

Compilation of Records of Surface Waters of the United States through September 1950

Part 6-B. Missouri River Basin below Sioux City, Iowa

Prepared under the direction of J. V. B. WELLS, Chief, Surface Water Branch

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1310



UNITED STATES DEPARTMENT OF THE INTERIOR

FRED A. SEATON, *Secretary*

GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

PREFACE

This report contains summaries of streamflow records in the Missouri River basin below Sioux City, Iowa. It was prepared by the United States Geological Survey in the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

The data were compiled under general supervision of R. E. Oltman, succeeded by H. F. Matthai, project engineer, by personnel in district offices under supervision of district engineers, Surface Water Branch, as follows:

F. M. Bell	Denver, Colo.
V. R. Bennion	Iowa City, Iowa
H. C. Bolon	Rolla, Mo.
E. R. Leeson	Topeka, Kans.
D. D. Lewis	Lincoln, Nebr.
L. R. Sawyer	St. Paul, Minn.

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COMPILATION OF RECORDS OF SURFACE WATERS OF THE MISSOURI RIVER BASIN BELOW SIOUX CITY, IOWA, THROUGH 1950

PURPOSE AND SCOPE

This volume is one of a series of reports presenting monthly and yearly summaries of streamflow and reservoir data collected by the Geological Survey. Included with these data are some records furnished by other Federal, State, and private agencies.

The purpose of this series of reports is to make available in summarized form all the surface-water records collected up to September 30, 1950.

The first known streamflow records to be systematically collected in the United States are those for Eaton and Madison Brooks in Madison County, N. Y., by John B. Jervis during 1835. Stream gaging by the United States Geological Survey was begun in 1888. At that time the Congress authorized the Irrigation Survey to be conducted by the Geological Survey in connection with special studies relating to irrigation. The work consisted of the measurements of stage and discharge of a few streams in the West. Since that time the work has expanded so that measurements of stage and discharge of streams and of stage and content of lakes and reservoirs have been made at more than 12,000 gaging stations in the 48 states and the territories of Hawaii and Alaska, of which about 6,400 were in operation on September 30, 1950. The details of the records collected at those stations are contained in annual reports, bulletins, and water-supply papers, which have been issued usually on an annual basis. Most of the records collected over the years are found only in numerous individual volumes, many of which are out of print and difficult to obtain.

The records have been collected mainly in cooperation with State, municipal and other Federal cooperating agencies and published in annual reports by the Geological Survey. This series of compilation reports has been prepared by the Geological Survey as a special project not included in the cooperative program.

The data presented in this series of reports consist of records of discharge of streams and contents of reservoirs summarized on a monthly and yearly basis. Results of miscellaneous discharge measurements and, in general, stage records have been excluded. Also included are bar charts showing the period of record covered by each gaging station and a map of the area showing the location of each station (pl. 1). The reports of this series are uniform in the type of data they contain and in the form of presentation.

In compiling the data for these summary reports, one important feature of the project was to review the analyses and computations originally made on the basis of all information now available. For some stations additional base data, obtained subsequently, allowed for reinterpretation and recomputation of more accurate records of discharge. All records were examined for major computation errors and tested wherever possible by comparison with records of discharge at other stations and weather data. Records that were found to be in need of substantial revision were recomputed or omitted if revision was not feasible. Estimates of discharge were made to fill short gaps to complete the continuity of the record, whenever practical.

Records furnished by other agencies are incorporated in these reports when they supplement records collected by the Geological Survey, and appeared consistent and reliable. Furnished records were reviewed in the same manner as Geological Survey records whenever base data were available and detailed study was feasible.

STREAM-GAGING PROGRAM

The area covered by this report (fig. 1) is that part of the Missouri River basin which lies below Sioux City, Iowa. It extends from the eastern slopes of the Rocky Mountains tributary to the Platte River eastward across the semi-arid Great Plains to the subhumid area of central Missouri. Most of the early gaging stations in the western part of this area were established to serve the needs of irrigation. Flood control, navigation, power, and municipal supply requirements provided the impetus for the early stations in the eastern part of this area.

The earliest discharge measurement on record was a flood discharge of 1,796 cubic feet per second of Clear Creek at Golden City (Golden), Colo. on June 19, 1876. This was made by the Hayden Survey, a predecessor of the Geological Survey. The State engineer of Colorado established stations on Cache la Poudre River at mouth of canyon, near Fort Collins, Colo. and on Big

Thompson River in 1881. The Cache la Poudre station was equipped with a water-stage recorder in 1884, and it is believed to have been the first recording station in the United States. Stream-gaging work in Wyoming started in 1888 when the State engineer installed a staff gage on Laramie River at Woods Landing.

The Geological Survey began its work in the basin in 1891 in Nebraska, in Kansas and Wyoming in 1895, in Colorado in 1897, in Missouri in 1903, in Minnesota in 1911, and in Iowa in 1917. In 1889 and 1890, the Geological Survey cooperated informally with Colorado by paying for part of the maintenance of gaging stations.

Cooperation with the States started in Kansas in the spring of 1895, and also in 1895 with Nebraska and Wyoming, with Colorado in 1897, and later with other States. Most of the cooperative programs were intermittent. All States in the basin have cooperated with the Geological Survey since 1934.

The investigation of the water resources of the basin was aided by the passage of the national Reclamation Act in 1902, and such events as the drought in the early thirties and floods in various areas aroused public interest and resulted in increased cooperative funds from the States. State participation has provided one of the principal sources of funds to sustain the work since its initiation.

The Corps of Engineers, as a result of the Rivers and Harbors Act of 1927 and the Flood Control Act of 1928, supported a considerable expansion of the work during the period 1928-31 and again in 1936 with passage of the Flood Control Act of 1936. The initiation of these programs and their continued support had a significant effect in advancing stream-gaging activities in the area.

Further interest in and development of irrigation in most of the basin caused an expansion of the stream-gaging program starting about 1930.

Plans for the coordinated development of the waters of the Missouri River basin with respect to flood control, navigation, power, and irrigation were formulated in 1943 and 1944 by the Corps of Engineers, Bureau of Reclamation, and the States in the basin. This plan gave a positive impetus to the growth of the stream-gaging program in the years immediately following.

The Republican River Compact between the States of Colorado, Kansas, and Nebraska was approved in 1943 and required 7 new gaging stations in Nebraska.

Numerous municipal and private organizations have assisted the Geological Survey in the stream-gaging program, as have several bureaus of the United States government. Details of their cooperation have been acknowledged in the annual water-supply papers.

DESCRIPTION OF DATA

The gaging-station records are arranged in a downstream order. The order used in this report is the same as that adopted for use in the annual series of reports on surface-water supply beginning with the water year 1951. In this report, in a downstream direction along the main stem, all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the bar chart (see p. 16) represents one rank. This downstream order and system of indentation show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used in the annual reports through the water year 1950 was different. In those reports all stations on the main stem are listed first in order, proceeding from the headwaters towards the mouth, then all stations on the uppermost tributary from its source to mouth, followed by all stations from source to mouth on the tributaries to the tributary.

The data presented for most of the gaging stations comprise a description of the station, tables of monthly discharge and runoff, and a yearly summary table. The station description gives the location of the gaging station, drainage area, supplemental records available (for some station), types and datums of gages, average discharge, extremes of discharge, and general remarks concerning the data. When records were furnished by another agency the fact is so stated.

The location of the gaging station and the drainage area are obtained from the best available maps. When more than one site was used and the difference in drainage areas is significant, the area for the latest site is shown first followed by the areas for other sites in chronological order. In some instances drainage-area figures have not been obtained because of the lack of suitable

maps or because the boundaries cannot be defined or the effective drainage area determined.

For some stations a paragraph headed "Supplemental records available" gives reference to records other than those given in the present report. Such records may consist of gage-height records for periods other than those for which discharge records are presented, records concerning quality of the water, or the results of periodic discharge measurements.

The gage described first is the present gage or the one used most recently. Information is then given in chronological order for all gages used earlier, giving changes in location, type of gage, or datum. The location or datum of all earlier gages is given with reference to the present or most recently used gage. The datum of the gage is the elevation of the zero of the gage above mean sea level. Where information as to datum is not available, the altitude of the gage is given. This may be determined from topographic maps, river-profile surveys, barometric levels, or where nothing better is available, by estimates based on average fall between a known elevation and the gage or on other known factors. The degree of accuracy of an altitude determination is indicated by the source of the information and to some extent by the refinement to which the figure is given.

The average discharge for a station is the average of all complete water years and is published only if there are five or more complete water years of record. The years used to determine the average are not necessarily consecutive. The average discharge is not published for some stations because of extensive changes in diversion or storage, or other water development, that have occurred upstream.

In general, the momentary maximum and minimum discharges and stages for the entire period of record are published in the "Extremes" paragraph. These are qualified if necessary according to the type of gage used and the completeness of the record. Maximum and minimum discharges at nonrecording gaging stations are qualified as "observed" unless determined from a graph drawn through actual gage heights which approximates the actual hydrograph.

Under "Remarks" information is given on factors which affect the basin yield and runoff characteristics. These include upstream regulation, diversion, and utilization—a history of changes in these items is given when known. Also, references are made to the records of storage or diversion upstream, if published. When discharge records are furnished by another agency, credit is given under "Cooperation."

The streamflow data summarized in this paper are generally contained in two monthly tables and one yearly table. The first monthly table is a tabulation of monthly and yearly mean discharge in cubic feet per second. These figures represent discharge passing the station; they are unadjusted for storage or diversion upstream. Each monthly figure is the mean flow for the entire month; generally no record for part of a month is tabulated. Likewise, each yearly figure is the mean flow for a full year, and no figure is shown for a partial year. Usually the months are arranged on a water-year basis. Exceptions to this rule are made in connection with seasonal records wherein the months are grouped to give a complete season for each calendar year.

The second monthly table is a tabulation of monthly and yearly runoff in acre-feet. The third table contains a yearly summary of the streamflow data. The column headed "W. S. P. no." lists the number of the water-supply paper or other publication in which the figures of daily and monthly discharge are published; for early years for which daily discharges were not published, that column lists the report that contains daily gage heights, rating tables, and monthly discharge. If a part of the record has been revised and published, then reference is made to both the original report and the one containing the revised record; if the daily discharge record for the entire year has been republished to include revisions, then only the later report is listed. For some stations the third table is omitted; however, the report containing records for any particular year can generally be found by reference to the tables given on p.

In the third table the momentary maximum discharge for each water year and the date of its occurrence is given whenever obtainable. This is maximum discharge for the water year unless otherwise qualified. For nonrecording gage records, momentary maximums were often obtained from graphs drawn through the gage readings. If a graph was not feasible, then the discharge was computed from the maximum gage height observed, provided it was believed to be of significant value. The momentary maximum discharge is given for some years for which the record, as shown in the first two tables, is incomplete. The maximum discharge when so given is believed to be representative of the absolute maximum of the water year and is not qualified in any way. Occasionally maximum daily discharges are tabulated, but only when it was not practicable to give momentary maximums and when figures may have general statistical value.

The minimum daily discharge for each water year is listed if known. The annual mean discharge listed in the third table is the same as that given in the yearly column in the first table.

Other data in this table are given for both the water and calendar year and consist of runoff in inches or in acre-feet, or both. These are adjusted or unadjusted for storage or diversion as the occasion demands, but in general no adjustments have been made in the West. In arid regions where the average annual precipitation is less than 20 inches, the computation of runoff in cubic feet per second per square mile and in depth in inches is not ordinarily made.

Most canal and diversion records are given in a single table. There are some records for large canals, however, that are published in the same detail as those for streams. Records of reservoirs also are given in a single table which shows the contents at the end of each month.

Figures of discharge that have been revised as the result of the review made in connection with this compilation are so noted; however, revisions that have been previously published are not indicated as revisions in this report. Revised daily discharges made in connection with this compilation will be published in a later annual water-supply paper. If only annual maximum discharges are revised and no revision of daily discharge is made for a station, revised annual maximums are given only in this report and will not be republished in a later annual report. Revisions of figures of runoff in inches resulting solely from a revision of the drainage area are not noted as such. Figures that represent corrections of typographical or computational errors where no figures of daily discharge have been revised or changed are indicated as "corrected" in this report. Estimated of discharge made to complete months or years for this report are noted as estimates and as "not previously published."

For a few stations, after reviewing the past records, it was found that part of the previously published records was grossly in error, yet the base data were such that the record could not be improved or revised. For such stations a note listing the periods of record which have been discredited and not republished is given with the records published herein. Stations for which the entire period of record previously published has been discredited are omitted from this report. The following table lists the stations so omitted.

Stations omitted from this report for which the entire record should not be used

Station	Period of record
Big Blue River near Manhattan, Kans.....	1895-1905
Big Bull Creek near Hillsdale, Kans.....	1948-50
Big Bull Creek near Paola, Kans.....	1929-32
Frenchman Creek at Wauneta, Nebr.....	1895-96
Interstate Canal at Whalen, Wyo.....	1910-16

Stations omitted from this report for which the entire record should not be used—Cont.

Station	Period of record
Kansas River at Lawrence, Kans.....	1891-98
Little Blue River at Blue Bluff, Nebr.....	1912
North Platte River at Pathfinder, Wyo., inflow to Pathfinder Reservoir, Wyo..	1909-13
Platte River at South Bend, Nebr.....	1903
Saline River near Beverly, Kans.....	1895-97
Saline River near Salina, Kans.....	1897-1903
Smoky Hill River at Jerome, Kans.....	1928-32

In addition to the above, records for some other stations in the area, previously published by the Geological Survey in the annual series of reports, are omitted from this compilation. In general, the records of such stations either are too fragmentary to allow computation of monthly mean discharge or are records that did not measure streamflow, total diversion, or return flow and were considered not important enough to warrant publication in this report. These stations are listed in the following table:

Previously published records which are not compiled in this report

Station	Period of record
Beaver River (Ladder Creek) near Scott City, Kans.....	1904-5
Big Piney River near Hooker, Mo.....	1903
Big Piney River near Houston, Mo.....	1908-9
Community Canal near Marshall, Colo.....	1909
Douglas Canal near Orpha, Wyo.....	1935-50
Duck Lake Creek near Grant, Colo.....	1909-11
Handy ditch near Arkins, Colo.....	1899-1900, 1903
Horse Creek near Little Horse Creek, Wyo.....	1911-12
Jefferson Creek at Jefferson, Colo.....	1910-12
Little Piney Creek near Arlington, Mo.....	1903
Michigan Creek near Jefferson, Colo.....	1910-12
Mitchell Canal at Wyoming-Nebraska State line.....	1938-41
Mullen Creek near French, Wyo.....	1911
North Laramie River at Ura, Wyo.....	1911-12
Owl Creek near Lindland, Colo.....	1937
Pioneer Canal at Colorado-Nebraska State line.....	1950
Running Dutchman Canal near Careyhurst, Wyo.....	1935-50
Smelter Creek at Old Geneva Smelter, near Grant, Colo.....	1909-11
Tarryall Creek above Como, Colo.....	1911-12

PUBLICATIONS

To facilitate publication of streamflow records, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the annual series of water-supply papers on the surface-water supply of the United States was published in 14 volumes, 1 for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, including 2 volumes each for parts 1, 2, 3, and 6. This system is used in publishing the present series of compilation reports with the exception of part II which is published in 2 volumes for the compilation report series only. The boundaries

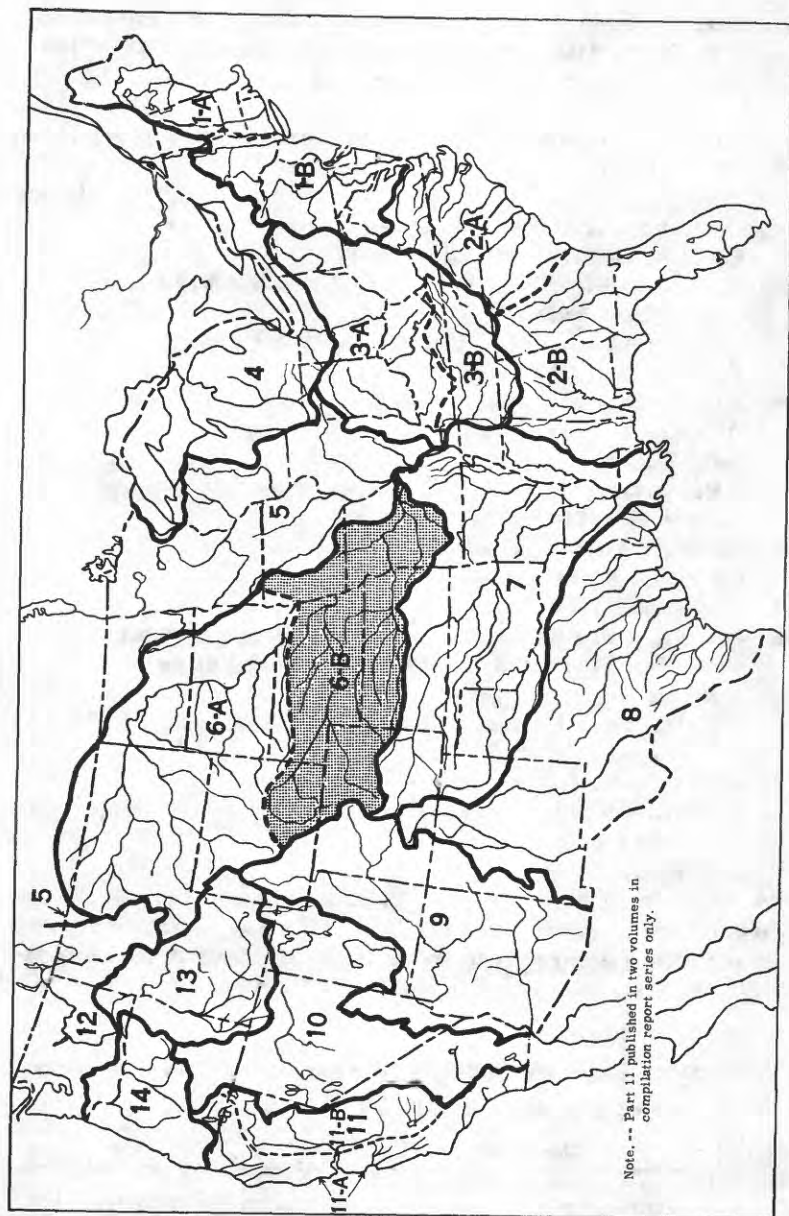


Figure 1.—Map of the United States showing areas covered by the annual reports on surface-water supply and also by the present series of compilation reports. The area covered by this report is shaded.

of the various parts are indicated in the following list and on figure 1.

- Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
 - B, North Atlantic slope basins, New York to York River.
2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
 - A, South Atlantic slope basins, James River to Savannah River.
 - B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.
 3. Ohio River basin, in two volumes:
 - A, Ohio River basin except Cumberland and Tennessee River basins.
 - B, Cumberland and Tennessee River basins.
 4. St. Lawrence River basin.
 5. Hudson Bay and upper Mississippi River basins.
 6. Missouri River basin, in two volumes:
 - A, Missouri River basin above Sioux City, Iowa.
 - B, Missouri River basin below Sioux City, Iowa.
 7. Lower Mississippi River basin.
 8. Western Gulf of Mexico basins.
 9. Colorado River basin.
 10. The Great Basin.
 11. Pacific slope basins in California, in two volumes:
 - A, Coastal basins (excluding Central Valley).
 - B, Central Valley.
 12. Pacific slope basins in Washington and upper Columbia River basin.
 13. Snake River basin.
 14. Pacific slope basins in Oregon and lower Columbia River basin.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901, in reports of the 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	Monthly discharge and descriptive information.....	1884-92
14th A, pt. 2	Monthly discharge.....	1888-93
B 131.....	Descriptions, measurements, gage heights, and ratings.	1893-94

Streamflow data for the years 1884—1901, in reports of the Geological Survey—Cont.

Report	Character of data	Year
16th A, pt. 2	Descriptive information only.	
B 140,.....	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895
W 11,.....	Gage heights,.....	1896
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1895-96
W 15,.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897
W 16,.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897
W 27,.....	Measurements, ratings and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898
W 28,.....	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898
20th A, pt. 4	Monthly discharge,.....	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

Reports on surface-water supply containing records from 1899 to 1950 for drainage basins in this report are listed in the following table. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Missouri River basin below Sioux City, Iowa 1899-1950

Year	W. S. P	Year	W. S. P	Year	W. S. P	Year	W. S. P	Year	W. S. P
1899	37	1910	286	1921	526	1931	716	1941	926
1900	49, ^a 50	1911	306	1922	546	1932	731	1942	956
1901	66, 75	1912	326	1923	566	1933	746	1943	976
1902	84	1913	356	1924	586	1934	761	1944	1006
1903	99	1914	386	1925	606	1935	786	1945	1036
1904	130, ^b 131	1915	406	1926	626	1936	806	1946	1056
1905	172	1916	436	1927	646	1937	826	1947	1086
1906	208	1917	456	1928	666	1938	856	1948	1116
1907-8	246	1918	476	1929	686	1939	876	1949	1146
1909	266	1919-20	506	1930	701	1940	896	1950	1176

^a Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.

^b Platte and Kansas Rivers.

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report.

Reports also have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which may have been revised), as well as some records not contained in the annual series of water-supply papers. The following table lists reports of this type for the Missouri River basin below Sioux City, Iowa.

Reports containing compilations of records by States and drainage basins

W. S. P.	Period	Report
74.....	1884-1900	Water resources of Colorado.
469.....	1894-1921	Surface waters of Wyoming and their utilization.

Records of discharge have been published also in State Reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Colorado...	1881-1935	Water resources of Colorado, Appendix 2, Data on stream-gaging stations of Colorado ^a .	State Planning Commission, Water Conservation Board, State Engineer.
Do.....	1881-1938	Water resources of Colorado, Appendix 3, v. 1 and 2, Stream-flow data of Colorado.	Do.
Iowa.....	1873-1932	Streamflow records of Iowa.....	State Planning Board.
Do.....	1873-1940	Water-Supply Bull. 1, Summaries of yearly and flood flow relating to Iowa streams.	
Do.....	1941-42	Water-Supply Bull. 2, Surface water resources of Iowa.	Do.
Do.....	1942-50	Water-Supply Bull. 3, Surface water resources of Iowa.	Do.
Kansas.....	1895-1919	Surface waters of Kansas.....	Kansas Water Commission.
Do.....	1919-24	.....do.....	Do.
Do.....	1924-28	Report of Division of Water Resources.....	State Board of Agriculture.
Do.....	1928-35	Streamflow data of Kansas.....	Do.
Do.....	1935-39	.....do.....	Do.
Do.....	1939-41	.....do.....	Do.
Do.....	1942-43	.....do.....	Do.
Do.....	1944-45	.....do.....	Do.
Do.....	1946-47	.....do.....	Do.
Minnesota..	1909-12	Water resources investigation of Minnesota.	State Drainage Commission.
Missouri....	1857-1926	Vol. 20, 2d series, Water resources of Missouri.	Missouri Bureau of Geology and Mines.
Do.....	1927-39	Vol. 26, 2d series, Surface waters of Missouri.	Missouri Geological Survey and Water Resources.
Do.....	1940-49	Vol. 34, 2d series, Surface waters of Missouri	Do.
Nebraska...	1894-1914	1st hydrographic report.....	Bureau of Irrigation, Water Power, and Drainage.
Do.....	1914-28	2d hydrographic report.....	Do.
Do.....	1929-32	3d hydrographic report.....	Do.
Do.....	1895-1930	Special survey report.....	Do.
Do.....	1895-1938	Water resources of Nebraska.....	Nebraska State Planning Board.

^aContains records of yearly discharge only.

Note.—In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: Colorado, Kansas, Missouri, Nebraska, and Wyoming.

Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey or other agencies. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following list gives the numbers and titles of these reports.

<i>Report</i>	<i>Issued by</i>
W. S. P. 96: Destructive floods in the United States in 1903.....	U. S. Geological Survey
W. S. P. 147: Destructive floods in the United States in 1904.....	Do.
W. S. P. 162: Destructive floods in the United States in 1905.....	Do.
W. S. P. 520-G: Some floods in the Rocky Mountain region.....	Do.
W. S. P. 771: Floods in the United States, magnitude and frequency.	Do.
W. S. P. 796-B: Flood on Republican and Kansas Rivers, May and June 1935.	Do.
W. S. P. 847: Maximum discharges at stream-measurement stations through September 1938.	Do.
W. S. P. 997: Floods in Colorado.....	Do.
W. S. P. 1137-D: Floods of May-July 1950 in southeastern Nebraska.	Do.
Bulletin. 1: Iowa floods, magnitude and frequency.....	Iowa Highway Research Board.
Circ. 370: Floods in Missouri, Magnitude and frequency.....	U. S. Geological Survey
Do. Floods in Nebraska, magnitude and frequency.....	Nebraska Department of Roads and Irrigation.

HYDROLOGIC CONDITIONS

Hydrologic conditions in the area covered by this report vary greatly with respect to both location and time. Figure 2 shows annual discharge for three streams representing different hydrologic conditions within the Missouri River basin below Sioux City, Iowa. The average discharge shown on the graphs is based on the period of record at each of the gaging stations.

The North Platte River is typical of streams that rise in the high altitudes of the Rocky Mountains. Runoff during the open-water season depends on the melting snow, which has accumulated during the preceding winter. High flows in the spring and early summer are followed by a recession to low flows during the fall and winter. The flow is supplemented occasionally by storms in the summer and early autumn.

The Elkhorn River is representative of streams that drain the Great Plains. Most floods are due to summer storms in the four months May to August, during which time about half of the annual rainfall occurs. Floods seldom occur during the spring break-up.

The Gasconade River is typical of streams that drain the humid part of the Missouri Basin. In this area the precipitation and resulting runoff are more evenly distributed throughout the year, although summer storms do affect the runoff.

No hydrograph is shown for the type of stream that drains the sand-hill region in Nebraska. The flow for these streams in the upper Loup River basin is very steady month to month and year to year as there is very little surface runoff. The streamflow comes almost entirely from ground-water basins.

As shown by the graphs in figure 2, runoff of the North Platte River during the 21-year period 1930-50 was generally less than that during the 22 years 1903-6, 1910-29. During the period 1930-50 the annual discharge exceeded the average discharge in only four of the 21 years. During this same period, the annual discharge of the Elkhorn River exceeded the average in only six years, five of which occurred in the seven years 1944-50. The Gasconade River record indicates that recovery from the previous dry periods started in 1942, and that seven of the last nine years exceeded the average.

The flow of many streams in this report is affected by trans-mountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. However, natural flow conditions still prevail in most of the headwater streams.

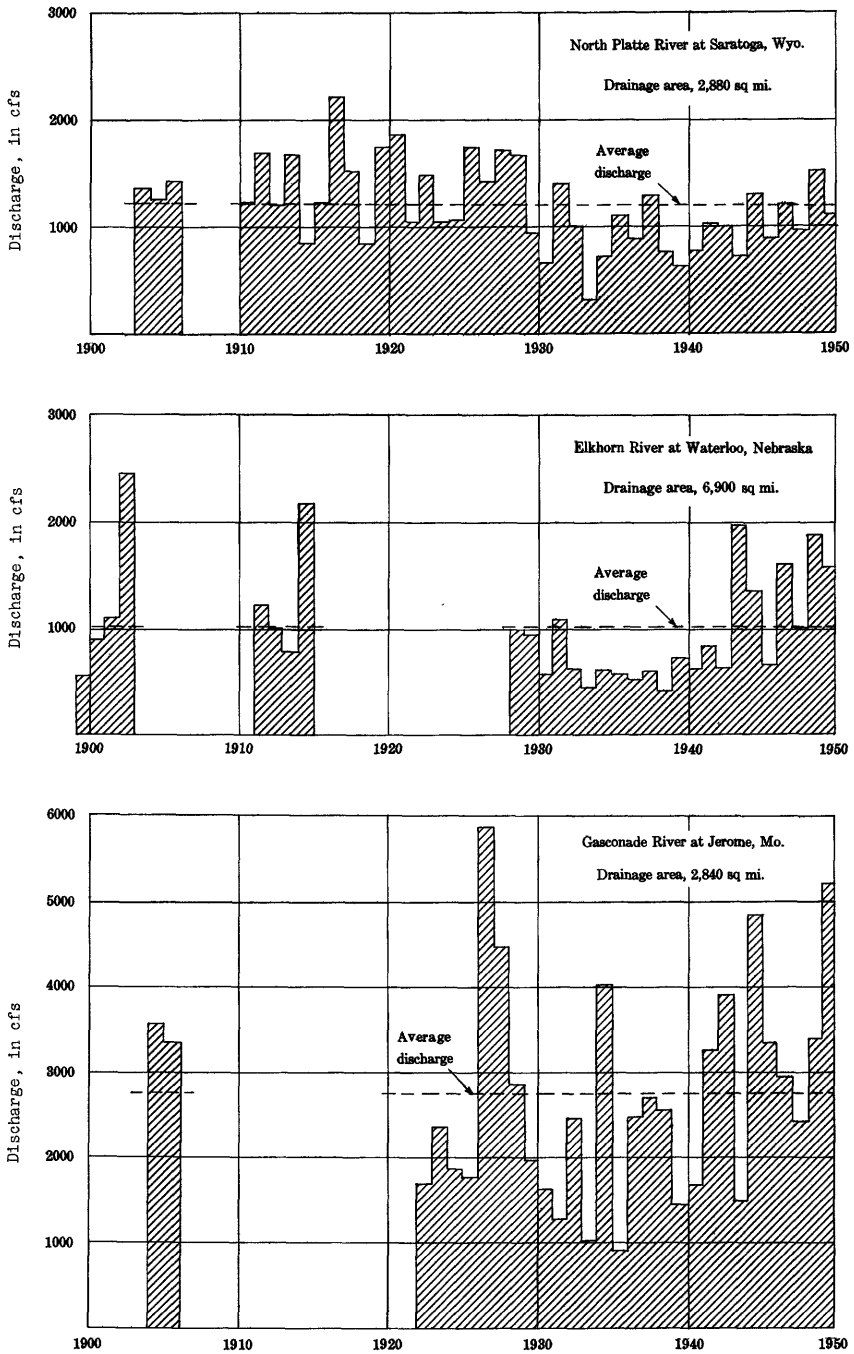



Figure 2.--Yearly discharge at three representative long-term gaging stations in Missouri River basin below Sioux City, Iowa

BAR CHART

The following bar chart shows the period of record of discharge of streams and contents of reservoirs for all stations compiled in this report through September 30, 1950. Periods of record of stage only are not included. The stations are listed in downstream order (see p. 4) and are numbered consecutively. The number is used to identify the station on the map (pl. 1) showing location of gaging stations.

Bar chart of gaging-station records

Legend:  Streamflow Reservoir contents

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
1897-						Missouri River at Sioux City, Iowa.....	1	25
						Perry Creek basin		
						Perry Creek at 38th Street, Sioux City, Iowa.....	2	27
						Floyd River basin		
						Floyd River at James, Iowa.....	3	28
						Omaha Creek basin		
						Omaha Creek at Homer, Nebr.....	4	29
						Little Sioux River basin		
						Little Sioux River near Lakefield, Minn.....	5	29
						Jackson County ditch No. 11 near Lakefield, Minn....	6	30
						Little Sioux River at Spencer, Iowa.....	7	30
						Little Sioux River at Correctionville, Iowa.....	8	31
						Little Sioux River near Kennebec, Iowa.....	9	33
						Maple River at Mapleton, Iowa.....	10	33
						Maple River at Turin, Iowa.....	11	34
						Little Sioux River near Turin, Iowa.....	12	35
						Monona-Harrison ditch:		
						West Fork ditch at Holly Springs, Iowa.....	13	36
						Monona-Harrison ditch near Turin, Iowa.....	14	37
						Tekamah Creek basin		
						Tekamah Creek at Tekamah, Nebr.....	15	38
						Soldier River basin		
						Soldier River at Pisgah, Iowa.....	16	38
						New York Creek basin		
						New York Creek at Herman, Nebr.....	17	39
						Boyer River basin		
						Boyer River at Logan, Iowa.....	18	39
						Missouri River at Omaha, Nebr.....	19	41
						Platte River basin		
						Grizzly Creek (head of Platte River) near Walden, Colo.	20	42
						Little Grizzly Creek near Hebron, Colo.....	21	44
						Roaring Fork near Walden, Colo.....	22	45
						North Platte River near Walden, Colo.....	23	47
						North Fork North Platte River at Higo, Colo.....	24	48
						North Fork North Platte River near Walden, Colo.....	25	49
						North Platte River near Cowdrey, Colo.....	26	50
						Michigan River near Lindland, Colo.....	27	50
						Michigan River at Haworth School, near Lindland, Colo.....	28	51
						Michigan River at Walden, Colo.....	29	52
						Illinois Creek near Rand, Colo.....	30	53
						Willow Creek near Rand, Colo.....	31	54
						Illinois Creek at Walden, Colo.....	32	55
						Michigan River near Cowdrey, Colo.....	33	56
						Canadian River at Cowdrey, Colo.....	34	57
						North Platte River near Northgate, Colo.....	35	59
						Douglas Creek near Keystone, Wyo.....	36	61
						Douglas Creek near Foxpark, Wyo.....	37	61
						Big Creek at Big Creek ranger station, Wyo.....	38	62
						French Creek near French, Wyo.....	39	63
						Brush Creek near Saratoga, Wyo. (upper station).....	40	64
						Brush Creek near Saratoga, Wyo. (lower station).....	41	65
						Encampment River above Encampment, Wyo.....	42	66
						Encampment River at Encampment, Wyo.....	43	66
						Encampment River at mouth, near Encampment, Wyo.....	44	68
						Cow Creek near Saratoga, Wyo.....	45	69
						Spring Creek:		
						North Spring Creek near Saratoga, Wyo.....	46	69
						Spring Creek near Saratoga, Wyo.....	47	70
						North Platte River at Saratoga, Wyo.....	48	70
						Jack Creek at Matheson ranch, near Saratoga, Wyo.....	49	72
						Jack Creek at Blydenburg's ranch near Saratoga, Wyo.....	50	73
						Jack Creek near Saratoga, Wyo.....	51	74
						Pass Creek near Saratoga, Wyo.....	52	74
						Pass Creek near Walcott, Wyo.....	53	75
						North Platte River above Seminoe Reservoir, near Sinclair, Wyo.....	54	75
						Medicine Bow River near Elk Mountain, Wyo.....	55	76
						Medicine Bow River near Medicine Bow, Wyo.....	56	76

Bar chart of gaging-station records--Continued

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
						Missouri River--Continued		
						Platte River basin--Continued		
						Medicine Bow River--Continued		
						Rock Creek:		
						Deep Creek near Arlington, Wyo.	57	77
						Rock Creek at Arlington, Wyo.	58	78
						Rock Creek near Rock River, Wyo.	59	79
						Rock Creek below Rock River, Wyo.	60	80
						Medicine Bow River at Medicine Bow, Wyo.	61	80
						Little Medicine Bow River:		
						Muddy Creek near Shirley, Wyo.	62	80
						Medicine Bow River above Seminoe Reservoir, near Hanna, Wyo.	63	81
						Seminoe Reservoir near Leo, Wyo.	64	82
						North Platte River above Pathfinder Reservoir, Wyo.	65	82
						Sage Creek above Pathfinder Reservoir, Wyo.	66	84
						Deweese Creek near Alcova, Wyo.	67	85
						Sand Creek near Alcova, Wyo.	68	86
						Sweetwater River near Atlantic City, Wyo.	69	86
						Sweetwater River at Devils Gate, near Splitrock, Wyo.	70	87
						Sweetwater River near Alcova, Wyo.	71	88
						Horse Creek near Alcova, Wyo.	72	89
						Canyon Creek near Alcova, Wyo.	73	90
						Pathfinder Reservoir near Alcova, Wyo.	74	91
						North Platte River below Pathfinder Reservoir, Wyo.	75	92
						Alcova Reservoir at Alcova, Wyo.	76	94
						North Platte River at Alcova, Wyo.	77	95
						Bates Creek near Freeland, Wyo.	78	96
						Bates Creek near Alcova, Wyo.	79	97
						North Platte River near Goose Egg, Wyo.	80	98
						Casper Creek at Casper, Wyo.	81	99
						North Platte River below Casper, Wyo.	82	100
						North Platte River at Parkington, Wyo.	83	101
						Deer Creek in canyon, near Glenrock, Wyo.	84	102
						Deer Creek at Glenrock, Wyo.	85	102
						Box Elder Creek at Boxelder, Wyo.	86	104
						Box Elder Creek near Careyhurst, Wyo.	87	105
						La Prele Creek near Douglas, Wyo.	88	107
						La Prele Creek near Orpha, Wyo.	89	108
						North Platte River near Douglas, Wyo.	90	110
						Wagonhound Creek near La Bonte, Wyo.	91	111
						La Bonte Creek:		
						West Fork La Bonte Creek near La Bonte, Wyo.	92	113
						La Bonte Creek near La Bonte, Wyo.	93	114
						North Platte River at Orin, Wyo.	94	115
						Horseshoe Creek near Esterbrook, Wyo.	95	116
						Horseshoe Creek near Glendo, Wyo.	96	117
						North Platte River near Cassa, Wyo.	97	119
						Cottonwood Creek near Fletcher Park, Wyo.	98	119
						Cottonwood Creek at Wendover, Wyo.	99	120
						Guernsey Reservoir near Guernsey, Wyo.	100	121
						North Platte River below Guernsey Reservoir, Wyo.	101	122
						North Platte River at recorder station below Whalen, Wyo.	102	125
						Laramie River near Glendevey, Colo.	103	127
						McIntyre Creek at Gleneyre, Colo.	104	129
						Laramie River near Jelm, Wyo.	105	130
						Laramie River at Woods Landing, Wyo.	106	132
						Laramie River and Pioneer Canal near Woods, Wyo.	107	133
						Pioneer Canal near Woods, Wyo.	108	135
						Laramie River at Laramie, Wyo.	109	136
						Laramie River at Two Rivers, Wyo.	110	137
						Little Laramie River near Filmore, Wyo.	111	139
						Little Laramie River at Two Rivers, Wyo.	112	141
						Laramie River near Lookout, Wyo.	113	144
						Laramie River at McGill, Wyo.	114	146
						Laramie River below McGill, Wyo.	115	146
						Laramie River near Wheatland, Wyo.	116	147
						Sybill Creek above Bluegrass Creek, near Wheatland, Wyo.	117	148
						Sybill Creek below Bluegrass Creek, near Wheatland, Wyo.	118	148
						Sybill Creek near Mule Shoe Ranch, near Wheatland, Wyo.	119	149
						Sybill Creek near Wheatland, Wyo.	120	149
						North Laramie River near Wheatland, Wyo.	121	150
						North Laramie River at Wilson's Ranch, near Wheatland, Wyo.	122	151
						Laramie River at Uva, Wyo.	123	152
						Chugwater Creek at Chugwater, Wyo.	124	153
						Laramie River near Fort Laramie, Wyo.	125	154

Bar chart of gaging-station records--Continued

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
<i>North Platte River, cont.</i>						Missouri River--Continued		
						Platte River basin--Continued		
						...Rawhide Creek near Lingle, Wyo.....	126	156
						...North Platte River at Torrington, Wyo.....	127	157
						...Cherry Creek drain near Torrington, Wyo.....	128	159
						...Arnold drain near Torrington, Wyo.....	129	160
						...Katzner drain near Henry, Nebr.....	130	160
						...North Platte River at Wyoming-Nebraska State line.....	131	161
						...North Platte River at Henry, Nebr.....	132	163
						...Horse Creek near Meriden, Wyo.....	133	163
						...Horse Creek near La Grange, Wyo.....	134	164
						...Horse Creek near Yoder, Wyo.....	135	165
						...Horse Creek near Lyman, Nebr.....	136	166
						...Sheep Creek near Morrill, Nebr.....	137	167
						...North Platte River at Morrill, Nebr.....	138	168
						...Dry Spotted Tail Creek at Mitchell, Nebr.....	139	169
						...North Platte River at Mitchell, Nebr.....	140	169
1897-1900						...Tub Springs near Scottsbluff, Nebr.....	141	172
						...North Platte River at Scottsbluff, Nebr.....	142	172
						...Winter Creek near Scottsbluff, Nebr.....	143	173
						...Gering drain near Gering, Nebr.....	144	175
						...North Platte River near Minatare, Nebr.....	145	176
						...Ninemile drain near McGrew, Nebr.....	146	178
						...Bayard Sugar Factory drain near Bayard, Nebr.....	147	179
						...Red Willow Creek near Bridgeport, Nebr.....	148	180
1896-1900						...Red Willow Creek near Bayard, Nebr.....	149	180
						...North Platte River at Bridgeport, Nebr.....	150	181
						...Pumpkin Creek near Bridgeport, Nebr.....	151	184
						...North Platte River at Broadwater, Nebr.....	152	185
						...North Platte River at Lisco, Nebr.....	153	186
						...North Platte River at Oshkosh, Nebr.....	154	187
						...Blue Creek near Lewellen, Nebr.....	155	189
						...North Platte River at Lewellen, Nebr.....	156	190
						...North Platte River at Belmar, Nebr.....	157	191
						...Otter Creek near Lemoyme, Nebr.....	158	192
						...North Platte River at Lemoyme, Nebr.....	159	193
						...North Platte River at Martin, Nebr.....	160	193
						...McConaughy Lake near Keystone, Nebr.....	161	194
						...North Platte River near Keystone, Nebr.....	162	195
						...North Platte River near Sutherland, Nebr.....	163	196
						...Birdwood Creek near Sutherland, Nebr.....	164	197
						...Birdwood Creek near Hershey, Nebr.....	165	198
						...Lincoln County drain No. 1 at North Platte, Nebr.....	166	199
1895						...North Platte River at North Platte, Nebr.....	167	199
						South Platte River:		
						...East Hoosier ditch at Hoosier Pass, Colo.....	168	202
						...West Hoosier ditch at Hoosier Pass, Colo.....	169	203
						...Middle Fork South Platte River at Alma, Colo.....	170	203
						...Middle Fork South Platte River at Fairplay, Colo.....	171	204
						...South Fork South Platte River near Fairplay, Colo.....	172	204
						...South Platte River above Elevenmile Canyon Reservoir, near Hartsel, Colo.....	173	205
						...Elevenmile Canyon Reservoir, near Lake George, Colo.....	174	206
						...South Platte River near Lake George, Colo.....	175	207
						...South Platte River at Lake George, Colo.....	176	208
						Tarryall Creek:		
						...Boreas Pass ditch at Boreas Pass, Colo.....	177	209
						...Tarryall Creek near Jefferson, Colo.....	178	210
						...Rock Creek near Jefferson, Colo.....	179	211
						...Tarryall Creek near Lake George, Colo.....	180	211
1899-1902						...South Platte River above Cheesman Lake, Colo.....	181	213
1899-1900						...Goose Creek above Cheesman Lake, Colo.....	182	215
						...Cheesman Lake near Deckers, Colo.....	183	216
						...South Platte River below Cheesman Lake, Colo.....	184	217
						...South Platte River above North Fork at South Platte, Colo.....	185	219
						...North Fork South Platte River at Grant, Colo.....	186	220
						Geneva Creek:		
						...Scott Gomer Creek near Grant, Colo.....	187	221
						...Geneva Creek at Grant, Colo.....	188	221
						...North Fork South Platte River below Geneva Creek at Grant, Colo.....	189	222
						...North Fork South Platte River at Pine, Colo.....	190	223
						...North Fork South Platte River at South Platte, Colo.....	191	224
1887-92, 1895-97, 1898						...South Platte River at South Platte, Colo.....	192	226
						...South Platte River at Waterton, Colo.....	193	230
						...Deer Creek near Littleton, Colo.....	194	231
						...Plum Creek near Sedalia, Colo.....	195	232
						...Plum Creek near Louviers, Colo.....	196	232

Bar chart of gaging-station records--Continued

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
						North Platte River		
						Missouri River--Continued		
						Platte River basin--Continued		
						South Platte River--Continued		
						.....South Platte River at Littleton, Colo.....	197	233
(1887-91, 1895-1950)						.....Bear Creek at Morrison, Colo.....	198	234
						.....Turkey Creek near Morrison, Colo.....	199	236
						.....Bear Creek at mouth, at Sheridan, Colo.....	200	237
						.....Cherry Creek near Franktown, Colo.....	201	238
						.....Cherry Creek near Melvin, Colo.....	202	239
						.....Cherry Creek below Cherry Creek Reservoir, Colo.....	203	240
						.....Cherry Creek at Denver, Colo.....	204	241
						.....South Platte River at Denver, Colo.....	205	242
1889-91, 1895-						Clear Creek:		
						West Fork Clear Creek:		
						.....Jones Pass tunnel at east portal, near Jones Pass, Colo.....	206	245
						Hoop Creek:		
						.....Berthoud Pass ditch at Berthoud Pass, Colo.....	207	245
						.....West Fork Clear Creek above Empire, Colo.....	208	246
						.....West Fork Clear Creek near Empire, Colo.....	209	247
						.....Clear Creek near Lawson, Colo.....	210	247
						.....Fall River near Idaho Springs, Colo.....	211	248
(1889-1912)						.....Clear Creek at Idaho Springs, Colo.....	212	249
						.....Clear Creek at Forks Creek, Colo.....	213	249
						.....Clear Creek near Golden, Colo.....	214	251
						.....Clear Creek at mouth, near Derby, Colo.....	215	253
						.....South Platte River at Henderson, Colo.....	216	254
						.....South Platte River at Fort Lupton, Colo.....	217	256
						.....North St. Vrain Creek near Allens Park, Colo.....	218	258
						.....North St. Vrain Creek at Longmont Dam, near Lyons, Colo.....	219	259
						.....South St. Vrain Creek near Ward, Colo.....	220	260
						.....Middle St. Vrain Creek near Allens Park, Colo.....	221	261
(1895-1903)						.....Supply ditch at Lyons, Colo.....	222	262
(1887-91, 1895-1950)						.....St. Vrain Creek at Lyons, Colo.....	223	262
						.....Lefthand Creek near Boulder, Colo.....	224	266
						.....Lefthand Creek at mouth, at Longmont, Colo.....	225	266
						.....Middle Boulder Creek at Nederland, Colo.....	226	268
						.....North Boulder Creek at Silver Lake, Colo.....	227	270
1887-88						.....North Boulder Creek near Nederland, Colo.....	228	271
						.....Boulder Creek near Orodell, Colo.....	229	272
						.....Fourmile Creek at Orodell, Colo.....	230	274
1889-92, 1895-1901						.....Boulder Creek near Boulder, Colo.....	231	275
						South Boulder Creek:		
						.....Moffat water tunnel at East Portal, Colo.....	232	277
						.....South Boulder Creek near Rollinsville, Colo.....	233	277
						.....South Boulder Creek near Eldorado Springs, Colo.....	234	278
1888-92, 1895-1901						.....Boulder Creek at mouth, near Longmont, Colo.....	235	282
						.....St. Vrain Creek at mouth, near Platteville, Colo.....	236	283
						Big Thompson River:		
						Spruce Canyon:		
						.....Eureka ditch near Flattop Mountain, Colo.....	237	285
						.....Glacier Creek near Estes Park, Colo.....	238	285
						.....Fall River at Estes Park, Colo.....	239	286
						.....Big Thompson River at Estes Park, Colo.....	240	287
						.....Alva B. Adams tunnel at east portal, near Estes Park, Colo.....	241	288
						.....Fish Creek near Estes Park, Colo.....	242	288
						.....Big Thompson River near Estes Park, Colo.....	243	289
						.....North Fork Big Thompson River at Drake, Colo.....	244	290
						.....Big Thompson River below powerhouse, near Drake, Colo.....	245	291
1887-92, 1895-1903						.....Big Thompson River at mouth of canyon, near Drake, Colo.....	246	293
(1887-88, 1895-1911)						.....Big Thompson River near Arkins, Colo.....	247	295
(1895-98)						.....Big Thompson River below Home Supply ditch, near Arkins, Colo.....	248	296
						.....Buckhorn Creek near Masonville, Colo.....	249	297
						.....Dry Creek near Pinewood, Colo.....	250	298
						Cottonwood Creek:		
						.....Rattlesnake Creek near Pinewood, Colo.....	251	298
						.....Cottonwood Creek near Pinewood, Colo.....	252	298
						.....Big Thompson River near Loveland, Colo.....	253	299
						.....Little Thompson River near Berthoud, Colo.....	254	299
						.....Dry Creek below Carter Lake, Colo.....	255	300
						.....Big Thompson River at mouth, near La Salle, Colo.....	256	301

Bar chart of gaging-station records--Continued

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
						Missouri River--Continued		
						Platte River basin--Continued		
						South Platte River--Continued		
						Cache la Poudre River:		
						Long Draw:		
						.....Grand River ditch at La Poudre Pass, Colo.....	257	302
						.....Cache la Poudre River above Chambers Lake outlet, Colo.....	258	304
						Joe Wright Creek:		
						.....Cameron Pass ditch at Cameron Pass, Colo.....	259	304
						.....Michigan ditch at Cameron Pass, Colo.....	260	305
						.....Lost Lake outlet at Chambers Lake, Colo.....	261	306
						.....Skyline ditch at Chambers Lake, Colo.....	262	307
						.....Laramie-Poudre tunnel near Chambers Lake, Colo.....	263	308
						Roaring Creek:		
						.....Bob Creek ditch near Glendevy, Colo.....	264	309
						.....Cache la Poudre River near Log Cabin, Colo.....	265	310
						.....South Fork Cache la Poudre River near Eggers, Colo.....	266	311
						.....Cache la Poudre River below Elkhorn Creek, Colo.....	267	311
						.....Cache la Poudre River near Fort Collins, Colo.....	268	312
						North Fork Cache la Poudre River:		
						.....Columbine ditch at Deadman Hill, Colo.....	269	313
						Sheep Creek:		
						.....Wilson Supply ditch near Eaton Reservoir, Colo.....	270	313
						.....North Fork Cache la Poudre River at Livermore, Colo.....	271	314
						.....Cache la Poudre River at mouth of canyon, near Fort Collins, Colo.....	272	315
						.....Cache la Poudre River near Greeley, Colo.....	273	319
						.....Lonetree Creek near Granite Canyon, Wyo.....	274	321
						.....South Platte River near Kersey, Colo.....	275	322
						.....Middle Crow Creek near Hecla, Wyo.....	276	324
						.....South Crow Creek near Hecla, Wyo.....	277	326
						.....North Fork Crow Creek near Hecla, Wyo.....	278	327
						.....Crow Creek near Cheyenne, Wyo.....	279	328
						.....South Platte River at Sublette, Colo.....	280	328
						.....South Platte River at Orchard, Colo.....	281	330
						.....Bijou Creek near Wiggins, Colo.....	282	331
						.....South Platte River at Fort Morgan, Colo.....	283	331
						.....South Platte River at Balzac, Colo.....	284	332
						.....Lodgepole Creek near Federal, Wyo.....	285	334
						.....South Fork Lodgepole Creek near Federal, Wyo.....	286	335
						.....Lodgepole Creek at Bushnell, Nebr (upper station)	287	335
						.....Lodgepole Creek at Bushnell, Nebr.....	288	336
						.....Lodgepole Creek at Sidney, Nebr.....	289	337
						.....Lodgepole Creek at Ralton, Nebr.....	290	337
						.....South Platte River at Julesburg, Colo.....	291	338
						.....South Platte River at Big Spring, Nebr.....	292	340
						.....South Platte River at Paxton, Nebr.....	293	341
						.....South Platte River at North Platte, Nebr.....	294	342
						.....Platte River at Brady, Nebr.....	295	344
						.....Platte River near Cozad, Nebr.....	296	345
						.....Platte River near Lexington, Nebr.....	297	346
						.....Plum Creek near Smithfield, Nebr.....	298	348
						.....Platte River near Overton, Nebr.....	299	348
						.....Buffalo Creek near Darr, Nebr.....	300	350
						.....Buffalo Creek near Overton, Nebr.....	301	351
						.....Elm Creek near Overton, Nebr.....	302	351
						.....Platte River near Odessa, Nebr.....	303	352
						.....Platte River near Grand Island, Nebr.....	304	353
						.....Wood River near Riverdale, Nebr.....	305	354
						.....Wood River near Gibbon, Nebr.....	306	354
						Prairie Creek:		
						.....Dry Creek at Cairo, Nebr.....	307	355
						.....Prairie Creek near Silver Creek, Nebr.....	308	355
						.....Platte River near Duncan, Nebr.....	309	356
						.....Middle Loup River near Mullen, Nebr.....	310	358
						.....Middle Loup River near Seneca, Nebr.....	311	359
						.....Middle Loup River at Dunning, Nebr.....	312	359
						.....Dismal River near Gem, Nebr.....	313	360
						.....Dismal River at Dunning, Nebr.....	314	360
						.....Middle Loup River at Walworth, Nebr.....	315	361
						.....Middle Loup River at Sargent, Nebr.....	316	362
						.....Middle Loup River near Comstock, Nebr.....	317	362
						.....Middle Loup River at Arcadia, Nebr.....	318	363
						.....Middle Loup River at Loup City, Nebr.....	319	364
						.....Middle Loup River at Boelus, Nebr.....	320	364
						.....South Loup River near Cumro, Nebr.....	321	365
						.....South Loup River at Ravenna, Nebr.....	322	365

Bar chart of gaging-station records--Continued

Period of record						Gaging station	Map no.	Page no.
1900	1910	1920	1930	1940	1950			
						Missouri River--Continued		
						Platte River basin--Continued		
						Middle Loup River--Continued		
						South Loup River--Continued		
					Mud Creek near Broken Bow, Nebr.....	323	366
					Mud Creek near Sweetwater, Nebr.....	324	366
					South Loup River at St. Michael, Nebr.....	325	367
					Oak Creek near Dannebrog, Nebr.....	326	368
					Middle Loup River at St. Paul, Nebr.....	327	368
					North Loup River at Brewster, Nebr.....	328	371
					North Loup River at Taylor, Nebr.....	329	371
					Calamus River near Harrop, Nebr.....	330	372
					Calamus River near Burwell, Nebr.....	331	373
					North Loup River near Burwell, Nebr.....	332	373
					North Loup River near Ord, Nebr.....	333	374
					North Loup River at Scotia, Nebr.....	334	374
					Davis Creek near Cotesfield, Nebr.....	335	375
					North Loup River near St. Paul, Nebr.....	336	376
						Loup River:		
					Spring Creek at Cushing, Nebr.....	337	378
					Cedar River near Spalding, Nebr.....	338	379
					Cedar River near Fullerton, Nebr.....	339	379
					Loup River power canal near Genoa, Nebr.....	340	380
					Loup River near Genoa, Nebr.....	341	381
					Beaver Creek at Loretto, Nebr.....	342	382
					Beaver Creek at Genoa, Nebr.....	343	383
					Loup River at Columbus, Nebr.....	344	384
					Shell Creek at Newman Grove, Nebr.....	345	386
					Shell Creek near Columbus, Nebr.....	346	387
					Platte River at North Bend, Nebr.....	347	388
					Platte River near Fremont, Nebr.....	348	388
					Elkhorn River at O'Neill, Nebr.....	349	389
					Elkhorn River at Ewing, Nebr.....	350	389
					South Fork Elkhorn River at Ewing, Nebr.....	351	390
					Elkhorn River at Neligh, Nebr.....	352	390
					Elkhorn River at Norfolk, Nebr.....	353	391
					Logan Creek near Uehling, Nebr.....	354	393
					Elkhorn River at Waterloo, Nebr.....	355	394
					Platte River near Ashland, Nebr.....	356	396
					Salt Creek at Lincoln, Nebr.....	357	397
					Wahoo Creek at Ithaca, Nebr.....	358	398
					Silver Creek at Ithaca, Nebr.....	359	398
					Salt Creek near Ashland, Nebr.....	360	399
						Waubonsie Creek basin		
					Waubonsie Creek near Bartlett, Iowa.....	361	399
						Weeping Water Creek basin		
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MISSOURI RIVER MAIN STEM

1. Missouri River at Sioux City, Iowa

Location.--Lat 42°29', long. 96°25', in sec. 17, T. 29 N., R. 9 E., sixth principal meridian, at bridge on U. S. Highway 77 at Sioux City, 2.5 miles downstream from Big Sioux River.

Drainage area.--314,600 sq mi, approximately.

Supplemental records available.--January 1879 to December 1890, monthly discharges only, in H. Doc. 238, 73d Cong., 2d sess., Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,076.96 ft above mean sea level, datum of 1929. Sept. 2, 1878, to Dec. 31, 1905, staff, cable and chain gages at various locations within 1.7 miles of present site and at various data. Jan. 1, 1906, to Feb. 14, 1935, chain gage at present site and datum.

Average discharge.--53 years (1897-1950), 33,700 cfs.

Extremes.--1928-31, 1938-50: Maximum discharge, 252,000 cfs Apr. 25, 1950 (gage height, 18.44 ft); minimum, 2,500 cfs Dec. 29, 1941; minimum gage height observed, -3.34 ft Dec. 27, 1946.

Remarks.--Flow partly regulated by Fort Peck Reservoir.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	14,600	13,400	8,100	8,100	14,400	22,800	42,000	60,200	129,400	109,000	35,800	20,200	39,900
1899	16,300	16,800	9,800	9,800	16,200	35,800	112,600	85,100	95,800	104,100	48,800	21,800	46,100
1900	16,300	18,500	9,800	9,800	18,000	34,200	47,100	60,200	84,000	60,200	24,400	20,200	33,600
1901	17,900	15,100	9,800	9,800	14,400	19,500	33,600	47,200	110,900	78,100	37,400	30,200	35,400
1902	17,900	13,400	9,800	9,800	14,400	22,800	38,700	40,700	68,900	58,900	39,000	23,500	29,700
1903	17,900	16,800	9,800	9,800	14,400	27,600	37,000	43,900	89,900	76,400	53,700	35,300	34,400
1904	22,800	16,800	11,400	11,400	17,400	27,600	72,300	50,400	90,700	69,900	34,200	21,800	37,200
1905	14,600	13,400	8,100	8,100	16,200	26,000	20,200	29,300	60,500	84,600	39,000	15,100	28,000
1906	11,400	13,400	11,400	9,800	12,600	27,600	50,400	45,500	116,000	66,700	48,800	42,000	38,000
1907	26,000	21,800	14,600	14,600	19,800	65,100	65,500	60,200	100,800	105,700	48,800	26,900	47,700
1908	29,300	26,900	14,600	13,000	20,900	30,900	42,000	53,700	152,900	99,200	43,900	21,800	45,700
1909	21,100	23,500	21,100	14,600	28,800	40,700	48,700	34,200	146,200	125,600	60,200	51,900	49,600
1910	21,100	18,500	11,400	11,400	32,400	79,700	37,000	50,400	62,200	37,400	22,800	15,100	33,300
1911	14,600	13,400	8,100	8,100	12,600	22,800	28,600	27,600	75,600	68,300	40,700	35,300	29,700
1912	26,000	16,800	13,000	13,000	17,400	32,500	95,800	52,000	82,300	78,100	53,700	40,300	43,400
1913	32,500	30,200	27,600	17,900	19,800	27,600	65,500	45,500	89,100	73,200	47,200	31,900	42,400
1914	24,400	25,200	21,100	14,600	19,800	29,300	42,000	53,700	97,500	68,300	34,200	25,200	38,000
1915	26,000	33,600	17,900	17,900	23,400	30,900	70,600	48,800	87,400	82,900	60,200	42,000	45,200
1916	35,800	26,900	16,300	13,000	20,900	66,700	82,300	56,900	73,900	107,300	42,300	21,800	47,100
1917	22,800	23,500	13,000	13,000	28,200	39,000	99,200	73,200	100,800	94,000	32,500	25,200	46,000
1918	22,800	23,500	13,000	13,000	23,400	58,500	43,700	42,300	75,600	87,800	37,400	21,800	38,700
1919	11,400	13,400	6,500	19,500	18,000	32,500	38,700	24,400	35,300	21,100	8,100	6,700	19,600
1920	9,800	8,400	8,100	8,100	17,400	52,000	65,500	78,100	32,400	78,100	32,500	16,800	39,000
1921	13,000	13,400	14,600	9,800	21,600	27,600	33,600	40,700	110,900	66,700	26,000	15,100	32,700
1922	8,100	10,100	8,100	8,100	18,000	37,400	55,500	45,500	87,400	58,500	35,800	15,100	32,300
1923	13,000	16,800	8,100	8,100	14,400	29,300	47,100	43,900	87,400	84,600	60,200	26,900	36,700
1924	52,000	37,000	22,800	16,300	22,600	40,700	72,300	48,800	84,000	56,900	32,500	16,800	41,900
1925	21,100	23,500	13,000	13,000	19,800	42,300	67,200	45,500	90,700	69,900	26,000	15,100	37,300
1926	19,500	18,500	11,400	11,400	18,000	30,900	23,500	50,400	67,200	53,700	27,600	28,600	30,100
1927	24,400	18,500	9,800	9,800	19,800	34,200	67,200	97,600	164,700	84,600	42,300	35,300	50,700
1928	26,000	18,500	13,000	13,000	57,400	55,300	42,000	47,200	79,000	89,400	48,800	22,200	42,600
1929	17,900	18,800	10,700	10,200	11,500	53,300	57,600	39,900	111,000	55,100	21,000	13,500	34,900
1930	16,300	15,000	8,200	9,580	16,400	47,700	43,300	41,100	42,000	26,100	19,700	19,700	25,500
1931	17,000	14,400	7,890	6,880	16,300	16,800	19,400	14,600	32,800	21,900	10,800	8,390	15,700
1932	10,400	10,100	6,200	7,300	9,200	26,000	33,900	43,600	79,500	55,900	23,100	15,300	26,700
1933	12,200	10,100	6,000	9,100	9,000	27,600	32,400	43,300	71,600	39,500	14,800	20,700	24,000
1934	11,900	12,600	9,100	7,500	11,700	25,700	20,800	26,000	30,900	19,400	9,400	7,100	16,700
1935	8,500	10,400	5,900	5,700	10,600	15,000	24,000	23,700	56,500	49,100	18,700	10,400	19,900
1936	8,800	7,200	7,300	7,200	7,100	44,200	30,200	29,600	40,300	22,400	12,200	11,100	19,000
1937	9,300	10,600	7,800	6,800	6,300	18,500	29,600	19,000	57,100	50,400	19,000	8,600	20,300
1938	10,700	9,600	5,400	7,200	8,300	39,400	22,900	20,900	47,100	78,900	29,900	26,900	25,700
1939	19,800	16,790	10,570	13,350	9,428	26,180	59,880	30,560	50,120	59,280	17,710	11,170	26,330
1940	9,875	11,390	10,540	3,735	5,576	9,632	23,120	23,370	29,630	22,440	21,170	16,050	15,550
1941	13,930	8,590	7,775	7,532	7,950	13,990	28,570	21,980	53,390	27,300	22,170	26,030	19,930
1942	22,530	17,380	8,009	6,884	8,307	21,040	28,920	76,180	73,430	37,610	25,510	24,280	29,250
1943	22,280	23,060	7,568	8,835	10,010	29,140	92,530	31,670	68,350	66,970	29,710	29,676	34,990
1944	27,540	28,210	17,380	15,050	17,100	18,510	78,990	35,530	91,800	81,840	37,160	27,890	39,690
1945	25,920	28,020	14,020	14,850	23,500	58,950	31,380	18,150	50,320	48,770	28,070	23,610	30,470
1946	28,960	20,030	9,184	9,571	12,350	30,570	24,820	23,560	44,560	42,280	21,960	30,840	24,940
1947	35,430	22,700	7,410	11,260	14,870	24,930	75,280	50,480	77,720	61,590	39,380	33,220	37,880
1948	37,410	29,310	12,230	13,040	15,670	40,630	63,720	36,140	77,910	64,450	41,790	31,170	38,470
1949	38,160	33,540	10,940	11,950	15,180	49,140	82,400	36,840	44,600	34,300	28,430	30,620	34,690
1950	29,070	24,040	9,558	8,000	9,896	29,920	113,100	52,440	44,590	51,250	34,950	33,300	36,710

MISSOURI RIVER MAIN STEM

Monthly and yearly runoff, in thousands of acre-feet, of Missouri River at Sioux City, Iowa												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
The year												
1898	900	800	500	500	800	1,400	2,500	3,700	7,700	5,700	2,200	1,200
1899	1,000	1,000	600	600	900	2,200	6,700	4,000	5,700	6,400	3,000	1,300
1900	1,000	1,100	600	600	1,000	2,100	2,800	3,700	5,000	3,700	1,500	1,200
1901	1,100	900	600	600	800	1,200	2,000	2,900	6,600	4,800	2,300	1,800
1902	1,100	800	600	600	800	1,400	2,300	2,500	4,100	3,500	2,400	1,400
1903	1,100	1,000	600	600	800	1,700	2,200	2,700	4,100	4,700	3,300	2,100
1904	1,400	1,000	700	700	1,000	1,700	4,300	3,100	5,400	4,300	2,100	1,300
1905	900	800	500	500	900	1,600	1,200	1,800	3,600	5,200	2,400	900
1906	700	800	700	600	700	1,700	3,000	2,800	6,900	4,100	3,000	2,500
1907	1,600	1,300	900	900	1,100	4,000	3,900	3,700	6,000	6,500	3,000	1,600
1908	1,800	1,600	900	800	1,200	1,900	2,500	3,300	9,100	6,100	2,700	1,300
1909	1,300	1,400	1,300	900	1,600	2,500	2,900	2,100	8,700	7,600	3,700	1,900
1910	1,300	1,100	700	700	1,800	4,900	2,200	3,100	3,700	2,300	1,400	900
1911	900	800	500	500	700	1,400	1,700	1,700	4,500	4,200	2,500	2,100
1912	1,600	1,000	800	800	1,000	2,000	5,700	3,200	4,900	4,800	3,300	2,400
1913	2,000	1,800	1,700	1,100	1,100	1,700	3,900	2,800	4,500	5,200	2,900	1,900
1914	1,500	1,500	1,300	900	1,100	1,800	2,500	3,300	5,800	4,200	2,100	1,500
1915	1,600	2,000	1,100	1,100	1,300	1,900	4,200	3,000	5,200	5,100	3,700	2,500
1916	2,200	1,600	1,000	800	1,200	4,100	4,900	3,500	4,400	6,600	2,600	1,300
1917	1,400	1,400	800	800	1,400	2,400	5,900	4,500	6,000	5,200	2,000	1,500
1918	1,400	1,400	800	800	1,300	3,600	2,600	2,600	4,000	5,400	2,300	1,300
1919	700	800	400	1,200	1,000	2,000	2,300	1,500	2,100	1,300	500	400
1920	600	500	500	500	1,000	3,200	3,900	4,800	5,500	4,800	2,000	1,000
1921	800	800	900	600	1,200	1,700	2,000	2,500	6,600	4,100	1,600	900
1922	500	600	500	500	1,000	2,300	3,300	2,800	5,200	3,600	2,200	900
1923	800	1,000	500	500	800	1,800	2,800	2,700	5,200	5,200	3,700	1,600
1924	3,200	2,200	1,400	1,000	1,300	2,500	4,300	3,000	5,000	3,500	2,000	1,000
1925	1,300	1,400	800	800	1,100	2,600	4,000	2,800	5,400	4,300	1,600	900
1926	1,200	1,100	700	700	1,000	1,900	1,400	3,100	4,000	3,300	1,700	1,200
1927	1,500	1,100	600	600	1,100	2,100	4,000	6,000	5,900	5,200	2,600	2,100
1928	1,600	1,100	800	800	3,300	3,400	2,500	2,900	4,700	5,500	3,000	1,320
1929	1,100	1,120	658	627	639	3,280	3,430	2,450	6,600	3,260	1,290	803
1930	1,000	893	504	589	911	2,930	2,580	2,530	2,500	1,640	1,210	1,170
1931	1,050	857	485	534	905	1,030	1,150	898	1,950	1,350	664	499
1932	640	600	380	450	530	1,600	2,020	2,680	4,730	3,440	1,420	910
1933	750	600	370	560	500	1,700	1,930	2,660	4,260	2,430	910	1,230
1934	730	750	580	460	650	1,580	1,240	1,600	1,840	1,190	580	420
1935	520	620	360	350	590	920	1,430	1,460	3,360	3,020	1,150	620
1936	540	430	450	440	410	2,720	1,800	1,820	2,400	1,380	750	660
1937	570	630	480	420	350	1,140	1,760	1,170	3,400	3,100	1,170	510
1938	660	570	330	440	460	2,420	1,360	1,280	2,800	4,850	1,830	1,600
1939	1,218	999	650	821	524	1,610	3,560	1,867	2,982	2,355	1,099	665
1940	607	678	648	230	321	592	1,376	1,437	1,763	1,380	1,302	955
1941	857	511	478	463	442	860	1,700	1,352	3,177	1,678	1,363	1,549
1942	1,385	1,054	492	423	461	1,294	1,721	4,684	4,070	2,312	1,556	1,445
1943	1,370	1,372	465	543	556	1,792	5,506	1,948	4,367	4,118	1,827	1,766
1944	1,693	1,678	1,068	926	984	1,138	4,700	2,185	5,463	5,032	2,285	1,660
1945	1,594	1,668	862	913	1,294	3,625	1,867	1,116	2,994	2,999	1,726	1,405
1946	1,781	1,192	565	588	686	1,980	1,477	1,449	2,652	2,600	1,350	1,635
1947	2,179	1,351	456	692	828	1,533	4,479	3,104	4,624	3,781	2,421	1,977
1948	2,300	1,744	752	802	798	2,498	5,792	2,222	4,636	3,965	2,569	1,855
1949	2,347	1,996	672	735	842	3,022	4,905	2,265	2,654	2,109	1,748	1,822
1950	1,787	1,430	588	492	550	1,840	6,730	3,224	2,653	3,151	2,149	1,961

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1898	(a)	-	-	-	39,900	28,900,000	40,500	29,300,000
1899	(a)	-	-	-	46,100	33,400,000	46,300	33,500,000
1900	(a)	-	-	-	33,600	24,300,000	33,400	24,200,000
1901	(a)	-	-	-	35,400	25,600,000	35,200	25,500,000
1902	(a)	-	-	-	29,700	21,500,000	30,000	21,700,000
1903	(a)	-	-	-	34,400	24,900,000	34,900	25,300,000
1904	(a)	-	-	-	37,200	27,000,000	36,000	26,100,000
1905	(a)	-	-	-	28,000	20,300,000	28,000	20,300,000
1906	(a)	-	-	-	38,000	27,500,000	40,200	29,100,000
1907	(a)	-	-	-	47,700	34,500,000	48,300	35,000,000
1908	(a)	-	-	-	45,700	33,200,000	45,300	32,900,000
1909	(a)	-	-	-	49,600	35,900,000	48,300	35,000,000
1910	(a)	-	-	-	33,300	24,100,000	32,000	23,200,000
1911	(a)	-	-	-	29,700	21,500,000	31,400	22,700,000
1912	(a)	-	-	-	45,400	31,500,000	46,300	33,600,000
1913	(a)	-	-	-	42,400	30,700,000	40,700	29,500,000
1914	(a)	-	-	-	38,000	27,500,000	38,500	27,900,000
1915	(a)	-	-	-	45,200	32,700,000	45,300	32,800,000
1916	(a)	-	-	-	47,100	34,200,000	45,500	33,000,000
1917	(a)	-	-	-	46,000	33,500,000	46,000	33,300,000
1918	(a)	-	-	-	38,700	28,000,000	36,300	26,300,000
1919	(a)	-	-	-	19,600	14,200,000	19,200	13,900,000
1920	(a)	-	-	-	39,000	28,500,000	40,200	29,200,000

Yearly discharge, in cubic feet per second, of Missouri River at Sioux City, Iowa--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	(a)	-	-	-	32,700	23,700,000	31,500	22,800,000
1922	(a)	-	-	-	32,300	23,400,000	33,300	24,100,000
1923	(a)	-	-	-	36,700	26,600,000	43,000	31,100,000
1924	(a)	-	-	-	41,900	30,400,000	37,300	27,100,000
1925	(a)	-	-	-	37,500	27,000,000	36,600	26,500,000
1926	(a)	-	-	-	30,100	21,800,000	30,400	22,000,000
1927	(a)	-	-	-	50,700	36,700,000	51,100	37,000,000
1928	(a)	-	-	-	42,600	30,900,000	41,700	30,300,000
1929	716	190,000	Apr. 1, 1929	-	34,900	25,300,000	34,200	24,800,000
1930	716	108,000	Mar. 6, 1930	-	25,500	18,500,000	25,500	18,500,000
1931	716	54,700	June 16, 1931	5,510	15,700	11,400,000	14,600	10,600,000
1932	(a)	-	-	-	26,700	19,400,000	26,900	19,500,000
1933	(a)	-	-	-	24,700	17,900,000	25,100	18,200,000
1934	(a)	-	-	-	16,000	11,600,000	15,300	11,100,000
1935	(a)	-	-	-	19,900	14,400,000	19,800	14,300,000
1936	(a)	-	-	-	19,000	13,800,000	19,400	14,100,000
1937	(a)	-	-	-	20,300	14,700,000	20,200	14,600,000
1938	(a)	-	-	-	25,700	18,600,000	27,500	19,800,000
1939	876	168,000	Apr. 3, 1939	6,800	25,330	18,340,000	24,040	17,410,000
1940	896	55,700	June 16, 1940	3,100	15,550	11,290,000	15,430	11,200,000
1941	926	121,000	June 15, 1941	3,900	19,930	14,430,000	21,400	15,500,000
1942	956	127,000	June 8, 1942	2,920	29,250	21,180,000	29,660	21,470,000
1943	976	212,000	Apr. 10, 1943	6,000	34,990	25,330,000	36,690	26,560,000
1944	1006	180,300	Apr. 12, 1944	10,200	39,690	28,810,000	39,250	28,500,000
1945	1036	116,400	Mar. 22, 1945	12,000	30,470	22,060,000	29,660	21,480,000
1946	1056	87,900	June 21, 22, 1946	3,300	24,940	18,060,000	25,560	18,500,000
1947	1086	178,000	Apr. 4, 1947	3,520	37,880	27,420,000	39,000	28,230,000
1948	1116	115,000	Mar. 27, 1948	7,400	38,470	27,930,000	38,780	28,150,000
1949	1146	178,000	Apr. 10, 1949	3,700	34,690	25,120,000	32,850	23,900,000
1950	1176	252,000	Apr. 25, 1950	3,800	36,710	26,570,000	-	-

a Geological Survey Circular 108.

Note.--Monthly and annual figures of discharge for October 1897 to August 1928 and October 1931 to September 1938 determined from Geological Survey Circular 108. Records of discharge for October 1897 to August 1928 were estimated on basis of Weather Bureau gage-height records, recent discharge measurements, estimated discharge records for Williston, N. Dak., and weather records. Records of discharge for October 1931 to September 1938 were estimated on basis of records for Yankton, S. Dak., and Omaha, Nebr.

PERRY CREEK BASIN

2. Perry Creek at 38th Street, Sioux City, Iowa

Location--Lat 42°32', long. 96°25', in SW $\frac{1}{4}$ sec. 9, T. 89 N., R. 47 W., at 38th Street bridge in Sioux City, 3.6 miles upstream from mouth.

Drainage area--60 sq mi, approximately.

Gage--Wire-weight gage and auxiliary water-stage recorder for stages above 5 ft. Datum of gage is 1,117.04 ft above mean sea level (City of Sioux City benchmark).

Average discharge--5 years (1945-50), 18.1 cfs.

Extremes--1945-50: Maximum discharge, 7,780 cfs Sept. 10, 1949 (gage height, 21.80 ft), from rating curve extended above 1,700 cfs on basis of slope-area determination of peak flow; no flow July 14, 20, Aug. 30 to Sept. 2, 1946.

Flood of July 7, 1944, reached a stage of about 25.5 ft, from floodmarks (discharge, 9,600 cfs, by contracted-opening method, by Corps of Engineers).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	4.15	4.66	3.11	2.02	44.4	30.4	5.55	14.4	1.98	0.35	0.31	12.8	10.1
1947	1.95	2.95	2.26	2.38	11.8	39.6	14.6	9.27	16.9	3.16	.47	.45	8.80
1948	1.18	1.15	1.71	2.18	78.4	30.5	9.69	15.6	34.5	17.5	17.0	.38	17.0
1949	1.69	1.21	1.05	3.95	10.7	62.9	6.47	7.29	7.53	34.8	69.1	147	29.5
1950	8.21	4.61	3.42	3.23	22.5	91.2	7.57	7.11	26.2	99.5	18.0	7.59	25.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	255	277	191	124	2,460	1,870	330	882	118	22	19	759	7,310
1947	120	175	139	146	658	2,440	872	570	1,000	194	29	27	6,370
1948	73	68	105	134	4,510	1,870	577	833	2,060	1,070	1,050	23	12,370
1949	104	72	64	243	593	3,870	385	448	448	2,140	4,250	8,760	21,380
1950	505	274	210	198	1,250	5,610	450	437	1,560	6,120	1,110	452	18,180

PERRY CREEK BASIN

Yearly discharge, in cubic feet per second, of Perry Creek at 38th Street, Sioux City, Iowa

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acre-feet	Mean	Inches Acre-feet
1946	1146	1,070	May 18, 1946	0	10.1	0.168	2.29	7,310	9.70	2.19 7,020
1947	1146	246	June 22, 1947	.2	8.80	.147	1.99	6,370	8.54	1.93 6,180
1948	1146	3,350	Aug. 14, 1948	.2	17.0	.283	3.87	12,370	17.0	3.87 12,370
1949	1146	7,780	Sept. 10, 1949	.2	29.5	.492	6.89	21,580	30.6	6.94 22,130
1950	1178	5,380	July 12, 1950	1.9	25.1	.418	5.69	18,180	-	- -

FLOYD RIVER BASIN

3. Floyd River at James, Iowa

Location.--Lat 42°34'40", long. 96°18'40", in NW1/4 sec. 32, T. 90 N., R. 46 W., at bridge on county highway J at James, 9.5 miles upstream from mouth and 14 miles downstream from West Floyd River.

Drainage area.--918 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,102.59 ft above mean sea level, datum of 1929. Prior to Sept. 11, 1938, wire-weight gage at same site and datum.

Average discharge.--15 years (1935-50), 158 cfs.

Extremes.--1934-50: Maximum discharge, 7,440 cfs May 13, 1944 (gage height, 18.83 ft); minimum observed, 1 cfs Aug. 20, 27, 1936.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	11.9	232	210	47.5	40.5	131	128	13.5	17.6	-
1936	12.5	13.2	9.94	6.55	8.69	*945	72.7	168	28.3	7.32	37.6	124	*121
1937	26.6	14.3	8.61	3.94	6.00	314	77.4	400	316	135	231	60.2	154
1938	30.8	26.0	8.2	11.0	31.9	675	93.0	152	98.3	132	39.2	510	132
1939	64.4	51.2	35.4	46.1	20.9	345	72.9	56.3	43.3	35.9	71.3	6.9	71.5
1940	6.7	7.1	5.5	2.7	3.4	25.2	43.8	21.6	215	64.0	68.3	34.1	41.3
1941	12.1	13.3	15.1	16.2	135	561	152	65.5	145	120	17.5	50.2	108
1942	54.5	35.6	30.0	22.5	30.0	107	113	291	904	268	137	284	189
1943	63.0	41.6	20.0	16.4	275	146	74.1	41.8	377	525	126	62.3	146
1944	29.2	36.2	29.1	31.8	345	153	169	757	998	671	397	354	329
1945	140	95.8	83.3	27.8	171	*959	205	339	809	327	271	61.1	*290
1946	43.0	38.4	31.4	25.1	546	408	125	103	93.9	45.8	17.1	40.1	124
1947	57.9	117	86.4	30.1	115	341	450	471	576	275	43.0	23.5	215
1948	16.1	34.8	25.8	17.6	418	508	100	76.0	149	81.3	145	38.4	133
1949	19.6	23.8	16.7	18.8	51.7	917	252	150	112	60.3	31.2	283	162
1950	51.2	34.5	23.4	14.6	61.7	557	104	84.2	396	313	89.4	102	153

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	734	12,860	12,900	2,830	2,490	7,790	7,880	833	1,050	-
1936	770	785	611	403	500	*58,100	4,320	10,340	1,680	450	2,310	7,370	*87,640
1937	1,640	853	530	242	333	19,310	4,610	24,620	18,830	8,280	14,220	3,580	97,050
1938	1,900	1,550	994	678	1,770	41,520	5,530	9,340	5,850	8,100	2,410	30,360	110,000
1939	3,980	3,040	2,180	2,830	1,160	21,220	4,540	3,460	2,580	2,210	4,380	413	51,790
1940	413	424	339	169	196	1,550	2,610	1,330	12,800	3,940	4,200	2,030	30,000
1941	744	791	928	994	7,510	34,480	9,050	3,900	8,640	7,370	1,080	2,990	78,480
1942	3,350	2,120	1,840	1,380	1,670	*6,590	*6,730	17,890	53,800	16,500	8,420	16,900	137,200
1943	3,870	2,470	1,230	1,010	15,290	9,980	4,410	2,570	22,420	32,270	7,720	3,710	106,000
1944	1,800	2,150	1,790	1,950	19,860	9,430	10,050	46,560	59,380	41,250	24,410	19,890	238,500
1945	8,610	5,700	3,890	1,710	9,510	*58,970	12,220	20,840	48,120	20,110	16,680	3,630	*210,000
1946	2,640	2,280	1,930	1,550	30,340	25,090	7,440	6,330	5,590	2,820	1,050	2,390	89,450
1947	3,560	6,960	5,310	1,850	6,410	20,970	26,780	28,990	34,260	16,890	2,640	1,400	156,000
1948	990	2,070	1,590	1,080	24,050	31,220	5,970	4,680	8,880	5,000	8,940	2,290	96,760
1949	1,200	1,420	1,020	1,160	2,870	56,360	15,000	9,200	6,660	3,710	1,920	16,870	117,400
1950	3,150	2,050	1,440	899	3,430	34,270	6,170	5,170	23,540	19,240	5,500	6,040	110,900

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acre-feet	Mean	Inches Acre-feet
1935	786	*1,460	June 28, 1935	3	-	-	-	-	71.2	1.06 51,530
1936	806,1240	*4,050	Mar. 10, 1936	1	*121	*0.132	*1.80	*87,640	*122	*1.81 *88,500
1937	826	*3,570	May 27, 1937	3	134	.146	1.96	97,050	136	1.99 98,470
1938	856	*2,060	Sept. 15, 1938	8	152	.166	2.25	110,000	159	2.34 114,800
1939	876	1,300	Mar. 12, 1939	5	71.5	.078	1.04	51,790	60.4	.88 43,770
1940	896	1,390	June 5, 1940	2	41.3	.045	.61	30,000	43.1	.65 31,290

* Revised.

Yearly discharge, in cubic feet per second, of Floyd River at James, Iowa--Continued

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet	
1941	926	1,720	Mar. 11, 1941	9	108	0.118	1.61	78,480	115	1.70	83,330	
1942	956	6,280	June 4, 1942	6	189	.206	2.81	137,200	190	2.82	137,400	
1943	976	1,560	June 17, 1943	14	146	.159	2.17	106,000	144	2.13	104,100	
1944	1006	7,440	May 13, 1944	10	329	.358	4.88	238,500	346	5.14	251,000	
1945	1036,1240	*5,320	Mar. 12, 1945	20	*290	.316	4.29	*210,000	*274	4.04	*198,000	
1946	1056	1,400	Mar. 1, 1946	8	124	.135	1.82	89,450	136	2.00	98,430	
1947	1086	3,240	June 25, 1947	15	215	.234	3.18	156,000	200	2.95	144,800	
1948	1116	2,710	Mar. 17, 1948	8	133	.145	1.97	96,760	132	1.95	95,750	
1949	1146	4,520	Mar. 5, 1949	5.0	182	.176	2.40	117,400	166	2.46	120,400	
1950	1176	4,840	June 19, 1950	13	153	.167	2.26	110,900	-	-	-	

* Revised.

OMAHA CREEK BASIN

4. Omaha Creek at Homer, Nebr.

Location--Lat 42°19'40", long. 96°28'50", in W $\frac{1}{2}$ sec. 12, T. 27 N., R. 8 E., at bridge on U. S. Highways 73 and 77, half a mile northeast of Homer.

Drainage area--170 sq mi, approximately.

Gage--Water-stage recorder. Datum of gage is 1,074.38 ft above mean sea level, datum of 1929 (preliminary).

Average discharge--5 years (1945-50), 29.2 cfs.

Extremes--1945-50: Maximum discharge observed, 3,240 cfs Aug. 7, 1950 (gage height, 14.84 ft), may have been exceeded during floods of July 6, 1949, Mar. 5 or June 18, 1950; minimum daily, 0.1 cfs Sept. 16, 18, 19, 1948.

Greatest flood known occurred June 4, 1940, stage and discharge not determined.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	#12	#10	#6.5	#8.3	#89	#42	#12.4	40.8	66.8	12.3	5.82	11.3	#25.9
1947	14.6	22.4	13.2	9.2	15.0	40.4	50.2	73.9	28.7	7.73	7.27	25.3	
1948	5.96	7.95	4.5	4.5	72.8	37.2	22.5	11.9	3.46	13.2	24.1	7.75	17.7
1949	3.05	2.60	4.10	3.47	3.05	86.4	33.5	41.0	56.2	111	31.2	13.1	32.7
1950	14.4	9.71	7.00	4.1	6.4	237	13.9	25.5	79.7	42.5	79.1	8.83	44.5

* Not previously published; estimated on basis of records for West Fork ditch at Holly Springs, Iowa, and Logan Creek near Uehling, Nebr.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	#738	#595	#400	#510	#4,940	#2,580	#788	2,510	3,970	759	358	674	#18,770
1947	897	1,330	813	563	851	2,490	2,990	1,440	4,400	1,640	475	433	18,830
1948	367	473	268	274	4,190	2,290	1,340	729	563	810	1,480	46	12,830
1949	187	155	252	213	170	5,310	1,890	2,520	3,340	6,850	1,920	782	23,700
1950	883	578	430	250	357	14,570	825	1,570	4,740	2,610	4,670	525	32,210

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	al,090	June 29, 1946	-	#25.9	#18,770	#27.7	#20,080
1947	1086	939	June 12, 1947	2.2	25.3	18,300	22.6	16,370
1948	1116	-	-	1	17.7	12,630	17.0	12,320
1949	1146	-	July 6, 1949	.3	32.7	23,700	34.5	24,990
1950	1176	3,240	Aug. 7, 1950	-	44.5	32,210	-	-

* Not previously published.

a Maximum for water year.

LITTLE SIOUX RIVER BASIN

5. Little Sioux River near Lakefield, Minn.

Location--Lat 43°37'10" long. 95°16'30" in SE $\frac{1}{4}$ sec. 21, T. 102 N., R. 37 W., at bridge on township highway, a quarter of a mile upstream from Jackson County ditch 11, and 6.7 miles southwest of Lakefield.

Drainage area--17.1 sq mi.

Gage--Water-stage recorder. Datum of gage is 1,405.28 ft above mean sea level, datum of 1929.

Extremes--1948-50: Maximum discharge recorded, 103 cfs Apr. 4, 1949 (gage height, 4.24 ft, backwater from ice); maximum gage height, 5.8 ft about Mar. 7, 1949 (from flood-mark), backwater from ice; no flow on many days each year.

Remarks--No regulation or diversion.

LITTLE SIOUX RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of Little Sioux River near Lakefield, Minn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	0.11	0	-
1949	0	0	0	0	0	10.7	19.5	1.02	0.74	0.09	.03	0	+2.67
1950	0	0	0	0	0	3.98	1.19	.40	0	0	0	0	.47

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	6.5	0	-
1949	0	0	0	0	0	659	1,160	63	44	5.6	1.8	0	1,930
1950	0	0	0	0	0	244	71	24	0	0	0	0	339

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1948	1116	-	-	0	-	-	-	-	-
1949	1146	a103	Apr. 4, 1949	0	+2.67	1,930	2.67	1,930	-
1950	1176	*32	Mar. 27, 1950	0	.47	339	-	-	-

† Corrected.

* Not previously published.

a Maximum recorded.

6. Jackson County ditch 11 near Lakefield, Minn.

Location.--Lat 43°37'10", long. 95°16'10", in SW¼ sec. 22, T. 102 N., R. 37 W., 600 ft upstream from mouth and 6.5 miles southwest of Lakefield.

Drainage area.--7.69 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,404.47 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 70 cfs Mar. 24, 1949 (gage height, 5.57 ft); maximum gage height, 6.37 ft Mar. 7, 1949 (backwater from ice); no flow on many days each year.

Remarks.--No regulation or diversion.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	0.15	0.02	-
1949	0.12	0.61	0.01	0	0.15	8.78	5.38	1.62	1.24	0.14	0	.02	1.51
1950	0	0	0	0	0	.51	.16	.22	.06	.23	0	0	.10

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	8.9	1.2	-
1949	7.3	36	0.8	0	8.1	540	320	99	74	8.7	0	1.2	+1,100
1950	0	0	0	0	0	32	9.7	14	3.6	14	0	0	73

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1948	1116	-	-	0	-	-	-	-	-
1949	1146	70.	Mar. 24, 1949	0	1.51	+1,100	1.45	1,050	-
1950	1176	a2.6	Apr. 8, 1950	0	.10	73	-	-	-

† Corrected.

a Maximum recorded.

7. Little Sioux River at Spencer, Iowa

Location.--Lat 43°08', long. 95°08'; in sec. 18, T. 96 N., R. 36 W., at bridge on U. S.

Highways 18 and 71 at Spencer, three-quarters of a mile downstream from Ocheyedan River.

Drainage area.--1,030 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1,294.56 ft above mean sea level, datum of 1929. Prior to Sept. 17, 1937, wire-weight gage at same site and 0.40 ft lower datum. Low, partly washed out rock-fill dam 0.7 mile below gage after Jan. 7, 1938.

Average discharge.--6 years (1936-42), 200 cfs.

Extremes.--1936-42: Maximum discharge, 5,000 cfs Sept. 16, 1938 (gage height, 14.97 ft, from graph based on gage readings, from rating curve extended above 2,000 cfs on basis of velocity-area study; minimum observed, 4.7 cfs Jan. 23, 1937, result of discharge measurement; minimum gage height observed, 3.74 ft, present datum, Feb. 7, 16, 1937. Flood in the spring of 1936 reached a stage of 15.4 ft, present datum, from flood-mark (discharge not determined).

Monthly and yearly mean discharge, in cubic feet per second, of Little Sioux River at Spencer, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	209	81.2	13.1	15.4	50.7	-
1937	29.5	25.5	9.27	6.05	5.29	406	321	290	450	93.7	129	53.5	152
1938	64.8	42.3	18.6	14.3	15.2	759	213	568	394	913	212	*1,395	*386
1939	287	194	70.7	89.0	34.3	392	323	194	81.2	70.9	134	28.0	159
1940	25.7	24.3	23.3	9.7	12.2	72.0	111	56.0	121	33.4	25.8	14.7	44.0
1941	13.8	26.4	27.9	24.8	54.4	560	292	115	149	76.1	19.7	31.5	116
1942	57.6	93.0	68.1	67.5	68.1	321	352	629	839	505	576	557	346

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	12,860	5,430	808	946	3,020	-
1937	1,810	1,520	570	372	294	24,990	19,100	17,820	26,800	5,760	7,940	3,180	110,200
1938	3,980	2,520	1,140	918	843	46,680	12,700	34,940	23,470	56,120	13,040	*82,990	*279,300
1939	17,870	11,570	4,350	5,470	1,800	24,100	19,200	11,960	4,850	4,360	8,270	1,550	115,200
1940	1,580	1,450	1,430	597	700	4,430	6,600	3,440	7,220	2,050	1,590	875	31,960
1941	847	1,570	1,720	1,520	3,020	34,460	17,350	7,100	8,850	4,680	1,210	1,870	84,200
1942	3,540	5,530	4,190	4,150	3,780	19,760	20,920	38,700	49,910	31,060	35,430	33,170	250,100

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1936	826	-	-	-	-	-	-	-	-	-	-
1937	826	*3,250	June 14, 1937	4.7	152	0.148	2.00	110,200	157	2.07	113,900
1938	856,1210	5,000	Sept. 16, 1938	13	*386	*.375	*5.10	*279,300	*422	*5.57	*305,300
1939	876	1,080	Aug. 11, 1939	20	159	.154	2.10	115,200	119	1.58	86,100
1940	896	503	June 24, 1940	8	44.0	.043	.59	31,960	43.6	.57	31,640
1941	926	1,540	Mar. 10, 1941	11	116	.113	1.54	84,200	129	1.71	93,320
1942	956	2,170	Aug. 31, 1942	12	346	.336	4.55	250,100	-	-	-

* Revised.

8. Little Sioux River at Correctionville, Iowa

Location.--Lat 42°28', long. 95°47', in $\frac{1}{2}$ sec. 1 T. 88 N., R. 43 W., at bridge on U.S. Highway 20, 0.2 mile upstream from Bacon Creek, 0.5 mile west of Correctionville, and 0.8 mile downstream from Pierson Creek.

Drainage area.--2,450 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period May to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder at present site since Nov. 8, 1938. Datum of gage is 1,096.49 ft above mean sea level, datum of 1929. May 28, 1918, to July 1, 1925, and Oct. 29, 1928, to July 15, 1929, chain gage at Illinois Central Railroad bridge 0.2 mile downstream from present site at 1.25 ft lower datum. July 16, 1929, to July 2, 1932, and June 15, 1936, to Nov. 7, 1938, chain gage at present site and datum.

Average discharge.--23 years (1918-24, 1928-31, 1936-50), 643 cfs.

Extremes.--1918-25, 1928-32, 1936-50: Maximum discharge, 14,800 cfs (revised) Aug. 5, 1945 (gage height, 21.93 ft); minimum observed, 2.6 cfs July 17, 25, 1936 (gage height, 2.14 ft), caused by construction dam above gage.

Flood of June 23 or 24, 1891, reached a stage of 29.34 ft, present datum, from levels to floodmark by Soil Conservation Service (discharge not determined).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	1,610	426	464	330	-
1919	156	581	602	919	856	2,050	2,650	1,710	4,770	2,040	604	336	1,440
1920	356	631	365	172	143	3,200	1,630	2,940	1,390	1,820	504	472	1,140
1921	285	533	a342	a275	a566	518	585	1,210	1,660	267	121	436	a563
1922	211	a127	a65	a50	a400	1,020	399	75.9	102	136	59.4	a333	-
1923	32.8	215	a127	a70	a80	a575	575	407	664	286	54.2	211	a275
1924	505	243	a196	a125	a450	a1,220	905	286	*876	*444	905	400	a546
1925	335	157	*125	*150	*900	*569	277	133	*628	-	-	-	-
1929	a193	216	*94	a80	a150	a2,640	1,090	629	570	195	63.5	55.8	a501
1930	89.5	150	45	23.4	328	285	165	839	1,130	150	32.9	29.7	271
1931	40.0	*62.2	28.3	22.7	42.4	53.5	61.9	57.3	63.1	169	15.0	28.5	*53.7
1932	115	137	213	220	200	1,250	1,490	887	680	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	51.3	108	175	-
1937	74.7	48.3	28.0	14.7	44.1	1,121	825	1,067	*1,581	328	*948	191	*525
1938	153	103	52.4	35.8	112	1,706	621	1,187	783	1,479	555	3,671	873
1939	86.7	491	278	219	122	1,226	729	476	248	235	430	65.4	451
1940	52.5	54.4	49.5	21.5	23.3	193	431	197	472	178	357	66.1	175

* Revised.

* Not previously published; estimated on basis of weather records and records for nearby stations.

a Revised; supersedes figure (acre-ft) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly mean discharge, in cubic feet per second of Little Sioux River at Correctionville, Iowa--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	45.5	66.4	87.2	102	236	1,063	890	351	421	300	56.7	324	328
1942	542	625	408	580	445	711	954	1,073	2,074	1,129	738	872	812
1943	483	279	128	95.1	078	1,188	782	565	1,651	3,455	1,018	518	955
1944	228	342	365	162	625	824	820	2,481	3,442	2,277	203	1,140	1,154
1945	629	453	224	123	692	3,361	1,538	1,699	4,274	1,457	1,996	368	1,406
1946	244	213	155	121	1,499	1,959	861	966	928	465	140	175	638
1947	418	570	358	173	474	1,227	2,186	2,550	2,389	2,042	2,255	109	1,065
1948	104	199	161	110	811	1,858	657	632	383	325	281	90.6	467
1949	58.6	98.8	66.6	135	247	1,866	1,393	620	786	208	98.9	172	480
1950	100	79.8	54.7	31.9	89.1	917	380	412	787	810	326	167	348

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	95,710	26,210	28,520	19,650	-
1919	9,610	34,570	37,000	56,480	47,530	126,600	157,500	105,300	284,000	25,410	37,150	19,970	1,041,000
1920	21,920	37,550	22,450	10,750	8,210	136,500	97,070	181,000	82,990	12,200	30,960	28,110	829,700
1921	16,500	51,700	21,100	16,900	31,400	31,900	34,800	74,400	98,800	16,400	7,440	25,900	a407,000
1922	12,980	a7,530	a4,000	a5,070	a22,210	a83,370	60,400	24,550	4,510	6,270	8,360	3,530	a240,800
1923	2,020	12,810	a7,810	a4,500	a4,440	a35,370	34,240	25,040	39,520	17,600	3,330	12,570	a199,000
1924	31,030	14,460	a2,070	a7,690	a25,880	a75,290	53,840	17,620	a2,150	a27,500	55,620	23,790	a396,700
1925	20,610	9,350	a7,690	a9,220	a49,980	a34,500	16,490	8,190	a37,350	-	-	-	-
1929	all, 900	12,900	a5,760	a4,920	a8,330	a182,000	64,900	38,700	33,900	12,000	3,900	3,320	a362,500
1930	5,500	8,930	2,770	1,440	18,200	17,500	9,820	51,600	67,200	9,220	2,020	1,770	196,000
1931	2,460	a3,700	1,740	1,400	2,350	3,290	3,680	3,520	3,750	10,400	922	1,700	a38,900
1932	7,070	8,150	13,100	13,500	11,500	76,900	88,700	54,500	40,500	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	3,160	6,630	10,410	-
1937	4,590	2,870	1,720	906	2,450	68,910	49,080	65,590	a4,080	20,190	58,270	11,390	a380,000
1938	9,430	6,130	3,220	2,200	2,330	104,900	38,970	72,390	16,570	90,320	34,100	218,400	632,000
1939	52,680	29,230	17,110	13,480	6,750	75,370	43,400	29,300	14,750	14,430	26,470	3,890	326,900
1940	3,230	3,240	3,040	1,320	1,340	11,890	25,650	12,110	28,110	10,970	21,980	3,930	126,800
1941	2,800	3,950	5,360	6,270	13,090	65,340	52,980	21,560	25,050	18,480	3,490	19,270	237,600
1942	21,040	57,180	25,110	23,340	24,720	43,730	56,780	65,990	a23,400	69,410	45,370	51,880	588,000
1943	28,470	16,610	7,870	5,850	59,890	72,940	46,540	34,760	98,230	a12,400	62,570	30,850	677,000
1944	14,010	20,320	22,440	9,990	35,860	50,870	48,780	a51,300	a204,800	a137,600	74,000	67,810	831,600
1945	39,650	26,940	13,790	7,560	38,420	a207,900	91,540	a104,400	a54,300	89,560	a22,700	21,870	1,018,000
1946	15,020	12,650	9,950	7,440	83,220	a120,500	51,240	59,400	55,220	28,580	8,610	10,390	461,800
1947	25,710	33,940	22,030	10,650	26,330	75,470	a130,100	a56,800	a42,200	125,500	15,660	6,480	770,900
1948	6,390	11,870	9,900	6,790	46,640	a114,200	39,120	38,870	22,780	19,970	17,310	5,390	339,200
1949	3,600	5,880	4,100	8,300	13,720	a114,700	82,870	38,150	46,790	12,770	6,080	10,240	347,200
1950	6,150	4,750	3,360	1,960	4,950	56,390	22,620	25,320	46,840	49,800	20,070	9,960	252,170

* Revised.

† Not previously published; see footnote to preceding table.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1918	508	-	-	-	-	-	-	-	-	-	-
1919	506	10,700	June 12, 1919	69	1,440	0.578	7.84	1,041,000	1,440	7.84	1,042,000
1920	506	8,920	Mar. 13, 1920	-	1,140	.458	6.22	829,700	1,130	a6.13	a816,900
1921	526	3,960	May 27, 1921	a36	a563	a.226	a3.06	a407,000	a501	a2.73	a362,400
1922	546	2,520	Mar. 13, 1922	a5	a333	a.134	a1.82	a240,800	a330	a1.94	a238,900
1923	566	2,000	Mar. 26, 1923	a25	a275	a.110	a1.62	a199,000	a323	a1.74	a234,000
1924	586, 1240	a4,950	June 29, 1924*	-	a546	a.219	a2.99	a396,700	a519	a2.84	a376,800
1925	606, 1240	2,190	June 4, 1925	-	-	-	-	-	-	-	-
1929	686	6,250	Mar. 14, 1929	a42	a501	a.204	a2.78	a362,500	a483	a2.66	a349,200
1930	701	2,990	June 13, 1930	-	271	.111	1.47	196,000	a258	a1.40	a186,700
1931	716, 1240	2,540	July 17, 1931	9	a53.7	a.022	a.30	a38,900	81.9	.45	59,330
1932	731	a6,560	Apr. 21, 1932	-	-	-	-	-	-	-	-
1937	826, 1240	a5,950	June 19, 1937	6	a525	a.214	a2.91	a380,000	a538	a2.99	a389,600
1938	858	7,250	Sept. 21, 1938	30	873	.356	4.84	632,000	984	5.45	712,300
1939	876	2,200	Mar. 12, 1939	47	451	.184	2.48	326,900	328	1.79	237,400
1940	896	4,730	Aug. 26, 1940	18	175	.071	.96	126,800	178	.99	129,400
1941	926	4,740	Sept. 15, 1941	30	328	.154	1.81	237,600	427	2.35	308,900
1942	956	3,800	June 19, 1942	120	812	.331	4.49	588,000	770	4.27	557,600
1943	976	6,530	July 4, 1943	80	935	.382	5.20	677,000	940	5.23	680,800
1944	1006	13,000	June 12, 1944	110	1,154	.471	6.42	831,600	1,185	6.60	860,200
1945	1036	a14,800	Aug. 5, 1945	100	1,406	.574	7.81	1,018,000	1,348	7.47	975,500
1946	1056	5,870	Feb. 5, 1946	80	638	.260	3.53	461,800	699	3.88	506,300
1947	1086	a10,400	May 1, 1947	88	1,065	.435	a5.91	770,900	991	5.50	717,400
1948	1116	7,770	Feb. 27, 1948	46	467	.191	2.59	339,200	447	2.48	324,600
1949	1146	a4,150	Mar. 6, 1949	45	460	.196	2.66	347,200	481	2.67	347,900
1950	1176	6,860	June 18, 1950	24	348	.142	1.93	252,170	-	-	-

* Revised.

† Corrected.

† Not previously published.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

9. Little Sioux River near Kennebec, Iowa

Location.--Lat 42°05', long. 96°00', in S $\frac{1}{2}$ sec. 18, T. 84 N., R. 44 W., at bridge on county road A, 1.3 miles south of Kennebec, 5.5 miles northeast of Onawa, and 6.5 miles upstream from Maple River.

Drainage area.--2,730 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period May to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,027.89 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to May 24, 1950, wire-weight gage at same site and datum.

Average discharge.--11 years (1939-50), 779 cfs.

Extremes.--1939-50: Maximum discharge, 10,800 cfs June 13, 1944; maximum gage height, 25.03 ft Aug. 7, 1945; minimum daily discharge, 24 cfs Jan. 25-31, 1940.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	523	279	513	425	84.2	-
1940	65.9	65.0	60.8	30.3	27.2	234	451	227	533	357	476	95.8	219
1941	59.5	85.9	113	143	354	1,153	927	395	445	387	74.2	420	379
1942	392	654	457	405	507	735	1,056	1,117	2,091	1,170	767	947	858
1943	514	296	146	104	1,361	1,466	858	580	1,795	3,581	1,031	570	1,024
1944	246	355	392	176	620	871	831	2,657	3,720	2,423	1,278	1,214	1,231
1945	687	516	280	164	744	3,755	1,776	1,901	4,402	1,636	2,045	401	1,529
1946	271	229	179	163	1,793	2,038	970	972	986	484	164	202	696
1947	440	594	401	204	606	1,484	2,146	2,713	2,528	2,148	303	151	1,145
1948	134	230	180	139	963	2,076	721	682	419	399	309	102	529
1949	68.9	110	80.0	174	294	2,073	1,479	645	815	237	125	207	526
1950	114	96.8	67.7	34.8	130	1,202	461	426	1,044	965	465	212	437

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	32,160	16,610	19,260	26,120	5,010	-
1940	4,050	3,870	3,740	1,860	1,560	14,390	26,820	13,940	31,710	21,940	29,280	5,700	158,900
1941	3,660	5,110	6,920	8,770	19,660	70,880	55,170	24,290	26,500	23,820	4,560	24,980	274,300
1942	24,100	38,910	28,110	24,920	28,180	45,170	62,830	68,670	124,500	71,940	47,180	56,360	620,900
1943	31,600	17,600	8,970	6,370	75,570	90,130	51,040	35,640	106,800	220,200	63,420	33,930	741,300
1944	15,100	21,100	23,500	10,840	35,680	53,560	49,480	163,400	221,400	49,000	78,580	72,220	893,900
1945	42,220	30,700	17,190	10,060	41,310	230,900	105,700	116,900	261,900	100,600	25,800	23,880	1,107,000
1946	16,840	13,600	11,000	10,000	99,560	125,300	57,700	59,760	58,680	29,760	10,110	12,010	504,100
1947	27,040	35,370	24,680	12,520	33,670	91,260	127,700	66,800	80,050	40,320	18,850	8,970	829,200
1948	8,250	13,690	11,100	8,560	55,370	127,700	42,900	41,310	24,940	24,550	19,030	6,080	384,100
1949	4,230	6,540	4,920	10,730	16,300	127,400	88,000	39,640	48,480	14,580	7,700	12,300	380,800
1950	7,040	5,760	4,160	2,140	7,220	73,900	27,450	26,180	62,140	59,320	28,610	12,610	316,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30								Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff			
		Discharge	Date				Inches	Acres-foot		Inches	Acres-foot		
1939	926	-	-	-	-	-	-	-	-	-	-	-	-
1940	926	4,120	June 4, 1940	24	219	0.080	1.10	158,900	224	1.12	162,900	-	-
1941	926	3,850	Sept. 16, 1941	36	379	.139	1.89	274,300	483	2.41	349,800	-	-
1942	956	*4,880	June 6, 1942	150	858	.314	4.25	620,900	812	4.02	587,900	-	-
1943	976	6,310	July 8, 1943	88	1,024	.375	5.08	741,300	1,026	5.08	742,800	-	-
1944	1006	10,800	June 13, 1944	120	1,231	.451	6.13	893,900	1,273	6.35	924,500	-	-
1945	1036	8,590	Aug. 7, 1945	130	1,529	.560	7.60	1,107,000	1,462	7.26	1,058,000	-	-
1946	1056	6,000	Feb. 6, 1946†	90	696	.255	3.45	504,100	780	3.77	550,000	-	-
1947	1086	8,390	May 2, 1947	116	1,145	.419	5.71	829,200	1,071	5.34	775,100	-	-
1948	1116	7,870	Feb. 28, 1948	60	529	.194	2.64	384,100	505	2.51	366,700	-	-
1949	1146	a5,300	Mar. 4, 1949	58	526	.193	2.59	380,800	528	2.61	382,100	-	-
1950	1176	6,140	June 18, 1950	27	437	.160	2.19	316,500	-	-	-	-	-

* Revised.

† Corrected.

a Estimated (backwater from ice).

10. Maple River at Mapleton, Iowa

Location.--Lat 42°09', long. 95°48', in SE $\frac{1}{4}$ sec. 23, T. 85 N., R. 43 W., at bridge on State Highway 175 (renumbered), 80 ft downstream from Chicago & Northwestern Railway bridge, 0.8 mile southwest of Mapleton, 12.5 miles northeast of Turin, and 16 miles upstream from mouth.

Drainage area.--661 sq mi.

Gage.--Wire-weight gage and auxiliary water-stage recorder for stages above 9.5 ft. Datum of gage is 1,085.86 ft above mean sea level, datum of 1929. Prior to June 8, 1949, wire-weight gage only.

Average discharge.--9 years (1941-50), 223 cfs.

Extremes.--1941-50: Maximum discharge, 13,000 cfs June 12, 1950 (gage height, 22.1 ft); no flow Sept. 21, 22, 1945, caused by temporary dam above gage.

LITTLE SIOUX RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of Maple River at Mapleton, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	136	224	110	102	121	178	119	118	1,059	275	125	109	222
1943	46.6	38.9	23.4	22.8	418	153	74.1	86.8	374	323	386	78.7	167
1944	40.0	50.7	31.7	37.6	120	263	186	384	1,232	507	570	202	302
1945	128	100	67.0	58.1	240	821	472	546	717	600	828	183	396
1946	129	94.3	62.1	84.5	647	479	216	469	272	161	88.7	172	237
1947	94.1	89.7	78.7	51.2	105	260	313	180	465	208	70.3	46.2	163
1948	38.0	59.5	49.2	41.3	651	560	164	139	106	106	138	27.8	172
1949	23.2	23.5	19.9	50.3	110	820	148	178	149	95.4	36.7	141	150
1950	49.7	35.8	35.8	16.0	91.3	465	65.2	138	842	356	174	56.5	192

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	8,360	13,310	6,780	6,300	6,710	10,930	7,100	7,240	63,010	16,880	7,700	6,510	160,800
1943	2,870	2,320	1,440	1,400	23,210	9,380	4,410	5,340	22,230	19,890	23,730	4,680	120,900
1944	2,460	3,020	1,950	2,310	6,900	16,160	11,060	23,590	73,290	31,200	35,050	11,990	219,000
1945	7,880	5,980	4,120	3,450	13,340	50,490	28,070	33,570	42,690	36,910	50,940	11,890	289,300
1946	7,920	5,610	3,820	5,200	35,930	29,460	12,860	28,850	16,170	9,900	5,460	10,240	171,400
1947	5,790	5,340	4,840	3,150	5,830	16,010	18,630	11,090	27,640	12,790	4,320	2,750	118,200
1948	2,330	3,540	3,020	2,540	37,430	34,420	9,780	8,520	6,310	6,500	8,490	1,650	124,500
1949	1,430	1,400	1,220	3,090	6,090	50,400	8,790	10,920	8,880	5,860	2,260	8,400	108,700
1950	3,050	2,130	2,200	985	5,070	28,600	3,880	8,460	50,110	20,660	10,710	3,360	139,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1942	956	*5,480	June 30, 1942	30	222	0.356	4.57	160,800	192	3.95	139,000
1943	976	3,940	June 16, 1943	15	167	.253	3.43	120,900	168	3.46	121,700
1944	1006	4,730	June 13, 1944	17	302	.457	6.23	219,000	316	6.52	229,500
1945	1036	7,570	Aug. 7, 1945	a0	398	.602	8.18	289,300	397	8.16	288,700
1946	1056	*5,460	May 24, 1946	25	237	.359	4.86	171,400	235	4.82	170,000
1947	1096	4,900	June 22, 1947	31	163	.247	3.34	118,200	153	3.15	111,100
1948	1116	*9,400	Feb. 27, 1948	24	172	.260	3.54	124,500	165	3.40	119,700
1949	1146	b7,000	Mar. 4, 1949	13	150	.227	3.08	108,700	155	3.18	112,100
1950	1176	13,000	June 12, 1950	8.0	192	.290	3.95	139,200	-	-	-

* Revised.

a Caused by temporary dam above gage.

b Estimated (backwater from ice).

11. Maple River at Turin, Iowa

Location.--Lat 42°01', long. 95°57', in SW¼NE¼ sec. 10, T. 83 N., R. 44 W., at bridge on State Highway 37, a quarter of a mile upstream from Beaver Creek, 0.7 mile east of Turin, and 2 miles upstream from mouth.

Drainage area.--725 sq mi.

Gage.--Wire-weight gage. Datum of gage is 1,028.45 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Extremes.--1939-41: Maximum discharge, 2,920 cfs June 4, 1940 (gage height, 19.42 ft, from floodmarks), from rating curve extended above 1,200 cfs on basis of slope-area determination of peak flow; minimum, 4 cfs Jan. 18-23, 1940.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	79.4	79.7	141	89.1	13.3	-
1940	20.5	11.4	11.6	6.1	5.3	106	110	35.5	241	302	309	73.3	103
1941	32.5	39.7	45.8	42.2	120	193	105	86.9	127	97.6	27.5	118	85.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	4,880	4,740	8,850	5,480	791	-
1940	1,260	676	712	375	307	6,490	6,570	2,180	14,370	18,580	19,020	4,360	74,900
1941	2,000	2,360	2,810	2,600	6,680	11,870	6,240	5,340	7,540	6,000	1,690	7,000	62,130

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	926	-	-	-	-	-	-	-	-	-	-
1940	926	2,920	June 4, 1940	4	103	0.142	1.94	74,900	109	2.05	79,420
1941	926	a889	Sept. 16, 1941	9	85.8	.118	1.61	62,130	-	-	-

a Backwater from Little Sioux River.

12. Little Sioux River near Turin, Iowa 1/

Location.--Lat 41°58', long. 95°58', on line between secs. 28 and 33, T. 83 N., R. 44 W., at bridge on Brown's grade, 1 mile east of gaging station on Monona-Harrison ditch near Turin, 2.4 miles downstream from equalizer ditch connecting Little Sioux River and Monona-Harrison ditch, 3.5 miles downstream from Maple River, 3.8 miles south of Turin, 6.5 miles northeast of Blencoe, and 16.5 miles upstream from mouth.

Drainage area.--4,460 sq mi, approximately (combined area above this station and above station on Monona-Harrison ditch, 1 mile west).

Gage.--Wire-weight gage. Datum of gage is 1,020.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to May 7, 1942, wire-weight gage at site 5.8 miles downstream at datum 9.74 ft lower.

Average discharge.--11 years (1939-50), 418 cfs.

Extremes.--1939-50: Maximum discharge, 6,620 cfs Aug. 8, 1945; maximum gage height, 26.0 ft, from floodmark, Mar. 4, 1949 (ice jam); no flow at times during period September 1939 to October 1940 and for several months in 1948, 1949, and 1950 when all of flow was carried by Monona-Harrison ditch.

Remarks.--Part or all of flow is diverted above station into Monona-Harrison ditch (see p. 37) which is a dredged channel paralleling Little Sioux River from a point several miles above station to mouth. Diversion is regulated by changing height of an obstruction composed of earth and rock in equalizer ditch connecting the two channels.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	189	123	140	164	0	-
1940	6.16	14.8	7.40	0.47	1.51	228	301	80.8	542	295	146	8.2	136
1941	70.7	122	167	211	231	202	204	505	622	493	122	539	290
1942	624	996	647	495	745	933	1,288	1,507	1,804	542	251	249	821
1943	58.9	8.5	.36	3.77	583	862	854	608	1,568	2,281	879	477	682
1944	182	251	267	112	370	643	850	1,593	2,202	1,536	998	709	810
1945	407	334	241	156	366	1,979	960	1,211	2,356	963	1,380	344	895
1946	310	324	309	254	833	968	433	559	464	202	78.0	93.9	400
1947	167	267	81.9	20.3	121	309	624	800	1,005	669	24.8	1.34	341
1948	.52	18.4	.3	3.10	410	861	53.2	46.8	20.2	36.7	53.0	.05	125
1949	.06	.29	.13	.61	67.2	547	64.2	8.10	35.4	5.42	13.9	5.24	62.6
1950	.81	.13	.19	.07	5.66	71.9	.35	1.70	288	4.31	20.6	0	32.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	11,610	7,320	8,620	10,080	0	-
1940	379	883	455	29	87	14,020	17,920	4,970	32,280	18,150	8,990	367	98,510
1941	4,350	7,280	10,240	12,990	12,820	12,410	12,150	31,040	37,040	30,340	7,520	52,090	210,300
1942	58,370	59,290	59,790	50,410	41,400	57,370	76,820	80,380	107,500	33,320	15,440	14,820	594,500
1943	3,620	506	22	232	32,580	53,010	50,790	37,390	93,310	140,200	54,050	28,400	493,900
1944	11,200	14,920	16,430	6,880	21,280	39,510	50,610	97,920	131,000	94,470	61,390	42,200	587,800
1945	25,050	19,860	14,830	9,570	20,350	21,700	57,090	74,470	140,200	59,230	84,830	20,480	647,700
1946	19,080	19,300	18,980	15,630	46,280	59,390	25,770	34,380	27,590	12,450	4,800	5,590	289,200
1947	10,280	15,870	5,040	1,250	6,750	19,030	37,110	49,210	59,800	41,150	1,520	80	247,100
1948	32	1,090	201	190	23,610	52,950	3,170	2,870	1,200	2,260	3,260	3.2	90,840
1949	4.0	17	.81	37	3,730	33,630	3,820	498	2,110	333	855	312	45,350
1950	50	7.7	12	4.6	314	4,420	21	104	17,040	285	1,260	0	23,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30										Calendar year		
		Momentary					Runoff					Mean		
		Discharge	maximum	Minimum	Mean	Per square mile	Inches	Acre-feet	Mean	Inches	Acre-feet	Mean	Inches	Acre-feet
1939	926	al,720	Aug. 2, 1939	0										
1940	926	2,820	June 4, 1940	0	136	b.0.094	b1.27	98,510	163	b1.32	118,700			
1941	926	3,250	Sept. 16, 1941	0	290	b.134	b1.81	210,300	450	b2.34	325,800			
1942	956	4,130	June 6, 1942	115	821	b.282	b3.83	594,500	637	b3.48	461,200			
1943	976	3,890	July 7, 1943	.2	682	b.303	b4.13	493,900	735	b4.13	532,300			
1944	1006	4,040	June 12, 1944	60	810	b.388	b5.28	587,800	833	b5.42	605,000			
1945	1036	6,820	Aug. 8, 1945	130	895	b.491	b6.68	647,700	891	b6.58	645,300			
1946	1056	2,700	May 23, 1946	26	400	b.258	b3.50	289,200	383	b3.69	283,100			
1947	1086	3,640	June 22, 1947	.1	341	b.351	b4.77	247,100	300	b4.44	217,200			
1948	1116	3,920	Mar. 16, 1948	0	125	b.206	b2.80	90,840	123	b2.72	89,540			
1949	1146	2,700	June 2, 1949	0	62.6	b.208	b2.83	45,350	62.7	b2.84	45,390			
1950	1176	3,700	June 18, 1950	0	32.5	b.189	b2.58	23,500		-	-			

a Maximum for period Apr. 11 to Sept. 30, 1939.

b Based on combined flow of Little Sioux River and Monona-Harrison ditch.

1/ Published as "near Blencoe" prior to 1942.

13. West Fork ditch at Holly Springs, Iowa

Location.--Lat 42°16', long. 96°05', between secs. 9 and 16, T. 86 N., R. 45 W., at bridge on State Highway 141 at west edge of village of Holly Springs, 12 miles upstream from Wolf Creek, 16.5 miles north of Onawa, and 22 miles southeast of Sioux City.

Drainage area.--395 sq mi.

Gage.--Wire-weight gage. Datum of gage is 1,052.82 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Average discharge.--11 years (1929-50), 84.9 cfs.

Extremes.--1929-50: Maximum discharge, 6,600 cfs (revised) Aug. 6, 1945 (gage height, 22.4 ft, from floodmark); minimum observed, 0.4 cfs Oct. 25, 1943; minimum gage height observed, 4.64 ft Aug. 19, 1946.

Remarks.--West Fork ditch is a dredged channel which diverts flow of West Fork Little Sioux River at Holly Springs and carries it 5.5 miles south, thence southeast 6.5 miles to a point 1.5 miles west of Kennebec, where Wolf Creek enters from left. From this point ditch roughly parallels Little Sioux River to a point 3 miles southwest of Turin where an equalizer ditch connects it with Little Sioux River. From this point ditch is known as Monona-Harrison ditch.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	39.6	53.9	117	74.1	4.4	-
1940	6.7	6.4	5.7	2.5	2.4	31.8	14.2	24.5	146	124	111	16.1	41.1
1941	12.5	7.7	9.6	9.8	136	256	87.1	24.9	58.6	17.1	3.1	144	63.1
1942	51.3	51.0	24.2	19.4	23.2	80.6	50.1	44.7	200	126	54.4	47.8	64.5
1943	13.1	11.2	4.6	5.4	245	751.5	23.7	11.5	112	133	15.1	12.5	51.7
1944	3.28	5.98	4.87	9.9	120	63.7	32.7	97.0	242	277	175	33.5	98.7
1945	13.8	11.2	13.0	7.16	218	454	58.3	104	414	175	537	68.5	173
1946	42.9	36.0	19.9	26.5	466	163	49.5	57.2	26.8	13.8	14.0	36.6	78.6
1947	65.7	57.1	32.7	18.6	57.9	141	220	142	269	87.0	22.4	14.9	93.8
1948	10.7	20.7	20.6	25.3	301	201	36.9	43.9	31.8	30.0	119	26.9	71.6
1949	13.0	16.6	13.4	35.8	111	369	75.7	170	162	83.3	29.4	211	107
1950	46.9	23.6	19.7	10.4	52.6	279	40.8	63.1	372	193	106	27.6	103

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	2,440	3,210	7,170	4,550	280	-
1940	413	383	351	157	139	1,950	843	1,510	8,710	7,620	6,810	980	29,850
1941	768	460	591	601	7,540	15,720	5,180	1,530	3,480	1,050	190	8,580	45,670
1942	3,150	3,030	1,490	1,190	1,290	4,960	2,980	2,750	11,890	7,760	3,350	2,850	46,690
1943	805	686	232	333	13,520	3,170	1,410	704	6,640	8,200	927	743	37,400
1944	201	356	300	611	6,880	3,920	1,950	5,960	14,380	17,060	10,780	1,990	64,390
1945	847	669	800	440	12,090	27,920	3,470	6,370	24,640	10,760	33,040	4,080	125,100
1946	2,640	2,140	1,220	1,630	25,870	10,040	2,950	3,520	1,600	850	858	2,180	55,500
1947	4,040	3,400	2,010	1,140	3,210	8,690	13,070	8,720	15,980	5,350	1,380	884	67,870
1948	659	1,250	1,270	1,560	17,330	12,340	2,200	2,700	1,890	1,840	7,320	1,600	51,940
1949	800	990	821	2,200	6,150	22,680	4,510	10,480	9,680	5,120	1,810	12,530	77,750
1950	2,680	1,410	1,210	638	2,920	17,140	2,430	3,890	22,130	11,850	6,510	1,640	74,640

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	926	-	-	-	-	-	-	-	-	-	-
1940	926	3,360	June 4, 1940	2	41.1	0.104	1.41	29,850	42.0	1.44	30,520
1941	926	*2,580	Sept. 15, 1941	1	63.1	.163	2.19	45,670	71.2	2.46	51,520
1942	956	878	June 30, 1942	3	64.5	.163	2.22	46,690	56.3	1.94	40,770
1943	976	2,480	July 19, 1943	1.4	51.7	.131	1.78	37,400	50.4	1.74	36,500
1944	1006	*3,590	July 8, 1944	1	88.7	.225	3.91	64,390	90.7	3.98	65,850
1945	1036	*6,600	Aug. 6, 1945	3.0	173	.438	5.93	125,100	178	6.11	128,800
1946	1056	*41,100	Feb. 7, 1946	2.9	76.6	.194	2.65	55,500	81.4	2.81	58,950
1947	1096	1,520	June 25, 1947	8.0	93.8	.237	3.21	67,870	85.1	2.91	61,580
1948	1116	2,000	Feb. 29, 1948	5.0	71.6	.161	2.47	51,940	70.8	2.45	51,390
1949	1146	2,040	June 1, 1949	7.8	107	.271	3.70	77,750	111	3.84	80,640
1950	1176	6,300	June 19, 1950	5.5	103	.261	3.55	74,640	-	-	-

* Revised.

a Estimated (backwater from ice).

14. Monona-Harrison ditch near Turin, Iowa 1/

Location.--Lat 41°58', long. 95°59', on line between secs. 29 and 32, T. 83 N., R. 44 W., at bridge on Brown's grade, 1 mile west of gaging station on Little Sioux River near Turin, 1.5 miles downstream from equalizer ditch connecting Little Sioux River and Monona-Harrison ditch, 4 miles southeast of Turin, 5.5 miles northeast of Blencoe, and 13 miles upstream from mouth.

Drainage area.--4,460 sq mi, approximately (combined area above this station and above station on Little Sioux River, 1 mile east).

Gage.--Wire-weight gage. Datum of gage is 1,020.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to May 7, 1942, wire-weight gage at site 4.8 miles downstream at datum 10.40 ft lower.

Average discharge.--11 years (1939-50), 760 cfs.

Extremes.--1939-50: Maximum discharge, 13,200 cfs June 18, 1950 (gage height, 22.0 ft, from graph based on gage readings); maximum gage height, 25.6 ft, from floodmarks, Mar. 4, 1949 (ice jam); minimum discharge observed, 3 cfs Sept. 8, 1941.

Remarks.--Monona-Harrison ditch is a dredged channel and is a continuation of West Fork ditch paralleling Little Sioux River into which it empties a quarter of a mile above Missouri River. At times, part or all of flow of Little Sioux River is diverted into Monona-Harrison ditch through an equalizer ditch which connects the two channels 1.5 miles above station. The diversion is regulated by changing the height of an obstruction composed of earth and rock in the equalizer ditch.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	488	409	509	531	102	-
1940	91.3	70.0	69.2	43.3	44.7	189	277	210	695	603	883	234	283
1941	58.3	19.3	19.8	27.1	485	1,458	987	55.4	157	60.7	8.9	368	306
1942	185	102	40.9	31.9	34.4	1,09	92.8	66.4	1,591	249	777	971	436
1943	565	339	185	139	2,042	1,219	132	77.2	734	772	648	284	670
1944	122	173	165	124	498	597	217	1,582	3,394	2,056	1,320	788	919
1945	352	245	137	77.1	865	3,137	202	1,713	3,948	395	2,123	321	1,295
1946	191	96.9	89.1	223	2,876	1,832	737	1,118	920	492	273	356	751
1947	488	619	480	289	914	1,782	227	2,322	2,985	2,019	399	219	1,228
1948	211	310	276	230	1,360	3,370	939	868	548	677	586	170	795
1949	105	191	144	312	453	3,287	814	1,094	1,328	442	247	946	865
1950	218	163	130	63.6	295	2,149	633	691	2,460	506	1,044	341	811

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	30,000	24,380	31,270	32,630	6,050	-
1940	5,620	4,170	4,250	2,680	2,570	10,400	16,500	12,910	41,350	37,090	54,300	13,920	205,700
1941	3,590	1,150	1,220	1,660	26,980	89,830	58,740	3,410	9,350	3,730	545	21,910	221,900
1942	10,140	6,090	2,510	1,960	1,910	8,870	5,520	4,080	94,650	76,780	47,800	57,790	315,900
1943	34,720	20,170	11,370	8,520	13,400	74,930	7,860	4,740	43,700	69,000	39,630	16,870	485,100
1944	7,520	10,290	10,120	7,820	28,650	36,690	12,890	97,300	202,000	28,400	81,150	46,750	667,400
1945	21,620	14,600	8,410	4,740	48,060	192,900	71,520	105,400	234,800	85,800	130,500	19,100	937,400
1946	11,780	5,760	4,190	13,700	59,700	112,600	43,850	68,730	54,770	30,270	16,780	21,190	543,300
1947	30,000	36,810	28,280	17,790	50,780	109,600	132,500	142,800	177,600	24,100	24,540	13,030	887,800
1948	12,950	18,430	16,960	14,110	77,990	207,300	55,870	53,370	32,520	41,630	36,050	10,100	577,300
1949	6,450	11,350	8,880	19,200	25,160	202,100	108,000	67,280	79,040	27,180	15,180	56,310	626,100
1950	13,580	9,720	7,970	3,910	16,370	32,100	37,690	42,460	146,400	92,610	64,190	20,280	587,100

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	928	3,140	July 7, 1939	-	-	-	-	-
1940	928	4,820	June 4, 1940	13	283	205,700	272	197,700
1941	928	3,230	Sept. 16, 1941	3	306	221,900	324	234,700
1942	928	5,200	July 1, 1942	8	436	315,900	502	363,400
1943	978	5,080	Feb. 28, 1943	56	670	485,100	617	446,800
1944	1006	6,700	June 16, 1944	84	919	667,400	942	684,100
1945	1036	8,300	Aug. 7, 1945	50	1,295	937,400	1,263	914,500
1946	1056	6,160	Feb. 6, 1946	30	751	543,300	852	616,700
1947	1086	10,000	June 22, 1947	163	1,228	887,800	1,162	841,100
1948	1116	11,800	Mar. 18, 1948	97	795	577,300	785	555,600
1949	1146	110,000	Mar. 5, 1949	80	865	626,100	871	630,500
1950	1176	13,200	June 18, 1950	46	811	587,100	-	-

a Maximum for period Apr. 11 to Sept. 30, 1939.

b Estimated.

1/ Published as "near Blencoe" prior to 1942.

TEKAMAH CREEK BASIN

15. Tekamah Creek at Tekamah, Nebr.

Location.--Lat 41°46'30", long. 96°13'10", in SE $\frac{1}{4}$ sec. 19, T. 21 N., R. 11 E., 30 ft up-stream from bridge, 1 block east of U. S. Highway 73 in Tekamah.

Drainage area.--21 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,032.04 ft above mean sea level, un-adjusted. July 1 to Sept. 14, 1949, wire-weight gage at site 30 ft downstream at same datum.

Extremes.--1949-50: Maximum discharge, 4,400 cfs July 15, 1950 (gage height, 14.26 ft), from rating curve extended above 700 cfs on basis of slope-area determination of peak flow; no flow on many days each year.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	0.67	0.08	4.03	-
1950	1.51	0.65	0.42	0.08	7.1	13.6	1.67	4.61	1.32	28.2	12.1	.68	6.04

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	41	5.0	240	-
1950	93	39	26	4.8	397	837	100	283	79	1,730	742	41	4,370

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1949	1178	-	-	0	-	-	-	-	-
1950	1176	4,400	July 15, 1950	0	6.04	4,370	-	-	-

SOLDIER RIVER BASIN

16. Soldier River at Pisgah, Iowa

Location.--Lat 41°50', long. 95°56', in NW $\frac{1}{4}$ sec. 14, T. 81 N., R. 44 W., at bridge on county road D at west edge of Pisgah, 2.5 miles downstream from Stowe Creek and 13 miles upstream from mouth.

Drainage area.--417 sq mi.

Gage.--Wire-weight gage. Datum of gage is 1,036.34 ft above mean sea level, datum of 1929. Auxiliary water-stage recorder for stages above 8.2 ft since Mar. 2, 1946, at same site and datum.

Average discharge.--10 years (1940-50), 122 cfs.

Extremes.--1940-50: Maximum discharge, 22,500 cfs June 12, 1950 (gage height, 28.17 ft); minimum daily, 2 cfs Jan. 2-10, 1945.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	30.5	19.8	*436	*360	391	20.2	-
1941	12.8	25.1	29.0	31.0	93.8	93.5	33.2	21.1	169	28.3	30.4	64.3	52.1
1942	88.0	45.9	24.3	36.0	36.8	73.4	63.2	111	726	196	91.8	89.2	132
1943	22.2	19.8	12.7	13.0	244	75.3	20.7	39.5	189	169	122	30.2	78.6
1944	11.2	19.1	10.9	25.2	56.8	96.6	55.4	198	572	122	163	33.9	113
1945	27.9	31.2	18.2	6.3	†192	†667	†227	†503	†261	†192	89.3	86.0	192
1946	40.6	39.5	39.5	184	340	126	33.1	174	238	109	154	282	143
1947	122	95.2	62.4	49	†61.5	124	134	91.6	544	130	54.7	37.0	108
1948	39.5	54.0	45.9	48.3	290	406	69.4	43.9	55.8	157	93.9	16.4	110
1949	23.5	38.8	19.5	78.4	94.0	574	98.1	113	127	137	90.0	51.5	121
1950	52.5	18.5	20.3	7.6	338	425	45.1	155	596	157	184	38.2	168

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	1,810	1,220	*25,970	*22,130	24,050	1,200	-
1941	789	1,490	1,780	1,900	5,210	5,750	1,980	1,300	10,060	1,740	1,870	3,820	37,690
1942	5,410	2,730	1,490	2,220	2,040	4,510	3,760	6,850	43,230	12,050	5,640	5,310	95,240
1943	1,360	1,180	780	797	13,570	4,630	1,230	2,430	11,240	10,390	7,530	1,800	†56,940
1944	690	1,140	670	1,550	3,270	5,940	3,500	12,180	34,050	7,520	9,990	2,020	82,300
1945	1,710	1,850	1,120	385	10,680	41,040	13,490	30,910	15,550	11,810	5,490	5,120	139,100
1946	2,500	2,350	2,430	10,070	18,890	7,740	1,970	10,720	14,180	6,700	9,460	16,810	103,800
1947	7,480	5,650	3,840	2,580	3,420	7,610	7,960	5,640	20,460	7,970	3,370	2,200	78,180
1948	2,430	3,220	2,820	2,970	16,660	24,950	4,130	2,700	3,320	9,660	5,780	978	79,600
1949	1,450	2,310	1,200	4,820	5,220	35,320	5,840	6,940	7,540	8,450	5,530	3,070	87,690
1950	3,230	1,100	1,250	470	18,790	28,120	2,680	9,550	35,460	9,640	11,320	2,270	121,900

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second, of Soldier River at Pisgah, Iowa

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1940	926,1240	17,000	June 4, 1940	-	-	-	-	-	-	-	-
1941	926	*4,220	June 2, 1941	6	52.1	0.125	1.70	37,690	59.8	1.94	43,260
1942	956	17,800	June 28, 1942	4	132	.317	4.27	95,240	123	3.99	88,930
1943	976	9,760	Aug. 22, 1943	8	78.6	.188	2.58	†56,940	77.5	2.54	56,120
1944	1006	15,700	June 12, 1944	5	113	.271	3.71	82,300	116	3.81	84,480
1945	1036	9,940	May 31, 1945	2	192	.460	6.27	139,100	196	6.39	141,700
1946	1056	12,400	Sept. 4, 1946	19	143	.343	4.68	103,800	157	5.11	113,500
1947	1086	5,270	June 22, 1947	27	108	.259	3.51	78,180	98.2	3.15	69,670
1948	1116	11,800	Feb. 27, 1948	20	110	.284	3.57	79,600	105	3.41	75,090
1949	1146	a9,500	Mar. 4, 1949	6	121	.290	5.94	87,690	122	3.98	88,310
1950	1176	22,500	June 12, 1950	4	168	.403	5.47	121,900	-	-	-

* Revised.

† Corrected.

a About. (Backwater from ice)

NEW YORK CREEK BASIN

17. New York Creek at Herman, Nebr.

Location.--Lat 41°39'40", long. 96°12'10", in NW¼ sec. 32, T. 20 N., R. 11 E., on left bank about 350 ft downstream from bridge on U. S. Highway 73, half a mile southeast of Herman.

Drainage area.--30 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,021.37 ft above mean sea level, unadjusted.

Extremes.--1946-50: Maximum discharge, 5,500 cfs July 15, 1950 (gage height, 19.5 ft, from floodmark), from rating curve extended above 600 cfs on basis of slope-area determination of peak flow; no flow Jan. 1-6, 1947.

Flood of June 11, 1944, reached a stage of 20.8 ft, from floodmarks (discharge, 4,700 cfs, revised, by slope-area determination).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	2.02	1.91	1.53	1.05	3.06	3.43	3.79	5.40	5.76	0.66	2.23	0.59	-
1948	1.12	1.59	2.15	1.31	14.1	19.3	1.75	1.28	4.94	3.66	.99	1.77	6.31
1949	1.16	1.50	1.23	2.87	2.78	46.4	3.02	4.68	6.78	11.8	2.02	11.8	8.07
1950	2.97	1.31	.73	.3	32.9	4.27	1.19	4.46	3.20	45.0	21.4	1.40	9.83

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	124	114	94	64	170	211	226	332	2,900	225	61	46	4,570
1948	69	95	132	81	809	1,220	104	79	294	201	111	792	3,990
1949	71	89	76	177	154	2,850	180	288	403	728	124	701	5,840
1950	182	78	45	18	1,830	263	71	274	191	2,770	1,320	84	7,130

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	*800	June 28, 1946	-	-	-	-	-
1947	1086	2,910	June 12, 1947	0	6.31	4,570	6.26	4,530
1948	1116	2,520	Sept. 2, 1948	.1	5.49	3,990	5.41	3,930
1949	1146	1,680	Sept. 11, 1949	.3	8.07	5,840	8.17	5,910
1950	1176	5,500	July 15, 1950	-	9.83	7,130	-	-

* Not previously published.

BOYER RIVER BASIN

18. Boyer River at Logan, Iowa

Location.--Lat 41°38', long. 95°47', in W¼ sec. 19, T. 79 N., R. 42 W., at highway bridge 300 ft downstream from Illinois Central Railroad bridge at Logan, 10.5 miles upstream from Willow Creek, and 16 miles upstream from mouth.

Drainage area.--810 sq mi.

Gage.--Wire-weight gage since Nov. 4, 1937. Datum of gage is 1,009.38 ft above mean sea level (Chicago & Northwestern Railway benchmark). Auxiliary water-stage recorder, which operates above 4.8 ft, since Oct. 22, 1946; chain gage from May 24, 1918, to Apr. 16, 1925; and cantilever gage from Apr. 17 to July 1, 1925; all at same site and datum.

Average discharge.--18 years (1918-24, 1938-50), 306 cfs.

Extremes.--1918-25, 1937-50: Maximum discharge, 18,800 cfs June 18, 1950 (gage height, 20.01 ft); maximum gage height, 20.7 ft Mar. 3, 1949 (backwater from ice); minimum discharge observed (revised), 1.5 cfs July 16, 1938.

Monthly and yearly mean discharge, in cubic feet per second, of Boyer River at Logan, Iowa													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	1,050	128	39.7	*8.17	-
1919	115	139	107	81.8	*405	368	*547	249	*1,420	*556	155	135	*354
1920	299	206	152	104	78.4	689	429	659	536	421	283	164	332
1921	115	262	a122	a80	a491	*266	295	404	346	*256	360	*358	a277
1922	111	109	97.7	a67	a621	209	475	144	90.4	240	341	83.3	a213
1923	47.3	167	76.3	66.2	64.6	605	237	271	768	308	605	456	307
1924	549	266	205	a180	a419	963	437	199	*1,420	495	816	342	a522
1925	229	158	a150	a300	379	238	168	113	*753	-	-	-	-
1938	-	-	6.7	5.0	49.6	57.6	128	283	153	187	193	867	-
1939	43.4	74.7	26.2	26.2	37.9	744	77.4	113	158	392	194	11.6	160
1940	14.4	8.3	8.1	3.1	3.6	280	83.0	98.6	525	393	387	48.6	155
1941	24.9	44.0	36.8	39.6	184	184	84.6	47.2	418	70.9	82.2	65.3	103
1942	65.0	107	68.0	120	132	221	122	251	1,081	642	233	228	272
1943	78.1	56.9	33.5	26.9	761	190	78.8	437	590	249	827	120	284
1944	51.2	68.0	42.3	53.9	108	218	257	528	1,856	570	699	157	385
1945	117	108	72.5	58.5	499	948	1,192	1,393	1,774	1,317	541	199	673
1946	157	127	109	377	675	523	202	469	484	278	345	328	337
1947	239	143	97.7	56.3	149	372	424	262	1,565	436	157	79.3	329
1948	78.1	119	86.4	73.5	530	2,110	254	147	91.2	226	124	29.9	239
1949	25.5	48.7	31.0	112	174	1,404	197	244	326	171	133	266	264
1950	81.0	41.1	34.3	17.6	454	691	45.5	466	1,117	383	367	62.3	310

* Revised.

a Revised; supersedes figure (acre-ft) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	82,610	7,840	2,440	*488	-
1919	6,960	8,280	6,560	5,030	22,530	22,640	*32,560	15,320	*84,740	*34,170	9,540	8,010	*256,300
1920	18,390	12,260	9,340	6,410	4,510	42,380	25,540	59,320	31,900	25,660	15,570	9,760	241,200
1921	7,090	15,570	a7,520	a4,920	a27,280	16,340	17,570	24,860	20,560	*15,760	22,110	*21,530	a200,900
1922	6,830	6,480	6,010	a4,110	a34,470	12,860	28,290	8,880	5,380	14,760	20,980	4,950	a154,000
1923	2,910	9,960	4,690	4,070	3,590	37,200	14,080	16,640	45,570	18,940	37,200	27,140	222,000
1924	33,760	15,820	12,580	a9,840	a24,100	59,240	25,990	12,210	*84,770	50,410	50,150	20,350	a379,200
1925	14,090	9,410	a9,220	a18,450	21,050	14,620	9,980	8,960	44,610	-	-	-	-
1938	-	-	411	307	2,780	3,550	7,530	16,170	9,120	11,490	11,850	51,590	-
1939	2,670	4,450	1,610	1,610	2,100	45,720	4,610	6,930	9,410	24,110	11,920	692	115,800
1940	883	496	500	188	204	17,240	4,940	6,070	31,270	24,150	23,820	2,690	112,700
1941	1,530	2,620	2,390	2,450	10,240	11,290	5,050	2,900	24,870	4,360	3,210	3,880	74,790
1942	4,000	6,340	4,180	7,350	7,310	13,620	7,260	15,450	64,340	59,500	14,320	15,540	197,200
1943	4,800	3,380	2,060	1,660	42,250	11,710	4,690	26,870	35,090	15,330	50,640	7,150	205,800
1944	3,150	4,040	2,600	3,320	6,230	13,410	15,320	32,480	10,400	35,040	42,970	9,320	278,500
1945	7,190	6,400	4,450	3,600	19,360	58,280	70,930	68,630	68,500	90,960	53,280	11,820	487,400
1946	9,660	7,580	6,670	23,200	37,360	32,140	12,040	28,830	26,770	17,110	21,190	19,510	244,100
1947	14,700	8,520	6,010	3,460	8,260	22,680	25,210	16,090	93,110	26,950	8,400	4,720	238,300
1948	4,800	7,100	5,510	4,520	30,490	68,250	15,130	9,010	5,430	13,920	7,630	1,780	173,400
1949	1,570	2,900	1,910	6,900	9,650	88,310	11,730	14,990	19,580	10,530	8,170	17,020	191,100
1950	4,980	2,450	2,110	1,080	25,190	42,470	2,710	28,630	66,450	22,300	22,550	3,710	224,600

* Revised.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second													
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year					
		Momentary maximum		Minimum		Mean		Runoff		Mean		Runoff	
		Discharge	Date	Discharge	Date	Per square mile	Per square mile	Inches	Acre-feet	Inches	Acre-feet	Inches	Acre-feet
1918	506,1240	-	-	-	-	-	-	-	-	-	-	-	-
1919	506,1240	*8,620	Apr. 23, 1919	5	-	*354	*0.437	*5.91	*256,300	*379	*6.34	*274,500	-
1920	506	*3,210	Aug. 20, 1920	43	-	332	.410	5.58	241,200	a319	a5.34	a231,400	-
1921	526,1240	*8,690	Sept. 10, 1921	-	-	a277	a.342	a4.63	a200,900	a262	a4.39	a190,000	-
1922	546	*7,470	Aug. 21, 1922	-	-	a213	a.263	a3.55	a154,000	a210	a3.50	a152,200	-
1923	566	9,200	June 18, 1923	-	-	307	.379	5.15	222,000	368	6.16	266,600	-
1924	586,1240	*13,200	June 24, 1924	-	-	a522	a.644	a8.75	a379,200	a482	a8.07	a349,800	-
1925	606,1240	*12,800	June 3, 1925	-	-	-	-	-	-	-	-	-	-
1938	856, 956	*13,500	Sept. 6, 1938	1.5	-	-	-	-	-	170	2.83	123,100	-
1939	876, 956	9,000	July 3, 1939	8	-	160	.198	2.70	115,800	151	2.54	109,000	-
1940	876, 956	13,600	July 9, 1940	2	-	155	.191	2.60	112,700	162	2.72	117,300	-
1941	956	4,400	June 11, 1941	8	-	103	.127	1.75	74,790	114	1.93	82,770	-
1942	956	13,400	June 28, 1942	7	-	272	.336	4.57	197,200	287	4.47	192,900	-
1943	976	13,400	May 15, 1943	19	-	284	.351	4.77	205,800	284	4.75	205,400	-
1944	1006	12,500	June 12, 1944	15	-	383	.473	6.43	278,500	395	6.63	286,500	-
1945	1036	15,000	Apr. 23, 1945	36	-	673	.831	11.27	487,400	681	11.40	493,500	-
1946	1056	11,000	Sept. 4, 1946	86	-	337	.416	5.65	244,100	344	5.78	249,400	-
1947	1086	12,600	June 22, 1947	39	-	329	.408	5.51	238,300	313	5.22	226,300	-
1948	1116	9,630	Feb. 27, 1948	20	-	239	.295	4.01	175,400	224	3.77	162,500	-
1949	1146	17,400	Mar. 4, 1949	21	-	264	.326	4.42	191,100	268	4.50	194,200	-
1950	1176	18,600	June 18, 1950	8	-	310	.383	5.21	224,600	-	-	-	-

* Revised.

† Corrected.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

19. Missouri River at Omaha, Nebr.

Location.--Lat 41°15'40", long. 95°55'15", in sec. 23, T. 15 N., R. 13 E., at Ak-Sar-Ben Bridge in Omaha.

Drainage area.--322,800 sq mi, approximately.

Supplemental records available.--April 1872 to December 1899, gage heights only, in reports of Missouri River Commission and since January 1875, gage heights only, in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 958.24 ft above mean sea level, datum of 1929.

Apr. 10, 1872, to Aug. 31, 1928, staff, cable and chain gages at several sites within 0.6 mile of present site not more than 0.43 ft below present datum.

Sept. 1, 1928, to Nov. 30, 1929, chain gage attached to Illinois Central Railroad bridge 2 miles upstream, at datum 2.97 ft higher.

Dec. 1, 1929, to May 26, 1930, chain gage, and May 27, 1930, to Oct. 18, 1931, wire-weight gage at present site and 1936, water-stage recorder 0.4 mile downstream at present datum.

Average discharge.--22 years (1928-50), 28,110 cfs.

Extremes.--1928-50: Maximum discharge, 200,000 cfs Apr. 12, 1943; maximum gage height, 22.45 ft Apr. 13, 1943; minimum discharge, about 2,200 cfs Jan. 6, 1937; minimum gage height observed, -1.7 ft Dec. 27, 1949.

Maximum stage known, 24.65 ft, present datum, Apr. 25, 1881 (ice jam).

Remarks.--Flow partly regulated by Fort Peck Reservoir.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	19,700	20,400	10,700	9,290	11,800	55,900	66,800	39,600	114,000	55,000	22,400	25,500	36,700
1930	16,500	15,400	7,920	10,100	17,900	51,600	44,000	42,400	41,800	27,700	19,400	20,700	26,300
1931	16,800	15,500	8,120	8,940	16,400	17,100	20,000	14,400	32,000	22,900	11,200	9,720	16,100
1932	10,400	11,300	6,250	7,550	9,530	27,400	34,700	43,800	79,600	56,200	23,200	16,500	27,200
1933	12,200	11,100	5,570	9,600	9,530	29,100	34,200	38,400	68,400	41,900	16,100	20,500	24,800
1934	12,230	12,320	9,078	7,512	13,170	24,340	21,060	22,580	31,980	22,900	9,981	7,350	16,210
1935	8,294	10,530	6,121	5,823	10,510	15,700	23,880	24,630	55,540	50,890	20,080	10,780	20,260
1936	8,849	7,671	7,093	6,816	6,931	46,400	32,160	29,150	38,410	23,230	12,230	12,610	19,330
1937	9,345	9,909	8,531	6,826	6,346	20,600	30,250	19,940	58,710	52,590	22,870	9,095	21,130
1938	10,430	9,687	5,158	6,801	8,982	39,890	24,140	22,520	43,030	78,590	30,230	34,350	28,280
1939	21,280	17,080	10,420	13,430	9,511	27,050	60,900	29,670	50,440	40,720	19,080	11,930	25,990
1940	10,030	11,420	11,020	3,706	5,679	10,080	23,720	23,340	31,640	24,350	23,370	16,940	18,280
1941	13,170	9,154	8,030	8,199	9,446	15,860	29,970	21,980	53,810	28,800	22,210	27,270	20,650
1942	23,470	18,590	9,783	7,558	9,138	23,610	30,180	80,230	79,050	43,170	27,460	24,740	31,530
1943	22,480	22,500	8,113	9,416	14,090	27,580	85,990	31,500	69,900	74,160	32,300	31,090	36,410
1944	27,980	28,920	16,890	15,300	18,450	23,890	77,000	37,400	100,400	84,110	32,560	29,120	41,520
1945	25,890	28,680	13,590	15,130	25,960	65,080	36,310	24,770	57,790	52,650	33,470	24,110	33,650
1946	29,230	20,260	9,632	10,640	15,390	30,960	25,530	24,520	42,430	41,020	21,680	30,170	25,190
1947	34,560	23,320	8,414	11,610	15,580	25,720	78,840	51,470	79,130	74,270	40,440	32,960	39,700
1948	35,390	29,220	11,780	12,750	18,190	47,280	60,560	36,030	75,590	66,540	43,550	31,640	39,100
1949	38,050	34,290	11,160	12,070	17,120	54,010	92,050	37,550	46,040	35,100	29,770	30,490	36,480
1950	29,200	23,460	9,840	8,820	10,550	32,300	11,200	54,820	48,630	53,860	36,740	34,210	37,830

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	1,210	1,210	658	571	655	3,440	3,970	2,430	6,780	5,380	1,580	861	26,500
1930	1,010	916	487	621	994	3,170	2,620	2,610	2,490	1,700	1,190	1,250	19,000
1931	1,030	922	499	550	911	1,050	1,190	885	1,900	1,410	689	578	11,800
1932	640	612	394	484	548	1,680	2,020	1,480	4,740	5,460	1,430	982	19,800
1933	750	660	342	590	529	1,790	2,040	2,380	3,950	2,580	990	1,220	17,800
1934	752	733	558	462	731	1,497	1,253	1,387	1,903	1,408	614	437	11,740
1935	510	627	376	358	584	966	1,421	1,514	3,305	3,129	1,235	640	14,680
1936	544	458	436	419	399	2,853	1,914	1,792	2,286	1,428	752	751	14,030
1937	575	590	525	407	352	1,767	1,800	1,226	3,374	3,234	1,408	541	15,300
1938	641	576	317	418	499	2,459	1,437	1,384	2,560	4,832	1,859	2,044	19,030
1939	1,308	1,017	641	626	528	1,663	3,624	1,825	5,001	2,504	1,172	710	18,820
1940	617	680	678	228	327	820	1,412	1,435	1,683	1,498	1,437	1,008	11,820
1941	810	545	494	504	525	975	1,783	1,352	3,202	1,771	1,368	1,622	14,950
1942	1,443	1,106	602	465	508	1,452	1,796	4,333	4,704	2,655	1,689	1,472	22,820
1943	1,381	1,339	499	579	782	1,695	5,583	1,937	4,159	4,560	1,988	1,850	26,360
1944	1,719	1,721	1,039	941	1,061	1,469	4,582	2,300	5,974	5,172	2,433	1,733	30,140
1945	1,592	1,705	858	930	1,442	4,002	2,160	1,523	3,439	3,237	2,058	1,434	24,360
1946	1,797	1,206	592	668	855	1,904	1,519	1,508	2,525	2,522	1,345	1,795	18,230
1947	2,113	1,387	517	714	865	1,582	4,679	3,165	4,708	4,567	2,486	1,961	28,740
1948	2,213	1,739	724	784	1,046	2,907	3,604	2,215	4,498	4,092	2,678	1,883	28,380
1949	2,539	2,040	686	742	951	3,321	5,477	2,309	2,739	2,158	1,831	1,814	26,410
1950	1,795	1,396	605	530	586	1,988	6,617	3,371	2,894	3,312	2,259	2,036	27,390

Yearly discharge, in cubic feet per second, of Missouri River at Omaha, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1928	686	-	-	-	-	-	-	-	-
1929	686	198,000	June 7, 1929	-	36,700	26,500,000	35,700	25,900,000	-
1930	701	84,400	Mar. 15, 1930	5,720	26,300	19,000,000	26,400	19,100,000	-
1931	716	52,800	June 18, 1931	-	16,100	11,600,000	15,000	10,900,000	-
1932	731	137,000	June 19, 1932	4,940	27,200	19,800,000	27,300	19,800,000	-
1933	746	102,000	May 29, 1933	-	24,600	17,800,000	24,980	18,090,000	-
1934	761	125,000	Mar. 5, 1934	3,500	16,210	11,740,000	15,480	11,210,000	-
1935	786	99,800	July 19, 1935	3,600	20,260	14,660,000	20,150	14,590,000	-
1936	806	89,200	Mar. 23, 1936	4,200	19,330	14,030,000	19,870	14,280,000	-
1937	826	111,000	June 24, 1937	2,200	21,130	15,300,000	20,920	15,140,000	-
1938	856	117,000	July 10, 1938	2,500	26,280	19,030,000	28,280	20,480,000	-
1939	876	141,000	Apr. 5, 6, 1939	5,300	25,990	18,820,000	24,620	17,830,000	-
1940	896	54,600	June 5, 1940	3,000	16,280	11,820,000	16,110	11,700,000	-
1941	926	107,000	June 18, 1941	4,200	20,850	14,950,000	22,450	18,250,000	-
1942	956	121,000	June 11, 12, 1942	3,620	31,530	22,820,000	31,620	22,890,000	-
1943	976	200,000	Apr. 12, 1943	6,500	36,410	26,360,000	38,150	27,620,000	-
1944	1006	149,000	Apr. 16, 17, 1944	9,500	41,520	30,140,000	41,050	29,800,000	-
1945	1036	108,000	Mar. 22, 1945	11,100	33,650	24,360,000	32,900	23,820,000	-
1946	1056	84,700	June 24, 1946	4,500	25,190	18,230,000	25,770	18,660,000	-
1947	1086	150,000	July 1, 1947	2,500	39,700	28,740,000	40,610	29,400,000	-
1948	1116	112,000	Mar. 28, 1948	6,200	39,100	28,380,000	39,630	28,770,000	-
1949	1146	183,000	Apr. 13, 1949	6,180	36,480	26,410,000	34,720	25,140,000	-
1950	1176	196,000	Apr. 27, 1950	3,830	37,830	27,390,000	-	-	-

PLATTE RIVER BASIN

20. Grizzly Creek near Walden, Colo. 1/

Location.--Lat 40°38', long. 106°24' (revised), in sec. 29, T. 8 N., R. 80 W., half a mile upstream from confluence with Little Grizzly Creek and $\frac{3}{4}$ miles southwest (revised) of Walden.

Drainage area.--252 sq mi.

Gage.--Water-stage recorder since Sept. 12, 1926. Altitude of gage is 8,060 (estimated from nearby line of levels). May 13, 1904, to Oct. 31, 1905, staff gage at different datum. May 3 to Sept. 30, 1923, chain gage at datum 0.77 ft higher.

Average discharge.--22 years (1904-5, 1926-47), 52.5 cfs.

Extremes.--1904-5, 1923, 1926-47: Maximum discharge observed, 1,340 cfs June 10, 1923, from rating curve extended above 570 cfs; maximum gage height, 6.29 ft Apr. 16, 1938 (ice jam); no flow at times during many years.

Remarks.--Divisions above station for irrigation of about 18,400 acres and return flow from irrigated areas.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	152	12.0	14.1	8.73	-
1905	13.7	a15	a10	a10	a10	a20	a89.9	227	226	34.0	5.1	3.1	a55.4
1906	5.7	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	639	476	130	47.8	29.1	-
1927	18.6	a13	a10	a10	a10	a20	a86.7	a254	234	45.9	35.4	18.3	a63.1
1928	22.7	a25.4	a15	a10	a10	a20	*148	492	263	38.7	34.5	22.6	*92.0
1929	19.4	a18.0	a15	a15	a15	a18	*35	a418	318	63.1	54.1	62.9	*88.0
1930	36.4	*15	*8.0	*5.0	*5.0	a26	369	180	134	30.6	56.2	29.8	*74.4
1931	b21.7	*14	*10	*9.0	*9.0	*12	*40	*75.8	b41.6	b6.58	b7.13	b8.33	*21.3
1932	b20.4	*16	*9.0	*8.0	*8.0	*9.0	*157	b488	b217	b31.8	b22.3	b5.40	*82.9
1933	b7.61	b21.6	*8.0	*7.0	*7.0	*10	*91.2	b275	b224	b7.06	b8.26	b11.4	*56.6
1934	10.2	15.2	*8.0	*8.0	*9.0	*10	*69.0	29.4	1.77	0	0	0	*13.3
1935	0	*2.66	*7.0	*7.0	*7.0	*12	*20	*70.3	162	14.4	*7.86	6.46	*26.3
1936	6.74	*14.9	*10	*9.0	*9.0	*9.0	*230	320	129	24.6	26.4	7.91	*66.3
1937	11.2	12.1	*7.0	*7.0	*7.0	*12	*118	189	77.0	15.7	11.8	4.56	*37.0
1938	7.93	12.6	*9.0	*8.0	*10	*13	*362	299	196	21.6	13.9	29.9	*73.9
1939	17.8	*13.6	*9.0	*7.0	*7.0	*15	*127	216	55.3	6.15	4.62	1.95	*40.2
1940	30.5	*15	*10	*8.0	*7.0	*10	88.2	147	44.8	5.05	.98	2.26	*50.8
1941	12.0	*10.2	*10	*9.0	*9.0	*15	*59.9	200	69.9	10.5	9.07	4.29	*35.1
1942	*8.43	*8.0	*7.0	*6.0	*6.0	*7.0	*99.1	186	160	18.2	8.53	3.50	*43.2
1943	7.23	*15.3	*12	*8.0	*9.0	*20	252	205	155	30.0	14.3	3.42	*60.8
1944	3.39	*11.5	*9.0	*8.0	*8.0	*7.0	*67.5	195	125	14.4	*32	*.02	*57.1
1945	2.23	*8.87	*8.0	*7.0	*8.0	*8.0	*78.4	288	185	56.7	36.2	10.1	*58.3
1946	16.3	33.0	*12	*9.0	*9.0	*20	191	131	104	8.76	4.34	8.19	*45.4
1947	19.5	13.5	*11	*6.0	*6.0	*13	102	236	182	36.7	14.6	10.0	*54.3

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Colorado.

1/ Published as Big Grizzly Creek at Hebron, 1904, and Grizzly Creek at Hebron, 1905.

Monthly and yearly runoff, in acre-feet, of Grizzly Creek near Walden, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	9,045	738	867	519	-
1905	842	a891	a614	a614	a554	a1,230	a5,350	13,980	13,450	2,090	314	184	a40,100
1906	350	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	39,300	28,300	8,000	2,940	1,730	-
1927	1,140	a772	a614	a614	a555	a1,230	a5,160	a15,600	13,900	2,820	2,800	090	a45,700
1928	1,400	a1,510	a921	a614	a574	a1,230	*8,810	30,300	15,600	2,380	2,120	340	*66,800
1929	1,190	a1,070	a922	a833	a1,110	*2,080	a25,700	18,900	3,880	3,880	3,590	740	*63,700
1930	2,240	*893	*492	*307	*278	a1,600	22,000	11,100	7,970	1,880	3,480	1,770	*54,000
1931	b1,330	*833	*615	*553	*500	*738	*2,380	*4,650	b2,480	b405	b438	b498	*15,400
1932	b1,250	*952	*553	*492	*460	*553	*9,340	b30,000	b12,900	b1,960	b1,370	b321	*60,200
1933	b480	b1,290	*492	*430	*388	*615	*5,430	b15,900	b13,300	b434	b508	b678	*40,900
1934	628	904	*492	*492	*500	*615	*4,110	1,810	105	0	0	0	*9,860
1935	0	*158	*430	*430	*589	*738	*1,190	*4,320	9,610	883	484	304	*19,020
1936	415	*889	*615	*553	*518	*553	*13,660	19,680	7,680	1,510	1,620	471	*48,140
1937	688	720	*430	*430	*389	*738	7,040	9,790	4,580	967	723	271	*26,770
1938	487	747	*553	*492	*555	*1,110	*15,570	18,370	11,640	1,330	856	780	*53,490
1939	1,090	*809	*553	*430	*589	*922	*7,580	13,280	3,290	378	284	116	*29,100
1940	1,870	*893	*615	*492	*403	*615	5,250	9,020	2,670	310	60	154	*22,330
1941	739	*610	*615	*553	*500	*922	*3,570	12,270	4,160	647	558	255	*25,400
1942	*518	*476	*430	*369	*333	*430	*5,900	11,410	9,550	1,120	525	208	*31,270
1943	444	*910	*738	*492	*500	*1,230	15,020	12,580	9,200	1,840	877	204	*44,040
1944	208	*684	*553	*369	*345	*430	*4,020	11,960	7,450	887	20	1.4	*26,930
1945	137	*528	*492	*430	*444	*492	*4,860	17,700	11,000	3,480	2,230	602	*42,200
1946	1,000	1,960	*738	*553	*500	*1,230	11,340	8,050	6,220	539	287	487	*32,880
1947	1,200	805	*676	*369	*333	*799	6,050	14,490	10,860	2,250	901	595	*39,340

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	a380	June 4, 1904	3	-	-	-	-
1905	172	b370	May 9, 22, June 11	1	e55.4	o40,100	-	-
1923	566	b1,340	June 10, 1923	-	-	-	-	-
1927	646	554	May 23, 1927	-	c63.1	c45,700	c64.9	c47,000
1928	668	762	May 10, 1928	-	*92.0	*66,800	*90.9	*66,000
1929	686	d731	May 17, 1929	-	*88.0	*63,700	*88.6	*64,200
1930	701	*692	Apr. 11, 1930	-	*74.4	*54,000	*73.3	*53,100
1931	(e)	*f120	May 28, 1931	1	*21.3	*15,400	*21.3	*15,400
1932	(e)	*680	May 15, 1932	3	*82.9	*60,200	*82.2	*59,700
1933	(e)	*530	May 23, 1933	1	*56.6	*40,900	*56.3	*40,700
1934	761	(g)	-	0	*13.3	*9,660	*11.3	*8,220
1935	786	330	June 13, 1935	0	*26.3	*19,020	*26.1	*20,350
1936	806	590	Apr. 23, 1936	-	*66.3	*48,140	*66.2	*48,060
1937	826	320	May 8, 1937	1.6	*37.0	*26,770	*36.9	*26,720
1938	856	755	Apr. 19, 1938	-	*74.0	*53,550	*74.8	*54,160
1939	876	486	May 4, 1939	.1	*40.2	*29,100	*41.5	*30,030
1940	896	237	May 5, 1940	0	*30.8	*22,330	*28.8	*20,920
1941	926	395	May 5, 1941	.5	*35.1	*25,400	*34.3	*24,860
1942	956	508	June 14, 1942	2.5	*43.2	*31,270	*44.1	*31,940
1943	976	542	June 3, 1943	1.0	*60.8	*44,040	*59.9	*43,390
1944	1006	410	May 21, 1944	0	*37.1	*26,930	*36.7	*26,840
1945	1036	716	May 10, 1945	0	*58.3	*42,200	*61.8	*44,740
1946	1056	392	Apr. 29, 1946	.3	*45.4	*32,880	*44.0	*31,870
1947	1086	659	June 22, 1947	.2	*54.3	*39,340	-	-

* Revised.

† Not previously published.

a Maximum observed during period June to September 1904.

b Observed.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Maximum during period May to September 1929.

e From reports of State engineer of Colorado.

f Estimated.

g Not determined; previously published figure probably not maximum for year.

21. Little Grizzly Creek near Hebron, Colo. 1/

Location.--Lat 40°37', long. 106°24', in sec. 32, T. 8 N., R. 80 W., 1 mile upstream from confluence with Grizzly Creek, 3 miles north of Hebron, and 9 miles southwest of Walden.

Drainage area.--96 sq mi, approximately.

Gage.--Water-stage recorder after May 22, 1937. Altitude of gage is 8,070 ft (from nearby level line). June 3, 1904, to Oct. 31, 1905, staff gage at same site at different datum. June 26, 1931, to May 21, 1937, staff gage at same site and datum.

Average discharge.--15 years (1904-5, 1931-45), 54.7 cfs.

Extremes.--1904-5, 1931-45: Maximum discharge observed, 592 cfs June 11, 1905 (gage height, 5.92 ft); no flow at times in 1934 and 1939.

Remarks.--Diversions above station for irrigation of about 11,500 acres. No winter records obtained during most years.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	277	49.0	18.0	10.8	-
1905	14.5	14	11	10	9.0	14	50.7	182	401	138	12.3	6.9	72.0
1906	19.2	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	84.77	a1.0	a10.7	-
1932	a28.0	a34.0	15	10	9.0	15	*104	a360	a356	a143	a39.1	a2.27	93.1
1933	a15.4	24.1	9.0	8.0	7.0	12	79.2	a174	a378	a44.8	a12.1	a9.63	64.1
1934	10.7	8.68	9.2	8.0	10.0	17	66.5	115	7.55	.04	0	0	21.2
1935	4.17	14.6	9.0	7.0	7.5	14	49.4	66.3	301	49.5	7.88	6.13	44.5
1936	5.85	20.4	12	12	12	20	191	334	284	45.0	20.9	5.32	78.4
1937	13.6	14.4	8.0	7.0	7.0	12	67.9	252	165	38.2	10.5	4.49	50.2
1938	4.41	13.7	11	10	11.0	20	178	224	270	38.4	11.9	24.8	68.4
1939	11.8	15.3	11	9.0	9.0	15	86.4	183	105	4.02	1.37	6.40	58.2
1940	13.6	13	8.0	8.0	8.0	15	59.6	151	160	8.97	1.80	3.52	37.4
1941	17.1	12.8	12	12	10	13	30.3	177	145	22.1	11.1	10.1	39.4
1942	73.7	51.5	8.0	3.0	5.0	9.0	52.4	124	213	30.1	6.41	2.66	46.6
1943	7.12	10.8	12	10	10	15	175	184	275	55.9	12.6	3.84	64.0
1944	9.13	12.2	10	7.0	7.0	10	43.0	134	208	29.6	3.07	.56	39.2
1945	6.01	8.3	10	9.0	10	10	38.1	242	258	134	32.7	9.44	64.1

* Revised; differs from figure published by State engineer of Colorado.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	16,480	3,010	1,110	643	-
1905	892	833	676	615	500	861	3,020	11,190	23,860	8,480	756	411	52,090
1906	1,180	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	a239	a61	a637	-
1932	al,720	a2,020	922	615	518	922	*6,190	22,100	21,200	a8,790	a2,400	a135	67,500
1933	a947	1,430	553	492	389	738	4,710	10,700	22,400	2,750	874	573	46,400
1934	656	518	567	492	555	1,050	3,960	7,080	449	2.6	0	0	15,330
1935	256	871	553	430	417	861	2,940	4,080	17,900	3,050	485	365	32,210
1936	360	1,210	738	738	690	1,230	11,370	20,520	15,680	2,770	1,280	317	56,900
1937	858	857	492	450	389	738	4,040	15,480	9,810	2,350	845	267	36,340
1938	271	812	676	615	833	1,230	10,610	13,800	16,090	2,560	732	1,480	49,510
1939	727	912	676	553	500	922	5,140	11,230	6,250	247	84	381	27,620
1940	853	774	492	450	460	922	3,540	9,280	9,490	552	111	210	27,160
1941	1,050	784	738	738	555	799	1,800	10,860	8,600	1,360	684	601	28,550
1942	4,530	1,870	492	184	278	553	3,120	7,630	12,670	1,850	394	158	33,730
1943	438	642	738	615	555	922	10,430	11,300	16,580	5,320	777	229	46,350
1944	562	728	615	430	403	492	2,560	8,210	12,390	1,820	189	33	28,430
1945	370	492	615	553	555	615	2,150	14,890	15,330	2,240	2,010	562	46,580

* Revised; differs from figure published by State engineer of Colorado.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1904	131	-	-	-	-	-	-
1905	172	a592	June 11, 1905	-	72.0	52,090	-
1931	(b)	-	-	-	-	-	-
1932	(b)	a585	May 14, 1932	-	93.1	67,500	90.7
1933	(b)	a513	June 17, 1933	-	64.1	46,400	62.4
1934	781	190	May 13, 1934	0	21.2	15,330	21.1
1935	786	496	June 15, 1935	0	44.5	32,210	45.4

* Not previously published.

a Maximum observed.

b In reports of State engineer of Colorado.

1/ Published as "at Hebron" 1905.

Yearly discharge, in cubic feet per second, of Little Grizzly Creek near Hebron, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	806	525	June 1, 1936	-	*78.4	*56,900	*78.4	*56,780
1937	826	442	May 30, 1937	-	*50.2	*36,340	*49.6	*35,910
1938	858	454	June 8, 1938	.4	*68.4	*49,510	*69.2	*50,060
1939	876	332	June 1, 1939	0	*38.2	*27,620	*37.9	*27,410
1940	896	403	June 6, 1940	.5	*37.4	*27,160	*38.0	*27,610
1941	926	403	May 28, 1941	1.9	*39.4	*28,550	*45.4	*32,890
1942	956	504	June 13, 1942	.6	*46.6	*33,730	*39.6	*28,660
1943	976	495	June 2, 1943	2.2	*64.0	*46,350	*64.1	*46,430
1944	1006	367	June 1, 1944	.2	*59.2	*28,430	*58.6	*28,000
1945	1036	416	June 24, 1945	2.6	*64.1	*46,380	-	-

* Not previously published.

22. Roaring Fork near Walden, Colo.1/

Location.--Lat 40°41', long. 106°26', in sec. 11, T. 8 N., R. 81 W., about 1 mile upstream from mouth and 10 miles southwest of Walden.

Drainage area.--84 sq mi, approximately.

Gage.--Water-stage recorder after Oct. 1, 1923. Datum of gage is 8,037.44 ft above mean sea level, adjustment of 1912 (levels by State engineer of Colorado). May 14, 1904, to Oct. 31, 1905, staff gage at different datum.

Average discharge.--25 years (1904-5, 1923-47), 57.1 cfs.

Extremes.--1904-5, 1923-47: Maximum discharge, 790 cfs June 15, 1924; maximum gage height observed (revised), 4.00 ft June 5, 9, 1905 (datum then in use); minimum discharge observed, 2 cfs Aug. 15, 1904.

Remarks.--Diversions above station for irrigation of about 9,000 acres and return flow from irrigated areas.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	*137	*277	a120	21.8	10.4	-
1905	13.6	b12	b10	b8.0	b8.0	b10	a21	43.6	327	89.5	31.5	9.2	a48.5
1906	13.0	-	-	-	-	-	-	-	-	-	-	-	-
1924	27	28.4	a20	a15	a12	a20	a148	197	316	55.1	30.6	21	a74.0
1925	30.4	b20	a15	a12	a12	a20	59.8	98.4	183	69.3	62.2	78.1	a55.1
1926	73.8	43.1	b25	b20	b20	b50	164	179	230	92.8	47.0	21.1	b78.9
1927	23.3	21.9	b20	b15	b15	b25	145	231	376	148	66.9	41.7	b94.1
1928	38.0	a32.4	a20	a15	a15	a20	79.3	254	287	127	69.5	34.3	a82.7
1929	22.5	20.0	a10	a10	a10	a15	a64.6	128	315	185	84.9	74.9	a78.4
1930	57.0	a35	a20	a12	a15	a20	207	64.9	180	64.0	84.6	33.8	a66.0
1931	42	22	*12	*10	*10	*12	*49.6	34.6	95.3	18.6	22.9	20.7	*29.1
1932	30.3	26	*15	*12	*10	*15	150	219	317	180	76.0	24.9	*89.6
1933	28.4	20.9	*10	*7.0	*6.0	*15	*43.0	57.5	309	44.5	32.9	19.3	*49.3
1934	19.2	13.7	*10	*9.0	*12	*25.0	36.3	83.8	17.5	7.03	15.5	7.21	*21.5
1935	7.98	12.2	12	12	13	16	37.7	47.6	242	88.0	35.1	13.0	44.6
1936	14.7	17.1	*11.6	*9.0	*12	*20	*137	257	325	89.6	50.1	21.8	*80.3
1937	23.3	18.3	*10	*7.0	*8.0	*15	54.0	150	185	77.1	32.3	20.0	*50.1
1938	22.8	20.0	*15	*12	*12	*20	*125	125	332	72.5	56.8	56.3	*70.6
1939	24.8	*20.4	*15	*12	*12	*20	*52.8	87.0	91.4	22.9	29.3	18.8	*33.9
1940	23.2	16.7	*12.0	*10	*10	*20	42.5	67.7	146	32.6	28.5	15.6	*35.3
1941	25.6	*18.3	*14	*12	*12	*15	*34.7	98.0	117	42.3	39.2	24.7	*37.9
1942	*44.4	*25	*12	*6.0	*9.0	*17	*46.9	34.6	161	62.2	36.8	12.5	*39.0
1943	12.0	*16.8	*10	*9.0	*12	*20	157	110	300	101	63.8	23.5	*69.6
1944	16.9	*12.2	*9.0	*8.0	*8.0	*10	31.5	61.4	142	56.1	29.9	13.1	*33.1
1945	17.5	*15.2	*10	*8.0	*8.0	*13	*60.3	158	201	183	100	33.9	*67.7
1946	22.5	28.2	*18	*13	*13	*30	85.5	29.7	154	41.9	46.3	24.6	*42.1
1947	25.0	20.2	*12	*9.0	*9.0	*20	74.7	108	179	123	69.0	33.7	*57.1

* Not previously published; estimated on basis of records for station on North Platte River near Northgate.

a Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

1/ Published as Roaring Fork River near Hebron, 1904, and Roaring Fork of North Platte River near Hebron, 1905.

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of Roaring Fork near Walden, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	\$8,420	\$16,500	\$7,380	1,540	619	-
1905	836	b713	b614	b491	b444	b614	a1,250	2,680	19,500	5,500	1,940	547	a35,100
1906	799	-	-	-	-	-	-	-	-	-	-	-	-
1924	1,660	1,690	a1,230	a922	a690	a1,230	a8,810	12,100	18,800	3,390	1,880	1,250	a53,700
1925	1,870	b1,190	a922	a738	a666	a1,230	3,560	6,050	10,900	4,260	3,820	4,650	a39,900
1926	4,540	2,560	b1,530	b1,230	b1,110	b1,840	9,760	11,000	13,700	5,710	2,890	1,260	b57,100
1927	1,430	1,300	b1,230	b921	b832	b1,530	8,630	14,200	22,400	9,100	4,110	2,480	b68,200
1928	2,340	a1,930	a1,230	a922	a863	a1,230	4,720	15,600	17,100	7,810	4,270	2,040	a60,100
1929	1,380	1,190	a615	a615	a555	a922	a3,840	7,870	18,700	11,400	5,220	4,460	a56,800
1930	3,500	a2,080	a1,230	a738	a833	a1,230	12,300	3,990	10,700	3,940	5,200	2,010	a47,800
1931	2,580	1,310	*738	*615	*555	*738	*2,950	2,130	5,670	1,140	1,410	1,230	*21,100
1932	1,860	1,550	*922	*738	*575	*922	8,920	13,500	18,900	11,100	4,670	1,480	*65,100
1933	1,750	1,240	*615	*430	*332	*922	*2,560	3,540	18,400	2,740	2,020	1,150	*35,700
1934	1,180	817	*615	*553	*666	*1,540	2,160	5,150	1,040	432	955	429	*15,540
1935	491	725	738	738	722	984	2,240	2,930	14,420	5,410	2,180	771	*32,320
1936	906	1,020	*715	*553	*690	*1,230	*8,130	15,830	19,330	5,510	3,080	1,300	*58,290
1937	1,430	1,090	*615	*430	*444	*922	3,220	9,200	11,020	4,740	1,990	1,190	*36,290
1938	1,400	1,190	*922	*738	*666	*1,230	*7,440	7,710	19,730	4,460	2,280	3,350	*51,100
1939	1,530	*1,210	*922	*738	*666	*1,230	*3,140	5,350	5,440	1,410	1,800	1,120	*24,560
1940	1,430	996	*742	*615	*575	*1,230	2,530	4,170	8,670	2,010	1,750	928	*25,650
1941	1,580	*1,090	*861	*738	*666	*922	*2,060	6,030	6,980	2,600	2,410	1,470	*27,410
1942	*2,730	*1,490	*738	*369	*500	*1,050	*2,790	2,130	9,600	3,820	2,260	742	*28,220
1943	740	*1,000	*615	*553	*666	*1,230	9,360	6,770	17,880	6,230	3,920	1,400	*50,360
1944	1,040	*728	*553	*460	*615	1,880	3,770	8,450	3,450	1,840	780	240	*24,060
1945	1,070	*904	*615	*492	*444	*799	*3,590	9,700	11,990	11,220	6,160	2,020	*49,000
1946	1,380	1,680	*1,110	*799	*722	*1,840	5,090	1,820	9,170	2,580	2,840	1,460	*30,490
1947	1,540	1,200	*738	*553	*500	*1,230	4,450	6,670	10,660	7,580	4,240	2,000	*41,360

* Not previously published; see footnote to preceding table.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					Calendar year	
		Water year ending Sept. 30			Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Momentary maximum	Date	Minimum day				
Discharge								
1904	131	*a567	June 14, 1904	2	-	-	-	-
1905	172	*a467	June 9, 1905	-	b48.5	b35,100	-	-
1924	586	790	June 15, 1924	-	b74.0	b53,700	b73.1	b53,100
1925	606	*357	June 22, 1925	-	b55.1	b39,900	b61.5	b44,500
1926	626	510	Apr. 16, 1926	-	c78.9	c57,100	c72.5	c53,500
1927	646	628	June 19, 1927	-	c94.1	c68,200	c86.3	c69,700
1928	666	594	June 2, 1928	-	b82.7	b60,100	b79.5	b57,700
1929	686	539	July 1, 1929	-	b78.4	b56,800	b83.4	b60,400
1930	701	465	Apr. 12, 1930	-	b66.0	b47,800	*63.0	*45,600
1931	(d)	*250	June 8, 1931	-	*29.1	*21,100	*28.7	*20,800
1932	(d)	*600	June 28, 1932	-	*89.6	*65,100	*88.6	*64,400
1933	(d)	*530	June 11, 1933	-	*49.3	*35,700	*47.9	*34,700
1934	761	313	May 30, 1934	-	*21.5	*15,540	*20.5	*14,880
1935	786	461	June 15, 1935	-	44.6	32,320	*45.6	*33,020
1936	806	544	June 1, 1936	-	*80.3	*58,290	*81.0	*58,790
1937	826	443	June 4, 1937	-	*50.1	*36,290	*50.6	*36,670
1938	856	603	Apr. 18, 1938	-	*70.6	*51,100	*70.8	*51,250
1939	876	250	June 6, 1939	-	*33.9	*24,560	*33.2	*24,060
1940	896	440	June 6, 1940	-	*35.3	*25,650	*35.8	*26,010
1941	926	413	July 20, 1941	-	*37.9	*27,410	*39.8	*28,830
1942	956	435	June 13, 1942	-	*39.0	*28,220	*35.4	*25,620
1943	976	572	June 26, 1943	-	*69.6	*50,360	*69.5	*50,330
1944	1006	244	June 26, 1944	-	*33.1	*24,060	*33.5	*24,330
1945	1036	515	June 24, 1945	-	*67.7	*49,000	*69.9	*50,580
1946	1056	447	June 17, 1946	-	*42.1	*30,490	*41.2	*29,800
1947	1086	670	June 21, 1947	-	*57.1	*41,360	-	-

* Not previously published.

a Observed.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d In reports of State engineer of Colorado.

23. North Platte River near Walden, Colo. 1/

Location.--Lat 40°42', long. 106°25' (revised), in sec. 6, T. 8 N., R. 80 W., about 2 miles downstream from Roaring Fork and 8 miles southwest of Walden.

Drainage area.--463 sq mi.

Gage.--Water-stage recorder since Sept. 29, 1923. Altitude of gage is 8,000 ft. May 14, 1904, to Oct. 31, 1905, staff gage at different datum.

Average discharge.--25 years (1904-5, 1923-47), 186 cfs.

Extremes.--1904-5, 1923-47: Maximum discharge recorded, 1,940 cfs Apr. 19, 1938 (gage height, 5.74 ft); minimum daily discharge, 5.2 cfs Sept. 19, 20, 1934.

Remarks.--Divisions above station for irrigation of about 43,000 acres.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	738	158	90.4	43.2	-
1905	57.0	*50	*40	*35	*35	*50	*185	479	950	164	54.3	18.5	*176
1906	27.4	-	-	-	-	-	-	-	-	-	-	-	-
1924	107	*98.2	*50	*40	*35	*40	503	797	858	130	50.1	31.5	*228
1925	111	*90	*35	*25	*25	*100	334	444	477	155	106	138	*170
1926	153	*102	*60	*45	*45	*90	895	654	599	180	79.2	39.4	*245
1927	57.1	*42.5	*25	*30	*30	*60	*648	1,130	1,040	266	135	90.0	*296
1928	102	*103	*80	*60	*60	*80	403	1,220	891	233	111	62.8	*284
1929	51.4	*57.1	*35	*30	*30	*45	a449	852	1,120	436	163	166	*287
1930	120	*81.9	*45	*30	*35	*40	831	396	546	135	208	85.9	*212
1931	b137	b55.0	*30	*20	*25	*30	*250	b239	b284	b38.7	b36.5	b29.5	*97.9
1932	b58.2	b54.0	b30.0	*30	*40	*60	b585	b1,000	b916	b309	b120	b44.0	*270
1933	b46.8	*90.0	*25	*15	*12	*40	*199	b416	b980	b92.9	b85.5	b50.5	*165
1934	46.0	*34.0	*30	*25	*35	*77.6	162	244	50.0	11.4	20.7	11.9	*62.5
1935	11.4	24.5	29	27	28	54.9	102	237	838	214	52.4	28.8	137
1936	29.6	42.8	42	32	40	60	683	1,017	798	170	101	37.7	254
1937	53.0	53.7	*25	*15	*20	*70	333	595	522	158	60.2	28.7	*161
1938	45.7	50.9	*35	*30	*35	*50	*629	*698	901	144	62.4	109	*232
1939	54.6	*46.1	*45	*35	*30	*70	*302	514	296	40.1	36.9	28.9	*125
1940	45.5	48.0	*40	*25	*25	*45	189	425	423	62.8	36.6	25.7	*116
1941	57.0	*34.2	*25	*20	*25	*45	*154	510	378	93.9	67.9	41.2	*121
1942	*78.5	*50	*40	*40	*40	*50	*112	336	596	130	53.1	21.3	*129
1943	*31.7	*37.8	*20	*20	*25	*50	600	524	808	225	106	32.2	*206
1944	30.1	*39.5	*18	*18	*20	*30	*204	441	568	139	42.7	16.4	*130
1945	29.7	*30.8	*20	*15	*15	*27	*212	720	727	460	208	59.6	*211
1946	48.1	59.6	*35	*30	*30	*80	422	334	535	102	72.3	42.0	*149
1947	54.9	56.4	*45	*18	*20	*45	250	625	686	273	112	53.7	*188

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	43,910	9,720	5,560	2,570	-
1905	3,500	*3,000	*2,460	*2,150	*1,940	*3,070	*11,000	29,450	56,530	10,080	3,340	1,100	*127,600
1906	1,680	-	-	-	-	-	-	-	-	-	-	-	-
1924	6,580	*5,840	*3,070	*2,460	*2,010	*2,460	29,900	49,000	51,100	7,990	3,080	1,870	*165,000
1925	6,820	*5,360	*2,150	*1,540	*1,390	*6,150	19,900	27,300	28,400	9,530	6,520	8,210	*123,000
1926	9,410	*6,070	*3,690	*2,770	*2,500	*5,530	53,300	40,200	35,900	11,100	4,870	2,340	*177,000
1927	3,510	*2,530	*1,540	*1,840	*1,670	*3,690	*38,600	69,500	61,900	16,400	8,300	5,360	*215,000
1928	6,270	*6,130	*4,920	*3,690	*3,450	*4,920	24,000	75,000	53,000	14,300	6,820	3,740	*206,000
1929	3,160	*3,400	*2,150	*1,840	*1,670	*2,770	a26,700	52,400	66,600	26,800	10,000	9,880	*207,000
1930	7,380	*4,870	*2,770	*1,840	*1,940	*2,460	49,400	24,300	32,500	8,300	12,800	5,110	*154,000
1931	b8,420	b3,270	*1,840	*1,230	*1,390	*1,840	*14,900	b14,700	b16,900	b2,380	b2,240	b1,760	*70,900
1932	b3,580	b3,210	b1,840	*1,840	*2,300	*3,690	b34,800	b61,500	b54,500	b19,000	b7,380	b2,620	*196,000
1933	b2,870	*2,980	*1,540	*922	*866	*2,460	*11,800	b25,600	b58,300	b5,100	b4,030	b2,000	*119,000
1934	2,830	2,020	*1,840	*1,540	*1,940	*4,770	9,650	15,000	2,970	701	1,270	708	*45,240
1935	698	1,460	1,780	1,660	1,560	3,370	6,070	14,560	49,970	13,140	3,220	1,710	99,100
1936	1,820	2,550	2,580	1,970	2,300	3,690	40,680	62,520	47,510	10,440	6,180	2,250	184,500
1937	3,260	3,190	*1,540	*922	*1,110	*4,300	19,800	36,560	31,080	9,690	3,700	1,710	*116,900
1938	2,810	3,030	*2,150	*1,840	*1,940	*3,070	37,410	42,830	53,630	8,850	3,840	6,470	*168,000
1939	3,850	*2,750	*2,770	*2,150	*1,670	*4,300	*17,960	31,610	17,630	2,470	2,270	1,720	*90,660
1940	2,790	2,850	*2,460	*1,540	*1,440	*2,770	11,230	26,120	25,180	3,860	2,250	1,530	*84,020
1941	3,500	*2,030	*1,540	*1,230	*1,390	*2,770	*9,140	31,360	22,510	5,770	4,180	2,450	*87,870
1942	*4,820	*2,980	*2,460	*2,220	*2,220	*3,070	*8,690	20,640	35,490	8,000	3,260	1,270	*93,360
1943	1,950	*2,250	*1,230	*1,230	*1,390	*3,070	35,730	32,230	48,100	13,850	6,500	1,910	*149,400
1944	1,850	*2,350	*1,110	*1,110	*1,150	*1,840	*12,170	27,120	33,900	8,550	2,630	976	*94,660
1945	1,830	*1,830	*1,230	*922	*833	*1,660	*12,640	44,280	43,260	28,300	12,790	3,540	*153,100
1946	2,960	3,550	*2,150	*1,840	*1,670	*4,920	25,100	20,540	31,840	6,280	4,440	2,500	*107,800
1947	3,990	3,360	*2,770	*1,110	*1,110	*2,770	14,860	38,460	40,820	16,810	6,890	3,200	*136,200

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

1/ Published as "near Hebron" 1904-5.

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second, of North Platte River near Walden, Colo.

Yearly discharge, in cubic feet per second, or North Platte river near Walden, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	a1,280	May 25, 1904	-	-	-	-	-
1905	172	a1,500	June 10, 1905	-	*176	*127,600	-	-
1924	586	1,760	June 15, 1924	-	*228	*165,000	*226	*164,000
1925	606	890	May 31, 1925	-	*170	*123,000	*177	*128,000
1926	626	1,870	Apr. 9, 1926	-	*245	*177,000	*229	*166,000
1927	646	1,640	May 18, 1927	-	*296	*215,000	*310	*225,000
1928	666	1,930	June 1, 1928	-	*284	*206,000	*272	*198,000
1929	686	b1,530	June 28, 1929	-	*287	*207,000	*295	*214,000
1930	701	c1,770	Apr. 12, 1930	-	*212	*154,000	*210	*152,000
1931	(d)	*600	June 8, 1931	10	*97.9	*70,900	*91.1	*66,000
1932	(d)	c1,540	May 15, 1932	-	*270	*196,000	*269	*195,000
1933	(d)	*1,450	June 20, 1933	-	*165	*119,000	*164	*119,000
1934	761	426	May 30, 1934	5.2	*62.5	*45,240	*58.7	*42,480
1935	786	1,640	June 15, 1935	8	137	99,100	141	102,100
1936	806	1,580	June 1, 1936	-	254	184,500	256	*185,500
1937	826	1,260	June 5, 1937	-	*161	*116,900	*161	*116,900
1938	856	1,940	Apr. 19, 1938	-	*232	*168,000	*233	*168,900
1939	876	866	May 4, 1939	12	*125	*90,680	*124	*89,880
1940	896	1,040	June 7, 1940	-	*116	*84,020	*114	*82,990
1941	926	879	May 28, 1941	-	*121	*87,870	*126	*91,060
1942	956	1,340	June 13, 1942	15	*129	*95,360	*122	*88,530
1943	976	1,660	June 2, 1943	-	*206	*149,400	*206	*149,500
1944	1006	836	June 1, 1944	-	*130	*94,660	*130	*94,240
1945	1036	1,220	June 24, 1945	-	*211	*153,100	*217	*156,900
1946	1056	1,060	June 18, 1946	-	*149	*107,800	*151	*109,200
1947	1086	1,840	June 22, 1947	-	*188	*136,200	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Not previously published.

a Maximum observed.

b Maximum during period May to September 1929.

c Maximum daily.

d In reports of State engineer of Colorado.

24. North Fork North Platte River at Hight, Colo.

Location.--Lat 40°45', long. 106°30', in sec. 22, T. 9 N., R. 81 W., at Hight, about 7 miles upstream from mouth and 11 miles (revised) west of Walden.

Drainage area.--86 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 8,000 ft (estimated from nearby line of levels).

Extremes.--1904-5: Maximum discharge observed, 380 cfs June 8, 18, 19, 1905 (gage height, 2.5 ft); minimum observed, 13 cfs Sept. 25, 1905 (discharge measurement).

Remarks.--Divisions above station for irrigation of about 8,600 acres.

Monthly and yearly mean discharge, in cubic feet per second

Year	Apr.	May	June	July	Aug.	Sept.	Oct.
1904	-	*84.7	159	105	77.5	46.9	43.3
1905	76.3	61.9	162	107	65.8	29.6	25.3

* Not previously published; estimated on basis of seasonal flow pattern.

Monthly and yearly runoff, in acre-feet

Year	Apr.	May	June	July	Aug.	Sept.	Oct.
1904	-	*5,210	9,460	6,460	4,760	2,790	2,660
1905	4,540	3,810	9,640	6,580	4,050	1,760	1,560

* Not previously published; estimated on basis of seasonal flow pattern.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	The season				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	*a280	May 27, 1904	-	-	-	-	-
1905	172	*380	June 8, 18, 19	-	-	-	-	-

* Not previously published.

a Maximum observed during period May to September 1904.

25. North Fork North Platte River near Walden, Colo.

Location.--Lat 40°44', long. 106°25' (revised), in NW¼ sec. 29, T. 9 N., R. 80 W., a quarter of a mile upstream from mouth and 7 miles west of Walden.

Drainage area.--168 sq mi.

Gage.--Water-stage recorder. Datum of gage is 7,972.23 ft above mean sea level, adjustment of 1929 (levels by Colorado Water Conservation Board). Prior to Oct. 1, 1928, at different datum.

Average discharge.--14 years (1923-28, 1936-45), 74.9 cfs.

Extremes.--1923-28, 1936-45: Maximum discharge, 694 cfs Apr. 19, 1926 (gage height, 2.63 ft, datum then in use), from rating curve extended above 400 cfs; minimum daily recorded, 2.8 cfs May 8, 1940.

Remarks.--Diversions above station for irrigation of about 18,800 acres. Natural flow of stream also affected by return flow from irrigated areas. Some water imported above station from Big Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	57.0	a48.9	b20	b15	b15	b15	a110	142	195	95.4	53.4	24.1	b65.8
1925	47.4	a24	a20	a20	a20	a35	70.4	54.8	141	151	89.9	83.6	a63.2
1926	101	a50.9	a30	a25	a25	a80	253	152	202	191	81.8	34.0	a102
1927	28.3	a25.1	a25	a20	a20	a75	266	181	260	212	117	65.6	a108
1928	68.6	a60	a40	a20	a20	a80	a200	219	260	201	118	71.4	a113
1937	*50	*40	*20	*13	*15	*25	*35	*98.0	176	146	67.3	33.1	*60.2
1938	36.5	32.8	*20	*20	*25	*35	*227	168	252	158	82.0	67.1	*92.0
1939	36.6	*36.1	*45	*35	*30	*55	*73.4	48.5	66.2	35.6	59.0	40.7	*46.8
1940	61.7	*54.7	*45	*25	*25	*40	94.1	41.8	84.9	52.4	40.3	31.3	*49.6
1941	39.9	*35	*25	*20	*20	*45	*120	89.7	104	90.8	82.2	44.5	*59.8
1942	*63.3	*50	*20	*10	*15	*35	*273	44.8	91.0	94.2	62.4	24.4	*65.4
1943	29.9	*34.3	*20	*15	*20	*40	158	67.4	232	154	91.5	31.8	*74.5
1944	51.4	*57.9	*20	*20	*25	*35	*73.3	80.1	83.2	94.9	56.9	18.8	*51.4
1945	38.6	*31.0	*20	*15	*15	*25	*106	210	196	245	186	64.9	*96.6

* Not previously published; estimated on basis of records for North Platte River near Northgate.
a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	3,500	a2,910	b1,230	b922	b863	b922	a6,540	8,730	11,600	5,870	3,280	1,430	b47,800
1925	2,910	a1,430	a1,230	a1,230	a1,110	a2,150	4,190	3,370	8,390	9,280	5,530	4,970	a45,800
1926	6,210	a3,030	a1,840	a1,530	a1,390	a4,910	15,100	9,350	12,000	11,700	5,030	2,020	a74,100
1927	1,740	a1,490	a1,530	a1,230	a1,110	a4,600	15,800	11,100	15,500	13,000	7,190	3,900	a78,200
1928	4,220	a3,560	a2,460	a1,790	a1,150	a4,910	a11,900	13,500	15,500	12,400	7,260	4,250	a82,300
1937	*3,070	*2,380	*1,230	*799	*833	*1,540	*2,080	*6,030	10,480	9,000	4,140	1,970	*43,550
1938	2,250	1,950	*1,230	*1,230	*1,390	*2,150	*13,530	10,330	15,000	8,510	5,040	3,990	*66,600
1939	2,250	*2,150	*2,770	*2,150	*1,670	*3,380	*4,370	2,980	3,940	2,190	3,320	2,420	*33,900
1940	3,800	*3,260	*2,770	*1,540	*1,440	*2,460	5,600	2,570	5,050	3,220	2,480	1,860	*36,050
1941	2,450	*2,080	*1,540	*1,230	*1,110	*2,770	*7,120	5,510	6,170	5,580	5,050	2,650	*43,260
1942	*3,890	*2,980	*1,230	*615	*833	*2,150	*16,220	2,750	5,420	5,790	3,990	1,450	*47,320
1943	1,840	*2,040	*1,230	*922	*1,110	*2,460	9,410	4,140	13,800	9,490	5,630	1,890	*53,960
1944	3,160	*3,450	*1,230	a1,230	*1,440	*2,150	*4,360	4,930	4,950	5,840	3,500	1,120	*37,360
1945	2,370	*1,850	*1,230	*922	*833	*1,540	*6,300	12,880	11,850	15,080	11,430	3,860	*69,940

* Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1924	586	416	June 15, 1924	-	a65.8	a47,800	a63.0	a45,700	
1925	606	346	June 23, 1925	-	b63.2	b45,800	b70.9	b51,300	
1926	626	694	Apr. 19, 1926	-	b102	b74,100	b93.6	b67,800	
1927	646	520	June 30, 1927	-	b108	b78,200	b116	b83,700	
1928	666	502	June 3, 1928	-	b113	b82,300	-	-	
1937	826	403	June 5, 1937	-	*60.2	*43,550	*58.4	*42,300	
1938	856	o500	Apr. 20, 1938	-	*92.0	*66,600	*94.4	*68,340	
1939	876	236	June 1, 1939	6.8	*46.8	*33,900	*50.5	*36,560	
1940	896	331	May 22, 1940	2.8	*49.6	*36,050	*44.5	*32,290	
1941	926	325	May 5, 1941	-	*59.8	*43,260	*62.6	*45,290	
1942	956	404	June 13, 1942	-	*65.4	*47,320	*61.2	*44,630	
1943	976	547	June 2, 1943	-	*74.5	*53,960	*78.3	*55,890	
1944	9006	279	May 20, 1944	-	*51.4	*37,360	*48.1	*34,920	
1945	1036	512	May 2, 1945	-	*96.6	*69,940	-	-	

* Not previously published.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Maximum daily.

Monthly and yearly runoff, in acre-feet, of Michigan River near Lindland, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	a879	a1,190	a994	-
1932	a1,110	a571	a277	a184	a173	a307	a1,190	a9,350	a13,700	a4,340	a2,130	a780	\$34,100
1933	a808	a744	a307	a246	a222	a307	a2,980	a9,840	a20,900	a5,510	a1,300	a1,220	\$42,400
1934	821	870	a369	a246	a167	a246	1,250	4,180	2,640	1,210	1,240	691	\$13,930
1935	356	207	a123	a123	a167	a246	a1,760	3,180	13,810	4,240	1,320	563	\$26,100
1936	443	a893	a492	a307	a288	a492	a3,320	11,100	9,210	2,050	1,580	799	\$30,970
1937	613	a417	a184	a123	a111	a184	a1,150	4,820	5,700	2,240	803	752	\$17,100
1938	795	a775	a369	a307	a444	a615	a1,640	11,450	20,640	2,720	1,240	2,020	\$43,020
1939	924	a559	a307	a246	a222	a307	a1,270	9,910	6,620	2,060	600	902	\$23,930
1940	919	a627	a430	a369	a345	a615	1,150	5,250	5,880	1,600	1,110	533	\$18,830
1941	457	a298	a246	a184	a167	a184	a624	6,720	5,320	1,340	1,300	950	\$19,790

* Not previously published; estimated on basis of records for Laramie River near Jelm, Wyo.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	(a)	-	-	-	-	-	-
1932	(a)	a530	May 22, 1932	-	a47.0	\$34,100	a46.8
1933	(a)	663	June 11, 1933	-	a58.5	a42,400	a58.8
1934	761	128	May 11, 1934	-	a19.2	a13,930	a17.4
1935	786	547	June 16, 1935	-	a36.0	a26,100	a37.6
1936	806	309	May 28, 1936	1.8	a42.7	a30,970	a41.8
1937	826	292	July 13, 1937	-	a23.6	a17,100	a24.6
1938	856	597	June 6, 1938	-	a59.4	a43,020	a59.2
1939	876	322	June 5, 1939	-	a33.0	a23,930	a33.3
1940	896	242	June 1, 1940	-	a25.9	a18,830	a24.6
1941	926	376	May 13, 1941	-	a27.3	a19,790	-

* Not previously published.

a In reports of State engineer of Colorado.

28. Michigan River at Haworth School, near Lindland, Colo.

Location.--Lat 40°37', long. 106°05', in SE $\frac{1}{4}$ sec. 36, T. 8 N., R. 78 W., a half a mile (revised) east of Haworth School, 2 $\frac{1}{2}$ miles northwest of Lindland, and about 3 miles downstream from North Fork.

Drainage area.--114 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 8,500 ft (estimated on basis of a benchmark about a mile away).

Extremes.--1937-39: Maximum discharge, 580 cfs June 6, 1938 (gage height, 3.50 ft); minimum daily, 9.2 cfs Aug. 19, 22, 1939, but may have been less during periods of no gage-height record.

Remarks.--Diversions above station for irrigation of about 2,340 acres. Water exported from tributaries above station to South Platte River basin by Cameron Pass and Michigan ditches (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	88.7	114	57.8	18.3	14.4	-
1938	15.9	a15.9	a10	a7.0	a7.0	a10	a49.9	228	420	74.7	26.6	59.0	\$75.2
1939	22.6	a18	a10	a6.0	a6.0	a15	a77.3	237	165	55.2	12.8	18.3	\$52.2

* Not previously published; estimated on basis of records for Laramie River near Jelm, Wyo.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	5,450	6,760	3,560	1,120	855	-
1938	980	a946	a615	a430	a389	a615	a2,970	13,990	25,000	4,590	1,630	2,320	\$54,480
1939	1,390	a1,070	a615	a369	a333	a922	a4,600	14,590	9,830	2,160	789	1,090	\$37,760

* Not previously published; estimated on basis of records for Laramie River near Jelm, Wyo.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1937	826	a450	July 13, 1937	-	-	-	-
1938	856	580	June 6, 1938	-	a75.2	a54,480	a76.0
1939	876	402	June 6, 1939	-	a52.2	a37,760	-

* revised.

* Not previously published.

a Maximum during period May to September.

29. Michigan River at Walden, Colo.1/

Location.--Lat 40°44', long. 106°17', in NW¼ sec. 21, T. 9 N., R. 79 W., at downstream side of former bridge, several hundred feet upstream from State Highway 125, half a mile north of Walden, and 1½ miles upstream from Illinois Creek.

Drainage area.--185 sq mi.

Gage.--Water-stage recorder at described site after July 21, 1925. Datum of gage is 8,044.87 ft above mean sea level, adjustment of 1912. May 9, 1904, to Oct. 31, 1905, staff gage half a mile upstream at different datum. May 2 to Aug. 8, 1923, staff gage and Aug. 9, 1923, to July 20, 1925, chain gage at same site and datum.

Average discharge.--24 years (1923-47), 55.7 cfs.

Extremes.--1904-5, 1923-47: Maximum discharge observed, 1,070 cfs June 10, 1923, from rating curve extended above 610 cfs; maximum gage height, 3.55 ft June 22, 1947; minimum daily discharge, 1.1 cfs Aug. 24, 1939, but may have been less during periods of no gage-height record.

Remarks.--Diversions above station for irrigation of about 17,500 acres. Water also diverted above station to South Platte River basin by Cameron Pass and Michigan ditches (see elsewhere in this report).

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	320	137	54.3	29.7	-
1905	26.8	-	-	-	-	-	-	-	377	97.5	51.2	8.9	-
1906	15.1	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	181	508	171	59.1	47.9	-
1924	55.3	45.0	*13	*8.0	*7.0	*7.0	*166	174	387	88.7	13.9	9.7	*80.9
1925	42.9	*41.6	*13	*8.0	*8.0	*35	120	117	244	81.8	75.0	65.2	*71.0
1926	56.7	a40	*20	*10	*10	*30	210	314	378	217	56.4	24.6	*114
1927	30.2	*13	*10	*7.0	*7.0	*20	*110	351	294	70.5	46.0	29.9	*82.7
1928	36.4	a35.0	*26	*15	*15	*25	*80	336	370	151	59.6	17.5	*97.3
1929	25.3	*23.1	*10	*7.0	*7.0	*10	a223	342	501	141	69.1	87.5	*120
1930	53.3	*25	*15	*7.0	*7.0	*10	170	47.3	118	14.9	89.6	43.3	*49.9
1931	*40	*15	*9.0	*5.0	*5.0	*7.0	*78.5	b26.0	b129	b25.5	b20.7	b16.7	*31.3
1932	b31.2	b27.5	*8.0	*4.0	*4.0	*10	*146	b508	b246	b69.7	b45.2	b23.9	*77.0
1933	*b24.5	*23.5	*9.0	*4.0	*5.0	*10	*69.6	b106	b378	b42.2	b24.6	b24.6	*59.7
1934	24.4	24.1	*12	*7.0	*7.0	*20	*20	39.4	22.8	5.57	9.30	6.04	*16.4
1935	9.25	6.72	8.0	7.5	8.0	18	71.7	23.5	222	32.5	33.7	17.8	36.0
1936	17.3	*28.9	*10	*4.0	*4.0	*10	*166	157	90.6	39.7	42.3	14.0	*48.6
1937	21.6	18.1	*6.0	*3.0	*3.0	*10	*55.4	44.1	75.5	51.9	17.2	13.0	*26.6
1938	19.0	26.0	*13	*7.0	*7.0	*10	*134	212	356	51.5	27.3	55.9	*76.4
1939	28.3	*16.7	*15	*10	*8.0	*20	*98.8	123	90.3	18.5	6.22	13.8	*37.3
1940	19.6	*23.1	*15	*7.0	*6.0	*13	56.1	57.5	70.1	21.5	12.0	12.1	*26.0
1941	22.3	*12.8	*8.0	*5.0	*5.0	*13	*43.7	115	94.0	17.1	18.5	14.9	*30.8
1942	31.5	*18.5	*5.0	*3.0	*3.0	*8.0	*94.1	81.5	223	22.1	17.9	14.1	*43.3
1943	18.8	*18.7	*6.0	*5.0	*5.0	*15	115	48.1	143	28.3	20.9	9.08	*35.8
1944	12.7	*16.8	*5.0	*4.0	*4.0	*7.0	*47.2	88.1	129	27.4	9.12	4.09	*29.4
1945	12.1	*12.2	*6.0	*4.0	*4.0	*4.0	*68.9	91.5	148	77.2	62.7	21.6	*42.9
1946	24.5	28.6	*13	*7.0	*7.0	*20	78.3	88.9	125	26.5	25.6	20.4	*58.7
1947	28.6	19.1	*15	*4.0	*4.0	*15	84.5	177	242	80.7	42.8	28.2	*61.9

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

‡ Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	19,040	8,420	3,340	1,770	-
1905	1,650	-	-	-	-	-	-	-	22,430	6,000	1,920	530	-
1906	928	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	11,100	30,200	10,500	3,630	2,850	-
1924	3,400	2,680	*799	*492	*403	*430	*9,880	10,700	23,000	5,450	855	577	*58,700
1925	2,640	*2,480	*799	*492	*444	*2,150	7,140	7,190	14,500	5,030	4,610	3,880	*51,400
1926	3,490	a2,380	*1,230	*615	*555	*1,840	12,500	19,300	22,500	13,300	3,470	1,460	*82,600
1927	1,860	*774	*615	*430	*389	*1,230	*6,550	21,600	17,500	4,330	2,830	1,780	*59,900
1928	2,240	a2,080	*1,540	*922	*863	*1,540	*4,760	20,700	22,000	9,280	3,660	1,040	*70,600
1929	1,560	*1,370	*615	*430	*389	*1,540	*13,300	21,000	29,800	8,870	4,250	5,210	*67,200
1930	3,280	*1,490	*922	*430	*389	*615	10,100	2,910	7,020	918	5,610	2,580	*56,200

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

1/ Published as Michigan Creek near Walden, 1904-5, and as Michigan Creek at Walden, 1923-28. Published by State engineer of Colorado as "near Walden" 1931-32.

Monthly and yearly runoff, in acre-feet, of Michigan River at Walden, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	#2,460	#893	#553	#307	#278	#430	#4,670	b1,600	b7,680	b1,570	b1,270	b994	\$22,700
1932	b1,920	b1,640	#492	#246	#230	#615	#8,690	b18,900	b14,600	b4,280	b2,780	b1,420	\$55,800
1933	b1,510	#1,400	#553	#246	#167	#615	#4,140	b6,520	b22,500	b2,590	b1,510	b1,460	\$43,200
1934	1,500	1,440	#738	#430	#389	#1,230	#1,190	2,420	1,360	220	572	360	\$11,800
1935	569	400	492	461	444	1,110	4,270	1,450	13,230	2,000	2,070	1,060	27,560
1936	1,060	#1,720	#615	#246	#230	#615	#9,860	9,650	5,390	2,440	2,600	833	\$35,260
1937	1,330	1,080	#369	#184	#167	#615	#3,300	2,710	4,490	3,190	1,060	774	\$19,270
1938	1,170	1,550	#799	#430	#389	#615	#7,970	13,010	21,210	3,170	1,680	3,330	\$55,320
1939	1,740	#992	#922	#615	#444	#1,230	#5,760	7,560	5,370	1,140	382	822	\$26,980
1940	1,200	#1,370	#922	#430	#345	#799	3,340	3,540	4,170	1,320	738	720	\$18,890
1941	1,370	#764	#492	#307	#278	#799	#2,600	7,040	5,600	1,050	1,130	889	\$22,320
1942	1,930	#1,100	#307	#184	#167	#492	#5,600	5,010	13,270	1,360	1,100	859	\$31,360
1943	1,150	#1,110	#369	#307	#278	#922	6,830	2,960	9,520	1,620	1,280	540	\$25,890
1944	780	#998	#307	#246	#230	#430	#2,910	5,410	7,660	1,690	561	243	\$21,360
1945	746	#724	#369	#246	#222	#369	#4,100	5,630	8,790	4,750	3,860	1,280	\$31,090
1946	1,510	1,700	#799	#430	#389	#1,230	4,660	5,470	7,440	1,630	1,570	1,220	\$28,050
1947	1,760	1,130	#922	#246	#222	#922	5,030	10,910	14,390	4,960	2,630	1,680	\$44,800

* Not previously published; estimated on basis of records for North Platte River near Northgate.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	#460	June 15, 16, 1904	-	-	-	-	-
1905	172	#700	June 11, 14, 1905	-	-	-	-	-
1923	566	cl, 070	June 10, 1923	-	-	-	-	-
1924	586	0780	June 16, 1924	-	#80.9	#58,700	#79.6	#57,800
1925	606	c560	June 7, 1925	-	#71.0	#51,400	#72.6	#52,500
1926	626	d860	May 27, 1926	-	#114	#82,600	#109	#78,800
1927	646	532	May 24, 1927	-	#82.7	#59,900	#86.3	#62,500
1928	666	831	June 3, 1928	-	#97.3	#70,600	#94.1	#68,300
1929	686	746	May 15, 1929	-	#120	#87,200	#123	#89,400
1930	701	d500	Apr. 9, 10, 1930	-	#49.9	#36,200	#47.5	#34,400
1931	(e)	#f302	June 9, 1931	-	#31.3	#22,700	#31.5	#22,900
1932	(e)	#f583	May 24, 1932	-	#77.0	#55,800	#76.2	#55,200
1933	(e)	#575	June 14, 1933	-	#59.7	#43,200	#60.0	#43,430
1934	761	134	May 31, 1934	-	#16.4	#11,800	#13.3	#9,330
1935	786	569	June 16, 1935	-	38.0	27,560	40.7	29,490
1936	806	403	Apr. 20, 1936	-	#48.6	#35,260	#47.7	#34,640
1937	826	430	July 15, 1937	-	#26.6	#19,270	#27.6	#20,010
1938	856	615	June 8, 1938	-	#76.4	#55,320	#76.6	#55,460
1939	876	289	June 2, 1939	1.1	#37.3	#26,980	#37.0	#26,820
1940	896	199	June 7, 1940	-	#26.0	#18,890	#24.8	#18,030
1941	926	252	May 15, 1941	-	#30.8	#22,320	#31.8	#23,030
1942	956	575	June 14, 1942	-	#43.3	#31,360	#42.3	#30,650
1943	976	390	June 3, 1943	-	#35.8	#25,890	#35.0	#25,340
1944	1006	280	May 19, 1944	-	#29.4	#21,360	#29.1	#21,120
1945	1036	480	Apr. 23, 1945	-	#42.9	#31,090	#45.9	#33,260
1946	1056	318	June 19, 1946	-	#38.7	#28,050	#38.5	#27,850
1947	1086	830	June 22, 1947	-	#61.9	#44,800	-	-

* Revised; superseded figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published.

a Maximum observed during period May to September 1904.

b Maximum observed during period June to September 1905.

c Maximum observed.

d Maximum daily.

e In reports of State engineer of Colorado.

f Maximum during period May to September 1931, 1932.

30. Illinois Creek near Rand, Colo.

Location.--Lat 40°27', long. 106°11', in sec. 30, T. 6 N., R. 78 W., about 1 mile north of Rand and $2\frac{1}{2}$ miles upstream from Willow Creek.Drainage area.--71 sq mi, approximately.Gage.--Water-stage recorder. Datum of gage is 8,550.93 ft above mean sea level, adjustment of 1912.Average discharge.--9 years (1931-40), 32.8 cfs.Extremes.--1931-40: Maximum discharge, 745 cfs May 23, 1932 (gage height, 2.58 ft), from rating curve extended above 250 cfs; minimum daily, 1.3 cfs Sept. 3, 1934, but may have been less during periods of no gage-height record.Remarks.--Natural flow of stream affected by diversions above station for irrigation of about 2,200 acres (from Water Conservation Board investigation of irrigation facilities, survey of 1937-39) and return flow from irrigated areas. No winter records obtained.Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second, of Illinois Creek near Rand, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	24.6	8.6	8.5	-
1932	†8.6	9.5	3.1	†2.0	†2.0	†3.0	†4.0	226	200	56.4	18.9	6.9	†48.1
1933	7.3	†7.0	†2.0	†2.0	†2.0	†3.0	†15	107	252	34.5	7.5	11.2	†37.5
1934	8.13	†4.78	†3.0	†2.0	†3.0	†4.0	†21.3	74.9	27.4	7.10	3.13	4.18	†13.7
1935	3.48	†3.0	†2.0	†2.0	†2.0	†2.0	†13.9	52.1	205	47.5	7.76	5.21	†28.6
1936	6.32	†9.0	†4.0	†3.0	†3.0	†3.0	†68.9	186	106	27.5	27.5	7.43	†37.6
1937	6.79	†8.0	†3.0	†2.5	†2.5	†3.0	†26.4	97.5	91.8	33.6	9.12	6.21	†24.3
1938	10.2	†7.50	†4.0	†3.0	†4.0	†7.0	†47.0	203	232	43.4	9.54	16.5	†49.0
1939	8.63	†6.12	†3.5	†2.5	†2.5	†3.5	†51.5	187	117	14.4	5.20	3.95	†33.9
1940	4.98	†4.32	†2.5	†2.0	†2.0	†4.0	†31.3	93.2	95.1	25.5	5.65	4.28	†22.9

† Corrected; differs from figure published by State engineer of Colorado.

* Not previously published; estimated on basis of records for Laramie River near Jeim, Wyo.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	1,510	529	504	-
1932	528	565	191	†123	†115	†184	†2,380	13,900	11,900	3,470	1,160	412	†34,900
1933	448	†417	†123	†123	†111	†184	†893	6,580	15,000	2,120	448	666	†27,100
1934	500	†285	†184	†123	†167	†246	†1,270	4,600	1,630	437	192	249	†9,880
1935	214	†179	†123	†123	†111	†123	†829	3,200	12,100	2,920	477	310	†20,710
1936	388	†536	†246	†184	†173	†184	†4,100	11,410	6,280	1,690	1,690	442	†27,320
1937	417	†476	†184	†154	†139	†184	†1,570	6,000	5,460	2,080	561	370	†17,580
1938	630	†448	†246	†184	†222	†430	†2,790	12,510	13,790	2,870	586	984	†35,490
1939	531	†364	†215	†154	†139	†215	†3,060	11,480	6,950	886	320	235	†24,550
1940	306	†267	†154	†123	†115	†246	†1,960	5,790	5,660	1,570	348	255	†16,620

* Not previously published; estimated on basis of records for Laramie River near Jeim, Wyo.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	(a)	-	-	-	-	-	-	-	-
1932	(a)	†745	May 23, 1932	-	†48.1	†34,900	†47.8	†34,600	-
1933	(a)	†445	June 7, 1933	-	†37.5	†27,100	†37.4	†27,100	-
1934	761	123	May 12, 1934	-	†13.7	†9,880	†13.0	†9,430	-
1935	806	520	June 16, 1935	-	†28.6	†20,710	†29.5	†21,360	-
1936	826	328	Apr. 21, 1936	-	†37.6	†27,320	†37.5	†27,320	-
1937	806	230	June 3, 1937	-	†24.3	†17,580	†24.6	†17,580	-
1938	856	447	May 30, 1938	-	†49.0	†35,490	†48.7	†35,280	-
1939	876	277	June 6, 1939	-	†33.9	†24,550	†33.4	†24,160	-
1940	896	222	June 3, 1940	-	†22.9	†16,620	-	-	-

* Not previously published.

a In reports of State engineer of Colorado.

31. Willow Creek near Rand, Colo.

Location.--Lat 40°28', long. 106°13', in sec. 23, T. 6 N., R. 79 W., about 2½ miles up-stream from mouth and 2½ miles northwest of Rand.

Drainage area.--71 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 8,600 ft (estimated on basis of known elevation about a mile away).

Average discharge.--9 years (1931-40), 9.68 cfs.

Extremes.--1931-40: Maximum discharge recorded (revised), 200 cfs June 7, 1933 (gage height, 3.40 ft), from rating curve extended above 46 cfs; no flow many days in 1934.

Remarks.--Diversions above station for irrigation of about 4,000 acres.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	3.22	3.74	2.60	-
1932	†3.65	†4.0	†2.0	†1.5	†2.0	†4.0	†38.0	†71.2	†64.0	†14.5	†8.0	†3.90	†18.0
1933	†3.61	†3.5	†2.0	†1.5	†1.5	†2.5	†24.4	†23.5	†71.9	†4.42	†4.32	†4.43	†12.2
1934	2.95	4.54	†2.0	†2.0	†2.5	†4.0	†3.84	3.80	1.14	.09	.27	.95	†2.34
1935	1.02	†3.93	†2.2	†2.2	†2.2	†3.3	†7.41	5.63	54.8	7.65	7.17	4.16	†7.38
1936	4.55	†4.0	†3.0	†2.0	†2.0	†3.0	†17.8	45.2	28.8	12.9	16.2	3.49	†12.0
1937	2.45	†4.5	†2.0	†1.5	†1.5	†3.0	†83.2	8.62	20.5	7.23	5.06	1.56	†5.51
1938	2.75	†2.64	†2.0	†1.5	†1.5	†3.0	†22.7	60.4	89.6	11.9	5.17	8.95	†17.7
1939	4.89	†4.40	†2.5	†1.5	†1.5	†2.0	†15.7	36.5	21.9	3.84	2.57	2.54	†8.35
1940	2.33	†1.87	†1.5	†1.5	†1.5	†2.5	9.82	7.78	10.3	2.52	1.54	1.02	†3.67

* Revised; supersedes figure previously published by State engineer of Colorado.

* Not previously published; estimated on basis of records for Laramie River near Jeim, Wyo.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet, of Willow Creek near Rand, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	a198	-	a155	-
1932	a224	a238	a123	*92	*115	*246	a2,260	*4,380	a3,810	a892	a492	a232	*13,100
1933	a222	*208	*123	*92	*83	*154	*1,450	a1,440	a4,270	a272	a266	a264	*8,840
1934	181	270	*123	*123	*139	*246	*228	234	68	5.4	17	57	*1,890
1935	82	*23	*12	*12	*12	*18	*441	348	3,260	471	441	249	*5,340
1936	279	*238	*184	*123	*115	*184	*1,080	2,780	1,720	796	994	207	*8,680
1937	151	*267	*123	*92	*83	*184	*495	550	1,220	444	311	93	*3,990
1938	169	157	*123	*92	*83	*184	*1,350	3,710	5,330	734	318	533	*12,780
1939	300	*260	*154	*92	*83	*123	*936	2,240	1,300	236	158	151	*6,030
1940	143	*111	*92	*92	*86	*154	584	478	612	155	94	61	*2,680

* Revised; supersedes figure previously published by State engineer of Colorado.

† Not previously published; estimated on basis of records for Laramie River near Jelm, Wyo.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	(a)	-	-	-	-	-	-
1932	(a)	*175	May 20, 1932	-	*18.0	*13,100	*18.0
1933	(a)	*b200	June 7, 1933	-	*12.2	*8,840	*12.3
1934	781	11	May 4, 1934	0	*2.34	*1,690	*1.68
1935	786	162	June 16, 1935	-	*7.38	*5,340	*8.22
1936	806	130	June 3, 1936	-	*12.0	*8,680	*11.7
1937	826	121	June 4, 1937	-	*6.51	*3,990	*5.39
1938	856	168	June 8, 1938	-	*17.7	*12,780	*18.0
1939	876	116	June 1, 1939	-	*8.35	*6,030	*7.84
1940	896	104	June 6, 1940	-	*5.67	*2,680	-

* Revised.

† Not previously published.

a From reports of State engineer of Colorado.

b Maximum for period May to November, but may have been higher during period of no gage-height record.

32. Illinois Creek at Walden, Colo.

Location.--Lat 40°44', long. 106°18', in NW $\frac{1}{4}$ sec. 29, T. 9 N., R. 79 W., half a mile southwest of Walden, and 2 miles upstream from mouth.

Drainage area.--259 sq mi.

Gage.--Water-stage recorder at described site after July 1, 1937. Datum of gage is 8,038.80 ft above mean sea level, adjustment of 1912. Prior to Mar. 31, 1935, staff gage 500 ft upstream at different datum. Mar. 31, 1935, to June 30, 1937, water-stage recorder 350 ft upstream at datum 2.24 ft higher.

Average discharge.--24 years (1923-47), 36.1 cfs.

Extremes.--1923-47: Maximum discharge, 2,520 cfs May 28, 1926 (gage height, 6.4 ft, site and datum then in use); from rating curve extended above 440 cfs; no flow at times during 1934-37, 1939-40, 1942.

Remarks.--Natural flow of stream affected by diversions above station for irrigation of about 23,200 acres and return flow from irrigated areas.

Cooperation.--Records for 1931-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	221	428	178	56.7	40.8	-
1924	34.3	*24.2	*8.0	*4.0	*4.0	*8.0	*188	173	269	33.2	2.49	3.46	*62.4
1925	23.4	17.3	*4.0	*2.0	*2.0	*10	132	40.3	129	41.1	35.3	31.7	*38.9
1926	40.2	*29.9	*10	*7.0	*10	*25	283	304	260	130	30.5	7.3	*94.8
1927	15.9	*8.0	*5.0	*5.0	*6.0	*15	213	271	168	40.5	19.2	13.9	*85.1
1928	15.6	*5.0	*4.0	*5.0	*5.0	*10	177	306	218	48.1	12.5	2.52	*67.3
1929	11.5	*13.0	*4.0	*5.0	*5.0	*10	a308	280	302	52.7	41.2	59.2	*89.0
1930	42.0	*27	*9.0	*5.0	*6.0	*8.0	275	55.9	95.0	7.90	59.3	24.3	*50.5
1931	b16.9	b13.5	*7.0	*4.0	*4.0	*6.0	*76.3	b44.5	b60.5	b13.0	b6.16	b5.27	*21.4
1932	b6.68	b6.0	*3.0	*2.0	*2.0	*4.0	*165	b232	b160	b47.6	b19.7	b34.3	*54.2
1933	b5.6	*8.0	*3.0	*2.0	*1.0	*2.0	*55.8	b62.3	b194	b7.8	b7.0	b5.2	*29.3
1934	5.22	5.19	*4.0	*2.0	*2.0	*10	18.2	.90	.92	.11	.12	.02	*4.05
1935	.15	.63	.2	.5	.7	2.0	9.42	3.84	108	29.1	3.46	.19	13.1
1936	3.35	9.36	*3.03	*2.0	*2.0	*6.0	*79.6	65.5	69.1	20.0	24.3	1.93	*23.8
1937	3.35	5.58	*2	*2	*1.5	*15	*29.1	6.70	63.1	29.5	2.17	1.41	*13.2
1938	6.46	5.40	*4.0	*3.0	*3.0	*3.0	*192	173	265	30.6	3.37	18.0	*58.8
1939	8.38	*5.71	*5.0	*3.0	*2.0	*7.0	*74.6	80.7	51.4	2.50	.93	.10	*20.1
1940	.85	*.83	*1.0	*1.0	*2.0	*7.0	37.4	13.6	37.6	6.25	.56	.97	*9.02
1941	4.79	*4.23	*3.0	*2.0	*2.0	*4.0	*24.8	49.4	74.9	9.82	2.44	1.35	*15.2
1942	4.82	*5.0	*2.5	*1.0	*1.0	*2.0	*48.6	45.8	150	12.1	.90	1.59	*22.6
1943	9.74	*6.95	*2.0	*1.5	*2.0	*6.0	90.6	7.95	92.0	17.1	1.46	.49	*19.7
1944	2.13	*6.25	*2.0	*1.5	*1.5	*2.0	*28.5	25.8	45.5	9.97	.56	.22	*10.4
1945	1.47	*2.18	*1.5	*1.0	*1.0	*2.0	*86.0	88.0	104	36.4	25.0	3.32	*29.4
1946	7.38	11.4	*5.0	*2.0	*2.0	*10	70.4	39.9	44.3	3.02	4.01	3.25	*16.8
1947	11.7	8.74	*6.0	*1.5	*1.5	*5.0	63.1	84.4	193	36.3	20.8	11.2	*36.9

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Colorado.

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of Illinois Creek at Waldan, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	13,800	25,300	10,900	5,490	2,430	-
1924	2,110	*1,440	*492	*246	*230	*492	*11,200	10,600	16,000	2,040	153	206	*45,200
1925	1,440	1,030	*246	*123	*111	*615	7,860	2,480	7,680	2,530	2,170	1,890	*28,200
1926	2,470	*1,780	*615	*430	*555	*1,540	16,800	18,700	15,500	7,990	1,880	434	*68,700
1927	978	*476	*307	*307	*333	*922	12,700	16,700	10,000	2,490	1,180	827	*47,200
1928	959	*298	*246	*246	*288	*615	10,500	18,800	13,000	2,980	756	150	*48,800
1929	707	*756	*246	*246	*278	*615	18,300	16,000	18,000	3,240	2,530	5,520	*64,400
1930	2,730	*1,190	*553	*507	*333	*492	16,400	3,440	5,650	486	5,650	1,450	*36,600
1931	bl,040	b803	*430	*246	*222	*369	*4,540	b2,740	b3,600	b799	b379	b314	*14,500
1932	b411	b357	*184	*123	*115	*246	*9,820	b4,300	b9,520	b2,930	1,210	b204	*39,400
1933	b547	*476	*184	*123	*56	*123	*3,320	b3,830	b1,500	b480	b432	b208	*21,200
1934	321	309	*246	*123	*111	*615	1,080	55	55	6.9	7.3	1.2	*2,930
1935	9.3	38	12	31	39	123	560	236	6,440	1,790	213	12	9,500
1936	206	557	*186	*123	*115	*369	*4,740	4,020	4,110	1,230	1,500	115	*17,270
1937	206	592	*12	*12	*83	*922	*1,730	412	3,750	1,810	133	84	*9,550
1938	398	322	*246	*184	*167	*184	*11,450	10,680	15,780	1,880	207	1,070	*42,550
1939	515	*540	*307	*184	*111	*430	*4,440	4,960	3,080	154	57	6.0	*14,580
1940	53	*49	*61	*61	*115	*430	2,230	858	2,240	384	34	58	*6,550
1941	295	*252	*184	*123	*111	*246	*1,470	3,040	4,450	604	150	80	*11,000
1942	296	*298	*154	*61	*56	*123	*2,770	2,810	8,900	744	49	95	*16,380
1943	599	*414	*123	*92	*111	*369	5,390	489	5,480	1,050	90	29	*14,240
1944	135	*372	*123	*92	*86	*123	*1,700	1,580	2,700	613	35	13	*7,570
1945	90	*129	*92	*61	*56	*123	*5,120	5,410	6,200	2,240	1,540	198	*21,260
1946	454	677	*307	*123	*111	*615	4,190	2,460	2,640	186	247	194	*12,200
1947	718	520	*369	*92	*83	*507	3,760	5,190	11,490	2,230	1,280	669	*26,710

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for North Platte River near Northgate.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1923	566	al,040	June 10, 1923	-	-	-	-
1924	586	a675	May 29, 1924	-	*62.4	*45,200	*60.6
1925	606	a588	June 8, 1925	-	*58.9	*28,200	*41.9
1926	826	a2,520	May 28, 1926	-	*94.8	*68,700	*90.5
1927	846	a450	Apr. 28, 1927	-	*65.1	*47,200	*64.8
1928	866	a544	June 4, 1928	-	*67.3	*48,800	*67.6
1929	686	al,650	Apr. 18, 1929	-	*89.0	*64,400	*92.7
1930	701	al,070	Apr. 9, 10, 1930	-	*50.5	*36,600	*47.6
1931	(b)	*c224	Apr. 15, 1931	-	*21.4	*14,500	*19.6
1932	(b)	*a550	Apr. 22, 1932	-	*54.2	*39,400	*54.5
1933	(b)	*a323	June 9, 1933	-	*29.3	*21,200	*29.1
1934	781	a62	June 1, 1934	0	*4.05	*2,930	*2.92
1935	786	430	June 18, 1935	0	13.1	9,500	*14.4
1936	806	262	Apr. 22, 1936	0	*23.8	*17,270	*23.5
1937	826	396	June 4, 1937	0	*13.2	*9,550	*13.7
1938	856	614	Apr. 18, 1938	0	*58.8	*42,550	*59.0
1939	876	214	June 2, 1939	0	*20.1	*14,560	*18.7
1940	896	127	June 8, 1940	0	*9.02	*6,550	*9.80
1941	926	215	June 26, 1941	-	*15.2	*11,000	*15.2
1942	956	438	June 14, 1942	0	*22.6	*16,380	*23.1
1943	976	583	June 4, 1943	-	*19.7	*14,240	*19.0
1944	1006	117	June 4, 1944	-	*10.4	*7,570	*9.99
1945	1036	458	Apr. 21, 1945	-	*29.4	*21,260	*30.9
1946	1056	170	June 20, 1946	-	*16.8	*12,200	*17.1
1947	1086	505	June 25, 1947	-	*36.9	*26,710	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published.

a Maximum observed.

b From reports of State engineer of Colorado.

c Maximum observed during period Apr. 15 to Sept. 30, 1931.

33. Michigan River near Cowdrey, Colo. 1/

Location.--Lat 40°52', long. 106°20', in NE¼ sec. 11, T. 10 N., R. 30 W., 300 ft upstream from bridge on State Highway 312, 1 mile upstream from mouth, and 1½ miles west of Cowdrey.

Drainage area.--480 sq mi.

Gage.--Water-stage recorder at described site after Aug. 23, 1939. Datum of gage is 7,878.28 ft above mean sea level, adjustment of 1912. May 9, 1904, to Oct. 31, 1905, staff gage 200 ft downstream at different datum. May 19, 1937, to Aug. 23, 1939, water-stage recorder 300 ft downstream at different datum.

Average discharge.--10 years (1937-47), 50.2 cfs.

Extremes.--1904-5, 1937-47: Maximum discharge, 1,010 cfs Apr. 21, 1945; maximum gage height, 4.95 ft Apr. 21, 1945 (ice jam); no flow at times in July, August 1939 and September 1944.

Remarks.--Natural flow of stream affected by transmountain diversions, diversions above station for irrigation of about 46,000 acres, and return flow from irrigated areas.

1/ Published as Michigan Creek, or Middle Fork River, 1904.

Monthly and yearly mean discharge, in cubic feet per second, of Michigan River near Cowdrey, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	342	148	67.9	35.6	-
1905	27.7	-	-	-	-	-	133	186	466	122	50.7	10.9	-
1906	17.5	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	81.7	63.0	12.7	7.59	-
1938	13.1	22.5	*15	*10	*10	*20	*376	329	570	77.5	24.7	72.1	*128
1939	36.6	*27.3	*20	*15	*15	*30	*171	115	75.5	1.56	.63	3.23	*42.5
1940	13.0	*16.0	*15	*10	*10	*20	73.8	13.8	25.6	10.6	8.01	6.36	*18.4
1941	24.9	*16.1	*12	*8.0	*10	*20	*70.4	60.9	80.2	15.5	16.1	12.8	*28.9
1942	36.5	*25	*10	*5.5	*5.0	*15	*131	64.2	270	16.2	9.21	6.71	*49.1
1943	21.4	*20	*10	*7.0	*10	*30	210	13.5	126	15.3	15.6	5.74	*40.1
1944	10.6	*22.1	*7.0	*7.0	*7.0	*10	*74.6	59.3	64.7	10.6	5.65	.92	*21.5
1945	4.02	*14.5	*8.0	*6.0	*6.0	*10	*171	175	156	87.1	91.7	19.1	*62.6
1946	22.8	32.2	*15	*10	*10	*40	145	34.4	74.0	11.1	16.5	9.81	*35.0
1947	31.6	23.0	*20	*7.0	*7.0	*25	139	145	301	107	62.8	35.7	*75.4

* Not previously published; estimated on basis of records for North Platte River near Northgate.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	20,350	9,100	4,175	2,118	-
1905	1,703	-	-	-	-	-	7,914	11,440	27,730	7,501	3,117	649	-
1906	1,076	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	4,860	3,870	780	452	-
1938	807	1,340	*922	*615	*555	*1,230	22,560	20,210	33,900	4,770	1,520	4,290	*92,520
1939	2,250	*1,620	*1,230	*922	*833	*1,840	10,190	7,080	4,490	96	39	192	*30,780
1940	801	*954	*922	*615	*575	*1,230	4,390	850	1,520	649	493	378	*13,580
1941	1,530	*980	*738	*492	*555	*1,230	*4,190	3,740	4,770	953	992	763	*20,910
1942	2,250	*1,490	*815	*215	*278	*922	*7,810	3,950	16,070	996	568	399	*35,560
1943	1,520	*1,190	*815	*430	*555	*1,840	12,480	832	7,520	941	960	342	*29,020
1944	652	*1,320	*430	*430	*403	*815	*4,440	2,420	3,850	654	347	55	*15,620
1945	247	*865	*492	*569	*333	*615	*10,170	10,790	9,280	5,360	5,640	1,140	*45,500
1946	1,400	1,920	*922	*615	*555	*2,460	8,630	2,110	4,400	682	1,020	584	*25,300
1947	1,940	1,370	*1,230	*430	*388	*1,540	8,300	8,940	17,930	6,570	3,860	2,130	*54,630

* Not previously published; estimated on basis of records for North Platte River near Northgate.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	*a530	June 4, 17, 1904	-	-	-	-	-
1905	172	*a760	June 9, 1905	-	-	-	-	-
1937	826	b535	June 5, July 15	-	-	-	-	-
1938	858	925	Apr. 19, 1938	-	*128	*92,520	*131	*94,550
1939	876	415	June 3, 1939	0	*42.5	*30,780	*39.2	*28,360
1940	896	150	June 8, 1940	-	*18.4	*13,380	*19.2	*13,930
1941	926	265	June 10, 1941	-	*28.9	*20,910	*30.4	*22,040
1942	956	858	June 14, 1942	-	*49.1	*35,560	*47.4	*34,330
1943	976	o610	June 5, 1943	-	*40.1	*29,020	*39.1	*28,300
1944	1006	222	June 5, 1944	0	*21.5	*15,620	*20.4	*14,820
1945	1036	1,010	Apr. 21, 1945	-	*62.6	*45,500	*66.2	*47,940
1946	1056	330	June 20, 1946	-	*35.0	*25,300	*35.4	*25,600
1947	1086	878	June 23, 1947	-	*75.4	*54,630	-	-

* Not previously published.

a Maximum observed.

b Maximum during period June to September

c Maximum for period of record; may have been higher during period of no gage-height record.

34. Canadian River at Cowdrey, Colo. 1/

Location.--Lat 40°52', long. 106°19', in sec. 6, T. 10 N., R. 79 W., about 1,000 ft up-stream from Government Creek and half a mile north of Cowdrey.

Drainage area.--174 sq mi.

Gage.--Water-stage recorder at described site after June 23, 1937. Datum of gage is 7,869.54 ft above mean sea level, adjustment of 1912.

May 10, 1904, to Nov. 1, 1905, staff gage 1,000 ft upstream at different datum.

May 23, 1929, to Nov. 7, 1931, chain gage 1,000 ft upstream at datum 1.19 ft higher.

May 22-25, 1937, chain gage 1,000 ft upstream at different datum.

May 26 to June 22, 1937, water-stage recorder 2,000 ft upstream at different datum.

Average discharge.--12 years (1929-31, 1937-47), 29.8 cfs.

Extremes.--1904-5, 1929-31, 1937-47: Maximum discharge observed, 802 cfs Apr. 14, 1931 (gage height, 8.91 ft, present datum); no flow Aug. 26, 27, 1939, and may have occurred other years during periods of no gage-height record.

Remarks.--Natural flow of stream affected by diversions above station for irrigation of about 10,400 acres and return flow from irrigated areas.

1/ Published as Canadian Creek near Cowdrey, 1904.

Monthly and yearly mean discharge, in cubic feet per second, of Canadian River at Cowdrey, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	189	63.7	25.3	17.3	-
1905	15.0	-	-	-	-	-	218	69.4	235	44.4	19.3	10.3	-
1906	20.8	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	293	75.1	37.4	53.2	-
1930	34.7	*25	*12	*6.0	*6.0	*8.0	111	49.7	85.6	12.0	39.1	22.9	*34.3
1931	32.0	*25	*7.0	*5.0	*5.0	*8.0	128	46.6	69.7	13.0	11.7	8.7	*29.8
1932	15.0	*15.7	*8.0	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	18.4	45.8	29.4	12.3	6.72	-
1938	14.5	13.9	*10	*6.0	*6.0	*8.0	*107	166	262	45.6	14.7	23.7	*56.4
1939	18.7	*25	*10	*6.0	*6.0	*15	*79.4	90.5	46.0	3.11	3.78	4.62	*25.7
1940	11.0	*13.5	*10	*4.0	*3.0	*10	33.7	46.7	42.4	15.0	6.92	12.5	*17.4
1941	19.8	*11.7	*7.0	*4.0	*4.0	*10	*43.5	67.8	87.6	18.8	13.5	9.19	*24.8
1942	17.5	*15.1	*6.0	*2.0	*3.0	*6.0	*88.1	59.5	151	26.5	11.7	7.47	*52.7
1943	12.3	*13.4	*5.0	*3.0	*3.0	*7.0	75.2	25.2	53.3	15.1	12.1	5.08	*19.1
1944	6.69	*9.54	*3.0	*3.0	*3.0	*8.0	*51.1	40.8	97.2	19.3	5.81	1.72	*19.0
1945	8.71	*8.89	*6.0	*3.0	*3.0	*4.0	*75.8	54.0	117	47.5	38.6	14.4	*31.7
1946	15.5	19.7	*10	*7.0	*6.0	*20	54.1	53.9	70.2	9.70	9.98	7.97	*23.7
1947	16.1	9.76	*12	*3.0	*3.0	*10.0	71.3	118	164	64.4	28.4	18.5	*43.3

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for North Platte River near Northgate.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	11,250	3,920	1,560	1,030	-
1905	922	-	-	-	-	-	12,970	4,270	13,980	2,730	1,190	613	-
1906	1,280	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	17,400	4,620	2,300	3,170	-
1930	2,130	*1,490	*738	*369	*333	*492	6,800	3,060	5,090	738	2,400	1,560	*24,800
1931	1,970	*1,490	*430	*307	*278	*492	7,620	2,870	4,150	799	719	518	*21,600
1932	922	*934	*492	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	1,130	2,730	1,810	759	400	-
1938	892	829	*615	*369	*333	*492	*6,380	10,190	15,600	2,800	903	1,410	*40,810
1939	1,150	*1,490	*615	*369	*333	*922	*4,720	5,570	2,740	191	232	275	*18,610
1940	674	*805	*615	*246	*173	*615	2,010	2,870	2,520	921	425	741	*12,620
1941	1,220	*698	*430	*246	*222	*615	*2,590	4,170	5,210	1,150	832	547	*17,930
1942	1,080	*900	*369	*123	*167	*369	*5,240	3,680	8,990	1,810	717	444	*23,670
1943	754	*799	*307	*184	*167	*430	4,470	1,550	3,170	931	743	302	*13,810
1944	412	*558	*184	*184	*173	*492	*1,850	2,510	5,780	1,190	357	102	*13,800
1945	556	*529	*369	*184	*167	*246	*4,510	3,320	6,960	2,920	2,370	859	*22,970
1946	952	1,170	*615	*430	*333	*1,230	3,220	3,320	4,180	596	613	474	*17,130
1947	992	581	*738	*184	*167	*615	4,240	7,260	9,750	3,960	1,740	1,100	*31,330

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for North Platte River near Northgate.

Yearly discharge, in cubic feet per second													
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year					
		Momentary maximum			Minimum			Runoff in			Mean		
		Discharge	Date		day	Mean		acre-feet			Runoff in	acre-feet	
1904	131	a550	June 4, 1904	-	-	-	-	-	-	-	-	-	-
1905	172	a720	Apr. 11, 1905	-	-	-	-	-	-	-	-	-	-
1929	686	a434	June 12, 1929	-	-	-	-	-	-	-	-	-	-
1930	701	b300	Apr. 9, 10, 1930	-	-	*34.3	-	*24,800	-	*33.6	-	*24,300	-
1931	716	a802	Apr. 14, 1931	-	-	*29.8	-	*21,600	-	*27.8	-	*20,100	-
1937	826	c181	June 5, 1937	-	-	-	-	-	-	-	-	-	-
1938	856	445	Apr. 19, 1938	-	-	*56.4	-	*40,810	-	*57.6	-	*41,730	-
1939	876	198	June 1, 1939	0	-	*25.7	-	*18,610	-	*24.1	-	*17,450	-
1940	896	134	June 7, 1940	-	-	*17.4	-	*12,620	-	*17.7	-	*12,870	-
1941	926	296	June 17, 1941	-	-	*24.8	-	*17,930	-	*24.8	-	*17,930	-
1942	956	365	June 14, 1942	-	-	*32.7	-	*23,670	-	*32.0	-	*23,180	-
1943	976	179	June 3, 1943	-	-	*19.1	-	*13,810	-	*16.1	-	*13,110	-
1944	1006	197	June 6, 1944	-	-	*19.0	-	*13,800	-	*19.4	-	*14,070	-
1945	1036	784	Apr. 22, 1945	-	-	*31.7	-	*22,970	-	*33.5	-	*24,270	-
1946	1056	144	June 8, 1946	-	-	*23.7	-	*17,130	-	*23.1	-	*16,710	-
1947	1086	375	June 23, 1947	-	-	*43.3	-	*31,330	-	-	-	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published.

a Maximum observed.

b Maximum daily.

c Maximum during period May to September.

35. North Platte River near Northgate, Colo. 1/

Location (revised).--Lat 40°56'38", long. 106°20'26", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 11, T. 11 N., R. 80 W., 50 ft downstream from abandoned highway bridge, 0.1 mile upstream from Camp Creek, 0.8 mile downstream from bridge on State Highway 125, 3.8 miles south of Colorado-Wyoming State line, and 4 $\frac{1}{2}$ miles northwest of Northgate.

Drainage area.--1,440 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 7,806.98 ft above mean sea level, adjustment of 1912. May 11 to Nov. 9, 1904, staff gage near present site at different datum. Apr. 30, 1915, to May 12, 1916, staff gage; May 13, 1916, to Sept. 17, 1917, chain gage; Sept. 18, 1917, to Apr. 7, 1918, staff gage; and Apr. 8, 1918, to Sept. 18, 1933, water-stage recorder 50 ft upstream at same datum.

Average discharge.--35 years (1915-50), 448 cfs (revised).

Extremes.--1904, 1915-50: Maximum discharge, 6,720 cfs June 11, 1923 (gage height, 6.24 ft, site then in use), from rating curve extended above 4,100 cfs; maximum gage height, 8.80 ft Apr. 21, 1945 (ice jam); minimum daily discharge, 19 cfs July 17-19, 1934.

Remarks.--Diversions above station for irrigation of about 130,000 acres. Diversions from tributaries above station also export water to Cache la Poudre River basin (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904									1,547	499	231	144	-
1905	133	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	907	368	183	166	-
1916	205	a189	a120	a70	a100	a350	a853	1,200	1,450	662	563	307	a506
1917	335	a176	a120	a100	a100	a130	a1,380	2,390	1,190	1,950	458	204	a873
1918	a200	a200	a130	a100	a100	a300	a700	a1,500	a2,700	a639	a170	a150	a574
1919	a250	a200	a100	a70	a70	a120	a760	804	502	138	150	94.0	a272
1920	154	a130	a100	a80	a70	a80	a300	a2,410	a2,750	982	439	245	a646
1921	230	a200	a100	a100	a100	a400	a530	1,650	1,250	904	512	254	a687
1922	174	b192	b100	b80	b90	b130	b824	1,080	1,200	256	143	120	b364
1923	76.7	80	75	80	75	90	453	2,040	5,210	1,420	478	337	705
1924	288	b250	b100	b80	b70	b80	1,240	1,480	2,040	518	135	79.0	b528
1925	248	b210	b100	b80	b80	b300	691	890	1,210	543	412	369	b412
1926	422	b300	b150	b100	b120	b250	1,710	1,960	1,930	965	291	117	b695
1927	152	b100	b70	b80	b80	b150	b800	2,010	1,820	669	349	222	b543
1928	258	b300	b200	b150	b150	b200	b828	2,410	2,130	735	326	138	b653
1929	163	b150	b80	b80	b80	b120	c1,190	2,000	2,530	1,010	471	502	b698
1930	346	*200	*120	*70	*90	*100	1,790	621	990	261	471	219	*439
1931	285	130	*70	*60	*60	*80	808	434	608	123	109	82.7	*237
1932	166	142	*75	*70	*70	*90	1,540	2,050	1,690	756	327	118	*590
1933	142	172	76.1	48.3	35.7	123	358	729	2,000	262	183	130	354
1934	122	120	101	71.8	90.7	191	317	284	89.4	26.7	38.6	23.8	123
1935	31.7	54.2	53.3	49.7	51.3	122	270	361	1,547	518	194	82.1	277
1936	90.4	143	70.9	47.7	66.3	129	1,498	1,403	1,243	420	300	91.9	458
1937	134	155	62.5	59.1	58.8	157	511	843	909	451	160	78.4	297
1938	129	123	91.8	82.0	90.9	126	1,420	1,464	1,164	472	206	290	553
1939	151	126	130	96.4	82.1	314	734	853	610	105	109	76.1	283
1940	116	117	105	66.5	67.5	173	373	540	674	182	85.5	71.1	214
1941	150	97.0	76.6	55.0	66.4	128	376	775	827	268	183	109	260
1942	211	152	57.0	31.9	47.6	98.5	932	561	1,357	342	145	65.2	333
1943	101	115	57.3	52.3	68.0	175	1,193	846	1,504	541	237	80.9	397
1944	87.0	122	49.7	45.7	53.1	79.8	421	877	1,003	344	110	38.6	252
1945	91.4	85.9	52.9	41.9	42.9	69.5	593	1,309	1,398	975	501	160	445
1946	143	158	100	74.9	77.4	222	835	677	1,016	247	175	112	320
1947	157	155	130	46.6	50.1	153	530	1,103	1,659	733	307	161	433
1948	189	141	88.3	66.7	68.5	112	1,027	1,347	1,023	302	136	48.8	379
1949	126	128	*85.9	85.7	73.6	65.5	1,002	1,459	2,287	947	285	143	558
1950	166	165	103	84.9	102	145	372	670	1,348	571	168	122	335

* Only monthly figure revised; revised daily figures not available.

† Corrected.

a Revised; supersedes estimate published in WSP 469.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904									92,050	30,680	14,200	8,570	-
1905	8,180	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	54,000	22,600	11,300	9,880	-
1916	12,600	a11,200	a7,380	a4,300	a5,750	a21,500	a50,700	73,800	86,300	40,700	34,800	18,300	a367,000
1917	20,600	a10,500	a7,380	a6,150	a5,550	a7,990	a81,000	147,000	100,000	20,000	28,200	12,100	a636,000
1918	12,500	a11,900	a7,990	a6,150	a5,550	a18,400	a41,700	a92,200	a61,000	a39,300	a10,500	a8,930	a416,000
1919	a15,400	a11,900	a6,150	a4,300	a5,890	a7,380	a45,200	49,400	29,900	8,480	9,220	5,590	a197,000
1920	9,470	a7,740	a6,150	a4,920	a4,030	a4,920	a17,900	a48,000	a64,000	60,400	27,000	14,800	a469,000

a Revised; supersedes estimate published in WSP 469.

1/ Published as "near Pinkhampton" 1904.

Monthly and yearly runoff, in acre-feet, of North Platte River near Northgate, Colo.--Continued												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
The year												
1921	14,100	11,900	a6,150	a6,150	a5,550	24,800	31,500	101,000	93,000	55,600	31,500	15,100
1922	10,700	11,300	b6,150	b4,920	a5,000	b7,990	49,000	65,200	71,400	15,700	8,790	7,140
1923	4,720	4,760	4,610	4,920	4,180	5,530	26,800	125,000	91,000	87,300	29,400	20,100
1924	17,700	14,900	b6,150	b4,920	b4,030	b4,920	75,800	91,000	21,000	31,900	8,300	4,700
1925	15,200	12,500	b6,150	b4,920	b4,440	18,400	41,100	42,400	72,000	33,400	25,300	22,000
1926	25,900	b17,900	b9,220	b7,380	b6,680	15,400	102,000	121,000	115,000	59,300	17,900	6,960
1927	9,350	b5,950	b4,300	b4,920	b4,440	b9,220	47,800	124,000	108,000	41,100	21,500	13,200
1928	15,900	b17,900	b12,300	b4,920	b6,680	12,500	49,200	148,000	127,000	45,200	30,000	8,210
1929	10,000	b6,930	b4,920	b4,920	b4,440	b7,380	70,800	123,000	101,000	62,100	29,000	29,900
1930	21,300	*11,900	*7,380	*4,300	*5,000	*6,150	107,000	38,200	58,900	16,000	29,000	13,000
1931	17,500	7,740	*4,300	*3,690	*3,330	*4,920	48,100	26,700	36,200	7,560	6,700	4,920
1932	10,200	8,450	*4,610	*4,300	*4,030	*5,530	91,600	126,000	101,000	46,500	20,100	6,900
1933	8,730	10,200	4,680	2,970	1,980	7,560	21,300	44,800	19,000	16,100	11,300	7,740
1934	7,480	7,150	6,190	4,410	5,040	11,740	18,870	17,480	5,320	1,640	2,370	1,410
1935	1,950	3,250	3,270	3,060	2,850	7,510	16,040	22,210	92,050	31,840	11,940	4,880
1936	5,560	8,490	4,360	2,930	3,810	7,320	89,110	86,280	73,950	25,830	18,420	5,470
1937	8,740	9,230	3,840	2,410	3,250	9,640	30,430	51,810	54,080	27,750	9,860	4,720
1938	7,930	7,300	5,640	5,040	5,050	7,740	84,490	90,040	128,800	29,010	12,600	16,660
1939	9,310	7,520	8,010	5,920	4,560	19,290	43,650	52,450	36,320	6,440	6,690	4,530
1940	7,150	6,950	6,860	4,090	3,880	10,610	22,200	33,210	40,090	11,190	5,260	4,230
1941	9,220	5,770	4,710	3,380	3,690	7,870	22,380	47,640	49,200	16,470	11,230	6,470
1942	13,000	8,450	3,500	1,960	2,650	5,060	55,450	34,470	80,740	21,050	8,330	3,880
1943	6,180	6,830	3,520	3,220	3,770	10,730	70,970	39,700	89,520	33,240	14,590	4,810
1944	5,350	7,260	3,060	2,810	3,050	4,910	25,070	41,610	59,670	21,160	6,760	2,290
1945	5,620	5,110	3,250	2,580	2,380	4,270	35,300	80,470	83,190	59,920	30,810	9,490
1946	8,820	9,410	6,170	4,600	4,300	13,650	49,670	41,620	60,460	15,200	10,790	6,650
1947	9,650	9,210	7,980	2,860	2,780	9,430	31,510	67,830	98,700	45,080	18,860	9,580
1948	11,630	8,360	5,430	4,100	3,940	6,860	61,090	82,820	80,880	18,570	8,370	2,900
1949	7,740	7,650	5,280	5,270	4,090	4,020	59,640	89,710	136,100	58,210	17,550	6,530
1950	10,210	9,820	6,360	5,220	5,650	8,900	22,120	41,200	80,240	35,120	10,320	7,270

* Revised.

a Revised; supersedes estimate published in WSP 469.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1904	151	a2,540	May 26, 27, 1904	-	-	-	-
1915	406	a1,260	June 20, 1915	-	-	-	-
1916	436	a2,100	June 19, 1916	-	b506	b367,000	b516
1917	456	a4,840	May 18, 19, 1917	-	b873	b636,000	b870
1918	476	*c4,000	June 22, 1918	-	b574	b416,000	b576
1919	506	1,690	May 31, 1919	-	b272	b197,000	b255
1920	506	d4,080	May 21, 1920	-	b646	b469,000	b658
1921	526	6,640	June 17, 1921	-	b687	b496,000	b681
1922	546	1,940	June 15, 1922	-	e364	e263,000	e345
1923	556	6,720	June 11, 1923	-	703	508,000	e737
1924	586	4,150	June 16, 1924	-	e528	e383,000	e522
1925	606	2,570	June 7, 1925	-	e412	e298,000	e438
1926	626	5,760	May 28, 1926	-	e695	e505,000	e649
1927	646	2,760	May 19, 1927	-	e543	e394,000	e580
1928	666	5,050	June 3, 1928	-	e653	e474,000	e822
1929	686	*c4,200	Apr. 20, 1929	-	e698	e506,000	e721
1930	701	3,900	Apr. 11, 1930	-	*439	*318,000	*424
1931	716	2,600	Apr. 14, 1931	33	*237	*172,000	*228
1932	731	4,190	Apr. 17, 1932	-	*590	*429,000	*591
1933	746	2,930	June 13, 1933	-	354	256,000	350
1934	761	603	May 31, 1934†	19	123	89,100	106
1935	786	3,470	June 17, 1935	28	277	200,800	291
1936	806	4,640	Apr. 16, 1936	42	458	332,100	462
1937	826	2,410	June 5, 1937	30	297	215,300	297
1938	856	4,790	Apr. 19, 1938	73, 9	553	400,300	558
1939	876	1,720	June 2, 1939	26	283	204,700	277
1940	896	1,720	June 7, 1940	45	214	155,300	213
1941	926	1,510	May 28, 1941	50	260	188,000	268
1942	956	3,160	June 14, 1942	27	333	240,700	320
1943	976	3,250	June 3, 1943	42	397	287,100	395
1944	1006	1,400	June 4, 1944	30	252	183,000	250
1945	1036	5,140	Apr. 23, 1945	37	445	322,400	460
1946	1056	2,220	June 19, 1946	62	320	231,300	323
1947	1086	4,180	June 23, 1947	40	433	313,500	431
1948	1116	3,400	Apr. 17, 1948	39	379	275,000	372
1949	1146	3,250	June 20, 1949	56	558	403,800	566
1950	1176	1,970	June 20, 1950	72	335	242,400	-

* Revised.

† Corrected.

a Not previously published.

a Maximum observed.

b Revised; supersedes estimate published in WSP 469.

c Estimated; exact date unknown.

d Maximum during period of gage-height record.

e Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

36. Douglas Creek near Keystone, Wyo.

Location.--Lat 41°10'40", long. 106°16'00", in sec. 16, T. 14 N., R. 79 W., three-quarters of a mile upstream from Keystone Creek, about 1 mile north of Keystone, and 1½ miles south of Holmes.

Drainage area.--28 sq mi, approximately.

Gage.--Water-stage recorder at described site after May 22, 1915. Altitude of gage is 9,050 ft (from topographic map). July 25 to Oct. 11, 1912, staff gage 60 ft downstream at different datum. June 18, 1914, to May 22, 1915, staff gage 60 ft downstream at same datum.

Extremes (revised).--1914-16: Maximum discharge, 840 cfs June 1, 1914 (gage height, 4.19 ft, from floodmarks at site then in use), from rating curve extended above 160 cfs by logarithmic plotting; minimum not determined, occurred during period of no gage-height record.

Remarks.--No diversions above station.

Cooperation.--Records for 1912, 1914, furnished by Laramie Water Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	-	14.9	13.1	-
1914	-	-	-	-	-	-	-	-	-	28.0	12.0	7.4	-
1915	10.2	-	-	-	-	-	-	63.5	118	14.9	4.58	5.70	-
1916	+7.35	-	-	-	-	-	-	121	148	17.5	11.7	7.32	-
1917	7.23	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	-	916	780	-
1914	-	-	-	-	-	-	-	-	-	1,720	738	440	-
1915	627	-	-	-	-	-	-	3,900	7,020	916	282	339	-
1916	452	-	-	-	-	-	-	7,440	8,810	1,080	719	436	-
1917	445	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	469	-	-	-	-	-	-	-
1914	386	†840	June 1, 1914	-	-	-	-	-
1915	406	400	June 1, 1915	-	-	-	-	-
1916	436	281	June 4, 1916	-	-	-	-	-

* Not previously published.

37. Douglas Creek near Foxpark, Wyo.

Location.--Lat 41°04'45", long. 106°16'40", in S½ sec. 19, T. 13 N., R. 79 W., 600 ft downstream from Beaver Creek, and 8½ miles west of Foxpark.

Drainage area.--121 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 8,200 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 1,300 cfs June 4, 1949 (gage height, 4.30 ft), from rating curve extended above 750 cfs; minimum not determined, occurred during period of no gage-height record.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	12.4	9.40	-
1947	19.4	13.4	10	5.0	5.0	7.0	25	550	394	78.3	26.3	16.3	96.4
1948	19.0	14	11	9.5	9.0	9.5	62	508	166	35.5	11.6	9.27	72.5
1949	18.1	13.2	11	10	11	17	85	491	472	58.0	16.9	16.2	102
1950	19.1	12.6	10	9.0	9.4	10	35	388	437	52.4	12.7	20.4	84.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	763	559	-
1947	1,190	799	615	307	278	430	1,490	33,820	23,460	4,810	1,620	970	69,790
1948	1,170	833	676	584	518	584	3,690	31,230	9,880	2,180	714	551	52,610
1949	1,110	785	676	615	611	1,050	5,060	30,210	28,070	3,570	1,040	966	73,760
1950	1,170	752	615	553	522	615	2,080	23,940	26,010	3,220	782	1,210	61,470

Yearly discharge, in cubic feet per second, of Douglas Creek near Foxpark, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	-	-	-	-	-	-	-
1947	1086	a870	May 9, 1947	-	98.4	69,790	96.5	69,860
1948	1116	1,220	May 21, 1948	-	72.5	52,610	72.3	52,500
1949	1146	1,300	June 4, 1949	-	102	75,760	102	75,730
1950	1176	1,220	May 23, 1950	-	84.9	61,470	-	-

a Maximum daily.

38. Big Creek at Big Creek ranger station, Wyo. 1/

Location.--Lat 41°03'00", long. 106°31'30", in sec. 32, T. 13 N., R. 81 W., at Big Creek Ranger Station, about 2 miles downstream from confluence of North, South, and Middle Forks, and 4½ miles north of Pearl, Colo.

Drainage area.--123 sq mi.

Supplemental records available.--May to June 1911 and January to June 1912, gage heights only.

Gage.--Water-stage recorder. Altitude of gage is 7,770 ft (from topographic map). May 2, 1913, to May 12, 1918, staff gage and May 13, 1918, to Aug. 31, 1919, water-stage recorder at datum 0.90 ft lower.

Average discharge.--12 years (1912-24), 99.2 cfs.

Extremes.--1912-24: Maximum discharge, 1,300 cfs June 23, 1917; minimum, 5 cfs Sept. 2, 1915, but may have been less during periods of no gage-height record.

Remarks.--No adjudicated diversions above station in Wyoming. In Colorado, Independence Ditch diverted from Big Lake to North Platte basin approximately 80 cfs, usually from June 1 to July 10 each year. A considerable part of flow returned to Big Creek by seepage. Storage filling for 27,548 acre-ft in Big Lake, which supplies Independence Ditch.

Cooperation.--Records of daily discharge for 1914, not previously published by Geological Survey, furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	a48.5	a32.4	a27.0	a24.4	a21.6	a24.4	a181	a290	268	72.8	26.4	22.8	a86.6
1914	a21.0	a18.8	a18.9	a16.2	a18.9	a27.0	a103	345	490	b115	b52.1	b34.6	a105
1915	b41.6	a32.4	a27.0	a24.4	a23.9	a27.0	a57.0	100	201	74.0	38.8	32.0	a56.6
1916	36.1	a22.0	a21.6	a18.9	a18.9	a27.0	100	269	446	167	64.1	32.0	a102
1917	45.5	a31.0	a21.6	a21.6	a19.0	a24.4	a72.8	257	781	476	87.8	40	a157
1918	a59.1	a48.7	a32.2	a27.0	a21.6	a27.0	a119	a260	643	122	40.4	35.5	a118
1919	34.9	a40.5	a27.0	a21.6	a18.9	a21.6	a60.0	221	165	49.3	38.1	20.1	a60.1
1920	19.0	a27.1	a21.6	a21.6	a18.9	a21.6	a108	*340	631	207	70.7	40.8	*127
1921	a30.0	a27.1	a21.6	a21.6	a21.6	a44.9	66.4	278	679	161	82.8	40.7	a123
1922	22.0	a20.0	a20.0	a15.0	a15.0	a30.0	41.8	195	383	104	a31	a20	a74.7
1923	a16.0	a15.0	a15.0	a10.0	a10.0	a20.0	a59.8	254	567	208	72.0	36.7	a107
1924	a40.0	a40.0	a20.0	a10.0	a10.0	a25.0	a75.0	202	337	74.6	28.6	19.4	a73.3

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte

River.
a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; differs from figure published in reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	a2,980	a1,930	a1,660	a1,500	a1,200	a1,500	a10,800	a17,800	15,900	4,480	1,620	1,360	a62,700
1914	a1,290	a1,120	a1,160	a994	a1,050	a1,660	a5,120	21,200	29,200	b7,070	b3,200	b2,060	a76,100
1915	b2,560	a1,930	a1,660	a1,500	a1,660	a3,390	a1,660	6,150	12,000	4,550	2,390	1,900	a41,000
1916	2,220	a1,310	a1,330	a1,160	a1,090	a1,660	5,950	16,500	26,500	10,300	3,940	1,900	a73,900
1917	2,800	a1,840	a1,330	a1,330	a1,050	a1,500	a4,330	15,800	46,500	29,300	5,400	2,380	a114,000
1918	a2,340	a2,900	a1,980	a1,660	a1,200	a1,660	a7,070	a16,000	38,300	7,500	2,480	1,980	a85,100
1919	2,150	a2,410	a1,660	a1,330	a1,050	a1,330	a5,570	13,600	9,820	3,030	2,340	1,200	a43,500
1920	1,170	a1,610	a1,330	a1,330	a1,090	a1,330	a6,440	*20,900	37,500	12,700	4,350	2,430	*92,200
1921	a1,840	a1,610	a1,330	a1,330	a1,200	a2,760	3,950	17,100	40,400	9,900	5,090	2,420	a89,900
1922	1,350	a1,190	a1,230	a921	a831	a1,840	2,490	12,000	22,800	6,400	a1,900	a1,190	a54,100
1923	a982	a892	a921	a614	a554	a1,230	a3,580	15,800	35,700	12,800	4,430	2,180	a77,500
1924	a2,460	a2,380	a1,230	a614	a574	a1,540	a4,450	12,400	20,100	4,590	1,760	1,150	a53,200

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; differs from figure published in reports of State engineer of Wyoming.

1/ Published as "near Downingtown", 1911-12, and as "near Big Creek", 1913-23.

Yearly discharge, in cubic feet per second, of Big Creek at Big Creek ranger station, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1913	469	a495	May 31, 1913	-	b86.6	b62,700	b82.5	b59,700
1914	(c), 469	a475	June 2, 1914	-	b105	b76,100	b109	b78,700
1915	406, 469	a350	June 19, 1915	-	b56.6	b41,000	b54.8	b39,700
1916	436	a641	June 19, 1916	-	b102	b73,900	b103	b75,000
1917	456, 469	1,300	June 23, 1917	-	b157	b114,000	b159	b115,000
1918	476	1,160	June 13, 1918	-	b118	b85,100	b116	b84,100
1919	506	515	May 30, 1919	-	b60.1	b43,500	b57.2	b41,400
1920	506	862	June 9, 11, 1920	-	*127	*92,200	*128	*92,800
1921	526	d1,170	June 15, 1921	-	b123	b88,900	b121	b87,900
1922	546	605	June 9, 1922	-	b74.7	b54,100	b73.5	b53,200
1923	566	850	June 16, 1923	-	b107	b77,500	b111	b80,700
1924	586	714	June 14, 1924	-	b73.3	b53,200	-	-

* Revised.

† Not previously published.

a Maximum observed.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c From reports of State engineer of Wyoming.

d Estimated.

39. French Creek near French, Wyo.

Location.--Lat 41°12'30", long. 106°31'00", in SE $\frac{1}{4}$ sec. 5, T. 14 N., R. 81 W., 1 $\frac{1}{2}$ miles (revised) east of French, 2 miles upstream from mouth, and 1 $\frac{1}{2}$ miles east of Encampment.

Drainage area.--60 sq mi, approximately.

Gage.--Staff gage at described site after June 1, 1920. Altitude of gage is 7,500 ft (from topographic map).

Apr. 21, 1909, to Nov. 15, 1910, gage at same ranch but type and datum not known.

Apr. 30, 1911, to Apr. 9, 1918, staff gage 1 mile upstream at different datum.

Apr. 10, 1918, to June 1, 1920, staff gage 480 ft downstream at different datum.

Average discharge.--13 years (1911-24), 89.4 cfs.

Extremes.--1911-24: Maximum discharge observed, 1,680 cfs June 10, 11, 12, 13, 1921 (gage height, 3.0 ft); minimum daily discharge, 6 cfs Apr. 1, 1915, but may have been less during periods of no gage-height record.

Remarks.--Adjudicated diversions above station for irrigation of 660 acres.

Cooperation.--Records for 1909-10, 1913-14, furnished by State engineer of Wyoming; those for 1909-10 not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	a129	a1,020	a685	a189	a135	-
1910	-	-	-	-	-	-	-	a416	a434	a159	a104	a91	-
1911	a97	-	-	-	-	-	-	-	552	b135	-	-	-
1912	b33.3	b16.6	b13.1	b11.9	b10.7	b10.7	19.7	258	853	368	95.4	42.8	b123
1913	37.4	b14.3	b11.9	b10.7	b9.5	b10.7	c43.7	c211	c281	c79.5	c33.2	c22.8	b64.0
1914	b9.2	b8.3	b8.3	b7.1	b8.3	b11.9	c47.4	c537	c646	c170	c37.7	c16.0	b109
1915	c14.3	b14.3	b11.9	b10.7	b9.5	b10.7	47.5	171	315	110	34.8	29.1	b64.9
1916	27.9	22.2	b9.5	b8.3	b9.5	b19.0	42.3	185	303	83.7	35.8	20.7	b63.8
1917	23.7	b16.0	b9.5	b9.5	b8.3	b16.9	22.3	96.3	550	342	68.8	33.6	b99.8
1918	b16.8	b21.3	b14.3	b11.9	b9.5	b11.9	*24.7	144	869	*164	*50	*27.1	*96.8
1919	b22.9	b17.6	b11.9	b9.5	b8.3	b9.5	35.5	262	235	65.9	*30	b9.8	*59.9
1920	b11.9	b11.9	b9.5	b8.3	b8.3	b9.5	22.8	208	597	171	62.9	29.9	*95.9
1921	26.8	38.3	b9.5	b9.5	b9.5	b30.9	36.1	296	905	147	50.4	31.9	b132
1922	28.2	32.6	b20	b10	b10	b7.0	18.2	155	373	57.7	40.6	25.8	b64.8
1923	b25	b24.7	b20	b15	b15	b15	22.8	136	619	144	33.4	24.6	b90.9
1924	33.7	33.9	b20	b15	b15	b25	b16	196	521	*40	*35	*30	*84.8

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From reports of State engineer of Wyoming. Published figure is in acre-ft.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Revised; supersedes figure published by State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	a7,930	a60,800	a42,100	a11,800	a8,050	-
1910	-	-	-	-	-	-	-	a25,600	a25,800	a9,800	a5,380	a5,430	-
1911	a5,970	-	-	-	-	-	-	-	15,700	32,800	b8,300	-	-
1912	b2,050	b990	b805	b730	b615	b657	1,170	12,100	38,900	22,500	5,870	2,550	b88,900
1913	2,300	b850	b730	b657	b528	b657	c2,600	13,000	46,700	c4,890	c2,040	c1,380	b46,300
1914	b565	b493	b510	b436	b460	b730	c2,820	20,700	38,400	c10,500	c2,320	c952	b78,900
1915	c879	b850	b730	b657	b528	b657	2,830	10,500	18,700	6,760	2,140	1,730	b47,000

a From reports of State engineer of Wyoming.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published by State engineer of Wyoming.

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of French Creek near French, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	1,720	1,320	b583	b510	b546	b1,170	2,520	11,400	18,000	5,150	2,200	1,230	b46,300
1917	1,460	b950	b583	b583	b460	b1,040	1,330	5,920	32,700	21,000	4,250	2,000	b72,300
1918	b1,050	b1,270	b678	b730	b528	b730	*1,470	8,850	39,800	10,100	*3,070	*1,810	*70,100
1919	b1,410	b1,050	b730	b583	b460	b583	2,110	16,100	14,000	3,930	*1,840	b582	*43,400
1920	b730	b707	b583	b583	b476	b583	1,360	12,900	35,500	10,500	3,870	1,780	*69,500
1921	1,650	2,280	b583	b583	b526	b1,900	2,150	18,200	53,900	9,040	3,100	1,900	b95,800
1922	1,730	1,940	b1,230	b614	b554	b430	1,080	9,530	22,200	3,550	2,500	1,540	b46,900
1923	b1,540	b1,470	b1,230	b920	b851	b920	1,360	8,360	36,800	8,850	2,050	1,460	b65,800
1924	2,070	2,020	b1,230	b921	b861	b1,540	b950	12,100	31,000	*4,920	*2,150	*1,790	*61,600

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	-	-	-	-	-	-	-	-
1910	-	-	-	-	-	-	-	-
1911	306	*1,000	June 8, 1911	-	-	-	-	-
1912	326	*930	June 29, 1912	-	a123	a88,900	a123	a89,000
1913	469	*b600	May 31, 1913	-	a64.0	a46,300	a60.8	a44,000
1914	469	*b1,370	June 2, 1914	-	a109	a78,900	a110	a79,800
1915	406	*551	June 11, 1915	-	a64.9	a47,000	a65.5	a48,100
1916	436	433	June 10, 1916	-	a63.8	a46,300	a63.0	a45,700
1917	456	1,240	June 24, 1917	-	a99.8	a72,300	a100	a72,000
1918	476	1,350	June 13, 1918	-	c96.8	c70,100	c96.8	c70,100
1919	506	*70*	(d)	-	c59.8	c43,400	c58.3	c42,200
1920	506	1,081	June 8, 1920	-	*95.9	*69,500	a99.1	a72,000
1921	526	1,680	June 10-13, 1921	-	a132	a95,800	a133	a96,200
1922	546	853	June 9, 1922	-	a64.8	a46,900	a63.8	a46,200
1923	566	1,270	June 15, 1923	-	a90.9	a65,800	a92.4	a66,900
1924	586	1,370	June 14, 1924	-	c84.8	c61,600	-	-

* Revised.

† Corrected.

* Not previously published.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Estimated.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d May 27, 28, 29, 1919.

40. Brush Creek at upper station, near Saratoga, Wyo.1/

Location.--Lat 41°21'30" (revised), long. 106°33'10", in NE¼ sec. 13, T. 16 N., R. 82 W., 500 ft downstream from Barret Creek, a quarter of a mile downstream from confluence of North Brush and South Brush Creeks, and 1½ miles southeast of Saratoga.

Drainage area.--77.5 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,820 ft (from topographic map).

Extremes.--1941-47: Maximum discharge, 989 cfs June 1, 1943 (gage height, 5.02 ft), from rating curve extended above 380 cfs; minimum daily, 5.1 cfs Sept. 25-28, 1944, but may have been less during periods of no gage-height record.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	33.9	32.1	24.5	-
1942	41.4	-	-	-	-	-	-	*194	318	44.3	10.6	13.4	-
1943	15.0	18.5	-	-	-	-	*89.2	94.9	248	38.6	13.7	9.84	-
1944	12.2	12.8	-	-	-	-	-	160	253	37.5	7.74	6.82	-
1945	21.7	-	-	-	-	-	-	*209	270	158	49.3	22.0	-
1946	a24.6	-	-	-	-	-	-	a108	a279	a42.8	-	-	-
1947	-	-	-	-	-	-	-	a219	a264	a94.5	a33.6	a29.6	-

* Not previously published; estimated on basis of records for stations on nearby streams.

a Not previously published; computed on basis of gage-height record and approximate rating curve.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	2,080	1,970	1,460	-
1942	2,540	-	-	-	-	-	-	*11,910	18,830	2,720	850	796	-
1943	799	1,100	-	-	-	-	*5,310	5,840	14,830	2,380	845	585	-
1944	752	764	-	-	-	-	-	9,810	15,070	2,300	476	406	-
1945	1,340	-	-	-	-	-	-	*12,870	16,050	9,720	3,030	1,310	-
1946	a1,510	-	-	-	-	-	-	a6,840	a16,590	a2,630	-	-	-
1947	-	-	-	-	-	-	-	a13,460	a15,710	a5,810	a2,070	a1,760	-

* Not previously published; estimated on basis of records for stations on nearby streams.

a Not previously published; computed on basis of gage-height record and approximate rating curve.

1/ Published as Brush Creek near Saratoga, 1941-45.

Yearly discharge, in cubic feet per second, of Brush Creek at upper station, near Saratoga, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1941	928	-	-	-	-	-	-
1942	956	708	May 26, 1942	-	-	-	-
1943	976	989	June 1, 1943	-	-	-	-
1944	1006	562	June 9, 1944	-	-	-	-
1945	1036	770	July 10, 1945	-	-	-	-
1946	1440	*798	June 6, 1946	-	-	-	-
1947	1440	*690	June 20, 1947	-	-	-	-

* Not previously published.

41. Brush Creek at lower station, near Saratoga, Wyo. 1/

Location.--Lat 41°16'20", long. 106°37'20", in NW¼ sec. 16 (revised), T. 15 N., R. 82 W., at highway bridge half a mile upstream from mouth and 16 miles (revised) southeast of Saratoga.

Drainage area.--98 sq mi, approximately.

Gage.--Chain gage. Altitude of gage is 7,170 ft (from topographic map). Apr. 1, 1909, to June 30, 1910, gage near same site but type and datum not known.

Extremes.--1911-15: Maximum discharge observed, 2,120 cfs June 9, 1912 (gage height, 5.5 ft); minimum daily, 1.0 cfs Aug. 23, 1913, but may have been less during period of no gage-height record.

Remarks.--Prior to July 1, 1912, there were adjudicated diversions of 87 cfs from Brush Creek for irrigation of about 6,090 acres.

Cooperation.--Records for 1909-10, 1913-14, furnished by State engineer of Wyoming; those for 1909-10 not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	a22	a145	a326	a208	a148	a139	-
1910	-	-	-	-	-	-	-	a84	a38	-	-	-	-
1911	-	-	-	-	-	-	-	309	533	17.6	7.0	7.0	-
1912	33.8	15.0	10.0	-	-	-	-	-	*1,030	257	35.4	30.3	-
1913	56.6	-	-	-	-	-	-	-	b273	b34.6	b6.1	b7.7	-
1914	-	-	-	-	-	-	b81.2	b621	b706	b51.9	b3.18	b11.4	-
1915	-	-	-	-	-	-	-	228	358	48.5	13.1	18.2	-
1916	35.4	27.3	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated on basis of records for French Creek near French.

a From reports of State engineer of Wyoming. Published figure is in acre-ft.

b Revised; supersedes figure published by State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	a1,300	a8,890	a19,400	a12,800	a9,100	a8,260	-
1910	-	-	-	-	-	-	-	a5,140	a2,270	-	-	-	-
1911	-	-	-	-	-	-	-	19,000	31,700	1,080	430	417	-
1912	2,080	892	615	-	-	-	-	*61,200	15,800	2,180	1,860	-	-
1913	3,480	-	-	-	-	-	-	-	b16,200	b2,130	b375	b458	-
1914	-	-	-	-	-	-	b4,830	b38,200	b42,000	b3,190	b196	b678	-
1915	-	-	-	-	-	-	-	14,000	21,300	2,980	806	1,080	-
1916	2,180	1,620	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated on basis of records for French Creek near French.

a From reports of State engineer of Wyoming.

b Revised; supersedes figure published by State engineer of Wyoming.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1909	(a)	-	-	-	-	-	-
1910	(a)	-	-	-	-	-	-
1911	306	*1,400	June 15, 1911	-	-	-	-
1912	326	b2,120	June 9, 1912	-	-	-	-
1913	(a), 469	-	-	a1.0	-	-	-
1914	(a), 469	c1,760	June 3, 1914	-	-	-	-
1915	406	700	June 12, 1915	-	-	-	-

* Not previously published.

a From reports of State engineer of Wyoming.

b Maximum observed during period of record.

c Maximum daily.

Note.--Records for October 1909 to February 1910 published in reports of State engineer of Wyoming have been found to be unreliable.

1/ Published as Brush Creek near Saratoga, 1911-15; and as Brush Creek (Gross Ranch), 1909-10, and Brush Creek at Tilton's Ranch, 1913-14, by State engineer of Wyoming.

42. Encampment River above Encampment, Wyo.

Location.--Lat 41°12'00", long. 106°46'40", in NW $\frac{1}{4}$ sec. 7, T. 14 N., R. 83 W., 900 ft downstream from North Fork and 1 mile southeast of Encampment.

Drainage area.--205 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,170 ft (from topographic map).

Extremes.--1940-44: Maximum discharge, 3,920 cfs June 1, 1943 (gage height, 7.05 ft), from rating curve extended above 2,000 cfs; minimum daily, 22 cfs Feb. 28, Mar. 1, 1942, Sept. 12, 1944.

Remarks.--Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	-	996	645	89.6	30.7	30.1	-
1941	47.2	40.8	35.4	34.0	34.6	44.2	69.2	1,010	744	124	60.0	46.3	192
1942	104	69.5	49.0	39.2	29.2	30.2	213	855	1,431	217	49.5	37.0	260
1943	42.1	51.9	39.8	40.1	40.8	50.2	332	906	1,398	261	79.1	35.3	273
1944	41.1	40.8	35.5	32.2	32.6	40.4	69.3	701	1,320	247	42.7	27.9	218

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	-	61,270	38,370	5,510	1,890	1,790	-
1941	2,900	2,430	2,170	2,090	1,920	2,720	4,120	62,130	44,240	7,620	3,690	2,760	138,800
1942	6,420	4,140	3,010	2,410	1,620	1,860	12,650	52,580	85,180	13,360	3,050	2,200	188,500
1943	2,590	3,090	2,450	2,460	2,260	3,080	19,750	55,730	83,170	16,060	4,860	2,100	197,600
1944	2,530	2,430	2,060	1,980	1,870	2,490	4,130	43,110	78,540	15,180	2,620	1,660	158,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	896	1,870	June 2, 1940	-	-	-	-	-
1941	926	2,110	May 13, 1941	28	192	138,800	200	144,900
1942	956	2,800	May 26, 1942	22	260	188,500	253	183,000
1943	976	3,920	June 1, 1943	28	273	197,600	271	196,500
1944	1006	2,060	May 30, 1944	22	218	158,600	-	-

43. Encampment River at Encampment, Wyo.^{1/}

Location.--Lat 41°12'50", long. 106°46'40", in sec. 6, T. 14 N., R. 83 W., at Encampment, 1 mile downstream from North Fork.

Drainage area.--219 sq mi.

Gage.--Chain gage at described site after June 6, 1912. Datum of gage is 7,141.53 ft above mean sea level, unadjusted.

May 16 to Sept. 30, 1900, staff gage at site about 1 mile downstream at different datum.

Apr. 19, 1909, to Aug. 31, 1910, gage near same site, but type and datum not known.

May 2, 1911, to June 2, 1912, chain gage at site 170 ft downstream at same datum.

Average discharge.--16 years (1911-24, 1928-31), 295 cfs.

Extremes.--1900, 1911-24, 1928-32: Maximum discharge observed, 4,680 cfs May 29, 1900 (gage height 3.20 ft, site and datum then in use); minimum daily discharge, 3 cfs July 24, 1919.

Remarks.--Diversions above station for irrigation of about 8,000 acres.

Cooperation.--Records for 1909-10, 1913-14 furnished by State engineer of Wyoming; those for 1909-10 not previously published by Geological Survey.

^{1/} Published as Grand Encampment Creek at Peryam's Ranch, 1900.

Monthly and yearly mean discharge, in cubic feet per second, of Encampment River at Encampment, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	-	1,760	153	84.2	63.5	-
1909	-	-	-	-	-	-	-	-	a27	-	-	-	-
1910	-	-	-	-	-	-	-	a639	a627	a40	a36	-	-
1911	-	-	-	-	-	-	-	1,220	1,420	209	96.5	131	-
1912	140	70	55	50	45	45	125	1,160	2,130	407	116	125	372
1913	89.6	60	50	45	40	45	334	b1,460	b742	b85.9	b40.4	b39.0	254
1914	b38.7	35	35	30	35	50	b191	b1,600	b1,560	b214	b40.2	b36.2	323
1915	b70.9	60	50	45	40	45	257	685	872	119	36.5	55.0	195
1916	61.3	45.0	40	35	35	50	†282	1,300	1,630	225	98.2	70.9	†322
1917	182	58	40	40	35	45	135	545	2,620	1,010	129	61.7	408
1918	70.4	90.9	60	50	40	50	220	900	1,720	210	25.6	47.4	289
1919	96.5	75	50	40	35	40	254	1,540	595	52.7	29.5	41.2	222
1920	50.2	50	40	40	35	40	200	1,230	1,980	351	59.9	53.8	344
1921	52.1	50	40	40	40	55	125	1,500	2,260	333	†67.4	33.7	†383
1922	22.3	30.3	c30	c24.9	c25	c30	c65.9	378	1,570	24.3	32.9	25.6	c257
1923	27.9	c25.9	c24.9	c24.9	c25	c30	111	841	1,670	557	120	138	c324
1924	81.3	56	53	53	53	53	260	1,040	903	99.4	17.5	15	*217
1929	c34.0	c59.8	c53.8	c53.8	c53.8	c75.0	c921	c1,690	2,330	491	64.5	108	c495
1930	101	65	45	38	42	50	338	703	745	57.7	73.6	46.3	192
1931	92.6	39.5	40	45	35	40	121	508	505	30.5	19.3	26.8	125
1932	51.7	41.8	36	34	40	45	156	1,290	1,790	-	-	-	-

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure (acre-ft) published in WSP 469.

a From reports of State engineer of Wyoming. Published figure is in acre-ft.

b Revised; supersedes figure published by State engineer of Wyoming.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	-	105,000	9,410	5,180	3,780	-
1909	-	-	-	-	-	-	-	-	-	-	a1,630	-	-
1910	-	-	-	-	-	-	-	a51,600	a37,300	a2,460	a2,220	-	-
1911	-	-	-	-	-	-	-	75,000	84,500	12,900	5,930	7,800	-
1912	8,610	4,170	3,380	3,070	2,590	2,770	7,440	71,300	27,000	25,000	7,130	7,440	270,000
1913	5,510	3,570	3,070	2,770	2,220	2,770	19,900	b89,800	b44,200	b5,280	b2,480	b2,320	184,000
1914	b2,380	2,080	2,150	1,840	1,940	3,070	b11,400	b98,400	b92,800	b3,200	b2,470	b2,150	234,000
1915	b4,360	3,570	3,070	2,770	2,460	2,770	15,300	42,100	51,900	7,320	2,240	3,270	141,000
1916	3,770	2,680	2,460	2,150	2,010	3,070	†16,800	79,900	97,000	13,800	6,040	4,220	†234,000
1917	11,200	3,450	2,460	2,460	1,940	2,770	8,030	33,500	56,000	62,100	7,930	3,670	296,000
1918	4,330	5,360	3,690	3,070	2,220	3,070	13,100	55,300	102,000	12,900	1,570	2,820	209,000
1919	5,950	3,070	2,460	2,150	1,940	2,460	1,100	82,400	35,400	3,240	1,810	2,450	161,000
1920	3,090	2,980	2,460	2,460	2,010	2,460	11,900	75,600	118,000	21,600	3,680	3,200	249,000
1921	3,200	2,980	2,460	2,460	2,220	3,380	†7,440	92,200	134,000	20,500	†4,140	2,010	†277,000
1922	1,370	1,800	c1,840	c1,530	c1,590	c1,840	c3,920	60,100	93,400	14,900	2,020	1,520	c186,000
1923	1,720	c1,540	c1,530	c1,530	c1,390	c1,840	6,600	57,900	111,000	34,200	7,380	8,210	c235,000
1924	5,000	*3,450	*2,400	*2,030	*1,550	*2,030	*15,500	63,900	53,700	6,110	1,080	*893	*158,000
1929	c2,090	c3,560	c3,310	c3,310	c2,990	c4,610	c5,800	b104,000	b139,000	30,200	3,970	6,430	c359,000
1930	6,210	3,870	2,770	2,340	2,330	3,070	20,100	43,200	44,300	3,550	4,530	2,760	139,000
1931	5,690	2,350	2,460	2,770	1,940	2,460	7,200	31,200	30,000	1,880	1,190	1,590	90,700
1932	3,180	2,490	2,210	2,090	2,300	2,770	9,280	79,300	107,000	-	-	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure published in WSP 469.

a From reports of State engineer of Wyoming.

b Revised; supersedes figure published by State engineer of Wyoming.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				Runoff in acre-feet
1900	(a), 469	4,680	May 29, 1900	-	-	-	-
1909	(b)	-	-	-	-	-	-
1910	(b)	-	-	-	-	-	-
1911	306, 469	c2,460	June 8, 1911	-	-	-	-
1912	326, 469	c4,510	June 2, 1912	-	372	270,000	366
1913	(b), 469	†d2,520	May 15, 17, 1913	-	254	184,000	246
1914	(b), 469	†d3,700	June 4, 1914	-	323	234,000	329
1915	406, 469	2,460	June 1, 1915	-	195	141,000	192
1916	436, 469	2,180	(e)	-	†322	†234,000	†333
1917	456, 469	4,490	June 23, 1917	-	408	296,000	403
1918	469, 476	2,600	June 14, 1918	-	289	209,000	289
1919	469, 506	2,090	May 24, 1919	3	222	161,000	215
1920	469, 506	3,260	May 25, 1920	-	344	249,000	344

† Corrected.

* Not previously published.

a 22d Ann. Rept., Pt. 4.

b From reports of State engineer of Wyoming.

c Maximum daily.

d Estimated.

e May 31, June 12, 1916.

Yearly discharge, in cubic feet per second, of Encampment River at Encampment, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	469, 526	4,660	May 29, 1921	-	†583	†277,000	†378	†274,000
1922	546	3,680	May 28, 1922	8	e257	e186,000	e256	e185,000
1923	566	2,940	June 14, 1923	7	e324	e235,000	*533	*241,000
1924	586	1,760	June 14, 1924	-	*217	*158,000	-	-
1929	686	3,720	June 17, 1929	-	e495	e358,000	500	362,000
1930	701	1,720	May 29, 1930	-	192	139,000	189	137,000
1931	716	1,080	May 17, 1931	4	125	90,700	122	88,100
1932	731	2,520	May 23, 1932	-	-	-	-	-

* Revised; supercedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

e From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

44. Encampment River at mouth, near Encampment, Wyo.

Location.--Lat 41°18'10", long. 106°43'00", in NW¹ sec. 3, T. 15 N., R. 83 W., half a mile upstream from mouth, and 8 miles northeast of Encampment.

Drainage area.--260 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,970 ft (from topographic map).

Average discharge.--10 years (1940-50), 253 cfs.

Extremes.--1940-50: Maximum discharge, 4,510 cfs June 1, 1943 (gage height, 8.25 ft).
From rating curve extended above 2,400 cfs; minimum daily, 5.2 cfs Aug. 15, 16, 1940.

Remarks.--Water rights totaling about 165 cfs (priorities 1879 to 1923) for irrigation of about 11,940 acres adjudicated by Wyoming for diversion above station. Five small reservoirs (total adjudication, 415 acre-ft per year) above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	-	881	543	47.5	10.5	34.2	-
1941	64.0	59.4	51.8	45.0	53.8	55.4	86.8	980	651	90.4	55.7	56.9	188
1942	130	*84.0	*60	*50	*40	*52.2	224	853	1,369	174	27.5	38.8	*258
1943	56.3	63.5	54.3	52.3	56.7	59.1	328	864	1,439	225	47.0	30.8	273
1944	55.3	66.2	53.6	47.1	46.3	53.9	71.3	664	1,226	201	27.4	27.8	211
1945	59.6	60.2	50.4	50.2	59.9	60.8	87.0	939	1,498	612	175	83.9	312
1946	76.6	74.0	66.0	60.8	53.8	73.4	349	702	861	103	40.3	46.0	209
1947	81.6	70.7	56.7	53.5	61.0	72.5	118	1,112	1,101	333	54.5	59.9	285
1948	74.2	68.1	56.7	44.8	48.4	74.7	142	1,137	916	75.5	21.5	25.8	224
1949	74.4	73.5	60.5	65.4	67.5	71.8	194	1,103	1,704	322	40.5	38.7	318
1950	93.5	70.2	56.2	53.0	58.9	59.9	157	714	1,633	313	38.2	68.1	276

* Not previously published; estimated on basis of records for station above Encampment.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	-	54,170	32,320	2,920	647	2,030	-
1941	3,940	3,530	3,190	2,760	2,990	3,400	5,160	60,290	38,730	5,560	3,420	3,380	136,400
1942	8,000	*5,000	*3,690	*3,070	*2,220	*3,210	13,360	52,430	81,470	10,690	1,690	2,310	*187,100
1943	3,460	3,780	3,340	3,220	3,150	3,630	19,530	53,110	85,640	13,840	2,890	1,830	197,400
1944	3,400	3,940	3,300	2,900	2,660	3,320	4,240	40,830	72,970	12,370	1,680	1,660	153,300
1945	3,670	3,580	3,100	3,090	3,330	3,740	5,170	57,710	89,160	37,610	10,770	4,990	225,900
1946	4,710	4,400	4,060	3,740	2,980	4,510	20,750	43,180	51,210	6,300	2,480	2,740	151,100
1947	5,020	4,200	3,480	3,290	3,390	4,460	7,050	69,380	85,530	20,470	3,350	3,570	192,200
1948	4,560	4,050	3,490	2,750	2,790	4,590	8,450	69,890	54,490	4,640	1,320	1,540	162,600
1949	4,570	4,370	3,720	4,020	3,750	4,420	11,560	67,810	101,400	19,780	2,490	2,300	230,200
1950	5,750	4,180	3,460	3,260	3,270	3,680	9,320	43,920	97,150	19,270	2,350	4,050	199,700

* Not previously published; estimated on basis of records for station above Encampment.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1940	896	1,460	June 3, 1940	-	-	-	-
1941	928	1,950	May 14, 1941	29	188	136,400	†197
1942	956	2,870	May 27, 1942	-	*258	*187,100	*250
1943	976	4,510	June 1, 1943	28	273	197,400	273
1944	1006	1,940	May 31, 1944	22	211	153,300	211
1945	1036	2,370	June 23, 1945	40	312	225,900	316
1946	1056	1,710	June 7, 1946	24	209	151,100	208
1947	1086	1,950	June 9, 1947	34	265	192,200	265
1948	1116	2,620	May 22, 1948	10	224	162,600	225
1949	1146	2,570	June 18, 1949	23	318	230,200	319
1950	1176	2,530	June 17, 1950	15	276	199,700	-

* Not previously published.

45. Cow Creek near Saratoga, Wyo.

Location (revised).--Lat 41°18'40", long. 106°46'40", in sec. 31, T. 16 N., R. 83 W., 3 miles upstream from mouth and 10 miles south of Saratoga.

Drainage area.--60 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 7,090 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 290 cfs June 5, 1912 (gage height, 3.9 ft); minimum daily, 0.5 cfs Aug. 14, 15, 1912.

Remarks.--Divisions above station for irrigation of about 7,700 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	97.0	136	8.5	2.5	2.5	-
1912	10.5	-	-	-	-	-	7.63	78.7	160	23.7	9.40	7.15	-
1913	21.0	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	5,960	8,090	523	154	149	-
1912	646	-	-	-	-	-	454	4,840	9,520	1,460	578	425	-
1913	1,290	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1911	308	*218	June 16, 1911	2	-	-	-	-	-
1912	328	*290	June 5, 1912	.5	-	-	-	-	-

* Not previously published.

46. North Spring Creek near Saratoga, Wyo.

Location.--Lat 41°20'10", long. 107°00'00", in sec. 19, T. 16 N., R. 85 W., about 4 miles upstream from Methodist Creek and 13 miles (revised) southwest of Saratoga.

Drainage area.--26 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 7,500 ft (from topographic map).

Extremes.--1913-15: Maximum discharge observed, 370 cfs (revised) June 4, 5, 1914 (gage height, 3.1 ft), from rating curve extended above 160 cfs; minimum daily, 2 cfs at times during September and October 1913, but may have been less during periods of no gage-height record.

Remarks.--Divisions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	8.4	-
1914	3.9	-	-	-	-	-	-	125	174	34.0	8.3	*7.3	-
1915	9.3	-	-	-	-	-	-	80.6	88.3	-	-	-	-

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	500	-
1914	240	-	-	-	-	-	-	7,690	10,400	2,090	510	*434	-
1915	572	-	-	-	-	-	-	4,960	5,250	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1913	386	-	-	-	-	-	-	-	-
1914	386, 1440	*370	June 4, 5, 1914	2	-	-	-	-	-
1915	406	*155	June 2, 1915	-	-	-	-	-	-

* Revised.

47. Spring Creek near Saratoga, Wyo.

Location.--Lat 41°25'40", long. 106°48'00", in SW $\frac{1}{4}$ sec. 24 (revised), T. 17 N., R. 84 W., at bridge on State Highway 230, three-quarters of a mile upstream from mouth, and 2 miles south of Saratoga.

Drainage area.--152 sq mi.

Gage.--Staff gage. Altitude of gage is 6,830 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 685 cfs June 9, 1912 (gage height, 4.1 ft); no flow at times during August and September 1911.

Remarks.--Prior to July 1, 1912, adjudicated diversions above station of 5 cfs from Spring Creek, 85 cfs from North Spring Creek, and 104 cfs from South Spring Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	124	214	16.2	4.7	6.2	-
1912	23.6	-	-	-	15.0	20.0	*32.2	153	418	48.9	12.0	24.4	-
1913	34.8	-	-	-	-	-	-	-	-	-	-	-	-

* Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	7,620	12,700	996	289	369	-
1912	1,450	-	-	-	863	1,230	*1,920	9,410	24,900	3,010	738	1,450	-
1913	2,130	-	-	-	-	-	-	-	-	-	-	-	-

* Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1911	306	#430	June 9, 1911	0	-	-	-	-	-
1912	326	#655	June 9, 1912	-	-	-	-	-	-

* Not previously published.

48. North Platte River at Saratoga, Wyo.

Location.--Lat 41°27'20", long. 106°48'10" (revised), in sec. 11 (revised), T. 17 N., R. 84 W., 1,000 ft upstream from bridge on State Highway 130 in Saratoga and 1 mile downstream from Spring Creek.

Drainage area.--2,880 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,772.69 ft above mean sea level, datum of 1929. Prior to Apr. 25, 1911, staff gage at site 250 ft downstream at different datum.

Average discharge.--43 years (1903-6, 1910-50), 1,205 cfs (corrected).

Extremes.--1903-6, 1909, 1910-50: Maximum discharge, 18,000 cfs June 8, 1909 (gage height, 11.06 ft, present datum, from floodmarks), from rating curve extended above 14,000 cfs; minimum daily, 38 cfs July 18-20, 1934.

Remarks.--Diversions above station for irrigation of about 290,000 acres, part of which is above station and part below. Diversions above station also export water to Cache la Poudre River basin (see elsewhere in this report).

Cooperation.--Records for 1913-14 furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	1,270	446	592	-
1904	662	567	524	*322	300	588	1,480	4,490	5,390	1,340	499	352	1,370
1905	375	259	219	200	250	425	952	3,330	7,020	1,400	430	226	1,260
1906	299	334	275	250	250	400	1,670	4,740	5,670	2,000	543	502	1,420
1907	460	-	-	-	-	-	-	-	-	-	-	-	-
1909	-	-	-	-	-	-	1,310	5,860	12,900	5,190	1,420	1,010	-
1910	511	500	-	-	-	-	-	-	-	-	-	-	-
1911	500	450	300	250	300	400	1,500	3,810	5,370	1,270	302	209	1,220
1912	507	308	250	225	250	371	1,160	4,070	8,350	3,190	582	606	1,680
1913	694	450	400	350	350	500	a2,690	a4,140	a3,670	a853	a282	a261	1,200
1914	a439	400	350	300	300	450	b2,220	a6,250	b7,090	a1,400	b484	300	1,670
1915	558	337	300	250	250	400	1,500	2,020	3,250	780	309	317	855
1916	462	382	328	241	317	1,000	1,500	3,570	4,420	1,200	728	515	1,220
1917	683	389	328	302	295	378	2,180	5,060	10,500	4,950	949	474	2,210
1918	420	458	376	323	311	772	1,290	4,180	7,650	1,560	423	362	1,510
1919	599	472	318	265	261	496	1,570	3,560	1,910	272	225	163	845
1920	272	290	288	271	290	341	720	6,850	8,360	1,890	637	393	1,740

* Only monthly figure revised; revised daily figures not available.

a From reports of State engineer of Wyoming.

b Revised; supersedes figure published by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Saratoga, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	417	429	283	322	345	879	956	4,910	10,200	2,250	969	470	1,870
1922	333	342	281	218	256	443	1,400	3,550	4,670	696	246	170	1,050
1923	194	275	239	258	240	270	971	4,300	7,480	420	637	420	1,480
1924	521	441	299	255	211	254	1,970	3,820	4,930	766	187	169	1,150
1925	472	422	286	267	300	815	1,450	3,150	3,720	1,630	652	698	1,160
1926	1,020	684	455	371	432	628	3,360	5,920	5,740	1,470	532	261	1,740
1927	288	263	213	244	270	415	1,680	5,540	5,620	1,430	648	420	1,420
1928	604	708	537	455	396	728	1,610	7,540	5,760	1,480	492	286	1,720
1929	397	422	273	271	268	381	2,080	4,400	7,670	350	836	863	1,680
1930	646	465	381	243	411	445	2,600	2,000	2,600	452	806	413	954
1931	619	292	193	219	259	304	1,360	1,880	2,150	262	210	206	662
1932	377	304	258	226	254	340	2,530	5,140	5,110	1,640	525	250	1,410
1933	369	369	192	151	140	426	853	2,250	6,060	720	327	276	1,010
1934	269	259	252	189	223	336	780	1,149	280	58.8	32.4	67.4	530
1935	129	157	183	206	201	262	493	1,213	4,495	974	318	148	+729
1936	191	326	267	221	251	374	2,356	4,596	3,283	765	459	167	1,105
1937	289	319	208	181	182	333	1,047	3,088	3,438	1,09	289	197	892
1938	285	293	241	226	270	406	2,145	4,191	5,529	971	389	544	1,290
1939	346	359	343	288	275	612	1,414	3,208	1,761	210	194	180	768
1940	256	234	211	179	217	373	757	2,514	2,020	396	143	149	621
1941	326	278	251	212	241	442	755	3,165	2,517	540	376	287	785
1942	564	462	357	274	271	338	1,644	2,636	4,514	761	280	185	1,024
1943	286	326	298	249	292	417	2,010	2,337	4,210	1,066	445	207	1,010
1944	247	323	261	216	217	276	739	2,024	3,457	798	201	103	737
1945	259	283	260	292	259	327	1,274	3,674	4,979	477	1,059	439	1,302
1946	393	391	317	300	271	434	1,766	2,318	3,189	594	352	243	880
1947	381	368	320	199	214	446	1,285	3,992	4,619	695	606	378	1,212
1948	400	406	363	299	303	398	1,683	4,084	2,807	488	232	123	967
1949	301	297	290	263	271	440	1,935	4,614	7,057	2,000	466	332	1,523
1950	447	405	259	277	340	423	1,465	2,606	5,087	1,386	335	367	1,115

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	77,900	27,400	35,200	-
1904	40,700	33,700	32,200	19,800	17,300	36,200	88,100	276,000	320,000	82,400	30,700	19,800	997,000
1905	23,100	15,400	13,500	12,300	13,900	26,100	56,600	205,000	418,000	86,300	26,400	13,500	910,000
1906	18,400	19,900	16,900	15,400	13,900	24,600	99,400	291,000	537,000	23,000	33,400	29,800	1,020,000
1907	28,300	-	-	-	-	-	-	-	-	-	-	-	-
1909	-	-	-	-	-	-	78,000	560,000	68,000	519,000	87,300	60,100	-
1910	31,400	29,800	-	-	-	-	-	-	-	-	-	-	-
1911	30,700	26,800	18,400	15,400	16,700	24,800	69,300	234,000	500,200	78,100	18,800	12,400	885,000
1912	31,200	18,200	15,400	13,800	14,400	22,800	69,000	250,000	400,497	100,996	54,200	36,100	1,220,000
1913	42,100	26,800	21,500	19,400	19,400	30,700	160,000	255,000	425,000	40,200	20,000	17,300	871,000
1914	27,000	23,800	21,500	18,400	16,700	27,000	132,000	354,000	442,000	86,100	29,800	17,900	1,210,000
1915	34,300	20,100	16,400	15,400	13,900	24,600	69,300	124,000	193,000	48,000	19,000	16,900	619,000
1916	28,400	22,700	20,200	14,800	16,200	61,500	89,300	220,000	263,000	73,800	44,800	30,600	887,000
1917	42,000	23,100	20,200	18,600	16,400	23,200	100,000	11,000	25,000	504,000	58,400	28,200	1,600,000
1918	25,800	27,300	23,100	19,600	17,300	47,500	76,800	257,000	445,000	95,900	26,000	21,500	1,090,000
1919	36,800	28,100	19,600	16,300	14,500	30,500	93,400	192,000	114,000	16,700	13,700	9,700	612,000
1920	16,700	17,700	17,700	16,700	16,700	21,000	42,800	421,000	497,000	116,000	39,200	23,400	1,250,000
1921	25,600	25,500	17,400	19,800	19,200	54,000	56,900	502,000	608,000	100,138,000	59,800	28,000	1,350,000
1922	20,500	20,400	17,300	13,900	14,200	27,200	43,300	218,000	207,790,000	42,800	15,100	10,100	760,000
1923	11,900	16,400	14,700	15,900	13,300	16,600	57,800	264,000	400,445,000	149,000	39,200	25,000	1,070,000
1924	32,000	26,800	18,400	15,700	12,100	15,600	117,000	235,000	293,000	47,100	11,500	10,100	834,000
1925	29,000	25,100	17,600	16,400	16,700	50,100	86,300	194,000	221,000	100,000	40,100	41,500	838,000
1926	62,700	40,700	28,000	22,800	24,000	38,600	200,000	364,000	342,000	90,400	32,700	15,500	1,260,000
1927	17,700	16,800	13,100	15,000	15,000	25,000	100,000	341,000	354,000	87,900	39,800	25,000	1,030,000
1928	37,100	42,100	33,000	28,000	22,800	44,800	95,800	464,000	433,000	91,000	30,300	17,000	1,250,000
1929	24,400	25,100	18,800	16,700	14,900	23,400	124,000	271,000	355,000	144,000	51,400	51,400	1,220,000
1930	39,700	27,700	23,400	14,900	22,800	27,400	155,000	100,123,000	155,000	27,600	49,600	24,600	691,000
1931	38,100	17,400	11,900	13,500	14,400	18,700	80,900	116,000	128,000	16,100	12,900	12,300	480,000
1932	23,200	18,100	14,600	13,900	13,500	20,900	51,000	116,000	303,000	101,000	32,300	14,900	1,020,000
1933	23,900	22,000	11,800	9,280	7,780	28,200	51,100	138,000	303,661,000	44,300	20,100	16,400	732,000
1934	16,570	15,430	15,520	11,630	12,160	20,670	46,430	70,650	16,640	3,620	5,070	4,010	238,600
1935	7,950	9,340	11,250	12,670	12,560	16,110	29,310	74,580	267,500	59,880	19,570	8,800	528,100
1936	11,760	19,390	16,390	13,610	14,470	23,010	40,200	282,600	35,400	47,040	28,240	9,940	802,000
1937	17,750	19,010	12,800	11,160	10,100	20,470	62,310	189,800	204,600	68,210	17,770	11,700	645,700
1938	17,520	17,460	14,830	13,930	15,000	24,980	27,600	257,700	700,329,000	59,710	23,890	32,590	934,000
1939	21,270	21,380	21,080	17,710	15,290	37,620	84,120	197,300	104,800	12,880	11,940	10,690	556,100
1940	15,750	15,930	13,000	11,050	12,490	22,910	45,040	154,600	201,290	24,330	8,810	8,650	450,900
1941	20,040	16,560	15,430	13,310	13,400	27,210	44,930	194,600	149,800	33,220	23,110	17,100	568,400
1942	34,670	26,690	21,920	16,340	15,050	20,780	97,850	162,000	208,600	68,760	17,190	10,990	741,500
1943	17,610	19,370	18,340	15,320	16,210	25,610	119,600	43,700	250,560	65,560	27,350	12,320	731,500
1944	15,170	19,200	16,020	13,300	12,450	16,970	43,970	124,500	205,700	49,050	12,340	6,120	534,800
1945	15,900	16,840	15,960	17,940	14,410	20,080	75,820	225,900	296,300	50,520	65,140	26,130	942,700
1946	24,150	23,270	19,510	18,480	15,070	26,690	105,100	142,600	189,800	36,540	21,650	14,450	637,300
1947	23,420	21,760	19,700	12,230	11,880	27,450	76,470	245,500	274,800	104,200	37,290	22,500	877,200
1948	24,600	24,180	22,330	18,410	17,420	24,270	101,100	251,100	170,670	29,840	15,480	7,340	702,000
1949	18,520	17,690	17,850	16,150	15,030	27,040	115,100	233,700	119,900	22,900	28,660	19,760	1,102,000
1950	27,500	24,080	15,940	17,020	18,910	26,020	87,170	160,600	300,502,700	85,200	20,600	21,820	807,300

* Only monthly figure revised; revised daily figures not available.

† Corrected.

a From reports of State engineer of Wyoming.

b Revised; superseded figure published by State engineer of Wyoming.

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second, of North Platte River at Saratoga, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	99	a8,760	June 18, 1903	-	-	-	-	-
1904	131, 469	a9,000	May 26, 1904	-	1,370	997,000	1,300	942,000
1905	172, 469	a11,400	June 10, 1905	-	1,260	910,000	1,260	915,000
1906	208, 469	a9,310	June 14, 15, 17	-	1,420	1,020,000	-	-
1909	266	18,000	June 8, 1909	-	-	-	-	-
1911	306, 469	a7,950	June 17, 1911	-	1,220	885,000	1,210	874,000
1912	326, 469	a12,800	June 9, 1912	-	1,680	1,220,000	1,720	1,250,000
1913	(b), 469	a7,550	May 30, 1913	-	1,200	871,000	1,170	850,000
1914	(b), 469	a12,500	June 3, 1914	-	1,670	1,210,000	1,670	1,210,000
1915	406, 469	a5,140	June 2, 1915†	-	855	619,000	854	617,000
1916	436	a6,060	May 10, 1916	192	1,220	887,000	1,240	901,000
1917	456	a13,800	June 20, 23, 1917	262	2,210	1,600,000	2,200	1,590,000
1918	476	a11,400	June 14, 1918	262	1,510	1,090,000	1,520	1,100,000
1919	506	a6,150	May 29, 30, 1919	139	845	612,000	800	580,000
1920	506	a11,900	June 9, 1920	151	1,740	1,250,000	1,740	1,280,000
1921	526	a15,700	June 12, 1921	-	1,870	1,350,000	1,850	1,340,000
1922	546	a7,720	May 29, 1922	123	1,050	760,000	1,030	745,000
1923	566	a13,200	June 11, 12, 1923	-	1,480	1,070,000	1,520	1,100,000
1924	586	a8,740	June 15, 1924	-	1,150	834,000	1,140	829,000
1925	606	a7,020	June 8, 1925	-	1,160	838,000	1,240	898,000
1926	626	a13,900	May 28, 1926	209	1,740	1,280,000	1,630	1,180,000
1927	646	a8,460	June 15, 1927	-	1,420	1,030,000	1,510	1,100,000
1928	666	a14,000	May 30, 1928	243	1,720	1,250,000	1,660	1,200,000
1929	686	a10,600	June 12, 1929†	-	1,660	1,220,000	1,720	1,240,000
1930	701	a5,220	Apr. 10, 1930	-	954	691,000	922	668,000
1931	716	4,060	June 8, 1931	108	662	480,000	647	469,000
1932	731	10,100	May 23, 1932	-	1,410	1,020,000	1,410	1,030,000
1933	746	8,660	June 12, 1933	120	1,010	732,000	997	722,000
1934	761	1,680	May 13, 1934	38	330	258,600	303	219,600
1935	786	8,010	June 15, 1935	103	†729	528,100	756	547,100
1936	806	7,410	June 1, 1936	136	1,105	802,000	1,108	804,100
1937	826	6,370	June 1, 1937	131	892	645,700	892	645,900
1938	856	8,870	June 8, 1938	173	1,290	934,000	1,309	947,900
1939	876	5,080	June 1, 1939	86	768	556,100	739	535,000
1940	896	4,650	June 3, 1940	90	621	450,900	634	460,300
1941	926	5,710	May 14, 1941	180	785	568,400	831	601,700
1942	956	8,450	June 12, 1942	143	1,024	741,500	985	711,500
1943	976	11,500	June 2, 1943	159	1,010	731,500	1,004	726,600
1944	1006	5,100	June 5, 1944	81	737	534,800	734	533,100
1945	1036	7,900	June 6, 1945	191	1,302	942,700	1,327	961,000
1946	1056	6,030	June 19, 1946	180	880	637,300	877	635,300
1947	1086	7,820	June 22, 1947	175	1,212	877,200	1,220	883,400
1948	1116	7,500	May 22, 1948	97	967	702,000	944	685,000
1949	1146	10,200	June 13, 1949	220	1,523	1,102,000	1,541	1,116,000
1950	1176	7,530	June 17, 1950	180	1,115	807,300	-	-

† Corrected.

* Not previously published.

a Maximum observed.

b From reports of State engineer of Wyoming.

49. Jack Creek at Matheson Ranch, near Saratoga, Wyo.

Location (revised).--Lat 41°24', long. 107°00', in sec. 31, T. 17 N., R. 85 W., about 1 mile upstream from Willow Creek and about 12 miles west of Saratoga.

Drainage area.--40.9 sq mi (revised).

Gage.--Staff gage. Altitude of gage is 7,200 ft (from topographic map). Prior to Aug. 15, 1915, staff gage at site 200 ft upstream at different datum. Aug. 15, 1915, to June 12, 1917, staff gage at site 1,000 ft upstream at different datum.

Average discharge.--10 years (1913-17, 1918-24), 23.2 cfs.

Extremes.--1913-17, 1919-24: Maximum discharge observed, 334 cfs (revised) May 22-24, 1920 (gage height, 4.90 ft); no flow Aug. 18-23, 1919.

Remarks.--Diversions above station for irrigation of about 7,000 acres above and below station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	8.5	a7.0	a2.7	a2.9	a2.7	a5.8	a35.0	113	103	24.1	a3.0	4.7	-
1915	b6.9	a4	a3.5	a3.5	a3.5	a5	a15	49.5	83.1	19.9	b6.1	3.88	a26.3
1916	7.2	a7.0	a3.1	a2.7	a2.7	a9.7	16.3	64.8	75.9	19.0	9.0	7.0	a18.7
1917	10.9	6.9	a3.1	a3.1	a2.7	a3.5	24.8	91.6	202	85.4	13.6	6.6	a37.9

* Not previously published; estimated on basis of records for North Platte River at Saratoga.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Figure is for complete month, not for partial month as qualified in Water-Supply Paper 469; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly mean discharge, in cubic feet per second, of Jack Creek at Matheson Ranch, near Saratoga, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	7.2	a5.8	a3.8	a3.1	a2.7	a3.1	a26.9	59.2	45.1	9.5	2.2	3.2	a14.4
1920	a7.4	a3.8	a3.1	a3.1	a2.7	a3.1	a11.0	*135	136	22.4	10.6	5.4	*28.6
1921	a9.0	a3.8	a3.1	a3.1	a3.1	a4.2	a9.6	a110	169	31.4	9.9	5.8	a30.2
1922	6.3	7.3	a3	a3	a3	a3	*22.0	82.3	98.1	12.9	6.0	3.2	*20.8
1923	3.32	a5	a4	a3	a3	a3	*14.6	74.0	131	24.1	6.19	7.68	*23.4
1924	8.39	a7	a4	a3	a3	a5	25.3	72.3	55.9	62.9	2.08	2.30	a16.2

* Only monthly figure revised; revised daily figures not available.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	a184	280	-
1914	524	a416	a166	a178	a150	a233	a2,080	6,950	6,130	1,480	383	314	a19,000
1915	b424	*238	*214	*214	*167	*307	*893	3,040	3,750	1,220	b375	231	*11,100
1916	443	a416	a190	a166	a155	a595	970	3,980	4,520	1,170	553	417	a13,600
1917	670	411	a190	a190	a150	a215	1,480	5,630	12,000	5,250	*835	393	a27,400
1919	a454	a345	a233	a190	a150	a190	a1,600	3,640	2,680	584	135	190	a10,400
1920	443	a226	a190	a190	a155	a190	a653	*8,300	8,090	1,380	652	321	*20,800
1921	a552	a226	a190	a190	a172	a258	a570	a6,750	10,100	1,930	609	345	a21,700
1922	387	434	a164	a184	a166	a184	*1,310	5,060	5,840	793	369	190	*15,100
1923	204	a297	a246	a184	a166	a184	*867	4,550	7,800	1,480	504	457	*16,900
1924	516	a416	a246	a184	a172	a307	1,510	4,450	3,330	367	128	137	a11,800

* Only monthly figure revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated on basis of records for North Platte River at Saratoga.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Figure is for complete month, not for partial month as qualified in Water-Supply Paper 469; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet		Mean	Runoff in acre-feet
		Discharge	Date						
1913	386	-	-	-	-	-	-	-	-
1914	386	220	June 4, 1914	-	a26.3	a19,000	*26.0	-	a18,800
1915	406, 469	*130	June 2, 1915	-	*15.3	*11,100	*15.6	-	*11,200
1916	436	*196	May 21, 1916	-	a18.7	a13,600	a19.0	-	a13,800
1917	456, 469	280	June 11, 1917	-	a37.9	a27,400	-	-	-
1919	506	97	May 22-23, 1919	0	a14.4	a10,400	a14.1	-	a10,200
1920	506	*334	May 22-24, 1920	-	*28.6	*20,800	*29.0	-	*21,100
1921	469, 526	*294	June 10, 1921	-	a30.2	a21,900	a30.2	-	a21,900
1922	546	161	(b)	-	*20.8	*15,100	*20.5	-	*14,800
1923	566	258	June 9, 1923	-	*23.4	*16,900	*24.0	-	*17,400
1924	586	136	May 23, 1924	-	a16.2	a11,800	-	-	-

* Revised.

† Not previously published.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b May 26, 27, 29, June 8, 10, 12, 1922.

50. Jack Creek at Blydenburgh's Ranch, near Saratoga, Wyo.

Location (revised).--Lat 41°27'10" long. 106°55'40", in sec. 14, T. 17 N., R. 85 W., at

Highway bridge 6 miles west of Saratoga.

Drainage area.--112 sq mi.

Gage.--Staff gage. Altitude of gage is 6,950 ft (from topographic map).

Extremes.--1912-14: Maximum discharge observed, 735 cfs June 10, 1912 (gage height, 3.60

ft); from rating curve extended above 97 cfs; no flow Aug. 23 to Sept. 3, 1913.

Remarks.--Diversion above station for irrigation of about 3,000 acres, part of which is

above station and part below.

Cooperation.--Records for 1913-14, furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	a37.8	a9.5	a11.6	-
1913	a16.9	-	-	-	-	-	-	*110	*34.1	*4.15	*1.30	*1.07	-
1914	*5.36	-	-	-	-	-	-	*272	*148	*9.97	*3.31	*1.92	-
1915	*6.07	-	-	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published by State engineer of Wyoming.

a From files of Geological Survey.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	a2,320	a584	a713	-
1913	a1,040	-	-	-	-	-	-	*6,760	*2,030	*255	*80	*64	-
1914	*330	-	-	-	-	-	-	*16,700	*8,610	*613	*204	*114	-
1915	*373	-	-	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published by State engineer of Wyoming.

a From files of Geological Survey.

51. Jack Creek near Saratoga, Wyo.

Location.--Lat 41°30', long. 106°50', in sec. 28, T. 18 N., R. 84 W., at Burdick's ranch, about 1 mile upstream from mouth, and 4 miles (revised) northwest of Saratoga.

Drainage area.--137 sq mi.

Gage.--Staff gage. Altitude of gage is 6,750 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 318 cfs May 31, 1912 (gage height, 3.65 ft); minimum observed, 0.2 cfs Aug. 3-10, 1911 (gage height, 0.55 ft).

Remarks.--Diversions above station for irrigation of about 6,500 acres, part of which is above station and part below.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	63.0	52.1	2.0	0.48	0.98	-
1912	10.9	8.0	6.0	8.0	7.0	14.0	-	163	167	15.0	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	3,870	3,100	123	30	58	-
1912	670	476	369	492	403	861	-	10,000	9,940	922	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1911	306	#149	June 16, 1911	0.2	-	-	-	-	-
1912	326, 469	318	May 31, 1912	-	-	-	-	-	-

* Not previously published.

52. Pass Creek near Saratoga, Wyo.

Location.--Lat 41°35'40", long. 106°38'40", in sec. 29, T. 19 N., R. 82 W., a short distance downstream from Oberg Creek, and 12 miles northeast of Saratoga.

Drainage area.--119 sq mi.

Gage.--Staff gage. Altitude of gage is 7,150 ft (from topographic map).

Extremes.--1929-32: Maximum discharge observed, 450 cfs May 23, 1929 (gage height, 5.5 ft); minimum daily, 2.9 cfs Aug. 1, 1930.

Remarks.--Diversions above station for irrigation of about 6,000 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	231	32.4	15.4	17.9	-
1930	17.1	16.8	-	-	-	17.2	86.8	62.2	30.4	4.20	9.76	6.60	-
1931	13.3	-	-	-	-	-	77.2	95.1	58.3	11.0	6.0	5.9	-
1932	9.3	9.1	-	-	-	-	61.6	248	175	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	13,700	1,990	947	1,070	-
1930	1,050	1,000	-	-	-	1,060	5,160	3,820	1,910	258	600	393	-
1931	818	-	-	-	-	-	4,590	5,850	3,470	676	369	351	-
1932	572	541	-	-	-	-	3,670	15,200	10,400	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	450	May 23, 1929	-	-	-	-	-	-
1930	701	200	Apr. 7, 1930	2.9	-	-	-	-	-
1931	716	262	May 18, 1931	3	-	-	-	-	-
1932	731	421	May 20, 1932	-	-	-	-	-	-

53. Pass Creek near Walcott, Wyo.

Location.--Lat 41°43', long. 106°50', in sec. 1 (revised), T. 20 N., R. 84 W., at Crone's Ranch, 3 miles southeast (revised) of Walcott.

Drainage area.--278 sq mi.

Gage.--Staff gage. Altitude of gage about 6,600 ft (from topographic map).

Extremes.--May to September 1911: Maximum discharge observed, 252 cfs June 18, 1911 (gage height, 4.8 ft), from rating curve extended above 90 cfs; no flow July 13 to Sept. 30, 1911.

Remarks.--Adjudicated diversions above station for irrigation of about 13,000 acres, part of which is above station and part below.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	26.1	44.6	0.15	0	0	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	1,600	2,650	9.2	0	0	-

54. North Platte River above Seminole Reservoir, near Sinclair, Wyo. 1/

Location.--Lat 41°52'20", long. 107°03'25", in SW 1/4 sec. 13, T. 22 N., R. 86 W., 6.5 miles (revised) northeast of Sinclair and 14 miles upstream from high-water line of Seminole Reservoir.

Drainage area.--4,320 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,400.75 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 1,072 cfs.

Extremes.--1939-50: Maximum discharge, 11,300 cfs June 3, 1943 (gage height, 8.45 ft); minimum daily, 70 cfs Sept. 17, 1944.

Remarks.--Diversions for irrigation of about 293,000 acres above station. Transbasin diversions above station (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	204	179	154	-
1940	263	265	253	210	275	459	775	2,448	2,077	404	135	165	644
1941	356	309	264	219	253	474	827	3,412	2,774	604	390	280	850
1942	598	544	384	266	273	393	2,100	2,874	4,757	796	287	172	1,119
1943	289	348	309	260	296	444	2,158	2,294	4,465	1,133	407	195	1,048
1944	235	347	279	228	227	287	818	2,093	3,867	830	180	93.3	788
1945	259	282	270	296	282	356	1,429	4,006	5,410	2,685	1,171	465	1,413
1946	452	430	335	334	298	519	1,961	2,348	3,285	585	322	226	922
1947	380	454	353	205	228	571	1,393	4,120	4,832	1,704	592	389	1,271
1948	431	437	403	331	292	421	1,699	3,962	2,817	469	231	116	968
1949	325	401	327	293	302	513	2,039	5,103	7,233	1,812	460	316	1,594
1950	469	443	273	275	342	424	1,540	2,812	5,391	1,422	363	379	1,176

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	12,520	11,030	9,170	-
1940	16,160	15,790	15,560	12,890	15,830	28,240	46,090	150,500	123,600	24,830	8,280	9,810	467,600
1941	21,920	18,400	16,230	13,500	14,040	29,120	49,230	209,800	165,100	37,110	24,010	16,670	615,100
1942	36,760	32,390	23,580	16,350	15,170	24,170	124,900	176,700	283,000	48,960	17,680	10,200	809,800
1943	17,750	20,700	19,020	15,970	16,440	27,290	128,400	141,100	265,700	69,700	25,020	11,610	758,700
1944	14,460	20,660	17,160	14,020	13,070	17,650	48,870	128,700	230,100	51,010	11,080	5,550	572,100
1945	15,950	16,770	16,630	18,230	15,640	21,880	85,010	246,300	321,900	165,100	71,970	27,660	1,023,000
1946	27,790	25,600	20,570	20,560	18,560	31,940	116,700	144,400	194,300	35,940	19,780	13,450	667,600
1947	23,380	27,020	21,680	12,590	12,670	35,090	82,900	253,300	287,500	104,800	36,380	23,140	920,400
1948	26,520	26,010	24,750	20,380	16,770	25,900	101,100	243,600	167,600	28,850	14,190	6,870	702,500
1949	19,980	23,840	20,130	18,030	16,780	31,570	121,300	513,700	430,400	111,400	28,290	18,810	1,154,000
1950	28,860	26,360	16,770	16,890	19,010	26,050	91,660	172,900	320,800	87,460	22,330	22,580	851,700

1/ Published as "near Parco", 1939-43.

Yearly discharge, in cubic feet per second, of North Platte River above Seminoe Reservoir, near Sinclair, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	896	-	-	-	-	-	-	-
1940	896	4,960	June 3, 1940	90	644	467,600	657	476,600
1941	928	5,950	May 14, 1941	190	850	615,100	900	651,300
1942	956	8,320	June 13, 1942	125	1,119	809,800	1,070	774,600
1943	976	11,300	June 3, 1943	145	1,048	758,700	1,041	753,500
1944	1006	5,640	June 5, 1944	70	788	572,100	784	569,200
1945	1036	8,280	June 7, 1945	125	1,413	1,023,000	1,447	1,048,000
1946	1056	6,180	June 19, 1946	158	922	667,600	919	685,700
1947	1086	8,300	June 22, 1947	175	1,271	920,400	1,279	925,600
1948	1116	7,220	May 25, 1948	98	968	702,500	949	689,200
1949	1148	10,800	June 14, 1949	212	1,594	1,154,000	1,600	1,162,000
1950	1176	7,600	June 18, 1950	154	1,176	851,700	-	-

55. Medicine Bow River near Elk Mountain, Wyo.

Location.--Lat 41°34', long. 106°24' (revised), in sec. 5, T. 18 N., R. 80 W., three-eighths of a mile downstream from East Fork and 9 miles (revised) south of Elk Mountain.

Drainage area.--65.6 sq mi.

Gage.--Water-stage recorder.

Extremes.--August 1946 to September 1947: Maximum discharge, 660 cfs June 8, 1947 (gage height, 3.30 ft), from rating curve extended above 350 cfs; minimum daily, 6.4 cfs Sept. 3, 4, 1947.

Remarks.--Divisions above station for irrigation of about 2,500 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	14.1	-
1947	24.7	15	12	10	10	12	22	311	353	138	28.0	15.7	79.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	842	-
1947	1,520	893	738	615	555	738	1,310	19,120	21,030	8,460	1,720	933	57,630

56. Medicine Bow River near Medicine Bow, Wyo.

Location.--Lat 41°43', long. 106°19', in sec. 7, T. 20 N., R. 79 W., 3 miles upstream from Wagonhound Creek, and 14 miles southwest of Medicine Bow.

Drainage area.--178 sq mi.

Gage.--Staff gage. Altitude of gage is 7,000 ft (from topographic map). Prior to May 5, 1915, staff gage 600 ft upstream at different datum.

Average discharge.--11 years (1911-17, 1919-24), 122 cfs.

Extremes.--1911-17, 1919-24: Maximum discharge observed, 2,810 cfs June 23, 1917 (gage height, 5.4 ft), from rating curve extended above 1,200 cfs; no flow on many days some years.

Remarks.--Adjudicated diversions for irrigation of about 20,000 acres above station.

Cooperation.--Records for 1913-14 furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	a661	41.8	1.84	8.15	-
1912	35.1	b39	b40	b41	b45	b90	b250	486	1,030	*389	61.5	39.8	a212
1913	46.8	42.3	b40	b48	a50	a100	c248	d482	d417	d13	d2	d14	a125
1914	d51	b23.9	a25	a20	a20	a50	a97.7	d440	d676	d39	d25	d12	a122
1915	d16	b16	b20	b22	b25	b40	b60	193	382	40.4	8.69	22.5	b70.3
1916	32.0	b27.9	a20	a15	a18	b48	76.8	199	349	23.0	11.7	5.23	a68.6
1917	19.3	b19.5	a16	a14	a12	a20	a65.1	195	1,010	338	23.5	8.30	a145
1918	12.4	*17	*15	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	430	187	7.0	8.1	5.0	-
1920	19.9	30.8	a25	b32	b39	a51.3	69.8	461	953	93.3	24.5	13.3	a150
1921	26.2	43.2	a30	a35	a35	a58.7	75.8	494	864	55.3	24.0	7.6	a146
1922	7.1	a12.0	a10	a9	a10	a20	63.4	259	374	8.4	.1	a0	a68.3
1923	*1.57	14.7	b20	b25	b30	b40	75.2	262	603	79.2	5.35	12.6	b97.0
1924	32.3	a54.7	a40	b40	a35	a45	308	454	624	28.0	1.52	3.8	a138
1925	37.8	a32.7	*25	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

‡ Not previously published; estimated on basis of records for North Platte River at Saratoga.

a Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure

is in acre-ft.

c Revised; supersedes figure published by State engineer of Wyoming.

d From reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet, of Medicine Bow River near Medicine Bow, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	a39,500	2,570	113	485	-
1912	2,160	b2,320	b2,460	b2,520	b2,580	b5,520	b14,900	29,900	61,300	23,900	3,780	2,370	a154,000
1913	2,880	2,520	b2,460	b2,950	a2,780	a6,150	c14,800	d29,600	d24,800	4804	d145	d851	a90,700
1914	d1,870	b1,780	a1,540	a1,230	a1,110	a3,070	a5,820	d27,100	d40,200	d2,400	d1,520	d694	a88,200
1915	d967	b950	b1,230	b1,350	b1,390	b2,460	b3,560	11,900	22,700	2,480	534	1,340	b50,900
1916	1,970	b1,680	a1,230	a922	a1,040	b2,950	4,570	12,200	20,800	1,410	719	311	a49,800
1917	1,180	b1,190	a894	a861	a666	a1,230	a3,870	12,000	60,100	20,800	1,440	494	a105,000
1918	752	*1,010	*922	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	26,400	11,100	430	498	298	-
1920	1,220	1,830	a1,540	b1,960	b2,240	a3,150	4,150	28,300	56,700	5,740	1,510	791	a109,000
1921	1,610	2,570	a1,840	a2,150	a1,940	a3,610	4,510	30,400	51,400	3,400	1,480	452	a105,000
1922	430	a716	a615	a553	a555	a1,230	3,770	15,900	22,500	516	6	a0	a46,500
1923	98	875	b1,230	b1,540	b1,860	b2,460	4,470	16,100	35,900	4,870	329	750	*70,300
1924	1,990	a3,250	a2,460	b2,460	a2,010	a2,770	18,300	27,900	37,100	1,720	93	201	a100,000
1925	2,320	a1,940	*1,540	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

‡ Not previously published; estimated on basis of records for North Platte River at Saratoga.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published by State engineer of Wyoming.

d From reports of State engineer of Wyoming.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306	1,200	June 9, 17, 1911	0	-	-	-	-
1912	326, 1440	1,280	June 9, 10, 1912	-	a212	a154,000	a213	a155,000
1913	(b)	-	-	-	a125	a90,700	a122	a89,100
1914	(b)	-	-	-	a122	a98,200	a119	a86,200
1915	406	890	June 12, 1915	.4	c70.3	c50,900	a72.7	a52,600
1916	436, 469	688	June 11, 1916	0	a68.6	a49,800	a66.5	a48,300
1917	456	2,810	June 23, 1917	3	a145	a105,000	a144	a104,000
1918	458	-	-	0	-	-	-	-
1919	506	1,230	May 30, 1919	0	-	-	-	-
1920	506	1,970	June 12, 13, 1920	3	a150	c109,000	a153	a111,000
1921	526	*d1,640	June 8, 1921	4	a146	a105,000	a140	a101,000
1922	546	862	June 10, 1922	0	a64.3	a46,500	a64.9	a47,000
1923	568	1,320	June 10, 1923	0	c97.0	*70,300	a105	a75,800
1924	588	*1,630	June 15, 1924†	0	a138	a100,000	a136	a98,400

† Corrected.

‡ Not previously published.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From reports of State engineer of Wyoming.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d May have been higher during period of no gage-height record June 12, 1921.

57. Deep Creek near Arlington, Wyo.

Location.--Lat 41°27'10", long. 106°16'30", in sec. 9 (revised), T. 17 N., R. 79 W., at outlet of Sand Lake, 10 miles (revised) southwest of Arlington.

Drainage area.--3.7 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 10,100 ft (from topographic map). Prior to Oct. 1, 1915, water-stage recorder 160 ft upstream at different datum.

Extremes.--1914-18: Maximum discharge recorded, 116 cfs June 29, 1917 (gage height, 3.93 ft); minimum not determined.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	1.56	0.79	0.3	0.4	0.65	0.61	3.17	-	41.0	8.84	1.71	1.02	-
1916	1.4	2.1	1.1	.8	.9	.7	1.0	8.2	34.9	11.4	2.5	1.6	5.52
1917	1.32	.71	.30	.30	.48	.32	.65	.99	40.7	42.5	2.41	.37	7.62
1918	.65	.23	.31	.30	.39	.36	.36	10	24.8	11.3	.70	.72	4.17

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	96	47	18	25	36	38	189	-	2,440	544	105	61	-
1916	88	125	67	49	52	43	60	504	2,080	701	154	95	4,020
1917	81	42	18	18	27	20	39	61	2,420	2,610	148	22	5,510
1918	40	14	19	18	22	22	21	615	1,480	695	43	43	3,030

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	a75	June 11, 1915	-	-	-	-	-
1916	436, 469	-	-	-	5.52	4,020	5.34	3,880
1917	456	116	June 29, 1917	-	7.62	5,510	7.52	5,440
1918	476	a68	June 29, 1918	0.2	4.17	3,030	-	-

a Maximum daily.

58. Rock Creek at Arlington, Wyo.1/

Location.--Lat 41°35', long. 106°13', in sec. 25, T. 19 N., R. 79 W., at county bridge half a mile downstream from Overland Creek, 1 mile southwest of Arlington, and 7 miles southwest of McFadden.

Drainage area.--70 sq mi, approximately.

Gage.--Water-stage recorder. Prior to July 12, 1912, staff gage, and July 12, 1912, to Jan. 11, 1916, water-stage recorder at site 1 mile downstream at different datum. Jan. 12, 1916, to Sept. 30, 1918, water-stage recorder at site 40 ft upstream at same datum.

Extremes.--1910-18, 1939-50: Maximum discharge observed, 1,450 cfs June 7, 1911 (gage height, 3.9 ft, site and datum then in use), from rating curve extended above 1,000 cfs; minimum daily, 1 cfs Jan. 5, 6, 1915.

Remarks.--Adjudicated diversions above station for irrigation of about 4,900 acres above and below station. King Canyon Canal diverts water from right bank 300 ft above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	*40.6	*30	*25	*22	*18	*25	*38.6	282	643	88.9	38.9	23.8	*106
1912	45.5	*26.0	*22	*21	*21	*21	19.0	146	866	590	88.2	44.1	*141
1913	41.4	32.6	*25	*20	*15	*10.5	21.6	306	407	77.3	27.7	13.5	*83.3
1914	14.3	13.7	13	13	13	11.0	23.2	344	642	88.8	34.8	21.2	103
1915	21.2	10.9	3.6	7.2	15.8	13.5	37.3	250	424	69.7	16.9	16.3	73.8
1916	23.4	20.7	19.4	9.77	11.0	22.0	28.1	170	424	99.5	28.1	17.3	72.5
1917	22.4	19.0	14.3	9.7	11.2	11.3	20.8	40.5	501	273	34.7	19.7	81.4
1918	28.9	28.5	31.5	25.5	25.0	33.2	41.2	236	753	114	26.1	21.2	112
1939	-	-	-	-	-	-	-	-	-	-	-	12.2	-
1940	11.7	8.34	6.82	6.23	7.97	8.92	15.0	211	165	35.5	10.5	10.2	41.5
1941	12.0	10.9	10.6	8.94	7.49	9.69	14.1	262	236	46.6	24.9	16.0	55.2
1942	11.3	*7.07	*6.6	*5.0	*6.0	*7.4	23.1	187	525	82.1	16.1	12.7	*74.0
1943	13.5	12.6	*13	*13	*17	*20	*55.4	207	516	87.7	24.6	12.1	*82.4
1944	12.4	12.1	10.5	*10	*10	*12	*14	143	266	57.9	16.9	8.51	*47.7
1945	14.3	*10.3	*10	*12	*12	*16	*72	*250	397	158	30.9	18.2	*83.5
1946	16.0	13.4	*12	*15	*17	*25	62.0	157	352	58.0	21.6	12.5	*63.4
1947	15.0	9.0	6.0	*5.0	*6.0	*8.0	16.3	213	372	135	34.3	19.7	*70.2
1948	14.7	11.2	10.1	8.53	8.01	9.00	20.5	257	244	36.1	14.1	9.53	53.6
1949	12.5	10.6	9.5	8.0	8.0	9.0	25.2	179	524	96.1	21.8	14.5	76.3
1950	15.0	9.27	7.53	6.78	7.64	8.06	18.2	91.8	526	127	26.2	24.0	72.0

* Revised; supersedes figure published in Water-Supply Paper 469.

* Not previously published; estimated on basis of records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	*2,500	*1,790	*1,540	*1,350	*1,000	*1,540	*2,180	17,300	38,300	5,470	2,390	1,420	*76,800
1912	2,670	*1,550	*1,290	*1,290	*1,210	*1,290	1,130	9,000	51,500	23,460	5,420	2,620	*136,000
1913	2,550	1,940	*1,540	*1,230	*833	*648	1,290	18,800	24,200	4,750	1,700	791	*60,300
1914	879	815	799	799	722	676	1,380	21,200	38,200	5,460	2,140	1,280	74,300
1915	1,300	649	220	442	878	830	2,220	15,400	25,200	4,290	1,040	970	53,400
1916	1,440	1,230	1,190	601	633	1,350	1,670	10,500	25,200	6,120	1,730	1,030	52,700
1917	1,380	1,130	879	596	622	695	1,240	2,490	29,800	16,800	2,130	1,170	58,900
1918	1,780	1,700	1,940	1,570	1,390	2,040	2,450	14,500	43,600	7,010	1,600	1,260	80,800
1939	-	-	-	-	-	-	-	-	-	-	-	724	-
1940	718	496	407	383	458	548	890	12,940	9,830	2,180	645	605	30,100
1941	739	649	654	550	416	608	839	16,110	14,050	2,870	1,530	951	39,970
1942	694	*420	*406	*307	*333	*455	1,370	11,520	31,260	5,050	990	754	*53,560
1943	827	750	*799	*799	*944	*1,230	*3,290	12,710	30,680	5,380	1,510	718	*59,850
1944	760	722	645	*615	*575	*738	*833	8,770	15,850	3,560	1,040	508	*34,610
1945	877	*613	*615	*738	*666	*984	*4,280	15,370	23,640	9,700	1,900	1,080	*60,460
1946	984	797	*738	*922	*944	*1,540	3,690	9,680	20,940	3,570	1,330	742	*45,880
1947	924	536	369	*307	*333	*492	968	13,120	22,140	8,320	2,110	1,170	*50,790
1948	906	667	620	525	461	553	1,220	16,620	14,500	2,220	865	567	38,920
1949	767	632	584	492	444	553	1,500	10,980	31,200	5,910	1,340	885	55,270
1950	925	552	463	417	424	498	1,080	5,640	31,280	7,790	1,610	1,430	52,110

* Revised; supersedes figure published in Water-Supply Paper 469.

* Not previously published; estimated on basis of records for nearby stations.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306	a1,450	June 7, 1911	-	*106	76,800	*106	*76,500
1912	326	*a1,260	June 25, 1912	-	*141	102,000	*142	*103,000
1913	358	b800	May 30, 1913	-	*83.3	*80,500	*83.4	*80,500
1914	388	b1,160	June 2, 1914	-	103	74,300	102	74,000
1915	406	*1,060	June 11, 1915	1	73.8	53,400	76.2	55,100

* Revised.

* Not previously published.

a Maximum observed.

b Maximum daily.

1/ Published as "near Arlington," 1911-13, 1916-18.

Yearly discharge, in cubic feet per second, of Rock Creek at Arlington, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436	661	June 10, 1916	6	72.5	52,700	71.9	52,200
1917	456	1,100	June 21, 1917	4	81.4	58,900	84.2	61,000
1918	476	1,240	June 18, 1918	16	112	80,800	-	-
1939	896	-	-	-	-	-	-	-
1940	896	550	May 31, 1940	4.6	41.5	30,100	42.0	30,520
1941	926	815	May 26, 1941	4.5	55.2	39,970	54.5	39,450
1942	956	1,250	June 12, 1942	-	74.0	53,560	75.2	54,420
1943	976	1,180	June 1, 1943	5	82.4	59,650	82.1	59,400
1944	1006	662	May 30, 1944	6.7	47.7	34,610	47.6	34,590
1945	1036	1,080	June 27, 1945	6.7	83.5	60,460	84.1	60,880
1946	1056	995	June 6, 1946	-	63.4	45,880	62.4	45,190
1947	1086	1,080	June 21, 1947	-	70.2	50,790	70.7	51,150
1948	1116	980	June 2, 1948	6.2	53.6	38,920	53.3	38,710
1949	1146	1,440	June 16, 1949	-	76.3	55,270	76.3	55,220
1950	1176	1,280	June 16, 1950	6.0	72.0	52,110	-	-

* Not previously published.

59. Rock Creek near Rock River, Wyo.

Location.--Lat 41°44', long. 105°56', in sec. 4, T. 20 N., R. 76 W., $1\frac{1}{2}$ miles east of Rock River.

Drainage area.--184 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 6,900 ft (estimated on basis of level line about a mile away). Prior to July 28, 1912, staff gage and July 28 to Nov. 17, 1912, water-stage recorder 2 miles upstream at different datum.

Extremes.--1911-12, 1928-33: Maximum discharge observed, 1,350 cfs June 4, 1912 (gage height, 4.2 ft, site and datum then in use), from rating curve extended above 900 cfs; no flow Aug. 29 to Sept. 25, 1911, Sept. 2-20, 1931, and Sept. 23, 1932.

Remarks.--Divisions above station for irrigation of about 29,000 acres, part of which is above station and part below. Two reservoirs (combined capacity about 5,000 acre-ft) above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	8.9	110	457	43.2	11.6	0.7	-
1912	11.8	-	-	10	8	14	-	145	670	137	20.9	27.1	-
1913	41.9	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	345	434	73.2	7.71	4.73	-
1929	7.53	9.90	-	10.3	10.9	13.6	82.2	166	575	83.4	12.4	15.6	82.8
1930	12.4	15.0	12.0	6.0	15.0	18.0	48.8	57.8	59.6	3.28	17.8	2.32	22.3
1931	21.5	11.4	7	7	6	9	26.0	57.3	156	7.5	6.5	0	26.2
1932	3.2	3.7	5	5	6	10	45.6	124	320	36.9	12.1	1.9	47.5
1933	4.0	4.0	3.0	3.5	2.4	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	530	6,760	27,200	2,660	713	42	-
1912	726	-	-	615	460	861	-	8,920	39,900	8,420	1,290	1,610	-
1913	2,580	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	21,200	25,800	4,500	474	281	-
1929	463	589	615	633	605	836	4,890	10,200	34,200	5,130	762	928	59,800
1930	762	693	738	369	833	1,110	2,900	3,550	3,550	202	1,090	138	16,100
1931	1,320	678	430	430	333	553	1,550	3,520	9,280	461	400	0	19,000
1932	197	220	307	307	345	615	2,710	7,620	19,000	2,270	744	113	34,400
1933	246	238	184	215	133	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306	900	June 17, 1911	0	-	-	-	-
1912	326, 469	1,350	June 4, 1912	1	-	-	-	-
1913	326	-	-	-	-	-	-	-
1928	666	1,180	May 29,30, 1928	-	-	-	-	-
1929	686	1,040	June 11, 1929	3.3	82.8	59,800	83.8	60,600
1930	701	510	Aug. 13, 1930	.6	22.3	16,100	22.3	16,200
1931	716	492	June 5, 1931	0	26.2	19,000	23.9	17,300
1932	731	630	June 17, 1932	0	47.5	34,400	47.4	34,400
1933	746	-	-	-	-	-	-	-

a Maximum observed.

PLATTE RIVER BASIN

60. Rock Creek below Rock River, Wyo.

Location.--Lat 41°46', long. 105°56', in SW $\frac{1}{4}$ sec. 22, T. 21 N., R. 76 W., one-half mile upstream from Johnson ditch and 4.5 miles northeast of Rock River.

Drainage area.--216 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,750 ft (estimated on basis of level line about 2 miles away).

Extremes.--1940-42: Maximum discharge, 1,130 cfs June 13, 1942 (gage height, 6.42 ft), from rating curve extended above 370 cfs; no flow Sept. 1-10, 13-17, 1942.

Remarks.--Diversions above station for irrigation of about 32,000 acres above and below station. Several small reservoirs (total capacity about 3,300 acre-ft) above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1.09	1.55	1.3	1.3	3.0	14	37.2	53.3	95.4	17.5	8.84	2.32	19.7
1942	11.1	-	-	-	-	-	54.3	143	382	30.1	3.72	1.32	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	67	92	80	80	167	861	2,210	3,280	5,680	1,070	543	138	14,270
1942	683	-	-	-	-	-	3,230	8,810	22,700	1,850	229	79	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	*275	May 27, 1941	-	19.7	14,270	-	-
1942	956	1,130	June 13, 1942	0	-	-	-	-

* Revised.

61. Medicine Bow River at Medicine Bow, Wyo.

Location.--Lat 41°54', long. 106°11', in sec. 9 (revised), T. 22 N., R. 78 W., at Union Pacific Railroad pump house about half a mile east of Medicine Bow.

Drainage area.--900 sq mi, approximately.

Gage.--Vertical staff. Altitude of gage is 6,570 ft (from topographic map).

Extremes.--May to September 1901: Maximum discharge observed, 1,920 cfs May 23, 24, 1901 (gage height, 4.80 ft), from rating curve extended above 1,300 cfs; minimum daily, 6 cfs Aug. 22, 23, 24, 1901.

Remarks.--Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	*773	977	96	17	16	-

* Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	*47,500	58,100	5,900	1,040	952	-

* Only monthly figure revised; revised daily figures not available.

62. Muddy Creek near Shirley, Wyo.

Location.--Lat 42°13', long. 106°22', in sec. 12 (revised), T. 26 N., R. 80 W., at county bridge and 6 miles northeast of Shirley.

Drainage area.--67 sq mi, approximately.

Supplemental records available.--Apr. 8-15, 1917, 10 discharge measurements and daily discharges.

Gage.--Staff gage.

Extremes.--1915-17: Maximum daily discharge, 330 cfs Aug. 23, 1915; maximum gage height determined, 9.72 ft Aug. 23, 1915; no flow at times during 1915.

Remarks.--Adjudicated diversions above station for irrigation of about 3,300 acres.

Monthly and yearly mean discharge, in cubic feet per second, of Muddy Creek near Shirley, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	3.12	1.98	23.2	13.3	-
1916	3.87	-	-	-	-	-	13.5	16.5	5.02	.30	2.98	1.14	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	-	-	186	122	1,430	791	-
1916	238	-	-	-	-	-	803	1,010	299	18	183	68	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1915	406	a330	Aug. 23, 1915	0	-	-	-	-	-
1916	436	#b84	Aug. 21, 1916	-	-	-	-	-	-
1917	456	-	-	-	-	-	-	-	-

a Maximum daily.

b Maximum observed during period April to September 1916.

* Not previously published.

63. Medicine Bow River above Seminole Reservoir, near Hanna, Wyo.

Location (revised).--Lat 42°00'35", long. 106°30'45", in SW¼NW¼ sec. 34, T. 24 N., R. 81 W., 2 miles upstream from Troublesome Creek, 9 miles upstream from high-water line of Seminole Reservoir, and 10 miles north of Hanna.

Drainage area.--2,310 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,415.40 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 180 cfs.

Extremes.--1939-50: Maximum discharge, 6,590 cfs Mar. 29, 1943 (gage height, 5.23 ft), from rating curve extended above 1,900 cfs by logarithmic plotting; minimum daily, 2 cfs Aug. 22, 23, 1939.

Remarks.--Water rights totaling about 1,280 cfs (priorities 1866 to 1944), for irrigation of about 92,000 acres, adjudicated by State of Wyoming for diversion above station. Many small reservoirs above station for irrigation (total adjudication, 6,000 acre-ft per year).

Cooperation.--Records for July 1 to Sept. 30, 1939, furnished by the Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	5.7	9.5	9.2	-
1940	13.8	16.3	16	12	15	90.6	191	307	170	53.0	9.62	28.5	77.1
1941	30.1	23.2	20.4	18.1	24.6	112	*300	*857	.411	68.4	150	27.5	*171
1942	78.7	88.9	57.1	24.2	26.0	146	461	628	958	78.8	13.3	10.4	212
1943	40.5	75.3	47.9	31.9	33.7	616	406	304	759	157	26.8	9.51	209
1944	18.5	50.8	30.7	16.7	16.4	20.4	380	569	588	67.9	6.06	7.35	145
1945	20.1	23.3	23.1	26.5	36.0	56.4	306	823	966	45.4	150	49.4	245
1946	61.8	51.4	33.0	39.3	35.1	96.7	254	360	600	67.5	20.9	16.6	136
1947	36.3	64.1	56.4	20	27	172	334	609	981	311	73.1	21.8	226
1948	34.0	54.6	59.9	48.2	30.1	116	504	579	333	46.2	24.9	12.5	153
1949	21.5	22.3	13.2	12	10	248	591	711	1,086	230	37.4	22.5	250
1950	41.1	57.4	58.5	25.8	45.9	96.8	232	394	679	187	29.2	35.9	155

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	351	585	545	-
1940	849	970	984	738	863	5,570	11,390	18,900	10,120	3,280	592	1,700	55,940
1941	1,850	1,380	1,250	1,110	1,370	6,880	*17,840	*52,680	24,440	4,200	9,200	1,840	*123,800
1942	4,840	5,290	3,510	1,490	1,450	8,970	27,430	38,640	55,840	4,850	816	620	153,700
1943	2,490	4,480	2,940	1,960	1,870	37,870	24,130	18,670	45,190	9,680	1,650	566	151,500
1944	1,140	3,010	1,890	1,030	944	1,250	22,800	34,980	33,670	4,170	372	437	105,500
1945	1,250	1,590	1,420	1,630	2,000	3,470	18,230	50,600	57,460	27,890	9,240	2,940	177,500
1946	3,800	3,060	2,030	2,410	1,950	5,950	15,130	22,180	35,680	4,150	1,290	989	98,600
1947	2,350	3,810	3,470	1,230	1,500	10,560	19,880	37,460	58,370	19,120	4,490	1,300	163,500
1948	2,090	3,250	3,690	2,960	1,730	7,160	29,970	35,630	19,810	2,840	1,530	746	111,400
1949	1,320	1,330	813	738	555	15,260	35,190	43,700	64,620	14,150	2,300	1,340	181,300
1950	2,530	3,410	2,360	1,580	2,550	5,950	13,780	24,210	40,410	11,500	1,800	2,130	112,200

* Revised.

Yearly discharge, in cubic feet per second, of Medicine Bow River above Seminole Reservoir, near Hanna, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	896	-	-	-	-	-	-	-
1940	896	*1,270	July 5, 1940	2.3	77.1	55,940	79.4	57,610
1941	926, 1440	2,080	May 6, 1941	10	*171	*123,800	*184	*133,000
1942	956	1,610	June 14, 1942	5.4	212	153,700	207	150,000
1943	976	6,590	Mar. 29, 1943	7.4	209	151,500	204	147,600
1944	1008	2,370	Apr. 13, 1944	5.0	145	105,500	143	103,500
1945	1036	1,900	June 7, 1945	16	245	177,500	252	182,400
1946	1056	1,360	June 21, 1946	6.0	136	99,600	137	99,340
1947	1066	2,340	June 24, 1947	*11	226	153,500	225	162,900
1948	1116	1,140	May 31, 1948	8.5	153	111,400	146	105,800
1949	1146	2,120	June 12, 1949	-	250	181,300	257	186,200
1950	1176	1,080	June 19, 1950	12	155	112,200	-	-

* Revised.

† Not previously published.

64. Seminole Reservoir near Leo, Wyo.

Location.--Lat 42°09', long. 106°53', in sec. 8, T. 25 N., R. 84 W., on upstream side near center of dam on North Platte River, 6 miles upstream from high-water line of Pathfinder Reservoir, and 9 miles (revised) southwest of Leo.

Drainage area.--7,340 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,190.00 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation); gage readings have been reduced to elevations above mean sea level. Daily contents computed from elevation recorded at 8 a.m. Prior to Apr. 20, 1939, staff gage at same site and datum.

Extremes (revised).--1939-50: Maximum contents observed, 1,073,000 acre-ft June 20, 1949 (elevation, 6,359.29 ft); minimum observed (since appreciable storage was attained), 19,040 acre-ft Sept. 1, 1939 (elevation, 6,228.00 ft).

Remarks.--Reservoir is formed by concrete-arch dam. Storage began Apr. 1, 1939, but some regulation for power development during period Jan. 1 to Mar. 31, 1939. Capacity 1,026,000 acre-ft below elevation 6,357 ft (top of spillway gates). Figures given herein represent total contents above elevation 6,157 ft, of which 58,920 acre-ft (corrected) (capacity below 6,252 ft; minimum operating level for power development) are not available for power development and 352 acre-ft (below elevation 6,185.09 ft penstock invert) is dead storage. Dead storage is considered negligible. Surface area, 20,050 acres at elevation of 6,357. Water is used for irrigation and power development.

Cooperation.--Records furnished by Bureau of Reclamation.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1939	-	-	-	-	0	6,740	90,930	244,960	228,680	95,670	19,040	25,850
1940	37,520	44,200	44,200	43,420	47,000	64,610	66,920	128,350	158,430	67,540	23,690	27,170
1941	45,280	54,760	61,690	62,990	65,070	82,100	98,820	257,000	334,700	208,300	114,700	121,600
1942	132,000	143,000	132,200	107,300	83,730	64,380	160,800	283,600	551,000	533,800	438,400	360,600
1943	325,000	299,400	277,000	249,600	221,700	231,500	343,900	413,600	613,300	569,400	454,200	392,500
1944	342,200	313,100	274,000	221,100	187,600	121,900	168,800	276,300	462,700	430,700	313,200	256,900
1945	240,200	217,600	181,800	142,300	117,000	107,900	145,200	363,000	653,100	770,800	780,800	746,000
1946	702,700	671,800	639,400	595,300	554,500	543,000	610,700	693,500	819,700	727,600	610,700	562,000
1947	502,600	472,200	439,700	380,000	339,000	344,200	405,300	638,200	932,700	978,000	922,200	871,800
1948	818,300	780,900	737,100	682,000	624,300	590,800	650,700	835,700	947,500	873,900	797,800	728,200
1949	675,100	638,700	610,300	575,500	546,400	522,400	604,500	848,600	1,020,000	1,006,000	919,200	856,000
1950	811,600	769,500	706,300	647,200	604,000	573,800	601,800	657,000	885,400	863,700	780,400	746,400

† Corrected.

65. North Platte River above Pathfinder Reservoir, Wyo. 1/

Location.--Lat 42°11'35", long. 106°52'15", in sec. 27, T. 26 N., R. 84 W., 900 ft downstream from Lost Creek and 4 miles downstream from Seminole Reservoir dam.

Drainage area.--7,410 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 5,900 ft (from topographic map).

Average discharge.--25 years (1913-38), 1,654 cfs (prior to storage in Seminole Reservoir).

Extremes.--1913-39: Maximum discharge, 18,800 cfs June 26, 1917 (gage height, 6.2 ft);

minimum daily prior to regulation by Seminole Reservoir, 20 cfs Sept. 7, 1934.

Remarks.--Divisions above station for irrigation of about 326,000 acres. Flow regulated by Seminole Reservoir (capacity, 1,020,000 acre-ft) since Dec. 16, 1938. Transbasin diversions above station (see elsewhere in this report).

1/ Published as "above Pathfinder" prior to 1921.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River above Pathfinder Reservoir, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	623	593	455	390	390	800	2,660	*6,840	8,410	1,500	742	377	*1,980
1915	694	431	390	325	325	465	2,020	2,580	3,980	1,070	669	691	1,140
1916	598	485	470	315	415	al,600	2,010	4,030	4,800	1,400	962	609	al,480
1917	883	435	400	390	380	800	5,110	6,850	14,100	6,800	1,240	626	3,160
1918	467	523	450	420	400	1,150	1,810	4,710	10,000	1,850	473	435	1,890
1919	698	531	415	345	340	635	2,290	4,430	2,650	375	324	179	1,100
1920	366	443	375	350	380	755	1,720	8,630	11,000	2,580	851	509	2,330
1921	549	635	435	420	450	1,120	1,260	6,000	12,500	1,300	480		2,290
1922	410	435	370	283	b330	a953	1,950	5,040	5,710	901	366	194	cl,410
1923	232	317	c270	c300	c280	c575	cl,860	5,680	10,100	3,200	897	849	c2,050
1924	730	565	c450	c350	c300	c550	4,330	5,010	6,590	1,090	215	195	cl,690
1925	614	558	c375	c355	c400	1,390	1,980	4,150	4,710	2,310	970	960	cl,570
1926	b1,280	b844	b598	b488	b567	b847	b4,540	b7,200	b7,340	b1,890	b681	b302	b2,210
1927	b558	b524	b280	b320	b355	b558	b2,270	b6,750	b7,180	b1,820	b829	b487	b1,800
1928	b743	b872	b706	b598	b522	b982	b2,170	b9,190	b7,360	b1,890	b631	b335	b2,150
1929	b584	b694	b449	b356	c400	c600	c3,000	c6,000	9,620	3,130	919	960	c2,220
1930	718	502	420	265	515	849	3,480	2,360	3,120	518	1,120	453	1,180
1931	804	357	216	245	290	465	1,750	2,220	2,620	312	266	219	813
1932	383	329	250	240	265	421	3,240	7,400	7,210	1,990	564	279	1,880
1933	416	443	263	230	200	656	1,350	3,160	8,870	826	422	436	1,440
1934	312	355	320	310	424	570	982	1,274	380	115	86.4	39.9	431
1935	144	177	226	256	318	422	823	1,369	5,525	1,131	401	166	897
1936	220	361	504	281	273	672	3,136	5,326	3,795	862	667	161	1,342
1937	344	428	264	227	240	459	2,013	3,928	4,618	1,668	472	265	1,247
1938	357	383	343	337	422	1,143	2,507	4,885	6,766	1,236	413	938	1,643
1939	441	467	418	324	353	1,000	112	786	2,248	2,365	1,459	75.5	843

* Revised.

a Revised; partly estimated on basis of records for station at Saratoga; supersedes estimate published in WSP 469.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	38,300	35,300	28,000	24,000	21,700	49,200	158,000	421,000	*500,000	92,200	45,600	22,400	*1,440,000
1915	42,700	25,600	24,000	20,000	18,000	28,600	120,000	159,000	237,000	65,800	41,100	41,100	823,000
1916	36,900	28,900	28,900	19,400	23,900	a98,400	20,000	248,000	286,000	86,100	59,200	36,200	al,070,000
1917	54,300	25,900	24,600	24,000	21,000	49,200	504,000	421,000	839,000	418,000	76,200	37,200	2,290,000
1918	28,700	31,100	27,700	25,800	22,200	70,700	108,000	290,000	595,000	114,000	29,100	25,900	1,370,000
1919	42,900	31,600	25,500	21,200	18,900	39,000	136,000	272,000	518,000	23,100	19,900	10,700	799,000
1920	22,500	26,400	23,100	21,500	21,900	46,400	102,000	31,000	55,000	159,000	52,300	30,300	1,690,000
1921	33,800	37,800	26,700	25,800	25,000	68,900	75,000	359,000	744,000	55,000	69,500	28,600	1,660,000
1922	25,200	25,900	22,800	17,400	19,500	58,600	116,000	310,000	340,000	55,400	22,500	11,500	cl,020,000
1923	14,300	18,900	16,600	18,400	15,600	35,400	111,000	549,000	601,000	97,000	55,200	50,500	cl,480,000
1924	44,900	33,600	27,700	21,500	17,300	33,800	258,000	508,000	392,000	67,000	15,200	11,600	cl,230,000
1925	37,800	33,200	23,100	21,800	25,000	65,500	118,000	255,000	280,000	42,000	59,600	57,100	cl,140,000
1926	b77,300	b50,200	b36,800	b30,000	b31,500	b52,100	b270,000	b443,000	b437,000	b116,000	b41,900	b18,000	b1,600,000
1927	b21,900	b17,300	b19,700	b19,700	b19,700	b34,400	b135,000	b415,000	b427,000	b112,000	b51,000	b29,000	b1,300,000
1928	b45,700	b51,900	b43,400	b36,800	b30,000	b60,400	b129,000	b265,000	b438,000	b16,000	b38,800	b19,800	b1,570,000
1929	b35,900	b41,300	b27,600	b21,900	b22,200	b36,900	b179,000	b368,000	b572,000	b192,000	b6,500	b7,100	cl,810,000
1930	44,100	29,900	25,600	16,300	28,600	39,900	207,000	45,000	196,000	31,900	68,900	27,000	850,000
1931	49,400	21,200	13,300	15,100	16,100	28,600	104,000	136,000	156,000	19,200	16,400	13,000	588,000
1932	23,600	19,600	15,400	14,800	15,200	25,900	193,000	455,000	429,000	22,000	34,700	16,600	1,360,000
1933	25,600	26,400	17,400	14,100	11,100	40,300	80,300	194,000	528,000	50,800	25,900	25,900	1,040,000
1934	19,180	21,100	19,680	19,080	23,560	35,020	58,420	78,330	23,210	7,050	5,310	2,370	312,300
1935	8,880	10,510	13,890	15,760	17,660	25,920	37,070	85,420	328,800	89,560	24,670	11,070	649,200
1936	13,500	22,650	18,700	17,260	15,710	41,330	186,600	527,500	225,800	53,020	41,010	10,740	973,800
1937	21,150	25,480	16,250	13,950	13,330	28,240	119,800	241,500	274,800	102,600	29,010	16,990	903,100
1938	21,930	22,810	21,120	20,710	23,450	70,290	49,200	500,400	402,600	75,990	25,370	55,830	1,190,000
1939	27,150	27,800	25,730	19,920	19,590	61,490	6,640	48,320	133,800	45,400	89,690	4,490	610,000

* Revised.

a Revised; see footnote to preceding table.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of North Platte River above Pathfinder Reservoir, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	(a)	*16,500	June 6, 1914	-	*1,980	*1,440,000	*1,970	*1,430,000
1915	406, 469	b6,020	June 2, 1915	-	1,140	823,000	1,140	825,000
1916	(c)	6,380	June 14, 1916	265	d1,480	d1,070,000	d1,490	d1,080,000
1917	456, 469	18,800	June 26, 1917	-	3,160	2,290,000	3,150	2,280,000
1918	469, 476	15,300	June 15-17, 19	-	1,890	1,570,000	1,910	1,380,000
1919	469, 506	8,110	May 31, 1919	136	1,100	799,000	1,060	771,000
1920	469, 506	14,700	June 12, 1920	215	2,330	1,690,000	2,370	1,720,000
1921	469, 526	17,500	June 17, 1921	-	2,290	1,680,000	2,260	1,630,000
1922	546	9,100	May 31, 1922	144	e1,410	e1,020,000	e1,380	e1,000,000
1923	566	15,100	June 12, 1923	131	e2,060	e1,480,000	e2,130	e1,540,000
1924	586	10,800	June 17, 1924	-	e1,690	e1,230,000	e1,670	e1,220,000
1925	606	10,200	June 7, 1925	-	e1,570	e1,140,000	e1,670	e1,210,000
1926	-	*17,000	May 30, 1926	-	f2,210	f1,600,000	f2,070	f1,500,000
1927	-	*10,500	June 17, 1927	-	f1,800	f1,300,000	f1,910	f1,390,000
1928	-	*17,500	June 1, 1928	-	f2,160	f1,570,000	f2,120	f1,540,000
1929	686	12,800	June 15, 1929	-	e2,220	e1,610,000	e2,220	e1,610,000
1930	701	7,700	Apr. 11, 1930	-	1,180	850,000	1,150	835,000
1931	716	6,740	June 4, 1931	86	813	588,000	778	563,000
1932	731	15,500	May 24, 1932	-	1,880	1,360,000	1,900	1,380,000
1933	746	12,200	June 15, 1933	-	1,440	1,040,000	1,420	1,030,000
1934	761	1,980	May 14, 1934	20	431	312,300	395	285,600
1935	786	10,100	June 17, 1935	82	897	649,200	927	670,800
1936	806	9,000	June 2, 1936	152	1,342	973,800	1,353	981,800
1937	826	8,600	June 2, 1937	158	1,247	903,100	1,252	906,100
1938	856	10,000	June 9, 1938	189	1,643	1,190,000	1,664	1,205,000
1939	876	4,720	Mar. 6, 1939	12	843	610,000	-	-

* Revised.

† Not previously published.

a WSP Nos. 586, 469, 1440.

b Maximum observed.

c WSP Nos. 436, 469, 1440.

d Revised; see footnote a to preceding tables.

e Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

f From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

66. Sage Creek above Pathfinder Reservoir, Wyo.

Location.--Lat 42°14'50", long. 106°53'00", in sec. 4 (revised), T. 26 N., R. 84 W., about three-quarters of a mile (revised) upstream from Pathfinder Reservoir and 16 miles southwest of Alcova.

Drainage area.--182 sq mi.

Gage.--Staff gage. Altitude of gage is 5,870 ft (from topographic map). Prior to May 10, 1924, at different datum.

Average discharge.--10 years (1915-25), 18.6 cfs.

Extremes.--1915-25: Maximum discharge observed, 1,180 cfs Apr. 7, 1924 (gage height, 6.73 ft, datum then in use), from rating curve extended above 200 cfs; no flow Aug. 22, 25, 27, 30, 1919, and July 6-8, 1921.

Remarks.--Diversions above station for irrigation of about 3,100 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	a2.44	16.5	10.5	10.1	0.82	5.35	10.2	-
1916	8.54	a8.29	a7	a5	a4.8	a47.5	43.0	48.2	4.65	.63	.81	1.42	a15.0
1917	4.87	a8.87	a7	a5	a5	b16.9	93.9	114	74.6	1.59	.85	2.52	b27.9
1918	5.90	12.3	a10	a5	a5	a27.3	44.6	66.2	13.4	.68	1.09	2.14	a15.2
1919	4.41	a11.1	a8	a5	a5	a9.02	23.7	6.04	1.36	.26	.17	.42	a8.08
1920	a2.99	a4.49	a4	a3	a3	a30.0	91.7	133	27.4	.72	.86	.50	a25.2
1921	2.06	7.41	a5	a5	b10	a29.9	17.5	44.5	12.9	5.03	4.14	1.44	b12.1
1922	1.97	a2.99	a3	a3	a8	a24.9	26.2	149	22.8	5.65	1.89	7.74	a21.0
1923	3.45	a6.97	a7	a5	a5	a10.0	46.7	121	33.1	5.79	2.05	4.78	a21.0
1924	24.9	17.8	a12.0	a10	a9.7	a10.0	219	59.3	15.5	.50	.43	1.39	a31.4
1925	15.5	7.7	a6.0	a5	a5	32.4	32.3	15.1	3.3	a1.0	a.5	a.5	a10.4

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet, of Sage Creek above Pathfinder Reservoir, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	a150	982	646	601	50	329	607	-
1916	525	a495	a428	a306	a277	a2,920	2,560	2,960	277	39	50	84	a10,900
1917	299	a529	a428	a306	a277	b1,040	5,890	7,010	4,440	97	52	150	b20,200
1918	363	732	a614	a306	a277	a1,680	2,650	4,070	797	53	67	127	a11,700
1919	271	a654	a490	a306	a277	a553	1,410	371	21	15	10	25	a4,400
1920	a184	a267	a246	a184	a172	a1,840	5,460	8,180	1,630	44	53	30	c18,300
1921	127	440	a306	a306	b555	a1,840	1,040	2,740	768	309	255	96	b8,770
1922	121	a178	a184	a184	a444	a1,530	1,560	9,160	1,360	347	116	44	a15,200
1923	212	a415	a429	a306	a277	a614	2,780	7,440	1,970	356	126	294	a15,200
1924	1,530	1,060	a756	a614	a555	a614	15,000	3,650	922	31	26	83	a22,800
1925	953	458	a368	a306	a277	1,990	1,920	928	196	a61	a31	a30	a7,520

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	*117	Aug. 6, 1915*	-	-	-	-	-
1916	436	*248	Mar. 9, 1916	-	a15.0	a10,900	a14.8	a10,700
1917	456	336	Apr. 24, 1917	-	b27.9	b20,200	b28.6	b20,700
1918	476	118	Mar. 23, May 26	-	a16.2	a11,700	a15.8	a11,400
1919	506	42	Apr. 20, 1919	0	a6.08	a4,400	a5.09	a3,690
1920	506	c1,080	Apr. 9, 1920	-	a25.2	d18,300	a25.4	a18,500
1921	526	*145	July 15, 1921*	0	b12.1	b8,770	b11.6	b8,380
1922	546	494	May 19, 1922	-	a21.0	a15,200	a21.8	a15,800
1923	566	220	May 23, 1923	-	a21.0	a15,200	a24.1	a17,500
1924	586	1,180	Apr. 7, 1924	-	a31.4	a22,800	a29.3	a21,300
1925	606	133	Oct. 8, 1924	-	a10.4	a7,520	-	-

* Revised.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From floodmark.

d Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

67. Deweese Creek near Alcoa, Wyo.

Location.--Lat 42°18'15", long. 106°57'20", in SW¼SW¼ sec. 13 (revised), T. 27 N., R. 85 W. (revised), at bridge 1,000 ft upstream from high-water line of Pathfinder Reservoir and about 21 miles southwest of Alcoa.

Drainage area.--41 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,860 ft (from topographic map).

Extremes.--1918, 1923-24: Not determined.

Remarks.--Adjudicated diversions above station for irrigation of about 308 acres.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	*8.7	*5.1	*5.1	*6.7	*6.3	*2.9	-
1923	-	-	-	-	-	-	5.28	5.63	3.19	.49	.30	1.32	-
1924	-	-	-	-	-	-	16.9	14.8	6.20	1.03	.40	.82	-

* Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	*518	*314	*304	*412	*387	*173	-
1923	-	-	-	-	-	-	314	346	190	.30	18	79	-
1924	-	-	-	-	-	-	1,010	910	155	63	25	49	-

* Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	476	-	-	-	-	-	-	-
1923	566	-	-	-	-	-	-	-
1924	586	-	-	-	-	-	-	-

Note.--Records for March to September 1917 and April 1919 to September 1922 published in Water-Supply Papers 456, 506, 526, and 546 have been found to be of doubtful accuracy on the basis of restudy of published data and comparison with records at nearby stations. Those records are not published herein and should not be used.

68. Sand Creek near Alcova, Wyo.

Location.--Lat 42°21'50" long. 106°58'00", in sec. 26 (revised), T. 28 N., R. 85 W., half a mile upstream from Pathfinder Reservoir and 18 miles (revised) southwest of Alcova.

Drainage area.--70 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,860 ft (from topographic map).

Average discharge.--9 years (1915-24), 4.08 cfs.

Extremes.--1915-24: Maximum discharge not determined; no flow at times most years.

Remarks.--Adjudicated diversions for irrigation of about 2,000 acres above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	4.16	2.72	2.37	0.19	0.72	7.40	-
1916	a5	a3	a2	a1	a1	a10	b15.0	6.95	3.86	.39	a0	a0	b5.98
1917	a2	a3	a2	a1	a1	a1	a13.4	12.7	19.8	.11	.16	.47	a4.88
1918	a1	a5	a2	a1	a1	a1	3.6	4.5	4.3	2.5	3.4	2.0	a2.61
1919	a2	a7	a2	a1	a1	a2	5.32	2.13	0	0	0	0	a1.86
1920	a1	a2	a1	a1	a1	a1	7.53	2.95	3.25	.10	.94	.20	a1.82
1921	a.2	a1	a1	a1	a1	a2	5.9	11.1	11.2	3.8	0	.9	a3.26
1922	a1	a1	a1	a1	a1	a2	10.1	8.5	2.9	.04	0	.37	a2.41
1923	a1	a2	a1	a1	a1	a4	20.7	12.7	6.98	a0	a0	6.95	a4.76
1924	a15	a10	a10	a2	a2	b4	36.7	30.4	11.0	.11	4.52	8.04	b11.1

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	248	167	141	12	44	440	-
1916	a506	a178	a123	a61	a57	a614	b992	427	230	2.4	a0	a0	b2,890
1917	a123	a178	a123	a61	a55	a184	a800	781	1,180	6.8	9.8	28	a3,530
1918	a61	a297	a123	a61	a55	a61	214	277	256	154	209	119	a1,890
1919	a123	a416	a123	a61	a55	a123	317	131	0	0	0	0	cl,550
1920	a61	a119	a61	a61	a57	a61	448	191	193	6	58	12	a1,320
1921	a12	a59	a61	a61	a55	a123	351	692	666	234	0	54	a2,360
1922	a61	a59	a61	a61	a55	a123	602	523	174	2	0	22	a1,740
1923	a61	a119	a61	a61	a55	a246	1,230	781	415	a0	a0	414	a3,440
1924	a920	a594	a614	a123	a115	b246	2,180	1,870	655	7	278	478	b8,080

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	-	-	0	-	-	-	-
1916	436	-	-	0	a3.98	a2,890	a3.73	a2,710
1917	456	-	-	0	b4.88	b3,530	b4.95	b3,590
1918	476	-	-	0	b2.61	b1,890	b2.86	b2,070
1919	506	-	-	0	cl.86	cl,550	bl.28	b928
1920	506	-	-	-	b1.82	b1,320	bl.67	bl,210
1921	526	-	-	0	b5.26	b2,360	b5.32	b2,410
1922	546	-	-	0	b2.41	b1,740	b2.49	bl,800
1923	566	-	-	0	b4.76	b3,440	b7.36	b5,330
1924	586	-	-	0	a11.1	a8,080	-	-

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

69. Sweetwater River near Atlantic City, Wyo.

Location (revised).--Lat 42°23'50", long. 108°34'55", in SE $\frac{1}{4}$ sec. 13, T. 28 N., R. 99 W., $\frac{3}{4}$ miles downstream from Rock Creek, and 10 miles southeast of Atlantic City.

Drainage area.--411 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,190 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 1,810 cfs Apr. 23, 1950 (gage height, 7.79 ft); maximum gage height, 8.09 ft Apr. 16, 1950 (backwater from ice); minimum daily discharge, 3 cfs Aug. 19, 1946, but may have been less during periods of no gage-height record.

Remarks.--A few small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second, of
Sweetwater River near Atlantic City, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	35.3	28.1	-
1947	15.6	-	-	-	-	-	-	396	425	201	55.7	29.5	-
1948	35.9	30.6	-	-	-	-	-	298	204	48.7	13.7	5.20	-
1949	17.1	23.1	-	-	-	-	-	587	425	88.8	26.3	17.7	-
1950	45.8	40.8	-	-	-	-	521	733	887	255	54.6	40.1	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	2,170	1,670	-
1947	962	-	-	-	-	-	-	-	-	-	3,430	1,750	-
1948	2,210	1,820	-	-	-	-	-	24,350	25,280	12,360	845	310	-
1949	1,050	1,370	-	-	-	-	-	18,310	12,160	2,990	1,620	1,050	-
1950	2,810	2,430	-	-	-	-	31,030	45,090	52,780	15,590	3,360	2,380	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	-	-	-	-	-	-	-
1947	1086	677	June 22, 1947	-	-	-	-	-
1948	1116	8436	May 29, 1948	-	-	-	-	-
1949	1146	1,440	May 20, 1949	-	-	-	-	-
1950	1176	1,810	Apr. 23, 1950	-	-	-	-	-

a Maximum during period May to September.

70. Sweetwater River at Devils Gate, near Splitrock, Wyo.^{1/}

Location (revised).--Lat 42°26'40", long. 107°13'10", in sec. 35, T. 29 N., R. 87 W., at Sun Ranch, about 1,000 ft downstream from Pete's Creek, half a mile upstream from Devils Gate, and 18½ miles east of Splitrock.

Drainage area.--2,180 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,950 ft (from topographic map).

Extremes.--1902-3: Maximum discharge observed, 400 cfs June 11-14, 17, 1903 (gage height, 5.9 ft); minimum discharge not determined.

Remarks.--Adjudicated diversions of 101 cfs from Sweetwater River above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	16.8	19.0	-	-	-	-	110	140	287	49	17	15	-
1904	37	44.3	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	1,030	1,130	-	-	-	-	6,540	8,610	17,100	3,010	1,040	893	-
1904	2,280	2,640	-	-	-	-	-	-	-	-	-	-	-

a Published incorrectly in Water-Supply Paper 469.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	99, 469	400	June 11-14, 17	-	-	-	-	-

Note.--Records for January to March, November, December 1903 published in WSP 99 have been found in error on the basis of restudy of the original data and comparison with records for nearby stations. These records are not published herein and should not be used.

^{1/} Published as Sweetwater River near Splitrock in Water-Supply Paper 469.

71. Sweetwater River near Alcova, Wyo.

Location (revised).--Lat 42°27'30", long. 107°11'45", in NE $\frac{1}{4}$ sec. 25, T. 29 N., R. 87 W., at Dumbell Ranch, about 12 miles upstream from high-water line of Pathfinder Reservoir, and 25 miles southwest of Alcova.

Drainage area.--2,270 sq mi, approximately.

Gage.--Water-stage recorder at present site since Oct. 1, 1938. Altitude of gage is 5,920 ft (from topographic map). Aug. 28, 1913, to Sept. 30, 1924, staff gages 0.4 mile upstream at different datums.

Average discharge.--23 years (1913-24, 1938-50), 145 cfs.

Extremes.--1913-24, 1938-50: Maximum discharge observed, 4,290 cfs Apr. 13, 1924 (gage height, 8.86 ft, site and datum then in use); minimum daily, 0.5 cfs July 30 to Aug. 12, 1940.

Remarks.--Diversions for irrigation of about 24,000 acres above station. Several small reservoirs above station (total capacity about 2,200 acre-ft) for irrigation.

Cooperation.--Records for 1917-24 furnished by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	54.5	53.9	a45	a39	a39	a80	370	542	399	64.4	38.9	28.6	a146
1915	48.9	a43.0	a39	a32	a32	a46.5	136	95.6	176	72.0	52.5	70.5	a70.4
1916	86.6	a79.8	a45	a32	a42	a210	432	603	381	96.6	57.1	43.4	a176
1917	b60	a44	a40	a39	a38	a80	357	743	1,120	362	74.2	59.6	b251
1918	57.3	61.9	a53.0	a42	a40	a33.8	246	353	337	69.2	28.4	34.6	a118
1919	b45	a53	a41	a34	a34	a62.9	171	129	58.9	5.9	2.6	8.0	b53.9
1920	a37	a44	a38	a35	a38	a75	545	1,080	674	83.8	40.1	31.8	a227
1921	a55	a64	a43	a42	a45	a112	252	693	979	a90	a35	a30	b203
1922	a41	a44	a37	a38	a33	a150	133	782	761	177	49.0	33.1	a189
1923	a23	a32	a31	a33	a31	a35	221	645	529	218	a52	109	b164
1924	a73	a56	a39	a33	a27.	a33	1,840	983	529	82.3	c21	c18	a309
1939	66.1	51.7	41.0	33.9	28.6	122	178	107	77.8	8.06	3.58	8.05	60.4
1940	19.3	30.1	31.5	23.9	26.0	49.5	84.8	20.7	17.3	5.01	.92	1.90	25.8
1941	16.0	25.4	20.0	19.5	23.0	65.5	157	411	258	44.4	68.9	48.8	96.8
1942	76.6	65.3	42.0	26.5	34.2	73.2	401	300	248	50.8	11.1	13.4	110
1943	36.4	49.0	34.4	32.3	34.6	75.3	432	475	413	118	20.6	3.83	144
1944	33.5	54.0	40.6	31.1	32.2	43.7	199	540	455	118	27.5	10.4	132
1945	36.1	48.6	42.2	38.6	39.6	66.9	198	662	464	190	63.2	43.9	158
1946	64.4	64.4	49.5	31.5	30.0	82.1	231	266	245	50.2	7.36	13.2	94.7
1947	43.3	47.8	44.4	22.8	25.2	137	230	405	474	217	53.4	32.9	145
1948	45.1	63.9	49.7	40.9	40.2	102	256	209	148	40.5	13.3	3.51	84.2
1949	21.7	31.0	32.5	15.0	12.3	64.4	215	670	426	91.0	20.1	14.4	135
1950	53.7	71.4	44.2	28.5	49.8	101	582	730	972	286	70.3	37.9	252

a From Congressional documents: 75d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	3,350	3,210	a2,800	a2,400	a2,170	a4,920	22,000	33,300	23,700	3,960	2,390	1,700	-
1915	3,010	a2,560	a2,400	a2,000	a1,900	a2,860	8,090	5,890	10,500	4,430	3,250	4,200	a106,000 a51,000
1916	5,320	a4,750	a2,800	a1,940	a2,390	a12,900	25,700	37,100	22,700	5,940	3,510	2,580	a128,000
1917	b3,690	a2,590	a2,460	a2,400	a2,110	a4,920	21,200	45,700	66,600	22,500	4,560	3,550	b182,000
1918	3,520	3,680	a3,260	a2,580	a2,220	a5,770	14,600	21,700	20,100	4,250	1,750	2,060	a85,500
1919	b2,770	a3,160	a2,550	a2,120	a1,890	a3,870	10,200	7,930	3,500	363	160	476	b39,000
1920	a2,250	a2,640	a2,310	a2,150	a2,190	a4,640	32,400	66,400	40,100	5,150	2,470	1,890	a165,000
1921	a3,580	a3,780	a2,670	a2,580	a2,500	a6,890	15,000	42,600	58,300	c5,540	c2,150	61,780	b147,000
1922	a2,520	a2,590	a2,280	a1,740	a1,850	a3,200	7,890	10,400	10,900	3,000	1,970	1,970	a137,000
1923	a1,430	a1,890	a1,900	a2,060	a1,730	a2,160	13,200	39,700	31,500	13,400	c3,200	6,490	b119,000
1924	a4,490	a3,360	a2,390	a2,040	a1,580	a2,020	109,000	60,400	31,500	5,060	c1,290	c1,070	a224,000
1939	4,060	3,070	2,520	2,080	1,480	7,500	10,590	6,570	4,630	496	220	479	43,700
1940	1,190	1,900	1,470	1,470	1,500	3,040	5,050	1,270	1,030	308	56	113	18,760
1941	986	1,510	1,230	1,200	1,280	4,020	9,320	25,260	15,370	2,730	4,230	2,910	70,050
1942	4,710	3,880	2,580	1,630	1,900	4,500	23,950	18,420	14,790	1,890	680	795	79,620
1943	2,240	2,920	2,110	1,390	1,920	4,620	25,720	29,270	24,570	7,260	1,270	201	104,100
1944	2,060	3,220	2,500	1,910	1,850	2,690	11,810	33,220	27,090	7,230	1,690	617	95,890
1945	2,220	2,890	2,590	2,370	2,200	4,120	11,770	40,690	27,650	11,710	3,890	2,610	114,700
1946	3,960	3,830	3,040	1,930	1,670	5,050	13,740	16,390	14,600	3,090	452	784	68,540
1947	2,660	2,840	2,730	1,400	1,400	8,430	13,720	24,920	28,220	15,310	3,280	1,960	104,800
1948	2,770	3,800	3,050	2,510	2,310	6,250	15,240	12,820	8,820	2,490	818	209	61,090
1949	1,330	1,840	2,000	922	684	3,960	12,790	41,220	25,350	5,600	1,250	856	97,780
1950	3,300	4,250	2,720	1,750	2,770	6,200	34,840	44,900	57,810	17,600	4,520	2,260	182,500

a From Congressional documents: 75d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second, of Sweetwater River near Alcova, Wyo

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	386	a845-	Apr. 20, 1914	12	b146	b106,000	b144	b104,000
1915	406	a359	June 7, 1915	-	b70.4	b51,000	b77.2	b55,900
1916	436	a964	May 2, 1916	-	b176	b128,000	c170	c124,000
1917	456	-	-	-	c251	c182,000	b254	b184,000
1918	476	-	-	-	b118	b85,500	c115	c83,500
1919	506	-	-	2.0	c53.9	c39,000	b52.1	b37,700
1920	506	-	-	-	c227	b165,000	b250	b167,000
1921	526	-	-	-	c203	c147,000	c200	c145,000
1922	546	-	-	-	b189	b137,000	b186	b135,000
1923	566	-	-	-	c164	c119,000	c171	c124,000
1924	586	a4,290	Apr. 13, 1924	-	b509	b224,000	-	-
1939	876	309	Mar. 28, 1939	1.2	60.4	43,700	53.8	38,960
1940	896	120	Apr. 21, 1940	.5	25.8	18,760	24.2	17,560
1941	926	519	May 19, 1941	8	96.8	70,050	107	77,490
1942	956	826	Apr. 18, 1942	7	110	79,620	105	75,720
1943	976	742	May 9, 1943	.8	144	104,100	144	104,600
1944	1006	765	May 14, 1944	3.7	132	95,890	132	95,810
1945	1036	1,020	May 11, 1945	23	158	114,700	163	117,800
1946	1056	582	June 20, 1946	1.9	94.7	68,540	91.1	65,940
1947	1086	869	June 26, 1947	17	145	104,900	147	106,300
1948	1116	408	Apr. 25, 1948	1.9	84.2	61,090	78.3	56,640
1949	1146	1,040	May 20, 1949	7.6	135	97,780	142	102,900
1950	1176	1,750	Apr. 27, 1950	19	252	182,500	-	-

a Maximum observed.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

72. Horse Creek near Alcova, Wyo.

Location.--Lat 42°32'40", long. 107°00'00", in NE $\frac{1}{4}$ sec. 27 (revised), T. 30 N., R. 85 W., about half a mile upstream from high-water line of Pathfinder Reservoir and 14 miles (revised) west of Alcova.

Drainage area.--119 sq mi.

Gage.--Staff gage. Altitude of gage is 5,860 ft (from topographic map).

Extremes.--1915-20, 1923-24: Maximum daily discharge, 505 cfs Apr. 6, 1924; minimum not determined.

Remarks.--Adjudicated diversions above station for irrigation of 770 acres.

Cooperation.--Records for 1916-20, 1923-24 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	3.32	1.76	2.28	0.82	7.62	8.82	-
1916	-	-	-	-	-	-	3.53	.84	.72	-	-	-	-
1917	-	-	-	-	-	-	13.7	.72	.31	.49	.64	.70	-
1918	-	-	-	-	-	-	15.3	1.0	3.0	1.0	1.0	1.5	-
1919	-	-	-	-	-	-	5.46	1.19	1.0	1.0	1.0	1.0	-
1920	-	-	-	-	-	-	*24.8	24.6	4.05	2.08	2.4	3.0	-
1923	-	-	-	-	-	-	15.2	8.71	1.05	9.77	3.24	3.49	-
1924	-	-	-	-	-	-	84.3	8.54	2.77	1.56	.94	1.69	-

* Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	198	108	136	50	469	525	-
1916	-	-	-	-	-	-	211	52	43	-	-	-	-
1917	-	-	-	-	-	-	815	44	18	30	39	42	-
1918	-	-	-	-	-	-	910	61	179	61	61	89	-
1919	-	-	-	-	-	-	325	75	60	61	61	60	-
1920	-	-	-	-	-	-	*1,480	1,510	241	128	148	179	-
1923	-	-	-	-	-	-	904	536	62	601	199	208	-
1924	-	-	-	-	-	-	5,020	525	165	96	58	101	-

* Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum day		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	-	-	-	-	-	-	-
1916	436	-	-	-	-	-	-	-
1917	456	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Horse Creek near Alcovia, Wyo.--Continued								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	476	-	-	-	-	-	-	-
1919	506	-	-	-	-	-	-	-
1920	506	-	-	-	-	-	-	-
1923	566	-	-	-	-	-	-	-
1924	566	505	Apr. 6, 1924	-	-	-	-	-

Note.--Records for April 1921 to September 1922 published in Water-Supply Papers 526 and 546 have been found in error on the basis of restudy of the original data, weather records, and comparison with records for nearby stations. Those records are not published herein and should not be used.

73. Canyon Creek near Alcovia, Wyo.

Location (revised).--Lat 42°25'40", long. 106°50'40", in NE $\frac{1}{4}$ sec. 2, T. 28 N., R. 84 W., about half a mile upstream from Pathfinder Reservoir and 11 miles southwest of Alcovia.

Drainage area.--54 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,870 ft (from topographic map).

Average discharge.--9 years (1915-24), 6.84 cfs.

Extremes.--1915-24: Maximum discharge not determined; no flow at times most years.

Remarks.--Adjudicated diversions above station for irrigation of about 1,330 acres.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second, of Canyon Creek near Alcovia, Wyo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	4.36	1.67	*6.14	0.22	*1.50	*7.23	-
1916	a3.0	a2.5	b2.0	b1.0	b3.0	b20.0	9.73	4.41	.14	0	.11	1.26	a3.94
1917	b1.0	b1.0	b2.0	b1.0	b3.0	*8.31	*37.3	*18.8	6.95	.19	.15	.38	a6.66
1918	b1.0	b2.0	b5.0	b.5	b1.0	b5.0	12.7	10.7	*18.2	4.0	.5	1.0	a4.74
1919	b2.0	b1.0	b.5	b.5	b.5	b.5	6.27	1.85	.54	.18	0	.20	b1.29
1920	b.5	b1.0	b1.0	b1.0	b1.0	b1.0	*82.4	*79.5	*7.40	*5.39	*2.65	*6.67	a16.5
1921	b2.5	b4.0	b2.0	b.9	b2.0	b4.0	7.0	4.1	1.2	.9	1.1	1.0	c2.55
1922	b2.0	b3.0	b1.0	b1.0	b1.0	b3.0	6.0	*28.0	.8	*1.3	.1	.2	a3.90
1923	b.5	b1.0	b1.0	b1.0	b1.0	b12.4	21.5	19.2	6.54	*19.1	2.52	8.64	a7.86
1924	b18	b10	b8.0	b4.0	b4.0	b4.0	118	3.03	.62	.04	0	.42	b14.0

* Only monthly figure revised; revised daily figures not available.

† Corrected.

a Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Corrected; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	259	103	*365	14	*92	*430	-
1916	a184	a149	b123	b61	b172	b1,230	579	271	8.3	0	6.8	75	a2,860
1917	b61	b59	b123	b61	b166	*511	*2,220	*1,160	414	12	9.2	23	a4,820
1918	b55	b119	b31	b31	b55	b307	756	658	*1,080	246	31	60	a3,430
1919	b123	b59	b31	b31	b28	b123	373	114	32	11	0	12	b937
1920	b31	b59	b61	b61	b57	b614	*4,900	*4,890	*440	*331	*163	*397	a12,000
1921	b153	b238	b123	b55	b111	b246	417	252	71	55	68	60	c1,850
1922	b123	b178	b61	b61	b55	b184	358	*1,720	50	*119	6	12	a2,820
1923	b51	b59	b61	b61	b55	b736	1,280	1,180	389	*1,170	155	514	a5,690
1924	b1,100	b594	b491	b245	b230	b245	7,020	1,86	37	2	0	25	b10,200

* Only monthly figure revised; revised daily figures not available.

† Corrected.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	-	-	0	-	-	-	-
1916	436	-	-	0	a3.94	a2,860	b3.64	b2,650
1917	456	-	-	0	a6.66	a4,820	a6.60	a4,780
1918	476	-	-	0	a4.74	a3,430	a4.75	a3,440
1919	506	-	-	0	b1.29	b937	b1.21	b875
1920	506	-	-	-	a16.5	a12,000	a17.0	a12,400
1921	526	-	-	0	c2.55	c1,850	c2.34	c1,700
1922	546	-	-	0	a3.90	a2,820	a3.61	a2,610
1923	566	-	-	0	a7.86	a5,690	a10.7	a7,720
1924	566	-	-	0	b14.0	b10,200	-	-

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

74. Pathfinder Reservoir near Alcova, Wyo.

Location.--Lat 42°28'06", long. 106°51'12", in sec. 24 (revised), T. 29 N. (revised), R. 84 W., in gatehouse near left end of dam on North Platte River, 9 miles southwest of Alcova.

Drainage area.--10,700 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,680 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Apr. 12, 1950, reference marks and tape gages near present site.

Extremes.--1909-50: Maximum contents observed, 1,182,000 acre-ft June 25, 26, 27, 1917 (elevation, 5,856.96 ft); no storage at times during 1909-12 and 1931.

Remarks.--Reservoir is formed by masonry dam. Storage began in April 1909. Capacity, 1,187,200 acre-ft between elevations 5,670 ft (north outlet trashrack sill) and 5,858 ft (top of flashboards). Elevation of crest of spillway, 5,852 ft. No dead storage. Figures given herein represent total contents. Water is used to irrigate lands in Wyoming and Nebraska under the North Platte project.

Cooperation.--Records furnished by Bureau of Reclamation; those prior to 1939 not previously published by Geological Survey.

Contents, in thousands of acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1909	-	-	-	a0	a0	a0	a32	a114	a655	a520	a227	a125
1910	a0	a0	a0	a0	a0	a0	a55	a242	a297	a192	a85	a0
1911	a0	a0	a0	a0	a0	a17	a2	a170	a390	a270	a122	a0
1912	a0	a0	a0	a0	a20	a54	a225	a567	a966	a870	a576	a303
1913	a50	a3	a4	a4	a24	a71	a378	a567	a609	a474	a324	a209
1914	a229	a268	a298	a308	a328	a386	a578	a840	a1,082	a890	a636	a378
1915	a310	a332	a348	a363	a379	a410	a502	a600	a669	a468	a324	a277
1916	a320	a350	a377	a400	a429	a561	a684	a760	a799	a586	a398	a314
1917	a351	a383	a412	a436	a456	a492	a742	a1,102	a1,176	a1,055	a846	a647
1918	a628	a665	a700	a729	a752	a822	a884	a920	a1,107	a909	a696	a568
1919	a580	a612	a641	a659	a681	a725	a858	a921	a778	a549	a350	a233
1920	a173	a199	a222	a244	a277	a347	a501	a1,017	a1,129	a954	a768	a659
1921	a633	a671	a691	a715	a742	a840	a845	a1,085	a1,126	a929	a735	a577
1922	a529	a557	a584	a604	a620	a682	a903	a869	a934	a693	a465	a304
1923	a249	a277	a296	a320	a342	a374	a465	a812	a1,119	a981	a792	a657
1924	a710	a756	a774	a792	a820	a851	a1,019	a1,004	a1,070	a746	a407	a208
1925	a237	a278	a305	a330	a360	a451	a582	a671	a730	a503	a266	a120
1926	a198	a246	a280	a299	a333	a414	a727	a991	a1,062	a870	a590	a399
1927	a432	a454	a460	a456	a472	a515	a658	a1,040	a1,121	a880	a668	a504
1928	a553	a608	a626	a637	a667	a776	a900	a1,167	a1,117	a959	a678	a420
1929	a399	a427	a450	a467	a490	a539	a816	a1,152	a1,139	a985	a692	a534
1930	a516	a549	a584	a602	a629	a685	a906	a1,031	a955	a631	a464	a334
1931	a386.2	a405.3	a426.7	a439.0	a459.6	a496.8	a613.1	a635.5	a491.9	a197.2	a12.93	a0
1932	a0	a20.65	a37.92	a55.87	a73.99	a117.4	a352.5	a738.8	a826.7	a603.6	a357.4	a158.7
1933	a172.4	a204.2	a223.0	a242.0	a257.4	a306.6	a404.7	a622.3	a809.7	a531.7	a245.6	a121.7
1934	a110.9	a139.0	a164.3	a189.3	a217.4	a261.9	a331.8	a251.3	a180.1	a75.24	a2.36	a3.23
1935	a8.10	a18.92	a30.14	a44.53	a62.91	a92.06	a133.2	a222.3	a506.0	a256.5	a27.73	a5.72
1936	a18.06	a40.30	a53.56	a68.35	a82.31	a124.8	a263.5	a362.2	a419.8	a212.3	a40.16	a8.32
1937	a31.82	a59.56	a77.30	a81.50	a91.60	a146.2	a337.8	a465.5	a600.0	a470.7	a198.2	a63.20
1938	a81.65	a111.8	a142.7	a169.1	a178.5	a227.1	a352.8	a579.1	a742.1	a556.1	a272.1	a247.4
1939	a78.2	a305.9	a334.0	a358.6	a379.3	a442.5	a30.3	a198.9	a144.8	a45.07	a5.94	a6.17
1940	a4.22	a5.95	a5.99	a6.16	a7.46	a8.08	a73.68	a60.93	a37.53	a39.60	a4.01	a5.10
1941	a9.45	a20.44	a20.21	a19.54	a19.80	a19.02	a91.99	a149.2	a102.8	a79.54	a20.32	a8.52
1942	a52.85	a86.45	a130.4	a167.6	a184.4	a211.2	a261.9	a350.6	a314.6	a88.20	a30.56	a20.59
1943	a85.23	a139.9	a186.9	a236.4	a290.2	a356.6	a318.6	a260.8	a240.2	a77.91	a24.90	a16.57
1944	a59.37	a76.22	a137.9	a205.6	a280.0	a354.5	a386.9	a398.6	a302.8	a105.2	a20.59	a6.75
1945	a50.56	a96.20	a151.2	a210.1	a259.8	a303.3	a292.2	a352.1	a411.2	a210.4	a28.38	a25.34
1946	a105.2	a164.8	a225.3	a299.6	a364.4	a424.7	a371.8	a340.6	a283.8	a107.2	a14.19	a50.76
1947	a144.8	a207.9	a273.3	a353.0	a415.4	a477.9	a470.4	a465.4	a520.0	a412.4	a200.9	a202.6
1948	a280.7	a351.6	a428.1	a508.1	a589.4	a672.8	a702.4	a670.5	a578.6	a371.0	a169.2	a163.4
1949	a238.1	a299.7	a352.2	a412.2	a461.7	a543.6	a636.7	a726.7	a913.8	a714.8	a514.1	a474.9
1950	a552.2	a623.2	a700.2	a779.7	a846.1	a920.0	a988.4	a1,059	a995.6	a831.0	a646.4	a592.8

a From reports of State engineer of Nebraska.

75. North Platte River below Pathfinder Reservoir, Wyo. 1/

Location.--Lat 42°27'54", long. 106°50'47" (revised), in SW $\frac{1}{4}$ sec. 24, T. 29 N., R. 84 W., 2,300 ft (revised) downstream from Pathfinder Dam and 9 miles southwest of Alcova.

Drainage area.--10,700 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 5,670 ft (from topographic map). Prior to 1932, staff or chain gages at same site and datum.

Average discharge.--45 years (1905-50), 1,642 cfs.

Extremes.--1905-50: Maximum daily discharge, 18,900 cfs June 25-27, 1917; minimum not determined (revised), occurred during period of no record.

Remarks.--Flow completely regulated by Seminoe and Pathfinder Reservoirs (see elsewhere in this report). Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, and diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records furnished by Bureau of Reclamation; those for Oct. 1, 1940, to Sept. 30, 1949, not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	-	-	-	-	-	-	-	-	8,800	1,800	597	249	-
1906	349	a410	b375	b500	b250	a976	3,030	6,180	7,390	2,260	666	664	b1,910
1907	575	b669	b450	b500	b340	1,890	2,440	5,070	10,300	6,010	1,380	587	b2,510
1908	669	440	315	292	348	759	1,620	2,370	4,590	2,030	1,210	544	1,270
1909	645	556	400	*400	462	958	1,480	5,920	8,010	8,480	6,390	3,100	*3,080
1910	2,670	697	522	423	367	1,760	1,130	885	2,400	2,100	1,940	1,750	1,390
1911	476	428	399	430	626	1,090	1,770	1,480	3,170	3,330	2,760	2,220	1,520
1912	809	534	359	301	89	4	10	442	3,710	5,800	6,470	5,720	2,030
1913	5,310	1,680	47	359	90.8	3.0	99.3	2,050	3,400	3,040	2,830	2,270	1,810
1914	303	4.8	5	5	5	5	5	2,740	4,390	4,610	4,880	4,700	1,810
1915	1,880	136	5	5	10	10	698	1,020	2,830	4,380	3,050	1,680	1,520
1916	7.7	5	5	10	10	14.5	165	3,380	4,610	5,000	3,870	1,950	1,590
1917	349	5	5	5	5	5	230	1,340	13,500	9,040	4,500	4,010	2,750
1918	758	5	5	5	5	32	1,100	4,510	6,750	5,090	3,840	2,610	2,070
1919	541	25.0	19.5	15.0	15.0	15.0	82.7	2,990	5,220	3,960	3,580	2,070	1,540
1920	1,420	15.0	15.0	15.0	15.0	15.0	15.0	684	8,960	5,340	3,970	2,260	1,890
1921	965	15	15	83.4	120	113	1,460	2,230	11,800	5,570	4,340	2,970	2,480
1922	1,120	20.0	88.4	105	105	83.9	*41.5	4,240	5,040	4,750	3,980	2,740	1,870
1923	1,150	27	79	75	75	58	562	153	3,630	5,310	3,790	3,020	1,500
1924	97.0	100	100	100	100	100	3,580	5,850	5,350	6,400	5,790	3,450	2,580
1925	380	47	53	56	65	75	158	2,530	4,000	5,730	4,340	3,320	1,780
1926	50.0	50.0	209	237	50.0	38.9	129	2,670	5,290	6,050	5,450	3,590	2,000
1927	50	163	416	435	216	132	53	445	5,280	5,890	4,580	3,390	1,770
1928	100	99.3	232	377	100	100	257	4,660	8,110	4,780	5,350	4,700	2,410
1929	1,020	*60.2	80.0	75.0	88.9	83.9	83.8	1,950	9,950	5,580	5,730	3,740	2,380
1930	1,220	90	90	90	90	90	90	752	4,670	5,930	4,200	2,560	1,670
1931	195	207	117	102	49.3	50.0	43.0	1,960	5,320	4,810	3,200	451	1,380
1932	508	77.4	35.4	35	35	16.0	*5	1,060	5,650	6,110	4,560	3,540	1,810
1933	304	77.3	60	50	60.4	*18.6	*18.0	*5	5,280	5,590	4,920	2,550	1,590
1934	553	*5	*5	*5	*5	*5	*73.0	2,591	1,578	1,798	1,277	82.9	*673
1935	120	75.1	75.2	50.0	*29.3	*21.4	*13.9	*5	*988	5,083	4,048	578	*937
1936	74.3	74.0	74.0	58.8	50.0	*8.1	*85.7	†3,990	3,235	4,169	3,388	734	*1,402
1937	85.6	*45.2	49.0	169	63.8	*17.8	*5	2,407	2,870	4,134	4,833	2,580	1,450
1938	181	*46.4	*4.9	*5	*273	*618	*848	*1,494	3,973	4,535	4,996	*1,444	*1,545
1939	*5	*5	*5	*5	*4.9	*5	*572	4,524	3,281	3,936	2,087	132	*1,226
1940	197	209	305	274	281	397	*33.6	*1,728	2,015	1,950	1,443	152	*753
1941	c92.2	c59.8	c205	c253	c277	c545	*6.6	*1,098	c2,795	c3,085	c3,190	†467	c1,014
1942	*5.3	*6.6	*5	*163	c503	c525	c797	c522	c1,653	c4,667	c2,695	†1,658	*1,106
1943	*5	*5	*5	*5	*5	*5	†c6,221	c2,603	c2,308	c4,646	c3,120	†1,382	†1,320
1944	†439	*654	*5	*5	*5	*5	*496	†1,064	c2,939	c4,600	c3,385	†1,266	†1,244
1945	*5	*5	*5	*5	*5	†114	c1,651	*951	†521	c4,355	c4,006	†1,058	†1,068
1946	*5	*5	*5	*5	*5	*5	c1,688	c2,110	c2,633	c4,837	c3,577	*523	†1,311
1947	*5	*5	*5	*5	*5	*5	c1,126	†1,324	c1,558	c3,025	c4,794	†1,116	*976
1948	*5	*5	*5	*5	*5	*5	†1,101	*2,252	c2,883	c4,838	c4,535	†1,321	†1,422
1949	*5	*5	*5	*5	*5	*5	*5	c772	*2,045	c5,457	c5,041	†1,857	†1,281
1950	*7	*5	*5	*5	*5	*5	*5	1,865	3,873	4,929	4,668	†1,832	†1,492

* Only monthly figure revised; revised daily figures not available.

† Corrected.

‡ Not previously published; estimated by Geological Survey on basis of leakage through dam.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; superseded figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From files of Bureau of Reclamation.

1/ Published as "at Pathfinder" prior to 1921.

Monthly and yearly runoff, in acre-feet, of North Platte River below Pathfinder Reservoir, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	-	-	-	-	-	-	-	-	524,000	111,000	36,700	14,800	-
1906	21,500	24,400	23,100	18,400	13,900	180,000	180,000	580,000	440,000	139,000	41,000	39,500	bl,380,000
1907	35,400	39,800	27,700	18,400	18,900	116,000	45,000	112,000	113,000	370,000	84,800	34,900	bl,820,000
1908	41,100	28,200	19,400	18,000	20,000	46,700	96,400	46,000	273,000	25,000	74,400	22,400	919,000
1909	39,700	31,900	24,600	24,600	25,700	57,700	88,100	564,000	404,777,000	521,000	93,000	184,000	*2,230,000
1910	164,000	41,500	32,100	26,000	20,400	108,000	67,200	54,400	143,000	29,000	119,000	104,000	1,010,000
1911	29,300	25,500	24,500	26,400	34,800	66,800	105,000	91,100	188,000	205,000	100,170,000	132,000	1,100,000
1912	49,700	31,800	20,800	18,500	5,120	276	595	27,200	221,000	357,000	93,989,000	140,000	1,470,000
1913	526,000	100,000	29,100	20,800	4,490	184	5,910	126,000	202,000	187,000	174,000	135,000	1,310,000
1914	18,600	286	307	307	278	307	298	168,000	261,000	283,000	300,000	280,000	1,310,000
1915	116,000	8,090	307	307	555	615	41,500	62,700	168,000	269,000	188,000	100,000	*955,000
1916	474	298	307	615	575	892	9,820	208,000	274,000	507,000	238,000	116,000	1,160,000
1917	21,500	298	307	307	278	307	13,700	82,400	803,000	556,000	277,000	239,000	1,990,000
1918	46,600	298	307	307	278	1,970	65,500	277,000	402,000	513,000	236,000	155,000	1,500,000
1919	33,500	1,490	1,200	922	833	922	4,920	184,000	1,000	1,000	1,000	1,000	1,120,000
1920	87,500	893	922	922	863	922	893	42,100	533,000	328,000	442,000	134,000	1,370,000
1921	59,300	893	922	5,130	6,660	6,950	86,900	137,000	702,000	542,000	267,000	177,000	1,790,000
1922	68,900	1,190	5,440	6,460	5,930	5,160	*2,470	261,000	300,000	562,000	292,000	133,000	1,360,000
1923	70,700	1,610	4,860	4,610	4,170	3,570	32,400	9,410	216,000	326,000	333,000	180,000	1,090,000
1924	5,960	5,950	6,150	6,150	5,750	6,150	213,000	560,000	531,000	534,000	556,000	205,000	1,880,000
1925	23,400	2,800	3,260	3,440	3,610	4,610	9,400	156,000	238,000	352,000	291,000	198,000	1,290,000
1926	3,070	3,000	12,900	14,600	2,800	2,390	7,680	164,000	315,000	372,000	335,000	202,14,000	1,450,000
1927	3,070	9,700	25,600	29,800	12,000	8,120	3,150	27,400	314,000	562,000	282,000	202,000	1,280,000
1928	6,150	5,910	14,300	23,200	5,750	6,150	15,300	287,000	604,853,000	294,000	329,000	280,000	1,750,000
1929	62,700	*3,580	4,920	4,610	4,940	6,150	4,990	120,000	531,000	543,000	352,000	223,000	1,720,000
1930	75,000	5,360	5,530	5,530	5,000	5,530	5,560	46,200	278,000	365,000	259,000	152,000	1,210,000
1931	12,000	12,300	7,190	6,270	2,740	3,070	2,560	121,000	317,000	296,000	197,000	26,800	1,000,000
1932	31,200	4,610	2,180	2,150	2,010	*984	*298	*65,400	336,000	376,000	280,000	211,000	1,310,000
1933	18,700	4,600	3,690	3,070	3,350	*1,140	*1,070	*307	314,000	544,000	302,000	152,000	1,150,000
1934	34,030	*298	*307	*307	*278	*307	*4,340	159,300	35,900	110,600	78,540	4,930	*487,100
1935	7,390	4,470	4,620	3,070	*1,630	*307	*829	*307	*58,810	312,800	248,900	34,370	*678,300
1936	4,570	4,400	4,550	3,610	2,890	*496	*50,980	245,400	192,500	256,300	209,300	43,680	*1,018,000
1937	5,280	*2,890	3,010	10,360	3,540	*1,080	*298	148,000	117,800	255,200	297,200	153,500	*1,050,000
1938	11,150	*2,760	*303	*307	*15,150	*37,980	*50,440	*91,890	236,400	278,900	307,200	*85,910	*1,118,000
1939	*307	*298	*307	*307	*270	*307	*34,030	278,100	195,200	242,400	228,300	7,830	*887,300
1940	12,090	12,420	18,750	16,860	16,150	24,400	*2,000	106,300	119,900	119,900	88,710	9,020	*546,500
1941	c5,670	c3,560	c12,630	c15,530	c15,400	c33,560	*395	*67,520	c166,300	c189,700	c196,100	c27,760	*734,100
1942	*325	*391	*307	*10,020	c27,950	c32,300	c47,440	c32,120	c98,390	c287,000	c165,700	c98,680	*800,600
1943	*307	*298	*307	*307	*278	*307	*96,470	c160,100	c137,300	c265,700	c191,800	c82,220	*955,400
1944	*27,010	59,820	*307	*307	*298	*307	*29,530	c65,410	c174,900	c282,800	c208,100	c75,300	*903,200
1945	*307	*298	*307	*307	*278	*7,010	c98,260	c58,460	c31,030	c267,800	c246,300	c62,970	*775,300
1946	*307	*298	*307	*307	*278	*307	c112,300	c129,700	c156,700	c297,400	c220,000	c31,150	*949,100
1947	*307	*298	*307	*307	*278	*307	c67,000	c81,430	c9,390	c186,000	c234,800	c66,380	*706,800
1948	*307	*298	*307	*307	*298	*307	c65,520	c138,500	c171,600	c287,500	c278,800	c78,630	*1,032,000
1949	*307	*298	*307	*307	*278	*307	*298	c47,470	c121,700	c335,500	c310,000	c110,500	*927,300
1950	*430	*298	*307	*307	*278	*307	*40,230	c114,700	c250,156,900	c287,900	c287,000	c109,000	*1,080,000

* Only monthly figure revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated by Geological Survey on basis of leakage through dam.

a From Congressional documents: 75d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From files of Bureau of Reclamation.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Discharge	Maximum Date	Minimum day	Mean	Runoff in acre-feet	Mean Runoff in acre-feet
1905	246	-	-	-	-	-	-
1906	208, 246	-	-	-	al,910	al,380,000	al,950
1907	246	-	-	-	a2,510	al,820,000	a2,490
1908	246, 469	-	-	-	1,270	919,000	1,280
1909	246	-	-	313	*3,080	*2,230,000	*3,280
1910	286	-	-	330	1,390	1,010,000	1,180
1911	306	-	-	185	1,520	1,120,000	1,550
1912	326	-	-	2	2,050	1,470,000	2,500
1913	356	-	-	2	1,810	1,310,000	1,210
1914	386	-	-	4	1,810	1,310,000	1,960
1915	406	-	-	5	†1,320	†955,000	†1,150
1916	436	-	-	5	1,590	1,160,000	1,620
1917	456	bl,890	June 25-27, 1917	5	2,750	1,990,000	2,790
1918	476	-	-	5	2,070	1,500,000	2,080
1919	506	-	-	15	1,540	1,120,000	1,620
1920	506	-	-	15	1,890	1,370,000	1,850
1921	526	-	-	15	2,480	1,790,000	2,500
1922	546	-	-	-	1,870	1,360,000	1,680
1923	566	-	-	5	1,500	1,090,000	1,420
1924	586	-	-	5	2,580	1,880,000	2,600
1925	606	-	-	5	1,780	1,290,000	1,760

* Revised.

† Corrected.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b Maximum daily discharge.

Yearly discharge, in cubic feet per second, of North Platte River below
Pathfinder Reservoir, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	626	-	-	5	2,000	1,450,000	2,020	1,470,000
1927	646	-	-	50	1,770	1,280,000	1,750	1,270,000
1928	666	-	-	70	2,410	1,750,000	2,470	1,790,000
1929	686	-	-	-	2,580	1,720,000	2,400	1,730,000
1930	701	-	-	90	1,670	1,210,000	1,590	1,150,000
1931	716	-	-	15	1,380	1,000,000	1,390	1,010,000
1932	731	-	-	-	1,810	1,310,000	1,790	1,300,000
1933	746	-	-	-	1,590	1,150,000	*1,600	*1,160,000
1934	761	-	-	-	*673	*487,100	*648	*469,000
1935	786	-	-	-	*937	*678,300	*933	*675,400
1936	806	-	-	-	*1,402	*1,018,000	1,398	1,015,000
1937	826	-	-	-	1,450	*1,050,000	*1,455	*1,055,000
1938	846	-	-	-	*1,545	*1,118,000	*1,526	*1,105,000
1939	876	-	-	-	*1,228	*987,300	*1,284	*929,600
1940	896	-	-	-	*753	*546,500	*723	*529,100
1941	-	-	-	-	cl,014	*734,100	*985	*715,300
1942	-	-	-	-	*1,106	*800,600	*1,106	*800,600
1943	-	-	-	-	*1,320	*955,400	*1,410	*1,021,000
1944	-	-	-	-	*1,244	*903,200	*1,154	*837,900
1945	-	-	-	-	*1,068	*773,300	*1,068	*773,300
1946	-	-	-	-	*1,311	*949,100	*1,311	*949,100
1947	-	-	-	-	*976	*706,800	*976	*706,800
1948	-	-	-	-	*1,422	*1,032,000	*1,422	*1,032,000
1949	-	-	-	-	*1,281	*927,300	*1,281	*927,300
1950	1176	6,310	July 24, 1950	*1	*1,492	*1,080,000	-	-

* Revised.

† Not previously published.

c From files of Bureau of Reclamation.

Note.--Supplemental records for January 1909 to September 1913, published as daily inflow to Pathfinder Reservoir, Wyo., in WSP 266, 286, 306, 326, and 356 have been found in error on the basis of comparison with records at nearby stations. Those records are not published herein and should not be used.

Previously published statement of no flow for periods in 1922, 1928, 1932-50 published in Water-Supply Papers 546, 686, 731, and 1176 is incorrect on the basis of restudy of the original data. Those records of no flow should not be used.

76. Alcova Reservoir, Wyo.

Location.--Lat 42°32'50", long. 106°53'08", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 24 (revised), T. 30 N., R. 83 W., in elevator shaft at right end of dam on North Platte River and a quarter of a mile southwest of Alcova.

Drainage area.--10,800 sq mi, approximately.

Gage.--Electric tape gage since May 1946. Datum of gage is 5,320 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to May 1946, electric tape gages or reference marks nearby at same datum. Gage readings have been reduced to elevations above mean sea level.

Extremes.--1938-50: Maximum contents observed, 189,500 acre-ft July 29, 1946 (elevation, 5,499.60 ft); minimum observed (since appreciable storage was attained), 1,880 acre-ft (corrected) Sept. 30, 1940 (elevation, 5,353.56 ft). No usable storage prior to February 1938.

Remarks.--Reservoir is formed by rock-fill dam completed by Bureau of Reclamation in January 1938. Capacity of reservoir, 190,400 acre-ft (corrected) between elevations 5,500.00 ft (top of spillway gates) and 5,330.00 ft (trashrack sill for outlet tunnel). Dead storage, 100 acre-ft. Figures given herein represent usable contents above elevation 5,320.00 ft. Water is used for irrigation in North Platte River basin.

Cooperation.--Records furnished by Bureau of Reclamation.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1938	-	-	-	-	12,280	44,830	86,460	101,740	114,220	115,160	121,250	117,250
1939	101,120	100,160	99,540	99,050	99,000	98,620	132,240	155,020	166,430	148,550	42,060	3,970
1940	10,410	18,020	34,470	50,200	65,860	91,060	92,840	111,600	79,030	48,680	2,640	1,980
1941	3,100	2,980	12,860	25,670	40,080	73,810	74,280	106,700	110,800	104,400	68,750	13,070
1942	13,340	14,310	15,020	25,810	53,940	86,530	133,400	164,800	167,800	157,900	50,760	18,020
1943	19,420	20,340	21,160	21,810	22,470	23,600	120,400	165,100	164,400	152,300	55,960	5,810
1944	33,910	73,070	72,800	72,890	73,050	73,260	104,800	162,100	161,800	162,800	70,800	11,160
1945	13,150	14,450	15,170	16,540	17,560	26,010	124,800	162,200	162,000	161,000	159,100	33,000
1946	34,380	35,130	35,630	36,300	36,810	*37,570	147,900	171,400	171,100	187,800	128,900	*82,740
1947	83,050	83,150	83,180	83,360	83,720	84,220	150,400	179,000	179,200	179,500	185,700	109,400
1948	109,500	109,300	109,200	109,300	109,600	110,400	175,300	178,400	178,100	178,300	177,200	131,700
1949	131,200	130,500	130,100	129,600	129,500	129,800	130,200	177,500	178,100	182,900	178,500	173,300
1950	156,900	156,300	155,400	155,100	154,900	154,800	179,200	186,700	185,900	182,400	182,500	172,200

† Corrected.

77. North Platte River at Alcova, Wyo.

Location.--Lat 42°33'04", long. 106°42'48" (revised), in SW $\frac{1}{4}$ sec. 19, T. 30 N., R. 82 W., at Alcova, a quarter of a mile downstream from Alcova Dam.

Drainage area.--10,800 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,329.85 ft above mean sea level, datum of 1929. Feb. 19, 1904, to Dec. 31, 1905, staff gage at site 1,000 ft upstream at datum 2.59 ft lower.

Average discharge.--17 years (1904-5, 1934-50), 1,222 cfs.

Extremes.--1904-5, 1934-50: Maximum discharge observed, 13,400 cfs June 6, 10, 11, 1905 (gage height, 11.5 ft, site and datum then in use); minimum discharge not determined.

Remarks.--Flow completely regulated by Seminoe, Pathfinder, and Alcova Reservoirs (see elsewhere in this report). Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1935-50 computed by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	a900	1,729	5,900	6,758	1,808	582	389	-
1905	482	#286	#200	a250	a250	a800	1,394	4,707	8,855	1,817	574	273	#1,656
1906	347	406	a200	-	-	-	-	-	-	-	-	-	-
1935	#130	#85	#85	#60	#38	#29	#23	#10	1,069	5,185	4,047	561	#956
1936	#85	#85	#85	#76	#70	#16	#838	3,922	3,121	4,042	3,285	705	#1,370
1937	89.3	59.1	56.8	190	85.1	26.4	25.8	2,314	2,949	*4,180	4,787	2,454	*1,446
1938	b34.5	61.1	16.0	16.0	b9.57	b3	b62.6	1,176	3,678	4,540	4,880	1,468	b1,340
1939	378	4.2	3.0	3.0	4.7	13.9	3.04	0.035	3,032	4,190	3,769	813	1,370
1940	111	76.1	32.1	15.5	14.3	3.0	3.01	4,29	2,511	2,408	2,234	180	756
1941	93.7	72.8	71.5	59.2	24.6	9.90	3	588	2,704	3,222	3,764	1,451	1,013
1942	36.4	3.0	3.0	3.0	3.0	3.0	3	4.8	1,570	4,743	4,457	2,278	1,103
1943	3	3	3	3	3	3	3	1,852	2,283	4,831	4,626	2,269	1,336
1944	8.4	3.0	3.3	3.0	3.0	3.0	3.0	107	2,880	4,583	4,784	2,310	1,230
1945	b3	b3	b3	b3	b3	b3	b3	b392	b530	4,304	4,338	2,850	b1,047
1946	3	3	3	3	3	4	38.51	782	2,584	4,447	4,472	1,294	1,232
1947	6.5	5.5	5.6	5.0	5.0	5.0	6.0	809	125	2,894	4,604	2,407	917
1948	5.0	6.7	6.6	5.5	5.0	5.0	5.02	136	2,775	4,679	4,499	2,075	1,359
1949	10	10	7.0	18	8.0	5.5	5.5	6.68	1,911	5,271	4,958	2,100	1,204
1950	6.5	5.7	5.6	5.5	5.6	5.7	301	1,725	3,782	4,716	4,564	1,959	1,434

* Revised.

Not previously published; estimated on basis of records for station below Pathfinder Reservoir.

a Not previously published; estimated from original gage-height record and rating table.

b Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	a55,300	102,900	362,800	402,100	111,200	35,790	23,150	-
1905	29,640	#17,030	#12,300	a14,100	a13,900	a49,200	82,950	289,400	526,900	111,700	35,290	16,240	#1,199,000
1906	21,340	24,160	12,300	-	-	-	-	-	-	-	-	-	-
1935	#7,990	#5,060	#5,230	#3,690	#2,110	#1,780	#1,370	#615	63,590	318,800	248,800	33,360	#692,400
1936	#5,230	#5,060	#5,230	#4,670	#4,030	#984	#49,860	241,200	185,700	248,500	202,000	41,940	#994,400
1937	5,490	3,510	3,490	11,700	4,730	1,620	1,540	142,300	175,500	#257,000	294,300	146,000	*1,047,000
1938	b2,120	3,630	984	984	b532	b184	b3,730	72,320	218,900	279,200	300,000	87,330	b969,900
1939	25,240	252	184	184	262	853	179	248,100	180,400	257,700	231,800	48,400	991,600
1940	6,830	4,530	1,970	950	823	184	179	87,860	149,400	148,100	137,400	10,690	548,900
1941	6,070	4,330	4,400	3,640	1,370	609	179	36,140	160,900	198,100	231,400	86,320	733,500
1942	2,240	179	184	184	167	184	179	298	53,410	221,800	274,100	155,600	799,300
1943	184	179	184	184	167	184	179	113,900	135,800	297,000	284,400	135,000	967,400
1944	514	179	200	184	173	184	179	6,560	171,400	281,800	294,100	137,500	893,000
1945	b184	b179	b184	b184	b167	b184	b179	24,090	63,51,540	264,700	266,700	169,600	b757,900
1946	184	179	184	184	167	246	2,290	109,600	153,800	273,400	275,000	77,020	892,300
1947	397	323	345	307	278	307	357	49,750	7,430	177,900	283,100	143,200	663,700
1948	307	397	407	337	288	307	298	131,400	165,100	287,700	276,700	123,500	986,700
1949	615	595	430	1,100	444	358	327	42,213	700,524	103,504	80,125	500	872,000
1950	400	339	344	338	311	356	17,910	106,100	225,000	290,000	280,600	116,600	1,038,000

* Revised.

Not previously published; estimated on basis of records for station below Pathfinder Reservoir.

a Not previously published; estimated from original gage-height record and rating table.

b Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second, of North Platte River at Alcovia, Wyo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Discharge	Maximum Date	Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
1904	172	*11,600	May 27, 1904	-	-	-	-	-
1905	172	*13,400	June 6, 10, 11	-	*1,656	*1,199,000	*1,654	*1,197,000
1935	786	*6,000	July 8, 9, 1935	-	*956	*692,400	*953	*689,600
1936	806	*6,050	May 29, 1936	-	*1,370	*994,400	*1,366	*991,400
1937	826, 1440	*6,500	June 8, 1937	9	*1,446	*1,047,000	*1,439	*1,041,000
1938	856	*9,880	July 12, 1938	-	*1,340	*969,900	1,363	*966,900
1939	876	*15,200	May 27, 1939	3	1,370	991,800	1,355	981,200
1940	896	*14,060	July 14, 1940	3	756	548,900	758	550,400
1941	926	5,910	June 28, 1941	3	1,013	733,500	996	721,300
1942	956	5,690	July 25, 1942	3	1,103	798,300	1,100	796,300
1943	976	5,710	July 15, 1943	3	1,336	967,400	1,337	967,700
1944	1006	5,640	July 26, 1944	3	1,230	893,000	*1,230	*892,600
1945	1036	5,650	Sept. 2, 1945	-	*1,047	*757,900	*1,047	*757,900
1946	1056	5,630	June 18, 1946	-	1,232	892,300	1,233	892,800
1947	1086	5,550	Aug. 4, 1947	5	917	663,700	917	663,700
1948	1116	5,500	July 9-12, 1948	5	1,359	986,700	1,360	987,300
1949	1146	5,920	July 10, 1949	-	1,204	872,000	1,204	871,400
1950	1176	6,070	July 24, 1950	-	1,434	1,038,000	-	-

* Revised.

* Not previously published.

a Maximum observed.

b Estimated.

78. Bates Creek near Freeland, Wyo.

Location (revised).--Lat 42°32', long. 106°19', in sec. 29, T. 30 N., R. 79 W., 20 ft up-stream from bridge on county highway, 2 miles downstream from Chalk Creek, and 8 miles southeast of Freeland.

Drainage area.--129 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,510 ft (estimated from USGS levels, 1929 N.A.D.). Prior to June 4, 1946, staff gage at bridge 20 ft downstream at same datum.

Average discharge.--5 years (1945-50), 14.5 cfs.

Extremes.--1940-41, 1945-50: Maximum discharge observed, 600 cfs May 4, 1941 (gage height, 3.95 ft), from rating curve extended above 100 cfs by logarithmic plotting; minimum daily, 0.4 cfs Aug. 25, 1948.

Remarks.--Flow regulated by Bates Creek Reservoir (3,112 acre-ft per year adjudicated for irrigation). Diversions above station for irrigation of about 329 acres.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	50.1	54.9	3.07	3.28	0.92	0.96	-
1941	a1.2	-	-	-	-	-	a85.5	a174	a22.0	a9.0	a5.0	a1.8	-
1946	3.98	*4.23	*4.0	*3.5	*3.5	*11.8	42.5	83.9	24.9	4.02	1.92	3.06	*16.0
1947	4.28	3.34	2.56	1.8	1.45	32.2	48.0	49.7	45.0	18.4	4.87	2.01	17.9
1948	2.31	2.90	2.52	2.23	3.30	9.64	52.4	52.1	20.14	2.50	1.20	1.38	11.7
1949	2.71	3.62	3.90	3.2	3.0	6.90	61.7	65.2	20.3	3.91	1.36	2.40	14.9
1950	3.77	2.97	3.0	2.0	3.0	4.36	50.6	51.1	16.1	4.69	1.91	2.14	12.1

* Not previously published; estimated on basis of records for stations on nearby streams.

a Not previously published; estimated on basis of original gage-height record and approximate rating curve.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	-	-	-	-	2,980	3,380	182	202	57	57	-
1941	a73	-	-	-	-	-	a5,090	a10,720	a1,310	a552	a307	a105	-
1946	245	*252	*246	*215	*194	*724	2,530	5,160	1,480	247	118	182	*11,590
1947	263	199	157	111	80	1,980	2,860	3,080	2,680	1,130	300	119	12,930
1948	142	173	155	137	183	593	3,120	3,210	484	154	74	82	8,510
1949	166	216	240	197	167	424	3,670	4,010	1,210	240	84	143	10,770
1950	232	177	184	123	167	268	3,010	3,140	959	269	118	127	8,790

* Not previously published; estimated on basis of records for stations on nearby streams.

a Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second, of Bates Creek near Freeland, Wyo.

Yearly discharge, in cubic feet per second, at Bates Creek near Fredonia, Wyo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	896	a188	May 2, 1940	-	-	-	-	-
1941	-	*a600	May 4, 1941	-	-	-	-	-
1945	1056	147	May 5, 1945	-	\$16.0	\$11,590	\$15.8	\$11,470
1947	1176	381	Mar. 22, 1947	-	17.9	12,930	17.7	12,800
1948	1176	208	Apr. 29, 1948	0.4	11.7	8,510	12.0	8,650
1949	1176	129	May 17, 1949	.5	14.9	10,770	14.8	10,740
1950	1176	194	Apr. 6, 1950	-	12.1	8,790	-	-

* Not previously published.

a Maximum observed.

79. Bates Creek near Alcova, Wyo.1/

Location (revised).--Lat 42°40'29", long. 106°35'58", in NE 1/4 sec. 12, T. 31 N., R. 82 W., 3 miles upstream from mouth and 10 1/2 miles northeast of Alcova.

Drainage area.--377 sq mi.

Gage.--Water-stage recorder at present site since June 5, 1935. Altitude of gage is 5,290 ft (from topographic map). Apr. 10, 1916, to Sept. 30, 1924, staff gages near present site at various datums.

Average discharge.--15 years (1935-50), 16.0 cfs.

Extremes.--1916-24, 1935-50: Maximum daily discharge, 4,000 cfs, estimated, Sept. 27, 30, 1923; no flow at times many years.

Remarks.--Water rights totaling about 127 cfs (priorities 1886 to 1939) for irrigation of about 8,800 acres, adjudicated by Wyoming for diversion above station. Natural flow of stream also affected by Bates Creek Reservoir (capacity 3,112 acre-ft) and several smaller reservoirs (total capacity, about 1,400 acre-ft) above station for irrigation.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation.

Monthly and yearly mean discharge in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	5.21	0	10.3	5.13	0.82	-
1917	-	-	-	-	-	-	118	114	38.7	.53	.11	-	-
1918	-	-	-	-	-	-	-	111	.6	10.5	1.0	1.0	-
1919	-	-	-	-	-	-	53.8	5.3	0	0	0	0	-
1920	-	-	-	-	-	-	171	598	35.9	2.6	0	0	-
1921	-	-	-	-	-	-	16.7	46.3	*26.7	3.6	0	0	-
1922	-	-	-	-	-	-	22.8	*126	*13.1	4.7	2.1	0	-
1923	-	-	-	-	-	-	48.7	*163	*46.3	*54.3	0	*492	-
1924	-	-	-	-	-	-	*1,510	*505	1.70	1.53	1.52	1.73	-
1935	-	-	-	-	-	-	-	-	-	.19	.39	.58	-
1936	1.06	7	6	4	3	8.41	11.9	.30	.14	.12	.45	0	3.52
1937	1.47	3.55	2	1.6	3.5	6	26.2	8.20	1.82	27.5	2.13	2.51	7.22
1938	2.85	9	12	7	9	24.8	116	18.5	2.71	1.90	2.73	17.8	18.6
1939	5.06	11.0	12.6	11.7	9.38	11.7	17.8	.54	.54	.26	0	.79	6.76
1940	3.09	2.78	7.48	6.47	9.55	9.99	10.2	4.25	0	1.25	.15	1.77	4.73
1941	3.13	4.75	5.50	5.24	6.35	13.6	51.7	115	9.73	8.05	21.6	7.64	21.2
1942	16.0	14.9	13	13	14	25.5	113	100	5.07	.34	.32	7.01	26.8
1943	13.6	19.1	25.4	22.2	30.8	75.0	48.4	.17	.35	.08	.24	3.21	19.8
1944	4.22	8.39	10.3	10.1	10.4	11.5	149	134	2.92	.24	1.30	5.93	29.0
1945	14.2	16.7	15.4	14.8	15.4	28.8	46.6	190	1.29	.30	9.61	3.94	30.0
1946	13.8	19.7	18.0	16.8	16.7	21.6	18.4	33.1	1.59	.26	3.20	9.62	14.4
1947	13.9	17.5	16.0	5	12	68.0	64.5	30.0	13.1	2.28	.53	4.28	21.1
1948	10.4	19.0	20.2	15.8	17.4	32.7	43.8	11.2	4.75	.32	.09	4.49	14.6
1949	3.82	8.10	11.8	9.90	9.36	15.3	40.9	9.64	30.6	10.2	.51	5.96	13.0
1950	5.87	7.14	10.7	12.1	11.8	20.5	28.9	1.27	.11	5.06	.10	3.86	8.92

* Only monthly figure revised; revised daily figures not available.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	320	0	633	315	49	-
1917	-	-	-	-	-	-	7,020	7,010	2,300	33	6.8	-	-
1918	-	-	-	-	-	-	-	6,820	36	646	61	60	-
1919	-	-	-	-	-	-	3,200	328	0	0	0	0	-
1920	-	-	-	-	-	-	10,200	36,800	2,020	160	0	0	-
1921	-	-	-	-	-	-	994	2,850	*1,590	221	0	0	-
1922	-	-	-	-	-	-	1,360	*7,750	184	289	129	0	-
1923	-	-	-	-	-	-	2,900	*10,000	*2,750	*3,340	0	*29,300	-
1924	-	-	-	-	-	-	*77,900	*31,100	101	94	93	103	-

* Only monthly figure revised; revised daily figures not available.

1/ Published as "near Casper" 1916-24.

Monthly and yearly runoff, in acre-feet, of Bates Creek near Alcovia, Wyo.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	-	-	-	-	-	-	12	24	22	-
1936	65	417	369	246	173	517	711	18	8.3	7.1	27	0	2,560
1937	90	211	123	98	194	369	1,560	504	108	1,690	131	150	5,230
1938	175	536	738	430	500	1,530	6,880	1,140	161	117	168	1,060	13,440
1939	311	653	778	718	522	722	1,060	33	32	16	0	47	4,890
1940	190	165	460	398	549	614	606	262	0	77	9.3	105	3,440
1941	192	283	338	322	353	838	3,080	7,100	579	495	1,330	455	15,360
1942	985	889	799	799	778	1,570	6,700	6,160	302	21	20	417	19,440
1943	837	1,140	1,560	1,360	1,710	4,610	2,880	11	21	4.8	15	191	14,340
1944	260	499	636	623	597	706	8,840	8,240	174	15	80	353	21,020
1945	873	992	944	912	853	1,770	2,770	11,690	77	18	591	234	21,720
1946	847	1,170	1,110	1,030	926	1,330	1,090	2,030	95	16	197	572	10,410
1947	857	1,040	986	307	668	4,180	3,840	1,840	140	33	255	15,280	15,280
1948	641	1,130	1,240	972	1,000	2,010	2,610	691	283	19	5.6	29	10,630
1949	235	482	725	609	520	943	2,430	592	820	630	31	355	9,370
1950	361	425	659	742	658	1,260	1,720	78	6.3	311	6.1	229	6,460

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436	-	-	0	-	-	-	-
1917	456	-	-	0	-	-	-	-
1918	476	-	-	0	-	-	-	-
1919	506	-	-	0	-	-	-	-
1920	506	-	-	0	-	-	-	-
1921	526	-	-	0	-	-	-	-
1922	546	-	-	0	-	-	-	-
1923	566	a4,000	Sept. 27, 30, 1923	0	-	-	-	-
1924	586	-	-	0	-	-	-	-
1935	786	-	-	0	-	-	-	-
1936	806	*81	Apr. 12, 1936	0	3.52	2,560	2.94	2,130
1937	826	390	July 12, 1937	0	7.22	5,230	8.64	6,250
1938	856	570	Sept. 1, 1938	.2	18.6	13,440	19.0	13,730
1939	876	56	Apr. 23, 1939	0	6.76	4,890	5.48	3,960
1940	896	165	Apr. 28, 1940	0	4.73	3,440	4.73	3,430
1941	926	622	May 4, 1941	.1	21.2	15,360	23.8	17,220
1942	956	376	Apr. 6, 1942	.3	26.8	19,440	28.0	20,300
1943	976	630	Mar. 30, 1943	0	19.8	14,340	16.9	12,200
1944	1006	533	Apr. 4, 1944	.1	29.0	21,020	30.9	22,440
1945	1036	614	May 7, 1945	.3	30.0	21,720	30.5	22,040
1946	1056	356	May 5, 1946	.1	14.4	10,410	14.1	10,170
1947	1086	583	Mar. 31, 1947	.2	21.1	15,280	21.3	15,410
1948	1116	214	Apr. 30, 1948	0	14.6	10,630	12.5	9,060
1949	1146	*2,000	June 6, 1949	.1	13.0	9,370	13.0	9,380
1950	1176	605	July 24, 1950	0	8.92	6,460	-	-

* Revised.

a Maximum daily discharge, estimated; supersedes previously published daily discharge.

80. North Platte River near Goose Egg, Wyo. 1/

Location.--Lat 42°43'15", long. 106°32'10" (revised), in SW¼ sec. 22, T. 32 N., R. 81 W., 0.3 mile downstream from Cottonwood Creek, 2½ miles downstream from Poison Spring Creek, 4 miles southwest (revised) of Goose Egg, and 13 miles southwest of Casper.

Drainage area.--11,500 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads and water temperatures for the period June to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is 5,183 ft (from topographic map).

Apr. 9, 1917, to Sept. 30, 1919, staff gages at site 1½ miles downstream at different datums. May 1 to Sept. 30, 1924, and May 9 to Sept. 30, 1947, staff gages at site 4½ miles downstream at different datums.

Extremes.--1917-19, 1924, 1947, 1950: Maximum discharge observed, 19,200 cfs June 24-26, 1917; maximum gage height observed, 9.71 ft June 25, 1917, site and datum then in use; minimum daily, 70 cfs Sept. 30, 1950.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power development, and diversions above station for irrigation of about 350,000 acres.

Cooperation.--Records for 1917-19, 1924 furnished by Bureau of Reclamation.

1/ Published as "near Casper" 1917-19, 1924.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River near Goose Egg, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	1,610	13,700	9,200	4,400	3,910	-
1918	-	-	-	-	-	-	1,160	4,580	6,730	5,560	4,030	2,560	-
1919	-	-	-	-	-	-	-	2,550	5,040	3,820	3,300	2,000	-
1924	-	-	-	-	-	-	-	5,260	4,610	5,860	5,100	3,090	-
1947	-	-	-	-	-	-	-	#831	#173	#2,889	#4,684	#2,573	-
1950	-	-	-	-	-	-	-	-	3,772	4,761	4,751	2,126	-

* Not previously published; estimated on basis of original gage-height record, discharge measurements, and records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	99,000	815,000	566,000	271,000	233,000	-
1918	-	-	-	-	-	-	69,000	282,000	400,000	542,000	248,000	152,000	-
1919	-	-	-	-	-	-	-	157,000	300,000	235,000	203,000	119,000	-
1924	-	-	-	-	-	-	-	523,000	274,000	560,000	514,000	184,000	-
1947	-	-	-	-	-	-	-	#51,130	#10,280	#177,700	#288,000	#153,100	-
1950	-	-	-	-	-	-	-	-	224,400	292,700	292,100	126,500	-

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1917	456	a19,200	June 25-28, 1917	-	-	-	-
1918	476	-	-	-	-	-	-
1919	506	-	-	-	-	-	-
1924	586	-	-	-	-	-	-
1947	-	#b6,500	Aug. 3, 1947	-	-	-	-
1950	1176	6,400	July 25, 1950	-	-	-	-

* Not previously published.

a Maximum observed.

b Estimated.

81. Casper Creek at Casper, Wyo.

Location.--Lat 42°50'52", long. 106°21'52" (revised), in NW¼NE¼ (revised) sec. 7, T. 33 N., R. 79 W., 700 ft upstream from bridge on U. S. Highways 20 and 26 at west edge of Casper and 0.4 mile (revised) upstream from mouth.

Drainage area.--662 sq mi.

Supplemental records available.--Records of chemical analyses for the period December 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is 5,110 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 531 cfs June 25, 1948 (gage height, 4.51 ft), from rating curve extended above 9 cfs on basis of slope-area determination of peak flow; no flow at times.

Remarks.--Diversion for irrigation of about 3,500 acres above station. Twenty small reservoirs (total capacity about 15,000 acre-ft) above station. Return flow from water imported from the North Platte River for the Kendrick Irrigation Project enters above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	0.30	0.12	0.02	0.11	-
1947	0.08	0.08	0.05	0.09	0.05	0.15	0.15	0.20	.76	.05	.21	.33	0.18
1948	.23	.32	.2	.1	.2	46.9	6.27	.87	21.3	4.59	1.75	.14	6.94
1949	.37	.53	.34	.24	.13	1.11	1.24	18.7	16.4	4.49	1.95	1.39	3.59
1950	.53	.32	.36	.31	.65	.55	.66	6.84	3.69	2.29	2.72	1.79	1.74

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	18	7.1	1.4	6.3	-
1947	4.8	5.0	3.2	5.6	2.6	8.9	9.1	12	45	2.8	13	19	131
1948	14	19	12	6.1	12	2,890	373	53	1,270	282	107	8.5	5,050
1949	23	32	21	14	7.3	68	74	1,150	976	30	120	83	2,600
1950	32	19	22	19	36	34	39	421	219	141	167	107	1,260

Yearly discharge, in cubic feet per second, of Casper Creek at Casper, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	88.3	June 1, 1946	0	-	-	-	-
1947	1086	18	June 18, 1947	0	0.18	131	0.23	163
1948	1116	531	June 25, 1948	0	6.94	5,050	6.98	5,080
1949	1146	428	June 7, 1949	0	3.59	2,600	3.59	2,600
1950	1176	39	May 12, 1950	.1	1.74	1,260	-	-

a Maximum during period June to September 1946.

82. North Platte River below Casper, Wyo.1/

Location.--Lat 42°51'45" long. 106°13'00", in NW¼NW¼ sec. 4, T. 33 N., R. 78 W., 0.3 mile upstream from Claude Creek, half a mile north of U. S. Highways 20 and 87, 5½ miles east of City Hall in Casper, and 9½ miles downstream from Casper Creek.

Drainage area --12,600 sq. mi. approximately.

Supplemental records available.--Records of suspended-sediment loads for the period April 1947 to September 1950 and water temperatures for the period June 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is 5,070 ft (from topographic map). Prior to Oct. 1, 1932, staff or chain gages at sites about 9 miles upstream at different datums.

Average discharge.--21 years (1929-50), 1,341 cfs.

Extremes.--1929-50: Maximum discharge observed, 13,800 cfs May 30, 1929 (gage height, 8.00 ft, site and datum then in use); minimum daily, 33 cfs Jan. 7, 1937.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	2,420	10,600	5,880	5,940	3,860	-
1930	1,390	168	115	100	145	181	233	775	4,290	5,890	4,580	2,820	1,740
1931	290	289	165	140	125	161	156	2,150	5,590	5,100	3,560	641	1,540
1932	734	173	110	100	110	125	190	1,350	5,740	6,070	4,570	3,630	1,910
1933	392	149	130	120	110	55	142	194	4,350	5,640	5,260	2,820	1,670
1934	637	87.9	71.0	55	95	64.9	178	2,570	1,554	1,703	1,260	140	709
1935	132	117	125	109	79.3	68.4	59.9	66.2	884	5,009	4,106	717	969
1936	132	116	103	115	91.2	108	924	5,881	3,105	4,018	3,367	893	1,415
1937	167	101	83.6	117	189	129	142	2,398	2,892	4,582	4,886	2,741	1,545
1938	295	111	74.5	69.2	71.1	81.4	225	2,246	3,753	4,428	4,886	1,680	1,421
1939	510	92.7	90.5	74.1	68.0	124	73.45	984	3,085	4,235	3,892	954	1,447
1940	174	139	84.7	72.9	75.3	57.5	64.61	423	2,634	2,518	2,348	229	823
1941	146	113	122	104	78.1	67.0	234	849	2,676	3,235	4,001	1,589	1,109
1942	150	93.6	77.3	66.1	65.6	88.9	188	300	1,594	4,843	4,654	2,529	1,232
1943	124	100	86.6	79.9	107	140	113	1,921	2,362	4,812	4,750	2,504	1,437
1944	107	70.5	60.5	64.1	68.4	69.1	244	604	3,029	4,700	5,080	2,780	1,385
1945	119	74.7	62.7	62.1	64.9	128	164	604	655	4,463	4,484	3,113	1,177
1946	117	92.9	83.2	75.6	74.0	69.8	67.8	836	2,606	4,542	4,715	1,580	1,334
1947	112	82.9	71.0	61.2	64.0	98.0	112	923	2,68	4,710	4,710	2,675	1,014
1948	103	81.2	70.8	70.5	70.7	181	99.82	136	3,078	4,759	4,503	2,296	1,462
1949	101	74.8	57.7	49.3	66.8	101	93.1	125	1,811	5,385	5,219	2,473	1,309
1950	119	75.5	63.7	51.8	68.4	60.5	358	1,737	3,695	4,820	4,717	2,182	1,506

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	7,070	6,150	8,050	11,100	13,900	149,000	331,000	562,000	565,000	230,000	-
1930	85,500	10,000	7,070	6,150	8,050	11,100	13,900	47,700	255,000	562,000	565,000	230,000	1,260,000
1931	17,800	17,200	10,100	8,610	6,940	9,900	9,280	132,000	333,000	314,000	219,000	38,100	1,120,000
1932	45,100	10,500	6,760	6,150	6,940	7,890	11,300	85,000	85,000	85,000	85,000	85,000	1,390,000
1933	24,100	8,970	7,990	7,380	6,110	3,380	8,450	11,900	93,000	547,000	503,230	168,000	1,210,000
1934	39,150	5,230	4,370	3,380	5,280	3,990	10,570	158,000	92,490	104,700	77,450	8,360	513,000
1935	8,130	6,970	7,680	6,700	4,410	4,210	3,560	4,070	52,580	308,000	252,500	42,660	701,500
1936	8,090	6,910	6,320	7,050	5,250	6,640	54,950	238,600	184,800	247,100	208,300	53,140	1,027,000
1937	10,260	6,040	5,140	7,190	10,520	7,920	8,470	400,172	100,281	700,298	800,163	101	1,119,000
1938	18,140	6,610	4,580	4,250	3,950	5,010	13,380	76,620	23,300	272,300	500,400	99,970	1,029,000
1939	31,340	5,320	5,560	4,550	3,780	7,610	4,370	245,000	85,600	260,400	239,300	56,740	1,048,000
1940	10,680	8,270	5,210	4,480	4,330	3,530	3,840	87,520	156,700	154,800	144,400	12,640	597,400
1941	8,960	6,730	7,520	6,380	4,340	4,120	13,930	52,180	159,200	198,900	266,000	94,550	802,800
1942	9,220	5,570	4,750	4,060	3,650	5,460	11,200	18,430	94,840	297,800	286,200	150,500	891,700
1943	7,610	5,970	5,330	4,910	3,950	8,600	6,720	118,100	40,500	295,900	292,100	149,000	1,041,000
1944	6,580	4,200	3,720	3,940	3,930	4,250	14,520	16,920	80,300	289,000	312,400	165,400	1,005,000
1945	7,350	4,440	3,680	3,820	3,610	7,850	9,740	37,120	38,970	274,400	400,275	700,185	852,100
1946	7,170	5,530	5,120	4,650	4,110	4,290	4,040	112,900	155,100	279,300	289,900	94,040	966,200
1947	6,910	4,930	4,360	3,760	3,560	6,030	6,640	56,740	15,800	176,400	288,600	159,200	733,900
1948	6,340	4,830	4,350	4,330	4,070	11,120	5,940	131,300	181,000	292,600	276,900	136,600	1,061,000
1949	6,180	4,450	3,550	3,330	3,710	6,230	5,540	7,690	107,800	331,100	280,900	147,200	947,400
1950	7,340	4,490	3,920	3,190	3,800	3,720	21,300	106,800	219,900	296,400	290,000	129,800	1,091,000

1/ Published as "at Casper" 1929-32.

Yearly discharge, in cubic feet per second, of North Platte River below Casper, Wyo.

Totaly discharge, in cubic feet per second, at North Platte River Gauging Station, Wyo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	a13,800	May 30, 1929	-	-	-	-	-
1930	701	a8,500	Aug. 7, 1930	-	1,740	1,260,000	1,657	1,200,000
1931	716	a12,700	June 5, 1931	-	1,540	1,120,000	1,564	1,130,000
1932	731	a6,460	June 11, 1932	-	1,910	1,390,000	1,883	1,370,000
1933	748	7,080	Sept. 9, 1933	*42	1,670	1,210,000	1,681	1,217,000
1934	761	5,340	June 2, 1934	42	709	513,000	673	487,000
1935	786	5,660	July 14, 1935	38	969	701,500	967	700,000
1936	806	5,810	May 24, 1936	60	1,415	1,027,000	1,415	1,027,000
1937	826	9,980	July 12, 1937	33	1,545	1,119,000	1,556	1,127,000
1938	856	7,620	Sept. 2, 1938	47	1,421	1,029,000	1,439	1,042,000
1939	876	5,480	June 1, 1939	41	1,447	1,048,000	1,422	1,030,000
1940	896	5,420	July 1, 1940	42	823	597,400	822	596,400
1941	926	8,060	Aug. 11, 1941	50	1,109	802,800	1,104	799,100
1942	956	5,780	July 25, 1942	48	1,232	891,700	1,231	891,000
1943	976	5,620	July 16, 1943	45	1,437	1,041,000	1,431	1,036,000
1944	1006	5,640	July 24, 1944	49	1,385	1,005,000	1,386	1,006,000
1945	1036	5,930	Aug. 20, 1945	46	1,177	852,100	1,180	854,500
1946	1066	5,940	June 18, 1946	41	1,334	966,200	1,332	964,500
1947	1086	5,800	Aug. 1, 1947	51	1,014	733,900	1,013	733,200
1948	1116	5,800	July 11, 1948	49	1,462	1,061,000	1,460	1,060,000
1949	1146	9,740	July 11, 1949	35	1,309	947,400	1,311	949,000
1950	1176	6,120	July 26, 1950	40	1,506	1,091,000	-	-

* Revised.

a Maximum observed.

83. North Platte River at Parkerton, Wyo.

Location.--Lat 42°51'00", long. 105°58'50", in NW $\frac{1}{4}$ sec. 9 (revised), T. 33 N., R. 76 W., at bridge half a mile west of Parkerton and $3\frac{1}{4}$ miles (revised) downstream from Cole Creek.

Drainage area.--13,000 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,000 ft (from topographic map).

Extremes.--1919-24: Maximum daily discharge, 16,500 cfs June 15, 1921; minimum discharge not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas. There were adjudicated diversions above station in 1924 for irrigation of about 175,000 acres.

Monthly and yearly mean discharge, in cubic feet per second

Year	Apr.	May	June	July	Aug.	Sept.			
1919	-	3,080	5,020	3,620	3,470	2,110			
1920	-	1,420	8,130	5,270	4,010	2,380			
1921	1,450	2,090	10,700	5,430	4,730	3,140			
1922	-	4,650	4,820	4,390	3,870	2,900			
1923	571	530	3,610	5,550	3,800	3,700			
1924	3,910	6,850	5,750	6,640	5,760	3,430			

Monthly and yearly runoff, in acre-feet

Year	Apr.	May	June	July	Aug.	Sept.			
1919	-	189,000	299,000	223,000	213,000	126,000			
1920	-	87,300	484,000	324,000	247,000	142,000			
1921	86,300	129,000	637,000	334,000	291,000	187,000			
1922	-	285,000	287,000	270,000	238,000	173,000			
1923	34,000	32,600	215,000	341,000	234,000	220,000			
1924	233,000	409,000	342,000	406,000	354,000	204,000			

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	The period				Calendar year		
		Maximum daily		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1919	566	6,100	June 8, 1919	-	-	-	-	-
1920	566	10,700	June 16,17,1920	-	-	-	-	-
1921	566	16,500	June 15, 1921	-	-	-	-	-
1922	566	8,100	May 25, 1922	-	-	-	-	-
1923	566	9,190	Sept. 28, 1923	-	-	-	-	-
1924	566	10,300	May 15, 1924	-	-	-	-	-

84. Deer Creek in canyon, near Glenrock, Wyo.

Location.--Lat 42°44', long. 106°02' (revised), in sec. 26 (revised), T. 32 N., R. 77 W., just upstream from Tolland No. 1 ditch and 14 miles southwest of Glenrock.

Drainage area.--120 sq mi, approximately.

Gage.--Water-stage recorder.

Extremes.--1946-50: Maximum discharge, 855 cfs Apr. 7, 1950 (gage height, 8.76 ft), from rating curve extended above 280 cfs; minimum, 2.0 cfs Sept. 7, 8, 1950 (gage height, 3.40 ft).

Remarks.--Water rights totaling 46.73 cfs (priorities 1883-1930), for irrigation of about 3,280 acres, adjudicated by Wyoming for diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	116	18.8	5.93	8.19	-
1947	14.6	11.6	7.55	5.00	3.44	47.0	203	228	170	57.4	8.95	7.54	63.8
1948	8.97	10.3	10.4	9.5	9.0	12.7	147	179	29.2	6.04	2.96	3.01	35.7
1949	5.04	8.40	7.94	7.0	11	23.5	204	296	63.3	9.12	2.98	4.45	53.7
1950	6.32	7.34	5.39	4.61	5.56	9.77	177	226	84.7	11.1	2.95	4.58	45.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	6,880	1,150	364	488	-
1947	897	690	464	307	191	2,890	12,070	14,040	10,140	3,530	550	449	46,220
1948	552	613	639	584	518	779	8,720	11,020	1,740	372	182	179	25,900
1949	310	500	488	430	611	1,440	12,130	18,210	3,770	561	185	265	38,900
1950	389	437	332	284	309	595	10,550	13,920	5,040	690	181	272	32,990

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	8434	May 23, 1946	-	-	-	-	-
1947	1086	780	Apr. 14, 1947	2.8	63.8	46,220	63.5	45,970
1948	1116	639	Apr. 29, 1948	2.4	35.7	25,900	35.0	25,390
1949	1146	498	Apr. 24, 1949	2.4	53.7	38,900	53.5	38,760
1950	1176	855	Apr. 7, 1950	2.1	45.6	32,990	-	-

a Maximum during period May 15 to Sept. 30, 1946.

85. Deer Creek at Glenrock, Wyo.

Location.--Lat 42°51'42", long. 105°52'02" (revised), in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 4, T. 33 N., R. 75 W., 40 ft downstream from bridge on U. S. Highways 20 and 87 in Glenrock and 0.6 mile (revised) upstream from mouth.

Drainage area.--216 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,980 ft (from topographic map). Prior to June 1, 1935, staff gages at site 400 ft downstream at various datums. Datum lowered 2.00 ft June 15, 1916, and 1.00 ft May 26, 1928.

Average discharge.--28 years (1916-24, 1928-33, 1935-50), 65.0 cfs.

Extremes.--1916-24, 1928-33, 1935-50: Maximum discharge observed, 2,840 cfs Apr. 15, 1924 (gage height, 6.5 ft, site and datum then in use), from rating curve extended above 1,200 cfs; no flow at times many years.

Remarks.--Divisions above station for irrigation of about 6,500 acres. One small reservoir above station (capacity, about 60 acre-ft) for irrigation.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second, of Deer Creek at Glenrock, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	a375	253	32.8	5.74	0.20	0.20	-
1917	a0.2	a1.0	a1.0	a2.0	a6.0	a100	*316	625	*278	18.7	2.5	4.7	b113
1918	*5.0	*10	*8.0	*6.0	*5.0	*20	c266	c590	c90	*4.0	*4.0	c3.0	*84.8
1919	a10	a12	a4.0	a3.0	a3.0	b10	201	*141	*10.9	0	.52	3.5	b33.3
1920	a8.0	a10	a3.0	a5.0	a6.0	a10	97.1	*849	35.4	9.7	1.7	4.5	b87.6
1921	a5.0	a6.0	a8.0	a10	a11	a15	164	258	65.3	1.1	1.0	1.0	a45.6
1922	a2.0	a1.0	a1.0	a1.0	a1.0	a5.0	*43.4	*315	25.5	0	0	0	b33.3
1923	a0	a0	a1.0	a1.0	a1.0	a15	114	447	*227	9.2	*4.3	50.8	b72.8
1924	b20	b10	b7.0	b7.0	b6.0	a22	512	618	48.2	.73	.68	5.16	b105
1928	-	-	-	-	-	-	-	-	140	11.0	4.06	4.42	-
1929	17.6	a20	a18	a18	a15	a48.9	199	747	125	1.92	1.36	8.91	a102
1930	16.4	20.4	*15	*12	*18.7	26.7	268	184	37.2	4.88	3.43	4.02	*50.7
1931	22.0	20.3	*15	*12	*14	23.3	189	253	7.2	.64	.82	.75	*46.7
1932	2.37	16.0	*25.0	*20	*25	34.4	228	473	30.7	13.7	1.15	1.06	*72.9
1933	9.08	20.9	*16.5	*10	*10	*25	*374	770	98.1	.73	.96	4.68	*112
1935	-	-	-	-	-	-	42.0	358	104	.03	.26	.28	-
1936	3.39	14.9	16.5	12.3	11.0	15.2	86.5	30.0	1.59	.10	.07	.01	15.9
1937	3.86	11.8	9.32	8	10.5	14.6	186	200	189	83.9	2.50	3.20	60.3
1938	9.32	18.1	17.6	17.8	17.4	31.6	315	230	25.0	4.60	.5	7.05	57.8
1939	5.72	15	17	15	14	21.5	231	143	14.4	1.11	.41	.16	39.8
1940	.94	8.54	10.7	10.6	11.8	10.7	110	173	217	.08	0	.44	28.3
1941	4.68	7.45	8.44	10.2	10.2	15.3	168	582	55.1	6.87	27.6	14.1	76.6
1942	28.5	40.1	27.8	21.4	19.7	20.5	358	620	80.2	10.6	1.41	4.13	103
1943	21.4	27.0	25.2	21.7	22.0	94.2	164	50.1	38.8	3.96	.22	.36	39.0
1944	5.81	12.3	13.4	17.2	19.0	20.5	178	519	92.4	7.56	.82	.66	74.2
1945	13.0	17.7	12.9	15.0	19.2	23.1	93.1	579	169	20.7	4.22	7.81	81.8
1946	23.6	24.6	20.3	20.7	19.9	60.7	157	372	152	10.2	1.73	10.6	73.0
1947	26.8	29.4	21.7	18.6	19.0	58.5	230	221	197	60.7	.43	.26	73.5
1948	6.56	21.5	24.6	25.3	24.6	24.2	137	164	19.5	2.48	.66	.52	37.6
1949	3.86	16.5	23.4	23.2	21.6	33.7	166	299	65.4	2.66	.16	1.33	54.9
1950	14.1	20.7	16.5	15.3	20.8	20.9	147	195	78.1	6.62	.25	2.38	44.9

* Only monthly figure revised; revised daily figures not available.

† Not previously published; estimated on basis of weather records and records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Not previously published; estimated on basis of partial gage-height record, discharge measurements, and records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	a22,300	15,600	1,950	353	12	12	-
1917	a12	a59	a61	a123	a332	a6,140	a18,800	38,400	16,500	1,150	152	278	b82,000
1918	*307	*595	*492	*369	*278	*1,230	c15,800	36,300	c5,360	*246	*246	c179	*61,400
1919	a614	a712	a246	a184	a166	b614	12,000	*8,670	*649	0	32	208	b24,100
1920	a491	a594	a184	a304	a345	a614	5,780	*52,200	2,110	596	105	268	b63,600
1921	a307	a356	a491	a614	a610	a921	9,760	15,900	3,890	68	61	60	a33,000
1922	a123	a59	a61	a61	a55	a307	*2,580	*19,400	1,520	0	0	0	b24,100
1923	a0	a0	a61	a61	a55	a921	6,780	27,500	*13,500	566	*264	5,020	b52,700
1924	b1,230	b595	b430	b430	b345	a1,350	30,480	37,970	2,870	45	42	307	b76,100
1928	-	-	-	-	-	-	-	-	8,330	676	250	263	-
1929	1,080	a1,190	a1,100	a1,100	a630	a3,010	11,800	45,900	7,440	118	84	530	a74,200
1930	1,010	1,210	*922	*738	*1,040	1,640	15,900	11,300	2,210	300	211	239	*36,700
1931	1,350	1,210	*922	*738	*778	1,430	11,200	15,600	428	39.4	50.4	44.6	*33,800
1932	146	952	*1,540	*1,230	*1,440	2,120	13,600	29,100	1,830	842	71	63	*52,900
1933	558	1,240	*1,010	*615	*555	*1,540	*22,300	47,500	5,840	45	59	278	*61,300
1935	-	-	-	-	-	307	2,500	22,030	6,190	2.0	16	17	-
1936	208	898	1,020	756	635	932	5,150	1,850	94	6.1	4.6	.4	11,540
1937	237	701	573	492	583	900	11,090	12,320	11,270	160	154	191	43,670
1938	573	1,080	1,080	1,100	968	1,940	18,750	14,120	1,490	263	31	420	41,840
1939	352	893	1,050	922	778	1,320	13,740	8,800	854	68	25	9.5	28,810
1940	58	508	659	650	682	660	6,530	10,650	129	4.8	0	26	20,560
1941	288	444	519	628	567	938	10,020	35,790	3,280	422	1,700	841	55,440
1942	1,750	2,380	1,710	1,320	1,090	1,260	21,290	38,100	4,770	651	87	246	74,650
1943	1,310	1,610	1,550	1,330	1,220	5,790	9,740	3,080	2,310	243	14	22	28,220
1944	357	730	823	1,060	1,090	1,260	10,580	31,920	5,500	465	51	39	53,880
1945	799	1,050	793	925	1,070	1,420	5,540	35,580	10,030	1,270	260	465	59,200
1946	1,450	1,470	1,250	1,270	1,110	3,730	9,320	22,850	9,060	629	106	634	52,880
1947	1,650	1,760	1,330	1,020	1,060	3,600	13,700	13,610	11,730	730	26	15	53,220
1948	403	1,280	1,510	1,560	1,420	1,490	8,180	10,110	1,180	153	41	31	27,340
1949	237	982	1,440	1,450	1,200	2,070	9,870	18,390	3,690	164	9.7	79	39,760
1950	866	1,230	1,010	942	1,160	1,290	8,770	12,000	4,650	407	15	141	32,480

* Only monthly figure revised; revised daily figures not available.

† Not previously published; see footnote a to preceding table.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Not previously published; see footnote c to preceding table.

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second, of Deer Creek at Glenrock, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Discharge	Momentary maximum Date	Minimum day	Mean	Runoff in acre-feet	Mean
1916	436	-	-	-	-	-	-
1917	456	-	-	-	a113	a82,000	*115
1918	476	-	-	-	*84.8	*61,400	*85.1
1919	506	-	-	0	a33.3	a24,100	a32.9
1920	506	-	-	-	a87.6	a63,600	a87.4
1921	526	-	-	-	b45.6	b33,000	b45.1
1922	546	-	-	0	a33.3	a24,100	a33.1
1923	566	-	-	0	a72.8	a52,700	a75.9
1924	926	c2,840	Apr. 15, 1924	.3	a105	a76,100	-
1928	666	c267	June 13, 1928	.3	-	-	-
1929	686	c1,650	May 15, 1929	.2	b102	b74,200	*102
1930	701	c705	Apr. 15, 1930	.2	*50.7	*36,700	*51.2
1931	716	c646	Apr. 18, 1931	.5	*46.7	*33,800	*45.5
1932	731	c1,160	July 9, 1932	.4	*72.9	*52,900	*73.1
1933	746	c1,810	May 23, 1933	0	*112	*81,300	-
1935	786	c570	May 28, 1935	0	-	-	-
1936	806	273	Apr. 20, 1936	0	15.9	11,540	15.1
1937	826	1,300	Apr. 16, 1937	0	60.3	43,670	62.0
1938	856	1,360	Apr. 19, 1938	-	57.8	41,840	57.2
1939	876	691	Apr. 25, 1939	.1	39.8	28,810	38.3
1940	896	443	Apr. 29, 1940	0	28.3	20,560	28.4
1941	926	2,400	May 5, 1941	2.6	76.6	55,440	82.9
1942	956	d2,150	May 15, 1942	0	103	74,650	101
1943	976	950	Mar. 31, 1943	0	39.0	28,220	35.4
1944	1006	1,630	May 19, 1944	0	74.2	53,880	75.2
1945	1036	1,370	May 7, 1945	1.5	81.8	59,200	83.9
1946	1056	790	May 9, 1946	.2	73.0	52,880	73.8
1947	1086	1,000	June 22, 1947	0	73.5	53,220	71.4
1948	1116	608	Apr. 30, 1948	0	37.6	27,340	36.9
1949	1146	514	May 9, 1949	0	54.9	39,760	55.6
1950	1176	594	Apr. 8, 1950	.1	44.9	32,480	-

* Not previously published.

a Revised; superseded figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Maximum observed.

d Not previously published; from recorded range in stage, date estimated.

86. Box Elder Creek at Box Elder, Wyo.

Location.--Lat 42°37', long. 105°52', in SW 1/4 sec. 32, T. 31 N., R. 75 W., just downstream from private bridge at Hiser Ranch (old Boxelder post office), an eighth of a mile downstream from Snowshoe Creek, and about 17 miles south of Glenrock.

Drainage area.--63.2 sq mi.

Gage.--Water-stage recorder. Datum of gage is 6,704.18 ft above mean sea level, datum of 1929. Prior to June 7, 1946, staff gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 496 cfs May 21, 1949, from rating curve extended above 330 cfs; maximum gage height recorded, 4.78 ft May 4, 1947; no flow at times.

Remarks.--Water rights totaling 1.8 cfs (priorities 1888-1902) for irrigation of about 120 acres adjudicated by Wyoming for diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	238	107	13.8	0.62	1.89	-
1947	4.84	5.04	3.90	3	3	8	94.7	224	155	48.8	4.08	.78	46.4
1948	1.20	2.58	2.73	3.0	3.7	5.5	70.3	161	29.7	5.44	.25	.06	23.9
1949	.90	3.18	3.13	2.50	3.00	5.25	109	316	56.3	4.86	.26	.17	42.3
1950	.95	1.50	.63	.69	1.12	2.79	60.0	197	95.7	8.48	.26	.61	30.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	14,620	6,350	846	38	113	-
1947	298	300	240	184	167	492	5,640	13,750	9,230	3,000	251	47	33,600
1948	74	154	168	184	213	338	4,190	9,900	1,770	335	15	3.6	17,340
1949	56	189	193	154	167	323	6,470	19,420	3,350	299	16	10	30,650
1950	58	89	39	42	62	172	3,570	12,110	5,690	522	16	36	22,410

Yearly discharge, in cubic feet per second, of Box Elder Creek at Box Elder, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	454	June 18, 1946	-	-	-	-	-
1947	1086	486	May 4, 1947	0.6	46.4	33,600	45.8	33,160
1948	1116	321	Apr. 29, 1948	0	23.9	17,340	23.9	17,390
1949	1146	496	May 21, 1949	0	42.3	30,650	42.0	30,400
1950	1176	432	May 18, 1950	0	30.9	22,410	-	-

87. Box Elder Creek near Careyhurst, Wyo.

Location (revised).--Lat 42°50'08", long. 105°40'24", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 13, T. 33 N., R. 74 W., 0.9 mile south of Careyhurst and 2 $\frac{1}{4}$ miles upstream from mouth.

Drainage area.--202 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,930 ft (from topographic map). May 18 to Oct. 30, 1911, Apr. 9, 1916, to Sept. 30, 1924, staff gage within one-half mile of present site at different datum. May 26 to Oct. 4, 1928, staff gage 30 ft upstream at same datum.

Average discharge.--28 years (1915-24, 1928-32, 1935-50), 51.1 cfs.

Extremes.--1911, 1916-24, 1928-33, 1935-50: Maximum discharge, 2,360 cfs May 23, 1933 (gage height, 9.04 ft), from rating curve extended above 1,200 cfs; no flow at times many years.

Remarks.--Water rights totaling about 140 cfs (priorities 1876-1935), for irrigation of about 10,200 acres, adjudicated by Wyoming for diversion above station. Water rights for 3.9 cfs (priorities 1879-1923), for municipal supply of Douglas, adjudicated for diversion above station. Several small reservoirs above station (total adjudication, 276 acre-ft per year) for irrigation.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	36.6	1.84	0.07	0	-
1912	7.92	12	s	-	-	-	-	-	-	-	-	-	-
1916	a12	a23	a11	a6.0	a4.0	a4.0	a172	155	16.1	4.5	4.5	4.5	a34.6
1917	a4.0	a9.0	a5.0	a5.0	a4.0	a15	104	365	9.6	3.5	3.4	-	a89.7
1918	a3.0	a9.0	a3.0	a3.0	a3.0	a16	123	514	74.5	4.0	4.0	4.0	a55.6
1919	a9.0	a4.0	a4.0	a4.0	a4.0	a10	75.9	34.4	4.0	4.0	4.0	4.0	a13.4
1920	a7.0	a4.0	a4.0	a4.0	a4.0	a8.0	76.9	759	143	4.8	4.0	4.0	a86.0
1921	a4.0	a7.0	a4.0	a3.0	a3.0	a10	52.4	265	42.0	14.2	5.4	5.0	a34.9
1922	a5.0	a5.0	a4.0	a4.0	a4.0	a9.0	28.8	*391	44.2	*1.0	0	0	*41.8
1923	a0	a1.0	a1.0	a2.0	a2.0	a6.0	37.1	319	65.5	20.1	8.8	65.2	a44.2
1924	a65	a70	a50	a50	a40	a40	357	436	46.4	2.45	3.72	37.0	+100
1928	-	-	-	-	-	-	-	-	129	29.5	3.18	-	-
1929	11.4	a15	a10	a8.0	a8.0	a64.9	209	596	122	1.64	1.25	3.28	a88.0
1930	7.57	11.3	a15	+12	+12	18.6	182	179	60.1	1.13	1.74	4.02	+42.0
1931	13.9	10	+8.0	+7.0	+7.0	15.9	87.1	164	48.5	1.9	.9	1.0	+30.6
1932	7.6	5.6	+3.0	+3.0	+5.0	+10	90.0	282	144	.64	.75	1.31	+34.3
1933	9.20	-	-	-	-	-	-	522	114	.95	4.55	.69	-
1935	-	-	-	-	-	-	.67	215	139	3.63	.90	.57	-
1936	2.10	2.38	4.61	7.0	6.5	11	61.9	23.9	2.15	.35	1.83	.66	10.3
1937	2.36	4.91	5.64	4.5	6.0	4.06	70.6	160	188	42.5	1.83	1.11	40.9
1938	3.46	10	10	9.0	10.5	10.3	190	217	13.2	.67	.96	1.95	39.9
1939	2.38	4.2	6.5	6.0	6.0	24.4	185	144	1.45	.76	.55	4.0	31.9
1940	1.45	.96	2.95	4.0	5.31	2.93	49.5	105	.92	.50	.12	.22	14.5
1941	.55	1.94	2.63	3.29	4.41	4.38	133	486	44.3	3.94	7.79	7.20	58.9
1942	13.7	22.2	16.1	12.2	12.2	14.9	251	673	73.4	1.77	.32	2.64	91.8
1943	9.55	10.1	15.7	15.1	17.5	56.1	153	65.3	30.3	3.67	.40	.92	31.4
1944	3.38	5.98	7.92	10.6	10.6	11.7	125	587	93.4	7.87	1.05	1.65	72.7
1945	4.24	4.08	5.69	7.87	11.4	14.4	94.4	564	208	30.5	3.11	2.16	79.7
1946	5.23	11.6	13.4	15.4	13.6	37.9	126	370	210	25.8	.88	4.17	69.7
1947	12.4	19.2	16.1	11.7	11.7	43.4	211	265	248	86.8	5.02	.52	77.6
1948	1.82	11.8	13.2	15.2	17.7	22.7	132	164	9.70	2.23	.92	.67	32.7
1949	4.00	6.42	8.17	7.23	11.8	22.0	162	353	50.5	1.38	.29	1.64	52.7
1950	2.73	2.65	3.96	7.14	5.36	1.90	51.8	192	94.9	2.28	.52	1.58	30.7

* Only monthly figure revised; revised daily figures not available.

+ Corrected; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for nearby stations.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet, of Box Elder Creek near Careyhurst, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	2,300	113	-	0	-
1912	487	714	492	-	-	-	-	-	-	-	4	-	-
1916	a736	a1,370	a675	a368	a230	a246	a10,200	9,530	958	277	277	268	a25,100
1917	a246	a534	a307	a222	a222	a921	6,190	33,500	21,700	591	216	202	a64,900
1918	a184	a534	a246	a184	a166	a982	7,320	25,500	4,430	246	246	238	a40,300
1919	a552	a238	a246	a246	a222	a614	4,520	2,120	238	246	246	238	a9,730
1920	a430	a238	a246	a246	a230	a491	4,580	46,700	8,510	295	246	238	a62,400
1921	a246	a416	a246	a184	a636	a614	3,120	16,300	2,500	873	332	298	a25,300
1922	a307	a297	a246	a246	a222	a552	1,710	24,000	2,630	*62	0	0	*30,300
1923	a0	a59	a61	a123	a111	a368	2,210	19,600	3,900	1,240	541	3,760	a32,000
1924	a3,990	a4,160	a3,070	a3,070	a2,300	a2,460	21,200	26,900	2,680	151	229	2,200	+72,600
1928	-	-	-	-	-	-	-	-	7,680	1,810	196	-	-
1929	701	a891	a814	a491	a444	a3,990	12,400	36,000	7,260	40	77	195	a63,700
1930	465	672	*922	*738	*666	1,140	10,800	11,000	3,580	69	107	239	*30,400
1931	855	595	*492	*430	*398	978	5,180	10,100	2,890	117	55	60	*22,100
1932	467	333	*184	*184	*298	*614	5,360	17,300	26	39	46	78	*24,900
1933	566	-	-	-	-	-	-	32,100	6,780	58	267	41	-
1935	-	-	-	-	-	-	40	13,200	8,290	223	55	34	-
1936	129	142	283	430	374	676	3,690	1,470	128	22	113	52	7,510
1937	145	282	347	277	333	250	4,200	9,810	11,180	2,620	113	86	29,630
1938	213	595	615	553	583	634	11,330	13,330	796	41	59	118	28,860
1939	147	250	400	369	333	1,500	11,020	8,860	88	47	34	24	23,070
1940	89	57	181	246	305	180	2,950	6,440	55	31	7.5	13	10,550
1941	34	116	162	202	245	270	7,910	29,900	2,630	242	479	428	42,620
1942	842	1,320	992	750	676	914	14,930	41,410	4,370	109	20	157	66,490
1943	587	601	966	928	970	3,450	9,090	4,010	1,800	228	25	55	22,710
1944	208	356	487	654	811	718	7,460	36,110	5,560	484	64	98	52,810
1945	260	243	350	484	632	887	5,620	34,650	12,360	1,890	191	128	57,690
1946	322	690	821	944	758	2,330	7,500	22,730	12,510	1,590	54	248	50,500
1947	762	1,140	988	718	649	2,670	12,540	16,290	14,770	5,330	309	31	56,200
1948	112	705	813	934	1,020	1,400	7,830	10,100	577	137	57	40	23,720
1949	246	382	503	445	658	1,350	9,660	21,710	3,010	85	18	109	38,180
1950	168	158	244	459	298	117	3,080	11,800	5,650	140	32	94	22,220

* Revised.

† Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

* Not previously published; estimated on basis of records for nearby stations.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306	*a135	June 17, 1911	0	-	-	-	-
1916	436	-	-	-	b34.6	b25,100	b32.3	b23,400
1917	456	-	-	-	b89.7	b64,900	b89.5	b64,800
1918	478	-	-	-	b55.6	b40,300	b55.7	b40,300
1919	506	-	-	-	b13.4	b9,730	b13.3	b9,600
1920	506	-	-	-	b86.0	b62,400	b86.0	b62,400
1921	528	-	-	-	b34.9	b25,300	b34.9	b25,200
1922	546	-	-	-	*41.8	*30,300	*40.7	*29,500
1923	566	-	-	-	0	b44.2	b32,000	b59.5
1924	586	-	-	1.5	+100	+72,600	-	-
1928	668	a260	June 13, 1928	-	-	-	-	-
1929	688	994	May 15, 1929	0	b88.0	b63,700	*87.8	*63,800
1930	701	448	May 16, 1930	.4	*42.0	*30,400	*41.8	*30,300
1931	716	274	May 29, 1931	0	*30.6	*22,100	*29.3	*21,200
1932	731	654	May 15, 1932	0	*34.3	*24,900	-	-
1933	746	2,360	May 23, 1933	0	-	-	-	-
1935	766	675	May 17, 1935	0	-	-	-	-
1936	806	180	Apr. 20, 1936	0	10.3	7,510	10.6	7,740
1937	826	760	June 10, 1937	.6	40.9	29,630	41.8	30,270
1938	856	912	Apr. 16, 1938	.3	39.9	28,860	39.0	28,230
1939	876	676	Apr. 25, 1939	.3	31.9	23,070	31.2	22,600
1940	896	277	May 4, 1940	0	14.5	10,550	14.5	10,540
1941	926	1,310	May 3, 1941	.4	58.9	42,620	62.8	45,460
1942	956	1,450	May 16, 1942	.1	91.8	66,490	90.5	65,490
1943	976	448	Mar. 29, 1943	0	31.4	22,710	29.9	21,600
1944	1006	2,000	May 19, 1944	.4	72.7	52,810	72.5	52,610
1945	1036	1,120	May 7, 1945	1.5	79.7	57,690	81.0	56,660
1946	1066	984	June 18, 1946	.6	69.7	50,500	71.2	51,550
1947	1086	1,140	June 22, 1947	.4	77.6	56,200	75.9	54,940
1948	1116	377	Apr. 30, 1948	.4	32.7	23,720	32.0	23,230
1949	1146	569	May 5, 1949	.2	52.7	38,180	52.0	37,620
1950	1176	379	May 18, 1950	.4	30.7	22,220	-	-

* Revised.

† Corrected.

* Not previously published.

a Maximum observed.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

88. La Prele Creek near Douglas, Wyo.

Location (revised).--Lat 42°40', long. 105°36', in sec. 5, T. 31 N., R. 73 W., near high-water line of La Prele Reservoir and 13 miles southwest of Douglas.

Drainage area.--146 sq mi.

Gage.--Water-stage recorder. Altitude of gage is about 5,600 ft (from nearby line of Levels).

Average discharge.--31 years (1919-50), 42.9 cfs.

Extremes.--1919-50: Maximum discharge, 1,220 cfs May 11, 1920 (gage height, 11.4 ft, from Floodmarks), from rating curve extended above 800 cfs; no flow at times in 1936, 1939, 1940, 1943.

Remarks.--Natural flow of stream affected by small reservoirs above station (total capacity about 147 acre-ft). Diversions above station for irrigation of about 7,250 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	+0.4	0.4	-
1920	1.81	5.25	2.90	5.74	6.63	10.3	69.4	511	75.9	10.5	4.54	4.63	59.5
1921	5.83	8.48	8.1	12.3	11.8	18.2	40.3	167	46.3	9.53	4.60	2.02	27.9
1922	3.58	2.81	2.73	3.0	3.0	8.63	19.4	261	52.4	7.63	5.0	3.2	32.0
1923	4.53	4.46	4.0	3.0	3.0	22.2	88.0	328	158	21.2	17.1	17.6	56.1
1924	31.4	30.2	31.9	23.3	19.3	19.6	198	269	69.5	5.31	2.67	2.88	58.5
1925	81.7	37.3	21.7	15.5	17.4	35.2	109	142	77.6	10.3	6.73	9.70	47.1
1926	9.7	9.6	10	9.0	11	29.5	294	285	66.4	67.3	10	9.0	67.7
1927	9.68	11.6	12.2	11.7	11.6	13.1	120	420	72.9	18.0	17.3	7.28	61.0
1928	13.7	25.6	14.3	13.9	12.8	48.4	118	319	97.4	14.7	5.59	5.98	57.6
1929	10.4	13.5	12	10	11	53.5	153	398	94.5	6.13	5.48	7.85	64.0
1930	5.75	11.0	13.2	8.58	14.1	11.6	142	171	34.4	3.41	4.38	4.70	35.1
1931	7.39	5.95	6.0	6.0	6.58	8.0	61.9	120	30.1	1.99	1.85	2.21	21.6
1932	+3.0	+4.0	+5.0	+5.0	+11	+14	107	210	13.5	.98	1.1	1.6	+31.4
1933	8.49	8.62	5.5	6.0	6.0	21.3	189	463	93.9	3.38	1.83	3.59	67.2
1934	1.41	3.69	5.16	5.61	6.34	6.22	41.5	18.2	3.41	.99	.36	.44	7.82
1935	1.18	2.62	8.60	6.05	2.96	4.12	13.7	235	118	5.74	.91	.90	33.6
1936	2.00	5.32	5.01	3.93	3.04	7.71	92.1	67.1	6.65	1.31	.24	.91	16.2
1937	5.5	9.0	4.5	4.0	5.5	11	90.0	203	192	44.4	7.81	15.9	49.5
1938	+7.3	+11	+10	+13.8	7.5	29.0	224	243	31.1	10.4	1.76	2.52	+49.5
1939	7.61	9.0	7.5	5.5	4.2	17.1	156	132	7.80	1.61	2.62	.87	29.3
1940	9.92	4.48	4.03	4.46	5.54	6.26	43.5	92.0	6.69	2.24	.49	.23	14.2
1941	.59	1.70	2.48	2.58	2.07	5.13	145	288	32.5	8.78	6.18	8.34	42.2
1942	12.7	13.5	12	11	9.5	9.82	174	459	38.1	4.04	1.63	3.17	62.8
1943	6.8	8.95	11.9	9.93	10.8	22.3	96.7	85.5	36.4	5.41	1.04	.25	23.0
1944	2.66	5.54	3.18	4.13	6.57	8.21	86.5	348	42.2	19.5	2.47	1.35	42.8
1945	4.96	6.18	5.6	6.0	6.3	10.1	60.2	345	155	20.6	16.0	6.35	53.8
1946	10.0	10.8	9.18	7.97	8.81	30.6	118	265	136	19.9	4.53	6.67	52.4
1947	17.1	15.9	12.2	6.80	7.07	24.0	153	239	195	56.6	9.31	6.10	62.1
1948	7.84	10.5	9.82	10.4	10.9	13.3	106	130	9.15	5.47	3.41	2.61	26.7
1949	5.22	6.14	6.91	5.97	6.78	20.7	121	324	59.3	9.22	4.85	3.90	48.1
1950	6.25	6.51	6.16	6.99	6.76	7.05	52.7	172	71.9	9.15	5.04	4.56	29.7

* Not previously published; partly estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	+25	25.0	-
1920	111	312	178	353	381	633	4,130	31,400	4,520	646	279	276	43,200
1921	358	505	499	756	655	996	2,400	10,300	2,760	586	283	120	20,200
1922	220	167	168	184	167	531	1,150	16,000	3,120	601	469	298	23,100
1923	279	265	246	184	167	1,360	5,240	20,000	9,400	1,300	1,050	1,050	40,500
1924	1,930	1,800	1,960	1,430	1,110	1,210	11,800	16,500	4,080	328	164	171	42,500
1925	5,020	2,220	1,330	953	968	2,160	6,490	8,730	4,620	633	414	577	34,100
1926	596	571	615	553	611	1,810	17,500	17,500	3,950	4,140	615	536	49,000
1927	595	690	750	719	644	806	7,140	25,800	4,340	1,110	1,060	432	44,100
1928	842	1,520	879	855	756	2,980	7,020	19,600	5,800	904	331	356	41,800
1929	640	803	738	615	611	3,290	9,100	23,700	5,620	377	337	455	46,300
1930	354	655	612	528	783	713	6,450	10,500	2,050	209	269	280	25,600
1931	454	354	369	369	365	492	3,680	7,380	1,790	122	114	132	15,600
1932	134	458	4307	433	431	6,370	12,900	803	50	68	95	28	+26,800
1933	522	513	339	369	333	1,310	11,200	26,500	4,990	208	113	214	46,600
1934	86	219	317	345	352	382	2,470	1,180	203	61	22	26	5,660
1935	73	156	529	372	164	253	813	14,450	7,030	353	56	53	24,300
1936	123	317	308	242	175	474	5,480	4,130	396	80	15	54	11,790
1937	338	536	277	246	305	676	5,380	12,490	11,440	2,730	480	945	35,820
1938	450	850	610	650	417	1,780	13,350	14,950	1,850	639	108	150	+35,810
1939	468	556	461	338	233	1,050	9,280	8,100	464	98	161	52	21,220
1940	610	267	248	275	319	365	2,590	5,040	398	138	50	14	10,310
1941	36	101	153	159	115	315	8,610	17,690	1,930	540	380	496	30,520
1942	783	801	738	676	528	604	10,350	28,200	2,270	249	100	189	45,490
1943	418	533	732	610	602	1,370	5,750	4,020	2,170	333	64	15	16,620
1944	163	329	196	254	378	505	3,960	21,380	2,510	1,200	152	80	31,110
1945	305	368	344	369	350	624	3,580	21,190	9,230	1,270	983	378	38,990
1946	618	644	564	490	499	1,880	7,010	16,290	8,080	1,220	279	397	37,960
1947	1,050	948	751	418	393	1,480	9,130	14,730	11,620	3,480	572	363	44,940
1948	482	626	604	638	628	817	6,290	8,020	544	337	210	155	19,350
1949	321	366	425	367	377	1,270	7,200	19,910	3,530	567	298	232	34,860
1950	385	387	379	430	378	434	3,140	10,550	4,280	563	310	271	21,500

* Not previously published; partly estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second, of La Prele Creek near Douglas, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1919	508	-	-	-	-	-	-
1920	508	1,220	May 11, 1920	0.4	59.5	43,200	80.6
1921	528	570	May 25, 1921	-	27.9	20,200	26.8
1922	546	715	May 20, 1922	-	32.0	23,100	32.3
1923	568	752	May 22, 1923	-	56.1	40,500	62.9
1924	586	685	Apr. 14, 1924	1.3	58.5	42,500	62.5
1925	608	688	May 16, 1925	3.0	47.1	34,100	37.7
1926	628	750	May 28, 1926	-	67.7	49,000	68.1
1927	646	898	May 15, 1927	-	61.0	44,100	62.6
1928	666	858	May 17, 1928	4.0	57.6	41,800	56.2
1929	686	716	Apr. 29, 1929	3.9	64.0	46,300	65.5
1930	701	478	May 15, 1930	-	35.1	25,600	34.5
1931	718	184	May 7, 1931	-	21.6	15,600	*20.9
1932	731	367	May 14, 1932	-	*31.4	*22,800	*32.2
1933	746	998	May 23, 1933	1.0	67.2	48,600	66.2
1934	761	68	Apr. 9, 1934	.2	7.82	5,680	8.01
1935	786	676	May 21, 1935	.2	33.6	24,300	33.5
1936	806	290	Apr. 25, 1936	0	16.2	11,790	16.8
1937	828	665	June 7, 1937	-	49.5	35,820	*50.3
1938	856	888	Apr. 15, 1938	.9	*49.5	*35,810	*49.1
1939	876	505	Apr. 30, 1939	0	29.3	21,220	28.8
1940	896	216	May 5, 1940	0	14.2	10,310	13.1
1941	926	918	Apr. 28, 1941	.1	42.2	30,520	45.0
1942	958	840	May 15, 1942	1.3	62.8	45,490	62.0
1943	976	179	Apr. 27, 1943	0	23.0	16,620	21.8
1944	1006	988	July 5, 1944	.2	42.8	31,110	43.3
1945	1036	886	Aug. 2, 1945	3.1	53.8	38,990	55.0
1946	1056	920	June 18, 1946	1.9	52.4	37,960	53.7
1947	1086	984	June 21, 1947	4.2	62.1	44,940	60.6
1948	1116	343	Apr. 30, 1948	1.5	26.7	19,350	25.8
1949	1146	596	May 9, 1949	2.8	48.1	34,860	48.2
1950	1176	392	May 16, 1950	2.2	29.7	21,500	-

* Not previously published.

89. La Prele Creek near Orpha, Wyo. 1/

Location (revised).--Lat 42°50'12", long. 105°29'25", in NW¼ sec. 15, T. 33 N., R. 72 W., 20 ft downstream from highway bridge, 1½ miles upstream from mouth, and 1½ miles south-east of Orpha.

Drainage area.--227 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,880 ft (from topographic map). Prior to May 26, 1928, staff gages at site about a quarter of a mile downstream at different datums. May 26, 1928, to Sept. 30, 1933, staff gage at present site at datum 0.5 ft higher. Apr. 1 to June 2, 1935, staff gage at present site and datum.

Average discharge.--20 years (1928-33, 1935-50), 15.8 cfs.

Extremes.--1916, 1918, 1923-24, 1928-33, 1935-50: Maximum discharge, 1,340 cfs Sept. 6, 1946 (gage height, 7.30 ft), from rating curve extended above 460 cfs; no flow at times many years.

Remarks.--Flow regulated by La Prele Reservoir (capacity, 20,000 acre-ft). Also several small reservoirs above station (total capacity about 140 acre-ft) for irrigation. Divisions for irrigation of about 21,000 acres above station.

Cooperation.--Records for 1916, 1918, 1923-24 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	a20	101	12.9	6.65	a3.0	-	-
1918	-	-	-	-	-	-	19.3	197	27.6	8.7	3.4	3.5	-
1923	-	-	-	-	-	-	5.00	6.26	8.20	10.5	13.3	13.0	-
1924	-	-	-	-	-	-	215	169	7.37	5.19	7.01	6.95	-
1928	-	-	-	-	-	-	-	-	44.3	21.3	25.4	50.4	-
1929	10.5	a10	a6.0	a5.0	a8.0	40.8	25	265	49	10	41.6	25.1	b41.8
1930	19.2	23.5	*15	*12	*17	*9.46	11.2	15.6	7.85	2.39	9.76	6.32	*12.4
1931	72.1	16.0	*10	*8	*6	*5.1	7.0	3.1	2.1	2.8	2.6	2.0	*11.5
1932	2.8	4.4	*5	*5	*10	*7.3	6.8	3.49	1.15	.37	.36	.79	*3.93
1933	1.22	13.2	*9	*9	*7	*10	*7	226	44.7	4.08	3.33	5.02	*28.6

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

1/ Published as "near Fetterman" prior to May 1928.

Monthly and yearly mean discharge, in cubic feet per second, of La Prele Creek near Orpha, Wyo.--Con.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	-	-	-	-	-	-	.04	1.06	1.40	.25	.04	1.80	-
1936	4.52	6.39	5.84	10	9.0	8.37	8.25	.37	.03	0	0	0	4.38
1937	.40	2.21	6.79	5.0	9.0	1.43	5.95	1.91	2.77	7.36	3.25	8.59	4.52
1938	16.1	17	15	10	6.0	6.75	9.95	2.12	.89	1.39	.22	3.68	7.43
1939	14.0	15	12	11	4.5	9.0	8.0	.51	.05	.18	.03	.30	6.23
1940	1.49	4.87	6.41	5.63	7.85	3.93	2.03	1.37	.10	.15	0	0	2.80
1941	.09	1.57	3.39	4.66	3.66	3.87	8.70	33.8	4.45	4.76	9.57	16.7	7.98
1942	24.6	22.5	16.7	13.0	12.4	7.59	14.6	306	21.7	3.21	4.46	6.38	38.2
1943	19.3	18.1	18.7	13.8	13.4	15.0	20.6	14.2	4.45	2.37	.15	3.55	12.0
1944	9.12	12.0	10.8	12.7	13.7	13.7	16.3	60.2	12.1	7.18	14.4	10.0	16.1
1945	14.6	13.3	13.4	12.3	13.6	7.56	10.3	86.1	136	27.1	19.5	42.2	35.0
1946	36.1	19.2	14.6	13.9	16.3	9.15	15.9	22.5	57.8	14.9	10.9	29.8	21.7
1947	40.0	22.5	20.6	8.59	7.03	18.5	19.8	21.1	116	56.8	28.8	19.8	33.6
1948	12.9	14.0	15.0	15.8	17.0	19.0	16.2	9.87	9.40	3.55	2.54	3.17	11.5
1949	11.4	11.9	12.1	9.90	10.5	15.3	13.8	7.72	8.77	4.79	3.36	5.88	9.61
1950	14.6	14.0	12.3	8.86	6.84	9.37	8.82	6.08	8.15	23.0	4.32	6.33	10.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	al,190	6,210	768	409	al84	-	-
1918	-	-	-	-	-	-	1,150	12,100	1,640	535	209	208	-
1923	-	-	-	-	-	-	298	385	498	846	819	774	-
1924	-	-	-	-	-	-	12,800	10,400	439	319	431	414	-
1928	-	-	-	-	-	-	-	2,840	1,310	1,560	3,000	-	-
1929	646	a594	a368	a307	a443	2,510	1,490	16,300	920	615	2,560	1,490	b30,200
1930	1,180	1,400	#922	#738	#944	#582	666	959	467	147	600	376	#8,980
1931	4,430	952	#615	#492	#333	#314	417	191	125	172	180	119	#8,320
1932	172	262	#308	#308	#575	#449	405	215	68	23	22	47	#2,850
1933	75	786	#553	#553	#569	#615	#417	13,900	660	251	205	299	#20,700
1935	-	-	-	-	-	-	2.2	65	3	15	2.2	107	-
1936	278	380	359	615	518	515	491	23	2.0	0	0	0	3,180
1937	25	131	418	307	500	88	354	117	165	453	200	511	3,270
1938	990	1,010	922	615	333	415	592	130	53	85	14	219	5,360
1939	861	893	759	676	250	553	476	31	3.2	11	2.0	18	4,510
1940	91	290	394	346	452	242	121	84	6.0	9.3	0	0	2,040
1941	5.6	93	208	287	204	238	518	2,080	265	293	589	994	5,770
1942	1,510	1,340	1,030	799	686	467	869	18,800	1,290	198	274	380	27,640
1943	1,190	1,080	1,150	848	746	920	1,220	875	265	146	9.1	211	8,660
1944	561	714	685	783	785	843	970	3,700	719	442	886	596	11,660
1945	900	793	825	753	754	465	613	5,290	1,100	1,670	1,200	2,510	23,870
1946	2,220	1,340	897	857	904	563	944	1,390	440	915	671	1,780	15,720
1947	2,460	1,340	1,270	528	391	1,140	1,180	1,300	870	3,490	1,770	1,180	22,920
1948	792	832	922	958	976	1,170	962	607	560	218	156	189	8,340
1949	700	710	743	609	585	938	822	474	522	295	207	350	6,960
1950	898	833	756	545	380	576	525	374	485	1,410	265	377	7,430

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436	-	-	-	-	-	-	-
1918	476	-	-	-	-	-	-	-
1923	566	-	-	-	-	-	-	-
1924	586	#a430	Apr. 24, 1924	-	-	-	-	-
1928	666	-	-	-	-	-	-	-
1929	686	b370	May 27, 1929	-	c41.8	c30,200	c44.4	c32,100
1930	701	b46	June 24, 1930	0.1	#12.4	#8,980	#15.9	#11,500
1931	716	b206	Oct. 6, 1930	0	#11.5	#8,320	#4.23	#3,060
1932	731	#b21	May 31, 1932	0	#3.93	#2,850	#4.66	#3,530
1933	746	bl,140	May 23, 1933	.1	#26.6	#20,700	-	-
1935	786	16	Sept. 26, 1935	0	-	-	-	-
1936	806	-	-	0	4.38	3,180	3.77	2,740
1937	826	98	Sept. 29, 1937	0	4.52	3,270	7.76	5,620
1938	856	32	Sept. 11, 1938	0	7.43	5,360	6.83	4,950
1939	876	64	Oct. 7, 1939	0	6.23	4,510	3.66	2,600
1940	896	38	July 11, 1940	0	2.80	2,040	2.16	1,570

* Revised.

* Not previously published.

a Estimated.

b Maximum observed.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of La Prele Creek near Orpha, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	768	Aug. 6, 1941	0	7.98	5,770	12.9	9,350
1942	956	824	May 16, 1942	.6	38.2	27,640	37.5	27,180
1943	976	101	Apr. 10, 1943	0	12.0	8,660	9.92	7,180
1944	1006	194	May 27, 1944	.2	16.1	11,660	16.9	12,240
1945	1036	308	May 24, 1945	4.5	33.0	23,870	35.4	25,610
1946	1056	1,340	Sept. 6, 1946	4.0	21.7	15,720	22.8	16,530
1947	1086	485	June 23, 1947	6.0	31.6	22,920	28.2	20,400
1948	1116	162	Aug. 3, 1948	0	11.5	8,340	10.9	7,950
1949	1146	83	Sept. 6, 1949	0	9.61	6,960	10.1	7,290
1950	1176	450	July 24, 1950	1.0	10.3	7,430	-	-

90. North Platte River near Douglas, Wyo.1/

Location (revised).--Lat 42°41'00", long. 105°23'26", in NW¼SE¼ sec. 5, T. 31 N., R. 71 W., 2 miles downstream from Bedtick Creek, 3¼ miles upstream from Wagonhound Creek, and 4 miles south of Douglas.

Drainage area.--14,300 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period April 1947 to September 1950 and water temperatures for the period June 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 4,743.56 ft above mean sea level, datum of 1929. Prior to Apr. 28, 1932, staff or chain gages at sites 4 to 7 miles upstream at various datums. Apr. 28, 1932, to Sept. 30, 1939, water-stage recorder at site 6 miles upstream at different datum.

Average discharge.--14 years (1929-39, 1946-50), 1,493 cfs.

Extremes.--1929-39, 1946-50: Maximum discharge recorded, 16,700 cfs July 13, 1937 (gage height, 8.44 ft, site and datum then in use); minimum daily, 45 cfs Jan. 8, 1937.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 385,000 acres above station, and return flow from irrigated areas.

Cooperation.--Records for 1891-94 furnished by State engineer of Wyoming and those for 1919-23 furnished by Bureau of Reclamation, reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1891	-	-	-	-	-	-	-	7,210	7,670	2,580	879	724	-
1892	725	823	-	-	-	-	-	-	4,920	967	702	-	-
1893	-	-	-	-	-	-	-	-	10,600	2,690	880	733	-
1894	-	-	-	-	-	-	-	8,660	8,670	2,620	880	792	-
1919	-	-	-	-	-	-	481	2,710	4,650	3,810	3,650	2,290	-
1920	-	-	-	-	-	-	-	-	7,710	5,030	3,750	2,570	-
1921	-	-	-	-	-	-	1,790	2,460	10,300	5,860	4,780	3,820	-
1922	-	-	-	-	-	-	-	5,280	4,840	5,030	4,350	3,120	-
1923	-	-	-	-	-	-	1,380	1,490	3,690	5,930	3,970	4,110	-
1929	-	-	-	-	-	-	798	3,590	10,700	5,620	5,600	3,830	-
1930	1,570	268	160	135	195	239	732	1,060	4,420	5,890	4,540	2,930	1,860
1931	521	401	230	190	195	201	412	2,200	5,500	4,960	3,580	694	1,600
1932	795	270	170	155	190	244	551	1,780	5,180	5,660	4,440	1,930	1,930
1933	531	246	166	135	120	175	541	1,890	5,060	5,420	5,120	2,850	1,860
1934	755	199	90	80	135	151	210	2,253	1,757	1,693	1,416	188	751
1935	156	168	179	180	135	107	86.9	538	1,037	5,134	4,015	839	1,061
1936	185	156	136	116	141	211	900	3,454	3,175	4,027	3,188	993	1,398
1937	217	214	127	112	207	225	428	2,348	3,150	4,769	4,669	2,793	1,616
1938	435	232	139	133	142	161	769	1,600	3,551	4,208	4,646	1,746	1,490
1939	624	185	141	134	114	226	455	3,998	3,010	3,930	3,614	1,115	1,476
1946	-	-	-	-	-	-	387	2,483	2,957	4,563	4,634	1,882	-
1947	291	228	171	127	156	258	690	1,483	951	2,886	4,695	2,864	1,243
1948	216	189	157	146	205	405	439	2,351	3,179	4,302	4,553	2,588	1,568
1949	224	175	176	115	166	287	427	800	1,675	5,324	5,101	2,580	1,433
1950	272	177	129	145	187	186	586	12,073	3,794	4,678	4,619	2,392	1,613

† Corrected.

1/ Published as "at Douglas" 1891-94, 1929-39.

Monthly and yearly runoff, in acre-feet, of North Platte River near Douglas, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1891			-	-	-	-	-	443,000	456,000	59,000	54,000	43,100	-
1892	44,600	49,000	-	-	-	-	-	503,000	59,500	41,800	-	-	-
1893	-	-	-	-	-	-	-	531,000	65,000	54,100	43,700	-	-
1894	-	-	-	-	-	-	-	532,000	61,000	54,100	47,100	-	-
1919	-	-	-	-	-	-	28,600	167,000	277,000	234,000	224,000	136,000	-
1920	-	-	-	-	-	-	-	459,000	509,000	231,000	153,000	-	-
1921	-	-	-	-	-	-	107,000	151,000	613,000	588,000	294,000	215,000	-
1922	-	-	-	-	-	-	-	523,000	288,000	509,000	266,000	186,000	-
1923	-	-	-	-	-	-	82,100	91,600	202,000	565,000	244,000	245,000	-
1929	-	-	-	-	-	-	47,500	221,000	637,000	546,000	344,000	228,000	-
1930	96,500	15,900	9,840	8,300	10,800	14,700	43,600	85,200	263,000	662,000	279,000	174,000	1,340,000
1931	32,000	23,900	14,100	11,700	10,800	12,400	24,500	135,000	327,000	505,000	220,000	41,300	1,180,000
1932	48,900	16,100	10,500	9,530	10,900	15,000	32,800	109,000	508,480	273,100	218,000	1,400,000	1,400,000
1933	32,600	14,600	10,200	8,300	6,660	10,800	32,200	116,000	501,900	333,000	315,000	170,000	1,350,000
1934	46,440	11,820	5,530	4,920	7,500	9,300	12,470	138,500	104,500	104,100	87,050	11,200	543,300
1935	9,620	9,990	11,020	11,080	7,500	6,570	5,170	33,070	61,720	515,700	246,900	49,940	768,300
1936	11,350	9,300	8,370	7,230	8,120	12,970	53,530	12,400	188,900	247,600	196,000	59,090	1,015,000
1937	13,360	12,730	7,800	6,890	11,510	13,820	25,490	144,400	187,500	293,200	287,100	166,200	1,170,000
1938	26,750	13,800	8,540	8,180	7,910	9,900	45,730	98,400	211,300	258,700	285,700	103,900	1,079,000
1939	56,350	10,990	8,690	8,220	6,320	13,910	27,070	245,800	179,100	241,700	222,200	66,350	1,069,000
1946	-	-	-	-	-	-	23,030	152,700	175,900	280,600	284,900	112,000	-
1947	17,870	13,570	10,510	7,820	6,680	15,880	41,050	91,220	56,590	77,400	288,700	170,400	899,700
1948	13,250	11,230	9,680	9,000	11,780	24,880	26,120	144,600	189,200	264,500	280,000	154,000	1,138,000
1949	13,750	10,420	10,800	7,050	9,240	17,650	25,390	49,220	99,690	527,400	513,700	153,500	1,038,000
1950	16,720	10,560	7,940	8,910	10,370	11,440	34,860	127,500	225,700	287,600	284,000	142,300	1,168,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1891	469	-	-	-	-	-	-	-
1892	469	-	-	-	-	-	-	-
1893	469	-	-	-	-	-	-	-
1894	(a)	-	-	-	-	-	-	-
1919	508	-	-	-	-	-	-	-
1920	568	-	-	-	-	-	-	-
1921	568	-	-	-	-	-	-	-
1922	568	-	-	-	-	-	-	-
1923	568	-	-	-	-	-	-	-
1929	688	b13,800	May 30, 1929	-	-	-	-	-
1930	701	b7,670	May 13, 1930	-	1,860	1,340,000	1,644	1,191,000
1931	716	b8,110	May 30, 1931	-	1,600	1,180,000	1,607	1,163,000
1932	731	5,920	June 27, 1932	-	1,950	1,400,000	1,903	1,392,000
1933	746	8,560	Aug. 29, 1933	-	1,350,000	-	1,874	1,357,000
1934	761	6,530	July 25, 1934	-	751	543,300	705	510,200
1935	786	5,800	July 13, 1935	60	1,061	768,300	1,059	768,700
1936	806	5,500	June 29, 1936	75	1,398	1,015,000	1,405	1,020,000
1937	826	16,700	July 13, 1937	45	1,616	1,170,000	1,637	1,185,000
1938	858	7,020	Sept. 2, 1938	97	1,490	1,079,000	1,502	1,088,000
1939	876	5,710	June 1, 1939	70	1,476	1,069,000	-	-
1946	1056	8,970	Sept. 7, 1946	-	-	-	-	-
1947	1068	8,410	Aug. 10, 1947	120	1,243	899,700	1,232	891,900
1948	1116	8,100	Aug. 3, 1948	110	1,568	1,138,000	1,569	1,139,000
1949	1146	9,420	July 12, 1949	85	1,433	1,038,000	1,434	1,038,000
1950	1176	7,250	June 18, 1950	85	1,613	1,168,000	-	-

a Bull. 131.

b Maximum observed.

91. Wagonhound Creek near La Bonte, Wyo.

Location (revised).--Lat 42°39'35", long. 105°22'10", in SW¼ sec. 16, T. 31 N., R. 71 W., 0.6 mile upstream from mouth, 3½ miles northeast of La Bonte, and 6 miles south of Douglas.

Drainage area.--125 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,741 ft (from topographic map). Prior to Oct. 18, 1939, staff or chain gages at several sites within half a mile of present site at various datums.

Average discharge.--19 years (1916-24, 1939-50), 14.0 cfs.

Extremes.--1916-24, 1929-32, 1937-50: Maximum discharge, 2,000 cfs July 12, 1937 (gage height, 10.0 ft, site and datum then in use, from floodmarks), from rating curve extended above 73 cfs on basis of slope-area determination of peak flow; no flow at times many years.

Remarks.--Water rights totaling 56.3 cfs (priorities 1883 to 1933) above station for irrigation of about 3,950 acres, adjudicated by Wyoming for diversion. Diversion above station for supplemental irrigation supply to about 8,860 acres along La Prele Creek.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second, of Wagonhound Creek near La Bonte, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	5.76	1.28	3.90	1.15	0.23	-
1917	a0.3	a0.3	a0.3	a0.2	a0.5	a18	a71.8	197	64.2	1.45	.20	.20	a29.7
1918	a.2	a.2	a.2	a.6	a1.0	a10	64.1	36.6	4.4	4.5	5.6	a4	a10.9
1919	a4.0	a1.0	a.6	a.6	a.6	a5.0	36.7	1.77	.37	.94	.03	0	a4.27
1920	a0	a.5	a.5	a1.0	a2.0	a12	108	462	22.4	3.1	10.3	1.0	a52.4
1921	a1.0	a1.0	a2.0	a3.0	a4.0	a7.0	13.8	44.3	27.2	4.4	1.0	1.0	a9.16
1922	a1.0	a1.0	a2.0	a2.0	a2.0	a5.0	16	128	4.8	.8	1.7	1.0	a14.0
1923	a1.0	a1.0	a1.0	a1.0	a2.0	a9.0	49	113	28	18	19	19	a21.9
1924	b5.0	b2.0	b2.0	b1.0	b2.0	b4.0	145	75.5	9.43	.73	.52	.50	b20.5
1929	-	-	-	-	-	-	-	111	16.8	5.81	-	-	-
1930	-	-	-	-	-	-	-	64.6	3.5	0	2.2	11.1	-
1931	8.8	17.4	-	-	-	1.8	40.2	31.5	.69	-	-	-	-
1932	-	-	-	-	-	-	45	33.5	5.1	-	-	-	-
1937	-	-	-	-	-	-	-	5.20	33.1	53.8	.85	1.50	-
1938	-	-	-	-	-	.90	28.7	2.24	1.35	.57	.70	1.64	-
1939	2.69	4.93	-	-	-	-	-	1.77	1.39	.34	.07	0	-
1940	0	0	0	0	0	0	0	2.05	.56	.54	0	.37	.30
1941	.05	0	0	0	0	0	51.7	34.0	6.88	1.17	29.0	1.76	10.4
1942	1.72	2.01	1.90	1.59	1.53	1.55	38.8	125	2.13	.55	.25	.10	15.0
1943	a.28	.75	3.05	2.48	1.71	9.85	28.9	7.73	13.9	1.22	.14	.03	5.66
1944	0	0	0	.39	.27	.53	33.8	52.3	3.36	10.5	.30	.11	8.49
1945	.08	.29	.28	.22	.31	1.24	29.6	91.7	47.0	3.68	1.17	.21	14.7
1946	2.03	4.57	2.45	2.35	2.38	5.22	6.32	43.3	39.3	2.66	.31	.11	9.27
1947	.69	3.62	3.49	2.94	3.14	14.1	74.2	19.0	93.0	25.5	2.56	.98	20.2
1948	2.38	5.44	5.0	4.5	4.8	18.5	49.9	7.25	.24	.33	5.25	.61	8.64
1949	.68	1.18	1.11	1.0	1.13	9.64	14.8	41.0	26.7	1.55	.31	.25	8.31
1950	.91	2.06	1.60	1.76	1.74	.77	8.76	7.58	7.52	2.60	1.42	.64	3.11

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	354	76	240	71	14	-
1917	a18	a18	a18	a12	a28	a1,110	a4,270	12,100	3,820	89	12	12	a21,500
1918	a12	a12	a12	a37	a55	a614	3,810	2,250	262	277	344	a238	a7,920
1919	a246	a59	a37	a37	a33	a307	2,180	109	22	58	2	0	a3,090
1920	a0	a30	a31	a61	a115	a736	6,430	28,400	1,330	191	633	60	a38,000
1921	a61	a59	a123	a184	a222	a430	821	2,720	1,820	271	61	60	a6,630
1922	a61	a59	a123	a123	a111	a368	940	7,880	283	48	105	59	a10,200
1923	a61	a59	a61	a61	a111	a552	2,900	6,960	1,640	1,130	1,140	1,140	a15,900
1924	b308	b119	b123	b62	b115	b246	8,630	4,640	561	45	32	30	b14,900
1929	-	-	-	-	-	-	-	6,820	988	357	-	-	-
1930	-	-	-	-	-	-	-	3,970	208	0	135	660	-
1931	541	1,040	-	-	-	111	2,390	1,940	41	-	-	-	-
1932	-	-	-	-	-	-	2,560	2,060	303	-	-	-	-
1937	-	-	-	-	-	-	-	320	1,970	3,310	52	89	-
1938	-	-	-	-	-	55	1,710	138	80	35	43	97	-
1939	166	293	-	-	-	-	-	109	83	21	4.4	0	-
1940	0	0	0	0	0	0	0	126	34	33	0	22	215
1941	3.4	0	0	0	0	0	3,080	2,080	410	722	780	105	7,540
1942	103	120	117	98	85	95	2,310	7,710	127	34	18	8.1	10,820
1943	17	45	187	153	95	612	1,600	475	827	75	8.3	1.8	4,100
1944	0	0	0	19	16	33	2,010	3,220	200	643	18	6.5	6,170
1945	5.0	17	17	14	17	76	1,760	5,840	2,800	227	72	12	10,680
1946	125	272	151	144	132	321	376	2,660	2,340	164	19	6.5	6,710
1947	42	215	215	181	175	868	4,420	1,170	5,530	1,570	158	58	14,600
1948	146	324	307	277	276	1,130	2,970	446	14	20	323	36	6,270
1949	42	70	68	61	63	593	878	2,520	1,590	95	19	15	6,010
1950	56	123	98	108	97	48	521	466	447	160	87	38	2,250

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1916	436	-	-	-	-	-	-	-	-
1917	456	-	-	-	-	-	-	-	-
1918	476	-	-	-	a29.7	a21,500	a29.7	a21,500	a29.7
1919	506	-	-	-	a10.9	a7,920	a11.4	a8,230	a10.9
1920	506	-	-	-	a4.27	a3,090	a3.88	a2,810	a4.27
1921	-	-	-	-	a52.4	a38,000	a52.6	a38,200	a52.4
1922	526	-	-	-	a9.16	a6,630	a9.16	a6,630	a9.16
1923	546	-	-	-	a14.0	a10,200	a13.9	a10,100	a14.0
1924	566	-	-	-	a21.9	a15,900	b22.4	b16,200	a21.9
1925	586	-	-	-	b20.5	a14,900	-	-	b20.5

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of Wagonhound Creek near La Bonte, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	c186	May 5, 1929	-	-	-	-	-
1930	701	c500	May 16, 1930	0	-	-	-	-
1931	716	c109	Oct. 2, 1930	-	-	-	-	-
1932	731	c69	May 6, 1932	0	-	-	-	-
1937	826	2,000	July 12, 1937	-	-	-	-	-
1938	856	c476	Apr. 16, 1938	-	-	-	-	-
1939	876	-	-	0	-	-	-	-
1940	896	442	May 29, 1940	0	.30	215	.30	218
1941	926	1,180	Aug. 12, 1941	0	10.4	7,540	10.9	7,880
1942	956	819	May 11, 1942	.1	15.0	10,820	14.8	10,730
1943	976	210	Apr. 11, 1943	0	5.66	4,100	5.31	3,850
1944	1006	1,210	July 5, 1944	0	8.49	6,170	8.54	6,200
1945	1036	226	May 6, 1945	0	14.7	10,680	15.4	11,170
1946	1056	293	June 19, 1946	0	9.27	6,710	9.17	6,630
1947	1086	813	June 22, 1947	.1	20.2	14,600	20.6	14,910
1948	1116	593	Aug. 3, 1948	.1	8.64	6,270	7.82	5,670
1949	1146	469	June 8, 1949	.1	8.31	6,010	8.45	6,110
1950	1176	36	Apr. 16, 1950	0	3.11	2,250	-	-

c Maximum observed.

92. West Fork La Bonte Creek near La Bonte, Wyo.

Location.--Lat 42°28', long. 105°41', in sec. 23, T. 29 N., R. 74 W., 150 ft downstream from confluence of Gould and Rocky Fork Creeks and 13 miles southwest of La Bonte.

Drainage area.--23.8 sq mi.

Gage.--Water-stage recorder.

Extremes.--1946-50: Maximum discharge, 171 cfs Apr. 20, 1947 (gage height, 4.88 ft), from rating curve extended above 80 cfs; minimum daily, 0.1 cfs at times each year.

Remarks.--Water rights totaling 12.1 cfs (priorities 1910-14), for irrigation of about 846 acres, adjudicated by Wyoming for diversion above station. Diversion above station for supplemental supply to about 9,300 acres along La Prele Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	0.28	-
1947	1.25	1.5	1.2	1.0	1.0	4.0	33.6	29.4	32.8	10.1	0.81	.28	9.74
1948	.55	.99	1.02	1.0	1.1	2.0	15	21.7	6.12	1.51	.18	.13	4.28
1949	.27	.42	.6	.5	.6	1.92	25.4	44.1	10.7	.80	.33	.34	7.19
1950	.49	.35	.17	.20	.25	.57	16.3	23.1	7.62	2.50	.23	.37	4.36

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	17	-
1947	77	89	74	61	56	246	2,000	1,810	1,950	618	50	17	7,050
1948	34	59	63	61	63	123	893	1,350	364	93	11	7.7	3,100
1949	17	25	37	31	33	118	1,510	2,710	638	49	20	20	5,210
1950	30	21	10	12	14	35	972	1,420	454	154	14	22	3,160

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	-	-	-	-	-	-	-
1947	1086	171	Apr. 20, 1947	0.1	9.74	7,050	9.62	6,960
1948	1116	-	-	.1	4.28	3,100	4.37	3,020
1949	1146	148	(a)	.1	7.19	5,210	7.17	5,190
1950	1176	73	May 17, 1950	.1	4.36	3,160	-	-

a May 15 or 16, 1949.

93. La Bonte Creek near La Bonte, Wyo.

Location.--Lat 42°39'00", long. 105°21'24", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15 (revised), T. 31 N., R. 79 W., 0.9 mile (revised) upstream from mouth and 3 miles northeast of La Bonte.

Drainage area.--302 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,742 ft (from topographic map). Prior to May 4, 1935, staff or chain gages at site a quarter of a mile upstream at different datums. May 4 to June 3, 1935, staff gage at same site and datum.

Average discharge.--27 years (1916-24, 1928-32, 1935-50), 62.1 cfs.

Extremes.--1916-24, 1928-33, 1935-50: Maximum discharge observed, 2,750 cfs May 22, 23, 1923 (gage height, 7.5 ft, site and datum then in use), from rating curve extended above 1,100 cfs; no flow at times during many years.

Remarks.--Water rights totalling 119.29 cfs (priorities 1883 to 1946) for irrigation of about 8,350 acres, adjudicated by Wyoming for diversion above station. Diversion above station for supplemental supply to about 9,300 acres along La Prele Creek. One small reservoir above station (capacity, about 100 acre-ft) for irrigation.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	152	22.8	1.59	1.35	0.54	-
1917	a0.6	a0.6	a2	a3	a3	a80	a224	805	425	6.1	.3	.3	a130
1918	a.3	a.4	a2	a2	a2	a74.5	342	391	43.6	22.6	3.4	1.0	a74.1
1919	a0	a.5	a1	a1	a2	a16	162	64.4	30.4	18.9	5.1	1.0	a25.1
1920	a1	a1	a1	a2	a3	a10	161	1,070	113	58.4	58.9	15.0	a126
1921	a10	a7	a8	a6	a6	a15	123	233	81.0	18.5	9.0	9.0	a43.9
1922	a9	a8	a6	a6	a5	a23	65.9	*913	*122	5.0	6.4	5.1	*98.9
1923	a5	a5	a4	a3	a3	a12	146	506	132	69.0	31.5	58.6	a81.8
1924	a22	a9	a7	a6	a6	a70	282	350	80.9	1.63	1.82	1.4	a69.9
1928	-	-	-	-	-	-	-	-	216	40.4	17.3	5.71	-
1929	12.4	a20	a18	a12	a11	38.3	297	693	123	6.77	4.34	4.91	a104
1930	8.11	11.5	a9	a8	*13.1	27.0	243	335	80.3	6.07	26.4	7.14	a64.8
1931	25.6	12.2	a9	a6	a8	21.4	154	140	53.9	1.65	1.71	.34	a36.2
1932	5.63	6.0	a4	a3	a3	*17.4	178	252	16.0	2.76	.92	.57	a40.7
1933	1.14	1.61	-	-	-	-	-	-	67.7	5.23	.65	.37	-
1935	-	-	-	-	-	-	.86	314	126	4.94	1.32	.47	-
1936	2.47	3.96	6.04	4	4.0	8.03	103	36.6	2.95	.59	.07	0	14.2
1937	.13	.89	1.36	3.5	6.5	14	221	238	192	94.5	16.0	6.68	66.2
1938	5.40	8	7	9	9.5	19.9	244	174	18.9	4.87	1.34	4.75	42.2
1939	2.94	5.01	6.56	6.94	4.88	13.6	231	93.9	9.30	2.61	.44	0	31.3
1940	.09	.56	.54	.57	.98	2.67	46.4	52.5	2.58	.35	0	0	8.93
1941	.05	.44	.28	.47	.49	.41	243	324	88.2	26.5	16.5	5.10	59.0
1942	6.88	10.6	10.5	8.26	9.21	9.04	263	725	62.4	8.98	1.33	.03	93.7
1943	2.15	18.0	20.3	18.6	20.6	54.3	302	107	68.3	10.6	1.21	.13	51.7
1944	.30	1.40	2.87	5.61	8.76	7.36	148	442	39.4	11.7	1.40	0	56.1
1945	1.93	4.33	3.0	3.0	6.0	15	70	524	356	35.6	15.3	7.74	87.3
1946	13.2	7.23	7.60	8.49	9.94	39.6	91.2	281	134	24.9	5.78	6.57	51.0
1947	12.5	18.0	13.1	9.63	5.69	53.2	279	271	365	117	18.5	8.62	97.5
1948	8.13	10.6	10.5	12.0	14.1	20.9	155	93.9	15.0	12.4	11.7	3.19	30.5
1949	3.92	4.97	5.10	4.92	6.78	31.8	183	337	78.2	7.48	4.31	3.67	56.2
1950	4.78	7.99	6.24	5.01	4.50	4.94	98.2	200	64.0	15.4	7.63	4.85	35.4

* Only monthly figure revised; revised daily figures not available.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	a37	a36	a123	a184	a166	a4,310	a13,300	9,350	1,360	98	83	32	-
1918	a18	a24	a123	a123	a111	a4,580	20,400	49,500	25,500	375	18	18	a94,000
1919	a0	a50	a61	a61	a111	a982	9,640	24,000	2,590	1,390	209	60	a53,600
1920	a61	a59	a61	a123	a172	a814	9,580	65,800	6,720	1,610	314	60	a18,200
1921	a614	a416	a491	a368	a333	a921	7,320	14,300	4,820	3,590	3,620	893	a31,300
1922	a552	a476	a368	a368	a277	a1,410	3,800	56,100	*7,280	307	394	304	*71,600
1923	a307	a297	a266	a184	a166	a736	8,690	31,100	7,860	4,240	1,940	3,490	a59,300
1924	a1,350	a535	a430	a368	a344	a4,300	18,800	21,500	4,810	100	112	93	a50,700
1928	-	-	-	-	-	-	-	-	12,900	1,060	340	-	-
1929	762	a1,190	a1,100	a736	a610	2,360	17,700	42,600	7,320	416	267	292	a75,400
1930	499	684	a554	a492	a730	1,660	14,500	20,600	4,780	373	1,620	425	a46,900
1931	1,570	726	a554	a369	a444	1,320	9,160	8,610	3,210	101	105	20	a26,200
1932	223	357	a246	a184	a172	*1,070	10,600	15,500	952	170	57	34	a29,600
1933	70	96	-	-	-	-	-	-	4,050	322	40	22	-
1935	-	-	-	-	-	-	51	19,320	7,470	304	81	28	-

* Only monthly figure revised; revised daily figures not available.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Monthly and yearly runoff, in acre-feet, of La Bonte Creek near La Bonte, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	152	236	371	246	230	494	6,130	2,250	176	36	4.2	0	10,330
1937	7.9	41	84	215	361	861	13,180	14,610	11,410	5,810	983	398	47,940
1938	332	492	450	553	528	1,220	14,510	10,700	1,120	500	83	283	30,550
1939	181	298	403	427	271	839	13,750	5,770	553	160	27	0	22,680
1940	5.4	33	33	35	57	164	2,760	3,230	153	21	0	0	6,490
1941	3.0	26	17	29	27	25	14,450	19,930	5,250	1,630	1,020	303	42,710
1942	423	632	644	508	512	556	15,680	44,560	3,720	552	82	1.8	67,870
1943	132	1,070	1,250	1,150	1,140	3,340	17,960	6,570	4,070	654	75	7.9	37,420
1944	18	83	177	345	504	453	8,810	27,180	2,340	722	86	0	40,720
1945	119	258	184	184	333	922	4,170	32,250	21,180	2,190	942	461	63,190
1946	812	430	468	522	522	2,440	5,430	18,070	7,940	1,530	355	391	36,940
1947	766	1,070	803	592	316	3,270	16,570	16,630	21,700	7,180	1,140	513	70,550
1948	500	628	649	738	809	1,290	9,210	5,770	895	761	719	190	22,160
1949	241	296	314	303	377	1,960	10,900	20,700	4,650	460	265	219	40,680
1950	294	475	384	308	250	303	5,840	12,280	3,810	944	469	289	25,650

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436	-	-	-	-	-	-	-
1917	456	a1,750	May 28, 1917	0	b130	b94,000	b130	b93,900
1918	476	a697	May 9, 1918	0	b74.1	b53,600	b74.0	b53,600
1919	506	a683	June 20, 1919	0	b25.1	b18,200	b25.2	b18,300
1920	506	a2,500	May 13, 1920	-	b126	b91,300	b128	b92,600
1921	526	a411	May 8,9, 1921	-	b43.9	b31,800	b43.8	b31,700
1922	546	-	May 22,23, 1922	-	*98.9	*71,600	*98.2	*71,100
1923	566	c2,750	Apr. 14, 1924	-	b81.8	b59,300	b63.9	b60,700
1924	566	a748	Apr. 14, 1924	-	b69.9	b50,700	-	-
1928	666	-	-	-	-	-	-	-
1929	686	c1,100	Apr. 30, May 15	-	b104	b75,400	*102	*74,000
1930	701	c944	Aug. 28, 1930	-	*64.8	*46,900	*66.3	*48,000
1931	716	c275	Apr. 8, 1931	0	*36.2	*26,200	*33.4	*24,200
1932	731	0445	May 4, 1932	-	*40.7	*29,600	-	-
1933	746	c1,360	May 23, 1933	0	-	-	-	-
1935	786	c842	May 22, 1935	0	-	-	-	-
1936	806	200	Apr. 20, 1936	0	14.2	10,330	13.4	9,700
1937	826	1,580	July 12, 1937	0	66.2	47,940	67.8	49,080
1938	856	*990	Apr. 19, 1938	.9	42.2	30,550	41.7	30,180
1939	876	648	Apr. 23, 1939	0	31.3	22,680	30.2	21,870
1940	896	476	May 29, 1940	0	8.93	6,490	8.90	6,470
1941	926	1,230	May 2, 1941	0	59.0	42,710	61.3	44,360
1942	956	1,350	May 11, 1942	0	93.7	67,870	94.8	68,620
1943	976	1,250	Apr. 11, 1943	0	51.7	37,420	48.7	35,240
1944	1006	978	May 19, 1944	0	56.1	40,720	56.5	41,000
1945	1036	d1,050	June 6, 1945	0	87.3	63,190	88.9	64,340
1946	1056	878	June 19, 1946	3.1	51.0	36,940	52.3	37,870
1947	1086	1,490	June 21, 1947	3.1	97.5	70,550	96.3	69,690
1948	1116	1,080	Aug. 3, 1948	1.9	30.5	22,160	29.2	21,230
1949	1146	552	May 16, 1949	.4	56.2	40,680	56.6	40,990
1950	1176	412	May 16, 1950	.4	35.4	25,650	-	-

* Revised.

† Not previously published.

a Maximum daily.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Maximum observed.

d Maximum recorded, but may have been higher prior to beginning of gage-height record.

94. North Platte River at Orin, Wyo.1/

Location.--Lat 42°38'55", long. 105°09'55", in NW¼NW¼ sec. 20 (revised), T. 31 N., R. 69 W. (revised), at railroad bridge just upstream from bridge on U. S. Highway 87, half a mile upstream from Shawnee Creek, and 1 mile east of Orin.

Drainage area.--14,800 sq mi, approximately.

Gage.--Staff gage at described site after Apr. 30, 1924. Altitude of gage is 4,660 ft (from topographic map). Jan. 1, 1895, to Nov. 30, 1899, at described site at different datum. Apr. 1, 1917, to Sept. 30, 1918, at site 2½ miles downstream at different datum.

Extremes.--1895-99, 1917-18, 1924: Maximum discharge observed, 23,300 cfs June 24, 1899 (gage height, 7.2 ft, datum then in use); minimum daily, 170 cfs Sept. 11-14, 1899, but may have been less during periods of no gage-height record.

Remarks.--Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation and return flow from irrigated areas. Major regulation began after completion of Pathfinder Reservoir in June 1909.

Cooperation.--Records for 1917-18, 1924 furnished by Bureau of Reclamation.

1/ Published as "at Orin Junction" 1895, 1897-99, and "at McKinley" 1917, 1918.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Orin, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	*3,420	*6,960	*7,570	2,400	1,040	544	-
1896	657	*600	-	-	-	-	-	5,070	5,260	1,340	1,010	974	-
1897	973	-	-	1,100	1,350	1,500	5,040	14,000	8,990	1,830	1,010	572	-
1898	500	550	550	700	900	700	1,860	5,550	6,060	1,280	583	399	1,840
1899	600	*685	700	-	-	-	*6,610	10,500	17,700	9,200	1,170	328	-
1900	499	500	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	1,860	3,980	14,400	9,970	530	4,150	-
1918	-	-	-	-	-	-	2,250	6,550	7,010	5,900	4,000	2,600	-
1924	-	-	-	-	-	-	-	7,040	5,150	5,550	5,260	3,760	-

* Only monthly figure revised; revised daily figures not available.

† Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	*203,000	*428,000	*451,000	47,000	63,800	32,400	-
1896	*40,400	*35,700	-	-	-	-	-	312,000	313,000	82,300	62,000	58,000	-
1897	59,800	-	-	67,600	75,000	92,200	300,000	859,000	355,000	112,000	62,300	34,000	-
1898	30,700	32,700	33,800	43,000	50,000	45,000	111,000	341,000	361,000	79,000	35,800	23,700	1,180,000
1899	36,900	*40,600	43,000	-	-	-	*33,000	44,000	130,000	566,000	73,900	19,500	-
1900	30,700	29,600	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	111,000	245,000	857,000	313,000	279,000	247,000	-
1918	-	-	-	-	-	-	134,000	403,000	417,000	563,000	246,000	155,000	-
1924	-	-	-	-	-	-	-	433,000	306,000	341,000	323,000	224,000	-

* Revised.

† Corrected.

‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	(a)	\$14,700	June 4, 1895	-	-	-	-	-
1896	(b), 469	-	-	-	-	-	-	-
1897	(c)	-	-	-	-	-	-	-
1898	(d), 469	-	-	-	1,640	1,180,000	\$3,080	2,230,000
1899	(e)	\$23,300	June 24, 1899	170	-	-	\$1,670	\$1,210,000
1917	456	-	-	-	-	-	-	-
1918	476	-	-	-	-	-	-	-
1924	586	-	-	-	-	-	-	-

* Revised.

† Corrected.

‡ Not previously published.

a Bull. 140.

b 18th Ann. Rept., Pt. 4.

c 19th Ann. Rept., Pt. 4.

d 20th Ann. Rept., Pt. 4.

e 21st Ann. Rept., Vol. 4.

95. Horseshoe Creek near Esterbrook, Wyo.

Location.--Lat 42°21'30", long. 105°26'35", in NE $\frac{1}{4}$ sec. 35, T. 28 N., R. 72 W., 30 ft downstream from Trail Creek and $\frac{1}{2}$ miles southwest of Esterbrook.

Drainage area.--45 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 6,350 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 195 cfs June 21, 1947 (gage height, 4.47 ft), from rating curve extended above 80 cfs; no flow at times in 1948, 1949.

Remarks.--Water rights totaling 5.51 cfs (priorities 1904-41), for irrigation of about 389 acres, adjudicated by Wyoming for diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	3.74	0.15	0.25	-
1947	1.39	1.90	1.2	0.6	0.6	4.0	42.8	73.7	75.0	26.8	4.23	1.20	19.5
1948	1.30	1.85	1.8	1.6	2.0	4.5	32.1	43.9	11.3	2.21	.23	.07	8.58
1949	.10	.61	1.75	1.61	1.77	3.28	41.3	84.7	18.7	1.35	.06	.03	13.0
1950	.28	.66	.60	.37	.96	2.83	30.7	71.0	28.5	4.96	.26	.56	11.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	230	9.3	15	-
1947	85	113	74	37	33	246	2,540	4,530	4,460	1,650	260	71	14,100
1948	80	110	111	98	115	277	1,910	2,700	673	136	14	4.0	6,230
1949	8.5	48	108	99	98	202	2,460	5,210	1,110	83	4.0	1.6	8,430
1950	17	39	37	23	53	174	1,820	4,370	1,700	305	16	33	8,590

Yearly discharge, in cubic feet per second, of Horseshoe Creek near Esterbrook, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean Runoff in acre-feet
		Discharge	Date				
1946	1056	-	-	-	-	-	-
1947	1176	195	June 21, 1947	0.2	19.5	14,100	18.6
1948	1176	74	Apr. 30, 1948	0	8.58	8,230	8.88
1949	1176	183	May 15, 1949	0	13.0	8,430	12.9
1950	1176	117	May 18, 1950	.1	11.9	8,590	-

96. Horseshoe Creek near Glendo, Wyo.

Location (revised).--Lat 42°27'09", long. 104°58'11", in SE $\frac{1}{4}$ sec. 26, T. 29 N., R. 68 W., 0.6 mile upstream from mouth and $\frac{1}{2}$ miles southeast of Glendo.

Drainage area.--203 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,500 ft (from topographic map).
Prior to June 9, 1935, chain or staff gages at sites about 2 miles upstream at different datums.

Average discharge.--24 years (1916-18, 1921-24, 1928-32, 1935-50), 31.9 cfs.

Extremes.--1916-18, 1921-24, 1928-33, 1935-50: Maximum discharge, 11,900 cfs May 30, 1935 (gage height, 8.80 ft, from floodmarks), from rating curve extended above 750 cfs on basis of slope-area determination of peak flow; no flow at times during 1918, 1935, 1939, 1940.

Remarks.--Adjudicated diversions for irrigation of about 7,600 acres above station.

Cooperation.--Records for 1916-18, 1921-24 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	120	28.9	5.85	2.65	2.43	a3.0	-
1917	a5.0	a5.0	a5.0	a10	a10	a15	118	455	356	23.1	4.5	2.0	a84.3
1918	a5.0	a5.0	a5.0	a6.0	a10	a20	127	174	86.9	.5	0	0	a36.6
1921	-	-	-	-	-	-	42.8	107	125	7.2	1.0	1.0	-
1922	a1.0	a1.0	a2.0	a2.0	a5.0	a5.0	28	186	43.1	a4.0	a4.0	a4.0	a23.9
1923	a4.0	a5.0	a7.0	a7.0	a15	a25	141	397	169	93.3	11.3	13.8	a74.5
1924	a12	a12	a10	a12	a12	a20	186	200	51.3	3.8	3.0	1.1	a43.6
1928	-	-	-	-	-	-	-	-	117	16.8	5.08	3.76	-
1929	4.68	a9.0	b7.0	b5.0	b5.0	a28	158	329	130	2.72	1.98	2.07	b55.2
1930	4.00	7.97	7.0	7.0	7.80	16.7	52.5	110	38.8	1.48	11.6	7.97	22.8
1931	23.8	15.6	5.0	3.0	3.0	5.7	81.6	65.2	6.25	5.32	2.75	2.75	18.2
1932	2.60	3.81	3.46	3.0	3.0	9.31	48.6	109	7.68	5.31	3.13	3.11	17.1
1933	1.84	3.21	-	-	-	-	-	-	45.5	2.99	2.58	2.50	-
1935	-	-	-	-	-	-	.02	261	184	6.14	1.92	1.71	-
1936	6.91	7.59	8	3.0	3.47	8.27	32.6	9.23	4.06	1.06	.93	1.77	7.21
1937	6.58	3.95	3.27	1.7	1.5	2.66	45.3	89.4	117	39.3	6.20	8.64	27.2
1938	4.52	6.82	7.05	7.66	8.96	11.6	128	94.8	53.9	18.8	2.68	16.6	30.0
1939	6.77	15.7	10.4	8.45	8.80	15.2	160	40.9	4.57	3.11	1.82	.92	22.7
1940	2.12	1.90	2.21	2.08	1.77	1.82	1.84	5.35	1.10	3.78	.50	.73	2.11
1941	2.32	1.45	1.99	1.59	1.46	1.91	82.3	140	58.3	25.5	9.01	3.30	27.5
1942	3.45	6.97	8.09	6.99	7.83	6.73	63.8	439	61.5	12.7	2.11	2.62	52.4
1943	6.32	15.4	15.9	13.8	11.3	24.7	144	57.5	56.9	11.7	2.39	2.58	30.1
1944	3.03	3.14	3.18	3.01	3.5	4.0	57.1	179	20.1	4.05	2.71	3.19	24.0
1945	3.93	3.66	1.95	2.38	1.78	3.33	86.5	224	141	23.5	5.63	6.12	42.2
1946	8.34	11.7	9.70	8.38	8.65	13.1	23.3	54.6	26.3	8.95	4.72	5.69	15.3
1947	4.93	8.13	7.95	7.5	8.0	15	94.1	137	194	57.4	6.18	5.92	45.4
1948	6.80	8.77	8.60	7.72	10.7	16.9	59.7	29.9	4.25	5.37	6.09	3.10	14.0
1949	4.87	5.18	4.46	4.26	6.18	20.2	63.4	205	85.5	5.02	4.06	5.19	34.6
1950	4.72	5.61	5.02	5.25	4.16	3.78	22.8	84.0	29.5	8.68	7.17	6.14	15.7

* Not previously published; estimated on basis of normal winter pattern and weather records.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	a7,120	1,780	348	163	149	a178	-
1917	a307	a297	a307	a614	a555	a921	7,020	28,000	21,200	1,420	277	119	a61,000
1918	a307	a297	a307	a369	a555	a1,230	7,560	10,700	5,170	31	0	0	26,500
1921	-	-	-	-	-	-	2,550	6,580	7,440	443	61	60	-
1922	a61	a59	a123	a123	a278	a307	1,640	11,400	2,560	a246	a246	a238	a17,300
1923	a246	a297	a430	a430	a832	a1,540	8,390	24,400	10,100	5,740	695	821	a53,900
1924	a737	a714	a614	a737	a690	a1,250	11,100	12,300	3,050	234	184	65	a31,700

† Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Monthly and yearly runoff, in acre-feet, of Horseshoe Creek near Glendo, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	6,960	1,030	312	223	-
1929	288	a534	b430	b308	b166	509	9,400	20,200	7,740	167	122	123	b40,000
1930	246	474	4430	4430	4444	1,030	3,120	6,760	2,310	91	713	474	416,500
1931	1,460	809	4308	4184	4166	350	4,860	4,010	372	327	169	164	413,200
1932	160	227	213	4184	4288	572	2,890	6,700	457	328	192	185	412,400
1933	113	191	-	-	-	-	-	-	2,710	184	146	149	-
1935	-	-	-	-	-	-	1.2	16,070	10,950	378	118	102	-
1936	425	452	492	184	199	508	1,940	567	242	65	57	105	5,240
1937	405	235	201	105	83	164	2,690	5,500	6,970	2,420	381	514	19,670
1938	278	406	433	471	498	716	7,600	5,830	3,210	1,160	165	989	21,760
1939	416	817	637	520	489	933	9,490	2,510	272	191	100	55	16,430
1940	131	113	136	128	102	112	109	329	66	253	31	43	1,530
1941	142	86	122	98	81	117	4,900	8,580	3,470	1,570	554	197	19,920
1942	211	415	497	430	455	414	3,800	26,990	3,680	782	130	156	37,920
1943	399	918	978	947	626	1,520	3,550	5,540	3,380	718	147	153	21,770
1944	186	187	195	185	201	246	3,390	11,000	1,190	249	167	190	17,390
1945	242	218	120	146	99	205	5,140	13,790	8,400	1,450	346	364	30,520
1946	513	698	596	516	480	806	1,380	3,360	1,560	551	290	339	11,090
1947	303	494	489	461	444	922	5,600	8,400	11,540	3,530	380	352	32,900
1948	424	522	529	474	618	1,040	3,550	1,840	253	330	374	185	10,140
1949	299	308	275	263	343	1,240	3,770	12,590	5,090	309	250	308	25,040
1950	290	334	309	323	231	232	1,360	5,160	1,750	534	441	365	11,330

* Not previously published; estimated on basis of normal winter pattern and weather records.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second									
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1916	436	-	-	-	-	-	-	-	
1917	456	-	-	-	a84.3	a61,000	a84.3	a61,000	
1918	476	-	-	0	a36.6	426,500	-	-	
1921	526	-	-	-	-	-	-	-	
1922	546	-	-	-	a23.9	a17,300	a24.9	a18,000	
1923	566	-	-	-	a74.5	a53,900	a76.0	a55,000	
1924	586	-	-	-	a43.6	a31,700	-	-	
1928	666	bl,120	May 9, 1928	-	-	-	-	-	
1929	686	bl,210	June 2, 1929	-	c55.2	c40,000	c55.1	c39,900	
1930	701	d281	May 17, 1930	-	422.8	416,500	424.8	417,900	
1931	716	d142	May 5, 1931	-	418.2	413,200	415.5	411,200	
1932	731	d204	May 7, 1932	-	417.1	412,400	-	-	
1933	746	d1,050	May 23, 1933	-	-	-	-	-	
1935	786	b11,900	May 30, 1935	0	-	-	-	-	
1936	806	71	Apr. 26, 1936	.3	7.21	5,240	6.49	4,710	
1937	826	350	June 12, 1937	.9	27.2	19,670	27.5	19,940	
1938	856	752	July 13, 1938	1.4	30.0	21,760	31.1	22,510	
1939	876	304	Apr. 22, 1939	0	22.7	16,430	20.6	14,940	
1940	896	323	July 16, 1940	0	2.11	1,530	2.07	1,500	
1941	926	822	July 26, 1941	1.0	27.5	19,920	28.6	20,690	
1942	956	744	May 10, 1942	1.2	52.4	37,920	54.0	39,080	
1943	976	398	Apr. 11, 1943	1.5	30.1	21,770	27.7	20,050	
1944	1006	438	May 11, 1944	-	24.0	17,390	24.0	17,400	
1945	1036	428	May 7, 1945	1.0	42.2	30,520	43.9	31,750	
1946	1056	143	May 13, 1946	4.3	15.3	11,090	14.6	10,560	
1947	1086	616	June 22, 1947	-	45.4	32,900	45.7	33,100	
1948	1116	129	Aug. 3, 1948	.8	14.0	10,140	13.1	9,550	
1949	1146	404	May 22, 1949	2.9	34.6	25,040	34.7	25,100	
1950	1176	164	May 16, 1950	3.5	15.7	11,330	-	-	

† Corrected.

* Not previously published.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From floodmarks.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Maximum observed.

Note.--Records for April to September 1919 published in Water-Supply Paper 508 have been found doubtful on the basis of restudy of the original data. Those records are not published herein and should not be used.

97. North Platte River near Cassa, Wyo.

Location.--Lat 42°23'53", long. 104°55'53", in SE $\frac{1}{4}$ sec. 18, T. 28 N., R. 67 W., half a mile downstream from Bear Creek, $\frac{1}{2}$ miles southeast of Cassa, $\frac{5}{8}$ miles (revised) downstream from Horseshoe Creek, and about 8 miles (revised) upstream from high-water line of Guernsey Reservoir.

Drainage area.--15,700 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period March 1947 to September 1950 and water temperatures for the period June 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 4,457.82 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 9,780 cfs Sept. 7, 1946 (gage height, 6.12 ft); minimum daily, 100 cfs Feb. 13, 1949.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	552	2,722	3,041	4,331	4,569	2,105	-
1947	357	295	262	199	247	336	1,102	1,789	1,676	2,999	4,709	3,048	1,427
1948	304	263	219	203	278	610	708	2,317	3,203	4,256	4,557	2,709	1,842
1949	287	222	267	152	231	439	711	1,448	1,892	5,197	4,957	2,630	1,565
1950	371	249	164	158	212	222	705	2,364	3,770	4,681	4,657	2,604	1,690

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	32,820	167,400	181,000	266,300	281,000	125,200	-
1947	21,950	17,540	16,130	12,240	13,720	20,640	65,560	110,000	99,720	184,400	289,500	181,400	1,033,000
1948	18,690	15,640	13,490	12,460	15,970	37,530	42,150	42,400	90,600	261,700	280,200	161,200	1,192,000
1949	17,640	13,220	16,420	9,320	12,610	27,010	42,300	89,040	112,600	319,600	504,800	168,400	1,133,000
1950	22,790	14,820	10,080	9,710	11,800	13,630	41,970	145,300	224,400	267,800	296,400	154,900	1,224,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	9,780	Sept. 7, 1946	-	-	-	-	-
1947	1098	5,900	Aug. 11, 1947	170	1,427	1,033,000	1,416	1,025,000
1948	1116	7,340	Aug. 3, 1948	155	1,642	1,192,000	1,641	1,191,000
1949	1146	9,240	July 12, 1949	100	1,565	1,133,000	1,566	1,134,000
1950	1176	7,510	June 18, 1950	105	1,690	1,224,000	-	-

98. Cottonwood Creek near Fletcher Park, Wyo.

Location.--Lat 42°18'45", long. 105°14'13" (revised), at east boundary of sec. 16, T. 27 N., R. 70 W., a quarter of a mile downstream from Held Creek and $\frac{8}{10}$ miles north-east of Fletcher Park.

Drainage area.--48.1 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,480 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 236 cfs June 22, 1947 (gage height, 5.01 ft), from rating curve extended above 60 cfs by logarithmic plotting; minimum daily, 0.1 cfs Sept. 4, 5, 13-17, 20, 21, 25-28, 1946.

Remarks.--Water rights totaling 7.8 cfs (priorities 1873-1919) for irrigation of about 550 acres adjudicated by Wyoming for diversion above station. Natural flow of stream also affected by two small reservoirs above station (total adjudication, 22 acre-ft per year) for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	0.50	0.17	-
1947	0.69	1.56	1.49	1.17	1.14	6.44	31.5	40.0	70.6	18.5	3.83	1.01	14.8
1948	1.14	2.19	2.31	1.85	2.41	4.56	9.22	5.05	6.80	4.60	1.50	.42	3.50
1949	.57	.77	1.12	.96	1.66	3.95	16.7	39.8	30.1	4.11	.67	.24	8.40
1950	.39	.46	.54	.46	.58	1.15	2.67	33.1	20.7	7.16	1.37	.34	5.78

Monthly and yearly runoff, in acre-feet, of Cottonwood Creek near Fletcher Park, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	177	31	10	-
1947	42	81	92	72	63	396	1,870	2,460	4,200	1,140	235	60	10,710
1948	70	130	142	114	139	280	549	511	405	283	92	25	2,540
1948	35	46	69	59	92	243	992	2,450	1,790	252	41	14	6,080
1950	24	26	33	28	32	71	159	2,030	1,230	441	84	20	4,180

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1946	1056	-	-	-	-	-	-
1947	1086	236	June 22, 1947	0.2	14.8	10,710	15.0
1948	1116	73	July 14, 1948	.3	3.50	2,540	3.23
1949	1146	120	May 16, 1949	.2	8.40	6,080	8.31
1950	1176	82	May 16, 1950	.2	5.78	4,180	-

99. Cottonwood Creek at Wendover, Wyo. 1/

Location.--Lat 42°19'32" (revised), long. 104°52'33" (revised), in SE $\frac{1}{4}$ sec. 10, T. 27 N., R. 67 W., at Wendover, 1,000 ft upstream from mouth.

Drainage area.--159 sq mi.

Gage.--Water-stage recorder at present site since Apr. 6, 1946. Datum of gage is 4,421.52 ft above mean sea level, datum of 1929.

Apr. 19, 1916, to Sept. 30, 1921, staff gage at site three-quarters of a mile upstream at different datum.

Apr. 1, 1922, to Sept. 30, 1924, staff gage at site 300 ft upstream at different datum.

May 1, 1929, to Sept. 30, 1933, and Apr. 1 to May 23, 1935, chain gage at site a quarter of a mile upstream at different datum.

May 24, 1935, to Sept. 30, 1942, water-stage recorder at site 250 ft upstream at different datum; datum lowered 2.00 ft July 25, 1936.

Average discharge.--14 years (1929-32, 1935-42, 1946-50), 6.18 cfs.

Extremes.--1916-24, 1929-33, 1935-42, 1946-50: Maximum discharge, 4,140 cfs Sept. 23, 1940 (gage height, 12.13 ft, site and datum then in use, from floodmark), from rating curve extended above 140 cfs on basis of slope-area determination at gage heights 7.57 and 12.13 ft; no flow July 12, 15, 1932 (corrected).

Maximum discharge known, about 5,800 cfs Aug. 15, 1927 (gage height, 10.6 ft, from floodmark, site and datum of 1929), by slope-area determination.

Remarks.--Diversions above station for irrigation of about 3,000 acres. Two small reservoirs above station (total capacity, about 20 acre-ft) for irrigation.

Cooperation.--Records for 1916-24 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	5.97	11.9	3.94	3.55	1.73	-
1917	-	-	-	-	-	-	-	152	112	4.97	2.10	2.53	-
1918	-	-	-	-	-	-	8.5	25.1	*16.4	*1.5	*1.0	*1.0	-
1919	-	-	-	-	-	-	3.00	3.41	1.86	.20	.20	.20	-
1920	-	-	-	-	-	-	2.8	145	6.5	3.4	5.8	2.0	-
1921	-	-	-	-	-	-	1.9	8.5	113	3.1	1.4	6.1	-
1922	-	-	-	-	-	-	4.9	41.6	23.5	25.6	3.7	4.0	-
1923	-	-	-	-	-	-	10.1	80.1	64.9	*7.2	*6.7	*32	-
1924	-	-	-	-	-	-	127	28.5	*26	*4.1	2.20	2.20	-
1929	-	-	-	-	-	-	-	71.1	54.7	5.77	12.3	5.63	-
1930	4.0	8.6	*6.0	*3.0	*3.5	*3.8	3.9	29.8	20.4	4.0	15.0	21.6	*10.3
1931	32.4	32.9	*20	*15	*12	13.1	25.0	22.1	4.3	5.8	4.3	2.6	*15.8
1932	3.99	9.9	9.7	*8.0	*6.0	6.7	5.9	6.7	3.4	1.51	3.13	5.4	*5.85
1933	10.5	11.3	*10	-	-	-	-	81.9	12.1	3.97	2.78	2.67	-
1935	-	-	-	-	-	-	11.1	88.2	70.3	2.40	1.89	2.74	-
1936	4.27	4.35	3.18	3.15	2.35	2.35	2.50	4.29	5.34	2.47	2.20	2.24	3.22
1937	3.03	2.57	1.7	1.5	2.0	2.72	2.14	3.75	10.9	12.5	2.36	3.10	4.03
1938	2.34	2.51	2.36	2.66	2.89	2.72	5.90	4.03	3.45	1.64	3.34	1.85	2.99
1939	2.39	2.58	2.74	3.10	2.95	4.03	3.43	3.79	3.28	2.08	2.76	3.14	3.02
1940	2.95	2.48	1.73	2.80	2.35	2.24	2.24	1.99	1.64	7.44	1.47	11.8	3.42
1941	1.76	1.55	1.67	1.61	1.82	2.23	4.98	12.5	19.8	5.95	3.25	2.24	4.95
1942	2.38	2.81	2.62	2.62	2.61	2.83	4.12	72.0	16.5	8.00	4.89	3.38	10.5
1946	-	-	-	-	-	-	-	4.26	6.21	2.87	2.80	5.24	-
1947	2.63	2.57	2.40	2.40	2.07	2.70	4.03	5.11	52.9	15.2	4.45	3.49	8.30
1948	3.35	4.22	4.89	5.12	5.38	9.49	5.44	4.45	5.63	4.53	4.47	2.98	5.00
1949	2.96	3.02	3.08	1.53	2.63	3.53	3.68	4.99	19.7	8.52	3.74	4.02	5.11
1950	3.41	2.65	3.05	3.30	4.91	5.39	4.67	4.23	5.25	4.67	3.42	3.05	3.99

* Only monthly figure revised; revised daily figures not available.

† Not previously published; estimated on basis of records for Bighorn River at Thermopolis.

1/ Published as "near Wendover" 1916-24.

Monthly and yearly runoff, in acre-feet, of Cottonwood Creek at Wendover, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	367	708	242	218	103	-
1917	-	-	-	-	-	-	-	9,350	6,660	306	129	151	-
1918	-	-	-	-	-	-	-	506	1,540	*976	*92	*60	-
1919	-	-	-	-	-	-	-	179	210	111	12	12	-
1920	-	-	-	-	-	-	-	167	8,920	367	209	357	-
1921	-	-	-	-	-	-	-	113	523	6,720	191	86	-
1922	-	-	-	-	-	-	-	292	2,560	1,400	1,570	228	-
1923	-	-	-	-	-	-	-	601	4,930	3,860	*443	*412	-
1924	-	-	-	-	-	-	-	7,560	1,750	*1,550	*252	135	-
1929	-	-	-	-	-	-	-	4,370	3,250	355	756	335	-
1930	246	512	*569	*184	*194	*234	232	1,830	1,210	246	922	1,290	-
1931	1,990	1,960	*1,230	*922	*666	806	1,490	1,360	256	357	264	155	-
1932	245	589	596	*492	*345	412	351	412	202	93	192	321	-
1933	646	672	*615	-	-	-	-	5,040	720	244	171	159	-
1935	-	-	-	-	-	-	-	663	5,420	4,180	148	116	-
1936	263	259	195	193	135	144	149	264	318	152	135	133	-
1937	186	153	105	92	111	167	128	230	850	768	145	184	-
1938	144	149	145	176	160	167	351	248	205	101	205	110	-
1939	147	154	168	191	164	248	204	233	195	128	170	187	-
1940	181	147	106	172	135	138	133	122	98	457	90	705	-
1941	108	92	103	99	101	137	296	770	1,180	366	200	133	-
1942	146	167	173	161	145	174	245	4,430	984	492	301	189	-
1946	-	-	-	-	-	-	-	262	370	177	172	312	-
1947	162	153	148	148	115	166	240	314	3,150	933	274	208	-
1948	206	251	300	315	309	584	324	274	335	278	275	177	-
1949	182	180	189	94	146	217	219	307	1,170	524	230	239	-
1950	210	156	188	203	273	331	278	260	312	287	210	181	-

* Only monthly figure revised; revised daily figures not available.

* Not previously published; estimated on basis of records for Bighorn River at Thermopolis.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1916	436	-	-	-	-	-	-
1917	456	-	-	-	-	-	-
1918	476	-	-	-	-	-	-
1919	506	-	-	-	-	-	-
1920	506	-	-	-	-	-	-
1921	526	-	-	-	-	-	-
1922	546	-	-	-	-	-	-
1923	566	-	-	-	-	-	-
1924	586	-	-	-	-	-	-
1929	686	a840	June 1, 1929	-	-	-	-
1930	701	*450	Aug. 28, 1930	-	10.3	*7,470	*15.9
1931	716	b56	May 9, 1931	-	15.8	*11,500	*10.6
1932	731	b280	May 20, 1932	0	5.85	*4,250	*6.55
1933	746	b212	May 23, 1933	-	-	-	-
1935	786	a3,600	June 11, 1935	-	-	-	-
1936	806	299	June 6, 1936	1.6	3.22	2,340	2.85
1937	826	256	Sept. 6, 1937	-	4.03	2,920	4.02
1938	856	284	Aug. 10, 1938	.8	2.99	2,160	3.03
1939	876	52	July 12, 1939	1.2	3.02	2,190	2.98
1940	896	a4,140	Sept. 23, 1940	.5	3.42	2,460	3.24
1941	926	818	July 14, 1941	1.3	4.95	3,580	5.20
1942	956	a2,220	June 27, 1942	1.9	10.5	7,610	-
1946	1086	254	July 1, 1946	-	-	-	-
1947	1086	102	June 22, 1947	-	8.30	6,010	8.71
1948	1118	a691	June 14, 1948	2.6	5.00	3,630	4.71
1949	1146	122	July 12, 1949	1.2	5.11	3,700	5.11
1950	1176	32	June 18, 1950	2.0	3.99	2,890	-

* Revised.

a From floodmark.

* Not previously published.

b Maximum observed.

100. Guernsey Reservoir, Wyo.

Location.--Lat 42°17'23", long. 104°45'48" (revised), in NE¼NW¼ sec. 27, T. 27 N., R. 6E W., on gate structure at right end of dam on North Platte River, 1¼ miles north-west of Guernsey.

Drainage area.--16,200 sq mi, approximately.

Gage.--Electric tape and staff gages. Datum of gage is 4,370.00 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Dec. 22, 1933, staff gages at same site and datum. Gage readings have been reduced to elevations above mean sea level.

Guernsey Reservoir, Wyo.--Continued

Extremes.--1928-50: Maximum contents observed, 73,240 acre-ft Oct. 17, 1929 (elevation, 4,420.95 ft); minimum contents observed, 5,510 acre-ft Sept. 28, 1941 (elevation, 4,386.62 ft). New capacity tables prepared periodically. Figures shown are those derived from tables current at time of observation.

Remarks.--Reservoir is formed by rock-fill dam completed in July 1927. Capacity, 48,960 acre-ft (revised) between elevations 4,360 ft (sill of gate to penstock) and 4,420 ft (top of spillway gate). Dead storage, 190 acre-ft (revised). Figures herein represent usable contents. Water is used for irrigation in eastern Wyoming and western Nebraska, and for development of power.

Cooperation.--Records furnished by Bureau of Reclamation; those prior to 1939 not previously published by Geological Survey.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928	-	-	-	a32,780	a35,630	a41,580	a37,050	a49,890	a52,500	a33,840	a24,140	a48,660
1929	a71,400	a68,750	a64,430	a58,500	a55,050	a39,390	a49,440	a70,900	a69,900	a24,200	a25,100	a11,190
1930	a71,890	a70,600	a69,100	a62,160	a63,920	a62,580	a60,180	a49,240	a41,560	a46,170	a51,520	a37,560
1931	a39,350	a41,930	a40,780	a45,030	a49,540	a46,800	a57,900	a35,350	a41,160	a48,620	a32,100	a24,550
1932	a37,860	a30,140	a29,660	a28,790	a35,480	a44,800	a50,080	a38,850	a52,770	a45,750	a54,390	a54,840
1933	a42,500	a44,000	a38,510	a40,010	a39,210	a46,560	a63,810	a68,500	a45,690	a44,660	a56,390	a33,100
1934	a46,740	a46,410	a42,000	a41,380	a41,490	a38,600	a37,600	a35,101	a42,310	a30,650	a12,060	a12,320
1935	a11,140	a15,490	a20,650	a24,290	a28,910	a27,320	a24,790	a60,180	a35,480	a40,480	a45,670	a26,010
1936	a26,570	a27,560	a26,030	a25,640	a27,910	a35,580	a44,650	a25,100	a21,300	a29,630	a27,050	a30,550
1937	a30,600	a25,950	a21,820	a13,040	a14,210	a21,630	a37,440	a24,350	a25,860	a30,260	a30,150	a27,770
1938	a43,600	a45,030	a42,450	a39,090	a35,670	a39,090	a52,470	a45,280	a53,670	a43,700	a38,140	a22,180
1939	a5,010	a1,550	a7,520	a4,260	a24,560	a27,190	a41,990	a24,590	a20,970	a27,950	a36,560	a31,150
1940	a1,730	a2,150	a3,160	a2,880	a3,610	a3,750	a46,320	a33,200	a37,200	a17,730	a21,410	a18,800
1941	a22,320	a23,300	a25,020	a27,870	a30,960	a34,040	a50,320	a24,410	a27,440	a22,970	a40,740	a6,480
1942	a30,570	a37,000	a29,140	a26,410	a29,650	a44,050	a49,510	a50,480	a42,060	a29,550	a20,750	a24,640
1943	a38,580	a42,560	a41,620	a37,630	a41,840	a50,640	a44,760	a29,180	a25,360	a23,000	a12,800	a9,420
1944	a6,050	a7,540	a29,270	a30,805	a37,470	a37,150	a26,550	a29,410	a20,890	a19,250	a24,170	a15,760
1945	a1,310	a34,660	a36,100	a38,470	a42,230	a42,180	a31,620	a25,820	a36,500	a20,590	a20,020	a20,210
1946	a0,600	a45,070	a42,450	a42,650	a43,330	a47,010	a19,580	a39,810	a25,100	a18,940	a17,970	a11,710
1947	a1,840	a41,570	a33,720	a42,190	a43,970	a36,710	a41,790	a36,750	a46,120	a14,680	a9,870	a10,100
1948	a26,880	a37,560	a45,300	a44,350	a47,440	a45,650	a22,460	a24,380	a42,680	a31,450	a30,490	a24,790
1949	a32,500	a30,210	a28,120	a20,600	a20,600	a47,920	a34,130	a35,670	a16,810	a29,780	a33,590	a36,980
1950	a6,700	a44,210	a44,900	a45,850	a47,210	a30,050	a18,950	a44,470	a25,220	a26,110	a31,670	a21,940

* Revised; supersedes figure published in WSP 1056.

a From reports of State engineer of Nebraska.

Note.--New capacity tables prepared about every 3 years. Month-end figures shown are derived from tables current at time of observation.

101. North Platte River below Guernsey Reservoir, Wyo. 1/

Location.--Lat 42°16'50", long. 104°45'15", in SE 1/4 sec. 27, T. 27 N., R. 66 W., 1 mile northwest of Guernsey and 1.1 miles (revised) downstream from Guernsey Dam.

Drainage area.--16,200 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period April 1947 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder at present site since Jan. 1, 1928. Altitude of gage is 4,340 ft (from topographic map). June 14, 1900, to Nov. 16, 1908, and Mar. 30 to Oct. 31, 1912, staff gages downstream at several sites within three-quarters of a mile at different datums. May 1, 1909, to Dec. 31, 1927, staff gages at different datums on river and diversion canals at Whalen Dam about 9 miles downstream.

Average discharge.--48 years (1902-50), 2,030 cfs.

Extremes.--1900-1950: Maximum discharge, 30,000 cfs June 2 or 3, 1908 (gage height, 11.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 13,000 cfs; no flow Feb. 28, 1927 (Guernsey Reservoir storing water temporarily).

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Flow completely regulated by Guernsey Reservoir (see above) since 1927. Small diversions for irrigation between this station and diversion dam at Whalen.

Cooperation.--Records furnished by Bureau of Reclamation.

1/ Published as "near Guernsey" 1900-1901, 1904; "at Guernsey" 1902-5, 1905-8, March to October 1912; "at Whalen" 1909; North Platte River and Interstate Canal at Whalen, 1910-11, 1913-16; and "above Whalen" 1917-27.

PLATTE RIVER BASIN

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Monthly and yearly mean discharge, in cubic feet per second, of North Platte River below Guernsey Reservoir, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	-	-	1,800	465	-	-
1901	-	-	-	-	-	-	2,070	8,590	9,150	1,900	706	516	-
1902	-	-	-	-	-	-	1,880	5,560	6,150	1,500	400	196	-
1903	436	516	*518	*712	897	1,450	2,710	4,670	8,480	2,630	635	665	*2,020
1904	980	*715	*600	*500	a700	1,190	1,710	6,080	9,320	2,800	715	488	a2,150
1905	652	503	a411	a550	a500	b1,080	2,540	6,740	10,600	3,290	1,040	582	a2,340
1906	435	559	a400	a250	a300	b1,190	4,140	6,580	8,990	3,510	1,350	672	a2,370
1907	629	1,270	a1,000	a800	a900	a2,500	3,650	6,430	13,300	7,510	1,850	994	a3,420
1908	981	a1,060	b691	b797	b783	1,090	1,960	4,690	10,500	2,240	1,150	583	a2,200
1909	614	*640	*500	*500	*600	*800	*1,500	6,620	10,900	7,700	6,280	3,010	*3,320
1910	5,450	1,000	763	653	616	2,170	2,210	1,210	2,020	2,020	1,750	1,690	1,640
1911	836	665	411	617	839	1,250	1,700	1,910	3,220	3,250	2,750	2,250	1,640
1912	1,060	647	471	393	411	410	c1,910	c3,170	c4,050	c5,650	c6,520	c6,090	d2,570
1913	5,690	2,610	675	632	446	540	1,530	2,250	3,270	2,950	2,860	2,350	d2,140
1914	676	255	208	214	204	416	1,150	3,700	4,140	4,360	4,650	4,620	2,060
1915	2,490	664	116	99.1	128	258	1,280	2,140	3,650	4,160	3,340	2,990	1,790
1916	792	412	268	141	304	453	1,180	3,670	4,320	4,800	3,990	2,080	1,880
1917	1,000	226	195	171	217	679	1,370	4,610	15,400	9,900	4,560	4,270	3,560
1918	1,750	454	240	166	140	302	1,780	6,490	7,480	6,250	4,800	3,570	2,800
1919	1,080	405	253	223	291	192	473	2,670	5,130	4,600	3,860	2,040	1,700
1920	1,500	230	99.5	128	145	612	915	5,450	8,750	5,610	4,250	2,890	2,570
1921	1,710	274	185	239	466	391	1,480	3,410	11,200	5,710	4,360	2,920	2,700
1922	1,460	259	159	162	249	323	271	5,550	5,170	4,620	3,980	2,920	†2,110
1923	1,400	240	141	217	172	266	891	2,740	4,170	5,700	4,160	4,240	2,040
1924	1,210	535	296	244	514	520	*5,680	*7,900	*5,800	*6,650	*5,920	*4,270	*3,300
1925	590	502	300	254	587	461	1,110	3,160	4,170	5,370	4,560	3,740	2,140
1926	419	285	272	413	378	406	1,950	3,560	5,420	6,030	5,040	3,680	2,330
1927	533	397	472	663	517	347	1,080	3,320	5,250	5,610	4,700	3,730	2,230
1928	646	467	316	279	339	459	928	5,560	9,270	5,140	5,360	4,500	2,780
1929	1,040	478	384	375	328	1,070	1,120	3,930	11,100	5,890	5,510	4,120	2,960
1930	945	415	441	410	628	586	1,120	1,690	4,390	5,650	4,620	3,200	2,020
1931	775	458	373	280	287	329	548	2,480	5,440	4,780	4,090	900	1,740
1932	514	471	239	248	205	234	706	2,260	5,140	5,920	4,470	3,870	2,030
1933	910	299	269	206	202	235	506	3,200	5,440	5,600	5,040	4,330	2,120
1934	681	268	339	222	280	277	423	1,924	1,773	1,653	1,819	251	832
1935	197	89.9	84.0	115	147	164	185	669	1,655	4,770	3,928	1,431	1,149
1936	260	223	220	211	205	206	727	3,895	3,367	4,013	3,359	1,190	1,498
1937	314	316	268	270	178	254	476	2,635	3,488	5,067	4,737	3,027	1,766
1938	298	246	275	264	275	246	968	2,006	3,515	4,437	4,780	2,374	1,650
1939	386	294	286	241	308	307	508	4,191	3,271	3,673	3,520	1,464	1,567
1940	272	225	140	167	170	153	125	1,714	2,440	2,514	2,363	423	899
1941	185	147	140	118	120	112	537	2,825	2,738	3,296	3,938	2,442	1,393
1942	16.6	154	346	195	134	31.6	1,008	3,667	2,051	4,491	4,494	2,748	1,625
1943	138	211	269	309	194	236	1,204	1,966	2,462	4,692	4,610	2,758	1,600
1944	27.3	170	138	118	25.9	237	907	2,079	2,805	4,431	4,634	2,955	1,550
1945	27.5	136	138	141	141	334	852	2,537	1,804	4,205	4,220	3,354	1,501
1946	24.1	183	229	213	217	235	995	2,215	3,254	4,451	4,440	2,196	1,564
1947	19.0	129	197	220	188	549	1,005	1,940	1,566	3,521	4,668	3,047	1,431
1948	25.2	108	133	260	243	682	1,079	2,256	2,794	4,350	4,523	2,795	1,610
1949	156	239	213	247	199	40.5	899	1,390	2,124	4,826	4,770	2,643	1,490
1950	379	107	140	155	208	484	822	1,662	3,951	4,637	4,461	2,749	1,672

* Only monthly figures revised; revised daily figures not available.

† Corrected.

‡ Not previously published; estimated on basis of normal seasonal pattern.

a Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Figures published for station at Guernsey.

d Yearly total includes some monthly figures for record obtained at Guernsey.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	-	-	-	-	111,000	29,700	-	-
1901	-	-	-	-	-	-	123,000	528,000	545,000	117,000	43,400	18,800	-
1902	-	-	-	-	-	-	112,000	341,000	364,000	80,100	24,600	11,700	-
1903	26,800	30,600	*31,900	*43,800	49,800	89,400	161,000	287,000	505,000	162,000	39,000	39,600	*1,470,000
1904	60,500	*42,500	*36,900	*30,700	40,300	73,200	102,000	374,000	554,000	172,000	44,000	29,000	a1,560,000
1905	40,100	29,300	a25,300	a21,500	a27,800	b66,300	151,000	415,000	630,000	202,000	54,000	22,700	a1,700,000
1906	26,800	33,300	a24,800	a15,400	a16,700	b73,000	246,000	405,000	535,000	216,000	83,000	40,000	a1,710,000
1907	38,700	75,600	a61,500	a49,200	a61,500	a154,000	217,000	395,000	791,000	462,000	114,000	59,100	a2,480,000
1908	60,300	a62,800	a62,500	a49,000	a45,000	67,000	117,000	268,000	606,000	38,000	70,700	34,700	a1,600,000
1909	37,800	b38,100	b30,700	b30,700	b33,300	a49,200	a89,300	a107,000	a49,000	a77,000	a386,000	a179,000	*2,400,000
1910	112,000	59,500	46,900	40,200	34,200	133,000	132,000	74,400	120,000	24,000	108,000	101,000	1,190,000

* Only monthly figures revised; revised daily figures not available.

† Not previously published; estimated on basis of normal seasonal pattern.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Monthly and yearly runoff, in acre-feet, of North Platte River below Guernsey Reservoir, Wyo.--Con.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year	
1911	51,400	39,600	25,200	37,900	46,600	76,900	101,000	117,000	192,000	200,000	169,000	134,000	1,190,000	
1912	65,200	38,500	29,000	23,600	23,600	25,200	114,000	195,000	241,000	384,000	400,000	362,000	1,870,000	
1913	335,000	155,000	41,500	38,900	24,800	33,200	90,400	137,000	195,000	181,000	164,000	140,000	1,550,000	
1914	41,600	15,200	12,900	13,200	11,300	25,600	88,400	228,000	248,000	268,000	288,000	275,000	1,490,000	
1915	153,000	40,700	7,130	6,090	7,110	15,900	76,200	152,000	217,000	256,000	205,000	178,000	1,290,000	
1916	48,700	24,500	16,500	8,670	17,500	27,900	70,200	226,000	257,000	295,000	245,000	124,000	1,360,000	
1917	61,500	13,400	12,000	10,500	12,100	41,800	81,500	283,000	291,000	308,000	280,000	205,250	2,570,000	
1918	106,000	27,000	14,800	10,200	7,780	18,600	106,000	398,000	445,000	504,000	295,000	202,120	2,020,000	
1919	66,400	24,000	15,800	13,700	16,200	11,800	28,100	164,000	305,000	302,460	220,000	121,000	1,230,000	
1920	92,200	13,700	6,120	7,870	8,340	37,600	54,400	334,000	351,000	357,000	260,000	172,000	1,860,000	
1921	105,000	16,300	11,400	14,700	27,000	24,000	88,100	210,000	266,000	351,000	268,000	174,000	1,980,000	
1922	89,800	15,400	9,770	9,960	13,800	19,900	16,100	341,000	308,000	284,000	245,000	174,000	1,530,000	
1923	86,100	14,300	8,670	13,300	9,550	17,600	53,000	168,000	204,248	300,550	200,256	125,000	1,480,000	
1924	74,400	31,800	18,200	15,000	29,600	32,000	338,000	486,000	345,000	409,000	364,000	254,000	*2,400,000	
1925	85,500	29,900	18,400	15,600	32,600	28,300	66,000	194,000	248,000	300,330	260,000	223,000	1,550,000	
1926	25,800	17,000	16,700	25,400	21,000	25,000	116,000	219,000	300,323	300,371	300,310	200,219	1,690,000	
1927	32,800	23,600	29,000	40,800	28,700	21,300	64,300	204,000	300,311	300,345	300,289	200,222	1,810,000	
1928	39,700	27,800	19,400	17,200	19,500	28,200	55,200	342,000	500,316	500,316	300,330	200,268	2,020,000	
1929	84,000	28,400	23,600	23,100	18,200	65,800	66,600	242,000	300,680	300,680	300,339	200,245	2,140,000	
1930	58,100	24,700	27,100	25,200	34,900	36,000	66,600	104,000	261,000	300,347	300,284	190,500	1,460,000	
1931	47,700	27,300	22,900	17,200	15,900	20,200	32,600	152,000	324,000	294,000	251,000	153,600	1,260,000	
1932	31,600	28,000	14,700	15,200	11,800	14,400	42,000	140,000	300,306	300,364	300,275	200,230	1,470,000	
1933	56,000	17,800	16,500	12,700	11,200	14,400	30,100	197,000	300,324	300,344	300,310	200,204	1,540,000	
1934	41,960	17,180	20,860	13,660	14,400	17,020	25,200	118,300	105,500	101,600	111,800	14,930	602,400	
1935	12,100	5,350	5,160	7,060	8,160	11,310	11,030	41,120	110,000	293,500	300,241	500	831,700	
1936	15,970	13,260	13,500	12,950	11,810	12,660	43,290	229,500	300,220	400,246	700,206	600	1,087,000	
1937	19,320	18,800	16,470	16,630	9,870	15,620	28,340	182,000	300,207	600,312	800,291	300,180	1,279,000	
1938	18,350	14,610	16,900	16,210	15,290	15,130	57,580	123,400	209,200	272,800	293,900	141,300	1,195,000	
1939	24,350	17,510	17,620	14,820	17,110	18,870	30,230	257,700	194,700	238,200	202,116	87,130	1,135,000	
1940	16,750	13,380	8,640	10,250	9,750	9,410	7,430	105,400	145,200	154,600	146,500	25,160	652,500	
1941	11,390	8,750	8,640	7,250	6,650	6,890	31,960	173,700	162,900	202,700	700,242	200,145	300	1,008,000
1942	1,020	9,170	21,260	11,970	7,460	1,940	59,970	225,500	100,122	300,276	1,002,760	300,163	500	1,176,000
1943	8,480	12,580	17,760	19,010	10,800	14,480	71,630	120,900	146,500	298,500	283,500	164,100	1,158,000	
1944	1,580	10,130	8,470	7,250	1,480	14,580	53,970	127,900	166,900	272,400	284,900	176,800	1,125,000	
1945	1,690	8,080	8,500	6,890	7,810	20,510	50,680	156,000	100,107	300,256	500,253	500,199	600	1,087,000
1946	1,480	10,890	14,070	13,090	12,030	14,470	59,210	136,200	200,193	600,273	700,273	600,130	700	1,132,000
1947	1,170	7,680	12,130	15,520	10,470	33,770	59,630	119,300	300,393	170,216	500,287	600,181	300	1,036,000
1948	1,550	6,430	8,170	15,980	13,950	41,950	64,190	138,700	166,300	267,500	278,100	166,300	300	1,163,000
1949	9,620	14,210	13,110	15,210	11,040	2,490	53,490	85,490	126,400	400,296	700,293	300,157	300	1,078,000
1950	23,280	6,390	8,620	9,550	11,570	29,760	48,900	114,500	250,351	1,002,730	1,002,730	300,163	600	1,211,000

* Only monthly figures revised; revised daily figures not available.

c Figures published for station at Guernsey.

d Yearly total includes some monthly figures for record obtained at Guernsey.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1900	(a), 469	-	-	-	-	-	-
1901	75	-	-	80	-	-	-
1902	84	-	-	175	-	-	-
1903	99	*b11,800	June 21, 1903	-	*2,020	*1,470,000	*2,090
1904	131	*b14,200	May 22, 1904	-	c2,150	c1,560,000	c2,090
1905	172	b13,900	June 12,13,1905	-	c2,340	c1,700,000	c2,330
1906	208	b11,700	June 1, 1906	-	c2,370	c1,710,000	c2,490
1907	248	-	-	-	c3,420	c2,460,000	c3,410
1908	246	30,000	June 2 or 3, 1908	-	c2,200	c1,600,000	c2,120
1909	266	-	-	-	*3,320	*2,400,000	*3,610
1910	286	-	-	125	1,640	1,190,000	1,360
1911	306	-	-	157	1,640	1,190,000	1,670
1912	326	*b8,200	July 21, 1912	132	d2,570	d1,870,000	d3,170
1913	469	-	-	269	d2,140	d1,550,000	1,480
1914	386	-	-	160	2,060	1,490,000	2,240
1915	406	-	-	65	1,790	1,290,000	1,650
1916	436	-	-	61	1,880	1,360,000	1,870
1917	456	-	-	80	3,560	2,570,000	3,640
1918	476	-	-	100	2,800	2,020,000	2,740
1919	506	-	-	175	1,700	1,250,000	1,710
1920	506	-	-	30	2,570	1,860,000	2,600
1921	526	-	-	60	2,700	1,960,000	2,680
1922	546	-	-	56	*2,110	1,530,000	2,100
1923	566	-	-	53	2,340	1,480,000	2,060
1924	586	-	-	76	*3,300	*2,400,000	*3,310
1925	606	-	-	184	2,140	1,550,000	2,040

* Revised.

† Corrected.

‡ Not previously published.

a 22d Ann. Rept., Pt. 4.

b Maximum observed.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Yearly total includes some monthly figures for record obtained at Guernsey.

Yearly discharge, in cubic feet per second, of North Platte River below
Guernsey Reservoir, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Discharge	Momentary maximum Date	Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
1926	626	-	-	60	2,350	1,690,000	2,370	1,710,000
1927	646	-	-	0	2,250	1,610,000	2,230	1,610,000
1928	666	-	-	81	2,780	2,020,000	2,820	2,040,000
1929	686	-	-	285	2,960	2,140,000	2,950	2,140,000
1930	701	-	-	285	2,020	1,460,000	2,000	1,450,000
1931	716	-	-	165	1,740	1,260,000	1,710	1,230,000
1932	731	-	-	155	2,050	1,470,000	2,050	1,450,000
1933	746	-	-	109	2,120	1,540,000	2,110	1,550,000
1934	761	-	-	131	832	602,400	753	545,100
1935	786	-	-	56	1,149	831,700	1,177	851,800
1936	806	-	-	140	1,498	1,087,000	1,514	1,099,000
1937	826	-	-	155	1,766	1,279,000	1,760	1,274,000
1938	856	-	-	155	1,650	1,195,000	1,663	1,204,000
1939	876	-	-	185	1,567	1,135,000	1,539	1,114,000
1940	896	-	-	61	899	652,500	885	642,500
1941	926	5,420	Aug. 9, 1941	21	1,393	1,008,000	1,396	1,011,000
1942	956	5,560	May 17, 1942	6	1,625	1,176,000	1,635	1,184,000
1943	976	5,020	July 17, 1943	20	1,600	1,158,000	1,574	1,140,000
1944	1006	4,980	July 22, 1944	15	1,550	1,125,000	1,548	1,123,000
1945	1036	4,900	July 18, 1945	20	1,501	1,087,000	1,513	1,095,000
1946	1056	4,980	July 16, 1946	16	1,564	1,132,000	1,557	1,127,000
1947	1086	5,430	June 23, 1947	19	1,431	1,036,000	1,424	1,031,000
1948	1116	4,980	July 24, 1948	18	1,610	1,169,000	1,639	1,190,000
1949	1146	5,380	July 3, 1949	20	1,480	1,078,000	1,491	1,080,000
1950	1176	5,090	July 16, 1950	21	1,672	1,211,000	-	-

102. North Platte River at recorder station, below Whalen, Wyo.1/

Location.--Lat 42°14'18", long. 104°36'28" (revised), in SW $\frac{1}{4}$ sec. 12, T. 26 N., R. 65 W.,
0.3 mile downstream from Cottonwood Draw, $2\frac{1}{2}$ miles (revised) downstream from Whalen
Dam, and $4\frac{1}{4}$ miles northwest of Fort Laramie.

Drainage area.--16,300 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,250 ft (from topographic map). May 1,
1909, to Apr. 15, 1938, staff gages at different datums on diversion canals and river
 $2\frac{1}{2}$ miles upstream near Whalen Dam.

Extremes.--1909-50: Maximum daily discharge, 19,900 cfs June 3, 1909; no flow at times
during 1910, 1916, 1925-27.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs,
power developments, ground-water withdrawals and diversions for irrigation, and return
flow from irrigated areas.

Cooperation.--Records computed by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	6,290	10,600	8,740	5,130	2,040	-
1910	5,320	1,000	763	653	616	2,170	2,020	618	1,020	1,020	560	510	1,190
1911	743	665	411	617	839	1,220	800	1,200	2,080	2,360	1,520	1,230	1,140
1912	1,010	647	471	383	411	410	1,520	2,510	2,430	4,150	5,720	5,120	2,070
1913	5,630	2,610	675	632	446	540	1,520	1,640	2,140	1,940	1,540	1,450	1,730
1914	676	255	208	214	204	416	1,150	2,920	2,750	2,950	2,240	5,470	1,540
1915	2,490	684	116	99.1	128	258	1,130	1,610	2,730	2,860	2,180	2,220	1,380
1916	792	412	268	141	304	453	1,090	2,580	3,040	3,540	5,20	950	1,340
1917	884	226	195	171	216	679	1,220	3,750	14,400	8,530	950	2,880	3,000
1918	1,390	454	240	166	140	302	1,280	5,380	5,860	4,290	3,90	2,310	2,080
1919	641	403	253	223	291	192	420	1,590	3,210	2,020	1,690	698	973
1920	604	206	79.5	108	125	592	895	5,140	7,330	3,900	2,430	1,550	1,920
1921	951	245	156	209	457	361	1,090	2,330	10,500	3,690	5,20	1,360	1,990
1922	752	219	140	142	229	306	175	4,530	3,350	2,450	1,940	1,090	1,280
1923	463	172	105	189	147	261	538	1,900	3,170	3,390	2,200	2,580	1,260
1924	1,020	510	271	224	494	495	5,410	*6,170	*2,930	*3,490	*2,740	*1,780	*2,130
1925	902	502	300	254	587	414	248	1,390	1,790	2,360	1,780	1,460	1,000
1926	265	134	122	227	206	228	988	1,900	2,970	3,190	2,010	1,360	1,140
1927	361	307	319	494	329	345	708	2,160	2,880	2,560	1,150	1,300	1,150
1928	632	467	216	141	289	417	405	3,490	7,470	2,180	1,980	1,480	1,590
1929	446	477	385	354	249	1,050	916	2,580	8,560	2,410	3,10	2,050	1,780
1930	629	342	405	348	504	586	526	273	1,550	2,020	1,640	1,030	831
1931	423	385	211	171	196	265	184	610	1,970	1,580	1,120	146	608
1932	41.5	50.2	67.5	94.4	66.7	110	56.7	713	2,130	2,340	1,550	891	678
1933	46.8	179	110	48.9	53.2	145	95.0	2,050	2,360	2,030	1,520	819	793
1934	144	118	142	93.3	158	189	73.8	759	764	559	86.6	43.8	262
1935	45.8	10.1	10.0	10.0	10.0	15.9	29.7	274	779	1,683	1,035	390	361

* Only monthly figure revised; revised daily figures not available.

1/ Published as "below Whalen" prior to Apr. 16, 1938.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at recorder station, below Whalen, Wyo.—Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	58.0	25.7	14.7	11.6	11.9	43.7	39.9	1,410	1,338	1,478	813	213	458
1937	53.8	53.0	50.4	67.1	34.5	51.5	83.4	997	1,148	1,947	1,282	365	517
1938	51.9	57.4	120	70.5	72.3	57.5	502	502	1,052	1,203	1,243	241	434
1939	73.8	97.7	84.5	44.3	118	103	110	1,383	938	1,023	782	279	421
1940	57.1	25.2	24.5	12.5	16.1	10.3	29.2	804	1,124	624	242	83.9	253
1941	19.7	9.02	13.8	13.8	6.92	11.7	40.3	1,150	981	1,034	1,137	436	406
1942	23.9	34.8	143	20.8	18.4	18.1	279	2,888	427	1,421	1,141	408	576
1943	26.9	96.2	117	128	58.8	78.8	210	620	778	1,416	1,189	365	427
1944	28.5	8.86	6.00	5.80	2.49	7.08	14.5	983	855	1,303	1,202	421	399
1945	13.7	9.23	8.12	6.63	6.25	78.2	29.0	1,130	682	1,148	965	792	409
1946	23.6	52.2	60.0	34.4	56.2	68.2	30.4	530	765	990	947	146	311
1947	36.8	19.6	15.2	7.38	8.25	14.2	16.0	379	1,035	641	1,004	378	298
1948	34.2	4.69	4.70	23.1	29.9	432	28.0	409	532	1,016	976	305	319
1949	44.0	26.8	6.04	5.53	5.91	26.1	35.9	119	350	1,291	1,152	280	279
1950	52.0	82.3	125	96.2	44.4	84.0	35.8	341	1,030	1,018	942	288	547

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	587,000	531,000	414,000	515,000	21,000	-
1910	204,400	59,500	46,900	40,200	34,200	133,000	120,000	38,000	60,700	62,700	34,400	30,500	864,000
1911	45,700	39,800	25,300	37,900	46,600	75,000	47,800	73,800	121,000	145,000	93,500	73,200	824,000
1912	62,100	38,500	29,000	23,600	23,600	25,000	90,400	54,000	100,255	100,352	100,352	100,352	1,500,000
1913	346,000	55,000	41,500	39,900	24,800	33,200	90,400	101,000	127,000	119,000	94,700	86,500	1,260,000
1914	41,600	15,200	12,800	13,200	11,500	25,600	68,400	80,000	64,000	81,000	99,000	208,000	1,120,000
1915	153,000	40,700	7,130	6,090	7,110	15,900	67,200	99,000	182,000	176,000	134,000	132,000	1,000,000
1916	48,700	24,500	16,500	8,670	16,900	27,900	64,900	159,000	181,000	202,118,000	155,000	56,500	978,000
1917	54,400	13,400	12,000	10,500	12,100	41,800	72,600	231,000	857,000	105,12,000	81,000	171,000	2,170,000
1918	85,500	27,000	14,800	10,200	7,780	18,600	76,200	331,000	405,490,000	264,000	184,000	137,000	1,510,000
1919	39,400	24,000	15,600	13,700	16,200	11,800	25,000	97,800	91,000	24,000	104,000	41,500	704,000
1920	37,100	12,000	4,890	6,640	7,190	36,400	53,300	516,000	436,000	22,400	149,000	92,200	1,390,000
1921	58,500	14,600	9,590	12,900	25,400	22,200	64,900	143,000	205,25,000	227,000	155,000	82,100	1,440,000
1922	46,200	13,000	8,610	8,730	12,700	18,600	10,400	279,000	98,000	151,000	119,000	64,900	950,000
1923	28,500	10,200	6,480	11,600	8,160	16,000	32,000	117,000	189,000	208,000	135,000	154,000	916,000
1924	62,700	30,300	16,700	13,800	28,400	30,400	322,000	379,000	174,000	214,000	168,000	105,000	1,540,000
1925	55,500	29,900	18,400	15,600	32,600	25,500	14,800	85,500	107,000	145,000	109,000	86,900	726,000
1926	16,300	7,970	7,500	14,000	11,400	14,000	58,800	117,000	177,000	196,000	124,000	80,900	825,000
1927	22,200	18,500	19,600	30,400	18,300	21,200	42,100	133,000	171,000	145,000	100,32,000	77,400	950,000
1928	38,900	27,800	13,500	8,670	16,600	25,600	24,100	215,000	404,444,000	134,000	122,000	86,100	1,160,000
1929	27,400	26,400	23,700	21,800	15,800	64,800	54,500	159,000	905,000	148,000	117,000	21,000	1,290,000
1930	38,700	20,400	24,900	21,400	33,500	36,000	31,300	16,800	92,200	124,000	100,101,000	61,300	602,000
1931	26,000	22,900	13,000	10,500	10,900	16,300	10,900	37,500	117,000	97,200	68,900	8,690	440,000
1932	2,550	2,990	4,150	5,800	3,840	6,760	3,370	43,800	127,000	144,000	95,300	53,000	493,000
1933	2,880	10,700	6,760	3,010	2,950	8,920	5,650	26,000	40,000	125,000	93,500	48,700	574,000
1934	8,870	6,990	8,730	5,740	8,760	11,630	4,390	46,700	45,460	34,380	5,350	2,600	189,800
1935	2,810	601	615	615	555	976	1,770	16,850	46,360	103,500	63,620	23,230	261,500
1936	3,560	1,530	902	714	684	2,690	2,370	86,700	79,600	90,730	49,870	12,670	332,100
1937	3,930	3,160	3,100	4,130	1,910	3,170	4,960	61,300	68,300	119,700	78,600	21,700	374,200
1938	3,190	3,420	7,380	4,340	4,010	3,540	29,890	30,870	62,610	73,980	76,420	14,320	314,000
1939	4,540	5,820	5,190	2,720	6,560	6,350	6,530	85,020	55,800	62,920	46,850	16,590	304,900
1940	2,290	1,500	1,510	767	928	633	1,740	49,410	66,870	38,340	14,760	4,990	183,700
1941	1,210	537	850	850	384	719	2,400	69,510	58,400	63,550	89,900	25,960	294,300
1942	1,470	2,070	8,610	7,890	1,020	1,110	16,620	77,600	25,430	87,350	70,150	24,220	417,200
1943	1,650	5,720	7,210	7,280	1,260	4,830	12,480	38,120	46,320	87,050	73,110	21,620	309,300
1944	1,750	527	369	357	143	435	865	54,930	50,320	80,100	73,910	25,030	289,300
1945	844	549	499	408	347	4,810	1,730	69,490	40,570	70,580	59,350	47,120	296,300
1946	1,450	3,110	3,690	2,110	3,120	4,190	1,810	32,560	45,520	60,880	58,240	8,780	225,500
1947	2,260	1,170	934	454	458	875	952	23,300	61,610	39,440	61,740	22,500	215,700
1948	2,100	279	289	1,420	1,720	26,540	1,660	25,130	31,680	62,450	80,110	18,160	231,500
1949	2,700	1,590	371	340	328	1,610	2,140	7,340	20,810	79,360	70,660	16,840	204,100
1950	3,200	4,300	7,700	5,910	2,470	5,170	2,130	20,960	61,280	62,590	57,950	17,160	251,400

* Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	469	-	-	-	-	-	-	-
1910	469	419,900	June 3, 1909	125	1,190	864,000	917	664,000
1911	469	-	-	0	1,140	824,000	1,160	843,000
1912	469	-	-	132	2,070	1,500,000	2,640	1,920,000
1913	469	-	-	269	1,750	1,260,000	1,080	785,000
1914	469	-	-	160	1,540	1,120,000	1,730	1,250,000
1915	469	-	-	65	1,380	1,000,000	1,230	889,000
1916	469	-	-	61	1,340	978,000	1,330	968,000
1917	456	-	-	0	3,000	2,170,000	3,060	2,220,000
1918	476	-	-	100	2,080	1,510,000	2,010	1,460,000
1919	506	-	-	175	973	704,000	938	679,000
1920	506	-	-	20	1,920	1,390,000	1,960	1,420,000

a Maximum daily.

Yearly discharge, in cubic feet per second, of North Platte River at recorder station, below Whalen, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	526	-	-	50	1,990	1,440,000	1,970	1,430,000
1922	546	-	-	47	1,280	950,000	1,250	908,000
1923	556	-	-	18	1,260	916,000	1,350	980,000
1924	588	-	-	51	*2,130	*1,540,000	*2,120	*1,540,000
1925	606	-	-	40	1,000	726,000	903	654,000
1926	626	-	-	0	1,140	825,000	1,180	853,000
1927	646	-	-	0	1,150	830,000	1,170	850,000
1928	666	-	-	25	1,590	1,180,000	1,590	1,180,000
1929	686	-	-	23	1,780	1,290,000	1,790	1,290,000
1930	701	-	-	30	651	602,000	800	579,000
1931	716	-	-	17	608	440,000	535	368,000
1932	731	-	-	14	678	493,000	693	503,000
1933	746	-	-	14	793	574,000	799	578,000
1934	761	-	-	10	262	189,600	233	169,000
1935	786	-	-	10	361	261,500	364	263,500
1936	806	-	-	10	458	332,100	463	336,300
1937	826	-	-	6	517	374,200	522	378,000
1938	856	2,530	June 20, 1938	6	454	314,000	436	315,500
1939	876	2,680	June 25, 1939	-	421	304,900	407	294,600
1940	896	2,100	June 3, 1940	7.0	253	183,700	249	181,000
1941	926	3,060	May 3, 1941	5.0	406	294,300	420	304,000
1942	956	4,920	May 19, 1942	8	576	417,200	579	419,400
1943	976	2,400	July 17, 1943	7.4	427	309,300	411	297,300
1944	1006	3,500	May 21, 1944	1.8	399	289,300	398	288,800
1945	1036	2,900	May 9, 1945	5.2	409	296,300	418	302,700
1946	1056	1,940	July 16, 1946	8.0	311	225,500	306	221,600
1947	1086	5,140	June 24, 1947	5.9	298	215,700	296	214,000
1948	1116	2,020	July 12, 1948	2.4	319	231,500	+322	233,500
1949	1146	2,280	July 5, 1949	4.8	279	204,100	297	215,200
1950	1176	2,100	(b)	10	347	251,400	-	-

* Revised.

† Corrected.

b Sometime during period May 19-25, 1950.

103. Laramie River near Glendevy, Colo. 1/

Location.--Lat 40°48'00", long. 105°52'40" (revised), in NW¼ sec. 36, T. 10 N., R. 76 W., just upstream from Stub Creek, 180 ft downstream from highway bridge, 250 ft downstream from Nunn Creek, and 1½ miles north of Glendevy post office.

Drainage area.--101 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 8,230 ft (from topographic map). Prior to Nov. 7, 1910, staff gage; water-stage recorder thereafter.
Prior to Sept. 21, 1922, at datum 1.22 ft higher; Sept. 21, 1922, to Sept. 26, 1923, at datum 1.94 ft higher; July 9, 1929, to July 22, 1931, at datum 2.73 ft higher; July 23, 1931, to Sept. 19, 1935, at datum 2.09 ft higher; all at site 180 ft upstream. Sept. 27, 1923, to July 8, 1929, at site 140 ft upstream at datum 1.35 ft higher.

Average discharge.--41 years (1904-5, 1910-50), 73.9 cfs.

Extremes.--1904-5, 1910-50: Maximum discharge, 2,240 cfs June 9, 1923 (gage height, 4.55 ft, site and datum then in use, from floodmarks), from rating curve extended above 1,400 cfs; minimum daily recorded, 5 cfs Feb. 14, 15, 1911, but may have been less during winter periods of no gage-height record.

Remarks.--Diversions for irrigation of about 700 acres of hay meadows above station. Sky-line ditch, Laramie-Poudre tunnel, Bob Creek ditch, Columbine ditch, and part of Wilson Supply ditch export water from Laramie River and tributaries above station to Cache la Poudre River in South Platte River basin; see elsewhere in this report for records of diversions.

Cooperation.--Records for 1910-18, 1931-33 furnished by State engineer of Colorado; 1931-33, not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	165	63.4	31.7	-
1905	26.6	8	8	8	10	10	31.3	+241	627	162	60.7	18.5	101
1906	8.5	-	-	-	-	-	-	-	-	-	-	-	-
1910	-	-	-	-	-	-	-	-	-	-	-	-	-
1911	32.5	20.8	16.9	15.1	11.3	22.1	42.3	233	424	132	41.1	31.1	85.2
1912	35.0	19.7	15.0	13.9	15.2	15.9	20.0	205	542	266	53.7	37.0	103
1913	36.1	21.1	12	13	12	15	70	197	199	83.6	31.9	27.8	58.3
1914	32.7	25	15	13	13	14.3	50.6	393	640	148	60	25	+119
1915	35	15	10	8	10	10	50	163	258	80.3	49.9	34.1	60.4

† Corrected.

1/ Published as "at Glendevy" 1905, 1910-18.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of Laramie River
near Glendevy, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	34.1	20	15	15	15	20	80	202	287	95.8	57.5	44.2	†72.4
1917	a45.9	a30	a24	a19	a19	a15	a37	a174	a849	331	101	54.9	a143
1918	25.9	28.0	12	12	12	15	41.8	373	681	129	33.6	30.7	†115
1919	25	25	15	15	15	18	35	213	110	27.6	21.6	18	44.6
1920	a15.8	a12.8	a11.1	a11.1	a9.1	a11.1	a16.7	a218	579	161	63.3	45.1	a95.0
1921	25.9	8.7	10	12	12	15	27.8	248	619	153	61.5	32.4	102
1922	25.8	b33.0	b15	b15	b15	b15	22.5	134	245	74.6	39.6	23.7	b54.0
1923	16.3	b13.2	b11	b11	b10	b15	b21.9	165	b684	199	50.4	26.2	b102
1924	37.9	b34	b17	b15	b15	b18	b50	236	496	106	35.7	32.1	b90.8
1925	42.1	27	b18	b15	b13	b15	b29	165	162	72.8	52.0	43.0	b54.8
1926	48.4	b32.4	b19	b18	b18	b20	59.2	369	454	115	46.1	27.4	b102
1927	54.9	27.2	b18	b17	b17	b20	54.8	212	268	98.2	61.3	41.7	b70.9
1928	38.4	b28.5	b19	b15	b13	b15	37.5	331	366	135	46.2	24.1	b89.1
1929	28.0	23.7	a15	a12	a12	a15	b40.3	185	529	145	52.6	45.5	a91.8
1930	36.7	†19.6	†11	†9	†8	†11	76.9	153	166	46.1	51.7	35.0	†52.1
1931	c43.7	†20.8	†15	†14	†17	†18	†71.0	c111	c138	c35.1	c18.8	c17.1	†43.2
1932	c28.4	c26.0	†17	†15	†14.5	†20	†45	c254	c311	c70.6	c29.4	c16.5	†70.7
1933	c25.1	c27.0	†12	†11	†11	†17	c24.9	c118	c542	c60.2	c12.8	c26.0	†74.5
1934	30.4	20.3	†16.9	†17	†17	†20	62.2	106	19.0	11.8	14.0	14.1	†29.1
1935	15.4	15	†10	†10	†12	†15	25.6	80.5	44.2	72	22.1	21.9	†84.4
1936	29.2	26.6	†15	†15	†15	†16	†74.4	220	159	35.2	28.7	33.4	†55.7
1937	26.0	24.0	†12	†10	†10	†15	36.0	130	119	32.2	17.4	23.3	†38.0
1938	29.5	22.0	†15	†15	†20	†30	†50.8	222	451	96.9	23.3	40.1	†84.5
1939	34.9	24.2	†15	†10	†10	†15.7	46.2	151	121	18.0	18.4	18.2	†40.3
1940	19.1	20.1	†10	†10	†10	†14.4	30.9	82.1	194	145	47.0	33.8	†51.4
1941	37.2	†21.5	†15	†15	†13	†16	23.5	115	215	146	59.8	32.5	†59.4
1942	41.8	†28.8	†15	†8	†9	†10	†40.6	121	399	56.3	15.8	20.2	†63.4
1943	25.5	22.3	†15	†10	†12	†15	95.1	209	475	68.8	20.5	20.8	†82.2
1944	23.0	22.0	†15	†10	†12	†15	19.5	118	154	101	57.6	23.5	†47.2
1945	22.7	†16.6	†12	†12	†13	†15	†22.9	171	204	159	117	44.5	†67.9
1946	30.6	28.0	†15	†12	†12	†15	69.7	125	256	145	61.8	35.8	†67.3
1947	32.0	20.7	19.1	10	10	11	34.3	222	377	191	80.0	53.5	88.7
1948	44.3	38.1	29	22	19	20	47.7	195	178	85.1	56.5	21.7	65.0
1949	26.6	23.3	16.5	15	15.2	15.6	48.0	202	449	62.4	42.7	39.2	79.6
1950	34.3	22.4	15.5	12.2	15.1	14.3	59.1	112	241	96.3	54.4	43.5	58.4

† Corrected.

* Not previously published; estimated on basis of records for other stations on Laramie River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; superseded figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	10,100	3,900	1,890	-
1905	1,640	476	492	492	†555	615	1,860	†14,800	37,500	9,980	3,730	1,100	75,000
1906	523	-	-	-	-	-	-	-	-	-	-	-	-
1910	-	-	-	-	-	-	-	-	-	-	-	2,510	-
1911	2,000	1,240	1,040	928	628	1,360	2,520	14,300	25,200	8,140	2,530	1,850	61,700
1912	2,150	1,170	922	855	874	976	1,190	12,600	32,300	16,400	3,300	2,200	†74,900
1913	2,220	1,260	739	799	666	922	4,710	12,100	11,800	3,910	1,960	1,650	42,200
1914	†2,010	1,490	922	799	722	879	3,010	24,200	38,100	8,980	3,980	1,490	†86,300
1915	2,150	1,890	615	492	555	615	2,980	10,000	15,400	4,940	3,070	2,030	43,700
1916	2,100	1,190	922	922	863	1,230	3,570	12,400	17,100	5,890	3,540	2,630	†52,400
1917	a2,820	a1,780	a1,490	a1,180	a1,030	a810	a2,200	a10,700	a50,500	20,400	6,210	3,270	a102,000
1918	1,590	1,670	739	738	666	922	2,490	22,900	40,500	7,930	2,070	1,280	85,500
1919	1,540	1,190	922	922	833	1,110	2,080	13,100	16,550	1,700	1,330	1,070	32,300
1920	a970	a770	a680	a680	a530	a680	a1,100	a13,400	34,500	9,900	3,980	2,560	a69,700
1921	1,590	518	615	738	666	922	1,650	15,200	36,800	9,410	3,780	1,930	73,800
1922	1,590	b1,370	b922	b799	b889	b922	1,340	8,240	14,600	4,590	2,430	1,410	b39,100
1923	1,000	b785	b676	b799	b555	b922	b1,300	10,100	40,700	12,200	3,100	1,880	b75,700
1924	2,350	b2,020	b1,050	b922	b883	b1,110	b2,980	14,500	29,500	6,520	2,200	1,910	b65,800
1925	2,590	1,610	b1,110	b922	b722	b922	b1,730	10,100	9,640	4,480	3,200	2,560	b59,600
1926	2,980	b1,930	b1,170	b1,110	b1,000	b1,230	3,520	22,700	27,000	7,070	2,830	1,630	b74,200
1927	2,150	1,620	b1,110	b1,050	944	b1,230	2,070	13,000	15,900	5,920	3,770	2,480	b51,200
1928	2,360	b1,700	b1,100	b922	b748	b922	2,230	20,400	21,800	8,300	2,840	1,430	b64,800
1929	1,720	1,410	a922	a738	a666	a922	b2,400	11,400	31,500	8,920	3,230	2,710	a66,500
1930	2,260	†1,170	†676	†553	†444	†674	4,580	9,410	9,880	2,830	3,180	2,080	†37,700
1931	c2,690	†1,240	†922	†861	†944	†1,110	†4,220	†6,826	†8,210	c2,040	c1,160	c1,020	†31,200
1932	c1,750	c1,550	†1,050	†922	†833	†1,230	†2,680	†15,800	†18,500	4,340	c1,810	c982	†51,200
1933	c1,540	c1,610	†738	†676	†611	†1,050	c1,480	†7,260	†32,300	c3,700	c1,290	c1,550	†53,800
1934	1,870	1,210	†1,040	†1,050	†944	†1,230	3,700	6,510	1,130	724	861	837	†21,110
1935	946	891	†615	†1,015	†1,050	†922	1,520	4,950	26,270	4,430	1,360	1,300	†44,490
1936	1,790	1,590	†922	†922	†863	†984	†4,430	13,520	9,490	2,170	1,770	1,990	†40,430
1937	1,600	1,430	†738	†815	†555	†922	2,140	8,000	7,070	1,980	1,070	1,380	†27,500
1938	1,910	1,310	†922	†922	†1,110	†1,040	†3,020	13,550	26,830	5,960	1,430	2,390	†61,190
1939	2,150	1,440	†922	†815	†555	†964	2,750	9,290	7,210	1,100	1,130	1,080	†29,200
1940	1,180	1,190	†615	†615	†575	†883	1,840	5,050	11,560	8,920	2,890	2,010	†37,330

† Corrected.

* Not previously published; estimated on basis of records for other stations on Laramie River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet, of Laramie River near Glendevney, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	2,290	#1,280	#922	#922	#722	#984	1,400	7,100	12,810	8,980	3,680	1,940	#43,030
1942	2,560	#1,600	#922	#492	#500	#615	#2,420	7,420	23,740	3,460	974	1,200	#45,900
1943	1,570	1,330	#922	#615	#668	#922	5,660	12,840	28,270	4,230	1,260	1,240	#59,520
1944	1,420	1,310	#922	#615	#555	#738	1,160	7,270	9,150	6,180	3,540	1,400	#34,260
1945	1,400	#986	#738	#738	#722	#922	#1,360	10,500	12,150	9,800	7,190	2,650	#49,160
1946	1,680	1,670	#922	#738	#666	#922	4,150	7,680	15,230	8,920	3,800	2,130	#48,710
1947	1,970	1,230	1,170	615	555	676	2,040	13,630	22,430	11,770	4,920	3,180	64,190
1948	2,730	2,270	1,780	1,350	1,090	1,230	2,840	12,020	10,560	5,110	3,470	1,290	45,740
1949	1,630	1,590	1,020	936	865	956	2,920	12,450	26,720	3,840	2,620	2,270	57,620
1950	2,110	1,330	954	752	837	877	2,330	6,660	14,370	5,960	3,340	2,590	42,310

* Not previously published; estimated on basis of records for other stations on Laramie River.

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					Calendar year	
		Water year ending Sept. 30					Mean	Runoff in acre-feet
		Discharge	Momentary maximum Date	Minimum day	Mean	Runoff in acre-feet		
1904	131, 172	-	-	-	-	-	-	-
1905	172, 469	a1,040	June 9, 1905	-	101	73,000	-	-
1910	286	-	-	-	-	-	-	-
1911	306	-	-	-	85.2	61,700	85.2	61,700
1912	326	-	-	5	103	74,900	103	74,900
1913	356, 469	-	-	10	58.3	42,200	58.6	42,400
1914	469	1,380	June 1, 1914	-	119.9	186,500	118	85,000
1915	469	-	-	-	60.4	43,700	61.2	44,300
1916	436, 469	-	-	-	72.4	452,400	b74.7	b54,200
1917	469	-	-	-	b142	b102,000	b139	b100,000
1918	469	-	-	-	115	83,500	115	83,100
1919	469, 506	-	-	-	44.6	32,300	b42.9	b31,100
1920	506	1,180	June 8, 1920	-	b96.0	b69,700	b96.4	b70,000
1921	469, 526	-	-	-	102	73,800	c104	c75,000
1922	546	417	June 10, 1922	-	c54.0	c39,100	c52.0	c37,700
1923	566	2,240	June 9, 1923	-	c102	c73,700	c106	c76,600
1924	586	1,100	June 15, 1924	-	c90.8	c65,900	c90.7	c65,800
1925	606	335	June 6, 1925	-	c54.8	c39,600	c55.8	c40,400
1926	626	894	May 28, 1926	-	c102	c74,200	c101	c73,000
1927	646	570	May 21, 1927	-	c70.9	c51,200	c71.3	c51,500
1928	666	942	May 31, 1928	-	c89.1	c64,800	c87.6	c65,600
1929	686	780	June 9, 1929	-	b91.8	b65,500	b91.9	b66,600
1930	701	492	May 31, 1930	-	#52.1	#37,700	#53.1	#38,500
1931	(d)	585	May 15, 1931	-	#43.2	#31,200	#42.5	#30,700
1932	(d)	1,100	May 22, 1932	-	#70.7	#51,200	#70.0	#50,800
1933	(d)	1,400	June 1, 1933	-	#74.3	#53,800	#74.6	#54,000
1934	761	195	May 4, 1934	-	#29.1	#21,110	#26.8	#19,440
1935	786	1,060	June 16, 1935	-	#61.4	#44,490	#64.0	#46,320
1936	806	377	June 16, 1936	-	#55.7	#40,430	#54.9	#39,910
1937	826	289	May 15, 1937	-	#38.0	#27,500	#38.4	#27,770
1938	856	690	June 23, 1938	-	#84.5	#61,190	#85.2	#61,660
1939	876	392	June 1, 1939	-	#40.3	#29,200	#38.2	#27,680
1940	896	402	June 16, 1940	-	#51.4	#37,330	#53.5	#38,840
1941	926	628	June 25, 1941	-	#59.4	#43,030	#60.2	#43,620
1942	956	720	June 12, 1942	-	#63.4	#45,900	#61.7	#44,640
1943	976	600	June 26, 1943	-	#82.2	#59,520	#82.0	#59,360
1944	1006	340	May 31, 1944	-	#47.2	#34,280	#46.5	#33,730
1945	1036	405	June 27, 1945	-	#67.9	#49,160	#69.8	#50,500
1946	1056	584	June 18, 1946	-	#87.3	#48,710	#87.1	#48,610
1947	1086	830	June 21, 1947	-	88.7	64,190	92.0	66,600
1948	1116	548	June 4, 1948	-	83.0	45,740	59.2	43,000
1949	1146	815	June 18, 1949	13	79.6	57,620	80.1	57,970
1950	1176	440	June 17, 1950	10	58.4	42,310	-	-

† Corrected.

* Not previously published.

a Maximum observed.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; superseded figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Colorado.

104. McIntyre Creek at Gleneyre, Colo.

Location.--Lat 40°53', long. 105°57', in sec. 32 (revised), T. 11 N., R. 76 W., at Gleneyre, half a mile upstream from mouth.

Drainage area.--47.2 sq mi.

Gage.--Staff gage. Altitude of gage is 7,980 ft (from topographic map).

Extremes.--1904-5: Maximum discharge observed, 460 cfs June 12, 1905 (gage height, 5.0 ft), from rating curve extended above 200 cfs; minimum not determined, probably occurred during period of no gage-height record.

Remarks.--Diversion above station for irrigation.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of McIntyre Creek at Gleneyre, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	86.2	29.9	31.4	-
1905	-	-	-	-	-	-	10.1	98.2	283	52.5	17.0	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	4,070	1,840	1,870	-
1905	-	-	-	-	-	-	601	6,040	15,800	3,230	1,040	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1904	151	a192	June 24, 1904	-	-	-	-	-	-
1905	172	a460	June 12, 1905	-	-	-	-	-	-

* Not previously published.

a Maximum during period June 24 to Sept. 30, 1904.

105. Laramie River near Jelm, Wyo.

Location.--Lat 41°00'10", long. 106°00'50", in SE $\frac{1}{4}$ sec. 15, T. 12 N., R. 77 W., 35 ft downstream from highway bridge, a quarter of a mile north of Colorado-Wyoming State line, half a mile upstream from Johnson Creek, and 4 miles south of Jelm.

Drainage area.--297 sq mi.

Gage.--Water-stage recorder. Datum of gage is 7,683.36 ft above mean sea level, adjustment of 1929. June 22, 1904, to Oct. 31, 1905, staff gage at site three-quarters of a mile upstream at different datum. May 7 to July 13, 1911, staff gage and July 14, 1911, to Sept. 3, 1921, water-stage recorder on downstream side of bridge 35 ft upstream at present datum.

Average discharge.--41 years (1904-5, 1910-50), 166 cfs.

Extremes.--1904-5, 1910-50: Maximum discharge, 4,200 cfs June 9, 1923 (gage height, 4.15 ft); minimum recorded, 5.6 cfs Dec. 2, 1933, but may have been less during winter periods of no gage-height record.

Remarks.--Divisions for irrigation of about 4,600 acres of hay meadows above station. Transbasin diversions from Laramie River and tributaries to Cache la Poudre River and tributaries (see elsewhere in this report).

Cooperation. Records for 1913-14 furnished by the State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	272	101	45.9	-
1905	44.6	40	35	30	25	22	50.1	458	1,160	212	97.8	39.6	184
1906	27.7	-	-	-	-	-	-	-	-	-	-	-	-
1911	a65	a45	a35	a35	a30	a40	a120	a565	792	223	71.4	43.1	a172
1912	68.1	62.3	45	40	45	45	60	*518	*1,510	*547	120	81.7	265
1913	83.3	55.3	35	40	35	50	175	516	441	135	55.3	52.0	140
1914	71.4	55.9	45	40	40	50	115	957	1,340	234	108	37.3	258
1915	71.6	45	28	22	28	30	120	304	477	129	73.1	63.4	116
1916	68.8	50	45	48	48	65	116	528	762	154	97.6	82.4	173
1917	90	80	65	52	50	40	100	470	2,000	875	172	81.3	340
1918	44.5	40	35	35	35	45	87	581	1,170	242	90.7	61.0	208
1919	50	45	45	45	45	50	120	425	282	91.8	54.9	37.8	108
1920	42.6	35	30	30	25	30	50	590	1,390	284	148	75.9	228
1921	59.7	30	40	40	40	50	85	584	1,410	*317	123	62.4	236
1922	49.0	a38	a35	a30	a30	a50	a80	335	499	121	68.6	37.0	a115
1923	51.3	a28	a25	a25	a25	a35	a75	450	1,480	396	101	84.9	a228
1924	76.9	75.9	a48	a45	a40	a50	a160	515	969	189	84.6	60	a192
1925	a75	a60	a50	a40	a35	a45	a70	356	597	152	118	95.3	a125
1926	105	a85	a70	a65	a50	a75	168	843	830	293	96.6	57.3	a229
1927	65.0	50.3	a35	a30	a40	a60	73.8	516	658	214	104	61.7	a159
1928	75.5	a55	a45	a40	a40	a50	89.0	844	880	297	86.0	50.7	a213
1929	57.0	49.7	b40	b35	b35	b45	a120	425	1,260	359	111	97.1	a218
1930	66.4	*40	*25	*15	*15	*20	192	416	449	120	136	61.2	*130
1931	77.5	46.6	32	30	35	39.5	171	304	384	66.5	42.5	33.5	105
1932	54.3	47.2	35	30	30	40	92.6	595	724	158	56.7	32.2	158
1933	44.6	48.6	25	23.3	22.7	35.4	121	257	1,090	146	52.1	49.7	159
1934	44.2	32.0	27.4	31.1	37.3	41.5	108	232	51.3	17.9	29.5	21.9	56.3
1935	34.1	27.6	23.6	25.5	26.9	32.7	44.7	178	1,031	184	57.0	40.5	141

* Revised.

† Corrected.

* Not previously published; estimated on basis of records for stations at Glendevy and Woods. a Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

Monthly and yearly mean discharge, in cubic feet per second, of Laramie River near Jelm, Wyo.--Con.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	48.4	64.8	37.0	34.8	39.4	37.6	192	585	401	99.6	66.9	43.8	138
1937	50.8	55.7	28.3	23.7	25.4	38.0	112	433	406	136	50.3	36.1	117
1938	48.4	39.2	29.3	29.4	39.2	65.8	99.8	615	1,020	198	55.6	78.7	193
1939	58.3	44.1	30.5	26.2	26.2	45.6	98.9	476	319	45.6	31.7	32.0	103
1940	38.6	36.6	24.2	23.5	23.9	33.1	57.9	339	483	213	63.5	50.4	116
1941	61.6	40.6	37.2	32.4	29.4	39.7	60.3	379	478	211	88.5	68.9	128
1942	61.5	56.8	36.5	20.8	22.0	26.2	101	461	934	128	46.3	32.2	162
1943	54.5	48.5	38.5	28.0	31.9	41.2	173	466	839	128	60.5	34.4	162
1944	40.9	41.1	30.7	20.8	20.5	24.7	67.3	303	489	146	63.1	28.7	106
1945	43.2	30.7	28.3	26.5	30.1	30.7	59.6	427	620	296	187	71.1	155
1946	58.3	55.9	41.2	32.0	30.8	44.0	180	394	588	210	93.8	54.9	149
1947	57.6	46.9	40.4	20.0	20.9	28.1	85.1	605	784	340	131	81.6	187
1948	78.2	67.3	55	42	36	39	99.0	593	431	127	80.5	32.7	140
1949	39.3	35.0	30.7	28.7	31.5	42.6	115	516	963	158	70.3	46.3	173
1950	55.1	43.7	30.5	24.2	29.9	51.2	73.9	285	605	151	71.1	69.0	122

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	16,700	6,210	2,730	-
1905	2,740	2,380	2,150	1,840	1,390	1,350	2,980	28,200	69,000	13,000	6,010	2,380	133,000
1906	1,700	-	-	-	-	-	-	-	-	-	-	-	-
1911	a4,000	a2,680	a2,150	a2,150	a1,670	a2,460	a1,140	b34,700	47,100	13,700	4,390	2,580	a125,000
1912	4,180	5,710	2,770	2,460	2,590	2,770	3,570	*31,800	89,900	33,600	7,380	4,860	190,000
1913	5,120	3,290	2,150	2,460	1,940	3,070	10,400	31,700	26,200	8,300	3,400	3,090	101,000
1914	4,390	3,330	2,770	2,460	2,220	3,070	6,840	58,800	79,700	14,400	6,640	2,220	187,000
1915	4,400	2,680	1,720	1,350	1,560	1,840	7,140	18,700	28,400	7,930	4,490	3,770	84,000
1916	4,230	2,980	2,770	2,950	2,780	4,000	6,900	32,500	45,300	9,470	6,000	4,900	125,000
1917	5,530	4,760	4,000	3,200	2,780	2,460	5,950	28,900	119,000	53,900	10,600	4,820	246,000
1918	2,740	2,380	2,150	2,150	1,940	2,770	5,180	35,700	69,600	14,900	5,580	3,830	149,000
1919	3,070	2,680	2,770	2,770	2,500	3,070	7,140	26,100	16,800	5,640	3,580	2,250	78,200
1920	2,620	2,080	1,840	1,840	1,440	1,840	2,980	36,300	82,700	17,500	9,100	4,520	165,000
1921	3,670	1,790	2,460	2,460	2,220	3,070	5,060	35,900	83,900	19,500	7,580	3,710	171,000
1922	3,010	a2,260	a2,150	a1,840	a1,670	a3,070	a4,760	20,600	29,700	7,440	4,220	2,200	a82,900
1923	1,920	a1,670	a1,540	a1,540	a1,390	a2,150	a4,460	27,700	88,100	24,300	6,210	3,860	a165,000
1924	4,730	4,520	a2,950	a2,770	a2,300	a3,070	a9,520	31,700	58,800	11,600	3,970	3,570	a140,000
1925	a4,620	a3,570	a3,070	a2,460	a1,940	a2,770	a4,180	20,700	23,600	9,350	7,260	5,670	a89,200
1926	6,460	a5,060	a4,300	a4,000	a2,780	a4,610	10,000	51,800	49,400	18,000	5,940	3,410	a166,000
1927	4,000	2,990	a2,150	a1,840	a2,220	a3,690	4,390	31,700	39,200	13,200	6,400	3,670	a115,000
1928	4,640	a3,270	a2,770	a2,460	a2,300	a3,070	5,300	51,900	52,400	18,300	5,290	3,020	a155,000
1929	3,500	2,960	b2,660	b2,150	b1,940	b2,770	a7,140	26,100	75,000	20,600	6,820	5,780	a157,000
1930	4,080	*2,380	*1,540	*922	*833	*1,230	11,400	25,600	26,700	7,380	8,360	3,640	*94,100
1931	4,770	2,770	1,970	1,840	1,940	2,430	10,200	18,700	22,800	4,090	2,610	1,980	76,100
1932	3,340	2,610	2,150	1,840	1,730	2,460	5,510	36,600	43,100	9,720	3,490	1,920	115,000
1933	2,740	2,690	1,540	1,430	1,280	2,180	7,200	18,800	64,900	8,960	3,200	2,960	115,000
1934	2,720	1,810	1,690	1,910	1,070	2,550	8,400	14,250	5,050	1,100	1,810	1,310	40,770
1935	2,100	1,840	1,450	1,170	1,600	2,010	2,660	10,840	61,340	11,300	3,500	2,410	102,400
1936	2,980	3,660	2,270	2,140	2,270	2,310	11,430	35,980	23,660	6,120	4,110	2,600	99,930
1937	3,120	3,320	1,740	1,460	1,410	2,330	6,660	26,650	24,190	8,340	3,090	2,150	84,460
1938	2,960	2,330	1,800	1,800	2,180	4,040	5,940	37,800	60,880	12,150	3,420	4,680	139,800
1939	3,580	2,630	1,880	1,610	1,570	2,810	5,880	29,290	18,950	2,800	1,950	1,910	74,860
1940	2,370	2,180	1,490	1,440	1,370	2,030	3,450	20,820	28,720	13,090	3,900	3,000	83,660
1941	3,750	2,420	2,290	1,990	1,630	2,440	3,590	23,290	28,470	12,960	5,440	4,100	92,370
1942	5,010	3,380	2,250	1,280	1,220	1,610	6,010	28,340	55,590	7,850	2,850	1,920	117,300
1943	3,350	2,690	2,350	1,720	1,770	2,530	10,280	26,680	49,900	7,670	3,720	2,040	117,100
1944	2,520	2,450	1,890	1,280	1,180	1,520	4,000	16,610	29,100	9,000	3,880	1,710	77,140
1945	2,660	1,830	1,740	1,630	1,670	1,890	3,550	26,260	36,890	18,210	11,520	4,230	112,100
1946	3,590	3,330	2,530	1,970	1,710	2,710	10,690	24,230	34,990	12,890	5,770	3,270	107,700
1947	3,540	2,790	2,480	1,230	1,160	1,750	5,070	37,180	46,630	20,910	8,040	4,680	135,600
1948	4,310	3,910	2,790	2,070	2,000	2,400	5,890	36,450	25,870	7,800	4,950	3,950	102,000
1949	2,420	2,080	1,890	1,770	1,750	2,820	6,820	31,760	57,300	9,700	4,320	2,760	125,200
1950	3,390	2,600	1,870	1,430	1,680	1,920	4,400	17,550	36,000	9,280	4,370	4,100	86,630

* Revised.

† Corrected.

* Not previously published; estimated on basis of records for stations at Glendevy and Woods.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1904	469, 1440	-	-	-	-	-	-	-	-
1905	172, 469	*a2,060	June 5, 9, 1905	-	164	133,000	-	-	-
1911	306	*a1,500	June 9, 1911	-	b172	b125,000	b175	b127,000	
1912	(c)	*2,690	June 31, 1912	-	263	190,000	262	190,000	
1913	356, 469	2,690	May 31, 1913	-	140	101,000	140	101,000	
1914	386, 469	3,270	June 2, 1914	-	258	187,000	255	185,000	
1915	406, 469	1,280	June 1, 1915	-	116	84,000	118	85,200	

* Not previously published.

a Maximum observed.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c WSP 326, 469, 1440.

Yearly discharge, in cubic feet per second, of Laramie River near Jelm, Wyo.--Continued								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436, 469	1,500	May 10, 1916	-	173	125,000	178	129,000
1917	456, 469	3,590	June 23, 1917	-	340	246,000	330	239,000
1918	469, 476	*1,840	June 13, 1918*	-	206	149,000	207	150,000
1919	469, 506	780	May 26, 1919	-	108	78,200	105	76,200
1920	469, 506	a,540	June 8, 1920	-	228	165,000	229	166,000
1921	469, 526	*d2,350	June 15, 1921	-	236	171,000	b236	b171,000
1922	546	1,020	May 26, 1922	-	b115	b82,900	b111	b80,800
1923	566	4,200	June 9, 1923	-	b228	b185,000	b237	b172,000
1924	586	2,160	June 15, 1924	-	b192	b140,000	b191	b139,000
1925	606	830	June 7, 1925	-	b123	b89,200	b129	b93,800
1926	626	2,230	May 28, 1926	-	b229	b166,000	b220	b157,000
1927	646	1,190	May 22, 1927	-	b159	b115,000	b162	b117,000
1928	666	2,180	May 31, 1928	-	b213	b155,000	b211	b153,000
1929	686	1,960	June 10, 1929	-	b218	b157,000	*218	*156,000
1930	701	1,280	June 1, 1930	-	*130	*94,100	*132	*95,600
1931	716	729	May 18, 1931	-	105	76,100	104	74,900
1932	731	1,610	May 23, 1932	-	158	115,000	156	114,000
1933	746	1,590	June 5, 1933	-	159	115,000	158	114,000
1934	761	416	May 7, 1934	10	56.3	40,770	54.8	39,600
1935	786	1,790	June 14, 1935	13	141	102,400	147	106,300
1936	806	1,130	June 1, 1936	27	138	99,930	136	99,000
1937	826	1,470	July 11, 1937	21	117	84,460	115	83,390
1938	856	1,590	May 30, 1938	24	193	139,800	194	140,800
1939	876	948	June 1, 1939	20	103	74,860	101	72,810
1940	896	888	May 28, 1940	17	116	83,860	119	86,280
1941	926	1,030	May 14, 1941	26	128	92,370	131	94,550
1942	956	1,680	June 13, 1942	16	162	117,300	159	115,300
1943	976	1,540	June 2, 1943	22	162	117,100	159	115,400
1944	1008	876	May 31, 1944	18	106	77,140	105	76,510
1945	1036	1,060	June 5, 1945	18	155	112,100	159	115,300
1946	1056	1,060	June 7, 1946	27	149	107,700	148	107,000
1947	1086	1,530	June 22, 1947	17	187	135,600	192	139,000
1948	1116	1,350	May 23, 1948	-	140	102,000	132	96,150
1949	1146	1,470	June 12, 1949	26	175	126,200	175	126,700
1950	1176	990	June 7, 1950	20	122	88,630	-	-

* Revised.

† Not previously published.

a Maximum observed.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Estimated.

106. Laramie River at Woods Landing, Wyo.1/

Location.--Lat 41°06'40", long. 106°00'40", in sec. 11, T. 13 N., R. 77 W., at Woods Landing, 60 ft downstream from Wood Creek.

Drainage area.--375 sq mi.

Supplemental records available.--Apr. 1 to Nov. 20, 1895, gage heights and discharge measurements only.

Gage.--Staff gage. Altitude of gage is 7,460 ft (from river-profile map). July 1, 1890, to June 30, 1892, Apr. 12, 1896, to Sept. 30, 1900, staff gage at about same site at different datums.

Average discharge.--5 years (1890-91, 1896-1900), 343 cfs.

Extremes.--1890-92, 1896-1900, 1911-12: Maximum discharge observed, 4,500 cfs June 25, 1899 (gage height, 4.65 ft); minimum observed, 17 cfs Sept. 23, 1911.

Remarks.--Natural flow of stream affected by transbasin diversions, diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1890	-	-	-	-	-	-	-	-	-	378	190	82.6
1891	83.6	50	45	40	40	40	100	852	1,140	514	268	162
1892	-	-	-	-	-	-	175	-	-	-	-	-
1896	-	-	-	-	-	-	*181	619	*499	127	94	116
1897	100	50	40	*35	*35	*40	128	1,960	1,560	266	93	65
1898	*50	*40	*35	35	35	45	129	636	969	89	44	40
1899	42	40	35	*35	*35	*40	*100	1,280	3,220	1,250	191	56
1900	65	*50	*45	*40	*40	*50	125	1,940	1,780	111	50	44
1911	-	-	-	-	-	-	-	*632	943	242	77.5	29.6
1912	75.7	*46	-	-	-	-	-	-	-	-	-	-

* Only monthly figure revised; revised daily figures not available.

† Corrected.

* Not previously published; partly estimated on basis of records for other stations on Laramie River.

1/ Published as "at Woods" for 1900.

Monthly and yearly runoff, in acre-feet, of Laramie River at Woods Landing, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1890	-	-	-	-	-	-	-	-	-	23,200	11,700	3,920	-
1891	5,140	2,980	2,770	2,460	2,220	2,460	5,950	52,400	67,800	31,800	16,500	9,640	202,000
1892	-	-	-	-	-	-	10,400	-	-	-	-	-	-
1896	-	-	-	-	-	-	10,800	38,100	72,900	7,810	5,780	6,900	-
1897	6,150	2,980	2,460	*2,150	*1,940	*2,460	7,820	121,000	93,100	18,400	5,750	3,870	*266,000
1898	*3,070	*2,380	*2,150	2,150	1,940	2,770	7,680	39,100	57,700	5,470	2,700	2,580	130,000
1899	2,580	2,380	2,150	*2,150	*1,940	*2,460	*5,950	79,000	192,000	77,000	11,700	3,530	*382,000
1900	4,000	*2,980	*2,770	*2,460	*2,220	*3,070	7,440	119,000	106,000	16,820	3,070	2,620	*262,000
1911	-	-	-	-	-	-	-	*38,800	56,100	14,900	4,770	1,760	-
1912	4,650	*2,730	-	-	-	-	-	-	-	-	-	-	-

* Only monthly figure revised; revised daily figures not available.

† Corrected.

‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1890	469	-	-	-	-	-	-	-
1891	469	-	-	-	-	-	-	-
1892	469	a1,500	June 9, 1891	-	279	202,000	-	-
1896	(b), 469	a2,170	May 30, 1896	-	-	-	-	-
1897	(c)	a3,420	May 25, 1897	-	*367	*266,000	*362	*262,000
1898	(d), 469	a1,570	May 26, 1898	-	180	130,000	178	129,000
1899	(e)	f4,500	June 25, 1899	-	*528	*382,000	*532	*385,000
1900	(g)	a4,000	May 31, 1900	-	*362	*262,000	-	-
1911	306	f1,650	June 17, 1911	17	-	-	-	-

* Revised.

a Maximum daily.

b 18th Ann. Rept., Pt. 4.

c 19th Ann. Rept., Pt. 4.

d 20th Ann. Rept., Pt. 4.

e 21st Ann. Rept., Pt. 4.

f Maximum observed.

g 22d Ann. Rept., Pt. 4.

107. Laramie River and Pioneer Canal near Woods, Wyo.

Location.--Lat 41°08'30", long. 105°58'40", in E½ sec. 36, T. 14 N., R. 77 W., 100 ft upstream from diversion dam for Pioneer Canal, 2.2 miles downstream from Fox Creek, and 2.5 miles (revised) northeast of Woods.

Drainage area.--418 sq mi.

Gage.--River: Water-stage recorder and concrete control. Datum of gage is 7,388.99 ft above mean sea level, datum of 1929. Apr. 16 to Nov. 15, 1912, staff gage and Nov. 16, 1912, to Sept. 22, 1915, water-stage recorder 90 ft downstream between dam crest and canal headgates at datum 1.00 ft higher. Sept. 23, 1915, to Sept. 30, 1924, Apr. 19 to Sept. 30, 1927, Apr. 11, 1932, to July 13, 1950, water-stage recorder 50 ft downstream; prior to Oct. 1, 1935, at datum 1.00 ft higher.

Canal: Water-stage recorder 1½ miles downstream from headgates. Altitude of gage is 7,380 ft (from river-profile survey). Apr. 16, 1912, to Apr. 10, 1923, chain gage; Apr. 11, 1923, to Sept. 30, 1924, Apr. 19 to June 9, 1927, water-stage recorder; and June 10 to Sept. 30, 1927, staff gage at same site at different datum. Apr. 11, 1932, to May 8, 1938, staff gage at same site and datum.

Average discharge.--32 years (1912-24, 1927, 1931-50), 191 cfs.

Extremes.--1912-24, 1927, 1931-50: Maximum combined discharge, 5,060 cfs June 10, 1923, (river discharge by computation of peak flow over dam); minimum combined discharge not determined.

Remarks.--Pioneer Canal diverts from left bank of the river at diversion dam for irrigation downstream. The record contained herein is the combined flow of the river and canal. Diversions above station for irrigation of about 11,000 acres, part of which is above station and part below. Three small reservoirs above station in Wyoming (total adjudication about 626 acre-ft per year) for irrigation, stock water, and domestic use. (See elsewhere in this report for diversions from Laramie River and tributaries to Cache la Poudre River and tributaries.)

Cooperation.--Records for January to December 1913, furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second, of Laramie River and Pioneer Canal near Woods, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	6501	580	559	128	86.5	-
1913	104	89.9	37.6	a43.1	a42.4	a53.6	a213	a623	a447	a111	a50.9	a50.8	155
1914	†81.8	a61.8	a52.8	b46.2	b47.0	b54.6	b130	b1,050	b1,330	b222	b65.9	b56.4	†284
1915	†75.9	50.2	30.2	24.8	32.6	35.4	132	332	540	140	64.5	63.0	c127
1916	85.1	51.5	48.5	53.6	54.9	74.1	149	691	801	224	125	95.1	203
1917	105	86.7	70.9	59.4	54.6	45.3	128	616	2,370	893	182	69.7	389
1918	d50	e50.5	e32.5	e48.8	e54	e100	106	8511	3,390	246	78.0	72.7	e257
1919	54.7	d42	d40	e32.5	d32.5	d40	134	463	292	75.9	57.2	36.4	d109
1920	d16.5	d25	e32.5	d40.5	e43.5	d50	d135	1,010	1,590	328	138	78	d290
1921	61.0	78.7	48	45	45	60	101	881	1,590	312	154	56.2	286
1922	62.0	51.5	d37	d25	d25	d67.6	132	490	657	114	64.7	34.9	d146
1923	27.6	30	30	30	30	30	85	524	1,750	437	137	80.8	264
1924	100	d58	d50	d50	d45	d50	d178	802	1,220	206	59.6	44.6	d238
1927	†75	†55	†38	†34	†45	†66	†90	772	766	253	77.5	70.4	†196
1932	†60	†52	†38	†34	†33	†45	†163	871	867	184	66.1	28.7	†204
1933	43.9	†40.9	†35	†35	†38	†55	†95.5	425	1,310	161	52.7	46.0	†194
1934	36.8	32	30	34	40	†50.1	141	287	62.9	20.2	26.0	15.1	†64.9
1935	33.8	†18.2	†10	†10	†15	†20	†4.3	308	1,217	204	60.1	38.6	†166
1936	42.6	†58.7	†35	†35	†35	†40	†259	793	458	108	85.8	48.4	†167
1937	39.0	†54.0	†25	†25	†25	†36.0	136	579	495	108	53.8	34.8	†139
1938	47.3	†40.4	†30	†30	†30	†50.6	152	899	1,200	215	67.5	112	†240
1939	66.4	†54.6	†40	†35	†35	†89.4	161	561	315	52.8	40.6	30.6	†124
1940	37.1	†35.5	†30	†25	†25	†38.0	87.0	399	471	219	59.9	50.3	†123
1941	63.2	†41.2	†35	†30	†30	†50	88.3	467	470	209	86.1	43.1	†137
1942	75.3	†68.1	†45	†30	†30	†40	†164	640	1,107	152	48.1	33.3	†203
1943	52.9	†40.8	†40	†30	†30	†40	275	543	876	140	54.8	32.3	†179
1944	35.5	40	†30	†20	†20	†30	†70.3	386	511	157	66.2	27.3	†116
1945	46.0	†26	†15	†25	†35	†45	†101	681	741	320	198	67.4	†192
1946	57.6	†57.9	†40	†40	†40	†60	240	467	623	217	92.3	52.3	†166
1947	†42.1	†40	†35	†15	†20	†30	129	809	930	392	143	76.3	†223
1948	76.2	†70.7	†60	†50	†45	†50	†170	805	487	135	80.7	27.7	†172
1949	†50	†45	†35	†45	†45	†80	†178	744	1,128	178	66.0	49.5	†223
1950	57.2	†50	†30	†25	†40	†60	109	458	758	167	73.0	73.6	†158

† Corrected; differs from figure published in report of State engineer of Wyoming.

* Not previously published; estimated on basis of records for other stations on Laramie River.

a From reports of State engineer of Wyoming.

b Daily discharges from files of Geological Survey

c Corrected.

d Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	39,900	94,000	34,400	7,850	4,760	-
1913	6,400	4,160	2,510	a2,850	a2,350	a3,500	a12,700	a38,300	a26,800	a5,830	a3,130	a3,020	112,000
1914	†3,800	†3,680	†3,250	b2,840	b2,610	b3,380	b7,740	b64,400	b79,200	b15,700	b4,050	b2,170	191,000
1915	4,660	2,990	1,960	1,520	1,810	2,180	7,860	20,400	32,100	8,610	3,970	5,750	c91,700
1916	4,000	3,060	2,980	3,300	3,160	4,560	8,870	42,500	47,700	13,800	7,990	5,680	147,000
1917	6,460	5,160	4,360	3,850	3,030	2,790	7,500	37,900	41,000	54,900	11,200	4,150	282,000
1918	d3,070	e3,000	e2,000	e3,000	e3,000	e6,200	6,310	52,300	82,700	15,100	4,800	4,330	e186,000
1919	3,360	e2,500	d2,460	e2,000	d1,800	d2,460	7,970	28,500	17,400	4,670	3,520	2,280	d79,900
1920	d1,010	d1,490	d2,000	d2,490	e2,500	d3,070	d8,030	62,100	94,600	20,200	8,500	4,640	d211,000
1921	3,750	4,680	2,950	2,770	2,500	3,690	6,010	54,200	94,600	19,200	9,470	5,340	207,000
1922	3,810	3,900	d2,280	d1,540	d1,390	d4,160	7,860	30,100	39,100	7,010	3,980	2,060	d108,000
1923	1,700	1,790	1,840	1,840	1,870	1,840	5,060	32,000	33,000	26,900	8,420	4,810	191,000
1924	6,150	d3,450	d3,070	d3,070	d2,580	d3,070	d10,680	49,300	72,600	12,700	3,660	2,650	d173,000
1927	†4,610	†3,270	†2,340	†2,090	†2,500	†4,080	†5,350	47,500	45,600	15,600	4,770	4,190	†142,000
1932	†3,690	†3,090	†2,340	†2,090	†1,900	†2,770	†9,700	53,600	51,600	11,300	4,060	1,710	†148,000
1933	2,700	†2,430	†2,150	†2,110	†3,380	†5,560	26,100	78,000	9,900	5,240	2,740	1,400	†140,000
1934	2,270	†1,800	†1,840	†2,090	†2,220	†3,080	8,420	17,670	3,740	12,560	3,700	2,300	†120,000
1935	2,080	†1,080	†615	†615	†930	†1,230	3,630	18,920	72,440	12,560	3,700	2,300	†120,000
1936	2,620	†3,490	†2,150	†2,150	†2,010	†2,460	†15,410	48,770	27,280	6,640	5,280	2,680	†121,000
1937	2,400	†3,210	†1,540	†1,540	†1,390	†2,210	8,110	35,610	29,480	9,840	3,310	2,070	†100,700
1938	2,910	†2,400	†1,840	†1,840	†1,670	†3,110	9,040	55,260	71,380	13,200	4,150	6,650	†173,500
1939	4,090	†3,250	†2,460	†2,150	†1,940	†5,500	9,570	34,520	18,740	3,250	2,500	1,820	†89,790
1940	2,280	†2,110	†1,840	†1,540	†1,440	†2,340	5,180	24,560	28,050	13,450	3,680	2,990	†89,460
1941	3,880	†2,450	†2,150	†1,840	†2,220	†3,070	5,260	29,970	27,970	12,870	5,290	2,560	†99,530
1942	4,630	†4,050	†2,770	†1,840	†1,670	†2,460	9,760	39,340	65,860	9,360	2,960	1,980	†146,700
1943	3,250	†2,410	†2,460	†1,840	†1,670	†2,460	16,230	33,390	52,150	6,610	3,370	1,920	†129,800
1944	†2,160	†2,380	†1,840	†1,230	†1,150	†1,840	†4,180	23,750	30,430	9,680	4,070	1,620	†84,530
1945	2,830	†1,550	†920	†1,540	†1,940	†2,770	†6,000	41,880	44,080	19,650	12,170	4,020	†139,300
1946	3,540	†3,450	†2,460	†2,460	†2,220	†3,690	14,280	28,720	37,040	13,340	5,680	3,110	†120,000
1947	†2,380	†2,380	†2,150	†920	†1,110	†1,840	7,680	49,760	55,370	24,100	8,770	4,540	†161,200
1948	4,680	†4,200	†3,690	†3,070	†2,590	†3,070	10,100	49,500	29,000	8,330	4,960	1,850	†124,800
1949	†3,070	†2,680	†2,150	†3,570	†4,880	†3,690	10,800	45,720	67,090	10,380	4,060	2,950	†161,400
1950	4,130	†2,980	†1,840	†1,540	†2,220	†3,690	6,480	28,720	43,940	10,290	4,490	4,580	†114,100

† Corrected; differs from figure published in reports of State engineer of Wyoming.

* Not previously published; estimated on basis of records for other stations on Laramie River.

a From reports of State engineer of Wyoming.

b Daily discharges from files of Geological Survey

c Corrected.

d Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second, of Laramie River and Pioneer Canal near Woods, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	326	a2,480	June 3, 1912	-	-	-	-	-
1913	(b), 469	-	-	-	155	112,000	152	110,000
1914	(c), 469	-	-	28	+264	191,000	262	+190,000
1915	406	-	-	19	+127	+91,700	127	92,200
1916	436	1,070	June 13, 1916	14	203	147,000	211	153,000
1917	456	3,850	June 22, 1917	35	589	282,000	379	274,000
1918	476	2,120	June 12, 1918	-	d257	d186,000	d257	d186,000
1919	506	868	May 29, 1919	-	e109	e78,900	e104	e75,100
1920	506	2,660	June 9, 1920	-	e290	e211,000	e300	e218,000
1921	469, 526	2,910	June 16, 1921	-	286	207,000	e263	e205,000
1922	546	1,320	May 30, 1922	-	e146	e106,000	e142	e103,000
1923	566	5,060	June 10, 1923	10	264	191,000	e273	e198,000
1924	586	2,180	June 15, 1924	-	e238	e173,000	-	-
1927	646	1,560	May 22, 1927	-	+196	+142,000	-	-
1932	731	1,910	May 22, 1932	-	+204	+148,000	+201	+146,000
1933	746	2,160	June 5, 1933	-	+194	+140,000	+192	+139,000
1934	761	474	May 9, 1934	-	+64.9	47,000	+61.8	+44,730
1935	786	2,330	June 16, 1935	-	+166	+120,200	+172	+124,700
1936	806	1,270	June 1, 1936	-	+167	+121,100	+165	+120,000
1937	826	1,200	July 11, 1937	-	+139	+100,700	+139	+100,700
1938	856	2,180	May 30, 1938	-	+240	+173,500	+243	+176,100
1939	876	916	June 2, 1939	-	+124	+89,790	+119	+86,220
1940	896	891	May 28, 1940	-	+123	+89,460	+126	+91,710
1941	926	1,240	May 14, 1941	-	+137	+99,530	+142	+102,500
1942	956	2,180	June 13, 1942	-	+203	+146,700	+198	+143,300
1943	976	1,700	June 2, 1943	-	+179	+129,800	+177	+128,000
1944	1006	1,000	May 31, 1944	-	+116	+84,330	+115	+83,250
1945	1036	1,380	June 5, 1945	-	+192	+139,300	+198	+143,500
1946	1056	1,150	June 7, 1946	-	+166	+120,000	+163	+117,700
1947	1086	2,040	June 22, 1947	-	+223	+161,200	+230	+166,600
1948	1116	1,750	May 23, 1948	-	+172	+124,800	+166	+120,200
1949	1146	1,550	June 7, 1949	-	+223	+161,400	+224	+162,500
1950	1176	1,410	May 25, 1950	-	+158	+114,100	-	-

† Corrected.

* Not previously published.

a Maximum observed.

b From reports of State engineer of Wyoming.

c Daily discharges from files of Geological Survey.

d From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

e Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Note.--Momentary maximum discharge not previously published, former publication of maximum discharge was for River and Canal separately.

108. Pioneer Canal near Woods, Wyo.

Location--Lat 41°09'05", long. 105°57'30", in SE $\frac{1}{4}$ sec. 30, T. 14 N., R. 76 W., at bridge $\frac{1}{2}$ miles (revised) downstream from headgate and 4 miles northeast of Woods.

Gage--Water-stage recorder. Altitude of gage is 7,380 ft (from river-profile survey).

Prior to Apr. 11, 1923, chain gage and Apr. 11, 1923, to Sept. 30, 1924, Apr. 19 to June 11, 1927, water-stage recorder, June 12 to Sept. 30, 1927, staff gage at same site at different datum. Apr. 11, 1932, to May 8, 1938, staff gage at same site and datum.

Extremes--1912-24, 1927, 1932-50: Maximum daily discharge, 618 cfs June 19, 1917; practically no flow at times, headgate leakage.

Remarks--Pioneer Canal diverts from left bank of Laramie River $\frac{1}{2}$ miles upstream from gage for irrigation in the vicinity of Laramie.

Monthly and yearly diversions in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	13,600	32,100	13,600	3,720	-	-
1913	-	-	-	200	361	492	1,730	22,200	11,100	2,890	664	1,110	-
1914	1,140	119	61	-	-	-	-	3,340	18,500	4,250	1,510	1,060	-
1915	236	-	-	-	-	-	-	4,790	5,890	3,090	2,410	1,680	-
1916	633	119	123	123	115	298	3,430	4,430	6,190	4,600	4,120	2,860	27,000
1917	3,820	1,330	123	123	111	123	321	9,720	36,800	9,530	3,250	797	66,000
1918	-	-	-	-	-	-	-	238	1,390	5,490	2,320	1,760	119
1919	123	-	-	-	-	-	-	238	4,440	4,080	2,960	2,220	1,240
1920	-	-	-	-	-	-	-	-	7,500	16,400	8,060	4,850	1,020
1921	369	357	369	-	-	553	595	2,390	7,560	5,340	2,720	1,260	-
1922	910	1,060	1,170	1,170	1,060	1,220	3,230	3,490	5,510	3,500	2,790	1,400	26,500
1923	799	774	1,370	1,540	1,390	1,540	1,770	7,750	24,300	7,500	4,870	1,900	55,500
1924	910	-	-	-	-	-	-	972	5,510	6,820	2,790	1,800	-
1927	-	-	-	-	-	-	-	2,530	7,090	7,870	1,110	1,070	-
1932	-	-	-	-	-	-	-	2,020	9,100	4,110	3,470	1,610	-
1933	1,620	-	-	-	-	-	-	2,280	8,030	3,790	2,900	1,850	-
1934	-	-	-	-	-	-	-	4,530	1,490	712	990	708	-
1935	1,430	-	-	-	-	-	526	3,490	5,640	4,280	2,940	1,690	-

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	5,140	6,630	4,180	3,400	2,480	-
1937	1,150	-	-	-	-	-	292	2,800	4,800	4,330	3,010	1,780	-
1938	1,424	-	-	-	-	-	179	3,460	7,520	5,190	3,410	2,350	-
1939	1,380	-	-	-	-	-	131	5,020	4,630	3,050	2,360	1,540	-
1940	1,650	-	-	-	-	-	965	4,940	4,980	4,290	3,360	2,030	-
1941	1,590	-	-	-	-	-	149	4,140	4,550	4,460	3,630	2,050	-
1942	1,390	-	-	-	-	-	-	1,890	8,430	5,160	2,810	1,940	-
1943	1,910	-	-	-	-	-	-	4,510	9,480	5,200	3,240	1,560	-
1944	-	-	-	-	-	-	-	4,030	4,960	4,080	3,800	1,610	-
1945	648	-	-	-	-	-	-	4,550	5,880	5,280	3,240	2,490	-
1946	1,490	-	-	-	-	-	1,900	4,430	7,060	4,670	3,870	2,790	-
1947	-	-	-	-	-	-	655	5,670	12,320	10,260	3,480	2,300	-
1948	1,390	-	-	-	-	-	-	10,940	11,740	3,950	3,980	1,640	-
1949	-	-	-	-	-	-	-	4,730	27,410	6,280	3,910	2,590	-
1950	2,110	-	-	-	-	-	202	3,610	9,520	4,980	4,000	2,410	-

109. Laramie River at Laramie, Wyo.

Location.--Lat 41°19'40" long. 105°36'30", in SW 1/4 sec. 29, T. 16 N., R. 73 W., 1.2 miles northwest of City Hall in Laramie and 5 miles downstream from Fivemile Creek.

Drainage area.--1,140' sq mi, approximately.

Gage.--Wire-weight gage. Altitude of gage is 7,125 ft (from river-profile survey). Prior to Apr. 10, 1936, chain gage 1.4 miles upstream at different datum. Apr. 10, 1936, to May 21, 1949, chain gage at same site and datum.

Extremes.--1933-50: Maximum discharge observed, 1,810 cfs June 15, 1942 (gage height, 5.06 ft); minimum daily, 0.1 cfs Sept. 7-9, 1950.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation of about 53,000 acres above station and return flow from irrigated areas.

Monthly mean discharge, in cubic feet per second

Year	Apr.	May	June	July	Aug.	Sept.
1933	*61	155	930	140	15.4	14.4
1934	57.1	89.4	18.3	8.19	6.36	2.57
1935	23.2	103	857	111	28.6	9.64
1936	*98.2	391	234	48.7	38.8	7.07
1937	126	293	377	101	17.2	7.83
1938	97.0	536	984	145	13.3	48.0
1939	128	266	184	10.0	2.09	1.20
1940	11.9	143	282	143	17.6	12.9
1941	62.7	230	300	147	41.0	17.7
1942	106	467	984	114	15.7	8.20
1943	187	350	567	95.3	11.3	3.57
1944	71.2	160	339	101	14.7	4.97
1945	65.9	333	559	232	178	38.8
1946	117	280	415	165	45.9	23.9
1947	117	453	664	200	109	30.7
1948	140	398	219	65.8	28.1	8.07
1949	128	*434	*706	77.7	*22.9	*12
1950	51.3	177	389	83.5	17.5	22.1

* Not previously published; partly estimated on basis of records for other stations on Laramie River.

Monthly runoff, in acre-feet

Year	Apr.	May	June	July	Aug.	Sept.
1933	*3,630	9,530	55,300	8,610	947	857
1934	3,400	5,500	1,090	503	391	153
1935	1,380	6,300	51,000	6,800	1,760	574
1936	*5,840	24,020	13,930	2,990	2,390	421
1937	7,470	18,030	22,460	6,230	1,060	466
1938	5,770	32,940	53,220	8,920	816	2,850
1939	7,640	16,330	10,950	615	128	71
1940	706	8,610	16,610	8,770	1,080	770
1941	3,730	14,160	17,840	9,060	2,520	1,060
1942	6,290	28,700	58,560	7,020	964	488
1943	11,140	21,490	33,730	5,860	697	212
1944	4,230	9,860	20,160	6,190	902	296
1945	3,920	20,480	33,270	14,260	10,970	2,310
1946	6,980	17,200	24,700	10,160	2,820	1,420
1947	6,990	27,870	39,530	12,320	6,690	1,830
1948	8,360	24,440	13,020	4,040	1,730	480
1949	7,630	26,700	42,030	4,780	*1,410	*714
1950	3,050	10,870	23,150	5,140	1,070	1,310

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second, of Laramie River at Laramie, Wyo.

Daily discharge, in cubic feet per second, of Laramie river at Laramie, Wyo.								
Year	W.S.P. no.	The season				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	746	1,350	June 7, 1933	6.6	-	-	-	-
1934	761	182	May 11, 1934	1.5	-	-	-	-
1935	786	1,660	June 18, 1935	4.6	-	-	-	-
1936	806	640	June 1, 1936	5.1	-	-	-	-
1937	826	757	May 31, 1937	5.8	-	-	-	-
1938	856	1,330	June 1, 1938	3.1	-	-	-	-
1939	876	548	June 3, 1939	3.6	-	-	-	-
1940	896	486	June 4, 1940	3.5	-	-	-	-
1941	926	512	June 27, 1941	13	-	-	-	-
1942	956	1,810	June 15, 1942	6.0	-	-	-	-
1943	976	1,580	June 3, 1943	2.4	-	-	-	-
1944	1006	516	June 12, 1944	4.2	-	-	-	-
1945	1036	885	June 8, 1945	20	-	-	-	-
1946	1056	860	June 20, 1946	17	-	-	-	-
1947	1086	1,460	June 24, 1947	19	-	-	-	-
1948	1116	825	May 25, 1948	5.6	-	-	-	-
1949	(a)	1,240	June 15, 1949	-	-	-	-	-
1950	1176	755	May 26, 1950	.1	-	-	-	-

a From files of Geological Survey.

110. Laramie River at Two Rivers, Wyo.

Location.--Lat 41°28'20", long. 105°43'30", in SW $\frac{1}{4}$ sec. 5, T. 17 N., R. 74 W., at old Two Rivers post office, 0.6 mile (revised) upstream from Little Laramie River, and 14 miles northwest of Laramie.

Drainage area.--1,290 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 7,058.85 ft above mean sea level, datum of 1929.

Apr. 16, 1909, to June 17, 1910, staff gage in the vicinity of present gage at about the same datum.

May 6, 1911, to Oct. 31, 1912, staff gage 45 ft upstream at datum 0.74 ft lower.

Apr. 8, 1913, to Oct. 31, 1914, water-stage recorder about 300 ft downstream at datum 0.74 ft lower.

Apr. 21, 1915, to Apr. 30, 1920, water-stage recorder 45 ft upstream at present datum.

Average discharge.--37 years (1908-27, 1932-50), 122 cfs.

Extremes.--1908-27, 1932-50: Maximum discharge, 3,930 cfs June 13, 1923 (gage height, 7.48 ft), from rating curve extended above 2,500 cfs; no flow Sept. 22-25, 1911, Aug. 17 to Sept. 6, Sept. 9-22, 1939.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions above station for irrigation of about 56,000 acres, and return flow from irrigated areas.

Cooperation.--Records for 1909, 1910, 1913, not previously published by Geological Survey, furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	a59	a63	a48	a41	a45	a45	a113	+342	+1,750	b668	+145	+165	c293
1910	a68	c60	c45	c40	c40	c45	c100	c236	b167	b12	b8	b8	c62.4
1911	a13	a39	a41	a41	a40	a41	c109	291	473	61.1	8.0	7.7	c96.7
1912	23	a60	a41	a41	a38	a42	a111	180	826	272	108	29.9	a147
1913	69.7	a68	a33	a42	a38	a44	a185	b113	b134	b40.8	+27.4	b64.0	a71.3
1914	51.3	a52.4	a42	a41	a40	a59	a161	589	790	180	81.9	60.7	a177
1915	174	a42	a41	a24	a29	a33	a118	136	276	79.4	30.2	26.7	a84.1
1916	68.8	a67	a33	a49	a52	a57	a84	a260	371	95.0	57.5	a34	a102
1917	a24	a34	a41	a57	a54	a65	a168	517	1,870	894	137	56	a326
1918	a49	a50	a33	a49	a54	a114	a168	523	1,180	239	55.2	26.3	a211
1919	a49	a50	a33	a24	a18	a33	a101	a195	a67	a8.1	6.7	4.5	a49.3
1920	a7	a10	a13	a16	a17	a33	a84	499	1,260	207	84.0	83.0	a191
1921	76.7	a67	a57	a49	a54	a68	90.4	480	1,510	278	140	52.9	a243
1922	31.5	a26.9	a8	a8	a9	a16	81.2	214	409	64.8	8.3	2.0	73.2
1923	5	a8	a8	a16	a18	a33	a50	a310	1,200	389	118	107	a188
1924	a49	a34	a33	a24	a26	a33	a134	620	848	87.0	14	14	a180
1925	113	a50	a24	a16	a27	a32.5	35.9	84.3	207	80.9	69.5	51.0	a66.1
1926	88.9	75.8	a49	a16	a27	a33	a90.8	787	924	254	66.9	19.7	a203
1927	25.2	44.3	a16	a10	a13	a23	a67	415	438	119	80.7	35.8	a108

† Corrected, supersedes figure published in reports of State engineer of Wyoming.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly mean discharge, in cubic feet per second, of Laramie River at Two Rivers, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	*15	*25	*20	*20	*20	*30	*40	*87.8	856	118	16.8	11.7	*104
1934	13.8	24.3	*15	*15	*15	*20	*25	51.1	13.9	4.92	3.71	1.83	*17.0
1935	1.16	2.19	15.2	21.0	26.2	29.4	14.6	56.6	762	105	22.3	5.31	87.7
1936	7.94	31.3	*15	*15	*15	*35.5	88.3	325	228	35.6	32.9	5.45	*69.6
1937	10.7	39.5	19.3	12.8	13.6	38.8	125	249	361	119	16.9	7.84	84.5
1938	24.2	27.5	34	32	40	81.3	113	446	924	172	29.6	63.6	165
1939	37.8	54.9	52.5	43.3	35.8	86.7	132	234	146	11.6	1.47	.22	69.9
1940	1.85	7.67	16.7	11.4	8.56	31.4	8.52	90.3	230	129	16.1	12.9	47.4
1941	32.1	22.6	44	33	42	62	45.7	170	260	139	36.1	15.6	75.3
1942	31.8	46.4	44.3	30.2	23.2	38.7	97.8	418	871	105	13.7	2.99	143
1943	22.9	30	40	28	23	58.1	137	286	520	104	9.97	3.33	105
1944	6.85	42.6	32	30	28	38	52.7	80.5	277	79.0	20.5	4.77	57.5
1945	8.16	8.55	6.7	14	21	28	75.9	258	499	242	175	41.5	115
1946	33.0	46.5	28	35	65	86.2	87.1	231	337	136	47.5	27.0	96.5
1947	38.3	62.2	54.8	24.2	37.0	53.4	107	384	642	225	111	38.9	149
1948	48.4	70.5	60.5	49.5	46	55	140	303	175	65.9	29.6	7.84	87.7
1949	12.8	39.0	30	40	40	55	125	360	628	88.8	23.6	15.4	121
1950	27.0	59.6	30	27	43	63	41.1	128	339	99.9	29.4	39.9	77.1

* Not previously published; estimated on basis of records for other stations on Laramie River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	a3,620	a3,740	a2,940	a2,500	a2,500	a2,750	a6,720	*21,000	*104,000	b1,900	*8,920	*9,920	c210,000
1910	*4,200	c3,570	c2,770	c2,460	c2,220	c2,770	c5,950	a14,500	b9,950	b758	b522	b468	c50,100
1911	a800	a2,300	a2,500	a2,500	a2,200	a2,500	a6,500	17,900	28,100	3,760	492	458	c70,000
1912	1,410	a3,600	a2,500	a2,500	a2,200	a2,600	a6,580	11,100	49,200	16,700	6,640	1,780	a107,000
1913	4,290	a4,020	a2,000	a2,600	a2,100	a2,710	a11,000	b6,950	b7,970	b2,510	*1,680	b3,810	a51,600
1914	3,150	a3,120	a2,600	a2,500	a2,200	a3,600	a8,000	36,200	47,000	11,100	5,040	3,610	a128,000
1915	10,700	a2,500	a2,500	a1,500	a1,600	a2,000	a7,000	8,360	16,400	4,880	1,860	1,590	a60,900
1916	4,230	a4,000	a2,000	a3,000	a3,000	a3,500	a5,000	a18,000	22,100	5,840	3,540	a2,000	a74,200
1917	a1,500	a2,000	a2,500	a3,500	a3,000	a4,000	a10,000	31,800	11,000	55,000	8,420	3,330	a236,000
1918	a3,000	a3,000	a2,000	a3,000	a3,000	a7,000	a10,000	32,200	70,200	14,700	3,390	1,560	a153,000
1919	a3,000	a3,000	a2,000	a1,500	a1,000	a2,000	a6,000	a12,000	a4,000	a500	412	268	a33,700
1920	a400	a600	a800	a1,000	a1,000	a2,000	a5,000	30,700	75,000	12,700	5,160	4,940	a139,000
1921	4,720	a4,000	a3,500	a3,000	a3,000	a4,200	5,380	29,500	89,800	17,100	8,610	3,150	a176,000
1922	1,940	a1,600	a500	a500	a500	a1,000	4,830	13,200	24,300	3,980	510	119	a53,000
1923	507	a500	a500	a1,000	a1,000	a2,000	a3,000	a19,000	71,400	23,900	7,260	6,370	a136,000
1924	a3,000	a2,000	a2,000	a1,500	a1,500	a2,000	a8,000	38,100	50,500	5,350	861	833	a116,000
1925	6,950	a3,000	a1,500	a1,000	a1,500	a2,000	2,140	5,180	12,300	4,970	4,270	3,030	a47,800
1926	5,470	4,510	a3,000	a1,000	a1,500	a2,000	a5,400	48,400	55,000	15,600	4,110	1,170	a147,000
1927	1,550	2,640	a1,000	a614	a720	a1,410	a3,980	25,500	26,100	7,320	4,960	2,130	a77,900
1933	*922	*1,490	*1,230	*1,230	*1,100	*1,840	*2,380	*5,400	50,900	7,260	1,030	696	*75,500
1934	848	1,450	*922	*922	*833	*1,230	*1,490	3,140	830	303	228	109	*12,300
1935	71	131	956	1,290	1,460	1,810	870	3,460	45,340	6,450	1,370	316	63,520
1936	488	1,860	*922	*922	*863	*2,180	5,260	19,960	13,550	2,190	2,020	324	*50,540
1937	659	2,350	1,190	787	754	2,390	7,430	15,310	21,480	7,290	1,040	467	61,150
1938	1,490	1,630	2,090	1,970	2,220	5,000	6,710	27,450	55,010	10,590	1,820	3,790	119,800
1939	2,330	3,260	3,230	2,660	1,980	5,330	7,860	14,420	8,700	714	91	13	50,590
1940	113	456	1,150	698	492	1,930	507	5,560	13,670	7,930	1,110	765	34,380
1941	1,970	1,340	2,710	2,030	2,330	3,810	2,720	10,450	15,480	8,530	2,220	927	54,520
1942	1,960	2,760	2,720	1,850	1,290	2,380	5,820	25,700	51,820	6,430	843	178	105,800
1943	1,410	1,790	2,460	1,720	1,290	3,570	8,180	17,580	30,910	6,370	613	198	76,080
1944	421	2,530	1,970	1,840	1,610	2,340	3,130	4,950	16,510	4,860	1,260	284	41,700
1945	502	509	412	861	1,170	1,720	4,520	15,890	29,720	14,860	10,750	2,470	85,580
1946	2,030	2,770	1,720	2,150	3,610	5,300	5,180	14,220	20,030	8,350	2,920	1,610	69,890
1947	2,350	3,700	3,370	1,490	2,050	3,280	6,390	23,610	38,220	13,840	7,270	2,310	107,900
1948	2,980	4,200	3,720	3,040	2,650	3,380	8,320	18,610	10,410	4,050	1,820	467	63,650
1949	798	2,320	1,840	2,460	2,220	3,580	7,450	22,160	37,400	5,460	1,460	914	87,840
1950	1,660	3,550	1,840	1,660	2,390	3,870	2,450	7,860	20,190	6,140	1,810	2,380	55,800

† Corrected; supersedes figure published in reports of State engineer of Wyoming.

* Not previously published; estimated on basis of records for other stations on Laramie River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of Laramie River at Two Rivers, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	(a)	-	-	-	b293	b210,000	b302	b219,000
1910	(a)	-	-	-	b62.4	b50,100	b124	b89,500
1911	306	*c740	June 18, 1911	0	b96.7	b70,000	b99.3	b71,900
1912	326	*c1,360	June 12,13,1912	-	d147	d107,000	d152	d110,000
1913	(a)	-	-	-	d71.3	d51,600	d89.3	d50,200
1914	386	-	-	-	d177	d128,000	d186	d135,000
1915	406	400	June 4, 1915	-	d84.1	d60,900	d76.5	d55,400
1916	436	566	June 9, 1916	-	d102	d74,200	d96.4	d70,000
1917	456, 469	2,560	June 22, 1917	-	d326	d236,000	d329	d238,000
1918	476	1,850	June 16, 1918	-	d211	d153,000	d211	d153,000
1919	506	-	-	2	d49.3	d35,700	d40.7	d29,500
1920	506	*2,030	June 12, 1920	-	d191	d139,000	d207	d150,000
1921	526	2,340	June 17, 1921	-	d243	d176,000	d232	d168,000
1922	546	665	June 1, 1922	-	d73.2	d53,000	d69.3	d50,200
1923	566	3,930	June 13, 1923	-	d188	d136,000	d196	d142,000
1924	586	1,610	June 17, 1924	-	d160	d116,000	d165	d120,000
1925	606	500	June 8, 1925	-	d66.1	d47,800	d68.2	d49,400
1926	626	1,900	May 31, 1926	-	d203	d147,000	d192	d139,000
1927	646	780	May 24, 1927	-	d108	d77,900	-	-
1933	746	1,240	June 9, 1933	-	*104	*75,500	*104	*75,100
1934	761	88	May 12, 1934	-	*17.0	*12,300	*14.1	*10,220
1935	786	1,550	June 19, 1935	.7	87.7	63,520	*90.7	*65,660
1936	806	589	June 2, 1936	.7	*69.6	*50,540	*70.9	*51,460
1937	826	784	June 1, 1937	6.8	84.5	61,150	85.9	62,160
1938	856	1,320	June 9, 1938	6.7	165	119,800	170	123,400
1939	876	796	Apr. 18, 1939	0	69.9	50,590	60.1	43,490
1940	896	404	June 5, 1940	.7	47.4	34,380	53.3	38,680
1941	926	420	May 29, 1941	9.6	75.3	54,520	77.3	55,940
1942	956	1,670	June 16, 1942	.9	143	103,800	141	102,000
1943	976	1,040	June 5, 1943	2.2	105	76,080	104	75,340
1944	1006	420	June 13, 1944	3.2	57.5	41,700	52.6	38,210
1945	1036	818	June 18, 1945	-	115	83,380	122	88,480
1946	1056	694	June 21, 1946	-	96.5	69,890	101	72,790
1947	1086	1,300	June 25, 1947	22	149	107,900	151	109,400
1948	1116	630	May 29, 1948	6.0	87.7	63,650	79.5	57,700
1949	1146	1,190	June 14, 1949	9.6	121	87,840	124	89,940
1950	1176	536	May 28, 1950	14	77.1	55,800	-	-

* Revised.

a Not previously published.

b From reports of State engineer of Wyoming.

c Revised; superseded figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Maximum observed.

d From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

111. Little Laramie River near Filmore, Wyo.1/

Location.--Lat 41°17'20", long. 106°02'30", in sec. 9, T. 15 N., R. 77 W., at May Ranch, 1½ miles west (revised) of Filmore, and 3½ miles downstream from North Fork.

Drainage area.--155 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,600 ft (from topographic map). Prior to Sept. 16, 1938, staff gage at present site; at different datum prior to May 14, 1911; at datum 0.21 ft lower May 14, 1911, to Apr. 17, 1914; at present datum thereafter.

Average discharge.--34 years (1902-3, 1911-26, 1932-50), 107 cfs.

Extremes.--1902-3, 1911-26, 1933-50: Maximum discharge observed, 2,400 cfs June 1, 1914 (gage height, 5.9 ft), from rating curve extended above 1,700 cfs; minimum daily determined, 1 cfs Sept. 17-20, 1913.

Remarks.--Diversion above station for irrigation of about 18,000 acres above and below station. Ten small reservoirs above station (total capacity about 160 acre-ft) for irrigation, stock water, recreation, and domestic use.

Cooperation.--Records for 1913-14, furnished by State engineer of Wyoming.

1/ Published as "near Hatton," 1902-3, and as "at May's Ranch, Filmore," 1913-14, by State engineer of Wyoming.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second, of Little Laramie River near Filmore, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	-	-	-	-	27	*37.7	-
1903	46	38	30	25	25	30	115	222	1,220	207	65	50	*172
1911	-	-	-	-	-	-	-	-	530	128	39.4	18.8	-
1912	37.9	25.	25	20	20	25	42	220	912	377	128	74.7	+158
1913	77.2	50	40	35	35	40	64	a337	a375	a110	a35.0	a8.8	101
1914	a18.4	20	15	15	15	25	80	b476	c692	c163	c55	c28	+134
1915	28.5	35	30	25	25	28	55.8	200	317	70.7	41.2	37.0	74.5
1916	45.0	35	30	25	25	25	94.4	209	405	114	57.0	18.8	90.2
1917	28.2	20	18	18	15	18	62	191	1,130	572	96.3	38.9	184
1918	31.3	37.7	25	25	20	40	51.8	222	1,030	211	58.9	44.5	149
1919	38.1	30	25	20	20	25	50.5	305	187	52.7	26.5	9.5	66.2
1920	17.9	10	15	15	15	20	50.7	280	929	182	87.0	43.7	138
1921	37.9	40.1	25	20	20	d40	48.0	287	941	193	79.7	29.6	+146
1922	26.7	24.5	d25	d20	d20	d28	46.4	211	491	88.1	40.3	23.2	d86.9
1923	19.1	d20	d18	d18	d20	c20	d46.4	222	729	192	64.3	42.6	d117
1924	58.2	d40.2	c30	c20	d19	d25	136	377	686	81.0	44.1	36.1	d129
1925	d38	d30	d30	d20	d20	d25	d46.4	264	388	150	57.4	29.2	d91.8
1926	c22.0	c29.6	d30	c20	c20	d25	d94.4	502	494	162	65.2	34.0	d125
1927	22.0	29.6	-	-	-	-	-	-	-	-	-	-	-
1933	*22	*24.5	*18	*18	*20	*25	*46.3	73.5	700	87.0	22.7	15.5	*88.8
1934	15.2	13.1	*10	*10	*10	*14	27.7	200	48.3	17.9	12.6	10.4	*32.7
1935	13.4	12.9	13	17	15	13	25.1	72.2	598	142	31.6	15.5	80.4
1936	13.2	12.5	*13	*15	*14	*15	*85.4	426	404	87.4	47.2	17.9	*96.0
1937	42.2	e27.3	*25	*19.5	*24.3	*22	*53.4	278	398	192	46.9	29.0	*96.7
1938	24.5	25.4	25	26	28	31.8	73.8	309	595	150	44.6	60.5	116
1939	41.5	36.5	26.2	17.8	17.6	36.6	50.9	338	225	53.4	29.6	19.5	74.8
1940	19.0	21.7	21.6	16.2	18.5	32.5	27.4	221	207	68.5	21.2	21.7	58.0
1941	29.0	24.6	20.6	17.4	18.9	27.9	35.9	307	296	81.5	46.1	32.7	78.5
1942	45.7	36.1	26.4	17.1	21.0	29.3	73.4	211	554	106	35.2	23.4	98.1
1943	35.1	28.6	34.2	25.3	23.0	39.4	106	380	694	180	52.4	17.4	135
1944	21.5	27.8	19.8	16.2	16.0	20.9	42.7	102	358	83.8	25.3	13.0	61.9
1945	22.9	20.0	16.1	15.3	17.3	22.1	64.0	246	547	293	95.0	35.7	116
1946	36.3	37.4	35.3	28.8	26.1	45.6	78.5	175	429	106	40.5	25.0	88.4
1947	32.0	39.2	36.3	21.7	21.2	25.7	42.5	288	550	219	81.1	32.0	116
1948	31.7	31.2	27.5	24.3	22.6	27.3	85.1	369	329	80.2	28.2	13.8	89.3
1949	25.5	26.7	26.2	21.8	21.8	31.5	54.8	304	852	202	51.7	32.0	137
1950	39.5	37.6	21.9	14.1	17.1	18.2	39.0	146	694	193	52.5	42.9	109

* Revised.

† Corrected; supersedes figure published in Water-Supply Paper 469.

* Not previously published; estimated on basis of records for stations on nearby streams.

a Revised; supersedes figure published by State engineer of Wyoming.

b Corrected; supersedes figure published by State engineer of Wyoming.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

d Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	-	-	-	-	1,680	*2,240	-
1903	2,830	2,260	1,840	1,540	1,390	1,840	6,840	13,600	72,400	12,700	4,000	2,980	*124,000
1911	-	-	-	-	-	-	-	-	31,500	7,870	2,420	1,120	-
1912	2,330	1,490	1,540	1,230	1,150	1,540	2,500	13,500	54,300	23,200	7,750	4,440	115,000
1913	4,750	2,980	2,460	2,150	1,940	2,460	3,810	20,700	22,300	a5,760	a2,150	a524	73,000
1914	a1,130	1,190	922	922	833	1,540	4,760	b29,300	a1,200	10,000	c3,380	c1,570	+96,700
1915	1,750	2,080	1,840	1,540	1,390	1,720	3,320	12,300	18,900	4,350	2,530	2,200	53,900
1916	2,770	2,080	1,840	1,540	1,440	1,540	5,820	12,900	24,100	7,010	3,500	1,120	65,500
1917	1,730	1,190	1,110	1,110	833	1,110	3,690	11,700	67,200	35,200	5,920	2,310	135,000
1918	1,920	2,240	1,540	1,540	1,110	2,460	3,080	13,600	61,300	13,000	3,620	2,650	108,000
1919	2,340	1,790	1,540	1,230	1,110	1,540	3,000	18,800	11,100	3,240	1,630	565	47,900
1920	1,100	595	922	922	863	1,230	3,020	17,200	55,300	11,200	5,350	2,600	100,000
1921	2,330	2,390	1,540	1,230	1,110	d2,460	2,740	17,600	56,000	11,900	4,900	1,760	+106,000
1922	1,640	1,460	d1,540	d1,230	d1,110	d1,720	2,760	13,000	29,200	5,420	2,480	1,380	d62,900
1923	1,170	d1,190	d1,110	d1,110	d1,110	c1,230	c2,760	13,600	45,400	11,800	3,950	2,530	d85,000
1924	3,580	d2,390	c1,840	c1,230	c1,100	d1,540	8,090	23,200	40,800	4,980	2,710	2,150	d93,600
1925	d2,340	d1,790	d1,900	d1,230	d1,110	d1,540	d2,760	16,200	23,100	9,220	3,530	1,740	d66,500
1926	c1,350	c1,760	d1,840	c1,230	c1,110	d1,540	d5,620	30,900	29,400	9,960	4,010	2,020	d90,700
1927	1,350	1,760	-	-	-	-	-	-	-	-	-	-	-
1933	*1,350	*1,460	*1,110	*1,110	*1,110	*1,540	*2,760	4,520	41,700	5,350	1,400	922	*64,300
1934	932	780	*615	*615	*555	*849	1,650	12,280	2,870	1,100	776	617	*23,640
1935	821	766	799	1,050	833	799	1,500	4,440	35,600	8,720	1,940	920	58,190

* Revised.

† Corrected; supersedes figure published in Water-Supply Paper 469.

* Not previously published; estimated on basis of records for stations on nearby streams.

a Revised; supersedes figure published by State engineer of Wyoming.

b Corrected; supersedes figure published by State engineer of Wyoming.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet, of Little Laramie River near Filmore, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	811	746	*799	*900	*829	*952	*5,080	26,190	24,070	5,370	2,900	1,070	\$69,720
1937	2,590	1,620	*1,540	*1,200	*1,350	*1,350	*3,180	17,110	23,700	11,790	2,880	1,730	\$70,040
1938	1,500	1,510	1,540	1,600	1,560	1,960	4,390	19,020	35,420	9,250	2,740	3,600	\$4,090
1939	2,550	2,170	1,610	1,100	978	2,250	3,030	20,800	13,360	3,280	1,820	1,160	\$4,110
1940	1,170	1,290	1,330	994	1,060	2,000	1,630	13,560	12,300	4,200	1,300	1,290	\$4,210
1941	1,780	1,460	1,270	1,070	1,050	1,720	2,140	18,910	17,630	5,010	2,840	1,950	\$6,830
1942	2,810	2,150	1,620	1,050	1,180	1,800	4,370	12,990	32,960	6,520	2,160	1,390	\$7,990
1943	2,160	1,700	2,100	1,580	1,260	2,420	6,310	23,340	41,270	11,040	3,280	1,040	\$9,440
1944	1,320	1,650	1,220	994	918	1,280	2,540	6,260	21,270	5,150	1,550	774	\$4,310
1945	1,410	1,190	988	940	960	1,360	3,810	15,110	32,540	18,030	5,840	2,130	\$8,310
1946	2,230	2,230	2,170	1,770	1,450	2,800	4,550	10,780	25,540	6,520	2,490	1,490	\$6,020
1947	1,970	2,330	2,230	1,330	1,180	1,580	2,530	17,730	32,740	13,480	4,990	1,900	\$8,990
1948	1,950	1,860	1,690	1,490	1,300	1,680	5,060	22,710	19,590	4,930	1,730	821	\$6,810
1949	1,560	1,590	1,610	1,340	1,210	1,940	3,260	18,710	50,720	12,400	3,180	1,900	\$9,420
1950	2,430	2,240	1,340	889	950	1,120	2,320	8,980	41,320	11,880	3,230	2,550	\$7,230

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1902	(a)	-	-	-	-	-	-	-
1903	99, 469	-	-	-	*172	*124,000	-	-
1911	306	b1,080	June 16, 1911	-	-	-	-	-
1912	326, 469	b1,440	June 8, 9, 1912	-	*158	115,000	165	120,000
1913	(c), 469	-	-	c1	101	73,000	91.2	66,000
1914	(c), 469	b2,400	June 1, 1914	-	*134	*96,700	137	99,200
1915	406, 469	b820	June 11, 1915	-	74.5	53,900	75.9	54,900
1916	436, 469	b739	June 10-12, 1916	-	90.2	65,500	86.5	62,800
1917	456, 469	b1,920	June 23, 25, 1917	-	184	133,000	186	135,000
1918	469, 476	b1,820	June 14, 1918	-	149	108,000	149	108,000
1919	469, 506	b965	May 30, 1919	7	68.2	47,900	61.9	44,800
1920	469, 506	b1,800	June 10, 1920	-	138	100,000	143	104,000
1921	469, 526	b1,880	June 7, 1921	-	*146	*106,000	d144	d104,000
1922	546	b1,030	June 9, 1922	-	d86.9	d62,900	d85.4	d61,800
1923	566	e1,400	June 10, 1923	-	d117	d85,000	d123	d89,300
1924	586	b1,720	June 14, 1924	-	d129	d93,600	d127	d91,800
1925	606	b960	June 5, 1925	-	d91.8	d66,500	d90.3	d65,400
1926	626	b1,950	May 28, 1926	-	d125	d90,700	-	-
1933	746	b1,190	June 12, 1933	-	*88.8	*64,300	*86.6	*62,700
1934	761	b332	May 13, 1934	-	*32.7	*23,640	*32.7	*23,700
1935	786	b1,410	June 14, 15, 1935	-	80.4	58,190	80.3	58,160
1936	806	b1,080	June 1, 1936	-	*96.0	*69,720	*101	*73,110
1937	826	b918	May 30, 1937	-	*96.7	*70,040	*95.1	*68,840
1938	856	b1,140	June 7-9, 1938	-	116	84,090	119	85,870
1939	876	738	June 1, 1939	12	74.8	54,110	71.2	51,570
1940	896	636	May 29, 1940	10	58.0	42,120	59.0	42,840
1941	926	864	May 27, 1941	14	78.5	56,830	81.3	58,900
1942	956	1,470	June 12, 1942	14	98.1	70,980	97.2	70,360
1943	976	1,660	June 1, 1943	14	135	97,440	132	95,670
1944	1006	652	June 12, 1944	11	61.9	44,950	61.1	44,320
1945	1036	976	June 28, 1945	12	116	84,310	121	87,350
1946	1056	1,050	June 7, 1946	19	88.4	64,020	88.3	63,920
1947	1086	1,380	June 21, 1947	19	116	83,990	115	82,960
1948	1116	1,140	June 3, 1948	10	89.3	64,810	88.3	64,070
1949	1146	1,710	June 12, 1949	16	137	99,420	139	100,700
1950	1176	1,120	June 15, 1950	12	109	79,230	-	-

* Revised.

† Corrected; supersedes figure published in Water-Supply Paper 469.

* Not previously published.

a WSP 84, 469, 1440.

b Maximum observed.

c From reports of State engineer of Wyoming.

d Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e From high-water mark.

112. Little Laramie River at Two Rivers, Wyo.1/

Location.--Lat 41°28'10", long. 105°43'50", in SE1/4 sec. 6 (revised), T. 17 N., R. 74 W., at old Two Rivers post office, half a mile upstream from mouth, and 14 miles northwest of City Hall in Laramie.

Drainage area.--310 sq mi, approximately.

Supplemental records available.--Mar. 25 to Sept. 30, 1903, gage heights and discharge measurements only.

1/ Published as "at Haley's Ranch, near Laramie", 1903.

Little Laramie River at Two Rivers, Wyo.--Continued

Gage.--Water-stage recorder. Datum of gage is 7,060.62 ft above mean sea level, datum of 1929.

March to September 1903, staff gage near present site at different datum.

May 1, 1911, to Apr. 13, 1913, staff gage at present site and datum.

Apr. 14, 1913, to Apr. 20, 1915, water-stage recorder 400 ft upstream at different datums. Datum lowered 1.0 ft July 1, 1913.

Average discharge.--33 years (1910-27, 1934-50), 48.1 cfs.

Extremes.--1903, 1910-27, 1933-50: Maximum discharge, 1,880 cfs (revised) June 4, 1914 (gage height, 6.44 ft, present site and datum); no flow at times in most years.

Remarks.--Water rights totaling 801 cfs (priorities 1871 to 1941), for irrigation of about 56,000 acres, adjudicated by the State of Wyoming for diversion above station. Fifteen small reservoirs above station (total capacity, about 1,300 acre-ft) for irrigation, stock water, recreation, and domestic use.

Cooperation.--Records for 1913-14, furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	a11.4	a21.8	a24.4	a24.4	a21.6	a24.4	a58.8	3.08	169	9.21	0	0	a30.5
1912	b4.07	b40	a25	a24.4	a20.9	a26.0	a112	32.3	310	136	41.1	43.9	b67.6
1913	57.5	a55.5	a18.5	a22.8	a22.2	a30.9	a67.1	c81.0	b121	c8.7	c9.4	c2.1	a41.3
1914	c16.2	a23.5	a16.3	a16.3	a18	a24.4	a58.8	190	503	13.4	19.5	2.2	a74.8
1915	9.9	a16.8	a16.3	a16.3	a18.0	a24.4	a50.5	28.4	56.2	3.23	2.01	1.75	a20.2
1916	11.4	a8.4	a8.1	a8.1	a8.7	a8.1	a6.7	44.1	44.2	.78	a2.0	a3.4	a9.44
1917	a6.5	a8.4	a8.1	a16.3	a9.0	a16.3	a67.2	171	665	395	b22.7	a1.2	b116
1918	a1.6	a8.4	a8.1	a8.1	a9.0	a32.5	a84.1	54.2	780	78.9	12.0	3.93	a89.3
1919	a4.9	a8.4	a8.1	a16.3	a18	a16.3	62.3	a32.5	a20.1	1.45	a1.6	a1.7	a15.9
1920	a3.3	a3.4	a3.3	a3.3	a8.7	a13	a15	76.3	558	53.6	44.7	18.3	a66.2
1921	12.7	a11.8	a9.8	b10	b10	b15	b25	107	842	66.6	22.8	t6.0	b94.2
1922	1.6	4.7	a4.9	a4.9	a5.4	a9.8	a40.3	43.1	180	3.69	3.77	.15	a23.4
1923	a0	a0	a1.6	a8.1	a9.0	a16.3	a42	a97.6	451	155	14.4	4.73	a66.3
1924	b20	b8.0	a3.1	a8.1	a7	a12.2	b50	242	450	42.3	7.76	7.89	b71.9
1925	44.5	b25	b10	a13	a18	b24.4	a42	45.6	232	64.6	39.6	34.5	b49.3
1926	61.9	40.5	a16.3	a12.2	a18	a24.4	b64.5	284	314	90.3	30.9	5.0	b80.5
1927	17.1	32.2	#5	#5	#4	#7	#20	90.1	254	45.1	33.8	9.1	#43.4
1933	-	-	-	-	-	-	-	5.12	279	31.2	4.13	2.22	-
1934	.15	2.48	-	-	-	-	-	3.14	.55	0	0	0	-
1935	0	0	0	.06	.5	.6	1.5	3.38	207	5.56	2.56	.09	18.2
1936	0	4.38	#5	#5	#5	#10	#14.5	94.3	159	17.0	23.0	.18	#28.1
1937	53.9	14.0	3.1	0	.6	16.1	67.8	80.8	197	139	11.3	1.09	44.8
1938	7.04	16.0	10	3	5	18	64.0	55.0	364	54.2	7.31	28.5	52.3
1939	8.18	15.9	15.5	7.3	2.0	25.7	38.9	45.5	63.2	.94	0	0	18.6
1940	0	.40	3.04	1.32	1.53	9.83	5.85	14.8	31.7	.40	0	.03	5.73
1941	2.63	5.40	5	2.5	3	18	24.1	35.4	112	12.8	9.15	.92	19.2
1942	11.1	19.6	14.3	3.82	2.92	4.93	35.7	93.5	280	13.9	4.05	.03	40.1
1943	12.8	26.7	8.5	2.03	0	11.5	60.7	133	403	91.4	17.9	.08	63.9
1944	0	8.38	2.5	1.5	3.0	13	33.9	11.1	83.6	15.4	.45	0	14.3
1945	.97	1.82	.8	.5	3.0	5.0	50.9	41.1	369	192	79.8	9.46	62.8
1946	14.6	15.7	3.63	3.84	10	25.4	28.3	19.3	151	20.0	7.13	3.26	25.0
1947	7.78	20.6	16.0	2.07	2.76	19.0	53.6	108	441	118	46.8	5.12	70.0
1948	12.1	13.8	8.71	7.0	6.5	10	45.3	116	145	20.5	6.11	.13	32.4
1949	2.80	9.43	12	13	13	30	59.3	81.0	644	119	15.2	3.62	85.0
1950	9.18	15.4	3.13	3.2	8.0	17	17.4	48.0	305	138	18.9	9.60	49.4

* Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	a700	a1,300	a1,500	a1,500	a1,200	a1,500	a3,500	189	10,100	566	0	0	a22,100
1912	b250	b2,380	a1,500	a1,500	a1,200	a1,600	a6,670	1,990	18,500	8,360	2,530	2,610	b49,100
1913	3,540	a3,300	a1,140	a1,400	a1,230	a1,900	a4,000	4,980	67,200	c535	c578	c125	a29,900
1914	c986	a1,400	a1,000	a1,000	a1,000	a1,500	a3,500	11,700	29,900	824	1,200	133	a54,200
1915	609	a1,000	a1,000	a1,000	a1,000	a1,500	a3,000	1,750	3,340	199	124	104	a14,600
1916	701	a500	a500	a500	a500	a500	a400	a250	2,630	48	a123	a200	a6,850
1917	a400	a500	a500	a1,000	a500	a1,000	a4,000	10,500	39,600	24,300	b1,400	a700	b83,900
1918	a100	a500	a500	a500	a500	a2,000	a5,000	3,330	46,400	4,850	738	234	a64,700
1919	a300	a500	a500	a1,000	a1,000	a1,000	3,710	a2,000	a1,200	89	a100	a100	a1,500
1920	a200	a200	a200	a200	a500	a800	a900	4,690	33,200	3,300	2,750	1,090	a48,000
1921	781	a700	a500	b615	b555	b922	b1,490	6,580	50,100	4,100	1,400	t357	b68,200
1922	98	280	a300	a300	a300	a600	a2,400	2,650	9,520	227	232	8.9	a16,900
1923	a0	a0	a100	a500	a500	a1,000	a2,500	a6,000	26,800	9,410	885	281	a48,000
1924	b1,230	b476	a500	a500	a500	a750	b2,980	14,900	26,800	2,600	477	469	b52,200
1925	2,740	b1,490	b615	a800	a1,000	b1,500	a2,500	2,800	13,800	3,970	2,430	2,050	b35,700

* Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet, of Little Laramie River at Two Rivers, Wyo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	3,810	2,410	al,000	a750	al,000	al,500	b3,840	17,500	18,700	5,550	1,900	298	b58,300
1927	1,050	1,920	#307	#307	#222	#430	#1,190	5,540	15,100	2,770	2,080	541	#31,500
1933	-	-	-	-	-	-	-	315	16,600	1,920	254	132	-
1934	8.9	148	0	0	28	37	89	133	33	0	0	0	-
1935	0	0	0	4.0	0	0	0	208	12,290	342	157	5.4	13,160
1936	0	261	#307	#307	#288	#615	#864	5,800	9,470	1,040	1,410	11	#20,400
1937	331	830	190	0	32	990	4,040	4,970	11,730	8,570	696	65	32,440
1938	433	954	615	184	278	1,110	3,810	3,380	21,660	3,330	449	1,690	37,890
1939	503	944	953	449	111	1,580	2,310	2,800	3,760	58	0	0	13,470
1940	0	24	187	81	88	604	348	911	1,890	25	0	2.0	4,160
1941	162	321	307	154	167	1,110	1,430	2,180	6,670	786	563	55	13,900
1942	681	1,170	881	235	182	303	2,130	5,750	16,640	853	249	2.0	29,080
1943	788	1,590	523	125	0	705	3,610	8,200	23,970	5,620	1,100	5.0	46,240
1944	0	498	154	92	173	799	2,020	683	4,970	948	28	0	10,360
1945	60	108	49	31	167	307	3,030	2,520	21,960	11,780	4,910	563	45,480
1946	898	934	223	236	555	1,560	1,680	1,190	8,960	1,230	438	194	18,100
1947	478	1,230	986	127	154	1,170	3,190	6,630	26,240	7,280	2,870	304	50,660
1948	742	821	536	430	374	615	2,570	7,160	8,620	1,660	375	7.9	23,510
1949	172	561	738	799	722	1,840	3,530	4,900	38,500	7,290	933	216	60,080
1950	564	915	193	197	444	1,050	1,040	2,950	18,160	8,500	1,160	571	35,740

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.F. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306, 326	a495	June 18, 1911	0	b30.5	b22,100	c31.3	c22,700
1912	326	d635	June 11, 1912	-	c67.6	c49,100	b72.9	b52,900
1913	(e), 469	a345	June 1, 1913	0	b41.3	b29,900	b35.0	b25,300
1914	(e), 469	*1,880	June 4, 1914	1	b74.8	b54,200	b73.0	b53,400
1915	406	256	June 4, 1915	-	b20.2	b14,600	b18.9	b13,700
1916	436	118	June 21, 1916	0	b6.850	b9.02	b6.550	b6,550
1917	456	1,390	June 25, 1917	-	c116	c83,800	c115	c83,500
1918	476	1,240	June 16, 1918	-	b89.3	b64,700	b89.6	b64,900
1919	506	-	-	0	b15.9	b11,500	b15.0	b10,800
1920	506	1,280	June 11, 1920	-	b66.2	b48,000	b68.2	b49,500
1921	526	1,550	June 15, 1921	-	c94.2	c68,200	c92.3	c66,800
1922	546	365	June 1, 1922	0	b23.4	b16,900	b22.6	b16,300
1923	566	1,100	June 11, 1923	0	b66.3	b48,000	c69.2	c50,100
1924	586	1,050	June 16, 1924	0	c71.9	c52,200	c75.5	c54,800
1925	506	1,120	June 7, 1925	-	c49.3	c35,700	c52.6	c36,100
1926	626	1,790	May 29, 1926	-	c80.5	c58,300	c75.0	c54,300
1927	646	481	June 16, 1927	-	#43.4	#31,500	-	-
1933	746	615	June 13, 1933	-	-	-	-	-
1934	761	-	-	0	-	-	-	-
1935	786	710	June 17, 1935	0	18.2	13,160	#19.0	#13,700
1936	806	556	June 3, 1936	0	#28.1	#20,400	#29.2	#21,200
1937	826	725	June 1, 1937	0	44.8	32,440	45.7	33,100
1938	856	731	June 9, 1938	0	52.3	37,890	52.9	38,290
1939	876	362	June 2, 1939	0	18.6	13,470	15.6	11,280
1940	896	267	May 29, 1940	0	5.73	4,160	6.53	4,740
1941	926	327	June 10, 1941	2	19.2	13,900	21.9	15,850
1942	956	998	June 14, 1942	0	40.1	29,080	40.4	29,220
1943	976	1,180	June 3, 1943	0	63.9	46,240	60.8	43,990
1944	1006	231	June 14, 1944	0	14.3	10,360	13.7	9,930
1945	1036	812	June 16, 1945	0	62.8	45,480	65.4	47,320
1946	1056	515	June 21, 1946	-	25.0	18,100	25.9	18,740
1947	1086	1,400	June 23, 1947	0	70.0	50,660	69.1	50,060
1948	1116	520	May 30, 1948	0	32.4	23,510	31.5	22,880
1949	1146	1,390	June 14, 1949	0	85.0	60,080	85.3	60,280
1950	1176	595	June 21, 1950	0	49.4	35,740	-	-

* Revised.

Not previously published.

a Maximum daily.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Maximum observed.

e From reports of State engineer of Wyoming.

Note.--Records for 1909-10 are published in H. Doc. 197 and reports of State engineer of Wyoming; however, since no data for satisfactory analysis are available, records for these years are not contained herein.

113. Laramie River near Lookout, Wyo.

Location.--Lat 41°46', long. 105°41', in SE $\frac{1}{4}$ sec. 27, T. 21 N., R. 74 W., about 1 mile upstream from Wheatland Reservoir No. 2 and 9 miles northeast of Lookout.

Drainage area.--2,100 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,962.67 ft above mean sea level, datum of 1929. Prior to Apr. 22, 1915, chain gage, and Apr. 22, 1915, to Aug. 31, 1917, water-stage recorder 155 ft upstream at same datum. Oct. 14, 1931, to Sept. 17, 1938, water-stage recorder 125 ft upstream at same datum.

Average discharge.--29 years (1912-17, 1921-27, 1932-50), 143 cfs.

Extremes.--1912-17, 1921-27, 1932-50: Maximum daily discharge, 3,100 cfs June 26, 1917; no flow at times during 1934-35, 1939-40.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, diversion for irrigation of about 99,000 acres above station, and return flow from irrigated areas.

Cooperation.--Records for 1913-14 furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	964	403	149	93	-
1913	a158	a105	a45	a50	a50	a55	a250	b216	+265	b47.6	b37.3	b51.7	a111
1914	b63.6	a65	b65	a65	c55	c80	a201	+758	b1,400	b188	b110	+52.4	c258
1915	a199	a100	c50	c35	c35	c40	c142	150	244	89.4	37.9	26.3	c95.8
1916	69.8	c40	c50	c60	c60	a65	c61	241	442	119	76.9	45.8	c111
1917	c30.1	c40	c50	c65	c60	c70	c544	656	1,900	1,120	170	c60	c397
1918	a48.8	a50.4	a32.5	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	a48.8	a54.0	a48.8	a58.5	a397	a2,020	a416	a187	a49.1	-
1922	a32.5	a33.6	a32.5	a13.0	a14.4	a26.0	a147	a278	a476	a71.1	a16.0	a5.0	a95.3
1923	a8.1	a16.8	a16.3	a16.3	a18.0	a32.5	a101	a168	a1,430	a493	a120	a55.6	a205
1924	a32.5	a33.6	a32.5	a32.5	a34.8	a32.5	a227	a789	a1,400	a200	a26.0	a12.7	a236
1925	a166	a84.0	a32.5	a32.5	a54.0	a48.8	a91.9	a78.4	a439	a157	a101	a51.6	a111
1926	a97.6	a101	a65.1	a32.5	a54.0	a65.1	a224	a768	a1,270	a333	a114	a44.4	a264
1927	a27.0	a25.2	a24.4	a16.3	a27.0	a48.8	a101	a496	a632	a168	a117	a39.0	a144
1928	a32.5	a25.2	a24.4	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	507	455	157	18.3	6.3	-
1933	4.7	a8.4	a13	a14.6	a16.2	a16.3	a33.6	58.0	1,070	152	24.6	9.3	a118
1934	9.33	a8.4	a8.1	a6.5	a18	a32.5	51.6	43.2	15.0	28	a56	0	a15.9
1935	0	0	0	11.3	25	32	20	31.6	888	114	28.7	5.2	95.4
1936	3.94	a19.3	a12	a15	a15	a25	a111	340	372	48.5	56.2	4.17	a85.1
1937	5.62	a29	a15	a12	a12	a25	a80	259	550	249	40.7	9.59	a107
1938	21.8	a28.6	a28	a25	a28	a55	121	341	1,094	232	31.3	97.4	175
1939	57.0	a89.1	a66.3	a50.7	a34.1	a120	a173	a235	a211	a11.0	a1.02	0	a7.4
1940	0	1.28	a12.7	a1.80	a2.67	a69.4	a13.0	a67.7	a246	a135	a16.1	a9.78	a48.0
1941	31.8	7.15	a18	a17	a24	a62	a62.5	a144	a323	a157	a51.1	a21.5	a76.7
1942	a1.8	a72.8	a57.0	a32.6	a36.6	a50.2	a106	a421	a1,155	a136	a25.4	a1.41	a177
1943	a21.0	a60.8	a54	a42	a31	a53.0	a128	a387	a822	a262	a35.5	a3.43	a158
1944	a4.57	a45	a28	a30	a30	a45	a64.1	a59.1	a331	a91.9	a19.0	a1.92	a82.1
1945	a6.43	a9.48	a3.8	a13	a25	a32	a76	a252	a764	a444	a267	a59.5	a163
1946	a55.3	a58.5	a35	a35	a55	a84.4	a87.7	a232	a446	a150	a43.3	a27.4	a109
1947	a36.8	a91.6	a85.1	a41.6	a50.5	a61.7	a141	a410	a1,001	a308	a143	a58.5	a202
1948	a63.6	a96.3	a70	a55	a50	a70	a193	a362	a317	a83.7	a38.8	a9.11	a117
1949	a15.8	a45.2	a40	a50	a60	a85	a174	a384	a1,200	a230	a43.6	a23.4	a195
1950	a37.2	a71.8	a20.9	a17.9	a45.6	a82.8	a58.7	a155	a550	a238	a61.6	a45.4	a115

* Revised; supersedes figure published in reports of State engineer of Wyoming.

+ Corrected; supersedes figure published in reports of State engineer of Wyoming.

Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet, of Laramie River near Lookout, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	57,400	24,800	9,180	5,530	-
1913	a9,720	a6,250	a2,770	a3,070	a2,780	a3,380	a14,900	a13,300	a15,800	b2,930	b2,290	b3,080	a80,300
1914	b5,910	a3,870	b4,000	a4,000	c3,050	c4,920	a12,000	b46,800	b83,300	b11,600	b6,780	b3,120	c187,000
1915	b12,200	c5,950	c3,070	c2,150	c1,940	c2,460	c8,470	9,220	14,500	5,500	2,350	1,560	c69,400
1916	a4,290	c2,380	c3,070	c3,690	c3,450	a4,000	c3,650	14,800	26,300	7,320	4,730	2,730	a80,400
1917	c1,850	c2,380	c3,070	a4,000	c3,350	c4,300	c32,400	40,300	b11,000	68,900	10,500	c3,570	c288,000
1918	a3,000	a3,000	a2,000	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	a3,000	a3,000	a3,000	a3,480	a24,400	a120,000	a25,600	a11,500	a2,920	-
1922	a2,000	a2,000	a2,000	a800	a800	a1,600	a8,770	a17,100	a28,500	a4,370	a983	a297	a69,000
1923	a500	a1,000	a1,000	a1,000	a1,000	a2,000	a6,000	a10,500	a85,000	a50,300	a7,370	a3,510	a149,000
1924	a2,000	a2,000	a2,000	a2,000	a2,000	a2,000	a13,500	a8,500	a85,000	a12,300	a1,600	a757	a172,000
1925	a10,200	a5,300	a2,000	a2,000	a3,000	a5,000	a5,470	a4,920	a26,100	a9,640	a6,220	a3,070	a80,500
1926	a6,000	a6,000	a4,000	a2,000	a3,000	a4,000	a13,300	a47,200	a75,700	a20,500	a6,990	a2,640	a191,000
1927	a1,660	a1,500	a1,500	a1,500	a1,500	a5,000	a6,000	a30,500	a37,600	a10,300	a7,200	a2,320	a104,000
1928	a2,000	a1,500	a1,500	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	31,200	27,100	9,650	1,130	375	-
1933	289	a500	a800	a900	a900	a1,000	a2,000	3,570	63,700	9,350	1,510	553	a85,100
1934	574	a500	a500	a400	a1,000	a2,000	3,070	2,860	771	17	35	0	a11,530
1935	0	0	0	694	1,390	1,970	1,190	1,940	52,940	7,010	1,760	311	69,100
1936	242	a1,150	a738	a922	a863	a1,540	a6,810	20,910	22,140	2,980	3,450	248	a61,790
1937	346	a1,720	a922	a738	a666	a1,540	a4,760	15,900	32,700	15,290	2,510	571	a77,660
1938	1,340	1,700	1,720	1,540	1,560	3,380	7,180	20,980	65,110	14,250	1,920	5,800	126,500
1939	3,500	5,300	4,080	3,120	1,890	7,390	10,270	14,420	12,550	679	63	0	a63,260
1940	0	76	784	110	154	4,270	774	4,160	14,670	8,280	991	582	34,850
1941	1,960	428	1,110	1,050	1,330	3,810	3,720	8,840	19,230	9,660	3,140	1,280	55,560
1942	2,570	4,350	3,500	2,010	2,040	3,080	6,310	25,900	69,700	9,350	1,560	84	129,400
1943	1,290	3,620	3,320	2,580	1,720	3,260	7,640	23,780	48,160	16,110	2,180	204	114,600
1944	281	2,680	1,720	1,840	1,730	2,770	3,810	3,630	19,690	5,650	1,170	114	45,080
1945	395	564	234	799	1,390	1,970	4,520	15,480	45,480	27,310	16,420	3,540	118,100
1946	3,400	3,480	2,150	2,150	3,050	5,190	5,220	14,290	26,570	9,240	2,680	1,630	79,030
1947	2,260	5,450	5,230	2,560	2,800	3,900	8,380	25,240	59,560	18,970	8,900	3,480	146,500
1948	3,310	5,730	4,500	3,360	2,880	4,500	11,510	22,250	19,890	5,150	2,390	542	85,230
1949	970	2,690	2,460	3,070	3,350	5,230	10,360	23,590	71,580	14,770	2,880	1,390	141,300
1950	2,290	4,270	1,290	1,100	2,530	5,090	3,490	9,540	32,740	14,620	3,790	2,700	82,450

* Revised; supersedes figure published in reports of State engineer of Wyoming.

† Corrected; supersedes figure published in reports of State engineer of Wyoming.

‡ Not previously published; estimated on basis of records for nearby stations.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second									
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1912	469	a1,710	June 13, 14, 1912	-	-	-	-	-	-
1913	(b)	-	-	-	a111	a80,300	c101	c73,300	-
1914	(b)	-	-	-	c258	c187,000	c272	c197,000	-
1915	406	501	June 7, 1915	-	c95.8	c69,400	c79.9	c57,900	-
1916	436	681	June 17, 1916	-	d111	d80,400	c107	c78,000	-
1917	456	e3,100	June 28, 1917	-	c397	c288,000	-	-	-
1921	-	-	-	-	-	-	d280	d203,000	-
1922	-	-	-	-	d95.3	d69,000	d90.5	d65,500	-
1923	-	-	-	-	d205	d149,000	d210	d152,000	-
1924	-	-	-	-	d236	d172,000	d252	d183,000	-
1925	-	-	-	-	d111	d80,500	d110	d79,300	-
1926	-	-	-	-	d264	d191,000	d249	d180,000	-
1927	-	-	-	-	d144	d104,000	d144	d104,000	-
1932	731	1,360	May 26, 1932	-	-	-	-	-	-
1933	745	1,690	June 15, 1933	-	a118	a85,100	a117	a85,100	-
1934	761	88	Apr. 2, 1934	0	a15.9	a11,530	a13.7	a9,250	-
1935	786	1,830	June 19, 1935	0	95.4	69,100	a98.4	a71,240	-
1936	806	1,000	June 4, 1936	-	a85.1	a61,790	a86.3	a62,650	-
1937	827	1,210	June 2, 1937	-	a107	a77,660	a110	a79,440	-
1938	856	1,680	June 10, 1938	5.5	175	126,500	186	134,600	-
1939	876	651	June 3, 1939	0	87.4	63,260	70.8	51,240	-
1940	896	504	June 4, 1940	0	48.0	34,850	51.6	37,490	-
1941	926	545	May 30, 1941	-	76.7	55,560	86.3	62,460	-
1942	956	2,020	June 15, 1942	.3	177	128,400	174	126,300	-
1943	976	1,460	June 5, 1943	.9	158	114,600	153	111,000	-
1944	1006	545	June 15, 1944	.8	62.1	45,080	57.3	41,590	-
1945	1036	1,240	June 18, 1945	-	163	118,100	174	125,900	-
1946	1056	908	June 22, 1946	-	109	79,030	115	82,940	-
1947	1086	2,100	June 24, 1947	19	202	146,500	204	147,500	-
1948	1116	926	May 31, 1948	4.5	117	85,230	107	77,410	-
1949	1146	2,160	June 15, 1949	10	195	141,300	198	143,000	-
1950	1176	613	June 23, 1950	13	115	83,450	-	-	-

‡ Not previously published.

a Maximum observed.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

e Maximum daily.

114. Laramie River at McGill, Wyo.

Location.--Lat 41°51', long. 105°39' in SE $\frac{1}{4}$ sec. 24, T. 22 N., R. 74 W., a quarter of a mile east of McGill post office, 3 miles downstream (revised) from outlet of Wheatland Reservoir No. 2, and 15 miles northeast of Lookout.

Drainage area.--2,190 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 6,930 ft (from river-profile map).

Prior to May 1, 1913, staff gage and May 1, 1913, to May 9, 1915, water-stage recorder at site 400 ft downstream at different datum. May 10-24, 1915, water-stage recorder at site 50 ft downstream at same datum.

Extremes.--1912-15: Maximum discharge, 1,630 cfs June 11, 1914 (gage height, 3.60 ft, site and datum then in use); minimum daily, 1 cfs Oct. 27, 28, Nov. 1, 2, 1912, but may have been less during winter periods.

Remarks.--Flow completely regulated by Wheatland Reservoir No. 2 (capacity, 98,930 acre-ft). Natural flow of stream affected by transbasin diversions, storage reservoirs, and diversions for irrigation. No diversions between this station and Lookout.

Cooperation.--Records for 1913, 1914, furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	511	587	234	98.4	-
1913	2.95	2.63	-	a2	a2	a3	a4	a312	a576	a341	a242	a57.5	-
1914	15.48	a2.5	a2	-	-	-	-	-	*862	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	*561	221	-	-

* Revised; supersedes figure published in report of State engineer of Wyoming.

† Corrected; supersedes figure published in report of State engineer of Wyoming.

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	30,400	36,100	14,400	5,860	-
1913	181	156	-	a123	a111	a184	a238	a19,200	a34,300	a21,000	a14,900	a3,420	-
1914	a337	a149	a123	-	-	-	-	-	*51,300	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	*34,500	13,800	-	-

* Revised; supersedes figure published in report of State engineer of Wyoming.

† Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Wyoming.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1912	469	-	-	-	-	-	-	-	-
1913	{a}, 469	-	-	-	-	-	-	-	-
1914	{a}, 469	1,630	June 11, 1914	-	-	-	-	-	-
1915	408, 469	-	-	-	-	-	-	-	-

a From reports of State engineer of Wyoming.

115. Laramie River below McGill, Wyo. 1/

Location (revised).--Lat 41°55', long. 105°35', in sec. 34, T. 23 N., R. 73 W., half a mile downstream from spillway of Wheatland reservoir No. 2, 6 miles northeast of McGill, 12½ miles downstream from Wheatland No. 2 dam, and 22 miles northeast of Lookout.

Drainage area.--2,230 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 6,885 ft (from river-profile map).

Prior to May 17, 1917, staff gage at same site and datum.

Extremes.--1916-17: Maximum discharge, 2,860 cfs June 26-30, 1917 (gage height, 5.6 ft); minimum is practically no flow in winter when all flow is stored in Wheatland reservoir No. 2.

Remarks.--Flow regulated by Wheatland reservoir No. 2 (capacity, 98,930 acre-ft). Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	575	326	-	-	-
1917	-	-	-	-	-	-	-	-	-	1,590	572	-	-

1/ Published as "below Wheatland reservoir No. 2" beginning October 1951.

Monthly and yearly runoff, in acre-feet, of Laramie River below McGill, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	34,200	20,000	-	-	-
1917	-	-	-	-	-	-	-	-	-	97,800	35,200	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	436	a852	June 16, 17, 1916	-	-	-	-	-
1917	456	2,860	June 26-30, 1917	-	-	-	-	-

a Maximum observed.

116. Laramie River near Wheatland, Wyo.

Location.--Lat 42°06'10", long. 105°05'40", in sec. 35, T. 25 N., R. 69 W., half a mile upstream from Sybille Creek and 8 miles (revised) northwest of Wheatland.

Drainage area.--2,480 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 4,595 ft (from topographic map). Prior to May 28, 1913, staff gage 300 ft upstream at different datum. May 28, 1913, to Nov. 18, 1916, chain gage at same site and different datum. Oct. 2, 1929, to Sept. 2, 1931, chain gage at same site and datum.

Extremes.--1912-16, 1929-33: Maximum daily discharge, 1,660 cfs June 8, 1914; no flow at times in 1916, 1930-32.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, diversions for irrigation, and return flow from irrigated areas. Flow regulated by Wheatland Reservoir No. 2, capacity 98,930 acre-ft.

Cooperation.--Records for 1912-14 furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	45.1	13.3	12.1	7.16	5.63	-
1913	14.2	15.3	10.2	-	-	-	a25.9	a9.0	a23.1	a22.7	a5.2	a5.4	-
1914	a10.3	a11.4	-	-	-	-	a27.9	a63.5	a62.9	a73.2	a38.4	a11.1	-
1915	a20.6	-	-	-	-	-	19.8	29.6	40.2	12.9	22.0	8.57	-
1916	10.7	8.33	-	-	-	-	11.9	8.94	4.93	1.81	.45	.67	-
1917	6.25	-	-	-	-	-	-	-	-	-	-	-	-
1930	12.4	14.9	-	-	-	44.5	69.4	69.8	19.3	1.85	6.22	6.44	-
1931	21.7	31.7	-	-	-	21.3	17.1	3.15	.50	1.98	.13	-	-
1932	3.49	7.5	-	-	-	18.5	24.7	6.2	2.05	.02	.09	.02	-
1933	1.61	4.1	3.5	4.0	4.0	-	-	-	-	-	-	-	-

a Revised; supersedes figure published in reports of State engineer of Wyoming.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	2,770	791	744	440	335	-
1913	873	910	627	-	-	-	a1,540	a553	a1,370	a1,400	a320	a321	-
1914	a633	a678	-	-	-	-	a1,660	a3,900	a37,400	a4,500	a2,360	a660	-
1915	a1,270	-	-	-	-	-	1,180	1,820	2,390	793	1,350	510	-
1916	658	496	-	-	-	-	708	550	293	111	27.7	39.9	-
1917	384	-	-	-	-	-	-	-	-	-	-	-	-
1930	762	887	-	-	-	2,740	4,130	4,290	1,150	114	582	383	-
1931	1,330	1,890	-	-	-	-	1,270	1,050	187	30.7	122	7.7	-
1932	215	446	-	-	-	1,140	1,470	381	122	1	6	1	-
1933	99	244	215	246	222	-	-	-	-	-	-	-	-

a Revised; supersedes figure published in reports of State engineer of Wyoming.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	326	117	May 31, 1912	-	-	-	-	-
1913	(a) 469	360	July 18, 1913	-	-	-	-	-
1914	(a) 469	1,660	June 9, 1914	-	-	-	-	-
1915	406	*251	Aug. 22, 1915	-	-	-	-	-
1916	436	40	Mar. 13, 1916	0	-	-	-	-
1930	701	127	Apr. 5, 1930	0	-	-	-	-
1931	716	43	Mar. 30, 1931	0	-	-	-	-
1932	731	86	Apr. 3, 1932	0	-	-	-	-
1933	746	-	-	-	-	-	-	-

* Revised.

a From reports of State engineer of Wyoming.

117. Sybille Creek above Bluegrass Creek, near Wheatland, Wyo.

Location (revised).--Lat 41°52'05", long. 105°12'42", in sec. 23, T. 22 N., R. 70 W., a quarter of a mile upstream from Bluegrass Creek and 18 miles southwest of Wheatland.

Drainage area.--265 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,246 ft (from topographic map).

Average discharge.--9 years (1941-50), 28.8 cfs.

Extremes.--1941-50: Maximum discharge, 1,100 cfs June 5, 1949 (gage height, 4.62 ft), from rating curve extended above 340 cfs; minimum daily, 1.1 cfs Mar. 17, 18, 1941.

Remarks.--Diversions for irrigation of about 3,600 acres above station. One small diversion between station and Bluegrass Creek. Seven small reservoirs (total capacity about 400 acre-ft) above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	7.29	24.2	18.4	14.2	4.90	2.94	-
1942	3.51	*7.4	*8	*5	*5	*5.9	28.2	279	91.4	47.0	17.2	13.0	*42.8
1943	37.1	44.8	35.8	25.2	22.0	59.4	67.4	76.4	66.3	49.0	12.0	7.13	42.0
1944	10.1	16.0	14.3	10.5	10.8	12.1	37.6	32.0	30.7	9.07	2.37	1.67	15.6
1945	2.57	2.89	4.53	5.25	5.90	6.55	57.7	97.1	81.3	48.4	27.7	11.8	29.4
1946	14.4	18.1	14.8	12.1	11.8	10.5	8.45	13.2	17.3	13.5	3.69	4.01	11.8
1947	9.28	14.4	16.2	13.8	13.0	25.6	51.1	73.9	273	134	58.1	27.2	59.0
1948	30.0	24.5	21.8	21.9	22.5	27.1	75.6	35.7	27.5	20.1	6.29	3.05	28.3
1949	3.20	4.38	6.35	8.13	8.51	12.3	39.2	64.4	70.1	57.7	15.9	8.89	23.1
1950	9.77	12.8	9.75	7.75	8.18	6.42	5.68	11.1	19.0	16.0	5.09	3.36	9.58

* Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	434	1,490	1,090	870	301	175	-
1942	216	*442	*369	*307	*278	*363	1,680	17,160	5,440	2,890	1,060	773	*30,980
1943	2,280	2,670	2,200	1,550	1,220	3,650	4,010	4,700	3,950	3,010	740	424	30,400
1944	619	954	881	643	619	747	2,240	1,970	1,830	558	146	99	11,310
1945	158	172	278	323	327	402	3,440	5,970	4,840	2,980	1,700	705	21,300
1946	893	1,080	911	742	656	648	503	815	1,030	832	227	238	8,560
1947	571	857	996	850	721	1,570	3,040	4,550	16,220	8,250	3,450	1,620	42,700
1948	1,850	1,460	1,340	1,350	1,300	1,660	4,500	2,200	1,640	1,230	387	182	19,100
1949	197	261	391	377	473	754	2,330	3,960	4,170	2,320	979	529	16,740
1950	601	762	599	476	454	395	338	684	1,130	986	313	200	6,940

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1941	928	*200	July 4, 1941	-	-	-	-	-	-
1942	956	*511	May 9, 1942	-	*42.8	*30,980	*51.2	*37,100	
1943	976	864	July 9, 1943	5.4	42.0	30,400	35.5	25,710	
1944	1006	195	May 16, 1944	1.4	15.6	11,310	13.0	9,460	
1945	1036	198	May 7, 1945	1.9	29.4	21,300	32.5	23,560	
1946	1056	326	July 14, 1946	1.8	11.8	8,560	11.2	8,120	
1947	1086	1,040	June 21, 1947	4.2	59.0	42,700	62.0	44,920	
1948	1116	255	June 26, 1948	2.2	26.3	19,100	21.1	15,300	
1949	1146	1,100	June 5, 1949	2.3	23.1	16,740	24.7	17,850	
1950	1176	31	June 5, 1950	1.8	9.58	6,940	-	-	

* Revised.

* Not previously published.

118. Sybille Creek below Bluegrass Creek, near Wheatland, Wyo.

Location (revised).--Lat 41°52'40", long. 105°12'17", in S $\frac{1}{2}$ sec. 14, T. 22 N., R. 70 W., three-quarters of a mile downstream from Bluegrass Creek, 1 mile upstream from Wheatland Canal No. 1, and 17 miles southwest of Wheatland.

Drainage area.--369 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,220 ft (from topographic map).

Extremes.--April to September 1950: Maximum discharge, 672 cfs July 3 (gage height, 2.94 ft); minimum daily, 2.3 cfs Apr. 28.

Remarks.--Most of flow during the irrigation season is water released from Wheatland reservoir No. 2 (capacity, 98,930 acre-ft) on the Laramie River and diverted down Bluegrass Creek for irrigation of land near Wheatland. Diversions for irrigation of about 4,400 acres above station. Ten small reservoirs above station (total capacity, about 400 acre-ft) for irrigation.

Monthly and yearly mean discharge, in cubic feet per second, of Sybille Creek below Bluegrass Creek, near Wheatland, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950							27.7	71.9	379	370	336	144	

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950							1,650	4,420	22,560	22,770	20,690	8,540	

119. Sybille Creek near Mule Shoe Ranch, near Wheatland, Wyo.

Location.--Lat 42°01'47", long. 105°04'20", in NW¼ sec. 25, T. 24 N., R. 69 W., 1½ miles downstream from Wheatland Canal No. 2, 1½ miles upstream from Mule Shoe Ranch, 6 miles southwest of Wheatland, and 6¼ miles (revised) upstream from mouth.

Drainage area.--542 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,740 ft (from topographic map).

Extremes.--April to September 1950: Maximum discharge, 355 cfs May 26 (gage height, 3.76 ft), from rating curve extended above 120 cfs on basis of velocity-area studies; minimum daily, 1.8 cfs Aug. 23.

Remarks.--Part of flow past station is return flow from lands irrigated by water from the Laramie River. Diversions for irrigation of about 18,000 acres above station. Twenty small reservoirs above station (total capacity, about 800 acre-ft) for irrigation and stock water. Wheatland reservoir No. 1 above station (capacity, 7,160 acre-ft) is used mainly for storage of irrigation water diverted from the Laramie River.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950							21.2	37.4	21.3	31.3	4.05	9.68	

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950							1,260	2,300	1,270	1,920	249	576	

120. Sybille Creek near Wheatland, Wyo.1/

Location.--Lat 42°06'00", long. 105°05'10", in sec. 35, T. 25 N., R. 69 W., half a mile upstream from mouth and 7 miles (revised) northwest of Wheatland.

Drainage area.--568 sq mi.

Gage.--Staff gage. Altitude of gage is 4,630 ft (from topographic map). May 23, 1912, to May 27, 1913, 20 ft downstream at same datum.

Extremes.--1912-16: Maximum discharge observed, 663 cfs (revised) Apr. 1, 1913 (gage height, 3.04 ft); no flow Aug. 20, 1913, July 1-3, July 24 to Oct. 5, 1916.

Remarks.--Adjudicated diversions of about 220 cfs (by decree of district court dated Dec. 27, 1912) for irrigation of about 19,000 acres.

Cooperation.--Records for 1913-14 furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	*85.9	*20.6	*113	*37.8	-
1913	20.1	46.0	-	-	-	-	a134	b34	b19	a29.8	b14	b5	-
1914	a5.19	a10.7	-	-	-	-	b108	a80.9	b37.6	b13.2	b23.6	b2.1	-
1915	b7.71	-	-	-	-	-	29.1	31.9	14.1	24.6	40.1	10.3	-
1916	13.6	20.5	-	-	-	-	42.7	27.5	4.27	.35	0	0	-
1917	.54	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

a Revised; supersedes figure published in reports of State engineer of Wyoming.

b From reports of State engineer of Wyoming.

1/ Published as "Sibylee Creek" 1912, 1915, 1916; "Sybille Creek" in WSP 469; "Sybille Creek near mouth" 1913, 1914, in reports of State engineer of Wyoming.

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of Sybille Creek near Wheatland, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	*5,110	*1,270	*6,950	*2,250	-
1913	1,240	2,740	-	-	-	-	a7,970	b2,080	b1,100	a1,830	b873	b269	-
1914	a519	a637	-	-	-	-	b6,430	a4,970	b2,240	b810	b1,450	b125	-
1915	b474	-	-	-	-	-	1,730	c1,960	839	1,510	2,470	613	-
1916	836	1,220	-	-	-	-	2,540	1,690	254	22	0	0	-
1917	33	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

a Revised; supersedes figure published in reports of State engineer of Wyoming.

b From reports of State engineer of Wyoming.

c Figure published in WSP 469 is incorrect.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1912	(a)	*822	Aug. 2, 1912	-	-	-	-	-	-
1913	(b)	c863	Apr. 1, 1913	0	-	-	-	-	-
1914	(b)	*218	May 3, 1914	-	-	-	-	-	-
1915	406	*405	Aug. 23, 1915	1	-	-	-	-	-
1916	436	148	May 12, 1916	0	-	-	-	-	-

* Revised.

† Not previously published.

a WSP Nos. 406, 1440.

b Reports of State engineer of Wyoming.

c Revised; supersedes figure published in reports of State engineer of Wyoming.

121. North Laramie River near Wheatland, Wyo.

Location.--Lat 42°10'02", long. 105°12'15" (revised), in SE $\frac{1}{4}$ sec. 2, T. 25 N., R. 70 W., 1,000 ft upstream from headgate of North Laramie Land Co.'s canal, 1 mile downstream from Spring Creek, and 15 miles (revised) northwest of Wheatland.

Drainage area.--366 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,830 ft (from topographic map).

Nov. 6, 1914, to Sept. 30, 1923, water-stage recorder at site 460 ft upstream at different datum.

Average discharge.--20 years (1914-23, 1939-50), 48.3 cfs.

Extremes.--1914-23, 1939-50: Maximum discharge, 4,100 cfs Mar. 28, 1943, from rating curve extended above 500 cfs on basis of slope-area determination of peak flow; maximum gage height, 8.07 ft June 5, 1949, from floodmarks; no flow Nov. 29, 1915, and at times during July to September 1919.

Remarks.--Water rights totaling 124 cfs (priorities 1886 to 1944) for irrigation of about 8,800 acres, adjudicated by the State of Wyoming for diversion above station. Seven small reservoirs above station (total capacity about 290 acre-ft) for irrigation and stock water.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	a10	a6.4	b4	a3	a3	b4	42.3	128	113	52.7	92.2	54.8	a43.0
1916	22.8	6.20	b3	a3	b2	a15	125	94.4	36.3	b2	b1	b1	a25.9
1917	a3.3	a3.4	a2.8	a2.8	a2.7	a24.3	203	681	518	88.8	25.4	18.6	a131
1918	19.3	22.0	a18.4	b15	a15	a48.7	137	†262	63.6	18.7	7.45	6.89	a53.1
1919	10.7	a8.51	a4	a3	a3	a18	a57.1	51.7	12.6	b2	b1	b1	a14.4
1920	a6	a5.0	a3	a2	a2	a22.6	368	616	92.8	26.1	20.4	10.4	a98.2
1921	10	12	a8	b7	b6	a12.0	89.7	240	256	55.4	27.5	10	a61.2
1922	13.4	a10	a8	a7	a6	b15.0	83.0	312	92.8	a26.0	a20	a10	a50.7
1923	*26	*8.4	*7.3	*6.5	*5.3	*15	101	559	224	58.6	22.1	37.5	*89.9
1939	-	-	-	-	-	-	-	-	-	-	2.13	.68	-
1940	1.41	2.58	3.09	3.75	4.18	5.05	45.0	80.5	10.4	2.07	.35	.79	13.3
1941	2.01	2.44	3.00	2.86	3.26	13.8	90.4	202	51.3	16.2	16.6	7.18	34.5
1942	8.85	*9	*8	*7	*6	*7.00	127	307	52.2	15.0	5.88	3.30	*46.6
1943	7.85	9.76	9.42	7.64	9.82	128	163	104	77.3	18.8	5.56	3.18	45.3
1944	3.86	6.81	7.41	6.82	6.29	6.42	59.9	210	56.7	9.88	2.42	1.45	31.6
1945	3.14	4.23	3.55	5.41	5.73	6.13	43.7	309	200	47.3	45.2	10.8	57.4
1946	12.5	12.2	9.10	7.53	8.36	22.1	40.9	78.3	27.2	10.8	2.09	3.17	19.6
1947	5.76	7.20	7.44	5.80	6.43	54.8	71.3	145	216	85.8	13.8	7.36	51.0
1948	8.74	13.7	14.4	13.9	15.4	15.5	104	87.9	34.3	10.0	4.54	2.04	27.0
1949	4.32	5.49	6.25	5.05	5.50	19.6	119	230	114	16.8	6.77	5.42	45.0
1950	6.71	7.97	8.22	5.94	5.79	9.58	39.8	144	59.6	20.0	7.02	5.96	26.8

† Corrected.

* Not previously published; estimated on basis of records for nearby stations.

a Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet, of North Laramie River near Wheatland, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	a615	a381	b246	a184	a167	b246	2,520	7,870	6,720	3,240	5,670	3,260	a31,100
1916	1,400	369	b184	a184	b115	a922	7,440	5,800	2,160	b123	b61	b59	a18,800
1917	a200	a200	a175	a175	a150	a1,500	12,100	41,900	30,800	5,460	1,560	988	a95,200
1918	1,190	1,310	a1,130	b920	a833	a3,000	8,150	16,100	3,780	1,150	458	410	a38,400
1919	658	a507	a246	a184	a167	a1,110	a3,400	3,180	750	b123	b61	b59	a10,400
1920	a369	a298	a184	a123	a115	a1,390	21,900	37,900	5,520	1,600	1,250	619	a71,300
1921	615	714	a492	b430	b332	a738	5,340	14,800	15,200	3,410	1,690	595	a44,400
1922	824	a595	a492	a430	a333	b920	4,940	19,200	5,530	a1,600	a1,230	a615	a36,700
1923	*1,600	*500	*450	*400	*320	*922	6,010	34,400	13,300	3,600	1,360	2,230	*\$5,100
1939	-	-	-	-	-	-	-	-	-	-	131	41	-
1940	86	153	190	231	240	311	2,680	4,950	619	127	22	47	9,660
1941	124	145	185	176	181	850	5,380	12,440	3,050	998	1,020	427	24,980
1942	544	*536	*492	*430	*333	*431	7,530	18,860	3,100	922	362	196	*33,740
1943	483	581	579	470	546	7,770	9,690	8,380	4,800	1,160	342	189	32,790
1944	237	405	456	419	362	395	3,560	12,900	3,680	608	149	86	22,960
1945	193	252	218	333	318	377	2,600	19,010	11,900	2,910	2,780	640	41,530
1946	766	726	559	463	464	1,360	2,430	4,810	1,620	663	129	189	14,180
1947	354	428	457	357	357	3,370	4,240	8,890	12,850	4,050	1,160	438	36,950
1948	538	817	983	857	885	952	6,210	5,400	2,040	618	279	121	19,600
1949	266	327	384	311	305	1,200	7,090	14,150	6,760	1,030	417	323	32,560
1950	412	474	505	365	322	589	2,370	8,830	3,550	1,230	431	355	19,430

* Not previously published; estimated on basis of records for nearby stations.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1915	406	225	May 31, 1915	-	a43.0	a31,100	a44.0	a31,800
1916	436	176	Apr. 27, 1916	0	a25.9	a18,800	a24.0	a17,400
1917	456	*1,420	May 30, 1917*	-	a131	a95,200	a136	a98,300
1918	476	592	May 9, 1918	.6	a53.1	a38,400	a50.0	a36,200
1919	506	148	Apr. 27, 1919	0	a14.4	a10,400	a13.6	a9,890
1920	506	3,020	Apr. 7, 1920	-	a98.2	a71,300	a93.5	a72,200
1921	526	-	-	-	a61.2	a44,400	a61.4	a44,400
1922	546	1,380	May 28, 1922	-	a50.7	a36,700	*51.6	*\$7,300
1923	566	-	-	-	*89.9	*\$5,100	-	-
1939	896	-	-	-	-	-	-	-
1940	896	208	Apr. 29, 1940	.2	13.3	9,660	13.3	9,680
1941	926	635	May 3, 1941	1.8	34.5	24,980	*36.0	*28,090
1942	956	1,020	Apr. 4, 1942	1.9	*46.6	*33,740	*46.7	*33,810
1943	976	4,100	Mar. 28, 1943	2.7	45.3	32,790	44.5	32,240
1944	1006	550	May 19, 1944	1.2	31.6	22,960	31.0	22,520
1945	1036	1,620	Aug. 3, 1945	2.0	57.4	41,530	59.3	42,920
1946	1056	164	May 5, 1946	.6	19.6	14,180	18.5	13,370
1947	1086	1,680	Mar. 23, 1947	.4	51.0	36,950	52.4	37,950
1948	1116	574	Apr. 19, 1948	1.5	27.0	19,600	25.3	19,340
1949	1146	4,030	June 5, 1949	2.3	45.0	32,560	45.6	32,980
1950	1176	200	May 16, 1950	4.1	26.8	19,430	-	-

* Revised.

† Not previously published.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

122. North Laramie River at Wilson's Ranch, near Wheatland, Wyo. 1/

Location.--Lat 42°10'33", long. 105°10'33", in SW 1/4 sec. 6, T. 25 N., R. 69 W., at Wilson's Ranch, 1 mile below headgate of the North Laramie Land Company Canal, and 14 miles (revised) northwest of Wheatland.

Drainage area.--370 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 4,780 ft (from topographic map).

Extremes.--1912-14: Maximum discharge observed, 680 cfs May 10, 1912 (gage height, 6.80 ft); minimum daily discharge, 1.0 cfs Nov. 24, 27, 28, 30, 1912, July 13-19, 1914.

Remarks.--Water rights totaling about 119 cfs for irrigation of about 8,400 acres adjudicated by State of Wyoming for diversion above station.

Cooperation.--Records for 1913-14 furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	4.5	5.0	6.84	94.5	317	51.3	12.3	10.4	4.07	-
1913	4.39	6.58	5.5	-	-	-	-	-	60.8	6.7	3.0	2.0	-
1914	2.4	-	-	-	-	-	-	225	20.0	3.3	3.8	3.0	-
1915	5.6	-	-	-	-	-	-	-	-	-	-	-	-

1/ Published as "near Wheatland," 1912-14.

Monthly and yearly runoff, in acre-feet, of North Laramie River at Wilson's Ranch, near Wheatland, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	277	288	420	5,620	19,500	3,050	756	640	242	-
1913	270	392	338	-	-	-	-	3,620	412	184	119	-	-
1914	148	-	-	-	-	-	-	13,800	1,190	203	234	179	-
1915	344	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	326	†680	May 10, 1912	-	-	-	43.8	31,800
1913	469	-	-	1	-	-	-	-
1914	469	665	May 3, 4, 1914	1	-	-	-	-

† Not previously published.

123. Laramie River at Uva, Wyo.

Location.--Lat 42°07'40", long. 104°54'35", in NE¼ sec. 20, T. 25 N., R. 67 W., half a mile southeast of Uva, ½ miles (revised) downstream from North Laramie River.

Drainage area.--3,179 sq mi.

Gage.--Staff gage. Altitude of gage is 4,450 ft (from topographic map). Apr. 22, 1895, to Oct. 28, 1899, staff gage at same site and different datum.

Extremes.--1895-99, 1903: Maximum discharge observed, 3,610 cfs June 26, 1899 (corrected) (gage height, 6.0 ft); no flow Aug. 8, 1896, Sept. 13-19, 23-30, 1897, July 31 to Aug. 10, 1898.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, diversion for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	*805	1,610	*223	*38.1	*9.6	-
1896	*13.4	-	-	-	-	-	†166	a260	a331	a42.2	a73.5	a9.7	-
1897	-	-	-	-	-	-	a743	a1,260	1,050	a33.6	a105	a2.0	-
1898	-	-	-	-	-	-	76.1	†403	654	27	2.2	2	-
1899	†2.5	*8.2	-	-	-	-	a1,090	1,180	a2,690	1,540	203	55	-
1900	a79.0	-	-	-	-	-	-	-	-	-	-	-	-
1903	-	-	-	-	-	-	-	225	163	130	21	13	-
1904	11	-	-	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published in Bull. 140.

† Corrected.

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

a Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	*49,500	95,800	*13,700	*2,340	*571	-
1896	*824	-	-	-	-	-	†9,870	a16,000	a19,700	a2,590	a4,520	a577	-
1897	-	-	-	-	-	-	a44,200	a77,500	62,500	a2,070	a6,460	a119	-
1898	-	-	-	-	-	-	4,520	†24,800	38,900	1,660	135	119	-
1899	154	*488	-	-	-	-	a64,900	72,400	a160,000	94,400	12,500	3,270	-
1900	a4,860	-	-	-	-	-	-	-	-	-	-	-	-
1903	-	-	-	-	-	-	-	13,800	9,700	7,990	1,290	774	-
1904	676	-	-	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published in Bull. 140.

† Corrected.

‡ Not previously published; partly estimated on basis of records for stations on nearby streams.

a Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	(a), 469	3,110	June 3, 1895	-	-	-	-	-
1896	(b)	1,940	June 3, 1896	0	-	-	-	-
1897	(c)	2,570	May 27, 28, 1897	0	-	-	-	-
1898	(d)	1,220	May 28, 29, 1898	0	-	-	-	-
1899	(e)	3,610	June 26, 1899†	-	-	-	-	-
1903	99	-	-	-	-	-	-	-

† Corrected.

a Bull. 140.

b 18th Ann. Rept., Pt. 4.

c 19th Ann. Rept., Pt. 4.

d 20th Ann. Rept., Pt. 4.

e 21st Ann. Rept., Pt. 4.

Note.--Records for January to March, October to December, 1897, published in 19th Ann. Rept., Pt. 4, January to March, December, 1898, published in 20th Ann. Rept., Pt. 4, and January to March, November, December, 1899, published in 21st Ann. Rept., Pt. 4 have been found in error on basis of restudy of the original data and comparison with records at nearby stations. Those records are not published herein and should not be used.

124. Chugwater Creek at Chugwater, Wyo.

Location.--Lat 41°45'10", long. 104°48'55", in NE¼ sec. 31, T. 21 N., R. 66 W., 270 ft upstream from old highway bridge, a quarter of a mile southeast of Chugwater, and half a mile upstream from headgate for Ramsey ditch.

Drainage area.--380 sq mi (revised), approximately.

Gage.--Chain gage. Altitude of gage is 5,270 ft (from topographic map). May 22, 1911, to Feb. 5, 1912, staff gage at site 300 ft downstream at different datum. Feb. 6, 1912, to Apr. 5, 1916, staff gage and Apr. 6, 1916, to Sept. 30, 1921, chain gage at same site at different datum.

Average discharge.--11 years (1911-21, 1938-39), 20.5 cfs.

Extremes.--1911-21, 1938-40: Maximum discharge observed, 350 cfs Sept. 4, 1915 (gage height, 4.5 ft, datum then in use), from rating curve extended above 230 cfs; no flow at times in 1913.

Remarks.--Adjudicated diversions of about 75 cfs above station for irrigation of about 5,000 acres.

Cooperation.--Records for 1913 and 1914 furnished by the State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	a2	1.90	4.13	4.29	2.10	-
1912	4.10	9.27	3.00	2.91	3.24	7.29	27.1	98.5	32.7	9.23	42.2	42.5	23.6
1913	29.5	a20	a10	a8	a7	a15	98.0	26.6	b8.2	b7.5	b4.5	1.5	a19.6
1914	b8.0	7.3	b3.5	b5.3	8.3	b22.6	67.8	c50	c9.3	b5.1	b14	b9	c17.5
1915	b13	a17	a20	31.2	27.4	36.5	51.2	36.1	32.1	d17.5	32.4	a32	c28.8
1916	31.2	24.6	18.8	13.4	20.3	41.4	28.2	7.16	4.85	2.92	2.84	2.68	16.5
1917	3.69	5.54	4.36	3.04	4.35	9.26	44.8	122	129	18.3	19.5	18.8	31.8
1918	17.3	25.7	22.2	19.0	20.4	37.8	78.9	45.5	64.2	20.9	17.1	12.2	31.7
1919	13.3	13.4	10.6	9.75	9.83	17.7	35.3	6.78	3.30	4.95	5.66	5.54	11.3
1920	4.72	4.21	2.70	3.84	8.96	8.83	24.8	120	21.7	15.2	32.4	18.7	22.3
1921	14.4	15.5	11.8	11.5	17.5	41.3	13.8	12.4	19.7	12.2	20.6	7.42	16.5
1938	-	-	-	-	-	-	-	-	#6.17	6.03	4.04	7.33	-
1939	4.62	5.33	6.94	7.96	5.84	15.4	13.8	4.04	4.90	2.31	3.03	1.87	6.33
1940	1.90	2.08	1.71	1.53	1.60	1.34	2.11	1.75	1.60	-	-	-	-

* Not previously published; partly estimated on basis of records for stations on nearby streams.
a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b Revised; supersedes figure published in reports of State engineer of Wyoming.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Corrected; figure published in WSP 469 for partial month only.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	a123	113	254	284	129	-
1912	252	552	184	179	186	448	1,610	6,050	1,950	568	2,590	2,530	17,100
1913	1,810	a1,190	a514	a491	a397	a920	5,830	1,640	b488	b461	b277	89	a14,200
1914	b492	434	b215	b326	461	b1,390	4,030	c3,070	c551	b314	b858	b535	c12,700
1915	b798	a1,010	a1,230	1,920	1,520	2,240	3,050	2,220	1,910	d1,070	1,990	a1,900	c20,900
1916	1,920	1,460	1,160	824	1,170	2,550	1,680	440	289	180	162	159	12,000
1917	227	211	268	187	242	569	2,670	7,500	7,680	1,160	1,200	1,120	23,000
1918	1,060	1,530	1,360	1,170	1,130	2,320	4,690	2,800	3,820	1,290	1,050	726	22,900
1919	818	797	652	600	546	1,090	2,100	417	196	304	348	330	8,200
1920	290	251	166	236	515	543	1,480	7,360	1,290	935	1,990	1,110	16,200
1921	885	922	726	707	972	2,540	821	762	1,170	750	1,270	442	12,000
1938	-	-	-	-	-	-	-	-	#367	371	248	436	-
1939	284	317	427	469	324	944	820	248	291	142	186	111	4,580
1940	117	124	105	94	92	82	126	108	95	-	-	-	-

* Not previously published; partly estimated on basis of records for stations on nearby streams.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in reports of State engineer of Wyoming.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Corrected; figure published in WSP 469 for partial month only.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1911	306, 326	#204	July 22, 1911	-	-	-	-
1912	326	#282	Aug. 2, 1912	1	23.6	17,100	a27.2
1913	(b), 469	-	-	0	a19.6	a14,200	a16.2
1914	(b), 469	-	-	-	c17.5	c12,700	c20.1
1915	406	350	Sept. 4, 1915	-	c28.8	c20,900	c30.9
1916	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-

* Not previously published.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Wyoming.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of Chugwater Creek at Chugwater, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	456	90	(d)	2.5	16.5	12,000	11.2	8,160
1917	456	†275	June 1, 1917	2.6	31.8	23,000	36.3	26,300
1918	476	240	July 23, 1918	10	31.7	22,900	29.4	21,300
1919	506	140	Aug. 1, 1919	2.3	11.3	8,200	9.2	6,640
1920	506	227	May 7, 1920	1.2	22.3	16,200	24.8	18,000
1921	526	169	July 31, 1921	4.1	16.5	12,000	-	-
1938	856	69	Sept. 5, 1938	-	-	-	-	-
1939	876	171	June 1, 1939	-	6.33	4,580	5.39	3,900
1940	896	S.1	Feb. 27, 1940	1.7	-	-	-	-

† Corrected.

d Mar. 20, 21, 24, 1916.

125. Laramie River near Fort Laramie, Wyo. 1/

Location.--Lat 42°12'06", long. 104°32'39", in NE 1/4 sec. 28, T. 26 N., R. 64 W., half a mile east of Old Fort Laramie, 0.9 mile downstream from Deer Creek, 1.3 miles upstream from mouth, 1.4 miles southwest of Fort Laramie, and 5 miles downstream from point of diversion to Gering-Port Laramie Canal.

Drainage area.--4,600 sq mi, approximately.

Supplemental records available.--November 1930 to April 1931 and November 1931 to April 1932, combined flow of Laramie River and Gering-Port Laramie Canal published in WSP 716 and 731, respectively.

Gage.--Water-stage recorder. Altitude of gage is 4,220 ft (from topographic map). Apr. 4, 1915, to Mar. 31, 1925, staff gage at site half a mile downstream at different datum. Apr. 1, 1925, to Sept. 30, 1932, staff gage, and Oct. 1, 1932, to Aug. 20, 1935, water-stage recorder at Gering-Port Laramie Canal siphon 4 miles upstream at different datum.

Average discharge.--22 years (1926-30, 1932-50), 95.2 cfs.

Extremes.--1915-50: Maximum discharge observed, 4,280 cfs June 6, 1917 (gage height, 4.20 ft, site and datum then in use), from rating curve extended above 2,800 cfs; no flow Jan. 31 to Mar. 20, Oct. 24 to Dec. 17, 1926, Mar. 1-26, 1927, Apr. 14, 1938 (diversion bypassing all flow).

Remarks.--Records for river, contained herein, for years subsequent to 1919 do not include diversion to Gering-Port Laramie Canal. Previously published records for water years 1926-39 are for combined flow of river and canal. Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversion for irrigation, and return flow from irrigated areas.

Cooperation.--River records prior to 1939 and diversion records of Gering-Port Laramie Canal for 1925-50 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	127	144	166	176	206	169	-
1916	181	160	-	-	-	-	-	89.5	20.6	6.20	10.1	7.90	-
1917	-	-	-	-	-	-	201	1,340	3,000	1,290	190	90.6	-
1918	72.1	151	168	-	-	-	306	427	986	244	155	102	-
1919	-	-	-	-	-	-	231	89.7	23.9	69.6	12.3	20.0	-
1920	-	-	-	-	-	-	-	1,030	858	185	105	123	-
1921	-	-	-	-	-	-	146	239	1,280	236	77.5	29.2	-
1922	34.0	106	-	-	-	-	210	391	217	58.5	33.4	11.4	-
1923	a49.0	-	-	-	-	-	159	485	506	235	228	143	-
1924	-	-	-	-	-	-	850	887	993	108	67.1	73.5	-
1925	-	-	-	-	-	-	216	142	140	24.5	42.3	28.9	-
1926	a94.0	a139	-	-	a0	a115	a451	a436	a689	a311	a136	a125	-
1927	a86.2	a0	a55.8	a197	a236	a9.7	a445	a571	a270	a203	a306	a150	a211
1928	a27.0	a18.0	a16.0	a26.0	a126	a233	a250	a713	a880	a194	a95.8	a90.5	a222
1929	a42.0	a18.0	a6.0	a16.0	a16.0	a33.0	a473	a1,470	a1,000	a200	a90.0	a243	a303
1930	a54.0	a86.0	a79.0	a47.0	a118	a88.0	a278	a471	a253	a48.5	a182	a160	a155
1931	a205	-	-	-	-	-	-	a31.0	a61.2	a19.8	a49.3	a32.4	-
1932	a74.1	-	-	-	-	-	-	a112	a44.9	a25.3	a13.5	a17.5	-
1933	a15.0	a5.0	a7.0	a5.0	a5.0	a10.0	a60.0	a425	a72.3	a20.9	a22.9	a27.8	a56.9
1934	a32.0	a3.0	a4.0	a6.0	a5.0	a12.0	a26.0	a5.0	a7.2	a8.5	a4.1	a8.9	a10.3
1935	a2.7	a4.2	a3.0	a4.5	a2.8	a2.4	a2.4	a93.1	a512	a39.1	a21.6	a26.4	a59.2
1936	a9.5	a8.0	a8.2	a6.8	a19.8	a10.2	a119	a65.6	a148	a16.7	a13.1	a23.6	a37.1
1937	a8.7	a7.9	a4.2	a4.5	a6.2	a5.5	a59.0	a135	a167	a199	a57.1	a34.1	a57.6
1938	a13.0	a5.2	a12.0	a9.3	a12.0	a20.0	a125	a177	a111	a72.8	a48.6	a106	a59.4
1939	a16.3	a18.4	a14.5	a12.8	a13.3	a20.3	a29.6	a50.9	a35.6	a16.4	a16.4	a17.5	a21.9
1940	11.3	6.72	9.41	9.68	10.8	6.88	9.97	46.3	65.3	24.4	14.7	18.0	†19.6
1941	7.85	7.22	8.92	7.67	6.54	6.23	28.7	176	87.8	53.0	50.1	38.2	40.1
1942	13.5	7.72	17.7	11.2	9.27	6.45	136	711	211	101	88.7	54.6	115
1943	14.2	20.3	25.5	24.0	15.2	164	417	270	195	112	66.5	41.1	114
1944	14.4	9.54	7.07	6.20	5.84	4.97	51.2	104	74.4	58.4	33.0	18.6	29.0
1945	11.9	7.72	7.82	7.02	6.89	6.84	21.6	323	491	184	166	101	112
1946	29.9	9.09	9.38	9.55	7.63	7.97	7.94	105	57.8	52.0	34.6	90.6	35.3
1947	115	66.9	13.1	10.6	9.82	50.8	51.9	235	822	441	177	117	176
1948	79.7	14.2	40.0	67.3	53.4	48.8	99.6	149	236	109	70.9	67.7	86.3
1949	53.2	9.62	9.15	28.8	36.0	12.3	12.2	136	732	161	96.8	76.2	113
1950	96.1	85.1	9.37	9.43	9.91	7.90	8.25	104	135	110	56.4	70.0	58.6

† Corrected.

* Not previously published; partly estimated on basis of records for other Laramie River stations.

a Not previously published; from files of Bureau of Reclamation.

1/ Published as "at Fort Laramie" prior to October 1931.

Monthly and yearly runoff, in acre-feet, of Laramie River near Fort Laramie, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	-	-	-	-	-	-	7,560	8,850	9,880	10,800	12,700	10,100	-
1916	11,100	9,520	-	-	-	-	-	5,500	1,230	381	621	470	-
1917	-	-	-	-	-	-	12,000	82,000	179,000	79,300	11,700	5,390	-
1918	4,430	8,980	10,300	-	-	-	18,200	26,300	58,700	15,000	9,530	6,070	-
1919	-	-	-	-	-	-	13,700	5,520	1,420	4,280	756	1,190	-
1920	-	-	-	-	-	-	-	63,300	51,100	11,400	6,460	7,320	-
1921	-	-	-	-	-	-	8,690	14,700	76,200	14,500	4,770	1,740	-
1922	2,110	6,380	-	-	-	-	12,500	24,000	12,900	2,360	2,050	678	-
1923	a3,000	-	-	-	-	-	9,460	29,700	30,100	14,400	14,000	8,510	-
1924	-	-	-	-	-	-	50,600	54,500	59,100	6,640	4,130	4,370	-
1925	-	-	-	-	-	-	12,900	8,730	8,330	1,510	2,600	1,720	-
1926	a5,780	a8,270	-	-	-	a0	a7,090a	a26,900a	a26,800a	a1,000a	a19,100	a8,360	a7,440
1927	a5,300	a0	a4,040a	a12,100a	a13,100	a595a	a26,500a	a35,100a	a16,100a	a12,500a	a18,800	a8,900	a153,000
1928	a1,640	a1,070	a1,010	a1,580	a7,270a	a14,300a	a14,900a	a43,800a	a52,400a	a11,900	a5,890	a5,390	a161,000
1929	a2,560	a1,040	a365	a980	a885	a2,020a	a28,200a	a90,400a	a60,100a	a12,300	a5,530a	a14,500	a219,000
1930	a3,300	a5,110	a4,860	a2,920	a6,540	a5,400a	a16,500a	a29,000a	a15,100	a2,970a	a11,200	a8,520	a112,000
1931	a12,600	-	-	-	-	-	-	a1,900	a3,640	a1,220	a3,030	a1,930	-
1932	a4,560	-	-	-	-	-	-	a6,880	a2,670	a1,740	a830	a1,040	-
1933	a930	a320	a430	a320	a270	a640	a3,560a	a26,100	a4,300	a1,280	a1,410	a1,650	a41,200
1934	a1,970	a190	a270	a360	a280	a760	a1,560	a330	a428	a522	a250	a532	a7,450
1935	a165	a250	a186	a276	a155	a147	a145	a5,720a	a30,490	a2,400	a1,330	a1,570	a42,830
1936	a581	a478	a506	a420	a1,140	a629	a7,110	a4,030	a8,800	a1,030	a803	a1,410	a26,940
1937	a530	a460	a260	a280	a350	a340	a3,490	a8,310	a9,960a	a12,210	a3,510	a2,030	a41,750
1938	a100	a310	a730	a570	a690	a1,260	a7,420a	a10,870	a6,590	a4,470	a2,990	a6,280	a42,990
1939	a8,000	a1,100	a889	a786	a737	a1,250	a1,760	a3,130	a2,120	a1,010	a1,010	a1,040	a15,830
1940	693	400	579	595	624	423	593	2,980	3,880	1,500	904	1,070	14,240
1941	483	430	549	472	363	383	1,710	10,820	5,220	3,260	3,080	2,280	29,050
1942	851	459	1,090	690	515	396	8,080	43,730	12,570	6,220	5,450	3,250	83,280
1943	875	1,210	1,570	1,480	843	10,080	24,800	16,580	11,580	6,910	4,090	2,440	82,460
1944	894	568	435	361	325	306	1,860	6,400	4,430	2,360	2,030	1,100	21,080
1945	729	459	481	432	382	420	1,280	19,850	29,230	11,340	10,220	6,010	80,830
1946	1,840	541	577	587	424	490	472	6,460	3,440	3,200	2,130	5,390	25,550
1947	7,080	3,980	807	651	534	3,120	3,090	14,430	48,910	27,130	10,880	6,930	127,500
1948	4,900	847	2,460	4,140	3,070	3,000	5,920	9,180	14,040	6,710	4,360	4,030	62,660
1949	3,270	572	562	1,770	2,000	755	723	8,330	43,560	9,950	5,950	4,530	81,950
1950	5,910	5,060	576	580	550	486	491	6,380	8,010	6,770	3,470	4,170	42,450

* Not previously published; partly estimated on basis of records for other Laramie River stations.

a Not previously published; from files of Bureau of Reclamation.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1915	406	a1,600	July 27, 1915	-	-	-	-
1916	436	a228	Oct. 18, 1915	-	-	-	-
1917	456	a4,280	June 6, 1917	-	-	-	-
1918	476	a1,640	June 21, 25, 1918	-	-	-	-
1919	506	a820	July 5, 1919	-	-	-	-
1920	506	a1,550	June 19, 1920	-	-	-	-
1921	526	a1,940	June 18-20, 1921	-	-	-	-
1922	546	a727	May 19, 1922	-	-	-	-
1923	(b), 566	a1,300	May 24, 1923	-	-	-	-
1924	586	a2,070	Apr. 10, 1924	-	-	-	-
1925	606	a410	May 17, 1925	-	-	-	-
1926	(b)	a1,120	July 11, 1926	b0	-	-	-
1927	(b)	a1,180	Aug. 15, 1927	b0	b211	b153,000	b204
1928	(b)	a1,620	June 7, 1928	b10	b222	b161,000	b222
1929	(b)	a2,500	June 2, 1929	b5	b303	b219,000	b315
1930	(b)	a760	Apr. 30, 1930	b10	b155	b112,000	-
1931	(b)	-	-	-	-	-	-
1932	(b)	-	-	-	-	-	-
1933	(b)	a625	May 25, 1933	b1	b56.9	b41,200	b57.9
1934	(b)	a86	Oct. 24, 1933	b1	b10.3	b7,450	b7.8
1935	(b)	a1,900	June 2, 1935	b2	b59.2	b42,830	b60.5
1936	(b)	1,680	June 6, 1936	b4	b37.1	b26,940	b36.7
1937	(b)	991	July 14, 1937	b3	b57.6	b41,730	b58.5
1938	(b)	507	May 30, 1938	b0	b59.4	b42,990	b61.0
1939	(b)	95	May 5, 1939	b8.6	b21.9	b15,830	20.0
1940	896	1,610	June 4, 1940	5.4	t19.6	14,240	19.3
1941	926	476	July 11, 1941	5.0	40.1	29,050	41.4
1942	956	1,550	June 27, 1942	5.8	115	83,280	117
1943	976	2,170	Mar. 30, 1943	9.6	114	82,460	111
1944	1006	202	May 24, 1944	4.5	29.0	21,080	28.7
1945	1036	1,420	June 7, 1945	6.0	112	80,830	113
1946	1056	220	May 11, 1946	6.4	35.3	25,550	47.6
1947	1086	2,140	June 25, 1947	8.6	176	127,500	171
1948	1116	745	May 22, 1948	10	86.3	62,660	81.1
1949	1146	2,190	June 19, 1949	7.5	113	81,950	123
1950	1176	520	May 27, 1950	7.5	58.6	42,450	-

† Corrected.

a Maximum daily.

b From files of Bureau of Reclamation.

Monthly and yearly runoff, in acre-feet, of diversion from Laramie River to Gering-Fort Laramie Canal near Fort Laramie, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	0	0	0	2,620	9,350	9,800	5,820	0	0	0	0	0	27,600
1927	3,460	8,880	5,150	0	333	11,300	1,080	0	0	0	0	198	30,400
1928	9,500	9,760	7,740	8,460	3,590	8,410	7,340	0	0	0	0	0	54,900
1929	5,120	9,020	7,750	7,240	5,730	11,200	10,100	0	0	0	0	0	56,200
1930	9,330	9,920	10,200	7,680	8,820	11,700	6,880	0	0	0	0	0	64,500
1931	4,240	-	-	-	-	-	-	4,970	0	0	0	0	-
1932	0	-	-	-	-	-	-	5,700	0	0	0	0	-
1933	2,570	4,460	4,470	5,140	3,610	5,750	5,340	900	0	0	0	0	32,200
1934	850	3,540	4,700	6,020	4,380	5,570	3,130	660	0	0	0	90	28,940
1935	1,260	2,400	3,240	5,480	2,480	2,290	1,690	4,640	2,640	0	0	0	24,120
1936	2,760	4,610	4,140	5,370	4,530	5,490	5,050	1,220	0	0	0	0	33,170
1937	3,080	4,240	3,780	3,270	3,870	4,280	6,580	1,790	0	0	0	0	30,890
1938	3,980	5,410	5,620	5,260	5,180	5,570	3,760	2,200	0	0	0	390	37,370
1939	4,240	5,450	5,080	5,740	4,880	6,240	6,280	1,040	0	0	0	0	38,950
1940	2,280	3,110	3,880	3,770	4,480	4,130	3,770	331	0	0	0	163	25,910
1941	2,910	3,280	3,380	3,090	3,090	3,690	4,000	0	0	0	0	0	23,440
1942	2,850	3,200	2,820	3,360	3,410	4,350	1,170	0	0	0	0	†202	21,340
1943	6,090	8,640	9,600	9,030	8,660	8,340	4,100	0	0	0	0	0	54,460
1944	3,040	5,760	6,100	6,240	6,720	6,870	11,370	10,290	0	0	0	0	56,390
1945	1,870	3,070	3,620	4,590	4,000	5,180	8,000	9,720	0	0	0	0	40,050
1946	5,100	6,770	7,170	7,430	6,700	7,270	6,160	0	0	0	0	0	46,600
1947	0	4,360	7,250	6,950	6,720	9,610	10,620	3,080	0	0	0	0	48,590
1948	4,130	10,330	11,030	9,000	8,010	10,950	13,300	5,660	0	0	0	0	72,410
1949	3,280	6,920	7,320	5,020	6,390	11,940	11,630	13,720	8,400	0	0	547	75,170
1950	593	3,150	6,080	5,510	8,440	6,640	6,880	7,440	0	0	0	0	44,740

† Corrected; supersedes figure listed in files of Bureau of Reclamation.

126. Rawhide Creek near Lingle, Wyo.

Location.--Lat 42°07'30", long. 104°19'20", in sec. 20, T. 25 N., R. 62 W., 300 ft up-stream from bridge on U. S. Highway 26, 1 mile east of Lingle, and 1 mile upstream from mouth.

Drainage area.--510 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,160 ft (from topographic map). Prior to June 12, 1935, staff gage at site 300 ft downstream at different datum. June 12, 1935, to Oct. 5, 1938, water-stage recorder at site 500 ft downstream at datum 0.24 ft lower.

Average discharge.--22 years (1928-50), 25.0 cfs.

Extremes.--1928-50: Maximum discharge, 3,970 cfs Sept. 7, 1946 (gage height, 11.76 ft), by float measurement; minimum daily, 0.7 cfs Aug. 2, 1934.

Remarks.--Low flow represents return flow from lands irrigated by Interstate Canal in Rawhide Creek basin. Diversions above station for irrigation of about 4,900 acres. Six small reservoirs (total capacity about 460 acre-ft) above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	29	69	75	54.0	58.0	-
1929	55.4	*37.6	*25	*20	*20	*25	34.4	33.3	35.4	33.2	57.0	64.0	*36.8
1930	33.1	30.5	*25	*20	30.9	26.2	17.4	40.6	37.1	27.7	54.0	47.6	*32.5
1931	52.7	30.9	25	21	22	24.5	21.1	22.9	22.2	38.4	38.1	29.2	29.1
1932	50.8	46.1	27.7	15	18	32.0	21.7	25.7	26.5	21.9	*41.1	36.3	*30.3
1933	40.2	27.5	18	18	14	18.2	22.9	42.3	20	26.7	42.9	47.9	28.3
1934	31	27	22	21	18	20	20	4.1	54.3	7.99	7.69	10.5	20.3
1935	11	8.0	13	10	13	7.0	2.0	26.0	100	24.0	20.9	25.8	21.7
1936	16.2	14.5	17.9	12.0	9.2	15.1	68.5	17.3	21.1	15.3	19.4	26.9	21.1
1937	13.9	7.29	9.38	6.46	6.11	10.7	13.8	30.5	34.0	44.9	27.8	29.1	19.6
1938	20.8	17.8	14.0	14.0	13.7	20.2	30.1	29.6	25.9	41.5	35.5	37.4	25.1
1939	12.7	5.00	15.8	14.3	13.2	16.8	14.1	13.2	21.1	21.5	30.9	30.5	17.5
1940	15.9	8.44	9.71	12.4	14.0	14.2	10.3	12.5	9.38	10.6	15.5	10.5	12.0
1941	11.8	8.16	8.04	8.35	8.22	8.55	14.4	14.3	34.2	102	25.9	26.5	22.7
1942	20.4	17.4	15.0	12.5	15.7	19.9	22.2	32.2	29.8	26.5	31.8	32.3	23.0
1943	27.3	20.2	19.5	18.2	19.3	18.1	21.6	26.5	34.4	30.1	31.8	34.1	25.1
1944	22.9	16.1	16.0	14.7	15.4	21.0	25.8	26.8	28.6	26.5	34.1	28.8	23.1
1945	22.5	17.6	16.1	16.8	16.6	16.3	22.5	27.8	40.2	31.5	40.8	46.0	26.3
1946	23.1	19.4	18.0	17.1	16.5	16.8	20.3	34.1	34.9	23.6	33.6	125	31.8
1947	35.9	26.9	21.4	18.2	18.8	16.9	18.8	28.2	46.4	22.9	28.3	33.8	26.4
1948	25.5	19.5	17.6	16.6	15.1	24.2	17.4	24.9	28.0	24.5	31.8	34.3	23.3
1949	27.6	19.7	16.4	15.2	15.4	19.1	18.5	42.7	44.6	25.5	31.0	38.7	26.2
1950	27.9	22.9	19.3	21.4	20.1	22.3	25.5	33.3	22.3	38.6	33.8	52.4	28.4

* Revised.

* Not previously published; estimated on basis of records for Bighorn River at Thermopolis.

Monthly and yearly runoff, in acre-feet, of Rawhide Creek near Lingle, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	1,780	4,110	4,610	3,320	3,450	-
1929	3,410	*2,240	*1,540	*1,230	*1,110	*1,540	2,050	2,050	2,110	2,040	3,500	3,810	*26,600
1930	2,040	1,810	*1,540	*1,230	1,720	1,610	1,040	2,500	2,210	1,700	3,320	2,830	*23,600
1931	3,240	1,840	1,540	1,290	1,220	1,510	1,260	1,410	1,320	2,360	2,340	1,740	21,100
1932	3,120	2,740	1,700	922	1,040	1,970	1,290	1,580	1,580	1,350	*2,530	2,160	*22,000
1933	2,470	1,640	1,110	1,110	778	1,120	1,360	2,600	1,190	1,640	2,640	2,850	20,500
1934	1,910	1,610	1,350	1,290	1,000	1,230	1,190	271	3,230	492	473	624	14,670
1935	676	476	799	615	722	430	119	1,600	5,960	1,480	1,290	1,540	15,710
1936	994	865	1,100	738	528	926	4,080	1,070	1,250	942	1,200	1,600	15,290
1937	857	434	577	397	339	660	821	1,880	2,020	2,760	1,710	1,730	14,180
1938	1,280	1,080	863	879	780	1,240	1,790	1,820	1,540	2,550	2,180	2,230	18,190
1939	781	298	970	877	731	1,030	841	614	1,260	1,320	1,900	1,820	12,640
1940	976	502	597	760	803	873	610	771	558	652	953	624	8,680
1941	728	486	494	514	456	526	856	879	2,030	6,290	1,590	1,580	16,430
1942	1,260	1,030	924	772	873	1,220	1,320	1,980	1,770	1,630	1,960	1,920	16,660
1943	1,680	1,200	1,200	1,120	1,070	1,110	1,280	1,630	2,050	1,850	1,950	2,030	18,170
1944	1,410	956	982	904	887	1,290	1,540	1,650	1,700	1,630	2,100	1,720	16,770
1945	1,380	1,050	992	1,040	924	1,000	1,340	1,710	2,390	1,940	2,510	2,740	19,020
1946	1,420	1,150	1,110	1,050	918	1,030	1,210	2,100	2,080	1,450	2,070	7,460	23,050
1947	2,210	1,600	1,320	1,120	1,040	1,040	1,120	1,740	2,760	1,410	1,740	2,010	19,110
1948	1,560	1,160	1,080	1,020	867	1,490	1,040	1,530	1,670	1,510	1,960	2,040	16,930
1949	1,700	1,170	1,010	934	853	1,170	1,100	2,630	2,650	1,560	1,910	2,300	18,990
1950	1,720	1,360	1,190	1,320	1,120	1,370	1,520	2,040	1,320	2,380	2,080	3,120	20,540

* Revised.

† Not previously published; estimated on basis of records for Bighorn River at Thermopolis.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	-	-	-	-	-	-	-
1929	686	a540	June 2, 1929	-	*36.8	*26,600	*34.3	*24,800
1930	701	a225	Aug. 14, 1930	5	*32.5	*23,600	*34.2	*24,800
1931	716	a172	July 22, 1931	6	29.1	21,100	30.4	22,000
1932	731, 1440	*a315	Aug. 2, 1932	4	*30.3	*22,000	*27.0	*19,600
1933	746	a281	May 24, 1933	4	28.3	20,500	27.8	20,160
1934	761	a538	June 4, 1934	.7	20.3	14,670	16.2	11,750
1935	786	b1,940	June 1, 1935	-	21.7	15,710	23.1	16,720
1936	806	*261	Apr. 13, 1936*	6.3	21.1	15,290	19.6	14,200
1937	826	223	May 30, 1937	4	19.6	14,180	21.4	15,520
1938	856	200	Sept. 3, 1938	6.6	25.1	18,190	23.5	17,040
1939	878	122	June 2, 1939	1.4	17.5	12,640	17.5	12,670
1940	896	90	July 15, 1940	2.4	12.0	8,680	11.4	8,510
1941	926	b5,860	July 12, 1941	2.9	22.7	16,430	24.8	17,940
1942	956	294	June 4, 1942	9	23.0	16,660	24.2	17,520
1943	976	223	June 13, 1943	14	25.1	18,170	24.1	17,440
1944	1006	249	June 12, 1944	12	23.1	16,770	23.2	16,840
1945	1036	417	May 30, 1945	14	26.3	19,020	26.6	19,270
1946	1056	c3,970	Sept. 7, 1946	13	31.8	23,050	33.8	24,500
1947	1086	174	June 23, 1947	15	26.4	19,110	24.6	17,780
1948	1116	138	Mar. 16, 1948	10	23.3	16,930	23.4	17,010
1949	1146	176	May 22, 1949	11	26.2	18,990	26.8	19,380
1950	1176	72	July 22, 1950	14	28.4	20,540	-	-

* Revised.

† Not previously published.

a Maximum observed.

b From floodmarks.

c Float measurement.

127. North Platte River at Torrington, Wyo.1/

Location.--Lat 42°03', long. 104°11' (revised), in sec. 15, T. 24 N., R. 61 W., half a mile south of Torrington and 1 mile upstream from Cherry Creek.

Drainage area.--21,700 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is about 4,100 ft (from topographic map). June 21, 1917, to Mar. 30, 1924, and Jan. 1, 1926, to Apr. 21, 1929, staff gage near same site at different datums.

Mar. 31 to Oct. 28, 1924, staff gage at Vaughn about 6 miles upstream at different datum.

Apr. 22, 1929, to Oct. 5, 1931, staff gage at same site at 0.10 ft higher datum.

Oct. 6, 1931, to Apr. 19, 1932, staff gage at same site and datum.

Average discharge.--13 years (1926-39), 1,180 cfs.

Extremes.--1917-24, 1926-39: Maximum discharge observed, 24,000 cfs June 17, 1921 (gage height, 10.40 ft, datum then in use), from rating curve extended above 17,000 cfs; minimum daily discharge, 80 cfs May 16, 1934.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1918-23, not previously published by Geological Survey, furnished by Bureau of Reclamation and those for 1926-30, not previously published by Geological Survey, furnished by State engineer of Nebraska.

1/ Published as "at Vaughn", 1924.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Torrington, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	10,400	13,200	13,000	-
1918	-	-	-	-	-	-	-	a5,180	a5,900	a3,470	a2,250	a1,920	-
1919	-	-	-	-	-	-	-	a886	a1,600	a3,140	a2,050	a1,710	a1,190
1920	-	-	-	-	-	-	-	a1,600	a6,080	a7,950	a3,790	a2,540	a1,720
1921	-	-	-	-	-	-	-	a1,220	a2,460	a13,900	a3,530	a2,590	a1,750
1922	-	-	-	-	-	-	-	a691	a5,510	a3,330	a2,700	a2,320	a1,260
1923	-	-	-	-	-	-	-	a1,110	a2,200	a3,010	a4,570	a3,510	a3,660
1924	-	-	-	-	-	-	-	5,850	6,770	3,680	3,040	2,500	2,180
1926	-	-	-	b600	b685	b956	b2,020	b2,790	b4,710	b4,160	b3,140	b2,140	-
1927	b1,030	b950	b1,000	b1,040	b982	b847	b1,820	b3,640	b4,090	b3,600	b3,820	b2,110	b2,070
1928	b1,200	b956	b760	b700	b862	b1,130	b1,190	b4,510	b9,490	b2,700	b2,390	b2,060	b2,300
1929	b974	b725	b541	b645	b607	b1,410	b3,070	b4,700	b10,500	b3,500	b2,180	b2,370	b2,480
1930	b1,350	b1,010	b1,100	b935	b1,080	b1,020	b1,120	b1,230	b1,930	b1,150	b2,160	b1,520	b1,380
1931	1,240	971	777	611	584	594	511	836	2,080	1,650	1,410	699	1,000
1932	460	306	375	398	406	372	393	835	2,100	2,260	1,670	1,150	893
1933	437	590	469	428	406	472	409	2,570	2,570	2,090	1,650	1,270	1,100
1934	618	538	556	461	427	461	327	623	1,037	715	244	527	529
1935	294	272	282	250	269	257	225	470	1,575	1,543	1,142	663	604
1936	462	448	378	367	347	353	362	1,204	1,500	1,489	983	625	712
1937	507	535	410	313	308	373	358	1,150	1,537	2,197	1,319	582	804
1938	518	478	459	446	472	441	689	737	1,186	1,227	1,298	777	729
1939	491	516	465	432	512	475	424	1,242	1,021	1,057	929	651	684

* Not previously published; estimated on basis of partial gage-height record and records for nearby stations.

a From files of Bureau of Reclamation.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	#639,000	#137,000	#179,000	-
1918	-	-	-	-	-	-	-	-	a317,000	a351,000	a213,000	a136,000	a114,000
1919	-	-	-	-	-	-	-	-	a52,700	a98,400	a187,000	a128,000	a105,000
1920	-	-	-	-	-	-	-	-	a95,200	a374,000	a475,000	a233,000	a156,000
1921	-	-	-	-	-	-	-	-	a72,600	a151,000	a27,000	a217,000	a159,000
1922	-	-	-	-	-	-	-	-	a41,000	a339,000	a234,000	a168,000	a142,000
1923	-	-	-	-	-	-	-	-	a66,000	a135,000	a179,000	a281,000	a216,000
1924	-	-	-	-	-	-	-	-	548,000	416,000	219,000	187,000	154,000
1926	-	-	-	b36,900	b38,100	b58,800	b120,000	b172,000	b200,000	b256,000	b193,000	b127,000	-
1927	b53,300	b56,500	b61,500	b64,400	b54,500	b52,100	b109,000	b224,000	b243,000	b221,000	b235,000	b125,000	t1,500,000
1928	b74,000	b56,900	b46,700	b45,000	b49,600	b69,300	b70,800	b278,000	b545,000	b168,000	b147,000	b122,000	b1,670,000
1929	b59,900	b43,200	b35,200	b39,700	b33,700	b86,900	b123,000	b289,000	b596,000	b215,000	b35,000	b141,000	b1,800,000
1930	b83,000	b60,200	b67,400	b57,400	b59,900	b82,700	b66,800	b75,500	b115,000	b131,000	b133,000	b90,900	b1,000,000
1931	76,200	57,800	47,800	37,600	32,400	36,500	30,400	51,400	124,000	101,000	86,700	41,600	723,000
1932	28,300	18,200	22,900	23,700	23,400	22,900	23,400	51,300	125,000	139,000	103,000	68,400	650,000
1933	26,900	35,100	28,800	26,300	22,500	29,000	24,300	58,000	141,000	129,000	100,000	75,600	798,000
1934	38,020	32,020	34,200	28,370	23,740	28,330	19,480	38,310	61,710	43,990	15,030	19,430	382,600
1935	18,100	16,200	17,350	14,150	14,960	15,820	13,410	28,900	93,690	94,870	70,230	39,480	457,100
1936	28,400	26,680	23,250	22,550	19,940	21,700	21,570	74,020	89,250	91,540	60,440	37,180	516,500
1937	31,150	31,850	25,190	19,240	17,110	22,950	21,310	70,730	91,480	135,100	81,100	34,660	581,900
1938	31,850	28,450	28,220	27,400	26,200	27,110	41,020	45,320	70,600	75,480	79,830	46,220	527,700
1939	30,210	30,690	28,560	26,550	28,450	29,110	25,200	75,880	60,750	64,980	57,100	37,560	495,000

† Corrected; differs from figure published in reports of State engineer of Nebraska.

* Not previously published; see footnote to preceding table.

a From files of Bureau of Reclamation.

b From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	(a)	b22,400	June 27, 29, 1917	-	-	-	-	-
1918	(a)	b9,820	June 24, 1918	-	-	-	-	-
1919	(a)	b4,720	June 20, 1919	-	-	-	-	-
1920	(a)	b11,200	May 15, 14, 1920	-	-	-	-	-
1921	(a)	b24,000	June 17, 1921	-	-	-	-	-
1922	(a)	b10,400	May 19, 1922	-	-	-	-	-
1923	(a)	b14,000	Sept. 30, 1923	-	-	-	-	-
1924	586	-	-	-	-	-	-	-
1926	(c)	-	-	-	-	-	e2,010	e1,450,000
1927	(c)	-	-	e750	e2,070	t1,500,000	e2,080	e1,510,000
1928	(c)	-	-	e700	e2,300	e1,670,000	e2,250	e1,630,000
1929	(c)	-	-	e500	e2,480	e1,800,000	e2,590	e1,870,000
1930	(c)	-	-	e750	e1,380	e1,000,000	1,350	974,000
1931	716	b3,000	May 29, 1931	279	1,000	723,000	845	611,000
1932	731	3,150	July 4, 1932	-	893	650,000	923	671,000
1933	746	6,740	May 24, 1933	228	1,100	798,000	1,120	811,000
1934	761	2,570	June 4, 1934	80	529	382,800	456	330,000
1935	786	11,300	June 1, 1935	125	604	437,100	641	463,800
1936	806	2,480	June 7, 1936	166	712	516,500	725	526,400
1937	826	5,690	July 14, 1937	246	804	581,900	804	582,200
1938	856	1,770	June 21, 1938	300	729	527,700	730	528,600
1939	876	1,730	May 28, 1939	252	684	495,000	-	-

† Corrected.

b Maximum observed.

* Not previously published.

c From reports of State engineer of Nebraska.

a From files of Bureau of Reclamation.

128. Cherry Creek drain near Torrington, Wyo.

Location.--Lat 42°09'20" (revised), long. 104°09'40" (revised), in sec. 23, T. 24 N., R. 61 W., 50 ft downstream from county highway bridge, three-quarters of a mile upstream from mouth, and 2 miles southeast of Torrington.

Gage.--Water-stage recorder. Altitude of gage is 4,090 ft (from topographic map). May 1, 1931, to Sept. 30, 1932, and May 1 to June 11, 1935, staff gage at site 1 mile upstream at different datum. June 12, 1935, to Sept. 30, 1945, water-stage recorder at datum 2.00 ft higher.

Average discharge.--15 years (1935-50), 20.5 cfs.

Extremes.--1931-32, 1935-50: Maximum discharge, 1,040 cfs June 10, 1941 (gage height, 9.41 ft, present site and datum), from rating curve extended above 200 cfs on basis of slope-area determinations at gage heights 8.18 ft and 9.41 ft (present site and datum); minimum daily, 0.4 cfs Jan. 28, 29, 1949.

Remarks.--Flow is mainly return water from irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	\$13.5	\$29.5	\$32.8	\$36.3	\$27.7	-
1932	-	-	-	-	-	-	-	\$11.5	\$38.6	\$48.8	\$55.3	\$55.3	-
1935	-	-	-	-	-	-	-	11.0	19.1	19.5	14.6	21.3	-
1936	10.2	6.9	3.6	3.5	3.0	3.9	4.7	9.0	17.2	13.7	22.2	21.0	9.9
1937	15.7	11.8	5.98	9.5	1.91	5.68	4.23	8.87	19.6	31.8	24.1	42.7	14.3
1938	15.7	9.93	8.5	6.5	7.0	5.48	8.11	21.8	22.5	34.6	41.9	43.3	18.9
1939	19.9	10.4	7.90	8.88	5.95	10.5	9.35	17.5	24.9	26.0	32.4	29.7	17.0
1940	13.6	9.49	10.1	7.65	8.43	7.21	7.29	8.19	7.14	8.09	8.80	11.9	9.00
1941	8.62	7.09	4.89	3.59	3.65	5.05	7.06	8.98	48.9	24.1	28.1	40.3	15.8
1942	19.4	12.0	9.37	4.80	6.73	8.08	10.1	27.0	22.7	29.3	39.1	51.4	20.1
1943	18.9	20.2	13.7	10.7	10.5	7.89	8.76	14.4	23.7	33.6	35.5	49.3	20.6
1944	21.3	12.0	9.91	7.78	7.65	8.58	9.59	14.4	23.4	44.9	47.9	50.2	21.5
1945	26.5	15.8	11.6	10.3	10.1	9.59	13.3	14.4	50.6	35.5	59.5	74.2	27.6
1946	29.1	17.6	14.3	13.0	12.4	11.6	10.2	29.0	31.4	39.0	43.7	45.0	24.8
1947	23.0	14.7	11.8	8.19	9.10	8.70	8.05	20.1	23.0	35.2	54.7	62.5	23.3
1948	22.6	14.9	12.6	12.1	9.93	10.2	10.1	25.9	43.4	50.2	60.1	68.2	28.4
1949	25.7	17.0	13.8	7.35	13.9	17.1	8.49	12.5	34.3	45.7	56.2	68.1	26.7
1950	21.1	14.5	12.9	11.7	8.41	9.38	8.79	22.1	38.6	63.9	57.5	85.9	29.6

* Not previously published; computed on basis of original gage-height record and rating table.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	\$830	\$1,760	\$2,020	\$2,230	\$1,650	-
1932	-	-	-	-	-	-	-	\$707	\$2,300	\$3,000	\$3,400	\$3,290	-
1935	-	-	-	-	-	-	-	676	1,140	1,200	900	1,270	-
1936	625	413	224	214	171	238	282	553	1,020	841	1,360	1,250	7,190
1937	968	703	367	58	108	228	252	545	1,180	1,960	1,480	2,540	10,360
1938	964	591	523	400	398	356	482	1,340	1,340	2,580	2,580	2,580	15,680
1939	1,230	617	486	546	350	646	556	1,080	1,480	1,600	1,990	1,770	12,330
1940	856	564	621	470	485	444	434	504	425	497	541	710	6,530
1941	530	422	301	221	203	310	420	552	2,910	1,480	1,750	2,400	11,480
1942	1,190	716	576	295	374	497	601	1,660	1,350	1,800	2,400	3,060	14,520
1943	1,160	1,200	845	860	583	485	521	885	1,410	2,060	2,180	2,930	14,920
1944	1,310	712	609	478	440	527	571	885	1,390	2,760	2,950	2,990	15,620
1945	1,630	940	713	632	559	590	789	868	3,010	2,180	3,660	4,420	20,010
1946	1,790	1,050	877	799	690	716	604	1,780	1,870	2,400	2,690	2,690	17,950
1947	1,410	873	728	504	505	535	479	1,230	1,370	2,160	3,360	3,720	16,870
1948	1,390	887	778	744	571	625	601	1,590	2,580	3,080	3,690	4,080	20,600
1949	1,580	1,010	851	452	773	1,050	505	771	2,040	2,810	3,450	4,050	19,340
1950	1,300	865	793	722	467	577	523	1,360	2,300	3,930	3,530	5,050	21,420

* Not previously published; computed on basis of original gage-height record and rating table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-
1935	786	a339	June 1, 1935	-	-	-	-	-	-
1936	806	77	June 24, 1936	1	9.9	7,190	11.0	7,970	
1937	826	227	July 12, 1937	.5	14.3	10,360	14.4	10,400	
1938	856	600	May 19, 1938	3.9	18.9	13,660	19.2	13,910	
1939	876	73	Aug. 29, 1939	4.0	17.0	12,330	16.6	12,020	
1940	896	146	May 16, 1940	3.8	9.00	6,530	7.94	5,760	
1941	926	1,040	June 10, 1941	3.0	15.8	11,480	17.5	12,710	
1942	956	222	Apr. 30, 1942	4.2	20.1	14,520	21.1	15,240	
1943	976	82	June 30, 1943	5.0	20.6	14,920	19.8	14,340	
1944	1008	279	Aug. 25, 1944	6.8	21.4	15,620	22.4	16,270	
1945	1036	594	June 11, 1945	8.0	27.6	20,010	28.2	20,440	
1946	1056	155	May 27, 1946	8.6	24.8	17,950	23.8	17,240	
1947	1086	306	June 21, 1947	6.3	23.3	16,870	23.4	16,920	
1948	1116	270	May 22, 1948	8.4	28.4	20,600	28.9	20,880	
1949	1146	704	June 6, 1949	.4	26.7	19,340	26.1	18,860	
1950	1176	622	July 22, 1950	6.1	29.6	21,420	-	-	

a Maximum observed.

129. Arnold drain near Torrington, Wyo.

Location.--Lat 42°02', long. 104°08', in sec. 24, T. 24 N., R. 61 W., 600 ft upstream from mouth and 3 miles southeast of Torrington.

Gage.--Water-stage recorder. Altitude of gage is 4,070 ft (from topographic map). May 1 to Sept. 30, 1931, staff gage near present site, probably at different datum.

Extremes.--1931, 1939-42: Maximum discharge recorded, 46 cfs July 28, 1940 (gage height, 2.09 ft), from rating curve extended above 20 cfs; no flow at times each year.

Remarks.--Flow is mainly return water from lands irrigated by Ferris and Interstate Canals. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	*7.1	*4.0	*9.6	*11.3	*14.4	-
1940	-	-	-	-	-	-	-	4.26	.49	1.71	7.19	10.5	-
1941	5.41	-	-	-	-	-	-	3.65	3.83	3.63	12.2	11.4	-
1942	-	-	-	-	-	-	-	-	-	3.76	4.61	6.60	-

* Not previously published; computed on basis of original gage-height record and rating table.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	*437	*238	*590	*695	*857	-
1940	-	-	-	-	-	-	-	262	29	105	442	623	-
1941	332	-	-	-	-	-	-	225	228	223	751	677	-
1942	-	-	-	-	-	-	-	-	-	231	284	393	-

* Not previously published; computed on basis of original gage-height record and rating table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum 'day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	-	-	-	0	-	-	-	-	-
1940	896	a46	July 28, 1940	0	-	-	-	-	-
1941	926	a43	June 8, 1941	0	-	-	-	-	-
1942	956	b17	Aug. 10, 1942	0	-	-	-	-	-

a Maximum during period May to September.

b Maximum during period July to September.

130. Katzer drain near Henry, Nebr.

Location (revised).--Lat 41°58'30", long. 104°04'00", in sec. 10, T. 23 N., R. 60 W., 250 ft downstream from county highway bridge in Wyoming, 1 mile upstream from mouth, and 2½ miles southwest of Henry.

Gage.--Water-stage recorder. Altitude of gage is 4,060 ft (from topographic map). May 11 to Aug. 24, 1928, staff gage at bridge about 1 mile downstream at different datum.

Aug. 25, 1928, to June 23, 1935, staff gage 250 ft upstream at datum 0.75 ft higher. June 24, 1935, to Sept. 30, 1938, water-stage recorder at present site at datum 0.75 ft higher.

Average discharge.--19 years (1931-50), 17.0 cfs.

Extremes.--1928-50: Maximum discharge, 1,230 cfs May 19, 1938 (gage height, 10.22 ft), from rating curve extended above 330 cfs on basis of slope-area determination of peak flow; minimum daily, 0.5 cfs Jan. 14, 1937.

Remarks.--Flow is return water from land irrigated by Fort Laramie Canal. Katzer drain empties into North Platte River in Wyoming, 1 mile upstream from Nebraska State line.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	40.1	-
1929	5.45	-	-	-	-	-	14.2	13.5	24.6	25.2	32.6	27.5	-
1930	10.2	10.0	-	-	-	5.0	6.9	26.7	19.2	32.0	34.3	26.7	-
1931	14.9	11.9	-	-	-	5.6	7.5	11.0	27.1	30.5	27.7	24.2	-
1932	9.8	13.3	8	5	4	5.1	6.5	21.3	19.6	32.3	39.9	40.3	17.1
1933	11.7	12.0	6.0	3.0	4.5	8.0	9.1	18.5	25.2	31.8	41.4	50.7	18.5
1934	13	12	11	10	6.6	6.4	6.0	4.13	8.88	4.67	11.0	5.52	8.28
1935	4.5	4.0	3.5	1.7	3.0	3.4	3.0	7.7	8.0	13.0	15.3	18.5	7.2
1936	6.05	6.26	3.77	3.50	3.1	3.60	4.87	8.29	17.2	11.3	17.3	17.5	8.56
1937	6.47	5.21	5.71	2.30	3.20	5.16	5.18	6.29	17.3	26.3	31.6	43.5	13.2
1938	14.2	9.92	8.12	7.49	6.96	7.97	10.9	17.4	21.3	43.4	44.5	37.5	19.2
1939	12.6	11.9	11.2	8.97	8.26	10.2	6.74	18.6	27.9	24.7	30.9	28.8	16.8
1940	9.79	8.41	7.35	6.80	8.42	7.91	7.91	5.48	5.16	6.40	8.10	7.22	7.39

Monthly and yearly mean discharge, in cubic feet per second, of Katzer drain near Henry, Nebr.--Con.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	6.55	4.62	3.98	4.12	4.69	4.87	5.18	6.36	35.0	16.1	27.5	32.2	12.6
1942	14.8	9.23	7.85	4.27	5.98	7.04	20.8	26.9	27.1	31.4	42.3	47.3	20.5
1943	14.4	12.4	9.94	9.85	8.12	7.32	9.25	19.7	18.7	31.1	47.6	39.8	19.1
1944	12.5	10.6	9.54	8.89	9.94	10.1	9.81	12.2	24.9	33.8	53.0	49.6	20.4
1945	17.3	11.6	10.2	9.86	9.18	10.3	17.9	17.9	33.0	39.3	66.4	52.1	24.7
1946	19.9	12.9	10.1	9.27	9.44	10.7	8.69	17.5	27.5	34.3	44.9	45.1	20.9
1947	16.2	12.4	9.67	8.88	8.56	8.45	7.86	15.4	24.0	32.5	49.9	53.4	20.6
1948	14.7	13.7	12.7	12.3	9.91	10.2	8.42	17.6	29.7	36.0	53.5	58.2	23.1
1949	16.4	13.6	11.5	10.8	14.1	15.5	10.4	10.4	22.7	39.1	47.8	51.0	22.0
1950	15.3	12.1	10.6	8.19	8.16	9.73	8.48	16.5	32.2	49.4	51.6	56.2	23.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	2,390	-
1929	335	-	-	-	-	-	845	830	1,460	1,550	2,000	1,640	-
1930	627	595	-	-	-	307	411	1,640	1,140	1,970	2,110	1,590	-
1931	916	708	-	-	-	344	446	676	1,610	1,880	1,700	1,440	-
1932	603	791	492	307	230	314	387	1,370	1,170	1,890	2,450	1,640	12,400
1933	719	714	369	184	250	492	541	1,140	1,500	1,960	2,550	3,020	13,400
1934	799	714	676	615	367	393	357	254	529	287	677	329	6,000
1935	277	238	215	105	167	209	179	476	477	801	940	1,100	5,180
1936	372	372	232	215	179	221	290	510	1,020	698	1,070	1,040	6,220
1937	398	310	351	141	178	317	308	387	1,030	1,620	1,950	2,590	9,580
1938	873	590	499	461	386	490	648	1,070	1,270	2,870	2,740	2,230	13,930
1939	778	710	690	552	459	625	401	1,140	1,660	1,520	1,900	1,710	12,140
1940	602	501	452	406	484	486	470	337	307	394	498	429	5,370
1941	403	275	245	253	260	299	308	391	2,080	988	1,690	1,920	9,110
1942	910	549	470	263	332	433	1,240	1,660	1,610	1,930	2,600	2,810	14,810
1943	887	736	611	606	451	450	551	1,210	1,110	1,910	2,930	2,370	13,820
1944	772	632	587	547	572	624	584	752	1,480	2,080	3,260	2,950	14,840
1945	1,060	692	626	606	510	633	1,070	1,100	1,960	2,420	4,080	3,100	17,860
1946	1,220	770	624	570	524	657	517	1,080	1,630	2,110	2,760	2,690	15,150
1947	994	758	594	546	475	520	468	946	1,430	2,000	3,070	3,180	14,980
1948	906	817	781	756	570	630	501	1,080	1,770	2,210	3,290	3,470	16,780
1949	1,010	811	710	663	785	952	620	641	1,350	2,400	2,940	3,030	15,910
1950	940	720	652	504	453	598	504	1,010	1,920	3,040	3,180	3,350	16,870

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	-	-	-	-	-	-	-
1929	686	al,050	June 2, 1929	-	-	-	-	-
1930	701	a268	May 4, 1930	-	-	-	-	-
1931	716	a54	Sept. 5, 1931	-	-	-	-	-
1932	731	al,000	May 20, 1932	-	17.1	12,400	17.0	12,400
1933	746	a556	May 23, 1933	-	18.5	13,400	19.1	13,800
1934	761	a35	Aug. 29, 1934	0.8	8.28	6,000	6.3	4,540
1935	786	al02	May 31, 1935	-	7.2	5,180	7.5	5,450
1936	806	113	June 9, 1936	1.6	8.56	6,220	8.68	6,300
1937	826	162	July 13, 1937	.5	13.2	9,580	14.4	10,480
1938	856	1,230	May 19, 1938	4.5	19.2	13,930	19.5	14,140
1939	876	187	June 1, 1939	4.4	16.8	12,140	15.9	11,520
1940	896	66	July 15, 1940	.9	7.39	5,370	6.52	4,730
1941	926	834	June 9, 1941	2.7	12.6	9,110	14.0	10,120
1942	956	1,010	June 3, 1942	3.8	20.5	14,810	20.9	15,110
1943	976	137	June 27, 1943	5.8	19.1	13,820	18.8	13,580
1944	1006	134	Aug. 24, 1944	5.8	20.4	14,840	21.0	15,230
1945	1036	275	Aug. 14, 1945	8.0	24.7	17,860	25.0	18,090
1946	1056	142	June 18, 1946	7.6	20.9	15,150	20.5	14,860
1947	1086	399	June 21, 1947	6.4	20.6	14,960	20.9	15,140
1948	1116	250	Aug. 1, 1948	6.3	23.1	16,780	23.1	16,810
1949	1146	362	June 13, 1949	7.5	22.0	15,910	21.7	15,690
1950	1176	202	July 5, 1950	5.6	23.3	16,870	-	-

a Maximum observed.

131. North Platte River at Wyoming-Nebraska State line

Location (revised).--Lat 41°59'40", long. 104°03'00", in sec. 3, T. 23 N., R. 60 W., 800 ft upstream from Wyoming-Nebraska State line and half a mile west of Henry, Nebr.

Drainage area.--22,100 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 4,025.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1940. Prior to Nov. 6, 1929, chain gage, and Nov. 6, 1929, to Apr. 15, 1932, water-stage recorder at site on right bank 200 ft upstream at same datum. Apr. 16, 1932, to Dec. 14, 1942, water-stage recorder at site on left bank 200 ft upstream at same datum.

Average discharge.--21 years (1929-50), 767 cfs.

Extremes.--1929-50: Maximum discharge observed, 17,900 cfs June 2, 1929 (gage height, 6.04 ft, site then in use), from rating curve extended above 13,000 cfs; minimum daily, 21 cfs May 16, 1934.

Remarks.--Natural flow of stream affected by transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Wyoming-Nebraska State line

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	4,200	10,400	3,490	2,130	2,430	-
1930	1,450	962	895	751	1,010	888	958	1,090	1,560	1,840	2,040	1,640	1,260
1931	1,440	1,020	782	582	615	599	592	666	1,760	1,370	1,210	635	942
1932	479	379	427	440	437	409	413	835	1,860	2,150	1,550	1,080	873
1933	496	621	503	485	437	507	433	2,650	2,140	1,970	1,530	1,170	1,080
1934	650	586	576	492	460	538	504	497	871	611	154	250	498
1935	247	174	315	283	298	290	213	456	1,616	1,586	1,059	704	588
1936	458	310	388	383	367	411	392	1,067	1,388	1,391	964	664	684
1937	460	548	429	316	330	398	361	905	1,410	2,033	1,224	697	763
1938	549	480	506	491	507	478	689	809	1,147	1,233	1,289	826	752
1939	553	577	523	479	570	535	461	1,120	1,045	1,088	997	657	719
1940	456	379	348	343	361	340	302	622	1,125	827	508	451	504
1941	328	290	310	279	297	269	186	1,052	1,086	1,091	1,277	940	619
1942	385	388	490	445	357	264	477	3,705	1,126	1,376	1,200	891	932
1943	508	628	667	626	522	566	925	868	1,325	1,211	787	801	801
1944	410	517	447	403	340	312	377	1,125	1,058	1,274	1,180	808	689
1945	395	448	397	409	406	446	364	1,618	1,587	1,203	1,121	1,094	793
1946	572	556	530	545	528	524	302	663	990	1,088	1,097	723	678
1947	506	498	530	496	472	458	396	632	2,066	1,216	1,086	759	760
1948	493	524	571	563	572	926	554	716	1,029	1,254	1,332	982	794
1949	630	694	597	516	607	461	449	537	1,220	1,166	1,139	717	728
1950	565	478	509	530	560	510	263	532	964	1,110	950	838	650

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	89,200	57,200	55,000	46,200	56,100	54,600	57,000	258,000	619,000	215,000	131,000	145,000	-
1930	89,200	57,200	55,000	46,200	56,100	54,600	57,000	67,000	92,800	113,000	125,000	97,600	911,000
1931	88,500	60,700	48,100	35,800	34,200	36,800	35,200	41,000	105,000	84,200	74,400	37,800	682,000
1932	29,500	22,600	26,300	27,100	25,100	25,100	24,600	51,300	111,000	132,000	95,500	64,300	634,000
1933	30,500	37,000	30,900	29,800	24,300	31,200	25,800	165,000	127,000	121,000	94,100	69,600	784,000
1934	39,970	34,870	35,410	30,260	25,520	33,060	18,120	30,540	51,810	37,550	9,480	13,710	360,300
1935	15,160	10,360	19,390	17,420	16,530	17,810	12,700	28,010	96,160	85,230	65,120	41,920	425,800
1936	28,180	18,430	23,860	23,530	21,100	25,300	23,350	65,640	82,580	85,550	59,260	39,520	496,300
1937	28,260	32,600	26,590	19,430	18,330	24,460	21,480	55,650	83,910	125,000	75,270	41,460	552,200
1938	33,750	28,590	31,120	30,200	28,140	29,370	41,010	49,770	68,250	75,840	79,260	49,120	544,400
1939	34,020	34,360	32,130	29,450	31,630	32,890	27,420	68,890	62,190	66,930	61,310	39,080	520,300
1940	28,060	22,540	21,390	21,060	20,770	20,930	17,970	38,240	66,930	50,820	31,230	25,650	365,600
1941	20,140	17,270	19,060	17,130	16,480	16,510	11,080	64,680	64,610	67,060	78,510	55,900	448,400
1942	23,680	23,100	30,100	27,340	19,840	16,220	28,360	227,000	67,000	84,650	73,770	53,010	674,800
1943	31,240	37,350	41,020	38,460	28,970	34,810	55,030	53,580	56,990	81,500	74,480	46,850	580,100
1944	25,240	30,780	27,500	24,750	19,580	19,210	32,440	69,150	62,930	78,350	72,540	48,060	500,500
1945	24,270	26,680	24,440	25,140	22,520	27,420	21,650	99,480	94,420	73,990	68,920	65,120	574,000
1946	35,180	33,090	32,600	33,510	29,310	32,220	18,000	40,790	58,890	66,880	67,480	43,020	491,000
1947	31,100	29,640	32,580	30,480	26,190	28,170	23,560	38,830	122,900	74,760	66,760	45,140	550,100
1948	30,300	31,200	35,090	34,650	32,880	56,910	32,950	44,020	61,210	77,080	81,900	58,420	576,600
1949	38,710	41,320	36,710	31,720	33,750	28,340	26,720	32,990	72,580	71,670	70,040	42,660	527,200
1950	34,740	28,460	31,300	32,580	31,120	31,380	15,680	32,710	57,390	68,240	57,190	49,860	470,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	a17,900	June 2, 1929	-	-	-	-	-	-
1930	701	#b3,460	Aug. 15, 1930	395	1,260	911,000	1,250	907,000	-
1931	716	2,300	Oct. 6, 1930	354	942	682,000	777	563,000	-
1932	731	2,740	July 5, 1932	238	873	634,000	900	654,000	-
1933	746	6,980	May 24, 1933	262	1,080	784,000	1,100	796,000	-
1934	761	2,490	June 4, 1934	21	498	360,300	407	295,000	-
1935	786	11,800	June 1, 1935	100	588	425,800	623	451,400	-
1936	806	2,520	June 7, 1936	135	684	496,300	707	513,100	-
1937	826	5,490	July 14, 1937	98	763	552,200	771	558,400	-
1938	856	2,450	May 19, 1938	346	752	544,400	762	561,500	-
1939	876	1,720	June 1, 1939	163	719	520,300	679	491,800	-
1940	896	2,480	June 5, 1940	179	504	365,600	482	350,100	-
1941	926	3,750	July 12, 1941	122	619	448,400	648	468,800	-
1942	956	6,120	May 20, 1942	184	932	674,800	977	707,600	-
1943	976	2,200	Mar. 31, 1943	378	801	580,100	765	554,000	-
1944	1006	3,500	May 22, 1944	260	689	500,500	678	492,400	-
1945	1036	3,490	June 11, 1945	301	795	574,000	828	599,500	-
1946	1056	1,470	Sept. 8, 1946	169	678	491,000	668	483,400	-
1947	1086	6,530	June 25, 1947	342	760	550,100	764	553,400	-
1948	1116	2,350	July 25, 1948	386	794	576,600	822	596,800	-
1949	1146	2,350	June 20, 1949	370	728	527,200	697	505,000	-
1950	1176	1,700	June 7, 1950	122	650	470,600	-	-	-

* Not previously published.

a Maximum observed.

b Maximum peak discharge; maximum discharge during the year, 5,750 cfs at 12:01 a.m. Oct. 1, 1929, stage falling.

132. North Platte River at Henry, Nebr.

Location.--Lat 42°00', long. 104°02', on west line of sec. 3, T. 23 N., R. 58 W., at highway Bridge just upstream from Spring Creek, about a half a mile downstream from Wyoming-Nebraska State line, and half a mile south of Henry post office. Gering canal diverts water from the stream between this station and the State line, and Mitchell canal diverts water from the stream in Wyoming about 1 mile above the State line.

Drainage area.--22,100 sq mi, approximately.

Gage.--Staff gages, one in each of three channels. The datum of the first two gages is the same; that of the third is 1 ft lower to avoid negative readings. Gage readings taken from gage in second channel. Altitude of gage is about 4,020 ft (from topographic map).

Extremes.--1912-18: Maximum discharge observed, 12,710 cfs June 25, 1918; minimum daily flow not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for May 11 to Sept. 17, 1912, June 4 to Nov. 13, 1913, Apr. 20 to Nov. 13, 1914, Apr. 13 to Sept. 30, 1915, Apr. 1 to Aug. 31, 1916, computed by State engineer of Nebraska and reviewed by Geological Survey. Records for July 12 to Oct. 10, 1917, and May 16 to Oct. 31, 1918, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	a3,090	2,470	4,300	6,530	a5,500	-
1913	-	-	-	-	-	-	-	-	a2,240	2,070	1,630	1,780	-
1914	1,090	a499	a478	a688	a817	a960	a1,560	3,290	a2,890	2,650	2,970	3,040	a1,750
1915	2,050	a1,120	a1,080	a1,550	a1,820	a1,280	a1,010	1,710	2,760	2,800	2,530	2,400	a1,840
1916	-	-	-	-	-	-	1,280	2,440	3,240	3,200	2,620	-	-
1917	-	-	-	-	-	-	-	-	-	a8,800	b2,410	b5,190	-
1918	*1,190	-	-	-	-	-	-	-	-	-	-	-	-
1919	b899	-	-	-	-	-	-	a4,490	b6,540	b4,100	b2,600	b1,950	-

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	a190,000	47,000	264,000	402,000	a327,000	-
1913	-	-	-	-	-	-	-	-	a133,000	27,000	100,000	a106,000	-
1914	67,000	a29,700	a29,400	a42,300	a45,400	a59,000	a92,700	202,000	a172,000	a163,000	a183,000	a181,000	a1,270,000
1915	126,000	a66,500	a65,100	a95,100	a101,000	a78,500	a60,000	105,000	a164,000	a172,000	a156,000	a145,000	a1,330,000
1916	-	-	-	-	-	-	76,200	a150,000	a193,000	a197,000	a161,000	-	-
1917	-	-	-	-	-	-	-	-	-	*541,000	b148,000	b190,000	-
1918	*73,200	-	-	-	-	-	-	a276,000	b399,000	a252,000	b190,000	b116,000	-
1919	b55,300	-	-	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	326	-	-	-	-	-	-	-
1913	356	-	-	-	-	-	-	-
1914	368	-	-	-	a1,750	a1,270,000	a1,930	a1,398,000
1915	406	-	-	-	a1,840	a1,330,000	-	-
1916	436	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-
1918	-	12,710	June 25, 1918	-	-	-	-	-

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

133. Horse Creek near Meriden, Wyo.

Location.--Lat 41°33', long. 104°20', in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 6, T. 18 N., R. 62 W., 1 $\frac{1}{2}$ miles northwest of Meriden and 4 miles upstream from Little Horse Creek.

Drainage area.--412 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,960 ft (from topographic map).

Extremes.--1945-47: Maximum discharge, 230 cfs Aug. 1, 1945 (gage height, 6.55 ft), from rating curve extended above 80 cfs by logarithmic plotting; minimum daily discharge, 10 cfs Aug. 3, 1946.

Remarks.--Diversions for irrigation of about 3,500 acres above station.

Monthly and yearly mean discharge, in cubic feet per second, of Horse Creek near Meriden, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	43.0	47.5	25.1	-
1946	26.7	27.7	24.5	20.7	24.6	30.2	30.2	24.6	23.4	13.5	24.9	26.6	24.8
1947	27.8	27.4	25.6	17.6	18.5	30.3	44.9	30.1	73.0	45.0	31.1	20.1	32.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	2,640	2,920	1,490	-
1946	1,640	1,650	1,510	1,270	1,370	1,860	1,800	1,510	1,390	833	1,530	1,580	17,940
1947	1,710	1,630	1,580	1,080	1,030	1,860	2,670	1,850	4,350	2,770	1,910	1,190	23,630

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1945	1036	#230	Aug. 1, 1945	-	-	-	-	-	-
1946	1056	130	Aug. 28, 1946	10	24.8	17,940	24.9	-	18,060
1947	1086	145	June 23, 1947	13	32.6	23,630	-	-	-

* Not previously published.

134. Horse Creek near La Grange, Wyo. 1/

Location.--Lat 41°39'10", long. 104°10'50", in SW 1/4 sec. 34, T. 20 N., R. 61 W., 1 1/2 miles northwest of La Grange and 2 1/2 miles (revised) upstream from Bear Creek.

Drainage area.--683 sq mi.

Supplemental records available.--December 1911, January, May, September, October, and December 1912, gage heights and discharge measurements only at site 1 1/4 miles downstream.

Gage.--Water-stage recorder. Altitude of gage is 4,500 ft (from topographic map). Prior to June 1, 1914, staff gage or water-stage recorder 1 1/4 miles downstream at different datums.

Extremes.--1915-20: Maximum discharge, 366 cfs June 22, 1918 (gage height, 3.3 ft); minimum daily, 6.0 cfs July 7, 12-15, 19-26, 1916, but probably was less during periods of no gage-height record.

Remarks.--Prior to July 1, 1919, adjudicated diversions of 1,176 cfs for irrigation above station. Actual diversions for irrigation probably for about 9,000 acres above station.

Cooperation.--Records for 1912-14, not previously published by Geological Survey, furnished by State engineer of Wyoming, except for periods estimated by Geological Survey to complete months.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	a40	a105	#76.8	-	-	-	-	-	-
1913	-	-	-	a48	#50.4	#87.4	a86	-	-	-	-	-	-
1914	-	-	-	-	-	#82.2	a49	#25.5	-	-	-	-	-
1916	b53	51.2	49.9	43.0	59.3	57.6	25.9	10.7	8.60	7.13	10.9	13.7	b32.5
1917	17.6	25.0	30.0	28.4	43.3	56.3	27.5	78.2	127	21.3	22.0	40.6	42.9
1918	41.1	20.6	15.4	19.5	56.2	64.1	47.7	21.0	30.4	30.3	39.3	45.2	35.7
1919	46.8	44.2	b40	b40	43.3	49.7	52.5	12.9	b35	b45	b15	b35	b58.1
1920	-	-	-	48.0	43.2	48.3	-	-	-	-	-	-	-

* Not previously published; partly estimated on basis of adjacent flow pattern and weather records.

a From reports of State engineer of Wyoming.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	a2,310	a6,460	#4,570	-	-	-	-	-	-
1913	-	-	-	a2,980	#2,800	#5,380	a5,080	-	-	-	-	-	-
1914	-	-	-	-	-	#5,060	a2,900	#1,570	-	-	-	-	-
1916	b3,250	3,050	3,070	2,640	3,410	3,540	1,540	658	512	438	670	816	b23,600
1917	1,080	1,490	1,840	1,750	2,400	3,460	1,640	4,810	7,560	1,310	1,350	2,420	31,100
1918	2,530	1,250	947	1,200	3,120	3,940	2,840	1,290	1,810	1,860	2,420	2,690	25,900
1919	2,880	2,630	b2,460	b2,460	2,400	3,060	3,120	793	b2,080	b2,760	b921	b2,080	b27,600
1920	-	-	-	2,950	2,480	2,970	-	-	-	-	-	-	-

* Not previously published; see footnote to preceding table.

a From reports of State engineer of Wyoming.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

1/ Published as "at Wye Cross Bridge, La Grange," 1912-14.

Yearly discharge, in cubic feet per second, of Horse Creek near La Grange, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	(a)	-	-	-	-	-	-	-
1913	(a)	-	-	-	-	-	-	-
1914	(a)	-	-	-	-	-	-	-
1916	436	104	Feb. 18, 1916	6	b32.5	b23,600	25.7	18,600
1917	456	345	June 3, 1917	9	42.9	31,100	43.4	31,400
1918	478	368	June 22, 1918	9	35.7	25,900	b40.2	b29,100
1919	506	65	Apr. 18, 1919	-	b38.1	b27,600	-	-
1920	506	-	-	-	-	-	-	-

a From reports of State engineer of Wyoming.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

135. Horse Creek near Yoder, Wyo.

Location.--Lat 41°53'00", long. 104°14'30", in NE $\frac{1}{4}$ sec. 13, T. 22 N., R. 62 W., half a mile upstream from Fort Laramie Canal siphon and 3 $\frac{1}{2}$ miles (revised) southeast of Yoder.

Drainage area.--1,320 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,235 ft (from topographic map). May 1 to Nov. 10, 1928, staff gage at site 300 ft downstream at different datum.

Average discharge.--5 years (1928-33), 22.4 cfs.

Extremes.--1928-33, 1935-45: Maximum discharge, 586 cfs Aug. 3, 1945 (gage height, 5.43 ft), from rating curve extended above 120 cfs by logarithmic plotting; no flow at times many years.

Remarks.--Flow regulated by Hawk Springs Reservoir (capacity, 19,400 acre-ft). Natural flow of stream also affected by diversions for irrigation of about 4,000 acres above station.

Cooperation.--Records for 1942-44, not previously published by Geological Survey, furnished by State engineer of Wyoming.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	1.15	2.31	2.97	4.74	1.80	-
1929	5.97	55.0	51.6	16	15	41.0	108	115	111	3.81	.40	31.9	46.2
1930	4.2	54.3	55.2	45.8	76.0	38.6	3.84	13.6	4.72	.24	53.8	49.6	33.0
1931	49.0	45.8	46.2	43.4	19.6	58.2	30.8	7.11	.90	.20	.47	.36	25.3
1932	5.07	11.0	4.0	11.2	21.8	4.6	9.9	.47	.32	.07	.63	.75	5.74
1933	.53	.81	3.15	2.84	3.69	2.44	1.2	2.13	.49	.90	.72	.81	1.63
1935	-	-	-	-	-	-	-	-	-	-	*.16	*.49	-
1936	*.78	*.72	-	-	-	-	*1.31	*1.17	*7.49	*.20	*1.50	*.10	-
1937	-	-	-	-	-	-	-	*.69	*1.14	*.80	*5.94	-	-
1938	-	-	-	-	-	-	-	1.27	.24	.18	0	.24	-
1939	.20	-	-	-	-	-	.20	1.21	3.03	.17	0	0	-
1940	-	-	-	-	-	-	-	1.47	.87	2.55	4.03	.05	-
1941	-	-	-	-	-	-	-	1.03	2.71	.90	1.97	.10	-
1942	-	-	-	-	-	-	-	a.62	a2.18	a1.34	a.17	-	-
1943	-	-	-	-	-	-	-	a33.0	a35.5	a.65	a.37	a.28	-
1944	-	-	-	-	-	-	-	a42.2	a7.01	a2.06	a.28	a.14	-
1945	-	-	-	-	-	-	-	-	-	-	*35.2	-	-

* Not previously published; partly estimated on basis of gage-height record and approximate rating curves.

a Only monthly figure published in report of State engineer of Wyoming; daily figures contained in files of Geological Survey.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	71	137	183	291	107	-
1929	367	3,270	3,170	984	833	2,520	6,430	7,070	6,600	234	25	1,900	33,400
1930	258	3,230	3,390	2,820	4,220	2,370	228	836	281	15,310	2,950	2,950	23,900
1931	3,010	2,730	2,840	2,670	1,090	3,580	1,830	437	54	12	29	22	18,300
1932	312	655	246	689	1,250	233	589	29	19	4	39	45	4,160
1933	33	48	194	175	205	150	71	131	29	55	44	48	1,180
1935	-	-	-	-	-	-	-	-	-	-	*9.7	*29	-
1936	*48	*43	-	-	-	-	*78	*72	*446	*12	*92	*6.0	-
1937	-	-	-	-	-	-	-	*42	*68	*49	*365	-	-
1938	-	-	-	-	-	-	-	78	14	11	0	14	-
1939	12	-	-	-	-	-	12	74	180	10	0	0	-
1940	-	-	-	-	-	-	-	90	52	157	248	3.0	-
1941	-	-	-	-	-	-	-	63	161	55	121	6.1	-
1942	-	-	-	-	-	-	-	-	a37	a134	a83	a10	-
1943	-	-	-	-	-	-	-	a2,030	a2,110	a40	a23	a17	-
1944	-	-	-	-	-	-	-	a2,600	a417	a127	a17	a8	-
1945	-	-	-	-	-	-	-	-	-	-	*2,040	-	-

* Not previously published; see footnote to preceding table.

a See footnote to preceding table.

Yearly discharge, in cubic feet per second, of Horse Creek near Yoder, Wyo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	846	Aug. 2, 1928	-	-	-	-	-
1929	686	455	June 8, 1929	0	46.2	33,400	46.3	33,500
1930	701	153	Aug. 17, 1930	.1	33.0	23,900	35.4	25,600
1931	716	268	Apr. 1, 1931	.1	25.3	18,300	15.1	10,900
1932	731	34	Oct. 30, 1931	0	5.74	4,160	4.45	3,200
1933	746	14	Aug. 5, 1933	0	1.63	1,180	-	-
1935	(b)	-	-	-	-	-	-	-
1936	(b)	-	-	0	-	-	-	-
1937	(b)	-	-	0	-	-	-	-
1938	856	-	-	0	-	-	-	-
1939	876	9.3	June 1, 1939	0	-	-	-	-
1940	896	16	July 30, 1940	0	-	-	-	-
1941	926	19	June 9, 1941	0	-	-	-	-
1942	(b)	-	-	0	-	-	-	-
1943	(b)	+119	June 9, 1943	0	-	-	-	-
1944	(b)	+83	May 7, 1944	0	-	-	-	-
1945	(b)	+586	Aug. 3, 1945	-	-	-	-	-

* Not previously published.

a Maximum observed during period May to September 1928.

b From files of Geological Survey.

136. Horse Creek near Lyman, Nebr.

Location.--Lat 41°56', long. 103°59', in NE $\frac{1}{4}$ sec. 25, T. 23 N., R. 58 W., 250 ft upstream from county highway bridge, three-quarters of a mile upstream from mouth, 1 mile downstream from Kiowa drain, and $\frac{3}{4}$ miles northeast of Lyman.

Drainage area.--1,860 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,010 ft (from topographic map). Prior to Nov. 23, 1938, staff gage at site half a mile upstream at different datum. Nov. 23, 1938, to Mar. 31, 1944, water-stage recorder at site 50 ft downstream at datum 1.00 ft higher; Apr. 1, 1944, to Apr. 12, 1946, at present site at datum 1.00 ft higher.

Average discharge.--19 years (1931-50), 57.2 cfs.

Extremes.--1931-50: Maximum discharge, 1,970 cfs May 19, 1938, from rating curve extended above 830 cfs; minimum daily, 0.4 cfs Feb. 1, 2, 1949.

Remarks.--Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	65.4	65.8	107	132	98.9	85.9	62.9	-
1932	41.1	43.0	39.0	27.3	66.9	31.1	25.3	53.3	171	108	128	143	72.6
1933	84.7	36.3	21.4	25.0	17.8	30.3	35.2	170	130	96.7	134	241	85.5
1934	89.1	30.8	25.2	23.0	19.4	19.5	18.4	8.4	18.7	16.3	16.7	12.9	24.9
1935	12.7	10.6	11.9	9.5	10.1	7.5	24.2	35.6	169	43.6	33.6	41.7	34.1
1936	29.1	22.9	15.1	10.9	7.8	12.9	14.2	15.4	100	27.3	38.7	31.5	27.1
1937	30.2	18.9	13.7	8.1	9.14	14.0	10.5	18.0	67.6	95.1	57.6	99.3	36.9
1938	80.6	36.9	28.9	20.0	16.7	19.9	23.9	117	79.3	92.0	72.1	168	63.2
1939	58.1	35.9	23.1	21.0	15.4	28.9	17.0	28.4	73.0	42.3	43.5	39.3	35.6
1940	36.2	28.1	21.5	16.3	22.4	17.9	19.0	9.07	10.4	12.5	5.92	18.7	18.1
1941	25.3	13.2	15.7	14.7	13.2	8.22	9.40	14.1	81.2	56.7	46.6	59.8	29.9
1942	52.5	26.1	17.5	15.4	22.1	21.8	30.1	94.5	133	67.5	81.7	134	58.1
1943	70.1	48.5	32.3	26.6	31.4	35.1	47.2	126	96.8	59.6	63.2	90.4	60.6
1944	82.6	45.7	29.3	21.3	30.9	28.4	30.7	73.2	79.6	84.0	68.4	102	56.4
1945	69.8	42.6	31.9	26.5	21.0	24.7	31.0	77.3	247	74.5	273	139	88.4
1946	107	58.9	53.5	49.1	72.0	82.3	46.8	130	134	83.1	65.3	177	88.2
1947	81.2	52.5	34.1	29.1	26.5	45.5	55.6	124	179	183	74.2	121	84.1
1948	95.5	62.1	34.5	26.9	69.9	108	38.2	45.6	175	112	106	155	85.7
1949	78.2	48.7	35.3	4.23	55.6	57.3	24.9	31.1	155	62.8	69.4	125	62.1
1950	75.2	46.8	32.6	23.9	26.8	22.5	18.3	40.2	89.2	114	83.9	254	68.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	4,020	3,920	6,580	7,880	6,080	5,280	3,740	-
1932	2,510	2,560	2,400	1,680	3,850	1,810	1,510	3,280	10,200	6,640	7,750	8,530	52,800
1933	5,230	2,160	1,320	1,540	989	1,860	2,090	10,500	7,740	5,950	8,240	14,300	61,800
1934	5,480	1,850	1,550	1,410	1,080	1,200	1,090	516	1,110	1,000	1,030	768	18,060
1935	781	631	732	581	563	458	1,440	2,190	10,080	2,680	2,070	2,480	24,690
1936	1,790	1,360	930	670	450	793	845	949	5,950	1,680	2,380	1,880	19,680
1937	1,880	1,120	841	498	507	860	624	1,100	4,020	5,850	3,540	5,910	26,730
1938	4,980	2,190	1,780	1,230	926	1,220	1,420	7,190	4,720	5,650	4,430	9,990	45,710
1939	3,570	2,140	1,420	1,290	857	1,780	1,010	1,750	4,340	2,600	2,670	2,340	25,770
1940	2,250	1,670	1,320	1,000	1,290	1,100	1,130	558	616	771	364	1,110	13,160

Monthly and yearly runoff, in acre-feet, of Horse Creek near Lyman, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1,550	785	963	902	732	505	560	867	4,830	3,490	2,870	3,560	21,610
1942	3,230	1,560	1,070	944	1,230	1,340	1,790	5,810	7,940	4,150	5,030	7,960	42,050
1943	4,310	2,890	1,990	1,640	1,740	2,040	2,810	7,760	5,760	3,670	3,890	5,380	43,880
1944	5,080	2,720	1,800	1,510	1,780	1,740	1,830	4,500	4,740	5,170	4,200	6,040	40,910
1945	4,290	2,540	1,960	1,630	1,180	1,520	1,840	4,750	14,700	4,580	16,760	8,290	64,020
1946	6,580	3,500	3,290	3,020	4,000	5,060	2,770	8,020	8,000	5,110	4,010	10,520	63,880
1947	4,990	3,120	2,100	1,790	1,470	2,790	3,310	7,850	10,630	11,270	4,560	7,190	60,880
1948	5,870	3,700	2,120	1,650	4,020	6,650	2,270	2,800	10,430	6,900	6,550	9,230	62,190
1949	4,610	2,900	2,170	280	3,090	3,520	1,480	1,910	9,220	3,860	4,270	7,430	44,920
1950	4,620	2,790	2,000	1,470	1,490	1,380	1,090	2,470	5,310	6,990	5,160	15,090	49,860

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	716	-	-	-	-	-	-
1932	731	508	June 21, 1932	13	72.6	52,800	74.3
1933	746	1,070	May 23, 1933	12	85.5	61,900	85.7
1934	761	373	Oct. 1, 1933	6	24.9	18,060	15.7
1935	786	1,150	June 13, 1935	-	34.1	24,690	36.8
1936	806	401	June 6, 1936	4	27.1	19,880	26.7
1937	826	421	Sept. 30, 1937	3	36.9	26,730	44.0
1938	856	1,870	May 19, 1938	7	63.2	45,710	60.7
1939	876	225	Oct. 2, 1938	11	36.6	25,770	33.0
1940	896	121	July 15, 1940	1.6	18.1	13,160	15.5
1941	926	1,320	June 9, 1941	3.0	29.9	21,610	33.4
1942	956	712	May 13, 1942	1	58.1	42,050	62.7
1943	976	818	May 22, 1943	22	60.6	43,880	61.2
1944	1006	283	June 12, 1944	14	56.4	40,910	55.3
1945	1036	1,850	May 28, 1945	12	88.4	64,020	94.8
1946	1056	396	May 4, 1946	17	88.2	63,880	83.9
1947	1086	790	June 21, 1947	15	84.1	60,880	86.1
1948	1116	754	June 17, 1948	16	85.7	62,190	83.2
1949	1146	670	June 13, 1949	.4	62.1	44,920	61.4
1950	1176	890	Sept. 20, 1950	12	68.9	49,860	-

* Not previously published.

Note.--Records for January 1921 to February 1931, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

137. Sheep Creek near Morrill, Nebr.

Location.--Lat 41°58', long. 103°56', in NW $\frac{1}{4}$ sec. 16, T. 23 N., R. 57 W., 20 ft downstream from bridge on U. S. Highway 26, 40 ft upstream from Chicago, Burlington & Quincy Railroad bridge, 1 mile west of Morrill, and $1\frac{1}{2}$ miles upstream from mouth.

Gage.--Water-stage recorder. Datum of gage is 3,995.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1940. Prior to Apr. 14, 1940, staff gage at site 20 ft upstream at same datum.

Average discharge.--19 years (1931-50), 50.8 cfs.

Extremes.--1931-50: Maximum gage height, 6.75 ft (from floodmark) Aug. 2, 1932, due to break in Interstate Canal (discharge not determined); minimum daily discharge, 0.8 cfs July 7, 8, 1934, Nov. 5, 1940.

Remarks.--Natural flow of stream affected by diversions and ground-water withdrawals for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	92.7	89.2	83.5	76.6	73.9	74.5	73.6	49.0	2.0	5.5	15.8	5.7	53.5
1933	118	105	92.9	91.0	83.1	83.0	80.4	73.2	11.0	3.41	4.28	67.0	87.4
1934	119	108	96.0	86.0	83.4	74.9	75.5	7.81	2.98	1.79	6.24	7.28	55.5
1935	3.5	1.3	46.7	50.2	41.2	36.9	52.0	39.1	39.8	25.5	4.07	3.11	28.6
1936	39.8	61.4	55.5	51.3	51.5	50.5	50.9	8.39	10.9	1.75	2.14	4.87	32.3
1937	52.9	64.2	54.3	47.1	44.0	50.1	30.5	1.38	19.3	2.17	2.61	2.45	30.8
1938	84.5	72.7	69.5	59.5	57.9	58.4	56.8	43.8	17.2	33.0	3.37	6.37	46.9
1939	77.5	68.1	67.3	66.9	59.9	61.8	57.5	22.5	10.3	10.6	13.8	12.5	44.0
1940	22.4	71.1	64.5	60.8	58.9	57.2	57.3	16.7	19.4	5.43	2.53	3.87	38.5
1941	30.5	37.6	37.3	44.3	45.9	45.7	44.4	17.5	30.9	8.80	10.8	26.3	31.5
1942	66.2	62.8	51.4	51.3	50.9	50.2	54.2	65.7	58.6	12.3	9.54	49.0	48.4
1943	89.1	78.6	73.6	64.5	64.9	64.5	62.5	11.4	16.7	16.0	10.3	7.48	46.5
1944	75.1	85.7	80.9	76.3	73.9	70.4	66.6	62.5	26.8	8.97	10.1	12.7	54.1
1945	99.1	88.2	83.9	80.6	74.6	71.5	75.3	56.3	80.0	26.7	12.0	51.6	66.5
1946	109	87.1	86.1	74.5	75.5	71.5	51.0	40.1	24.8	8.15	7.36	55.7	57.4
1947	112	89.5	71.9	76.0	77.0	77.0	83.5	73.9	83.5	34.3	3.05	9.42	64.7
1948	110	94.6	90.8	81.9	78.8	77.7	87.5	26.1	59.8	40.6	11.0	42.2	65.0
1949	117	101	87.2	83.1	80.7	78.5	76.3	41.3	65.7	8.34	56.8	61.9	67.0
1950	134	109	92.9	86.2	83.4	78.4	75.2	34.9	3.51	24.7	17.8	74.2	67.8

Monthly and yearly runoff, in acre-feet, of North Platte River at Morrill, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	942,000	570,600	132,800	136,500	-
1918	75,090	-	-	-	-	-	-	-	71,260	104,800	38,730	44,080	64,380
1919	-	-	-	-	-	-	-	-	428,800	514,300	204,600	109,700	85,490
1920	81,370	-	-	-	-	-	-	-	96,200	134,500	800,400	-	-
1921	-	-	-	-	-	-	-	-	134,500	800,400	-	125,200	11,600
1922	105,900	68,030	-	-	-	-	-	52,760	296,900	161,700	97,490	62,360	15,360
1923	-	-	-	47,980	43,490	47,700	-	60,050	121,000	157,900	154,000	115,400	87,670
1924	131,500	75,080	74,580	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	(a)	-	-	-	-	-	-	-
1918	(a)	-	-	-	-	-	-	-
1919	(a)	-	-	-	-	-	-	-
1920	(a)	-	-	-	-	-	-	-
1921	(a)	-	-	-	-	-	-	-
1922	(a)	-	-	-	-	-	-	-
1923	(a)	-	-	-	-	-	1,542	1,116,000

a From reports of State engineer of Nebraska.

139. Dry Spotted Tail Creek at Mitchell, Nebr.

Location.--Lat 41°57', long. 103°50', at southeast corner of sec. 20, T. 23 N., R. 56 W., at bridge on county road, half a mile west of Mitchell and three-quarters of a mile upstream from mouth.

Gage.--Water-stage recorder. Datum of gage is 3,944.75 ft above mean sea level, datum of 1929, Western Wyoming supplementary adjustment of 1940.

Extremes.--1948-50: Maximum discharge, 327 cfs June 8, 1949 (gage height, 3.97 ft), from rating curve extended above 150 cfs; minimum daily, 22 cfs Apr. 22, 1950.

Remarks.--Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	64.7	45.2	55.9	44.6	42.5	43.5	38.8	40.7	43.6	70.5	70.9	85.7	54.0
1950	57.5	43.8	52.4	48.2	41.4	31.3	31.6	46.9	55.8	59.7	44.5	68.9	48.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	3,980	2,690	3,440	2,740	2,360	2,670	2,310	2,510	2,600	4,330	4,360	5,100	39,090
1950	3,530	2,600	3,220	2,960	2,300	1,930	1,880	2,880	3,320	3,670	2,730	4,100	35,120

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1146	327	June 8, 1949	31	54.0	39,090	52.9	38,330
1950	1176	143	July 20, 1950	22	48.5	35,120	-	-

Note.--Records for January 1919 to September 1948 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

140. North Platte River at Mitchell, Nebr.

Location.--Lat 41°56', long. 103°48', in SW¼ sec. 27, T. 23 N., R. 56 W., at State highway bridge half a mile south of Mitchell.

Drainage area.--24,300 sq mi, approximately.

Supplemental records available.--February 1912 to July 1913, gage heights only.

Gage.--Water-stage recorder. Datum of gage is 3,931.3 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940. Prior to October 1927, staff or chain gages near present site at different datums. October 1927 to Apr. 30, 1936, water-stage recorder at site 30 ft downstream at datum 2.00 ft higher. May 1, 1936, to June 30, 1942, at site 30 ft downstream at datum 1.00 ft higher.

North Platte River at Mitchell, Nebr.--Continued

Extremes.--1901-11, 1916-18, 1920-50: Maximum discharge, 27,500 cfs June 3, 1909 (gage height, 6.45 ft, datum then in use, from graph based on gage readings), from rating curve extended above 17,000 cfs; minimum daily discharge observed, 25 cfs Sept. 25-29, 1908.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for 1916-18, 1920-30, not previously published by Geological Survey, furnished by State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	-	a7,530	a2,340	a397	322	-
1902	584	a516	a299	a859	a1,330	a1,280	a1,695	4,346	4,915	1,308	207	69	a1,410
1903	a299	a563	a753	a549	a753	a1,280	4,471	7,340	7,340	2,638	478	765	a1,810
1904	1,449	a1,762	a1,680	a1,690	a1,520	a1,628	1,511	6,873	10,270	2,875	594	382	a2,690
1905	307	398	377	a381	a589	1,239	3,573	10,013	12,760	3,594	1,296	420	a2,910
1906	460	a464	a470	a555	a589	a1,360	a4,470	6,850	9,260	3,190	1,410	742	ta2,490
1907	708	1,270	a1,200	a1,420	a1,490	a2,130	3,960	6,190	12,400	7,110	1,920	960	a3,400
1908	783	749	a701	a709	a642	931	1,210	2,980	7,950	2,030	815	229	a1,640
1909	121	898	859	a1,030	a1,120	a1,330	1,830	7,140	15,200	12,500	6,950	1,990	ta4,270
1910	3,180	1,210	1,610	a1,900	a1,960	2,380	2,620	803	551	481	129	159	a1,410
1911	-	-	-	-	-	-	-	769	1,450	1,230	758	592	-
1912	1,010	978	1,090	-	-	-	-	-	-	-	-	-	-
1916	-	--	-	-	-	-	-	b1,520	*2,030	*2,070	b1,810	*573	-
1917	-	-	-	-	-	-	-	c4,670	b15,200	b9,140	b1,910	b2,040	-
1918	-	-	-	-	-	-	-	*5,430	b5,560	b3,550	b1,450	b1,140	-
1919	b771	-	-	-	-	-	-	-	b7,990	b3,050	b1,260	b914	-
1920	-	-	-	-	-	-	-	b6,180	b7,990	b3,050	b1,260	b914	-
1921	b1,070	a1,080	a1,090	a1,280	a1,120	a1,070	b1,200	b2,090	b12,200	b2,730	b1,980	b961	ta2,320
1922	b1,390	b970	a919	a929	a837	a805	*892	b4,570	b2,480	b1,300	*865	b304	a1,360
1923	*752	b783	*852	b832	*840	b843	b1,090	b2,410	b2,880	b2,360	b2,150	b1,360	*1,440
1924	b2,580	b1,520	b1,170	b1,200	b1,200	b1,090	b7,400	b7,280	b5,300	b2,280	b1,760	b1,820	b2,700
1925	b1,950	b1,450	b1,300	b1,300	b1,290	b1,120	b1,210	b1,480	b1,110	b1,240	b1,520	b1,130	b1,340
1926	b1,340	b1,180	b1,100	*1,300	*984	b983	b2,080	b2,120	b4,590	b3,410	b980	b1,340	*1,960
1927	b1,510	b1,270	b1,270	b1,400	b1,460	b1,350	b2,380	b3,990	b5,220	b2,360	b3,510	b1,540	b2,100
1928	b2,050	b1,660	b1,600	*1,260	b1,110	b1,350	*1,270	b3,570	b9,130	b1,950	b1,290	b988	*2,260
1929	b910	b1,270	b1,050	b700	b1,000	a1,440	b2,110	b4,120	b10,100	b2,430	*959	b2,180	b2,350
1930	b2,140	b1,580	b1,380	*1,460	b1,330	b1,300	b1,410	b1,220	*749	*874	b1,470	b1,400	*1,360
1931	1,970	1,570	1,400	1,090	1,020	862	1,010	585	601	355	438	221	927
1932	657	689	769	660	781	734	669	566	894	980	618	415	703
1933	980	926	774	755	676	704	651	2,490	1,040	813	572	820	927
1934	1,112	843	832	750	686	732	429	837	1,188	100	795	747	483
1935	156	135	447	522	460	384	238	480	1,481	235	240	151	409
1936	307	436	580	487	472	511	407	202	532	337	150	131	379
1937	512	735	602	403	487	548	413	249	729	994	256	236	514
1938	791	728	761	665	661	659	872	822	426	433	370	539	644
1939	751	805	720	672	631	715	656	266	332	268	202	158	514
1940	458	492	560	521	592	534	524	210	212	121	868	899	366
1941	334	328	441	468	458	429	503	577	694	289	328	263	407
1942	595	571	621	621	585	471	3,963	588	547	305	485	820	820
1943	794	848	888	894	787	723	1,219	361	333	268	278	295	638
1944	558	758	682	629	551	531	572	896	340	354	318	339	544
1945	681	691	648	609	608	650	596	1,303	1,661	359	596	565	747
1946	1,104	835	801	786	764	778	508	400	410	281	246	560	622
1947	903	814	794	727	698	726	665	490	2,419	1,187	351	426	848
1948	880	860	836	834	840	1,214	771	350	780	504	437	546	732
1949	986	948	817	693	844	776	645	367	1,363	368	359	506	755
1950	906	787	766	679	743	716	486	289	359	474	366	801	614

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

* Not previously published; partly estimated on basis of records for adjoining stations.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly mean runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	-	a48,000	a14,000	a24,400	19,180	-
1902	23,611	a18,800	a18,400	a52,800	a73,800	a78,600	a95,500	287,200	292,420	80,420	12,728	4,105	a1,020,000
1903	a18,400	a33,500	a32,800	a33,200	a27,000	a48,800	170,301	274,911	143,760	63,835	29,022	45,521	a1,310,000
1904	89,095	a105,000	a103,000	a104,000	a37,400	a100,000	89,210	222,606	111,760	76,800	36,520	22,750	a1,950,000
1905	18,880	23,680	a23,200	a23,400	a32,700	76,180	122,606	315,500	759,300	221,000	79,690	24,990	a2,110,000
1906	28,280	a27,600	a28,900	a34,100	a32,700	a83,500	a26,000	a21,000	a51,000	a19,000	86,700	44,200	ta1,800,000
1907	43,500	75,800	a73,700	a87,200	a82,600	a151,000	a236,000	a381,000	a738,000	a18,000	57,100	a2,460,000	-
1908	48,100	44,800	a43,100	a43,600	a36,900	57,200	72,000	a183,000	a473,000	a25,000	50,100	13,600	a1,190,000
1909	7,440	53,400	52,800	a52,000	a62,100	a81,600	a109,000	a439,000	a904,000	a79,000	a27,000	a18,000	ta3,090,000
1910	196,000	72,000	99,000	a177,000	a109,000	a46,000	a156,000	49,400	32,800	29,800	7,930	9,460	a1,020,000

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Monthly and yearly runoff, in acre-feet, of North Platte River at Mitchell, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	47,300	86,300	75,600	46,600	35,200	-
1912	62,100	58,200	67,000	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	*93,600	*121,000	*127,000	*111,000	*34,100	-
1917	-	-	-	-	-	-	-	287,000	805,000	562,000	117,000	122,000	-
1918	-	-	-	-	-	-	-	333,400	331,000	218,000	89,200	67,700	-
1919	47,400	-	-	-	-	-	-	580,000	475,000	188,000	77,700	54,400	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	685,700	64,100	67,000	78,500	62,100	65,700	71,700	129,000	725,000	188,000	122,000	57,200	1,680,000
1922	685,400	657,700	556,500	57,100	46,500	49,500	53,100	231,000	1,000	779,800	553,200	18,100	895,000
1923	646,200	46,800	52,400	51,200	46,700	50,000	51,900	685,000	146,000	147,000	145,000	135,000	1,040,000
1924	46,000	69,500	72,100	73,800	69,100	67,100	44,000	448,000	196,000	139,000	108,000	108,000	1,960,000
1925	120,000	86,400	79,900	79,900	71,800	69,100	72,000	91,100	86,000	76,200	83,500	67,100	6973,000
1926	682,400	70,400	67,600	79,900	85,600	59,200	124,000	131,000	273,000	209,000	118,000	79,400	1,350,000
1927	692,700	71,700	78,000	86,100	80,800	83,100	142,000	246,000	192,000	145,000	218,000	91,500	1,520,000
1928	126,000	98,500	98,400	77,500	63,900	82,800	75,300	121,000	643,000	120,000	79,400	57,600	1,640,000
1929	55,900	75,500	84,400	43,000	55,500	88,400	126,000	253,000	600,000	149,000	89,000	130,000	1,700,000
1930	132,000	93,800	85,000	88,600	67,000	80,700	90,800	83,800	75,200	44,600	53,700	90,800	1,995,000
1931	121,000	93,400	86,100	67,000	56,800	53,000	60,100	38,900	25,800	21,800	13,200	-	671,000
1932	40,400	41,000	47,300	40,600	44,900	45,100	39,800	34,800	53,200	60,300	38,000	24,700	510,000
1933	54,100	55,100	47,600	46,400	37,500	43,300	38,700	153,000	61,900	50,300	35,200	48,800	672,000
1934	68,370	50,170	51,170	46,130	38,190	45,030	25,500	5,760	11,160	6,160	4,890	4,680	357,200
1935	9,620	8,040	27,470	32,100	29,540	23,630	14,150	29,490	68,120	14,450	14,730	8,980	296,300
1936	18,890	25,940	35,660	29,940	27,180	31,410	24,240	12,430	31,680	20,750	9,250	7,770	275,100
1937	31,500	43,750	37,040	24,790	27,050	33,690	24,560	15,320	43,380	61,140	15,780	14,030	372,000
1938	46,620	43,350	46,820	40,870	36,690	40,530	51,820	50,540	25,330	26,610	22,720	32,070	466,100
1939	46,180	47,920	44,270	41,340	35,040	43,990	39,040	16,330	19,740	16,490	12,420	9,420	372,200
1940	28,180	29,300	34,440	32,050	34,070	32,820	31,170	12,920	12,620	7,410	5,340	5,350	265,700
1941	20,510	19,500	27,100	28,750	25,460	26,350	18,030	35,470	41,310	16,550	20,190	15,650	294,900
1942	36,580	34,000	38,180	38,350	31,350	28,990	38,710	243,700	35,010	21,360	18,740	28,850	593,800
1943	46,810	50,480	54,580	54,950	42,590	44,790	72,530	22,200	19,800	16,480	17,090	17,550	461,800
1944	34,300	45,120	41,940	38,680	31,680	32,670	34,040	55,080	20,220	21,760	19,530	20,180	395,200
1945	41,880	41,130	39,840	37,460	33,780	39,940	35,490	80,140	98,850	22,060	36,640	33,640	540,800
1946	67,880	49,670	49,220	48,300	42,410	47,730	30,230	24,610	24,370	17,260	15,100	33,320	450,100
1947	55,520	48,440	48,830	44,690	38,240	44,620	39,600	30,150	143,900	73,020	21,600	25,330	613,900
1948	54,130	51,200	51,390	51,270	48,320	74,660	45,900	21,530	46,380	31,010	25,660	32,230	533,700
1949	60,630	56,440	50,250	42,630	46,850	47,690	38,360	22,590	61,120	23,870	22,070	30,120	522,600
1950	55,700	46,830	47,200	41,760	41,580	44,020	28,910	17,760	21,380	29,310	22,510	47,640	444,400

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected.

‡ Not previously published; partly estimated on basis of records for adjoining stations.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1901	75	*12,700	June 15, 1901	-	-	-	-	-	-
1902	84	*6,877	June 6, 1902	-	al, 410	al, 020,000	al, 440	al, 040,000	-
1903	99	*11,000	June 22, 1903	-	al, 810	al, 310,000	a2,100	al, 520,000	-
1904	131	*13,300	May 23, 1904	-	a2,690	al, 950,000	a2,370	al, 720,000	-
1905	172	*17,600	June 14, 1905	-	a2,910	a2,110,000	a2,940	a2,130,000	-
1906	208	*16,500	June 2, 1906	-	†a2,490	†al, 800,000	a2,640	al, 910,000	-
1907	246	*15,400	June 11, 12, 13	-	a3,400	a2,460,000	a3,320	a2,400,000	-
1908	246	*26,000	June 4, 1908	-	al, 640	al, 190,000	al, 610	al, 170,000	-
1909	266	*27,500	June 3, 1909	-	†a4,270	†a3,090,000	a4,610	a3,340,000	-
1910	286	*6,540	Oct. 7, 1909	-	al, 410	al, 020,000	-	-	-
1911	306	*4,800	June 19, 1911	-	-	-	-	-	-
1912	306	-	-	-	-	-	-	-	-
1916	-	*3,540	July 25, 1916	-	-	-	-	-	-
1917	-	*19,700	June 28, 1917	-	-	-	-	-	-
1918	-	*12,400	June 25, 1918	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-
1920	-	*12,700	June 19, 1920	-	-	-	-	-	-
1921	-	*24,000	June 17, 1921	-	†a2,320	†al, 680,000	a2,320	al, 680,000	-
1922	-	*8,200	May 20, 1922	-	al, 360	a985,000	al, 280	a950,000	-
1923	-	*12,400	Sept. 30, 1923	300	*1,440	*1,040,000	*1,680	*1,200,000	-
1924	-	*15,600	Apr. 17, 1924	800	b2,700	bl, 960,000	2,670	bl, 940,000	-
1925	-	*9,000	May 17, 1925	275	bl, 340	b973,000	1,250	b907,000	-
1926	-	*9,800	June 19, 1926	650	†bl, 860	†bl, 350,000	†bl, 890	†bl, 570,000	-
1927	-	*7,300	Aug. 16, 1927	950	bl, 520	bl, 520,000	b2,220	bl, 610,000	-
1928	-	*14,300	June 9, 1928	500	†b2,260	†bl, 640,000	†b2,080	†bl, 510,000	-
1929	-	*20,000	June 2, 1929	400	b2,500	bl, 700,000	b2,500	bl, 810,000	-
1930	-	*8,100	Oct. 1, 1929	500	†bl, 560	†b985,000	†bl, 350	†b975,000	-

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected.

‡ Not previously published.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second, of North Platte River at Mitchell, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	2,750	Oct. 6, 7, 1930	200	927	671,000	690	499,100
1932	731	2,160	Aug. 3, 1932	181	703	510,000	741	538,200
1933	746	5,990	May 25, 1933	372	927	672,000	945	684,500
1934	761	1,760	Oct. 6, 1933	45	493	357,200	321	232,600
1935	786	11,000	June 1, 1935	99	409	296,300	458	331,700
1936	806	1,210	June 7, 1936	75	379	275,100	423	306,900
1937	828	4,090	July 15, 1937	101	514	372,000	550	398,500
1938	856	2,880	May 20, 1938	187	844	466,100	843	465,600
1939	876	1,060	Oct. 11, 1938	130	514	372,200	450	325,700
1940	896	1,190	June 6, 1940	58	366	265,700	332	240,900
1941	926	4,400	June 10, 1941	105	407	294,900	465	336,500
1942	956	6,660	May 14, 1942	150	820	595,800	882	638,900
1943	976	2,220	Mar. 31, 1943	195	638	461,800	593	429,300
1944	1006	2,190	May 22, 1944	195	544	395,200	546	396,700
1945	1056	3,390	June 11, 1945	258	747	540,800	808	584,800
1946	1056	1,970	Oct. 1, 1945	186	622	450,100	602	436,100
1947	1086	7,410	June 25, 1947	245	848	613,900	853	617,900
1948	1116	2,240	June 18, 1948	148	735	533,700	750	544,300
1949	1146	3,060	June 8, 1949	167	722	522,600	698	505,000
1950	1176	1,760	Sept. 22, 1950	156	614	444,400	-	-

141. Tub Springs near Scottsbluff, Nebr.

Location.--Lat 41°55', long. 103°43', at southeast corner sec. 32, T. 23 N., R. 55 W., on highway bridge 200 ft downstream from headgates of Enterprise Canal, 1½ miles upstream from mouth, and 3½ miles northwest of Scottsbluff.

Gage.--Water-stage recorder. Datum of gage is 3,926.54 ft above mean sea level, datum of 1929, Western Wyoming supplementary adjustment of 1940.

Extremes.--1948-50: Maximum discharge, 352 cfs Sept. 16, 1950 (gage height, 3.35 ft); minimum daily, 0.8 cfs June 3, 1949, June 4, 7, 8, 1950.

Remarks.--Natural flow of stream affected by diversions for irrigation, spill from Enterprise Canal, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	76.0	57.3	45.3	38.0	33.8	29.8	33.6	33.7	41.5	27.1	21.4	52.6	40.8
1950	75.4	55.9	46.9	38.2	34.4	31.3	33.1	34.5	10.1	28.5	10.3	71.9	39.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	4,670	3,410	2,780	2,330	1,870	1,830	2,000	2,070	2,470	1,670	1,320	3,130	29,550
1950	4,640	3,320	2,880	2,350	1,910	1,930	1,970	2,120	604	1,750	633	4,280	28,390

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1146	*332	June 6, 1949	0.8	40.8	29,550	40.8	29,530
1950	1176	352	Sept. 16, 1950	.8	39.2	28,390	-	-

* Revised.

Note.--Records for January 1920 to September 1948 (irrigation seasons only, 1940-48) published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

142. North Platte River at Scottsbluff, Nebr.1/

Location.--Lat 41°51', long. 103°39', on line between secs. 25 and 26, T. 22 N., R. 55 W., at the wagon bridge connecting Scottsbluff with Gering, about three-quarters of a mile south of Scottsbluff.

Drainage area.--24,500 sq mi, approximately.

Gage.--Staff gages at various points on bridge, datum unrelated. Altitude of gage is 3,870 ft (from topographic map).

Extremes.--1897-1900, 1912-13, 1917-18: Maximum discharge, 27,900 cfs May 30, 1897 (gage height, 3.50 ft, datum then in use); minimum not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversion for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1917-18, not previously published by Geological Survey, furnished by State engineer of Nebraska.

1/ Published as "at Gering" prior to 1912.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Scottsbluff, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	-	13,600	2,140	1,071	537	-
1898	514	-	-	-	-	-	-	7,528	9,002	2,049	177	100	-
1899	258	-	-	-	-	-	3,108	9,649	16,025	10,823	2,964	844	-
1900	1,501	-	-	-	-	-	-	11,672	10,737	2,689	713	378	-
1901	431	-	-	-	-	-	-	-	-	-	-	-	-
1912	-	-	-	-	-	-	-	-	1,840	3,980	7,070	6,110	-
1913	7,080	3,550	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	b5,180	b16,300	b9,470	b2,190	b2,620	-
1918	-	-	-	-	-	-	-	b1,920	b5,470	b6,130	b3,290	b1,800	b1,660

* Revised.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	-	a81,000	131,584	65,854	31,954	-
1898	31,805	-	-	-	-	-	184,938	450,461	535,655	125,927	10,883	5,950	-
1899	15,864	-	-	-	-	-	-	593,294	953,554	465,480	182,249	50,221	-
1900	92,293	-	-	-	-	-	-	717,684	638,898	165,340	43,841	22,493	-
1901	26,501	-	-	-	-	-	-	-	-	-	-	-	-
1912	-	-	-	-	-	-	-	-	109,000	245,000	435,000	364,000	-
1913	435,000	211,000	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	b318,000	b971,000	b582,000	b135,000	b156,000	-
1918	-	-	-	-	-	-	-	b114,000	b336,000	b365,000	b202,000	b111,000	b98,500

* Revised; supersedes figure published in reports of State engineer of Nebraska.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1897	(a)	+27,900	May 30, 1897	-	-	-	-
1898	(b)	+18,500	May 27, 29, 1898	-	-	-	-
1899	(c)	+23,500	June 26, 1899	-	-	-	-
1900	(d)	+15,800	June 4, 1900	-	-	-	-
1901	(d)	-	-	-	-	-	-
1912	326	-	-	-	-	-	-
1913	326	+10,600	Oct. 27, 1912	-	-	-	-
1917	-	+20,700	June 29, 1917	-	-	-	-
1918	-	+10,200	June 25, 1918	-	-	-	-

* Not previously published; estimated from graphs based on gage readings or daily discharges.

a 19th Ann. Rept., Pt. 4.

b 20th Ann. Rept., Pt. 4.

c 21st Ann. Rept., Pt. 4.

d 22d Ann. Rept., Pt. 4.

Note.--Monthly figures for November and December 1897 published in 19th Ann. Rept., Pt. 4 have been found in error on the basis of restudy by comparison with records at nearby stations. Those records are not published herein and should not be used.

143. Winter Creek near Scottsbluff, Nebr.

Location.--Lat 41°52', long. 103°37', near center of sec. 30, T. 22 N., R. 54 W., half a mile downstream from bridge on U. S. Highway 26, 1 mile upstream from mouth, and 1½ miles east of Scottsbluff.

Gage.--Water-stage recorder. Datum of gage is 3,861.8 ft above mean sea level, datum of 1929, Western Wyoming supplementary adjustment of 1940. Prior to Nov. 19, 1938, staff gage at site half a mile upstream at different datum.

Average discharge.--19 years (1931-50), 56.3 cfs.

Extremes.--1931-50: Maximum discharge, 590 cfs June 5, 1940 (by slope-area method); maximum gage height, 8.34 ft Jan. 7, 1949 (backwater from snowdrifts); minimum daily discharge, 1 cfs July 24, 1934, Aug. 16, 17, 1935.

Remarks.--Natural flow of stream affected by diversions and ground-water withdrawals for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second, of Winter Creek near Scottsbluff, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	80.4	62.0	59.1	55.8	52.4	51.7	51.1	45.0	18.9	54.1	60.8	89.7	56.8
1933	105	71.5	65.9	65.9	57.9	59.0	47.8	56.3	17.4	69.1	82.6	114	67.8
1934	86.3	77.3	65.9	59.3	55.6	53.4	46.2	6.4	22.8	8.5	10.8	33.8	43.7
1935	46.5	25.8	56.5	44.0	43.4	41.3	42.2	51.0	35.6	12.3	22.1	72.0	41.0
1936	59.2	45.0	51.0	49.5	47.4	43.5	42.1	17.7	48.7	40.6	59.4	66.8	47.5
1937	77.3	55.5	53.4	48.8	45.1	43.1	39.4	32.0	28.2	40.8	52.5	84.0	50.0
1938	79.1	57.4	60.7	56.4	51.6	48.2	47.0	52.7	53.0	70.6	61.5	107	62.2
1939	84.4	61.0	60.2	58.7	53.5	49.4	44.8	22.9	60.8	48.9	66.1	79.6	57.5
1940	81.1	62.8	62.1	57.9	55.5	49.9	46.0	28.4	35.1	36.4	18.4	55.3	49.0
1941	51.8	38.2	38.6	39.3	39.6	38.1	36.5	31.5	40.1	40.1	38.6	52.6	40.4
1942	61.0	54.0	47.3	47.0	47.8	44.6	42.7	53.8	56.0	31.7	47.2	97.1	52.4
1943	81.9	60.2	53.1	51.1	49.8	46.2	43.3	51.2	67.4	37.1	59.0	99.9	58.3
1944	116	72.2	66.0	61.5	56.1	52.5	49.4	49.3	60.4	53.9	60.5	96.2	66.2
1945	93.5	78.0	72.2	60.0	54.4	50.3	47.2	48.0	78.2	42.7	82.2	93.1	66.7
1946	100	69.0	65.5	59.0	52.8	48.0	37.8	60.9	45.1	47.4	56.0	119	63.4
1947	89.2	64.8	53.9	51.0	49.9	49.5	47.2	31.0	94.6	46.2	60.3	107	62.0
1948	101	66.7	58.5	56.5	53.5	51.8	46.9	55.3	74.6	64.2	55.9	101	65.5
1949	85.9	65.5	61.5	58.7	49.7	50.6	44.0	46.5	41.3	52.3	61.4	90.1	59.0
1950	91.5	63.8	59.7	54.4	50.8	47.1	46.9	29.5	27.4	53.4	67.8	122	59.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	4,940	3,690	3,630	3,430	3,010	3,180	3,040	2,770	1,120	3,530	3,740	5,340	41,200
1933	6,460	4,250	4,050	4,050	3,220	3,630	2,840	3,460	1,040	4,250	5,080	6,780	49,100
1934	5,310	4,600	4,050	3,650	3,090	3,280	2,750	391	1,360	522	666	2,010	31,680
1935	2,860	1,540	3,470	2,710	2,410	2,540	2,510	3,140	2,120	756	1,360	4,280	29,700
1936	3,640	2,680	3,140	3,050	2,730	2,670	2,510	1,090	2,900	2,500	3,650	3,970	34,530
1937	4,750	3,500	3,280	3,000	2,500	2,650	2,350	1,970	1,680	2,510	3,230	5,000	36,220
1938	4,860	3,420	3,750	3,470	2,870	2,960	2,800	3,240	3,160	4,340	3,780	6,390	45,020
1939	5,190	3,630	3,700	3,610	2,970	3,030	2,680	1,410	3,620	3,000	4,070	4,730	41,620
1940	4,990	3,740	3,820	3,560	3,190	3,070	2,740	1,750	2,090	2,240	1,130	3,290	35,610
1941	3,180	2,270	2,370	2,410	2,200	2,340	2,170	1,940	2,390	2,470	2,370	3,130	29,240
1942	3,750	3,210	2,910	2,890	2,650	2,750	2,540	3,310	3,330	1,950	2,900	5,780	37,970
1943	5,040	3,580	3,260	3,140	2,760	2,840	2,580	3,150	4,010	2,280	3,630	5,950	42,220
1944	7,160	4,300	4,060	3,780	3,230	3,230	2,940	3,390	3,590	3,620	3,720	5,720	48,080
1945	5,750	4,640	4,440	3,690	3,020	3,090	2,810	2,950	4,650	2,530	5,060	5,540	48,270
1946	6,170	4,110	4,030	3,630	2,930	2,950	2,250	3,740	2,680	2,910	3,440	7,060	45,900
1947	5,490	3,850	3,310	3,130	2,770	3,040	2,810	1,900	5,630	2,840	3,710	6,360	44,840
1948	6,210	3,970	3,590	3,470	3,080	3,180	2,790	3,400	4,440	3,950	3,440	6,030	47,550
1949	5,280	3,900	3,780	3,610	2,760	3,110	2,620	2,860	2,460	3,220	3,780	5,360	42,740
1950	5,630	3,800	3,670	3,340	2,820	2,890	2,790	1,810	1,630	3,280	4,170	7,230	43,060

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	731	135	Sept. 21, 1932	5	56.8	41,200	60.2	43,700
1933	746	176	Sept. 14, 1933	4	67.8	49,100	66.7	48,300
1934	761	97	Oct. 5, 1933†	1	43.7	31,680	35.3	25,590
1935	786	400	(a)	1	41.0	29,700	43.2	31,290
1936	806	436	June 8, 1936	7	47.5	34,530	50.1	36,400
1937	826	280	Aug. 18, 1937	4	50.0	36,220	51.0	36,900
1938	856	241	Sept. 2, 1938	8	62.2	45,020	62.9	45,530
1939	876	409	June 16, 1939	3.5	57.5	41,620	57.5	41,650
1940	896	590	June 5, 1940	4.4	49.0	35,610	42.5	30,880
1941	926	297	June 8, 1941	5	40.4	29,240	43.2	31,290
1942	956	164	July 23, 1942	6.1	52.4	37,970	55.2	39,980
1943	976	202	June 16, 1943	19	58.3	42,220	63.3	45,860
1944	1006	339	June 11, 1944	11	66.2	48,080	65.3	47,390
1945	1036	395	Aug. 7, 1945	11	66.7	48,270	66.0	47,750
1946	1056	210	May 23, 1946	6.1	63.4	45,900	61.1	44,240
1947	1086	379	June 21, 1947	8.2	62.0	44,840	63.5	45,960
1948	1116	504	June 16, 1948	15	65.5	47,550	64.6	46,740
1949	1146	362	July 30, 1949	12	59.0	42,740	59.2	42,880
1950	1176	239	Sept. 29, 1950	5.1	59.5	43,060	-	-

† Corrected.

a July 9 or 10, 1935.

144. Gering drain near Gering, Nebr.

Location.--Lat 41°49', long. 103°37', in SE $\frac{1}{4}$ sec. 6, T. 21 N., R. 54 W., a quarter of a mile downstream from bridge on State Highway 86, 1 mile upstream from mouth, and 2 miles east of Gering.

Gage.--Water-stage recorder. Altitude of gage is 3,870 ft (from topographic map). Prior to Apr. 19, 1935, staff gage at bridge 0.4 mile downstream at datum 1.0 ft lower. Apr. 19, 1935, to Apr. 28, 1943, chain gage at bridge 600 ft upstream from previous site at present datum. Apr. 29, 1943, to Sept. 30, 1945, staff gages at various sites at or near bridge a quarter of a mile upstream at different datums.

Average discharge.--16 years (1931-45, 1948-50), 37.9 cfs.

Extremes.--1930-45, 1948-50: Maximum discharge, 3,000 cfs June 30, 1935 (gage height, 10.8 ft, site and datum then in use, from floodmarks), from rating curve extended above 1,400 cfs on basis of slope-area determination at gage height 9.0 ft; minimum daily, 5 cfs Aug. 13, 16, 19, 1940.

Remarks.--Base flow is mainly return water from land irrigated by Fort Laramie Canal.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	26.5	24.6	45.5	73.3	51.8	47.4	31.8	-
1932	41.6	29.7	27.0	23.0	23.2	24.5	24.5	28.6	73.5	71.6	66.5	77.0	42.5
1933	51.9	39.2	33.8	31.5	26.6	29.2	35.1	56.9	62.8	62.1	65.2	113	50.7
1934	44.6	36.9	34.4	29.6	29.2	26.2	28.2	23.9	38.2	18.8	19.8	13.4	28.5
1935	22.2	22.5	35.2	17.4	17.4	19.8	33.9	54.6	50.4	46.4	33.5	35.3	32.5
1936	25.4	37.7	25.7	23.2	18.5	29.1	23.3	36.0	51.9	20.6	24.7	23.3	28.3
1937	27.7	24.9	19.0	16.9	16.1	17.2	20.5	28.4	37.9	30.2	39.5	47.0	27.1
1938	34.7	28.2	25.4	23.1	22.8	22.4	24.8	41.2	44.1	59.0	45.0	73.9	37.1
1939	38.6	33.1	28.6	24.5	23.7	26.0	21.6	30.6	51.1	33.1	31.3	30.5	31.1
1940	30.3	33.5	33.5	26.8	26.8	24.5	25.6	22.4	25.5	13.3	7.71	16.1	23.8
1941	25.8	36.4	19.6	18.5	17.6	16.8	25.6	25.0	39.2	39.5	33.6	36.8	27.9
1942	33.3	25.6	19.6	18.3	18.4	19.8	24.0	42.4	85.3	49.5	50.3	75.5	38.5
1943	39.2	32.5	29.8	27.5	24.4	24.2	25.2	63.8	92.7	42.6	52.4	65.3	43.3
1944	39.5	33.9	29.3	26.1	25.8	26.2	24.6	45.2	83.2	70.7	64.9	75.0	45.4
1945	58.1	35.3	33.8	32.1	29.6	26.8	27.7	40.5	109	76.3	132	107	59.1
1949	45.5	38.9	31.2	23.2	31.7	32.8	26.1	28.3	65.3	69.7	75.1	83.3	46.0
1950	44.6	39.3	33.2	30.8	27.2	30.6	24.6	35.4	50.4	66.5	78.5	79.9	45.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	1,630	1,460	2,800	4,360	3,190	2,910	1,890	-
1932	2,560	1,770	1,660	1,410	1,330	1,510	1,460	1,750	4,360	4,400	4,090	4,580	30,900
1933	3,190	2,330	2,080	1,940	1,480	1,800	2,090	3,500	3,740	3,820	4,010	6,720	36,700
1934	2,740	2,200	2,110	1,820	1,620	1,610	1,680	1,470	2,270	1,160	1,180	795	20,660
1935	1,360	1,340	2,160	1,070	964	1,220	2,020	3,360	3,000	2,850	2,060	2,100	23,500
1936	1,560	2,250	1,580	1,420	1,060	1,790	1,390	2,210	3,090	1,270	1,520	1,380	20,520
1937	1,710	1,480	1,170	1,040	895	1,060	1,220	1,740	2,250	1,860	2,430	2,800	19,660
1938	2,130	1,680	1,560	1,420	1,270	1,380	1,480	2,620	3,630	2,770	4,400	4,400	26,870
1939	2,370	1,970	1,760	1,510	1,320	1,600	1,260	1,890	3,040	2,040	1,930	1,820	22,530
1940	1,860	2,000	2,060	1,650	1,540	1,500	1,530	1,390	1,920	817	474	958	17,290
1941	1,590	2,170	1,210	1,140	980	1,030	1,520	1,540	2,330	2,430	2,070	2,190	20,200
1942	2,040	1,520	1,210	1,120	1,020	1,220	1,430	2,610	5,080	3,050	3,090	4,490	27,880
1943	2,410	1,930	1,830	1,690	1,350	1,490	1,500	3,920	5,520	2,620	3,220	3,890	31,370
1944	2,430	2,020	1,800	1,600	1,480	1,610	1,470	2,780	4,950	4,350	3,990	4,460	32,940
1945	3,570	2,100	2,080	1,980	1,640	1,650	1,650	2,490	6,510	4,690	8,090	6,360	42,810
1949	2,800	2,320	1,920	1,420	1,760	2,020	1,560	1,740	3,690	4,280	4,620	4,960	33,290
1950	2,740	2,340	2,040	1,900	1,510	1,880	1,470	2,170	3,000	4,090	4,830	4,750	32,720

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet		
		Discharge	Date							
1931	716	-	-	-	-	-	-	-	-	-
1932	731	-	-	18	42.5	30,900	44.8	32,500		
1933	746	*1,100	July 5, 1933	18	50.7	36,700	49.9	36,150		
1934	761	2,250	June 2, 1934	6	28.5	20,660	25.5	18,460		
1935	786	3,000	June 30, 1935	-	32.5	23,500	33.2	24,030		
1936	806	a252	June 1, 1936	11	28.3	20,520	26.8	19,490		
1937	826	*217	Sept. 7, 1937	15	27.1	19,660	28.5	20,660		
1938	856	*660	Sept. 2, 1938	20	37.1	26,870	38.1	27,600		
1939	876	2,500	June 15, 1939	19	31.1	22,530	30.8	22,350		
1940	896	1,530	June 5, 1940	5	23.8	17,290	22.5	16,340		
1941	926	a799	June 9, 1941	16	27.9	20,200	27.6	20,000		
1942	956	a277	July 20, 1942	16	38.5	27,880	40.4	29,280		
1943	976	*a503	July 17, 1943	21	43.3	31,370	43.4	31,450		
1944	1006	1,700	May 16, 1944	23	45.4	32,940	47.5	34,440		
1945	1036	1,600	Aug. 1, 1945	25	59.1	42,810	-	-		
1949	1146	1,400	June 6, 1949	14	46.0	33,290	46.1	33,370		
1950	1176	351	Sept. 19, 1950	21	45.2	32,720	-	-		

* Revised.

† Not previously published.

a Maximum observed.

Note.--Records for January 1923 to February 1931 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

145. North Platte River near Minatare, Nebr. 1/

Location.--Main channel gage, lat 41°47', long. 103°31', in E $\frac{1}{2}$ sec. 13, T. 21 N., R. 54 W., 350 ft upstream from highway bridge and 1 $\frac{1}{2}$ miles southwest of Minatare. Nine-mile channel gage, 25 ft upstream from highway bridge and 700 ft north of main channel.

Drainage area.--24,700 sq mi, approximately.

Gage.--Main channel: Water-stage recorder. Datum of gage is 3,812.7 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940.

May 1916 to October 1919, staff gage on upstream side of bridge, 350 ft downstream at different datum.

April 1922 to Apr. 11, 1932, staff gage on downstream side of bridge, 350 ft downstream at datum 0.54 ft higher.

Apr. 12, 1932, to July 20, 1936, water-stage recorder on right bank just downstream from bridge, 350 ft downstream at datum 0.54 ft higher.

July 21, 1936, to Apr. 30, 1941, water-stage recorder at present site at datum 1.00 ft higher.

Nine-mile channel: Water-stage recorder. Datum of gage is 3,813.3 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940. No records collected prior to May 16, 1934. May 16, 1934, to May 19, 1940 (irrigation seasons only), staff gage at bridge 25 ft downstream at same datum.

Extremes.--1916-19, 1922-50: Maximum discharge, 19,500 cfs July 2, 1917 (from graph based on mean daily discharge); minimum daily discharge, 11 cfs Aug. 16-18, 1940.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for irrigation seasons, 1916-19, 1922-23, and records for complete years, 1924-30, except for January to March 1927, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	a2,230	a2,550a2,320	a2,300	-	-	-
1917	-	-	-	-	-	-	-	b4,700	a14,800a9,500	a2,040	a2,140	-	-
1918	al,820	bl,360	b825	b859	bl,020	bl,170	bl,580	*5,080	a5,110a3,470	al,460	c1,390	c2,100	-
1919	-	-	-	-	-	-	-	al,230	t1,740	a637	al,580	-	-
1920	al,790	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	al,330a5,320	a3,320a1,810	t1,330	a625	-	-
1923	-	-	-	-	-	-	-	-	a2,890a2,550	t2,230	t1,670	-	-
1924	a2,610	al,800	al,300	*1,500	a2,230	al,250	as,850a7,840	-	a5,510a2,320	al,820	a2,310	*2,940	-
1925	a2,220	t1,833	al,800	al,660	al,700	al,210	al,220al,420	t1,390al,340	al,680	al,490	t1,580	-	-
1926	al,860	al,530	al,400	al,600	t1,510	al,390	a2,120t2,520	a4,600a3,380	a2,090	t2,180	t2,180	-	-
1927	t1,900	t1,700	*1,700	cl,600	cl,900	cl,600	a3,250a4,240	a3,500a2,330	a3,720	al,750	c2,440	-	-
1928	a2,510	al,940	al,850	al,500	al,250	al,510	al,460a3,950	a9,490a2,230	al,640	al,610	a2,570	-	-
1929	t1,770	al,980	t1,750	t1,000	t1,080	al,760	t2,740t4,640	a10,500a2,470	t1,260	a2,960	t2,820	-	-
1930	t2,980	a2,070	al,870	al,640	t1,480	al,500	al,550al,670	t967	a880	a2,150	al,840	t1,720	-
1931	2,480	1,890	1,590	1,460	1,350	1,200	1,180	685	716	474	472	445	1,160
1932	1,060	972	995	819	825	938	916	735	957	1,080	759	696	904
1933	1,330	1,310	1,100	1,130	861	979	942	2,930	1,090	957	763	1,380	1,230
1934	1,434	1,177	1,144	1,014	946	958	681	905	281	967	781	197	674
1935	343	250	702	738	634	542	579	689	1,753	334	230	307	590
1936	586	718	805	690	631	693	673	216	687	357	202	208	539
1937	797	995	801	522	680	755	545	284	813	1,030	300	450	664
1938	1,127	1,030	1,053	911	868	897	1,052	1,052	570	618	444	990	886
1939	1,101	1,032	930	823	965	965	851	264	512	260	260	274	685
1940	761	768	763	781	802	791	738	276	317	170	277	184	530
1941	590	586	604	611	625	588	531	654	875	313	326	419	560
1942	917	859	828	793	730	662	842	4,038	932	427	386	821	1,024
1943	1,107	1,123	1,195	1,143	976	952	1,360	669	598	278	341	556	856
1944	922	1,114	979	872	803	788	812	1,096	622	573	444	578	800
1945	1,088	1,076	947	922	875	875	815	1,433	1,903	603	884	856	1,023
1946	1,400	1,200	1,152	1,086	1,025	1,012	735	731	610	354	309	934	878
1947	1,285	1,115	1,034	987	946	905	879	685	2,865	1,451	500	736	1,114
1948	1,292	1,221	1,144	1,116	1,129	1,496	977	545	992	747	566	835	1,004
1949	1,342	1,292	1,094	861	1,103	1,031	880	614	1,411	364	500	863	960
1950	1,303	1,149	1,079	891	997	932	715	470	439	601	543	1,124	852

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

1/ Published as "at Melbete", 1918, 1919, 1922-26 in reports of State engineer of Nebraska.

Monthly and yearly runoff, in thousands of acre-feet, of North Platte River near Minatare, Nebr.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	1a137.00	1a152.00	1a143.00	1a141.00	-	-
1917	-	-	-	-	-	-	-	b289.00	a84.00	a584.00	a125.00	a127.00	-
1918	112.00	b80.80	b50.70	b52.80	b56.50	b71.90	b93.90	*312.00	1a304.00	a213.00	a89.40	a82.60	a1,520.0
1919	-	-	-	-	-	-	-	1a75.70	1a103.00	1a39.20	48.30	1a94.10	-
1920	110.00	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	a78.90	a327.00	1a197.00	1a111.00	a82.00	a37.20
1923	-	-	-	-	-	-	-	-	-	1a172.00	1a157.00	a137.00	a99.50
1924	1a161.00	1a107.00	a79.80	*92.20	a128.00	a29.00	a77.10	a408.00	a482.00	a209.00	a143.00	1a112.00	1a138.00
1925	1a156.00	1a109.00	1a111.00	1a102.00	a94.40	a74.60	a72.90	a87.50	a82.40	a82.80	1a103.00	a88.70	*2,140.0
1926	1a114.00	a90.80	a86.30	a98.40	a83.70	a85.70	1a126.00	1a155.00	a274.00	a208.00	a129.00	1a130.00	1a1,580.0
1927	1a117.00	1a101.00	*105.00	c98.40	1a106.00	c98.40	1a193.00	a261.00	a208.00	1a144.00	a229.00	1a104.00	c1,760.0
1928	1a155.00	1a115.00	1a114.00	a92.20	a71.90	a92.80	a87.10	a243.00	a565.00	1a137.00	1a101.00	a95.90	a1,870.0
1929	1a104.00	1a118.00	1a108.00	a61.70	a59.80	1a108.00	1a163.00	a286.00	a622.00	1a152.00	a77.30	1a176.00	1a2,040.0
1930	1a184.00	1a123.00	1a115.00	1a101.00	a82.00	a92.30	1a230.00	1a103.00	a57.50	a54.10	1a132.00	1a109.00	1a1,250.0
1931	152.00	112.00	*97.70	89.80	75.00	73.80	70.20	42.10	42.60	29.10	29.00	26.50	840.0
1932	65.20	57.80	61.20	50.40	53.20	57.70	54.50	45.20	56.90	66.40	46.70	41.40	657.0
1933	61.80	78.00	67.60	69.50	47.80	60.20	56.10	180.00	64.90	58.80	46.90	82.10	894.0
1934	88.17	70.06	70.33	62.36	52.66	58.91	40.52	5.57	16.75	6.07	4.80	11.73	487.9
1935	21.07	14.85	43.16	45.38	35.19	33.33	34.44	42.34	104.30	20.53	14.16	18.26	427.0
1936	36.17	42.72	49.73	42.43	36.32	42.60	40.06	13.29	40.90	21.98	12.40	12.36	391.0
1937	39.03	59.23	49.23	32.11	37.74	46.40	32.46	17.46	48.39	63.35	18.42	26.80	480.6
1938	69.28	51.26	54.73	56.01	49.37	55.18	62.59	64.68	33.89	37.99	27.31	58.92	641.2
1939	67.70	61.43	57.21	58.52	45.67	59.58	50.61	16.23	30.48	15.97	15.97	16.27	495.6
1940	46.79	45.70	46.89	48.01	46.13	48.62	43.94	16.98	18.87	10.46	1.71	10.97	385.1
1941	36.28	34.87	37.16	37.56	34.95	36.15	31.59	40.23	52.31	19.26	20.02	24.91	405.3
1942	56.36	51.09	50.91	48.79	40.55	40.70	50.12	248.30	55.48	26.24	23.76	48.88	741.2
1943	68.07	66.82	73.47	70.27	54.21	58.56	80.92	41.11	35.47	17.08	20.96	33.08	620.0
1944	56.68	66.31	60.20	53.61	46.21	48.45	48.29	67.41	36.99	35.25	27.31	34.36	581.1
1945	66.91	64.03	58.24	56.70	48.79	53.83	48.52	88.09	113.20	37.08	54.35	50.96	740.7
1946	86.08	71.39	70.83	68.80	56.94	62.21	43.96	44.95	36.32	21.78	19.02	55.56	635.8
1947	78.98	66.37	63.59	60.71	52.51	55.68	52.53	42.11	170.50	89.23	30.71	43.77	906.5
1948	79.42	72.63	70.31	68.61	64.96	62.11	58.16	33.48	59.03	54.83	49.68	729.1	949.6
1949	82.51	76.86	67.27	52.92	61.25	63.38	52.33	37.74	83.99	34.71	20.75	51.33	695.0
1950	80.09	68.37	66.35	54.79	55.37	57.29	42.53	28.91	26.12	36.94	33.39	66.91	617.0

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	-	\$5,200	July 16, 1916	-	-	-	-	-
1917	-	*9,200	July 2, 1917	-	-	-	-	-
1918	-	*8,800	June 25, 1918	-	a2,100	a1,520,000	-	-
1919	-	*4,000	Sept. 14, 1919	-	-	-	-	-
1922	-	*10,200	May 20, 1922	-	-	-	-	-
1923	-	*11,700	Sept. 30, 1923	-	-	-	-	-
1924	-	*16,200	Apr. 17, 1924	1,050	*2,940	*2,140,000	*2,950	*2,150,000
1925	-	*7,600	May 18, 1925	420	1b1,580	1b1,140,000	1b1,490	1b1,080,000
1926	-	*8,000	June 19, 1926	700	1b2,180	1b1,580,000	*2,230	*1,610,000
1927	-	*7,000	June 23, 1927	-	a2,440	a1,760,000	a2,520	a1,830,000
1928	-	*14,700	June 6, 1928	750	b2,570	b1,870,000	b2,510	b1,820,000
1929	-	*17,000	June 3, 1929	600	1b2,820	1b2,040,000	1b2,940	1b2,130,000
1930	-	*9,400	Oct. 1, 1929	500	1b1,720	1b1,250,000	1b1,640	1b1,180,000
1931	716	3,650	Oct. 7, 1930	142	1,160	840,000	914	662,000
1932	731	2,130	Aug. 3, 1932	376	904	657,000	964	700,000
1933	745	6,370	May 25, 1933	450	1,230	894,000	1,240	895,000
1934	761	9,100	Oct. 6, 1933	116	674	487,900	467	338,400
1935	786	9,100	June 2, 1935	158	590	427,000	658	476,600
1936	806	1,770	June 9, 1936	30	539	391,000	578	419,800
1937	826	3,930	July 15, 1937	45	664	480,600	716	518,400
1938	856	2,980	May 20, 1938	184	886	641,200	873	632,300
1939	876	1,740	June 16, 1939	126	685	495,600	620	448,700
1940	896	2,150	June 6, 1940	11	530	358,100	488	354,000
1941	926	4,540	June 11, 1941	45	560	405,300	629	455,300
1942	956	6,950	May 14, 1942	191	1,024	741,200	1,093	791,200
1943	976	2,030	Apr. 1, 3, 1943	176	856	620,000	822	594,800
1944	1006	2,290	May 17, 1944	201	800	581,100	809	587,100
1945	1036	3,360	June 11, 1945	351	1,023	740,700	1,077	779,800
1946	1056	2,160	Oct. 1, 1945	226	878	635,800	852	616,500
1947	1086	6,740	June 26, 1947	401	1,114	806,500	1,133	819,900
1948	1116	3,200	June 17, 1948	155	1,004	729,100	1,010	733,400
1949	1146	2,960	June 13, 1949	247	960	695,000	944	683,200
1950	1176	2,120	Sept. 19, 1950	182	852	617,000	-	-

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected.

‡ Not previously published.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From reports of State engineer of Nebraska.

146. Ninemile drain near McGrew, Nebr.

Location.--Lat 41°46', long. 103°24', near southeast corner of sec. 23, T. 21 N., R. 53 W., 15 ft upstream from highway bridge, half a mile upstream from mouth, and 1½ miles north of McGrew.

Gage.--Water-stage recorder. Altitude of gage is 3,800 ft (from topographic map). Prior to Apr. 14, 1939, staff gage at same site and datum.

Average discharge.--18 years (1932-50), 119 cfs.

Extremes.--1932-50: Maximum discharge, 710 cfs Aug. 26, 1950 (gage height, 5.57 ft, from high-water mark in gage well), by contracted-opening method; minimum daily, 51 cfs July 25, 1934.

Remarks.--Flow affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	95.4	93.6	89.5	90.0	142	177	220	232	-
1933	198	151	121	112	98.6	99.2	94.7	118	126	178	217	254	149
1934	188	156	130	111	104	89.2	74.1	76.4	98.6	77.5	81.2	94.6	107
1935	106	101	81.0	72.9	70.4	70.8	73.7	80.5	96.4	109	113	124	91.7
1936	117	97.2	84.6	76.0	68.0	68.3	67.1	67.9	150	119	130	134	98.3
1937	137	105	86.7	74.8	71.7	71.3	68.9	86.8	111	146	148	164	106
1938	133	116	99.7	90.7	84.5	84.4	80.5	96.9	118	137	146	202	116
1939	134	117	109	98.1	88.7	86.9	77.4	89.0	135	120	135	151	112
1940	134	112	101	94.1	88.4	83.2	80.2	74.4	104	96.1	84.0	98.3	95.8
1941	94.8	75.3	71.6	66.1	63.9	60.4	62.8	77.9	115	104	121	146	88.3
1942	120	88.7	85.2	80.2	80.1	76.2	77.3	113	120	123	170	185	110
1943	144	111	105	88.7	81.1	75.7	76.1	88.6	142	143	188	198	120
1944	171	126	107	97.6	90.7	89.0	87.8	81.5	145	166	202	230	133
1945	171	132	112	103	92.4	85.8	81.6	104	183	156	213	223	138
1946	164	126	110	95.3	86.7	84.0	83.2	113	140	168	182	226	132
1947	153	127	106	93.8	83.4	80.2	78.6	101	185	154	185	223	131
1948	161	127	110	96.3	90.3	85.8	82.2	117	154	167	208	247	137
1949	163	126	106	94.6	88.3	82.0	76.3	103	158	159	198	227	136
1950	167	122	106	90.2	85.8	80.3	69.9	97.6	129	179	228	239	133

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	5,490	5,760	5,330	5,530	8,450	10,900	13,500	13,800	-
1933	12,200	8,980	7,440	6,890	5,480	6,100	5,640	7,260	7,500	10,900	13,300	15,100	107,000
1934	11,590	9,260	7,980	6,850	5,750	5,490	4,410	4,690	5,870	4,760	4,990	5,630	77,270
1935	6,510	6,020	4,980	4,880	3,910	4,350	4,390	4,950	5,730	6,720	6,950	7,370	66,360
1936	7,190	5,790	5,200	4,690	3,910	4,200	3,990	4,180	8,930	7,320	7,990	8,000	71,380
1937	8,430	6,270	5,330	4,600	3,980	4,380	4,100	5,340	6,830	5,000	9,120	9,750	76,930
1938	8,170	6,930	6,130	5,580	4,690	5,190	4,790	5,960	7,020	8,450	8,960	12,010	83,880
1939	8,240	6,980	6,680	6,030	4,930	5,350	4,610	5,470	8,080	7,450	8,280	8,980	80,940
1940	8,270	6,640	6,190	5,790	5,090	5,120	4,770	4,580	6,170	5,910	5,160	5,850	69,540
1941	5,830	4,480	4,400	4,060	3,550	3,710	3,740	4,790	6,860	6,380	7,430	8,660	63,890
1942	7,380	5,290	5,240	4,930	4,450	4,690	4,600	6,950	7,160	7,560	10,450	11,050	79,700
1943	8,850	6,650	6,440	5,450	4,500	4,680	4,530	5,450	8,430	8,770	11,540	11,760	87,010
1944	10,540	7,820	6,610	6,000	5,210	5,470	5,220	5,010	8,610	10,230	12,440	13,650	96,520
1945	10,510	7,880	6,880	6,330	5,130	5,270	4,850	6,370	10,890	9,610	13,120	13,280	100,100
1946	10,070	7,530	6,780	5,860	4,820	5,160	4,950	6,980	8,320	10,340	11,210	13,470	95,490
1947	9,380	7,570	6,540	5,770	4,630	4,930	4,680	6,220	11,010	9,440	11,280	13,260	94,710
1948	9,930	7,580	6,750	5,920	5,190	5,270	4,890	7,200	10,160	10,240	12,860	14,990	99,680
1949	10,030	7,490	6,450	5,820	4,560	5,650	4,540	6,500	8,900	11,590	12,200	13,520	98,150
1950	10,270	7,280	6,540	5,840	4,760	4,940	4,160	6,000	7,690	11,010	14,020	14,240	96,450

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1932	731	a385	Aug. 13, 1932	-	-	-	-	-	-
1933	746	a344	Sept. 14, 1933	83	147	107,000	148	107,000	107,000
1934	761			51	107	77,270	91.1	65,950	65,950
1935	786	#412	June 11, 1935	60	91.7	66,360	92.6	67,030	67,030
1936	806, 926	630	June 8, 1936	55	98.3	71,380	101	73,230	73,230
1937	826	a386	Aug. 18, 1937	64	106	76,930	108	78,130	78,130
1938	856	a465	May 19, 1938	75	116	83,880	117	84,550	84,550
1939	876	347	June 15, 1939	64	112	80,940	111	80,140	80,140
1940	896	316	Apr. 28, 1940	59	95.8	69,540	87.0	63,150	63,150
1941	926	599	June 9, 1941	57	88.3	63,890	92.6	67,060	67,060
1942	956	341	Aug. 4, 1942	67	110	79,700	116	83,740	83,740
1943	976	372	June 13, 1943	69	120	87,010	124	89,760	89,760
1944	1006	511	June 12, 1944	62	133	96,520	134	97,120	97,120
1945	1036	644	Aug. 8, 1945	69	138	100,100	137	99,220	99,220
1946	1066	338	Sept. 18, 1946	73	132	95,490	131	94,600	94,600
1947	1086	a524	June 29, 1947	75	131	94,710	132	95,480	95,480
1948	1116	554	June 17, 1948	73	137	99,680	137	99,390	99,390
1949	1146	375	June 6, 1949	68	136	98,150	136	98,270	98,270
1950	1176	710	Aug. 26, 1950	64	133	96,450	-	-	-

* Not previously published.

a Maximum observed.

Note.--Records for October 1930 to January 1932 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

147. Bayard Sugar Factory drain near Bayard, Nebr.

Location.--Lat 41°44', long. 103°19', in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 20 N., R. 52 W., $1\frac{1}{4}$ miles south of Bayard.

Gage.--Water-stage recorder and concrete flume. Altitude of gage is 3,760 ft (from topographic map). Prior to Jan. 7, 1939, staff gage at same site and datum.

Average discharge.--19 years (1931-50), 34.0 cfs.

Extremes.--1931-50: Maximum discharge, 356 cfs June 29, 1947 (gage height, 3.93 ft), from rating curve extended above 170 cfs; no flow June 1, 2, July 4-8, 1934, May 16, 17, 1936.

Remarks.--Flow affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	62.7	52	49.9	42.2	37.4	34.8	32.4	38.3	28.7	36.4	65.1	90.3	47.5
1933	75.5	55.1	47.7	43.9	38.8	37.2	33.2	39.0	20.9	28.8	47.7	77.0	45.4
1934	60.3	49.6	43.8	40.7	36.9	35.0	32.1	19.5	9.53	14.3	22.5	21.3	32.1
1935	26.8	22.6	28.6	26.3	25.0	25.3	28.1	33.2	21.8	9.0	24.6	26.7	24.8
1936	34.7	34.8	31.1	29.0	25.6	26.2	23.4	10.1	26.7	25.5	32.9	35.4	27.9
1937	48.5	42.1	32.2	26.5	27.4	27.1	25.3	23.2	24.5	20.3	40.4	4.7	31.6
1938	47.9	40.6	36.7	33.3	32.0	30.0	31.1	37.0	28.5	25.0	36.8	60.4	36.6
1939	51.7	44.5	37.7	35.0	31.2	33.4	29.9	9.22	22.2	21.5	39.4	43.0	33.2
1940	49.9	41.9	36.4	33.7	34.8	32.5	29.3	10.4	18.8	18.3	13.9	13.5	27.8
1941	40.6	29.5	22.0	22.9	23.7	23.2	23.2	7.06	*25.1	12.5	30.3	34.8	*24.5
1942	38.5	33.2	29.2	25.0	26.3	28.4	29.9	49.0	40.3	26.2	42.3	48.5	34.8
1943	52.9	41.5	35.5	32.0	29.8	27.4	26.1	31.2	22.4	33.3	42.1	49.7	35.4
1944	52.2	41.4	34.6	30.4	30.4	31.6	30.9	23.1	34.7	36.0	44.3	56.7	37.4
1945	46.9	43.2	35.1	34.5	31.8	28.9	28.4	28.5	48.1	40.8	55.4	61.9	40.5
1946	53.9	39.5	35.9	32.3	30.1	29.9	26.1	21.2	31.0	30.0	33.6	49.4	34.4
1947	49.3	38.0	33.8	30.1	26.3	25.6	26.4	8.85	67.9	43.1	39.7	56.1	37.1
1948	50.7	40.4	36.6	33.2	31.1	28.3	25.3	24.0	19.1	20.5	38.3	34.2	31.8
1949	41.3	38.9	34.5	27.2	31.6	33.3	24.4	15.3	34.1	32.0	33.6	54.1	33.3
1950	45.9	35.1	30.6	27.4	26.4	26.8	22.2	13.8	15.6	23.5	31.3	56.4	29.6

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	3,860	3,090	3,070	2,590	2,150	2,140	1,930	2,360	1,710	2,240	4,000	5,370	34,500
1933	4,640	3,280	2,930	2,700	2,150	2,290	1,980	2,400	1,240	1,770	2,930	4,580	32,900
1934	3,710	2,950	2,690	2,500	2,050	2,150	1,910	1,200	567	882	1,380	1,270	23,260
1935	1,650	1,340	1,760	1,620	1,390	1,560	1,670	2,040	1,300	551	1,510	1,590	17,980
1936	2,140	2,070	1,910	1,790	1,470	1,610	1,390	619	1,590	1,570	2,020	2,110	20,290
1937	2,980	2,510	1,980	1,630	1,520	1,660	1,500	1,430	1,460	1,250	2,480	2,480	22,880
1938	2,940	2,420	2,260	2,050	1,780	1,850	1,850	2,280	1,690	1,540	2,270	3,600	26,530
1939	3,180	2,650	2,320	2,150	1,740	2,050	1,780	567	1,320	1,320	2,420	2,460	24,060
1940	3,070	2,490	2,240	2,070	2,000	2,000	1,740	637	1,120	1,130	857	805	20,160
1941	2,500	1,760	1,350	1,410	1,320	1,430	1,380	434	*1,490	768	1,860	2,070	*17,770
1942	2,370	1,980	1,800	1,540	1,460	1,740	1,780	3,010	2,600	1,610	2,600	2,890	25,180
1943	3,250	2,470	2,180	1,970	1,650	1,690	1,550	1,920	1,340	2,050	2,590	2,860	25,620
1944	3,210	2,460	2,130	1,870	1,750	1,950	1,840	1,420	2,070	2,340	720	3,570	27,130
1945	3,000	2,570	2,160	2,120	1,770	1,780	1,690	1,760	2,860	2,510	3,410	3,680	29,310
1946	3,310	2,350	2,210	1,990	1,670	1,840	1,550	1,310	1,840	1,850	2,060	2,940	24,920
1947	3,030	2,260	2,080	1,850	1,460	1,570	1,570	544	4,040	2,650	2,440	3,340	26,830
1948	3,120	2,400	2,250	2,040	1,790	1,740	1,500	1,470	1,140	1,260	2,350	2,030	23,090
1949	2,540	2,310	2,120	1,670	1,760	2,040	1,450	939	2,030	1,970	2,070	3,220	24,120
1950	2,820	2,090	1,880	1,680	1,460	1,650	1,320	850	928	1,450	1,920	3,560	21,410

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	731	a100	(b)	4	47.5	34,500	48.7	35,300
1933	746	115	July 4 or 5, 1933	5	45.4	32,900	43.4	31,400
1934	761	a75	Oct. 1, 1933	0	32.1	23,260	25.8	19,530
1935	786	180	Apr. 26, 1935	1	24.8	17,980	26.7	19,350
1936	806	138	June 9, 1936	0	27.9	20,290	29.8	21,640
1937	826	*112	Aug. 18, 1937	.2	31.6	22,880	31.8	23,040
1938	856	157	Sept. 2, 1938	13	36.6	25,530	37.3	27,060
1939	876	150	July 13, 1939	.6	33.2	24,060	32.8	23,710
1940	896	121	June 5, 1940	.3	27.8	20,160	24.7	17,970
1941	926, 1390	*298	June 10, 1941	.1	*24.5	*17,770	*25.3	*18,310
1942	956	182	July 11, 1942	4.4	34.8	25,180	37.2	26,930
1943	976	143	July 17, 1943	9.2	35.4	25,620	35.2	25,820
1944	1006	200	June 12, 1944	9.2	37.4	27,130	37.3	27,060
1945	1036	280	Aug. 2, 1945	12	40.5	29,310	40.7	29,450
1946	1056	170	Oct. 1, 1945	5.2	34.4	24,920	33.7	24,420
1947	1086	356	June 29, 1947	1.7	37.1	26,830	37.6	27,230
1948	1116	141	June 17, 1948	4.5	31.8	23,090	30.7	22,290
1949	1146	233	June 6, 1949	5.0	33.3	24,120	33.1	23,940
1950	1176	160	Aug. 26, 1950	1.5	29.6	21,410	-	-

* Revised.

a Maximum observed, same as maximum daily.

b Sept. 11, 18, 19, 24, 30, 1932.

148. Red Willow Creek near Bridgeport, Nebr.

Location.--Lat 41°44', long. 103°15', at southwest corner of sec. 6, T. 20 N., R. 51 W., at downstream end of right abutment of timber highway bridge, three-quarters of a mile above mouth of Wild Horse drain, 1½ miles above mouth, 4 miles southeast of Bayard, and 7 miles northwest of Bridgeport.

Drainage area.--83 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 3,745 ft (from topographic map).

Extremes.--February to September 1931: Maximum discharge observed, 214 cfs May 22, 1931 (gage height, 2.80 ft), from rating curve extended above 100 cfs; minimum, 1 cfs several days during the summer.

Remarks.--Alliance Canal diverts water from the creek about a half a mile upstream. Tri-State Canal occasionally wastes into creek several miles upstream. Flow is affected by ground-water withdrawals, small diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	31.9	29.0	38.7	15.8	29.1	30.6	56.4	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	1,960	1,730	2,350	940	1,790	1,880	3,560	-

149. Red Willow Creek near Bayard, Nebr.

Location.--Lat 41°43', long. 103°15', at southwest corner of sec. 7, T. 20 N., R. 51 W., just downstream from timber bridge, a quarter of a mile downstream from Wild Horse drain, three-quarters of a mile upstream from mouth, and 4½ miles southeast of Bayard.

Drainage area.--Indeterminate.

Gage.--Water-stage recorder. Datum of gage is 3,716.29 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940. Prior to Nov. 18, 1938, staff gage and Nov. 18, 1938, to Apr. 15, 1946, water-stage recorder at datum 1.00 ft higher.

Average discharge.--19 years (1931-50), 83.1 cfs.

Extremes.--1931-50: Maximum discharge, 1,780 cfs Aug. 25, 1950 (gage height, 6.45 ft); maximum gage height, 7.8 ft (present datum) May 10, 1942, from floodmark; minimum daily discharge, 15 cfs Apr. 23, 1935.

Remarks.--Natural flow of stream affected by diversions and ground-water withdrawals for irrigation, return flow from irrigated areas, and occasional waste into creek from Tri-State canal.

Cooperation.--Records for October 1931 to January 1932, not previously published by Geological Survey, furnished by the State Engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	115	102	102	172	65.2	62.5	58.5	110	76.8	82.6	101	116	886.5
1933	130	102	85.7	78.4	68.4	63.7	60.9	114	51.9	77.5	161	181	98.2
1934	116	97.2	84.0	76.1	65.9	60.5	54.9	39.3	43.8	33.5	31.3	30.8	61.1
1935	55.5	39.4	68.1	58.6	43.6	39.3	49.1	64.3	121	35.3	53.7	44.5	56.1
1936	81.8	69.2	66.2	58.8	51.4	47.7	42.4	35.6	78.1	53.5	57.5	60.4	58.5
1937	88.5	82.0	68.3	54.6	46.4	48.1	36.8	55.9	66.7	46.6	55.0	69.6	59.9
1938	94.2	77.9	70.4	63.6	59.9	56.9	56.5	104	67.0	81.0	73.3	179	82.0
1939	108	95.3	81.2	70.5	65.4	65.0	55.6	40.1	82.1	61.7	54.3	74.6	71.1
1940	118	98.0	90.0	69.8	64.1	54.8	49.1	37.3	63.4	49.1	29.1	35.9	63.3
1941	80.4	62.9	56.5	46.6	45.8	44.9	43.4	44.7	65.6	70.9	63.6	91.5	59.8
1942	89.5	82.9	68.4	64.3	56.6	54.9	54.4	164	176	77.4	79.9	126	91.3
1943	132	93.9	84.7	69.2	64.8	63.2	56.6	71.9	84.4	113	81.0	127	87.0
1944	143	98.5	85.9	73.8	69.0	67.1	63.7	101	132	140	97.6	139	101
1945	133	108	90	80.4	72.1	63.6	60.8	86.5	175	85.2	150	209	109
1946	122	101	86.2	74.2	66.2	62.1	57.0	115	83.7	84.8	78.8	176	92.1
1947	122	104	89.2	76.2	64.3	61.1	59.0	72.7	221	147	75.2	170	105
1948	119	90.8	80.9	72.2	64.2	59.3	52.8	72.3	130	118	105	200	97.0
1949	123	105	89.2	79.3	76.4	70.0	56.3	97.2	127	90.8	127	195	103
1950	137	97.9	85.6	73.0	64.1	60.0	54.1	63.6	59.3	136	131	194	96.5

† From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet, of Red Willow Creek near Bayard, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	a7,050	a5,510	a5,070	a4,450	3,750	3,830	3,480	6,760	4,570	5,080	6,210	6,900	a62,660
1933	7,990	6,070	5,270	4,820	3,800	3,920	3,620	7,010	3,090	4,770	9,900	10,800	71,100
1934	7,100	5,780	5,160	4,680	3,660	3,720	3,270	2,420	2,610	2,060	1,920	1,830	44,210
1935	3,410	2,350	4,190	3,600	2,420	2,420	2,920	3,950	7,220	2,170	3,300	2,650	40,600
1936	5,030	4,120	4,070	3,620	2,960	2,940	2,520	2,190	4,650	3,290	3,530	3,600	42,520
1937	5,440	4,880	4,200	3,360	2,570	2,960	2,190	3,440	3,970	2,860	3,580	4,140	43,390
1938	5,790	4,640	4,330	3,910	3,320	3,500	3,360	6,420	3,990	4,980	4,510	10,640	59,390
1939	6,640	5,670	4,990	4,330	3,630	4,000	3,310	2,460	4,880	3,800	3,340	4,440	51,490
1940	7,280	5,830	5,530	4,290	3,690	3,370	2,920	2,290	3,770	3,020	1,790	2,150	45,910
1941	4,940	3,740	3,470	2,870	2,540	2,760	2,580	2,750	3,900	4,360	3,910	5,440	43,260
1942	5,500	4,930	4,200	3,960	3,150	3,380	3,240	10,090	10,460	4,760	4,910	7,500	66,080
1943	8,140	5,590	5,210	4,250	3,600	3,880	3,370	4,420	5,020	6,960	4,980	7,570	62,990
1944	8,820	5,860	5,280	4,540	3,970	4,130	3,790	6,220	7,850	8,630	6,000	8,290	73,380
1945	8,170	6,420	5,530	4,940	4,010	3,910	3,620	5,320	10,400	5,240	9,200	12,420	79,180
1946	7,500	5,990	5,300	4,560	3,680	3,820	3,390	7,070	4,980	5,210	4,720	10,470	66,690
1947	7,500	6,190	5,490	4,690	3,570	3,760	3,510	4,470	13,150	9,010	4,620	10,120	76,080
1948	7,300	5,400	4,970	4,460	3,650	3,140	4,440	7,740	7,260	6,430	11,920		70,380
1949	7,540	6,250	5,490	4,880	4,240	4,300	3,350	5,880	7,550	5,580	7,790	11,620	74,570
1950	8,400	5,830	5,270	4,490	3,560	3,690	3,220	3,910	3,530	8,340	8,080	11,530	69,850

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1932	731	1,320	May 20, 1932	37	a86.3	a62,660	a88.7
1933	746	1,510	Aug. 25, 1933	33	98.2	71,100	96.3
1934	761	253	Aug. 15, 1934	18	61.1	44,210	49.9
1935	786	1,570	June 11, 1935	15	56.1	40,600	60.6
1936	806	645	June 9, 1936	17	58.5	42,520	60.3
1937	826	*430	Aug. 18, 1937	21	59.9	43,390	60.3
1938	856	1,590	May 19, 1938	33	82.0	59,390	85.5
1939	876	698	May 31, 1939	26	71.1	51,490	73.0
1940	896	248	June 5, 1940	19	63.3	45,910	54.3
1941	926	972	June 9, 1941	23	59.8	43,260	63.2
1942	956	1,640	May 10, 1942	46	91.3	66,080	97.2
1943	976	479	July 12, 1943	40	87.0	62,990	88.4
1944	1006	600	July 4, 1944	43	101	73,380	101
1945	1036	749	Aug. 1, 1945	38	109	79,180	108
1946	1056	394	Sept. 18, 1946	39	92.1	66,690	92.7
1947	1086	1,580	June 30, 1947	43	105	76,080	103
1948	1116	728	June 17, 1948	38	97.0	70,380	99.2
1949	1146	857	June 6, 1949	41	103	74,570	103
1950	1176	1,780	Aug. 25, 1950	30	96.5	69,850	-

* Revised.

a From reports of State engineer of Nebraska.

150. North Platte River at Bridgeport, Nebr. 1/

Location.--Main channel gage: Lat 41°40', long. 103°06', in sec. 28, T. 20 N., R. 50 W. on downstream side of pier near center of bridge on U. S. Highway 26, half a mile north of Bridgeport. Brown's Creek channel gage: Lat 41°41', long. 103°06', in sec. 28, T. 20 N., R. 50 W., on left bank, a quarter of a mile upstream from culvert on U. S. Highway 26, three-quarters of a mile north of Bridgeport.

Drainage area.--25,300 sq mi, approximately.

Gage.--Main channel: Water-stage recorder. Datum of gage is 3,656.15 ft above mean sea level, datum of 1929. June 1896 to October 1900, staff gage at site 4 miles upstream at different datum. May 1902 to November 1906, wire-weight gage, June 1915 to May 1917 staff gage, and June 1917 to Oct. 6, 1927, water-stage recorder all at present site at datum 0.31 ft higher.

Brown's Creek channel: Water-stage recorder. Altitude of gage is 3,670 ft (from topographic map). No gage maintained prior to June 1, 1934. June 1, 1934, to Aug. 31, 1936, staff gage at site a quarter of a mile downstream at different datum. Sept. 1, 1936, to May 31, 1943, staff gages near present site at present datum. Prior to May 1, 1943, gage read during irrigation seasons only.

Extremes.--1896-1900, 1902-6, 1915-50: Maximum discharge, 24,900 cfs June 26, 1899 (gage height, 5.39 ft, site and datum then in use, from graph based on gage reading); minimum not determined, probably occurred during period when no record of flow was maintained for Brown's Creek channel.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions, and ground-water withdrawals for irrigation and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for irrigation seasons for 1916-22 and records for complete years 1923-30, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

1/ Published as "near Camp Clark" 1896-1900.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Bridgeport, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1896	-	-	-	-	-	-	-	-	-	1,554	924	939	-
1897	1,008	-	-	2,287	2,253	1,299	*4,756	*14,765	*11,735	*2,180	1,066	492	-
1898	484	-	-	-	-	-	1,630	5,403	7,390	1,617	266	110	-
1899	2,452	-	-	-	-	-	6,659	10,257	16,400	12,230	2,854	a858	-
1900	1,372	-	-	-	-	-	a4,627	10,379	9,771	2,227	471	289	-
1901	369	-	-	-	-	-	-	-	-	-	-	-	-
1902	-	-	-	-	-	-	-	4,149	4,267	1,200	244	162	-
1903	559	b502	b483	b503	b5,130	b3,480	3,664	5,526	7,665	2,837	589	240	b2,420
1904	487	b877	b844	b911	b854	b981	b1,390	6,313	9,630	2,940	157	108	b2,120
1905	464	c846	b808	b877	b2,050	b4,310	4,822	11,710	14,430	4,536	1,316	370	b3,880
1906	685	b615	b589	b1,160	b2,000	b3,590	b6,710	9,790	12,000	4,120	1,130	760	b3,590
1907	727	b350	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	c2,920	2,200	*3,111	-	-
1916	-	-	-	-	-	-	-	d2,100	d2,550	d1,730	d2,090	e1,060	-
1917	b1,180	b1,060	b1,020	b1,100	b1,030	b1,000	b1,360	d5,360	d14,800	d9,220	d2,660	d2,740	b3,550
1918	d2,320	d1,560	b948	b1,020	b1,170	b1,350	c1,760	d5,480	e5,580	d3,490	d1,870	e1,990	c2,380
1919	d1,970	b1,760	b1,890	b1,840	b1,730	b1,330	d1,300	d1,400	d1,750	d851	d907	d1,730	b1,520
1920	d1,860	b1,680	b1,610	b1,740	b1,640	b1,820	d1,950	d6,400	e7,640	d3,570	d1,800	d1,770	b2,790
1921	d1,620	b1,480	b1,420	b1,540	b1,450	f1,460	d2,330	d12,900	d3,020	d2,180	d1,710	-	c2,710
1922	d2,290	d1,670	b1,600	b1,720	b1,620	b1,580	d1,300	d4,130	d2,800	d1,900	e1,420	e830	b1,910
1923	d1,220	e1,570	d1,050	d1,410	d1,320	e1,120	d1,350	d3,080	d3,760	d2,900	d2,870	d1,610	e1,940
1924	d3,040	d2,020	d1,720	e1,820	d2,030	d1,770	d5,860	d7,010	d3,920	d2,370	d2,020	d2,740	e3,020
1925	d2,710	d2,120	d2,010	e1,960	d1,840	d1,650	e1,350	e1,430	d1,520	d1,260	d1,870	d1,870	e1,800
1926	d2,030	d1,860	d1,600	d2,000	d2,200	d1,700	d2,250	d2,340	d4,680	d3,530	d2,330	d2,550	e2,420
1927	e2,550	d1,950	d2,200	d1,800	d2,380	d1,900	d2,870	d4,680	d3,780	d2,400	d4,320	d2,150	e2,750
1928	e2,820	d2,090	d2,110	d2,000	d1,600	d1,970	d1,733	d4,270	d10,300	d3,110	d1,900	d1,740	d2,970
1929	d2,030	d2,280	d1,890	d1,700	e1,650	d2,570	e2,610	e3,890	d11,700	e2,670	d1,820	d3,750	e3,200
1930	e3,580	d2,400	d1,980	e1,810	e1,770	e2,780	d2,130	d2,460	d1,560	e1,230	d2,460	d2,490	e2,220
1931	3,430	2,360	1,900	1,970	1,650	1,380	1,610	1,080	876	548	724	767	1,520
1932	1,440	1,310	1,310	1,080	1,180	1,160	1,150	987	1,100	1,240	1,070	1,070	1,160
1933	1,800	1,700	1,400	1,520	1,120	1,340	1,190	3,180	1,150	1,120	1,110	2,090	1,560
1934	2,017	1,619	1,608	1,564	1,253	1,268	918	167	359	124	94	229	917
1935	500	456	1,022	1,073	859	766	750	1,012	2,195	314	347	571	803
1936	809	1,002	1,023	972	891	1,115	852	290	738	430	290	302	725
1937	1,000	1,355	1,038	722	917	1,037	791	358	1,016	1,041	397	634	857
1938	1,443	1,387	1,361	1,143	1,114	1,127	1,295	1,402	733	824	828	1,493	1,162
1949	1,390	1,468	1,279	1,260	872	1,245	1,284	345	740	371	352	412	901
1940	1,102	1,072	1,073	979	1,159	1,007	942	414	423	281	85.1	222	728
1941	831	745	818	847	807	813	736	853	1,189	399	452	622	758
1942	1,218	1,079	1,011	1,097	1,064	947	1,094	4,889	1,380	644	578	1,080	1,345
1943	1,549	1,549	1,517	1,447	1,231	1,141	1,710	968	913	538	483	859	1,157
1944	1,383	1,541	1,369	1,153	1,081	1,097	1,062	1,422	1,018	975	732	1,026	1,155
1945	1,650	1,527	1,336	1,156	1,190	1,200	1,141	1,791	2,701	798	1,323	1,363	1,431
1946	1,938	1,604	1,268	1,362	1,234	1,309	974	1,019	866	634	442	1,467	1,175
1947	1,794	1,548	1,353	1,216	1,198	1,132	1,037	828	3,586	1,983	646	1,067	1,447
1948	1,695	1,650	1,574	1,417	1,438	1,751	1,253	773	1,341	1,126	909	1,392	1,358
1949	1,850	1,707	1,418	1,352	1,546	1,401	1,171	957	1,633	834	630	1,396	1,308
1950	1,851	1,527	1,413	1,129	1,304	1,214	942	693	571	880	870	1,702	1,172

* Revised.

a Only monthly figure revised; revised daily figures not available.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Nebraska.

e Corrected; supersedes figure published in reports of State engineer of Nebraska.

f Revised; supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1896	-	-	-	-	-	-	-	-	-	95,600	56,800	55,900	-
1897	62,000	-	-	140,623	125,125	79,873	*283,000	*307,800	*398,300	*134,000	65,546	29,276	-
1898	29,760	-	-	-	-	-	96,992	532,220	439,735	99,426	16,346	6,545	-
1899	15,065	-	-	-	-	-	396,283	630,678	875,868	751,993	174,256	*49,700	-
1900	84,361	-	-	-	-	-	*275,300	638,180	681,415	136,933	28,961	17,197	-
1901	22,689	-	-	-	-	-	-	-	-	-	-	-	-
1902	-	-	-	-	-	-	-	*255,112	253,900	73,780	15,000	9,640	-
1903	34,372	29,900	29,700	30,900	174,000	214,000	218,023	359,780	456,099	174,440	36,216	14,281	a1,750,000
1904	29,944	52,200	51,900	56,000	49,100	40,800	82,500	68,200	53,700	100,800	9,654	6,426	a1,540,000
1905	28,530	50,300	49,700	53,900	114,000	265,000	286,900	20,000	858,600	278,900	80,920	22,020	a2,810,000
1906	42,120	36,600	36,200	71,200	111,000	221,000	399,000	302,000	714,000	253,000	69,500	45,200	a2,600,000
1907	44,700	20,800	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	b174,000	136,000	*191,000	-

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet, of North Platte River at Bridgeport, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	a72,500	a63,000	a62,800	a67,500	a57,100	a62,000	a80,800	a329,000	a152,000	a107,000	a129,000	a63,300	-
1918	a143,000	a93,000	a58,300	a63,000	a64,900	a82,900	a105,000	a337,000	a332,000	a214,000	a115,000	a118,000	b1,730,000
1919	a121,000	a105,000	a104,000	a113,000	a96,000	a81,700	a77,500	a86,300	a104,000	a151,100	a85,800	a103,000	a1,100,000
1920	a114,000	a99,800	a88,900	a107,000	a94,100	a112,000	a115,000	a139,000	a145,000	a219,000	a111,000	a105,000	a2,020,000
1921	a99,300	a88,000	a87,200	a84,500	a80,800	a89,900	a95,000	a143,000	a178,000	a186,000	a134,000	a102,000	b1,970,000
1922	a141,000	a99,600	a98,200	a106,000	a89,800	a97,000	a177,400	a254,000	a187,000	a117,000	a100,800	a99,49,200	a1,580,000
1923	a75,100	a93,200	a84,800	a86,900	a73,100	a69,100	a80,500	a189,000	a224,000	a178,000	a176,000	a95,900	a1,410,000
1924	a187,000	a120,000	a106,000	a112,000	a117,000	a109,000	a143,000	a343,000	a100,000	a146,000	a124,000	a103,000	a2,290,000
1925	a167,000	a126,000	a123,000	a122,000	a102,000	a102,000	a80,300	a88,100	a139,900	a600,77,600	a115,000	a111,000	a1,500,000
1926	a125,000	a110,000	a98,400	a123,000	a122,000	a105,000	a134,000	a114,000	a278,000	a217,000	a143,000	a152,000	a1,750,000
1927	a157,000	a116,000	a135,000	a113,000	a111,000	a132,000	a117,000	a171,000	a287,000	a225,000	a148,000	a235,000	a1,990,000
1928	a173,000	a244,000	a136,000	a123,000	a132,000	a103,000	a26,000	a65,000	a135,000	a191,000	a117,000	a104,000	a2,160,000
1929	a125,000	a135,000	a116,000	a104,000	a191,900	a159,000	a155,000	a239,000	a299,000	a104,000	a112,000	a223,000	a2,320,000
1930	a220,000	a145,000	a122,000	a111,000	a98,100	a171,000	a127,000	a151,000	a132,900	a75,500	a151,000	a148,000	a1,610,000
1931	a211,000	a10,000	a12,700	a100,21,000	91,600	84,800	95,800	66,400	52,100	33,700	44,500	45,600	1,100,000
1932	a88,500	78,000	80,600	66,400	67,900	71,300	68,400	60,700	65,500	68,900	64,000	63,700	844,000
1933	a111,000	a101,000	86,100	93,500	82,200	82,400	70,800	a194,000	61,400	68,900	68,200	a124,000	1,130,000
1934	a124,000	96,360	98,780	83,880	89,600	77,950	54,510	10,270	21,230	7,630	5,780	13,640	663,600
1935	30,740	27,120	62,810	65,990	47,700	47,090	44,660	62,200	a130,600	19,290	21,350	22,060	581,600
1936	49,710	59,620	62,900	59,740	51,240	68,550	50,710	17,840	43,910	26,420	17,840	17,940	526,400
1937	61,500	80,630	83,830	44,100	50,930	63,730	47,070	21,980	60,450	64,030	24,390	37,750	620,700
1938	88,710	82,530	83,660	70,270	61,860	69,280	77,050	86,200	43,640	50,700	38,600	88,820	841,300
1939	85,460	87,370	78,620	77,490	48,430	76,540	64,520	21,190	44,000	22,840	21,630	24,490	652,600
1940	67,750	63,780	65,960	60,220	66,670	61,910	56,030	25,470	25,180	17,310	5,110	13,240	528,600
1941	51,080	44,310	50,310	52,080	44,840	49,960	43,810	52,470	70,720	24,520	27,800	37,020	548,900
1942	74,920	64,220	62,190	67,480	59,100	58,240	65,110	a300,600	82,130	39,620	35,530	64,280	973,400
1943	95,270	92,190	93,280	89,000	68,350	70,180	a101,700	59,540	54,330	33,080	29,720	51,130	837,800
1944	85,050	91,700	84,200	70,890	62,180	67,440	63,170	87,450	60,530	59,970	45,040	61,040	839,700
1945	101,500	90,940	82,140	71,110	66,110	73,800	67,910	a10,200	a160,700	49,040	81,350	61,130	1,036,000
1946	119,200	95,440	77,970	83,740	68,510	80,490	57,960	62,650	a1,530	38,980	27,200	67,280	851,000
1947	100,300	92,090	83,190	74,790	66,550	69,600	61,690	50,890	a213,400	a21,900	39,710	63,510	1,048,000
1948	104,200	99,200	96,790	87,120	82,690	a107,700	74,580	47,550	79,810	69,210	55,870	82,230	986,000
1949	113,800	a101,600	87,210	64,680	85,840	86,120	69,680	58,860	49,190	a1,270	51,020	83,050	947,300
1950	112,600	90,860	86,900	69,420	72,440	74,660	56,060	42,620	33,990	54,110	53,520	a101,300	838,500

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes figure published in reports of State engineer of Nebraska.

d From reports of State engineer of Nebraska.

e Revised; supersedes figure published in reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1896	(a)	-	-	-	-	-	-	-
1897	(b), 1390	±22,700	June 6, 1897	-	-	-	-	-
1898	(c)	±17,000	May 28, 1898	-	-	-	-	-
1899	(d)	±24,900	June 26, 1899	-	-	-	-	-
1900	(e)	±14,500	June 5, 1900	-	-	-	-	-
1901	(e)	-	-	-	-	-	-	-
1902	84	±6,600	June 7, 1902	-	-	-	-	-
1903	99	±10,800	June 23, 1903	-	±2,420	±1,750,000	±2,470	±1,790,000
1904	131	±14,200	June 9, 1904	-	±2,120	±1,540,000	±2,110	±1,530,000
1905	172	±18,200	June 15, 1905	-	±3,880	±2,810,000	±3,860	±2,800,000
1906	208	±20,400	May 29, 1906	-	±3,590	±2,600,000	-	-
1907	208	-	-	-	-	-	-	-
1915	406, 1390	±6,050	June 10, 1915	-	-	-	-	-
1916	(g)	±4,400	June 16, 1916	-	-	-	-	-
1917	(g)	±20,200	June 28, 1917	-	±3,550	±2,570,000	±3,680	±2,660,000
1918	(g)	±9,800	June 27, 1918	-	±2,380	±1,730,000	±2,430	±1,760,000
1919	(g)	±4,600	Sept. 13, 1919	-	±1,520	±1,100,000	±1,490	±1,080,000
1920	(g)	±11,600	May 15, 1920	-	±2,790	±2,020,000	±2,730	±1,980,000
1921	(g)	±24,000	June 19, 1921	-	±2,710	±1,970,000	±2,800	±2,030,000
1922	(g)	±7,600	May 22, 1922	-	±1,910	±1,380,000	±1,770	±1,280,000
1923	(g)	±8,000	May 26, 1923	600	±1,940	±1,410,000	±2,190	±1,590,000
1924	(g)	±14,000	Apr. 18, 1924	1,450	±3,020	±2,200,000	±3,030	±2,200,000
1925	(g)	±10,000	May 19, 1925	400	±1,800	±1,300,000	±1,690	±1,220,000
1926	(g)	±7,700	June 16, 1926	1,050	±2,420	±1,750,000	±2,520	±1,830,000
1927	(g)	±7,800	June 23, 1927	1,500	±2,750	±1,990,000	±2,780	±2,010,000
1928	(g)	±15,000	June 6, 1928	1,000	±2,970	±2,160,000	±2,900	±2,100,000
1929	(g)	±24,000	June 3, 1929	275	±3,200	±2,320,000	±3,360	±2,430,000
1930	(g)	±9,300	Oct. 1, 1929	400	±2,220	±1,610,000	±2,200	±1,590,000

† Corrected.

* Not previously published.

a 18th Ann. Rept., Pt. 4.

b 19th Ann. Rept., Pt. 4.

c 20th Ann. Rept., Pt. 4.

d 21st Ann. Rept., Pt. 4.

e 22d Ann. Rept., Pt. 4.

f From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

g From reports of State engineer of Nebraska.

h Corrected; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

i Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second, of North Platte River at Bridgeport, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean Runoff in acre-feet
		Discharge	Date				
1931	716	4,600	Oct. 7, 8, 1930	396	1,520	1,100,000	1,218
1932	731	2,200	Aug. 4, 1932†	520	1,160	844,000	1,233
1933	746	6,570	May 26, 27, 1933	547	1,560	1,130,000	1,592
1934	761	2,440	Oct. 2, 1933	55	917	663,600	629
1935	786	12,400	June 2, 1935	196	803	581,600	875
1936	806	2,180	June 9, 1936	61	725	526,400	772
1937	826	3,540	July 16, 1937	118	857	620,700	925
1938	856	4,890	Sept. 5, 1938	192	1,162	841,300	1,157
1939	876	1,780	Nov. 3, 1938	118	901	652,600	827
1940	896	1,760	June 7, 1940	55	728	528,600	657
1941	926	5,410	June 12, 1941	100	758	548,900	835
1942	956	10,100	May 15, 1942	296	1,345	973,400	1,454
1943	976	2,470	Apr. 2, 3, 4, 1943	318	1,157	837,800	1,130
1944	1006	2,510	June 12, 1944	295	1,155	838,700	1,174
1945	1036	4,260	June 12, 1945	513	1,431	1,036,000	1,456
1946	1056	2,840	Oct. 2, 1945	234	1,175	851,000	1,166
1947	1086	8,430	June 30, 1947	451	1,447	1,048,000	1,466
1948	1116	3,230	June 17, 1948	256	1,358	986,000	1,363
1949	1146	2,780	June 14, 1949	397	1,308	947,300	1,292
1950	1176	2,690	Sept. 20, 1950	271	1,172	848,500	-

† Corrected.

Note.--Records for November and December 1897 published in 19th Ann. Rept., Pt. 4 have been found in error on the basis of restudy of the original data and comparison with records at nearby stations. Those records are not published herein and should not be used.

151. Pumpkin Creek near Bridgeport, Nebr.

Location.--Lat 41°38', long. 103°02', in SW¼ sec. 12, T. 19 N., R. 50 W., 250 ft downstream from bridge on U. S. Highway 26, half a mile upstream from mouth, and 4 miles southeast of Bridgeport.

Drainage area.--1,080 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 3,635.99 ft above mean sea level, datum of 1929. Prior to June 25, 1934, staff gage on downstream side of bridge 240 ft upstream at datum 0.29 ft higher and June 25, 1934, to May 18, 1936, water-stage recorder at upstream side of bridge 260 ft upstream at datum 0.29 ft higher.

Average discharge.--19 years (1931-50), 32.7 cfs (revised).

Extremes.--1931-50: Maximum discharge, 939 cfs (revised) May 2, 1934 (corrected) (gage height, 6.95 ft, from floodmark, datum then in use); minimum daily, 0.4 cfs Aug. 6, 1936.

Reports of Nebraska State Engineer contain record of a current-meter measurement of 1,000 cfs made June 1, 1921. Railroad bridge 1½ miles upstream was washed out on same date.

Remarks.--Natural flow of stream affected by ground-water withdrawals, diversions for irrigation, return flow from irrigated areas, and occasional spillage from Belmont Canal.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	54.1	52.9	39.6	7.8	17.0	27.9	36.1	-
1932	31.4	38	40	34	32	56.7	40.8	30.9	*35.0	27.0	19.3	13.0	*33.2
1933	19.8	29.2	30.8	40.6	40.2	44.9	32.9	42.1	17.7	16.8	20.4	39.5	31.2
1934	29.3	52.1	42.2	43.4	41.2	43.1	36.0	28.6	24.4	12.8	7.0	15.1	29.5
1935	12.0	7.9	21.4	31.7	27.1	32.3	43.4	72.2	*93.9	41.5	50.3	20.7	*36.2
1936	43.8	32.9	32.3	50.2	38.3	49.3	39.2	12.9	22.1	23.0	12.2	11.6	30.7
1937	10.2	18.0	19.4	27.8	34.5	36.1	14.9	13.6	24.8	5.83	11.2	22.2	19.7
1938	12.3	14.5	30.7	38.1	37.0	31.1	23.7	*38.6	*40.0	31.5	26.4	46.1	*30.8
1939	20.2	33.4	40.3	48.2	43.6	*72.0	50.2	11.7	*26.7	25.6	13.1	10.8	*32.9
1940	18.1	16.8	22.2	31.9	40.9	41.2	41.3	16.4	22.9	20.9	21.2	22.8	26.3
1941	20.5	14.8	27.6	32.9	35.6	28.3	29.9	23.7	35.4	33.6	16.1	24.2	26.8
1942	30.9	31.3	32.5	29.5	34.9	38.8	27.5	67.4	39.9	20.9	16.6	23.8	32.8
1943	29.2	33.3	39.7	42.3	45.0	46.9	32.4	18.0	39.9	16.6	17.5	12.7	30.8
1944	17.5	27.6	40.1	35.6	42.4	50.1	48.2	37.7	34.5	45.9	24.0	29.6	36.1
1945	29.1	33.2	45.7	46.3	50.5	47.2	48.4	44.7	65.1	32.0	46.1	36.6	43.7
1946	47.5	46.7	44.7	48.9	53.1	49.6	38.4	41.1	36.3	25.1	15.1	38.6	40.3
1947	31.6	44.7	44.3	40.6	45.1	41.6	34.7	19.2	57.0	39.1	11.2	36.5	37.0
1948	34.7	43.5	48.5	50.1	49.5	48.6	42.2	31.0	23.1	26.4	22.7	28.9	37.4
1949	25.2	38.2	36.2	25.0	29.9	57.6	50.3	46.0	43.3	17.1	23.1	27.4	34.9
1950	25.5	35.5	36.2	39.4	42.7	41.3	33.5	29.7	20.1	30.4	19.2	39.0	31.9

* Revised.

Monthly and yearly runoff, in acre-feet, of Pumpkin Creek near Bridgeport, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	3,330	3,150	2,430	464	1,040	1,720	2,150	-
1932	1,930	2,260	2,460	2,090	1,840	3,490	2,430	1,900	*2,080	1,660	1,190	774	*24,100
1933	1,220	1,740	1,890	2,500	2,230	2,760	1,960	2,590	1,050	1,030	1,250	2,350	22,600
1934	1,800	1,910	2,590	2,670	2,290	2,650	2,140	1,760	1,450	789	430	900	21,380
1935	740	470	1,320	1,950	1,500	1,980	2,580	4,440	*5,190	2,550	1,860	1,230	*26,210
1936	2,700	1,960	1,990	3,090	2,200	3,030	2,330	793	1,320	1,420	752	690	22,280
1937	625	1,070	1,190	1,710	1,920	2,220	886	833	1,470	359	688	1,320	14,290
1938	754	865	1,890	2,340	2,050	1,910	1,410	*2,370	*2,380	1,840	1,630	2,750	*22,290
1939	1,240	1,990	2,480	2,960	2,420	*4,430	2,990	719	*1,590	1,570	803	640	*23,850
1940	1,110	998	1,370	1,960	2,350	2,530	2,460	1,010	1,360	1,290	1,300	1,350	19,090
1941	1,260	881	1,700	2,020	1,980	1,740	1,780	1,450	2,100	2,070	989	1,440	19,410
1942	1,900	1,860	2,000	1,820	1,940	2,390	1,640	4,140	2,370	1,280	1,020	1,410	25,770
1943	1,800	1,980	2,580	2,600	2,390	2,880	1,370	1,110	2,580	1,020	1,070	758	22,500
1944	1,080	1,640	2,450	2,190	2,440	3,080	2,870	2,320	2,050	2,820	1,480	1,760	26,190
1945	1,790	1,980	2,810	2,850	2,800	2,900	2,880	2,750	3,870	1,970	2,830	2,180	31,610
1946	2,920	2,780	2,750	3,000	2,950	3,050	2,280	2,530	2,160	1,540	927	2,300	29,190
1947	1,950	2,660	2,720	2,500	2,500	2,560	2,060	1,180	3,390	2,400	687	2,170	26,780
1948	2,130	2,590	2,980	3,080	2,850	2,990	2,510	1,910	1,370	1,620	1,390	1,720	27,140
1949	1,550	2,270	2,230	1,540	1,660	3,540	2,990	2,830	2,580	1,050	1,420	1,650	25,290
1950	1,570	2,110	2,230	1,870	2,370	2,540	1,990	1,830	1,200	1,870	1,180	2,320	23,080

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	-	-	-	-	-	-	-
1932	731, 1390	*225	June 16, 1932	-	*33.2	*24,100	*30.7	*22,300
1933	746	162	Aug. 28, 1933	6	31.2	22,600	33.2	24,020
1934	761	*359	May 2, 1934†	1	29.5	21,380	24.5	17,610
1935	786, 1390	*684	June 16, 1935	6	*36.2	*26,210	*41.9	*30,330
1936	806	*68	Mar. 6, 1936*	.4	30.7	22,280	25.5	18,510
1937	826	94	Mar. 5, 1937	3.4	19.7	14,290	20.6	14,920
1938	856, 1390	564	May 17, 1938	5.4	*30.8	*22,290	*33.8	*24,490
1939	876, 1390	*706	Mar. 9, 1939	4.6	*32.9	*23,830	*29.8	*21,600
1940	896	315	Sept. 21, 1940	2.0	26.3	19,090	26.8	19,450
1941	926	409	July 3, 1941	1.2	26.8	19,410	29.5	21,330
1942	956	116	May 15, 1942	6.8	32.8	23,770	33.4	24,170
1943	976	107	June 1, 1943	8.5	30.8	22,300	29.4	21,320
1944	1006	154	Aug. 24, 1944	7.9	36.1	26,190	38.0	27,590
1945	1036	162	June 10, 1945	18	43.7	31,610	46.2	33,480
1946	1056	77	Sept. 1, 1946	8.5	40.3	29,190	38.8	28,070
1947	1086	157	June 21, 1947	8.8	37.0	26,780	37.5	27,150
1948	1116	80	Nov. 8, 1947	6.4	37.4	27,140	35.1	25,490
1949	1146	71	Aug. 30, 1949	9	34.9	25,290	34.7	27,550
1950	1176	88	May 5, 1950	5.0	31.9	23,080	-	-

* Revised.

† Corrected.

Note.--Records for January 1922 to September 1930 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

152. North Platte River at Broadwater, Nebr.

Location.--Lat 41°35', long. 102°51', in SE $\frac{1}{4}$ sec. 28, T. 19 N., R. 48 W., at highway bridge about three-quarters of a mile south of Broadwater.

Drainage area.--26,700 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 3,570 ft (from topographic map).

Extremes.--1917-23: Maximum daily discharge observed, 25,800 cfs June 19, 1921; minimum daily observed, 350 cfs July 26-30, Aug. 16-18, Aug. 30 to Sept. 1, 1919, Aug. 26, 1922.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1917-23, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	16,800	10,200	2,570	2,620	-
1918	2,230	-	-	-	-	-	-	-	*5,640	*3,500	*1,880	2,010	-
1919	-	-	-	-	-	-	1,550	1,620	1,830	1,070	832	1,810	-
1920	1,880	-	-	-	-	-	-	5,750	8,100	4,040	2,110	1,970	-
1921	-	-	-	-	-	-	-	*2,630	*15,300	3,700	2,810	1,730	-
1922	-	-	-	-	-	-	1,680	5,570	2,960	1,690	1,420	*940	-
1923	-	-	-	-	-	1,510	1,510	2,850	*3,730	2,790	*3,150	1,830	-
1924	*3,770	2,470	1,960	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of North Platte River at Broadwater, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	989,000	829,000	158,000	156,000	-
1918	137,000	-	-	-	-	-	-	-	736,000	215,000	116,000	20,000	-
1919	-	-	-	-	-	-	92,500	98,400	109,000	65,700	51,200	95,800	-
1920	116,000	-	-	-	-	-	-	554,000	482,000	249,000	130,000	117,000	-
1921	-	-	-	-	-	-	-	162,000	909,000	228,000	173,000	103,000	-
1922	-	-	-	-	-	-	-	99,700	543,000	176,000	104,000	87,200	55,900
1923	-	-	-	86,700	71,400	71,200	90,000	175,000	222,000	171,000	193,000	109,000	-
1924	232,000	147,000	120,000	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	(a)	-	-	-	-	-	-	-
1918	(a)	-	-	-	-	-	-	-
1919	(a)	-	-	-	-	-	-	-
1920	(a)	-	-	-	-	-	-	-
1921	(a)	-	-	-	-	-	-	-
1922	(a)	-	-	-	-	-	-	-
1923	(a)	-	-	-	-	-	†2,330	†1,690,000

† Corrected.

a From reports of State engineer of Nebraska.

153. North Platte River at Lisco, Nebr.

Location.--Lat 41°30', long. 102°38', in sec. 33, T. 18 N., R. 46 W., at county highway bridge half a mile south of Lisco.

Drainage area.--26,900 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 3,475.5 ft above mean sea level, datum of 1923, western Wyoming supplementary adjustment of 1940. Prior to May 4, 1932, staff gage at same site and datum, and prior to Sept. 8, 1931, at different datum.

Extremes.--1916-17, 1931-50: Maximum discharge, 20,100 cfs June 27, 29, 1917, from graph based on daily gage readings, from rating curve extended above 15,000 cfs; minimum daily, 8 cfs Aug. 4, 1934.

Remarks.--Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for 1916-17, not previously published by Geological Survey, furnished by Nebraska State engineer.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	a2,480	†2,190	a1,840	†2,090	a1,380	-
1917	-	-	-	-	-	-	-	-	a15,700	†10,400	a2,240	†2,430	-
1918	a2,400	-	-	-	-	-	-	-	-	-	-	-	-
1932	1,510	1,420	1,470	1,170	1,280	1,310	1,230	989	1,080	1,130	984	1,060	1,220
1933	1,970	1,920	1,500	1,790	1,430	1,460	1,390	3,580	1,160	981	1,040	2,230	1,710
1934	1,978	1,662	1,585	1,651	1,441	1,536	1,093	374	457	101	631	193	1,008
1935	512	478	1,079	1,325	991	851	934	1,241	2,348	394	315	341	898
1936	772	1,112	1,182	1,092	1,005	1,270	1,013	389	783	337	275	286	792
1937	1,025	1,516	1,216	813	1,216	1,293	809	391	1,073	868	362	727	940
1938	1,646	1,540	1,422	1,251	1,540	1,336	1,495	1,654	893	981	717	1,663	1,343
1939	1,650	1,699	1,449	1,500	1,031	1,606	1,257	456	907	331	323	415	1,057
1940	1,135	1,256	1,220	1,039	1,477	1,200	1,079	504	494	275	838	203	828
1941	818	783	969	870	924	945	989	854	1,218	442	432	743	830
1942	1,361	1,215	1,243	1,294	1,227	1,137	1,373	5,404	1,689	636	650	1,192	1,540
1943	1,897	1,727	1,704	1,676	1,449	1,285	1,898	1,008	1,019	536	435	883	1,290
1944	1,502	1,739	1,522	1,227	1,283	1,364	1,344	1,610	1,269	1,146	765	1,060	1,319
1945	1,666	1,688	1,382	1,249	1,353	1,371	1,259	1,760	2,834	926	1,434	1,409	1,526
1946	2,059	1,784	1,281	1,395	1,434	1,475	1,077	1,170	954	606	370	1,540	1,260
1947	1,982	1,671	1,494	1,256	1,364	1,292	1,152	874	3,505	2,226	685	1,213	1,558
1948	1,913	1,930	1,746	1,560	1,536	1,961	1,470	896	1,467	1,166	941	1,394	1,499
1949	1,990	1,960	1,578	1,092	1,758	1,630	1,299	1,118	1,835	745	841	1,496	1,430
1950	1,915	1,696	1,514	1,160	1,493	1,427	1,081	836	623	699	922	1,668	1,284

* Revised; supersedes figure published in reports of State engineer of Nebraska.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet, of North Platte River at Lisco, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	152,000	113,000	129,000	182,000	-	-
1917	-	-	-	-	-	-	-	135,000	113,000	129,000	145,000	-	-
1918	147,000	-	-	-	-	-	-	-	135,000	113,000	129,000	145,000	-
1932	92,800	84,500	90,400	71,900	73,600	80,600	73,200	60,800	64,300	69,500	60,500	63,100	885,000
1933	121,000	114,000	92,200	110,000	79,400	89,800	82,700	220,000	69,000	60,300	64,000	133,000	1,240,000
1934	121,600	98,880	97,430	101,500	80,010	94,430	65,030	22,980	26,010	6,220	3,880	11,500	729,500
1935	31,470	28,500	66,340	81,500	65,020	52,330	55,580	76,320	139,700	23,620	19,380	20,280	650,000
1936	47,460	66,170	72,650	67,150	57,790	78,070	60,300	23,910	46,570	20,750	16,930	17,030	574,900
1937	63,050	90,210	74,800	50,020	67,540	79,870	48,120	24,040	63,840	53,400	22,240	43,250	880,400
1938	101,200	91,620	67,450	76,930	85,510	82,140	98,940	101,700	53,130	60,320	44,090	98,980	972,000
1939	101,500	101,100	89,100	92,230	57,260	98,740	74,780	28,060	53,970	24,040	19,840	24,670	765,300
1940	69,790	74,720	75,000	63,900	84,970	73,770	64,210	31,000	29,410	16,920	5,090	12,090	600,900
1941	50,310	46,620	59,560	53,500	51,310	58,110	58,870	52,540	72,490	27,160	26,570	44,190	601,200
1942	84,890	72,300	76,420	78,920	68,130	69,920	81,680	532,500	100,500	39,120	40,000	70,950	1,115,000
1943	116,600	102,700	104,700	103,000	80,450	79,000	112,300	61,980	60,660	32,950	26,770	52,530	953,800
1944	92,370	103,500	93,580	75,470	73,900	83,880	79,950	98,970	75,510	70,440	47,050	63,100	957,600
1945	102,400	100,400	84,970	76,780	75,130	84,320	74,920	108,200	68,600	56,950	68,170	83,830	1,105,000
1946	126,600	108,100	78,780	85,800	79,660	90,680	64,090	71,940	56,770	37,250	22,760	91,630	912,100
1947	121,900	99,430	91,870	77,220	75,730	79,440	68,570	53,750	208,500	136,900	42,130	72,150	1,128,000
1948	117,600	114,800	107,400	95,900	88,340	120,600	87,470	55,080	88,470	71,700	57,870	82,950	1,088,000
1949	121,800	110,700	97,050	66,550	97,670	100,200	77,280	68,620	109,200	45,790	51,720	89,020	1,036,000
1950	117,700	100,900	93,100	71,330	83,030	87,770	64,310	51,590	37,090	55,200	56,660	11,200	929,700

* Revised; superseded figure published in reports of State engineer of Nebraska.

† Corrected.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1916	-	+6,000	May 22, 1916	-	-	-	-	-	-
1917	-	+20,100	June 27, 29, 1917	-	-	-	-	-	-
1932	731	2,120	June 19, 1932	-	1,220	885,000	1,301	944,700	
1933	746	8,150	May 26, 1933	374	1,710	1,240,000	1,693	1,226,000	
1934	761	3,580	May 3, 1934	8	1,008	729,500	743	537,900	
1935	786	12,100	June 15, 1935	132	898	650,000	981	710,000	
1936	806	2,610	June 10, 1936	75	792	574,800	849	616,600	
1937	826	3,360	July 18, 1937	104	940	680,400	1,012	732,600	
1938	856	5,750	Apr. 26, 1938	279	1,343	972,000	1,158	985,400	
1939	876	2,440	Nov. 3, 1938	108	1,057	765,300	959	693,100	
1940	896	2,080	June 8, 1940	15	828	600,900	741	537,800	
1941	926	5,110	June 13, 1941	67	830	601,200	937	678,400	
1942	956	8,470	May 16, 1942	278	1,540	1,115,000	1,665	1,206,000	
1943	976	2,770	Oct. 14, 1942	195	1,290	953,600	1,242	899,100	
1944	1006	3,110	July 11, 1944	314	1,319	957,600	1,317	955,900	
1945	1036	4,350	June 13, 1945	684	1,526	1,105,000	1,559	1,128,000	
1946	1056	2,940	Oct. 2, 1945	195	1,260	912,100	1,262	913,800	
1947	1086	7,790	June 29, 1947	477	1,558	1,128,000	1,594	1,154,000	
1948	1116	3,130	June 18, 1948	378	1,499	1,088,000	1,485	1,078,000	
1949	1146	3,230	June 15, 1949	332	1,430	1,036,000	1,406	1,018,000	
1950	1176	2,820	Sept. 19, 1950	323	1,284	929,700	-	-	

† Corrected.

* Not previously published.

154. North Platte River at Oshkosh, Nebr.

Location.--Lat 41°23', long. 102°21' (revised), near line between secs. 3 and 10, T. 16 N., R. 44 W., at bridge on State Highway 27, 1 mile south of Oshkosh.

Drainage area.--27,500 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 3,369.6 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940. April 1916 to October 1917, staff gage at same site at different datum. March 1928 to Apr. 22, 1933, staff gage at same site and datum. Auxiliary staff gage on Midland channel read once daily during irrigation season since Sept. 1, 1934.

Extremes.--1916, 1928-50: Maximum discharge, 19,500 cfs June 4, 1929; no flow July 21 to Aug. 8, Aug. 11, 21, 24-30, 1934.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. River flows in two channels for which separate records are computed May to September. These factors have been changing throughout the history of the station.

Cooperation.--Records for 1916-17, 1928-30, not previously published by Geological Survey, furnished in reports of State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Oshkosh, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	a2,240	t2,530	a1,540	a2,230	a1,210	-
1917	-	-	-	-	-	-	-	b5,890	b16,200	c10,500	t2,060	a2,490	-
1918	a2,220	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	d2,300	a2,140	a4,200	a10,200	a3,360	a2,000	a2,100	-
1929	a2,250	a2,220	a2,290	a1,580	t1,700	a2,690	t3,660	a4,970	t10,400	t2,570	t1,620	t3,350	t3,270
1930	t3,790	a2,620	a2,600	a2,030	a2,030	t2,520	a2,800	t2,880	a1,400	t997	t2,670	a2,580	t2,400
1931	3,290	3,090	2,520	2,470	2,200	1,900	1,650	1,180	705	464	607	803	1,740
1932	1,470	1,440	1,480	1,230	1,380	1,440	1,540	1,050	1,120	1,160	1,020	1,000	1,280
1933	2,040	1,960	1,570	1,920	1,630	1,800	1,620	3,600	1,110	931	981	2,450	1,800
1934	2,285	2,328	1,837	1,758	1,506	1,505	1,230	464	392	485	*202	177	1,127
1935	483	500	1,187	1,471	1,165	890	998	1,414	2,676	503	280	314	970
1936	807	1,272	1,238	1,116	1,034	1,512	1,094	414	729	284	279	240	834
1937	961	1,571	1,270	895	1,528	1,441	895	365	1,038	824	315	682	961
1938	1,554	1,542	1,522	1,365	1,655	1,416	1,621	1,895	1,005	921	653	1,872	1,416
1939	1,580	1,762	1,531	1,538	1,220	1,722	1,389	450	868	327	270	404	1,087
1940	1,113	1,231	1,220	1,098	1,615	1,254	1,073	546	417	222	610	176	834
1941	759	792	1,022	959	986	999	1,038	842	1,072	406	379	691	826
1942	1,458	1,280	1,180	1,176	1,354	1,204	1,408	5,207	1,678	666	650	1,115	1,533
1943	1,802	1,781	1,658	1,618	1,627	1,464	1,985	1,221	991	510	386	841	1,312
1944	1,499	1,707	1,554	1,311	1,298	1,419	1,362	1,619	1,290	1,091	732	960	1,320
1945	1,646	1,672	1,393	1,267	1,375	1,386	1,385	1,624	2,808	503	1,443	1,442	1,544
1946	2,050	1,697	1,275	1,402	1,468	1,628	1,165	1,157	914	555	361	1,439	1,257
1947	1,909	1,761	1,507	1,421	1,354	1,423	1,205	857	3,397	2,360	674	1,129	1,582
1948	1,836	1,896	1,817	1,402	1,784	2,040	1,497	873	1,444	1,115	910	1,332	1,493
1949	1,923	1,964	1,529	1,085	1,785	1,745	1,348	1,259	1,810	761	762	1,464	1,440
1950	1,951	1,750	1,534	1,104	1,411	1,449	1,134	823	572	833	929	1,769	1,268

* Revised.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

c Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Revised; supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	a138,000	a150,000	a94,400	a157,000	a72,100	-
1917	-	-	-	-	-	-	-	b362,000	b962,000	b46,000	a126,000	a48,000	-
1918	a136,000	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	d141,000	a127,000	a258,000	a608,000	a206,000	a123,000	a25,000	-
1929	a139,000	a122,000	a141,000	a97,000	a94,600	a155,000	a216,000	a305,000	a150,000	a99,800	a199,000	a2,370,000	-
1930	a123,000	a156,000	a160,000	a125,000	a113,000	a155,000	a177,000	a83,400	a61,300	a164,000	a153,000	a1,740,000	-
1931	202,000	184,000	155,000	152,000	22,000	117,000	98,200	72,600	42,000	28,500	37,300	47,800	1,280,000
1932	90,400	85,700	91,000	75,600	79,400	98,500	81,600	64,600	66,600	71,300	62,700	59,500	927,000
1933	125,000	171,000	96,500	118,000	90,500	111,000	86,400	221,000	66,000	57,200	60,500	46,000	1,300,000
1934	140,500	39,400	112,900	108,100	85,640	92,570	73,220	58,000	23,320	2,980	*1,240	10,550	*815,900
1935	29,690	29,770	73,020	90,450	64,700	54,700	59,410	86,970	159,200	18,650	17,220	18,680	702,500
1936	49,630	75,680	76,190	68,600	59,450	92,950	85,110	25,450	43,390	17,450	17,160	14,280	605,300
1937	59,090	93,480	78,070	54,450	73,760	88,600	53,270	22,440	61,780	50,660	19,370	40,580	695,600
1938	95,560	91,780	93,610	83,940	91,930	87,090	96,440	16,500	59,820	56,620	40,160	11,400	1,025,000
1939	97,150	104,800	94,120	94,590	67,780	105,900	82,670	27,680	51,540	20,100	16,600	24,030	787,000
1940	68,410	73,250	75,010	67,520	92,910	77,120	63,860	33,550	24,820	13,690	4,990	10,450	605,600
1941	46,690	47,130	62,820	58,970	54,740	61,400	61,630	51,760	63,800	24,980	23,280	41,090	598,300
1942	89,510	76,160	72,600	72,320	75,170	74,060	83,790	20,200	99,830	40,970	38,750	66,360	†1,110,000
1943	110,800	106,000	101,900	99,470	90,350	89,990	118,100	68,950	58,990	31,390	23,700	50,060	949,700
1944	92,160	101,600	95,520	80,630	74,720	87,230	81,060	99,570	76,750	67,100	44,980	57,140	958,500
1945	101,200	99,510	85,650	77,930	76,380	85,210	82,410	112,200	67,000	55,530	88,750	85,790	1,118,000
1946	126,000	101,000	78,410	86,200	81,500	100,100	89,320	71,150	54,370	34,000	22,180	85,620	909,800
1947	117,300	104,900	92,770	87,390	75,470	87,470	82,680	202,200	45,100	41,440	67,200	1,145,000	1,145,000
1948	112,900	112,800	111,700	86,250	102,600	125,400	89,090	53,660	86,950	68,530	55,970	79,260	1,084,000
1949	118,200	101,900	94,040	66,720	95,130	107,300	80,210	77,390	107,300	46,770	46,870	87,110	1,042,000
1950	120,000	103,000	94,330	67,890	78,390	89,120	67,490	50,590	34,010	51,230	57,100	105,200	918,400

* Revised.

† Corrected.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d Revised; supersedes figure published in reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	-	†5,700	May 25, 1916	-	-	-	-	-
1917	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-
1928	-	†14,500	June 7, 1928	-	-	-	-	-
1929	-	†19,500	June 4, 1929	800	ta3,270	ta2,370,000	ta3,460	ta2,500,000
1930	-	†9,900	Oct. 2, 1929	300	ta2,400	ta1,740,000	ta2,390	ta1,730,000

† Corrected.

* Not previously published.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second, of North Platte River at Oakkosh, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	716	5,200	Nov. 23, 1930	253	1,740	1,260,000	1,359
1932	731	2,400	Apr. 23, 1932	-	1,280	927,000	1,375
1933	746	6,370	May 27, 1933	287	1,800	1,300,000	1,876
1934	761, 1390	3,190	May 4, 1934	0	1,127	*815,900	769
1935	786	11,800	June 16, 1935	83	970	702,500	1,066
1936	806	-	Mar. 3, 1936	53	834	605,300	874
1937	826	3,020	July 19, 1937	101	961	695,600	1,030
1938	856	6,420	May 30, 1938	304	1,416	1,025,000	1,437
1939	876	-	-	158	1,087	787,000	977
1940	896	2,150	Feb. 28, 1940	4	834	605,600	751
1941	926	4,900	June 13, 1941	76	826	598,300	939
1942	956	9,350	May 16, 1942	353	1,533	†1,110,000	1,644
1943	976	2,680	(b)	187	1,312	949,700	1,271
1944	1006	3,050	July 12, 1944	310	1,320	958,500	1,316
1945	1036	4,310	June 15, 1945	568	1,344	1,118,000	1,370
1946	1056	3,030	Oct. 3, 1945	156	1,257	909,800	1,270
1947	1086	8,580	June 29, 1947	449	1,582	1,145,000	1,613
1948	1116	2,950	June 19, 1948	265	1,493	1,084,000	1,474
1949	1146	3,080	June 15, 1949	423	1,440	1,042,000	1,432
1950	1176	3,020	Sept. 19, 1950	295	1,268	918,400	-

* Revised.

† Corrected.

b Oct. 14, 1942, Apr. 3, 1943.

155. Blue Creek near Lewellen, Nebr.

Location.--Lat 41°20', long. 102°10', in NE¹ sec. 30, T. 16 N., R. 42 W., 60 ft downstream from county highway bridge, half a mile downstream from bridge on U. S. Highway 26, three-quarters of a mile upstream from mouth, and 1½ miles west of Lewellen.

Drainage area.--267 sq mi.

Gage.--Water-stage recorder. Datum of gage is 3,309.55 ft above mean sea level, datum of 1929, western Wyoming supplementary adjustment of 1940. Prior to July 16, 1934, staff gage at site 40 ft upstream at datum 2.00 ft higher. July 16, 1934, to May 21, 1947, water-stage recorder at present site at datum 2.00 ft higher and May 22, 1947, to May 10, 1950, at datum 1.00 ft higher.

Average discharge.--20 years (1930-50), 72.6 cfs.

Extremes.--1930-50: Maximum discharge, 720 cfs May 20, 1938 (gage height, 6.46 ft, present datum), from rating curve extended above 500 cfs; maximum gage height, 6.93 ft (present datum) Dec. 21, 1945 (backwater from ice); no flow Oct. 22, 1940, May 23-26, 1947.

Remarks.--Natural flow of stream affected by some ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	114	129	123	106	122	141	128	62.7	17.7	38.4	20.4	30.6	85.8
1932	75.5	108	135	118	118	113	126	77.5	68.0	10.1	32.9	26.7	83.9
1933	81.5	105	106	128	120	139	116	125	16.2	44.4	72.0	31.2	92.0
1934	87.2	104	104	107	105	100	88.3	65.3	64.5	44.4	16.1	42.8	75.5
1935	59.2	58.8	118	117	119	88.7	52.5	101	120	36.3	47.8	5.8	76.9
1936	24.4	82.2	96.2	103	101	93.1	103	50.2	37.2	62.0	34.7	47.9	69.4
1937	14.0	80.8	90.1	89.3	94.0	114	71.7	9.57	48.2	13.4	37.5	75.1	61.1
1938	44.1	92.5	105	115	100	93.2	94.0	88.2	61.5	60.7	56.6	96.4	83.8
1939	57.4	85.2	90.7	93.6	85.4	108	101	62.5	41.4	43.5	27.0	13.9	67.4
1940	26.8	78.8	87.4	98.3	111	102	92.0	30.7	42.0	66.5	57.4	55.1	70.5
1941	2.64	65.0	92.8	99.0	92.4	97.5	94.3	31.3	68.6	56.7	21.5	32.9	60.9
1942	84.3	91.7	87.4	95.2	102	98.2	106	127	103	25.6	1.34	23.9	78.6
1943	79.9	99.0	96.5	94.6	96.7	98.1	91.9	48.8	26.3	13.1	14.0	12.9	64.1
1944	39.5	90.9	96.7	93.8	107	105	106	80.0	67.2	41.6	29.5	46.5	75.1
1945	36.8	75.9	98.0	91.6	95.7	98.1	107	64.7	74.7	6.35	51.7	35.8	69.5
1946	69.1	93.6	80.3	93.3	95.9	97.9	82.9	55.6	18.6	12.6	7.58	30.5	61.3
1947	45.8	86.5	91.7	94.6	91.5	91.6	86.4	30.8	70.7	32.9	1.62	10.1	61.0
1948	32.2	97.7	106	95.9	94.2	111	98.1	16.2	32.9	44.5	12.7	17.5	63.0
1949	50.8	95.4	91.1	84.8	96.1	121	99.8	102	68.9	18.8	17.8	50.7	74.6
1950	52.2	92.5	91.0	94.2	107	103	92.7	60.3	11.1	47.5	90.5	94.0	77.8

PLATTE RIVER BASIN

Monthly and yearly runoff, in acre-feet, of Blue Creek near Lewellen, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	7,010	7,680	7,560	6,520	6,780	8,670	7,620	3,860	1,050	2,360	1,250	1,820	62,200
1932	4,640	6,430	8,300	7,260	6,790	6,950	7,500	4,770	4,050	621	2,020	1,530	60,900
1933	5,010	6,250	6,520	7,870	6,660	8,550	6,900	7,690	964	255	4,450	5,430	66,500
1934	5,360	6,160	6,360	6,580	5,810	6,120	4,060	4,010	3,840	2,730	391	2,540	54,600
1935	3,640	3,500	7,260	7,200	6,600	5,450	3,120	6,230	7,150	2,230	2,940	343	55,660
1936	1,500	4,890	5,910	6,350	5,820	5,720	6,100	3,090	2,220	3,810	2,130	2,850	50,390
1937	859	4,810	5,540	5,490	5,220	6,990	4,270	588	2,870	826	2,300	4,470	44,230
1938	2,710	5,500	6,460	7,070	5,550	5,730	5,600	5,420	3,660	3,730	3,480	5,740	60,650
1939	3,530	5,070	5,580	5,760	4,740	6,660	6,020	3,850	2,460	2,680	1,660	827	48,840
1940	1,650	4,690	5,370	6,040	6,400	6,270	5,470	1,890	2,500	4,090	3,530	3,280	51,170
1941	162	3,870	5,700	6,090	5,130	5,990	5,610	1,920	4,080	2,260	1,320	1,960	44,090
1942	5,180	5,450	5,370	5,850	5,650	6,040	6,290	7,820	6,120	1,640	82	1,420	56,910
1943	4,910	5,890	5,930	5,820	5,370	6,030	5,470	3,000	1,560	808	861	769	46,420
1944	2,430	5,410	5,950	5,770	6,150	6,480	6,290	4,920	4,000	2,560	1,810	2,770	54,540
1945	2,260	4,510	6,030	5,640	5,310	6,030	6,390	3,980	4,440	391	3,180	2,130	50,290
1946	4,250	5,570	4,940	5,740	5,330	6,020	4,930	3,420	1,110	776	466	1,810	44,360
1947	2,980	5,150	5,640	5,820	5,060	5,650	5,140	1,890	4,210	2,020	100	600	44,160
1948	1,980	5,810	6,490	5,890	5,420	6,820	5,840	993	1,960	2,740	780	1,040	45,760
1949	3,120	5,680	5,600	5,220	5,340	7,450	5,940	6,280	4,100	1,150	1,100	3,020	54,000
1950	3,210	5,500	5,590	5,790	5,920	6,320	5,520	3,710	659	2,920	5,560	5,590	56,290

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	716	200	Oct. 4, 1930	1	85.8	62,200	81.9
1932	731	310	Apr. 24, 1932	1	83.9	60,900	81.7
1933	746	296	Aug. 26, 1933	.2	92.0	66,500	92.1
1934	761	229	May 3, 1934	.4	75.5	54,600	70.6
1935	766	553	June 12, 1935	.2	76.9	55,660	74.0
1936	806	182	May 10, 1936	.3	69.4	50,390	67.9
1937	826	493	Aug. 25, 1937	.2	61.1	44,230	65.9
1938	856	720	May 20, 1938	1.2	83.8	60,650	83.1
1939	876	182	June 2, 1939	.5	67.4	48,840	64.0
1940	896	159	July 12, 1940	1.6	70.5	51,170	67.8
1941	926	*685	June 6, 1941	0	60.9	44,090	69.6
1942	956	286	May 1, 1942	.6	78.6	56,910	79.6
1943	976	136	Feb. 1, 1943	.1	64.1	46,420	60.0
1944	1006	528	July 12, 1944	.5	75.1	54,540	73.8
1945	1036	161	Apr. 17, 1945	.5	69.5	50,290	72.2
1946	1056	134	Feb. 1, 1946	.1	61.3	44,360	59.8
1947	1086	313	June 29, 1947	0	61.0	44,160	61.8
1948	1116	223	July 28, 1948	.2	65.0	45,760	63.2
1949	1146	254	June 12, 1949	.3	74.6	54,000	74.4
1950	1176	306	Aug. 26, 1950	.6	77.8	56,290	-

* Revised.

† Corrected.

Note.--Records for June 1919 to September 1930 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

156. North Platte River at Lewellen, Nebr.

Location.--Lat 41°19', long. 102°08', in sec. 34, T. 16 N., R. 42 W., near left bank on downstream side of bridge over left channel and near left bank on downstream side of bridge over right channel, on U. S. Highway 26, half a mile upstream from high-water line of McConaughy Lake, and 1 mile southeast of Lewellen.

Drainage area.--28,500 sq mi, approximately.

Gage.--Water-stage recorders on two channels. Datums of gages on left and right channels are 3,284.6 and 3,283.7 ft above mean sea level, respectively, datum of 1929, western Wyoming supplementary adjustment of 1940. July to September 1931, staff gage at site 1 mile upstream at different datum.

Extremes.--1931, 1940-50: Maximum discharge, 9,140 cfs June 29, 1947; minimum daily, 81 cfs Aug. 15, 1941.

Remarks.--Natural flow of stream affected by transmountain diversion, storage reservoirs, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. River flows in two channels for which separate records are computed; figures given herein represent combined discharge.

PLATTE RIVER BASIN

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Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Lewellen, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	424	502	694	-
1941	-	-	958	1,063	1,163	1,147	1,125	919	1,278	454	377	764	-
1942	1,639	1,467	1,207	1,287	1,581	1,439	1,414	5,530	1,948	749	658	1,213	1,680
1943	1,983	1,923	1,890	1,901	1,826	1,666	2,146	1,260	1,140	512	390	851	1,454
1944	1,471	1,799	1,521	1,505	1,563	1,649	1,492	1,688	1,363	1,177	722	1,088	1,419
1945	1,722	1,841	1,534	1,437	1,619	1,545	1,539	2,038	3,071	908	1,495	1,471	1,682
1946	2,248	1,876	1,499	1,667	1,641	1,668	1,284	1,319	964	555	344	1,464	1,375
1947	2,055	1,969	1,599	1,536	1,572	1,530	1,360	919	3,639	2,596	632	1,230	1,718
1948	2,014	2,026	1,966	1,508	1,674	2,093	1,568	919	1,597	1,267	947	1,337	1,597
1949	2,062	2,013	1,568	1,143	1,984	2,001	1,537	1,425	1,991	712	776	1,521	1,555
1950	2,060	1,888	1,731	1,544	1,851	1,630	1,206	921	569	950	1,111	2,013	1,453

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	26,100	30,900	41,300	-
1941	-	-	58,930	65,370	64,590	70,530	66,920	56,530	78,040	27,900	23,180	45,480	-
1942	100,800	87,310	74,190	79,150	87,780	88,500	84,150	540,000	115,900	46,070	40,350	72,200	1,216,000
1943	121,900	144,000	116,200	116,900	101,400	102,500	127,700	77,460	67,840	31,460	23,990	50,630	1,052,000
1944	90,470	107,100	93,540	92,510	89,930	101,400	88,760	103,800	81,100	72,390	44,400	64,730	1,030,000
1945	105,900	109,600	94,290	88,360	89,930	95,030	91,580	125,300	182,700	55,830	91,950	87,540	1,218,000
1946	138,200	111,600	92,150	102,500	91,180	102,600	76,380	81,080	57,380	34,100	21,170	87,120	995,400
1947	126,400	116,400	99,300	94,470	87,510	94,080	80,910	58,510	121,500	59,000	38,960	73,200	1,244,000
1948	123,800	120,600	100,200	92,720	107,800	128,700	94,470	58,520	95,050	77,890	59,230	82,550	1,159,000
1949	126,800	119,800	96,440	70,250	110,200	123,000	91,480	87,650	118,500	43,750	47,720	90,530	1,126,000
1950	126,700	112,300	106,400	94,950	102,800	100,200	71,770	56,630	33,850	58,430	68,320	119,800	1,052,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	716	-	-	-	-	-	-	-	-
1941	926	4,940	June 14, 1941	81	-	-	1,048	758,800	-
1942	956	6,380	May 16, 1942	390	1,680	1,216,000	1,805	1,307,000	-
1943	976	-	-	245	1,454	1,052,000	1,569	991,000	-
1944	1006	3,320	July 12, 1944	357	1,419	1,030,000	1,445	1,049,000	-
1945	1056	4,830	June 16, 1945	645	1,682	1,218,000	1,727	1,250,000	-
1946	1056	3,080	Oct. 3, 1945	170	1,375	995,400	1,376	996,600	-
1947	1086	9,140	June 29, 1947	430	1,718	1,244,000	1,749	1,266,000	-
1948	1116	-	-	313	1,597	1,159,000	1,566	1,137,000	-
1949	1146	3,240	June 16, 1949	599	1,555	1,126,000	1,559	1,128,000	-
1950	1176	3,440	Aug. 6, 1950	326	1,453	1,052,000	-	-	-

157. North Platte River at Belmar, Nebr.

Location.--Lat 41°17', long. 101°58', on west line of sec. 7, T. 15 N., R. 40 W., at highway bridge half a mile south of Belmar.

Drainage area.--29,100 sq mi, approximately.

Gage.--Staff gage. Datum of gage is 3,230 ft above mean sea level, from records of State engineer of Nebraska.

Extremes.--1917-26: Maximum discharge, 23,000 cfs June 20, 1921; minimum discharge not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records 1917-26, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	a5,190	a15,100	10,500	b2,390	b2,250	-
1918	b2,180	a1,950	a1,740	a1,770	a1,910	a2,130	a2,790	b5,790	b5,620	a3,760	a2,240	a1,680	a2,800
1919	-	-	-	-	-	-	a2,030	b1,870	b2,040	b743	b950	b1,660	-
1920	b2,370	-	-	-	-	-	a7,460	b9,550	b4,260	b2,360	b2,440	-	-
1921	b1,860	a2,280	a2,230	a1,710	a1,800	a1,980	c1,840	b3,060	14,800	b3,000	b3,060	b2,100	*3,300
1922	b2,340	b2,050	a1,840	a1,570	a1,850	a1,740	b1,480	b5,550	c3,430	b1,820	b1,390	t1,090	*2,180
1923	b1,540	b1,910	b1,800	b1,500	b1,500	t1,660	b2,040	b3,670	b4,390	b2,950	t3,920	b1,790	*2,400
1924	b4,420	b2,800	b2,360	b2,700	b3,530	b2,740	b7,470	b9,150	b5,150	b2,440	b2,100	b2,880	b3,970
1925	t3,240	t2,430	b2,100	b2,000	c3,000	b2,200	b1,840	b2,070	t2,130	b1,420	b2,520	b2,180	t2,250
1926	b2,980	b2,890	b2,190	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

t Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

c Revised; supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet, of North Platte River at Belmar, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	a139,000	a89,000	a46,000	a147,000	a134,000	-
1918	b134,000	a116,000	a107,000	a109,000	a106,000	a131,000	a166,000	a356,000	a334,000	a231,000	a138,000	a98,900	a2,030,000
1919	-	-	-	-	-	-	a121,000	a115,000	a121,000	a45,700	a58,400	a105,000	-
1920	b146,000	-	-	-	-	-	-	a459,000	a569,000	a262,000	a145,000	a145,000	-
1921	b114,000	a136,000	a137,000	a105,000	a99,800	a122,000	a110,000	a188,000	a789,000	a165,000	a188,000	a125,000	*2,390,000
1922	b144,000	a122,000	a115,000	a98,300	a103,000	a107,000	a88,300	a342,000	a204,000	a112,000	a85,500	a64,900	*1,580,000
1923	b94,500	a114,000	a111,000	a92,200	a83,500	a102,000	a122,000	a226,000	a261,000	a132,000	a241,000	a105,000	*1,740,000
1924	b272,000	a167,000	a145,000	a166,000	a192,000	a169,000	a44,000	a568,000	a307,000	a150,000	a129,000	a171,000	b2,890,000
1925	a199,000	a145,000	a129,000	a123,000	a167,000	a135,000	a110,000	a127,000	a127,000	a87,200	a155,000	a125,000	*1,630,000
1926	b183,000	b172,000	b135,000	-	-	-	-	-	-	-	-	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

‡ From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

§ From reports of State engineer of Nebraska.

|| Revised; supersedes figure published in reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	(a)	*11,200	June 27, 1918	-	b2,800	b2,030,000	-	-
1919	(a)	*4,700	Sept. 15, 1919	-	-	-	-	-
1920	(a)	*14,400	June 21, 1920	-	-	-	-	-
1921	(a)	*23,000	June 20, 1921	-	*3,300	*2,390,000	*3,290	*2,380,000
1922	(a)	*12,200	May 23, 1922	-	*2,180	*1,580,000	*2,100	*1,520,000
1923	(a)	*9,300	June 14, 1923	-	*2,400	*1,740,000	*2,760	*2,000,000
1924	(a)	*14,200	Apr. 28, 1924	-	3,970	2,890,000	3,810	2,760,000
1925	(a)	*9,600	May 20, 1925	-	*2,250	*1,630,000	*2,280	*1,650,000

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

‡ Not previously published.

§ From reports of State engineer of Nebraska.

|| From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

158. Otter Creek near Lemoyne, Nebr.

Location.--Lat. 41°18', long. 101°55', in sec. 5, T. 15 N., R. 40 W., half a mile above mouth and ½ miles northwest of Lemoyne.

Drainage area.--13.9 sq mi (revised), of which 5.4 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Altitude of gage is 3,240 ft (from topographic map). Prior to Apr. 11, 1933 (revised), staff gage one-half mile downstream at datum 9.42 ft lower. Apr. 11, 1933, to June 30, 1934, staff gage about 2,300 ft downstream at datum 8.11 ft lower.

Average discharge.--5 years (1932-37), 22.2 cfs.

Extremes.--Not determined.

Remarks.--Several diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	29.9	17.2	18.5	24.9	18.1	26.3	-
1933	28.8	25.6	23.4	29.9	27.6	28.4	26.3	26.3	16.0	20.3	22.3	27.0	25.1
1934	23.2	23.3	24.0	25.3	23.6	23.8	19.4	21.5	20.7	14.8	5.6	17.9	20.2
1935	22.5	21.5	21.7	23.8	25.6	24.4	27.4	27.8	23.2	23.1	23.1	23.7	23.8
1936	23.6	23.6	26.5	26.5	25.0	25.0	18.8	18.4	16.0	15	14	18.8	20.9
1937	20.4	20.2	23.3	23.1	23.5	23.5	21.6	13.1	19.1	18.8	20.4	25.1	21.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	1,780	1,060	1,100	1,530	1,110	1,560	-
1933	1,770	1,520	1,440	1,840	1,530	1,750	1,580	1,620	952	1,250	1,370	1,810	18,200
1934	1,450	1,390	1,480	1,560	1,310	1,460	1,150	1,320	1,230	932	347	1,070	14,660
1935	1,390	1,280	1,350	1,470	1,510	1,500	1,630	1,710	1,500	1,420	1,420	1,410	17,250
1936	1,450	1,410	1,630	1,630	1,440	1,540	1,120	1,130	952	922	861	1,120	15,200
1937	1,250	1,200	1,430	1,420	1,310	1,450	1,290	805	1,140	1,150	1,250	1,490	15,180

Yearly discharge, in cubic feet per second, of Otter Creek at Lemoyne, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	-	-	-	-	-	-	-
1933	746	46	Mar. 1, 1933	5	25.1	18,200	24.5	17,780
1934	761	29	(a)†	2	20.2	14,660	19.8	14,350
1935	786	-	July 21, 1935	11	23.8	17,250	24.5	17,740
1936	806	-	-	-	20.9	15,200	20.1	14,600
1937	826	-	-	1	21.0	15,180	-	-

† Corrected.

a Jan. 3, Mar. 4, 1934.

159. North Platte River at Lemoyne, Nebr.

Location.--Lat 41°15', long. 101°49', on west line at sec. 20, T. 15 N., R. 39 W., at highway bridge half a mile south of Lemoyne.

Drainage area.--29,500 sq mi, approximately.

Gage.--Wooden staff 5 ft in length attached to north side of west pile on seventh bent from north. Datum of gage is about 3,185 ft above mean sea level, from records of State engineer of Nebraska.

Extremes.--1926-27: Maximum discharge, 10,700 cfs June 18, 1926, from graph based on mean daily discharge; minimum flow not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1926-27, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a2,980	a2,890	a2,180	a2,960	a3,150	a2,030	b3,250	b3,530	b7,040	b5,380	b3,210	b3,040	a3,470
1927	†3,390	b2,400	a2,550	a1,470	a1,650	a2,640	a4,000	†5,740	b4,660	b3,120	b5,730	b2,660	*3,540

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a183,000	a172,000	a134,000	a182,000	a175,000	a125,000	b193,000	b217,000	b419,000	b331,000	b198,000	b181,000	a2,510,000
1927	†208,000	b143,000	a157,000	a90,200	a91,500	a162,000	a238,000	†353,000	b277,000	b192,000	b352,000	b158,000	*2,420,000

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected; supersedes figure published in reports of State engineer of Nebraska.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926								
1927	(a)	10,700	June 18, 1926	-	b3,470	b2,510,000	b3,490	b2,530,000
	(a)	10,500	Aug. 5, 1927	-	*3,540	*2,420,000	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

160. North Platte River at Martin, Nebr.

Location.--Lat 41°14', long. 101°43', in sec. 31, T. 15 N., R. 38 W., at highway bridge 1 mile south of Martin and 3 miles downstream from Otter Creek.

Drainage area.--30,000 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 3,130 ft, from records of State engineer.

Extremes.--1933-38: Maximum discharge, 16,400 cfs June 17, 1935 (gage height, 3.35 ft), from rating curve extended above 11,000 cfs; no flow July 25 to Aug. 14, Aug. 27, 29-31, 1934.

Remarks.--Numerous diversions for irrigation. Flow partly regulated by Pathfinder and Guernsey Reservoirs.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at Martin, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	2,285	2,318	2,029	2,005	1,735	1,818	1,331	570	578	105	6.4	193	1,245
1935	533	696	1,328	1,685	1,389	1,143	1,293	1,644	3,062	464	288	249	1,143
1936	869	1,427	1,369	1,310	1,253	1,804	1,293	562	749	215	290	258	949
1937	998	1,888	1,337	929	1,411	1,817	1,169	427	1,099	848	338	874	1,090
1938	1,694	1,854	1,780	1,580	1,840	1,676	1,724	1,936	1,059	1,213	679	2,122	1,593

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	140,500	137,900	124,700	123,300	96,340	111,800	79,190	35,040	34,390	6,470	395	11,470	901,500
1935	32,780	40,800	81,630	103,600	77,160	70,270	76,940	101,100	82,200	28,500	17,720	14,830	827,500
1936	53,450	84,930	84,180	80,560	72,100	110,900	76,960	34,530	44,550	13,250	17,840	15,370	688,600
1937	61,330	112,400	82,230	57,120	78,370	111,700	69,570	26,240	65,370	52,160	20,800	52,030	789,300
1938	104,200	110,300	109,400	97,150	102,200	103,000	102,600	119,100	63,010	74,550	41,760	26,200	1,153,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	761	3,910	Mar. 4, 1934	0	1,245	901,500	903	653,600
1935	786	16,400	June 17, 1935	127	1,143	827,500	1,236	894,900
1936	806	-	Mar. 3, 1936	65	949	688,600	995	722,000
1937	826	2,910	July 20, 1937	150	1,090	789,300	1,184	857,300
1938	856	5,360	Apr. 28, 1938	318	1,593	1,153,000	-	-

161. McConaughy Lake near Keystone, Nebr.

Location.--Lat 41°13', long. 101°40', in NW 1/4 sec. 3, T. 14 N., R. 38 W., near right bank at outlet tower of Kingsley Dam on North Platte River, 4 1/2 miles west of Keystone.

Gage.--Electric tape gage read once daily at 8 a.m. to tenths. Gage is referred to mean sea level, datum of 1929.

Extremes.--1941-50: Maximum contents observed, 1,838,000 acre-ft Apr. 17 to May 13, 1950 (elevation, 3,266.5 ft); minimum observed since normal use of water started, 32,860 acre-ft Sept. 29, 1941 (elevation, 3,153.4 ft).

Remarks.--Reservoir is formed by earth-fill dam; capacity, 1,948,000 acre-ft between elevations 3,130.0 ft (sill of outlet gates) and 3,270.0 ft (top of morning-glory spillway gates). Elevation of crest of morning-glory spillway, 3,254.0 ft. Dead storage negligible. Figures given herein represent total contents above elevation 3,130.0 ft. Storage began Feb. 9, 1941. Water is used for power development and irrigation on Central Nebraska project of Nebraska Public Power System.

Cooperation.--Record of elevations and capacity table furnished by Nebraska Public Power System.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1941	-	-	-	-	26,330	55,580	98,890	105,700	143,000	78,060	39,510	32,620
1942	108,800	191,800	222,500	293,600	368,500	442,800	508,900	808,800	874,900	812,000	691,200	667,600
1943	744,200	793,700	811,700	828,700	876,900	926,200	924,100	901,800	901,800	807,500	659,900	584,300
1944	560,000	578,700	596,300	617,300	671,100	754,300	814,200	869,200	872,000	809,700	850,300	594,200
1945	640,300	679,600	658,700	691,400	728,700	793,500	849,600	901,200	1,020,000	954,300	691,900	635,400
1946	929,500	994,000	992,500	1,066,000	1,133,000	1,211,000	1,259,000	1,230,000	1,166,000	998,000	826,300	839,900
1947	956,200	1,028,000	1,080,000	1,128,000	1,164,000	1,211,000	1,288,000	1,285,000	1,445,000	1,559,000	1,421,000	1,332,000
1948	1,342,000	1,386,000	1,461,000	1,509,000	1,564,000	1,676,000	1,708,000	1,656,000	1,653,000	1,564,000	1,469,000	1,406,000
1949	1,411,000	1,496,000	1,539,000	1,562,000	1,627,000	1,690,000	1,729,000	1,741,000	1,792,000	1,729,000	1,593,000	1,579,000
1950	1,633,000	1,633,000	1,644,000	1,679,000	1,736,000	1,796,000	1,858,000	1,796,000	1,711,000	1,650,000	1,607,000	1,535,000

162. North Platte River near Keystone, Nebr.^{1/}

Location.--Lat 41°12'30", long. 101°37'50", in SW¹/₄ sec. 1, T. 14 N., R. 38 W., on right bank, a quarter of a mile downstream from diversion dam of Sutherland Reservoir supply canal, and 2½ miles southwest of Keystone.

Drainage area.--30,000 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 3,107.1 ft above mean sea level (Platte Valley Power and Irrigation District benchmark).

May to September 1917, staff gage at bridge about 2 miles downstream at different datum.

July to September 1939, May to September 1940, staff gage at site about three-quarters of a mile downstream at different datum.

December 1940 to July 17, 1944, water-stage recorder at site about three-quarters of a mile downstream at datum 2.1 ft lower.

Extremes.--1917, 1939-50: Maximum discharge, 20,300 cfs June 30, 1917, from graph based on daily gage readings; an observation of no flow was made on Mar. 21, 1945.

Remarks.--Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station. Flow completely regulated by McConaughy Lake since Feb. 9, 1941. Supply canal for Platte Valley Public Power and Irrigation District diverts a quarter of a mile above station.

Cooperation.--Records for 1917, 1939, and 1940, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	16,100	10,500	2,620	-	-
1939	-	-	-	-	-	-	-	-	-	12,877	2,234	2,800	-
1940	-	-	-	-	-	-	-	276	230	1,207	1,020	1,186	-
1941	-	-	-	75.5	66.6	8.5	7.8	-	-	-	-	-	-
1942	-	-	-	-	-	8.9	8.1	33.7	97.8	390	1,019	45.3	-
1943	7.9	8.8	268	111	23.6	9.1	764	337	246	881	1,653	368	393
1944	205	31.2	8.9	10.8	8.6	14.6	49.3	67.2	216	689	1,757	342	286
1945	265	948	883	46.3	5	5	5	170	115	623	1,244	737	1,424
1946	92.0	*22.3	5.6	3.6	6.1	7.0	64.6	420	974	1,714	1,530	256	429
1947	26.3	9.2	7.2	6.8	6.6	*7.9	3.0	125	146	386	2,111	1,042	326
1948	250	41.8	5.4	38.1	529	6.4	648	829	342	1,438	853	523	459
1949	184	96.3	9.7	324	406	30.1	9.1	53.8	118	1,445	1,271	224	350
1950	465	171	19.0	3.9	3.7	20.9	416	878	555	546	609	109	319

* Revised.

† Corrected.

a From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	358,000	645,000	161,000	-	-
1939	-	-	-	-	-	-	-	-	-	1,760,000	1,400,000	-	-
1940	-	-	-	-	-	-	-	-	16,900	13,700	12,800	11,100	-
1941	-	-	-	4,640	3,700	520	466	-	-	-	-	-	-
1942	-	-	-	-	-	549	480	*2,070	5,810	24,000	62,680	2,700	-
1943	484	524	16,470	6,840	1,310	561	45,450	20,690	14,640	54,180	101,600	21,910	284,700
1944	12,610	1,860	545	662	492	899	2,940	4,130	12,830	42,390	108,000	20,330	207,700
1945	16,280	56,430	54,320	2,850	278	307	298	10,470	6,840	38,310	76,500	43,850	306,700
1946	5,660	*1,330	345	222	448	430	3,850	25,810	57,940	105,400	94,070	15,240	*310,700
1947	1,610	547	444	417	367	*488	179	7,660	8,710	23,710	129,800	62,020	*236,000
1948	15,390	2,490	333	2,940	30,410	391	38,550	50,990	20,320	98,450	52,470	31,110	333,200
1949	11,340	5,730	599	19,930	22,570	1,850	540	3,310	6,990	88,820	78,120	13,320	253,100
1950	28,560	10,170	1,170	238	204	1,290	24,780	53,960	33,000	33,550	37,470	6,510	230,900

* Revised.

† Corrected.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	-	*20,300	June 30, 1917	-	-	-	-	-
1939	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-
1941	926	-	-	-	-	-	-	-
1942	956, 1390	2,630	Aug. 3, 1942	-	-	-	-	-
1943	976	*2,160	Aug. 4, 1943	5	393	284,700	390	282,200
1944	1006	3,700	July 31, 1944	4	286	207,700	440	319,700
1945	1036	2,640	July 30, 1945	-	424	306,700	258	*187,000
1946	1056, 1390	2,630	July 22, 1946	3	429	*310,700	423	306,000
1947	1086, 1390	3,140	Aug. 18, 1947	2	326	*256,000	347	*251,600
1948	1116	3,100	July 28, 1948	3	459	333,200	458	332,700
1949	1146	3,040	July 26, 1949	2	350	253,100	380	275,400
1950	1176	1,650	Oct. 10, 1949	1	319	230,900	-	-

* Revised.

† Not previously published.

^{1/} Published as "at Keystone" in reports of State engineer of Nebraska.

163. North Platte River near Sutherland, Nebr. 1/

Location.--Lat 41°12', long. 101°06', in sec. 4, T. 14 N., R. 33 W., on downstream side of pier of highway bridge, 2½ miles upstream from Birdwood Creek, and 3½ miles north of Sutherland.

Drainage area.--31,300 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 2,930 ft (from topographic map). Prior to Apr. 29, 1936, staff gages near present site at different datums.

Extremes.--1917, 1933, 1935, 1936-50: Maximum discharge, 20,300^a cfs June 29, 1917, from discharge graph based on daily gage readings, from rating curve extended above 16,000 cfs; no flow July 24-28, 30, 31, 1931, Aug. 7, 1934, July 20-28, 1940.

Remarks.--Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have changed throughout the history of this station.

Cooperation.--Records for partial years 1917-18, 1932-33, and 1935, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	a16,900	b10,500	b2,070	b3,450	-
1918	b3,700	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	106	210	427	-
1932	-	-	-	-	-	-	-	-	b1,120	b612	b723	b801	-
1933	-	-	-	-	-	-	-	a4,220	b886	b604	a958	-	-
1935	-	-	-	-	-	-	-	a2,110	a3,210	b165	b33	b71	-
1936	-	-	-	-	-	-	-	+174	107	4.8	40.2	9.8	-
1937	991	874	590	209	1,384	1,659	982	238	917	389	74.9	638	739
1938	1,565	1,767	1,895	1,657	1,934	1,591	1,212	1,155	727	845	509	1,987	1,399
1939	1,594	1,814	798	599	445	1,738	1,192	209	296	131	8.8	41.3	740
1940	910	1,397	599	464	1,004	493	402	83.5	211	42.9	1.7	11.5	465
1941	177	77.3	135	172	206	151	144	72.6	59.9	181	23.9	64.4	122
1942	108	87.8	103	102	131	183	268	223	52.6	72.8	705	215	168
1943	63.8	101	406	181	150	107	835	281	216	575	1,234	215	366
1944	160	154	109	115	148	178	223	160	123	277	1,559	132	280
1945	223	1,159	1,189	218	120	144	151	129	220	458	1,169	636	487
1946	221	152	81.6	116	135	166	114	380	784	1,346	1,329	326	433
1947	200	194	136	115	124	135	140	97.1	89.8	153	1,783	1,124	359
1948	167	162	146	116	431	165	651	619	347	1,199	634	424	422
1949	212	275	155	406	636	298	227	213	128	1,032	1,085	139	401
1950	512	304	156	105	157	163	522	959	315	395	485	209	359

+ Corrected.

a Corrected; supersedes figure published in reports of State engineer of Nebraska.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	a1,000,000	b48,000	b127,000	b205,000	-
1918	b228,000	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	6,520	12,900	25,400	-
1932	-	-	-	-	-	-	-	-	b68,400	b37,600	b44,400	b47,700	-
1933	-	-	-	-	-	-	-	-	b260,000	b52,700	b37,100	b58,900	-
1935	-	-	-	-	-	-	-	-	b130,000	a191,000	b10,200	b2,030	b4,235
1936	-	-	-	-	-	-	-	-	10,700	6,350	296	2,470	581
1937	60,950	52,010	36,250	12,860	76,890	102,000	58,430	14,610	54,470	23,930	4,610	37,980	535,100
1938	96,210	105,200	118,500	101,900	107,400	97,820	72,100	71,010	43,280	51,880	31,270	19,300	1,013,000
1939	99,040	107,900	49,080	35,820	24,700	106,300	70,960	12,840	17,600	8,080	541	2,480	535,900
1940	55,940	83,120	36,810	28,530	57,740	30,300	23,920	5,140	12,540	2,640	103	686	337,500
1941	10,870	4,600	8,320	10,550	11,470	9,280	8,540	4,460	3,560	11,120	1,470	3,830	88,170
1942	6,670	5,230	6,350	6,250	7,300	11,260	15,830	13,720	3,130	4,480	43,360	12,680	136,200
1943	3,920	6,010	24,930	11,160	8,320	6,600	49,680	17,290	12,830	35,350	75,850	12,800	264,700
1944	9,870	9,150	6,670	7,060	8,390	10,970	13,250	9,850	7,330	17,010	95,860	7,870	203,300
1945	13,690	68,940	73,120	13,380	6,650	8,850	8,980	7,910	13,090	28,150	17,890	37,870	352,500
1946	13,590	9,030	5,020	7,110	7,510	10,220	6,790	23,360	46,650	82,760	81,750	19,390	313,200
1947	12,300	11,540	8,360	7,080	6,880	8,300	8,340	5,970	5,330	9,440	109,600	66,860	260,000
1948	10,250	9,660	8,950	7,110	24,790	10,140	38,740	38,080	20,650	73,710	39,000	25,230	306,300
1949	13,060	16,370	9,510	24,990	35,330	18,350	13,480	13,110	7,620	63,430	66,730	8,290	290,300
1950	31,480	18,080	9,590	6,470	8,740	10,040	31,060	58,940	18,720	24,280	29,840	12,450	259,700

a Corrected; supersedes figure published in reports of State engineer of Nebraska.

b From reports of State engineer of Nebraska.

1/ Published as "at Sutherland" in reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second, of North Platte River near Sutherland, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	(a)	#20,300	June 29, 1917	-	-	-	-	-
1918	(a)	-	-	-	-	-	-	-
1931	716	-	-	0	-	-	-	-
1932	(a)	-	-	-	-	-	-	-
1933	(a)	#10,000	May 29, 1933	48	-	-	-	-
1934	(a)	-	-	#0	-	-	-	-
1935	(a)	#12,000	June 18, 1935	3	-	-	-	-
1936	806	-	-	1	-	-	-	-
1937	826	#3,050	Mar. 7, 1937	1	739	535,100	972	703,800
1938	856	3,770	Apr. 29, 1938	43	1,399	1,013,000	1,312	950,100
1939	876	3,220	Mar. 12, 1939	1	740	535,900	631	456,800
1940	896	1,950	Mar. 1, 1940	0	465	337,500	255	185,400
1941	926	1,420	July 28, 1941	5	122	88,170	114	82,530
1942	956	976	Sept. 2, 1942	8	168	136,200	211	152,900
1943	976	1,940	July 23, 1943	10	366	284,700	353	255,600
1944	1006	2,470	Aug. 24, 1944	28	280	203,500	459	333,300
1945	1036	2,000	Aug. 2, 1945	13	487	352,500	310	224,400
1946	1056	2,020	July 24, 1946	9	433	313,200	439	317,700
1947	1086	2,980	Aug. 20, 1947	13	359	260,000	355	256,700
1948	1116	3,040	July 29, 1948	50	422	306,300	436	316,400
1949	1146	2,580	July 28, 1949	19	401	290,500	429	310,500
1950	1176	1,500	May 6, 1950	41	359	259,700	-	-

* Not previously published.

† From reports of State engineer of Nebraska.

164. Birdwood Creek near Sutherland, Nebr.

Location.--Lat 41°18', long. 101°04', in SW¼NE¼ sec. 2, T. 15 N., R. 33 W., at highway bridge, 5½ miles downstream from mouth of West Birdwood Creek (revised), 8½ miles upstream from mouth, and 10½ miles northeast of Sutherland (revised).

Drainage area.--250 sq mi, approximately.

Gage.--Vertical staff gage. Altitude of gage is 3,005 ft (from topographic map).

Extremes.--1913-15: Maximum discharge observed, 293 cfs Aug. 1, 1915 (gage height, 3.6 ft); minimum flow not determined, probably occurred during severe ice condition Dec. 12-20, 1914.

Remarks.--One small diversion of 5 cfs above station. Approved diversions of 112 cfs below station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	171	-
1914	172	172	183	173	180	176	177	181	187	176	181	154	176
1915	141	137	#126	#155	172	177	174	169	187	166	155	152	#159

* Not previously published; partly estimated on basis of records for Loup River at Columbus.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	-	10,200	-
1914	10,600	10,200	11,500	10,600	10,000	10,800	10,500	11,100	11,100	10,800	11,100	9,160	127,000
1915	8,670	8,150	#7,750	#9,530	9,550	10,900	10,400	10,400	11,100	10,200	9,530	9,040	#115,000

* Not previously published; partly estimated on basis of records for Loup River at Columbus.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1913	356	-	-	-	-	-	-	-
1914	388	244	June 13, 1914	144	176	127,000	#166	#120,000
1915	406	293	Aug. 1, 1915	†-	#159	#115,000	-	-

† Corrected; previous minimum published in error, minimum day not determined, probably occurred during period of severe ice affect in December.

* Not previously published.

165. Birdwood Creek near Hershey, Nebr.

Location.--Lat 41°13', long. 101°04', in NE¼ sec. 2, T. 14 N., R. 33 W., 9 ft downstream from bridge on county road, 1 mile upstream from mouth, and 5 miles northwest of Hershey.

Drainage area.--286 sq mi.

Gage.--Water-stage recorder. Jan. 1, 1931, to Dec. 16, 1934, staff gage at same site and datum. Altitude of gage is 2,920 ft (from topographic map).

Average discharge.--19 years (1931-50), 154 cfs.

Extremes.--1931-50: Maximum discharge, 1,770 cfs (revised) Apr. 1, 1949 (gage height, 4.35 ft), from rating curve extended above 680 cfs; maximum gage height, 5.12 ft Dec. 15, 1940 (backwater from ice); minimum daily discharge, 61 cfs Jan. 19, 1935, and Apr. 7, 1938.

Remarks.--Natural flow of stream affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	172	137	136	138	-
1932	154	175	192	163	170	188	186	151	146	126	144	167	163
1933	177	189	180	189	177	201	196	201	138	158	184	174	180
1934	184	205	191	211	180	170	165	129	126	123	143	179	167
1935	183	215	183	161	202	205	220	207	163	128	137	158	178
1936	176	210	172	167	141	167	174	143	142	110	115	125	153
1937	156	164	143	108	150	200	184	158	155	143	129	153	154
1938	160	152	160	177	122	162	163	149	143	124	115	157	149
1939	144	141	112	146	111	148	139	147	121	129	108	110	130
1940	152	161	151	174	196	162	154	127	134	108	108	125	146
1941	150	155	155	170	185	166	165	157	127	153	109	133	149
1942	147	147	150	163	186	168	193	190	160	135	132	156	161
1943	146	146	153	146	167	146	162	155	134	126	111	118	142
1944	141	140	155	148	167	169	169	153	148	139	106	112	146
1945	128	153	149	174	145	154	149	152	157	140	145	139	149
1946	149	150	163	150	154	166	164	163	138	124	114	147	149
1947	169	167	152	158	155	153	162	159	167	130	108	140	152
1948	141	155	168	152	161	176	154	131	153	123	139	131	149
1949	140	156	162	151	175	187	*205	177	161	141	119	136	*159
1950	149	160	168	160	179	163	169	167	120	117	144	143	153

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	10,200	8,420	8,360	8,210	-
1932	9,470	10,400	11,800	10,000	9,780	11,600	11,100	9,280	8,690	7,750	8,850	9,940	119,000
1933	10,900	11,200	11,100	11,600	9,830	12,400	11,700	12,400	8,210	9,720	11,500	10,400	131,000
1934	11,300	12,190	11,770	12,980	10,000	10,430	9,850	7,910	7,500	7,550	8,800	10,670	121,000
1935	11,260	12,790	11,230	9,900	11,220	12,590	13,110	12,760	9,710	7,840	8,430	8,210	129,000
1936	10,800	12,500	10,570	10,240	8,100	10,250	10,340	8,780	8,450	6,790	7,060	7,410	111,300
1937	9,590	9,780	8,820	8,630	8,510	12,310	10,980	9,730	9,200	8,770	7,940	9,080	111,100
1938	9,820	9,040	9,810	10,860	6,760	9,980	9,690	9,140	8,500	7,620	7,060	9,330	107,600
1939	8,840	8,380	6,880	8,950	6,190	9,120	8,270	9,030	7,180	7,930	6,620	6,570	93,960
1940	9,370	9,590	9,140	10,670	11,260	9,970	9,190	7,630	7,950	6,660	6,670	7,410	105,900
1941	9,200	9,210	9,510	10,450	8,600	10,200	9,800	9,660	7,560	9,400	6,700	7,940	108,200
1942	9,040	8,750	9,210	10,050	10,350	10,320	11,510	11,700	9,510	8,350	8,130	9,310	116,200
1943	9,000	8,680	9,400	8,980	9,260	8,960	9,630	9,520	7,950	7,720	6,830	7,050	103,000
1944	8,650	8,360	9,530	9,080	9,630	10,390	10,080	9,410	8,800	8,520	6,540	6,680	105,700
1945	7,750	9,110	9,140	10,670	8,080	9,460	8,880	9,330	9,330	8,580	8,940	8,280	107,500
1946	9,150	8,950	9,990	9,220	8,580	10,230	9,770	10,040	8,240	7,650	6,990	8,740	107,600
1947	10,390	9,950	9,370	9,720	8,610	9,390	9,630	9,770	9,950	8,010	6,640	8,360	109,800
1948	8,680	9,240	10,300	9,350	9,250	10,800	9,180	8,050	9,100	7,580	8,530	7,790	107,800
1949	8,600	9,270	9,980	9,280	9,710	11,480	*12,170	10,880	9,580	8,650	7,290	8,080	*115,000
1950	9,190	9,540	10,350	9,810	9,920	10,020	10,070	10,290	7,170	7,170	8,830	8,530	110,900

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	-	-	-	-	-	-	-
1932	731	320	June 11, 1932	91	163	119,000	166	120,000
1933	745	350	Apr. 21, 1933	102	180	131,000	188	133,000
1934	761	554	Aug. 17, 1934	71	167	121,000	167	121,000
1935	766	830	Apr. 24, 1935	61	178	129,000	176	127,600
1936	806	454	Apr. 30, 1936	81	153	111,300	145	105,600
1937	826	719	July 21, 1937	85	154	111,100	154	111,600
1938	856	657	July 17, 1938	61	149	107,600	142	103,000
1939	876	378	June 13, 1939	74	130	93,960	136	98,110
1940	896	286	Oct. 9, 1939	85	146	105,900	145	105,500

Yearly discharge, in cubic feet per second, of Birdwood Creek near Hershey, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	541	May 16, 1941	85	149	108,200	148	107,300
1942	956	725	Sept. 2, 1942	92	161	116,200	161	116,300
1943	976	599	June 14, 1943	79	142	103,000	142	102,400
1944	1006	494	June 3, 1944	92	146	105,700	145	105,100
1945	1036	398	Aug. 21, 1945	105	149	107,500	151	109,600
1946	1056	466	June 17, 1946	75	149	107,600	151	109,200
1947	1086	501	June 18, 1947	85	152	109,800	150	108,300
1948	1116	*465	Aug. 2, 1948	93	149	107,800	148	107,500
1949	1146,1390	*1,770	Apr. 1, 1949	97	*159	*115,000	*160	*116,200
1950	1176	308	Oct. 10, 1949	81	153	110,900	-	-

* Revised.

Note.--Records for May to September 1920 and January 1922 to May 1931 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

166. Lincoln County drain at North Platte, Nebr.

Location.--Lat 41°09', long. 100°47', on east line of sec. 30, T. 14 N., R. 30 W., half a mile above mouth and 1 mile northwest of North Platte.

Gage.--Staff gage. Altitude of gage is 2,805 ft (from topographic map).

Extremes.--1931-32: Not determined.

Remarks.--Discharge is chiefly return flow from irrigated area.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	66.6	68.2	116	103	103	103	-
1932	81.3	61.7	54.3	52.4	51.7	45.0	42.5	62.6	105	100	105	108	72.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	3,960	4,190	6,900	6,330	6,330	6,130	-
1932	5,000	3,670	3,340	3,220	2,970	2,770	2,530	3,850	6,250	6,150	6,460	6,430	52,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	-	-	-	-	-	-	-
1932	731	-	-	-	72.6	52,600	-	-

167. North Platte River at North Platte, Nebr.

Location.--Lat 41°09', long. 100°46', in sec. 28, T. 14 N., R. 30 W., on downstream side of pier of bridge on U. S. Highway 83 (renumbered), half a mile north of city of North Platte, and 4½ miles upstream from confluence with South Platte River.

Drainage area.--32,000 sq mi, approximately.

Supplemental records available.--March to December 1910 (fragmentary gage-height records).

Gage.--Water-stage recorder. Datum of gage is 2,794.9 ft above mean sea level (city of North Platte benchmark). Prior to Apr. 10, 1910, staff gage at Union Pacific Railroad bridge 2 miles downstream at different datum. Apr. 10, 1910, to Sept. 30, 1930, staff or chain gages or water-stage recorder at or near present site at various datums.

Extremes.--1895-1950: Maximum discharge, 29,600 cfs June 11, 1909 (discharge measurement); minimum daily discharge, 20 cfs Sept. 20, 1904.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of the station.

Cooperation.--Records for 1916-30, exclusive of a few months during 1916-22, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second, of North Platte River at North Platte, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	a3,220	3,005	3,470	7,033	10,830	3,137	492	241	-
1896	810	1,357	a1,360	a1,290	a1,810	a2,490	a2,810	4,558	6,334	1,134	919	857	a2,130
1897	1,150	2,186	a2,280	a2,800	a3,480	3,921	5,110	13,981	13,920	3,688	2,876	609	a4,670
1898	1,132	2,152	a2,240	a2,760	a2,180	2,226	2,540	5,276	6,878	1,646	353	558	a2,490
1899	471	1,088	a1,130	a3,640	a6,100	5,814	6,509	9,186	13,646	10,748	3,866	1,148	a5,370
1900	964	1,813	a1,900	a2,360	a2,570	a3,090	a4,110	a9,470	a9,210	2,260	a581	a111	a3,200
1901	a533	a1,114	a1,210	a1,540	a1,800	t3,261	2,408	t7,681	9,733	1,508	346	1,068	a2,680
1902	1,121	1,576	a1,640	a2,030	a1,610	a1,790	2,443	5,450	5,139	2,229	102	481	a2,140
1903	1,035	1,104	a1,260	a2,130	a3,200	a6,080	3,223	4,868	6,825	3,348	711	545	a2,860
1904	1,087	a1,316	a1,380	a1,710	a1,350	a1,370	1,938	5,644	10,260	3,681	399	159	a2,520
1905	1,167	1,517	a1,580	a1,950	a2,180	a2,730	3,743	10,270	14,700	5,983	1,862	585	*4,020
1906	616	a709	a858	a1,850	a4,180	a5,510	a6,100	7,530	10,600	4,150	1,130	1,470	a3,720
1907	1,590	2,250	a2,280	a2,160	a2,920	a3,120	a4,830	5,710	12,500	6,710	2,020	1,510	a3,950
1908	1,460	1,140	a1,000	a1,050	a1,230	1,670	1,540	a6,310	9,220	1,530	527	190	a2,260
1909	803	1,850	a1,400	a1,330	a1,800	*1,700	2,350	6,630	13,500	5,820	3,600	1,190	*3,500
1910	2,750	1,470	a2,780	a1,950	a1,840	*2,550	*3,660	*1,390	a185	*100	*80	50	*1,560
1911	a1,740	a1,680	a2,600	a2,450	a2,500	1,680	370	982	629	614	814	319	a1,360
1912	1,580	1,680	2,390	a2,260	a2,610	a3,240	7,440	2,570	572	3,690	9,040	6,450	a3,620
1913	5,920	5,330	2,950	a2,800	a3,150	a3,420	a2,740	a1,320	a1,080	833	1,340	a2,870	a2,800
1914	1,930	t1,570	a1,500	a1,420	a1,840	a1,750	2,000	4,800	1,590	915	1,760	3,210	a2,000
1915	2,620	1,900	a1,690	a1,610	a1,820	a2,240	4,430	3,990	3,970	2,290	3,990	3,090	a2,820
1916	a2,620	a2,200	a2,100	a2,550	a2,210	a2,050	a2,020	b2,140	b2,720	b1,000	b2,160	b1,120	a2,070
1917	a2,620	a2,200	a2,100	a2,600	a2,380	a3,530	b6,650	b7,400	b11,300	b2,300	b3,620	b2,200	a4,990
1918	b3,240	a3,110	a3,110	a2,960	a3,310	a3,200	b2,870	b6,120	b4,590	b4,080	b2,160	b1,900	*3,390
1919	b3,330	b2,770	a3,140	a2,980	a2,410	a2,160	a2,200	b2,050	b2,440	b1,140	b868	b1,710	*2,270
1920	b2,370	a2,320	a2,290	a2,200	a3,440	a4,310	a4,890	b6,820	b8,940	b3,450	b2,070	b2,600	a5,800
1921	b2,650	b2,910	a2,500	a2,370	a2,410	a2,360	b2,270	c3,360	b5,700	b3,300	b2,820	b2,050	*3,720
1922	b2,670	a2,300	a2,290	a2,180	a3,370	a3,790	b2,660	c5,620	b3,380	b1,920	b1,510	b661	a2,710
1923	d1,850	d2,400	b1,800	c2,250	b1,990	b2,160	b3,740	b3,780	b2,470	b3,830	b1,800	d2,510	a2,710
1924	b5,170	b3,220	b2,830	b1,500	c2,630	b3,330	b8,550	b9,360	b5,780	b2,160	b1,980	b3,400	b4,160
1925	b4,040	b3,110	b2,600	b4,210	b2,600	b4,210	b2,150	b1,720	b2,220	b968	b3,290	b2,120	b2,630
1926	b3,220	b3,000	b2,830	b4,120	b4,240	b2,440	b3,310	b2,920	b6,140	b4,370	b2,890	b3,270	b3,550
1927	b3,530	b3,270	b2,850	b2,050	b2,200	b3,150	b4,500	b5,030	b4,010	b2,490	b5,220	b2,240	c3,420
1928	b4,260	b3,550	b2,800	b2,500	c2,590	b2,760	b2,610	b3,780	b10,900	b5,980	b2,200	b1,730	c3,630
1929	b2,620	b2,830	b2,470	c1,460	c2,520	b3,490	b4,350	b5,020	b1,900	b2,520	b1,360	b3,550	b3,610
1930	c3,880	b2,960	b3,120	b2,200	b3,360	b3,040	b2,440	c3,420	c1,820	c568	b2,440	c2,670	b2,650
1931	3,930	3,110	3,040	2,540	2,810	2,360	2,430	1,410	677	242	309	607	1,950
1932	1,570	1,730	1,900	1,840	2,260	2,380	1,790	1,160	1,340	843	940	1,180	1,580
1933	2,490	2,570	2,050	2,660	1,960	2,310	2,360	4,460	1,180	804	1,270	2,780	2,240
1934	2,645	2,517	2,331	2,465	2,118	2,098	1,454	523	369	110	107	291	1,416
1935	476	772	1,391	1,725	1,777	1,528	1,328	2,365	3,504	287	126	249	1,290
1936	807	1,415	996	1,503	1,523	1,335	785	465	279	57.2	119	147	782
1937	1,019	1,128	605	301	1,792	2,189	1,549	424	1,069	503	168	689	944
1938	1,731	2,024	2,061	1,904	2,252	1,837	1,364	1,463	1,021	1,100	644	2,050	1,616
1939	1,680	1,886	1,459	1,320	920	1,819	1,550	471	411	267	86.5	166	1,004
1940	1,194	1,585	655	597	1,118	724	515	263	593	119	42.5	96.9	605
1941	374	404	310	378	423	344	392	294	228	424	132	292	332
1942	331	313	306	437	356	416	625	499	330	228	845	774	454
1943	307	354	698	388	397	380	1,201	528	441	604	1,315	425	588
1944	386	368	296	329	383	473	500	426	364	609	1,600	373	499
1945	474	1,339	1,442	468	385	348	383	362	537	691	1,511	916	740
1946	528	391	339	357	376	450	342	687	937	1,434	1,505	616	667
1947	537	487	405	335	403	410	386	334	428	423	1,697	1,334	599
1948	427	458	402	358	750	413	890	861	587	1,287	967	703	675
1949	470	528	386	462	784	653	604	547	424	1,186	1,306	421	648
1950	859	548	393	289	405	424	742	1,293	479	646	815	507	617

* Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-ft.

b From reports of State engineer of Nebraska.

c Corrected; supersedes figure published by State engineer of Nebraska.

d Revised; supersedes figure published by State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	a179,000	184,770	206,479	432,442	644,400	92,887	30,252	14,340	-
1896	49,805	80,747	a83,500	a79,200	a104,000	a153,000	a167,000	a280,262	376,898	69,727	56,507	50,995	a1,550,000
1897	70,711	128,886	a139,000	a172,000	a300,000	a41,094	a504,128	a589,664	a828,296	a126,768	176,839	36,238	a3,380,000
1898	69,604	128,053	a136,000	a170,000	a321,000	a36,871	a115,140	a324,409	a408,113	a508,217	705,200	20,945	a8,000,000
1899	28,981	64,740	a69,500	a224,000	a339,000	a18,979	a587,312	a565,444	a823,835	a660,562	637,771	68,311	a3,890,000
1900	59,274	107,881	a117,000	a145,000	a143,000	a190,000	a244,000	a582,000	a548,000	a139,000	a35,700	a6,600	a2,320,000
1901	a32,800	a66,500	a74,400	a94,000	a100,200	a251,43	a276,472	a288,579	a108,92	a712	21,275	63,546	a1,940,000
1902	68,919	93,772	a101,000	a125,000	a99,400	a110,000	a45,359	a35,065	a790	a37,039	6,271	28,620	a1,550,000
1903	63,642	65,688	a77,500	a131,000	a78,000	a374,000	a191,782	a229,199	a406,166	a205,861	43,718	32,430	a2,070,000
1904	66,837	a78,500	a84,700	a105,000	a77,500	a84,200	a115,300	a307,000	a10,500	a22,300	a24,530	9,461	a1,830,000
1905	71,780	90,270	a97,000	a120,000	a121,000	a168,000	a222,700	a31,500	a874,700	a567,800	a14,500	34,810	*2,910,000

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

Monthly and yearly runoff, in acre-feet, of North Platte River at North Platte, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	37,880	42,200	52,800	114,000	232,000	339,000	563,000	463,000	31,000	255,000	69,500	87,500	a2,690,000
1907	97,800	28,000	139,000	133,000	162,000	192,000	287,000	351,000	44,000	113,000	24,000	89,800	a2,860,000
1908	89,200	73,800	87,500	64,500	70,600	103,000	91,600	388,000	549,000	94,100	32,400	11,300	a1,640,000
1909	49,400	110,000	88,000	81,800	100,000	105,000	140,000	408,000	909,000	558,000	221,000	70,800	*2,530,000
1910	169,000	87,500	100,000	120,000	102,000	157,000	*218,000	*85,700	a11,000	*6,150	*4,920	*2,980	*1,150,000
1911	107,000	100,000	160,000	151,000	159,000	103,000	22,000	60,400	37,400	37,800	50,100	19,000	a987,000
1912	95,300	100,000	107,400	100,000	139,000	180,000	443,000	158,000	34,000	227,000	556,000	584,000	a2,630,000
1913	564,000	29,000	181,000	172,000	175,000	210,000	207,000	168,000	78,600	66,400	51,200	79,700	a2,080,000
1914	119,000	93,400	92,000	87,100	100,000	108,000	119,000	295,000	94,600	56,300	108,000	191,000	a1,450,000
1915	161,000	113,000	104,000	98,900	101,000	138,000	264,000	245,000	236,000	41,000	245,000	184,000	a2,040,000
1916	161,000	131,000	129,000	157,000	187,000	128,000	120,000	132,000	163,000	81,800	133,000	66,500	a1,510,000
1917	161,000	131,000	129,000	150,000	132,000	127,000	217,000	210,000	409,000	11,000	132,000	192,000	a3,610,000
1918	139,000	185,000	191,000	182,000	184,000	197,000	171,000	378,000	251,000	251,000	133,000	113,000	*2,460,000
1919	205,000	185,000	183,000	184,000	154,000	133,000	131,000	126,000	145,000	670,300	53,400	102,000	*1,640,000
1920	164,000	158,000	141,000	135,000	135,000	188,000	265,000	291,000	420,000	128,000	128,000	155,000	a2,760,000
1921	163,000	173,000	141,000	145,000	145,000	135,000	207,000	934,000	203,000	173,000	122,000		*2,690,000
1922	164,000	137,000	141,000	141,000	187,000	233,000	159,000	346,000	201,000	118,000	93,100	151,300	a1,960,000
1923	114,000	143,000	111,000	138,000	110,000	122,000	128,000	230,000	225,000	236,000	107,000		d1,820,000
1924	1518,000	192,000	174,000	109,200	201,000	206,000	503,000	577,000	344,000	133,000	122,000	202,000	b3,020,000
1925	249,000	185,000	166,000	180,000	234,000	156,000	128,000	106,000	132,000	559,500	202,000	126,000	b1,900,000
1926	198,000	179,000	174,000	254,000	235,000	150,000	197,000	180,000	365,000	268,000	178,000	194,000	b2,570,000
1927	217,000	195,000	203,000	161,000	122,000	194,000	268,000	308,000	239,000	153,000	321,000	133,000	a2,480,000
1928	262,000	211,000	172,000	154,000	149,000	170,000	155,000	232,000	364,000	244,000	135,000	105,000	a2,630,000
1929	161,000	169,000	152,000	90,100	140,000	215,000	259,000	309,000	668,000	115,000	83,500	211,000	b2,610,000
1930	238,000	176,000	192,000	135,000	138,000	187,000	145,000	210,000	103,000	34,900	150,000	159,000	b1,920,000
1931	242,000	185,000	187,000	156,000	156,000	145,000	145,000	86,700	40,300	14,900	19,000	36,100	1,410,000
1932	96,500	103,000	117,000	131,000	130,000	146,000	127,000	71,300	79,700	51,800	57,800	70,200	1,140,000
1933	153,000	153,000	153,000	164,000	109,000	142,000	140,000	274,000	70,200	49,400	78,100	65,000	1,620,000
1934	162,800	49,400	80,143	30,515	60,117	100,219	80,000	86,510	32,130	21,970	6,750	6,600	1,730,000
1935	29,240	45,940	85,500	106,100	98,680	93,980	79,010	146,700	208,500	16,750	7,730	14,770	933,800
1936	49,620	84,180	61,220	92,430	87,630	82,110	46,710	28,040	16,580	3,510	7,290	8,730	568,000
1937	62,670	67,140	37,210	18,490	99,520	134,600	92,150	26,090	63,600	30,950	10,300	40,990	683,700
1938	106,400	20,400	26,700	17,100	100,250	101,130,000	81,140	89,980	60,750	67,620	39,570	22,000	1,170,000
1939	103,300	112,200	89,730	81,170	51,080	111,800	92,210	28,980	24,440	16,410	5,320	9,870	726,500
1940	73,390	94,300	40,270	36,690	64,320	44,510	30,620	16,160	23,370	7,330	2,610	5,770	459,400
1941	22,990	24,020	19,090	23,230	23,470	21,150	23,320	18,090	13,540	26,070	8,100	17,350	240,400
1942	20,360	18,640	18,790	26,900	18,660	25,550	37,160	30,710	19,610	14,040	51,940	46,080	328,400
1943	18,860	21,040	42,900	23,840	22,050	23,390	71,460	32,470	26,270	37,120	80,850	25,310	425,600
1944	23,720	21,930	18,220	20,230	22,010	29,110	29,750	26,190	21,680	28,830	98,410	22,180	362,300
1945	29,120	79,670	88,680	28,780	21,400	21,370	22,800	22,260	31,930	42,500	92,900	54,520	535,900
1946	32,470	23,250	20,850	21,940	20,900	27,680	20,330	42,220	55,730	98,190	92,510	36,690	482,800
1947	33,030	28,900	24,890	20,810	22,390	25,230	22,970	20,530	25,450	26,010	104,400	79,390	433,900
1948	28,270	27,280	24,710	21,980	45,160	25,390	52,980	52,920	34,940	79,110	59,470	41,830	490,000
1949	28,890	31,410	23,710	28,400	43,560	40,120	35,930	33,600	25,200	72,950	80,300	25,060	469,100
1950	51,580	32,610	24,140	17,790	22,510	26,080	44,130	79,480	28,480	39,710	50,110	30,180	446,800

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Nebraska.

c Corrected; supersedes figure published by State engineer of Nebraska.

d Revised; supersedes figure published by State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Discharge	Maximum	Minimum	Mean	Runoff in acre-feet	Mean
			Date	day			Runoff in acre-feet
1895	Bull. 140	\$17,400	June 7, 1895	-	-	-	-
1896	(a)	\$16,300	June 6, 1896	-	b2,130	b1,550,000	b2,310
1897	(c)	\$25,000	June 8, 1897	422	b4,670	b3,380,000	b4,650
1898	(d)	\$15,300	May 30, 1898	50	b2,490	b1,800,000	b2,250
1899	(e)	\$18,305	June 27, 1899	254	b5,370	b3,890,000	b5,540
1900	(e)	\$19,400	June 8, 1900	70	b3,200	b2,320,000	b3,040
1901	84	\$19,400	June 12, 1901	75	b2,680	b1,940,000	b2,810
1902	84	\$9,300	May 16, 1902	30	b2,140	b1,550,000	b2,060
1903	95	\$16,000	Mar. 16, 1903	325	b2,850	b2,070,000	b2,830
1904	131	\$16,600	June 14, 1904	20	b2,520	b1,830,000	*2,560
1905	172	\$24,000	June 16, 1905	260	*4,020	*2,910,000	b3,850
1906	208	\$19,200	June 5, 1906	50	b3,720	b2,690,000	b4,030
1907	246	\$16,000	June 16, 1907	-	b3,950	b2,860,000	b3,760
1908	246	\$26,700	June 4, 1908	70	b2,260	b1,640,000	b2,270
1909	266	\$29,600	June 11, 1909	130	*3,500	*2,530,000	*3,740
1910	286	\$6,900	Oct. 16, 1909	-	*1,560	*1,130,000	*1,480
1911	306	\$3,550	Feb. 13, 1911	-	b1,360	b987,000	b1,330
1912	326	\$15,000	Apr. 5, 1912	-	b3,620	b2,630,000	b4,360
1913	356	\$9,040	Oct. 14, 1912	-	b2,870	b2,080,000	b2,090
1914	386	\$8,150	May 3, 1914	145	b2,000	b1,450,000	b2,100
1915	406	\$10,900	Mar. 27, 1915	-	b2,820	b2,040,000	b2,860

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Not previously published.

a 18th Ann. Rept., Pt. 4.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c 19th Ann. Rept., Pt. 4.

d 20th Ann. Rept., Pt. 4.

e 21st Ann. Rept., Pt. 4.

Yearly discharge, in cubic feet per second, of North Platte River at North Platte, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	(f)	*5,000	May 22, 1916	-	b2,070	b1,510,000	b2,070	b1,510,000
1917	(f)	*20,900	June 29, 1917	-	b4,990	b3,610,000	b5,300	b3,760,000
1918	(f)	*10,000	June 30, 1918	-	*3,390	*2,460,000	*3,390	*2,440,000
1919	(f)	*4,300	June 9, 1919	-	*2,270	*1,640,000	b2,080	b1,500,000
1920	(f)	*15,000	June 25, 1920	-	b3,800	b2,760,000	*3,900	*2,830,000
1921	(f)	*24,100	June 20, 1921	-	*3,720	*2,690,000	*3,650	*2,640,000
1922	(f)	*10,800	May 24, 1922	-	b2,710	b1,960,000	*2,610	*1,890,000
1923	(f)	*10,500	May 29, 1923	900	g2,510	g1,820,000	2,940	2,130,000
1924	(f)	*18,500	Oct. 3, 1923	1,250	4,160	3,020,000	4,050	2,940,000
1925	(f)	*6,300	May 21, 1925	175	2,630	1,900,000	h2,560	h1,850,000
1926	(f)	*10,800	June 19, 1926	1,650	3,550	2,570,000	h3,640	h2,640,000
1927	(f)	*9,200	Aug. 8, 1927	1,250	h3,420	h2,480,000	3,470	2,510,000
1928	(f)	*15,600	June 12, 1928	700	h3,630	h2,630,000	3,400	2,470,000
1929	(f)	*20,900	June 5, 1929	600	3,610	2,610,000	3,780	2,730,000
1930	(f)	*11,000	Oct. 4, 1929	150	2,650	1,920,000	2,670	1,930,000
1931	716	6,900	Apr. 3, 1931	75	1,950	1,410,000	1,550	1,120,000
1932	731	6,320	Mar. 19, 1932	416	1,580	1,140,000	1,740	1,260,000
1933	746	9,980	May 29, 1933	329	2,240	1,620,000	2,280	1,650,000
1934	761	3,840	May 6, 1934	41	1,416	1,025,000	1,008	730,100
1935	786	11,700	June 18, 1935	52	1,290	933,800	1,337	968,100
1936	806	-	Mar. 5, 1936	36	782	568,000	744	540,000
1937	826	-	Feb. 24, 1937	79	944	683,700	1,202	870,200
1938	856	5,010	Apr. 29, 1938	278	1,616	1,170,000	1,549	1,121,000
1939	876	3,920	Mar. 12, 1939	50	1,004	726,500	869	629,200
1940	896	2,320	June 7, 1940	26	605	439,400	410	297,500
1941	926	1,580	July 29, 1941	47	332	240,400	321	232,100
1942	956	6,610	Sept. 3, 1942	102	454	328,400	468	353,400
1943	976	2,430	June 15, 1943	98	588	425,600	562	406,600
1944	1006	2,510	Aug. 25, 1944	162	499	362,300	683	495,900
1945	1036	2,650	Aug. 5, 1945	200	740	535,900	573	415,000
1946	1056	2,060	July 22, 1946	190	667	482,800	681	493,100
1947	1086	2,630	Aug. 21, 1947	170	599	433,900	587	425,200
1948	1116	3,360	July 29, 1948	110	675	490,000	683	495,800
1949	1146	2,580	Aug. 2, 1949	100	648	469,100	682	493,400
1950	1176	1,910	May 6, 1950	110	617	446,800	-	-

* Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

† Not previously published.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

f From reports of State engineer of Nebraska.

g Revised; supersedes figure published by State engineer of Nebraska.

h Corrected; supersedes figure published by State engineer of Nebraska.

168. East Hoosier ditch at Hoosier Pass, Colo.

(Transmountain diversion)

Location.--Lat 39°21'40", long. 106°03'40", in SE¼ sec. 12, T. 8 S., R. 78 W., at Hoosier Pass.

Gage.--Water-stage recorder and 3-ft Parshall flume after June 1, 1935. Altitude of gage is 11,540 ft (from topographic map).

Remarks.--Diversion is from tributaries of Blue River between headgates in sec. 5, T. 8 S., R. 77 W., sec. 7, T. 8 S., R. 77 W., and sec. 2, T. 8 S., R. 78 W., and Hoosier Pass, in the Colorado River basin to Middle Fork South Platte River in sec. 13, T. 8 S., R. 78 W., in Platte River basin. No diversion prior to 1935. By court order, ditch discontinued after 1940.

Cooperation.--Records, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly diversions, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	a0	a0	a0	a0	a0	a0	a0	a0	a233	a9	a0	a0	a242
1936	a0	a0	a0	a0	a0	a0	a0	a101	a345	a27	a0	a0	a473
1937	a0	a0	a0	a0	a0	a0	a0	a54	a77	a18	a0	a0	b149
1938	a0	a0	a0	a0	a0	a0	a0	a20	a425	a52	a0	a0	b497
1939	a0	a0	a0	a0	a0	a0	a0	a154	a168	a0	a0	a0	b322
1940	a0	a0	a0	a0	a0	a0	a0	a25	a76	a0	a0	a0	b101

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

169. West Hoosier ditch at Hoosier Pass, Colo.

(Transmountain diversion)

Location.--Lat 39°21'40", long. 106°03'40", in SE $\frac{1}{4}$ sec. 12, T. 8 S., R. 78 W., at Hoosier Pass.

Gage.--Water-stage recorder and 3-ft Parshall flume after June 5, 1935. Altitude of gage is 11,540 ft (from topographic map).

Remarks.--Diversion is from West Lake Creek (tributary of Blue River) in sec. 2, T. 8 S., R. 78 W., in Colorado River basin, to Middle Fork South Platte River in sec. 13, T. 8 S., R. 78 W., in Platte River basin. No diversion prior to 1935. By court order, ditch discontinued after 1939.

Cooperation.--Records, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly diversions, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	a0	a0	a0	a0	a0	a0	a0	a0	a67	a0	a0	a0	a67
1936	a0	a0	a0	a0	a0	a0	a0	a71	a101	a10	a0	a0	a182
1937	a0	a0	a0	a0	a0	a0	a0	a63	a83	a0	a0	a0	b146
1938	a0	a0	a0	a0	a0	a0	a0	a2	a152	a1	a0	a0	b155
1939	a0	a0	a0	a0	a0	a0	a0	a87	a72	a0	a0	a0	b159

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

170. Middle Fork South Platte River at Alma, Colo.

Location.--Lat 39°17'05", long 106°03'35", in sec. 12 (revised), T. 9 S., R. 78 W., 40 ft north of road near east edge of town and 300 ft upstream from Buckskin Creek.

Drainage area.--23.7 sq mi.

Gage.--Staff gage. Altitude of gage is 10,340 ft (from topographic map).

Extremes.--May to August 1916: Not determined.

Remarks.--No diversions above station.

Cooperation.--Records furnished by Van Sant-Houghton Co., engineers of Denver, and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	22.1	73.0	33.9	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	1,360	4,340	2,080	-	-	-

171. Middle Fork South Platte River at Fairplay, Colo.

Location.--Lat 39°13', long. 106°00', in sec. 33 T. 9 S., R. 77 W., at highway bridge at Fairplay 1 mile upstream from Beaver Creek.

Drainage area.--83 sq mi, approximately.

Supplemental records available.--October 1910 to July 1912, gage heights and discharge measurements only under station names "South Fork of South Platte" 1910, and "Middle Fork of South Platte," 1911-12.

Gage.--Staff gage. Altitude of gage is 9,900 ft (estimated on basis of nearby benchmark).

Extremes.--1916-17: Not determined.

Remarks.--Diversions for irrigation above station.

Cooperation.--Records for 1916 furnished by Van Sant-Houghton Co., engineers of Denver, and reviewed by Geological Survey. Records for 1917, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	98.6	284	202	162	69.2	-
1917	48.6	-	-	-	-	-	-	#60.1	a286	a228	a80.0	a32.7	-
1918	#23.8	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; estimated by Geological Survey on basis of adjacent flow pattern and weather records.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	6,060	16,900	12,400	9,960	4,120	-
1917	2,990	-	-	-	-	-	-	#3,700a	17,000a	14,000	a4,920	a1,950	-
1918	#1,460	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; see footnote to preceding table.

a From reports of State engineer of Colorado.

172. South Fork South Platte River near Fairplay, Colo. 1/

Location.--Lat 39°04', long. 105°58', in NW¼ sec. 26, T. 11 S., R. 77 W., at bridge 5 miles upstream from Antero Reservoir and 11 miles (revised) south of Fairplay.

Drainage area.--88 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 9,200 ft (from nearby benchmark). May 9, to Sept. 30, 1916, water-stage recorder at same site at different datum.

Extremes.--1916, 1933-39: Maximum daily discharge, 300 cfs June 23, 1936; minimum daily determined, 4 cfs Apr. 28-30, 1935.

Remarks.--Diversions above station for irrigation of about 100 acres.

Cooperation.--Records for 1916, furnished by Van Sant-Houghton Co., engineers of Denver, and reviewed by Geological Survey; those for 1933-39, not previously published by Geological Survey, furnished by Denver Board of Water Commissioners.

Monthly and yearly mean discharge, in cubic feet per second.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	a106	61.7	#36.8	#27.2	-
1933	-	-	-	-	-	-	-	-	b69.9	b31.2	b17.6	b13.3	-
1934	b9.5	-	-	-	-	-	-	b35.7	b29.2	b16.9	b21.3	b12.8	-
1935	#11.6	-	-	-	-	-	-	b12.2	b11.4	b56.9	b42.0	b24.2	-
1936	b18.5	-	-	-	-	-	-	b94.1	b91.6	b52.0	b73.3	b31.5	-
1937	b27.4	-	-	-	-	-	-	b55.2	b37.8	b41.5	b23.6	b15.2	-
1938	b11.9	-	-	-	-	-	-	b31.4	b94.0	b41.2	b32.8	b53.9	-
1939	b33.3	-	-	-	-	-	-	b85.1	b79.4	b37.6	b22.6	b11.2	-
1940	b10.7	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated by Geological Survey on basis of adjacent flow pattern.

a Figure refers to complete month, not partial month as indicated in WSP 436.

b Not previously published; from files of Denver Board of Water Commissioners.

1/ Published as Little South Platte River near Fairplay, Colo., 1916, and as South Fork South Platte River at Twin Bridges, Colo., 1933-39, in Water Resources of Colorado.

PLATTE RIVER BASIN

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Monthly and yearly runoff, in acre-feet, of South Fork South Platte River
near Fairplay, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	a6,310	3,790	\$2,270	\$1,820	-
1933	-	-	-	-	-	-	-	-	b4,160	b1,920	b1,100	b793	-
1934	b587	-	-	-	-	-	-	-	b2,200	b1,740	b1,040	b1,310	-
1935	\$714	-	-	-	-	-	-	-	b754	b6,750	b3,500	b2,580	b1,440
1936	b1,140	-	-	-	-	-	-	-	b5,780	b5,450	b5,200	b4,510	b1,870
1937	b1,680	-	-	-	-	-	-	-	b3,390	b2,250	b2,550	b1,450	b908
1938	b732	-	-	-	-	-	-	-	b1,930	b5,590	b2,530	b2,020	b3,210
1939	b2,050	-	-	-	-	-	-	-	b5,110	b4,730	b2,310	b1,400	b668
1940	b658	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated by Geological Survey on basis of adjacent flow patterns.

a Figure refers to complete month, not partial month as indicated in WSP 456.

b Not previously published; from files of Denver Board of Water Commissioners.

173. South Platte River above Elevenmile Canyon Reservoir, near Hartsel, Colo.

Location.--Lat 38°58', long. 105°34', in sec. 33, T. 12 S. (corrected), R. 73 W., 250 ft downstream from highway bridge, 1 mile upstream from high-water line of Elevenmile Canyon Reservoir, 2 miles downstream from Threemile Creek, and 13 miles southeast of Hartsel.

Drainage area.--861 sq mi.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 8,600 ft (from nearby level line). Prior to May 27, 1939, water-stage recorder near present site at different datum.

Average discharge.--11 years (1939-50), 84.7 cfs.

Extremes.--1933-50: Maximum discharge recorded, 1,290 cfs June 19, 1949 (gage height, 4.42 ft); maximum gage height, 4.88 ft Aug. 2, 1945; minimum daily discharge recorded, 0.9 cfs Apr. 22, 1940, but may have been less during periods of no gage-height record.

Remarks.--Flow regulated by Antero Reservoir (capacity, 22,300 acre-ft). Many small diversions above station for irrigation of about 24,000 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	a158	a117	a72.5	a65.2	-
1934	a16.5	-	-	-	-	-	-	-	a86.4	a69.2	a54.8	a36.1	-
1935	a24.3	-	-	-	-	-	-	-	a15.1	a129	a247	a182	-
1936	a58.5	-	-	-	-	-	-	-	a169	a289	a223	-	a118
1937	a94.5	-	-	-	-	-	-	-	a110	a107	a145	a64.5	a48.1
1938	a39.2	-	-	-	-	-	-	-	a18.3	a214	a163	a152	a230
1939	a87.6	-	-	-	-	-	-	-	117	154	111	75.3	28.0
1940	19.0	\$8.1	\$4.0	\$5.0	\$8.0	\$10	\$12.7	69.3	186	47.0	22.4	36.2	\$35.5
1941	9.25	\$7.43	\$4.0	\$5.0	\$5.0	\$9.0	120	74.2	328	220	158	77.5	\$84.9
1942	111	\$48.5	\$25	\$15	\$10	\$25	\$228	107	246	201	148	34.6	\$100.
1943	33.7	\$23.8	\$17	\$15	\$15	\$25	71.2	70.2	112	140	151	41.0	\$59.9
1944	71.0	\$64.5	\$11	7.5	6.0	18	86.1	197	203	145	55.2	6.90	72.7
1945	97.4	\$50.1	\$6	\$4	\$4	\$15	\$55.9	49.6	52.9	181	312	63.4	\$75.1
1946	62.0	\$39.2	\$20	\$15	\$15	\$25	75.1	70.9	136	147	77.0	32.1	\$59.7
1947	25.1	\$45	\$25	\$17	\$12	\$50	\$70.1	66.5	296	349	228	109	\$108
1948	100	\$35	\$20	\$17	\$23	\$35	\$250	\$34.5	384	171	95.7	42.4	\$126
1949	54.4	\$32.3	\$15	\$15	\$15	\$35	85.0	115	744	567	150	76.8	\$159
1950	83.8	\$49.3	\$22	\$16	\$17	\$26	\$39.5	53.3	114	115	43.1	23.9	50.4

* Not previously published; estimated on basis of records for Elevenmile Canyon

Reservoir and station below the reservoir.

a Not previously published; from files of Denver Board of Water Commissioners.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	a9,400	a7,210	a4,460	a3,880	-
1934	a1,010	-	-	-	-	-	-	a5,310	a4,060	a3,370	a4,700	a2,150	-
1935	a1,500	-	-	-	-	-	-	a926	a7,680	a15,210	a11,220	a6,670	-
1936	a3,600	-	-	-	-	-	-	a10,370	a17,200	a13,720	-	a7,040	-
1937	a5,810	-	-	-	-	-	-	a6,790	a6,360	a8,940	a3,970	a2,860	-
1938	a2,410	-	-	-	-	-	-	a1,120	a12,750	a10,040	a9,330	a13,710	-
1939	a5,390	-	-	-	-	-	-	1,760	9,180	6,820	4,630	1,670	-
1940	1,170	\$484	\$246	\$307	\$460	\$615	\$754	4,260	11,080	2,890	1,380	2,160	\$25,810
1941	568	\$442	\$246	\$307	\$278	\$553	7,120	4,560	19,500	13,540	9,740	4,610	\$61,460
1942	6,800	\$2,890	\$1,540	\$922	\$555	\$1,540	\$13,590	6,590	14,650	12,360	9,100	2,060	\$72,600
1943	2,070	\$1,420	\$1,050	\$922	\$833	\$1,540	4,230	4,320	6,690	8,580	9,100	2,440	\$43,400
1944	4,360	\$3,840	\$768	\$461	\$435	\$1,110	\$5,130	12,100	12,070	8,910	3,390	411	\$2,800
1945	5,960	\$2,980	\$369	\$246	\$222	\$922	\$3,330	3,050	12,510	11,160	19,180	3,770	\$54,370
1946	3,810	\$2,330	\$1,230	\$922	\$833	\$1,540	4,470	4,360	8,090	9,010	4,730	1,910	\$43,240
1947	1,550	\$2,680	\$1,540	\$1,050	\$668	\$3,070	\$4,170	4,080	17,800	21,490	14,030	6,500	\$78,440
1948	6,150	\$2,080	\$1,230	\$1,050	\$1,320	\$1,840	\$14,880	\$21,080	22,830	10,490	5,890	2,520	\$91,350
1949	3,340	\$1,920	\$922	\$922	\$833	\$2,150	5,080	7,080	44,280	34,870	9,250	4,570	\$115,200
1950	5,160	\$2,950	\$1,350	\$984	\$944	\$1,600	\$2,290	3,280	6,810	7,040	2,650	1,420	\$6,460

* Not previously published; see footnote to preceding table.

a Not previously published; from files of Denver Board of Water Commissioners.

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second, of South Platte River above
Elevenmile Canyon Reservoir, near Hartsel, Colo.

Beverlyville Canyon Reservoir, near Harpers, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	(a)	-	-	-	-	-	-	-
1934	(a)	-	-	-	-	-	-	-
1935	(a)	-	-	-	-	-	-	-
1936	(a)	-	-	-	-	-	-	-
1937	(a)	-	-	-	-	-	-	-
1938	(a)	-	-	-	-	-	-	-
1939	876	350	June 1, 1939	-	-	-	-	-
1940	896	608	Sept. 9, 1940	-	\$35.5	\$25,810	\$34.6	\$25,160
1941	926	605	June 25, 1941	-	\$84.9	\$61,460	\$98.7	\$71,440
1942	956	6740	Aug. 1, 1942	-	\$100	\$72,600	\$91.0	\$65,910
1943	976	278	June 29, 1943	-	\$59.9	\$43,400	\$65.9	\$47,740
1944	1006	381	May 28, 1944	-	72.7	\$52,800	\$73.4	\$53,270
1945	1036	954	Aug. 2, 1945	-	\$75.1	\$54,370	\$72.4	\$52,400
1946	1056	695	July 18, 1946	-	\$59.7	\$43,240	\$57.5	\$41,640
1947	1086	837	Sept. 1, 1947	-	\$108	\$78,440	\$113	\$82,130
1948	1116	1260	Apr. 20, 1948	-	\$126	\$91,360	\$121	\$88,080
1949	1146	1290	June 19, 1949	-	\$159	\$115,200	\$164	\$118,500
1950	1176	249	June 12, 1950	-	50.4	36,460	-	-

* Not previously published.

a From files of Denver Board of Water Commissioners.

b Maximum recorded, but may have been higher during period of no gage-height record in April.

174. Elevenmile Canyon Reservoir near Lake George, Colo.

Location.--Lat 38°54' (revised), long. 105°28' (revised), at dam on South Platte River in SW $\frac{1}{4}$ sec. 20, T. 13 S., R. 72 W., 8 miles southwest of Lake George.

Drainage area.--929 sq mi.

Gage.--Staff gage. Datum of gage is mean sea level (datum of Denver Board of Water Commissioners).

Extremes.--1932-50: Maximum contents observed, 91,000 acre-ft June 20, 21, 1949 (elevation, 8,594.97 ft); no contents at times during 1935.

Remarks.--Reservoir is formed by concrete arch dam completed under supervision of Denver Board of Water Commissioners in November 1932. Storage began in October 1932 (corrected). Capacity, 81,920 acre-ft between elevations 8,488.25 ft (invert of outlet pipe) and 8,592.00 ft (crest of spillway). Dead storage negligible. Records herein represent total contents. Water is for municipal use by City of Denver.

Cooperation.--Records furnished by Denver Board of Water Commissioners.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1933	\$2,680	\$4,060	\$4,270	\$4,270	\$4,270	\$4,270	\$4,280	\$4,280	\$4,380	\$4,720	\$4,740	\$4,680
1934	\$4,720	\$4,750	\$5,120	\$5,210	\$5,890	\$6,830	\$7,310	\$7,500	\$7,410	\$7,360	\$7,330	\$7,330
1935	\$7,330	\$7,330	\$7,330	\$7,330	\$7,330	\$7,330	\$0	\$0	\$0	\$0	\$0	\$500
1936	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$3,710	\$4,900	\$11,870	\$13,230
1937	\$13,300	\$13,300	\$13,300	\$13,300	\$13,300	\$13,730	\$16,410	\$17,000	\$21,400	\$27,300	\$27,300	\$27,390
1938	\$27,440	\$27,440	\$27,440	\$27,440	\$27,440	\$27,440	\$27,440	\$27,440	\$36,750	\$44,360	\$49,720	\$9,420
1939	\$9,630	\$6,380	\$61,220	\$62,300	\$62,520	\$65,000	\$66,800	\$66,880	\$71,530	\$71,640	\$71,480	\$71,010
1940	\$70,500	\$70,500	\$70,500	\$70,500	\$70,500	\$70,500	\$69,940	\$72,950	\$80,400	\$81,960	\$81,250	\$81,040
1941	\$80,550	\$80,630	\$80,630	\$80,630	\$80,630	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,770	\$81,330
1942	\$81,630	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$81,920	\$82,690
1943	\$82,690	\$82,690	\$82,480	\$82,570	\$82,720	\$83,080	\$83,440	\$83,170	\$84,520	\$84,570	\$83,710	\$82,570
1944	\$82,870	\$82,160	\$82,330	\$82,220	\$82,100	\$82,510	\$83,860	\$85,200	\$82,240	\$84,240	\$82,690	\$81,450
1945	\$84,010	\$82,600	\$82,250	\$82,070	\$82,010	\$82,420	\$83,410	\$83,320	\$82,450	\$83,830	\$83,650	\$82,810
1946	\$83,380	\$82,720	\$82,420	\$82,420	\$82,420	\$83,110	\$83,380	\$82,750	\$82,450	\$82,250	\$82,100	\$81,510
1947	\$82,150	\$83,170	\$82,900	\$82,510	\$82,630	\$82,960	\$82,360	\$83,410	\$85,420	\$86,180	\$84,840	\$83,470
1948	\$83,680	\$82,870	\$82,930	\$83,080	\$83,140	\$83,020	\$86,180	\$85,720	\$85,690	\$84,960	\$83,350	\$82,630
1949	\$82,840	\$82,510	\$82,570	\$82,690	\$82,810	\$83,320	\$83,530	\$82,960	\$88,550	\$86,860	\$83,890	\$82,900
1950	\$83,560	\$82,840	\$82,570	\$82,720	\$83,050	\$83,200	\$82,870	\$82,130	\$82,270	\$82,160	\$82,130	\$81,860

† Corrected.

* Not previously published; records furnished by Denver Board of Water Commissioners.

175. South Platte River near Lake George, Colo.

Location.--Lat 38°54'20" (revised), long. 105°27'50", in SW $\frac{1}{4}$ sec. 20, T. 13 S., R. 72 W., 800 ft downstream from Elevenmile Canyon Reservoir and 8 miles southwest of town of Lake George.

Drainage area.--929 sq mi.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 8,450 ft (corrected) (from topographic map). Prior to Oct. 26, 1940, at site 1 mile downstream at datum 8,423.95 ft above mean sea level, adjustment of 1912.

Average discharge.--21 years (1929-50), 68.9 cfs.

Extremes.--1929-50: Maximum discharge, 990 cfs Aug. 15, 1930, from rating curve extended above 600 cfs; maximum gage height, 5.85 ft June 20, 1949; no flow at times in January 1930, February 1931, and November 1935.

Remarks.--Natural flow of stream affected by transmountain diversions through East and West Hoosier ditches at Hoosier Pass prior to 1941, storage in Elevenmile Canyon Reservoir (see elsewhere in this report) and Antero Reservoir (capacity, 22,800 acre-ft), diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	64.2	20	10	2.0	30	40	34.2	39.3	125	136	405	288	99.8
1931	221	33.1	15	8.0	5.0	35	78.0	39.7	78.2	47.6	33.2	7.4	50.5
1932	68.8	153	7.4	4.0	5.0	18.4	114	47.1	114	115	112	36.8	66.2
1933	29.6	7.1	3.6	1.5	1.0	3.0	30.6	7.9	164	117	71.1	67.6	42.1
1934	15.8	20.6	8.2	4.0	1.4	16.3	9.2	86.2	59.6	51.5	69.0	27.7	31.0
1935	21.5	22.6	4.9	2.0	2.0	22.7	165	23.7	117	235	193	87.5	74.9
1936	49.6	38.7	110	9.0	8.6	8.1	43.5	158	216	191	257	65.5	88.3
1937	88.6	43.5	10.1	9.0	8.8	8.10	45.2	85.9	23.7	33.2	53.0	30.0	36.8
1938	32.0	14.7	17.5	14.2	16.9	35.1	73.6	18.7	21.6	27.2	49.8	50.5	31.0
1939	78.8	9.98	7.0	7.0	7.0	7.0	7.08	129	54.3	90.7	57.4	13.0	39.5
1940	5.16	2.26	2.20	5.32	9.31	10	19.0	27.9	27.7	16.9	14.8	29.7	14.1
1941	2.12	6.16	3.70	6.44	7.50	10.6	155	72.8	316	202	159	72.2	84.5
1942	109	23.4	16.5	12.8	8.77	13.1	25.4	117	249	191	172	45.3	101
1943	23.7	19.3	17.6	17.4	17.8	24.2	66.6	67.4	66.8	131	159	40.0	54.6
1944	46.9	65.1	6.79	7.28	4.01	8.55	64.4	169	217	139	62.5	5.33	66.4
1945	42.6	70.9	10.7	5.21	4.21	6.81	30.3	44.3	50.1	163	394	55.3	73.0
1946	51.1	39.2	21.2	16.1	17.0	30.9	65.8	70.6	117	156	73.3	22.7	57.0
1947	4.00	29.7	23.7	19.1	11.7	47.4	91.8	58.5	253	356	255	123	107
1948	82.1	40.8	21.4	16.9	23.6	33.3	315	315	378	185	115	28.0	129
1949	32.9	26.4	14.9	17.9	18.2	36.0	94.2	112	614	610	155	74.7	151
1950	80.5	65.5	25.5	13.1	18.4	45.0	58.1	49.4	85.5	123	26.9	13.5	48.7

* Not previously published; estimated on basis of normal seasonal flow pattern.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	3,950	1,190	615	123	1,670	2,460	2,040	2,420	7,440	8,360	24,900	17,100	72,300
1931	13,600	1,970	922	492	278	2,150	4,640	2,440	4,650	2,930	2,040	440	36,600
1932	4,230	9,100	455	246	288	1,130	6,780	2,900	6,780	7,070	6,890	2,190	48,100
1933	1,820	422	221	92	56	184	1,820	488	9,760	7,190	4,370	4,020	30,400
1934	972	1,230	504	246	78	1,000	547	5,300	3,550	3,170	4,240	1,650	22,490
1935	1,320	1,340	301	123	111	1,400	9,800	1,460	6,980	14,300	11,870	5,200	54,200
1936	3,050	2,300	615	553	495	498	2,590	9,690	12,870	11,750	15,910	3,900	64,120
1937	5,450	2,590	821	553	492	498	2,690	5,280	1,410	2,040	3,260	1,780	25,660
1938	1,970	877	1,070	875	956	2,160	4,380	1,150	1,290	1,670	3,050	3,000	22,430
1939	4,850	593	430	430	389	430	421	7,920	3,230	5,580	3,330	777	28,580
1940	318	134	135	327	536	615	1,120	1,710	1,650	1,040	907	1,770	10,270
1941	130	387	228	398	417	653	9,230	4,480	18,780	12,440	9,770	4,300	61,190
1942	6,640	1,390	1,140	787	487	807	15,090	7,190	14,790	11,760	10,590	2,690	75,380
1943	1,450	1,150	1,080	1,070	990	1,490	3,960	4,140	3,970	8,060	9,800	2,380	39,550
1944	2,680	3,870	417	447	231	525	3,830	10,360	12,940	8,530	3,840	317	48,210
1945	2,620	4,220	658	320	234	419	1,800	2,730	2,980	10,010	24,200	3,290	53,480
1946	3,140	2,330	1,310	988	946	1,900	3,920	4,340	6,960	9,560	4,510	1,350	41,250
1947	246	1,770	1,460	1,170	650	2,910	5,460	3,620	15,080	21,920	15,680	7,320	77,290
1948	5,050	2,430	1,320	1,040	1,360	2,040	18,770	19,360	22,520	11,380	7,090	1,660	94,020
1949	2,030	1,570	918	1,100	1,010	2,210	5,610	6,860	36,540	37,520	9,550	4,450	109,400
1950	5,720	3,900	1,570	805	1,020	2,640	3,460	3,040	5,090	7,580	1,650	789	35,260

* Not previously published; estimated on basis of normal seasonal flow pattern.

Yearly discharge, in cubic feet per second, of South Platte River near Lake George, Colo.							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1930	701	990	Aug. 15, 1930	0	99.8	72,300	115
1931	716	357	Oct. 7, 1930	0	50.5	36,600	46.7
1932	731	306	Apr. 25, 1932	-	66.2	48,100	50.6
1933	746	592	June 13, 1933	-	42.1	30,400	42.4
1934	761	249	May 23, 24, 1934	-	31.0	22,490	31.4
1935	786	*633	July 22, 1935	2.0	74.9	54,200	*79.0
1936	806	744	Aug. 6, 1936	0	*88.3	*64,120	*92.0
1937	826	287	May 26, 27, 1937	4.4	36.8	26,680	30.3
1938	856	624	Sept. 3, 1938	3.4	31.0	22,430	33.7
1939	876	584	June 1, 1939	3.1	39.5	28,580	32.2
1940	896	169	May 18, 1940	1.9	14.1	10,270	14.3
1941	926	518	June 27, 1941	.8	84.5	61,190	96.2
1942	956	670	Apr. 15, 1942	8.0	101	73,360	93.7
1943	976	206	Aug. 11, 1943	14	54.6	39,550	59.4
1944	1006	328	June 2, 1944	1.6	66.4	48,210	66.9
1945	1036	740	Aug. 7, 1945	1.2	73.9	53,480	72.9
1946	1056	508	June 11, 1946	4.8	57.0	41,250	52.4
1947	1086	568	June 24, 1947	2.2	107	77,290	114
1948	1116	716	Apr. 22, 1948	12	129	94,020	124
1949	1146	954	June 20, 1949	12	151	109,400	158
1950	1176	303	July 10, 1950	8.5	48.7	35,260	-

* Not previously published.

176. South Platte River at Lake George, Colo. 1/

Location.--Lat 38°59'10", long. 105°21'30", in sec. 19, T. 12 S., R. 71 W., at highway bridge a quarter of a mile downstream from dam at Lake George and 0.6 mile northwest of town of Lake George.

Drainage area.--1,070 sq mi, approximately.

Supplemental records available.--October to December 1910, gage heights and discharge measurements only.

Gage.--Water-stage recorder or staff gages within 600 ft of described site at same datum. Altitude of gage is 7,880 ft (from topographic map).

Average discharge.--18 years (1911-29), 114 cfs.

Extremes.--1911-29: Maximum discharge estimated, 7,000 cfs July 17, 1923, caused by failure of dam at Lake George; no flow May 1, 2, 1917.

Remarks.--Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1916-29, not previously published by Geological Survey, furnished by State engineer of Colorado except those for winter periods, which were estimated by Geological Survey.

Monthly and yearly mean discharge in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1911	-	-	-	2.0	4.0	28.0	24.0	12.5	156	331	115	59.4
1912	33.8	25.0	7.0	1.0	1.50	13.1	39.3	31.5	255	493	132	89.9
1913	a49	a44	a32	a21	a17	a18	a80	a115	152	223	265	a106
1914	62.9	35.8	26.0	b10	a25	73.0	173	282	605	b617	531	b221
1915	a174	a101	b30	b25	a25	a27	a145	a110	a222	133	215	b109
1916	190	a45	a20	a13	a15	a74.8	c57.9	c94.7	c154	d220	c219	c107
1917	c211	b34.9	b15	a10	a20	a25	a76.8	c57.6	c168	c294	c268	b109
1918	c33.2	c22.5	a25	a15	a25	a43.9	c43.7	c24.1	c388	c207	c112	a85.9
1919	c61.9	c63.6	b30	b20	b30	c312	c186	c191	c285	272	c128	a138
1920	c59.5	c56.4	b45	b20	b50	b35	c75.5	c111	c134	c183	c256	b90.2
1921	c211	c57.8	a28	a30	a30	c70.7	c91.7	c72.1	c516	c413	c332	a171
1922	c126	c101	a39	a47	a57	a56	c60.3	c57.8	c62.7	c27.1	c98.1	a64.5
1923	c131	c112	c20.3	c13.9	c7.18	c18.3	c118	c135	c187	c394	c403	c149
1924	c153	c107	a67	a48	a40	a35	c206	c129	c182	c197	c132	a110
1925	c27.4	c27.3	a23	a25	a22	b61.0	c27.7	c118	c213	*257	c149	b90.1
1926	c71.9	c40	a18	a15	a17	a26.0	c99.5	c130	*213	*246	c172	b91.7
1927	c17.5	c44.9	a16	a16	a20	b50.0	c64.2	c36.5	c141	c203	c226	b89.3
1928	c34.8	d27	a11	a17	a17	a22	c21.3	c95.8	c136	c308	c290	a85.8
1929	c12.3	c29.5	d20	d10	d6.0	d20	c47.9	c34.0	c244	c484	c495	d137

* Revised; supersedes figure previously published by State engineer of Colorado

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d Sess., Platte River.

c From reports of State engineer of Colorado.

d Not previously published; estimated on basis of records for stations on nearby streams and adjacent flow pattern.

1/ Published as South Fork South Platte River at Lake George, 1911-13 and 1916-29.

Monthly and yearly runoff in acre-feet of South Platte River at Lake George, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	123	222	1,720	1,430	769	9,280	20,400	6,950	3,530	-
1912	2,080	1,490	430	61	29	805	2,340	1,940	15,200	30,300	8,120	2,460	65,300
1913	a3,010	a2,620	a1,960	a1,290	a942	a1,110	a4,750	a7,060	9,040	13,700	16,300	14,600	a76,500
1914	3,870	2,130	1,800	b615	a1,380	4,490	10,300	17,300	36,000	37,900	32,600	12,100	b160,000
1915	a10,700	a6,000	b1,840	b1,540	a1,380	a1,660	a8,610	a6,760	a13,200	8,180	13,200	5,950	b79,000
1916	11,700	a2,670	a1,230	a798	a860	a4,600	c3,440	c5,820	c9,160	a13,500	c13,500	c10,400	d77,700
1917	a13,000	b2,080	b922	a514	a1,110	a1,540	a4,570	c3,540	c10,000	b18,100	c16,500	c7,200	b79,200
1918	c2,040	c1,340	a1,540	a921	a1,380	a2,700	c2,600	c1,480	c23,100	b12,700	c6,890	c5,530	a62,200
1919	c3,810	c3,780	b1,840	b1,230	b1,110	b4,920	c18,600	c11,600	c11,400	b17,500	c16,700	c7,620	a100,000
1920	c3,660	c3,360	b2,770	b1,230	b1,720	b2,150	c4,490	c6,820	c7,970	c11,300	c15,700	c4,300	b65,500
1921	a13,000	c3,440	a1,720	a1,840	a1,660	c4,350	c5,460	c4,430	c30,700	c25,400	c20,400	c11,400	a124,000
1922	c7,750	c6,010	a2,400	a3,880	a3,180	a3,440	c3,590	c3,550	c5,740	c1,670	c6,030	c2,480	a46,700
1923	c8,060	c6,660	c1,250	c855	c399	c1,130	c7,020	c8,300	c11,100	c24,200	c24,800	c14,200	c108,000
1924	c9,410	c6,370	a4,120	a2,940	a2,300	a2,150	c17,300	c7,930	c10,800	b12,100	c8,120	c1,050	a78,600
1925	c1,680	c1,620	c1,410	c1,540	c1,220	b3,750	c1,650	c7,260	c12,700	c15,800	c9,160	c7,440	b65,200
1926	c4,420	c2,380	a1,110	a921	a943	a1,600	c5,920	c7,990	*12,700	*15,100	c10,600	c2,690	b66,400
1927	c1,080	c2,670	a982	a982	a1,110	b3,080	c3,820	c2,240	c8,390	c12,500	c13,900	c13,900	b64,700
1928	c2,140	a1,600	a675	a1,040	a978	a1,350	c1,270	c5,890	c8,090	c18,900	c17,800	c2,560	a62,300
1929	c756	c1,760	c1,230	d615	d333	d1,230	c2,850	c2,090	c14,500	c29,800	c30,400	c13,700	d99,300

* Revised; supersedes figure previously published by State engineer of Colorado.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado.

d Not previously published; see footnote d to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	326	-	-	-	-	-	66.3	48,400
1912	326	-	-	-	89.9	65,300	a94.8	a69,800
1913	356	b697	July 24, 1913	-	a106	a76,500	a106	a76,500
1914	386	3,000	June 17, 1914	-	c221	c160,000	c236	c171,000
1915	406	*510	Aug. 9, 1915	-	c109	c79,000	c105	c76,100
1916	(d)	-	-	-	*107	*77,700	*108	*78,100
1917	(d)	*b681	July 27, 1917	0	c109	c79,200	a94.1	a69,100
1918	(d)	-	-	-	a85.9	a62,200	c92.2	c66,700
1919	(d)	-	-	-	a136	a100,000	a139	a100,000
1920	(d)	*b1,230	July 27, 1920	-	c90.2	c65,500	c102	c73,800
1921	(d)	*b1,280	June 16, 1921	5.0	a171	a124,000	a168	a122,000
1922	(d)	-	-	4.0	a64.5	a46,700	a64.2	a46,500
1923	(d)	*7,000	July 17, 1923	6.0	d149	d108,000	a155	a112,000
1924	(d)	-	-	11	a110	a79,600	a88.7	a64,400
1925	(d)	-	-	11	c90.1	c65,200	c94.5	c66,400
1926	(d)	-	-	-	c91.7	c66,400	c97.3	c63,200
1927	(d)	-	-	-	c89.3	c64,700	c88.9	c64,300
1928	(d)	-	-	-	a85.8	a62,300	*84.9	*61,600
1929	(d)	-	-	-	*137	*99,300	-	-

* Not previously published.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Observed.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Colorado.

177. Boreas Pass ditch at Boreas Pass, Colo.

(Transmountain diversion)

Location.--Lat 39°24'40", long. 105°58'05", in sec. 26, T. 7 S., R. 77 W., at Boreas Pass.Gage.--Water-stage recorder and 3-ft Parshall flume since June 15, 1933. Altitude of gage is 11,480 ft (from topographic map).Remarks.--Diversion is from tributaries of Blue River between headgate in sec. 26, T. 7 S., R. 77 W., and Boreas Pass, in Colorado River basin, to Tarryall Creek in sec. 26, T. 7 S., R. 77 W., in Platte River basin. Ditch was first put into use about 1909.Cooperation.--Records furnished by State engineer of Colorado; those prior to 1948 not previously published by Geological Survey.

PLATTE RIVER BASIN

Monthly and yearly diversion in acre-feet, of Boreas Pass Ditch at Boreas Pass, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	a0	a0	a0	a0	a0	a0	a0	a0	a84	a145	a60	a0	a289
1934	a0	a0	a0	a0	a0	a0	a0	a12	a61	a0	a0	a0	a73
1935	a0	a0	a0	a0	a0	a0	a0	a6	a101	a66	a38	a4	a215
1936	a0	a0	a0	a0	a0	a0	a0	a83	a163	a85	a96	a3	a430
1937	a0	a0	a0	a0	a0	a0	a0	a49	a64	a34	a2	a0	b149
1938	a0	a0	a0	a0	a0	a0	a0	a0	a142	a123	a10	a0	b275
1939	a0	a0	a0	a0	a0	a0	a0	a0	a0	a25	a6	a0	b31
1940	a0	a0	a0	a0	a0	a0	a0	a6	a106	a57	a2	a0	*171
1941	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1943	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1944	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1945	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1946	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1947	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	53	16	0	0	69

* Revised; differs from figure published in report of State engineer.

a Files of State engineer of Colorado.

b Reports of State engineer of Colorado.

178. Tarryall Creek near Jefferson, Colo.

Location.--Lat 39°18', long. 105°42', in sec. 6, T. 9 S., R. 74 W., half a mile upstream from Rock Creek and 7 miles (revised) southeast of Jefferson.

Drainage area.--223 sq mi.

Supplemental records available.--October 1910 to June 1911, gage heights and discharge measurements only.

Gage.--Staff gage at described site after Apr. 21, 1916. Altitude of gage is 9,050 ft (from nearby level line). Prior to Apr. 22, 1916, at site 60 ft downstream at same datum.

Average discharge.--5 years (1912-17), 51.4 cfs.

Extremes.--1912-17: Maximum discharge observed, 1,320 cfs July 9, 1917 (gage height, 4.1 ft), from rating curve extended above 210 cfs; minimum discharge not determined.

Remarks.--Boreas Pass ditch (see elsewhere in this report) imports water from headwaters of the Blue River to Tarryall Creek above station. Natural flow also affected by diversions above station for irrigation of about 11,500 acres.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	193	88.6	43.7	-
1913	31.0	24.1	†17.8	†10	†10	†20	†91.5	42.8	150	76.2	46.4	49.6	†47.4
1914	36.6	28.8	†14.6	†15	†13	†25	112	168	214	210	135	39.3	†84.6
1915	33.0	23.3	†10	†8.0	†7.0	†10	†51.1	34.0	122	42.2	39.7	29.9	†34.1
1916	29.2	22.3	†15.0	†10	†10	†22.7	23.3	24.8	45.4	61.3	87.5	31.8	†32.1
1917	28.1	†21.6	†15	†12	†10	†10	†59.8	56.8	139	216	112	20.6	†58.8
1918	†5.99	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.

‡ Not previously published; estimated on basis of records for Geneva Creek at Grant.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1912	-	-	-	-	-	-	-	-	-	11,900	5,450	2,600	-
1913	1,910	1,430	†1,090	†615	†555	†1,230	†5,440	2,630	8,930	4,690	2,850	2,950	†34,300
1914	2,250	1,710	†898	†922	†722	†1,540	6,660	10,300	12,700	12,900	8,300	2,340	†61,200
1915	2,030	1,390	†615	†492	†368	†615	†3,040	2,090	7,260	2,590	2,380	1,780	†24,700
1916	1,800	1,330	†922	†615	†575	†1,400	1,390	1,510	2,700	3,770	5,380	1,890	†23,300
1917	1,730	†1,290	†922	†738	†555	†615	†3,560	3,490	8,270	13,300	6,890	1,230	†42,600
1918	†368	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected

‡ Not previously published; estimated on basis of records for Geneva Creek at Grant.

Yearly discharge, in cubic feet per second of Tarryall Creek near Jefferson, Colorado

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1912	326	\$580	July 24, 1912	-	-	-	-	-
1913	356	\$545	June 10, 1913	-	\$47.4	\$34,300	\$48.0	\$34,700
1914	386	\$760	June 15, 1914	-	\$84.6	\$61,200	\$85.5	\$60,400
1915	406	580	June 4, 1915	-	\$34.1	\$24,700	\$34.1	\$24,700
1916	436	425	July 31, 1916	1.0	\$32.1	\$23,300	\$31.9	\$23,200
1917	456	1,320	July 9, 1917	-	\$58.8	\$42,600	-	-

* Not previously published.

179. Rock Creek near Jefferson, Colo.

Location.--Lat 39°17', long. 105°42', in sec. 5, T. 9 S., R. 74 W., a quarter of a mile upstream from mouth and 8 miles (revised) southeast of Jefferson.

Drainage area.--44 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 9,040 ft.

Extremes.--June to August 1916: Maximum discharge observed. 27.8 cfs Aug. 4 (gage height, 1.10 ft) from rating curve extended above 2.0 cfs; minimum daily 0.4 cfs June 22, 23, 28, 29.

Remarks.--Diversions above station for irrigation.

Cooperation.--Records furnished by Van Sant-Houghton Co., engineers, of Denver.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	89.3	208	-	-	-

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	1.50	3.39	-	-	-

180. Tarryall Creek near Lake George, Colo.1/

Location (revised).--Lat 39°04'30", long. 105°24'30", in sec. 23, T. 11 S., R. 72 W., $\frac{5}{8}$ miles upstream from mouth and 8 miles northwest of town of Lake George.

Drainage area.--460 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 8,250 ft (from topographic map). Prior to June 19, 1916, staff gage, and June 19 to Oct. 26, 1916, water-stage recorder at site 250 ft downstream at different datum. Apr. 1, 1925, to Nov. 7, 1940, water-stage recorder at site 250 ft downstream at present datum.

Extremes.--1910-12, 1916, 1925-50: Maximum discharge recorded, 1,030 cfs Apr. 21, 1948 (gage height, 6.08 ft, from floodmark); no flow Feb. 23, 1944, and probably at other times during winter periods of no gage-height record.

Remarks.--Transmountain diversion from Colorado River basin through Boreas Pass ditch which enters above station (see elsewhere in this report). Diversions above station for irrigation of about 13,000 acres.

Cooperation.--Records for 1916, 1925-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	\$8.0	\$12	\$6.0	-	-	-	-	-	-	\$11.0	\$30	\$14	-
1912	\$23	-	-	-	-	-	\$70	\$35	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	a31.5	a65	a165	a36	-
1917	a31	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	b27.5	b41.5	b48.7	b27.4	b65.1	b60.8	-

* Not previously published; estimated on basis of discharge measurements, intermittent daily discharges, and weather records.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

1/ Published as "near Hayman", 1910-12.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second
of Tarryall Creek near Lake George, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	b60	b30	-	-	-	-	b130	b170	b180	b154	b77.0	b23.8	-
1927	b18.5	b18.9	-	-	-	-	b128	b71.4	b105	b69.2	b81.8	b33.0	-
1928	b35.4	-	-	-	-	-	b31.9	b98.9	b146	b83.6	b57.1	b41.6	-
1929	b14.2	b19.4	-	-	-	-	b45.0	b17.4	b27.0	b74.3	b177	b105	-
1930	b39.9	-	-	-	-	-	b81.8	b46.1	b97.2	b111	b235	b78.5	-
1931	b51.4	-	-	-	-	-	b44	b93.5	b99.3	b45.5	b30.6	b16.5	-
1932	b13.0	b16.0	-	-	-	-	b41.5	b41.7	b75.8	b66.9	b59.1	b19.8	-
1933	b20.6	b29.7	-	-	-	-	-	b155	b150	b64.8	b59.3	b39.9	-
1934	16.7	18.1	-	-	-	-	29.7	40.5	27.7	12.4	25.6	13.9	-
1935	12.5	10.8	-	-	-	-	19.8	31.1	30.3	84.4	71.8	36.5	-
1936	26.6	26.5	-	-	-	-	53.2	97.8	165	91.7	262	46.9	-
1937	36.3	35.0	-	-	-	-	-	51.9	47.0	50.0	31.3	21.2	-
1938	18.2	-	-	-	-	-	57.2	56.0	164	66.5	71.8	126	-
1939	66.5	-	-	-	-	-	64.1	101	97.4	27.7	17.5	7.25	-
1940	5.27	-	-	-	-	-	12.1	20.9	34.9	6.30	11.3	15.8	-
1941	9.97	7.29	-	-	-	-	63.4	83.3	160	62.9	69.1	37.6	-
1942	50.4	-	-	-	-	-	-	136	172	76.3	73.6	20.8	-
1943	10.5	-	-	-	-	-	63.5	27.2	36.5	30.5	55.4	14.9	-
1944	12.7	8.13	5	3	2	4	30.3	63.9	76.0	63.5	21.0	9.96	25.0
1945	12.4	-	-	-	-	-	-	34.5	40.3	112	257	47.1	-
1946	38.3	39.5	-	-	-	-	38.7	41.4	56.4	28.6	29.9	20.5	-
1947	16.0	30.6	-	-	-	-	71.4	129	260	169	119	66.8	-
1948	65.2	46.5	-	-	-	-	307	225	239	90.8	66.3	34.9	-
1949	19.0	-	-	-	-	-	53.3	57.7	386	215	61.6	28.8	-
1950	37.8	22.0	*12	*9.0	*10	*12	*28	31.5	58.8	44.0	18.0	7.48	*24.3

* Not previously published; estimated on basis of discharge measurements, intermittent daily discharges, and weather records.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-ft

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	*492	*714	*360	-	-	-	-	-	-	*6,760	*1,840	*833	-
1912	*1,410	-	-	-	-	-	*4,170	*2,150	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	a1,870	a4,000	a10,100	a2,140	-
1917	a1,910	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	b1,640	b2,550	b2,900	b1,680	b4,000	b3,620	-
1926	b3,690	b1,790	-	-	-	-	b7,740	b10,500	b11,900	b9,470	b4,730	b1,420	-
1927	b1,140	b1,120	-	-	-	-	b7,620	b4,390	b6,250	b4,250	b5,030	b1,960	-
1928	b2,180	-	-	-	-	-	b1,900	b6,080	b6,690	b5,140	b3,510	b2,480	-
1929	b873	b1,150	-	-	-	-	b2,680	b1,070	b1,610	b4,570	b10,900	b6,250	-
1930	b2,450	-	-	-	-	-	b4,870	b2,630	b5,780	b6,820	b14,400	b4,670	-
1931	b3,160	-	-	-	-	-	b2,620	b5,750	b5,910	b2,800	b1,880	b982	-
1932	b799	b952	-	-	-	-	b2,470	b2,560	b4,510	b4,110	b3,630	b1,180	-
1933	b1,270	b1,770	-	-	-	-	-	b8,300	b8,930	b3,980	b3,650	b2,370	-
1934	1,030	1,080	-	-	-	-	1,770	2,490	1,650	762	1,570	827	-
1935	770	641	-	-	-	-	1,180	1,910	1,800	5,190	4,420	2,170	-
1936	1,640	1,580	-	-	-	-	3,170	6,010	9,810	5,640	16,140	2,790	-
1937	2,230	2,080	-	-	-	-	-	3,190	2,800	3,080	1,920	1,260	-
1938	1,120	-	-	-	-	-	3,400	3,440	9,770	4,090	4,420	7,490	-
1939	4,090	-	-	-	-	-	3,820	6,220	5,800	1,700	1,080	432	-
1940	324	-	-	-	-	-	721	1,290	2,080	387	697	941	-
1941	613	434	-	-	-	-	3,770	5,120	9,500	3,870	4,250	2,240	-
1942	3,100	-	-	-	-	-	-	8,380	10,240	4,690	4,530	1,240	-
1943	648	-	-	-	-	-	3,780	1,680	2,170	1,880	3,410	889	-
1944	780	484	307	184	115	246	1,800	3,930	4,520	3,900	1,290	593	18,150
1945	762	-	-	-	-	-	-	2,120	2,400	6,870	15,910	2,600	-
1946	2,350	2,350	-	-	-	-	2,300	2,550	3,360	1,760	1,840	1,220	-
1947	984	1,820	-	-	-	-	4,250	7,950	15,450	10,360	7,340	3,970	-
1948	4,010	2,770	-	-	-	-	18,270	13,830	14,220	5,580	4,080	2,080	-
1949	1,170	-	-	-	-	-	3,170	3,550	22,950	13,220	3,790	1,710	-
1950	2,330	1,310	*738	*553	*555	*738	*1,670	1,940	3,500	2,710	1,110	445	*17,600

* Not previously published; see footnote to preceding table.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1910	326	-	-	-	-	-	-	-
1911	326	-	-	-	-	-	-	-
1912	326	-	-	-	-	-	-	-
1916	(a)	-	-	-	-	-	-	-
1925	(b)	*318	Aug. 28, 1925	-	-	-	-	-

* Not previously published.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Tarryall Creek
near Lake George, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(b)	*569	July 5, 1926	-	-	-	-	-
1927	(b)	*415	Aug. 10, 1927	-	-	-	-	-
1928	(b)	*378	June 4, 1928	-	-	-	-	-
1929	(b)	*655	July 29, 1929	-	-	-	-	-
1930	(b)	*567	July 30, 1930	-	-	-	-	-
1931	(b)	*249	May 23, 1931	b6.0	-	-	-	-
1932	(b)	*322	July 30, 1932	-	-	-	-	-
1933	(b)	*349	Sept. 11, 1933	-	-	-	-	-
1934	761	269	Aug. 15, 1934	3.0	-	-	-	-
1935	786, 806	643	July 31, 1935	4.0	-	-	-	-
1936	806	640	Aug. 1, 1936	5.9	-	-	-	-
1937	826	460	June 27, 1937	5.2	-	-	-	-
1938	836	383	Sept. 14, 1938	-	-	-	-	-
1939	876	330	June 1, 1939	2.6	-	-	-	-
1940	896	346	July 3, 1940	.8	-	-	-	-
1941	926, 956	417	June 5, 1941	-	-	-	-	-
1942	956	*475	June 9, 1942*	-	-	-	-	-
1943	976	131	June 30, 1943	-	-	-	-	-
1944	1006	239	July 4, 1944	0	25.0	18,150	-	-
1945	1036	685	Aug. 5, 1945	-	-	-	-	-
1946	1056	212	July 29, 1946	-	-	-	-	-
1947	1086	721	June 23, 1947	6.8	-	-	-	-
1948	1116	1,030	Apr. 21, 1948	8.1	-	-	-	-
1949	1146	618	June 12, 1949	-	-	-	-	-
1950	1176	601	July 10, 1950	-	*24.3	*17,600	-	-

* Revised.

† Not previously published.

b From reports of State engineer of Colorado.

181. South Platte River above Cheesman Lake, Colo.1/

Location.--Lat 39°09', long. 105°19', in sec. 22, T. 10 S., R. 71 W., 0.5 mile upstream from high-water line of Cheesman Lake.

Drainage area.--1,680 sq mi approximately.

Gage.--Water-stage recorder and compound rectangular weir. Datum of gage is 6,845.86 ft above mean sea level, adjustment of 1912. July 31, 1899, to Dec. 31, 1901, staff gage at site within 5 miles downstream at different datum.

Average discharge.--11 years (1899-1901, 1924-30, 1934, 1939-41), 142 cfs.

Extremes.--1899-1901, 1924-43: Maximum discharge, 3,030 cfs Aug. 6, 1936 (gage height 5.30 ft), from rating curve extended above 200 cfs on basis of weir tables; minimum daily, 3 cfs Jan. 9, 12, 1925, but may have been less during periods of no gage-height record.

Remarks.--Diversions above station for irrigation of about 39,000 acres. Flow partly regulated by Elevenmile Canyon Reservoir since 1932 (see elsewhere in this report) and Antero Reservoir (capacity 22,300 acre-ft) since 1907.

Cooperation.--Records for 1925-33, not previously published by Geological Survey, furnished by State Engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	321	136	-
1900	30	118	63	26	27	80	254	1,040	1,200	208	88	79	272
1901	84	69	33	14	15	67	198	341	260	92	342	166	141
1902	99	104	88	-	-	-	-	-	-	-	-	-	-
1925	a59.7	a40.9	a14.1	a5.13	a6.46	a60.5	a58.5	a156	a267	a290	a227	a197	a116
1926	a132	a71.5	a30.7	a14.2	a14.8	a58.3	a253	a317	a442	a365	a232	a74.7	a168
1927	a42.7	a44.4	a38.2	a20.1	a15.1	a64.4	a171	a101	a230	a268	a308	a287	a133
1928	a72.2	a43.2	a22.8	a11.5	a15.5	a58.6	a64.1	a209	a295	a371	a324	a91.5	a132
1929	a62.0	a63.6	a31.1	a26.4	a28.3	a51.3	a102	a91.3	a273	a509	a750	a391	a199
1930	a105	a71.7	a45.5	a15.2	a35.0	a73.7	a155	a94.5	a222	a240	a765	a444	a190
1931	a297	-	-	-	-	-	-	a236	a222	a139	a102	a35.5	-
1932	a110	-	-	-	-	-	-	a111	a204	a216	a198	a67.5	-
1933	a40.6	-	-	-	-	-	-	a226	a305	a171	a127	a107	-
1934	32.1	25	9.0	5.0	8.0	16.0	40.0	112	89.0	56.9	97.5	40.5	44.5
1935	26.6	30.9	-	-	-	-	172	88.3	148	276	152	59.2	-

a From reports of State engineer of Colorado.

1/ Published as South Fork South Platte River above Lake Cheesman by State engineer during 1925-33, South Fork South Platte River at Lake Cheesman, 1899, "below Lake Cheesman", 1900, and South Fork South Platte River at Cheesman, 1901.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second of South Platte River
above Cheesman Lake, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	39.5	-	-	-	-	-	97.1	310	442	325	639	145	-
1937	159	107	-	-	-	-	105	152	88.7	88.6	89.2	62.5	-
1938	45.5	-	-	-	-	-	183	134	215	115	134	244	-
1939	165	-	-	-	-	-	-	280	194	126	83.7	19.7	-
1940	13.5	9.43	2.8	4.2	4.8	37.3	45.9	74.4	67.9	28.8	25.0	59.1	31.1
1941	13.9	13.4	10	12	15	30	236	184	550	268	237	104	139
1942	168	-	-	-	-	20.2	611	571	497	277	282	96.8	-
1943	57.6	-	-	-	-	-	-	87.6	78.3	118	140	47.6	-

Monthly and yearly runoff, in acre feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	19,700	8,090	-
1900	4,920	7,020	3,870	1,600	1,500	4,920	15,100	63,800	71,600	12,800	5,410	4,700	197,000
1901	5,160	4,110	2,030	861	833	4,120	11,800	21,000	15,500	5,660	21,000	9,880	102,000
1902	6,090	6,190	5,410	-	-	-	-	-	-	-	-	-	-
1925	a3,670	a2,430	a867	a315	a358	a3,720	a3,480	a9,590	a15,900	a17,800	a14,000	a11,700	a83,800
1926	a8,120	a4,250	a1,890	a873	a822	a3,580	a15,100	a19,500	a26,300	a22,400	a14,300	a4,440	a122,000
1927	a2,630	a2,640	a2,350	a1,240	a835	a3,960	a10,200	a5,210	a13,700	a16,500	a19,900	a17,100	a96,300
1928	a4,440	a2,570	a1,400	a707	a892	a3,600	a3,810	a12,900	a17,600	a22,800	a19,900	a5,440	a96,100
1929	a3,810	a3,780	a1,910	a1,620	a1,570	a3,150	a6,070	a5,610	a16,200	a31,300	a46,100	a23,300	a144,000
1930	a6,460	a4,270	a2,800	a935	a1,940	a4,530	a9,220	a5,810	a13,200	a14,800	a47,000	a26,400	a137,000
1931	a18,300	-	-	-	-	-	-	a14,500	a13,200	a8,550	a6,270	a2,110	-
1932	a6,760	-	-	-	-	-	-	a6,820	a12,100	a13,300	a12,200	a4,020	-
1933	a2,500	-	-	-	-	-	-	a13,900	a18,100	a10,500	a7,810	a6,370	-
1934	1,970	1,490	553	307	444	984	2,380	6,980	5,300	3,500	6,000	2,410	32,230
1935	1,640	1,640	-	-	-	-	10,210	5,430	8,830	16,970	9,360	3,520	-
1936	2,430	-	-	-	-	-	5,780	19,080	26,330	19,960	39,310	8,630	-
1937	9,760	6,380	-	-	-	-	6,240	9,320	5,280	5,450	5,480	3,720	-
1938	2,800	-	-	-	-	-	10,900	8,270	12,800	7,080	8,230	14,500	-
1939	10,140	-	-	-	-	-	17,190	11,560	7,750	5,150	1,170	-	-
1940	850	561	172	258	276	2,290	2,730	4,570	4,040	1,770	1,540	3,520	22,560
1941	857	797	615	738	833	1,840	14,050	11,310	32,730	16,470	14,580	6,180	101,000
1942	10,310	-	-	-	-	1,240	36,340	35,090	29,600	17,000	17,330	5,760	-
1943	3,540	-	-	-	-	-	-	5,390	4,660	7,230	8,610	2,830	-

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1899	(a)	-	-	-	-	-	-
1900	(b)	-	-	-	272	197,000	266
1901	66	-	-	-	141	102,000	150
1925	(c)	*d550	July 23, 1925	c3	c116	c83,800	c126
1926	(c)	*d960	July 5, 1926	c9	c168	c122,000	c159
1927	(c)	*838	Aug. 11, 1927	c11	c133	c96,300	c134
1928	(c)	*d1,200	July 31, 1928	c9	c132	c96,100	c134
1929	(c)	*d1,470	Aug. 8, 1929	c20	c199	c144,000	c205
1930	(c)	*d1,790	Aug. 16, 1930*	c5	c190	c137,000	-
1931	(c)	*500	July 2, 1931	-	-	-	-
1932	(c)	*530	July 31, 1932	-	-	-	-
1933	(c)	*840	June 13, 1933	-	-	-	-
1934	761	405	July 25, 1934	-	44.5	32,230	-
1935	786	1,100	Aug. 1, 1935	-	-	-	-
1936	806	3,030	Aug. 6, 1936	-	-	-	-
1937	826	572	June 27, 1937	-	-	-	-
1938	856	965	Aug. 28, 1938	-	-	-	-
1939	873	768	June 2, 1939	-	-	-	-
1940	896	329	May 19, 1940	-	31.1	22,560	32.1
1941	926	978	June 5, 1941	-	139	101,000	-
1942	956	e1,580	Apr. 23, 1942	-	-	-	-
1943	976	558	July 21, 1943	-	-	-	-

* Revised; supersedes figure previously published in reports of State engineer of Colorado.

† Not previously published.

a 21st Ann. Rept., Pt. 4.

b 22nd Ann. Rept., Pt. 4.

c From reports of State engineer of Colorado.

d Estimated.

e Observed.

182. Goose Creek above Cheesman Lake, Colo. 1/
(Known also as Lost Park Creek)

Location.--Lat 39°12', long. 105°19', in sec. 3, T. 10 S., R. 71 W., 1 mile upstream from high-water line of Cheesman Lake.

Drainage area.--86 sq mi, approximately.

Gage.--Water-stage recorder and compound rectangular weir. Altitude of gage is 6,900 ft (from topographic map). Aug. 1 to Dec. 31, 1899, staff gage about 2 miles downstream at different datum.

Average discharge.--13 years (1924-30, 1936, 1939-41, 1943-47), 28.7 cfs.

Extremes.--1924-50: Maximum discharge, 464 cfs May 30, 1942 (gage height, 4.57 ft), from rating curve extended above 75 cfs on basis of weir formula; minimum daily, 1.0 cfs Jan. 6, 1930, but may have been less during periods of no gage-height record.

Remarks.--Diversion for irrigation of about 100 acres above station.

Cooperation.--Records for 1925-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	53	14	-
1900	10	10	8	-	-	-	-	-	-	-	-	-	-
1925	a14.3	a12.5	a6.71	a2.35	a3.14	a12.6	a13.7	a10.9	a8.20	a15.5	a46.3	a32.5	a15.0
1926	a21.8	a13.9	a9.87	a7.10	a7.39	a11.5	a49.1	a196	a145	a58.0	a28.2	a12.5	a47.0
1927	a9.35	a9.93	a7.90	a4.42	a5.89	a11.3	a31.4	a41.5	a25.2	a14.7	a19.2	a13.2	a16.1
1928	a12.8	a10.3	a4.74	a4.61	a5.41	a18.1	a25.0	a96.8	a89.0	a34.2	a24.0	a10.0	a27.9
1929	a1.9	a8.83	a8.16	a7.16	a7.0	a12.5	a21.6	a42.1	a20.1	a17.7	a92.0	a56.2	a26.6
1930	a25.1	a12.5	a7.19	a5.16	a5.25	a11.1	a59.5	a47.0	a45.1	a43.4	a135	a41.0	a35.0
1931	+22.3	-	-	-	-	-	-	a85.4	a87.1	a32.1	a21.2	a12.4	-
1932	a10.7	-	-	-	-	-	-	a34.9	a18.3	a13.4	a17.5	a11.0	-
1933	a14.9	-	-	-	-	-	-	a159	a143	a48.2	a31.6	a35.0	-
1934	18.9	-	-	-	-	-	a59.0	44.2	22.8	14.4	17.0	11.6	-
1935	9.8	11.3	-	-	-	-	16.4	64.4	76.4	41.2	38.4	25.7	-
1936	20.4	13.3	4.2	2.9	3.7	8.52	28.2	48.6	48.7	36.1	71.3	29.0	26.3
1937	26.5	-	-	-	-	-	27.1	27.8	31.3	39.9	23.3	17.5	-
1938	15.1	-	-	-	-	-	54.3	132	100	54.2	50.8	91.5	-
1939	50.3	-	-	-	-	-	55.4	80.2	39.3	17.6	10.8	7.07	-
1940	6.22	5.67	2.2	2.7	4.2	8.26	30.8	30.6	19.8	16.5	9.31	22.2	13.2
1941	20.0	11.5	9	7	6	10	26.9	164	111	55.7	35.7	31.3	40.9
1942	44.8	-	-	-	-	-	-	259	209	62.6	36.4	16.5	-
1943	20.6	-	-	-	-	-	-	49.5	45.7	22.1	22.5	10.2	-
1944	12.2	11.9	10	9	6.5	8	17.7	112	82.4	36.6	14.6	7.46	27.5
1945	7.47	8.94	5.6	4.4	4.6	6.0	15.6	53.8	26.9	44.1	155	39.3	31.2
1946	22.4	14.0	9	8.5	8	10.2	26.9	21.6	16.8	16.2	19.2	19.3	16.0
1947	16.6	15	14	13	14	15	25.3	161	138	93.4	72.1	42.8	52.0
1948	40.7	-	-	-	-	-	59.2	128	86.3	33.8	14.7	10.3	-
1949	10.8	-	-	-	-	-	-	88.6	246	93.1	39.9	14.1	-
1950	12.4	-	-	-	-	-	-	24.4	19.2	18.6	11.9	9.68	-

† Corrected; differs from figure published in report of State engineer of Colorado.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	2,030	833	-
1900	615	595	492	-	-	-	-	-	-	-	-	-	-
1925	a879	a744	a413	a144	a174	a775	a815	a670	a488	a953	a2,850	a1,930	a10,800
1926	a1,340	a827	a607	a437	a410	a707	a2,920	a12,100	a8,630	a3,570	a1,730	a744	a34,000
1927	a575	a591	a486	a272	a216	a695	a1,870	a2,550	a1,560	a904	a1,180	a786	a11,700
1928	a787	a613	a291	a283	a369	a1,110	a1,370	a5,950	a5,300	a2,100	a1,480	a595	a20,200
1929	a732	a525	a502	a440	a389	a769	a1,290	a2,590	a1,200	a1,090	a5,660	a3,340	a18,500
1930	a1,540	a744	a442	a317	a292	a682	a2,350	a2,890	a2,680	a2,670	a6,300	a2,440	a25,300
1931	a1,370	-	-	-	-	-	-	a5,250	a3,990	a1,970	a1,300	a738	-
1932	a658	-	-	-	-	-	-	a2,140	a1,090	a624	a1,080	a654	-
1933	a916	-	-	-	-	-	-	a5,780	a5,310	a2,960	a1,940	a2,060	-
1934	1,160	-	-	-	-	-	a2,320	2,720	1,350	885	1,050	690	-
1935	601	674	-	-	-	-	978	3,960	4,550	2,530	2,360	1,530	-
1936	1,250	793	258	180	214	524	1,680	2,990	2,900	2,220	4,380	1,730	19,120
1937	1,630	-	-	-	-	-	1,610	1,710	1,860	2,450	1,430	1,040	-
1938	926	-	-	-	-	-	3,250	8,150	5,980	3,350	3,120	5,440	-
1939	5,090	-	-	-	-	-	3,290	4,830	2,340	1,080	662	420	-
1940	382	337	135	166	242	508	1,630	1,680	1,180	1,010	572	1,320	9,560
1941	1,230	686	553	430	333	615	1,600	10,070	6,610	3,430	2,200	1,860	29,620
1942	2,760	-	-	-	-	-	-	15,940	12,410	3,850	2,240	980	-
1943	1,270	-	-	-	-	-	-	3,040	2,720	1,380	1,580	608	-
1944	748	707	615	553	374	492	1,050	6,890	4,900	2,250	900	444	19,920
1945	460	532	344	271	255	369	930	3,310	1,600	2,710	9,540	2,340	22,660
1946	1,380	831	553	523	444	629	1,600	1,330	998	998	1,180	1,150	11,620
1947	1,020	893	861	799	778	922	1,510	9,930	8,190	5,740	4,430	2,550	37,620
1948	2,510	-	-	-	-	-	3,520	7,890	5,130	2,080	904	613	-
1949	666	-	-	-	-	-	-	5,450	14,640	5,720	2,480	842	-
1950	760	-	-	-	-	-	-	1,500	1,140	1,140	731	576	-

a From reports of State engineer of Colorado.

1/ Published as "at Lake Cheesman" 1899, 1925-33.

Yearly discharge, in cubic feet per second of Goose Creek above Cheesman Lake, Colo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean Runoff in acre-feet
		Discharge	Date				
1899	(a)	-	-	-	-	-	-
1925	(b)	#110	Sept. 7, 1925	2	b15.0	b10,800	b11,800
1926	(b)	*c360	May 27, 1926	5	b47.0	b54,000	b32,900
1927	(b)	#95	(d)	2	b16.1	b11,700	b11,700
1928	(b)	c211	May 26, 1928	3	b27.9	b20,200	b20,500
1929	(b)	#174	Aug. 10, 1929	7	b25.6	b18,500	b19,500
1930	(b)	*269	Aug. 14, 1930	1	b35.0	b25,300	-
1931	(b)	#147	May 18, 1931	-	-	-	-
1932	(b)	#161	July 29, 1932	-	-	-	-
1933	(b)	*355	May 22, 1933	-	-	-	-
1934	761	155	May 6, 1934	-	-	-	-
1935	786	169	June 15, 1935	-	-	-	-
1936	806	194	Aug. 19, 1936	2	26.3	19,120	-
1937	826	126	June 26, 1937	-	-	-	-
1938	856	217	May 29, 1938	-	-	-	-
1939	876	150	Apr. 29, 1939	-	-	-	-
1940	896	e110	May 21, 1940	-	13.2	9,560	11,180
1941	926	304	May 14, 1941	-	40.9	29,620	-
1942	956	464	May 30, 1942	-	-	-	-
1943	976	106	May 11, 1943	-	-	-	-
1944	1006	217	May 14, 1944	-	27.5	19,920	26.4
1945	1036	331	Aug. 8, 1945	-	31.2	22,660	33.3
1946	1056	74	Aug. 24, 1946	-	16.0	11,620	16.0
1947	1086	242	May 5, 1947	-	52.0	37,620	-
1948	1116	208	May 18, 1948	-	-	-	-
1949	1146	435	June 14, 1949	-	-	-	-
1950	1176	62	May 30, 1950	-	-	-	-

* Revised.

+ Not previously published.

a 21st Ann. Rept., Pt. 4.

b Report of State engineer of Colorado.

c Maximum daily.

d Apr. 28, May 2, 1927.

e Observed.

183. Cheesman Lake near Deckers, Colo. 1/

Location.--Lat 39°13', long. 105°16', at dam on South Platte River in sec. 6, T. 10 S., R. 70 W., 4 miles southwest of Deckers.

Drainage area.--1,766 sq mi.

Gage.--Inclined staff gage. Datum of gage is 6,622.91 ft above mean sea level (datum of Denver Board of Water Commissioners).

Extremes.--1900-1950: Maximum contents observed, 80,820 acre-ft June 23, 1918, and June 7, 1921 (gage height, 214.00 ft); minimum observed since appreciable storage was attained, 3,650 acre-ft Apr. 20, 1933 (gage height, 55.02 ft).

Remarks.--Reservoir is formed by masonry dam. Reservoir was built under supervision of Denver Board of Water Commissioners. Dam was completed about October 1902. Capacity, 79,060 acre-feet between elevations 6,622.91 ft (sill of lowest gate) and 6,834.91 ft (spillway crest). No dead storage; records given herein represent total contents above elevation 6,622.91 ft. Water is used for municipal purposes by city of Denver.

Cooperation.--Records furnished by Denver Board of Water Commissioners; those prior to 1938 not previously published by Geological Survey.

1/ Published as Lake Cheesman prior to 1947.

Contents, in acre-feet, on last day of month of Cheesman Lake near Deckers, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1900	-	-	-	-	-	-	-	-	-	-	-	\$71
1901	\$78	\$50	\$14	\$12	\$19	\$71	\$535	\$2,940	\$5,180	\$5,420	\$5,170	\$5,070
1902	\$5,090	\$4,930	\$4,220									\$5,010
1903	\$5,730	\$6,530	\$6,410	\$4,690	\$3,040	\$5,350	\$10,720	\$11,470	\$13,300	\$13,290	\$13,320	\$13,280
1904	\$13,340	\$15,450	\$12,230	\$10,620	\$10,130	\$12,790	\$13,770	\$19,190	\$38,200	\$41,120	\$40,670	\$40,840
1905	\$42,030	\$46,080	\$47,510	\$48,530	\$48,530	\$56,170	\$71,520	\$79,600	\$79,260	\$79,320	\$79,370	\$79,230
1906	\$79,240	\$79,190	\$78,360	\$76,930	\$76,490	\$79,330	\$79,480	\$79,340	\$79,220	\$79,350	\$79,370	\$79,610
1907	\$79,570	\$79,510	\$79,240	\$79,200	\$79,280	\$79,270	\$79,340	\$79,590	\$79,780	\$79,980	\$79,490	\$77,430
1908	\$79,280	\$79,160	\$78,580	\$78,210	\$77,740	\$79,230	\$79,280	\$79,170	\$75,720	\$68,310	\$61,120	\$56,310
1909	\$54,950	\$57,510	\$57,860	\$58,050	\$59,070	\$60,030	\$74,530	\$79,350	\$79,650	\$79,460	\$79,750	\$79,660
1910	\$79,380	\$79,550	\$79,120	\$78,470	\$78,470	\$79,280	\$79,430	\$79,340	\$78,370	\$78,020	\$74,280	\$73,010
1911	\$72,260	\$72,590	\$71,520	\$69,190	\$68,010	\$71,850	\$72,020	\$68,230	\$70,620	\$65,830	\$59,580	\$58,080
1912	\$59,960	\$59,590	\$55,800	\$53,410	\$51,010	\$51,710	\$59,220	\$70,250	\$79,940	\$80,290	\$78,630	\$75,930
1913	\$76,810	\$79,020	\$76,380	\$74,000	\$72,800	\$73,130	\$79,420	\$79,280	\$68,440	\$63,240	\$70,050	\$79,260
1914	\$79,280	\$79,200	\$76,560	\$73,640	\$72,220	\$77,240	\$79,500	\$79,940	\$79,720	\$80,560	\$79,770	\$79,460
1915	\$78,430	\$77,850	\$75,870	\$73,010	\$72,450	\$76,040	\$79,500	\$79,500	\$78,620	\$70,620	\$75,620	\$71,770
1916	\$79,240	\$78,020	\$77,070	\$75,240	\$74,750	\$79,330	\$79,350	\$79,330	\$68,720	\$58,530	\$58,320	\$64,250
1917	\$73,960	\$74,190	\$77,410	\$67,360	\$65,430	\$64,710	\$76,340	\$79,560	\$79,660	\$79,650	\$76,610	\$74,930
1918	\$73,210	\$75,560	\$73,960	\$71,520	\$69,460	\$75,490	\$79,350	\$79,390	\$79,550	\$79,360	\$79,350	\$79,330
1919	\$79,290	\$79,020	\$76,560	\$72,680	\$69,710	\$71,520	\$79,770	\$72,530	\$47,820	\$40,790	\$34,640	\$32,340
1920	\$35,900	\$38,200	\$36,070	\$33,520	\$33,680	\$36,590	\$41,010	\$61,930	\$65,080	\$49,700	\$46,610	\$40,020
1921	\$47,010	\$51,810	\$50,460	\$48,850	\$47,560	\$54,640	\$66,550	\$79,540	\$79,750	\$79,410	\$75,330	\$72,020
1922	\$72,080	\$75,850	\$79,090	\$75,910	\$70,780	\$73,550	\$79,580	\$72,100	\$56,980	\$46,510	\$40,500	\$33,230
1923	\$37,190	\$41,920	\$39,700	\$56,510	\$32,750	\$31,790	\$42,890	\$53,540	\$73,590	\$79,610	\$79,690	\$79,550
1924	\$79,530	\$79,320	\$75,860	\$72,230	\$70,680	\$71,440	\$78,490	\$79,920	\$79,460	\$68,820	\$66,580	\$49,270
1925	\$47,200	\$46,360	\$41,140	\$34,260	\$30,100	\$33,330	\$30,680	\$26,700	\$26,780	\$33,250	\$34,400	\$34,620
1926	\$47,010	\$39,670	\$41,680	\$42,850	\$43,810	\$53,270	\$66,320	\$79,830	\$79,540	\$77,660	\$71,540	\$70,420
1927	\$69,230	\$66,540	\$67,830	\$67,790	\$66,300	\$66,300	\$75,460	\$76,180	\$75,830	\$67,260	\$71,570	\$79,340
1928	\$74,980	\$72,470	\$72,420	\$70,130	\$67,980	\$69,540	\$71,590	\$79,850	\$77,050	\$78,050	\$79,040	\$74,840
1929	\$68,330	\$67,980	\$67,120	\$64,240	\$61,740	\$62,760	\$66,770	\$67,280	\$65,860	\$71,970	\$79,060	\$77,550
1930	\$74,140	\$77,210	\$76,580	\$73,500	\$72,680	\$76,080	\$79,310	\$76,490	\$70,220	\$53,180	\$61,710	\$66,680
1931	\$75,000	\$74,210	\$74,120	\$72,570	\$71,220	\$73,070	\$79,340	\$79,540	\$74,320	\$60,740	\$47,520	\$40,470
1932	\$58,830	\$44,820	\$44,820	\$43,780	\$41,620	\$42,430	\$48,070	\$42,540	\$35,930	\$27,570	\$25,010	\$19,240
1933	\$13,730	\$9,740	\$7,400	\$5,970	\$4,900	\$4,400	\$7,760	\$33,040	\$38,620	\$38,350	\$33,840	\$37,700
1934	\$36,670	\$38,680	\$39,040	\$38,810	\$38,950	\$40,870	\$43,390	\$42,270	\$56,750	\$28,380	\$23,050	\$16,700
1935	\$12,210	\$12,090	\$11,920	\$11,410	\$11,140	\$11,070	\$18,720	\$25,460	\$35,270	\$34,010	\$29,880	\$28,610
1936	\$26,470	\$26,470	\$26,650	\$26,720	\$26,910	\$30,830	\$32,020	\$30,640	\$35,710	\$33,250	\$46,770	\$40,840
1937	\$45,050	\$46,710	\$48,920	\$47,140	\$45,900	\$46,470	\$48,670	\$47,520	\$58,040	\$43,780	\$35,700	\$31,100
1938	\$26,680	\$26,680	\$26,680	\$26,820	\$26,920	\$28,310	\$34,560	\$51,840	\$65,300	\$64,190	\$54,560	\$68,060
1939	\$68,060	\$70,490	\$71,980	\$73,070	\$73,240	\$79,060	\$79,060	\$79,060	\$76,140	\$69,600	\$69,350	\$59,080
1940	\$55,060	\$4,220	\$3,850	\$3,580	\$3,580	\$7,600	\$5,830	\$9,630	\$4,450	\$5,420	\$3,570	\$4,280
1941	\$42,280	\$42,280	\$42,280	\$42,280	\$42,280	\$43,730	\$50,090	\$59,440	\$78,990	\$79,060	\$74,740	\$71,510
1942	\$71,510	\$75,520	\$76,700	\$77,090	\$77,290	\$78,070	\$79,060	\$79,060	\$79,060	\$79,060	\$74,590	\$70,000
1943	\$68,860	\$69,000	\$69,320	\$69,320	\$69,320	\$72,010	\$79,380	\$79,380	\$79,500	\$76,160	\$70,020	\$66,320
1944	\$62,240	\$64,680	\$63,580	\$60,190	\$60,220	\$61,210	\$69,890	\$79,770	\$79,470	\$79,310	\$71,180	\$66,040
1945	\$63,510	\$64,390	\$63,180	\$60,170	\$58,450	\$58,460	\$60,370	\$63,150	\$64,820	\$69,890	\$79,430	\$75,750
1946	\$76,230	\$77,280	\$76,120	\$74,550	\$73,280	\$74,680	\$73,790	\$70,500	\$66,660	\$57,910	\$51,230	\$48,490
1947	\$46,470	\$46,640	\$50,000	\$49,480	\$48,110	\$49,790	\$58,880	\$77,470	\$79,830	\$77,710	\$77,910	\$74,900
1948	\$77,410	\$77,430	\$77,330	\$77,330	\$77,330	\$77,330	\$80,170	\$79,850	\$79,590	\$76,620	\$69,420	\$62,360
1949	\$58,090	\$55,630	\$54,410	\$51,760	\$48,660	\$50,920	\$56,740	\$66,610	\$80,010	\$79,440	\$72,600	\$68,330
1950	\$67,150	\$69,820	\$67,060	\$63,030	\$64,160	\$62,640	\$66,580	\$53,720	\$53,460	\$49,600	\$40,050	\$32,760

* Not previously published; records furnished by Denver Board of Water Commissioners.

Note.--Elevations not available January to August 1902, reservoir being repaired following damage by high water.

184. South Platte River below Cheesman Lake, Colo. 1/

Location.--Lat 39°13', long. 105°16', in sec. 6, T. 10 S., R. 70 W., a quarter of a mile downstream from Cheesman Lake.Drainage area.--1,766 sq mi.Gage.--Water-stage recorder. Datum of gage is 6,610.38 ft above mean sea level, adjustment of 1912.Average discharge.--26 years (1924-50), 166 cfs.Extremes.--1924-50: Maximum discharge, 3,020 cfs Apr. 23, 1942 (gage height, 8.46 ft), from rating curve extended above 1,800 cfs; minimum daily, 3 cfs Mar. 22, 23, 1925, May 1-16, 1926, but may have been less during periods of no gage-height record.Remarks.--Diversion above station for irrigation of about 40,000 acres. Flow partly regulated by Elevenmile Canyon Reservoir and Cheesman Lake (see elsewhere in this report), transmountain diversions, and return flow from irrigated areas.Cooperation.--Records for 1924-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

1/ Published as South Fork South Platte River below Lake Cheesman, 1924-33 by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second of
South Platte River below Cheesman Lake, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	a107	a67.9	a105	a118	a83.6	a20.8	a115	a235	a272	a198	a257	a228	a151
1926	a178	a7.77	a5.25	a5.25	a5.00	a3.25	a312	a621	a482	a345	a98.5		a173
1927	a68.4	a106	a22.0	a22.0	a52.9	a49.1	a82.3	a158	a247	a412	a257	a157	a137
1928	a156	a94.4	a28.4	a53.8	a59.6	a51.3	a53.7	a173	a434	a401	a329	a173	a168
1929	a174	a76.5	a53.1	a80.0	a80.0	a47.4	a57.1	a127	a320	a433	a658	a404	a210
1930	a172	a26.9	a55.1	a62.0	a46.2	a22.0	a131	a180	a367	a566	a756	a397	a233
1931	a249	a47.6	a31.5	a39.6	a47.8	a29.0	a99.6	a334	a342	a335	a292	a145	a167
1932	a132	a66.0	a20	a29	a48.6	a25.9	a99.2	a203	a294	a310	a248	a122	a134
1933	a155	a123	a34	a33	a19	a28.8	a65.6	a19.0	a217	a258	a245	a89.8	a126
1934		a35.5	a48.6	a26.4	21.0	21.0	29.6	51.6	199	211	217	157	103
1935	115	42.1	18.2	16	15	54.0	70.8	59.8	77.9	368	401	201	121
1936	138	75.3	11.9	6.50	7.51	7.50	112	411	403	402	480	263	194
1937	112	26.4	16.5	26.2	37.9	14.5	112	214	94.1	210	276	157	108
1938	136	36.4	26.5	26.3	20.5	27.0	147	11.0	76.2	177	338	114	95.4
1939	239	38.5	23.2	20.5	20.6	22.5	169	350	269	243	175	120	142
1940	90.8	36.5	20.7	20.7	20.7	10.5	47.1	117	203	144	141	112	80.5
1941	31.9	26.4	19.7	15.7	14.0	13.0	172	269	304	343	392	194	150
1942	244	26.1	20.1	20.9	20.4	21.1	931	970	758	362	390	188	330
1943	85.4	49.6	37.0	33.7	34.0	31.2	63.7	168	137	227	332	117	110
1944	125	57.0	41.8	70.3	10.2	10.7	10.9	244	402	242	235	118	131
1945	90.9	68.4	35.4	61.3	43.3	24.4	25.6	145	103	257	705	202	148
1946	103	58.8	47.7	46.6	48.2	37.7	165	194	259	381	255	110	143
1947	61.5	33.1	40.3	45.3	52.0	47.2	67.4	117	680	678	529	294	221
1948	151	109	55.3	41.0	69.6	99.0	709	808	715	336	361	196	304
1949	143	94.5	56.9	64.0	86.0	53.4	91.3	142	1,067	984	405	224	285
1950	136	52.5	69.8	70.2	27.8	81.6	258	187	169	237	209	155	139

a From reports of State engineer of Colorado.

Monthly and yearly discharge, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	a6,580	a4,040	a6,460	a7,260	a4,640	a1,280	a6,840	a14,400	a16,200	a12,200	a15,800	a13,600	a109,000
1926	a10,900	a462	a323	a323	a278	a200	a193	a19,200	a37,000	a29,600	a21,200	a5,860	a126,000
1927	a4,210	a6,310	a1,350	a1,350	a2,940	a3,020	a4,900	a9,720	a14,700	a25,300	a15,800	a9,340	a99,000
1928	a9,590	a5,620	a1,750	a3,310	a3,430	a3,150	a3,200	a10,600	a25,800	a24,700	a20,200	a10,300	a122,000
1929	a10,700	a4,550	a3,260	a4,920	a4,440	a2,910	a3,400	a7,810	a19,000	a26,600	a40,500	a24,000	a152,000
1930	a10,600	a1,600	a3,390	a5,810	a2,570	a1,350	a7,800	a11,100	a21,800	a34,800	a46,500	a25,600	a169,000
1931	a15,300	a2,830	a1,940	a2,430	a2,650	a1,780	a5,930	a20,500	a20,400	a20,600	a18,000	a8,630	a121,000
1932	a8,120	a3,930	a1,230	a1,780	a2,800	a1,590	a5,900	a12,500	a17,500	a19,100	a15,200	a7,260	a96,900
1933	a9,530	a7,320	a2,090	a2,030	a1,060	a1,770	a3,900	a1,170	a25,400	a15,800	a15,100	a5,340	a90,600
1934	2,060	2,890	1,620	1,290	1,170	1,820	3,070	12,200	12,600	13,300	13,000	9,340	74,360
1935	7,050	2,510	1,120	984	833	3,320	4,210	3,680	4,630	22,610	24,660	11,930	87,540
1936	8,510	4,480	732	400	432	461	6,690	25,240	23,950	24,710	29,480	15,670	140,800
1937	6,860	1,570	1,020	1,610	2,110	893	6,840	13,150	5,000	12,900	16,990	9,320	78,080
1938	6,340	2,170	1,630	1,620	1,140	1,660	6,740	677	4,540	10,900	20,860	6,800	69,080
1939	14,690	2,290	1,430	1,260	1,150	1,380	10,080	21,510	16,000	14,960	10,760	7,140	102,600
1940	5,580	2,170	1,270	1,270	1,190	645	2,800	7,210	12,110	8,650	8,650	6,680	58,420
1941	1,960	1,570	1,210	966	780	793	10,260	16,520	18,060	21,090	24,130	11,550	108,900
1942	14,980	1,550	1,240	1,290	1,130	1,300	55,440	59,640	45,110	22,230	24,010	11,200	239,100
1943	5,250	2,950	2,280	2,070	1,890	1,920	3,790	10,340	8,170	13,960	20,410	6,950	79,980
1944	7,660	3,390	2,570	4,320	588	658	648	14,990	23,890	14,890	14,480	7,010	95,090
1945	5,590	4,070	2,050	3,770	2,410	1,500	1,530	8,920	6,150	15,800	43,350	12,000	107,100
1946	6,310	3,500	2,940	2,870	2,680	2,320	9,830	11,910	15,430	23,460	15,690	6,540	103,500
1947	3,780	1,970	2,480	2,780	2,890	2,900	5,200	7,180	39,280	41,700	32,510	17,500	160,200
1948	9,300	6,460	3,400	2,520	4,000	6,090	42,180	49,670	42,530	20,670	22,200	11,690	220,700
1949	6,780	5,630	3,500	3,940	4,770	3,280	5,430	8,720	63,490	60,480	24,890	13,350	206,300
1950	6,390	3,120	4,290	4,310	1,540	5,020	15,380	11,520	10,040	14,600	12,870	9,210	100,300

† Corrected.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	(a)	-	-	3	a151	a109,000	a144	a104,000
1926	(a)	*1,220	May 28, 1926*	-	a173	a126,000	a174	a126,000
1927	(a)	*805	July 1, 1927	5	a137	a99,000	a144	a104,000
1928	(a)	*860	June 5, 1928	19	a168	a122,000	a170	a123,000
1929	(a)	*1,580	Aug. 9, 1929	25	a210	a152,000	a206	a149,000
1930	(a)	*1,310	July 31, 1930	22	a233	a169,000	a240	a173,000
1931	(a)	*814	Oct. 1, 1930	-	a167	a121,000	a158	a114,000
1932	(a)	*800	(b)	-	a134	a96,900	a141	a101,000
1933	(a)	*890	June 15, 1933	19	a126	a90,600	a108	a78,200
1934	761	521	May 29, 1934	19	103	74,360	109	74,770
1935	786	1,430	July 23, 1935	7	121	87,540	†125	90,580

* Revised; supersedes figure previously published in reports of State engineer of Colorado.

† Corrected.

* Not previously published.

a From reports of State engineer of Colorado.

b July 14, 15, 16, 1932.

Yearly discharge, in cubic feet per second of South Platte River below Cheesman Lake, Colo.--Con.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	806	1,630	June 25, 1936	6.5	194	140,800	188	136,500
1937	828	932	June 28, 1937	9.4	108	78,060	112	60,750
1938	856	932	Aug. 29, 1938	8.4	95.4	69,080	104	75,350
1939	876	728	June 2, 1939	20	142	102,600	129	93,260
1940	896	556	June 24, 1940	10	60.5	58,420	74.6	54,140
1941	926	1,020	Apr. 30, 1941	13	150	108,900	168	121,900
1942	956	3,020	Apr. 23, 1942	17	330	239,100	320	231,800
1943	976	921	Apr. 21, 1943	14	110	79,980	115	83,120
1944	1006	656	May 30, 1944	8.5	131	95,090	128	85,180
1945	1036	1,110	Aug. 11, 1945	21	148	107,100	149	108,200
1946	1056	782	July 16, 1946	35	143	103,500	137	98,960
1947	1086	1,640	June 24, 1947	24	221	160,200	236	171,100
1948	1116	2,180	Apr. 22, 1948	41	304	220,700	302	219,500
1949	1146	2,070	June 15, 1949	41	285	206,500	282	204,200
1950	1176	741	Nov. 6, 1949	13	139	100,300	-	-

c Observed.

185. South Platte River above North Fork, at South Platte, Colo. 1/

Location.--Lat 39°24'20", long. 105°10'15", in NE 1/4 sec. 36 (revised), T. 7 S., R. 70 W., at South Platte 600 ft upstream from North Fork.

Drainage area.--2,160 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 6,080 ft (from topographic map).

Average discharge.--6 years (1906-12), 218 cfs.

Extremes.--1905-12: Maximum discharge observed, 1,870 cfs July 29, 1907; maximum gage height, 5.90 ft Sept. 15, 1909; no flow Nov. 4-13, 1908.

Remarks.--Flow partly regulated by Cheesman Lake Reservoir (see elsewhere in this report), Antero Reservoir (capacity, 22,300 acre-ft) since 1907, diversions above station for irrigation of about 39,500 acres, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	-	-	-	-	-	-	-	-	638	112	176	171	-
1906	93.4	a104	-	-	-	-	301	435	224	240	199	310	-
1907	319	258	a97	b55	b75.0	146	194	325	667	782	472	255	b305
1908	149	111	53.3	30	30	80.7	115	95.5	127	173	269	144	115
1909	88.4	29.9	23.4	25	22	38.2	56.6	136	541	463	586	1,130	263
1910	319	170	115	137	89.3	350	270	418	271	208	310	117	232
1911	118	91.2	50	70.6	64.8	51.4	*121	146	186	653	*257	155	*165
1912	72.6	62.2	83.6	65	40	40	53.0	102	651	760	550	287	231
1913	153	170	-	-	-	-	-	-	-	-	-	-	-

* Only monthly figures revised; revised daily figures not available.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-ft) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	-	-	-	-	-	-	-	-	38,000	6,890	10,800	10,200	-
1906	5,740	a5,180	-	-	-	-	17,900	26,700	13,300	14,800	12,200	18,400	-
1907	19,600	15,400	a5,950	b3,380	b4,180	8,980	11,500	20,000	39,700	48,100	29,000	15,200	b221,000
1908	9,160	6,800	3,280	1,840	1,730	4,960	6,840	5,870	7,560	10,600	16,500	8,570	83,500
1909	5,440	1,780	1,440	1,540	1,220	2,350	3,370	8,360	32,200	29,700	36,000	67,200	191,000
1910	19,600	10,100	7,100	8,410	4,960	21,500	16,100	25,700	16,100	12,800	19,000	6,950	168,000
1911	7,270	5,430	3,080	4,340	3,600	3,160	*7,200	8,980	11,000	20,100	*15,800	9,210	*119,000
1912	4,460	5,700	5,140	4,000	2,500	2,460	3,150	6,270	38,700	46,700	33,800	17,100	168,000
1913	9,430	10,100	-	-	-	-	-	-	-	-	-	-	-

* Revised.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

1/ Published as South Fork of South Platte River at South Platte.

Yearly discharge, in cubic feet per second of South Platte
River above North Fork, at South Platte, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1905	172	*1,450	June 10, 1905	-	-	-	-	-
1906	208	*790	(a)	-	-	-	-	-
1907	246	*1,870	July 29, 1907	-	b305	b221,000	b275	b199,000
1908	246	410	Aug. 6, 21, 22, 1908	-	115	83,500	100	73,100
1909	268	1,780	Sept. 15, 1909	0	263	191,000	302	219,000
1910	356	644	May. 10, 1910	49	252	168,000	204	147,000
1911	306	1,040	July 8, 9, 10, 1911	42	*165	*119,000	*161	*117,000
1912	326	1,400	July 2, 1912	-	231	168,000	-	-

* Revised.

† Not previously published.

a May 25, 26, Sept. 29, 1906.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

186. North Fork South Platte River at Grant, Colo.

Location.--Lat 39°27'35", long. 105°39'50", in NE $\frac{1}{4}$ sec. 9, T. 7 S., R. 74 W., at Grant, and about 250 ft upstream from Geneva Creek.

Drainage area.--51 sq mi, approximately.

Gage.--Staff gage. Datum of gage is 8,575.73 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1910-17), 31.0 cfs.

Extremes.--1910-18: Maximum discharge observed, 965 cfs (revised) June 1, 1914 (gage height, 4.7 ft), from rating curve extended above 160 cfs; minimum discharge not determined.

Remarks.--Diversions for irrigation of about 125 acres above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	-	-	-	-	-	-	-	-	-	-	11.7	10.1	-
1911	10.6	8.08	6.8	7.0	7.0	6.0	12.7	66.3	71.7	38.0	17.3	14.2	22.2
1912	14.0	4.0	*5.0	6.0	5.5	6.5	11.9	59.9	132	101	44.9	25.5	*54.7
1913	21.3	19.2	*8.0	*8.0	*8.0	*8.0	*22.6	58.6	77.3	44.5	23.2	21.2	*26.4
1914	23.8	18.4	7.1	5.9	6.1	17.6	57.6	179	185	101	73.3	29.1	57.3
1915	19.8	14.9	*8.0	*8.0	*6.0	*6.0	15.1	45.6	84.2	43.2	22.2	13.5	*23.8
1916	11.9	*7.0	*7.0	*7.0	*6.0	*10.7	17.7	51.0	67.8	34.1	25.4	12.5	*21.6
1917	8.45	*8.0	*8.0	*8.0	*5.0	*3.0	11.1	46.2	154	82.6	28.9	11.6	*31.1
1918	8.7	10.1	*8.0	-	-	-	-	-	-	-	-	-	-

* Not previously published; estimated on basis of discharge measurements, weather records, and records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	-	-	-	-	-	-	-	-	-	-	719	601	-
1911	652	481	418	430	389	369	756	4,080	4,270	2,340	1,060	845	16,100
1912	861	238	*307	369	316	400	708	3,680	7,860	6,210	2,760	1,510	*25,200
1913	1,310	1,140	*492	*369	*333	*476	*1,340	3,600	4,600	2,740	1,430	1,260	*19,100
1914	1,460	1,090	434	361	341	1,080	2,250	11,000	11,000	6,210	4,510	1,730	41,500
1915	1,220	887	*492	*369	*333	*369	898	2,800	5,010	2,660	1,360	803	*17,200
1916	732	*417	*430	*430	*345	*658	1,050	3,140	4,030	2,100	1,560	744	*15,600
1917	520	*476	*492	*369	*278	*184	660	2,840	9,160	5,080	1,780	690	*22,500
1918	535	601	*492	-	-	-	-	-	-	-	-	-	-

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1910	286	-	-	-	-	-	-	-
1911	306	-	-	-	22.2	16,100	*22.0	*15,900
1912	326	-	-	-	*34.7	*25,200	*36.9	*26,800
1913	356	-	-	-	*26.4	*19,100	*26.4	*19,100
1914	386	*a965	June 1, 1914	5	57.3	41,500	*56.7	*41,100
1915	406	151	June 2, 1915	-	*23.8	*17,200	*22.3	*16,200
1916	436	a85	June 12, 1916	-	*21.6	*15,600	*21.4	*15,500
1917	456	a235	June 10, 1917	-	*31.1	*22,500	*31.3	*22,700
1918	476	-	-	-	-	-	-	-

* Revised.

† Not previously published.

a Maximum observed.

187. Scott Gomer Creek near Grant, Colo. 1/

Location.--Lat 39°30'25", long. 105°42'15", in SE¹/₄ sec. 19, T. 6 S., R. 74 W., a quarter or a mile upstream from mouth and 4 miles (revised) northwest of Grant.

Drainage area.--21 sq mi, approximately.

Gage.--Staff gage at described site and various datums since Sept. 4, 1909. Altitude of gage is 9,400 ft (from topographic map). Aug. 16 to Sept. 3, 1909, staff gage at site 2 3/4 miles upstream at different datum.

Extremes.--1909-14: Maximum discharge observed, 101 cfs June 27, 1912 (gage height, 2.00 ft); minimum discharge not determined.

Remarks.--No diversions above station.

Cooperation.--Records for December 1912 to March 1913, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1909	-	-	-	-	-	-	-	-	-	-	-	\$50
1910	\$26	\$12	\$8.0	\$6.0	\$6.0	\$7.0	\$10	\$17	\$20	\$8.2	\$7.7	\$5.4
1911	\$6.0	\$7.0	\$6.0	5.0	5.0	5.0	5.75	46.5	59.6	34.7	12.3	10.6
1912	10.5	8.0	5.0	\$3.5	\$2.5	\$3.5	\$4.4	\$18	\$61	\$43	\$24	\$13
1913	\$14	\$7.4	\$4.0	\$4.0	\$3.0	\$3.0	\$3.8	\$48	\$33	\$31	\$19	\$27
1914	\$17	\$9.6	\$6.0	-	-	-	-	-	-	-	-	-

* Not previously published; estimated on basis of fragmentary record and records for stations on nearby streams.

a From files of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1909	-	-	-	-	-	-	-	-	-	-	-	\$2,980
1910	\$1,600	\$714	\$492	\$368	\$333	\$430	\$595	\$1,050	\$1,190	\$504	\$474	\$321
1911	\$369	\$416	\$369	307	278	307	342	2,880	3,550	2,130	756	631
1912	646	476	307	\$215	\$144	\$215	\$262	\$1,110	\$3,630	\$2,640	\$1,480	\$774
1913	\$861	\$440	\$246	\$246	\$167	\$184	\$226	\$2,950	\$1,960	\$1,910	\$1,170	\$1,610
1914	\$1,050	\$571	\$368	-	-	-	-	-	-	-	-	-

* Not previously published; see footnote to preceding table.

a From files of State engineer of Colorado.

Yearly discharge, in cubic feet per second								
Year	W.S.P. No.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	266	-	-	-	-	-	-	-
1910	286	-	-	-	\$11.1	\$8,070	\$8.87	\$6,420
1911	306	100	June 10, 1911	-	\$17.0	\$12,300	17.4	12,600
1912	326	101	June 27, 1912	-	\$16.4	\$11,900	\$16.6	\$12,000
1913	356	95	May 21, 1913	-	\$16.5	\$12,000	\$17.1	\$12,400

* Not previously published.

188. Geneva Creek at Grant, Colo. 2/

Location.--Lat 39°27'35", long. 105°39'50", in NE¹/₄ sec. 9, T. 7 S., R. 74 W., just downstream from bridge at Grant and 300 ft upstream from mouth.

Drainage area.--74 sq mi, approximately.

Gage.--Staff gage. Datum of gage is 8,578.04 ft above mean sea level, datum of 1929. July 1, 1908, to Nov. 2, 1911, staff gage about 3 miles upstream at different datum.

Average discharge.--9 years (1909-18), 68.8 cfs.

Extremes.--1908-18: Maximum discharge observed, 1,700 cfs June 1, 1914 (gage height, 4.3 ft), from rating curve extended above 410 cfs; minimum daily discharge, 3.0 cfs Jan. 22, 1915, but may have been less during periods of no gage-height record.

Remarks.--Small diversions for irrigation of about 100 acres above station.

1/ Published as "at Sullivan's Ranch, near Grant" prior to 1911.

2/ Published as "at Sullivan's Ranch, near Grant" prior to 1911.

Monthly and yearly mean discharge, in cubic feet per second of Geneva Creek at Grant, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	51.9	50.6	31.5	-
1909	25.6	24.0	14.3	11.3	9.0	10.5	30	97	315	235	144	167	90.3
1910	74.8	57	24.4	20	15	18	37.5	80.9	89.6	42.3	32.5	20.8	42.9
1911	18.5	15	11	15	15	11.7	22.7	119	195	146	51.3	31.9	54.5
1912	32.2	20	*9.0	8.5	8.5	9.22	15.6	79.0	*278	*180	*52	37.7	*59.0
1913	36.0	22.8	*16	*14	*12	*15	31.8	152	173	121	89.7	66.2	*81.2
1914	44.5	28.8	16.4	16.3	16.5	16.5	43.2	410	620	344	226	60.0	154
1915	34.3	19.3	11.5	11.1	9.9	10.1	21.9	99.5	178	92.5	*49.0	*29.5	*47.4
1916	27.9	16.3	12.6	11.5	10.2	13.0	26.9	86.4	146	84.6	74.7	38.5	45.8
1917	26.5	23.4	18.2	14.9	10.7	12.5	18.3	56.3	300	197	67.5	28.9	64.5
1918	21.5	16.4	12.5	11.7	11.0	12.1	-	-	-	-	-	-	-

* Only monthly figure revised; see accuracy statement published in W.S.P. 436.

* Not previously published; estimated on basis of fragmentary gage-height records and records for North Fork South Platte River at Grant.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	3,190	3,110	1,870	-
1909	1,570	1,430	879	695	500	646	1,790	5,960	18,700	14,400	8,850	9,940	65,400
1910	4,600	3,390	1,500	1,230	833	1,110	2,230	4,970	5,330	2,600	2,000	1,240	31,000
1911	1,140	893	676	922	833	719	1,350	7,320	11,600	6,980	3,150	1,900	39,500
1912	1,980	1,190	*553	523	489	567	928	4,860	*16,500	*9,840	*3,200	2,240	*42,900
1913	2,340	1,360	*984	*861	*666	*922	1,890	9,350	10,300	7,440	4,290	3,940	*44,300
1914	2,740	1,710	1,010	1,000	916	1,010	2,570	25,200	36,900	21,200	13,900	5,570	112,000
1915	2,110	1,150	707	682	548	621	1,300	6,120	10,600	5,690	*3,010	*1,760	*34,300
1916	1,720	970	775	707	587	799	1,600	5,310	8,690	5,200	4,590	2,290	33,200
1917	1,630	1,390	1,120	916	594	769	970	3,460	17,900	12,100	4,150	1,720	46,700
1918	1,320	976	769	719	611	744	-	-	-	-	-	-	-

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1908	266	-	-	-	-	-	-
1909	266	*550	June 20, 1909	-	90.3	65,400	97.9
1910	286	136	Oct. 1, 1909	-	42.9	31,000	33.4
1911	306	*340	July 5, 1911	-	54.5	39,500	*55.9
1912	326	*445	June 8, 1912	-	*59.0	*42,900	*60.4
1913	356	*490	June 10, 1913	-	*61.2	*44,300	*62.3
1914	386	1,700	June 1, 1914	12	154	112,000	152
1915	406	*371	June 1 or 2, 1915	3	*47.4	*34,300	*46.7
1916	436	244	May 10, 1916	9	45.8	33,200	46.7
1917	456	546	June 17, 1917	10	64.5	46,700	63.0
1918	476	-	-	-	-	-	-

* Revised.

* Not previously published.

a From floodmarks.

189. North Fork South Platte River below Geneva Creek, at Grant, Colo. 1/

Location.--Lat 39°27'28", long. 105°39'28", in NW¼ sec. 10, T. 7 S., R. 74 W., just east of Grant and about 1,600 ft downstream from Geneva Creek.

Drainage area.--127 sq mi.

Gage.--Water-stage recorder at present site since July 23, 1948. Datum of gage is 8,558.60 ft above mean sea level (Bureau of Reclamation benchmark).

July 4 to Dec. 13, 1908, and May 23 to Nov. 30, 1913, staff gages at site 185 ft downstream from bridge at Santa Maria (formerly Cassells) about 2 miles downstream, at various datums.

Dec. 14, 1908, to May 22, 1913, chain gage on bridge at Santa Maria about 2 miles downstream at different datum.

June 19, 1942, to Mar. 15, 1948, staff gage at site 1,200 ft upstream from present site at datum 13.07 ft higher.

Mar. 16 to July 22, 1948, staff gage at site 400 ft upstream from present site at datum 6.35 ft higher than present datum.

Average discharge.--13 years (1908-13, 1942-50), 81.3 cfs.

Extremes.--1908-13, 1942-50: Maximum discharge observed, 990 cfs June 7, 8, 1912 (gage height, 3.30 ft, site and datum then in use), from rating curve extended above 530 cfs by logarithmic plotting; minimum daily discharge, 6.8 cfs Jan. 13, 14, Feb. 11, 1944.

Remarks.--Divisions for irrigation of about 200 acres above station. December 1913 to March 1918 equivalent records may be obtained by summation of flow of North Fork South Platte River at Grant (above Geneva Creek) and Geneva Creek at Grant.

1/ Published as "at Cassells" 1908-13.

PLATTE RIVER BASIN

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Monthly and yearly mean discharge, in cubic feet per second of North Fork South Platte River below Geneva Creek, at Grant, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	88.4	64.9	*40	-
1909	*35	*25	15.5	14.8	12.8	15.6	41.8	141	493	367	197	268	*136
1910	108	78.6	36.3	37.4	26.8	46.1	67.4	126	149	60.0	39.1	32.7	67.5
1911	32.0	25.7	20.8	24	25	16.8	31.5	162	225	195	87.5	52.5	75.2
1912	42.8	25	*20	14	14	15.5	34.4	167	434	268	98.6	67.1	*100
1913	57.1	45.3	*35	*25	*20	*30	*52.1	160	212	141	86.5	86.3	*79.4
1914	63.3	45.8	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	152	63.5	37.4	-
1943	29.7	23.4	19.9	15.6	15.3	17.4	46.9	146	233	132	64.7	31.0	64.8
1944	24.9	19.6	11.4	8.57	8.43	10.6	18.2	150	308	145	51.5	26.0	65.2
1945	20.5	20.4	12.3	9.37	9.76	12.2	29.3	111	210	154	163	76.2	69.3
1946	43.0	27.5	17.0	16.5	17.6	22.2	48.7	89.1	170	99.5	58.3	38.3	54.1
1947	28.7	23.2	20.4	18.6	18.2	14.0	28.6	249	393	289	147	78.3	109
1948	48.2	39.8	29.8	22.1	18.1	20.1	61.2	276	361	146	54.2	33.0	92.6
1949	30.2	26.3	19.3	17.5	16.4	17.6	32.4	112	399	258	84.0	43.3	66.1
1950	59.6	28.1	19.2	15.6	16.6	15.9	55.5	97.2	234	102	59.5	26.3	55.9

* Not previously published; estimated on basis of winter discharge measurements and records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	4,210	3,990	*2,380	-
1909	*2,150	*1,490	953	910	711	959	2,490	8,670	29,300	22,600	12,100	15,900	*98,200
1910	6,640	4,680	2,230	2,300	1,490	2,630	4,010	7,750	8,870	3,690	2,400	1,950	48,800
1911	1,970	1,530	1,280	1,480	1,390	1,030	1,870	9,960	13,400	12,000	5,380	3,120	54,400
1912	2,630	1,490	*1,350	861	805	953	2,050	10,300	25,800	16,500	6,060	3,990	*72,800
1913	3,510	2,700	*2,150	*1,540	*1,110	*1,840	*3,100	9,640	12,600	8,670	5,320	5,140	*57,500
1914	3,890	2,730	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	9,360	3,910	2,230	-
1943	1,820	1,390	1,220	962	851	1,070	2,790	8,950	13,860	8,140	3,980	1,840	46,870
1944	1,530	1,170	703	527	485	650	1,080	9,230	18,330	8,920	3,170	1,550	47,340
1945	1,260	1,220	754	576	542	752	1,740	6,810	12,480	9,490	10,040	4,540	50,200
1946	2,650	1,640	1,050	1,020	976	1,360	2,900	5,480	10,130	6,120	3,580	2,280	39,190
1947	1,760	1,380	1,250	1,150	1,010	861	1,700	15,340	23,360	17,750	9,030	4,660	79,250
1948	2,970	2,370	1,830	1,360	1,040	1,240	3,640	16,990	21,510	8,950	3,330	1,970	67,200
1949	1,660	1,560	1,180	1,080	910	1,080	1,930	6,870	23,720	15,840	5,170	2,580	63,780
1950	2,440	1,670	1,180	960	922	978	2,110	5,970	13,940	6,260	2,430	1,560	40,420

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1908	246	-	-	-	-	-	-	-
1909	266	*a750	(b)	8	*136	*98,200	148	107,000
1910	286	*a250	June 2, 1910	-	67.5	48,800	55.4	40,100
1911	306	*a660	July 5, 1911	10	75.2	54,400	*76.1	*55,100
1912	326	*a990	June 7, 8, 1912	-	*100	*72,800	*104	*75,700
1913	356	*a322	June 8, 1913	-	*79.4	*57,500	-	-
1942	956	-	-	-	-	-	-	-
1943	976	a335	June 30, 1943	12	64.8	46,870	63.3	45,850
1944	1006	a515	June 9, 1944	6.8	65.2	47,340	65.0	47,180
1945	1036	a465	June 25, 1945	8.0	69.3	50,200	72.2	52,310
1946	1056	a261	June 6, 8, 1946	13	54.1	39,190	52.8	38,240
1947	1086	a630	June 18, 1947	12	109	79,250	113	82,030
1948	1116	a630	May 20, 1948	16	92.6	67,200	89.0	64,630
1949	1146	754	June 13, 1949	14	88.1	63,780	89.0	64,470
1950	1176	464	June 17, 1950	10	55.9	40,420	-	-

* Not previously published.

a Maximum observed.

b June 8, 18, July 9, 1909.

190. North Fork South Platte River at Pine, Colo.

Location.--Lat 39°24'20", long. 105°18'55", in SE¹ sec. 27 (revised), T. 7 S., R. 71 W., 600 ft downstream from Elk Creek and half a mile east of Pine.

Drainage area.--374 sq mi.

Gage.--Staff gage. Altitude of gage is 6,710 ft (from topographic map).

Extremes.--1942-46: Maximum discharge observed, 1,040 cfs Aug. 14, 1945 (gage height, 3.30 ft), from rating curve extended above 610 cfs; minimum daily, 15 cfs Nov. 27, 1943.

Remarks.--Small diversions above station for irrigation.

PLATTE RIVER BASIN

Monthly and yearly mean discharge, in cubic feet per second of North Fork

South Platte River at Pine, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	286	130	69.6	-
1943	66.5	58.4	48.9	44.1	38.9	42.1	90.6	217	303	174	99.5	53.2	103
1944	48.3	38.9	31.0	23.1	22.2	28.5	59.1	305	451	223	78.7	46.1	113
1945	42.8	37.9	27.9	21.0	39.9	38.5	53.6	161	248	213	500	180	133
1946	109	63.0	39.4	35.9	36.4	45.4	94.0	140	193	124	80.7	67.0	85.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	17,570	8,010	4,140	-
1943	4,090	3,480	3,000	2,710	2,160	2,590	5,390	13,520	18,040	10,710	6,120	3,160	74,770
1944	2,970	2,310	1,900	1,420	1,280	1,750	3,510	18,760	26,840	13,740	4,840	2,740	82,060
1945	2,630	2,260	1,720	1,290	2,220	2,370	3,190	11,160	14,760	13,100	30,720	10,730	96,150
1946	6,720	3,750	2,420	2,210	2,020	2,790	5,590	8,630	11,460	7,650	4,960	3,980	62,180

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1942	958	-	-	-	-	-	-	-	-
1943	978	510	June 30, 1943	32	103	74,770	98.6	71,580	-
1944	1008	841	June 10, 1944	15	113	82,060	112	81,490	-
1945	1038	1,040	Aug. 14, 1945	16	133	96,150	141	102,400	-
1946	1058	293	June 7, 19, 1946	30	85.9	62,180	-	-	-

191. North Fork South Platte River at South Platte, Colo.

Location.--Lat 39°24'30", long. 105°10'30", in SW¹/₄ sec. 25, T. 7 S., R. 70 W., 0.2 mile west of South Platte and 0.3 mile upstream from mouth.

Drainage area.--484 sq mi.

Gage.--Water-stage recorder. Datum of gage is 6,090.55 ft above mean sea level, adjustment of 1912. Prior to May 13, 1925, staff gage at same site and datum.

Average discharge.--38 years (1909-10, 1913-50), 168 cfs.

Extremes.--1909-10, 1913-50: Maximum discharge, 2,050 cfs June 13, 1949 (gage height, 6.30 ft); minimum observed, 4.0 cfs (discharge measurement) Dec. 8, 1932.

Remarks.--Small diversions above station for irrigation of about 2,000 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	-	782	530	374	685	-
1910	295	124	75.9	80.2	60.4	80.0	141	244	218	135	84.6	56.6	133
1913	-	-	-	-	-	-	140	378	391	243	163	170	-
1914	125	85.9	69.8	69.6	66.0	84.8	140	1,060	897	488	541	176	341
1915	123	81.0	44.5	44.5	45.0	45.0	180	392	672	269	177	116	184
1916	119	88.6	75.2	49.6	50.2	50.8	110	278	321	185	207	116	138
1917	89.1	44.0	44.5	44.0	44.5	44.5	98.8	343	822	411	180	87.6	189
1918	85.5	46.3	22.0	42.5	43.5	43.9	136	377	690	466	191	133	186
1919	96.0	80.9	44.5	44.5	44.5	44.5	171	579	337	307	246	156	182
1920	109	75.2	44.5	35.5	25.5	35.0	67.8	591	633	349	251	166	201
1921	121	94.8	45.0	45.0	45.0	80.0	225	686	1,130	563	403	229	308
1922	140	87.9	53.4	44.8	45.0	88.0	111	304	409	217	204	131	154
1923	78.6	83.9	45.7	35.5	35.5	47.9	114	354	762	474	485	276	231
1924	202	152	102	70	50	43.4	173	462	872	294	117	75.4	218
1925	80.8	61.3	44.0	44.2	44.0	44.0	64.9	114	156	105	111	128	80.9
1926	120	95.6	61.5	43.1	28	50.5	286	648	732	346	231	105	229
1927	73.7	63.9	44.1	44.0	44.0	44.0	109	297	326	215	166	132	130
1928	110	88.1	43.9	43.1	43.1	60.0	72.1	441	423	273	159	73.6	155
1929	46.9	40.7	25	20	20	50	65.5	168	194	164	394	242	120
1930	138	79.1	45.9	45.0	46.2	47	135	218	360	222	395	204	164
1931	108	66.3	55	45	42	50	112	358	362	201	111	61.4	132
1932	52.9	45.7	48	32	45	45	65.6	215	318	247	125	70.0	109
1933	65.5	42.4	18	20	17	36	81	706	659	230	155	132	181
1934	82.4	69.9	47.0	40.0	40.0	56.0	112	242	355	97.9	79.2	56.9	90.2
1935	45.0	39.2	40	33	32	34.2	51.1	167	436	277	208	98.9	122

* Not previously published; estimated on basis of winter discharge measurements and records for South Platte River at South Platte.

Monthly and yearly mean discharge, in cubic feet per second of North Fork South Platte River at South Platte, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	63.1	38.0	33	28	33	43.0	126	432	538	313	467	175	191
1937	124	87.3	51.6	26.9	31.2	48.8	91.3	211	304	241	119	77.1	118
1938	67.6	46.4	41.3	37.2	36.0	40.5	189	577	674	321	190	443	223
1939	21.0	105	81.2	52.7	34.0	75.7	194	410	285	142	72.0	48.8	142
1940	45.3	40.1	21.5	18.5	32.6	58.4	72.0	127	173	109	57.2	76.7	69.1
1941	75.4	41.7	48.2	45.8	31.1	48.0	113	558	484	254	184	132	170
1942	119	81.2	62.7	56.4	47.8	62.2	452	982	747	515	161	96.8	26
1943	73.9	69.2	47.8	60.5	65.0	44.2	107	271	328	155	105	55.2	115
1944	50.0	40.2	36.2	28.8	25.2	32.8	92.0	438	559	282	120	57.2	145
1945	49.6	39.0	31.4	23.3	48.8	50.6	63.7	202	261	204	579	208	147
1946	131	80.7	49.2	43.2	48.2	56.0	106	159	199	147	124	78.7	102
1947	71.3	66.9	53.3	38.9	40.2	41.8	79.8	385	608	472	277	159	185
1948	126	90.7	57.0	47.3	57.3	76.5	131	564	232	128	69.7	187	187
1949	50.5	50.8	43.5	35.3	40.6	48.3	89.5	559	1,193	549	221	106	233
1950	82.2	56.8	34.8	26.7	33.9	38.3	73.0	159	275	145	66.6	47.5	86.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	-	-	-	-	46,500	32,800	23,000	40,800	-
1910	18,100	7,380	4,670	4,930	3,350	4,920	8,390	15,000	13,000	8,300	5,200	3,370	96,600
1913	-	-	-	-	-	-	8,330	23,200	23,300	14,900	10,000	10,100	-
1914	7,690	5,110	4,290	4,280	3,660	5,210	24,400	65,200	53,400	30,000	33,300	10,500	247,000
1915	7,660	4,820	2,770	2,770	2,780	3,070	10,700	24,100	40,000	16,500	10,900	6,900	133,000
1916	7,320	5,270	4,620	3,050	2,890	3,120	6,550	17,000	19,100	11,400	12,700	6,900	99,900
1917	5,480	2,680	2,770	2,460	2,500	3,380	5,860	21,100	48,900	25,300	11,100	5,210	137,000
1918	4,030	2,760	1,350	1,540	1,940	2,700	8,090	25,200	41,100	28,700	11,700	7,710	135,000
1919	5,900	4,810	2,770	2,770	2,500	3,500	10,200	35,600	20,100	18,900	15,100	9,280	131,000
1920	6,700	4,470	2,770	2,150	1,440	2,150	5,220	38,300	37,700	21,500	15,400	9,880	146,000
1921	7,440	5,640	3,070	3,070	2,780	4,920	13,400	42,200	67,200	34,800	24,800	13,600	225,000
1922	8,610	5,230	3,280	2,950	2,780	5,410	8,600	19,700	24,300	15,300	12,500	7,800	111,000
1923	4,830	3,800	2,810	2,150	1,940	2,950	6,780	21,800	45,300	29,100	29,700	16,400	168,000
1924	12,400	9,040	6,270	4,400	2,870	10,300	28,400	51,900	18,100	7,190	4,490	4,490	158,000
1925	4,970	3,650	2,710	2,580	2,220	2,710	3,860	7,010	8,090	6,480	6,820	7,500	58,600
1926	7,380	5,690	3,780	1,910	1,560	3,110	17,000	39,700	43,600	21,300	14,200	6,250	165,000
1927	4,530	3,800	2,770	2,460	2,220	3,070	6,490	18,300	19,400	15,200	10,200	7,860	94,300
1928	6,760	5,240	2,400	3,140	3,600	3,720	4,290	27,100	25,200	16,800	9,780	4,390	112,000
1929	2,880	2,420	1,540	1,230	1,110	3,070	2,900	10,300	11,700	10,100	24,200	14,400	86,800
1930	8,480	4,710	3,650	3,070	3,480	2,890	8,020	15,400	21,400	15,600	24,300	12,100	119,000
1931	6,840	3,950	3,380	2,770	2,330	3,070	6,680	22,000	21,500	12,400	6,820	3,650	95,200
1932	3,250	2,600	2,950	1,970	2,590	2,770	3,780	13,200	18,800	15,200	7,690	4,170	79,000
1933	4,030	2,520	1,110	1,230	944	2,210	4,820	43,400	39,200	14,100	9,530	7,860	131,000
1934	5,070	4,160	2,890	2,460	2,220	3,440	6,660	14,900	9,220	6,020	4,870	3,390	65,300
1935	2,770	2,330	2,460	2,030	1,780	2,100	3,040	10,270	25,920	17,050	12,770	5,880	88,370
1936	7,680	2,260	2,030	1,720	1,900	2,640	7,480	28,540	31,870	19,270	28,720	10,440	138,800
1937	3,840	5,190	3,180	1,650	1,730	3,000	5,430	12,980	18,110	14,840	7,290	4,590	85,630
1938	4,160	2,890	2,540	2,290	2,000	2,490	11,260	35,470	40,350	19,730	11,690	26,360	161,200
1939	12,910	6,150	4,990	3,540	1,890	4,660	10,930	25,230	16,970	6,740	4,430	2,900	103,000
1940	2,780	2,390	1,320	1,140	1,870	3,470	4,280	7,800	10,320	6,680	3,510	4,570	50,130
1941	4,640	2,480	2,970	2,810	1,730	2,950	6,720	34,330	28,800	16,210	11,320	7,870	122,800
1942	7,330	4,830	3,850	3,470	2,680	3,820	26,920	60,370	44,460	19,350	9,890	5,760	192,700
1943	4,550	4,120	2,940	3,720	3,500	2,720	6,370	16,690	19,490	9,550	6,440	3,280	83,370
1944	3,070	2,390	2,220	1,770	1,450	2,020	6,470	26,810	33,290	16,110	7,370	3,400	105,400
1945	3,050	2,320	1,930	1,430	2,710	3,110	3,790	12,410	15,520	12,530	35,610	12,350	106,800
1946	8,080	4,800	3,020	2,680	2,680	3,440	6,300	9,750	11,850	9,060	7,650	4,680	73,970
1947	4,390	3,970	3,890	2,590	2,230	2,570	4,750	23,690	26,210	29,010	17,020	9,460	139,600
1948	7,720	5,400	3,500	2,810	3,300	4,700	11,350	37,050	33,550	14,280	7,860	4,150	135,800
1949	3,720	3,020	2,670	2,170	2,250	2,970	5,330	22,070	70,990	33,750	13,620	6,310	168,900
1950	5,050	3,380	2,140	1,640	1,880	2,360	4,340	9,750	16,360	8,930	4,090	2,820	62,740

* Not previously published; estimated on basis of winter discharge measurements and records for South Platte River at South Platte.

Yearly discharge, in cubic feet per second of North Fork South Platte River at South Platte, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	286	*al,550	July 3, 1909	-	-	-	-	-
1910	286	*al,800	July 29, 1910	-	133	96,600	-	-
1913	356	*b880	May 13, 1913	-	-	-	-	-
1914	386	al,680	May 23, 1914	36	341	247,000	*339	*245,000
1915	406	a980	June 12, 1915	-	*184	*133,000	*186	*135,000
1916	436	a448	May 11, 1916	-	138	99,900	*129	*93,600
1917	456	al,300	June 18, 1917	-	*189	*137,000	*185	*134,000
1918	476	al,080	June 22, 1918	-	*186	*135,000	*194	*140,000
1919	506	a695	May 20, 21, 1919	-	*182	*131,000	*182	*132,000
1920	506	al,030	May 25, 1920	-	*201	*146,000	*204	*148,000
1921	526	al,910	June 8, 1921	-	*308	*223,000	*309	*224,000
1922	546	a574	May 27, 1922	17	*154	*111,000	*146	*108,000
1923	566	al,130	June 17, 1923	-	*231	*168,000	*254	*184,000
1924	586	al,380	June 7, 1924	-	*218	*158,000	*195	*142,000
1925	606	341	June 21, 1925	-	*80.9	*58,600	*88.5	*64,100
1926	626	1,520	June 7, 1926	-	*229	*165,000	*221	*160,000
1927	646	459	May 18, 1927	-	*130	*94,300	*135	*97,600
1928	666	964	May 30, 1928	-	*155	*112,000	*144	*105,000
1929	686	857	Aug. 7, 1929	-	*120	*86,800	*134	*96,800
1930	701	*700	Aug. 14, 1930	-	*164	*119,000	*161	*116,000
1931	716	740	May 27, 1931	-	132	95,200	124	90,000
1932	731	518	May 23, 1932	-	109	79,000	107	77,800
1933	746	*1,490	Sept. 9, 1933*	-	181	131,000	187	135,000
1934	761	335	May 10, 1934	-	90.2	65,300	83.9	60,740
1935	786	833	June 13, 1935	-	122	88,370	123	88,980
1936	806	1,620	Aug. 12, 1936	-	191	138,800	202	146,800
1937	826	1,715	June 27, 1937	20	118	85,630	109	79,200
1938	856	1,050	June 3, 1938	20	223	161,200	243	175,700
1939	876	543	June 1, 1939	20	142	103,000	118	85,480
1940	896	232	June 1, 1940	12	69.1	50,130	74.0	53,730
1941	926	1,030	May 14, 1941	8.0	170	122,800	178	128,800
1942	956	*1,370	May 27, 1942*	22	268	192,700	280	188,300
1943	976	571	May 30, 1943	19	115	83,370	110	79,440
1944	1006	1,040	June 10, 1944	19	145	105,400	145	105,000
1945	1036	1,360	Aug. 21, 1945	17	147	106,800	159	115,400
1946	1056	350	June 19, 1946	37	102	73,970	97.1	70,320
1947	1086	1,000	June 21, 1947	22	193	139,600	199	144,000
1948	1116	1,040	May 23, 1948	38	187	135,800	177	128,600
1949	1146	2,050	June 13, 1949	30	233	168,900	235	170,000
1950	1176	496	June 17, 1950	18	86.7	62,740	-	-

* Revised.

* Not previously published.

a Observed.

b Estimated.

192. South Platte River at South Platte, Colo.¹/

Location.--Lat 39°24'30", long. 105°10'10", in SE¹/₄ sec. 25, T. 7 S., R. 70 W., at South Platte, 200 ft downstream from bridge on State highway 75, and 400 ft downstream from North Fork.

Drainage area.--2,550 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 6,078.43 ft above mean sea level, adjustment of 1912.

Prior to Mar. 28, 1902, staff gages or water-stage recorder at several sites less than 9 miles downstream at various datums.

Mar. 28, 1902, to May 6, 1905, staff gage at bridge 200 ft upstream at different datum.

May 7, 1905, to Mar. 13, 1910, staff gage at present site and datum.

Average discharge.--57 years (1887-91, 1895-97, 1898-99, 1900-1950), 374 cfs.

Extremes.--1887-92, 1895-97, 1898-1950: Maximum discharge, 6,320 cfs June 8, 1921 (gage height, 8.95 ft), from rating curve extended above 3,500 cfs; minimum daily determined, 10 cfs Dec. 5, 1899.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, diversions above station for irrigation of about 45,000 acres, and return flow from irrigated areas. Records for individual transmountain diversions and storage reservoirs (except Antero Reservoir, capacity, 22,300 acre-ft) are given elsewhere in this report.

Cooperation.--Records prior to 1902 furnished by State engineer of Colorado.

¹/ Published as "at Deansbury," 1887-90, 1895-97, "at Deansbury and Platte Canyon," 1891-92, "at Platte Canyon," 1899, "near Platte Canyon," 1900, and "below North Fork, at South Platte," 1914.

Monthly and yearly mean discharge, in cubic feet per second of South Platte River at South Platte, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	550	550	*404	-	-
1888	*300	a250	a165	a130	a140	*165	*287	*443	*476	311	262	179	a259
1889	*176	a120	a100	a80	a90	a110	*150	478	460	324	211	129	aa203
1890	*118	a90	a80	a80	a90	a130	a200	391	403	520	562	196	b240
1891	172	a90	a80	a80	a90	a150	a473	a1,100	1,240	645	*457	219	b401
1892	-	-	-	-	-	-	-	-	628	847	555	328	-
1893	*392	-	-	-	-	-	-	-	-	-	-	-	-
1896	a195	a170	*100	97	115	207	473	502	281	233	189	250	a234
1897	217	169	93	81	80	101	370	964	1,050	a650	a407	a200	b367
1899	a195	a150	a115	a100	a80	a165	454	760	1,350	1,160	587	233	b448
1900	154	160	160	103	55	157	826	*2,510	-	-	-	-	-
1901	a200	a180	a150	a160	a150	a200	a400	a675	a619	a241	a398	a190	a298
1902	a115	a110	a75	a70	a125	a280	180	127	85	61	82	a119	-
1903	61	a59	a55	a55	a60	a65	144	213	861	353	a225	211	a196
1904	113	163	97	*55	*55	*52.7	196	470	541	421	633	366	*264
1905	301	49.3	a50	a55	a50	a95	b486	1,320	1,260	340	308	253	b382
1906	167	b167	a75	a65	a65	a85	468	887	722	519	350	480	b338
1907	510	395	a185	a135	a145	218	299	637	1,200	1,190	708	355	a500
1908	231	153	82.3	80	90	123	173	183	255	276	391	236	190
1909	175	91.2	71.3	80	50	78.4	166	449	1,070	917	902	1,900	494
1910	663	298	190	209	172	437	415	602	464	312	404	171	363
1911	167	131	77.3	103	95.4	83.6	188	361	492	665	373	242	266
1912	144	94.4	109	95	75	75	98.2	451	1,300	1,250	743	393	404
1913	246	219	a120	108	83	90	397	572	943	761	544	426	a377
1914	324	212	171	179	143	211	950	2,220	2,120	1,850	1,690	642	†899
1915	514	311	170	173	128	112	540	966	1,180	707	458	426	475
1916	395	207	156	118	124	147	220	508	734	618	668	231	345
1917	152	132	138	144	114	121	189	698	1,450	1,070	738	334	440
1918	148	87.6	118	118	123	98.3	388	792	1,340	817	442	357	412
1919	230	194	140	148	130	99	638	1,170	1,070	884	821	468	501
1920	160	118	151	134	108	104	225	840	1,050	918	832	500	430
1921	274	108	112	119	119	147	415	1,110	3,050	1,740	1,350	747	776
1922	415	201	125	153	185	181	316	812	931	532	589	342	400
1923	190	131	139	134	129	124	192	433	844	1,090	1,190	696	443
1924	588	407	255	182	154	134	624	986	1,540	813	478	260	535
1925	228	158	155	168	148	106	219	364	437	358	458	396	267
1926	305	140	77	68	75	111	401	1,180	1,520	875	641	240	472
1927	167	196	94	95	118	146	258	515	654	655	448	308	304
1928	277	170	68	105	106	135	168	783	950	615	450	214	338
1929	200	113	78	94	93	108	142	308	506	568	1,140	682	338
1930	337	185	136	116	138	107	302	469	739	801	1,150	508	417
1931	323	140	120	95	110	115	235	718	746	582	451	218	323
1932	199	116	72.5	61.5	86.9	86.9	211	466	635	597	395	197	262
1933	225	178	85.4	50.8	36.5	82.5	212	1,170	1,190	573	441	285	377
1934	162	148	102	73	80	103	220	464	384	324	324	223	218
1935	169	100	65	60	59	80.0	132	348	561	624	583	296	258
1936	222	141	55.5	49.7	55.3	69.9	247	874	933	718	1,010	440	403
1937	264	141	82.9	54.0	88.0	97.5	260	472	424	460	389	236	248
1938	214	100	69.2	71.4	70.0	97.6	432	900	930	531	601	721	396
1939	476	210	146	98.7	77.9	192	463	801	545	386	259	179	321
1940	138	91.3	45.2	45.6	66.3	120	191	296	562	271	218	196	172
1941	133	97.9	80.6	78.2	69.6	87.2	301	912	879	587	563	343	346
1942	402	174	110	91.0	86.8	115	1,955	2,979	2,068	985	725	353	640
1943	233	176	158	149	113	111	232	472	502	417	443	199	268
1944	189	125	78.4	99.6	80.2	61.9	208	888	1,004	529	363	172	316
1945	151	138	75.2	101	85.1	85.4	125	390	368	530	1,532	495	342
1946	244	178	139	112	124	144	311	371	462	497	392	238	268
1947	179	159	139	97.7	118	123	295	702	1,350	1,172	773	369	460
1948	356	279	151	109	150	243	1,023	1,503	1,359	632	479	268	546
1949	234	193	137	122	135	137	245	608	2,655	1,735	656	303	597
1950	201	133	114	123	93.9	137	332	348	468	409	295	209	239

* Only monthly figures revised; revised daily figures not available.

† Corrected.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet of South Platte River at South Platte, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	33,800	33,800	*24,000	-
1888	*18,400	a14,900	a10,100	a7,990	a8,050	*10,100	*17,100	*27,200	*28,500	19,100	16,100	10,700	a188,000
1889	*10,800	a7,140	a5,150	a4,920	a5,000	a5,780	*8,920	29,400	27,400	19,900	13,000	7,680	a147,000
1890	*7,260	a5,560	a4,920	a4,920	a5,000	a7,990	a11,900	24,000	24,000	32,000	34,800	11,700	b174,000
1891	10,600	a5,560	a4,920	a4,920	a5,000	a9,220	a28,100	a57,600	75,800	59,700	*28,100	13,000	b290,000
1892	-	-	-	-	-	-	-	-	37,400	52,100	32,900	19,500	-
1893	*24,100	-	-	-	-	-	-	-	-	-	-	-	-
1896	a12,000	a10,100	*6,150	5,980	6,620	12,700	28,100	30,900	16,700	13,700	12,200	14,900	a170,000
1897	13,300	10,100	5,720	4,980	4,440	6,210	22,000	60,500	62,200	40,000	25,000	11,900	b266,000
1899	a12,000	a8,930	a7,070	a6,150	a4,440	a10,100	27,000	46,700	80,100	71,400	36,100	13,900	b324,000
1900	9,470	9,520	9,830	6,530	3,050	9,650	49,200	*154,000	-	-	-	-	-
1901	a12,300	a10,700	a9,840	a9,840	a8,530	a12,300	a23,800	a41,500	a36,800	a14,800	a24,300	a11,500	a216,000
1902	a7,130	a6,550	a6,780	a4,610	a3,890	a7,690	15,500	11,100	7,580	5,230	4,980	4,880	a85,900
1903	3,750	a5,610	a3,380	a3,380	a3,340	a4,000	8,570	13,000	51,200	21,700	a13,800	12,600	a142,000
1904	6,950	9,700	5,980	*3,380	*3,160	*3,240	11,700	28,900	32,200	26,900	38,900	21,800	*192,000
1905	18,500	2,930	a3,070	a3,380	a2,780	a5,840	b28,900	81,200	74,800	20,900	18,800	15,100	b276,000
1906	10,300	b9,940	a4,610	a4,000	a3,610	a5,230	27,800	54,500	43,000	31,900	21,500	28,600	b245,000
1907	31,400	23,500	a11,400	a8,500	a8,050	13,400	17,800	39,200	71,400	73,200	43,500	21,100	a362,000
1908	14,200	9,100	5,060	4,920	5,180	7,560	10,300	11,300	15,200	17,000	24,000	14,000	138,000
1909	10,800	5,430	4,380	3,980	2,780	4,620	9,880	27,600	63,700	56,400	55,500	13,000	358,000
1910	40,800	17,700	11,700	12,800	9,560	26,900	24,700	37,000	27,600	19,200	24,900	10,200	263,000
1911	10,200	7,800	4,750	6,380	5,300	5,140	11,200	22,200	29,200	53,100	22,900	14,400	193,000
1912	8,830	5,620	6,700	5,840	4,310	4,610	5,840	27,700	77,400	76,900	46,100	23,400	293,000
1913	15,100	13,000	a7,380	6,840	4,610	5,530	23,800	35,200	56,100	46,800	33,400	25,500	a273,000
1914	19,900	12,600	10,500	11,000	7,940	13,000	56,500	136,000	128,000	114,000	104,000	39,200	650,000
1915	51,600	16,500	10,500	10,800	7,110	6,890	32,100	59,400	70,200	43,500	28,200	25,500	444,000
1916	24,300	12,300	9,590	7,260	7,130	9,040	13,100	31,100	43,700	38,100	41,100	13,700	250,000
1917	9,350	7,880	8,480	8,850	6,530	6,210	11,200	42,800	86,500	65,800	45,400	20,100	319,000
1918	9,100	5,210	7,260	7,130	6,830	6,040	23,100	48,700	79,700	56,400	27,200	21,200	298,000
1919	14,100	11,500	8,610	9,000	7,220	6,090	37,800	71,900	63,700	54,400	50,500	27,800	363,000
1920	9,840	7,020	9,280	8,240	6,210	6,400	13,400	51,600	62,500	56,500	51,200	29,800	312,000
1920	16,800	6,430	6,890	7,320	6,610	9,040	24,700	68,200	181,000	107,000	83,000	44,400	561,000
1922	25,500	12,000	7,690	9,410	10,300	11,100	18,800	49,900	55,400	32,700	36,200	20,400	289,000
1923	11,700	7,800	8,550	8,240	7,160	7,620	11,400	26,600	50,200	67,000	73,200	41,400	321,000
1924	36,200	24,200	15,700	11,200	8,660	8,240	37,100	60,600	91,600	60,500	29,300	15,500	388,000
1925	14,000	9,400	9,530	10,300	8,220	6,520	13,000	23,600	26,000	22,000	26,900	23,600	193,000
1926	18,800	8,330	4,740	4,060	4,160	6,820	23,900	72,600	90,400	53,800	39,400	14,300	341,000
1927	10,300	11,700	5,780	5,840	6,550	8,980	15,400	31,700	37,700	40,300	27,500	18,300	220,000
1928	17,000	10,100	4,180	4,660	6,100	8,300	10,000	48,100	56,500	37,800	27,700	12,700	245,000
1929	12,300	6,720	4,800	5,780	5,160	6,640	8,450	18,900	30,100	34,900	70,100	40,500	244,000
1930	20,700	8,920	8,360	7,130	7,660	6,580	18,000	28,800	44,000	49,300	70,700	30,200	301,000
1931	19,900	8,530	7,380	5,840	6,110	7,070	14,000	44,100	44,400	35,800	27,700	13,000	234,000
1932	12,200	6,900	4,480	3,780	6,100	5,340	12,600	28,700	37,800	36,700	24,300	11,700	191,000
1933	13,800	10,600	4,080	3,120	2,030	5,070	12,600	71,900	70,800	35,200	27,100	17,000	273,000
1934	9,980	8,810	6,270	4,490	4,440	6,530	13,100	28,500	22,800	19,900	19,900	13,500	157,800
1935	10,570	5,980	4,000	3,690	3,280	4,920	7,830	21,380	33,590	38,370	53,870	17,640	186,700
1936	13,660	8,370	3,410	3,050	3,180	4,300	14,720	53,750	55,530	44,170	62,310	26,160	292,600
1937	16,260	8,370	5,100	3,320	4,890	5,990	15,440	29,020	25,230	28,260	23,890	14,060	179,800
1938	13,160	5,980	4,250	4,320	3,890	6,000	25,680	55,360	55,340	32,660	36,940	42,890	286,500
1939	29,290	12,520	9,000	6,070	4,330	11,610	27,540	49,230	32,430	33,870	15,950	10,630	232,700
1940	8,490	5,430	2,780	2,800	3,820	7,380	11,350	18,300	22,740	16,660	13,420	11,780	125,000
1941	8,180	5,820	4,960	4,810	3,880	5,360	17,940	56,090	52,300	36,100	34,650	20,400	250,500
1942	24,720	10,370	6,770	5,600	4,820	7,070	116,300	183,200	123,000	80,600	44,600	21,020	608,100
1943	14,320	10,470	9,730	9,180	8,250	6,840	13,790	29,000	29,900	25,650	27,270	11,940	194,200
1944	11,650	7,430	4,820	6,130	3,460	3,800	12,370	54,680	59,710	32,520	22,290	10,260	229,100
1945	9,300	8,190	4,620	6,180	4,750	5,250	7,480	23,950	21,930	32,980	54,200	29,450	247,800
1946	14,980	10,570	8,530	6,890	6,860	8,880	18,520	22,830	27,460	30,540	24,090	14,160	194,300
1947	11,000	9,480	8,550	6,010	6,460	7,720	17,570	43,160	80,350	72,090	47,540	23,130	333,100
1948	21,870	16,590	9,290	6,670	8,610	14,940	60,850	92,410	80,890	58,870	29,460	15,960	396,400
1949	14,390	11,460	8,410	7,500	7,470	8,420	14,800	37,260	159,000	106,700	40,360	18,010	432,600
1950	12,350	7,890	7,030	7,560	5,210	6,440	19,740	21,400	27,850	25,140	18,150	12,420	173,200

* Revised.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of South Platte River at South Platte, Colo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1887	(a)	-	-	-	-	-	-	-
1888	(a)	-	-	-	b259	b188,000	b232	b169,000
1889	(a)	-	-	-	b203	b147,000	b194	b141,000
1890	(a)	-	-	-	c240	c174,000	c244	c177,000
1891	74	-	-	-	c401	c290,000	-	-
1892	74	-	-	-	-	-	-	-
1896	(d)	-	-	-	b234	b170,000	235	171,000
1897	(e)	-	-	67	c367	c266,000	-	-
1899	(f)	-	-	-	c448	c324,000	c448	c325,000
1900	(g)	-	-	10	-	-	-	-
1901	-	-	-	-	b298	b216,000	b291	b203,000
1902	84	-	-	21	b119	b85,900	b105	b76,100
1903	99	-	-	-	b196	b142,000	b213	b154,000
1904	131	*h2,750	July 24, 1904	-	*254	*192,000	c267	c194,000
1905	172	*h2,250	June 8, 1905	-	c382	c276,000	c382	c277,000
1906	208	*h1,300	May 22, 1906	-	c338	c245,000	b396	b286,000
1907	246	*h2,250	July 29, 1907	-	b500	b362,000	b448	b324,000
1908	246	*h1,000	Aug. 6, 1908	-	190	158,000	179	150,000
1909	266	*h2,900	Sept. 15, 1909	-	494	358,000	583	406,000
1910	306	*h1,300	July 29, 1910	-	363	263,000	298	216,000
1911	306	*2,280	July 6, 1911	63	266	193,000	264	191,000
1912	326	*2,180	June 30, 1912	-	404	293,000	b424	b308,000
1913	356	*1,540	June 18, 1913	-	b377	b273,000	387	280,000
1914	386	3,200	June 2, 1914	104	*899	650,000	922	667,000
1915	406	1,500	June 5, 1915*	-	475	344,000	455	329,000
1916	436	1,130	June 15, 1916	-	345	250,000	317	230,000
1917	456	2,050	June 20, 1917	-	440	319,000	434	315,000
1918	476	3,000	June 24, 1918	-	412	298,000	429	311,000
1919	506	1,850	Aug. 1, 1919	-	501	363,000	490	355,000
1920	506	1,390	(1)	-	430	312,000	345	316,000
1921	526	6,320	June 8, 1921	-	776	561,000	796	576,000
1922	546	*1,720	Aug. 5, 1922*	-	400	289,000	376	272,000
1923	566	1,660	July 16, 1923	-	443	321,000	510	359,000
1924	586	2,300	June 7, 1924	-	535	388,000	478	345,000
1925	606	690	June 11, 1925	-	267	193,000	265	192,000
1926	626	*j2,540	June 8, 1926	-	472	341,000	466	337,000
1927	646	1,160	July 2, 1927	-	304	220,000	309	224,000
1928	666	1,960	May 30, 1928	-	338	245,000	327	237,000
1929	686	2,340	Aug. 9, 1929	-	338	244,000	358	260,000
1930	701	2,110	Aug. 14, 1930	-	417	301,000	412	298,000
1931	716	1,320	July 1, 1931	-	323	234,000	306	222,000
1932	731	1,020	July 30, 1932	14	262	191,000	269	196,000
1933	746	2,080	June 2, 1933	-	377	273,000	373	270,000
1934	761	765	May 30, 1934	-	218	157,800	212	153,100
1935	766	1,630	July 23, 1935	-	258	186,700	265	191,800
1936	806	*2,770	Aug. 12, 1936*	27	403	292,600	409	296,900
1937	826	1,260	June 28, 1937	42	248	179,800	240	175,500
1938	856	1,660	May 30, 1938	40	396	286,500	434	314,000
1939	876	1,100	May 28, 1939	55	321	232,700	274	198,600
1940	896	1,150	Sept. 3, 1940	34	172	125,000	175	127,200
1941	926	1,640	June 6, 1941	59	346	250,500	378	273,400
1942	956	5,210	Apr. 23, 1942	70	840	608,100	830	600,700
1943	976	1,180	July 22, 1943	75	268	194,200	254	183,600
1944	1006	1,640	May 31, 1944	37	516	229,100	313	227,300
1945	1036	2,500	Aug. 21, 1945	40	342	247,800	359	259,800
1946	1056	1,010	July 16, 1946	100	268	194,300	261	189,300
1947	1086	2,490	June 24, 1947	58	460	333,100	466	351,800
1948	1116	*j2,500	Apr. 23, 1948	70	546	396,400	527	382,900
1949	1146	4,810	June 14, 1949	90	597	432,600	588	425,600
1950	1176	777	June 17, 1950	65	239	173,200	-	-

* Revised.

† Corrected.

* Not previously published.

a 13th Ann. Rept., Pt. 3.

b From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d 18th Ann. Rept., Pt. 4.

e 19th Ann. Rept., Pt. 4.

f 21st Ann. Rept., Vol. 4.

g 22nd Ann. Rept., Pt. 4.

h Observed.

i June 14, 16, July 30, 1920.

j Estimated.

193. South Platte River at Waterton, Colo.

Location.--Lat 39°29'18", long. 105°05'32", in NE $\frac{1}{4}$ sec. 34, T. 6 S., R. 69 W., 250 ft downstream from State Highway 221, half a mile east of Waterton, 5 miles west of Louviers, and 6 miles (revised) upstream from Plum Creek.

Drainage area.--2,620 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,484.43 ft above mean sea level, adjustment of 1912.

Average discharge.--24 years (1926-50), 197 cfs.

Extremes.--1926-50: Maximum discharge, 5,700 cfs Apr. 23, 1942 (gage height, 5.68 ft), minimum daily, 0.1 cfs Mar. 6, 7, 1933, Feb. 28 to Mar. 2, Mar. 20, 1938.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, diversions above station for municipal use and irrigation of about 55,000 acres, and return flow from irrigated areas. Records for individual transmountain diversions and storage reservoirs (except Antero Reservoir, capacity, 22,300 acre-ft) are given elsewhere in this report.

Cooperation.--Records for 1926-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	-	a896	a1,070	a443	a244	a87.5	-
1927	a12.9	a23.1	a27.2	a30.1	a35.6	a64.9	a67.9	a183	a209	a324	a179	a163	a110
1928	a28.9	a21.0	a21.0	a19.0	a17.2	a5.26	a30.8	a349	a500	a277	a209	a82.7	a131
1929	a32.8	a27.7	a17.1	a3.61	a5.71	a7.77	a9.43	a109	a278	a369	*712	a268	*155
1930	a82.1	a130	a48.2	a16.3	a26.5	a20.5	a78.0	a232	a454	a485	*611	a199	*198
1931	a74.8	a51.9	a44.0	a16.8	a19.8	a33.9	a86.6	a319	a449	a278	a189	a23.3	a133
1932	a30.2	a19.9	a16.6	a10.1	a5.24	a4.39	a84.8	a293	a352	a317	a202	a44.4	a115
1933	a42.9	a31.5	a13.3	a.6	a1.49	a13.1	a134	a733	a752	a375	a262	a108	a207
1934	67.0	61.4	44.4	12.8	22.7	28.6	72.0	257	174	124	153	51.3	89.5
1935	23.4	25.7	24.2	2.6	5.8	42.8	66.0	160	237	420	387	127	128
1936	51.9	78.2	19.3	4.18	2.26	13.9	116	467	552	484	777	306	240
1937	271	79.2	29.0	5.23	4.24	5.55	97.6	317	120	256	170	80.4	121
1938	48.8	16.0	22.2	6.63	1.45	8.82	194	599	394	305	409	425	203
1939	178	157	106	25.5	44.1	141	321	485	238	148	110	45.7	187
1940	31.7	30.7	6.63	17.4	8.34	32.1	74.3	157	125	66.6	77.9	57.6	57.2
1941	17.1	52.8	12.6	31.9	2.69	22.0	88.1	487	583	330	368	186	183
1942	263	140	51.5	11.8	19.0	61.2	1,859	5,100	1,896	526	397	168	710
1943	138	19.3	51.2	46.7	44.1	46.0	90.7	207	239	228	312	55.2	124
1944	22.4	13.5	39.3	13.3	16.8	23.7	137	554	578	267	151	37.0	155
1945	20.3	21.1	28.5	9.73	17.6	19.4	71.0	105	122	281	1,279	266	189
1946	86.0	89.7	52.2	33.3	36.9	45.1	118	156	230	287	112	58.9	107
1947	59.7	94.3	70.8	22.6	13.2	44.2	95.9	486	1,133	951	489	269	312
1948	122	178	99.0	54.9	68.7	176	926	1,218	992	396	254	78.3	380
1949	51.6	30.1	64.1	34.9	27.7	21.4	64.3	336	2,607	1,323	398	138	425
1950	88.0	45.4	24.0	31.9	67.0	28.1	60.0	88.3	228	202	51.2	33.0	78.7

* Revised; supersedes figure published by state engineer of Colorado.

a From reports of State engineer of Colorado.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	-	a55,100	a63,700	a27,200	a15,000	a5,210	-
1927	a793	a1,370	a1,670	a1,850	a1,980	a3,990	a4,040	a11,300	a12,400	a19,900	a11,000	a9,700	a80,000
1928	a1,780	a1,250	a1,290	a1,170	a989	a323	a1,830	a21,500	a29,800	a17,000	a12,900	a4,920	a94,800
1929	a2,020	a1,850	a1,050	a222	a317	a478	a561	a6,700	a15,500	a22,700	a43,800	a15,900	*112,000
1930	a3,820	a7,740	a2,960	a1,000	a1,470	a1,260	a4,640	a14,500	a27,000	a29,800	a37,600	a11,800	*143,000
1931	a4,600	a3,090	a2,700	a1,030	a1,100	a2,080	a5,150	a19,800	a26,700	a17,100	a11,600	a1,390	a96,100
1932	a1,860	a1,180	a1,020	a521	a501	a270	a5,050	a18,000	a20,900	a19,500	a12,400	a2,640	a85,700
1933	a2,640	a1,870	a818	a571	a83	a808	a7,970	a45,100	a44,700	a25,100	a16,100	a6,430	a150,000
1934	4,120	3,650	2,750	775	1,260	1,760	4,260	15,800	10,400	7,620	9,410	3,050	64,860
1935	1,440	1,630	1,490	159	321	2,630	3,930	9,610	14,090	25,620	23,800	7,550	92,570
1936	3,190	4,850	1,190	257	130	857	6,900	28,730	32,850	29,740	47,760	18,220	174,500
1937	16,890	4,710	1,780	321	236	342	5,810	19,520	7,170	15,770	10,470	4,790	87,610
1938	3,000	950	1,360	407	25	542	11,580	36,810	23,470	18,750	25,160	25,260	147,300
1939	10,840	9,350	6,490	1,450	2,450	8,650	19,080	29,670	14,170	9,120	6,750	2,720	120,700
1940	1,950	1,830	407	1,070	480	1,970	4,420	9,640	7,430	4,100	4,790	3,440	41,530
1941	1,050	3,140	774	1,960	149	1,360	5,240	29,970	34,710	20,310	22,650	11,060	132,400
1942	16,160	8,320	3,170	727	1,060	3,760	110,800	190,800	112,800	32,350	22,400	10,010	513,900
1943	8,480	1,150	3,150	2,870	2,450	2,830	5,400	12,740	14,190	14,000	19,190	3,280	89,730
1944	1,380	805	2,420	818	964	1,450	8,140	34,060	34,420	16,410	9,300	2,200	112,400
1945	1,250	1,280	1,750	598	978	1,190	4,230	6,430	7,290	17,270	78,670	15,810	136,700
1946	5,290	5,340	3,210	2,040	2,160	2,770	6,890	9,820	13,680	17,630	6,860	2,190	77,690
1947	5,670	6,810	4,350	1,390	734	2,720	5,710	29,880	67,400	58,480	30,040	16,010	226,000
1948	7,500	10,610	6,090	3,380	3,960	10,850	55,070	74,870	59,020	24,370	15,630	4,860	276,000
1949	3,170	7,790	3,940	2,150	1,540	1,310	3,820	20,640	155,100	81,340	24,500	8,200	307,500
1950	5,410	2,700	1,470	1,960	3,720	1,730	3,570	5,430	13,430	12,440	3,150	1,980	56,970

* Revised; supersedes figure published by State engineer of Colorado.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Platte River at Waterton, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	2,150	June 9, 1926	-	-	-	-	-
1927	(a)	*746	July 1, 1927	a4	a110	a80,000	a111	a80,500
1928	(a)	*2,150	June 3, 1928	a1	a131	a94,800	a131	a95,200
1929	(a)	*1,470	Aug. 6, 1929	a2	*155	*112,000	*168	*122,000
1930	(a)	*1,300	Aug. 14, 1930	-	*198	*143,000	*192	*139,000
1931	(a)	*973	May 25, 1931	a3	a133	a96,100	a124	a89,800
1932	(a)	*783	July 30, 1932	a2	a115	a85,700	a117	a85,000
1933	(a)	*1,480	May 22, 1933	a.1	a207	a150,000	a214	a155,000
1934	761	539	May 25, 1934	4	89.5	64,860	81.2	58,820
1935	788	1,280	July 23, 1935	1	128	92,570	134	97,140
1936	806	2,670	Aug. 12, 1936	.2	240	174,500	260	188,600
1937	826	888	May 16, 1937	1.6	121	87,610	96.3	69,740
1938	856	1,820	Sept. 3, 1938	.1	203	147,500	233	168,700
1939	876	876	May 26, 1939	5	167	120,700	136	98,250
1940	896	576	Aug. 23, 1940	2.8	57.2	41,530	58.3	42,300
1941	926	1,090	Aug. 12, 1941	1.8	183	132,400	214	155,100
1942	956	5,700	Apr. 23, 1942	2.3	710	513,900	689	499,100
1943	976	560	July 22, 1943	.2	124	89,730	113	81,580
1944	1006	1,090	June 10, 1944	2.0	155	112,400	154	112,000
1945	1036	2,320	Aug. 14, 1945	.9	189	136,700	202	146,300
1946	1056	801	July 17, 1946	2.2	107	77,690	107	77,480
1947	1086	2,400	June 24, 1947	2.2	312	226,000	327	236,600
1948	1116	2,300	Apr. 25, 1948	2.2	380	276,000	359	280,700
1949	1146	5,470	June 13, 1949	4.8	425	307,500	426	308,200
1950	1176	804	Nov. 7, 1949	.6	78.7	56,970	-	-

* Revised.

* Not previously published.

a From reports of State engineer of Colorado.

194. Deer Creek near Littleton, Colo.

Location.--Lat 39°32'55" long. 105°08'00", in NE $\frac{1}{4}$ sec. 8, T. 6 S., R. 69 W., at Deer Creek Park, $3\frac{1}{2}$ miles (revised) downstream from South Fork Deer Creek (formerly Blue Jay Creek), and $7\frac{1}{2}$ miles southwest of Littleton.

Drainage area.--21.8 sq mi.

Gage.--Staff gage. Datum of gage is 5,683.21 ft above mean sea level, datum of 1929.

Extremes.--1942-46: Maximum discharge observed, 162 cfs May 9, 1944 (gage height, 2.90 ft), from rating curve extended above 120 cfs; no flow at times during 1943-46.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	2.80	0.99	0.39	-
1943	2.40	1.90	0.90	0.90	0.82	1.81	3.38	*10.4	5.91	.87	.30	.01	*2.47
1944	0	.10	.15	.08	.20	1.11	29.0	75.5	4.51	.95	.39	.01	9.39
1945	0	.05	.09	.09	.34	.76	3.26	5.53	3.51	1.45	2.50	.47	1.51
1946	.77	.61	.15	.12	.51	2.22	3.29	3.65	.98	.15	0	.53	1.08

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	172	61	23	-
1943	148	113	55	55	46	111	201	*638	351	54	18	.6	*1,790
1944	0	6.0	9.5	5.2	11	68	1,720	4,640	288	59	24	.6	6,810
1945	0	3.2	5.8	5.6	19	47	194	340	209	88	154	28	1,090
1946	47	36	8.9	7.1	28	137	196	224	59	7.7	0	32	783

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Runoff in acre-feet
		Discharge	Date				
1942	956	18	June 29, 1942	-	-	-	-
1943	976, 1440	*47	Aug. 17, 1943	0	*2.47	*1,790	*2.06
1944	1006	162	May 9, 1944	0	9.39	6,810	9.38
1945	1036	42	June 25, 1945	0	1.51	1,090	1.62
1946	1056, 1440	*42	Sept. 7, 1946	0	1.08	783	-

* Revised.

195. Plum Creek near Sedalia, Colo.

Location.--Lat 39°26'20", long. 104°58'55", in SE $\frac{1}{4}$ sec. 15, T. 7 S., R. 68 W., 1 mile downstream from Jarre Creek and 1 mile west of Sedalia.

Drainage area.--274 sq mi (revised).

Gage.--Water-stage recorder. Datum of gage is 5,722.61 ft above mean sea level, datum of 1929. Prior to May 4, 1944, staff gage at site 150 ft downstream at same datum.

Average discharge.--5 years (1942-47), 32.2 cfs.

Extremes.--1942-47: Maximum discharge, 7,700 cfs Aug. 8, 1945 (gage height, 6.52 ft), from rating curve extended above 350 cfs on basis of slope-area determination of peak flow; no flow at times during 1943, 1944, 1946.

Remarks.--Diversions above station for irrigation of 1,500 acres.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	21.4	15.1	12.1	-
1943	31.8	30.6	29.1	23.0	24.7	17.5	15.7	32.7	19.6	3.74	.29	0	19.0
1944	1.75	12.3	5.00	8.04	27.8	23.5	107	332	48.4	8.11	.60	.06	47.9
1945	1.32	3.34	8.41	8.37	14.7	16.8	35.4	46.9	5.40	1.91	147	13.4	25.4
1946	12.4	23.5	7.91	13.3	23.2	13.1	20.3	5.06	2.70	2.87	2.42	1.39	10.6
1947	2.82	17.3	22.6	12.5	12.7	34.3	70.0	278	134	71.2	25.2	13.6	58.3

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	1,310	928	722	-
1943	1,950	1,820	1,790	1,410	1,370	1,080	934	2,010	1,160	230	18	0	13,770
1944	108	732	307	494	1,600	1,440	6,380	20,400	2,880	376	37	3.6	34,760
1945	81	199	517	515	815	1,040	2,110	2,880	321	117	9,040	799	18,430
1946	754	1,400	486	818	1,290	804	1,210	311	161	177	148	83	7,650
1947	174	1,030	1,390	772	704	2,110	4,170	17,090	8,000	4,360	1,550	811	42,180

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	maximum Date				
1942	956	a760	May 13, 1942	-	-	-	-
1943	976	b150	Oct. 17, 1943	0	19.0	13,770	12.9
1944	1008	620	May 15, 1944	0	47.9	34,760	47.4
1945	1036	7,700	Aug. 8, 1945	.2	25.4	18,430	28.0
1946	1056	431	Aug. 24, 1946	0	10.6	7,650	10.5
1947	1086	664	July 22, 1947	1.0	58.3	42,180	-

a Discharge measurement.
b Observed.

196. Plum Creek near Louviers, Colo.

Location.--Lat 39°30'25", long. 105°01'25", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 29, T. 6 S., R. 68 W., 0.5 mile upstream from flume crossing of Highline Canal, 2 $\frac{1}{2}$ miles (revised) north of Louviers, and 5 miles (revised) upstream from mouth.

Drainage area.--319 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,518.71 ft above mean sea level, datum of 1929.

Extremes.--1947-50: Maximum discharge, 948 cfs June 13, 1949 (gage height, 2.72 ft), from rating curve extended above 320 cfs by logarithmic plotting; minimum daily, 0.2 cfs Sept. 15-19, 1948, Aug. 3-8, 14-16, 18, Sept. 15, 18-27, 1950.

Remarks.--Diversions above station for irrigation of about 2,000 acres.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	32.2	28.1	24.8	17.9	27.6	61.1	134	121	20.7	7.78	3.59	0.37	39.9
1949	3.18	5.73	8.92	9.10	10.8	17.5	24.2	109	98.9	35.2	2.07	1.30	27.1
1950	3.94	5.96	9.15	12.7	13.2	7.24	10.5	6.62	3.18	.50	.34	.28	6.09

Monthly and yearly runoff, in acre-feet of Plum Creek near Louviers, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	1,980	1,670	1,530	1,100	1,590	3,750	7,970	7,440	1,230	478	221	22	28,980
1949	195	341	548	559	801	1,080	1,440	6,710	5,770	2,180	127	78	19,610
1950	242	355	563	778	734	445	625	407	189	31	21	16	4,410

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1948	1118	519	Mar. 14, 1948	0.2	39.9	28,980	34.3
1949	1146	948	June 13, 1949	.3	27.1	19,610	27.2
1950	1178	44	Apr. 16, 1950	.2	6.09	4,410	-

197. South Platte River at Littleton, Colo.

Location.--Lat 39°37'10" long. 105°01'10", in NE $\frac{1}{4}$ sec. 17, T. 5 S., R. 68 W., 200 ft. downstream from Hazard Street Bridge at Littleton, 3.1 miles upstream from Bear Creek.

Drainage area.--3,090 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,305.36 ft above mean sea level, datum of 1929. Prior to Nov. 23, 1948, wire-weight gage at site 200 ft upstream at same datum.

Average discharge.--9 years (1941-50), 325 cfs.

Extremes.--1941-50: Maximum discharge, 9,720 cfs Apr. 23, 1942 (gage height, 8.55 ft, from floodmark), from rating curve extended above 4,800 cfs; minimum daily, 9.0 cfs Oct. 20, 1943.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversion for irrigation and municipal use, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	-	378	194	-
1942	327	194	190.4	58.4	50.0	168	3,003	3,112	1,603	488	359	172	805
1943	191	91.7	103	128	103	74.1	121	266	225	215	271	52.2	154
1944	29.1	40.3	68.5	44.2	50.3	72.5	280	1,020	604	280	124	46.6	222
1945	26.4	39.3	56.0	36.1	61.3	48.6	128	157	111	254	1,342	276	213
1946	126	134	99.6	69.2	61.6	144	148	215	277	119	66.3	129	129
1947	97.5	127	108	58.3	49.5	111	184	887	1,337	1,074	564	297	410
1948	197	216	148	103	169	278	1,115	1,377	1,152	415	251	74.6	458
1949	56.7	73.4	71.6	63.5	66.1	58.2	101	447	2,513	1,304	374	154	440
1950	125	85.2	53.4	76.1	103	66.5	103	108	213	190	50.1	23.2	99.7

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	-	-	-	-	23,250	11,530	-
1942	20,100	11,550	5,560	3,470	2,770	10,300	178,700	191,400	95,410	30,030	22,080	10,280	581,800
1943	11,770	5,480	6,340	7,900	5,720	4,560	7,190	16,340	13,370	15,230	16,640	3,100	111,800
1944	1,790	2,400	4,210	2,720	2,890	4,460	16,670	62,710	35,960	17,230	7,810	2,770	181,400
1945	1,620	2,340	3,440	2,220	3,410	3,000	7,590	9,680	6,630	15,590	82,520	16,430	154,500
1946	7,740	7,950	6,130	4,250	3,420	5,030	8,540	9,150	12,810	17,010	7,300	3,950	95,280
1947	5,990	7,580	6,650	3,580	2,750	6,820	10,930	54,520	79,560	66,060	34,670	17,660	296,800
1948	12,090	12,860	9,120	6,310	9,730	17,120	66,370	84,650	68,530	25,520	15,450	4,440	332,200
1949	3,490	4,370	4,410	3,910	3,670	3,580	6,000	27,480	149,500	80,170	22,990	9,150	318,700
1950	7,660	5,070	3,280	4,680	5,730	4,090	6,120	6,730	12,690	11,690	3,080	1,390	72,180

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1941	856	a, b, 1,250	Aug. 13, 1941	-	-	-	-
1942	856	9,720	Apr. 23, 1942	28	803	581,600	784
1943	878	b, 556	May 30, 1943	19	154	111,600	133
1944	1008	b, 1,770	May 17, 1944	9.0	222	161,400	221
1945	1038	b, 3,520	Aug. 8, 1945	12	213	154,500	233
1946	1056	b, 691	July 14, 1946	20	129	92,280	127
1947	1086	b, 3,140	June 24, 1947	21	410	296,800	429
1948	1116	b, 2,950	Apr. 30, 1948	36	458	332,200	428
1949	1146	5,990	June 14, 1949	34	440	318,700	445
1950	1176	690	Nov. 7, 1949	15	99.7	72,180	-

a Maximum during period July to September.

b Maximum observed.

198. Bear Creek at Morrison, Colo. 1/

Location (revised).--Lat 39°39'10", long. 105°11'40", in SW $\frac{1}{4}$, sec. 35, T. 4 S., R. 70 W., 100 ft upstream from bridge on U. S. Highway 285 at Morrison, and a quarter of a mile upstream from Mount Vernon Creek.

Drainage area.--165 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,780.43 ft above mean sea level, datum of 1929.

Prior to Apr. 1, 1899, staff gage at site a quarter of a mile downstream at different datum.

Apr. 1, 1899, to Feb. 28, 1902, staff gage at site a quarter of a mile upstream at different datum.

Oct. 1, 1919, to Feb. 28, 1921, staff gage, and Mar. 1, 1921, to Sept. 30, 1934, water stage recorder at site 4 miles upstream at different datum

Average discharge.--35 years (1890-91, 1896-97, 1898-99, 1900-1901, 1919-50), 58.8 cfs.

Extremes.--1888-91, 1895-1901, 1919-50: Maximum discharge, 8,600 cfs (estimated) July 24, 1896; minimum daily, 0.8 cfs Nov. 26, 1939 (result of freezeup).

Remarks.--Diversions for irrigation of about 1,000 acres above station.

Cooperation.--Records for 1898 and 1920-34, not previously published by Geological Survey, furnished by Denver Union Water Company and by State engineer of Colorado respectively.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	†43	-
1888	-	-	-	-	-	-	31	95	100	65	*59	30	-
1889	-	-	-	-	-	-	-	*98	49	-	-	-	-
1890	-	-	-	-	-	-	-	†	*41	34	24	20	-
1891	21	17	†12	†10	†10	†10	†45	195	*322	90	32	25	†65.9
1895	-	-	-	-	-	-	-	-	-	134	126	69	-
1896	-	-	-	-	-	-	†45	51	32	†62	†53	50	-
1897	35	*25	†15	†12	†12	†15	†50	*149	175	115	199	67	†72.4
1898	55	34	20	-	-	-	*113	143	150	68	45	-	-
1899	29	23	†15	†12	†12	†15	†67	103	93	86	104	31	†49
1900	*19	-	-	-	-	-	-	487	379	115	50	*35	-
1901	29	17	†14	†12	†12	†15	54	116	114	52	40	22	†42
1902	20	15	-	-	-	-	-	-	-	-	-	-	-
1920	a31.0	a20.9	a15.4	a15.0	a16.8	a19.2	a28.4	a236	a153	a78.5	a78.6	a67.5	a63.6
1921	a31.2	a21.0	a18.7	a15.4	a20.8	a16.9	a89.9	a285	a332	a195	a169	a66.7	a107
1922	a31.3	a20.5	a22.2	a16.1	a16.7	a23	a44.6	a97.3	a86.3	a53.3	a91.1	a50.9	a46.3
1923	a31.5	a32.0	a25	a18	a17	a33	a53.1	a140	a239	a191	a307	a173	a106
1924	†95.9	a66.7	a57	a34	a36	a33.0	a102	a227	a285	a91.6	a28.5	a25.6	a90.2
1925	a33.9	a22.9	a18	a14	a15	a14.6	a16.4	a16.3	a24.7	a25.9	a42.2	a78.7	a26.9
1926	a86.8	a56.4	a35.0	a20	a18	a32.5	a226	a352	a280	a178	a98.4	a40.5	a117
1927	a32.3	a26.3	a20	a18	a16	a21.5	a48.8	a84.6	a86.0	a57.3	a87.5	a48.1	a44.1
1928	a32.5	a23.6	a20	a15	a7.5	a18.8	a40.8	a195	a154	a76.7	a49.6	a23.1	a54.9
1929	a28.4	a23.4	a15	a13	a8	a13	a21.0	a53.5	a40.3	a56.7	a154	a83.0	a42.6
1930	a46.1	a22.0	a13.5	a12	a18	a19.6	a42.2	a47.9	a49.9	a51.4	a159	a61.5	a45.5
1931	a41.4	a20.3	a12.5	a12.5	a15.5	a20.8	a47.8	a165	a155	a56.6	a35.8	a20.2	a50.5
1932	a21.4	a14.8	a12.0	a9.0	a6.0	a10.0	a18.0	a43.1	a51.0	a56.5	a43.0	a28.1	a26.2
1933	a20.2	a22.5	a8	a6	a4	a4	a21.1	a234	a178	a101	a40.3	a54.2	a58.1
1934	55.5	22.7	20	13	15	16.5	39.6	80.8	58.2	22.0	24	13.7	28.4
1935	9.5	10.3	10	12	7.5	7.2	14.3	125	124	67.5	49.1	36.4	39.5
1936	17.2	24.2	9.39	6.0	27.9	24.3	29.5	149	154	88.5	175	45.8	62.8
1937	40.3	26.0	14.2	7.0	7.92	12.8	25.4	51.3	135	90.6	38.9	32.9	40.3
1938	22.9	16.7	15.1	14.3	15.0	15.6	85.8	251	186	92.6	64.6	371	95.8
1939	94.8	42.3	30.7	20.8	15.8	44.9	92.0	86.7	37.0	16.9	14.4	12.6	42.6
1940	13.8	10.4	7.31	9.04	11.7	21.9	24.9	29.9	27.9	20.4	18.9	29.4	18.8
1941	32.0	21.1	15.4	9.65	11.2	21.4	68.7	224	219	86.2	60.0	42.0	67.8
1942	44.7	38.6	22.0	18.5	17.0	24.9	296	455	295	149	84.5	46.3	125
1943	56.3	25.4	19.8	16	11	18.5	41.6	81.6	130	64.8	35.0	16.4	43.2
1944	17.7	16.2	11.1	8.13	10.6	14.9	79.8	329	180	71.8	27.8	17.3	63.9
1945	17.5	11.7	13.4	7.83	11.0	15.2	26.5	59.7	55.7	42.4	115	66.8	37.0
1946	45.3	36.9	15.6	15.6	16.2	19.1	33.8	41.7	36.5	26.0	28.9	39.7	29.6
1947	28.5	26.3	19.4	15.7	15.2	23.0	44.5	150	237	172	91.3	58.9	70.4
1948	44.2	26.1	18.5	17.4	18.7	34.7	123	213	128	58.5	27.5	17.3	60.7
1949	21.1	21.2	20.0	13.0	11.2	15.5	27.0	168	551	249	87.4	22.2	101
1950	22.1	19.8	13.7	5.19	9.69	13.6	22.9	39.5	53.6	33.6	14.5	17.5	22.2

* Only monthly figures revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

† From reports of State engineer of Colorado.

1/ Published as "near Morrison" 1900-1902; as "at Starbuck" 1919-28; and as "at Idledale" 1929-34.

Monthly and yearly runoff, in acre feet of Bear Creek at Morrison, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	\$2,600	-
1888	---	-	-	-	-	-	1,840	5,840	5,950	4,000	*3,610	1,790	-
1889	-	-	-	-	-	-	-	*5,900	*5,060	3,030	-	-	-
1890	-	-	-	-	-	-	-	†	*2,440	2,090	1,480	1,190	-
1891	1,290	1,010	*738	*615	*555	*615	*2,680	12,000	*19,200	5,510	1,980	1,490	*47,700
1895	-	-	-	-	-	-	-	-	-	8,240	7,750	4,110	-
1896	-	-	-	-	-	-	*2,680	3,140	1,900	*3,810	*3,520	2,980	-
1897	2,150	*1,490	*922	*738	*666	*922	*2,980	*9,160	10,400	7,070	12,200	3,990	*52,700
1898	3,580	2,020	1,230	-	-	-	-	*6,950	8,510	9,220	4,050	2,680	-
1899	1,780	1,370	*922	*738	*666	*922	*3,990	6,330	5,550	5,290	6,400	1,840	*35,900
1900	*1,170	-	-	-	-	-	-	29,900	22,600	7,070	3,070	*2,080	-
1901	1,780	1,010	*861	*738	*666	*922	3,210	7,130	6,780	3,200	2,460	1,310	*30,100
1902	1,230	893	-	-	-	-	-	-	-	-	-	-	-
1920	a1,910	a1,240	a947	a922	a966	a1,180	a1,690	a14,500	a9,100	a4,830	a4,830	a4,020	a46,100
1921	a1,920	a1,250	a1,150	a947	a1,180	a1,040	a5,350	a17,500	a19,800	a12,000	a5,600	a5,160	a77,700
1922	a1,920	a1,220	a1,360	a990	a928	a1,410	a2,650	a5,980	a5,140	a3,280	a5,600	a3,030	a33,500
1923	a1,940	a1,900	a1,540	a1,110	a944	a2,030	a3,160	a8,610	a14,200	a11,700	a18,900	a10,300	a76,300
1924	a5,870	a5,160	a3,000	a2,090	a2,070	a2,030	a6,070	a14,000	a15,800	a5,630	a1,750	a1,520	a65,500
1925	a2,080	a1,360	a1,110	a861	a833	a898	a978	a1,000	a1,470	a1,590	a2,590	a4,680	a19,400
1926	a5,540	a3,360	a2,030	a1,230	a1,000	a2,000	a13,400	a21,600	a15,500	a10,900	a6,050	a2,410	a84,800
1927	a1,990	a1,560	a1,230	a1,110	a889	a1,320	a2,900	a5,200	a3,930	a3,520	a5,380	a2,860	a31,900
1928	a2,000	a1,400	a1,230	a922	a431	a1,160	a2,430	a12,000	a9,160	a4,720	a3,050	a1,370	a39,900
1929	a1,620	a1,390	a922	a799	a444	a799	a1,250	a3,290	a2,400	a3,490	a9,470	a4,940	a30,800
1930	a2,830	a1,310	a850	a758	a1,000	a1,210	a2,510	a2,950	a2,970	a3,160	a9,780	a3,660	a32,900
1931	a2,550	a1,210	a769	a769	a861	a1,280	a2,840	a10,100	a9,220	a3,490	a2,200	a1,200	a36,500
1932	a1,320	a681	a714	a536	a345	a615	a1,070	a2,650	a3,030	a3,470	a2,640	a1,670	a18,900
1933	a1,240	a1,540	a492	a369	a222	a246	a1,280	a14,400	a10,600	a6,210	a2,480	a3,230	a42,100
1934	2,060	1,350	1,230	799	833	1,010	2,370	4,970	2,270	1,350	1,480	815	20,540
1935	585	613	615	738	417	444	851	7,680	7,350	4,150	3,020	2,170	28,630
1936	1,080	1,440	578	369	1,610	1,490	1,750	9,160	9,150	5,440	10,790	2,720	45,560
1937	2,480	1,550	873	430	440	789	1,510	3,150	8,020	5,570	2,390	1,960	29,160
1938	1,410	994	928	881	831	958	5,110	15,410	11,080	5,690	3,970	22,060	69,320
1939	5,830	2,520	1,890	1,290	880	2,760	5,470	5,330	2,200	1,040	885	751	30,840
1940	649	620	449	556	671	1,350	1,480	1,840	1,660	1,260	1,160	1,750	13,640
1941	1,970	1,260	944	593	620	1,320	4,090	13,770	13,050	5,300	3,690	2,500	49,110
1942	2,750	2,300	1,350	1,020	946	1,530	17,620	27,970	17,580	9,160	5,200	2,760	90,490
1943	3,460	1,510	1,220	984	611	1,140	2,470	5,020	7,750	3,990	2,150	974	31,280
1944	1,090	961	683	500	609	914	4,750	20,250	9,500	4,410	1,710	1,030	46,410
1945	1,070	695	825	481	609	933	1,580	3,670	5,310	2,160	7,050	3,980	26,810
1946	2,780	2,200	960	958	899	1,170	2,010	2,570	2,170	1,600	1,780	2,360	21,460
1947	1,760	1,560	1,190	966	845	1,410	2,650	7,960	14,130	10,590	5,620	2,310	50,990
1948	2,720	1,560	1,140	1,070	1,080	2,130	7,290	13,080	7,650	3,600	1,690	1,030	44,040
1949	1,300	1,260	1,230	800	620	950	1,600	10,310	32,800	15,310	5,370	1,320	72,870
1950	1,360	1,180	840	319	538	837	1,360	2,430	3,200	2,080	895	1,040	16,060

* Only monthly figures revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Discharge	Maximum Date	Minimum day	Mean	Runoff in acre-feet	Mean
1888	74	a139	Aug. 17, 1888	-	-	-	-
1889	74	a195	May 20, 1889	-	-	-	-
1890	74	a75	July 23, 1890	-	-	-	-
1891	74	a622	May 27, 1891	-	*65.9	*47,700	-
1895	(b)	-	-	-	-	-	-
1896	(c)	8,600	July 24, 1896	-	-	-	-
1897	(e)	d1,203	Aug. 4, 1897	-	*72.4	*52,700	75.7
1898	(f)	a208	July 13, 1898	-	-	-	-
1899	(g)	a325	Aug. 4, 1899	-	*49	*35,800	-
1900	(h)	a691	Apr. 29, 1900	-	-	-	-
1901	75	d214	June 15, 1901	-	*42	*30,100	-
1920	(i)	d360	May 2, 1920	6	163.6	146,100	163.9
1921	(i)	a678	June 3, 1921	9	1107	177,700	1107
1922	(i)	*350	June 25, 1922	10	146.3	133,500	147.5
1923	(i)	*1,070	Aug. 16, 1923	-	1106	176,300	1118
1924	(i)	*482	June 5, 1924	-	190.2	165,500	178.4
1925	(i)	*590	Aug. 30, 1925	-	126.9	119,400	135.4

* Not previously published.

a Maximum daily.

b Bull. 140.

c 18th Ann. Rept., Pt. 4.

d Observed.

e 19th Ann. Rept., Pt. 4.

f 20th Ann. Rept., Pt. 4.

g 21st Ann. Rept., Pt. 4.

h 22nd Ann. Rept., Pt. 4.

i From report of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Bear Creek at Morrison, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(1)	*588	Apr. 21, 1926	-	1117	184,800	1109	178,900
1927	(1)	*390	Aug. 14, 1927	-	144.1	131,900	143.9	131,700
1928	(1)	*305	May 17, 31, 1928	-	154.9	139,900	153.9	139,200
1929	(1)	*1,560	July 22, 1929	-	142.6	130,800	144.0	131,800
1930	(1)	*741	Aug. 4, 1930	-	145.5	132,900	144.9	132,500
1931	(1)	*270	June 3, 1931	-	150.5	136,500	148.3	134,900
1932	(1)	*302	June 27, 1932	-	126.2	118,900	126.3	119,100
1933	(1)	39,110	July 7, 1933	-	159.1	142,100	160.3	143,700
1934	761	4,620	Aug. 9, 1934	-	28.4	20,540	24.5	17,710
1935	766	*1,060	July 12, 1935	-	39.5	26,630	41.3	29,900
1936	806	745	Aug. 12, 1936	-	62.8	45,560	65.3	47,380
1937	826	392	Aug. 30, 1937	-	40.3	29,160	38.1	27,590
1938	856	6,200	Sept. 2, 1938	10	95.8	69,320	105	76,230
1939	876	295	Oct. 1, 1939	6.2	42.6	30,840	31.1	22,510
1940	896	615	Aug. 25, 1940	.8	18.9	15,640	21.9	15,900
1941	926	2,500	June 21, 1941	8.8	67.8	49,100	20.9	51,330
1942	956, 976	1,850	Apr. 19, 1942	14	125	90,490	124	89,980
1943	976	244	June 30, 1943	-	43.2	31,280	38.4	27,820
1944	1006	542	May 15, 1944	4.0	63.9	46,410	63.7	46,260
1945	1036	375	Aug. 20, 1945	4.6	37.0	26,810	41.7	30,160
1946	1056	152	Aug. 24, 1946	10	29.6	21,460	27.7	20,030
1947	1086	386	June 22, 1947	10	70.4	50,990	71.7	51,900
1948	1116	398	Apr. 30, 1948	14	60.7	44,040	58.4	42,410
1949	1146	1,250	June 6, 1949	9.0	101	72,870	100	72,470
1950	1176	284	June 16, 1950	3.6	22.2	16,060	-	-

* Revised.

† Not previously published.

‡ From report of State engineer of Colorado.

§ Published only in WSP 997.

199. Turkey Creek near Morrison, Colo.

Location.--Lat 39°38'10", long. 105°10'05", in NE¼ sec. 12, T. 5 S., R. 70 W., at highway bridge, 2 miles upstream from mouth, and 2 miles southeast of Morrison.

Drainage area.--49.4 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,717.54 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Mar. 8, 1947, staff gage at same site and datum.

Average discharge.--7 years (1942-46, 1947-50), 4.94 cfs.

Extremes.--1942-50: Maximum discharge, 1,200 cfs Aug. 24, 1946 (gage height, 5.79 ft, from floodmark), from rating curve extended above 160 cfs on basis of contracted-opening determination of peak flow; no flow at times.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	1.44	2.63	1.28	-
1943	3.96	2.15	0.91	1.29	1.14	1.34	2.13	4.25	1.97	1.07	.15	.40	1.74
1944	.30	.34	.61	.36	.77	.90	26.8	94.8	3.53	.37	.37	.28	10.9
1945	.27	.37	.78	.51	.67	.79	.78	1.38	.83	.80	.68	.46	.70
1946	.78	.90	.42	.20	.64	.76	1.60	3.68	1.53	.36	3.74	.83	1.29
1947	-	-	-	-	-	3.91	3.68	41.6	40.8	4.78	1.11	.75	-
1948	1.49	.73	.51	.66	1.40	12.9	46.4	54.0	1.31	.67	.36	.24	10.1
1949	.18	.56	.41	.45	.41	.75	1.02	20.5	81.8	.97	.30	.45	8.92
1950	.69	1.65	.50	.66	.89	.83	2.23	1.20	1.30	.88	.22	.27	.94

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	89	162	76	-
1943	244	128	56	79	63	82	127	261	117	66	9.3	24	1,260
1944	18	20	37	22	44	55	1,600	5,830	210	23	23	17	7,900
1945	17	22	46	31	37	49	47	85	49	49	42	27	503
1946	48	54	26	12	36	47	95	236	91	22	230	49	936
1947	-	-	-	-	-	240	219	2,560	2,430	293	68	45	-
1948	92	44	31	41	81	795	2,760	3,320	76	41	22	14	7,320
1949	11	33	25	28	23	46	60	1,260	4,870	60	19	27	6,460
1950	42	98	31	41	49	51	132	74	77	54	13	16	678

Yearly discharge, in cubic feet per second of Turkey Creek near Morrison, Colo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1942	956	a37	Aug. 2, 1942	-	-	-	-
1943	976	b18	Oct. 15, 1942	0.1	1.74	1,260	1.25
1944	1006	b175	May 6, 1944	0	10.9	7,900	10.9
1945	1036	b18	June 8, 1945	0	.70	503	.75
1946	1056	1,200	Aug. 24, 1946	.1	1.29	936	-
1947	1086	128	June 22, 1947	-	-	-	-
1948	1116	215	Apr. 28, 1948	0	10.1	7,320	9.95
1949	1146	384	June 6, 1949	.1	8.92	6,460	9.06
1950	1176	110	June 18, 1950	.1	.94	678	-

a Maximum during period June to September.

b Maximum observed.

200. Bear Creek at mouth, at Sheridan, Colo.1/

Location.--Lat 39°39'07", long. 105°01'13", in NE $\frac{1}{4}$ sec. 5, T. 5 S., R. 68 W., at South Clay Street bridge in Sheridan, half a mile upstream from mouth, and $2\frac{1}{2}$ miles north of Littleton.

Drainage area.--265 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,280.72 ft above mean sea level, datum of 1929. Apr. 1 to Nov. 30, 1914, staff gage and Feb. 23, 1927, to June 18, 1931, water-stage recorder at site a quarter of a mile downstream at different datums. June 19, 1931, to June 5, 1949, water-stage recorder at present site at datum 2.00 ft higher.

Average discharge.--23 years (1927-50), 36.2 cfs.

Extremes.--1914, 1927-50: Maximum discharge, 3,000 cfs July 7, 1933 (gage height, 8.95 ft, present datum), from rating curve extended above 1,100 cfs on basis of slope-area determination of peak flow; maximum gage height, 9.21 ft (present datum) Sept. 2, 1938; minimum daily discharge, 0.6 cfs July 18, 1945.

Remarks.--Storage and diversion above station for irrigation of about 12,000 acres.

Cooperation.--Records for 1914, 1927-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	a566	a571	a175	a105	a23.9	a17.3	-
1915	a37.7	a54.3	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a11.0	a19.5	a19.0	a12.8	a11.8	a58.7	a23.0	-
1928	a25.4	a17.8	a18.2	a13.7	a11.4	a7.74	a17.3	a251	a86.4	a7.58	a8.65	a5.63	a37.6
1929	a17.2	a16.1	a16	a14	a12	a10.7	a5.43	a4.97	a4.03	a9.84	a43.7	a11.3	a14.0
1930	a9.9	a15.3	a13.5	a13.6	a10.9	a9.55	a7.77	a9.06	a2.43	a7.23	a55.5	a10.6	a13.9
1931	a15.1	a15.1	a12.0	a13.0	a11.5	a10.7	a23.3	a73.8	a34.7	a17.7	a19.2	a8.2	a21.1
1932	a12.7	a16.9	a18.0	a14.0	a14.0	a8.0	a4.51	a4.28	a6.06	a7.01	a6.53	a5.06	a9.74
1933	a9.84	a11.7	a11.0	a11.0	a11.0	a6.97	a35.5	a241	a80.4	a77.4	a14.6	a31.7	a45.5
1934	10.4	13.7	14.7	12.7	11.3	8.7	7.7	12.4	5.8	4.8	10.9	4.7	9.82
1935	4.9	9.2	10.5	8.7	8.3	5.4	3.3	66.4	38.5	15.0	10.6	12.2	16.0
1936	10.1	12.2	15.7	10.1	8.0	8.44	5.64	16.1	23.9	11.4	103	17.2	20.3
1937	47.4	17.1	12.4	9.0	10.8	8.44	11.3	10.0	47.7	18.1	16.7	21.9	19.2
1938	23.6	18.3	13.7	10.4	8.85	8.58	60.1	351	102	33.3	27.1	256	76.3
1939	11.1	46.9	53.0	34.9	26.3	30.8	101	29.1	6.57	4.85	4.63	5.50	29.7
1940	6.55	7.54	8.68	8.78	9.26	11.4	4.82	8.46	2.93	4.85	7.77	8.89	7.50
1941	7.91	11.8	9.19	8.35	9.56	6.16	31.4	188	169	29.5	19.9	15.3	42.2
1942	57.6	38.9	24.8	32.1	43.5	34.9	394	682	235	50.3	18.4	18.0	135
1943	26.5	18.4	16.7	25.7	14.7	16.8	8.39	49.7	45.2	20.7	11.5	8.41	21.8
1944	10.6	11.9	12.7	14.9	11.4	9.93	83.2	343	96.3	25.5	13.9	11.3	54.0
1945	7.59	13.4	11.2	3.85	5.09	6.29	5.59	10.9	8.82	12.7	141	14.9	20.4
1946	21.8	26.5	21.4	21.4	27.0	10.9	6.55	8.28	10.1	13.9	15.4	13.6	16.3
1947	6.03	19.0	13.9	27.6	18.7	26.4	29.8	259	295	81.7	29.8	19.4	69.0
1948	44.1	40.2	31.2	51.0	34.6	51.8	125	195	64.3	16.0	11.8	10.5	54.7
1949	12.4	12.2	14.0	18.4	15.5	9.70	8.50	127	630	122	20.8	16.4	85.6
1950	15.4	9.73	9.45	11.3	10.7	9.93	15.3	12.1	29.7	18.3	6.68	7.43	13.0

a From reports of State engineer of Colorado.

1/ Published as "at mouth" 1914, 1927-33, and as "at Sheridan Junction, 1934-41.

Monthly and yearly runoff, in acre-feet of Bear Creek at mouth, at Sheridan, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	a21,800	a35,100	a10,400	a6,460	a14,700	a1,030	-
1915	a2,320	a3,230	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a676	a1,160	a1,170	a762	a726	a2,380	a1,370	-
1928	a1,560	a1,060	a1,120	a642	a656	a476	a1,030	a15,400	a3,950	a466	a409	a335	a27,300
1929	a1,080	a1,080	a984	a861	a866	a658	a323	a356	a240	a605	a2,690	a672	a10,100
1930	a609	a910	a630	a836	a605	a567	a462	a507	a145	a445	a3,410	a631	a10,900
1931	a806	a898	a758	a799	a639	a656	a1,390	a4,540	a2,060	a1,090	a1,180	a488	a15,300
1932	a781	a1,010	a1,110	a861	a805	a492	a268	a263	a361	a431	a402	a301	a7,080
1933	a605	a696	a676	a676	a611	a429	a2,110	a4,800	a4,780	a4,760	a898	a1,890	a32,900
1934	640	815	904	781	628	535	458	762	345	295	670	280	7,110
1935	301	549	645	538	460	329	198	4,080	2,290	799	655	726	11,570
1936	620	728	964	619	460	519	336	993	1,420	700	6,360	1,020	14,740
1937	2,910	1,020	761	553	600	519	672	617	2,840	1,120	1,020	1,300	13,930
1938	1,450	1,090	843	638	491	527	3,580	21,590	6,090	2,040	1,670	15,220	55,230
1939	685	2,790	3,260	2,150	1,460	1,900	6,020	1,790	510	298	285	327	21,480
1940	403	449	534	540	533	699	287	520	174	299	478	529	5,440
1941	487	703	565	513	475	379	1,870	11,570	10,060	1,810	1,220	910	30,560
1942	3,540	2,200	1,530	1,970	2,420	2,140	23,450	41,940	14,010	3,090	1,130	1,070	98,490
1943	1,630	1,100	1,030	1,460	815	1,030	499	3,060	2,610	1,280	708	500	15,900
1944	651	706	785	914	657	610	4,950	21,100	5,750	1,570	856	675	39,200
1945	467	795	699	236	283	367	332	672	525	760	8,680	899	14,740
1946	1,340	1,580	1,310	1,520	1,500	668	390	509	599	852	944	811	11,820
1947	371	1,130	855	1,700	1,040	1,620	1,770	15,900	17,550	5,020	1,830	1,160	49,950
1948	2,710	2,390	1,920	1,910	1,990	3,190	7,440	12,010	3,820	984	726	624	39,710
1949	762	728	858	1,130	860	596	506	7,820	37,480	7,530	1,280	976	60,530
1950	947	579	581	692	596	610	910	744	1,770	1,130	411	442	9,410

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1914	(a)	-	-	-	-	-	-
1927	(a)	#350	Aug. 14, 1927	-	-	-	-
1928	(a)	#464	May 15, 1928	a1	a37.6	a27,300	a36.8
1929	(a)	#235	July 23, 1929	-	a14.0	a10,100	a12.9
1930	(a)	#752	Aug. 4, 1930	a1	a13.9	a10,000	a14.0
1931	(a)	#75	July 17, 1931	-	a21.1	a15,500	a21.7
1932	(a)	#785	July 16, 1932	a1.8	a9.74	a7,080	a8.49
1933	(a)	3,000	July 7, 1933	a4	a45.5	a32,900	a46.1
1934	761	1,500	Aug. 9, 1934	3	9.82	7,110	8.63
1935	796	612	July 12, 1935	1	16.0	11,570	17.1
1936	806	745	July 11, 1936	.7	20.3	14,740	23.6
1937	826	222	June 2, 1937	4.1	19.2	13,930	17.4
1938	856	2,610	Sept. 2, 1938	7.4	76.3	55,230	80.9
1939	876	141	Apr. 16, 1939	2.4	29.7	21,480	22.3
1940	896	690	Aug. 25, 1940	.9	7.50	5,440	8.01
1941	926	#980	June 22, 1941	3.8	42.2	30,560	49.8
1942	956	1,600	Apr. 19, 1942	7.8	136	98,490	131
1943	976	508	May 30, 1943	4.0	21.8	15,800	19.6
1944	1006	508	May 14, 1944	4.5	54.0	39,200	53.7
1945	1036	1,410	Aug. 20, 1945	.6	20.4	14,740	23.5
1946	1056	1,580	Aug. 24, 1946	2.6	16.3	11,820	13.7
1947	1086	1,010	June 22, 1947	2.8	69.0	49,950	75.4
1948	1116	605	Oct. 15, 1947	8.0	54.7	39,710	48.3
1949	1146	1,800	June 5, 1949	3.6	93.6	60,530	83.3
1950	1176	1,510	June 16, 1950	3.0	13.0	9,410	-

* Not previously published.

a From reports of State engineer of Colorado.

201. Cherry Creek near Franktown, Colo.

Location.--Lat 39°21'40", long. 104°45'50", in NE¹ sec. 15, T. 8 S., R. 66 W., 1 mile upstream from Russellville Gulch and 2 miles south of Franktown.

Drainage area.--172 sq mi.

Gage.--Water-stage recorder. Datum of gage is 6,147.53 ft above mean sea level, unadjusted (levels by Corps of Engineers). Prior to Apr. 13, 1942, at datum 2.00 ft higher.

Average discharge.--10 years (1940-50), 12.5 cfs.

Extremes.--1939-50: Maximum discharge, 9,170 cfs Aug. 5, 1945 (gage height, 4.91 ft), from rating curve extended above 300 cfs on basis of float measurement at peak stage; minimum daily, 0.2 cfs July 13, 1946, Sept. 30, 1950.
Highest flood known occurred Aug. 3, 1933, when Castlewood Dam failed.

Remarks.--Diversions for irrigation of about 800 acres above station.

Monthly and yearly mean discharge, in cubic feet per second
of Cherry Creek near Franktown, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	2.93	3.34	6.27	28.6	17.3	17.2	9.76	3.12	3.41	9.34	-
1941	3.23	3.95	4.10	4.86	8.82	9.26	10.5	5.22	5.79	19.7	22.2	8.31	8.85
1942	11.6	8.49	5.37	5.93	6.01	117	92.7	38.8	17.4	10.2	9.41	12.5	28.1
1943	12.3	9.40	9.87	10.2	10.9	9.95	10.6	11.7	7.24	5.73	1.87	1.40	8.41
1944	2.19	5.13	7.54	6.15	18.6	10.7	52.1	24.1	6.25	12.1	1.76	1.48	12.1
1945	3.23	4.02	5.43	7.10	16.4	11.4	11.0	4.69	4.34	18.8	59.9	6.46	12.8
1946	7.02	6.32	5.32	6.69	6.29	10.5	8.09	3.30	2.32	1.38	30.8	4.98	7.79
1947	4.37	9.93	11.0	6.51	10.9	82.4	14.9	19.2	11.4	13.7	14.3	4.17	17.0
1948	8.28	9.41	6.74	7.50	29.3	122	17.8	9.81	4.46	3.39	2.11	1.23	18.5
1949	2.29	3.44	3.74	3.34	6.99	10.0	9.07	14.2	22.2	7.10	1.23	1.32	7.06
1950	2.53	7.69	2.59	4.31	9.75	6.98	9.51	4.23	1.94	3.10	1.43	.78	4.52

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	180	205	361	1,760	1,030	1,060	581	192	210	556	-
1941	199	235	252	299	490	569	624	321	344	1,210	1,360	495	6,400
1942	713	505	330	365	334	7,200	5,520	2,380	1,040	629	578	745	20,340
1943	754	559	607	628	604	612	630	716	431	352	115	84	6,090
1944	135	305	463	378	957	657	3,100	1,480	372	742	108	88	8,780
1945	199	239	334	437	910	700	653	288	258	1,150	3,680	384	9,230
1946	432	376	327	411	349	644	481	203	138	85	1,900	297	5,640
1947	269	591	679	400	608	5,070	897	1,180	677	842	877	248	12,330
1948	509	560	414	461	1,680	7,490	1,060	603	265	208	130	73	13,450
1949	141	205	230	205	388	617	540	873	1,320	437	76	78	5,110
1950	155	457	159	265	541	429	566	260	116	190	88	46	3,270

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	698	\$2,000	June 6, 1940	-	-	-	9.14	6,640
1941	926	4,700	July 13, 1941	1.0	8.85	6,400	10.0	7,260
1942	956	3,620	Mar. 13, 1942	1.9	28.1	20,340	28.6	20,710
1943	976	198	June 28, 1943	.9	8.41	6,090	7.01	5,080
1944	1008	390	July 12, 1944	.8	12.1	8,780	11.9	8,650
1945	1036	9,170	Aug. 5, 1945	.8	12.8	9,230	13.3	9,600
1946	1056	1,470	Aug. 24, 1946	.2	7.79	5,640	8.35	6,050
1947	1086	928	Mar. 18, 1947	2.3	17.0	12,330	16.9	12,270
1948	1116	1,220	Mar. 23, 1948	.3	18.5	13,450	17.3	12,550
1949	1146	1,080	June 13, 1949	.6	7.06	5,110	7.33	5,300
1950	1176	146	July 27, 1950	.2	4.52	3,270	-	-

* Not previously published.

202. Cherry Creek near Melvin, Colo.

Location.--Lat 39°36'20", long. 104°49'15", in NW $\frac{1}{4}$ sec. 19, T. 5 S., R. 66 W., 400 ft downstream from Piney (South Cherry) Creek, $\frac{1}{2}$ miles southeast of Melvin, and 7 miles northwest of Parker.

Drainage area.--369 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,608.21 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 21.2 cfs.

Extremes.--1939-50: Maximum discharge, 17,600 cfs July 18, 1946 (gage height, 7.45 ft), from rating curve extended above 11,000; no flow at times during most years.

Maximum stage known, 9.72 ft Aug. 3, 1933, from floodmarks (discharge, 34,000 cfs by slope-area determination of peak flow at Kenwood dam site 5 miles downstream) caused by failure of Castlewood Dam.

Remarks.--Diversions above station for irrigation of about 1,800 acres.

Monthly and yearly mean discharge, in cubic feet per second
of Cherry Creek near Melvin, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0.61	4.77	17.0	31.2	21.6	17.2	23.7	23.7	21.7	46.9	17.3
1941	8.29	7.33	9.53	9.10	14.1	17.2	19.8	13.7	16.4	36.0	36.0	7.90	16.3
1942	28.5	10.5	9.27	6.72	9.39	172	204	118	23.3	9.41	19.8	7.11	51.5
1943	24.6	14.1	12.2	10.4	18.7	8.44	15.2	14.0	8.00	5.17	10.9	.03	11.6
1944	.29	7.11	3.28	7.58	39.3	20.4	53.4	26.2	3.03	25.0	1.57	.33	15.4
1945	0	2.87	4.16	9.29	23.4	13.5	18.2	3.62	7.89	37.0	141	5.58	22.3
1946	8.00	11.4	7.06	8.85	10.4	10.2	10.2	4.67	1.74	18.2	50.7	3.39	12.1
1947	3.28	25.6	25.0	7.59	11.4	104	26.0	73.4	28.6	19.1	12.4	1.61	28.4
1948	8.98	12.7	11.9	4.11	173	141	38.5	53.4	12.2	2.66	.08	0	37.7
1949	0	.80	4.84	2.22	15.1	28.0	14.5	37.9	58.3	4.91	.60	0	15.9
1950	0	2.25	2.64	13.8	16.1	6.88	14.5	8.03	3.45	11.3	.01	0	6.52

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	37	293	979	1,920	1,290	1,060	1,410	1,460	1,330	2,790	12,570
1941	510	436	586	560	781	1,080	1,180	845	977	2,210	210	464	11,820
1942	1,750	626	570	413	521	10,550	12,140	7,100	1,380	579	1,220	423	37,270
1943	1,520	839	748	642	1,040	519	787	860	476	318	670	1.8	8,420
1944	18	423	202	465	2,260	1,260	3,180	1,610	180	1,540	35	20	11,190
1945	0	171	256	571	1,300	832	1,080	223	470	2,270	640	332	16,140
1946	492	676	434	544	578	628	604	287	103	1,123	120	202	8,790
1947	202	1,530	1,540	467	655	6,580	1,550	4,510	1,700	1,180	764	96	20,550
1948	552	753	734	252	9,960	8,850	2,290	3,280	725	163	5.2	0	27,360
1949	0	47	298	136	837	1,720	862	2,330	3,470	302	37	0	10,040
1950	0	134	162	851	892	421	865	494	205	697	.4	0	4,720

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet		Mean	Runoff in acre-feet
		Discharge	Date						
1940	896	4,500	Sept. 6, 1940	0	17.3		12,570	19.4	14,060
1941	926	2,390	July 14, 1941	0	16.3		11,820	18.3	13,230
1942	956	2,220	Aug. 3, 1942	0	51.5	4	37,270	51.7	37,430
1943	976	3,580	Aug. 4, 1943	0	11.6		8,420	8.22	5,960
1944	1008	1,390	July 9, 1944	0	15.4		11,190	15.1	10,980
1945	1036	10,700	Aug. 5, 1945	0	22.3		16,140	23.9	17,320
1946	1056	17,600	July 18, 1946	0	12.1		8,790	14.4	10,460
1947	1088	1,790	Mar. 18, 1947	0	28.4		20,550	26.7	19,320
1948	1116	3,760	May 30, 1948	0	37.7		27,360	35.4	25,670
1949	1146	1,420	June 13, 1949	0	13.9		10,040	13.8	9,990
1950	1176	1,450	July 25, 1950	0	6.52		4,720	-	-

203. Cherry Creek below Cherry Creek Reservoir, Colo.

Location.--Lat 39°39'10", long. 104°51'40", in SW¹/₄ sec. 35, T. 4 S., R. 67 W., 2,000 ft downstream from Cherry Creek Dam, 2 miles (revised) southeast of Sullivan, 9 miles southeast of Civic Center in Denver, and 11 miles upstream from mouth.

Drainage area.--386 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 5,490.51 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Extremes.--June to September 1950: Maximum discharge, 187 cfs July 25 (gage height, 3.83 ft); minimum daily, 1.6 cfs Sept. 26-28.
Maximum flood known, 34,000 cfs Aug. 3, 1933, by slope-area determination near present site (Castlewood Dam failure).

Remarks.--Flood flow regulated by Cherry Creek Reservoir (capacity, 247,500 acre-ft, revised). Diversions for irrigation of about 1,800 acres above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	-	3.69	2.23	2.27	-

Monthly and yearly runoff, in acre-feet of Cherry Creek below Cherry Creek Reservoir, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	-	227	137	135	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1950	1176	1187	July 25, 1950	1.6	-	-	-	-	-

a Maximum for period June 30 to Sept. 30.

204. Cherry Creek at Denver, Colo.

Location.--Lat 39°44'52" (revised), long. 105°00'02" (revised), in NE $\frac{1}{4}$ sec. 33, T. 3 S., R. 68 W., at Market Street in Denver, 0.6 mile upstream from mouth.

Drainage area.--420 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 5,184.83 ft above mean sea level, datum of 1929.

Prior to Jan. 23, 1945, wire-weight gage 1.7 miles upstream at datum 48.80 ft higher.

Jan. 23 to Feb. 26, 1945, wire-weight gage 2.7 miles upstream at different datum.

Feb. 27, 1945, to Sept. 30, 1947, wire-weight gage 2.3 miles upstream at datum 63.82 ft higher and Oct. 1, 1947, to Sept. 30, 1949, at datum 62.62 ft higher.

Average discharge.--8 years (1942-50), 25.0 cfs.

Extremes.--1942-50: Maximum discharge observed, 3,120 cfs Aug. 5, 1945 (gage height, 5.25 ft, site and datum then in use); minimum daily, 0.4 cfs June 16-18, 1948.

Flood of July 26, 1885, reached a discharge of 20,000 cfs, by float measurement.

Flood of May 19, 20, 1864, reached a somewhat higher stage.

Flood of Aug. 3, 1933, reached a discharge of about 15,000 cfs, as determined by rise of South Platte River at Denver.

Remarks.--Diversions for irrigation of 1,900 acres above station and municipal use. Flood flow regulated by Cherry Creek Reservoir 11 miles upstream (capacity, 247,500 acre-ft, revised).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	-	8.73	-
1943	31.2	19.8	15.8	27.5	19.5	20.1	15.7	30.4	27.7	10.2	19.0	5.72	20.2
1944	7.65	14.4	7.53	17.1	31.5	17.7	79.3	108	118	55.7	5.46	6.12	38.9
1945	10.5	5.80	5.55	7.62	9.20	7.97	17.6	8.07	12.2	25.9	236	7.80	29.9
1946	12.9	14.2	6.41	6.02	12.8	12.4	8.67	6.30	3.17	12.1	52.1	22.8	14.2
1947	11.6	24.8	19.1	6.97	20.0	104	28.7	105	58.3	25.2	26.4	5.68	38.6
1948	22.1	19.7	10.8	10.2	73.8	179	44.8	34.3	23.8	3.74	4.05	4.03	35.8
1949	3.66	4.55	3.54	3.99	9.30	12.0	12.5	43.4	43.4	18.0	4.63	5.42	13.7
1950	4.88	4.90	4.14	5.46	4.41	3.65	29.6	34.4	15.7	9.47	7.16	8.86	11.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	-	519	-
1943	1,920	1,180	969	1,690	1,080	1,230	932	1,870	1,650	625	1,170	340	14,660
1944	470	857	463	1,050	1,810	1,090	4,720	6,650	6,990	3,420	336	384	28,220
1945	643	345	342	469	511	490	1,050	496	727	1,590	14,520	464	21,650
1946	792	845	394	370	712	760	518	387	189	741	3,200	1,360	10,270
1947	715	1,480	1,180	429	1,110	6,420	1,710	6,460	3,470	1,550	1,620	336	26,480
1948	1,360	1,170	667	624	4,250	11,010	2,670	2,110	1,420	230	249	240	28,000
1949	225	271	217	245	516	737	741	2,670	2,580	1,110	284	323	9,920
1950	300	292	254	336	245	225	1,760	2,110	934	583	440	527	8,010

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1942	958	-	-	-	-	-	-	-	-
1943	976	1,460	Aug. 5, 1943	2.0	20.2	14,660	17.1	12,380	-
1944	1006	1,340	July 9, 1944	1.8	58.9	28,220	38.2	27,760	-
1945	1036	3,120	Aug. 5, 1945	1.9	29.9	21,650	30.9	22,350	-
1946	1056	1,800	July 19, 1946	.5	14.2	10,270	16.0	11,610	-
1947	1086	858	Mar. 22, 1947	3.2	36.6	26,480	36.3	26,300	-
1948	1116	1,020	Mar. 21, 1948	.4	35.8	26,000	32.4	23,520	-
1949	1146	510	May 12, 1949	1.2	13.7	9,920	13.9	10,050	-
1950	1176	1,100	June 16, 1950	2.8	11.1	8,010	-	-	-

205. South Platte River at Denver, Colo.

Location.--Lat 39°45'35", long. 105°00'10", in SE $\frac{1}{4}$ sec. 28, T. 3 S., R. 68 W., at upstream side of Nineteenth Street Bridge in Denver, 0.4 mile downstream from Cherry Creek.

Drainage area.--3,840 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,162.12 ft above mean sea level, datum of 1929. Prior to Aug. 12, 1909, staff gages and Aug. 12, 1909, to Aug. 28, 1931, water-stage recorder, at several sites within half a mile of present site at approximately present datum.

Average discharge.--55 years (1895-1950), 370 cfs.

Extremes.--1889-90, 1895-1950: Maximum discharge, 22,000 cfs Sept. 10, 1933 (gage height, 10.98 ft), from rating curve extended above 8,800 cfs on basis of float-area determination at gage height 9.44 ft: minimum daily, 15 cfs Apr. 15, 1925.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions above station for irrigation of about 79,000 acres and municipal use, and return flow from irrigated areas.

Cooperation.--Records for 1907-8, 1914-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Water year	Monthly and yearly discharge, in cubic feet per second												The year
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1889	-	-	-	-	-	-	-	346	189	275	138	64.8	-
1890	73.4	-	-	-	-	-	-	-	-	328	315	108	-
1891	292	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	-	854	742	426	-
1896	696	456	204	182	†194	225	301	291	200	164	115	145	264
1897	111	101	105	95	85	179	470	733	1,030	393	187	270	355
1898	267	406	217	164	153	121	377	1,440	1,550	672	328	187	492
1899	146	131	98	55	196	409	466	432	821	637	527	286	351
1900	109	202	146	204	193	184	1,640	4,190	2,820	†370	148	123	†863
1901	104	186	177	212	217	241	516	553	715	250	366	216	312
1902	94	73	234	†60	†55	†80	†78.0	†95	†80	†40	†40	†40	†80.9
1903	a71	b35	a61	78	78	94	58	68	637	328	108	112	b144
1904	106	111	78	71.0	71.9	63.4	87.5	357	482	351	409	234	203
1905	153	123	98.2	93.9	118	172	837	1,840	894	282	240	164	420
1906	110	100	71.6	71.9	79.4	99.0	207	644	341	323	303	220	224
1907	469	597	b250	c124	c112	c161	c211	c451	c758	c832	c551	c355	b408
1908	c107	d117	c159	c108	c76	c92	c77	c106	c101	d141	b166	b130	b115
1909	†170	†100	†60	†45	†40	†70	†200	†400	†1,000	†836	†775	1,790	†458
1910	564	324	†194	268	191	501	373	492	304	187	374	120	326
1911	110	89.9	89.9	123	96	81	123	207	343	595	270	132	189
1912	104	89	†97	69.6	65.1	88.5	78.8	373	874	371	756	274	322
1913	222	256	b175	a125	b130	b110	b400	457	690	407	274	233	b290
1914	b251	b225	b244	c342	c358	c510	c1,920	c2,680	c1,960	c1,500	c2,300	c434	b1,080
1915	c370	c330	b240	c188	c189	c247	c1,480	c1,170	c1,210	c353	c427	c383	b548
1916	c400	c255	c229	c183	c177	c182	c145	c430	c508	c397	c445	c228	c299
1917	†205	†162	†148	c138	c119	c132	c176	c1,070	c1,770	c603	c470	c248	c437
1918	c182	c123	c138	c106	c120	c112	c319	c523	c1,000	c818	c358	c320	c343
1919	c251	c231	c189	c164	c133	c161	c597	c1,200	c876	c444	c241	c393	c479
1920	c149	c144	c156	c146	c116	c97.5	c234	c1,340	c522	c740	c606	c314	c383
1921	c162	c149	c147	c101	c135	c135	c177	c1,270	c3,850	c1,120	c1,130	c406	c775
1922	c197	c220	c196	c169	c166	c160	c362	c514	c556	c376	c451	c211	c299
1923	†165	†147	†189	c144	c151	c143	c145	c321	c800	c1,060	c1,600	c636	c461
1924	c836	c673	c379	c324	c414	c293	c848	c1,320	c1,530	c532	c246	c187	c631
1925	c194	c149	c171	c185	c150	c80.2	c65.2	c167	c206	c221	c322	c263	c182
1926	c151	c165	c122	c94.4	c119	c182	c989	c1,470	c1,220	c783	c379	c208	c491
1927	c101	c164	c112	c118	c118	c150	c183	c353	c390	c478	c390	c247	c234
1928	c124	c122	c121	c103	c96.8	c120	c130	c787	c733	c379	c285	c150	c263
1929	c165	c155	c111	c85.2	c74.5	c208	c112	c234	c322	c423	c897	c482	c274
1930	c168	c233	c158	c91.0	c193	c106	c223	c278	c470	c553	c1,080	c355	c327
1931	c226	c162	c111	c88.8	c104	c131	c211	c682	c560	c371	c329	c96.9	c257
1932	c115	c113	c89.3	c89.0	c79.7	c71.2	c114	c293	c434	c377	c253	c96.7	c176
1933	c120	c81.9	c55.1	c42.5	c58.8	c54.0	c59	c1,630	c897	c536	c579	c760	c426
1934	113	138	125	90.8	121	164	159	316	205	113	164	84.3	150
1935	61.6	61.2	60.2	33.4	38.5	57.7	78.5	712	448	377	442	180	219
1936	122	130	61.5	46.6	47.9	67.2	149	575	624	499	946	336	302
1937	354	164	98.0	47.2	70.8	69.6	197	318	490	282	177	134	201
1938	132	99.1	87.5	59.6	52.7	71.3	440	1,481	675	408	540	962	419
1939	358	320	214	173	140	916	782	645	323	203	144	74.6	359
1940	80.9	84.6	67.2	71.5	72.0	175	234	515	191	106	117	213	144
1941	104	130	67.2	84.7	69.1	84.1	230	867	922	434	519	310	320
1942	510	306	146	126	143	569	3,389	4,024	2,253	775	692	321	1,107
1943	349	155	183	207	152	118	185	394	362	319	329	107	239
1944	86.5	98.2	130	80.2	96.9	118	430	1,465	849	437	232	115	346
1945	59.3	97.6	102	48.1	114	102	162	194	185	312	1,890	367	306
1946	274	228	149	110	125	137	197	228	283	385	215	135	204
1947	145	216	160	119	119	295	324	1,332	1,737	1,217	677	362	564
1948	341	354	228	173	233	502	1,329	1,687	1,312	1,444	292	126	585
1949	132	137	124	90.1	111	110	146	695	3,361	1,459	401	205	581
1950	155	118	79.8	94.5	130	98.6	149	157	327	240	88.5	86.6	144

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado.

d Corrected; supersedes figure published by State engineer of Colorado.

Monthly and yearly runoff, in acre-feet of South Platte River at Denver, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1889	-	-	-	-	-	-	-	21,300	11,200	16,900	8,480	3,860	-
1890	4,510	-	-	-	-	-	-	20,200	19,400	20,200	19,400	6,430	-
1891	18,000	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	-	52,500	45,800	25,300	-
1896	42,900	27,100	12,500	11,200	11,200	13,800	17,900	17,900	11,900	10,100	7,070	8,630	192,000
1897	6,820	6,010	6,330	5,840	4,610	11,000	28,000	45,200	61,100	24,100	42,200	16,100	257,000
1898	16,400	24,200	13,300	10,100	8,500	7,440	22,400	88,800	92,400	41,300	20,200	11,100	356,000
1899	8,980	7,800	6,050	5,580	10,900	25,200	27,700	26,600	48,900	39,200	52,400	17,000	254,000
1900	6,700	12,000	8,980	12,500	10,700	11,300	97,500	258,000	169,000	22,800	9,100	7,320	1,625,000
1901	6,400	11,100	10,900	13,000	12,100	14,800	30,700	34,000	42,500	15,300	22,400	12,900	226,000
1902	5,660	4,280	14,400	13,690	13,050	14,920	14,640	15,840	14,760	12,460	12,460	12,460	158,500
1903	4,360	12,080	13,750	4,800	4,330	5,780	3,450	4,180	37,900	20,200	6,640	6,660	1104,000
1904	6,640	6,800	4,800	4,400	4,140	3,900	5,210	22,000	28,700	21,600	25,200	13,900	147,000
1905	9,410	7,320	6,040	5,770	6,550	10,600	49,800	113,000	53,200	17,300	14,800	9,760	304,000
1906	6,780	5,950	4,420	4,420	4,410	6,090	12,300	39,600	20,300	19,900	18,600	19,000	162,000
1907	29,800	55,500	15,400	17,620	16,220	19,900	112,800	127,700	106,651	120,000	100,000	21,100	1,295,000
1908	6,580	46,940	19,780	16,640	14,400	15,660	14,580	16,520	10,011	18,670	10,200	17,740	1,683,700
1909	10,550	15,950	13,690	12,770	12,220	14,300	11,900	24,600	59,500	85,400	47,600	107,000	1,332,000
1910	34,700	19,300	11,900	16,500	10,600	30,800	22,200	30,300	18,100	11,500	23,000	7,140	236,000
1911	6,760	5,350	5,530	7,580	5,350	5,010	7,330	12,700	20,400	36,600	16,800	7,840	137,000
1912	6,400	5,310	5,950	4,290	3,630	5,440	4,690	23,300	52,000	59,700	46,500	16,300	234,000
1913	13,600	15,200	10,800	17,670	17,220	16,780	23,800	28,100	41,100	25,000	16,800	13,900	1,210,000
1914	15,400	13,400	11,000	12,000	11,900	11,400	11,400	11,700	11,700	11,700	11,700	11,700	1,784,000
1915	22,800	19,600	14,800	11,600	10,500	15,200	18,100	17,200	17,200	17,200	17,200	17,200	1,597,000
1916	24,600	15,200	14,100	11,300	10,200	11,200	11,200	11,200	11,200	11,200	11,200	11,200	1,217,000
1917	12,600	19,640	19,100	18,490	16,610	18,120	10,500	10,500	10,500	10,500	10,500	10,500	1,317,000
1918	19,980	17,320	18,480	16,520	16,660	18,980	19,000	19,000	19,000	19,000	19,000	19,000	1,248,000
1919	15,400	13,700	11,800	10,100	7,390	19,900	15,500	17,800	15,000	14,000	15,000	15,000	1,347,000
1920	19,180	18,570	19,590	18,980	16,670	18,000	13,900	18,200	14,000	15,000	15,000	15,000	1,278,000
1921	19,980	18,870	19,040	18,210	16,390	18,500	14,700	17,800	12,200	12,200	12,200	12,200	1,561,000
1922	12,100	13,100	12,100	10,400	10,220	19,840	12,500	13,600	13,100	12,200	12,200	12,200	1,216,000
1923	10,100	18,750	11,600	18,850	18,390	18,790	18,630	19,700	17,400	17,400	17,400	17,400	1,334,000
1924	15,140	10,000	23,300	19,900	23,800	18,000	18,000	18,000	18,000	18,000	18,000	18,000	1,458,000
1925	11,900	18,870	10,500	11,400	18,330	14,930	13,880	10,300	12,300	13,600	19,800	15,600	1,331,000
1926	19,280	19,820	17,500	15,800	16,810	11,200	15,800	19,400	17,200	14,000	12,300	12,400	1,356,000
1927	16,210	19,760	16,890	17,130	16,550	19,220	10,900	12,100	12,500	12,000	12,400	14,700	1,170,000
1928	17,620	17,260	17,440	16,330	15,570	17,380	17,740	14,400	14,400	14,400	14,400	14,400	1,191,000
1929	10,100	19,220	16,820	15,240	14,140	12,800	14,400	19,200	19,200	19,200	19,200	19,200	1,198,000
1930	10,300	13,900	19,720	15,600	10,700	16,520	13,300	17,100	12,000	14,000	16,400	21,100	1,237,000
1931	13,900	19,640	16,820	15,480	15,780	18,080	12,600	14,900	13,300	12,800	12,200	15,770	1,186,000
1932	17,070	16,720	15,490	14,240	14,580	14,390	16,780	18,000	18,000	18,000	18,000	18,000	1,128,000
1933	17,580	14,870	13,390	12,610	12,150	13,320	17,200	10,000	10,000	10,000	10,000	10,000	1,308,000
1934	6,950	8,210	7,690	5,580	6,720	10,100	9,460	19,400	12,200	6,950	10,100	5,020	108,400
1935	3,790	4,830	3,700	2,050	2,140	3,550	4,670	43,750	28,780	23,170	27,190	10,720	158,300
1936	7,510	7,750	3,780	2,860	2,760	4,130	8,840	35,620	37,180	30,680	58,150	20,000	219,200
1937	21,750	19,780	18,050	2,900	3,930	4,290	11,720	19,560	28,180	17,330	10,860	8,000	145,300
1938	8,130	5,890	5,580	3,670	2,930	4,380	26,200	91,060	40,190	25,080	33,220	57,270	303,400
1939	22,030	19,030	13,170	10,640	7,770	56,330	46,550	39,680	19,240	12,480	12,480	12,480	260,200
1940	4,980	5,030	4,130	4,400	4,140	10,740	13,910	19,360	11,360	6,500	7,180	12,690	104,400
1941	6,410	7,760	4,130	5,210	3,840	5,170	13,690	53,330	54,890	26,700	31,910	18,470	231,500
1942	31,360	18,180	8,960	7,750	7,920	34,970	201,700	247,400	134,100	47,680	42,550	19,070	801,600
1943	21,470	9,240	11,260	12,720	8,440	7,240	11,020	24,250	21,520	19,590	20,210	6,370	173,300
1944	5,520	5,840	7,980	4,930	5,570	7,240	25,560	90,070	50,550	26,890	14,250	6,860	251,100
1945	3,650	5,810	6,290	2,960	3,360	6,300	9,650	11,920	11,000	19,210	16,200	21,930	221,200
1946	15,210	13,570	9,140	8,750	6,970	8,420	11,720	13,920	16,830	23,660	13,230	8,040	147,500
1947	8,930	12,890	11,050	7,330	6,590	18,150	19,280	81,880	103,400	74,800	41,650	22,760	408,700
1948	20,950	21,050	14,020	10,620	13,420	30,860	79,090	103,700	78,460	27,310	17,890	7,450	424,900
1949	8,090	8,160	7,600	5,540	6,160	6,750	8,680	43,010	200,000	89,740	24,680	12,190	420,600
1950	9,550	7,020	4,910	5,810	7,250	6,080	8,880	9,640	19,460	14,780	5,440	5,170	104,000

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado.

d Corrected; supersedes figure published by State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Platte River at Denver, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1889	(a)	-	-	-	-	-	-	-
1890	(a)	-	-	-	-	-	-	-
1895	(b)	c1,940	Aug. 2, 1895	-	-	-	-	-
1896	(d)	c1,090	Oct. 7, 1895	35	264	192,000	178	129,000
1897	(e)	c2,420	Aug. 5, 1897	27	355	257,000	402	292,000
1898	(f)	c2,310	May 28, 1898	50	492	356,000	449	325,000
1899	(g)	h1,420	Aug. 5, 1899	42	351	254,000	357	259,000
1900	(i)	h5,980	Apr. 29, 1900	51	†863	†625,000	†864	†625,000
1901	75	c1,390	June 15, 1901	25	312	226,000	307	222,000
1902	84	-	-	-	†80.9	†58,500	†61.3	†44,400
1903	99	h1,240	June 15-18, 1903	-	j144	j104,000	155	112,000
1904	131	h1,700	June 3, 1904	45	203	147,000	209	152,000
1905	172	h2,200	May 4, 1905	50	420	304,000	411	298,000
1906	208	h1,020	(k)	53	224	162,000	j310	j224,000
1907	(m)	-	-	-	j408	j295,000	j330	j239,000
1908	(m)	-	-	-	j115	j83,700	j111	†80,600
1909	266	h5,100	Aug. 7, 1909	-	†458	†332,000	†521	†377,000
1910	286	†1,600	July 30, 1910	65	326	236,000	259	189,000
1911	306	†2,900	Aug. 11, 1911	50	189	137,000	189	137,000
1912	326	†13,000	July 14, 1912	40	322	234,000	j352	j255,000
1913	356	†4,000	July 25, 1913	-	j290	j210,000	j286	j214,000
1914	(m)	†9,480	May 21, 1914	-	j1,080	j784,000	n1,100	j798,000
1915	(m)	†2,620	Apr. 27, 1915	110	j548	j597,000	m544	m594,000
1916	(m)	†2,400	Aug. 4, 1916	88	m299	m217,000	m268	m195,000
1917	(m)	†2,400	May 25, 1917	96	m437	m317,000	m430	m311,000
1918	(m)	†3,050	June 25, 1918	46	m343	m248,000	m363	m263,000
1919	(m)	†4,650	Aug. 1, 1919	80	m479	m547,000	m460	m533,000
1920	(m)	†2,410	May 3, 1920	47	m583	m278,000	m583	m278,000
1921	(m)	†9,790	June 8, 1921	44	m775	m561,000	m788	m571,000
1922	(m)	†5,850	July 28, 1922	45	m299	m216,000	m289	m210,000
1923	(m)	†4,200	July 12, 1923	52	m461	m334,000	m577	m418,000
1924	(m)	†2,950	June 4, 1924	95	m631	m458,000	m516	m375,000
1925	(m)	†1,310	Aug. 12, 1925	15	m182	m131,000	m175	m127,000
1926	(m)	†3,190	Apr. 22, 1926	73	m491	m356,000	m486	m352,000
1927	(m)	†1,890	Aug. 14, 1927	57	m234	m170,000	m233	m169,000
1928	(m)	†1,950	June 5, 1928	68	m263	m191,000	m268	m195,000
1929	(m)	†2,140	Aug. 6, 1929	59	m274	m198,000	m285	m206,000
1930	(m)	†3,250	Aug. 4, 1930	76	m327	m237,000	m322	m233,000
1931	(m)	†2,680	Aug. 16, 1931	62	m257	m186,000	m242	m175,000
1932	(m)	†2,000	July 13, 1932	33	m176	m128,000	m171	m124,000
1933	(m)	22,000	Sept. 10, 1933	50	m426	m308,000	436	315,000
1934	761	†1,300	Aug. 9, 1934	54	150	108,400	135	97,850
1935	766	12,320	May 31, 1935	23	219	158,300	228	165,100
1936	806	4,020	Aug. 12, 1936	25	302	219,200	327	237,700
1937	826	5,280	June 1, 1937	32	201	145,300	176	127,200
1938	856	5,870	Aug. 28, 1938	37	419	303,400	467	338,200
1939	876	4,790	Mar. 10, 1939	31	359	260,200	304	220,100
1940	896	2,480	Sept. 10, 1940	27	144	104,400	150	108,600
1941	926	4,000	June 22, 1941	39	320	231,500	375	271,700
1942	956	10,200	Apr. 25, 1942	78	1,107	801,600	1,084	785,100
1943	976	1,400	July 21, 1943	45	239	173,300	208	150,500
1944	1006	2,500	June 8, 1944	42	346	251,100	341	247,700
1945	1036	6,280	Aug. 6, 1945	30	306	221,200	336	243,400
1946	1056	3,530	July 18, 1946	48	204	147,500	197	142,400
1947	1086	3,920	June 22, 1947	75	564	408,700	596	431,800
1948	1116	3,440	Apr. 30, 1948	89	585	424,900	541	392,700
1949	1146	8,800	June 14, 1949	75	581	420,600	578	416,200
1950	1176	4,290	June 16, 1950	34	144	104,000	-	-

* Revised.

† Corrected.

‡ Not previously published.

a 13th Ann. Rept., Pt. 3, 5th Biennial Rept., State engineer of Colorado.

b Bull. 140.

c Maximum daily.

d 18th Ann. Rept., Pt. 4.

e 19th Ann. Rept., Pt. 4.

f 20th Ann. Rept., Pt. 4.

g 21st Ann. Rept., Pt. 4.

h Maximum observed.

i 22d Ann. Rept., Pt. 4.

j Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess.; Platte River.

k May 1, 26, 27, 1906.

m From reports of State engineer of Colorado.

n From Congressional documents, H. Doc. 197, 73d Cong., 2d sess., Platte River.

206. Jones Pass tunnel at east portal, near Jones Pass, Colo. 1/

(Transmountain diversion)

Location.--Lat 39°46'15", long. 105°50'55", in sec. 24, T. 3 S., R. 76 W., 2 miles east of Jones Pass.Gage.--Water-stage recorder and 10-ft concrete Parshall flume since May 10, 1940. Datum of gage is 10,312.5 ft above mean sea level (levels by city of Denver).Remarks.--Diversion is from tributaries of Willimas River between headgate on Bobtail Creek in sec. 28, T. 3 S., R. 76 W., and headgate on McQueary Creek in sec. 16, T. 3 S., R. 76 W., in Colorado River Basin, to West Fork Clear Creek in sec. 24, T. 3 S., R. 76 W., in Platte River basin. No diversion prior to May 10, 1940.Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversions, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	0	1,970	5,560	1,750	284	0	9,560
1941	0	0	0	0	0	0	0	1,540	3,470	2,110	946	124	8,190
1942	0	0	0	0	0	0	0	0	0	647	778	173	1,600
1943	0	0	0	0	0	0	0	0	0	2,580	1,270	430	4,080
1944	0	0	0	0	0	0	0	0	0	2,850	859	152	3,860
1945	0	0	0	0	0	0	0	0	2,300	5,550	2,560	641	11,050
1946	0	0	0	0	0	0	0	1,110	5,910	2,800	842	337	11,000
1947	0	0	0	0	0	0	0	0	0	1,980	91	2,070	
1948	0	0	0	0	0	0	0	0	0	1,160	760	128	2,050
1949	0	0	0	0	0	0	0	0	460	28	1,110	293	1,890
1950	0	0	0	0	0	0	0	300	5,460	2,650	624	56	9,090

207. Berthoud Pass ditch at Berthoud Pass, Colo.

(Transmountain diversion)

Location.--Lat 39°47'55", long. 105°46'35", in sec. 10, T. 3 S., R. 75 W., at Berthoud Pass.Gage.--Water-stage recorder and 3-ft Parshall flume since June 5, 1948. Altitude of gage is 11,310 ft (from topographic map). Prior to June 19, 1932, type of gage and exact location not known. June 19, 1932, to Sept. 8, 1940, water-stage recorder at grouted rock ditch section, and May 1, 1941, to Aug. 8, 1947, water-stage recorder and 2½-ft Parshall flume both at about present site.Remarks.--Diversion is from tributaries of Fraser River, in the Colorado River basin, between headgate in sec. 33 (revised), T. 2 S., R. 75 W., and Berthoud Pass, to Hoop Creek (tributary to West Fork Clear Creek) in sec. 10, T. 3 S., R. 75 W., in the South Platte River basin. Ditch was built about 1909.Cooperation.--Records furnished by State engineer of Colorado. Those prior to 1948 not previously published by Geological Survey except water year totals for 1910-25, published in WSP 617, and 1945-47, published in reports for Part 9 with records for Fraser River near Winter Park, Colo.

Monthly and yearly diversion, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	-	-	-	-	-	-	-	-	-	-	-	-	420
1911	-	-	-	-	-	-	-	-	-	-	-	-	434
1912	-	-	-	-	-	-	-	-	-	-	-	-	210
1913	-	-	-	-	-	-	-	-	-	-	-	-	1,160
1914	-	-	-	-	-	-	-	-	-	-	-	-	476
1915	-	-	-	-	-	-	-	-	-	-	-	-	650
1916	-	-	-	-	-	-	-	-	-	-	-	-	832
1917	-	-	-	-	-	-	-	-	-	-	-	-	504
1918	-	-	-	-	-	-	-	-	-	-	-	-	868
1919	-	-	-	-	-	-	-	-	-	-	-	-	476
1920	-	-	-	-	-	-	-	-	-	-	-	-	0
1921	-	-	-	-	-	-	-	-	-	-	-	-	100
1922	-	-	-	-	-	-	-	-	-	-	-	-	576
1923	-	-	-	-	-	-	-	-	-	-	-	-	1,370
1924	-	-	-	-	-	-	-	-	-	-	-	-	1,160
1925	-	-	-	-	-	-	-	-	-	-	-	-	1,050

1/ Published in reports for Part 9 as a supplementary record with records for Williams River near Leal and Williams River near Parshall, 1940-48.

Monthly and yearly diversion, in acre-feet of Berthoud Pass ditch
at Berthoud Pass, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a0	a0	a0	a0	a0	a0	a0	a0	a0	a240	a212	a0	a452
1927	a0	a0	a0	a0	a0	a0	a0	a0	a0	a346	a78	a0	1424
1928	a0	a0	a0	a0	a0	a0	a0	a0	a0	a422	a0	a0	a422
1929	a0	a0	a0	a0	a0	a0	a0	a0	a288	a574	a348	a0	a1,210
1930	a0	a0	a0	a0	a0	a0	a0	a0	a280	a528	a240	a0	a1,030
1931	a0	a0	a0	a0	a0	a0	a0	a0	a124	a188	a0	a0	a312
1932	a0	a0	a0	a0	a0	a0	a0	a0	a271	a373	a120	a4	a768
1933	a0	a0	a0	a0	a0	a0	a0	a0	a116	a406	a33	a0	a555
1934	a0	a0	a0	a0	a0	a0	a0	a298	a351	a0	a0	a0	a649
1935	a0	a0	a0	a0	a0	a0	a0	a0	a35	a467	a43	a0	a545
1936	a0	a0	a0	a0	a0	a0	a0	a0	a150	a396	a174	a0	a720
1937	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1938	a0	a0	a0	a0	a0	a0	a0	a0	a17	a425	a175	a160	b777
1939	a0	a0	a0	a0	a0	a0	a0	a0	a411	a339	a152	a0	*892
1940	a0	a0	a0	a0	a0	a0	a0	a0	a235	a222	a100	a15	*572
1941	a0	a0	a0	a0	a0	a0	a0	a0	a399	a179	a31	a0	*609
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a198	a65	a0	b261
1943	a0	a0	a0	a0	a0	a0	a0	a0	a118	a406	a33	a0	b555
1944	a0	a0	a0	a0	a0	a0	a0	a0	a160	a259	a11	a0	b450
1945	a0	a0	a0	a0	a0	a0	a0	a0	a228	a532	a258	a18	1,040
1946	a0	a0	a0	a0	a0	a0	a0	a0	a130	a235	a32	a0	397
1947	a0	a0	a0	a0	a0	a0	a0	a0	a0	a99	a67	a0	166
1948	0	0	0	0	0	0	0	0	301	260	0	0	561
1949	0	0	0	0	0	0	0	0	78.3	319	0	0	327
1950	0	0	0	0	0	0	0	0	275	215	0	0	490

* Revised; supersedes records previously published by State engineer of Colorado.

† Corrected.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

208. West Fork Clear Creek above Empire, Colo.

Location.--Lat 39°45'40", long. 105°41'55", in sec. 29, T. 3 S., R. 74 W., 200 ft down-stream from Mad Creek and 1 mile west of Empire.

Drainage area.--39.9 sq mi.

Gage.--Staff gage. Datum of gage is 8,604.92 ft above mean sea level, datum of 1929.

Extremes.--1942-46: Maximum discharge observed, 755 cfs June 24, 1945 (gage height, 8.80 ft), from rating curve extended above 500 cfs; minimum daily, 2.8 cfs Apr. 10, 1944.

Remarks.--No diversion above station for irrigation. Natural flow of stream affected by Transmountain diversions from Colorado River basin through Jones Pass tunnel and Berthoud Pass ditch (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	-	-	19.7
1943	11.6	8.27	8.58	4.84	4.40	4.80	23.2	72.7	253	163	61.8	24.4	53.3
1944	11.2	9.03	8.77	4.18	4.09	4.06	5.09	63.8	255	170	50.0	16.2	50.0
1945	10.8	8.12	5.88	4.51	4.30	4.24	5.65	59.8	257	270	134	37.0	67.1
1946	17.9	13.7	9.39	7.30	5.47	5.11	51.4	144	334	141	44.1	20.4	66.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	715	492	404	285	244	295	1,380	4,470	15,080	10,000	3,800	1,170	38,620
1944	689	557	416	259	235	250	303	3,920	15,150	10,448	3,070	961	36,270
1945	663	493	361	277	238	261	336	3,660	15,300	16,580	8,250	2,200	49,610
1946	1,100	815	577	449	304	314	3,060	8,830	19,850	8,680	2,710	1,210	47,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1942	056	-	-	-	-	-	-	-
1943	976	376	June 23, 1943	3.1	53.3	38,620	53.4	38,650
1944	1006	376	June 21, 1944	2.8	50.0	36,270	49.8	36,130
1945	1036	755	June 24, 1945	3.1	67.1	49,610	68.5	49,600
1946	1056	555	June 11, 12, 1946	4.0	66.2	47,900	-	-

209. West Fork Clear Creek near Empire, Colo.

Location.--Lat 39°45'30", long. 105°39'40", in sec. 27, T. 3 S., R. 74 W., 75 ft downstream from Miller Creek and 1 mile east of Empire.

Drainage area.--57 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 8,271.27 ft above mean sea level, adjustment of 1912.

Extremes.--1929-31: Maximum discharge, 720 cfs June 18, 1930 (gage height, 2.26 ft); minimum daily, 7 cfs (revised) Mar. 18, 1930, but may have been less during periods of no gage-height record.

Remarks.--No diversion above station for irrigation. Natural flow of stream affected by transmountain diversion from Colorado River basin through Berthoud Pass ditch (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	257	147	114	61.7	-
1930	58.3	21.9	13.4	11.0	10.5	10.0	39.9	95.4	396	125	98.5	39.9	75.0
1931	24.0	16.2	13.0	9.0	8.0	8.8	14.3	71.1	259	86.5	36.8	21.9	47.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	15,300	9,040	7,010	3,670	-
1930	2,360	1,300	824	678	583	615	2,370	5,870	23,600	7,690	6,060	2,370	54,300
1931	1,480	984	799	553	444	541	851	4,370	15,400	5,320	2,280	1,300	34,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	373	June 10, 1929	-	-	-	-	-
1930	701	720	June 18, 1930	7	75.0	54,300	73.3	53,100
1931	716	690	June 7, 1931	-	47.4	34,300	-	-

210. Clear Creek near Lawson, Colo.

Location.--Lat 39°45'40", long. 105°39'00", in NE $\frac{1}{4}$ sec. 27, T. 3 S., R. 74 W., 500 ft south of U. S. Highways 6 and 40, 0.4 mile (revised) downstream from West Fork Clear Creek, and 1 mile west of Lawson.

Drainage area.--144 sq mi.

Gage.--Water-stage recorder. Datum of gage is 8,193.72 ft (revised) above mean sea level (State Highway benchmark).

Extremes.--1946-50: Maximum discharge, 1,360 cfs June 20, 1947; maximum gage height, 5.39 ft June 19, 1949; minimum daily, 16 cfs Jan. 29, 1949.

Remarks.--Natural flow of stream affected by transmountain diversions (see elsewhere in this report). No diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	81.7	172	552	274	114	70.0	-
1947	53.0	36.9	34.6	24.3	26.4	22.1	34.9	278	721	721	265	111	195
1948	72.8	60.7	42.8	36.8	30.9	29.9	45.8	318	591	284	122	65.0	142
1949	45.2	37.6	29.9	19.5	20.1	22.1	36.1	185	752	536	180	85.3	163
1950	62.7	43.8	29.1	23.6	22.7	23.0	34.1	157	748	353	105	59.7	138

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	4,860	10,580	32,820	18,820	7,040	4,170	-
1947	3,260	2,200	2,130	1,490	1,460	1,360	2,070	17,080	42,890	44,350	16,280	6,620	141,200
1948	4,480	3,610	2,630	2,260	1,770	1,840	2,720	19,410	35,140	17,460	7,530	3,870	102,700
1949	2,960	2,240	1,780	1,200	1,110	1,360	2,150	11,350	44,720	32,950	11,070	5,080	118,000
1950	3,880	2,800	1,790	1,450	1,260	1,410	2,030	9,640	44,480	21,700	6,470	3,550	100,200

Yearly discharge, in cubic feet per second of Clear Creek near Lawson, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	*a880	(b)	-	-	-	-	-
1947	1086	1,560	June 20, 1947	20	195	141,200	199	144,300
1948	1116	885	June 2, 1948	27	142	102,700	136	98,980
1949	1146	1,180	June 19, 1949	16	163	118,000	165	119,200
1950	1176	1,100	June 16, 1950	19	138	100,200	-	-

* Not previously published.

a Estimated

b About June 12, 1946.

211. Fall River near Idaho Springs, Colo.

Location.--Lat 39°45'20", long. 105°33'20", in sec. 28, T. 3 S., R. 73 W., 400 ft up-stream from mouth and 1½ miles west of Idaho Springs.

Drainage area.--23.6 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,720 ft (from topographic map). Prior to July 6, 1937, at site 150 ft downstream at different datum.

Average discharge.--8 years (1930-38), 19.8 cfs.

Extremes.--1930-38: Maximum discharge, 325 cfs June 29, 1938 (gage height, 2.08 ft) from rating curve extended above 110 cfs; minimum not determined.

Remarks.--Flow regulated by storage for irrigation. No diversions above station for irrigation.

Cooperation.--Records prior to 1934, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	a19.8	b54.8	b75.0	a37.1	a36.3	a19.8	-
1931	a10.2	a7.43	a6.0	a4.0	a3.0	a3.0	a7.87	a42.7	a55.7	a30.1	a27.1	a8.10	a17.2
1932	a7.0	a6.0	a4.0	a4.0	a4.0	a4.0	a7.0	b55.4	b59.1	b31.7	b25.1	a6.63	b16.2
1933	a4.81	a4.6	a2	a2	a2	a3.7	a7	a53.8	a87.5	a43.7	a22.4	a13.4	a18.9
1934	4.71	3	3	2	2	4	6	65.0	42.2	19.5	8.61	6.6	14.0
1935	4.5	3	3	4	6	5	5.9	58.7	103	46.5	30.4	13.2	23.7
1936	8.78	6.73	4.51	4.0	3.0	3.71	15.1	69.3	74.4	37.9	34.8	18.0	23.4
1937	15.8	*7	*5	*3	*2	*4	*8.0	*30	48.5	30.7	23.0	12.0	*15.7
1938	11.7	11.1	8.0	6.0	4.5	5.64	11.7	55.4	122	52.5	38.5	28.3	29.7

* Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

b Revised; supersedes records previously published by State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	-	-	a1,180	b2,140	b4,460	a2,280	a2,230	a1,180	-
1931	a627	a442	a369	a246	a187	a184	a468	a2,620	a3,310	a1,850	a1,670	a482	a12,400
1932	a430	a357	a246	a246	a230	a246	a418	b2,180	b5,520	b1,960	b1,540	a394	b11,800
1933	a298	a274	a123	a123	a111	a228	a417	a2,070	a5,210	a2,690	a1,380	a797	a15,700
1934	290	179	184	123	111	246	357	4,000	2,510	1,220	529	393	10,140
1935	280	179	184	246	333	307	353	3,610	6,120	2,860	1,870	785	17,130
1936	540	401	278	246	173	228	899	4,260	4,430	2,330	2,140	1,070	16,990
1937	851	*417	*307	*184	*111	*246	*475	*1,840	2,890	1,890	1,430	714	*11,540
1938	722	659	492	369	250	347	697	3,400	7,270	3,230	2,370	1,680	21,490

* Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

b Revised; supersedes records previously published by State engineer of Colorado.

Yearly discharge, in cubic feet per second of Fall River near Idaho Springs, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	-	#172	June 18, 1930	-	-	-	-	-
1931	-	#268	May 26, 1931	-	#17.2	#12,400	#16.8	#12,000
1932	-	#112	June 19, 1932	-	#16.2	#11,800	#15.8	#11,400
1933	-	188	June 1, 1933	-	#18.9	#13,700	#18.9	#13,700
1934	761	98	May 31, 1934	-	14.0	10,140	14.0	10,130
1935	786	190	June 13, 1935	-	23.7	17,130	24.5	17,700
1936	806	130	May 30, 1936	-	23.4	16,990	#23.9	#17,350
1937	856	221	July 27, 1937	-	#15.7	#11,340	#16.1	#11,630
1938	856	325	June 29, 1938	-	29.7	21,490	-	-

* Revised; supersedes record previously published by State engineer of Colorado

* Not previously published.

a From reports of State engineer of Colorado.

212. Clear Creek at Idaho Springs, Colo.

Location.--Lat 39°44'32", long. 105°30'47", in SW $\frac{1}{4}$ sec. 36, T. 3 S., R. 73 W., at Idaho Springs, a quarter of a mile upstream from Soda Creek, and half a mile downstream from Chicago Creek.

Drainage area.--239 sq mi.

Supplemental records available.--October to December 1910, scattered gage heights and two discharge measurements referred to gage at slightly different site and datum.

Gage.--Staff gage. Altitude of gage is 7,510 ft (from topographic map).

Extremes.--1911-12: Maximum discharge observed, 1,260 cfs June 30, 1912 (gage height, 5.0 ft), from rating curve extended above 700 cfs; minimum not determined, occurred during period of no gage-height record.

Remarks.--No diversions above station for irrigation. Transmountain diversion into Clear Creek from Fraser River is decreed by court for 53 cfs.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	#80.5	#48.5	#25	20	22	31.1	55.8	196	494	386	134	73.6	#130
1912	66.5	55.6	40.0	30	30	35	40.8	235	919	801	361	153	231

* Not previously published; estimated on basis of records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	#4,950	#2,890	#1,540	1,230	1,270	1,910	3,320	12,100	28,800	23,700	8,240	4,380	#94,300
1912	4,090	3,310	2,460	1,840	1,730	2,150	2,430	14,400	54,700	49,300	22,200	9,100	168,000

* Not previously published; estimated on basis of records for nearby stations.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	308	680	July 6, 1911	-	#130	#94,300	130	94,800
1912	326	1,260	June 30, 1912	-	231	168,000	-	-

* Not previously published.

213. Clear Creek at Forks Creek, Colo.

Location.--Lat 39°44'45", long. 105°23'50", in sec. 36, T. 3 S., R. 72 W., at Forks Creek, 200 ft downstream from North Clear Creek, and 9 miles west of Golden.

Drainage area.--345 sq mi.

Gage.--Chain gage. Altitude of gage is 6,870 ft (from topographic map).

Average discharge.--13 years (1899-1912), 218 cfs.

Extremes.--1899-1912: Maximum discharge observed, 5,000 cfs July 9, 1907 (gage height, 9.2 ft), from rating curve extended above 1,100 cfs on basis of determination of peak flow by Kutter's formula; minimum daily, 18 cfs Mar. 11, 1910, Mar. 15-17, 27, 1911, but may have been less during periods of no gage-height record.

Remarks.--The natural flow is partially regulated by storage in various ponds and reservoirs above station. No court decrees for diversions above station.

Monthly and yearly mean discharge, in cubic feet per second, of Clear Creek at Forks Creek, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	a705	a1,020	791	440	214	-
1900	141	77	a35	*30	*35	a57.4	180	1789	968	378	137	58	*241
1901	58	51	*80	*50	*40	*40	*125	a477	652	433	227	114	*195
1902	75	37	*45	*40	*35	*40	*75.1	315	398	199	94	89	*119
1903	a88.0	*40	*35	*30	*30	*50	*57	248	804	567	219	124	*188
1904	108	*75	*45	*40	*35	*40	139	453	1,090	851	1588	308	*281
1905	219	*75	*50	*45	*40	*40	131	472	1,290	420	193	116	*258
1906	75.3	*40	*35	*35	*35	*40	102	510	*994	*590	256	236	*247
1907	240	*103	*40	*35	*35	*51.5	124	363	903	760	277	134	*256
1908	99.3	*48.1	*50	a45	a50	39.5	85.0	191	412	215	218	122	*131
1909	78.4	87.7	58.0	*40	*40	*40	*90	357	979	753	450	438	*284
1910	205	91.5	*50	40	45	46.8	94.9	295	511	251	199	163	*186
1911	71.1	52.8	29.4	23	24.4	37.2	81.1	321	717	517	192	104	182
1912	73.5	60.6	40.8	30	30	35	59.4	358	1,130	983	508	179	290
1913	122	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

‡ Not previously published; estimated on basis of records for nearby stations.

a Only monthly figure revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	-	-	-
1900	8,670	4,580	a2,150	*1,840	*1,940	a3,530	10,700	a43,300	a60,700	48,600	27,100	12,700	-
1901	3,570	3,040	*3,690	*3,070	*2,220	*2,460	*7,440	a29,300	a58,800	28,600	14,000	6,780	*141,000
1902	4,490	2,200	*2,770	*2,460	*1,940	*2,460	*4,470	19,400	23,700	12,200	5,780	4,110	*86,000
1903	a4,180	*2,380	*2,150	*1,840	*1,670	*1,840	*3,590	15,200	47,800	34,900	13,500	7,380	*136,000
1904	6,640	*4,460	*2,770	*2,460	*2,010	*2,460	8,270	27,800	65,000	40,000	23,900	18,300	*204,000
1905	13,500	*4,460	*3,070	*2,770	*2,220	*2,460	7,800	29,000	76,800	25,800	11,900	6,900	*187,000
1906	4,630	*2,380	*2,150	*2,150	*1,940	*2,460	6,070	31,400	a59,200	*36,300	15,700	14,200	*179,000
1907	14,800	a8,150	*2,460	*2,150	*1,940	*3,170	7,380	22,300	53,700	46,700	17,000	7,970	*188,000
1908	6,110	*2,660	*3,070	a2,770	*2,680	*2,460	5,060	11,700	24,500	a5,200	13,400	7,280	*95,200
1909	4,820	4,030	3,570	*2,460	*2,220	*2,460	5,560	22,000	58,300	46,300	27,700	26,100	*205,000
1910	12,600	5,440	*3,070	2,460	2,500	2,870	5,650	18,100	30,400	15,400	12,200	9,700	*120,000
1911	4,370	3,140	1,810	1,410	1,360	2,290	4,830	19,800	42,700	31,800	11,800	6,170	131,000
1912	4,520	3,600	2,510	1,840	1,730	2,150	3,530	22,000	67,200	59,200	31,200	10,700	210,000
1913	7,500	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

‡ Not previously published; estimated on basis of records for nearby stations.

a Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1899	(a)	*1,460	June 21, 1899	-	-	-	-	-
1900	(b)	*1,340	June 8, 1900	-	*241	*174,000	*234	*169,000
1901	75	*889	May 21, 1901	-	*195	*141,000	*194	*140,000
1902	84	*860	(d)	-	*119	*86,000	*118	*85,200
1903	99	*1,680	June 20, 1903	-	*188	*136,000	*195	*141,000
1904	131	*1,750	June 20, 1904	-	*281	*204,000	*291	*211,000
1905	172	*2,070	June 5, 1905	-	*258	*187,000	*241	*175,000
1906	208, 1440	*1,630	(e)	-	*247	*179,000	*266	*193,000
1907	246	*5,000	July 9, 1907	-	*256	*186,000	*241	*174,000
1908	246	*647	June 12, 1908	-	*131	*95,200	*132	*95,600
1909	266	*1,400	July 4, 1908	-	*284	*205,000	*296	*214,000
1910	266	*1,270	July 28, 1910	-	*166	*120,000	150	109,000
1911	306	*1,170	July 6, 1911	-	182	131,000	183	133,000
1912	326	*2,400	June 30, 1912	-	290	210,000	-	-

* Revised.

† Not previously published.

a 21st Ann. Rept., Pt. 4.

b 22d Ann. Rept., Pt. 4.

c Estimated.

d About June 11, 1902.

e June 13, 15, 16, 1906.

Note.--A graph of daily discharges for a part of 1887, 1888, taken from records kept by State engineer of Colorado, was published in the 13th Ann. Rept., Pt. 4. These records are not published herein as no check on their reliability can be made. Estimates of discharge that were made by Water Commissioner in office of State engineer of Colorado for several months in 1897, 1898 and monthly summaries published in WRF 74 are not published herein as these figures though published were discredited at time of publication.

214. Clear Creek near Golden, Colo.

Location.--Lat 39°45'05", long. 105°14'55", in NE $\frac{1}{4}$ sec. 32, T. 3 S., R. 70 W., half a mile downstream from headgate for Golden Canal, 0.8 mile upstream from highway crossing over Clear Creek, and 1 mile west (revised) of Golden.

Drainage area.--392 sq mi.

Gage.--Water-stage recorder. Datum of gage is 5,735.27 ft above mean sea level (State Highway benchmark). Prior to May 15, 1919, water-stage recorder half a mile upstream at different datum; May 15, 1919, to Mar. 16, 1934, at present site at datum 3.13 ft higher; Mar. 17, 1934, to Aug. 29, 1941, at present site at datum 4.00 ft higher; Aug. 30, 1941, to Apr. 16, 1942, at present site at datum 2.00 ft higher; Apr. 17, 1942, to Jan. 20, 1943, 600 ft downstream at datum 7.50 ft lower.

Average discharge.--40 years (1908-9, 1911-50), 240 cfs (adjusted for inflow from Jones Pass tunnel and Berthoud Pass ditch since 1940).

Extremes.--1908-9, 1911-50: Maximum discharge, 5,890 cfs Sept. 9, 1933 (gage height, 11.57 ft (revised), present datum, from floodmark), from rating curve extended above 2,200 cfs on basis of slope-area determination of peak flow; minimum daily recorded, 17 cfs Apr. 14, 1933.

Maximum discharge known, 8,700 cfs Aug. 1, 1888, from reports of State engineer of Colorado for station $\frac{5}{8}$ miles upstream.

Remarks.--Natural flow affected by transmountain diversions (see elsewhere in this report), several small reservoirs, and diversions for irrigation of about 3,000 acres above station.

Cooperation.--Records for 1929-33, furnished by State engineer of Colorado; those for 1930-33, not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1909	85	75	58.0	60.0	48.6	56.0	101	333	1,260	1,120	425	461
1910	211	121	108	-	-	-	-	-	-	-	-	-
1911	-	-	-	-	-	-	-	-	725	504	178	107
1912	75	85	40	32	30	40	58.7	343	1,290	1,200	409	166
1913	125	83.1	50.0	50	48	53.0	104	450	892	484	266	241
1914	185	138	75	80	85	80.0	219	1,120	1,710	777	431	170
1915	121	70.7	52	50	50	55	108	405	1,080	644	247	136
1916	116	61.9	45	45	50	60.1	95.5	311	651	439	330	182
1917	124	63.9	49.5	48.5	51.8	52.2	84.8	304	1,030	769	285	98.4
1918	75.3	60	50	45	50	60	89.1	434	1,340	687	229	136
1919	113	93	75	85	80	80	112	525	533	369	248	166
1920	98.7	77.3	45	55	55	55	71.1	519	1,020	550	306	186
1921	125	80	70	65	55	64.8	159	745	1,980	765	319	187
1922	108	84.0	58.8	55	50	45	69.0	271	889	318	208	112
1923	74.0	60.0	55	50	50	60	61.9	358	878	815	483	223
1924	170	120	100	70	58	51.0	134	664	1,300	497	178	96.5
1925	99.5	54	55	55	55	55	94.7	250	430	269	168	180
1926	133	100	70	60	45	57.6	228	844	1,320	665	319	136
1927	102	73.7	45	50	55	60	101	470	721	490	330	149
1928	110	79.5	50	45	45	50	70.1	641	915	593	228	111
1929	80.7	52	44	42	34	38	44	228	633	445	449	252
1930	a134	a85	a60	a38	a42	a45.0	a160	a300	a816	a391	a361	a153
1931	a85.9	a62.9	a49.6	a37.5	a31.6	a56.0	a78.5	a269	a637	a267	a162	a83.7
1932	a75.1	a38	a39	a40	a35	a40	a104	a311	a584	a424	a185	a90.4
1933	a61.8	a56.0	a48	a31	a30	a32	a43.8	a400	a1,560	a684	a233	a158
1934	102	60.9	55.7	62.4	59.4	43.9	108	786	470	219	160	89.2
1935	65.8	61.8	30	40	50	43.0	55.4	319	1,087	509	358	180
1936	111	68.9	59.5	50	52	51.1	140	792	1,052	490	482	204
1937	148	86.4	70	40	50	54.4	82.4	392	740	454	193	137
1938	98.6	78.8	73.9	48.0	48.4	48.7	156	591	1,560	623	276	424
1939	173	95.0	70.0	67.0	60.0	78.2	144	531	598	265	122	80.6
1940	59.0	40.8	23.6	30.5	45.6	47.3	68.1	291	627	329	152	121
1941	97.8	72.1	53.0	42.5	41.9	45.5	77.4	654	993	471	232	115
1942	93.5	61.4	57.5	45	57	60	216	829	931	360	192	97.0
1943	80.6	85.8	59.8	50.9	52.6	78.3	142	444	825	492	263	117
1944	60.2	46.5	53.9	41.8	34.5	46.4	102	523	980	514	157	79.7
1945	68.2	48.2	41.2	28.6	38.3	41.9	58.4	271	697	620	451	170
1946	108	86.8	33.7	32.2	35.2	46.6	133	268	678	394	181	112
1947	66.7	59.0	54.2	24.7	43.5	54.4	94.3	688	1,144	893	387	171
1948	122	105	89.9	58.1	56.4	61.3	131	559	896	388	179	99.6
1949	67.7	45.9	54.3	35.5	34.5	46.3	89.5	333	1,714	878	243	124
1950	67.8	58.2	45.6	34.5	44.5	38.2	55.1	226	834	395	140	72.6

† Corrected.

* Not previously published; estimated on basis of records for nearby stations.

‡ From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet of Clear Creek near Golden, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	\$5,230	\$4,460	\$3,570	\$3,690	2,700	3,440	6,010	20,500	75,000	68,900	26,100	27,400	\$247,000
1910	13,000	7,200	6,640	-	-	-	-	-	-	-	-	-	-
1911	-	-	-	-	-	-	-	-	\$43,100	31,000	10,800	\$6,370	-
1912	\$4,610	\$3,870	\$2,460	1,970	1,750	2,460	3,480	21,100	76,800	71,400	25,100	9,880	\$225,000
1913	7,690	4,940	\$3,070	\$3,070	\$2,670	\$3,260	6,190	27,700	41,200	29,800	16,400	14,300	\$160,000
1914	11,400	8,090	\$4,610	\$4,920	\$5,610	\$4,920	13,000	68,900	102,000	47,800	26,500	10,100	\$308,000
1915	7,440	4,210	\$3,200	\$3,070	\$2,780	\$3,380	6,430	24,800	64,300	39,600	15,200	8,090	\$183,000
1916	7,130	\$3,680	\$2,770	\$2,770	\$2,680	\$3,700	5,680	19,100	58,700	27,000	20,300	10,800	\$145,000
1917	7,620	3,800	3,040	2,980	2,880	3,210	5,050	18,700	61,300	47,300	16,300	5,880	\$178,000
1918	4,630	\$3,570	\$3,070	\$2,770	\$2,780	\$3,690	\$5,300	26,700	79,700	42,200	14,100	\$8,090	\$197,000
1919	6,960	\$5,630	\$4,610	\$4,000	\$3,530	\$3,680	6,680	32,500	31,700	22,700	15,200	9,880	\$147,000
1920	6,070	4,600	\$2,770	\$3,580	\$3,160	\$3,380	4,230	31,900	60,700	33,800	18,800	11,100	\$184,000
1921	7,690	4,760	4,300	4,000	3,050	3,980	9,460	45,800	118,000	47,000	19,600	11,100	\$279,000
1922	6,520	5,000	3,620	\$3,380	\$2,780	\$2,770	\$4,110	16,700	41,000	19,800	12,800	6,660	\$125,000
1923	\$4,550	\$3,570	\$3,380	\$3,070	\$2,780	\$3,690	4,870	22,000	52,200	50,100	29,700	13,300	\$193,000
1924	\$10,500	\$7,140	\$6,150	\$4,300	\$3,340	3,140	7,970	40,800	77,400	30,600	10,900	5,740	\$208,000
1925	6,120	\$3,210	\$3,380	\$3,380	\$3,050	\$3,380	5,640	15,400	25,600	16,500	10,300	10,700	\$107,000
1926	8,180	\$5,950	\$4,300	\$3,690	\$2,500	3,540	13,600	51,900	78,600	40,900	19,600	8,090	\$241,000
1927	6,270	4,590	\$3,200	\$3,070	\$3,050	\$3,690	6,010	28,900	42,900	30,100	20,300	8,870	\$161,000
1928	6,760	4,730	\$3,070	\$2,770	\$2,590	\$3,070	4,170	39,400	54,500	36,500	14,000	6,600	\$178,000
1929	4,960	3,090	2,710	2,580	1,890	2,340	2,620	14,000	37,700	27,400	20,800	15,000	\$142,000
1930	\$8,240	\$5,060	\$3,690	\$2,340	\$2,330	\$2,770	\$9,520	\$18,400	\$48,600	\$24,000	\$22,200	\$9,100	\$156,000
1931	\$5,280	\$3,740	\$3,050	\$2,310	\$1,780	\$3,440	\$4,550	\$16,500	\$37,900	\$16,400	\$9,980	\$4,980	\$110,000
1932	\$4,620	\$2,280	\$2,400	\$2,460	\$2,010	\$2,460	\$6,190	\$19,100	\$48,800	\$26,100	\$11,400	\$5,380	\$119,000
1933	\$3,800	\$3,530	\$2,950	\$1,910	\$1,670	\$1,970	\$2,610	\$24,600	\$80,900	\$42,100	\$14,300	\$9,400	\$190,000
1934	\$6,270	\$3,620	3,420	3,840	3,500	2,700	6,310	48,500	28,000	15,500	8,840	5,310	\$134,400
1935	\$4,060	3,680	1,840	2,460	2,780	2,640	3,290	19,590	64,700	31,320	22,020	9,530	\$167,900
1936	6,810	4,100	3,680	3,070	2,990	3,140	8,350	48,680	62,590	30,130	29,640	12,120	\$215,300
1937	9,090	5,140	4,300	2,460	2,780	3,340	4,900	24,120	44,010	27,920	11,880	8,180	\$148,100
1938	5,450	4,690	4,540	2,950	2,690	2,990	9,260	36,320	62,850	38,330	16,980	25,240	\$242,300
1939	10,630	5,650	4,300	4,120	3,330	4,810	8,570	32,640	35,600	16,310	7,530	4,800	\$158,300
1940	3,630	2,430	1,450	1,880	2,620	2,910	4,050	17,900	37,310	20,210	9,540	7,230	\$111,000
1941	6,020	4,290	3,260	2,620	2,330	2,800	4,610	40,200	59,090	28,970	14,290	6,850	\$175,300
1942	5,750	5,440	3,530	2,640	2,170	3,690	12,820	39,650	55,420	22,120	11,830	5,770	\$170,800
1943	4,950	5,110	3,620	3,130	2,920	4,810	8,490	27,280	49,090	30,260	14,980	6,940	\$161,600
1944	3,700	2,760	3,310	2,570	1,990	2,850	6,070	32,160	58,340	31,750	9,870	4,740	\$159,700
1945	4,190	2,670	2,530	1,760	2,130	2,580	3,470	16,670	41,450	38,110	27,720	10,090	\$153,600
1946	6,660	5,160	2,070	1,980	1,960	2,870	7,910	16,450	40,360	24,230	11,130	6,690	\$127,500
1947	4,100	3,510	3,330	1,520	2,420	3,340	5,610	41,070	68,080	54,920	25,810	10,190	\$221,900
1948	7,460	6,250	4,300	3,570	3,250	3,770	7,790	34,390	53,340	25,860	10,980	5,930	\$164,900
1949	4,160	2,730	3,340	2,180	1,920	2,840	4,140	20,470	102,000	53,970	14,870	7,350	\$220,000
1950	4,170	3,460	2,680	2,120	2,470	2,350	3,290	13,690	49,610	23,660	8,590	4,320	\$120,600

† Corrected.

* Not previously published; estimated on basis of records for nearby stations.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1909	266	-	-	-	\$341	\$247,000	†360	\$261,000	
1911	326	\$1,920	July 3, 1911	-	-	-	-	-	
1912	326	\$3,200	June 30, 1912	-	\$310	\$225,000	319	\$230,000	
1913	356	\$1,120	May 27, 1913	-	\$221	\$160,000	\$233	\$169,000	
1914	386	2,900	June 1, 1914	-	\$422	\$306,000	\$410	\$297,000	
1915	406	\$1,520	June 23, 1915	-	\$252	\$183,000	\$250	\$181,000	
1916	436	672	June 18, 1916	-	\$199	\$145,000	\$200	\$145,000	
1917	456	1,670	June 18, 1917	-	\$246	\$178,000	\$242	\$175,000	
1918	476	2,090	June 14, 1918	-	\$202	\$197,000	\$200	\$202,000	
1919	506	\$1,090	July 4, 1919	-	\$202	\$147,000	\$197	\$145,000	
1920	506	\$1,390	Aug. 1, 1920	-	\$253	\$184,000	\$258	\$187,000	
1921	526	\$4,420	July 31, 1921	-	364	\$279,000	383	\$277,000	
1922	546	1,170	June 13, 1922	-	\$173	\$125,000	\$168	\$121,000	
1923	566	\$2,110	June 16, 1923	-	\$267	\$193,000	\$284	\$206,000	
1924	586	2,450	June 13, 1924	-	\$286	\$208,000	\$271	\$197,000	
1925	606	720	June 21, 1925	-	\$147	\$107,000	\$155	\$112,000	
1926	626	2,100	June 7, 1926	-	\$333	\$241,000	\$326	\$236,000	
1927	646	1,080	June 29, 1927	-	\$222	\$161,000	\$223	\$161,000	
1928	666	1,560	May 30, 1928	-	\$245	\$178,000	\$240	\$174,000	
1929	686	1,280	Aug. 5, 1929	-	196	\$142,000	\$205	\$148,000	
1930	706	(c)	\$1,280	June 13, 1930	\$216	\$156,000	\$209	\$151,000	

* Revised.

† Corrected.

* Not previously published.

a Maximum observed.

b From floodmark.

c From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Clear Creek at Golden, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	(c)	#1,310	June 8, 1931	-	c152	c110,000	c148	c107,000
1932	(c)	#863	June 28, 1932	-	c164	c119,000	c165	c120,000
1933	(c)	5,890	Sept. 9, 1933	-	c282	c190,000	c266	c193,000
1934	761	2,160	Aug. 9, 1934	21	186	134,400	180	130,700
1935	786	4,900	Aug. 3, 1935	-	232	167,900	239	172,900
1936	806	1,840	May 31, 1936	-	297	215,300	302	219,200
1937	826	1,750	June 28, 1937	28	205	148,100	199	144,300
1938	856	4,090	Sept. 2, 1938	31	335	242,500	343	248,200
1939	876	*927	June 1, 1939*	-	191	138,500	173	125,200
1940	896	1,110	July 28, 1940	19	153	111,000	161	117,000
1941	926	5,140	June 22, 1941	29	242	175,300	244	176,500
1942	956	1,220	June 18, 1942	-	236	170,800	235	169,800
1943	976	1,040	June 29, 1943	19	223	161,600	218	157,600
1944	1006	*1,260	June 2, 1944*	23	220	159,700	220	159,600
1945	1036	1,200	Aug. 2, 1945	18	212	153,600	218	157,900
1946	1056	1,010	July 15, 1946	18	176	127,500	172	124,500
1947	1086	1,900	June 28, 1947	19	307	221,900	316	229,000
1948	1116	1,900	June 7, 1948	48	227	164,900	216	157,100
1949	1146	3,190	June 19, 1949	30	304	220,000	304	220,100
1950	1176	1,560	June 18, 1950	20	167	120,800	-	-

* Revised.

* Not previously published.

c From reports of State engineer of Colorado.

215. Clear Creek at mouth, near Derby, Colo.1/

Location.--Lat 39°49'40", long. 104°57'30", in SW $\frac{1}{4}$ sec. 36, T. 2 S., R. 68 W., at bridge on State Highway 224, 0.7 mile (revised) upstream from mouth, and 2 $\frac{1}{2}$ miles west of Derby.

Drainage area.--600 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 5,110 ft (from topographic map). Apr. 1 to Nov. 30, 1914, chain gage at same site at different datum. Feb. 25, 1927, to June 7, 1942, water-stage recorder at several sites within 1,000 ft of present site at different datums. June 8, 1942, to May 30, 1948, water-stage recorder at same site at datum 2.00 ft higher.

Average discharge.--23 years (1927-50), 82.7 cfs.*

Extremes.--1914, 1927-50: Maximum discharge, 3,650 cfs Sept. 3, 1938 (gage height, 4.04 ft, site and datum then in use), from rating curve extended above 1,300 cfs; minimum daily, 0.4 cfs Mar. 11, 1943.

Remarks.--Natural flow of stream affected by transmountain diversions (see elsewhere in this report), storage reservoirs, diversions for irrigation of about 77,000 acres above station, and return flow from irrigated areas.

Cooperation.--Records for 1914, 1927-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914			-	-	-	-	a592	a926	a775	a223	a121	a12.7	-
1915	a37.4	a42.5	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a53.4	a23.5	a54.6	a240	a78.2	a15.7	a15.6	-
1928	a22.1	a17.5	a37.4	a34.3	a28.1	a25.2	a11.8	a425	a543	a80.5	a25.5	a8.40	a105
1929	a18.0	a30.2	a25.4	a16.2	a15	a17	a15.8	a40.5	a221	a101	a125	a36.4	a55.1
1930	a13.2	a45.0	a39.1	a18.0	a28.9	a25.4	a24.7	a25.2	a135	a80.4	a23.4	a8.53	a38.7
1931	a11.2	a24.7	a28.5	a16.0	a13.0	a16.1	a14.3	a58.0	a106	a31.3	a17.5	a5.50	a28.7
1932	a4.16	a22.5	a52.5	a39.5	a33.9	a33.7	a11.4	a66.2	a103	a87.0	a22.0	a2.50	a38.2
1933	a3.10	a9.80	a45	a65	a50	a25	a20.0	a171	a431	a59.2	a17.9	a95.4	a95.1
1934	9.9	11.4	54.2	46.3	52.6	14.3	15.9	276	89.5	20.4	13.5	10	51.3
1935	2.5	7.5	29.7	20.0	18.4	6.6	6.3	78.9	248	107	22.6	8.0	46.3
1936	15.5	36.2	24.8	25	18	25.0	36.5	257	361	94.0	274	58.5	102
1937	58.7	44.8	12.8	8.29	17.6	31.7	14.6	99.1	395	187	6.83	6.74	72.7
1938	4.90	36.8	14.4	14.1	22.6	12.1	47.3	495	911	212	25.1	131	160
1939	23.2	91.0	48.8	45.3	67.9	80.2	64.8	95.3	286	36.6	5.81	1.27	70.1
1940	2.97	5.78	23.7	14.5	18.7	22.2	8.98	36.6	241	69.0	7.10	46.4	41.1
1941	16.4	15.6	17.9	15.8	13.9	13.2	13.2	207	410	92.2	31.8	12.1	71.6
1942	20.5	21.3	19.7	25.8	49.5	84.9	311	600	689	77.6	33.4	32.6	164
1943	47.7	33.3	48.5	33.6	24.5	28.1	39.7	132	345	152	18.6	8.63	76.1
1944	5.72	14.7	29.0	15.6	20.0	21.5	46.3	239	525	122	16.2	3.81	87.9
1945	6.31	7.09	18.0	8.34	21.0	15.8	19.8	70.2	315	446	231	12.7	98.3
1946	23.5	83.7	25.4	19.4	20.4	19.1	13.8	31.2	178	61.0	11.8	17.3	41.9
1947	18.3	69.6	34	17	24	21	27.2	284	1,070	398	24.1	24.7	167
1948	79.3	81.4	32.4	23.3	43.9	79.1	79.9	188	367	27.9	20.2	4.84	85.3
1949	9.50	8.4	14.7	15	20	14	11.1	115	1,312	367	23.2	13.1	169
1950	15.3	28.1	14.0	17.0	11.8	12.9	18.4	58.5	354	121	19.9	5.99	56.1

a From reports of State engineer of Colorado.

1/ Published as "near mouth" prior to 1934.

Monthly and yearly runoff, in acre-feet of Clear Creek at mouth, near Derby, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	a2,300	a2,530	-	-	-	-	a35,200	a56,900	a46,100	a13,700	a7,440	a756	-
1927	-	-	-	-	-	a3,280	a1,400	a3,360	a14,300	a4,810	a9,650	a928	-
1928	a1,360	a1,040	a2,300	a2,110	a1,500	a1,430	a702	a26,100	a32,300	a5,560	a1,570	a500	a76,500
1929	a1,110	a1,800	a1,560	a935	a833	a1,050	a821	a2,490	a13,200	a6,210	a7,690	a2,170	a39,900
1930	a812	a2,680	a2,340	a1,110	a1,600	a1,560	a1,470	a1,550	a8,030	a4,940	a1,440	a507	a28,000
1931	a689	a1,470	a1,750	a984	a722	a1,110	a851	a3,570	a6,310	a1,920	a1,080	a327	a20,800
1932	a256	a1,340	a3,250	a2,370	a1,950	a2,070	a678	a4,070	a6,130	a4,120	a1,350	a149	a27,700
1933	a191	a583	a2,770	a4,000	a2,780	a1,540	a1,190	a10,500	a25,600	a5,480	a1,210	a5,680	a61,500
1934	609	678	3,350	2,850	2,920	879	946	17,000	5,310	1,250	630	595	37,200
1935	153	446	1,830	1,250	1,020	403	377	4,850	14,740	6,600	1,390	478	33,520
1936	952	2,150	1,520	1,540	1,040	1,540	2,170	15,820	21,480	5,780	16,860	3,480	74,330
1937	3,610	2,670	785	510	980	1,950	868	6,100	22,900	11,470	420	401	52,660
1938	301	2,190	887	869	1,260	742	2,810	30,430	54,190	13,020	1,540	7,770	116,000
1939	1,430	5,420	3,000	2,780	3,770	4,930	3,860	5,860	17,010	2,250	357	76	50,740
1940	183	344	1,460	889	1,080	1,370	534	2,250	14,330	4,240	436	2,760	29,880
1941	1,010	930	1,100	972	770	813	788	12,730	24,380	5,670	1,960	720	51,840
1942	1,260	1,270	1,210	1,580	2,750	5,220	18,520	36,870	41,010	4,770	2,050	1,940	118,400
1943	2,930	1,980	2,990	2,060	1,380	1,730	2,360	8,130	20,510	9,360	1,140	513	55,060
1944	351	877	1,780	956	1,150	1,320	2,760	14,670	31,240	7,500	997	228	63,830
1945	388	422	1,110	513	1,160	973	1,180	4,310	18,760	27,420	14,210	754	71,200
1946	1,450	4,980	1,560	1,190	1,130	1,170	823	1,920	10,570	3,750	728	1,030	30,300
1947	1,120	4,140	2,090	1,050	1,330	1,290	1,820	17,490	63,680	24,470	1,480	1,470	121,200
1948	4,870	4,840	1,990	1,430	2,530	4,860	4,760	11,580	21,820	1,720	1,240	288	81,930
1949	584	500	904	922	1,110	861	860	6,940	76,080	22,540	1,430	778	115,300
1950	939	1,670	1,040	656	792	1,100	3,480	21,070	7,410	1,220	351	40,590	

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1914	(a)	b1,260	June 2, 1914	-	-	-	-	-
1927	(a)	*1,000	Aug. 14, 1927	-	-	-	-	-
1928	(a)	*1,290	May 27, 1928	a4	a105	a76,500	a105	a76,200
1929	(a)	*482	Aug. 6, 1929	a3	a55.1	a39,900	a56.9	a41,200
1930	(a)	*368	June 19, 1930	a2	a38.7	a28,000	a36.1	a28,100
1931	(a)	*274	June 7, 1931	a2	a28.7	a20,800	a30.1	a21,700
1932	(a)	*345	June 28, 1932	a1	a38.2	a27,700	a36.4	a26,400
1933	(a)	*1,530	Sept. 10, 1933	a1	a85.1	a61,500	a86.5	a62,600
1934	761	690	May 31, 1934	4	51.3	37,200	48.3	35,010
1935	786	537	June 12, 1935	1	46.3	33,520	49.4	35,720
1936	806	1,700	Aug. 3, 1936	5	102	74,330	106	76,780
1937	826	2,170	June 26, 1937	1.1	72.7	52,660	67.6	48,980
1938	856	3,650	Sept. 3, 1938	1.9	160	116,000	169	122,500
1939	876	588	June 6, 1939	.9	70.1	50,740	59.2	42,880
1940	896	918	Sept. 21, 1940	.9	41.1	29,880	42.6	30,930
1941	926	1,890	June 22, 1941	4.6	71.6	51,840	72.6	52,540
1942	956	1,560	Apr. 26, 1942	1.9	164	118,400	169	122,600
1943	976	766	May 30, 1943	.4	76.1	55,060	69.3	50,170
1944	1006	889	June 10, 1944	1.8	87.9	63,830	86.4	62,740
1945	1036	747	July 20, 1945	2.4	98.3	71,200	107	77,270
1946	1056	644	June 7, 1946	3.6	41.9	30,300	41.0	29,660
1947	1086	2,680	June 22, 1947	5.6	167	121,200	173	125,600
1948	1116	1,180	June 7, 1948	3.3	85.3	61,930	71.9	52,200
1949	1146	2,920	June 18, 1949	2.8	159	115,300	161	116,800
1950	1176	982	June 17, 1950	2.7	58.1	40,590	-	-

* Not previously published.

a From reports of State engineer of Colorado

b Maximum observed.

216. South Platte River at Henderson, Colo.

Location.--Lat 39°55'20", long. 104°52'05", in NE¼ sec. 34, T. 1 S., R. 67 W., 40 ft downstream from bridge on State Highway 128 and 0.2 mile northwest of Henderson.

Drainage area.--4,740 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 5,005.12 ft above mean sea level, datum of 1929. Prior to Apr. 20, 1942, at datum 2.00 ft higher.

Average discharge.--24 years (1926-50), 349 cfs.

Extremes.--1926-50: Maximum discharge, 10,700 cfs, Apr. 26, 1942 (gage height, 8.40 ft); minimum daily, 4.4 cfs Apr. 1, 1950.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals, diversions for irrigation of about 253,000 acres, and return flow from irrigated areas.

Cooperation.--Records for 1926-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second
of South Platte River at Henderson, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	a115	a184	a94.3	a71.0	a64.3	a114	a145	a175	a1560	a831	a319	a143	-
1928	a89.6	a75.6	a92.1	a209	a164	a85.0	a108	a778	a933	a321	a204	a104	a264
1929	a109	a78.3	a80.0	a42.6	a42	a145	a186	a213	a434	a349	a595	a337	a217
1930	a91.0	a127	a151	a202	a219	a55.7	a148	a277	a549	a461	a906	a245	a287
1931	a117	a90.3	a73.7	a59.4	a61.2	a59.3	a69.9	a568	a256	a275	a204	a92.3	a184
1932	a84.3	a101	a86.5	a156	a221	a115	a83.3	a270	a496	a408	a194	a101	a193
1933	a84.7	a37.2	a54.9	a75.9	a110	a90.5	a229	a1,390	a1,140	a498	a253	a480	a372
1934	59.2	28.6	162	203	193	85.2	108	526	185	118	150	91.6	159
1935	41.5	45.1	56.1	52.3	67.9	32.5	69.6	596	763	508	450	215	243
1936	97.7	81.2	126	144	74.3	129	138	650	784	538	1,035	352	346
1937	247	107	85.1	128	167	116	188	413	615	425	158	150	234
1938	82.8	92.8	86.1	79.5	168	95.3	378	1,655	1,217	554	536	893	466
1939	202	324	365	270	160	1,216	892	802	570	125	142	105	433
1940	61.2	67.1	95.9	68.8	111	309	193	332	399	181	132	265	184
1941	78.7	81.8	77.5	187	162	48.6	138	852	1,220	614	479	210	347
1942	312	184	99.8	155	130	60.7	3,591	4,886	2,436	799	545	202	1,166
1943	206	122	338	193	80.9	170	184	390	540	405	335	67.1	254
1944	58.4	47.8	69.4	83.0	71.0	147	339	1,435	898	497	171	89.8	327
1945	45.4	74.5	56.3	51.1	72.2	128	82.8	217	326	528	369	287	272
1946	95.5	276	162	103	100	159	166	262	438	344	288	161	208
1947	72.8	162	117	100	107	344	232	1,333	2,490	1,228	611	372	599
1948	283	395	159	184	414	919	1,294	1,645	1,534	442	315	95.2	639
1949	75.1	46.7	62.1	29.4	92.2	222	81.6	594	4,142	1,281	397	175	598
1950	96.9	123	78.3	31.7	169	81.5	90.0	208	648	344	96.5	60.5	168

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	a7,070	a10,900	a5,800	a4,370	a3,570	a7,010	a8,630	a16,900	a28,900	a23,700	a9,580	a150,000	-
1928	a5,510	a4,500	a5,660	a12,900	a9,430	a5,230	a6,430	a47,700	a55,500	a19,700	a12,500	a6,190	a191,000
1929	a6,700	a4,680	a3,690	a2,620	a2,330	a8,920	a11,100	a13,100	a25,800	a21,500	a36,600	a20,100	a157,000
1930	a5,600	a7,560	a9,280	a12,400	a12,200	a3,420	a8,810	a17,000	a32,700	a28,300	a55,700	a14,600	a208,000
1931	a7,190	a5,370	a4,330	a4,330	a3,400	a3,650	a4,180	a34,800	a31,300	a18,900	a12,500	a5,490	a133,000
1932	a5,180	a6,010	a5,320	a9,590	a12,700	a7,070	a4,980	a16,600	a29,500	a25,100	a11,900	a6,010	a140,000
1933	a5,210	a2,210	a3,380	a4,670	a6,110	a5,560	a13,600	a85,500	a67,800	a30,600	a15,600	a28,600	a269,000
1934	3,640	1,700	9,960	12,500	10,700	5,240	6,430	32,300	11,000	7,260	9,220	5,450	115,400
1935	2,550	2,680	3,450	3,220	3,770	2,000	4,140	36,640	45,370	31,270	27,680	12,790	175,600
1936	6,010	4,830	7,730	8,830	4,280	7,940	8,220	39,950	46,640	33,060	63,670	20,960	252,100
1937	15,180	6,390	5,230	7,850	9,260	7,150	11,160	25,710	36,590	26,180	9,690	8,900	169,300
1938	5,090	5,520	4,060	4,890	9,330	5,860	22,500	101,800	72,450	34,060	32,950	53,120	351,600
1939	12,400	19,290	22,430	16,600	8,690	74,780	53,080	49,340	33,890	7,680	8,740	6,230	315,400
1940	3,760	3,990	5,900	6,390	6,390	19,030	11,460	20,420	23,740	11,110	8,120	15,750	133,900
1941	4,840	4,870	4,760	11,510	8,980	2,990	8,200	52,410	72,580	37,750	29,480	12,510	250,900
1942	19,150	10,970	6,140	9,510	7,200	37,320	213,700	300,500	144,900	49,110	33,510	11,990	844,000
1943	12,640	7,290	20,810	11,880	4,490	10,420	10,960	23,980	32,120	24,930	20,600	3,990	184,100
1944	3,590	2,840	4,270	5,100	4,090	9,010	20,160	88,220	53,320	30,570	10,500	5,350	237,000
1945	2,790	4,450	3,460	3,140	4,010	7,880	4,930	13,370	19,410	32,440	84,200	17,060	197,100
1946	5,690	16,430	9,930	6,340	5,550	9,770	9,910	16,090	26,050	21,130	14,040	9,560	150,500
1947	4,480	9,610	7,170	6,140	5,930	21,140	13,800	82,330	148,200	75,490	37,560	22,130	434,000
1948	17,420	23,530	9,780	11,290	23,790	56,530	77,010	101,100	91,260	27,200	19,350	5,660	463,900
1949	4,620	2,780	3,820	1,610	5,120	13,640	4,860	36,530	246,500	78,760	24,420	10,400	433,300
1950	5,960	7,310	4,820	1,950	9,360	5,010	5,360	12,690	38,560	21,150	5,930	3,600	121,700

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	#3,350	June 14, 1926	-	-	-	-	-
1927	(a)	#2,720	June 12, 1927	a28	a207	a150,000	a195	a142,000
1928	(a)	#5,560	June 4, 1928	a14	a264	a191,000	a263	a191,000
1929	(a)	#1,950	Aug. 6, 1929	a26	a217	a157,000	a227	a165,000
1930	(a)	#2,360	Aug. 14, 1930	a17	a267	a208,000	a279	a202,000
1931	(a)	#1,680	Aug. 16, 1931	a47	a164	a133,000	a183	a132,000
1932	(a)	#1,290	July 14, 1932	a26	a193	a140,000	a185	a134,000
1933	(a)	#5,600	Sept. 10, 1933	a24	a372	a269,000	a378	a273,000
1934	761	#1,200	May 31, 1934	15	159	115,400	150	108,800
1935	786	#3,940	June 12, 1935	6	243	175,600	256	185,400

* Revised.

* Not previously published.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Platte River at Henderson, Colo.--Continued									
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1936	806	3,610	Aug. 3, 1936	35	346	252,100	359	260,400	
1937	826	3,200	June 2, 1937	42	234	189,300	217	157,100	
1938	856	4,480	May 30, 1938	36	486	351,600	540	391,100	
1939	876	5,730	Mar. 11, 1939	52	433	313,400	377	272,900	
1940	896	2,410	July 3, 1940	23	184	133,900	186	134,700	
1941	926	3,710	June 22, 1941	32	347	250,900	377	272,700	
1942	956	10,700	Apr. 26, 1942	15	1,166	844,000	1,172	848,500	
1943	976	962	May 9, 1943	24	254	184,100	213	154,100	
1944	1006	2,720	May 17, 1944	21	327	237,000	326	237,000	
1945	1036	5,720	Aug. 6, 1945	15	272	197,100	302	218,500	
1946	1056	2,190	Sept. 8, 1946	48	208	150,500	193	139,700	
1947	1086	5,670	June 22, 1947	33	599	434,000	640	463,400	
1948	1116	7,920	May 31, 1948	48	639	463,900	585	424,400	
1949	1146	8,850	June 14, 1949	9.2	598	433,300	608	440,100	
1950	1176	3,520	June 17, 1950	4.4	168	121,700	-	-	

* Revised.

217. South Platte River at Fort Lupton, Colo.

Location--Lat 40°04'50", long. 105°49'18", in NW¼ sec. 6, T. 1 N., R. 66 W., 50 ft downstream from bridge on State Highway 52 at Fort Lupton and 1 mile downstream from Big Dry Creek.

Drainage area--5,070 sq mi, approximately.

Gage--Water-stage recorder. Datum of gage is 4,888.66 ft above mean sea level, datum of 1929.

May to September 1906, staff gage at site 1 mile downstream at different datum.

Apr. 29, 1929, to Jan. 17, 1935, water-stage recorder and Jan. 18 to June 20, 1935, staff gage at site 250 ft downstream from present site at different datum.

June 21, 1935, to Oct. 2, 1947, water-stage recorder at site 650 ft upstream from present site at present datum.

Average discharge--21 years (1929-50), 377 cfs.

Extremes--1906, 1929-50: Maximum discharge, 9,000 cfs Apr. 26, 1942, from rating curve extended above 6,700 cfs; maximum gage height, 7.55 ft June 22, 1947, from recorded range in stage, site then in use; minimum daily discharge, 10 cfs Oct. 14, 15, 1939.

Remarks--Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions above station for irrigation of about 288,000 acres, and return flow from irrigated areas.

Cooperation--Records for 1907, 1929-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1906	-	-	-	-	-	-	-	-	a411	a294	a182	-
1929	-	-	-	-	-	-	-	a212	a345	a353	a547	a328
1930	a135	a230	a220	a258	a301	a120	a139	a276	a458	a378	a860	a245
1931	a192	a159	a127	a103	a104	a107	a97.6	a556	a452	a206	a177	a59.6
1932	a129	a173	a178	a213	a276	a198	a142	a287	a417	a312	a155	a59.4
1933	a109	a92.6	a77.3	a119	a143	a122	a278	a1,300	a956	a451	a277	a503
1934	85.2	81.1	223	267	245	118	130	391	165	54.8	61.0	57.8
1935	34.2	45.8	88.8	87.8	115	77.7	87.7	580	594	445	407	244
1936	140	133	187	190	95.1	103	185	727	780	415	931	301
1937	282	171	182	225	244	161	205	299	653	368	117	129
1938	91.0	139	113	129	199	109	365	1,579	1,200	469	483	988
1939	251	401	427	367	211	1,293	868	553	502	102	92.6	56.4
1940	40.5	55.7	125	87.2	171	318	184	239	300	136	74.7	288

† Corrected; supersedes figure published in reports of State engineer of Colorado.

a From reports of State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second of
South Platte River at Fort Lupton, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	100	102	94.3	217	214	76.8	158	798	947	440	464	211	319
1942	382	225	145	211	181	895	3,441	4,731	2,818	783	507	207	1,212
1943	251	214	375	255	145	206	176	358	518	378	290	55.8	270
1944	59.5	81.8	137	142	107	226	389	1,405	958	419	114	67.4	342
1945	65.6	127	122	122	117	157	121	215	368	398	1,243	228	276
1946	148	293	222	161	150	201	137	292	412	323	204	165	226
1947	128	239	200	163	149	400	280	1,553	3,021	1,488	504	318	705
1948	322	448	211	252	504	768	1,159	1,803	1,462	561	250	61.8	616
1949	87.2	119	113	159	185	272	138	682	3,901	1,184	314	184	610
1950	147	193	136	81.9	197	118	96.0	216	597	284	69.0	50.0	181

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	-	-	-	-	-	-	-	-	a24,500	a18,100	a11,200	-	-
1929	-	-	-	-	-	-	-	-	a13,000	a20,500	a21,700	a33,600	a19,500
1930	a8,300	a13,700	a13,500	a15,900	a16,700	a7,380	a8,270	a17,000	a27,200	a23,200	a52,900	a14,600	a219,000
1931	a11,800	a9,480	a7,810	a6,330	a5,780	a6,580	a5,810	a34,300	a26,900	a12,700	a10,900	a3,550	a142,000
1932	a7,930	a10,300	a10,900	a13,100	a15,900	a11,600	a8,450	a17,600	a24,800	a19,200	a9,530	a3,530	a153,000
1933	a6,700	a5,510	a4,750	a7,320	a7,940	a7,500	a16,500	a79,900	a57,000	a27,700	a17,000	a29,900	a268,000
1934	5,240	4,830	13,700	16,400	13,600	7,260	7,740	24,000	9,820	3,370	3,750	3,440	113,200
1935	2,100	2,730	5,460	5,400	6,590	4,780	5,220	35,640	35,320	27,350	25,050	14,530	170,000
1936	8,620	7,900	11,510	11,710	5,470	6,340	11,020	44,700	46,390	25,520	57,240	17,910	254,300
1937	17,350	10,200	11,190	13,800	13,530	9,890	12,210	18,410	38,630	22,600	7,170	7,690	182,900
1938	5,600	8,300	6,940	7,930	11,060	6,730	21,700	97,110	71,410	28,820	29,690	58,790	354,100
1939	15,440	23,860	26,260	22,500	11,730	79,530	51,680	34,030	29,880	6,250	5,700	3,350	310,200
1940	2,490	3,310	7,710	5,360	9,850	19,560	10,930	14,680	17,870	8,350	4,590	17,160	121,900
1941	6,160	6,090	5,800	13,370	11,890	4,720	9,400	49,090	56,370	27,060	28,540	12,580	231,100
1942	22,240	15,400	8,920	12,960	10,080	55,000	204,700	291,000	167,600	48,170	31,170	12,320	877,500
1943	15,440	12,720	23,090	15,670	8,350	12,640	10,460	21,890	30,800	13,250	17,820	3,320	195,200
1944	3,660	4,870	8,410	8,710	6,170	13,910	23,160	86,420	55,840	25,770	7,010	4,010	247,900
1945	4,040	7,580	7,530	7,520	6,480	9,660	7,220	13,220	21,800	24,480	76,460	13,580	199,600
1946	9,120	17,460	13,620	9,910	8,320	12,370	8,160	17,950	24,490	19,880	12,570	9,790	163,600
1947	7,870	14,250	12,280	10,030	8,250	24,590	16,660	95,490	179,700	91,500	30,960	18,950	510,500
1948	19,820	26,690	12,970	15,500	28,990	47,230	68,950	98,590	86,990	22,170	15,400	3,670	447,000
1949	5,360	7,080	6,950	9,760	10,290	16,700	8,240	41,940	232,000	72,780	19,290	10,950	441,300
1950	9,040	11,500	8,390	5,050	10,930	7,290	5,710	13,260	34,950	17,440	4,240	2,980	130,800

† Corrected; supersedes figure published in reports of State engineer of Colorado.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1906	(a)	-	-	-	-	-	-	-	-
1929	(a)	#1,730	Aug. 9, 1929	-	-	-	-	-	-
1930	(a)	#2,310	Aug. 14, 1930	62	a502	a219,000	a293	a212,000	
1931	(a)	#1,170	Aug. 17, 1931	39	a196	a142,000	a196	a142,000	
1932	(a)	#898	July 31, 1932	21	#211	a153,000	#194	a141,000	
1933	(a)	#4,510	Sept. 11, 1933	56	a370	a268,000	a380	a275,000	
1934	761	793	May 31, 1934	30	156	113,200	138	99,670	
1935	788	#b4,000	June 1, 1935	17	235	170,000	259	187,700	
1936	806	3,140	Aug. 4, 1936	39	350	254,300	365	265,000	
1937	826	2,680	June 2, 1937	48	253	182,900	228	185,000	
1938	856	4,220	Sept. 4, 1938	45	489	354,100	551	398,800	
1939	876	5,030	Mar. 11, 1939	37	299	310,200	357	258,200	
1940	896	1,880	July 3, 1940	10	168	121,900	174	126,400	

† Corrected.

Not previously published.

a From reports of State engineer of Colorado

b Estimated.

Yearly discharge, in cubic feet per second of South Platte River at Fort Lupton, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	2,410	June 23, 1941	42	319	231,100	256	257,600
1942	956	9,000	Apr. 26, 1942	77	1,212	877,500	1,221	884,200
1943	976	1,010	May 9, 1943	27	270	195,200	222	160,900
1944	1006	2,520	May 18, 1944	33	342	247,900	345	250,200
1945	1036	4,240	Aug. 6, 1945	42	276	199,600	305	220,600
1946	1056	1,970	Sept. 8, 1946	65	226	165,600	218	157,800
1947	1086	8,840	June 22, 1947	79	705	510,500	740	535,600
1948	1116	4,510	May 31, 1948	29	616	447,000	560	406,900
1949	1146	7,660	June 14, 1949	27	610	441,300	623	450,900
1950	1176	3,880	June 17, 1950	14	181	130,800	-	-

218. North St. Vrain Creek near Allens Park, Colo.

Location.--Lat 40°13'10", long. 105°31'50", in SW $\frac{1}{4}$ sec. 14, T. 3 N., R. 73 W., 1 mile upstream from Horse Creek and 2 miles (revised) north of Allens Park.

Drainage area.--33 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 8,230 ft (from topographic map). Prior to June 6, 1929, water-stage recorder at site 300 ft upstream at different datum.

Average discharge.--5 years (1925-30), 62.1 cfs.

Extremes.--1925-30: Maximum discharge, 1,000 cfs (estimated) June 9, 1929, caused by failure of Copeland Lake dam half a mile upstream; minimum not determined.

Remarks.--No diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	*21.7	15.5	11.8	9	8	8.7	20.6	134	294	191	73.9	23.7	*67.9
1927	11.5	14.9	8.0	7.18	7.05	7.45	16.1	35.3	251	167	90.7	37.9	59.7
1928	23.1	13.4	*9	*6	*6	*7	9.9	133	244	220	66.8	27.3	*64.0
1929	21.7	13.2	9.48	6	6	9	10.4	72.6	235	207	103	76.3	64.3
1930	35.2	18.4	8	7	4	5.6	30.3	75.1	177	117	126	49.4	54.7

* Not previously published; estimated on basis of records for other stations on St. Vrain Creek.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	*1,330	922	726	553	444	535	1,230	8,240	17,500	11,700	4,540	1,410	*49,100
1927	707	887	492	440	392	457	958	5,860	14,900	10,300	5,580	2,260	43,200
1928	1,420	797	*553	*369	*345	*430	589	8,180	14,500	13,500	4,110	1,620	*46,400
1929	1,330	786	583	369	333	553	619	4,460	14,000	12,700	6,330	4,540	46,600
1930	2,180	1,090	492	430	222	344	1,800	4,620	10,500	7,190	7,750	2,940	39,500

* Not previously published; estimated on basis of records for other stations on St. Vrain Creek.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	626	488	June 8, 1926	-	*67.9	*49,100	66.7	48,200
1927	646	407	June 28, 1927	-	59.7	43,200	*60.6	*43,900
1928	666	499	May 30, 1928	-	*64.0	*46,400	*63.9	*46,300
1929	686	al,000	June 9, 1929	-	64.3	46,600	65.8	47,600
1930	701	633	Aug. 14, 1930	-	54.7	39,500	-	-

* Not previously published.

a Estimated.

b Maximum observed.

219. North St. Vrain Creek at Longmont Dam, near Lyons, Colo. 1/

Location.--Lat 40°13'30", long. 105°21'00", in sec. 16, T. 3 N., R. 71 W., three-quarters of a mile upstream from Longmont Dam and 4 miles west of Lyons.

Drainage area.--109 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,050 ft (from topographic map). Prior to Oct. 8, 1936, water-stage recorder at site 30 ft downstream at datum 1.00 ft higher. Prior to 1945, water-stage recorder and 1945, 1946, staff gage, and Cippoletti weir a quarter of a mile downstream used for winter records.

Average discharge.--25 years (1925-50), 88.2 cfs.

Extremes.--1925-50: Maximum discharge, 1,630 cfs June 22, 1941 (gage height, 6.09 ft), from rating curve extended above 610 cfs; minimum daily, 3.3 cfs Dec. 19, 1939.

Remarks.--Diversion above station for irrigation of about 300 acres. Flow partly regulated by small reservoirs above station.

Cooperation.--Records for 1926-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a50	a38	*20	*17	*15	*20	*167	a270	a417	a257	a97.5	a41.2	*118
1927	a29.4	a17.0	a11.5	a11.1	a9.82	a11.2	a49.4	a177	a290	a200	a121	a49.1	a81.8
1928	a37.4	a31.4	a21.6	a14.9	a13.1	a20.1	a49.3	a370	a352	a257	a93.9	a38.2	a109
1929	a28.3	a20.8	a12.9	a10.4	a9.81	a13.6	a38.1	a118	a322	a268	a181	a114	a95.1
1930	a55.0	a26.2	a17.8	a11.1	a12.1	a13.0	a68.2	a122	a233	a161	a178	a64.5	a80.5
1931	a31.3	a18.6	a10.7	a6.64	a8.54	a10.3	a27.2	a178	a308	a109	a56.3	a27.6	a65.9
1932	a25.3	a15.4	a10.0	a5.74	a7.73	a9.61	a33.7	a128	a261	a178	a65.9	a28.3	a64.6
1933	a25.2	a17.3	a10.6	a9.52	a7.71	a12.2	a33.1	a227	a464	a171	a65.2	a51.2	a91.1
1934	a35.5	a16.8	a13.9	a11.5	a12.0	a15.5	a45.6	a260	a145	a171	a72.5	a4.7	a58.5
1935	a20.5	a12.4	a10.3	a9.4	a8.8	a9.4	a17.6	a170	a367	a212	a78.2	a48.6	a80.6
1936	a26.7	a19.4	a11.9	a9.54	a10.5	a13.1	a92.3	a265	a418	a217	a179	a47.6	a109
1937	a30.8	a24.2	a16.1	a6.56	a8.86	a10.9	a50.8	a179	a349	a191	a71.9	a38.6	a81.7
1938	a24.1	a16.9	a14.3	a10.6	a8.14	a11.6	a88.8	a221	a453	a205	a97.8	a162	a110
1939	a37.7	a20.3	a16.0	a13.7	a11.2	a18.3	a63.7	a190	a203	a105	a52.4	a31.2	a63.8
1940	a19.4	a10.2	a7.77	a10.1	a9.88	a12.4	a25.1	a123	a206	a125	a45.6	a43.3	a53.3
1941	a32.8	a15.8	a12.3	a8.30	a8.49	a10.7	a73.6	a221	*292	a150	a70.8	a55.3	*79.5
1942	a41.4	a28.1	a15.1	a12.5	a11.5	a14.8	a174	a254	a479	a233	a76.8	a45.7	a116
1943	a60.5	a37.2	a18.9	a14.5	a14.0	a20.6	a108	a235	a465	a219	a92.2	a42.8	a111
1944	a17.8	a16.7	a12.4	a9.25	a9.21	a9.81	a88.9	a324	a368	a165	a63.8	a27.6	a92.8
1945	a14.8	a15.7	a13.7	a9.85	a8.94	a13.5	a46.6	a196	a378	a265	a160	a75.8	a99.8
1946	a33.1	a24.1	a12.7	a9.82	a9.40	a10.7	a37.5	a94.5	a246	a135	a76.5	a44.8	a61.4
1947	a41.2	a35.7	a22	a13	a12	a14	a77.6	a262	a534	a355	a137	a75.6	a129
1948	a48.4	a28.6	a14.2	a10.2	a10.9	a21.5	a66.1	a200	a305	a150	a56.7	a25.5	a76.4
1949	a21.7	a15.0	a9	a8	a8	a12.0	a44.4	a221	a575	a273	a93.3	a43.8	a110
1950	a26.8	a19.0	a15.0	a14.5	a14.0	a11.6	a25.5	a107	a338	a164	a57.2	a41.3	a69.5

* Revised.

* Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a3,070	a2,260	*1,230	*1,050	*833	*1,230	*9,940	a16,600	a24,800	a15,800	a5,000	a2,450	*85,300
1927	a1,810	a1,010	a707	a682	a545	a683	a2,940	a10,900	a17,300	a12,300	a7,440	a2,920	a59,200
1928	a2,300	a1,870	a1,330	a916	a754	a1,240	a2,930	a22,800	a20,900	a15,800	a5,770	a2,270	a77,900
1929	a1,740	a1,230	a795	a639	a545	a856	a2,270	a7,260	a19,200	a16,500	a11,100	a6,780	a68,900
1930	a3,380	a1,560	a1,090	a682	a672	a798	a4,060	a7,500	a13,900	a9,900	a10,900	a3,640	a58,300
1931	a1,920	a1,110	a658	a408	a474	a633	a1,620	a10,900	a18,200	a6,700	a3,460	a1,640	a47,700
1932	a1,560	a922	a615	a533	a448	a591	a2,000	a7,870	a15,900	a10,900	a4,050	a1,680	a46,900
1933	a1,430	a1,030	a652	a524	a428	a750	a1,970	a14,000	a27,600	a10,500	a4,010	a3,050	a65,900
1934	a2,060	a988	a855	a707	a668	a853	a2,710	a16,000	a8,630	a4,460	a2,750	a1,820	a42,400
1935	a1,260	a736	a633	a575	a468	a579	a1,050	a10,470	a21,820	a13,060	a4,810	a2,890	a58,370
1936	a1,640	a1,150	a729	a597	a603	a807	a5,490	a16,320	a24,870	a13,360	a11,020	a2,830	a79,410
1937	a1,890	a1,440	a991	a403	a492	a670	a3,020	a10,980	a20,770	a11,770	a4,420	a2,300	a59,150
1938	a1,480	a1,000	a881	a649	a452	a711	a5,280	a13,580	a26,970	a12,600	a6,010	a9,660	a79,270
1939	a2,320	a1,210	a986	a845	a624	a1,120	a3,790	a11,690	a22,090	a6,450	a3,220	a1,850	a46,200
1940	a1,190	a608	a478	a625	a568	a764	a1,490	a7,560	a12,280	a7,710	a2,820	a2,570	a38,660
1941	a2,020	a941	a758	a510	a472	a655	a4,380	a13,570	a17,370	a9,240	a4,350	a3,290	*57,550
1942	a2,450	a1,670	a931	a770	a639	a912	a10,340	a15,630	a28,490	a14,350	a4,720	a2,720	a83,690
1943	a3,720	a2,210	a1,160	a893	a776	a1,270	a6,420	a14,480	a27,670	a13,490	a5,670	a2,550	a80,310
1944	a1,100	a992	a760	a569	a530	a603	a5,290	a19,950	a21,870	a10,130	a3,920	a1,640	a67,350
1945	a912	a813	a845	a605	a496	a833	a2,770	a12,040	a22,470	a16,270	a9,810	a4,390	a72,250
1946	a2,040	a1,440	a779	a604	a522	a657	a2,230	a5,810	a14,680	a8,330	a4,710	a2,660	a44,440
1947	a2,530	a2,120	a1,350	a799	a666	a861	a3,440	a16,130	a31,770	a20,820	a8,430	a4,500	a83,220
1948	a2,980	a1,700	a975	a630	a628	a1,320	a3,930	a12,290	a19,140	a7,990	a3,490	a1,520	a65,490
1949	a1,330	a893	a553	a492	a444	a738	a2,640	a13,560	a34,200	a16,790	a5,730	a2,610	a79,980
1950	a1,650	a1,130	a920	a893	a778	a712	a1,520	a6,560	a20,100	a10,110	a3,520	a2,460	a50,350

* Revised.

* Not previously published; partly estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

1/ Published as North St. Vrain Creek at Longmont Dam, prior to 1933, by State engineer of Colorado.

Yearly discharge, in cubic feet per second of North St. Vrain Creek at Longmont Dam, near Lyons, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	*698	June 7, 1926	-	*118	*85,300	*114	*82,200
1927	(a)	*426	June 29, 1927	a6	a81.6	a59,200	a84.6	a61,200
1928	(a)	*783	May 30, 1928	a9	a109	a77,900	a106	a77,100
1929	(a)	*1,050	June 9, 1929	a8.5	a95.1	a68,900	a98.3	a71,200
1930	(a)	*498	Aug. 15, 1930	a8.1	a80.5	a58,300	a77.3	a55,900
1931	(a)	*835	June 5, 1931	a4.8	a65.9	a47,700	a65.1	a47,100
1932	(a)	*435	June 28, 1932	a4	a64.6	a46,900	a64.6	a46,900
1933	(a)	*744	June 20, 1933	a5	a91.1	a65,900	a92.2	a66,700
1934	761	410	May 31, 1934	8	58.5	42,400	56.8	41,120
1935	786	930	Sept. 6, 1935	6	80.6	58,370	81.9	59,280
1936	806	598	June 1, 1936	7.6	109	79,410	111	80,210
1937	826	713	June 26, 1937	4.0	81.7	59,150	80.4	58,190
1938	856	972	Sept. 2, 1938	6.2	110	79,270	111	80,430
1939	876	356	June 6, 1939	6.4	63.8	46,200	60.7	43,960
1940	896	319	June 21, 1940	3.3	53.3	36,660	55.2	40,100
1941	926, 1440	1,630	June 22, 1941	4.7	*79.5	*57,550	*81.5	*58,980
1942	956	690	June 12, 1942	5.6	116	83,690	118	85,640
1943	976	681	June 2, 1943	9.5	111	80,310	106	76,070
1944	1006	514	May 15, 1944	7.2	92.8	67,350	92.4	67,070
1945	1036	713	June 24, 1945	4.4	99.8	72,250	102	73,940
1946	1056	*470	June 18, 1946*	7.5	61.4	44,440	63.8	46,180
1947	1086	1,250	June 17, 1947	-	129	93,220	128	92,770
1948	1116	613	June 10, 1948	-	76.4	55,490	72.6	52,710
1949	1146	1,540	June 4, 1949	-	110	79,980	112	80,900
1950	1176	526	June 18, 1950	-	69.5	50,350	-	-

* Revised.

* Not previously published.

a From reports of State engineer of Colorado.

220. South St. Vrain Creek near Ward, Colo.

Location.--Lat 40°05'40", long. 105°31'30", on line between secs. 35 and 36, T. 2 N., R. 73 W., 2 miles northwest of Ward and 3 miles downstream from Brainard Lake.

Drainage area.--14.3 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 9,420 ft (from topographic map).

Average discharge.--5 years (1925-27, 1928-31), 33.3 cfs.

Extremes.--1925-27, 1928-31: Maximum discharge, 313 cfs June 7, 1926 (gage height, 2.48 ft); minimum daily, 1 cfs Mar. 20, 1930, but may have been less during periods of no gage-height record.

Remarks.--No diversion above station. Flow partly regulated by several small lakes above station.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1926	*14	*10	*8	*6	*5	*6	*15	*84.3	164	123	54.0	20.2
1927	10.6	*5	*4.5	*4	*4.5	*6	*10	*48.2	136	103	54.6	25.0
1929	*12	*8	*6	*4	*4	*5	*10	*36.9	154	112	82.6	36.6
1930	17.0	10	8	5	4	4	20	38.5	97.0	67.1	37.3	13.0
1931	7.9	3.3	2.0	2.0	2.0	2.0	5.0	50.5	121	40.5	32.2	10.4

* Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1926	*861	*595	*492	*369	*276	*369	*893	*5,180	9,760	7,560	3,320	1,200
1927	652	*298	*277	*246	*250	*369	*598	*2,960	8,090	6,330	3,370	1,480
1929	*738	*476	*369	*246	*222	*307	*598	*2,270	9,160	6,890	5,090	2,180
1930	1,050	595	492	307	222	246	1,190	2,370	5,770	4,130	2,290	774
1931	486	196	123	123	111	123	298	3,110	7,200	2,490	1,980	619

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second of South St. Vrain near Ward, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	626	313	June 7, 1926	-	42.6	30,900	41.7	30,200
1927	646	225	June 29, 1927	-	34.4	24,900	-	-
1929	686	231	June 8, 1929	-	39.4	28,500	40.2	29,100
1930	701	176	June 12, 1930	1	26.8	19,400	25.0	18,100
1931	716	*195	June 7, 1931	-	23.3	16,900	-	-

* Revised.

† Not previously published.

221. Middle St. Vrain Creek near Allens Park, Colo.

Location.--Lat 40°10'05", long. 105°26'35" in NW¹ sec. 3, T. 2 N., R. 72 W., 2 miles downstream from Cave Creek and 5 miles (revised) southeast of Allens Park.

Drainage area.--28 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 7,560 ft (from topographic map). Jan. 12 to Apr. 16, 1927, Feb. 6 to Apr. 11, 1928, staff gage and Cippoletti wier at site 600 ft downstream at different datum.

Average discharge.--5 years (1925-30), 43.9 cfs.

Extremes.--1925-30: Maximum discharge, 387 cfs (revised) June 6, 1926 (gage height, 2.65 ft); minimum observed, 3.1 cfs Mar. 5, 1929, but may have been less during periods of no gage-height record.

Remarks.--No diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	*14	*10	*8	*6	*8	*7	*33.3	142	210	120	56.5	16.4	*52.7
1927	7.85	5.63	5.0	4.57	4.94	5.55	22.6	107	140	102	57.0	21.8	40.5
1928	13.1	10.8	7	6	4.61	6.52	15.7	133	146	114	44.1	13.1	43.0
1929	9.29	6	6	5	4	5	12	73.2	179	125	91.7	41.1	46.5
1930	25.7	15	7	4	4	7	36.6	67.3	128	69.6	57.1	19.3	36.9

* Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	*861	*595	*492	*369	*333	*430	*1,980	8,730	12,500	7,380	3,470	976	*38,100
1927	470	335	307	281	274	341	1,340	6,580	8,330	6,270	3,500	1,300	29,300
1928	806	643	430	369	265	401	934	8,180	8,690	7,010	2,710	780	31,200
1929	571	357	369	307	222	184	714	4,500	10,700	7,690	5,640	2,450	33,700
1930	1,580	893	430	246	222	430	2,180	4,140	7,620	4,290	3,510	1,160	26,700

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	626	*387	June 6, 1926	-	52.7	38,100	51.6	37,300
1927	646	194	June 28, 1927	-	40.5	29,300	41.6	30,100
1928	686	290	May 27, 1928	-	43.0	31,200	42.2	30,600
1929	686	240	June 8, 1929	-	46.5	33,700	48.7	35,300
1930	701	211	Aug. 14, 1930	-	36.9	26,700	-	-

* Revised.

† Not previously published.

222. Supply ditch at Lyons, Colo.

Location.--Lat 40°13'10", long. 105°15'35", SW $\frac{1}{4}$ sec. 17, T. 3 N., R. 70 W., 200 ft downstream from headgates and half a mile southeast of Lyons.

Gage.--Staff gage and measuring flume. Altitude of gage is 5,300 ft (from topographic map).

Extremes.--1895-1903: Maximum daily discharge, 182 cfs June 10-17, 1900; probably no flow at times each year.

Remarks.--Canal diverts from left bank of St. Vrain Creek; diversions began about 1880; water is used for irrigation. Total flow at Lyons is sum of this record and that for St. Vrain Creek at Lyons.

Cooperation.--Records for 1895-1902, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	a37.0	b78.6	b59.0	b13.7	b3.9	-
1896	b7.6	-	-	-	-	-	b21.5	b50.2	b42.5	b14.1	b13.2	b10.1	-
1897	b9.5	-	-	-	-	-	-	a57	b98	b49	b29	b4	-
1898	b3	b2	-	-	-	-	-	b32	b52	b32	b9	b7	-
1899	b7	b8	-	-	-	-	b7	b40	b90	b84	b31	b10	-
1900	b4	b3	-	-	-	-	-	b23	b106	b20	b10	b7	-
1901	b2	a1	-	-	-	-	a12	a82	a85	a32	a20	a12	-
1902	a9	a10	-	-	-	-	a3.8	a20.3	a30.8	a10.2	a7.0	a6.2	-
1903	a10.6	a3	-	-	-	-	a5.1	58	90	44	12	7.5	-
1904	10	-	-	-	-	-	-	-	-	-	-	-	-

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	a2,280	b4,680	b3,630	b842	b232	-
1896	b467	-	-	-	-	-	b1,280	b1,860	b2,530	b867	b812	b601	-
1897	b584	-	-	-	-	-	-	a3,500	b5,850	b3,010	b1,780	b258	-
1898	b184	b119	-	-	-	-	-	b1,970	b3,090	b1,970	b553	b417	-
1899	b430	b476	-	-	-	-	b417	b2,460	b5,360	b5,160	b1,910	b595	-
1900	b246	b179	-	-	-	-	-	b1,410	b6,310	b1,230	b615	b417	-
1901	b123	a60	-	-	-	-	a714	a5,040	a5,060	a1,970	a1,230	a714	-
1902	a553	a595	-	-	-	-	a226	a1,250	a1,830	a627	a430	a369	-
1903	a652	a179	-	-	-	-	a309	2,540	5,360	2,700	738	446	-
1904	615	-	-	-	-	-	-	-	-	-	-	-	-

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum daily		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	(a)	106	June 2, 1895	0	-	-	-	-
1896	(a)	102	June 10, 1896	-	-	-	-	-
1897	(a)	114	(b)	-	-	-	-	-
1898	(a)	107	June 14, 15, 1898	0	-	-	-	-
1899	(a)	130	(c)	-	-	-	-	-
1900	(a)	182	June 10-17, 1900	0	-	-	-	-
1901	(d)	138	May 29, 1901	-	-	-	-	-
1902	(d)	101	June 2, 1902	-	-	-	-	-
1903	98	144	June 15, 1903	-	-	-	-	-

a From reports of State engineer of Colorado.

b Numerous days in May, June, July 1897.

c June 15 to July 5, 1899.

d From files of State engineer of Colorado.

223. St. Vrain Creek at Lyons, Colo. 1/

Location.--Lat 40°13'10", long. 105°15'40" (revised), in sec. 17, T. 3 N., R. 70 W., at southeast edge of Lyons (revised), 75 ft south of State Highways 7 and 66, and 300 ft downstream from confluence of North and South St. Vrain Creeks.

Drainage area.--226 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,290 ft (from topographic map).

Prior to Apr. 6, 1923, staff gages near present site at different datums.

Average discharge.--59 years (1887-91, 1895-50), 135 cfs.

Extremes.--1887-91, 1895-50: Maximum discharge, 10,500 cfs June 22, 1941 (gage height, 8.06 ft, from floodmark); from rating curve extended above 2,100 cfs on basis of slope-area determination at gage height 7.90 ft; no flow Jan. 19, 20, 1922, Jan. 12, 13, 1950.

Remarks.--Diversions above station for irrigation of about 20,000 acres. Flow partly regulated by many small reservoirs above station.

Cooperation.--Records for 1904-8, 1914-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

1/ Published as "near Lyons" 1901, 1903.

Monthly and yearly mean discharge, in cubic feet per second of St. Vrain Creek at Lyons, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	150	109	-
1888	a58	a27	a23	a19	a17.3	a25	72	156	320	208	133	56	b91.2
1889	50	a28	a24	a20	a19	a26	a35	a420	371	197	102	44	c112
1890	59	a26	a22	a19.8	a17	a24	a108	a230	436	292	179	66	a122
1891	45	a23	a19	a16	a15	a21	165	629	1,046	516	151	96	b229
1895	-	-	-	-	-	-	-	-	-	410	229	93	-
1896	189	a25	a15	a13	a12	a16	74	229	320	211	154	129	a116
1897	55	a40	a33	a28	a27	a36	a165	510	668	457	274	123	a202
1898	47	35	*50	a24	a23	a32	a146	211	431	229	104	61	b114
1899	15	12	a11	a9	a9	a15	215	260	739	650	299	85	a194
1900	40	21	a20	a16	a16.5	17	*230	634	623	270	98	67	a172
1901	47	a23	a19	a16	a15	a21	102	337	490	301	157	59	a133
1902	30	14	a12	a10	a9	a12	29.6	193	279	101	52.3	58.6	c66.9
1903	58.5	c52.7	a70	a58.9	a55.8	a75.8	a168	231	679	368	127	64.4	c167
1904	40	*30	*20	*18	*16	*18	*60	*200	*500	d352	d175	d99	*126
1905	d52	d24	a20	a17	a16	a70	a95.8	d436	d851	d277	d146	d59	a172
1906	*50	*25	*15	*10	*10	*25	c210	d398	d464	d346	d180	d109	*153
1907	*90	*60	*35	*30	*30	*50	a146	a443	d705	d701	d271	d79	*222
1908	d51	d17	d16	a13	a12.5	a17	d39	d100	d264	d223	d184	d96	a86.2
1909	d39	d37	a31	a26	a25	a33	a160	296	728	513	191	126	a184
1910	45.8	26.8	19.5	16.7	12.9	23.5	39.7	150	241	146	75.8	67.6	72.3
1911	26.0	15.0	13.6	11	8.1	18	42	205	425	250	102	61	98.5
1912	49	19	7.7	7.42	6.00	13	64.1	353	629	536	175	84.8	163
1913	66.2	27.3	a23	a19	a18	a25	a95.8	245	312	190	87.6	d99	*101
1914	d85	d33	a54	a45	a42.9	d58.3	d258	d537	d768	d356	d192	d79.9	c208
1915	d55.5	d29.4	a25	a20	a17	a15	d248	d315	d518	d325	d159	d125	a155
1916	d94.1	d41.9	a16	a13	a13	a30.9	d70.8	d273	d427	d511	d175	d85.7	a130
1917	d71.9	d45.3	d17.4	d9.42	d10.4	d17.2	d93.4	d472	d703	d481	d149	d66.4	d179
1918	d20.1	d16.8	d14.5	d11.9	d10.9	d17.2	d42.9	d162	d784	d352	d147	d86.9	d139
1919	d75.7	d24.0	d16.7	d11.3	d7.21	d10.2	d48.6	d225	d262	d176	d172	d69.3	d92.0
1920	d33.5	d11.2	d8.87	d12.1	d12.0	d12.2	d49.1	d478	d505	d352	d189	d78.1	d145
1921	d29.4	d18.2	d16.5	d15.5	d11.8	d15.5	d172	d404	d1,090	d384	d174	d74.8	d200
1922	d19.3	d16.3	d18.3	d10.3	d6.25	d13.3	d42.9	d161	d376	d175	d98.6	d34.6	d89.5
1923	d10.5	d11.0	d10.8	d11.5	d10.0	d20.2	d92.1	d351	d825	d581	d254	d110	d189
1924	d124	d139	d55.4	d30.9	d26.2	d27.7	d212	d399	d819	d340	d116	d49.0	d194
1925	d28.5	d15.7	d8.84	d11.4	14.8	d13.4	d25.0	d135	d232	d181	d109	d77.0	d71.2
1926	d66.2	d50.6	d30.0	d26.7	d23.4	d37.2	d347	d431	d652	d402	d175	d58.6	d192
1927	d17.4	d13.7	d13.9	d13.5	d12.4	d15.3	d99.7	d267	d428	d291	d157	d92.3	d119
1928	d27.6	d18.1	d22.3	d15.6	d14.7	d12.5	d39.0	e520	d454	d354	d144	d53.4	e140
1929	d19.5	d20.7	d15.1	d9.23	d9.21	d16.4	d39.3	d163	d435	d330	d225	d119	d117
1930	d72.2	d28.2	d18.2	d13.6	d14.6	d14.4	d76.9	d163	d348	d206	d231	d91.8	d107
1931	d33.1	d15.1	d10.5	d7.81	d10.1	d12.5	d40.8	d223	d429	d141	d73.7	d31.5	d85.8
1932	d20.3	d14.7	d9.61	d3.35	d7.59	d5.87	d41.5	d207	d434	d274	d74.2	d25.7	d93.1
1933	d17.2	d14.0	d7.90	d8.94	d4.57	d9.97	d56.9	d429	d681	d249	d72.9	d75.2	d136
1934	35.2	16.4	9.5	10.1	15.4	22.5	56.9	413	230	80.6	41.1	21.9	80.0
1935	15.6	7.3	8.4	8.6	8.9	9.1	20.3	315	600	327	102	59.7	124
1936	21.0	20.2	6.86	7.80	9.30	14.9	126	414	587	285	204	68.1	147
1937	32.7	29.2	12.0	5.33	10.6	14.2	84.6	259	419	248	88.6	52.1	103
1938	19.3	19.9	15.2	13.7	6.86	6.34	151	366	622	287	109	263	157
1939	45.9	25.9	15.8	14.8	12.6	12.6	96.7	289	292	133	70.6	42.8	88.8
1940	20.7	4.65	6.23	8.97	6.75	8.52	33.4	176	321	172	60.4	63.2	73.7
1941	46.4	10.2	9.09	4.52	6.23	9.14	126	341	484	237	84.1	66.9	119
1942	41.1	35.9	13.5	12.3	11.2	23.7	334	484	713	296	92.5	53.6	176
1943	88.7	49.3	20.2	15.9	12.6	20.6	139	360	587	270	110	49.5	144
1944	23.2	6.14	9.18	6.10	8.28	11.4	175	402	386	231	78.8	32.1	114
1945	14.7	6.71	4.20	3.88	3.14	8.23	57.6	258	526	344	190	76.9	125
1946	24.4	15.7	8.09	9.23	6.33	9.92	55.4	126	352	180	89.4	55.2	78.0
1947	32.2	47.3	34.4	11.6	8.90	28.1	69.7	394	920	475	149	79.7	188
1948	46.6	29.4	15.1	11.7	12.4	29.5	88.2	273	437	164	70.3	27.5	100
1949	20.9	6.07	7.86	7.06	6.27	9.06	58.7	298	1,088	376	118	46.2	170
1950	28.2	12.2	5.04	5.08	10.7	7.20	33.2	136	468	223	77.7	43.8	87.7

* Only monthly figures revised; revised daily figures not available.

† Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Corrected; supersedes figure published in H. Doc. 197.

c Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Colorado.

e Revised; supersedes records previously published by State engineer of Colorado.

Monthly and year runoff, in acre-feet of St. Vrain Creek at Lyons, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	9,200	6,490	-
1888	a2,340	a1,600	a1,410	a1,170	a897	a1,540	4,280	9,590	19,000	12,800	8,180	3,350	b66,200
1889	5,070	a1,600	a1,480	a1,230	a1,050	a1,800	a2,080	a25,800	22,100	12,100	6,270	2,620	c81,100
1890	2,400	a1,550	a1,350	a1,220	a940	a1,480	a6,400	a14,100	25,900	18,000	11,000	3,950	b88,300
1891	2,770	a1,370	a1,170	a983	a830	a1,290	9,820	58,700	62,200	31,700	9,280	5,710	b166,000
1895	-	-	-	-	-	-	-	-	-	25,200	14,100	5,530	-
1896	11,600	a1,480	a921	a798	a690	a983	4,400	14,100	19,000	13,000	9,780	7,680	a84,400
1897	5,390	a2,380	a2,030	a1,720	a1,500	a2,210	a9,800	51,400	39,700	28,000	16,800	7,320	a146,000
1898	2,890	2,080	*1,840	a1,480	a1,270	a1,960	a8,670	*13,000	25,600	14,100	6,400	3,630	b82,900
1899	922	714	a675	a552	a498	a921	12,800	16,000	44,000	40,000	18,400	5,060	a141,000
1900	2,460	1,250	a1,250	a983	a920	1,050	*13,700	59,000	37,100	16,600	6,030	3,990	a124,000
1901	2,890	a1,370	a1,170	a983	a830	a1,290	6,070	20,800	29,200	18,600	9,650	3,510	a96,400
1902	1,840	833	a736	a614	a498	a736	1,760	11,900	16,600	6,210	3,220	3,490	c48,400
1903	3,600	c3,140	a4,500	a5,620	a5,100	a4,660	a9,970	14,200	40,400	22,600	7,810	3,850	c121,000
1904	2,480	*1,790	*1,230	*1,110	*920	*1,110	*5,570	*12,300	*29,800	*20,400	*8,800	*5,890	*91,400
1905	d3,200	d1,450	a1,230	a1,040	a898	a4,500	a5,700	d26,900	d50,600	d17,000	d8,980	d3,510	a125,000
1906	*1,840	*1,490	*922	*615	*555	*1,540	d12,500	d24,500	d27,600	d21,500	d11,100	d6,490	*110,000
1907	*5,530	*3,570	*2,150	*1,840	*1,670	*3,070	*8,670	a27,600	a42,000	a43,100	d16,700	d4,700	*161,000
1908	d3,140	d1,010	d984	a798	a720	a1,040	d2,520	d6,150	d15,700	d10,110	d3,300	d5,710	a62,600
1909	d2,400	d2,200	a1,900	a1,600	a1,380	a2,010	a9,500	18,300	43,200	31,500	11,700	7,620	a133,000
1910	2,820	1,600	1,200	1,030	716	1,440	2,560	9,220	14,300	8,980	4,660	4,020	52,300
1911	1,600	893	656	700	448	1,130	2,480	12,600	25,300	15,400	6,290	3,680	71,300
1912	3,020	1,130	472	456	345	798	3,810	21,700	37,400	33,000	10,800	5,050	111,000
1913	4,070	1,620	a1,410	a1,170	a1,000	a1,530	a5,700	15,100	18,800	11,700	5,390	d5,890	*73,200
1914	d5,230	d1,980	a3,320	a2,760	d2,380	d3,580	d14,200	d33,000	d45,700	d21,900	d11,800	d4,750	c151,000
1915	d5,410	d1,750	a1,540	a1,230	a942	a920	d14,800	d19,400	d45,000	d40,200	d9,780	d7,440	a112,000
1916	d5,790	d2,490	a983	a798	a745	a1,900	a4,200	d16,800	d25,400	d19,100	d10,800	d5,100	a94,100
1917	d4,420	d2,700	d1,070	d579	d578	d1,060	d5,560	d29,000	d41,800	d29,600	d9,160	d3,950	d129,000
1918	d1,240	d1,000	d892	d732	d605	d1,060	d2,550	d9,960	d46,800	d21,600	d9,040	d5,170	d100,000
1919	d4,650	d1,450	d1,030	d695	d400	d627	d2,890	d13,800	d15,600	d10,800	d6,800	d4,120	d66,600
1920	d2,080	d666	d545	d744	d690	d750	d2,920	d29,400	d30,000	d21,600	d11,600	d4,650	d106,000
1921	d1,810	d1,080	d1,010	d953	d655	d953	d10,200	d24,800	d4,900	d23,600	d10,700	d4,450	d145,000
1922	d1,190	d970	d1,150	d633	d347	d818	d2,550	d9,900	d22,400	d10,800	d5,450	d2,060	d58,200
1923	d648	d655	d664	d695	d555	d1,240	d4,890	d21,600	d49,100	d35,700	d14,400	d6,550	d157,000
1924	d7,620	d8,270	d3,410	d1,900	d1,510	d1,700	d12,600	d24,500	d48,700	d20,900	d7,130	d2,920	d141,000
1925	d1,750	d954	d544	d701	d822	d824	d1,490	d8,500	d13,800	d11,100	d6,700	d4,580	d51,500
1926	d4,070	d3,010	d1,840	d1,640	d1,300	d2,290	d20,600	d26,500	d38,800	d24,700	d10,800	d3,500	d159,000
1927	d1,070	d815	d855	d830	d693	d941	d5,930	d16,400	d25,500	d17,900	d9,650	d5,490	d86,100
1928	d1,700	d1,080	d1,370	d959	d846	d763	d2,320	d32,000	d27,000	d21,800	d8,850	d3,180	e102,000
1929	d1,200	d1,250	d928	d568	d512	d1,010	d2,370	d10,000	d25,900	d20,300	d13,800	d7,080	d84,900
1930	d4,440	d1,680	d1,120	d856	d811	d885	d4,580	d10,000	d20,700	d12,700	d14,200	d5,460	d77,400
1931	d2,040	d898	d646	d480	d561	d763	d2,430	d13,700	d25,500	d8,670	d4,530	d1,870	d62,100
1932	d1,250	d875	d591	d206	d436	d361	d2,470	d12,700	d25,800	d16,800	d4,560	d1,530	d67,600
1933	d1,080	d853	d486	d450	d254	d613	d5,390	d26,400	d40,400	d15,500	d4,480	d4,470	d98,300
1934	2,160	976	584	621	855	1,380	3,390	25,400	13,700	4,960	2,530	1,300	57,860
1935	960	454	514	530	492	561	1,210	19,390	35,730	20,130	6,290	3,550	89,790
1936	1,290	1,200	422	480	555	919	7,480	25,440	34,950	17,530	12,520	4,050	106,800
1937	2,010	1,740	740	328	591	874	3,860	15,910	24,910	15,230	5,450	3,100	74,740
1938	1,190	1,180	935	843	382	390	8,990	22,500	37,010	17,670	6,720	15,630	113,400
1939	2,820	1,540	971	912	697	1,390	5,740	17,790	17,580	8,170	4,350	2,550	64,510
1940	1,270	277	583	552	346	524	1,990	10,930	19,090	10,600	5,720	3,760	53,480
1941	2,850	607	559	278	346	562	7,480	20,980	28,790	14,570	5,170	3,980	86,170
1942	2,530	2,140	827	758	622	1,460	19,850	29,780	42,410	18,220	5,690	3,190	127,500
1943	5,450	2,930	1,240	978	698	1,270	8,290	22,160	34,910	16,630	6,750	2,940	104,200
1944	1,450	365	564	375	476	699	10,390	24,690	22,980	14,210	4,850	1,910	82,940
1945	902	399	258	237	174	506	3,430	15,850	31,310	21,160	11,710	4,570	90,510
1946	1,500	932	497	568	351	610	3,500	7,850	20,970	11,080	5,500	3,280	56,440
1947	1,980	2,810	2,120	715	494	1,750	4,150	24,210	54,740	29,180	9,170	4,740	136,000
1948	2,860	1,750	929	721	714	1,810	5,250	16,700	26,050	10,070	4,320	1,630	72,780
1949	1,280	361	484	434	348	558	3,490	18,120	64,770	23,130	7,270	2,750	123,000
1950	1,730	727	310	313	595	443	1,980	8,460	27,870	13,170	4,780	2,600	63,520

* Only monthly figures revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Corrected; supersedes figure published in H. Doc. 197.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Colorado.

e Revised; supersedes records previously published by State engineer of Colorado.

Yearly discharge, in cubic feet per second of St. Vrain Creek at Lyons, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1887	(a)	-	-	-	-	-	-	-
1888	(a)	#555	June 19, 1888	-	c91.2	c86,200	c92.4	c67,100
1889	(a)	#545	May 28, 1889	-	c112	c81,100	c111	c80,200
1890	(a)	b675	June 2, 1890	-	d122	c88,300	d122	c88,400
1891	74	b1,400	May 27, 1891	-	c229	c166,000	-	-
1895	(e)	b1,130	June 16, 1895	-	-	-	-	-
1896	(e)	#b1,500	Aug. 18, 1896	-	d116	d84,400	d108	d78,200
1897	(f)	#b1,020	(g)	-	d202	d146,000	c201	c145,000
1898	(h)	#b603	June 17, 21, 1898	-	c114	c82,900	d108	c78,400
1899	(i)	#b1,180	June 20, 1899	6	d194	d141,000	d198	d143,000
1900	(j)	#b918	Apr. 29, 1900	-	d172	d124,000	d172	d125,000
1901	75	#b857	June 23, 24, 1901	-	d133	d96,400	d130	d94,300
1902	84	#b514	June 9, 1902	4	k66.9	k48,400	k77.4	k56,100
1903	99	#b1,710	June 23, 1903	-	k167	k121,000	#160	#116,000
1904	(m)	#n850	June 20, 1904	-	#126	#91,400	#126	#91,800
1905	(m)	#n1,650	June 9, 1905	-	d172	d125,000	#170	#125,000
1906	(m)	#n1,170	June 13, 1906	-	#153	#110,000	#162	#117,000
1907	(m)	#n1,120	July 2, 1907	-	#222	#161,000	#213	#154,000
1908	(m)	#n650	July 30, 1908	-	d86.2	d62,600	d88.1	d65,900
1909	266	#n1,150	July 4, 1909	-	d184	d133,000	d183	d132,000
1910	286	#n465	June 3, 1910	7.5	72.3	52,300	69.1	50,100
1911	306	#n680	June 9, 22, 1911	2	98.5	71,300	100	72,800
1912	328	#n1,150	June 25, 28, 1912	3	165	119,000	d168	d120,000
1913	356	#n490	June 11, 1913	-	#101	#73,200	#106	#76,600
1914	(m)	#n1,540	June 2, 1914	-	k208	k151,000	d203	d147,000
1915	(m)	#n955	June 20, 1915	-	d155	d112,000	d158	d115,000
1916	(m)	#n620	June 19, 20, 1916	-	d130	d94,100	d128	d95,000
1917	(m)	#b1,240	June 23, 1917	6	m179	m129,000	m172	m124,000
1918	(m)	#n1,700	June 22, 1918	6	m139	m100,000	m144	m104,000
1919	(m)	9,400	July 30, 1919	5	m92.0	m66,800	m86.7	m62,800
1920	(m)	#b733	May 26, 1920	4	m145	m106,000	m146	m106,000
1921	(m)	b2,050	June 7, 1921	2	m200	m145,000	m200	m145,000
1922	(m)	#b574	June 13, 14, 1922	0	m80.5	m58,200	m78.6	m56,900
1923	(m)	#1,670	June 9, 1923	2	m189	m137,000	m213	m154,000
1924	(m)	#2,230	June 14, 1924	15	m194	m141,000	m172	m125,000
1925	(m)	#410	June 2, 1925	6	m71.2	m51,500	m79.1	m57,200
1926	(m)	#1,100	June 9, 1926	16	m192	m139,000	m184	m133,000
1927	(m)	#604	June 29, 1927	8	m119	m86,100	m121	m87,500
1928	(m)	#1,010	May 31, 1928	3	#140	#102,000	#139	#101,000
1929	(m)	#765	July 3, 1929	4	m117	m84,900	m123	m88,800
1930	(m)	#2,040	Aug. 10, 1930	11	m107	m77,400	m102	m75,800
1931	(m)	#1,450	July 17, 1931	2	m85.8	m62,100	m84.6	m61,200
1932	(m)	854	June 18, 1932	2	m93.1	m67,600	m92.6	m67,200
1933	(m)	1,130	June 20, 1933	2	m136	m98,300	m138	m99,700
1934	761	628	May 10, 1934	4	80.0	57,860	77.5	56,040
1935	786	2,340	May 27, 1935	3	124	89,790	125	90,800
1936	806	832	June 17, 1936	1.7	147	106,800	149	108,400
1937	826	1,230	June 26, 1937	2.4	103	74,740	102	73,560
1938	856	1,650	Sept. 3, 1938	2.2	157	113,400	159	115,500
1939	876	978	Aug. 30, 1939	4.3	88.8	64,310	84.1	60,910
1940	896	675	May 27, 1940	1.5	73.7	53,480	76.5	55,570
1941	926	10,500	June 22, 1941	1.0	119	86,170	121	87,650
1942	956	1,510	Aug. 2, 1942	2.0	176	127,500	182	131,600
1943	976	1,230	May 29, 1943	5.0	144	104,200	134	96,980
1944	1006	962	May 18, 1944	4.2	114	82,940	113	82,140
1945	1036	1,000	June 25, 1945	1.3	125	90,510	127	91,680
1946	1056	2,140	July 18, 1946	2.3	78.0	56,440	83.5	60,420
1947	1086	2,360	June 17, 1947	1.7	188	136,000	186	134,700
1948	1116	820	June 11, 1948	4.5	100	72,760	95.6	69,570
1949	1146	2,970	June 4, 1949	2.7	170	123,000	171	123,600
1950	1176	712	June 13, 1950	0	87.7	63,520	-	-

* Revised

† Not previously published.

a 15th Ann. Rept., Pt. 3.

b Observed.

c Corrected; superseded figure published in H. Doc. 197.

d From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

e 16th Ann. Rept., Pt. 4.

f 19th Ann. Rept., Pt. 4.

g May 18, June 11, 1897.

h 20th Ann. Rept., Pt. 4.

i 21st Ann. Rept., Pt. 4.

j 22d Ann. Rept., Pt. 4.

k Revised; superseded figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

m From reports of State engineer of Colorado.

n Estimated.

224. Lefthand Creek near Boulder, Colo.

Location.--Lat 40°06'50", long. 105°18'30", in sec. 26, T. 2 N., R. 71 W., 100 ft upstream from diversion point of a small power ditch, three-quarters of a mile upstream from Spruce Gulch, and 7 miles (revised) north of courthouse in Boulder.

Drainage area.--48.0 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,820 ft (from topographic map). Prior to Oct. 7, 1949, at site half a mile downstream at different datum.

Extremes.--1929-31, 1947-50: Maximum discharge, 1,140 cfs June 4, 1949 (gage height, 5.49 ft, present site and datum, from floodmark), from rating curve extended above 780 cfs.
1949-50: Minimum daily discharge, 1.0 cfs Jan. 4, 1950.

Remarks.--Records prior to Oct. 1, 1949, not equivalent to records thereafter, since they do not include flow in the small power ditch (capacity, 7.5 cfs) which averaged about 5 cfs throughout the period. A large part of flow is water diverted from South St. Vrain Creek for irrigation of lands along Lefthand Creek downstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	146	104	84.1	43.2	-
1930	16.4	5.47	4	3	4	3.26	32.7	42.7	97.8	64.9	52.3	20.5	29.0
1931	8.5	.94	1.0	1.0	.5	1.39	8.0	87.3	135	51.1	17.8	7.0	26.7
1947	-	-	-	-	-	-	*24.9	*105	*144	*109	*54.9	*30.0	-
1948	11.1	5.37	2.33	1.96	2.09	7.78	32.1	74.2	112	61.5	28.1	5.75	28.7
1949	2.46	.64	.50	.20	.28	.28	9.84	60.9	235	122	45.1	9.53	40.6
1950	8.98	5.66	3.13	2.05	2.72	1.99	8.78	48.8	144	69.7	33.3	14.3	28.6

* Only monthly figures revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	8,690	6,400	5,170	2,570	-
1930	1,010	325	246	184	222	200	1,950	2,630	5,820	3,990	3,220	1,220	21,000
1931	523	56	61	61	28	85	476	5,370	8,030	3,140	1,090	417	19,300
1947	-	-	-	-	-	-	*1,480	*6,450	*8,560	*6,720	*3,380	*1,780	-
1948	682	320	143	121	120	478	1,910	4,580	6,640	3,780	1,730	342	20,830
1949	151	36	31	12	16	17	585	3,750	13,970	7,480	2,770	587	29,390
1950	552	337	192	126	151	123	522	3,000	8,540	4,280	2,040	850	20,710

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	216	July 17, 1929	-	-	-	-	-	-
1930	701	*340	Aug. 26, 1930	-	29.0	21,000	27.7	20,100	-
1931	716	396	Aug. 2, 1931	0	26.7	19,300	-	-	-
1947	1086	*254	June 22, 1947	-	-	-	-	-	-
1948	1116	510	June 7, 1948	1.4	28.7	20,830	27.4	19,900	-
1949	1146	1,140	June 4, 1949	0	40.6	29,390	-	-	-
1950	1176	234	June 16, 1950	1.0	28.6	20,710	-	-	-

* Revised.

225. Lefthand Creek at mouth, at Longmont, Colo. 1/

Location.--Lat 40°08'50", long. 105°06'05", in S $\frac{1}{2}$ sec. 10, T. 2 N., R. 69 W., at bridge on U. S. Highways 87 and 287, 1 mile upstream from mouth, and 1 mile south of Longmont.

Drainage area.--74 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,945 ft (from topographic map). Prior to Aug. 25, 1942, at datum 1.00 ft higher.

Average discharge.--15 years (1927-42), 13.9 cfs.

Extremes.--1927-42: Maximum discharge, 812 cfs Sept. 2, 1938 (gage height, 6.10 ft, datum then in use), from rating curve extended above 330 cfs on basis of slope-area determination of peak flow; minimum daily, 0.4 cfs Sept. 20, 1939.

Remarks.--Diversions above station for irrigation of about 12,000 acres. Flow regulated by storage for irrigation. Flow is mostly return waste water from ditches that divert water from other streams.

Cooperation.--Records for 1927-33, 1942, not previously published by Geological Survey, furnished by State engineer of Colorado.

1/ Published as "at mouth", 1927-30, and as "near mouth near Longmont", 1931-33.

Monthly and yearly mean discharge, in cubic feet per second of
Left-hand Creek at mouth, at Longmont, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	a4.65	a28.9	a38.3	a30.6	a17.2	a23.7	a6.03	-
1928	a6.97	a6.63	a6.84	a7.16	a5.97	a4.35	a8.33	a144	a54.5	a23.2	a12.9	a5.30	a24.0
1929	a4.26	a3.23	a3.2	a3.5	a3.5	a6.29	a6.97	a13.8	a7.77	a23.1	a57.6	a15.7	a12.5
1930	a6.90	a8.80	a6.16	a6.5	a4.54	a4.58	a9.07	a10.9	a11.2	a11.0	a33.3	a8.20	a10.1
1931	a4.48	a6.30	a6.6	a6.0	a3.50	a3.65	a2.80	a15.2	a23.4	a5.29	a2.52	a2.20	a6.83
1932	a2.52	a3.13	a3.0	a2.0	a2.0	a4.10	a4.90	a3.84	a10.9	a8.97	a3.74	a1.87	a4.25
1933	a3.65	a5.53	a3.0	a4.0	a3.0	a1.39	a7.73	a128	a20.4	a17.3	a5.45	a10.3	a17.7
1934	4.0	4.5	5.7	4.5	4.4	3.3	6.7	24.1	8.4	3.7	2.0	2.5	6.2
1935	1.4	1.2	1.7	1.8	1.5	1.0	1.3	69.3	34.5	12.2	4.0	8.5	11.6
1936	7.03	6.59	4.58	5.2	5.52	2.35	6.72	29.7	51.7	15.8	25.8	12.3	14.4
1937	14.3	10.9	7.55	4.5	4.0	4.01	10.3	9.59	65.2	22.9	6.02	7.70	13.9
1938	5.93	4.60	4.62	6.28	2.96	3.28	39.6	66.0	24.5	24.2	7.71	66.7	20.5
1939	11.0	6.99	11.3	9.0	7.0	6.0	34.8	35.0	18.7	9.49	3.66	3.08	13.0
1940	2.88	2.50	3.40	2.5	3.3	2.63	3.43	3.79	7.05	11.1	2.40	6.47	4.28
1941	5.41	4.87	2.80	2.91	2.35	3.17	28.2	45.8	32.3	11.7	8.32	6.59	12.9
1942	a6.45	a7.53	a3.63	a5.0	a10	a10.8	a125	a159	a66.4	a23.6	a8.02	a8.47	a36.3

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	a286	a1,720	a2,360	a1,620	a1,060	a1,460	a359	-
1928	a429	a395	a421	a440	a343	a287	a498	a8,850	a3,240	a1,430	a793	a315	a17,400
1929	a262	a192	a197	a215	a194	a387	a415	a848	a462	a1,420	a3,540	a934	a9,070
1930	a424	a524	a379	a400	a252	a282	a540	a670	a666	a676	a2,050	a488	a7,350
1931	a275	a375	a406	a369	a194	a224	a167	a935	a1,390	a325	a155	a131	a4,950
1932	a155	a186	a184	a123	a115	a252	a292	a236	a649	a552	a230	a111	a3,080
1933	a224	a329	a184	a246	a167	a85	a460	a7,870	a1,210	a1,060	a335	a613	a12,800
1934	246	268	350	277	244	203	399	1,480	500	228	123	149	4,470
1935	87	73	107	109	81	61	75	4,260	2,050	752	248	508	8,410
1936	432	392	282	320	317	144	400	1,830	3,080	972	1,590	732	10,490
1937	881	648	465	277	222	247	613	590	3,880	1,410	370	458	10,060
1938	365	274	284	385	165	202	2,360	4,060	1,460	871	474	3,970	14,870
1939	678	416	698	553	389	369	2,070	2,150	1,110	584	225	181	9,420
1940	177	149	209	154	190	161	204	233	420	681	147	385	3,110
1941	333	290	172	179	131	195	1,680	2,810	1,920	718	512	392	9,330
1942	a397	a448	a223	a307	a555	a663	a7,460	a9,790	a3,950	a1,450	a493	a504	a26,240

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1927	(a)	#113	July 26, 1927	-	-	-	-	-	-
1928	(a)	252	May 10, 1928	a2	a24.0	a17,400	a23.2	a16,800	-
1929	(a)	#257	Aug. 6, 7, 1929	-	a12.5	a9,070	a13.5	a9,740	-
1930	(a)	#252	Aug. 13, 1930	a2	a10.1	a7,350	a9.78	a7,080	-
1931	(a)	#69	June 8, 1931	a1	a6.83	a4,950	a6.10	a4,420	-
1932	(a)	#69	June 16, 1932	-	a4.25	a3,080	a4.54	a3,300	-
1933	(a)	#355	May 19, 1933	-	a17.7	a12,800	a17.8	a12,910	-
1934	761	106	May 5, 1934	1	6.2	a4,470	5.4	3,870	-
1935	786	228	May 18, 1935	1	11.6	8,410	12.8	9,250	-
1936	806	161	June 10, 1936	-	14.4	10,490	15.7	11,380	-
1937	826	192	June 3, 1937	2.5	13.9	10,060	12.4	8,990	-
1938	856	812	Sept. 2, 1938	2.6	20.5	14,870	21.7	15,730	-
1939	876	66	May 1, 1939	4	13.0	9,420	11.3	8,170	-
1940	896	36	Sept. 28, 1940	1.1	4.28	3,110	4.64	3,370	-
1941	926	321	June 22, 1941	1.2	12.9	9,330	13.3	9,610	-
1942	(a)	a369	Apr. 19, 1942	a2.7	a36.3	a26,240	-	-	-

* Not previously published.

a From reports of State engineer of Colorado.

226. Middle Boulder Creek at Nederland, Colo.

Location.--Lat 39°57'42", long. 105°30'14", in NE¹/₄ sec. 13, T. 1 S., R. 73 W., at Nederland, just downstream from North Beaver Creek and 1,000 ft upstream from Barker Reservoir.

Drainage area.--35.5 sq mi.

Gage.--Water-stage recorder and compound sharp-crested weir. Datum of gage is 8,183.5 ft above mean sea level (Public Service Company benchmark). Prior to Mar. 18, 1909, at datum 1.5 ft lower.

Average discharge.--43 years (1907-50), 53.3 cfs.

Extremes.--1907-50: Maximum discharge, 811 cfs June 2, 1914 (gage height, 5.37 ft), by computation of peak flow over compound weir; minimum daily, 0.8 cfs Jan. 14, 1908.

Remarks.--No diversion above station. North Beaver Creek entered Middle Boulder Creek downstream from station June 1 to Dec. 31, 1907, March 1911 to Dec. 31, 1916.

Cooperation.--Records for 1907-34, 1941-44, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second													The year
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1907	-	-	-	-	-	-	-	-	a314	a326	a87.0	a30.8	-
1908	a24.1	a9.9	a4.45	a2.13	a3.0	a6.0	a29	a61.9	a178	a114	a76.9	a26.6	a44.7
1909	a16.8	a13.4	a7.5	a7	a5.4	a8.2	a21.3	a109	a334	a207	a85.4	a37.6	a71.2
1910	a22.3	b14.0	b6.4	a5.5	a5.1	a15.4	a37.0	a86.4	a133	a64.8	a27.7	a20.3	b36.8
1911	a12.1	a8.2	a7	a5	a6	a4.5	a18.9	a105	a228	a126	a34.0	a17.8	a47.7
1912	a22.5	a12.0	b6	b4	b5	b5.5	b11	b103	a298	a234	a78.3	a26.7	b66.4
1913	a22.2	a12.7	a4.27	b5	b5	b5.5	b25	b135	b124	a83.5	a32.9	a41.3	b41.6
1914	a29.5	a15.9	a5	a5	a6.5	a7.7	a25.0	a191	a357	a129	a50.5	a24.9	a70.7
1915	a19.6	a12.2	a5.4	a3.7	a4	a3.8	a27.8	a102	a228	a156	a56.5	a32.9	a54.5
1916	a25.9	a13.1	a7.61	a5.47	a5.41	a11.3	a26.7	a81.9	a191	a102	a57.0	a27.4	a45.5
1917	a23.0	a14.1	a6.71	a5.18	a3.23	a3.60	a15.6	a74.4	a278	a169	a53.2	a18.3	a55.5
1918	a11.0	a9.97	a8.34	a5.75	a5.05	a7.96	a20.1	a139	a399	a178	a68.5	a30.2	a73.8
1919	a27.6	a18.7	a8.05	a5.42	a4.21	a5.00	a33.4	a149	a134	a71.7	a28.3	a19.6	a42.3
1920	a12.3	a13.1	a6.42	a5.02	a5.03	a5.37	a10.2	a155	a252	a163	a94.5	a34.5	a63.2
1921	a16.0	a14.8	a7.20	a5.54	a5.30	a10.4	a22.2	a179	a397	a141	a81.4	a30.1	a76.0
1922	a11.8	a9.23	a10.2	a6.83	a4.54	a5.08	a14.1	a96.3	a184	a80.9	a38.5	a14.2	a59.7
1923	a12.9	a10.5	a7.67	a5.44	a4.44	a5.61	a18.3	a121	a293	a210	a72.9	a24.8	a64.9
1924	a31.2	a20.0	a10.5	a6.66	a6.47	a5.95	a25.2	a156	a276	a127	a34.3	a17.1	a59.8
1925	a26.8	a15.4	a7.47	a5.58	a5.51	a6.66	a30.7	a85.5	a68.6	a78.1	a50.0	a44.7	a35.6
1926	a26.6	a23.4	a11.4	a6.84	a5.39	a6.19	a38.5	a221	a290	a172	a80.5	a21.3	a75.7
1927	a14.0	a10.5	a7.14	a3.66	a3.5	a4.73	a29.5	a149	a183	a169	b70	a27.6	b56.4
1928	a26.0	a15.6	a10.5	a6.80	a6.24	a6.99	a14.8	a172	a204	a177	a68.3	a19.4	a60.9
1929	a16.9	a10.1	a5.52	a4.81	a4.36	a4.99	a8.96	a91.9	a230	a132	a81.2	*50	*53.6
1930	a50.5	a15.0	a6.30	a6.25	a6.18	a5.87	a47.6	a84.6	a192	a100	a77.6	a26.5	a50.0
1931	a15.5	a7.80	a4.2	*3	a2.96	a4.06	a11.3	a95.4	a198	a59.0	a28.1	a13.6	*37.0
1932	a18.2	a8.0	a4.0	a4.0	*4	a5.13	a18.3	a123	a203	a117	a36.0	a12.4	*46.0
1933	a11.4	a7.83	a5.87	a3.61	a2.86	a5.52	a10.1	a97.1	a310	a109	a28.8	a29.1	a51.7
1934	a10.5	a5.03	a5.03	a4.35	a5.21	a6.97	a40.7	a168	a82.7	a26.5	a13.8	a10.1	a32.2
1935	9.5	7.8	5.2	4.8	4.6	4.6	14.5	68.5	299	182	50.8	20.7	56.1
1936	10.8	9.44	5.29	5.00	4.78	5.65	46.2	205	245	120	64.5	21.6	62.1
1937	17.7	12.4	6.96	2.02	5.41	4.15	24.8	139	175	95.1	39.1	23.8	45.3
1938	17.9	15.4	10.3	7.51	5.98	7.61	30.8	129	311	150	54.4	48.1	55.8
1939	20.8	10.6	8.21	5.89	3.97	7.73	31.1	167	157	64.2	22.8	12.3	42.8
1940	10.1	11.0	4.37	4.99	4.81	6.06	22.4	112	183	91.4	30.8	28.3	42.4
1941	a26.7	a11.8	a7.56	a6.11	a6.31	a7.84	a15.1	a196	a199	a79.2	a28.6	a17.5	a50.4
1942	a19.5	a13.4	a7.75	a6.19	a6.13	a6.84	a31.5	a133	a275	a112	a30.1	a15.8	a54.8
1943	a11.5	a11.2	a8.40	a6.50	a6.19	a7.84	a49.0	a126	a245	a121	a36.5	a11.6	a53.4
1944	a12.8	a7.05	a4.75	a3.42	a3.30	a3.48	a6.70	a115	a253	a114	a26.2	a10.1	a46.6
1945	a9.61	a5.83	a4.12	a4.12	a4.30	a4.38	a8.17	132	219	183	102	55.2	a59.8
1946	19.4	15.3	7.87	7.10	5.88	7.69	57.5	84.4	166	73.3	29.3	16.3	40.9
1947	19.6	17.6	11.9	6.98	6.46	7.42	19.1	139	213	181	118	40.9	65.4
1948	24.1	15.6	8.96	6.31	6.76	8.09	31.1	128	182	87.7	31.1	12.3	45.2
1949	14.2	8.38	8.75	6.56	4.25	5.77	22.8	116	342	182	60.1	15.2	65.7
1950	17.5	10.7	5.87	4.72	4.82	4.53	16.1	89.3	221	75.2	24.3	15.7	40.8

* Revised; superseded records previously published by State engineer of Colorado.

Not previously published; estimated on basis of records for stations on nearby streams.

a From files of State engineer of Colorado.

b Wholly or partly estimated by Geological Survey on basis of records for stations on nearby streams.

c From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet of Middle Boulder Creek at Nederland, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	-	-	-	-	-	-	-	-	a18,700	a20,000	a5,350	a1,830	-
1908	a1,480	a589	a274	a131	a173	a369	a1,730	a3,810	a10,600	a7,010	a4,730	a1,580	a32,500
1909	a1,030	a797	a461	a430	a300	a504	a1,270	a6,700	a19,900	a12,700	a5,250	a2,250	a51,600
1910	a1,370	b833	b516	a338	a283	a947	a2,200	a5,310	a7,910	a3,980	a1,700	a1,210	b26,600
1911	a744	a488	a430	a307	a333	a277	a1,120	a5,480	a13,600	a7,750	a2,090	a1,060	a34,700
1912	a1,580	a714	b387	b248	b268	b270	b655	b6,330	a17,100	a14,400	a4,810	a1,590	b48,100
1913	a1,360	a756	a283	b507	b278	b358	b1,490	b6,500	a7,400	a5,130	a2,020	a2,460	b30,100
1914	a1,810	a946	a307	a307	a361	a474	a1,490	a11,700	a21,200	a7,950	a5,110	a1,480	a51,100
1915	a1,210	a726	a332	a228	a222	a234	a1,650	a6,270	a13,600	a9,590	a3,470	a1,960	a39,500
1916	a1,590	a780	a468	a336	a311	a695	a1,590	a5,040	a10,800	a6,300	a3,500	a1,630	a33,000
1917	a1,410	a839	a412	a319	a179	a221	a928	a4,570	a16,500	a10,400	a3,270	a1,090	a40,100
1918	a676	a593	a513	a354	a280	a489	a1,200	a8,550	a23,700	a10,900	a4,210	a1,800	a53,300
1919	a1,700	a1,110	a495	a333	a234	a307	a1,990	a9,180	a7,970	a4,410	a1,740	a1,170	a30,600
1920	a756	a780	a395	a309	a289	a350	a607	a9,530	a15,000	a10,000	a5,810	a2,050	a45,900
1921	a984	a881	a443	a341	a294	a640	a1,320	a11,000	a23,600	a8,670	a5,010	a1,790	a55,000
1922	a726	a549	a627	a420	a252	a312	a839	a5,920	a10,900	a4,970	a2,370	a845	a28,700
1923	a793	a613	a472	a334	a247	a345	a1,090	a7,440	a16,800	a12,900	a4,480	a1,180	a47,000
1924	a1,920	a1,190	a646	a410	a372	a364	a1,500	a9,590	a16,400	a7,810	a2,110	a1,020	a43,300
1925	a1,650	a916	a459	a343	a306	a411	a1,830	a5,260	a4,080	a4,800	a3,070	a2,660	a25,800
1926	a1,640	a1,390	a701	a421	a299	a381	a2,290	a13,600	a17,300	a10,600	a4,950	a1,270	a54,800
1927	a661	a625	a439	a237	a194	a291	a1,780	a9,160	a20,900	a10,400	b4,300	a1,640	b40,800
1928	a1,600	a928	a646	a418	a371	a430	a891	a10,600	a12,100	a10,900	a4,200	a1,150	a44,200
1929	c1,040	c601	c339	c296	c242	c307	c533	c5,650	a13,700	c8,120	a4,990	*2,980	*38,800
1930	c1,880	c893	c387	c384	c343	c361	c2,830	c5,200	c11,400	c6,150	a4,770	c1,580	c36,200
1931	c953	c464	*258	*184	c164	c250	c672	c5,900	c11,800	c3,630	c1,730	c809	*26,800
1932	c996	c476	c246	c246	*230	c319	c1,090	c7,560	c12,100	c7,190	c2,210	c758	*33,400
1933	c701	c466	c361	c222	c159	c339	c601	c5,970	c18,400	c6,700	c1,770	c1,730	c37,400
1934	c646	c299	c309	c607	c289	a429	c2,420	c10,300	a4,920	c1,630	c648	c601	c23,300
1935	585	464	319	298	254	286	865	4,210	17,800	11,170	3,210	1,250	40,600
1936	666	562	325	308	275	347	2,750	12,610	14,590	7,400	3,970	1,280	45,080
1937	1,090	740	428	124	190	255	1,480	8,520	10,280	5,850	2,410	1,420	32,790
1938	1,100	918	634	462	332	468	1,840	7,930	18,490	9,250	3,340	2,660	47,620
1939	1,280	641	505	362	220	475	1,850	10,240	9,330	3,950	1,400	733	30,990
1940	619	655	269	307	276	372	1,340	6,870	10,900	5,620	1,890	1,680	30,800
1941	a1,640	a699	a485	a376	a351	a482	a897	a12,050	a11,830	a4,870	a1,780	a1,040	a36,460
1942	a1,200	a800	a477	a391	a340	a420	a1,890	a8,170	a16,340	a8,880	a1,850	a941	a39,700
1943	a706	a669	a517	a400	a344	a482	a2,910	a7,740	a14,570	a7,410	a2,240	a681	a56,680
1944	a787	a420	a292	a210	a190	a213	a339	a7,060	a15,070	a7,010	a1,610	a601	a33,860
1945	a591	a347	a290	a253	a239	a269	a486	8,110	13,060	11,280	6,280	2,100	a43,300
1946	1,190	908	484	436	326	473	3,420	5,190	9,870	4,510	1,800	972	29,580
1947	1,210	1,050	734	429	359	456	1,140	8,550	12,670	11,100	7,230	2,440	47,370
1948	1,480	930	551	388	389	497	1,850	7,880	10,840	5,590	1,910	750	32,840
1949	671	498	538	403	238	355	1,560	7,180	20,360	11,170	3,700	907	47,550
1950	1,070	635	349	290	268	279	958	5,490	13,180	4,620	1,500	951	29,570

* Revised; supersedes records previously published by State engineer of Colorado.

† Not previously published; estimated on basis of records of stations on nearby streams.

a From files of State engineer of Colorado.

b Wholly or partly estimated by Geological Survey on basis of records for stations on nearby streams.

c From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1907	(a)	-	-	-	-	-	-	-
1908	(a)	-	-	a0.6	a44.7	a32,500	a44.6	a32,400
1909	(a)	-	-	a4	a71.2	a51,600	a71.8	a52,000
1910	(a)	-	-	-	b36.8	b26,600	a35.3	a25,500
1911	(a)	-	-	a4	a47.7	a34,700	b49.0	b35,500
1912	(a)	-	-	-	b66.4	b48,100	b66.3	b48,100
1913	(a)	-	-	-	b45.6	b30,100	b42.5	b30,800
1914	(a)	811	June 2, 1914	-	a70.7	a51,100	a69.6	a50,300
1915	(a)	-	-	a2.2	a54.5	a39,500	a55.3	a40,100
1916	(a)	-	-	a4	a45.5	a33,000	a45.3	a32,900
1917	(a)	-	-	a2.2	a55.5	a40,100	a54.3	a39,300
1918	(a)	-	-	a4.5	a73.8	a53,300	a75.8	a54,800
1919	(a)	-	-	a3.3	a42.3	a30,600	a40.4	a29,200
1920	(a)	-	-	a4.0	a65.2	a45,900	a63.7	a46,200
1921	(a)	-	-	a3.7	a76.0	a55,000	a75.4	a54,600
1922	(a)	-	-	a3.2	a39.7	a28,700	a39.7	a28,700
1923	(a)	-	-	a4.3	a64.9	a47,000	a67.5	a46,900
1924	(a)	-	-	a5.0	a59.8	a43,300	a58.6	a42,600
1925	(a)	-	-	a1.3	a35.6	a25,800	a36.6	a26,500

* Revised.

† Not previously published.

a From files of State engineer of Colorado.

b Partly estimated by Geological Survey.

c From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Middle Boulder Creek at Nederland, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	-	-	a4.8	a75.7	a54,800	a73.2	a53,000
1927	(a)	-	-	-	a56.4	a40,800	a58.1	a42,100
1928	(a)	-	-	a2.2	a60.9	a44,200	a59.3	a43,000
1929	(c)	-	-	a3.8	*53.8	*38,800	*55.2	*40,000
1930	(c)	-	-	a4.6	a50.0	a36,200	a47.9	a34,700
1931	(c)	-	-	-	*37.0	*26,800	*37.1	*26,900
1932	(c)	-	-	-	*46.0	*33,400	*45.7	*33,200
1933	(c)	-	-	-	a51.7	a37,400	a51.3	a37,100
1934	(c)	-	-	-	a52.2	a23,500	a52.3	a23,400
1935	786	-	-	3	56.1	40,600	56.3	40,790
1936	806	-	-	4.0	62.1	45,080	63.1	45,790
1937	826	-	-	-	45.3	32,790	45.8	33,180
1938	856	-	-	5.2	65.8	47,620	65.5	47,400
1939	876	-	-	2.4	42.8	30,990	41.6	30,100
1940	896	-	-	2.3	42.4	30,900	a44.2	a32,060
1941	(a)	-	-	a5.2	a50.4	a36,460	a49.9	a36,130
1942	(a)	-	-	a4.4	a54.8	a39,700	a54.0	a39,080
1943	(a)	-	-	a4.5	a53.4	a38,680	a52.9	a38,290
1944	(a)	-	-	a2.4	a46.8	a33,880	a46.3	a33,590
1945	1036	491	June 25, 1945	-	a59.8	a43,300	a61.7	a44,660
1946	1056	346	June 17, 1946	4.5	40.9	29,580	41.4	29,990
1947	1086	427	June 21, 1947	6.0	65.4	47,370	65.4	47,340
1948	1116	510	June 8, 1948	4.6	45.2	32,840	43.8	31,780
1949	1146	674	June 13, 1949	3.0	65.7	47,550	65.9	47,700
1950	1176	414	June 14, 1950	3.0	40.6	29,570	-	-

* Revised.

* Not previously published.

a From files of State engineer of Colorado.

c From reports of State engineer of Colorado.

227. North Boulder Creek at Silver Lake, Colo.

Location.--Lat 40°01'40" long. 105°34'30", in NW¼ sec. 28, T. 1 N., R. 73 W., at outlet of Silver Lake and 5 miles southwest of Ward.

Drainage area.--8.7 sq mi, approximately.

Gage.--Water-stage recorder and standard compound sharp-crested weir. Altitude of gage is 10,100 ft (from topographic map).

Average discharge.--19 years (1913-32), 27.3 cfs.

Extremes.--1913-32: Maximum discharge not determined; minimum daily recorded, 0.2 cfs May 19, 1931.

Remarks.--No diversion above station. Flow regulated by storage in Silver Lake (capacity, 2,080 acre-ft).

Cooperation.--Records furnished by city engineer of Boulder.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	*26.4	-	28.9
1914	9.56	7.19	4.37	3.58	3.60	3.17	3.51	24.0	106	78.9	43.8	18.4	25.5
1915	6.22	5.35	5.58	5.16	5.24	6.63	8.68	15.8	60.6	72.6	40.1	26.9	21.6
1916	11.1	6.46	4.95	5.38	5.33	3.45	3.55	8.31	36.9	43.0	30.7	12.9	14.3
1917	6.76	6.92	5.22	6.33	6.68	5.96	1.66	6.65	38.7	77.5	44.1	18.7	18.9
1918	13.4	8.23	4.77	4.41	4.68	5.00	4.87	17.1	105	76.7	44.5	18.1	25.6
1919	16.9	12.0	7.54	5.76	3.89	4.17	4.27	17.1	47.2	49.3	31.5	25.6	18.9
1920	15.2	10.8	6.20	4.61	2.84	2.21	2.48	16.9	90.3	156	188	71.3	47.8
1921	59.3	60.6	22.4	21.0	17.0	19.0	19.5	38.0	135	*92.5	*56.8	28.8	*47.6
1922	46.0	32.4	26.6	19.2	10.7	15.7	25.4	39.9	63.2	65.2	52.5	56.4	37.9
1923	48.4	38.1	27.0	7.49	5.32	8.25	4.52	14.4	82.0	86.6	79.7	45.3	37.5
1924	15.0	16.9	16.4	15.5	16.9	19.6	17.8	24.4	*56.4	*30	*14	*20.2	*21.9
1925	52.6	47.5	42.0	41.6	40.8	38.2	31.1	34.9	33.8	51.0	36.7	26.1	39.7
1926	18.0	12.8	7.92	5.81	7.03	5.00	6.11	35.2	95.9	98.3	65.2	28.9	32.3
1927	19.2	16.2	16.2	13.1	14.8	17.9	17.4	38.9	73.1	70.7	28.6	27.8	29.7
1928	29.4	14.2	5.48	6.27	5.77	5.77	6.61	26.3	75.0	94.1	40.8	13.8	27.2
1929	a7.79	b6.17	b6.38	b5	b4.5	b5	b5	a6.97	a55.3	a76.8	b40	b25	b20.4
1930	b7	b5	a1.42	a3.52	a3.61	a2.77	a4.08	a11.8	a49.5	a62.0	a55.6	b15	b19.4
1931	b10.4	a5.05	a3.07	a4.15	a4.05	a3.82	a4.55	b5.20	b50	b30	b20	b13	b12.8
1932	a11.8	a4.90	a4.53	a4.81	a4.96	a5.71	a7.14	a10.5	a56.8	a74.8	a43.6	a13.9	a20.4
1933	a7.04	a5.57	a3.87	-	-	-	-	-	-	-	-	-	-

* Not previously published; estimated on basis of records for stations on nearby streams.

a From files of City of Boulder.

b Wholly or partially estimated by Geological Survey on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet of North Boulder Creek at Silver Lake, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	-	-	-	-	-	-	-	-	-	-	\$1,820	1,720	-
1914	588	428	289	219	200	195	209	1,480	6,310	4,850	2,690	1,080	18,500
1915	382	318	343	317	291	408	516	972	3,610	4,460	2,470	1,600	15,700
1916	682	384	304	331	307	212	211	511	2,200	2,640	1,890	768	10,400
1917	416	412	321	389	371	368	99	409	2,300	4,770	2,710	1,110	13,700
1918	824	490	293	271	260	307	290	1,050	6,250	4,720	2,740	1,080	18,600
1919	1,040	714	464	354	216	256	254	1,050	2,810	3,030	1,940	1,520	13,600
1920	935	643	381	283	163	136	148	1,160	5,370	9,590	11,600	4,240	34,600
1921	3,650	3,610	1,380	1,290	944	1,170	1,160	2,340	8,030	\$5,690	\$3,490	1,710	\$34,500
1922	2,830	1,930	1,640	1,180	594	965	1,510	2,450	3,760	4,010	3,230	3,360	27,500
1923	2,980	2,270	1,660	461	293	507	289	885	4,880	5,320	4,900	2,700	27,100
1924	922	1,010	1,010	953	972	1,210	1,060	1,500	\$3,360	\$1,840	\$861	\$1,200	\$15,900
1925	3,230	2,830	2,580	2,560	2,270	2,350	1,850	2,150	2,010	3,140	2,260	1,550	28,800
1926	1,110	762	487	357	390	307	364	2,160	5,710	6,040	4,010	1,720	23,400
1927	1,180	1,080	996	806	822	1,100	1,040	2,390	4,350	4,350	1,760	1,650	21,500
1928	1,810	845	357	386	332	355	393	1,740	4,460	5,790	2,510	821	19,800
1929	a479	b567	b592	b507	b205	b507	b298	a424	a3,290	a4,720	b2,480	b1,480	b14,800
1930	b430	b298	a87	a216	a200	a170	a243	a728	a2,950	a3,610	a4,030	b893	b14,100
1931	b639	a300	a189	a255	a225	a235	a271	b320	b2,980	b1,840	b1,230	b774	b9,260
1932	a726	a292	a279	a296	a285	a351	a425	a646	a3,380	a4,600	a2,680	a827	a14,800
1933	a433	a331	a236	-	-	-	-	-	-	-	-	-	-

* Not previously published; estimated on basis of records for stations on nearby streams.

a From files of City of Boulder.

b Wholly or partially estimated by Geological Survey on basis of records of stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum daily		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1913	456	-	-	-	-	-	-
1914	456	192	June 3, 1914	2.96	25.5	18,500	25.3
1915	456	131	June 24, 1915	2.01	21.6	15,700	22.1
1916	456	57.2	June 30, 1916	1.2	14.3	10,400	14.1
1917	456	105	(a)	1.3	18.9	13,700	19.5
1918	476	164	June 23, 1918	3.8	25.6	18,600	26.5
1919	506	71.0	July 4, 1919	3.3	18.9	13,600	18.5
1920	506	294	July 27, 28, 1920	2.0	47.8	34,600	56.9
1921	528	198	June 12, 1921	12	\$47.6	\$34,500	\$44.5
1922	546	147	Oct. 28, 1921	8.9	37.9	27,500	38.6
1923	566	170	June 18, 1923	2.9	37.5	27,100	32.0
1924	586	b69	June 13, 14, 1924	-	\$21.9	\$15,900	\$29.8
1925	606	75.5	July 14, 1925	11.4	39.7	28,800	31.0
1926	626	133	July 4, 1926	4.94	32.3	23,400	33.6
1927	646	110	June 27-30, 1927	7.6	29.7	21,500	29.3
1928	666	124	June 30, 1928	4.30	27.2	19,800	c24.8
1929	(d)	b98.0	July 29, 1929	-	c20.4	c14,800	c19.8
1930	(d)	d129	Aug. 17, 1930	d.51	c19.4	c14,100	c19.8
1931	(d)	-	-	d.2	c12.8	c9,260	c13.0
1932	(d)	d139	June 30, 1932	d4.1	d20.4	d14,800	d20.0

* Not previously published.

a June 25, 26, July 2, 1917.

b Maximum daily recorded.

c Partially estimated by Geological Survey.

d From files of the City of Boulder.

228. North Boulder Creek near Nederland, Colo.

Location.--Lat 30°59'15", long. 105°29'45", in SW¼ sec. 6, T. 1 S., R. 72 W., 300 ft upstream from bridge on State Highway 160, a quarter of a mile upstream from Sherwood Creek, and 2 miles north of Nederland.

Drainage area.--25 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 8,260 ft (from topographic map). Prior to Aug. 28, 1929, chain gage at same site and datum.

Extremes.--1929-31: Maximum discharge, 319 cfs May 27, 1931 (gage height, 2.64 ft; no flow at times).

Remarks.--About 1,600 acre-ft diverted annually above station for city of Boulder. Flow regulated by several lakes at headwaters.

Monthly and yearly mean discharge, in cubic feet per second
of North Boulder Creek near Nederland, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	-	91.3	53.5	35.4	-
1930	17.2	4.67	0	0	0	0	14.8	36.9	100	58.8	77.2	22.5	27.8
1931	4.72	.3	.3	.3	.3	.3	2.04	37.9	113	49.6	26.5	10.8	20.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	-	5,610	3,290	2,110	-
1930	1,060	278	0	0	0	0	881	2,270	5,950	3,620	4,750	1,340	20,100
1931	290	18	18	18	17	18	121	2,330	6,720	3,050	1,630	643	14,900

Yealy discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	a259	Aug. 5, 1929	-	-	-	-	-
1930	701	228	Aug. 14, 1930	0	27.8	20,100	26.5	19,100
1931	716	319	May 27, 1931	-	20.6	14,900	-	-

a Maximum observed.

229. Boulder Creek near Orodell, Colo.1/

Location.--Lat 40°00'30", long. 105°19'50", in sec. 34, T. 1 N., R. 71 W., 1 mile southwest of Orodell, 1 mile upstream from Fourmile Creek, and 3 miles southwest of Boulder.

Drainage area.--105 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,850 ft (from topographic map). Prior to Sept. 1, 1907, staff gage and Sept. 1, 1907, to May 11, 1917, water-stage recorder at sites 1 mile downstream, just upstream from Fourmile Creek, at different datums.

Average discharge.--42 years (1906-14, 1916-50), 92.7 cfs.

Extremes.--1887-88, 1906-14, 1916-50: Maximum discharge, 2,500 cfs June 6, 1921 (gage height, 4.31 ft), from rating curve extended above 1,200 cfs; minimum daily, 1 cfs Jan. 29, Feb. 1-3, 16-24, 1938.

Remarks.--Diversion above station for irrigation of about 100 acres. Flow regulated by Barker Meadow Reservoir (capacity, 11,500 acre-ft). Low flow during nonirrigation season regulated by powerplant 1,500 ft upstream.

Cooperation.--Records for 1914-33, not previously published by Geological Survey, furnished by the State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	110	80	-
1888	60	-	-	-	-	-	81	164	-	261	210	157	80
1889	60	-	-	-	-	-	-	-	-	-	-	-	-
1907	#20	#15	#11	#10	#10	a37.9	70.4	234	467	460	164	62.4	#131
1908	32.0	15.9	7.83	4.5	5.5	10.4	46.5	103	252	159	119	54.8	67.6
1909	19.6	20.2	9.87	9	10.1	11.3	69.8	173	482	372	183	114	123
1910	b35	18.2	b8.8	7.3	6.5	18.0	42.3	107	184	106	59.5	27.6	b51.8
1911	15.0	8.3	7.3	3.5	6.7	4.4	20	150	318	171	63	a24	a66.1
1912	a15	17	a10	a10	c15	a5.8	a21.0	a161	a330	a457	a108	a104	a105
1913	a43.0	32.2	a20	a24.9	33.8	a27	56.7	83.4	243	143	69.5	68.0	a70.4
1914	50.3	36.4	53.7	b49.3	b42.3	b28.2	b93.5	c307	c608	b269	b134	b72.2	c146
1915	b45.2	b50.1	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	b82.7	b75.1	a289	c330	b239	b145	b46.2	-
1917	b32.0	b41.8	a27.0	a23.0	a25.0	a22.0	a44.0	a127	b283	b298	b96.2	b36.7	a68.3
1918	b28.0	b31.8	b44.6	b48.0	b45.1	b40.3	b49.1	b151	b478	b314	b110	b55.6	b116
1919	b57.4	b56.1	b60.4	b53.7	b47.9	b40.3	b46.9	b164	b220	b139	b101	b30.4	b85.1
1920	b23.1	b31.4	b16.1	b13.7	b23.4	b18.1	b27.8	b177	b336	b272	b156	b75.7	b97.8

Not previously published; estimated on basis of records for nearby stations.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b From reports of State engineer of Colorado.

c Revised; superseded figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

1/ Published as "North Boulder Creek, Colo.", 1887-88, and as "at Orodell," 1907-16.

Monthly and yearly mean discharge, in cubic feet per second of
Boulder Creek near Ordell, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	b58.6	b21.3	b14.0	b35.2	b29.7	b27.8	b52.8	b178	b613	b304	b113	b42.4	b139
1922	b20.3	b17.9	b58.2	b58.4	b56.6	b84.2	b117	b156	b371	b185	b74.5	b26.4	b97.3
1923	b19.7	b18.5	b24.2	b27.1	b28.5	b28.5	b43.9	b154	b505	b334	b117	b51.5	b112
1924	b83.4	b90.6	b83.8	b62.4	b60.4	b35.7	b76.1	b194	b460	b209	b73.1	b54.5	b124
1925	b73.4	b51.2	b36.6	b65.2	b25.6	b19.5	b33.7	b127	b207	b130	b57.0	b61.5	b71.7
1926	b25.4	b23.5	b35.7	b30.9	b31.6	b35.9	b158	b263	b518	b324	b151	b59.0	b138
1927	b44.0	b39.7	b31.7	b31.6	b34.1	b22.1	b54.9	b158	b281	b232	b117	b68.1	b93.1
1928	b49.0	b58.1	b27.8	b26.7	b29.7	b37.1	b195	b195	b396	b320	b104	b60.5	b114
1929	b34.5	b19.4	b33.8	b36.0	b25.7	b36.1	b31.8	b115	b586	b241	b137	b82.5	b98.4
1930	b33.2	b29.3	b21.2	b22.2	b33.2	b17.5	b73.6	b122	b312	b185	b145	b49.1	b87.2
1931	b26.2	b15.6	b27.9	b20.5	b13.8	b27.7	b39.2	b158	b342	b116	b62.2	b26.1	b73.1
1932	b17.2	b11.2	b13.7	b11.7	b11.2	b15.8	b36.9	b161	b296	b211	b89.0	b20.2	b74.8
1933	b10.9	b13.4	b8.45	b6.52	b2.57	b7.13	b19.3	b137	b352	b167	b57.9	b53.4	b69.8
1934	26.2	25.0	33.0	37.5	27.4	30.3	55.2	212	146	65.1	34.9	19.1	59.6
1935	8.2	5.3	8.8	6.2	9.1	7.7	22.5	91.9	423	298	93.2	54.3	85.9
1936	33.8	32.9	39.6	29.5	22.1	26.8	63.5	261	375	213	160	49.6	109
1937	37.7	24.4	35.4	32	29.5	35.6	47.1	176	174	179	67.1	56.1	74.9
1938	22.8	24.9	31.7	31.6	33.1	30.2	77.7	149	426	254	96.0	126	109
1939	54.6	41.8	37.5	33.0	30.9	52.6	64.4	192	214	109	47.3	26.3	75.6
1940	12.4	14.3	16.4	13.0	11.9	18.9	39.8	139	283	160	51.2	39.2	66.6
1941	19.1	22.1	21.5	13.0	15.1	16.7	45.1	208	311	138	76.2	34.5	77.0
1942	30.5	26.0	31.1	31.1	28.7	40.0	136	229	373	229	82.8	49.5	107
1943	33.7	37.1	24.1	28.8	23.1	32.0	68.8	125	342	210	91.6	46.5	88.7
1944	21.2	18.1	21.3	40.5	25.3	27.4	73.6	197	319	196	49.0	30.6	84.9
1945	17.9	22.4	19.4	22.8	20.6	45.6	41.5	102	226	277	160	42.8	83.7
1946	19.6	27.2	40.9	45.9	46.8	17.4	60.3	108	229	134	100	44.8	72.9
1947	26.1	25.2	19.1	15.9	13.9	16.2	39.3	161	477	360	146	43.9	112
1948	37.5	28.5	30.6	28.3	32.6	49.1	82.6	169	261	122	62.9	27.4	79.1
1949	19.6	11.9	23.0	29.5	32.2	24.5	47.9	112	452	276	75.9	38.8	95.5
1950	23.4	19.4	27.5	29.8	38.9	45.0	50.3	104	300	134	40.6	29.5	70.2

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	6,760	4,760	-
1888	3,690	-	-	-	-	-	-	4,820	10,100	15,500	12,900	9,650	4,780
1889	3,690	-	-	-	-	-	-	-	-	-	-	-	-
1907	*1,230	*893	*676	*615	*555	a2,350	4,190	14,400	27,800	28,300	10,100	3,710	*94,800
1908	1,970	946	461	277	316	840	2,770	5,330	15,000	9,780	7,320	3,250	49,100
1909	1,210	1,200	607	553	561	695	4,150	10,600	28,700	22,900	11,300	6,780	89,300
1910	b2,150	1,080	b541	449	361	1,110	2,520	6,580	10,900	6,520	3,680	1,640	b37,500
1911	922	494	449	236	373	270	1,180	9,240	18,900	10,500	3,880	a1,430	a47,900
1912	a920	1,060	a615	a615	a363	a540	a1,250	a9,880	a19,600	a28,100	a6,840	a6,180	a76,300
1913	a2,640	1,920	a1,230	a1,530	1,880	a1,660	3,370	5,130	14,500	8,790	4,270	4,050	a51,000
1914	3,090	2,280	3,300	b3,030	b2,350	b1,730	b5,560	b18,900	b36,200	b16,500	b8,240	b4,300	a105,000
1915	b2,780	b2,980	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	b5,080	b4,470	a17,200	a19,600	a14,700	b8,920	b2,870	-
1917	b1,970	b2,490	a1,660	a1,410	a1,390	a1,350	a2,620	a7,610	a16,800	a18,300	b5,920	b2,180	a63,900
1918	b1,720	b1,890	b2,740	b2,950	b2,500	b2,480	b2,920	b9,290	b28,400	b19,300	b6,760	b3,320	b64,300
1919	b3,530	b3,340	b3,710	b3,300	b2,680	b2,480	b2,790	b10,100	b13,100	b8,550	b6,210	b1,810	b61,600
1920	b1,420	b1,870	b990	b842	b1,350	b1,110	b1,650	b10,900	b20,000	b16,700	b9,590	b4,500	b70,900
1921	b2,370	b1,270	b661	b2,160	b1,650	b1,710	b3,140	b10,900	a48,400	b18,700	b6,950	b2,520	b101,000
1922	b1,250	b1,070	b2,350	b3,590	b2,030	b5,180	b6,960	b9,590	a22,100	b10,100	b4,580	b1,570	b7,400
1923	b1,210	b1,100	b1,490	b1,670	b1,190	b1,750	b2,610	b9,470	b30,000	b20,500	b7,190	b3,060	b61,200
1924	b5,130	b5,710	b5,150	b3,640	b3,470	b2,200	b4,530	b11,900	b27,400	b12,900	b4,490	b3,240	b90,000
1925	b4,510	b3,050	b2,250	b2,120	b1,420	b1,200	b2,010	b7,610	b12,300	b7,890	b5,800	b3,660	b51,600
1926	b1,560	b1,400	b2,200	b1,900	b1,760	b2,210	b9,400	b16,200	b30,800	b19,900	b9,280	b3,510	b100,000
1927	b2,710	b2,360	b1,950	b1,940	b1,890	b1,360	b3,270	b9,720	b16,700	b14,300	b7,190	b4,050	b67,400
1928	b3,010	b5,460	b3,410	b1,710	b1,540	b1,830	b2,210	b12,000	b23,600	b19,700	b6,400	b3,600	b62,500
1929	b2,120	b1,150	b2,080	b2,210	b1,430	b2,220	b1,890	b7,070	b23,000	b14,900	b8,420	b4,910	b71,300
1930	b2,040	b1,740	b1,300	b1,300	b1,840	b1,060	b4,380	b7,500	b18,600	b11,400	b6,820	b2,920	b63,100
1931	b1,610	b928	b1,720	b1,260	b766	b1,700	b2,330	b9,720	b20,400	b7,130	b3,820	b1,550	b52,900
1932	b1,060	b666	b642	b719	b644	b972	b2,200	b9,900	b17,600	b13,000	b5,470	b1,200	b54,300
1933	b670	b797	b520	b401	b143	b438	b1,150	b6,420	b20,900	b10,300	b3,560	b3,180	b50,500
1934	1,610	1,490	2,030	2,310	1,520	1,860	3,280	13,000	8,690	4,000	2,150	1,140	43,080
1935	504	317	540	381	506	476	1,340	5,650	25,160	18,330	5,730	3,230	62,170
1936	2,080	1,960	2,430	1,810	1,270	1,650	3,780	16,070	22,320	13,110	9,840	2,950	79,250
1937	2,320	1,450	2,170	1,970	1,640	2,190	2,800	10,830	10,380	11,010	4,120	3,340	54,200
1938	1,400	1,480	1,950	1,940	1,640	1,860	4,620	9,190	25,320	15,600	5,900	7,530	78,630
1939	3,360	2,490	2,310	2,030	1,720	2,340	3,830	11,840	12,750	6,680	2,910	1,560	54,720
1940	761	849	1,010	801	683	1,160	2,370	8,530	16,840	9,830	3,150	2,330	48,310
1941	1,170	1,320	1,320	802	837	1,030	2,690	12,810	18,520	8,490	4,680	2,050	55,720
1942	1,680	1,550	1,910	1,910	1,590	2,460	8,110	14,100	22,180	14,070	5,080	2,950	77,800
1943	2,070	2,310	1,460	1,770	1,280	1,970	4,100	7,700	20,360	17,890	5,830	1,770	64,230
1944	1,310	1,080	1,310	2,490	1,460	1,680	4,380	12,100	18,980	12,030	3,010	1,820	61,650
1945	1,100	1,330	1,190	1,400	1,140	2,800	2,470	6,300	13,450	17,000	9,840	2,550	60,570
1946	1,200	1,620	2,520	2,820	2,600	1,070	3,590	6,650	13,630	8,270	6,180	2,670	52,820
1947	1,800	1,500	1,170	952	770	999	2,340	9,910	28,380	22,140	8,990	2,610	81,340
1948	2,310	1,700	1,880	1,620	1,870	3,020	4,910	10,380	15,540	7,510	3,870	2,820	57,430
1949	1,200	707	1,410	1,810	1,790	1,500	2,850	6,890	26,900	16,980	4,670	2,300	69,020
1950	1,440	1,150	1,690	1,930	2,160	2,770	2,990	6,410	17,650	8,270	2,500	1,760	50,620

* Not previously published; estimated on basis of records for nearby stations.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b From reports of State engineer of Colorado.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of Boulder Creek near Orodell, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1887	(a)	-	-	-	-	-	-	-
1888	(a)	b350	June 19, 1888	-	-	-	-	-
1907	246	*c840	July 1, 1907	-	*131	*94,800	*132	*95,400
1908	246	*c465	June 17, 1908	-	67.6	49,100	67.0	48,700
1909	266	*c875	June 20, 1909	5	123	89,300	d124	d90,000
1910	286	*324	July 28, 1910	-	d51.8	d37,500	49.2	35,600
1911	306	*469	June 13, 14, 1911	2	e66.1	e47,900	e67.2	e48,700
1912	326	*880	July 30, 1912	-	e105	e76,300	f109	f79,500
1913	356	*566	June 2, 1913	-	e70.4	e51,000	e74.3	e53,800
1914	(d)	*764	May 28, 1914	-	f146	f105,000	-	-
1916	(d)	*458	(g)	-	-	-	-	-
1917	(d)	*545	June 25, 1917	-	e88.3	e63,900	d88.6	d64,100
1918	(d)	*812	June 22, 1918	d17	d116	d84,300	d122	d88,600
1919	(d)	*1,300	Aug. 3, 1919	d17	d85.1	d61,600	d76.3	d55,300
1920	(d)	*436	June 10, 29, 1920	d3	d97.8	d70,900	d98.1	d71,100
1921	(d)	2,500	June 6, 1921	d2	d139	d101,000	d139	d101,000
1922	(d)	*554	June 16, 1922	d12	d97.3	d70,400	d96.1	d69,500
1923	(d)	*983	June 15, 1923	d4	d112	d81,200	d129	d93,450
1924	(d)	*926	June 13, 14, 1924	d24	d124	d90,000	d115	d83,800
1925	(d)	*374	June 24, 1925	d7	d71.7	d51,800	d65.3	d47,200
1926	(d)	*929	June 8, 1926	d15	d138	d100,000	d141	d102,000
1927	(d)	*672	June 11, 1927	d10	d93.1	d87,400	d97.1	d70,300
1928	(d)	*767	June 2, 1928	d7	d114	d82,500	d107	d77,900
1929	(d)	*548	June 22, 1929	d10	d98.4	d71,500	d98.1	d71,000
1930	(d)	*490	June 14, 1930	d4	d87.2	d63,100	d86.0	d62,300
1931	(d)	*535	May 28, 1931	d4	d73.1	d52,900	d70.7	d51,200
1932	(d)	*550	June 26, 1932	d4	d74.8	d54,300	d74.0	d53,700
1933	(d)	*480	June 12, 1933	d1	d69.8	d50,500	d74.1	d53,600
1934	761	576	May 31, 1934	2	59.6	43,080	54.4	39,310
1935	786	1,060	June 15, 1935	2	85.9	62,170	92.9	67,270
1936	806	626	June 19, 1936	1.6	109	79,270	108	78,740
1937	826	455	June 25, 1937	5.4	74.9	54,200	73.3	53,090
1938	856	802	June 22, 1938	12	109	78,630	113	81,960
1939	876	425	May 31, 1939	8.6	75.6	54,720	67.9	49,180
1940	896	490	Sept. 21, 1940	3.2	66.6	48,310	68.2	49,500
1941	926	*1,120	June 21, 1941	1.5	77.0	55,720	79.1	57,250
1942	956	793	June 12, 1942	7.4	107	77,800	108	78,220
1943	976	834	June 30, 1943	1.4	98.7	64,230	85.9	62,170
1944	1006	578	June 22, 1944	4.6	84.9	61,650	84.8	61,570
1945	1036	617	June 26, 1945	4.3	83.7	60,570	86.1	62,290
1946	1056	469	June 18, 1946	8.6	72.9	52,820	71.5	51,750
1947	1086	1,290	June 21, 1947	4.6	112	81,340	115	82,960
1948	1116	712	June 7, 1948	4.0	79.1	57,430	75.6	54,860
1949	1146	965	June 6, 1949	4.8	95.3	69,020	96.7	69,980
1950	1176	519	June 16, 1950	5.2	70.2	50,820	-	-

* Revised.

* Not previously published.

a 15th Ann. Rept., Pt. 3.

b Maximum observed.

c Estimated.

d From reports of State engineer of Colorado.

e From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

f. Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

g June 29, July 10, 1916.

230. Fourmile Creek at Orodell, Colo.

Location.--Lat 40°01'10", long. 105°19'30", in SE¹ sec. 27, T. 1 N., R. 71 W., at old Orodell, a quarter of a mile upstream from mouth, and 2 miles west of courthouse in Boulder.

Drainage area.--24.7 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,750 ft (from topographic map).

Extremes.--1947-50: Maximum discharge, 256 cfs June 6, 1949 (gage height, 3.66 ft), from rating curve extended above 110 cfs; no flow Sept. 1-7, 15-18, 1948.

Remarks.--Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	9.66	38.0	64.7	17.5	3.86	4.80	-
1948	3.03	2.39	0.9	1.2	1.1	5.20	14.0	22.3	15.7	3.04	4.47	1.10	5.79
1949	1.65	.78	.82	.91	1.33	1.40	4.44	20.1	62.6	9.95	2.37	4.35	9.11
1950	1.40	1.13	.98	1.40	1.36	1.15	3.01	8.58	15.7	2.75	1.13	.67	3.27

Monthly and yearly runoff, in acre-feet of Fourmile Creek at Orodell, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	575	2,350	3,850	1,080	237	286	-
1948	186	142	55	74	63	320	833	1,370	937	187	28	8.0	4,200
1949	40	46	51	58	74	86	264	1,240	3,720	612	146	259	6,590
1950	86	67	60	86	76	71	173	528	933	168	70	40	2,360

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1086	126	June 22, 1947	-	-	-	-	-
1948	1116	47	Oct. 14, 1947	0	5.79	4,200	5.45	3,960
1949	1146	256	June 6, 1949	.3	9.11	6,590	9.21	6,670
1950	1176	30	July 3, 1950	.3	3.27	2,360	-	-

231. Boulder Creek near Boulder, Colo. 1/

Location.--Lat 40°00'45", long. 105°18'05", in sec. 35, T. 1 N., R. 71 W., half a mile west of Boulder and 1½ miles downstream from Fourmile Creek.

Drainage area.--129 sq mi.

Gage.--Staff gage. Altitude of gage is 5,450 ft (from topographic map). May 8, 1889, to Oct. 31, 1892, water-stage recorder at same site at different datum. May 13, 1895, to Aug. 13, 1908, staff gage at same site at datum 0.5 ft higher.

Extremes.--1889-92, 1895-1901, 1905-8: Maximum discharge observed, 1,600 cfs June 10, 1897 (gage height, 5.00 ft), from rating curve extended above 650 cfs; minimum daily, 1 cfs Dec. 14, 27, 28, 1901, but may have been less during periods of missing records.

Remarks.--There are diversions above station for irrigation of about 300 acres. Water for the municipal supply for the city of Boulder is diverted above station. Numerous lakes in the headwaters cause natural regulation, and a few reservoirs give artificial regulation of the flow.

Cooperation.--Records for 1904-6 not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1889	-	-	-	-	-	-	-	a400	a565	a277	a97	a34	-
1890	a36	-	-	-	-	-	-	a250	a341	a258	a173	a56	-
1891	a33	-	-	-	-	-	-	-	a427	a240	a116	-	-
1892	-	-	-	-	-	-	-	-	a447	a372	a148	a47	-
1893	a43	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	502	355	205	86	-
1896	44	-	-	-	-	-	80	*211	*259	150	*101	73	-
1897	33	-	-	-	-	-	-	323	458	339	213	83	-
1898	47	38	60	-	-	-	-	233	447	213	62	30	-
1899	8	40	-	-	-	-	117	353	663	577	265	87	-
1900	39	24	-	-	-	-	-	624	640	254	94	55	-
1901	33	-	-	-	-	-	75	388	513	319	114	35	-
1902	15	8	5	-	-	-	-	-	-	-	-	-	-
1904	-	-	-	-	-	-	-	-	-	-	a160	a64	-
1905	*36.1	-	-	-	-	a20	a156	a415	a617	a257	a109	*49.5	-
1906	-	-	-	-	-	-	-	a388	a468	a296	a141	a106	-
1907	a85	a91	-	-	-	-	-	322	589	565	186	59.0	-
1908	28.5	-	-	-	-	-	40.2	103	256	161	*132	43.3	-
1909	17.8	17.0	13.4	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

* Not previously published; partially estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

1/ Published as "at Boulder" 1895-98.

Monthly and yearly runoff, in acre-feet of Boulder Creek near Boulder, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1889	-	-	-	-	-	-	-	a24,600	a35,600	a17,000	a5,960	a2,020	-
1890	a2,210	-	-	-	-	-	-	a15,400	a20,500	a15,900	a10,600	a3,330	-
1891	a2,030	-	-	-	-	-	-	-	a25,400	a14,800	a7,130	-	-
1892	-	-	-	-	-	-	-	-	a26,600	a22,900	a9,100	a2,800	-
1893	a2,640	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	29,900	21,600	12,600	5,120	-
1896	2,700	-	-	-	-	-	4,760	*12,900	*15,400	9,220	6,210	4,340	-
1897	2,030	-	-	-	-	-	-	19,900	27,500	20,800	13,100	4,940	-
1898	2,890	2,260	3,690	-	-	-	-	14,300	26,800	13,100	3,810	1,780	-
1899	492	2,380	-	-	-	-	-	6,960	21,700	39,500	35,500	16,300	5,180
1900	2,400	1,430	-	-	-	-	-	38,400	38,100	15,600	5,780	3,270	-
1901	2,030	-	-	-	-	-	4,460	23,900	30,500	19,600	7,010	2,080	-
1902	922	476	307	-	-	-	-	-	-	-	-	-	-
1904	-	-	-	-	-	-	-	-	-	-	a9,040	a3,810	-
1905	*2,220	-	-	-	-	a1,230	a9,280	a25,500	a36,700	a15,800	a6,700	*2,950	-
1906	-	-	-	-	-	-	-	a23,900	a27,700	a18,200	a8,670	a6,310	-
1907	a4,000	a5,410	-	-	-	-	-	19,800	35,000	34,700	11,400	3,510	-
1908	1,750	-	-	-	-	-	2,390	6,330	15,200	9,900	*8,120	2,580	-
1909	1,090	1,010	824	-	-	-	-	-	-	-	-	-	-

* Revised.

† Not previously published; estimated on basis of records for station on nearby streams.

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1889	(a)	b785	May 31, 1889	-	-	-	-	-
1890	(a)	b1,200	Aug. 4, 1890	-	-	-	-	-
1891	(a)	b540	June 8, 1891	-	-	-	-	-
1892	(a)	b646	June 23, 1892	-	-	-	-	-
1895	(c)	*1,090	July 31, 1895	-	-	-	-	-
1896	(c), 1440	*1,320	Aug. 19, 1896	-	-	-	-	-
1897	(d)	*1,600	June 10, 1897	-	-	-	-	-
1898	(e)	*568	(f)	-	-	-	-	-
1899	(g)	*851	July 2, 1899	-	-	-	-	-
1900	(h)	*824	June 1, 1900	-	-	-	-	-
1901	75	*810	June 23, 1901	-	-	-	-	-
1904	(a)	-	-	-	-	-	-	-
1905	(a)	b779	June 9, 1905	-	-	-	-	-
1906	(a)	b802	June 16, 1906	-	-	-	-	-
1907	(a), 246	b840	July 3, 1907	-	-	-	-	-
1908	246	b374	June 17, 1908	-	-	-	-	-

* Not previously published.

a From reports of State engineer of Colorado.

b Maximum daily.

c 18th Ann. Rept., Pt. 4.

d 19th Ann. Rept., Pt. 4.

e 20th Ann. Rept., Pt. 4.

f June 14-16, 18, 19, 1898.

g 21st Ann. Rept., Pt. 4.

h 22d Ann. Rept., Pt. 4.

232. Moffat water tunnel at East Portal, Colo.1/
(transmountain diversion)

Location.--Lat 39°54'10", long. 105°38'50", in sec. 2, T. 2 S., R. 74 W., at East Portal.
Gage.--Water-stage recorder and 15-ft Parshall flume. Altitude of gage is 9,200 ft (from topographic map).

Remarks.--Diversion is from tributaries of Fraser River in the Colorado River basin to South Boulder Creek in the Platte River basin. In 1950 three collection ditches extended, respectively, from Vasquez Creek in sec. 18, T. 2 S., R. 75 W., from Fraser River in sec. 23, T. 2 S., R. 75 W., and from Middle Fork Ranch Creek in sec. 25, T. 1 S., R. 75 W., to the tunnel portal, intercepting all intermediate tributaries. Delivery point on South Boulder Creek is in sec. 2, T. 2 S., R. 74 W. In 1936 when diversion started, only the Fraser River, Vasquez Creek, and a few hundred feet of the Ranch Creek collection ditches were used; in 1950, the Ranch Creek collection ditches had been extended to the point noted above and other extensions were under construction. No diversion prior to beginning of record herewith.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	4,150	13,710	3,110	1,170	†12,140
1937	-	-	-	-	-	-	-	-	2,670	11,240	6,450	1,270	†21,630
1938	-	-	-	-	-	-	-	148	*6,470	22,570	9,790	*3,380	*43,180
1939	1,220	-	-	-	-	-	-	-	8,550	12,570	4,880	2,230	30,860
1940	1,090	401	-	-	-	-	232	-	6,080	12,170	5,320	2,210	1,890 29,390
1941	966	-	-	-	-	-	-	-	8,310	14,530	7,200	3,370	1,910 36,290
1942	1,400	-	-	-	-	-	-	-	-	-	5,380	3,040	1,520 11,320
1943	877	-	-	-	-	-	481	-	5,960	12,770	6,380	3,700	1,720 *52,490
1944	1,210	28	-	-	-	-	-	-	18 4,750	7,030	2,220	1,130	16,390
1945	869	165	-	-	-	-	-	-	3,580	12,680	9,900	6,930	2,580 36,600
1946	1,310	-	-	-	-	-	1,410	-	5,500	13,640	6,000	2,890	1,870 32,620
1947	715	-	-	-	-	-	-	-	6,040	2,570	6,030	5,360	2,880 23,600
1948	2,080	307	-	-	-	-	-	-	5,820	6,750	5,150	2,720	1,430 24,260
1949	1,110	-	-	-	-	-	114	-	5,600	6,150	6,470	3,410	1,810 24,660
1950	1,330	5	-	-	-	-	-	-	4,200	15,870	4,880	1,940	1,340 29,560

* Revised.

† Corrected.

233. South Boulder Creek near Rollinsville, Colo.

Location (revised).--Lat 39°54'50", long 105°30'05", in SE¼ sec. 36, T. 1 S., R. 73 W., at bridge on State Highway 119, a quarter of a mile south of Rollinsville and half a mile downstream from Moon Gulch.

Drainage area.--43.1 sq mi.

Supplemental records available.--September 1910, gage heights and discharge measurements only.

Gage.--Water-stage recorder. Altitude of gage is 8,380 ft (from topographic map).

Prior to June 2, 1916, staff gage at site three quarters of a mile upstream at different datum. June 2, 1916, to May 1, 1918, staff gage at site 4,500 ft upstream at different datum.

Average discharge.--7 years (1910-17), 60.4 cfs.

Extremes.--1945-49: Maximum discharge, 944 cfs June 12, 1949; maximum gage height, 4.90 ft June 28, 1945; minimum discharge observed, 2.8 cfs Feb. 15, 1946 (discharge measurement), but may have been less during period of no gage-height record.

Maximum discharge observed during period 1910-18 (prior to construction of Moffat tunnel), 542 cfs June 2, 1914.

Remarks.--Records for period 1945-49 include inflow from Moffat tunnel, which discharges into South Boulder Creek 9 miles upstream from gage (see elsewhere in this report). No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	*9	*9	*9	8.0	8.1	8.5	16.9	104	152	95.4	40.8	26.9	*40.8
1912	36.1	19.7	8.5	6.5	5.5	6.0	40	128	305	180	49.0	20.9	67.1
1913	17.0	9.4	6.0	*6	*6	*7	*88	177	194	72.0	26.5	38.8	*52.4
1914	38.3	28.3	12	10	10	12	50.2	252	356	155	46.5	18.4	82.8
1915	*16.0	14.5	*10	*6	*6	6.71	41.2	189	316	161	46.5	23.5	*68.2
1916	19.6	14.7	8.4	8.19	8.59	16.5	27.6	105	247	108	53.6	20.3	53.2
1917	19.0	15.8	13.7	*10	*7	*9	*22.0	99.2	287	169	36.2	13.2	*58.6
1918	7.75	12.5	*10	*7	*6	*14.0	29.7	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	160	446	332	196	79.4	-
1946	42.0	16.8	8.5	6.5	3.5	5.9	68.3	160	397	169	93.3	63.3	86.4
1947	33.5	15.9	12	8.5	9.5	14	31.3	318	374	274	142	81.8	110
1948	57.2	23.1	8.4	8.8	8.0	9.2	38.2	265	367	168	76.0	37.2	88.9
1949	28.6	6	8	7	6	7	20	251	553	279	86.0	42.5	108

* Not previously published; estimated on basis of records for stations on nearby streams.

1/ Published in annual water-supply papers for Part 9 as a supplementary record with Fraser River near West Portal for water year 1936, and with Fraser River at Granby for water years 1938-50; for water year 1937, diversion to the tunnel is the sum of diversions published with the records for Fraser River near West Portal and for Vasquez Creek near West Portal.

Monthly and yearly runoff, in acre-feet of South Boulder Creek near Rollinsville, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	*553	*556	*553	492	450	523	1,010	6,400	9,040	5,870	2,510	1,600	*29,500
1912	2,220	1,170	523	400	316	369	2,380	7,870	18,100	11,100	3,010	1,240	48,700
1913	1,050	559	369	*369	*333	*430	*4,050	10,900	11,500	4,430	1,630	2,310	*37,900
1914	2,360	1,680	738	615	555	738	2,990	15,500	21,200	9,410	3,040	1,090	59,900
1915	*984	863	*615	*369	*333	413	2,450	10,400	18,800	9,900	2,860	1,400	*49,400
1916	1,210	875	544	504	494	1,010	1,650	6,460	14,700	6,640	3,300	1,210	38,600
1917	1,170	940	842	*615	*389	*553	*1,310	6,100	17,100	10,400	2,230	786	*42,400
1918	477	744	*615	*430	*333	*861	1,770	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	9,840	26,560	20,410	12,060	4,720	-
1946	2,580	1,000	523	400	194	363	4,060	9,860	23,640	10,410	5,740	3,770	62,540
1947	2,060	1,000	738	523	528	861	1,850	19,530	22,270	16,840	8,720	4,870	79,790
1948	3,510	1,260	578	541	460	566	2,280	16,300	21,830	10,300	4,670	2,220	64,520
1949	1,760	476	492	430	333	430	1,190	15,460	32,910	17,140	5,290	2,530	78,440

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1911	326	a350	June 12, 1911	-	*40.8	*29,500	43.7
1912	326	a450	June 8, 1912	-	67.1	48,700	64.4
1913	356	*a320	May 31, 1913	-	*52.4	*37,900	*56.3
1914	386	a542	June 2, 1914	-	82.8	59,900	*79.6
1915	406	*a484	June 20, 23, 1915	-	*68.2	*49,400	*68.4
1916	436	*a324	June 10, 17, 1916	6	53.2	38,600	53.6
1917	456	a432	June 22, 1917	-	*58.6	*42,400	*57.1
1918	476	-	-	-	-	-	-
1945	1036	703	June 28, 1945	-	-	-	-
1946	1056	696	June 10, 1946	-	86.4	62,540	86.0
1947	1086	640	June 21, 1947	-	110	79,790	112
1948	1116	696	May 22, 1948	-	88.9	64,520	85.2
1949	1146	944	June 12, 1949	-	108	78,440	-

* Revised.

* Not previously published.

a Observed.

234. South Boulder Creek near Eldorado Springs, Colo. 1/

Location.--Lat 39°55'52", long. 105°17'43", in SE $\frac{1}{4}$ sec. 26, T. 1 S., R. 71 W., 0.2 mile downstream from South Draw, 1 mile west of Eldorado Springs, and 5 miles south of Boulder.

Drainage area.--114 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,080 ft (from topographic map).

Prior to Sept. 25, 1929, staff gage or water-stage recorder at sites 1 mile downstream at different datums.

Sept. 25, 1929, to May 2, 1934, water-stage recorder at site a quarter of a mile downstream at different datum.

May 3, 1934, to Sept. 3, 1938, water-stage recorder at site 250 ft upstream at datum 4.00 ft higher than present datum.

Sept. 4, 1938, to May 9, 1940, staff gage at site 300 ft upstream or water-stage recorder at site half a mile downstream at different datums.

Average discharge.--51 years (1895-99, 1900-1901, 1904-50), 77.0 cfs.

Extremes.--1888-92, 1895-1901, 1904-50: Maximum discharge, 7,390 cfs Sept. 2, 1938 (gage height, 9.24 ft, site and datum then in use, from floodmarks), from rating curve extended above 600 cfs on basis of slope-area determination of peak flow; no flow Oct. 15, 1932.

Remarks.--Records for periods 1900-1901, 1904-8, 1910-11, do not contain flow in Community ditch and South Boulder and Coal Creek ditch, all other records contain flow in these ditches. Divisions above station for irrigation of about 500 acres. Most of water imported from Colorado River basin through Moffat water tunnel is diverted $\frac{1}{2}$ miles upstream from station.

Cooperation.--Records for 1888-92, 1904-33, furnished by the State engineer of Colorado; those for 1904-8, 1914-33, not previously published by Geological Survey.

1/ Published as "at" or "near Marshall" prior to Jan. 1, 1911; as "at Eldorado Springs" Jan. 1, 1911, to Dec. 13, 1913.

Monthly and yearly mean discharge, in cubic feet per second of
South Boulder Creek near Eldorado Springs, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1888	-	-	-	-	-	-	a67	a135	b191	b132	b95	b53	-
1889	-	-	-	-	-	-	-	-	b335	b152	b38.6	b21.2	-
1890	b19.8	-	-	-	-	-	-	-	b349	+150	b64.4	+36.0	-
1891	a30	-	-	-	-	-	+81.9	+373	b358	b140	b45	b20	-
1892	-	-	-	-	-	-	-	-	b374	b232	b62	b21	-
1893	b18	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	c552	c231	c107	c38.8	-
1896	c37.5	a10	a9	a8	a8	a10	c73	*c202	*c209	75	42	37	c60.0
1897	b56	a12	a10	a9	a8	a15	a75	c331	c458	235	129	43	c113
1898	39	35	30	a15	a12	a14	a25	c208	c325	c138	42	22	c75.5
1899	20	18	a15	a10	a8	a15	c122	c357	c539	c325	c124	35	c133
1900	-	-	-	-	-	-	-	-	356	92	29	9	-
1901	*7	*6	*5	*5	*6	*8	47	128	229	118	48	20	*52.3
1904	-	-	-	-	-	-	-	-	-	-	-	-	-
1905	b25	b18	b15	b4	b5	b15	b144	b324	b366	b107	b33	b15	b89.3
1906	b9	b4	b5	b5	b6	+15	b94	b291	b314	b158	b47	b50	*83.5
1907	b56	b37	a22	a8	a8	a10	b73	b287	b433	b258	b62	b26	a107
1908	b25	b15	b14	a14	a12	a17	b38	b79	b162	b81	b55	b20	b44.4
1909	b18	b16	a14	12	11	c21.8	c142	c288	c610	c260	c98.2	b152	c137
1910	36	21	13	9.0	8.0	20.9	35.0	104	118	49.5	23.9	11.9	37.7
1911	11.4	9.3	7.1	3.3	3.1	16	29	139	234	120	37	17	52.4
1912	17	13	8.6	3.4	5.9	8.1	40.0	204	339	213	63.0	28.0	78.6
1913	23.0	17.0	*12	*10	*8	+15	58.2	b170	180	72.2	26.8	32.8	*52.3
1914	b36.5	b23.3	+15	+12	+12	b28.6	b177	b588	b409	b162	b83.0	b30.5	+132
1915	b32.4	b19.7	+15	+12	+12	+15	b128	b288	b435	b180	b61.7	b37.5	+103
1916	b33.9	b27.3	b24.0	b17.4	b17.3	b22.8	b48.5	b152	b223	b91.5	b59.7	b23.8	b61.9
1917	b36.4	b22.9	+18	+15	+15	+21.5	b61.0	b207	b354	b150	b48.9	+17.9	*80.8
1918	b15.8	b16.5	+12	+10	+10	b28.3	b63.8	b252	b425	b158	b46.1	b37.9	*89.6
1919	b40.1	b29.2	b14.5	+11	+11	b12.5	b78.6	b222	b146	b78.1	b66.2	b28.3	*61.7
1920	b15.4	b10.7	b10.3	b11.9	b9.8	b19.6	b69.6	b371	b514	b118	b60.5	b27.8	b86.8
1921	b17.5	b12.1	b8.26	*7	*8	b28.3	b108	b379	b626	b166	b47.8	b16.9	+119
1922	b16.5	b3.93	b4.94	*5	*5	+12	b38.7	b148	b209	b65.5	b27.4	b13.1	*45.8
1923	b11.8	b11.8	b10.3	b9.90	b10.2	b18.8	b56.7	b236	b440	b219	b103	b44.0	b97.9
1924	b44.3	b55.7	b34.3	b19.6	b23.7	b23.1	b145	b562	b423	b103	b13.2	b8.77	b104
1925	b18.9	b16.3	b12.5	b8	b12	b15.7	b35.2	b98.8	b121	b52.7	b25.9	b40.2	b38.1
1926	b26.1	b27.3	b17.8	b15.4	b16.5	b25.4	b180	b401	b349	b163	b55.8	b14.7	b108
1927	b15.5	b18.9	b13.5	b13.9	b15.4	b17.2	b47.9	b222	b240	b103	b46.5	b18.2	b64.6
1928	b19.1	b18.4	b16.7	b12.1	b10.8	b15.5	b35.1	b296	b281	b162	b56.2	b16.1	b76.8
1929	b16.1	b13.1	b7.8	b6.8	b7.0	b15.5	b35.2	b111	e256	b113	b85.0	b43.4	e59.2
1930	b26.0	b32.5	b14.6	b8.0	b10.2	b12.5	b97.4	b151	b268	b94.6	b90.8	b33.5	b69.9
1931	b20.2	b15.5	b9.06	b6.0	b7.0	b14.0	b41.8	b166	b255	b80.8	b33.5	b13.5	b53.6
1932	b12.9	b11.5	b5.42	b3.0	b5.82	b10.8	b29.4	b166	b222	b102	b29.5	b9.83	b50.7
1933	b7.39	b6.0	b3.16	b2.0	b2.0	b5.94	b32.9	b312	b410	b115	b30.0	b27.1	b79.6
1934	13.1	6.0	4.0	6.0	9.0	18.0	65.5	211	114	29.0	12.6	8.9	41.6
1935	6.6	8.5	5	5	6.6	7.4	25.2	197	338	145	49.1	18.5	67.9
1936	13.7	13.8	11.8	7.15	8.97	17.4	86.8	308	238	91.1	108	37.0	78.7
1937	40.5	26.8	f10.3	4.37	6.99	11.3	44.9	201	309	87.7	28.0	17.7	65.8
1938	16.6	14.6	12.6	10.3	8.04	9.7	101	346	516	163	37.5	125	113
1939	29.0	21.4	11.6	12.9	8.6	16.1	89.9	225	156	46.8	16.5	6.70	53.6
1940	5.67	6.66	3.54	6.78	6.36	12.8	36.6	140	200	80.3	20.6	26.4	45.5
1941	23.8	11.3	8.45	6.50	7.91	14.4	64.4	327	262	75.0	39.3	19.1	71.9
1942	26.8	17.3	11.3	9.91	9.96	27.6	159	421	426	124	33.5	14.2	107
1943	15.7	14.1	17	20	22.9	21.9	61.9	237	323	97.1	33.7	11.1	72.9
1944	10.3	9.54	9.54	5.96	5.56	9.98	85.2	253	325	120	21.8	8.19	71.9
1945	9.55	8.41	8.11	9.87	12.1	16.9	33.9	165	251	151	138	37.1	70.5
1946	26.6	21.0	12.5	6.5	7.5	11	63.3	118	246	68.7	22.4	13.2	51.7
1947	13.0	18.8	14.8	16.1	12.0	19.2	82.9	338	481	316	88.7	25.0	137
1948	17.5	10.3	9.30	9.70	8.97	10.5	32.2	231	284	78.3	18.7	9.01	60.0
1949	10.1	10.4	13.5	12.6	11.0	12.4	53.6	155	536	203	32.8	16.6	86.9
1950	13.4	8.97	3.41	4.66	8.55	9.65	27.7	112	353	75.2	20.7	12.3	54.0

* Revised.

† Corrected; supersedes figure published by State engineer of Colorado.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b From reports of State engineer of Colorado.

c Includes flow in Community ditch and South Boulder & Coal Creek ditch.

d Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Revised, supersedes figure published by State engineer of Colorado.

f Corrected.

Monthly and yearly runoff, in acre-feet of South Boulder Creek
near Eldorado Springs, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1888	-	-	-	-	-	-	a3,990	b8,300	b11,400	b8,120	b5,840	b3,150	-
1889	-	-	-	-	-	-	-	-	-	b19,900	b9,350	b2,370	b1,260
1890	b1,220	-	-	-	-	-	-	-	b20,800	+9,220	b5,960	+2,140	-
1891	a1,840	-	-	-	-	-	+4,870	+22,900	b21,200	b8,610	b2,770	b1,190	-
1892	-	-	-	-	-	-	-	-	b22,300	b14,300	b3,610	b1,250	-
1893	b1,110	-	-	-	-	-	-	-	-	-	-	-	-
1895	-	-	-	-	-	-	-	-	c32,800	b14,200	c6,580	c2,310	-
1896	c2,310	a595	a553	a492	a460	a615	c4,350	*12,400	*12,400	4,610	2,580	2,200	c43,600
1897	1,410	a714	a615	a553	a444	a922	a4,480	c20,400	c27,300	14,400	7,930	2,560	c81,700
1898	2,400	2,080	1,840	a922	a566	a861	a1,490	c12,700	c19,300	c8,490	2,580	1,310	c54,600
1899	1,230	1,070	a922	a615	a444	a922	c7,260	c22,000	c32,100	c20,000	7,820	2,080	c96,300
1900	-	-	-	-	-	-	-	-	21,200	5,660	1,780	536	-
1901	+430	+357	+307	+307	+333	+492	2,800	+7,870	13,600	7,260	2,950	1,190	+37,900
1904	-	-	-	-	-	-	-	-	-	-	b4,120	b2,260	-
1905	b1,540	b1,070	b922	b246	b167	b922	b8,570	b19,900	b1,800	b6,580	b2,030	b893	b64,600
1906	b553	b238	b307	b307	b333	+922	b5,590	b17,900	b18,700	b9,720	b2,890	b2,980	+60,400
1907	b5,440	b2,200	a1,350	a492	a444	a615	b4,340	b17,600	b25,800	b15,900	b3,810	b1,550	+77,500
1908	b1,540	b893	b861	a861	a590	a1,040	b2,260	b4,860	b9,640	b4,980	b3,380	b1,190	c32,200
1909	b1,110	b952	a861	736	611	c1,340	c8,420	c17,700	c36,300	c16,000	c6,040	c9,035	c99,100
1910	2,210	1,250	799	553	444	1,290	2,080	6,400	7,020	3,040	1,470	708	27,300
1911	701	553	437	202	173	980	1,730	8,560	14,000	7,360	2,280	990	38,000
1912	1,020	768	530	209	339	498	2,380	12,500	20,200	13,100	3,870	1,670	57,100
1913	1,410	1,010	+738	+615	+444	+922	3,460	b10,500	10,700	4,440	1,650	1,950	+37,800
1914	b2,240	b1,390	+922	+738	+668	b1,760	b10,500	b36,200	b24,300	b9,960	b5,100	b1,820	+95,600
1915	b1,990	b1,170	+922	+738	+666	+922	b7,620	b17,700	b25,900	b11,100	b3,790	b2,230	+74,700
1916	b2,080	b1,620	b1,480	b1,070	b995	b1,400	b2,890	b9,350	b13,300	b5,630	b3,670	b1,420	+64,900
1917	b2,240	b1,360	+1,110	+922	+833	+1,320	b3,630	b12,700	b21,100	b8,220	b3,010	+1,070	+58,500
1918	+848	+982	+738	+615	+555	b1,740	b3,800	b15,500	b25,300	b9,720	b2,830	b2,260	+64,900
1919	b2,470	b1,740	b892	+676	+811	b768	b4,680	b13,700	b8,690	b4,680	b4,070	b1,680	+44,700
1920	b947	b637	b633	b732	b564	b1,210	b4,140	b22,800	b18,700	b7,260	b3,720	b1,650	+63,000
1921	b1,080	b720	b508	+430	+444	b1,740	b6,420	b23,300	b37,200	b10,200	b2,940	b1,010	+86,000
1922	b1,010	b234	b304	+307	+278	+738	b2,300	b9,100	b12,400	b4,030	b1,680	b780	+33,200
1923	b726	b702	b633	b609	b566	b1,160	b3,370	b14,500	b26,200	b13,500	b6,330	b2,620	b70,900
1924	b2,720	b3,310	b2,110	b1,210	b1,360	b1,420	b8,630	b22,300	b25,200	b6,330	b812	b522	b75,900
1925	b1,160	b970	b769	b492	b666	b968	b2,090	b6,080	b7,200	b3,240	b1,590	b2,390	b27,600
1926	b1,600	b1,620	b1,090	b947	b918	b1,560	b10,700	b24,700	b20,800	b10,000	b3,430	b875	b78,200
1927	b953	b1,120	b830	b855	b855	b1,060	b2,850	b13,600	b14,300	b6,330	b2,880	b1,080	b46,700
1928	b1,170	b1,080	b1,030	b744	b621	b953	b2,090	b18,200	b18,700	b9,960	b2,230	b958	b55,700
1929	b990	b780	b480	b418	b389	b953	b2,090	b6,820	b15,200	b6,950	b5,230	b2,580	+62,900
1930	b1,600	b1,930	b898	b492	b500	b768	b5,800	b9,280	b15,900	+5,820	b5,580	b1,990	b50,600
1931	b1,240	b922	b557	b369	b389	b861	b2,490	b10,200	b15,200	b3,740	b2,060	b803	b38,800
1932	b793	b684	b333	b184	b323	b664	b1,750	b10,200	b13,200	b6,270	b1,810	b585	b36,800
1933	b454	b357	b194	b123	b111	b365	b1,980	b19,200	b24,400	b7,070	b1,840	b1,610	b57,700
1934	806	357	246	369	500	1,110	3,900	13,000	6,780	1,780	775	530	30,150
1935	409	504	307	307	365	456	1,500	12,130	20,140	8,920	3,020	1,100	49,160
1936	843	821	725	440	516	1,070	5,160	18,930	14,170	5,600	6,640	2,200	57,120
1937	2,490	1,590	631	269	388	694	2,670	12,350	18,370	5,390	1,720	1,050	47,610
1938	1,020	867	778	630	447	597	5,980	21,300	30,720	10,010	2,310	7,450	82,110
1939	1,780	1,280	716	793	478	968	5,350	13,860	9,270	2,880	1,010	398	38,800
1940	349	397	217	417	367	790	2,180	8,620	11,900	4,930	1,270	1,570	33,010
1941	1,460	672	519	400	439	886	3,830	20,080	15,590	4,610	2,410	1,140	52,040
1942	1,650	1,030	695	809	553	1,700	9,440	25,890	25,370	7,620	2,060	847	77,460
1943	967	839	1,050	1,230	1,220	1,350	3,680	14,560	19,200	5,970	2,070	658	52,800
1944	636	568	586	366	320	614	5,070	15,570	19,320	7,350	1,340	488	52,230
1945	588	501	490	607	671	1,040	2,020	10,150	14,910	9,300	8,510	2,210	51,000
1946	1,630	1,250	770	523	417	676	3,770	7,240	14,780	4,220	1,580	787	37,440
1947	797	1,120	899	623	668	1,180	3,740	20,800	28,610	19,440	5,460	1,490	84,830
1949	1,070	615	572	597	516	643	1,920	14,190	16,910	4,810	1,150	556	43,540
1949	620	621	629	778	613	764	1,800	9,520	31,910	12,460	2,020	966	62,920
1950	824	534	210	287	475	594	1,650	6,900	22,020	4,620	1,280	733	39,120

* Revised.

† Corrected; supersedes figure published by State engineer of Colorado.

‡ Not previously published; estimated on basis of records for stations on nearby streams.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

c Includes flow in Community ditch and South Boulder & Coal Creek ditch.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Revised, supersedes figure published by State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Boulder Creek near Eldorado Springs, Colo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1888	(a)	*b245	June 19, 1888	-	-	-	-	-
1889	(a)	*o730	May 31, 1889	-	-	-	-	-
1890	(a)	*o705	May 28, 1890	-	-	-	-	-
1891	(a)	*o650	May 25, 1891	-	-	-	-	-
1892	(a)	*o730	June 24, 1892	-	-	-	-	-
1895	(d)	*b1,130	June 3, 1895	-	-	-	-	-
1896	(e)	*b582	May 29,30, 1896	-	f60.0	f43,600	f59.0	f42,800
1897	(g)	*b820	June 11, 1897	-	f113	f81,700	f118	f85,300
1898	(h)	*o475	June 17, 1898	-	f75.5	f54,800	f71.2	f51,500
1899	(i)	*o700	June 20,21, 1899	-	f133	f96,300	-	-
1900	(j)	*c1,100	May 9, 1900	-	-	-	-	-
1901	75	*o360	June 24, 1901	-	*52.3	*37,900	-	-
1904	(a)	-	-	-	-	-	-	-
1905	(a)	*o740	June 5, 1905	-	a89.3	a64,600	a85.9	a62,200
1906	(a)	*o655	June 14,16, 1906	a2	*83.5	*60,400	*91.6	*66,300
1907	(a)	*o685	June 15, 1907	-	kl07	kl77,500	kl02	kl73,800
1908	(a)	*o315	June 15, 1908	a10	m44.4	m32,200	m43.8	m31,800
1909	(a), 266	*c1,340	June 20, 1909	-	f137	f99,100	139	100,000
1910	286	*o245	June 3, 1910	3	37.7	27,300	34.1	24,700
1911	306	*o440	June 9, 1911	1	52.4	38,000	53.2	38,500
1912	326	*o645	June 25, 1912	.5	78.6	57,100	*79.9	*57,900
1913	(a), 356	*o350	May 29,30, 1913	-	*52.3	*37,800	*54.2	*39,200
1914	(a)	*c1,240	May 24, 1914	-	*132	*95,600	*131	*95,100
1915	(a)	*o685	June 12, 1915	-	*103	*74,700	*105	*75,800
1916	(a)	*o350	June 11, 1916	a9	a61.9	a44,900	a61.2	a44,400
1917	(a)	*b563	June 18, 1917	-	*80.8	*58,500	*77.9	*56,400
1918	(a)	*o915	June 22, 1918	a3	*89.6	*64,900	*93.1	*67,400
1919	(a)	*o560	Aug. 7, 1919	-	*61.7	*44,700	*57.7	*41,800
1920	(a)	*b531	May 26, 1920	a3	a86.8	a63,000	a86.9	a63,100
1921	(a)	*1,440	June 6, 1921	a4	*119	*86,000	*118	*85,200
1922	(a)	*3397	June 13, 1922	a1	*445.8	*33,200	*446.5	*33,700
1923	(a)	*646	June 9, 1923	a5	a97.9	a70,900	a106	a77,000
1924	(a)	*625	June 14, 1924	a7	a104	a75,900	a97.4	a70,700
1925	(a)	*186	June 22, 1925	-	a38.1	a27,600	a40.1	a29,000
1926	(a)	n561	May 24, 1926	a9	a108	a78,200	a106	a76,800
1927	(a)	*343	May 22, 1927	a6	a64.6	a46,700	a65.1	a47,100
1928	(a)	*490	May 27, 1928	a4	a76.8	a55,700	a75.4	a54,700
1929	(a)	*310	June 6, 1929	-	n59.2	n42,900	n62.2	n45,100
1930	(a)	*536	June 19, 1930	-	a69.9	a50,600	a67.5	a48,800
1931	(a)	*427	June 8, 1931	-	a53.6	a38,800	a52.4	a37,900
1932	(a)	*356	May 23, 1932	-	a50.7	a36,800	a49.6	a36,000
1933	(a)	*666	May 19, 1933	a0	a79.6	a57,700	a80.2	a58,100
1934	761	275	May 15, 1934	-	41.6	30,150	41.3	29,960
1935	786	477	June 11, 1935	-	67.9	49,160	69.5	50,330
1936	806	420	May 16, 1936	4.8	78.7	57,120	81.9	59,440
1937	826	780	June 26, 1937	2	65.8	47,610	63.0	45,570
1938	856	7,390	Sept. 2, 1938	-	113	82,110	115	83,220
1939	876	540	June 1, 1939	4	53.6	38,800	49.7	35,990
1940	896	688	July 28, 1940	1.2	45.5	33,010	47.8	34,700
1941	926	672	May 12, 1941	2.9	71.9	52,040	72.9	52,760
1942	956	913	May 13, 1942	2.0	107	77,480	106	76,940
1943	976	538	May 30, 1943	-	72.9	52,800	71.5	51,730
1944	1006	528	June 2, 1944	4.8	71.9	52,230	71.7	52,020
1945	1036	558	June 25, 1945	5.2	70.5	51,000	73.3	53,070
1946	1058	568	June 15, 1946	-	51.7	37,440	50.6	36,610
1947	1086	1,290	June 21, 1947	8.2	117	84,830	116	84,270
1948	1116	639	May 23, 1948	4.0	60.0	43,540	59.7	43,350
1949	1146	1,430	June 6, 1949	5.4	86.9	62,920	86.2	62,420
1950	1176	737	June 13, 1950	2.5	54.0	39,130	-	-

* Not previously published.

a From reports of State engineer of Colorado.

b Observed.

c Estimated.

d 18th Ann. Rept., Pt. 4.

e 18th Ann. Rept., Pt. 4, WSP 1440.

f Includes flow in Community ditch and South Boulder & Coal Creek ditch.

g 19th Ann. Rept., Pt. 4.

h 20th Ann. Rept., Pt. 4.

i 21st Ann. Rept., Pt. 4.

j 22d Ann. Rept., Pt. 4.

k From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

m Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

n Revised, supersedes figure published by State engineer of Colorado.

235. Boulder Creek at mouth, near Longmont, Colo.1/

Location.--Lat 40°08'20", long. 105°01'10", in NE¼ sec. 17, T. 2 N., R. 68 W., 200 ft downstream from bridge on State Highway 254, 1½ miles upstream from mouth, and 5 miles southeast of city hall in Longmont.

Drainage area.--512 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,875 ft (from topographic map). Prior to June 10, 1939, at site 1,000 ft downstream at datum 2.00 ft lower.

Average discharge.--22 years (1927-49), 59.1 cfs.

Extremes.--1927-49: Maximum discharge, 4,410 cfs Sept. 3, 1938 (gage height, 6.94 ft, site and datum then in use), from rating curve extended above 340 cfs on basis of slope-area determination of peak flow; no flow at times during 1934-36, 1942, 1946.

Remarks.--Diversions above station for irrigation of about 90,000 acres.

Cooperation.--Records for 1927-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	-	a87.5	a92.1	a76.7	a29.0	a85.0	a5.13	-
1928	a33.2	a32.8	a49.9	a49.9	a41.9	a66.3	a45.5	a363	a248	a94.4	a23.4	a3.10	a88.0
1929	a9.0	a19.2	a54.7	a86.8	a90	a75	a54.1	a40.9	a24.9	a29.9	a33.7	a31.6	a45.6
1930	a20.6	a38.7	a72.4	a83.9	a102	a37.8	a45.4	a10.7	a21.5	a17.0	a94.7	a11.9	a46.1
1931	a19.4	a21.9	a42.6	a35.3	a20.7	a34.7	a47.1	a139	a70.1	a3.64	a3.97	a2.97	a36.9
1932	a3.06	a2.80	a5.22	a12.3	a12.9	a6.26	a18.9	a6.74	a15.3	a9.19	a3.39	a2.27	a8.23
1933	a2.84	a2.17	a1.71	a9.06	a11.4	a4.74	a25.7	*250	*90.3	a5.97	a1.71	a13.6	*35.2
1934	2.9	2.5	8.8	23.1	36.0	27.5	56.9	83.9	4.6	2.2	2.3	1.4	20.9
1935	1.1	2.5	1.5	2.9	2.8	2.6	2.3	119	203	4.4	2.2	8.5	29.3
1936	12.0	27.5	42.6	35.9	30	26.5	66.5	65.0	125	5.14	23.3	4.73	38.5
1937	37.9	28.9	65.8	55	60	47.3	66.4	29.3	133	40.0	4.40	3.66	47.4
1938	4.47	4.85	15.9	16.8	33.5	10.6	107	453	239	89.9	5.43	440	118
1939	79.5	84.4	95.8	66.0	72.0	90.0	168	72.1	13.7	2.72	1.50	1.28	61.9
1940	1.27	2.53	1.16	3.26	6.40	6.69	9.87	5.11	6.78	3.82	1.48	5.33	4.45
1941	12.2	4.40	4.70	11.3	18.0	21.6	89.5	84.9	225	6.47	6.42	2.75	40.3
1942	48.1	21.5	27.2	60	37	70.5	581	1,101	474	43.3	1.42	2.89	206
1943	39.0	33.0	32.9	46	42.9	35.0	80.9	202	62.0	21.0	1.76	3.11	50.1
1944	1.83	18.0	21.0	24.9	28	27.4	236	460	39.0	7.54	2.90	2.47	72.6
1945	1.83	16.8	19.0	26.1	21.2	18.6	54.9	116	152	17.2	33.1	5.29	40.2
1946	39.3	42.2	73.9	67.5	65.7	22.6	9.54	5.08	8.52	5.77	2.14	3.69	28.7
1947	6.45	44.5	39.7	24.5	18.5	22.7	16.4	244	976	219	9.70	5.48	135
1948	34.9	42.2	58.7	73.0	115	120	130	119	53.5	6.84	2.90	2.20	63.1
1949	2.39	8.53	20.2	65	53	22.4	36.3	63.8	671	68.0	3.48	1.5	83.9

* Revised; superseded figure published by State engineer of Colorado.
a From reports of State engineer of Colorado.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	-	a5,210	a5,660	a4,560	a1,780	a5,230	a305	-
1928	a2,040	a1,950	a3,070	a3,070	a2,410	a4,080	a2,712	a2,300	a1,800	a5,800	a1,440	a184	a63,900
1929	a553	a1,140	a3,360	a5,340	a5,000	a4,810	a5,220	a2,510	a1,480	a1,840	a2,070	a1,880	a33,000
1930	a1,270	a2,300	a4,450	a5,160	a5,660	a2,320	a2,700	a658	a1,260	a1,040	a5,820	a708	a33,400
1931	a1,190	a1,300	a2,620	a2,170	a1,150	a2,130	a2,800	a8,550	a4,170	a224	a244	a177	a26,700
1932	a188	a167	a382	a756	a742	a385	a1,120	a414	a910	a565	a208	a135	a5,970
1933	a175	a129	a105	a557	a633	a291	a1,530	*15,400	*5,370	a367	a105	a809	*25,500
1934	178	149	541	1,420	2,000	1,690	3,390	5,160	274	135	141	83	15,160
1935	69	149	91	180	153	159	135	7,300	12,100	268	133	504	21,240
1936	740	1,640	2,620	2,210	1,730	1,630	3,960	4,000	7,420	316	1,430	281	27,980
1937	2,330	1,720	4,050	3,380	3,330	2,910	3,950	1,800	7,910	2,460	270	218	34,330
1938	275	289	921	1,040	1,860	651	6,360	27,880	14,230	5,530	211	26,180	85,430
1939	4,890	5,020	5,770	4,060	4,000	5,530	9,990	4,440	815	167	92	76	44,850
1940	78	150	71	201	368	411	587	314	403	235	91	317	3,230
1941	749	262	289	696	1,000	1,330	5,330	5,220	13,380	398	395	163	29,210
1942	2,960	1,280	1,870	3,690	2,050	4,330	34,590	67,700	28,230	2,660	87	172	149,400
1943	2,300	1,960	2,020	2,330	2,380	2,150	4,810	12,420	3,690	1,290	108	185	36,240
1944	112	1,070	1,290	1,530	1,610	1,690	14,040	28,290	2,320	464	178	147	52,740
1945	112	1,000	1,170	1,610	1,180	1,150	3,260	7,160	9,060	1,060	2,030	315	29,110
1946	2,410	2,510	4,540	4,150	3,650	1,390	568	312	507	355	131	231	20,750
1947	396	2,650	2,440	1,510	1,030	1,400	978	15,000	58,100	15,460	597	326	97,890
1948	2,150	2,510	3,610	4,490	6,630	7,390	7,760	7,340	3,180	420	179	151	45,790
1949	147	508	1,240	4,000	2,940	1,360	2,160	3,920	39,940	4,180	214	89	60,720

* Revised; superseded figure published by State engineer of Colorado.
a From reports of State engineer of Colorado.

1/ Published as Boulder Creek near mouth, near Longmont, 1934.

Yearly discharge, in cubic feet per second of Boulder Creek at mouth, near Longmont, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1927	(a)	#407	July 29, 1927	-	-	-	-	-
1928	(a)	#694	June 4, 1928	a1	a88.0	a83,900	a85.2	a81,800
1929	(a)	#530	July 23, 1929	a1	a45.6	a33,000	a49.7	a36,000
1930	(a)	#353	Aug. 18, 1930	a2	a46.1	a33,400	a42.1	a30,500
1931	(a)	#369	May 29, 1931	a1	a36.9	a26,700	a30.9	a22,400
1932	(a)	#128	July 13, 1932	a1	a8.23	a5,970	a7.77	a5,640
1933	(a)	#670	May 4, 1933	a1	b35.2	b25,500	b35.8	b25,900
1934	761	398	May 10, 1934	1	20.9	15,160	20.2	14,600
1935	786	*1,110	May 28, 1935	0	29.3	21,240	35.8	25,930
1936	806	366	June 17, 1936	0	38.5	27,980	42.8	31,080
1937	828	680	June 26, 1937	1.5	47.4	34,330	38.3	27,710
1938	856	4,410	Sept. 3, 1938	1.3	118	85,430	138	99,620
1939	876	390	Apr. 24, 1939	.4	61.9	44,850	40.7	29,470
1940	896	*174	July 3, 1940	.2	4.45	3,230	5.82	4,230
1941	926	738	June 22, 1941	.3	40.3	29,210	46.7	33,820
1942	956	1,790	Apr. 24, 1942	0	206	149,400	207	149,900
1943	976	553	May 19, 1943	.4	50.1	36,240	44.7	32,340
1944	1006	970	Apr. 14, 1944	1.0	72.6	52,740	72.4	52,550
1945	1036	702	May 30, 1945	.6	40.2	29,110	50.1	36,280
1946	1056	178	July 19, 1946	0	28.7	20,750	23.2	16,780
1947	1086	2,040	June 23, 1947	.6	135	97,890	139	100,700
1948	1116	721	Oct. 15, 1947	.8	63.1	45,790	54.3	39,420
1949	1146	2,020	June 7, 1949	.6	83.9	60,720	-	-

* Revised.

† Not previously published.

a From reports of State engineer of Colorado.

b Revised; supersedes figure published by State engineer of Colorado.

236. St. Vrain Creek at mouth, near Platteville, Colo.

Location.--Lat 40°15'28", long. 104°52'46", in NW¼ sec. 3, T. 3 N., R. 67 W., 40 ft upstream from highway bridge, 1.3 miles (revised) upstream from mouth, and 4 miles northwest of Platteville.

Drainage area.--1,000 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,740 ft (from topographic map). July 1, 1904, to Dec. 31, 1906 and Apr. 1 to Dec. 31, 1915, staff gages at bridge 40 ft downstream at different datums. Feb. 24, 1927, to June 10, 1939, water-stage recorder at bridge 40 ft downstream at present datum.

Average discharge.--25 years (1904-6, 1927-50), 188 cfs.

Extremes.--1905-6, 1915, 1927-50: Maximum discharge, 11,300 cfs Sept. 3, 1938 (gage height, 8.93 ft), from rating curve extended above 4,700 cfs; minimum daily, 12 cfs Apr. 23, 1935.

Remarks.--Diversion above station for irrigation of about 177,000 acres. Flow partly regulated by small reservoirs above station.

Cooperation.--Records prior to 1934, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	a137	a64	a60	-
1905	a78	a59	a64	a94	a120	a84	a637	a1540	a1170	a147	a122	a80	a350
1906	a65	a78	a67	a78	a72	a87	a362	a729	a200	a200	a98	a132	a181
1907	a180	a224	b120	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	b512	b904	b926	b311	b117	b133	-
1916	b274	b128	b113	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a104	a219	a204	a248	a207	a269	a156	-
1928	a149	a117	a114	a127	a88.3	a118	a101	a1150	a646	a271	a159	a101	a263
1929	a91.3	a104	a85	a95	a100	a140	a116	a112	a115	a215	a367	a207	a146
1930	a134	a135	a140	a90	a100	a98.4	a99.9	a108	a112	a135	a293	a120	a131
1931	a118	a86.2	a85	a92	a71	a81.9	a93.6	a195	a212	a108	a69.7	a60.2	a106
1932	a42.1	a43.6	a45	a50	a54	a49	a35.8	a49.1	a93.2	a93.0	a54.2	a52.6	a55.1
1933	a44.5	a54.0	a40.0	a38	a55	a44.0	a77.0	a793	a298	a101	a62.7	a109	a144
1934	67.7	55.5	62.4	67.4	96.0	73.8	108	*175	*99.7	50.4	51.1	22.7	*77.4
1935	25.5	31.2	27.9	24.4	30.2	28.3	25.1	462	718	108	66.0	102	137

* Revised.

† Corrected.

a From reports of State engineer of Colorado.

b From files of State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second of St. Vrain Creek at mouth, near Platteville, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	86.9	88.2	80.8	80	80	74.5	113	136	490	123	194	95.2	136
1937	140	110	131	95	97	104	121	105	504	214	103	105	152
1938	71.5	65.6	66.5	72.0	86.1	66.4	228	815	515	279	121	1,062	287
1939	199	180	170	192	175	214	286	156	157	121	107	61.6	167
1940	46.9	56.6	44.8	41.9	66.0	65.0	57.2	65.0	78.1	140	41.0	69.0	64.1
1941	82.0	55.1	48.1	47.1	60.4	55.7	157	230	447	108	112	71.9	123
1942	132	80.9	92.6	115	134	182	1,100	2,108	1,264	257	134	83.6	475
1943	182	132	106	114	116	126	162	725	421	238	136	87.9	213
1944	62.5	74.9	70.0	56.9	71.5	87.0	572	1,418	454	210	112	55.0	269
1945	59.6	63.1	52.2	43.7	64.6	67.1	130	247	491	149	224	76.3	139
1946	113	105	111	115	114	68.5	43.5	81.2	118	181	110	92.1	104
1947	84.6	140	140	73.7	48.9	110	97.8	719	2,494	724	185	98.6	409
1948	156	124	122	129	195	222	241	244	263	138	93.0	76.5	165
1949	64.3	67.3	60.1	74.1	117	79.2	86.8	218	2,619	310	125	81.8	323
1950	74.0	59.7	63.3	64.6	84.6	64.2	57.1	108	143	120	98.8	76.1	84.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	a8,420	a3,940	a3,570	-
1905	a4,800	a3,510	a3,940	a5,780	a6,660	a5,160	a37,900	a94,700	a69,600	a9,040	a7,500	a4,760	a253,000
1906	a4,000	a4,640	a4,120	a4,800	a4,000	a5,350	a21,500	a44,800	a11,900	a12,300	a6,030	a7,850	a131,000
1907	a11,100	a13,300	b7,380	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	b30,500	b55,600	b55,100	b19,100	b7,190	b7,910	-
1916	b16,800	b7,620	b6,950	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a6,400	a13,000	a12,500	a14,800	a12,700	a16,500	a9,280	-
1928	a9,160	a6,960	a7,010	a7,810	a5,080	a7,260	a8,010	a7,700	a8,400	a15,700	a9,780	a8,010	a191,000
1929	a5,610	a6,190	a5,230	a5,840	a5,550	a8,610	a6,900	a8,890	a6,840	a13,200	a22,500	a12,300	a106,000
1930	a8,240	a8,030	a8,610	a5,530	a5,550	a6,050	a5,940	a6,640	a6,660	a8,300	a18,000	a7,140	a94,700
1931	a7,260	a5,130	a5,220	a5,660	a3,940	a5,040	a5,580	a12,000	a12,600	a6,640	a4,290	a3,580	a76,900
1932	a2,590	a2,590	a2,770	a3,070	a3,110	a3,010	a2,130	a3,020	a5,550	a5,720	a3,330	a3,130	a40,000
1933	a2,740	a3,210	a2,460	a2,340	a3,050	a2,710	a4,580	a4,800	a17,700	a6,210	a3,860	a6,490	a104,000
1934	a4,160	3,300	3,840	4,140	5,330	4,540	6,430	10,730	*5,950	3,100	3,140	1,350	*55,820
1935	1,570	1,860	1,720	1,500	1,680	1,740	1,490	28,390	42,750	6,670	4,060	6,060	99,490
1936	5,340	5,250	4,970	4,920	4,600	4,580	6,750	8,380	29,160	7,570	11,910	5,660	99,090
1937	6,620	6,570	8,070	5,640	6,390	6,390	7,180	6,440	29,980	13,160	6,300	6,220	110,200
1938	4,400	3,780	4,090	4,430	4,780	4,080	13,540	50,120	30,670	17,150	7,430	63,200	207,700
1939	12,250	9,520	10,480	11,830	9,720	13,190	17,020	9,570	9,330	7,430	6,560	3,670	120,600
1940	2,880	3,370	2,760	2,580	3,790	4,000	3,400	3,870	4,650	8,580	2,520	4,110	46,510
1941	5,040	3,280	2,960	2,890	3,350	3,430	9,340	14,130	26,570	6,660	6,860	4,260	88,790
1942	6,130	4,820	5,690	7,090	7,470	11,220	65,470	129,600	75,200	15,820	8,270	4,970	343,800
1943	11,170	7,870	6,500	7,000	6,460	7,760	9,630	44,600	25,070	14,650	8,380	5,230	154,300
1944	3,840	4,450	4,300	3,500	4,110	5,350	34,040	87,170	25,800	12,920	6,770	3,270	195,600
1945	3,670	3,760	3,210	2,690	3,600	4,120	7,750	15,210	29,200	9,160	13,770	4,540	100,700
1946	6,930	6,220	6,820	7,060	6,350	4,210	2,590	4,990	7,020	11,100	6,770	5,480	75,540
1947	5,200	8,310	8,630	4,530	2,720	6,740	5,820	44,120	148,400	44,530	11,350	5,870	296,200
1948	9,620	7,410	7,490	7,920	11,240	13,680	12,750	15,000	15,630	8,500	5,720	4,550	119,500
1949	3,360	4,000	3,690	4,550	6,470	4,870	5,160	13,410	155,900	19,050	7,670	4,870	235,600
1950	4,550	3,550	3,890	3,970	4,700	3,950	3,400	6,650	8,530	7,370	6,070	4,530	61,160

* Revised.

† Corrected.

a From reports of State engineer of Colorado.

b From files of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1904	(a)	-	-	-	-	-	-
1905	(a)	b2,680	June 11, 1905	-	a350	a253,000	a350
1906	(a)	b1,620	May 6, 1906	-	a181	a131,000	a208
1915	(c)	-	-	-	-	-	-
1927	(a)	*1,470	July 29, 1927	-	-	-	-
1928	(a)	*1,970	May 28, 1928	a55	a263	a191,000	a255
1929	(a)	*1,200	Aug. 4, 1929	a60	a146	a106,000	a157
1930	(a)	a1,510	Aug. 15, 1930	a62	†a131	†a94,700	a121
1931	(a)	*662	June 6, 1931	a38	a106	a76,900	a92.8
1932	(a)	*320	July 13, 1932	-	a55.1	a40,000	a55.8
1933	(a)	*1,870	May 20, 1933	-	a144	a104,000	148
1934	761, 1440	*2,380	June 14, 1934	17	*77.4	*55,820	*68.9
1935	786	†2,360	May 28, 1935	12	137	99,490	152

* Revised.

† Corrected.

* Not previously published.

a From reports of State engineer of Colorado.

b Maximum observed.

c From files of State engineer of Colorado.

Yearly discharge, in cubic feet per second of St. Vrain Creek at mouth, near Platteville, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1936	806	1,420	June 11, 1936	-	136	99,090	147
1937	826	1,990	June 27, 1937	46	152	110,200	137
1938	856	11,300	Sept. 3, 1938	54	287	207,700	314
1939	876	595	May 2, 1939	34	167	120,800	134
1940	896	1,420	July 3, 1940	25	84.1	46,510	67.2
1941	926	1,740	June 23, 1941	29	123	88,790	133
1942	956	4,940	May 3, 1942	58	475	343,800	484
1943	976	1,620	May 19, 1943	48	213	154,300	195
1944	1006	2,390	May 13, 1944	37	269	195,600	268
1945	1036	1,230	June 26, 1945	26	139	100,700	152
1946	1056	1,820	July 18, 1946	30	104	75,540	107
1947	1086	5,920	June 23, 1947	44	409	296,200	412
1948	1116	874	Oct. 15, 1947	55	165	119,500	147
1949	1146	6,150	June 7, 1949	51	323	235,600	323
1950	1176	715	May 26, 1950	14	84.5	61,160	-

237. Eureka ditch near Flattop Mountain, Colo.

(Transmountain diversion)

Location.--Lat 40°20'00", long. 105°43'40", in sec. 6, T. 4 N., R. 74 W., near Flattop Mountain.

Gage.--Water-stage recorder and 4-ft Cipolletti weir. Altitude of gage is 11,850 ft (from topographic map).

Remarks.--Diversion is from Tonahutu Creek in sec. 7, T. 4 N., R. 74 W., in Colorado River basin, to Glacier Creek (tributary to Big Thompson River) in sec. 16, T. 4 N., R. 74 W., in Platte River basin. All records available are published herewith.

Cooperation.--Records furnished by State engineer of Colorado; those prior to 1948 not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	a0	a0	a0	a0	a0	a0	a0	a0	a1.3	a34	a1.1	a0	b36
1941	a0	a0	a0	a0	a0	a0	a0	a0	a42	a34	a0	a0	b76
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1943	a0	a0	a0	a0	a0	a0	a0	a0	a49	a50	a28	a6	b133
1944	a0	a0	a0	a0	a0	a0	a0	a0	a29	a55	a.9	a0	*85
1945	a0	a0	a0	a0	a0	a0	a0	a0	a40	a92	a50	a4.4	a186
1946	a0	a0	a0	a0	a0	a0	a0	a0	a86	a31	a28	a7	a152
1947	a0	a0	a0	a0	a0	a0	a0	a0	a11	a106	a58	a0	a175
1948	0	0	0	0	0	0	0	0	64	27	9	2	102
1949	0	0	0	0	0	0	0	0	38	35	15	†2.8	.91
1950	0	0	0	0	0	0	0	0	38	31	8	0	77

* Revised; differs from figure published in report of State engineer.

† Corrected.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

238. Glacier Creek near Estes Park, Colo.

Location.--Lat 40°20'50", long. 105°34'50", in sec. 4, T. 4 N., R. 73 W., 30 ft downstream from trail bridge, half a mile downstream from Mill Creek, three-quarters of a mile upstream from mouth, and 4 miles southwest of Estes Park.

Drainage area.--25.2 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,980 ft (from topographic map).

Average discharge.--9 years (1941-50), 28.8 cfs.

Extremes.--1941-50: Maximum discharge, 338 cfs June 17, 1949 (gage height, 3.42 ft); minimum daily, 1.5 cfs Mar. 2-6, 1948, but may have been less during periods of no gage-height record.

Remarks.--City of Estes Park pipe line diverts water above station.

Cooperation.--Records for 1941-46, not previously published, furnished by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second of Glacier Creek near Estes Park, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	a13.0	a9.92	#5.0	#3.0	#3.0	#2.5	#17	#66.5	a143	a93.4	a35.4	a15.4	#34.1
1943	a9.58	#5.55	#4.0	#3.0	#3.0	#3.80	a23.6	a61.1	a126	a80.9	a41.8	a14.4	#31.5
1944	a9.58	#5.56	#5.5	#2.0	#1.5	#2.0	#8.3	a60.4	a103	a64.2	a25.6	a9.06	#24.4
1945	a7.25	a4.51	#2.22	#1.5	#2.0	#3.5	#7.2	#57.0	a102	a101	a57.6	a17.4	#30.7
1946	a10.2	#6.87	#3.5	#3.0	#3.0	#5.5	#20.1	a30.9	a24.2	a30.3	a32.5	a18.4	#15.8
1947	11.5	5.79	#3.0	#2.5	#3.0	#4.5	#10	83.5	138	112	56.7	23.1	#58.1
1948	16.4	8.08	4.96	4.15	3.18	3.21	13.9	65.6	94.8	53.9	24.1	9.06	25.2
1949	7.39	5.96	4.31	2.71	2.01	2.74	13.0	60.1	167	105	33.0	14.4	34.9
1950	11.1	6.21	4.19	3.04	3.04	2.78	7.85	40.3	109	64.9	24.4	21.1	24.9

* Not previously published; estimated on basis of records for stations on nearby streams.
a From files of Bureau of Reclamation.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	a799	a590	#307	#184	#167	#154	#1,040	#4,090	a8,540	a5,740	a2,180	a916	#24,710
1943	a589	#330	#246	#184	#167	#234	a1,410	a3,760	a7,480	a4,970	a2,570	a856	#22,800
1944	a589	#351	#215	#125	#86	#123	#496	a3,720	a6,130	a3,950	a1,450	a539	#17,750
1945	a446	a268	#136	#92	#111	#215	#425	#3,500	a6,050	a6,190	a3,540	a1,040	#22,010
1946	a629	#409	#215	#184	#167	#338	#1,190	a1,900	a1,440	a1,860	a2,000	a1,090	#11,420
1947	707	344	#184	#154	#167	#278	#621	5,130	8,240	6,900	3,490	1,370	#27,580
1948	1,010	481	305	255	183	198	825	4,030	5,640	3,320	1,480	539	18,270
1949	455	355	265	167	112	168	774	3,700	9,960	6,460	2,030	854	25,300
1950	684	370	258	187	169	171	467	2,480	6,510	3,990	1,500	1,260	18,050

* Not previously published; estimated on basis of records for stations on nearby streams.
a From files of Bureau of Reclamation.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Maximum Date						
1942	(a)	#b215	June 12, 1942	-	#34.1	#24,710	#33.4	#24,180	
1943	(a)	#a252	June 2, 1943	-	#31.5	#22,800	#31.4	#22,770	
1944	(a)	#a167	June 10, 1944	-	#24.4	#17,750	#24.1	#17,470	
1945	(a)	#a243	June 24, 1945	-	#30.7	#22,010	#31.0	#22,420	
1946	(a)	#a163	June 18, 1946	-	#15.8	#11,420	#15.8	#11,400	
1947	1086	276	June 21, 1947	-	#38.1	#27,580	#38.9	#28,150	
1948	1118	174	June 3, 1948	1.5	25.2	18,270	24.2	17,540	
1949	1146	358	June 17, 1949	1.7	34.9	25,300	35.3	25,540	
1950	1176	200	June 14, 1950	2.1	24.9	18,050	-	-	

* Not previously published.
a From files of Bureau of Reclamation.
b Estimated.

239. Fall River at Estes Park, Colo.

Location.--Lat 40°22'40", long. 105°31'40", in sec. 25, T. 5 N., R. 73 W., 150 ft upstream from Main Street Bridge (U. S. Highway 34) in Estes Park and half a mile upstream from mouth.

Drainage area.--40.8 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,550 ft (from topographic map).

Extremes.--1945-50: Maximum discharge, 424 cfs June 18, 1949 (gage height, 2.73 ft); minimum daily, 0.9 cfs Mar. 3, 1948, but may have been less during periods of no gage-height record.

Remarks.--Small power development above station. Flow partly regulated by Lawn Lake Reservoir (capacity, 817 acre-ft).

Cooperation.--Records for 1946, not previously published by Bureau of Reclamation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	#126	#139	#88.2	#32.5	-
1946	a20.8	-	-	-	-	-	-	a46.2	a121	a55.5	a33.1	a19.8	-
1947	-	-	-	-	-	-	11.8	87.2	219	174	51.9	22.0	-
1948	18.9	12.1	5.55	3.08	1.78	1.33	11.1	84.5	154	63.1	35.7	9.32	33.4
1949	7.01	4.67	2.35	2.45	3.46	4.89	13.3	63.5	235	149	40.0	25.8	46.0
1950	8.52	5.28	3.60	2.83	4.21	4.79	8.18	33.3	128	61.0	27.3	14.5	25.1

* Not previously published; estimated on basis of daily gage height, approximate rating curve, and records for nearby stations.
a From files of Bureau of Reclamation.

Monthly and yearly runoff, in acre-feet of Fall River at Estes Park, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	7,400	8,550	5,420	11,940	-
1946	al,280	-	-	-	-	-	-	a2,840	a7,170	a3,410	a2,040	a1,180	-
1947	-	-	-	-	-	-	704	5,360	13,010	10,710	3,190	1,310	-
1948	1,160	721	342	189	102	82	660	5,190	9,170	3,980	2,200	555	24,250
1949	431	278	144	150	192	301	792	3,900	13,960	9,180	2,460	1,530	33,320
1950	524	313	222	174	234	294	487	2,050	7,600	3,750	1,680	864	18,190

* Not previously published; see footnote to preceding table.

a From files of Bureau of Reclamation.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	-	#284	June 25, 1945	-	-	-	-	-
1946	(a)	#b220	June 9, 1946	-	-	-	-	-
1947	1086	597	June 9, 1947	-	-	-	-	-
1948	1116	265	June 8, 1948	0.9	33.4	24,250	31.5	22,880
1949	1146	424	June 18, 1949	2.1	46.0	33,320	46.3	33,520
1950	1176	220	June 15, 1950	2.3	25.1	18,190	-	-

* Not previously published.

a From files of Bureau of Reclamation.

b Estimated.

240. Big Thompson River at Estes Park, Colo.^{1/}

Location.--Lat 40°22'40", long, 105°30'50", in NW^{1/4} sec. 30 (revised), T. 5 N., R. 72W. (revised), at eastern edge of Estes Park, 500 ft downstream from Black Canyon Creek, 1,000 ft downstream from bridge on State Highways 7 and 66, and half a mile upstream from highwater line of Lake Estes.

Drainage area.--137 sq mi.

Gage.--Water-stage recorder. Datum of gage is 7,493.7 ft above mean sea level (levels by Bureau of Reclamation). Prior to May 18, 1949, at site 800 ft downstream at different datum.

Extremes.--1946-50: Maximum discharge, 1,660 cfs June 18, 1949; maximum gage height, 4.71 ft, site and datum then in use, Nov. 30, 1948 (ice jam); minimum not determined, occurred during period of no gage-height record.

Remarks.--Diversion from Colorado River to Big Thompson River basin above station through Alva B. Adams tunnel (see elsewhere in this report) began Aug. 10, 1947, and ended Aug. 2, 1950. Small power development and small diversions above station for irrigation and municipal use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	49.3	28.6	11	10	11	17.0	38.3	335	756	556	257	93.7	181
1948	56.7	51.8	35.1	25.1	19.3	23.9	51.6	320	484	262	133	44.7	126
1949	23.2	31.6	30.6	17.2	15.2	19.3	66.9	385	947	475	171	84.2	189
1950	38.5	22.3	11.3	9.95	11.7	13.3	32.2	225	712	357	89.9	58.2	132

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	3,030	1,700	676	615	611	1,050	2,280	21,820	43,800	34,170	15,800	5,580	131,100
1948	3,490	3,080	2,160	1,540	1,110	1,470	3,070	19,700	28,830	26,100	8,190	2,660	91,400
1949	1,430	1,880	1,880	1,060	847	1,190	3,980	23,700	56,380	29,200	10,520	5,010	137,100
1950	2,370	1,330	698	612	649	817	1,920	13,860	42,580	21,980	5,530	3,470	95,610

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1086	1,220	June 21, 1947	-	181	131,100	186	134,500
1948	1116	953	June 3, 1948	17	126	91,400	121	87,860
1949	1146	1,660	June 18, 1949	12	189	137,100	188	136,500
1950	1176	1,180	June 18, 1950	8.4	132	95,610	-	-

^{1/} Published as Thompson River at Estes Park, 1947.

241. Alva B. Adams tunnel at east portal, near Estes Park, Colo.

(Transmountain diversion)

Location.--Lat 40°19'40", long. 105°34'50", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 9, T. 4 N., R. 73 W., at Aspen Creek Siphon at east portal, $\frac{1}{2}$ miles southwest of Estes Park.

Gage.--Water-stage recorder and Parshall flume. During period of construction, gage was moved and control changed several times, but records of flow at the different sites are equivalent.

Remarks.--Diversion is from Grand Lake in sec. 4, T. 3 N., R. 75 W., in Colorado River basin, to Big Thompson River in sec. 30, T. 5 N., R. 72 W., in Platte River basin. Prior to Aug. 3, 1950, water was discharged into Wind River in sec. 9, T. 4 N., R. 73 W. thence to Aspen Brook and Big Thompson River. Diversion point is 13.35 miles (revised) west of the east portal. No diversion prior to 1947.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	0	0	0	0	0	0	0	0	0	0	3,360	1,250	4,610
1948	0	779	625	594	397	394	222	0	0	5,400	2,160	664	9,240
1949	0	562	993	334	237	381	2,280	8,160	664	855	1,930	1,080	17,480
1950	0	0	0	0	0	0	0	4,920	11,940	7,870	1,170	369	26,270

242. Fish Creek near Estes Park, Colo.

Location.--Lat 40°22'10", long. 105°29'40", in SW $\frac{1}{4}$ sec. 29, T. 5 N., R. 72 W., 50 ft upstream from high-water line of Lake Estes, 0.4 mile upstream from bridge on State Highway 66, and 2 miles southeast of Estes Park.

Drainage area.--16.9 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 7,477 ft (estimated from nearby line of levels run by Bureau of Reclamation).

Extremes.--1947-50: Maximum discharge, 108 cfs June 6, 1949 (gage height, 4.12 ft), from rating curve extended above 35 cfs; no flow at times most years.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	24.6	7.33	2.26	0.71	-
1948	1.20	1.43	0.49	0.22	0.13	0.45	3.92	6.84	2.43	5.54	.03	0	1.48
1949	.26	.18	0	0	.11	.55	1.18	7.22	33.6	5.03	.83	.31	4.09
1950	.59	.30	.2	0	.1	.31	.69	1.40	2.83	.54	.09	.07	.59

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Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	1,460	451	139	42	-
1948	74	85	30	13	7.7	28	233	421	145	33	1.6	0	1,070
1949	16	11	0	0	6.3	34	70	444	2,000	309	51	18	2,960
1950	36	18	12	0	5.6	19	41	86	168	33	5.0	4.4	428

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1086	53	June 22, 1947	-	-	-	-	-
1948	1116	14	Apr. 27, 1948	0	1.48	1,070	1.25	909
1949	1146	108	June 6, 1949	0	4.09	2,960	4.14	3,000
1950	1176	4.6	June 9, 1950	0	.59	428	-	-

243. Big Thompson River near Estes Park, Colo.1/

Location.--Lat 40°22'30", long. 105°28'55" (revised), in NE¼ sec. 29, T. 5 N., R. 72 W., at bridge on county road, 0.4 mile downstream from Dry Creek and 2 miles (revised) east of Estes Park.

Drainage area.--158 sq mi.

Gage.--Water-stage recorder. Datum of gage is 7,412.04 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Jan. 29, 1934, staff gage at bridge 1.1 mile downstream at different datum.

Average discharge.--20 years (1930-50), 131 cfs (adjusted for inflow from Alva B. Adams tunnel).

Extremes.--1930-50: Maximum discharge observed, 2,800 cfs June 20, 1933, from rating curve extended above 460 cfs; maximum gage height, 5.54 ft June 16, 1935; minimum daily discharge, 4.4 cfs Dec. 12, 1940, but may have been less during periods of no gage-height record.

Remarks.--Diversion from Colorado River to Big Thompson River basin above station through Alva B. Adams tunnel began Aug. 10, 1947. Small power developments and small diversions for irrigation and municipal use above station. Low flow regulated by Lake Estes (capacity, 2,890 acre-ft) since Nov. 30, 1948.

Cooperation.--Records for 1930-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1930	-	-	-	-	-	-	-	-	-	a230	a315	a107
1931	a63.3	a32.9	a13.0	a12.0	a10.0	a15.0	a35.0	a182	a296	a222	a142	a70.3
1932	a46.5	a27.9	a14.0	a12.0	a14.0	a15.0	a24.0	a280	a474	a350	a154	a45.7
1933	a24.4	a16.5	a8.5	a8.6	a5.8	a12	a23.9	a209	a886	a364	a138	a88.5
1934	43.5	20.8	20	15	14	13.8	53.6	295	227	104	72.3	38.2
1935	22.1	17.4	16	15	12	15.0	21.6	185	619	478	154	62.9
1936	33.9	30.3	17	16	18	24	100	431	616	365	316	78.4
1937	54.1	33.9	20.0	9	12	17	54.1	349	655	300	113	59.7
1938	46.0	27.2	22.6	17.4	13.4	19.1	71.6	343	716	358	144	257
1939	59.8	34.0	26	17	15	24	60.1	304	332	165	84.5	48.7
1940	28.0	19.4	14.9	12.2	11.3	14.0	35.6	220	376	225	92.5	75.3
1941	59.3	24.4	15.7	11.3	11.8	14.4	33.9	350	474	237	100	56.5
1942	52.0	37.0	18.6	12.6	14.3	12.5	80.7	301	640	342	118	54.2
1943	46.1	34.3	20	18	16	24	96.8	283	534	304	130	44.6
1944	26.0	19.2	13.7	7.38	6.68	8.28	38.3	269	499	273	81.9	25.3
1945	24.5	13.8	10.9	5.86	10.2	16.0	31.8	255	473	455	251	64.6
1946	37.0	27.8	14.1	12.5	12.1	21.1	61.7	123	385	214	108	61.2
1947	48.7	31.5	12	11	12.0	16.1	37.4	378	776	560	274	99.0
1948	60.4	58.4	33.2	22.3	17.8	23.0	58.3	321	483	255	135	44.5
1949	28.0	23.5	22.5	14.2	14.1	22.9	77.0	423	972	497	181	69.5
1950	32.0	24.3	18.0	15.0	11.9	17.7	29.3	232	769	395	83.5	80.6

* Revised; supersedes figure published by State engineer of Colorado.

† Not previously published; estimated on basis of records for nearby stations.

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1930	-	-	-	-	-	-	-	-	-	a14,100	a19,400	a6,370
1931	a3,890	a1,960	a799	a738	a555	a922	a2,080	a11,200	a17,600	a13,800	a8,730	a4,180
1932	a2,860	a1,680	a861	a739	a805	a922	a1,430	a17,200	a28,200	a21,500	a8,470	a2,720
1933	a1,500	a980	a520	a540	a320	a750	a1,420	a12,900	a22,700	a22,400	a8,480	a5,270
1934	2,670	1,240	1,230	922	778	848	3,190	19,100	13,500	6,400	4,450	2,270
1935	1,360	1,040	984	922	666	922	1,290	11,350	36,820	29,370	9,490	3,740
1936	2,090	1,800	1,050	984	1,040	1,480	5,950	26,470	36,680	22,450	19,410	4,670
1937	3,330	2,020	1,230	553	666	1,050	3,220	21,460	38,990	18,470	6,980	3,550
1938	2,830	1,620	1,390	1,070	742	1,180	4,260	21,110	42,580	22,010	8,870	15,300
1939	5,680	2,020	1,600	1,050	333	1,490	5,580	16,690	19,730	10,150	5,190	2,900
1940	1,720	1,150	916	752	653	861	2,120	13,540	22,370	13,820	5,680	4,480
1941	3,650	1,450	966	695	654	884	2,020	21,530	28,200	14,570	6,150	3,360
1942	3,200	2,200	1,140	778	795	772	4,800	18,520	38,080	21,050	7,280	3,220
1943	2,830	2,040	1,230	1,110	889	1,480	5,760	17,400	31,770	18,710	8,000	2,650
1944	1,600	1,140	840	454	384	509	2,280	16,550	29,660	18,780	5,040	1,500
1945	1,510	822	673	360	567	982	1,890	15,660	28,130	27,970	15,460	3,850
1946	2,280	1,650	865	766	672	1,300	3,670	7,560	22,900	13,170	6,640	3,640
1947	3,000	1,880	738	676	664	992	2,220	23,260	46,190	34,420	16,850	5,890
1948	3,710	3,480	2,040	1,370	1,020	1,410	3,470	19,720	28,720	15,680	8,280	2,650
1949	1,720	1,400	1,380	875	785	1,410	4,580	25,990	57,810	30,580	11,110	4,130
1950	1,970	1,450	1,100	922	663	1,090	1,740	14,290	45,730	24,280	5,140	4,790

* Revised; supersedes figure published by State engineer of Colorado.

† Corrected.

* Not previously published; estimated on basis of records for nearby stations.

a From reports of State engineer of Colorado.

1/ Published as Thompson River near Estes Park, 1934-47.

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second of Big Thompson River near Estes Park, Colo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1930	(a)	a1,590	July 18, 1930	-	-	-	-
1931	(a)	*b1,010	June 8, 1931	-	*91.5	*66,500	*89.8
1932	(a)	*b713	June 16, 24, 1932	-	a122	a88,400	*118
1933	(a)	*b2,800	June 20, 1933	-	*149	*108,000	*152
1934	761	454	May 29, 1934	5	76.9	55,600	74.5
1935	786	1,590	June 16, 1935	-	135	97,940	137
1936	806	1,100	July 11, 1936	-	171	124,100	173
1937	826	1,370	June 26, 1937	-	140	101,500	139
1938	856	1,350	June 22, 1938	12	170	123,000	172
1939	876	665	June 1, 1939	-	97.9	70,890	93.1
1940	896	612	June 3, 1940	6	93.8	68,060	96.9
1941	926	1,170	July 14, 1941	4.4	116	84,130	117
1942	956	962	June 7, 1942	7.0	141	101,800	140
1943	976	932	June 2, 1943	-	130	95,870	126
1944	1006	777	June 11, 1944	5.8	106	76,740	105
1945	1036	908	June 24, 1945	4.5	135	97,670	138
1946	1056	739	June 7, 1946	10	89.9	65,110	91.1
1947	1086	1,630	June 21, 1947	10	189	136,800	194
1948	1116	1,020	June 3, 1948	15	126	91,550	120
1949	1146	1,820	June 18, 1949	10	196	141,800	196
1950	1176	1,170	June 18, 1950	8.4	145	103,200	-

* Revised.

* Not previously published.

a From reports of State engineer of Colorado.

b Maximum observed.

244. North Fork Big Thompson River at Drake, Colo. 1/

Location.--Lat 40°26'00", long. 105°20'20", in NW¼ sec. 3, T. 5 N., R. 71 W., at Drake, 400 ft upstream from mouth.

Drainage area.--85.1 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 6,170 ft (from topographic map).

Extremes.--1947-50: Maximum discharge, 820 cfs June 4, 1949 (gage height, 5.00 ft), from rating curve extended above 600 cfs; minimum daily, 2.0 cfs Jan. 4, 1950.

Remarks.--Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	232	114	44.7	20.8	-
1948	16.8	11.4	8.82	7.49	6.33	7.73	18.8	58.1	86.8	35.8	17.4	10.8	23.9
1949	10.3	8.40	5.94	4.57	4.15	5.49	15.7	69.5	324	112	36.9	17.8	51.1
1950	12.7	9.50	4.91	4.95	5.66	4.10	7.49	24.6	89.5	50.8	17.5	14.5	20.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	13,800	7,030	2,750	1,240	-
1948	1,040	679	542	461	364	475	1,120	3,570	5,160	2,200	1,070	644	17,320
1949	832	500	365	281	230	337	932	4,270	19,260	6,860	2,270	1,060	37,000
1950	783	565	302	305	314	262	446	1,520	5,330	3,130	1,080	865	14,890

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1947	1086	410	June 21, 1947	-	-	-	-
1948	1116	166	June 11, 1948	5.7	23.9	17,320	22.8
1949	1146	820	June 4, 1949	2.6	51.1	37,000	51.3
1950	1176	450	July 10, 1950	2.0	20.6	14,890	-

1/ Published as North Fork Thompson River at Drake, 1947.

245. Big Thompson River below powerhouse, near Drake, Colo./

Location (revised).--Lat 40°25'10", long. 105°16'05", in NW¹ sec. 8, T. 5 N., R. 70 W., 500 ft north of U. S. Highway 34, 700 ft upstream from Cedar Creek, a quarter of a mile downstream from hydroelectric plant of city of Loveland, and 4 miles east of Drake.

Drainage area.--277 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,600 ft (from topographic map). Prior to June 16, 1921, at site 3 miles upstream at different datum. June 16, 1921, to Dec. 31, 1926, staff gage at site 3½ miles upstream at different datum.

Average discharge.--33 years (1917-50), 179 cfs (adjusted for inflow from Alva B. Adams tunnel).

Extremes.--1917-50: Maximum discharge, 8,000 cfs July 31, 1919 (gage height, 9.5 ft, from floodmark, site and datum then in use), from rating curve extended above 2,000 cfs on basis of velocity-area study; minimum daily, 2.3 cfs Feb. 12, 1933.

Remarks.--Diurnal regulation by reservoir of Loveland powerplant (capacity, 30 acre-ft). Natural flow of stream affected by diversion from Colorado River to Big Thompson River above station through Alva B. Adams tunnel (see elsewhere in this report) since Aug. 10, 1947.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	41.1	34.0	28.9	18.0	19.0	28.0	53.6	311	#960	#313	#123	#65	#168
1919	#60	#45	35.0	26.0	21.5	25.7	58.3	246	251	214	135	111	#103
1920	59.0	46.1	35.9	31.6	34	23	40	290	971	533	305	176	212
1921	77.6	38	25	25	22	26	122	460	1,450	578	275	137	270
1922	60.8	38.5	32.1	33.8	28.3	29.5	57.7	305	671	323	210	86.0	157
1923	43.1	35.6	33.3	23	19	26.2	81.7	447	1,420	1,010	355	165	305
1924	132	115	72.7	43.0	35.2	26.6	154	654	1,550	662	144	81.0	306
1925	67.8	37.1	19.5	19.1	24.7	24.3	52.4	208	590	284	209	145	124
1926	136	73.2	35.8	22.2	17.8	23.8	317	883	1,170	726	245	88.7	313
1927	54.6	35.2	28.8	a20	a18	a25	a70	a340	a610	a385	a210	a90	a158
1928	a73	a45	a28	a26	a23	a30	a40	a590	a710	a580	a200	a60	a201
1929	49.5	36.3	20.0	#15.9	#15	#17	#51.2	254	596	521	420	289	#191
1930	143	66.9	40.7	18.7	23.9	22.7	99.0	220	423	272	373	127	153
1931	74.1	46.5	21.2	11.2	13.0	15.3	42.0	284	566	228	141	87.4	126
1932	55.0	31.3	20.8	14.3	17.8	20.6	49.5	267	501	352	150	55.0	128
1933	36.4	24.4	12.8	10.3	7.21	17.0	41.7	308	731	348	142	103	149
1934	56.1	32.2	25.2	18.4	20.7	23.6	68.1	383	255	118	77.8	45.2	94.2
1935	29.1	21.3	18.4	20.5	20.8	23.9	32.8	249	870	562	189	87.7	177
1936	62.0	40.9	22.6	19.8	20.3	26.0	130	498	802	436	389	114	214
1937	74.5	43.1	26.2	10.1	14.0	23.1	61.8	391	660	391	129	80.5	159
1938	63.1	42.3	31.7	24.3	19.9	26.4	85.3	420	935	419	155	459	223
1939	114	53.5	37.2	25.6	18.1	31.9	80.5	357	378	185	98.4	61.2	120
1940	36.6	22.1	15.8	15.6	16.3	20.1	39.4	235	429	245	107	91.6	106
1941	83.6	38.8	21.5	15.4	18.2	19.4	57.9	439	615	286	135	86.7	152
1942	68.1	52.2	24.1	14.9	19.5	17.5	121	457	834	373	135	65.4	182
1943	85.8	62.2	35.6	25.1	25.4	27.1	113	339	745	360	150	57.8	169
1944	36.0	28.2	20.9	16.6	14.9	18.3	88.3	436	666	327	109	39.6	150
1945	35.4	19.5	14.9	11.0	14.0	22.2	50.6	298	585	554	359	106	173
1946	64.3	45.3	26.0	27.2	25.1	28.6	70.4	141	445	241	132	75.4	110
1947	63.6	49.5	33.4	22.8	24.2	32.0	63.8	559	1,028	693	330	119	250
1948	74.9	61.6	39.0	32.7	30.9	36.5	80.5	394	804	289	145	58.6	154
1949	35.3	29.5	30.8	22.6	17.8	27.7	90.2	510	1,321	610	220	87.5	251
1950	40.4	35.6	24.2	21.2	22.6	21.7	35.8	254	808	427	98.3	90.8	157

* Not previously published; partly estimated on basis of records for nearby stations.

a Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	2,550	2,020	1,780	1,110	1,060	1,720	3,190	19,100	57,100	19,200	#7,560	#3,870	#120,000
1919	#3,680	#2,680	2,150	1,600	1,190	1,580	3,470	15,100	14,900	13,200	8,300	6,600	#74,500
1920	3,650	2,740	2,210	1,940	1,980	1,410	2,380	17,800	57,800	32,800	18,800	10,500	154,000
1921	4,770	2,260	1,540	1,540	1,220	1,600	7,260	28,300	86,300	35,500	16,900	8,150	195,000
1922	3,740	2,290	1,970	2,080	1,570	1,810	3,430	18,800	39,900	19,900	12,900	5,120	114,000
1923	2,650	2,120	2,050	1,410	1,060	1,610	4,860	27,500	84,500	32,100	21,800	9,820	221,000
1924	8,120	6,840	4,470	2,640	2,020	1,640	9,160	40,200	92,200	40,700	8,850	4,820	222,000
1925	4,170	2,210	1,200	1,170	1,370	1,490	3,120	12,800	25,200	17,500	12,900	8,530	89,600
1926	8,360	4,360	2,200	1,360	989	1,460	18,900	54,300	69,600	44,600	15,100	5,280	227,000
1927	3,360	2,090	1,770	a1,230	a1,000	a1,540	a4,170	a20,900	a36,300	a23,700	a12,900	a5,360	a114,000
1928	a4,490	a2,680	a1,720	a1,600	a1,320	a1,840	a2,380	a36,300	a42,200	a35,700	a21,300	a5,570	a146,000
1929	3,040	2,160	1,230	#978	#833	#1,050	#3,050	15,600	35,500	32,000	25,800	17,200	#138,000
1930	8,790	3,980	2,500	1,150	1,330	1,400	5,890	13,500	25,200	16,700	22,900	7,560	111,000

* Not previously published; partly estimated on basis of records for nearby stations.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River

/ Published as Big Thompson Creek near Drake prior to 1921; Thompson River near Drake, 1921-26, Thompson River at mouth of canyon near Drake, October to December 1926; and as Thompson River below powerhouse near Drake, 1929-47.

Monthly and yearly runoff, in acre-feet of Big Thompson River below powerhouse, near Drake, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	4,560	2,770	1,300	689	722	941	2,500	16,200	33,700	14,000	8,670	5,200	91,300
1932	3,380	1,860	1,280	879	1,020	1,270	2,950	16,400	29,800	21,600	9,220	3,270	92,900
1933	2,240	1,450	787	799	400	1,050	2,480	18,900	43,500	21,400	8,730	6,130	108,000
1934	3,450	1,910	1,550	1,130	1,150	1,450	4,050	23,560	15,190	7,280	4,780	2,690	88,170
1935	1,790	1,270	1,130	1,260	1,160	1,470	1,950	15,290	51,770	34,540	11,640	5,220	128,500
1936	3,610	2,430	1,390	1,220	1,170	1,600	7,750	30,820	47,720	26,800	23,890	6,760	155,200
1937	4,590	2,560	1,610	1,221	780	1,420	3,680	24,050	39,240	24,060	7,950	4,790	115,300
1938	3,680	2,520	1,950	1,500	1,110	1,620	5,080	25,810	55,650	25,750	9,520	27,330	161,700
1939	7,020	3,190	2,280	1,580	1,010	1,960	4,790	21,940	22,510	11,240	6,050	3,640	87,210
1940	2,250	1,320	972	960	938	1,230	2,350	14,330	25,500	15,070	6,600	5,450	76,970
1941	5,140	2,310	1,320	948	1,010	1,190	3,450	27,000	36,610	17,600	8,320	5,160	110,100
1942	4,190	3,100	1,480	918	1,080	1,070	7,180	28,120	49,640	22,940	8,300	3,890	131,900
1943	5,280	3,700	2,190	1,540	1,410	1,860	6,740	20,850	44,320	22,130	9,190	3,440	122,400
1944	2,210	1,680	1,290	1,020	857	1,120	5,250	26,780	39,650	20,980	6,720	2,360	109,000
1945	2,170	1,160	918	674	776	1,370	3,010	18,310	34,820	34,040	22,050	6,290	125,600
1946	3,950	2,700	1,600	1,670	1,390	1,760	4,190	8,670	24,460	14,800	8,130	4,480	79,800
1947	3,910	2,950	2,050	1,400	1,340	1,970	3,800	32,540	61,170	42,600	20,300	7,090	181,100
1948	4,610	3,670	2,400	2,010	1,780	2,250	4,790	24,240	35,920	17,790	8,910	3,490	111,900
1949	2,170	1,760	1,890	1,590	990	1,700	5,370	31,380	78,620	37,490	13,550	5,200	181,500
1950	2,480	2,120	1,490	1,320	1,260	1,340	2,130	15,630	48,100	26,230	6,050	5,400	113,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	456	-	-	-	-	-	-	-
1918	476	a1,600	June 20, 1918	-	+166	\$120,000	+169	\$122,000
1919	506, 546	8,000	July 31, 1919	-	+103	\$74,500	+103	\$74,500
1920	506	1,600	June 9, 1920	5	212	154,000	212	154,000
1921	526	3,000	June 7, 1921	-	270	195,000	269	195,000
1922	546	b1,100	June 14, 1922	-	157	114,000	155	112,000
1923	566	b3,590	June 9, 10, 1923	-	306	221,000	323	234,000
1924	586	b2,960	June 15, 1924	-	306	222,000	289	210,000
1925	606	b640	May 30, 1925	-	124	89,800	134	97,100
1926	626	b1,970	June 7, 1926	16	313	227,000	302	219,000
1927	646	a920	June 29, 1927	-	c158	c114,000	c160	c116,000
1928	-	a1,400	May 31, 1928	-	c201	c146,000	c198	c144,000
1929	686	a1,320	July 28, 1929	-	+191	+138,000	+203	+147,000
1930	701	868	Aug. 14, 1930	-	153	111,000	144	104,000
1931	716	812	June 8, 1931	6	126	91,300	123	89,100
1932	731	760	June 28, 1932	7	128	92,900	125	90,900
1933	746	1,010	June 14, 1933	2.3	149	108,000	152	110,000
1934	761	*654	May 31, 1934	11	94.2	68,170	90.4	65,450
1935	786	1,950	June 14, 1935	13	177	128,500	182	131,900
1936	806	1,320	June 28, 1936	9.4	214	155,200	215	156,300
1937	826	1,460	June 26, 1937	6.0	159	115,300	159	114,900
1938	856	1,670	Sept. 3, 1938	15	223	161,700	229	165,800
1939	876	818	June 1, 1939	13	120	87,210	109	79,280
1940	896	755	June 3, 1940	4.9	106	76,970	112	81,200
1941	926	1,110	June 22, 1941	5.5	152	110,100	152	110,100
1942	956	1,250	June 8, 1942	6.0	182	131,900	186	134,300
1943	976	1,220	June 2, 1943	13	169	122,400	161	116,500
1944	1006	1,070	June 11, 1944	9	150	109,000	149	108,100
1945	1036	1,230	June 25, 1945	3.0	173	125,600	179	129,600
1946	1056	882	June 18, 1946	14	110	79,800	111	80,480
1947	1086	1,990	June 21, 1947	12	250	181,100	253	182,900
1948	1116	1,150	June 3, 1948	20	154	111,900	147	107,000
1949	1146	1,990	June 7, 1949	8.0	251	181,500	251	181,800
1950	1176	1,140	June 18, 1950	9.5	157	113,600	-	-

* Revised.

† Not previously published.

a Not previously published; discharge and date estimated.

b Maximum observed.

c Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

246. Big Thompson River at mouth of canyon, near Drake, Colo. 1/

Location.--Lat 40°25'20", long. 105°13'35" (revised), in NW $\frac{1}{4}$ sec. 10, T. 5 N., R. 70 W., at mouth of canyon, 450 ft upstream from Handy ditch diversion dam and 6 miles (revised) east of Drake.

Drainage area.--302 sq mi.

Gage.--Water-stage recorder at described site Apr. 19, 1938, to Sept. 30, 1949. Datum of gage is 5,296.02 ft (Bureau of Reclamation benchmark).

Aug. 25, 1897, to Sept. 30, 1898, and Apr. 1, 1899, to Sept. 21, 1903, staff gages within half a mile downstream below Handy ditch diversion dam at different datums.

May 9, 1895, to Mar. 31, 1899, staff gage $1\frac{1}{2}$ miles downstream, and 600 ft downstream from Home Supply ditch diversion dam, at different datum.

Oct. 1 to Dec. 31, 1926, staff gage $6\frac{1}{2}$ miles upstream at different datum.

Jan. 1, 1927, to Sept. 30, 1933, water-stage recorder 1 mile upstream at different datum.

Average discharge.--14 years (1926-28, 1932-33, 1938-49), 180 cfs (adjusted for inflow from Alva B. Adams tunnel).

Extremes.--1887-92, 1895-1903, 1926-33, 1938-49: Maximum discharge, 7,600 cfs July 19, 1945 (gage height, 7.55 ft) from rating curve extended above 2,300 cfs; minimum daily, 7.0 cfs Dec. 20, 26, 27, 1939, Dec. 12, 1940, but may have been less during period of no gage-height record.

Remarks.--Diversions above station for irrigation. Diversions from Colorado River to Big Thompson River basin above station through Alva B. Adams tunnel (see elsewhere in this report) began Aug. 10, 1947.

Cooperation.--Records for 1887-90, June 1891, 1895-1900, and 1931-33 furnished by State engineer of Colorado; those for 1887, June 1891, 1895-1900, and 1931-33 not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	a117	-
1888	-	-	-	-	-	-	a62	a132	a458	a275	a190	a75	-
1889	a50	-	-	-	-	-	-	a250	a382	a200	a89	a49	-
1890	a46	-	-	-	-	-	-	a400	a530	a454	a593	a151	-
1891	a71	-	-	-	-	-	-	-	ab817	a383	a159	a95	-
1892	-	-	-	-	-	-	-	-	a704	a498	a150	a49	-
1895	-	-	-	-	-	-	-	-	c963	c680	c420	c170	-
1896	c106	-	-	-	-	-	-	c300	c407	c290	c172	c161	-
1897	e96	-	-	-	-	-	-	c567	c695	c376	c195	c71	-
1898	e54	c37	c40	-	-	-	-	c214	c582	c316	c112	c55	-
1899	e22	c11	-	-	-	-	d151	d352	d1,040	d787	d316	d102	-
1900	-	-	-	-	-	-	d432	d1,430	d1,490	d380	d149	d87	-
1901	-	-	-	-	-	-	-	e600	e859	e530	e261	e72	-
1902	-	-	-	-	-	-	a29	a299	a505	a182	a90	a89	-
1903	a98	-	-	-	-	-	-	a274	a885	a568	a170	-	-
1927	*59	*38	*30	22	20	26.1	75.9	379	696	439	223	98.8	176
1928	77.3	49.3	31.2	29.3	24.9	32.0	45.1	661	807	656	212	69.1	225
1929	-	-	-	-	-	-	-	-	753	617	515	297	-
1930	143	-	-	-	-	-	97.0	212	439	294	425	130	-
1931	b75.8	-	-	-	-	-	b45.6	b261	b686	b235	b150	b81.9	-
1932	b52.7	b33.0	-	-	-	-	b55.0	b311	b586	b391	b154	b57.3	-
1933	b37.5	b35.4	b14	b13.5	b8.0	b17.5	b43.0	b325	b881	b366	b149	b116	b167
1938	-	-	-	-	-	-	-	473	1,052	431	174	547	-
1939	115	58.5	40.1	31.5	21.5	35.4	95.5	360	392	189	102	64.3	126
1940	41.4	26.5	16.6	15.0	15.3	18.7	46.9	250	462	263	115	106	115
1941	89.0	42.3	23.1	17.4	18.9	20.9	63.8	461	739	302	137	88.9	169
1942	74.1	56.9	29.2	17.4	22.4	21.6	150	505	1,013	406	128	62.4	208
1943	118	77.1	40	32	33	35	120	401	900	423	167	62.0	201
1944	34.6	29.7	27.5	20.5	16.7	21.1	144	472	756	384	108	36.3	171
1945	34.9	21.1	17.0	12.5	15.6	26.7	56.9	332	697	693	384	94.0	199
1946	66.2	47.7	28.3	28.3	25.9	28.8	72.8	148	507	266	133	81.4	120
1947	68.2	48.1	29.9	21.2	21.8	29.8	59.7	553	1,133	719	329	123	262
1948	76.1	63.6	41.0	35.7	33.3	37.2	87.8	408	629	290	143	53.8	158
1949	35.5	30.0	32	23	18	27.5	92.1	517	1,400	652	219	92.7	262

* Only monthly figures revised; revised daily figures not available.

† Corrected.

* Not previously published; estimated on basis of partial month record.

a Includes flow in Handy ditch.

b From reports of State engineer of Colorado.

c From files of State engineer of Colorado; figures have been adjusted to include diversions of Handy and Home Supply ditches.

d From files of State engineer of Colorado; figures have been adjusted to include diversions of Handy ditch.

e Includes flow in Buchhorn Creek, which enters about 4 miles downstream, and in Handy ditch.

Note.--Figures as previously published for June, September, October, 1895, May to July 1896, June 1897 and June 1898 were revised; revised figures were adjusted to include diversions by Home Supply ditch.

1/ Published as Big Thompson Creek at Arkins, 1888-92, Big Thompson Creek near Arkins, 1901-3, Thompson River at mouth of canyon, near Drake, 1927-30, 1938-47, and by State engineer as Arkins Station on Big Thompson Creek, 1891 and Big Thompson River at Canyon mouth, 1931-33.

Monthly and yearly runoff, in acre-feet of Big Thompson River
at mouth of canyon, near Drake, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	a6,960	-
1888	-	-	-	-	-	-	a3,690	a8,120	a27,300	a16,900	a11,700	a4,460	-
1889	a3,070	-	-	-	-	-	-	a15,400	a22,700	a12,300	a5,470	a2,920	-
1890	a2,830	-	-	-	-	-	-	a24,600	a31,500	a27,900	a24,200	a8,990	-
1891	a4,370	-	-	-	-	-	-	-	a49,600	a23,600	a9,780	a5,650	-
1892	-	-	-	-	-	-	-	-	a41,900	a30,600	a9,220	a2,930	-
1895	-	-	-	-	-	-	-	-	c57,300	c41,800	c25,800	b10,300	-
1896	c6,500	-	-	-	-	-	-	c18,500	c23,200	c17,800	c10,600	c9,580	-
1897	c5,900	-	-	-	-	-	-	c34,900	c41,300	c23,100	c12,000	c4,220	-
1898	c3,300	c2,190	c2,460	-	-	-	-	c13,200	c33,400	c19,400	c6,880	c3,270	-
1899	c1,320	c643	-	-	-	-	-	d8,980	d21,700	d81,700	d47,200	d19,400	-
1900	-	-	-	-	-	-	-	d25,700	d88,100	d88,400	d23,300	d9,160	d5,180
1901	-	-	-	-	-	-	-	e36,900	e51,100	e32,600	e16,000	e4,280	-
1902	-	-	-	-	-	-	-	a1,730	a18,400	a30,000	a11,200	a5,530	a5,300
1903	a6,050	-	-	-	-	-	-	-	a16,800	a52,700	a34,900	a10,500	-
1927	*3,630	*2,260	*1,840	1,350	1,110	1,600	4,520	23,300	41,400	27,000	13,700	5,880	*128,000
1928	4,750	2,930	1,920	1,800	1,430	1,970	2,680	40,800	48,000	40,300	13,000	4,050	163,000
1929	-	-	-	-	-	-	-	-	44,800	37,900	31,700	17,700	-
1930	8,790	-	-	-	-	-	5,770	13,000	26,100	18,100	26,100	7,740	-
1931	b4,660	-	-	-	-	-	b2,710	b16,000	b40,800	b14,400	b9,220	b4,870	-
1932	b3,240	b1,960	-	-	-	-	b3,270	b19,100	b34,900	b24,000	b9,470	b5,410	-
1933	b2,310	b2,110	b861	b830	b444	b1,080	b2,560	b20,000	b52,400	b22,500	b9,160	b6,900	b121,000
1938	-	-	-	-	-	-	-	29,080	62,590	26,510	10,700	32,580	-
1939	7,090	3,480	2,460	1,930	1,190	2,170	5,680	22,120	23,320	11,640	6,290	3,830	91,200
1940	2,540	1,580	1,020	924	883	1,150	2,790	15,370	27,500	16,180	7,080	6,330	83,350
1941	5,470	2,520	1,420	1,070	1,050	1,290	3,800	29,590	43,960	18,550	8,430	5,290	122,400
1942	4,550	3,390	1,790	1,070	1,240	1,330	8,950	31,070	60,280	24,960	7,890	3,710	150,200
1943	7,230	4,590	2,460	1,970	1,830	2,150	7,140	24,660	53,570	26,020	10,290	3,690	145,600
1944	2,130	1,770	1,690	1,260	962	1,300	8,570	28,990	44,960	23,630	6,620	2,160	124,000
1945	2,150	1,260	1,040	767	869	1,640	3,380	20,420	40,860	42,630	23,610	5,600	144,200
1946	4,070	2,840	1,740	1,740	1,440	1,770	4,330	9,130	30,190	16,350	8,160	4,850	86,610
1947	4,190	2,860	1,840	1,300	1,210	1,830	3,550	34,010	67,450	44,210	20,160	7,310	189,900
1948	4,680	3,790	2,520	2,200	1,920	2,290	5,220	25,100	37,440	17,800	8,770	3,200	114,900
1949	2,180	1,780	1,970	1,410	1,000	1,690	5,480	31,820	83,340	40,120	13,460	5,320	189,800

* Only monthly figures revised; revised daily figures not available.

† Corrected.

‡ Not previously published; estimated on basis of partial month record.

a Includes flow in Handy ditch.

b From reports of State engineer of Colorado.

c See footnote b to preceding table.

d See footnote c to preceding table.

e Includes flow in Buckhorn Creek, which enters about 4 miles downstream, and in Handy ditch.

Note.--See note of preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1887	-	-	-	-	-	-	-
1888	(a)	†b889	June 18, 19, 1888	-	-	-	-
1889	(a)	-	-	-	-	-	-
1890	(a)	-	-	-	-	-	-
1891	74, (c)	-	-	-	-	-	-
1892	74	-	-	-	-	-	-
1895	(d)	†b1,900	July 30, 1895	-	-	-	-
1896	(d)	†b1,010	May 30, 1896	-	-	-	-
1897	(d)	†b1,080	June 11, 1897	-	-	-	-
1898	(d)	†b1,360	July 11, 1898	-	-	-	-
1899	(d)	†b1,920	June 20, 21, 1899	-	-	-	-
1900	(d)	-	-	-	-	-	-
1901	75	-	-	-	-	-	-
1902	84	b773	June 10, 1902	-	-	-	-
1903	99	†b1,300	June 18, 1903	-	-	-	-
1927	646	1,030	June 29, 1927	-	176	*128,000	179
1928	686	1,900	May 31, 1928	-	225	163,000	-
1929	686	1,600	July 28, 1929	18	-	-	-
1930	701	1,590	Aug. 14, 1930	-	-	-	-

* Revised.

† Not previously published.

a 13th Ann. Rept., Pt. 3.

b Observed.

c From reports of State engineer of Colorado.

d From files of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Big Thompson River at mouth of canyon, near Drake, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	(c)	\$1,190	June 7, 1931	-	-	-	-	-
1932	(c)	\$928	June 28, 1932	-	-	-	-	-
1933	(c)	\$1,460	June 14, 1933	-	c167	c121,000	-	-
1938	858	5,600	Sept. 1, 1938	-	-	-	-	-
1939	876	923	June 1, 1939	15	126	91,200	115	83,310
1940	896	839	June 3, 1940	7	115	83,350	121	87,620
1941	926	4,690	June 22, 1941	7	169	122,400	170	122,800
1942	956	3,750	June 7, 1942	10	208	150,200	214	154,800
1943	976	1,350	June 23, 1943	-	201	145,600	189	136,900
1944	1006	1,260	June 11, 1944	11	171	124,000	169	122,900
1945	1036	7,600	July 19, 1945	7.4	199	144,200	205	148,400
1946	1056	1,880	July 19, 1946	15	120	86,610	120	86,850
1947	1086	2,320	June 21, 1947	11	262	189,900	265	192,000
1948	1116	1,507	June 3, 1948	20	158	114,900	151	109,900
1949	1146	3,330	June 4, 1949	-	262	189,800	-	-

* Not previously published.

c From reports of State engineer of Colorado.

247. Big Thompson River near Arkins, Colo. 1/

Location.--Lat 40°25'10", long. 105°13'10", in sec. 3 (revised), T. 5 N., R. 70 W., at private bridge a quarter of a mile downstream from Handy ditch diversion dam, 1½ miles (revised) southwest of Arkins and 8 miles west of Loveland.

Drainage area.--305 sq mi.

Gage.--Staff gage at described site after Apr. 16, 1909. Altitude of gage is 5,290 ft (from topographic map).

Aug. 25, 1887, to Oct. 13, 1888, staff gage about 900 ft upstream at different datum.

May 9, 1895, to Mar. 31, 1899, staff gage 1 mile downstream and 600 ft downstream from Home Supply ditch diversion dam at different datum.

Apr. 1, 1899, to Sept. 30, 1900, and Apr. 1, 1902, to Apr. 16, 1909, staff gages near described site at various datums.

Extremes.--1887-88, 1895-1911: Maximum discharge, 6,000 cfs July 7, 1906 (gage height, 6.00 ft, datum then in use), from rating curve extended above 1,300 cfs; minimum daily, 4 cfs Apr. 9, 1899, Apr. 1, 2, 1900, Apr. 3, 1905, but may have been less during periods of no gage-height record.

Remarks.--Prior to 1912 there were court decrees for diversions above station for 198 cfs.

Cooperation.--Records for 1887-88, 1895-1900, 1902, 1904-11, furnished by State engineer of Colorado; those for 1887, 1902, 1904-8, not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	\$80.7	-
1888	-	-	-	-	-	-	\$53.8	a115	a429	a246	a162	a62	-
1895	-	-	-	-	-	-	-	-	b793	b577	b567	b145	-
1896	b74.5	-	-	-	-	-	-	b265	b352	b264	b150	b133	-
1897	b74	-	-	-	-	-	-	b480	b586	b305	b153	b51	-
1898	b27	27	40	-	-	-	-	b192	b475	b277	b97	b45	-
1899	12	7	-	-	-	-	140	303	917	653	285	92	-
1900	\$57.3	-	-	-	-	-	412	1,380	1,350	349	137	77	-
1902	-	-	-	-	-	-	a29	a290	a466	a161	a80	a74	-
1903	a84	-	-	-	-	-	-	c240	c745	c516	c145	-	-
1904	-	-	-	-	-	-	-	-	d226	d120	d120	-	-
1905	d75	d55	d48	d29	d31	\$20	d170	d461	d1,048	d470	a193	a39	\$220
1906	d42	d42	d44	d61	d69	a37	d174	d427	d715	d614	d207	d168	a217
1907	d127	d148	a88	-	-	-	a107	d396	d959	d995	d330	-	-
1908	-	-	-	-	-	-	-	d133	d391	d360	d309	d125	-
1909	d52	d60	-	-	-	-	-	e323	e757	e558	e265	e184	-
1910	55.1	37.6	28.5	28.7	25.9	38.8	52.6	238	389	218	93.3	115	110
1911	44.1	26.9	25.8	-	-	-	-	-	544	326	111	-	-

* Not previously published; estimated by Geological Survey on basis of partial month record.

a From files of State engineer of Colorado.

b From files of State engineer of Colorado; figures adjusted to include diversions by Home Supply ditch.

c From files of Geological Survey; figures have been adjusted to exclude diversions by Handy ditch.

d From reports of State engineer of Colorado.

e Revised.

Note.--Figures as previously published for June, September to October 1895, May to July 1896, June 1897, June 1898 were revised; revised figures were adjusted to include diversions by Home Supply ditch.

1/ Published as Big Thompson Creek at Arkins, 1899, 1910, Big Thompson Creek near Arkins, 1900, 1909, 1911, "at Arkins," 1904, and as Big Thompson Creek at Arkins, below Handy dam, 1907-8.

Monthly and yearly runoff, in acre-feet of Big Thompson River near Arkins, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1887	-	-	-	-	-	-	-	-	-	-	-	\$4,800	-
1888	-	-	-	-	-	-	\$3,200	a7,070	a25,500	a15,100	a9,980	a3,690	-
1895	-	-	-	-	-	-	-	-	b47,200	b35,500	b22,600	b8,620	-
1896	b4,580	-	-	-	-	-	-	b16,300	b22,000	b16,200	b9,240	b7,920	-
1897	b4,580	-	-	-	-	-	-	b29,500	b34,800	b18,800	b9,410	b3,040	-
1898	b1,890	1,610	2,460	-	-	-	-	b11,800	b28,200	b17,000	b5,950	b2,430	-
1899	b758	417	-	-	-	-	-	8,330	18,600	54,600	40,200	17,400	5,470
1900	\$3,520	-	-	-	-	-	24,500	85,000	80,400	21,500	8,420	4,580	-
1902	-	-	-	-	-	-	a1,730	a17,800	a27,700	a9,900	a4,920	a4,400	-
1903	a5,180	-	-	-	-	-	-	c14,800	c44,300	c31,700	c8,920	-	-
1904	-	-	-	-	-	-	-	-	-	-	d13,900	d7,140	-
1905	d4,610	d3,270	d2,950	d1,780	a1,720	\$1,230	d10,100	d28,300	d62,400	d28,900	d11,900	a2,320	\$159,000
1906	d2,580	d2,500	d2,710	d3,750	d3,830	a2,280	d10,400	d26,300	d42,500	d37,800	d12,700	a10,000	a157,000
1907	d7,810	d8,810	a5,410	-	-	-	a6,370	d24,300	d57,100	d81,200	d20,500	-	-
1908	-	-	-	-	-	-	-	d8,180	d22,700	d22,100	d19,000	a7,440	-
1909	d3,200	d3,570	-	-	-	-	-	e19,800	e45,000	e34,300	16,300	d10,900	-
1910	3,390	2,240	1,750	1,760	1,440	2,390	3,130	14,600	23,100	13,400	5,740	6,840	79,800
1911	2,710	1,600	1,590	-	-	-	-	-	32,400	20,000	6,840	-	-

* Not previously published; estimated by Geological Survey on basis of partial month record.

a From files of State engineer of Colorado.

b From files of State engineer of Colorado; figures adjusted to include diversions by Home Supply ditch.

c From files of Geological Survey; figures adjusted to exclude diversions by Handy ditch.

d From reports of State engineer of Colorado.

e Revised.

Note.--See note to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1887	(a)	-	-	-	-	-	-	-
1888	(a)	\$b780	June 4, 18, 19	-	-	-	-	-
1895	(a)	\$b1,720	July 30, 1895	-	-	-	-	-
1896	(a)	\$b852	May 30, 1896	-	-	-	-	-
1897	(a)	\$b1,020	June 11, 1897	-	-	-	-	-
1898	(a)	\$b1,320	July 11, 1898	-	-	-	-	-
1899	(c)	\$b1,750	June 20, 21, 1899	4	-	-	-	-
1900	(d)	-	-	4	-	-	-	-
1902	(a)	\$b710	June 10, 1902	-	-	-	-	-
1903	-	\$b1,140	June 18, 1903	-	-	-	-	-
1904	(e)	-	-	-	-	-	-	-
1905	(a), (e)	-	-	4	\$220	\$159,000	\$216	\$156,000
1906	(a), (e)	ab6,000	July 7, 1906	-	a217	a157,000	a237	a172,000
1907	(a), (e)	-	-	-	-	-	-	-
1908	(e)	-	-	-	-	-	-	-
1909	266,1440	-	-	-	-	-	-	-
1910	288	-	-	-	110	79,800	108	78,300
1911	308	-	-	-	-	-	-	-

* Not previously published.

a From files of State engineer of Colorado.

b Observed.

c 20th and 21st Ann. Repts., Pt. 4.

d 22d Ann. Rept., Pt. 4.

e Reports of State engineer of Colorado.

248. Big Thompson River below Home Supply ditch, near Arkins, Colo.1/

Location.--Lat 40°25'25", long. 105°12'30" in SW $\frac{1}{4}$ sec. 2, T. 5 N., R. 70 W., 600 ft. downstream from Home Supply ditch, 1 mile southwest of Arkins and 7 $\frac{1}{2}$ miles (revised) west of Loveland.

Drainage area.--306 sq mi.

Gage.--Staff gage. Altitude of gage is 5,190 ft (from topographic map).

Extremes.--1895-98: Maximum discharge observed, 1,720 cfs July 30, 1895 (gage height, 4.00 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum daily determined, 2 cfs May 1, 1896.

Remarks.--Natural flow of stream affected by diversions for irrigation and return flow from irrigated areas.

Cooperation.--Records furnished by State engineer of Colorado.

1/ Published as Arkins station, on Big Thompson Creek, 1895, Big Thompson Creek near Arkins, 1896, and Big Thompson Creek at Arkins, 1897-98.

Monthly and yearly mean discharge, in cubic feet per second of Big Thompson River below Home Supply ditch, near Arkins, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	-	*602	465	316	*133	-
1896	*70.2	-	-	-	-	-	-	*251	*328	*255	144	119	-
1897	66	-	-	-	-	-	-	417	*481	285	152	37	-
1898	17	27	40	-	-	-	-	164	*441	237	79	*56	-
1899	12	7	-	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	-	*35,800	28,600	19,400	*7,910	-
1896	*4,320	-	-	-	-	-	-	*15,400	*19,500	15,700	8,850	7,080	-
1897	4,060	-	-	-	-	-	-	25,600	28,600	16,300	8,120	2,200	-
1898	1,040	1,610	2,460	-	-	-	-	10,100	26,200	14,600	4,860	2,140	-
1899	738	417	-	-	-	-	-	-	-	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1895	(a), 1440	*1,720	July 30, 1895	-	-	-	-	-	-
1896	(b), 1440	720	May 30, 1896	2	-	-	-	-	-
1897	(c), 1440	*875	June 11, 1897	-	-	-	-	-	-
1898	(d), 1440	*1,280	July 11, 1898	-	-	-	-	-	-

† Not previously published.

a Bull. 140.

b 16th Ann. Rept., Pt. 4.

c 19th Ann. Rept., Pt. 4.

d 20th Ann. Rept., Pt. 4.

249. Buckhorn Creek near Masonville, Colo.

Location.--Lat 40°27'15", long. 105°11'50", in SE $\frac{1}{4}$ sec. 26, T. 6 N., R. 70 W., $1\frac{1}{2}$ miles upstream from Buckhorn Reservoir Dam and $2\frac{1}{2}$ miles (revised) south of Masonville.

Drainage area.--140 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 5,200 ft (from topographic map).

Extremes.--1947-50: Maximum discharge, 5,750 cfs May 30, 1948 (gage height, 10.35 ft), from rating curve extended above 1,300 cfs on basis of slope-area determination of peak flow; minimum daily, 0.1 cfs Sept. 22, 1948.

Flood of June 15, 1923, discharge, 10,500 cfs, by slope-area determination, $1\frac{1}{2}$ miles above station. Flood of Sept. 1, 1938, discharge, 10,200 cfs, by slope-area determination, half a mile below station.

Remarks.--Diversions above station for irrigation of about 500 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	71.6	147	32.5	2.94	1.63	-
1948	3.48	4.11	2.54	2.34	5.47	14.0	27.3	47.1	21.9	2.04	.93	.29	11.0
1949	.71	.62	.95	.58	.53	1.83	9.19	55.7	436	28.5	3.93	2.17	44.7
1950	2.84	2.18	2.17	1.75	1.93	2.08	3.02	15.1	12.3	2.89	1.23	.63	4.02

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	4,410	8,740	2,000	181	97	-
1948	214	244	156	144	315	960	1,620	2,890	1,300	125	57	17	7,940
1949	44	37	59	56	30	112	547	3,430	25,950	1,760	242	129	32,380
1950	174	130	133	108	107	128	180	927	733	178	78	37	2,910

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1086	324	June 22, 1947	-	-	-	-	-	-
1948	1116	5,750	May 30, 1948	0.1	11.0	7,940	10.3	-	7,470
1949	1146	3,740	June 4, 1949	.2	44.7	32,380	45.1	-	32,670
1950	1178	104	June 28, 1950	.6	4.02	2,910	-	-	-

250. Dry Creek near Pinewood, Colo.^{1/}

Location.--Lat 40°22'20", long. 105°13'35", in NW $\frac{1}{4}$ sec. 27, T. 5 N., R. 70 W., just downstream from Flatiron Dam, a quarter of a mile upstream from Cottonwood Creek, and 2 $\frac{1}{2}$ miles northeast of Pinewood.

Drainage area.--7.4 sq mi, approximately.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 5,420 ft (from topographic map).

Extremes.--April to September 1950: 5.3 cfs June 3 or 4 (gage height, 1.28 ft, from recorded range in stage); minimum daily, 0.07 cfs Apr. 13, 26.

Remarks.--No known diversions above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	0.126	0.156	1.03	0.286	0.186	0.193	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	7.5	9.6	61	18	11	12	-

251. Rattlesnake Creek near Pinewood, Colo.

Location.--Lat 40°22'10", long. 105°17'15", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 30, T. 5 N., R. 70 W., just downstream from Rattlesnake Dam, 0.4 mile upstream from mouth, and 1 $\frac{1}{2}$ miles northwest of Pinewood.

Drainage area.--3.3 sq mi, approximately.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 6,500 ft (from topographic map).

Extremes.--March to September 1950: Maximum discharge, 3.4 cfs Apr. 16 (gage height, 1.00 ft); no flow on many days.

Remarks.--Flow regulated by pumping for construction of Rattlesnake Dam.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	0.062	0.122	0.070	0.028	0.003	0.030	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	3.7	7.5	4.1	1.7	0.20	1.6	-

252. Cottonwood Creek near Pinewood, Colo.

Location.--Lat 40°23'00", long. 105°14'30", in SW $\frac{1}{4}$ sec. 21, T. 5 N., R. 70 W., 1 $\frac{1}{2}$ miles upstream from mouth, $\frac{3}{2}$ miles northeast of Pinewood, and 9 miles west of Loveland.

Drainage area.--15.1 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,650 ft (from topographic map).

Extremes.--1947-50: Maximum discharge, 330 cfs June 4, 1949 (gage height, 3.11 ft), from rating curve extended above 80 cfs on basis of slope-area determination of peak flow; no flow at times each year.

Remarks.--Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	3.41	7.31	1.24	0.36	0.01	-
1948	0.53	0.29	0.18	0.20	0.24	1.36	2.16	1.41	1.35	.04	0	0	0.57
1949	0	0	0	0	.06	.23	.53	1.62	27.3	1.28	0.29	.12	2.60
1950	.22	.11	.03	.03	.22	.14	.25	1.30	.95	.03	0	.02	.28

^{1/} Published as Chimney Hollow Dry Creek.

Monthly and yearly runoff, in acre-feet of Cottonwood Creek near Pinewood, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	209	435	76	24	0.8	-
1948	35	17	11	12	14	84	130	87	21	2.8	0	0	412
1949	0	0	0	0	5.6	18	35	95	1,620	78	18	7.3	1,880
1950	13	6.5	5.4	1.6	12	8.7	15	80	58	3.4	0	1.0	206

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1116	a37	June 20, 1947	0	-	-	-	-	-
1948	1116	38	Oct. 15, 1947	0	0.57	412	0.48	351	-
1949	1146	330	June 4, 1949	0	2.60	1,880	2.63	1,900	-
1950	1176	9.8	May 26, 1950	0	.28	206	-	-	-

a Maximum during period May to September.

253. Big Thompson River near Loveland, Colo.

Location.--Lat 40°23'55", long. 105°06'10", in SE¼ sec. 15, T. 5 N., R. 69 W., 100 ft downstream from diversion dam for Loveland and Greeley Canal, about 1,000 ft downstream from an unnamed tributary, and 1 mile west of Loveland.

Drainage area.--515 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,970 ft (from topographic map). Prior to Oct. 1, 1947, at datum 1.00 ft higher.

Extremes.--1947-50: Maximum discharge, 7,750 cfs June 4, 1949 (gage height, 7.79 ft), from rating curve extended above 2,500 cfs; no flow for many days during most years.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	199	119	51.8	-
1948	-	-	-	-	-	10.7	8.76	104	120	82.6	19.6	13.1	-
1949	20.0	4.89	0	0	0	0	0	33.4	1,114	205	75.8	29.3	123
1950	9.34	.34	.07	.52	.05	.11	3.94	51.7	100	86.6	18.5	20.9	24.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	12,250	7,320	3,070	-
1948	-	-	-	-	-	657	521	6,400	7,140	3,850	1,200	781	-
1949	1,250	291	0	0	0	0	0	2,050	86,270	12,620	4,650	1,740	88,850
1950	574	20	4.6	32	2.8	6.9	234	3,180	5,980	5,320	1,140	1,240	17,730

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1116	-	-	-	-	-	-	-	-
1948	1116	4,380	May 30, 1948	-	-	-	-	-	-
1949	1146	7,750	June 4, 1949	0	123	88,850	121	87,930	-
1950	1176	218	June 18, 1950	0	24.5	17,730	-	-	-

254. Little Thompson River near Berthoud, Colo.

Location.--Lat 40°15'30", long. 105°12'15", in NW¼ sec. 2, T. 3 N., R. 70 W., at mouth of canyon, 7½ miles southwest of Berthoud.

Drainage area.--100 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 5,220 ft (from topographic map). May 26, 1929, to Sept. 30, 1930, at site a quarter of a mile upstream at different datum.

Extremes.--1929-30, 1947-50: Maximum discharge 3,620 cfs Aug. 10, 1930, from rating curve extended above 180 cfs on basis of slope-area determination of peak flow; maximum gage height, 9.3 ft June 6, 1949, from floodmark; no flow at times during 1948 and 1949.

Remarks.--One small diversion above station.

Monthly and yearly mean discharge, in cubic feet per second of
Little Thompson River near Berthoud, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	6.42	7.74	27.9	13.3	-
1930	3.34	4.33	3.0	0.4	1.0	1.91	8.68	11.9	6.5	1.73	85.8	18.8	12.4
1947	-	-	-	-	-	-	-	87.9	128	39.5	7.55	1.15	-
1948	5.97	6.35	2.47	1.69	4.45	16.2	37.8	28.0	12.3	1.43	.29	.11	9.82
1949	.20	.23	.22	.09	.24	1.24	8.58	52.6	344	15.4	1.85	.55	35.1
1950	.40	.82	.93	.52	.52	.54	1.58	15.0	27.9	1.50	.39	.18	4.17

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	394	476	1,720	791	-
1930	205	258	194	25	56	117	518	732	587	108	5,280	1,120	8,990
1947	-	-	-	-	-	-	-	5,400	7,620	2,410	464	69	-
1948	429	378	152	104	256	997	2,250	1,720	729	88	16	6.5	7,130
1949	12	14	13	5.4	13	76	511	3,230	20,470	948	113	33	25,440
1950	24	49	51	32	29	33	94	919	1,660	92	24	11	3,020

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	*a218	July 20, 1929	-	-	-	-	-	-
1930	701	3,620	Aug. 10, 1930	-	12.4	8,990	-	-	-
1947	1086	b1,360	July 8, 1947	-	-	-	-	-	-
1948	1116	101	June 27, 1948	0	9.82	7,130	8.55	6,210	-
1949	1146	3,500	June 6, 1949	0	35.1	25,440	35.3	25,520	-
1950	1178	82	June 4, 1950	.1	4.17	3,020	-	-	-

* Revised.

a Maximum during period June to September.

b Maximum during period May to September.

255. Dry Creek below Carter Lake, Colo.

Location.--Lat 40°19'30", long. 105°12'45", in SE $\frac{1}{4}$ sec. 10, T. 4 N., R. 70 W., 300 ft downstream from Carter Lake Dam and 7 miles west of Berthoud.

Drainage area.--1.5 sq mi, approximately.

Gage.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 5,580 ft (from topographic map).

Extremes.--1949-50: Maximum discharge, 72 cfs June 4, 1949 (gage height, 1.85 ft), from rating curve extended above 0.23 cfs on basis of slope-area determination of peak flow; no flow Sept. 28-30, 1950.

Remarks.--No known diversions above station.

Cooperation.--Records for 1949, not previously published by Geological Survey, furnished by State engineer of Colorado. Records for 1950 furnished by Bureau of Reclamation and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	a0.05	a0.06	a1.27	a0.17	a0.10	a0.09	-
1950	0.055	0.049	0.037	0.027	0.029	0.032	.044	.049	.040	.022	.020	.013	0.035

a From files of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	a5.0	a3.5	a78	a11	a6.0	a5.2	-
1950	3.4	2.9	2.3	1.7	1.7	2.0	2.6	3.0	2.4	1.3	1.2	.79	25

a From files of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1949	(a)	*a72	June 4, 1949	-	-	-	-	-	-
1950	1210	.68	May 26, 1950	0	0.035	25	.1	-	-

† Not previously published.

a From files of State engineer of Colorado.

256. Big Thompson River at mouth, near La Salle, Colo. 1/

Location.--Lat 40°21'05", long. 104°46'27", in SW 1/4 sec. 34, T. 5 N., R. 66 W., 80 ft downstream from highway bridge, 0.9 mile (revised) upstream from mouth and 3 1/2 miles (revised) west of La Salle.

Drainage area.--818 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 4,675 ft (from topographic map). Apr. 1, 1914, to Oct. 31, 1915, staff gage at different datum.

Extremes.--1914-15, 1927-50: Maximum discharge, 4,440 cfs June 5, 1949 (gage height, 7.46 ft); no flow at times during 1934, 1935, 1948.

Remarks.--Diversions for irrigation of about 95,000 acres above station. Natural flow of stream also affected by transmountain diversions, storage reservoirs, power developments, and return flow from irrigated areas.

Cooperation.--Records for 1914-15, 1927-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	a467	a1,040	a534	a20.6	a7.3	a21.5	-
1915	a41.4	a37.8	#40	b51	b45	b51	b84.9	b180	b255	b10.5	b24.4	b37.4	#71.5
1916	b103	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a55.3	a42.8	a11.5	a36.4	a21.4	a24.3	a18.1	-
1928	a90.2	a69.6	a55.2	a45.1	a32.1	a47.1	a16.2	a71.9	a106	a95.1	a31.9	a29.6	a57.4
1929	a51.2	a76.1	a67.6	a55.0	a40	a48	a47.2	a17.4	a41.9	a18.3	a70.6	a31.6	a47.1
1930	a51.4	a97.6	a77.3	a44.9	a70	a53.4	a38.5	a9.06	a8.93	a26.0	a108	a36.8	a51.7
1931	a67.2	a62.4	a58.9	a52.4	a44.5	a57.5	a31.2	a13.0	a33.6	a8.81	a7.42	a3.00	a36.6
1932	a23.2	a50.3	a50.3	a41.7	a33.6	a37.2	a6.90	a8.87	a18.7	a25.3	a14.2	a1.17	a26.7
1933	a25.0	a31.1	a34.5	a24	a29.6	a16.3	a7.67	a87.0	a12.0	a20.3	a8.39	a16.0	a26.1
1934	50.6	56.4	48.1	36.4	31.7	30.4	14.6	4.4	3.6	.9	0	0	21.4
1935	5.2	2.6	13.5	22.6	15.7	12.4	1.5	86.8	41.5	38.8	4.2	8.2	21.1
1936	30.5	53.0	42.4	28.6	28.8	31.3	13.4	5.86	43.0	28.4	23.1	9.37	28.1
1937	51.8	59.1	56.3	32.6	39.1	43.7	13.7	7.68	22.6	15.4	4.78	11.1	29.8
1938	17.4	46.0	49.8	40.5	38.6	30.0	21.8	12.2	24.9	16.8	14.3	434	61.6
1939	70.0	77.2	68.9	47.2	42.9	55.0	40.4	8.83	25.6	8.05	3.59	2.33	37.5
1940	3.74	29.3	28.1	28.5	39.5	35.3	3.48	2.16	10.9	19.6	2.99	4.64	17.3
1941	12.1	41.7	37.9	32.2	28.1	24.1	13.0	48.0	46.6	37.1	14.2	9.27	28.7
1942	6.10	45.3	47.5	34.0	31.2	53.0	134	241	110	55.0	24.3	18.9	68.9
1943	65.0	82.3	64.6	44.2	39.4	41.8	37.8	267	167	51.5	30.7	17.8	75.9
1944	22.6	41.8	51.4	42.5	34.5	37.2	81.2	168	39.9	51.9	8.33	6.57	49.0
1945	10.6	43.6	52.7	41.8	38.5	36.1	24.9	16.4	43.0	30.7	41.5	24.6	33.6
1946	40.5	44.1	48.6	34.1	33.9	34.2	24.2	6.69	13.1	44.5	7.05	17.7	29.1
1947	41.9	67.8	65.2	48.0	34.4	55.7	32.3	48.0	513	131	36.2	21.6	91.0
1948	67.4	78.4	71.2	53.2	71.3	81.7	68.5	35.0	48.9	27.5	18.6	15.2	53.0
1949	27.0	55.8	41.2	32.9	37.9	41.8	18.7	13.4	1,490	96.7	29.7	19.8	157
1950	45.4	56.7	49.2	31.8	41.5	36.6	19.4	18.0	15.7	29.8	17.0	14.8	31.3

* Not previously published; estimated on basis of weather records.

a From reports of State engineer of Colorado.

b From files of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	a27,800	a64,000	a31,800	a1,270	a449	a1,280	-
1915	a2,550	a2,250	#2,460	b3,140	b2,500	b3,140	b5,050	b11,100	15,200	b646	b1,500	b2,230	#51,800
1916	b6,330	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	a3,400	a2,550	a695	a2,170	a1,320	a1,490	a1,080	-
1928	a5,550	a4,080	a3,390	a2,770	a1,850	a2,900	a964	a4,420	a6,310	a5,720	a1,960	a1,760	a41,700
1929	a3,150	a4,530	a4,160	a3,580	a2,220	a2,950	a2,810	a1,070	a2,490	a1,130	a4,340	a1,880	a34,100
1930	a3,160	a5,810	a4,750	a2,760	a3,890	a3,280	a2,290	a557	a531	a1,600	a6,640	a2,190	a37,500
1931	a4,130	a3,710	a3,620	a3,220	a2,470	a3,540	a1,860	a799	a2,000	a542	a456	a178	a26,500
1932	a1,430	a2,990	a3,620	a2,560	a1,930	a2,230	a410	a545	a1,110	a1,560	a873	a70	a19,400
1933	a1,540	a1,850	a2,120	a1,480	a1,680	a1,000	a456	a5,350	a714	a1,250	a516	a952	a18,900
1934	3,110	2,170	2,960	2,240	1,760	1,870	869	271	214	55	0	0	15,520
1935	196	157	831	1,400	871	760	91	5,340	2,470	2,380	260	490	15,250
1936	1,870	3,150	2,610	1,760	1,660	1,920	797	361	2,560	1,750	1,420	558	20,420
1937	3,190	3,520	3,460	2,010	2,170	2,690	812	472	1,340	950	294	658	21,570
1938	1,070	2,740	3,060	2,490	2,150	1,840	1,300	752	1,480	1,030	981	25,820	44,610
1939	4,310	4,600	4,240	2,900	2,380	3,380	2,400	543	1,520	495	221	158	27,130
1940	230	1,740	1,750	1,760	2,270	2,180	207	133	649	1,200	184	276	12,560

* Not previously published; estimated on basis of weather records.

a From reports of State engineer of Colorado.

b From files of State engineer of Colorado.

1/ Published as Big Thompson Creek near Mouth, 1914, Big Thompson River at Mouth, 1927-33, and Thompson River at mouth, near La Salle, 1934-47.

Monthly and yearly runoff, in acre-feet of Big Thompson River at mouth, near La Salle, Colo.--Con.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	746	2,480	2,330	1,980	1,560	1,480	776	2,950	2,770	2,280	875	551	20,780
1942	375	2,690	2,920	2,090	1,740	3,260	7,970	14,830	6,570	3,380	1,500	1,120	49,440
1943	5,870	4,900	3,970	2,720	2,190	2,570	2,250	16,430	9,920	3,170	1,890	1,060	54,940
1944	1,390	2,490	3,160	2,610	1,990	2,290	4,830	10,340	2,380	3,190	512	391	35,570
1945	651	2,600	3,240	2,570	2,140	2,220	1,480	1,010	2,560	1,890	2,550	1,460	24,370
1946	2,490	2,630	2,990	2,100	1,880	2,100	1,440	411	780	2,740	434	1,050	21,040
1947	2,580	4,040	4,010	2,950	1,910	3,420	1,920	2,950	50,520	8,070	2,230	1,280	65,880
1948	4,150	4,680	4,380	3,270	4,100	5,030	4,070	2,150	2,910	1,690	1,140	908	38,480
1949	1,680	3,320	2,530	2,020	2,100	2,570	1,110	821	88,660	5,940	1,830	1,180	113,700
1950	2,790	3,370	3,030	1,960	2,310	2,250	1,160	1,110	935	1,830	1,050	881	22,680

Year	W.S.P. no.	Yearly discharge, in cubic feet per second						Calendar year	
		Water year ending Sept. 30							
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
Discharge	Date								
1914	(a)	-	-	-	-	-	-	-	
1915	(b)	-	-	b5	#71.5	#51,800	-	-	
1927	(a)	#235	June 12, 1927	a1	-	-	-	-	
1928	(a)	#599	May 11, 1928	a3	a57.4	a41,700	a55.8	a40,500	
1929	(a)	-	-	a5	a47.1	a34,100	a49.7	a36,000	
1930	(a)	-	-	a2	a51.7	a37,500	a48.6	a35,200	
1931	(a)	#512	June 24, 1951	a1	a36.6	a26,500	a31.9	a23,100	
1932	(a)	1,500	July 28, 1932	a1	a26.7	a19,400	a23.2	a16,900	
1933	(a)	#156	May 27, 1933	a1	a26.1	a18,900	a29.9	a21,600	
1934	763	73	Oct. 15, 1933	0	21.4	15,520	11.7	8,480	
1935	768	748	June 12, 1935	0	21.1	15,250	30.0	21,690	
1936	806	364	July 12, 1936	2.3	28.1	20,420	31.6	22,960	
1937	826	938	Sept. 4, 1937	2.4	29.6	21,570	25.2	18,270	
1938	858	3,000	Sept. 3, 1938	2.6	61.6	44,610	70.3	50,890	
1939	878	116	June 29, 1939	1.6	37.5	27,130	24.4	17,680	
1940	896	124	July 4, 1940	.6	17.3	12,560	19.9	14,420	
1941	926	581	June 23, 1941	1.6	28.7	20,780	29.3	21,210	
1942	956	578	May 3, 1942	1.4	68.9	49,440	76.2	55,200	
1943	976	878	June 3, 1943	5.9	75.9	54,940	68.0	49,240	
1944	1006	306	May 14, 1944	4.6	49.0	35,570	48.2	35,020	
1945	1036	301	June 25, 1945	3.0	33.6	24,370	35.9	25,990	
1946	1056	758	July 20, 1946	3.4	29.1	21,040	32.5	23,560	
1947	1086	1,600	June 23, 1947	.6	91.0	65,880	94.5	69,440	
1948	1116	435	May 30, 1948	0	55.0	38,480	45.2	32,780	
1949	1146	4,440	June 5, 1949	1.0	157	113,700	159	115,400	
1950	1176	76	Nov. 15, 1949	2.2	31.3	22,680	-	-	

* Not previously published.

a From reports of State engineer of Colorado.

b From files of State engineer of Colorado.

c Observed.

257. Grand River ditch at La Poudre Pass, Colo.

(Transmountain diversion)

Location.--Lat 40°28'40", long. 105°49'10", in sec. 20, T. 6 N., R. 75 W., at La Poudre Pass.

Gage.--Water-stage recorder and 10-ft Parshall flume since May 1937. Altitude of gage is 10,190 ft (from topographic map). May 1910 to September 1936, water-stage recorder and 12-ft rectangular flume at same site.

Remarks.--Diversion is from tributaries of Colorado River to Long Draw (tributary of Cache la Poudre River) in NE $\frac{1}{4}$ sec. 20, T. 6 N., R. 75 W., in Platte River basin. Two collection ditches beginning at headgates located in sec. 34, T. 5 N., R. 76 W., and sec. 29, T. 6 N., R. 75 W., intercept all tributaries upstream on each side of the Colorado River and converge at La Poudre Pass. Water was first diverted in 1892, but no records are available prior to 1896.

Cooperation.--Records for 1896-1903, furnished by Colorado Water Conservation Board; records for 1910-50 furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet of Grand River ditch at La Poudre Pass, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year	
1896	a0	a0	a0	a0	a0	a0	a0	a0	a122	a69	a65	a37	a293	
1897	a0	a0	a0	a0	a0	a0	a0	a0	a52	a295	a112	a73	a532	
1898	a0	a0	a0	a0	a0	a0	a0	a0	a0	a96	a16	a0	a112	
1899	a0	a0	a0	a0	a0	a0	a0	a0	a0	a78	a204	a18	a300	
1900	a0	a0	a0	a0	a0	a0	a0	a0	a785	a441	a70	a0	a1,300	
1901	a0	a0	a0	a0	a0	a0	a0	a180	a725	a503	a149	a11	a1,570	
1902	a0	a0	a0	a0	a0	a0	a0	a156	a921	a252	a192	a0	a1,520	
1903	a0	a0	a0	a0	a0	a0	a0	a0	a1,190	a663	a31	a0	a1,680	
1904	-	-	-	-	-	-	-	-	-	-	-	-	1,980	
1905	-	-	-	-	-	-	-	-	-	-	-	-	6,170	
1906	-	-	-	-	-	-	-	-	-	-	-	-	12,000	
1907	-	-	-	-	-	-	-	-	-	-	-	-	12,800	
1908	-	-	-	-	-	-	-	-	-	-	-	-	16,800	
1909	-	-	-	-	-	-	-	-	-	-	-	-	15,800	
1910	b0	b0	b0	b0	b0	b0	b0	b2,360	b5,640	b1,740	b496	b0	c10,240	
1911	b0	b0	b0	b0	b0	b0	b0	b1,150	b3,470	b3,910	b948	b235	c9,710	
1912	b126	b0	b0	b0	b0	b0	b0	b0	*280	5,310	*7,630	*2,330	*168	*15,840
1913	b0	b0	b0	b0	b0	b0	b0	b0	*1,470	*5,740	2,450	*434	0	*10,090
1914	b0	b0	b0	b0	b0	b0	b0	b0	0	*2,000	4,570	1,040	0	*7,610
1915	b0	b0	b0	b0	b0	b0	b0	b0	2,010	5,090	4,420	*686	0	*12,210
1916	b0	b0	b0	b0	b0	b0	b0	b0	1,220	*6,740	4,890	1,630	*42	*14,520
1917	b0	b0	b0	b0	b0	b0	b0	b0	0	0	*5,620	1,600	368	*7,590
1918	b0	b0	b0	b0	b0	b0	b0	b0	*854	*8,050	*4,630	*833	0	*14,370
1919	b0	b0	b0	b0	b0	b0	b0	b0	3,000	*4,310	2,200	620	0	*10,130
1920	b0	b0	b0	b0	b0	b0	b0	b0	*0	6,880	6,370	1,810	112	15,170
1921	b0	b0	b0	b0	b0	b0	b0	b0	*1,140	1,670	4,260	*1,910	*234	*9,210
1922	b0	b0	b0	b0	b0	b0	b0	b0	1,240	*7,420	*2,390	*1,330	*70	12,450
1923	b0	b0	b0	b0	b0	b0	b0	b0	*1,080	*2,420	*6,960	*2,010	*84	*12,550
1924	b0	b0	b0	b0	b0	b0	b0	b0	*1,150	*0	*5,490	*872	0	*7,510
1925	b0	b0	b0	b0	b0	b0	b0	b0	*2,730	*6,540	*4,460	*2,040	*946	16,720
1926	b76	b0	b0	b0	b0	b0	b0	b0	*1,190	*5,630	6,120	1,480	0	*14,500
1927	b0	b0	b0	b0	b0	b0	b0	b0	1,540	*8,950	*4,960	*1,040	0	*16,490
1928	b0	b0	b0	b0	b0	b0	b0	b0	b874	b5,110	b5,920	b1,630	b0	b13,530
1929	b0	b0	b0	b0	b0	b0	b0	b0	b921	b8,590	b7,300	b2,820	b272	b19,900
1930	b0	b0	b0	b0	b0	b0	b0	b288	b2,610	b6,210	b2,560	b2,000	b32	b13,700
1931	b0	b0	b0	b0	b0	b0	b0	b0	b1,690	b7,140	b1,610	b151	b0	b10,590
1932	b0	b0	b0	b0	b0	b0	b0	b0	b1,400	b6,810	b4,610	b1,030	b0	b13,850
1933	b0	b0	b0	b0	b0	b0	b0	b0	b328	b7,820	b3,630	b412	b0	b12,190
1934	b0	b0	b0	b0	b0	b0	b0	b379	b4,430	b2,180	b510	b191	b0	b7,690
1935	b0	b0	b0	b0	b0	b0	b0	b0	b190	b4,950	b5,130	b990	b18	b11,280
1936	b0	b0	b0	b0	b0	b0	b0	b0	b2,700	b9,450	b4,610	b2,110	b164	b19,030
1937	b0	b0	b0	b0	b0	b0	b0	b0	b3,580	b6,270	b3,520	b275	b0	b13,640
1938	b0	b0	b0	b0	b0	b0	b0	b0	b1,300	b2,450	b7,830	b2,170	b1,480	c26,210
1939	b0	b0	b0	b0	b0	b0	b0	b0	b4,620	b8,910	b3,930	b983	b185	d18,630
1940	b0	b0	b0	b0	b0	b0	b0	b0	b3,350	b0,240	b3,400	b235	b0	c17,220
1941	b0	b0	b0	b0	b0	b0	b0	b0	b4,130	b9,980	b4,350	b734	b0	c19,190
1942	b0	b0	b0	b0	b0	b0	b0	b0	b762	b11,910	b6,460	b1,020	b0	c20,150
1943	0	0	0	0	0	0	0	0	1,020	8,940	6,040	1,470	63	17,530
1944	0	0	0	0	0	0	0	0	252	9,480	6,000	906	16	16,650
1945	0	0	0	0	0	0	0	0	546	8,850	10,360	3,310	229	23,300
1946	0	0	0	0	0	0	93	1,930	10,440	4,520	1,600	239	18,820	
1947	0	0	0	0	0	0	0	1,500	7,930	11,840	2,970	577	24,820	
1948	0	0	0	0	0	0	0	2,790	9,870	4,020	940	108	17,730	
1949	0	0	0	0	0	0	0	604	5,950	8,640	1,640	360	17,190	
1950	0	0	0	0	0	0	0	297	10,990	4,350	524	0	16,160	

* Revised; differs from figure published in WSP 617.

a From files of Colorado Water Conservation Board.

b From files of State engineer of Colorado.

c From reports of State engineer of Colorado.

d Revised; differs from figure published in reports of State engineer of Colorado.

Note.--Records for 1896-1903, 1928-42, not previously published by Geological Survey; those for 1904-27 published in WSP 617 and those for 1943-47 in annual water-supply papers with records for Colorado River near Grand Lake.

258. Cache la Poudre River above Chambers Lake outlet, Colo.

Location.--Lat 40°38'00", long. 105°46'30", in NE $\frac{1}{4}$ sec. 28, T. 8 N., R. 75 W., at highway bridge a quarter of a mile upstream from Chambers Lake outlet and 8 miles (revised) southwest of Home.

Drainage area.--91 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 8,420 ft (from nearby level line). Prior to Oct. 8, 1929, at datum 0.60 ft higher.

Extremes.--1929-31: Maximum discharge, 1,720 cfs June 8, 1929 (gage height, 4.4 ft, datum then in use), from rating curve extended above 900 cfs; minimum not determined.

Remarks.--No diversions above station. Natural flow of stream affected by transmountain diversion into basin above station through Grand River ditch (see elsewhere in this report).

Monthly and yearly discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	985	407	153	113	-
1930	69.3	25.0	14.8	11.3	6.7	9.5	80.6	317	550	147	163	76.2	123
1931	35.6	25.5	7.4	2.0	2.0	3.0	10.7	234	526	167	42.9	20.4	90.0

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	57,400	25,000	9,410	6,720	-
1930	4,260	1,490	910	695	372	584	4,800	19,500	32,700	9,040	10,000	4,530	88,900
1931	2,190	1,520	455	123	111	184	637	14,400	31,400	10,300	2,640	1,210	65,200

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	1,720	June 8, 1929	-	-	-	-	-
1930	701	1,400	May 30, 1930	-	123	88,900	119	86,400
1931	716	1,520	June 7, 1931	-	90.0	65,200	-	-

259. Cameron Pass ditch at Cameron Pass, Colo.

(Transbasin diversion)

Location.--Lat 40°31'20", long. 105°53'30", in sec. 2, T. 6 N., R. 76 W., at Cameron Pass.

Gage.--Water-stage recorder and 2-ft Parshall flume. Altitude of gage is 10,300 ft (from topographic map). Prior to May 25, 1931, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from tributaries of Michigan River in sec. 10 (revised), T. 6 N., R. 76 W., in North Platte River basin to Joe Wright Creek in sec. 2, T. 6 N., R. 76 W., in Cache la Poudre River basin. All records available are published herewith.

Monthly figures of diversion for the period May 19, 1913, to May 24, 1931, based on periodic discharge measurements made near present site by State engineer of Colorado.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1913	a0	a0	a0	a0	a0	a0	a0	a0	a88	a0	a0	a0	a88
1914	a0	a0	a0	a0	a0	a0	a0	a0	a104	a93	a0	a0	a197
1915	a0	a0	a0	a0	a0	a0	a0	a0	a147	a160	a0	a0	a307
1916	a0	a0	a0	a0	a0	a0	a0	a0	a290	a233	a4	a0	a527
1917	a0	a0	a0	a0	a0	a0	a0	a0	a0	a101	a0	a0	a101
1918	a0	a0	a0	a0	a0	a0	a0	a0	a196	a36	a0	a0	a232
1919	a0	a0	a0	a0	a0	a0	a0	a56	a190	a37	a0	a0	a283
1920	a0	a0	a0	a0	a0	a0	a0	a0	a71	a188	a0	a0	a259
1921	a0	a0	a0	a0	a0	a0	a0	a0	a0	a42	a0	a0	a42
1922	a0	a0	a0	a0	a0	a0	a0	a8	a230	a19	a0	a0	a257
1923	a0	a0	a0	a0	a0	a0	a0	a0	a24	a194	a0	a0	a218
1924	a0	a0	a0	a0	a0	a0	a0	a0	a8	a81	a0	a0	a89
1925	a0	a0	a0	a0	a0	a0	a0	a22	a270	a92	a0	a0	a384

a From files of State engineer of Colorado.

Note.--Records prior to water year 1948 not previously published by Geological Survey.

Monthly and yearly diversion, in acre-feet of Cameron Pass ditch at Cameron Pass, Colo.--Con.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a0	a0	a0	a0	a0	a0	a0	a0	a224	a153	a0	a0	a377
1927	a0	a0	a0	a0	a0	a0	a0	a0	a262	a101	a0	a0	a373
1928	a0	a0	a0	a0	a0	a0	a0	a0	a129	a199	a5	a0	a333
1929	a0	a0	a0	a0	a0	a0	a0	a0	a186	a194	a9	a0	a389
1930	a0	a0	a0	a0	a0	a0	a0	a15	a211	a27	a0	a0	a253
1931	a0	a0	a0	a0	a0	a0	a0	a14	a280	a13	a0	a0	a307
1932	a0	a0	a0	a0	a0	a0	a0	a10	a273	a102	a0	a0	a385
1933	a0	a0	a0	a0	a0	a0	a0	a0	a346	a77	a0	a0	a423
1934	a0	a0	a0	a0	a0	a0	a0	a113	a855	a0	a0	a0	a168
1935	a0	a0	a0	a0	a0	a0	a0	a0	a169	a110	a0	a0	a279
1936	a0	a0	a0	a0	a0	a0	a0	a42	a287	a23	a0	a0	a352
1937	a0	a0	a0	a0	a0	a0	a0	a56	a163	a18	a0	a0	b237
1938	a0	a0	a0	a0	a0	a0	a0	a4	a350	a94	a0	a0	b448
1939	a0	a0	a0	a0	a0	a0	a0	a48	a189	a18	a0	a0	b255
1940	a0	a0	a0	a0	a0	a0	a0	a12	a196	a26	a0	a0	b234
1941	a0	a0	a0	a0	a0	a0	a0	a47	a190	a50	a0	a0	b297
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1943	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1944	a0	a0	a0	a0	a0	a0	a0	a0	a119	a67	a0	a0	b186
1945	a0	a0	a0	a0	a0	a0	a0	a0	a116	a181	a0	a0	a297
1946	a0	a0	a0	a0	a0	a0	a0	a0	a226	a36	a0	a0	a262
1947	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	0	93	56	0	0	149
1950	0	0	0	0	0	0	0	0	129	2	0	0	131

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--Records prior to water year 1948 not previously published by Geological Survey.

260. Michigan ditch at Cameron Pass, Colo.1/

(Transbasin diversion)

Location--Lat 40°31'20", long. 105°53'30", in sec. 2, T. 6 N., R. 76 W., at Cameron Pass.

Gage--Water-stage recorder and 8-ft Parshall flume. Altitude of gage is 10,300 ft (from topographic map). Prior to May 28, 1933, staff gage or water-stage recorder near present site at various datums.

Remarks--Diversion is from Michigan River and tributaries in sec. 12 (revised), T. 6 N., R. 76 W., in North Platte River basin to Joe Wright Creek in sec. 2, T. 6 N., R. 76 W., in Cache la Poudre River basin. All records available are published here-with.

Monthly figures of diversion for water years 1905-20 and 1922 based on periodic discharge measurements made near present site by State engineer of Colorado.

Cooperation--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1905	-	-	-	-	-	-	-	-	-	-	-	-	a861
1906	-	-	-	-	-	-	-	-	-	-	-	-	a1,920
1907	-	-	-	-	-	-	-	-	-	-	-	-	a3,980
1908	-	-	-	-	-	-	-	-	-	-	-	-	a4,120
1909	-	-	-	-	-	-	-	-	-	-	-	-	a5,750
1910	-	-	-	-	-	-	-	-	-	-	-	-	a2,310
1911	-	-	-	-	-	-	-	-	-	-	-	-	a2,840
1912	-	-	-	-	-	-	-	-	-	-	-	-	a4,750
1913	b0	b0	b0	b0	b0	b0	b0	b0	b1,540	b617	b220	b227	b2,600
1914	b83	b0	b0	b0	b0	b0	b0	b0	b427	b1,290	b391	b165	b2,360
1915	b0	b0	b0	b0	b0	b0	b0	b0	b647	b1,240	b229	b0	b2,120
1916	b0	b0	b0	b0	b0	b0	b0	b0	b1,990	b2,160	b1,130	b537	b5,820
1917	b81	b0	b0	b0	b0	b0	b0	b0	b0	b954	b306	b34	b1,380
1918	b0	b0	b0	b0	b0	b0	b0	b0	b77	b1,380	b825	b121	b2,360
1919	b0	b0	b0	b0	b0	b0	b0	b0	b625	b1,220	b468	b83	b2,400
1920	b0	b0	b0	b0	b0	b0	b0	b0	b1,640	b1,610	b331	b0	b3,780

a Calendar year figures.

b From files of State engineer of Colorado.

Note.--Records prior to water year 1948 not previously published by Geological Survey except for calendar year figures of yearly diversion of 1905-12 published in WSP 469.

1/ Published as Rist & McNab ditch, 1904-12.

Monthly and yearly diversion, in acre-feet of Michigan ditch at Cameron Pass, Colo.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	b0	b0	b0	b0	b0	b0	b0	b198	b1,120	b1,270	b427	b101	b3,120
1922	b0	b0	b0	b0	b0	b0	b0	b198	b2,280	b595	b218	b69	b3,560
1923	b0	b0	b0	b0	b0	b0	b0	b115	b1,520	b3,070	b664	b98	b5,470
1924	b0	b0	b0	b0	b0	b0	b0	b439	b750	b931	b292	b0	b2,410
1925	b0	b0	b0	b0	b0	b0	b0	b903	b3,600	b1,810	b778	b596	b7,690
1926	b95	b0	b0	b0	b0	b0	b0	b317	b2,670	b1,840	b702	b375	b6,000
1927	b0	b0	b0	b0	b0	b0	b0	b299	b2,420	b1,530	b500	b62	b4,810
1928	b0	b0	b0	b0	b0	b0	b0	b0	b1,510	b2,210	b552	b168	b4,440
1929	b0	b0	b0	b0	b0	b0	b0	b0	b2,310	b2,000	b770	b416	b5,500
1930	b0	b0	b0	b0	b0	b0	b0	b308	b1,680	b665	b689	b63	b5,600
1931	b0	b0	b0	b0	b0	b0	b0	b625	b2,630	b789	b372	b0	b4,420
1932	b0	b0	b0	b0	b0	b0	b0	b275	b2,320	b1,530	b394	b17	b4,540
1933	b0	b0	b0	b0	b0	b0	b0	b52	b5,360	b1,240	b228	b0	b4,880
1934	b0	b0	b0	b0	b0	b0	b0	b581	b405	b28	b0	b0	b1,010
1935	b0	b0	b0	b0	b0	b0	b0	b0	b1,840	b1,650	b394	b0	b3,880
1936	b0	b0	b0	b0	b0	b0	b0	b746	b2,490	b759	b488	b0	b4,480
1937	b0	b0	b0	b0	b0	b0	b0	b283	b1,360	b693	b67	b0	b2,420
1938	b0	b0	b0	b0	b0	b0	b0	b141	b3,040	b1,530	b217	b0	b4,930
1939	b0	b0	b0	b0	b0	b0	b0	b656	b1,520	b30	b78	b0	b2,280
1940	b0	b0	b0	b0	b0	b0	b0	b332	b1,240	b182	b25	b0	b1,780
1941	b0	b0	b0	b0	b0	b0	b0	b612	b2,130	b566	b91	b0	b3,400
1942	b0	b0	b0	b0	b0	b0	b0	b0	b56	b728	b2	b0	b786
1943	b0	b0	b0	b0	b0	b0	b0	b0	b655	b839	b43	b0	b1,540
1944	b0	b0	b0	b0	b0	b0	b0	b0	b1,070	b706	b31	b0	b1,810
1945	b0	b0	b0	b0	b0	b0	b0	b0	b834	b1,660	b596	b0	b3,090
1946	b0	b0	b0	b0	b0	b0	b0	b0	b1,800	b122	b18	b0	b1,940
1947	b0	b0	b0	b0	b0	b0	b0	b0	b815	b2,040	b409	b0	b3,260
1948	0	0	0	0	0	0	0	586	1,240	23	64	0	1,910
1949	0	0	0	0	0	0	0	0	691	1,600	72	0	2,360
1950	0	0	0	0	0	0	0	21	1,810	240	0	0	2,070

b From files of State engineer of Colorado.

c From reports of State engineer of Colorado.

Note.--See note on preceding page.

261. Lost Lake outlet at Chambers Lake, Colo.

(Transbasin diversion)

Location.--Lat 40°36'30", long. 105°50'50", in sec. 6, T. 7 N., R. 75 W., at Chambers Lake.

Gage.--Water-stage recorder and 7-ft rectangular weir. Altitude of gage is 9,180 ft (from topographic map). Prior to July 29, 1923, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from Laramie River in sec. 31, T. 8 N., R. 75 W., to Chambers Lake in sec. 6, T. 7 N., R. 75 W., in Cache la Poudre River basin. All records available are published herewith.

Monthly figures of diversion for the period June 1, 1899, to July 28, 1923, based on periodic discharge measurements made near present site by State engineer of Colorado. Figures of diversion for 1924-31 are those contained in Defendant's Exhibit G-3 of second suit (298 U.S. 573), Wyoming vs. Colorado.

Cooperation.--Records, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	a0	a0	a0	a0	a0	a0	a0	a0	a227	a0	a42	a63	a332
1900	a0	a0	a0	a0	a0	a0	a0	a14	a0	a90	a0	a0	a104
1901	a0	a0	a0	a0	a0	a0	a0	a318	a28	a151	a0	a0	a497
1902	a0	a0	a0	a0	a0	a0	a0	a170	a90	a0	a0	a0	a260
1903	a0	a0	a0	a0	a0	a0	a0	a239	a101	a29	a5	a0	a374
1904	a0	a0	a0	a0	a0	a0	a0	a277	a54	a52	a169	a0	a532
1905	a0	a0	a0	a0	a0	a0	a0	a0	a39	a96	a19	a0	a154
1906	a0	a0	a0	a0	a0	a0	a0	a0	a55	a1	a58	a44	a158
1907	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a170	a0	a170
1908	a0	a0	a0	a0	a0	a0	a0	a62	a26	a155	a26	a0	a269
1909	a0	a0	a0	a0	a0	a0	a0	a242	a47	a0	a124	a14	a427
1910	a0	a0	a0	a0	a0	a0	a0	a78	a0	a0	a129	a10	a217
1911	a0	a0	a0	a0	a0	a0	a0	a231	a0	a0	a49	a0	a280
1912	a37	a0	a0	a0	a0	a0	a0	a88	a247	a0	a0	a0	a372
1913	a0	a0	a0	a0	a0	a0	a0	a18	a0	a0	a16	a0	a34
1914	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1915	a0	a0	a0	a0	a0	a0	a0	a0	a0	a63	a0	a0	a63

a From files of State engineer of Colorado.

Monthly and yearly diversion, in acre-feet of Lost Lake outlet at Chambers Lake, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	a0	a0	a0	a0	a0	a0	a0	a59	a56	a162	a0	a0	a277
1917	a0	a0	a0	a0	a0	a0	a0	a0	a414	a0	a0	a0	a414
1918	a0	a0	a0	a0	a0	a0	a0	a101	a122	a414	a0	a0	a637
1919	a0	a0	a0	a0	a0	a0	a0	a53	a0	a0	a0	a0	a53
1920	a0	a0	a0	a0	a0	a0	a0	a0	a0	a280	a0	a0	a280
1921	a0	a0	a0	a0	a0	a0	a0	a60	a23	a368	a0	a0	a451
1922	a0	a0	a0	a0	a0	a0	a0	a0	a210	a0	a0	a0	a210
1923	a0	a0	a0	a0	a0	a0	a0	a0	a192	a442	a0	a0	a634
1924	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1925	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1926	a0	a0	a0	a0	a0	a0	a0	a213	a25	a337	a288	a0	a863
1927	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a454	a0	a454
1928	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a411	a0	a411
1929	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a470	a0	a470
1930	a0	a0	a0	a0	a0	a0	a0	a0	a0	a213	a13	a0	a231
1931	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a106	a0	a106
1932	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1933	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1934	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1935	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1936	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1937	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1938	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1939	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1940	a0	a0	a0	a0	a0	a0	a0	a132	a0	a0	a0	a0	b132
1941	a0	a0	a0	a0	a0	a0	a0	a168	a17	a0	a0	a0	b185
1942	a0	a0	a0	a0	a0	a0	a0	a243	a112	a54	a0	a0	b409
1943	a0	a0	a0	a0	a0	a0	a0	a395	a119	a0	a0	a0	b504
1944	a0	a0	a0	a0	a0	a0	a0	a93	a124	a0	a0	a0	b217
1945	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	0
1946	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1947	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1948	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1949	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1950	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

262. Skyline ditch at Chambers Lake, Colo.

(Transbasin diversion)

Location.--Lat 40°39'50", long. 105°53'10", in sec. 31, T. 8 N., R. 75 W., near north end of Chambers Lake.

Gage.--Water-stage recorder and 10-ft Parshall flume. Altitude of gage is 9,100 ft (from topographic map). Prior to May 4, 1937, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from West Branch Laramie River in sec. 14, T. 8 N., R. 76 W., in Laramie River basin to Chambers Lake in sec. 31, T. 8 N., R. 75 W., in Cache la Poudre River basin. All records available are published herewith.

Monthly figures of diversion for the period June 27, 1914, to May 18, 1923, based on periodic discharge measurements made near present site by State engineer of Colorado. Figures of diversion for 1899-1913 are those contained in Defendant's Exhibit No. 124 of the original Wyoming vs. Colorado case. Monthly figures of diversion for 1914-21 have been adjusted by Colorado Water Conservation Board to agree with yearly figures contained in Defendant's Exhibit M-3 of the second suit (298 U.S. 573).

Wyoming vs. Colorado. Figures of diversion of 1922-32 are those contained in Defendant's Exhibit E-3 of the second Wyoming vs. Colorado case.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a0	a0	a0	a0	a0	a0	a0	a292	a2,480	a5,450	a3,590	a1,420	a14,230
1896	a803	a740	a0	a0	a0	a0	a0	a1,390	a5,770	a3,850	a2,790	a1,280	a16,620
1897	a708	a495	a0	a0	a0	a0	a0	a519	a4,500	a5,740	a3,260	a1,450	a18,700
1898	a1,040	a354	a0	a0	a0	a0	a0	a1,260	a5,090	a3,310	a1,200	a678	a13,450
1899	a436	a316	a0	a0	a0	a0	a0	a0	a0	a7,180	a7,090	a2,350	a17,360
1900	a1,090	a0	a0	a0	a0	a0	a0	a0	a7,010	a6,300	a2,360	a1,230	a17,990
1901	a857	a726	a179	a0	a0	a0	a0	a937	a8,930	a8,120	a3,430	a1,150	a24,330
1902	a749	a491	a0	a0	a0	a0	a0	a1,560	a9,150	a5,540	a2,920	a1,330	a21,740
1903	a1,030	a592	a0	a0	a0	a0	a0	a277	a7,690	a9,500	a3,450	a2,040	a24,580
1904	a2,130	a1,030	a0	a0	a0	a0	a0	a1,550	a9,110	a7,870	a2,440	a869	a25,100
1905	a769	a559	a162	a0	a0	a0	a0	a0	a2,000	a6,130	a2,940	a1,050	a13,610

a From files of State engineer of Colorado.

Note.--Records prior to water year 1948 not previously published by Geological Survey except for calendar year figures for 1899-1921.

Monthly and yearly diversion, in acre-feet of Skyline ditch at Chambers Lake, Colo.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	a628	a456	a83	a0	a0	a0	a0	a0	a5,610	a6,150	a2,470	a1,240	a16,640
1907	a772	a456	a0	a0	a0	a0	a0	a0	a1,980	a6,770	a4,490	a1,280	a15,750
1908	a497	a0	a0	a0	a0	a0	a0	a1,100	a5,480	a5,550	a3,430	a1,600	a17,660
1909	a802	a0	a0	a0	a0	a0	a0	a0	a1,560	a3,500	a4,240	a2,550	a12,650
1910	a878	a0	a0	a0	a0	a0	a0	a3,030	a6,720	a3,390	a1,340	a1,640	a17,000
1911	a167	a149	a0	a0	a0	a0	a0	a1,480	a6,930	a4,870	a2,210	a1,380	a17,190
1912	a1,870	a335	a0	a0	a0	a0	a0	a285	a5,220	a7,390	a3,600	a1,490	a20,190
1913	a334	a68	a0	a0	a0	a0	a0	a1,780	a6,540	a4,080	a1,510	a719	a15,630
1914	a0	a0	a0	a0	a0	a0	a0	a0	a476	a5,850	a2,560	a1,320	a10,210
1915	a0	a0	a0	a0	a0	a0	a144	a1,350	a4,760	a5,880	a1,980	a884	a15,000
1916	a0	a0	a0	a0	a0	a0	a0	a1,840	a6,990	a6,430	a3,260	a1,800	a20,320
1917	a0	a0	a0	a0	a0	a0	a0	a0	a0	a8,550	a2,980	a1,040	a10,570
1918	a538	a380	a12	a0	a0	a0	a0	a365	a5,920	a5,510	a2,010	a625	a15,360
1919	a1,200	a166	a0	a0	a0	a0	a0	a2,860	a5,590	a3,440	a1,210	a452	a14,920
1920	a508	a350	a0	a0	a0	a0	a0	a0	a2,440	a7,700	a3,320	a440	a14,760
1921	a0	a0	a0	a0	a0	a0	a0	a944	a1,970	a7,930	a2,760	a514	a14,120
1922	a128	a58	a0	a0	a0	a0	a0	a1,100	a7,750	a4,410	a1,740	a292	a15,480
1923	a312	a437	a52	a0	a0	a0	a0	a1,110	a3,500	a6,680	a2,980	a377	a17,240
1924	a386	a0	a0	a0	a0	a0	a0	a1,540	a3,180	a6,830	a1,710	a70	a13,720
1925	a228	a115	a0	a0	a0	a0	a0	a2,500	a5,940	a4,810	a1,440	a0	a15,040
1926	a167	a25	a0	a0	a0	a0	a0	a2,400	a7,060	a6,990	a2,270	a27	a18,940
1927	a0	a0	a0	a0	a0	a0	a0	a1,990	a8,620	a7,140	a3,080	a550	a21,380
1928	a386	a270	a0	a0	a0	a0	a0	a1,400	a4,890	a8,680	a3,270	a825	a19,900
1929	a0	a0	a0	a0	a0	a0	a0	a1,220	a8,090	a8,830	a4,040	a2,300	a24,480
1930	a0	a0	a0	a0	a0	a0	a335	a2,060	a7,390	a4,580	a3,160	a914	a18,240
1931	a0	a0	a0	a0	a0	a0	a44	a1,270	a7,620	a2,660	a1,070	a690	a13,350
1932	a305	a0	a0	a0	a0	a0	a0	a1,730	a7,440	a7,620	a1,200	a0	a18,300
1933	a0	a0	a0	a0	a0	a0	a0	a785	a8,270	a5,740	a1,550	a960	a17,300
1934	a0	a0	a0	a0	a0	a0	a253	a4,910	a3,280	a1,270	a747	a88	a10,550
1935	a288	a0	a0	a0	a0	a0	a0	a708	a6,660	a7,990	a2,550	a735	a18,930
1936	a0	a0	a0	a0	a0	a0	a0	a4,130	a10,610	a5,270	a1,500	a0	a21,510
1937	a0	a0	a0	a0	a0	a0	a0	a3,100	a6,730	a4,590	a1,120	a157	b15,700
1938	a0	a0	a0	a0	a0	a0	a0	a2,260	a8,680	a6,750	a2,440	a1,600	b21,710
1939	a0	a0	a0	a0	a0	a0	a27	a4,030	a5,060	a3,850	a1,270	a638	b14,870
1940	a0	a0	a0	a0	a0	a0	a0	a2,790	a4,440	a0	a0	a0	*7,230
1941	a0	a0	a0	a0	a0	a0	a0	a3,190	a3,450	a0	a0	a0	*6,640
1942	a0	a0	a0	a0	a0	a0	a0	a984	a2,140	a4,680	a90	a455	a8,330
1943	a0	a0	a0	a0	a0	a0	a0	a1,470	a2,420	a4,840	a1,000	a0	*9,730
1944	a0	a0	a0	a0	a0	a0	a0	a893	a6,300	a3,600	a0	a0	*10,590
1945	a0	a0	a0	a0	a0	a0	a0	a860	a4,920	a4,990	a0	a0	a10,570
1946	a0	a0	a0	a0	a0	a0	a0	a1,290	a6,960	a841	a0	a0	a9,090
1947	a0	a0	a0	a0	a0	a0	a0	a1,760	a2,070	a0	a0	a0	a3,830
1938	0	0	0	0	0	0	0	2,340	5,440	0	0	0	7,780
1949	0	0	0	0	0	0	0	0	1,490	4,470	1,840	0	7,800
1950	0	0	0	0	0	0	0	0	2,960	0	0	0	2,960

* Revised; differs from figure published in reports of State engineer of Colorado.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--See note on preceding page.

263. Laramie-Poudre tunnel near Chambers Lake, Colo.

(Transbasin diversion)

Location--Lat 40°40'40", long. 105°51'10", in sec. 7, T. 8 N., R. 75 W., at west portal of Laramie-Poudre tunnel 4 miles north of Chambers Lake.

Gage--Water-stage recorder and 10-ft Parshall flume. Altitude of gage is 8,570 ft (from topographic map). Prior to Apr. 30, 1922, staff gage or water-stage recorder near present site at various datums. Apr. 30, 1922, to Apr. 30, 1937, water-stage recorder and 6-ft Parshall flume at east portal and May 1, 1937, to Apr. 30, 1938, water-stage recorder and 12-ft Parshall flume at same site and different datums.

Remarks--Diversion is from Laramie River in sec. 7, T. 8 N., R. 75 W., and Rawah Creek (tributary to Laramie River) in sec. 14, T. 9 N., R. 76 W., to Cache la Poudre River in sec. 9, T. 8 N., R. 75 W. All records available are published herewith.

Monthly figures of diversion for the period Aug. 8, 1914, to Apr. 29, 1922, based on periodic discharge measurements made near present site by State engineer of Colorado. Those for 1914-21 have been adjusted by Colorado Water Conservation Board to agree with yearly figures in Defendant's Exhibit N-3 of second suit (298 U.S. 573), Wyoming vs. Colorado.

Figures of diversion for 1922-32 are those contained in Defendant's Exhibit D-3 of the second Wyoming vs. Colorado case.

Cooperation--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet of Laramie-Poudre Tunnel near Chambers Lake, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	a0	a0	a0	a0	a0	a0	a0	a0	a0	a612	a201	a813	
1915	a0	a0	a0	a0	a0	a0	a288	a1,100	a1,460	a1,300	a636	a176	a4,960
1916	a0	a0	a0	a0	a0	a0	a0	a0	a2,270	a1,420	a710	a114	a4,510
1917	a0	a0	a0	a0	a0	a0	a0	a0	a0	a392	a0	a392	
1918	a0	a0	a0	a0	a0	a0	a0	a750	a6,080	a2,920	a615	a335	a10,700
1919	a0	a0	a0	a0	a0	a0	a136	a1,460	a1,340	a850	a300	a0	a4,090
1920	a0	a0	a0	a0	a0	a0	a62	a660	a6,150	a3,250	a932	a1,070	a12,120
1921	a276	a0	a0	a0	a0	a0	a0	a2,960	a990	a2,490	a980	a1,270	a8,970
1922	a140	a280	a120	a0	a0	a0	a29	a1,510	a3,850	a762	a555	a107	a7,350
1923	a238	a248	a0	a0	a0	a0	a415	a2,620	a7,410	a4,840	a768	a143	a10,680
1924	a0	a0	a0	a0	a0	a0	a0	a1,100	a50	a1,360	a690	a1,030	a4,230
1925	a194	a70	a0	a0	a0	a62	a928	a1,100	a2,280	a782	a1,180	a2,000	a8,600
1926	a1,400	a1,130	a337	a0	a0	a0	a0	a1,940	a764	a1,340	a1,030	a990	a8,930
1927	a0	a0	a0	a0	a0	a0	a649	a1,480	a3,000	a858	a336	a870	a7,190
1928	a467	a0	a0	a0	a0	a0	a300	a2,790	a4,400	a2,170	a300	a254	a10,680
1929	a189	a0	a0	a0	a0	a0	a0	a1,450	a5,390	a2,050	a417	a280	a7,770
1930	a1,330	a0	a0	a0	a0	a0	a0	a647	a1,320	a608	a425	a0	a4,330
1931	a0	a0	a0	a0	a0	a0	a0	a214	a1,430	a879	a377	a0	a2,900
1932	a0	a0	a0	a0	a0	a0	a0	a1,860	a5,370	a3,160	a2,060	a978	a13,430
1933	a222	a0	a0	a0	a0	a0	a0	a1,830	a7,660	a2,900	a811	a26	a13,450
1934	a0	a0	a0	a0	a0	a0	a0	a5,440	a1,810	a624	a182	a0	a6,060
1935	a0	a0	a0	a0	a0	a0	a0	a1,750	a6,240	a4,390	a1,350	a407	a14,120
1936	a0	a0	a0	a0	a0	a0	a0	a3,750	a6,170	a2,320	a726	a0	a12,970
1937	a0	a0	a0	a0	a0	a0	a0	a3,030	a5,360	a3,100	a797	a0	b12,290
1938	a0	a0	a0	a0	a0	a0	a0	a3,440	a4,390	a728	a924	a0	b9,480
1939	a0	a0	a0	a0	a0	a0	a0	a4,560	a5,710	a2,280	a516	a0	b13,070
1940	a0	a0	a0	a0	a0	a0	a150	a3,920	a3,340	a0	a0	a0	b7,410
1941	a0	a0	a0	a0	a0	a0	a0	a3,920	a3,570	a0	a0	a0	b7,490
1942	a0	a0	a0	a0	a0	a0	a0	a2,060	a2,600	a3,070	a2,510	a0	b10,240
1943	a0	a0	a0	a0	a0	a0	a0	a1,020	a916	a4,060	a2,410	a555	b9,960
1944	a0	a0	a0	a0	a0	a0	a0	a1,590	a6,850	a641	a0	a0	b9,080
1945	a0	a0	a0	a0	a0	a0	a0	a1,470	a5,550	a1,580	a0	a0	a8,600
1946	a0	a0	a0	a0	a0	a0	a0	a3,850	a4,440	a0	a0	a0	a9,470
1947	a0	a0	a0	a0	a0	a0	a1,180	a3,520	a2,350	a7,090	a1,410	a0	a14,370
1948	0	0	0	0	0	0	0	4,670	4,510	2,180	0	0	11,360
1949	0	0	0	0	0	0	0	2,630	2,230	5,810	99	0	10,770
1950	0	0	0	0	0	0	0	1,580	9,530	4,380	0	0	15,490

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--Records prior to water year 1948 not previously published by Geological Survey except for figures of calendar year diversions for 1914-21 published in WSP 469.

264. Bob Creek ditch near Glendevy, Colo.

(Transbasin diversion)

Location.--Lat 40°45'50", long. 105°46'40", in sec. 11, T. 9 N., R. 75 W., about 3 miles south of Deadman Hill and 9 miles southeast of Glendevy.

Gage.--Water-stage recorder and 2-ft Parshall flume. Altitude of gage is 9,900 ft (from topographic map). Prior to May 1, 1940, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from Nunn Creek (tributary of Laramie River) in sec. 9, T. 9 N., R. 75 W., in Laramie River basin, to Roaring Creek in sec. 11, T. 9 N., R. 75 W., in Cache la Poudre River basin. All records available are published herewith.

Monthly figures of diversion for the period June 1920 to Apr. 30, 1940 based on periodic discharge measurements by State engineer of Colorado. Figures for 1920-39 are those contained in Defendants Exhibit No. 124 of second suit (298 U.S. 573), Wyoming vs. Colorado.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	a0	a0	a0	a0	a0	a0	a0	a0	a791	a125	a0	a0	a916
1921	a0	a0	a0	a0	a0	a0	a0	a419	a902	a12	a0	a0	a1,330
1922	a0	a0	a0	a0	a0	a0	a0	a246	a258	a4	a0	a0	a508
1923	a0	a0	a0	a0	a0	a0	a0	a345	a472	a278	a0	a0	a1,100
1924	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1925	a0	a0	a0	a0	a0	a0	a0	a522	a216	a0	a0	a0	a738
1926	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1927	a0	a0	a0	a0	a0	a0	a0	a627	a366	a35	a0	a0	a1,030
1928	a0	a0	a0	a0	a0	a0	a0	a236	a225	a65	a0	a0	a528
1929	a0	a0	a0	a0	a0	a0	a0	a200	a878	a65	a0	a0	a1,140
1930	a0	a0	a0	a0	a0	a0	a40	a397	a204	a0	a0	a0	a631

a From files of State engineer of Colorado.

Note.--Records prior to water year 1949 not previously published by Geological Survey.

Monthly and yearly diversions, in acre-feet of Bob Creek ditch near Glendevey, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	a0	a0	a0	a0	a0	a0	a0	a344	a254	a35	a0	a0	a633
1932	a0	a0	a0	a0	a0	a0	a0	a459	a363	a0	a0	a0	a822
1933	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1934	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1935	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1936	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1937	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1938	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1939	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1940	a0	a0	a0	a0	a0	a0	a0	a115	a52	a0	a0	a0	b167
1941	a0	a0	a0	a0	a0	a0	a0	a161	a113	a0	a0	a0	b274
1942	a0	a0	a0	a0	a0	a0	a0	a72	a148	a0	a0	a0	b220
1943	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1944	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1945	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1946	a0	a0	a0	a0	a0	a0	a0	a77	a273	a0	a0	a0	a350
1947	a0	a0	a0	a0	a0	a0	a0	a218	a306	a0	a0	a0	a524
1948	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1949	0	0	0	0	0	0	0	6	170	0	0	0	176
1950	0	0	0	0	0	0	0	48	252	1	0	0	301

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--Records prior to water year 1949 not previously published by Geological Survey.

265. Cache la Poudre River near Log Cabin, Colo.1/

Location.--Lat 40°42'00", long. 105° 34'20", in SE $\frac{1}{4}$ sec. 33, T. 9 N., R. 73 W., at private bridge half a mile downstream from Sevenmile Creek and 7 miles (revised) southwest of Log Cabin.

Drainage area.--235 sq mi.

Gage.--Staff gage. Datum of gage is 7,090.24 ft above mean sea level, datum of 1929. Jan. 1, 1909, to Dec. 31, 1911, chain gage at site $\frac{1}{2}$ miles upstream at different datum.

Extremes.--1909-11, 1929-31: Maximum discharge observed, 6,310 cfs (revised) June 19, 1909 (gage height, 8.18 ft, site and datum then in use), from rating curve extended above 3,200 cfs by logarithmic plotting; minimum not determined.

Remarks.--Diversions above station for irrigation. Natural flow of stream affected by storage reservoirs and transbasin and transmountain diversions from Laramie, Michigan, and Colorado River basins (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	31.5	29.5	36.5	39.4	274	1,880	1,010	348	220	-
1910	90.5	53.6	34.8	28.5	25.5	38.0	125	607	846	272	102	127	196
1911	61.4	47.5	37.4	29.8	22.3	31.1	43.4	543	1,400	469	133	73.1	241
1912	83.8	54.3	25.3	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	2,010	869	384	273	-
1930	137	61.2	35.0	25.2	16.8	24.4	155	568	963	326	303	174	233
1931	138	23.0	14.1	10.4	9.7	11.8	27.3	371	1,020	348	199	55.1	186

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	1,940	1,640	2,240	2,340	16,800	112,000	62,100	21,400	13,100	-
1910	5,560	3,190	2,140	1,750	1,420	2,340	7,440	37,300	50,300	16,700	6,270	7,560	142,000
1911	3,780	2,830	2,300	1,830	1,240	1,910	2,580	33,400	83,300	28,800	8,180	4,350	174,000
1912	5,150	3,230	1,560	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	120,000	53,400	23,600	16,200	-
1930	8,420	3,640	2,150	1,550	933	1,500	9,220	34,900	57,300	20,000	18,600	10,400	169,000
1931	8,480	1,370	867	640	538	728	1,620	22,800	60,700	21,300	12,200	3,280	135,000

1/ Published as "near Elkhorn," 1909-11.

Yearly discharge, in cubic feet per second of Cache la Poudre River near Log Cabin, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1909	266	*6,310	June 19, 1909	-	-	-	388	244,000
1910	286	1,590	June 2, 1910	20	196	142,000	193	140,000
1911	306	1,880	June 9, 1911	10	241	174,000	242	176,000
1929	686	2,750	June 9, 1929	-	-	-	-	-
1930	701	*1,940	May 31, 1930	-	233	169,000	228	165,000
1931	716	1,600	June 4, 1931	-	186	135,000	-	-

* Revised.

266. South Fork Cache la Poudre River near Eggers, Colo.

Location.--Lat 40°37'00", long. 105°31'30", in sec. 36, T. 8 N., R. 73 W., at highway bridge a third of a mile upstream from Little Beaver Creek, $5\frac{1}{2}$ miles (revised) southwest of Eggers, and 10 miles southeast of Home.

Drainage area.--69 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 7,900 ft (from topographic map). Prior to May 31, 1929, staff gage at site $3\frac{1}{2}$ miles upstream at different datum.

Extremes.--1929-31: Maximum discharge, 424 cfs July 30, 1931 (gage height, 2.56 ft), from rating curve extended above 230 cfs; minimum observed, 4.1 cfs Jan. 6, 1931, but may have been less during periods of no gage-height record.

Remarks.--Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	250	173	99.5	74.7	-
1930	33.1	17.5	14.9	11.0	11.5	9.03	26.3	76.6	171	78.2	93.0	30.8	47.9
1931	22.7	21.2	8.0	5.0	5.0	7.0	18.0	80.0	200	84.1	62.9	26.5	45.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	14,900	10,800	6,120	4,440	-
1930	2,040	1,040	916	678	639	555	1,560	4,710	10,200	4,810	5,720	1,830	34,700
1931	1,400	1,260	492	307	278	430	1,070	4,920	11,900	5,170	3,870	1,580	32,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	359	June 9, 1929	-	-	-	-	-
1930	701	312	June 13, 1930	-	47.9	34,700	46.8	33,900
1931	716	424	July 30, 1931	-	45.2	32,700	-	-

287. Cache la Poudre River below Elkhorn Creek, Colo.

Location.--Lat 40°41'30", long. 105°26'00", in NW $\frac{1}{4}$ sec. 2 (revised), T. 8 N. (revised), R. 72 W., 500 ft southwest of State Highway 14, 0.6 mile downstream from Elkhorn Creek, and 20 miles northwest of Fort Collins.

Drainage area.--407 sq mi (revised).

Gage.--Water-stage recorder. Datum of gage is 6,447.53 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 3,830 cfs June 9, 1947 (gage height, 5.45 ft); minimum daily, 13 cfs Dec. 13, 1949; Jan. 3, 4, 1950.

Remarks.--Diversions above station for irrigation. Natural flow of stream affected by storage reservoirs, transbasin and transmountain diversions from Laramie River, Michigan River, and Colorado River (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second of
Cache la Poudre River below Elkhorn Creek, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	670	1,522	516	280	253	-
1947	61.9	51.1	36.7	22.6	18.9	37.1	70.5	956	1,772	1,304	486	238	423
1948	72.6	62.1	50.9	38.6	36.7	41.0	85.4	1,090	1,420	468	292	194	320
1949	51.9	31.7	26.7	27.2	28.5	43.2	73.0	724	2,115	1,200	441	213	416
1950	68.9	38.7	21.4	21.3	26.0	22.8	50.0	378	1,819	652	287	181	287

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	41,190	90,580	31,760	17,200	15,040	-
1947	3,810	3,040	2,260	1,390	1,050	2,280	4,200	58,790	105,400	80,210	29,870	14,170	306,500
1948	4,460	3,700	3,130	2,380	2,110	2,520	5,080	66,990	84,470	28,790	17,960	10,920	232,500
1949	3,190	1,980	1,640	1,670	1,580	2,650	4,350	44,520	125,800	73,780	27,120	12,660	300,800
1950	4,220	2,300	1,310	1,310	1,550	1,400	2,990	23,250	108,300	40,120	17,640	10,760	215,100

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056	3,020	June 7, 1946	-	-	-	-	-	-
1947	1086	3,830	June 9, 1947	17	423	308,500	426	308,600	
1948	1116	2,950	June 5, 1948	30	320	232,500	314	227,900	
1949	1146	3,610	June 18, 1949	20	416	300,800	417	302,000	
1950	1176	3,570	June 17, 1950	13	297	215,100	-	-	-

268. Cache la Poudre River near Fort Collins, Colo.

Location.--Lat 40°42'15", long. 105°14'35", in sec. 33, T. 9 N., R. 70 W., 1,000 ft downstream from intake of Fort Collins waterworks, 1,500 ft upstream from North Fork, and 11 miles northwest of Fort Collins city limits.

Drainage area.--495 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,350 ft (from topographic map).

Extremes.--1909-11: Maximum discharge observed, 4,580 cfs June 19, 1909 (gage height, 8.50 ft), from rating curve extended above 2,200 cfs; minimum observed, 12 cfs Dec. 5, 1909.

Remarks.--Diversions above station for irrigation and municipal supply. Natural flow of stream also affected by transmountain and transbasin diversions from Colorado, Michigan, and Laramie River basins (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	-	44.1	41.3	65.7	141	486	2,570	1,300	391	259
1910	113	76.2	51.0	52.3	39.2	63.8	156	747	994	312	143	147	242
1911	85.9	67.4	47.4	52.8	44.6	55.5	79.6	896	1,690	724	230	108	341
1912	138	64.7	48.5	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1909	-	-	-	2,710	2,290	4,040	8,390	30,000	153,000	79,900	24,000	15,400	-
1910	6,950	4,530	3,140	3,220	2,180	3,920	9,280	45,900	59,100	19,200	8,790	8,750	175,000
1911	5,280	4,010	2,910	3,250	2,490	3,410	4,740	55,100	101,000	44,500	14,100	6,430	247,000
1912	8,480	3,850	2,980	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1909	266	4,580	June 19, 1909	-	-	-	462	334,000	
1910	266	2,540	June 2, 1910	12	242	175,000	238	173,000	
1911	306	2,240	June 9, 1911	25	341	247,000	345	250,000	

* Not previously published.

269. Columbine ditch at Deadman Hill, Colo.

(Transbasin diversion)

Location.--Lat 40°48'00", long. 105°46'00", in sec. 26, T. 10 N., R. 75 W., at Deadman Hill 9 miles east of Glendevy.

Gage.--Water-stage recorder and 1-ft Parshall flume. Altitude of gage is 10,300 ft (from topographic map). Prior to May 18, 1940, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from Nunn Creek (tributary of Laramie River) in sec. 3, T. 9 N., R. 75 W., in Laramie River basin to North Fork Cache la Poudre River in sec. 25, T. 10 N., R. 75 W., in Cache la Poudre River basin. All records available are published herewith.

Monthly figures of diversion for the period May 28, 1921, to May 17, 1940 based on periodic discharge measurements made near present site by State engineer of Colorado. Figures for 1922-32 are those contained in Defendant's Exhibit I-3 of second suit (298 U.S. 573), Wyoming vs. Colorado.

Cooperation.--Records furnished by State engineer of Colorado.

Monthly and yearly diversion, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	a0	a0	a0	a0	a0	a0	a0	a60	a428	a16	a0	a0	a504
1922	a0	a0	a0	a0	a0	a0	a0	a60	a116	a4	a0	a0	a180
1923	a0	a0	a0	a0	a0	a0	a0	a20	a101	a208	a0	a0	a329
1924	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1925	a0	a0	a0	a0	a0	a0	a0	a92	a165	a0	a0	a0	a257
1926	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1927	a0	a0	a0	a0	a0	a0	a0	a95	a234	a42	a0	a0	a371
1928	a0	a0	a0	a0	a0	a0	a0	a15	a271	a83	a0	a0	a369
1929	a0	a0	a0	a0	a0	a0	a0	a0	a501	a84	a0	a0	a585
1930	a0	a0	a0	a0	a0	a0	a0	a46	a110	a0	a0	a0	a158
1931	a0	a0	a0	a0	a0	a0	a0	a61	a133	a17	a0	a0	a210
1932	a0	a0	a0	a0	a0	a0	a0	a45	a129	a0	a0	a0	a174
1933	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1934	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1935	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1936	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1937	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1938	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1939	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1940	a0	a0	a0	a0	a0	a0	a0	a0	a26	a52	a0	a0	b78
1941	a0	a0	a0	a0	a0	a0	a0	a0	a23	a52	a0	a0	b75
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1943	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1944	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1945	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1946	a0	a0	a0	a0	a0	a0	a0	a0	a163	a0	a0	a0	a163
1947	a0	a0	a0	a0	a0	a0	a0	a16	a172	a0	a0	a0	a188
1948	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1949	0	0	0	0	0	0	0	0	27	0	0	0	27
1950	0	0	0	0	0	0	0	0	84	2	0	0	86

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--Records prior to water year 1949 not previously published by Geological Survey.

270. Wilson Supply ditch near Eaton Reservoir, Colo. 1/

(Transbasin diversion)

Location.--Lat 40°54'30", long. 105°46'50", in sec. 23, T. 11 N., R. 75 W., about 3 miles southwest of Eaton Reservoir and 11 miles northeast of Glendevy.

Gage.--Water-stage recorder and 10-ft Parshall flume. Altitude of gage is 8,600 ft (from topographic map). Prior to May 19, 1923, staff gage or water-stage recorder near present site at various datums.

Remarks.--Diversion is from Sand Creek in sec. 22, T. 11 N., R. 75 W., and at times includes water diverted from tributaries of Deadman Creek in sec. 9, T. 10 N., R. 75 W., Diversion is from the Laramie River basin to Sheep Creek (tributary to North Fork Cache la Poudre River) in sec. 13, T. 11 N., R. 75 W., in the Cache la Poudre River basin (locations corrected). Records herein represent total flow diverted from the Laramie River basin by Wilson Supply ditch.

Monthly figures of diversion for 1914-21 have been adjusted by Colorado Water Conservation Board to agree with yearly figures in Defendant's Exhibit 0-3 of second suit (298 U.S. 573), Wyoming vs. Colorado. Figures of diversion for 1922-32 are those contained in Defendant's Exhibit F-3 of the second Wyoming vs. Colorado suit.

Cooperation.--Records furnished by State engineer of Colorado; those prior to 1948 not previously published by Geological Survey except water year totals 1902-21, 1944-47.

1/ Published as "Sand Creek system," 1902-21, and by State engineer of Colorado as "Sand Creek ditch," 1938, 1940-43.

Monthly and yearly diversion, in acre-feet of Wilson Supply ditch near Eaton Reservoir, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	-	-	-	-	-	-	1,920
1903	-	-	-	-	-	-	-	-	-	-	-	-	1,710
1904	-	-	-	-	-	-	-	-	-	-	-	-	6,810
1905	-	-	-	-	-	-	-	-	-	-	-	-	0
1906	-	-	-	-	-	-	-	-	-	-	-	-	5,000
1907	-	-	-	-	-	-	-	-	-	-	-	-	5,400
1908	-	-	-	-	-	-	-	-	-	-	-	-	2,090
1909	-	-	-	-	-	-	-	-	-	-	-	-	0
1910	-	-	-	-	-	-	-	-	-	-	-	-	783
1911	-	-	-	-	-	-	-	-	-	-	-	-	4,420
1912	-	-	-	-	-	-	-	-	-	-	-	-	2,150
1913	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	0
1914	a0	a0	a0	a0	a0	a0	a0	a0	a813	a122	a0	a0	935
1915	a0	a0	a0	a0	a0	a0	a0	a0	a68	a1,780	a138	a0	1,990
1916	a0	a0	a0	a0	a0	a0	a0	a320	a2,550	a0	a0	a0	2,870
1917	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0
1918	a0	a0	a0	a0	a0	a0	a0	a357	a2,880	a0	a0	a0	3,240
1919	a0	a0	a0	a0	a0	a0	a0	a1,180	a1,160	a170	a0	a0	2,510
1920	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	0
1921	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	0
1922	a0	a0	a0	a0	a0	a0	a0	a1,020	a1,910	a276	a0	a0	a3,210
1923	a0	a0	a0	a0	a0	a0	a0	a944	a3,820	a176	a0	a0	a4,940
1924	a0	a0	a0	a0	a0	a0	a0	a825	a948	a0	a0	a0	a1,770
1925	a0	a0	a0	a0	a0	a0	a38	a2,670	a1,510	a0	a0	a0	a4,220
1926	a0	a0	a0	a0	a0	a0	a0	a2,390	a186	a0	a0	a0	a2,580
1927	a0	a0	a0	a0	a0	a0	a0	a1,540	a1,840	a220	a0	a0	a3,400
1928	a0	a0	a0	a0	a0	a0	a0	a1,300	a0	a0	a0	a0	a1,300
1929	a0	a0	a0	a0	a0	a0	a0	a619	a4,430	a466	a0	a0	a5,520
1930	a0	a0	a0	a0	a0	a0	a10	a1,520	a1,300	a0	a0	a0	a2,830
1931	a0	a0	a0	a0	a0	a0	a0	a920	a1,270	a0	a0	a0	a2,190
1932	a0	a0	a0	a0	a0	a0	a0	a1,720	a3,110	a163	a0	a0	a5,000
1933	a0	a0	a0	a0	a0	a0	a0	a505	a5,480	a278	a0	a0	a6,260
1934	a0	a0	a0	a0	a0	a0	a0	a1,030	a333	a0	a0	a0	a1,360
1935	a0	a0	a0	a0	a0	a0	a0	a249	a4,510	a703	a0	a0	a5,460
1936	a0	a0	a0	a0	a0	a0	a0	a2,350	a1,040	a2	a0	a0	a3,390
1937	a0	a0	a0	a0	a0	a0	a0	a1,760	a1,880	a52	a0	a0	a3,680
1938	a0	a0	a0	a0	a0	a0	a0	a2,170	a4,090	a21	a0	a0	a6,280
1939	a0	a0	a0	a0	a0	a0	a0	a1,980	a675	a0	a0	a0	a2,580
1940	a0	a0	a0	a0	a0	a0	a0	a833	a387	a0	a0	a0	a1,220
1941	a0	a0	a0	a0	a0	a0	a0	a1,720	a913	a0	a0	a0	a2,630
1942	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	a0	b0
1943	a0	a0	a0	a0	a0	a0	a0	a1,110	a32	a0	a0	a0	b1,140
1944	a0	a0	a0	a0	a0	a0	a0	a599	a1,100	a0	a0	a0	1,700
1945	a0	a0	a0	a0	a0	a0	a0	a992	a2,880	a91	a0	a0	*3,960
1946	a0	a0	a0	a0	a0	a0	a320	a1,180	a2,130	a18	a0	a0	3,650
1947	a0	a0	a0	a0	a0	a0	a0	a2,890	a2,450	a0	a0	a0	*5,340
1948	0	0	0	0	0	0	0	2,480	1,090	39	0	0	3,610
1949	0	0	0	0	0	0	0	2,290	1,020	373	0	0	3,680
1950	0	0	0	0	0	0	0	948	2,310	182	0	0	3,440

* Revised.

a From files of State engineer of Colorado.

b From reports of State engineer of Colorado.

Note.--Records for 1902-47 not previously published by Geological Survey except water year totals for 1902-21, published in WSP 469, and 1944-47, published with records for Laramie River at Laramie, Wyo.

271. North Fork Cache la Poudre River near Livermore, Colo.1/

Location.--Lat 40°42'15", long. 105°14'10", in sec. 33, T. 9 N., R. 70 W., a quarter of a mile upstream from mouth, a quarter of a mile downstream from Milton Seaman Reservoir, and 6 miles southeast of Livermore.

Drainage area.--566 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,380 ft (from topographic map). May 24, 1929, to Sept. 30, 1931, chain gage on highway bridge at Livermore 9 miles upstream at datum 5,715.03 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1929-31, 1947-50), 45.3 cfs.

Extremes.--1929-31, 1947-50: Maximum discharge, 6,800 cfs May 31, 1930 (gage height, 9.82 ft, from floodmarks, site and datum then in use), from rating curve extended above 390 cfs on basis of slope-area determination of peak flow; minimum daily, 1.2 cfs June 9, 1947.

Maximum flood known, 20,000 cfs (estimated) May 20, 1904.

Remarks.--Diversions above station for irrigation of about 35,000 acres. Natural flow of stream affected by storage reservoirs and inflow from Laramie River Basin through Columbine ditch (see elsewhere in this report).

1/ Published as "at Livermore", 1929-31.

Monthly and yearly discharge, in cubic feet per second of
North Fork Cache la Poudre River near Livermore, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	251	11.1	34.1	29.4	-
1930	13.4	12.0	9.5	6.5	7.6	7.4	27.5	166	72.9	14.7	131	36.6	42.4
1931	28.3	15.3	9.0	8.0	7.0	9.6	59.0	19.8	14.0	36.9	9.8	12.4	19.1
1947	-	-	-	-	-	-	-	-	237	45.2	16.2	33.3	-
1948	7.25	7.64	32.8	31.5	35.2	36.8	21.8	50.2	37.0	29.7	37.0	23.3	29.2
1949	13.9	3.39	3.26	7.46	7.90	14.0	120	266	728	48.0	9.04	26.0	103
1950	33.3	22.5	10.5	6.35	25.6	38.6	47.9	59.2	67.7	30.0	25.2	24.7	32.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	14,900	682	2,100	1,750	-
1930	824	714	584	400	422	455	1,640	10,200	4,340	904	8,060	2,180	30,700
1931	1,740	910	553	492	389	590	3,510	1,220	833	2,270	603	738	13,800
1947	-	-	-	-	-	-	-	-	14,080	2,780	997	1,880	-
1948	445	454	2,010	1,940	2,030	2,260	1,300	3,090	2,200	1,830	2,280	1,390	21,230
1949	855	202	201	459	439	859	7,120	16,370	43,300	2,950	556	1,550	74,860
1950	2,050	1,340	644	390	1,420	2,370	2,850	3,640	4,030	1,850	1,550	1,470	23,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	a486	May 29, 1929	-	-	-	-	-
1930	701	6,800	May 31, 1930	-	42.4	30,700	43.9	31,800
1931	716	a1,440	July 30, 1931	-	19.1	13,800	-	-
1947	1086	765	June 22, 1947	b1.2	-	-	-	-
1948	1116	199	Aug. 17, 1948	2.1	29.2	21,230	26.9	19,580
1949	1146	1,910	June 10, 1949	2.3	103	74,860	107	77,640
1950	1176	142	June 4, 1950	4.7	32.6	23,600	-	-

a Maximum observed.

b Minimum daily during period June to September.

272. Cache la Poudre River at mouth of canyon, near Fort Collins, Colo.1/

Location.--Lat 40°39'55", long. 105°13'10", in sec. 15, T. 8 N., R. 70 W., at mouth of canyon, three-quarters of a mile upstream from Lewstone Creek, and 8½ miles (revised) northwest of Fort Collins.

Drainage area.--1,048 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 5,240 ft (from topographic map).

Average discharge.--67 years (1883-1950), 414 cfs.

Extremes.--1881, 1883-1950: Maximum discharge not determined, occurred May 20, 1904; minimum daily, 1.6 cfs Nov. 20, 28, 1948, caused by diversion of Poudre Valley Canal half a mile upstream.

Flood of June 9, 1891, caused by failure of Chambers Lake Dam, given in State report as 21,000 cfs.

Remarks.--Natural flow of stream affected by transbasin and transmountain diversions (see elsewhere in this report), diversions above station for irrigation of about 50,000 acres, and diversions for municipal use.

Cooperation.--Records prior to 1904 and those for 1910-33, furnished by State engineer of Colorado. Records for 1902-3, 1914-33, not previously published by Geological Survey.

1/ Prior to 1902, published as Cache la Poudre Creek or River at or near Fort Collins.

Monthly and yearly mean discharge, in cubic feet per second of Cache la Poudre River at mouth of canyon, near Fort Collins, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1881	-	-	-	-	-	-	-	-	-	877	-	-	-
1883	-	-	-	-	-	-	-	1,830	4,540	-	-	-	-
1884	a70	a60	a50	a50	a48	67	219	2,540	4,810	2,140	792	305	a929
1885	b195	a145	a110	a92	a79	a104	b329	1,420	2,910	1,860	657	273	a683
1886	203	a127	a79	a79	a76	a90	b165	1,310	1,880	717	338	185	a439
1887	129	a93	a79	a79	a76	a85	200	b1,400	b1,800	735	307	175	a431
1888	120	a62	a64	a64	a76	a104	181	484	1,110	421	213	103	c250
1889	d100	e62	e60	f60	f50	54	113	770	1,340	511	188	69	e282
1890	70	87	64	82	79	85	200	1,040	1,280	648	290	103	337
1891	80	61	65	92	76	59	144	1,220	1,900	542	228	138	384
1892	118	83	79	64	116	78	100	d420	1,510	735	200	e80	e298
1893	a80	a62	a64	a64	a79	a78	a113	g568	g1,810	614	g244	a69	c321
1894	a65	a52	a50	a50	a76	a99	a113	1,390	2,060	858	f339	164	a443
1895	105	*93.4	e70	f60	f70	f70	f250	1,220	2,380	1,120	495	219	e514
1896	f182	110	90	a90	a87	a99	a200	a910	h1,100	457	271	g280	c323
1897	a198	a127	a64	a64	a79	a100	a220	g2,050	g1,750	749	g335	g167	a493
1898	a123	a93	a64	a64	a79	a100	a146	g647	h1,310	478	g552	g73	a278
1899	a61	a62	a64	a64	a90	a85	a150	h1,210	2,630	1,440	1567	212	c553
1900	*120	a127	a75	a75	a79	a100	a743	2,810	2,940	721	265	149	c686
1901	132	a79	a75	a75	a79	a90	a220	1,760	1,960	a797	337	152	c480
1902	a100	a65	a50	a40	a40	a50	a106	a750	h1,120	1411	h171	h166	a256
1903	f140	a80	a73	a73	a77	a80	e205	j771	h2,710	*869	a281	a164	a459
1904	*120	a96	a73	a73	a62	a56	g158	a2,200	a1,800	g1,040	g327	g176	c517
1905	g140	g95	g70	g50	g45	g80	g318	g1,030	g2,710	g908	g340	g158	g495
1906	g110	g105	g80	g55	g50	g95	e250	g1,080	g1,650	g935	g276	g195	e409
1907	g150	g115	g85	g60	g55	g100	g119	g648	g2,770	g1,770	g473	g188	g546
1908	e135	g70	g50	g35	g30	g50	g135	g569	g1,480	g753	g476	g229	e360
1909	g139	g100	g75	g53	g49	g62	g219	g703	g3,700	g1,850	g460	g351	g647
1910	g139	g90	g58	g67	g65	g107	g260	e781	943	269	128	152	e257
1911	154	98.9	45	46	43	40	69	819	1,710	764	218	173	350
1912	126	65	46	43.4	52.4	67.9	62.6	785	2,130	1,230	429	212	442
1913	163	47.0	635	e36	e45	g55	g120	j2,150	2,250	528	265	204	e305
1914	184	e95.9	g75	g51	g47	g34.2	j215	j2,150	g2,500	g818	j335	j195	g560
1915	j91.4	j66.6	g49.1	g38	g35	g65	e287	j591	j1,520	j700	j274	j208	e327
1916	j116	j148	e76.0	g75	g68	e56.0	j151	h847	h1,700	j754	j397	j263	e387
1917	j114	e56.1	e45	g42	g40	e50.0	j134	h1,290	h4,000	j2,050	j392	j292	e710
1918	j111	j74.6	j72.1	g50	g40	e50.0	j129	j782	j2,550	g960	j275	j175	e438
1919	j88.0	j69.5	g51	g35	g32	g48	j115	j700	j725	j566	j316	j132	g224
1920	j69.6	j61.2	j52.9	j40.6	j46.1	j35.4	j103	j1,100	j2,670	j1,180	j422	j237	j502
1921	j90.6	j69.3	j46.5	j32.3	j30.5	j43.9	j204	j1,330	g3,060	j1,050	j592	j211	j547
1922	j68.1	j60.7	j55.4	j31.5	j27.9	j36.4	j101	h872	j1,570	j374	j319	j90.2	j284
1923	j53.8	j45.6	j47	j26	j24	j44	j136	h897	j3,640	j1,650	j502	j325	j616
1924	j172	j83.6	j40	j30	j25	j100	j429	j1,380	j3,680	h974	j351	j145	j616
1925	j112	j72.0	j45	j41	j42	j65.8	j163	j776	j1,200	j522	j344	j292	j307
1926	j146	j101	j76.9	j65	j64	j59.6	j302	j1,600	j2,210	j1,090	j380	j195	j527
1927	j51.3	j48.0	j48.2	j45	j43.9	j34.0	j122	j851	j1,710	j788	j309	j258	j360
1928	j86.4	j51.5	j50	j46	j47	j66.5	j96.5	j1,130	j1,780	j1,100	j316	j197	j416
1929	j70.7	j53.4	j36	j28	j27	j55	j93.3	*641	h2,550	j973	h448	j365	*444
1930	j142	j79.7	j13.6	j9.0	j12.0	j14.4	j159	j718	j1,180	j594	j651	j303	j307
1931	j211	j61.1	j30	j14	j20	j40.7	j120	j512	j1,110	j418	j280	j108	j244
1932	j79.3	j62.4	j27.3	j20	j22	j36.8	j97.8	j1,060	j1,710	j806	j303	j85.1	j360
1933	j57.8	j36.0	j21.6	j19	j26	j37.1	j59.2	j683	j2,390	j743	j277	j244	j382
1934	51.9	39.4	34.8	*33.7	38.0	38.8	118	1,060	442	201	116	48.1	186
1935	49.2	36.3	23.5	21.1	24.7	20.2	54.8	624	2,064	1,087	423	214	387
1936	83.5	54.5	37.0	33.2	35	35.3	175	1,400	1,650	681	473	199	406
1937	88.2	44.8	24.5	17.6	24.3	32.4	84.8	921	1,332	586	310	209	307
1938	96.6	59.9	49.4	31.7	31.8	38.8	161	1,196	2,555	876	412	443	496
1939	104	814	16.9	18.0	15.3	10.6	76.3	1,069	1,241	456	272	205	292
1940	71.3	35.9	14.4	15.3	25.4	26.6	54.0	718	951	448	222	186	231
1941	101	49.3	27.3	25.6	32.0	29.3	72.5	1,062	1,281	536	264	218	309
1942	80.7	54.8	39.9	31.2	27.0	30.9	291	1,175	2,099	817	270	275	453
1943	270	97.9	19.3	45.2	54.4	37.5	295	1,366	2,094	825	365	301	462
1944	72.0	38.0	40.5	35.6	48.4	27.6	176	869	1,575	678	269	121	312
1945	55.2	25.6	19.8	30.7	28.7	58.9	109	625	1,350	1,147	618	290	363
1946	65.9	45.5	23.0	17.6	19.0	60.3	226	573	1,472	520	275	254	296
1947	62.5	60.9	42.0	33.5	33.4	59.7	231	1,010	1,837	1,160	443	239	430
1948	66.5	55.2	56.9	67.5	72.6	77.2	45.4	1,073	1,294	459	276	177	316
1949	52.3	24.3	32.7	37.5	36.2	47.1	188	833	2,669	1,038	412	211	465
1950	87.0	64.9	30.6	29.0	64.8	66.1	102	432	1,551	621	284	194	294

* Revised.

† Corrected.

‡ Not previously published; estimated by Geological Survey on basis of weather records, records for nearby stations, and periodic discharge measurements.

a From files of State engineer of Colorado.

b Revised; supersedes figure published in 11th Ann. Rept., Pt. 2.

c Not previously published; differs from figure in files of State engineer of Colorado.

d Revised; supersedes figure published in 13th Ann. Rept., Pt. 3.

e Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

f Only monthly figures revised, revised daily figures not available.

g From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

h Not previously published; from Poudre River Bulletin, Agricultural Experiment Station, Fort Collins, Colo.

j From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet of Cache la Poudre River at mouth of canyon, near Fort Collins, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1881	-	-	-	-	-	-	-	-	-	53,900	-	-	-
1883	-	-	-	-	-	-	-	113,000	270,000	-	-	-	-
1884	a4,300	a3,570	a3,070	a3,070	a2,780	4,120	13,000	156,000	286,000	132,000	48,700	18,100	a675,000
1885	b12,000	a8,630	a6,760	a5,650	a4,400	a6,400	b19,600	87,300	175,000	114,000	40,300	16,200	a494,000
1886	12,500	a7,560	a4,830	a4,830	a4,220	a5,530	b9,820	80,400	112,000	44,100	20,800	11,000	a318,000
1887	7,930	a5,560	a4,830	a4,830	a4,220	a5,230	11,900	b66,100	107,000	45,200	18,900	10,400	a312,000
1888	7,380	a3,890	a3,950	a3,950	a4,400	a6,400	10,800	29,800	66,000	25,900	13,100	6,150	a182,000
1889	d6,150	e3,890	e3,690	f3,690	f2,780	3,320	6,720	47,300	79,700	31,400	11,600	4,110	e204,000
1890	4,300	5,180	3,940	5,040	4,390	5,230	11,900	64,200	76,200	39,800	17,800	6,130	244,000
1891	4,920	3,630	4,000	5,660	4,220	3,630	8,570	75,000	113,000	33,300	14,000	8,210	278,000
1892	7,260	4,940	4,860	3,940	6,670	4,800	5,950	d25,800	89,800	45,200	12,300	e4,760	e216,000
1893	a4,920	a3,690	a3,950	a3,950	a4,400	a4,800	a6,720	e35,000	106,000	37,800	15,500	a4,080	e232,000
1894	a3,870	a3,090	a3,070	a3,070	a4,220	a6,090	a6,720	85,500	123,000	51,400	20,800	9,760	a321,000
1895	6,460	e5,560	e4,500	f3,560	f3,890	f4,300	f14,900	75,000	142,000	68,900	30,400	13,000	e372,000
1896	f11,200	6,550	5,530	a5,530	a5,000	a6,090	a11,900	a56,000	h65,500	29,100	16,700	16,600	c235,000
1897	a12,200	a7,560	a3,950	a3,950	a4,400	a6,150	a13,100	e126,000	103,000	46,100	20,600	g9,940	a357,000
1898	a7,560	a5,560	a3,950	a3,950	a4,400	a6,150	a8,690	39,800	78,000	29,400	g9,350	g4,340	a201,000
1899	a3,760	a3,690	a3,950	a3,950	a5,000	a5,230	a8,920	h74,400	800,780	88,500	34,200	12,600	c400,000
1900	a7,380	a7,560	a4,610	a4,610	a4,400	a6,150	a44,200	173,000	175,000	44,300	16,300	8,870	c496,000
1901	8,120	a4,700	a4,610	a4,610	a4,400	a5,530	a13,100	108,000	116,000	49,000	20,700	9,400	c348,000
1902	a6,150	a3,870	a3,070	a2,460	a2,220	a3,070	a6,310	e46,100	f66,600	125,300	110,500	19,880	a186,000
1903	f8,610	a4,760	a4,490	a4,490	a4,280	a4,920	e12,200	147,400	161,000	53,400	117,300	a9,760	a333,000
1904	a7,380	a5,710	a4,490	a4,490	a3,570	a3,440	g9,410	a133,000	100,000	64,200	20,100	10,500	c375,000
1905	g8,600	g5,650	g4,500	g3,070	g2,500	g4,910	g18,900	g63,400	g161,000	g55,800	g20,900	g9,420	g358,000
1906	g6,740	g6,240	g4,910	g3,380	g2,780	g5,830	e14,900	g66,600	g98,300	g57,500	g17,000	g11,600	e296,000
1907	g9,200	g6,830	g5,210	g3,680	g3,050	g6,140	g7,080	g39,700	g165,000	g109,000	g29,100	g11,200	e295,000
1908	e8,300	g4,160	g3,070	g2,150	g1,780	g3,070	g8,040	g35,000	g88,800	g46,500	g47,100	g13,600	e261,000
1909	g8,550	g5,950	g4,600	g3,250	g2,760	e3,800	e14,200	g43,200	g206,000	g140,000	g28,500	g19,700	g48,000
1910	g9,550	g5,350	g3,560	g5,340	g2,600	g6,570	g15,500	e48,000	56,500	16,500	7,870	9,040	e186,000
1911	9,470	5,890	2,770	2,980	2,410	2,460	4,120	50,400	102,000	47,000	13,400	10,300	253,000
1912	7,720	3,880	2,600	2,670	3,010	4,180	3,720	48,300	100,000	75,600	26,400	12,600	321,000
1913	10,000	2,800	g2,150	g2,150	e2,500	g3,380	g7,130	56,600	73,200	32,500	16,300	12,100	e221,000
1914	11,300	e5,710	g4,600	g3,130	g2,610	g2,080	g12,800	g132,000	g149,000	150,300	120,600	11,600	g406,000
1915	15,620	13,960	g3,010	g2,330	g1,940	g4,000	e17,100	136,300	190,400	143,000	116,800	12,400	e237,000
1916	17,150	18,810	e4,670	g4,610	g3,900	e3,440	18,980	152,100	101,000	146,400	124,400	15,600	e281,000
1917	17,010	13,340	e2,700	g5,580	e2,220	e3,070	17,870	179,300	123,000	118,000	124,100	17,400	e514,000
1918	16,820	14,440	16,430	g7,070	e2,220	e3,070	17,680	148,100	115,000	159,000	116,900	10,400	e317,000
1919	15,410	14,140	g3,130	e2,150	g1,780	g2,940	16,840	143,000	143,000	122,500	119,400	17,860	g162,000
1920	14,280	13,640	13,250	12,500	12,650	12,180	16,130	168,200	159,000	172,600	225,900	14,100	1364,000
1921	15,570	14,120	12,860	11,990	11,690	12,700	12,100	181,800	182,000	164,600	124,100	12,600	1396,000
1922	14,190	13,610	13,410	11,940	11,550	12,240	16,010	141,300	199,400	123,000	119,600	15,370	1206,000
1923	13,310	12,710	12,690	11,600	11,330	12,710	18,090	155,200	127,000	101,000	150,900	19,300	1446,000
1924	110,600	16,970	12,460	11,440	11,440	16,150	125,500	184,800	122,900	159,000	121,600	18,630	1447,000
1925	16,890	14,280	12,770	12,520	12,350	14,050	19,700	137,400	171,400	132,100	121,200	17,400	1222,000
1926	18,980	16,010	14,730	14,000	13,550	13,660	18,000	198,400	132,000	167,000	123,400	11,600	1381,000
1927	13,150	12,860	12,960	12,770	12,440	12,090	17,260	152,300	102,000	148,500	119,000	15,400	1261,000
1928	15,310	13,060	13,070	12,830	12,700	14,090	15,740	169,500	107,000	167,800	119,400	11,700	1302,000
1929	14,350	13,180	12,210	11,710	11,500	13,380	15,550	139,400	150,000	159,800	127,500	22,900	1321,000
1930	18,730	14,740	13,630	13,550	13,660	13,880	19,460	144,100	170,200	124,200	140,000	18,000	1222,000
1931	133,000	13,640	11,840	11,810	11,110	12,500	17,140	131,500	166,000	25,700	117,200	16,430	1177,000
1932	14,880	13,710	11,680	11,230	11,260	12,260	15,820	165,200	102,000	149,600	118,600	15,060	1261,000
1933	13,550	12,140	11,530	11,170	11,440	12,280	13,520	142,000	142,000	145,700	117,000	14,500	1277,000
1934	3,190	2,340	2,140	e2,070	2,110	2,390	7,020	65,200	26,300	12,400	7,130	2,860	130,500
1935	3,030	2,160	1,450	1,300	1,370	1,240	3,260	38,340	122,800	66,840	25,990	12,760	280,500
1936	5,140	3,240	2,280	2,040	2,010	2,170	10,440	86,180	98,130	41,880	29,110	11,830	294,400
1937	5,420	2,660	1,510	1,080	1,350	1,990	5,040	56,620	79,250	36,010	19,040	12,420	222,400
1938	5,940	3,570	3,030	1,950	1,760	2,390	9,590	73,520	152,100	53,830	26,320	26,380	359,400
1939	6,410	464	1,040	1,110	843	649	4,540	65,720	73,860	28,050	16,700	12,200	211,600
1940	4,390	2,140	883	940	1,460	1,640	3,210	44,180	56,580	27,570	13,640	11,040	167,700
1941	6,230	2,930	1,680	1,580	1,780	1,800	4,320	65,290	76,240	32,950	16,240	13,000	224,000
1942	4,960	3,260	2,460	1,920	1,500	1,900	17,330	72,240	124,900	50,230	16,630	16,360	313,700
1943	16,630	5,820	1,190	2,780	3,020	2,300	17,560	84,130	124,600	50,750	22,450	17,930	349,200
1944	4,430	2,260	2,490	2,190	2,780	1,690	10,470	41,160	95,720	41,710	18,550	7,180	226,600
1945	3,390	1,520	1,220	1,890	1,590	3,620	6,490	38,450	79,120	70,540	38,010	17,250	263,100
1946	4,050	2,710	1,420	1,080	1,050	3,710	13,450	35,250	87,590	31,980	16,930	15,110	214,300
1947	3,840	3,620	2,580	2,060	1,850	3,670	13,770	62,120	109,300	71,350	27,220	14,220	315,600
1948	4,090	3,280	3,500	4,150	4,470	4,740	2,700	65,950	76,990	28,240	16,990	10,510	225,300
1949	3,220	1,450	2,010	2,300	2,010	2,900	11,180	51,220	158,800	63,830	25,330	12,540	336,800
1950	5,350	3,860	1,880	1,790	3,600	4,060	6,060	26,550	92,310	38,180	17,470	11,570	212,700

* Revised; supersedes record previously published by State engineer of Colorado.

† Corrected.

‡ Not previously published; see footnote to preceding table.

a From files of State engineer of Colorado.

b Revised; supersedes figure published in 11th Ann. Rept., Pt. 2.

c Not previously published; differs from figure in files of State engineer of Colorado.

d Revised; supersedes figure published in 13th Ann. Rept., Pt. 3.

e Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

f Revised.

g From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

h Not previously published, see footnote to preceding table.

i From reports of State engineer of Colorado.

k Corrected; differs from figure published in reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of Cache la Poudre River
at mouth of canyon, near Fort Collins, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1881	9	-	-	-	-	-	-	-
1883	9	*a7,900	June 22, 23, 1883	-	-	-	-	-
1884	(b), 9	6,850	May 20, 1884	-	c929	c675,000	c952	c891,000
1885	(b), 9	*4,040	June 5, 1885a	-	c683	c494,000	c679	c492,000
1886	(b), 9	*4,820	Aug. 18, 1886	-	c439	c318,000	c430	c311,000
1887	(d), 9	*a3,000	June 2, 1887a	-	*431	*312,000	*427	*309,000
1888	9	*a1,900	June 19, 1888a	-	*250	*182,000	*248	*180,000
1889	9	*a2,100	June 1, 1889	-	*232	*204,000	*282	*204,000
1890	9	*a1,900	June 2, 1890	33	337	244,000	336	243,000
1891	9	f21,000	June 9, 1891	32	384	278,000	390	283,000
1892	(d), 9	*a3,200	June 21, 1892	40	e298	e216,000	e292	e212,000
1893	9	*a3,200	June 11, 1893a	-	*321	*232,000	*317	*230,000
1894	9	*a4,000	June 6, 1894	-	*443	*321,000	*451	*327,000
1895	(g)	*a4,000	June 3, 1895a	-	*514	*372,000	*524	*379,000
1896	37	*a2,500	May 30, 1896a	-	*323	*235,000	*324	*235,000
1897	37	*a3,300	May 24, 1897a	-	*493	*357,000	*484	*350,000
1898	37	*a1,900	June 3, 1898a	-	*278	*201,000	*270	*195,000
1899	37	*a4,200	June 21, 1899	-	*553	*400,000	*564	*408,000
1900	49	*a5,000	May 29, 1900a	-	*686	*496,000	*683	*494,000
1901	66	*h12,000	May 21, 1901h	-	*480	*348,000	*474	*343,000
1902	(f)	*a2,500	May 16, 1902a	-	c256	c186,000	c283	c190,000
1903	(f)	*a4,100	June 9, 1903a	-	*459	*333,000	*459	*332,000
1904	(j)	-	May 20, 1904	-	*517	*375,000	*518	*376,000
1905	(j)	*a4,700	June 9, 1905a	-	*495	*358,000	*494	*358,000
1906	(j)	*a3,000	June 13, 14, 1906a	-	*409	*296,000	*413	*299,000
1907	(j)	*a4,000	June 16, 1907	-	*546	*395,000	*538	*389,000
1908	(j)	*a2,700	Aug. 1, 1908a	-	*360	*261,000	*365	*265,000
1909	(j)	*a5,900	June 19, 1909	-	*647	*468,000	*645	*467,000
1910	266	*2,240	June 2, 1910	-	*257	*186,000	*258	*187,000
1911	306	*2,470	June 9, 1911	-	350	253,000	343	249,000
1912	326	*3,820	June 27, 1912	-	442	321,000	k443	k321,000
1913	356	*2,700	May 31, 1913	-	*305	*221,000	*314	*228,000
1914	(f)	*5,380	June 2, 1914	-	*560	*406,000	*548	*397,000
1915	(f)	*2,700	June 20, 1915	-	*327	*237,000	*338	*245,000
1916	(f)	*2,340	June 18, 1916	-	*387	*281,000	*277	*273,000
1917	(f)	*7,000	June 23, 1917	f24	*514,000	*514,000	*713	*516,000
1918	(f)	*45,200	June 20, 1918	-	*438	*317,000	*434	*314,000
1919	(f)	*1,670	May 30, 1919	-	*224	*162,000	*222	*161,000
1920	(f)	*4,510	June 9, 1920	f23	f502	f364,000	f504	f366,000
1921	(f)	*5,230	June 8, 1921	f26	f547	f396,000	f545	f395,000
1922	(f)	*4,450	June 14, 1922	f20	f284	f206,000	f281	f203,000
1923	(f)	*m8,550	June 15, 1923*	-	f616	f446,000	f629	f455,000
1924	(f)	*7,440	June 14, 1924	-	f616	f447,000	f610	f443,000
1925	(f)	*1,780	June 22, 23, 1925	-	*307	*222,000	*315	*228,000
1926	(f)	*4,350	June 7, 1926	-	*527	*381,000	*512	*371,000
1927	(f)	*2,410	June 10, 1927	-	*360	*261,000	*364	*263,000
1928	(f)	*4,050	July 29, 1928	-	*416	*302,000	*414	*300,000
1929	(f)	*3,680	June 9, 1929	-	*444	*321,000	*450	*326,000
1930	(f)	c10,200	May 31, 1930	-	*307	*222,000	*313	*227,000
1931	(f)	*2,280	June 8, 1931	-	*244	*177,000	*233	*169,000
1932	(f)	*3,200	May 23, 1932	-	*360	*261,000	*355	*258,000
1933	(f)	*3,500	June 11, 1933	-	*382	*277,000	*383	*277,000
1934	761	1,860	May 10, 1934	20	186	*135,200	185	*134,100
1935	786	4,110	July 22, 1935	5	387	280,500	393	284,600
1936	806	3,280	June 1, 1936	-	406	294,400	404	293,400
1937	828	2,020	June 2, 1937	14	307	222,400	311	225,300
1938	856	6,180	June 22, 1938	24	496	359,400	490	354,800
1939	876	2,580	June 6, 1939	3.7	292	211,600	292	211,100
1940	896	3,510	Aug. 17, 1940	3.0	231	167,700	236	171,100
1941	926	2,180	May 26, 1941	9	309	224,000	309	223,900
1942	956	3,300	June 12, 1942	10	433	313,700	451	326,600
1943	976	3,380	June 2, 1943	2.9	482	349,200	462	334,700
1944	1006	2,770	June 10, 1944	10	312	226,600	308	223,600
1945	1036	2,110	June 25, 1945	4.7	363	263,100	366	265,100
1946	1056	2,900	June 7, 1946	11	296	214,300	299	216,200
1947	1086	4,660	June 22, 1947	10	436	315,600	437	316,400
1948	1116	2,850	May 22, 1948	22	310	225,300	305	221,100
1949	1146	6,090	June 5, 1949	1.6	465	336,800	471	341,200
1950	1176	2,910	June 17, 1950	19	294	212,700	-	-

* Revised.

* Not previously published.

a Estimated.

b 11th Ann. Rept., Pt. 2.

c From files of State engineer of Colorado.

d 13th Ann. Rept., Pt. 3.

e Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

f From reports of State engineer of Colorado.

g Bull. 140.

h From Poudre River Bulletin, Agricultural Experiment Station, Fort Collins, Colo.

j From files of Geological Survey.

k From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

m Observed.

273. Cache la Poudre River near Greeley, Colo.1/

Location (revised).--Lat 40°25'04", long. 104°38'22", in NW¼ sec. 11, T. 5 N., R. 65 W., 25 ft downstream from highway bridge, 3 miles east of courthouse in Greeley, and 3 miles upstream from mouth.

Drainage area.--1,840 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,610 ft (from topographic map). Prior to Apr. 4, 1916, staff gage and Apr. 4, 1916, to Dec. 17, 1919, water-stage recorder at sites within 2 miles downstream at different datums. May 27, 1924, to Dec. 13, 1933, water-stage recorder at present site at datum 0.51 ft higher.

Average discharge.--31 years (1914-19, 1924-50), 91.6 cfs (revised).

Extremes.--1903-4, 1914-19, 1924-50: Maximum daily discharge, 4,220 cfs June 24, 26, 1917; minimum daily, 0.8 cfs Oct. 3, 1946.

Remarks.--Diversions above station for irrigation of about 250,000 acres. Natural flow of stream also affected by transmountain and transbasin diversions (see elsewhere in this report), storage reservoirs, power developments, diversions for municipal supply, and return flow from irrigated areas.

Cooperation.--Records prior to 1934, furnished by State engineer of Colorado; those for 1904, 1914-20, 1924-33, not previously published by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	142	75	785	64	36	51	-
1904	89	-	-	-	-	-	-	-	-	-	a42	a43	-
1905	a106	a101	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	#90	a119	a162	a258	b1,690	b1,340	a36.4	a41.2	a43.6	-
1915	a132	a112	#90	#80	#80	#119	a141	a156	a86.2	a48.1	a98.6	a98.6	#102
1916	a241	a183	#129	#120	#120	#110	b91.1	a94.7	a103	a58.3	a71.7	a72.0	#116
1917	a184	a163	#133	a118	a113	a118	a115	a873	a2,390	a412	a62.7	a80.4	a396
1918	a178	a149	a137	b131	a141	a120	a110	#78.9	a658	a262	a65.6	a129	b179
1919	a192	a143	#139	#151	a142	a132	a84.7	a37.7	a30.2	a41.7	a32.4	a45.2	#97.4
1920	a66.3	a84.6	b77.8	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	a1,590	a32.3	a22.8	a37.9	-
1925	a109	a104	a97.0	a81.6	a101	a79.9	a31.2	a20.9	a81.9	a40.0	a40.2	a18.4	a66.9
1926	a97.8	a107	a88.8	a78.6	a104	a83.1	a302	a119	a537	a89.6	a23.8	a42.4	a139
1927	a139	a115	a104	a92.6	a88.1	a104	a119	a28.7	a60.6	a78.9	a55.8	a46.8	a86.0
1928	a140	a129	a104	a93.3	a88.2	a79.2	a51.7	c256	c363	c328	a41.8	a31.8	c142
1929	a123	a161	a127	a96.9	a90	a120	a108	a77.5	a120	a33.4	a37.3	a93.1	a98.8
1930	a107	a144	a126	a94.5	a183	a117	a96.1	a36.2	a41.0	a14.5	a107	a48.6	a90.7
1931	a131	a111	a105	a86.1	a75.2	a78	a61	a29.1	a32	a15.4	a16.7	a12.7	a74.6
1932	a40.3	a103	a74.4	a54.5	a56.8	a62.4	a28.9	a14.4	a27.3	c64.7	a25.1	a13.7	c47.1
1933	a39.5	a82.4	a56.2	a54.8	a50.5	a49.6	a18.2	a28.4	c190	a20.6	a29.6	a28.0	c53.7
1934	58.7	77.7	86.5	80.6	71.5	61.0	25.2	14.5	21.3	20.0	11.8	12.6	45.0
1935	7.1	6.6	34.5	37.4	38.1	33.9	7.8	*47.0	*252	14.9	*18.4	*29.0	*43.6
1936	26.2	76.7	64.7	56.0	46.2	61.2	27.4	16.8	46.9	19.1	19.5	22.0	40.2
1937	46.3	74.7	71.0	55.0	61.8	60.1	41.9	980	25.9	23.9	14.1	14.9	41.5
1938	12.0	45.1	58.3	52.8	54.7	47.8	31.1	17.9	77.6	26.7	17.5	72.3	42.6
1939	22.8	65.8	75.3	75.0	80.0	102	64.5	14.6	18.4	13.3	15.0	9.77	46.2
1940	15.2	13.4	45.3	49.8	53.8	49.7	31.1	10.8	25.9	15.5	5.43	20.0	27.9
1941	35.6	39.2	51.2	39.8	39.4	37.6	11.5	21.5	22.6	18.5	22.5	15.2	29.6
1942	52.4	64.9	56.5	49.6	42.8	63.2	44.7	*252	*655	23.5	16.8	46.4	*114
1943	56.2	108	88.2	97.3	103	90.6	175	*106	414	34.9	18.7	28.8	*194
1944	31.4	54.8	81.8	67.5	67.9	72.0	108	83.8	31.8	35.3	15.3	19.7	55.7
1945	20.7	62.6	86.0	72.0	65.5	63.6	68.2	43.7	38.7	46.8	47.5	43.2	54.8
1946	42.9	80.4	87.6	68.0	57.1	68.6	31.3	37.1	59.9	17.3	9.83	40.0	49.9
1947	21.8	83.6	94.2	64.6	52.2	81.5	53.6	42.7	891	63.0	32.6	26.9	125
1948	53.7	90.2	91.2	102	122	108	51.7	21.4	33.7	14.1	15.1	9.53	59.3
1949	35.4	74.4	65.3	55.1	62.6	67.2	59.1	37.1	1143	37.0	17.9	27.8	139
1950	31.8	81.2	75.0	62.5	61.1	57.7	28.0	12.5	43.8	20.7	16.5	19.2	42.3

* Revised.

† Corrected; differs from figure previously published by State engineer of Colorado.

‡ Not previously published; estimated on basis of records for station on nearby streams.

a From reports of State engineer of Colorado.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Revised; supersedes records previously published by State engineer of Colorado.

1/ Published as "at mouth" or "near mouth", 1904, 1914-33.

Monthly and yearly runoff, in acre-feet of Cache la Poudre River near Greeley, Colo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	8,450	4,610	46,700	3,940	2,210	3,040	-
1904	5,470	-	-	-	-	-	-	-	-	-	a2,580	a2,580	-
1905	a6,520	a6,010	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	\$5,530	a6,610	a9,960	a15,400	b104,000	b79,700	a2,240	a2,530	a2,590	-
1915	a8,120	a6,660	\$5,530	\$4,920	\$4,440	\$7,560	a8,390	a8,360	a5,150	a2,960	a6,060	a5,870	\$74,000
1916	a14,900	a10,900	\$7,930	\$7,380	\$6,900	\$6,760	b5,420	a5,820	a6,130	a3,580	a4,410	a4,280	\$84,300
1917	a11,300	a8,700	a6,180	a7,260	a6,280	a7,260	a6,840	a53,700	a142,000	a25,300	a3,860	a4,780	a286,000
1918	a10,900	a8,670	a6,420	b8,060	a7,830	a7,380	a6,550	a4,850	a39,200	a16,100	a4,030	a7,680	b130,000
1919	a11,800	a8,510	\$8,550	\$9,280	a7,890	a8,120	a5,040	a2,320	-	a2,660	a1,990	a2,690	\$70,600
1920	a4,080	a5,030	b4,780	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	a94,600	a1,990	a1,400	a2,260	-
1925	a6,700	a6,190	a5,960	a5,020	a5,610	a4,910	a1,860	a1,290	a4,870	a2,460	a2,470	a1,090	a48,400
1926	a6,010	a6,370	a5,460	a4,830	a5,780	a5,110	a18,000	a7,320	a32,000	a5,510	a1,460	a2,520	a100,000
1927	a8,550	a6,840	a6,400	a5,690	a4,890	a6,400	a7,080	a1,760	a3,610	a4,850	a3,450	a2,780	a62,300
1928	a8,610	a7,680	a6,400	a5,740	a5,070	a4,870	a3,080	a15,700	a21,600	a20,200	a2,570	a1,890	a103,000
1929	a7,560	a9,580	a7,610	a5,960	a5,000	a7,580	a6,430	a4,770	a7,140	a2,050	a2,290	a5,540	a71,500
1930	a6,580	a8,570	a7,750	a5,810	a9,050	a7,190	a5,720	a2,230	a2,440	a892	a6,580	a2,890	a65,700
1931	a8,060	a6,610	a6,460	a5,290	a4,180	a4,800	a3,630	a1,790	a1,900	a9,470	a1,030	a756	a54,000
1932	a2,480	a6,130	a4,570	a3,350	a3,270	a3,840	a1,720	a685	a1,620	a3,980	a1,540	a615	a34,200
1933	a2,450	a4,900	a3,460	a3,370	a2,800	a3,050	a1,080	a1,750	a11,300	a1,270	a1,820	a1,670	a38,900
1934	3,610	4,620	5,320	4,960	3,970	3,750	1,500	892	1,270	1,230	726	750	32,600
1935	458	595	2,120	2,300	2,120	2,080	462	\$2,890	15,000	914	\$1,130	\$1,730	\$31,580
1936	1,610	4,560	3,980	3,450	2,660	3,760	1,630	1,030	2,790	1,170	1,200	1,310	29,150
1937	2,850	4,440	4,370	3,380	3,430	3,690	2,490	602	1,540	1,470	867	884	30,010
1938	735	2,680	3,590	3,250	3,040	2,940	1,850	1,100	4,620	1,640	1,080	4,300	30,820
1939	1,400	3,910	4,630	4,610	4,440	6,290	3,840	899	1,090	818	924	581	35,430
1940	937	800	2,790	3,060	3,090	3,060	1,850	665	1,540	952	354	1,190	20,270
1941	2,190	2,330	3,150	2,450	2,190	2,310	683	1,320	1,350	1,140	1,390	907	21,410
1942	3,220	3,860	3,480	3,050	2,380	3,890	2,660	\$15,470	\$38,990	1,440	1,030	2,760	\$82,230
1943	3,450	6,420	5,420	5,980	5,750	5,570	10,440	\$67,990	24,600	2,150	1,150	1,710	\$140,600
1944	1,930	3,260	5,030	4,150	3,900	4,430	6,430	5,150	1,890	2,170	943	1,170	40,450
1945	1,270	3,720	5,290	4,430	3,640	3,910	4,060	2,690	2,300	2,880	2,920	2,570	39,680
1946	2,640	4,780	5,390	4,180	3,170	4,220	1,860	2,280	3,570	1,060	605	2,380	36,140
1947	1,340	4,970	5,790	3,970	2,900	5,010	3,190	2,620	53,030	3,870	2,000	1,800	90,290
1948	3,500	5,370	6,510	6,500	7,000	6,670	3,080	1,320	2,016	868	929	567	43,020
1949	2,180	4,450	4,010	3,390	3,480	4,130	3,520	2,280	69,020	2,270	1,100	1,650	100,500
1950	1,960	4,820	4,610	3,840	3,390	3,550	1,670	768	2,610	1,270	1,010	1,140	30,650

* Revised.

* Not previously published; estimated on basis of records for stations on nearby streams.

a From reports of State engineer of Colorado.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Revised; supersedes records previously published by State engineer of Colorado.

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1903	99	a2,820	June 11, 1903	-	-	-	-
1904	(b)	-	-	-	-	-	-
1914	(b)	-	-	-	-	-	-
1915	(b)	-	-	b37	\$102	\$74,000	\$121
1916	(b)	\$716	May 22, 1916	b32	\$116	\$84,500	\$110
1917	(b)	a4,220	June 24, 26, 1917	b40	b396	b285,000	b394
1918	(b)	-	-	b36	d179	d130,000	\$180
1919	(b)	\$224	Oct. 20, 1918	b16	\$97.4	\$70,600	\$76.8
1924	(b)	\$2,780	June 14, 1924	-	-	-	-
1925	(b)	\$1,800	June 16, 1925	b10	b66.9	b48,400	b65.5
1926	(b)	\$1,600	June 15, 1926	b10	b139	b100,000	b144
1927	(b)	\$435	July 29, 1927	b4	b86.0	b62,300	b67.3
1928	(b)	\$1,980	June 4, 1928	b14	\$142	\$103,000	\$146
1929	(b)	\$1,080	June 10, 1929	b10	b98.8	b71,500	b95.9
1930	(b)	\$1,270	June 1, 1930	b10	b90.7	b65,700	b88.3
1931	(b)	\$175	Oct. 8, 1930	b8	b74.6	b54,000	b63.6
1932	(b)	\$1,680	July 30, 1932	b3	\$47.1	\$34,200	\$43.8
1933	(b)	\$1,150	June 15, 1933	b3	\$53.7	\$38,900	\$57.5
1934	763	\$1,305	Oct. 20, 1933	5	\$45.0	\$32,600	\$30.4
1935	786, 1440	\$1,640	June 17, 1935	5	\$43.6	\$31,580	\$53.6

* Revised.

* Not previously published.

a Observed.

b From reports of State engineer of Colorado.

c Maximum daily.

d Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of Cache la Poudre River near Greeley, Colo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	806	655	June 5, 1936	3.0	40.2	29,150	42.2	30,660
1937	826	109	Nov. 10, 1936	3.0	41.5	30,010	35.0	25,360
1938	856	*1,230	Sept. 4, 1938	5.6	42.6	30,820	46.6	33,760
1939	876	165	Mar. 11, 1939	5.0	46.2	33,430	38.7	28,020
1940	896	162	July 4, 1940	2.3	27.9	20,270	32.3	23,410
1941	926	154	Aug. 27, 1941	6.3	29.6	21,410	33.6	24,300
1942	956, 1440	*1,720	June 22, 1942	5.6	*114	*82,230	*120	*86,960
1943	976, 1440	*2,190	May 7, 1943	14	*194	*140,600	*187	*135,500
1944	1006	510	May 18, 1944	8.7	55.7	40,450	55.8	40,510
1945	1036	379	May 30, 1945	9.4	54.8	39,680	48.3	42,210
1946	1056	192	June 20, 1946	1.0	49.9	36,140	48.9	35,420
1947	1086	4,050	June 23, 1947	.8	125	90,290	128	92,470
1948	1116	296	May 31, 1948	3.1	59.3	43,020	54.2	39,360
1949	1146	2,780	June 15, 1949	1.4	139	100,500	140	101,200
1950	1176	394	June 19, 1950	4.0	42.3	30,650	-	-

* Revised.

274. Lónetree Creek near Granite Canyon, Wyo.

Location.--Lat 41°05'10", long. 105°11'10", in sec. 24, T. 13 N., R. 70 W., $\frac{1}{2}$ miles southwest of Granite Canyon.

Drainage area.--23 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 7,320 ft (from topographic map).

Extremes.--1933-38: Maximum discharge, 230 cfs (estimated) Sept. 8, 1933 (gage height, 4.86 ft), from rating curve extended above 16 cfs; no flow at times in most years.

Remarks.--Diversions above station for irrigation of about 700 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	11.9	3.65	0.49	0.38	2.55	-
1934	0.81	1.10	1.15	1.27	1.32	2.67	2.88	1.62	.52	.20	.22	.24	1.16
1935	.16	.25	.29	.38	.48	.96	2.16	17.6	15.6	5.07	3.50	3.13	4.14
1936	2.66	3.76	-	-	-	-	-	3.08	.39	.13	.05	0	-
1937	.20	.55	.42	-	-	-	-	2.30	3.16	.67	.25	.13	-
1938	.59	1.25	-	-	-	-	-	5.87	2.46	.73	.05	1.77	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	732	217	30	23	152	-
1934	50	65	70	78	74	164	171	100	31	12	13	14	842
1935	10	15	18	23	27	59	129	1,080	926	312	215	186	3,000
1936	164	224	-	-	-	-	-	189	23	8.1	3.2	0	-
1937	12	33	26	-	-	-	-	142	188	41	16	7.9	-
1938	36	74	-	-	-	-	-	361	146	45	2.8	106	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	746	*a230	Sept. 8, 1933	-	-	-	-	-
1934	761	8.2	Apr. 8, 1934	0	1.16	842	0.97	700
1935	786	68	May 30, 1935	.1	4.14	3,000	-	-
1936	806	13	Apr. 26, 1936	0	-	-	-	-
1937	826	13	June 2, 1937	0	-	-	-	-
1938	856	18	Apr. 28, 1938	0	-	-	-	-

* Not previously published.
a Estimated.

275. South Platte River near Kersey, Colo. 1/

Location.--Lat 40°24'45", long. 104°33'46", in SW 1/4 sec. 9, T. 5 N., R. 64 W., 150 ft upstream from bridge on State Highway 37, 1.9 miles north of railroad in Kersey, and 2 1/2 miles downstream from Cache la Poudre River.

Drainage area.--9,500 sq mi, approximately.

Supplemental records available.--Records of chemical analyses for the period October 1949 to September 1950, are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 4,575.37 ft above mean sea level, datum of 1929.

Prior to July 8, 1919, staff or chain gages at bridge 150 ft downstream at different datum.

July 8, 1919, to Sept. 7, 1921, water-stage recorder at site 450 ft downstream from present site at different datum.

Sept. 8, 1921, to Sept. 12, 1923, water-stage recorder at site 750 ft downstream from present site at different datum.

Sept. 13, 1923, to July 2, 1935, at site 200 ft downstream at same datum.

Average discharge.--47 years (1901-3, 1905-50), 748 cfs.

Extremes.--1901-3, 1905-50: Maximum daily discharge, 31,000 cfs June 7, 1921, from rating curve extended above 17,000 cfs by logarithmic plotting, minimum daily, 35 cfs Apr. 23, 24, 1935.

Remarks.--Diversions above station for irrigation of about 888,000 acres. Natural flow of stream also affected by transmountain and transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and return flow from irrigated areas.

Cooperation.--Records for 1914-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	1,590	1,820	314	296	395	-
1902	456	526	*600	*600	*720	486	122	96	158	124	85	363	*359
1903	249	334	532	524	579	918	518	223	1,280	192	137	133	486
1904	213	397	443	-	-	-	-	-	-	-	-	-	-
1905	-	-	-	-	-	227	2,350	6,300	4,080	154	170	160	-
1906	383	533	339	*400	467	585	801	1,200	359	357	141	476	*503
1907	986	1,440	a1,510	a868	a699	568	550	1,790	2,240	1,770	790	376	a1,120
1908	759	767	707	a560	a500	a350	127	166	128	128	176	128	a375
1909	389	434	a494	a449	a558	a818a1,100	894	5,030	2,280	280	2,130	a1,230	a1,230
1910	1,200	970	1,000	1,020	858	964	419	237	973	100	106	114	590
1911	356	421	335	456	371	301	122	837	149	195	123	102	251
1912	291	432	363	375	350	417	336	613	1,490	2,530	978	560	731
1913	611	799	853	a800	a760	a4650	a899	a400	a370	a250	a145	a595	a587
1914	a696	a669	a598	b1,350	b1,860	b1,440b3,040	b8,010	b5,480	b796	b1,730	b561	a2,180	a1,230
1915	b836	b852	c649	b618	b704	b672b1,980	b3,460	b2,700	b408	b445	b395	c1,140	a1,410
1916	b1,240	b973	b788	a659	a894	b648	b517	d499	b234	b132	b321	a198	e563
1917	b1,040	b791	b737	b619	b599	b638	b539	b3,930	b6,230	b1,310	b180	b265	a1,410
1918	b634	b622	b655	b571	b620	b485	b562	d192	b2,310	b1,700	b275	b628	d769
1919	b795	b798	b865	b918	b796	b539	b595	b426	b114	b137	b404	b249	b552
1920	b474	b679	a748	b521	b539	b383	b637	b2,440	b1,030	b324	b488	b323	a733
1921	b635	b791	b674	b512	b533	b349b1,090	b1,680	b2,000	b851	b771	b335	b1,670	b1,670
1922	b511	b628	b822	b603	b553	b597	b532	b151	b106	b114	b129	b115	b405
1923	b146	b337	b445	b480	b617	b640	b430	b441	b6,000	b1,450	b1,250	b625	b1,070
1924	b1,520	b2,280	b1,200	b1,250	b1,230	b1,230b3,240	b3,020	b6,710	b237	b173	b567	b1,860	b1,860
1925	b498	b488	b514	b508	b594	b420	b179	b725	b209	b157	b283	b162	b339
1926	b578	b716	b620	b514	b583	b450b2,550	b2,950	b3,340	b1,090	b197	b210	b1,150	b1,150
1927	b561	b688	b562	b587	b482	b498	b796	b455	b460	b418	b676	b273	b538
1928	b678	b504	b571	b610	b548	b527	b324	b2,210	b2,260	b923	b273	b229	b805
1929	b528	b724	b653	b556	b452	b728	b694	b325	b226	b170	b544	b845	b537
1930	d489	b850	b738	b556	b850	b546	b446	b188	b127	b112	b1,530	b426	d571
1931	b738	b578	b539	b483	b381	b457	b386	b515	b410	b117	b134	b137	b405
1932	b206	b416	b543	b486	b335	b419	b217	b852	b175	b198	b161	b123	b297
1933	b196	b378	b368	b395	b485	b281	b235	b2,230	b802	b235	b227	b669	b542
1934	367	490	628	582	530	360	262	155	144	104	866	815	315
1935	820	871	251	209	182	170	815	867	1,303	137	142	451	330
1936	391	512	509	462	441	368	295	239	653	134	523	213	394
1937	612	599	607	475	584	486	417	101	608	182	114	148	409
1938	153	343	466	444	519	374	567	1,740	1,169	314	190	2,769	751
1939	548	863	887	811	598	1,641	1,492	351	269	974	109	107	648
1940	120	187	345	388	525	583	265	670	947	153	678	214	250

* Only monthly figures revised; revised daily figures not available.
a From Congressional documents; 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b From reports of State engineer of Colorado.

c From files of State engineer of Colorado.

d Revised; supersedes records previously published by State engineer of Colorado.

e Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess, Platte River.

1/ Published as "at Kersey", 1901-3, 1914.

Monthly and yearly mean discharge, in cubic feet per second of
South Platte River near Kersey, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	319	373	345	455	443	290	433	785	979	292	472	255	453
1942	701	698	518	528	463	1,352	5,091	8,995	4,999	506	316	250	1,982
1943	605	760	817	722	553	578	537	1,405	1,233	264	166	182	652
1944	258	294	360	464	448	480	841	2,787	775	418	144	164	616
1945	195	560	504	515	437	424	450	409	744	311	1,478	336	514
1946	597	678	625	552	504	481	225	202	197	208	169	301	395
1947	359	561	615	502	484	879	583	1,847	6,298	1,891	425	341	1,231
1948	810	976	691	628	1,128	1,598	1,592	1,655	1,618	148	136	131	923
1949	278	417	440	558	541	604	479	658	9,030	1,134	135	207	1,198
1950	386	551	499	416	515	413	286	289	435	154	114	145	349

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	-	-	-	-	-	-	-	85.7	108	19.3	18.2	23.5	-
1902	28.0	31.3	*36.9	*36.9	*40.0	29.9	7.26	5.9	9.4	7.62	5.23	21.6	*260
1903	15.3	19.9	32.7	32.2	32.2	56.4	30.8	13.7	76.0	11.8	8.42	7.91	337
1904	13.1	23.6	27.2	-	-	-	-	-	-	-	-	-	-
1905	-	-	-	-	-	14.0	140	387	243	9.47	10.4	9.52	-
1906	23.6	31.7	20.8	*24.6	25.9	36.0	47.7	73.8	21.4	22.0	8.67	28.3	*364
1907	60.6	85.7	a80.4	a53.4	a38.8	34.9	32.7	110	133	109	48.6	22.4	a810
1908	46.7	45.6	43.5	a34.4	a28.7	a21.5	7.56	10.2	7.62	7.87	10.8	7.62	a272
1909	24.5	25.8	a30.4	a27.6	a31.0	a50.3	a65.3	55.0	299	140	17.2	127	a893
1910	73.8	57.7	61.5	62.7	47.7	59.3	24.9	14.6	5.79	6.15	6.52	6.78	427
1911	21.9	25.1	20.6	28.0	20.6	18.5	7.28	5.15	8.84	12.0	7.56	6.1	182
1912	17.9	25.7	22.3	23.1	20.1	25.6	20.0	37.7	98.7	156	60.1	33.5	530
1913	37.6	47.5	52.4	a49.1	a38.8	a39.9	a53.5	a24.6	a22.0	a15.4	a8.9	a35.4	a425
1914	a42.8	a39.8	a36.8	b83.0	b103	b88.5	b181	b492	b326	b106	b106	b33.4	a1,580
1915	b51.4	b50.7	c39.9	b38.0	b39.1	b41.3	b118	b213	b161	b25.1	b27.4	b23.5	c928
1916	b78.2	b57.9	b48.5	a40.5	a51.4	b39.8	b30.8	d30.7	b13.9	b7.5	b19.7	a11.8	e409
1917	e63.9	b47.1	b45.3	b38.1	b33.3	b39.2	b32.1	b242	b371	b80.6	b11.1	b15.8	a1,020
1918	b39.0	b37.0	b40.3	b35.1	b34.4	b29.8	d33.4	d11.8	b138	b104	b16.9	b37.4	d557
1919	b48.9	b47.5	b53.2	b56.4	b44.2	b33.1	b35.4	b26.2	b6.78	b8.42	b24.8	b14.8	b400
1920	b29.1	b40.4	a46.0	b32.0	b31.0	b23.6	b49.8	b150	b61.3	b19.9	b30.0	b19.2	a532
1921	b39.0	b47.1	b41.4	b31.5	b29.6	b21.5	b64.9	b103	b714	b52.3	b47.4	b19.9	b1,210
1922	b31.4	b37.4	b50.5	b37.1	b30.7	b36.7	b31.7	b9.29	b6.31	b7.01	b7.93	b6.84	b293
1923	b6.98	b20.1	b27.4	b29.5	b34.3	b39.4	b25.6	b27.1	b357	b89.2	b76.9	b37.2	b773
1924	b93.5	b136	b73.8	b75.6	b70.8	b75.6	b193	b186	b399	b14.6	b10.6	b21.8	b1,350
1925	b30.6	b29.0	b31.6	b31.2	b33.0	b25.8	b10.7	b4.48	b12.4	b9.65	b17.4	b9.64	b245
1926	b35.5	b42.6	b38.1	b31.6	b32.4	b27.7	b152	b181	b199	b67.0	b12.1	b12.5	b832
1927	b34.5	b40.9	b34.6	b36.1	b26.8	b30.5	b47.4	b28.0	b27.4	b25.7	b41.6	b16.2	b390
1928	b41.7	b30.0	b35.1	b37.5	b51.5	b32.4	b19.3	b136	b134	b56.8	b16.8	b13.6	b585
1929	b32.5	b43.1	b40.2	b34.2	b25.1	b44.6	b41.3	b20.0	b13.5	b10.5	b33.4	b50.3	b389
1930	d30.1	b50.6	b45.4	b34.2	b47.2	b33.6	b26.5	b11.6	b7.56	b6.88	b94.1	b25.3	d413
1931	b45.4	b34.4	b33.1	b28.5	b21.2	b28.1	b23.0	b31.7	b24.4	b7.19	b8.24	b8.15	d293
1932	b12.7	b24.8	b33.4	b29.9	b30.8	b25.8	b12.9	b5.24	b10.4	b12.2	b9.9	b7.32	b215
1933	b12.0	b22.5	b22.5	b24.3	b26.9	b17.3	b14.0	b137	b47.7	b14.4	b14.0	b39.8	b392
1934	22.6	29.2	38.6	35.8	29.4	22.1	15.6	9.53	8.57	6.4	5.32	4.85	228
1935	5.04	5.18	15.42	12.85	10.12	10.47	4.88	53.33	77.53	8.44	8.74	26.81	238.8
1936	24.01	30.45	31.27	28.42	25.38	22.6	17.56	14.67	38.83	8.25	32.18	12.65	286.3
1937	37.63	35.63	37.33	29.24	32.41	29.87	24.83	6.23	36.17	11.17	6.98	8.79	296.3
1938	9.4	20.43	28.67	27.31	28.84	23.0	33.72	107	69.54	19.33	11.68	164.8	543.7
1939	33.7	51.34	54.53	49.84	33.2	100.9	88.78	21.6	15.99	5.99	6.67	6.37	468.9
1940	7.38	11.14	21.22	23.88	30.18	35.85	15.74	4.12	5.64	9.4	4.17	12.74	181.5
1941	19.62	22.22	21.24	27.95	24.61	17.84	25.74	48.24	58.27	17.97	29.03	15.18	327.9
1942	43.11	41.54	31.85	32.44	25.71	83.13	302.9	553.1	255.6	31.11	19.4	14.85	1,435
1943	37.19	15.24	50.22	44.41	30.7	35.44	31.87	86.36	73.37	16.22	10.21	10.88	472.2
1944	15.88	17.47	22.12	28.54	25.77	29.53	50.07	167.7	46.08	25.73	9.85	9.74	447.5
1945	11.38	21.44	31.02	31.65	24.27	26.05	26.79	25.15	44.3	19.11	90.86	19.99	372
1946	56.68	40.37	38.4	33.96	27.98	29.59	13.37	12.4	11.73	12.79	10.42	17.92	285.6
1947	22.08	33.41	37.82	30.85	26.86	54.08	34.69	113.6	374.8	116.3	26.16	20.28	890.9
1948	49.81	58.05	42.5	38.62	64.94	98.12	94.75	101.8	96.25	9.09	8.39	7.79	670.1
1949	16.99	24.82	27.07	34.29	30.03	37.17	28.51	40.47	537.4	69.74	8.28	12.33	867.1
1950	23.72	32.8	30.66	25.58	29.6	25.39	17.02	17.78	25.88	9.46	7.03	8.63	252.5

* Revised.

a From Congressional documents; 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

c From files of State engineer of Colorado.

d Revised; supersedes records previously published by State engineer of Colorado.

e Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of South Platte River near Kersey, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1901	75	-	-	-	-	-	-	-
1902	84	*a3,000	Sept. 22, 1902	42	*359	*260,000	*320	*232,000
1903	99	a3,850	June 19, 1903	67	466	337,000	460	333,000
1905	172	*a11,200	May 23, 1905	-	-	-	-	-
1906	208	*a2,080	Mar 7, 1906	110	*503	*364,000	b711	b515,000
1907	246	*a4,610	July 30, 1907	121	c1,120	c810,000	c993	c719,000
1908	246	*a1,350	July 31, 1908	67	c375	c272,000	c299	c217,000
1909	266	*a10,200	July 6, 1909	180	c1,230	c893,000	c1,390	c1,010,000
1910	286	*d1,790	Oct. 16, 1909	90	590	427,000	419	302,000
1911	306	*a848	July 6, 1911	62	251	182,000	249	180,000
1912	326	*a5,120	July 17, 1912	97	731	539,000	829	602,000
1913	-	-	-	-	e587	c425,000	e562	c407,000
1914	(f)	*d17,500	June 4, 1914	e230	c2,180	c1,580,000	b2,220	b1,600,000
1915	(e)	*d7,500	Apr 27, 1915	e160	f1,140	f828,000	e1,200	e896,000
1916	(e)	*d3,650	May 22, 1916	e80	b563	b409,000	b527	b383,000
1917	(e)	*a8,950	June 2, 1917	e145	c1,410	c1,020,000	e1,350	e980,000
1918	(e)	*d7,990	June 26, 1918	g78	g769	g557,000	g815	g590,000
1919	(e)	*2,820	Aug. 2, 1919	e51	e552	e400,000	e506	e366,000
1920	(e)	*4,190	May 5, 1920	e138	e735	e532,000	e750	e544,000
1921	(e)	h51,000	June 7, 1921	e184	e1,670	e1,210,000	e1,660	e1,200,000
1922	(e)	*937	Dec. 13, 1921	e54	e405	e293,000	e318	e230,000
1923	(e)	*d17,500	June 11, 1923	e103	e1,070	e773,000	e1,410	e1,020,000
1924	(e)	*a12,200	June 7, 1924	e112	e1,860	e1,350,000	e1,570	e1,140,000
1925	(e)	*1,660	June 16, 1925	e50	e339	e245,000	e374	e270,000
1926	(e)	*9,210	Apr. 23, 1926	e140	e1,150	e832,000	e1,140	e825,000
1927	(e)	*2,860	July 30, 1927	e31	e538	e390,000	e534	e386,000
1928	(e)	*7,120	June 5, 1928	e125	e805	e585,000	e818	e594,000
1929	(e)	*a3,050	Aug. 8, 1929	e63	e537	e389,000	g551	g399,000
1930	(e)	*6,360	Aug. 16, 1930	e63	g571	g413,000	e552	e400,000
1931	(e)	*1,200	May 31, 1931	e94	e405	e293,000	e347	e251,000
1932	(e)	*3,250	July 30, 1932	e51	e297	e215,000	e277	e201,000
1933	(e)	*7,500	Sept. 12, 1933	e54	e542	e392,000	e588	e426,000
1934	681	687	Feb. 19, 1934	57	315	228,000	226	163,200
1935	766	*10,800	May 3 31, 1935	35	330	238,800	413	298,900
1936	806	2,200	Aug. 5, 1936	51	394	286,300	429	311,100
1937	826	2,140	June 28, 1937	40	409	296,300	337	244,200
1938	856	18,500	Sept. 4, 1938	100	751	543,700	863	624,800
1939	876	4,180	Mar. 12, 1939	83	648	468,900	510	369,100
1940	896	1,670	July 4, 1940	47	250	181,500	282	204,800
1941	926	2,640	June 10, 1941	90	453	327,900	527	381,300
1942	956	19,200	Apr. 25, 1942	146	1,982	1,435,000	2,004	1,451,100
1943	976	3,090	June 3, 1943	114	562	472,200	546	395,000
1944	1,006	4,900	May 18, 1944	110	616	447,500	628	455,900
1945	1,036	4,310	June 10, 1945	124	514	372,000	585	423,600
1946	1,056	1,880	July 20, 1946	51	395	285,600	364	263,500
1947	1,086	14,400	June 24, 1947	163	1,231	890,900	1,309	948,000
1948	1,116	4,620	June 2, 1948	86	923	670,100	811	588,600
1949	1,146	17,800	June 15, 1949	114	1,198	867,100	1,223	885,400
1950	1,176	1,960	June 18, 1950	45	349	252,500	-	-

* Revised.

* Not previously published.

a Maximum observed.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Estimated.

e From reports of State engineer of Colorado.

f From reports and files of State engineer of Colorado.

g Revised; supersedes records previously published by State engineer of Colorado.

h Maximum daily.

276. Middle Crow Creek near Hecla, Wyo.]

Location.--Lat 41°10'30", long. 105°15'10", in sec. 20, T. 14 N., R. 70 W., a quarter of a mile upstream from high-water line of Granite Springs Reservoir, 4½ miles (revised) northwest of Hecla, and 7 miles northwest of Granite Canyon.

Drainage area.--23 sq mi, approximately.

Gage.--Water-stage recorder and Cipolletti weir. Altitude of gage is 7,270 ft (from topographic map). Apr. 1, 1902, to Nov. 12, 1903, staff gages at sites 1¼ miles downstream at different datums.

Average discharge.--17 years (1933-50), 4.77 cfs.

Extremes.--1902-3, 1933-50: Maximum discharge, 495 cfs Sept. 8, 1933 (gage height, 4.90 ft), from rating curve extended above 5½ cfs on basis of slope-area determination of peak flow; no flow at times in most years.

Remarks.--Diversions above station for irrigation of about 100 acres.

Monthly and yearly mean discharge, in cubic feet per second of Middle Crow Creek near Hecla, Wyo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	*8.12	22.4	4.4	2.6	-	-	-
1903	-	-	-	-	-	-	-	40.4	17.4	5.2	2.8	2.1	-
1904	2.4	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	*18	*23.3	8.64	1.13	.58	1.49	-
1934	1.00	1.10	1.29	0.96	0.85	2.10	4.60	2.76	.46	0	0	0	1.26
1935	.12	.34	.3	.4	.4	.6	2.22	31.1	26.5	4.01	.98	.78	5.67
1936	1.02	1.47	*1.4	*1	*.8	*1.8	*12.7	5.32	1.89	.03	.24	0	*2.29
1937	.21	.68	*.6	*.4	*.5	*1.8	*7.14	6.84	9.19	1.55	.19	0	*2.40
1938	.55	.74	*.4	*.3	*.5	*3	*20.3	27.8	9.63	1.89	1.14	5.13	*5.96
1939	3.17	*2.20	*.8	*.5	*.4	*1.5	*15.9	16.2	3.28	.31	0	0	*3.70
1940	.20	.71	*.5	*.3	*.3	*.5	4.84	4.83	1.11	.35	0	.14	*1.13
1941	.61	*.21	*.2	*.2	*.3	*.6	*13.4	23.3	12.6	6.80	3.83	1.35	*5.31
1942	*1.3	*1.1	*.7	*.4	*.5	*1.5	*23.3	62.4	22.6	7.28	2.25	1.48	*10.5
1943	8.40	*7.22	*3.5	*1	*.6	*.9	*12.5	31.3	18.0	4.31	.79	.35	*7.44
1944	1.00	1.56	*1.1	*.6	*.4	*.6	*13.4	33.6	11.6	4.02	.37	.24	*5.73
1945	1.07	*1.13	*.8	*.5	*.5	*.6	*9.5	20.2	15.1	4.65	3.23	.74	*4.85
1946	*1.28	*.8	*.4	*.3	*.2	*.6	*3.54	*11.6	*5.14	*.85	*.06	*.2	*2.09
1947	*.9	*.5	*.3	*.2	*.3	*.9	*17.9	*37.5	*25.6	*12.1	*2.82	*1.25	*8.39
1948	*1	*.9	*.6	*.4	*.3	*1	14.7	12.1	2.65	.59	.12	0	*2.86
1949	.51	*.6	*.5	*.3	*.4	*1	16.1	28.3	40.8	8.08	1.74	1.23	*8.29
1950	2.74	2.49	*1.5	*.9	*.8	*1.5	*6.14	10.2	7.05	3.48	.55	1.27	*3.22

* Revised.

* Not previously published; estimated or partly estimated on basis of weather records and records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	*483	1,380	263	161	-	-	-
1903	-	-	-	-	-	-	-	2,480	1,040	320	172	125	-
1904	148	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	*1,070	*1,430	514	69	36	89	-
1934	61	65	80	59	47	129	274	170	27	0	0	0	912
1935	7.1	20	18	25	22	37	132	1,910	1,580	247	60	45	4,100
1936	62	87	*86	*61	*48	*111	*756	327	113	1.6	15	0	*1,670
1937	13	40	*37	*25	*28	*111	*425	408	547	95	12	0	*1,740
1938	34	44	*25	*18	*28	*184	*1,210	1,710	573	116	70	305	*4,320
1939	195	*131	*49	*31	*22	*92	*947	998	195	19	0	0	*2,680
1940	12	42	*31	*18	*17	*31	288	284	66	21	0	8.1	*618
1941	37	*13	*12	*12	*17	*37	*799	1,430	748	418	236	81	*3,840
1942	*80	*65	*43	*25	*28	*92	*1,390	3,840	1,340	447	138	87	*7,580
1943	516	*430	*215	*61	*33	*55	*744	1,930	1,070	265	49	21	*5,390
1944	61	93	*68	*37	*23	*37	*800	2,070	689	247	23	14	*4,160
1945	66	*67	*49	*31	*28	*37	*565	1,240	898	286	198	44	*3,510
1946	*79	*48	*25	*16	*11	*37	*211	*714	*306	*53	*3.6	*12	*1,520
1947	*55	*30	*18	*12	*17	*55	*1,070	*2,310	*1,520	*741	*174	*74	*6,080
1948	*61	*54	*37	*25	*17	*61	877	741	158	36	7.1	0	*2,070
1949	31	*36	*31	*18	*12	*61	961	1,744	2,453	497	107	73	*6,010
1950	169	146	*92	*55	*44	*92	*368	626	420	213	34	76	*2,340

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1902	84, 1440	*a31	May 14, 1902	-	-	-	-	-	-
1903	99	*a96	Apr. 27, 1903	-	-	-	-	-	-
1933	746	495	Sept. 8, 1933	-	-	-	-	-	-
1934	781	12	May 4, 1934	0	1.28	912	1.04	751	
1935	786	147	May 31, 1935	0	5.67	4,100	*5.93	*4,290	
1936	806	144	June 24, 1936	0	*2.29	*1,670	*2.09	*1,520	
1937	826	34	June 1, 1937	0	*2.40	*1,740	*2.42	*1,750	
1938	858	183	Aug. 25, 1938	0	*5.96	*4,320	*6.33	*4,590	
1939	876, 1440	*35	May 4, 1939	0	*5.70	*2,680	*5.30	*2,390	
1940	896	10	Apr. 29, 1940	0	*1.13	*618	*1.10	*795	
1941	926	169	July 25, 1941	-	*5.31	*3,840	*5.48	*3,970	
1942	956	117	May 11, 1942	-	*10.5	*7,580	*11.8	*8,550	
1943	976	67	May 24, 1943	.2	*7.44	*5,390	*6.15	*4,450	
1944	1006	62	May 13, 1944	-	*5.73	*4,160	*5.68	*4,120	
1945	1036	52	June 5, 1945	.2	*4.85	*3,510	*4.81	*3,480	
1946	(b)	*b22	June 2, 1946	*b0	*2.09	*1,520	*2.03	*1,470	
1947	(b)	*b80	May 3, 1947	-	*3.39	*6,080	*5.46	*6,120	
1948	1116	27	Apr. 29, 1948	0	*2.86	*2,070	*2.78	*2,020	
1949	1146	108	June 10, 1949	0	*8.29	*6,010	*8.72	*6,320	
1950	1176, 1440	32	May 27 or 28, 1950	.2	*3.22	*2,340	-	-	

* Revised.

* Not previously published.

a Maximum observed.

b From files of Geological Survey.

277. South Crow Creek near Hecla, Wyo. 1/

Location.--Lat 41°07'40", long. 105°12'00", in sec. 2, T. 13 N., R. 70 W., just upstream from high-water line of South Crow Creek Reservoir, 2½ miles southwest of Hecla, and 3 miles northwest of Granite Canyon.

Drainage area.--16 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 7,190 ft (from topographic map).

Extremes.--1933-50: Maximum discharge, 110 cfs July 21, 1945 (gage height, 3.78 ft), from rating curve extended above 20 cfs; no flow for many days in most years.

Remarks.--Divisions above station for irrigation of about 100 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	1.69	0.12	0	0.65	-
1934	0.23	0.47	0.43	0.40	0.60	1.64	1.99	0.97	0.02	0	0	0	0.56
1935	0	0	-	0.08	0.07	0.18	1.00	11.0	8.82	1.79	0.56	0.81	2.04
1936	1.03	-	-	-	-	-	-	1.38	0.44	0	0	0	-
1937	0	0.07	-	-	-	-	-	1.98	3.41	0.68	0.01	0	-
1938	0.15	0.29	-	-	-	-	-	4.80	1.40	0.12	0	0.89	-
1939	0.84	-	-	-	-	-	7.24	3.57	0.32	0	0	0	-
1940	0	0	0.08	-	-	-	2.01	0.92	0.16	0	0	0	-
1941	0.62	-	-	-	-	-	8.79	7.17	3.16	2.14	2.14	1.06	-
1942	1.86	-	-	-	-	-	11.2	20.6	7.43	3.06	1.73	1.51	-
1943	6.07	-	-	-	-	-	7.47	16.0	9.23	2.40	1.23	0.80	-
1944	1.14	1.13	-	-	-	-	-	9.62	2.53	1.85	0.15	0.08	-
1945	0.80	-	-	-	-	-	-	04.40	03.40	01.42	01.04	0.42	-
1946	01.02	-	-	-	-	-	-	03.82	01.98	0.74	0.07	0.46	-
1947	01.03	-	-	-	-	-	04.23	08.06	05.34	01.88	0.67	0.45	-
1948	0.96	-	-	-	-	-	5.09	2.72	0.68	0.05	0	0	-
1949	0	-	-	-	-	-	4.04	3.07	9.28	1.62	0.76	0.76	-
1950	1.08	-	-	-	-	-	-	2.81	1.70	0.98	0.28	0.29	-

* Not previously published; estimated on basis of weather records.

a From files of Geological Survey; only monthly figures available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	101	7	0	39	-
1934	14	28	26	25	33	101	118	60	1	0	0	0	406
1935	0	0	0	5.2	4.0	11	60	679	525	110	35	48	1,480
1936	63	-	-	-	-	-	-	85	26	0	0	0	-
1937	0	4.4	-	-	-	-	-	122	203	42	0.6	0	-
1938	8.9	17	-	-	-	-	-	283	84	7.3	0	53	-
1939	51	-	-	-	-	-	431	220	19	0	0	0	-
1940	0	0	4.0	-	-	-	119	56	9.3	0	0	0	-
1941	38	-	-	-	-	-	345	441	188	131	132	63	-
1942	114	-	-	-	-	-	666	1,270	442	188	107	90	-
1943	373	-	-	-	-	-	444	901	549	148	76	47	-
1944	70	67	-	-	-	-	-	591	150	113	8.9	4.8	-
1945	049	-	-	-	-	-	-	0270	0202	007	004	025	-
1946	062	-	-	-	-	-	-	0235	0118	0045	0046	0028	-
1947	065	-	-	-	-	-	0252	0497	0318	0115	0041	0027	-
1948	59	-	-	-	-	-	303	167	41	2.8	0	0	-
1949	0	-	-	-	-	-	241	189	552	99	47	45	-
1950	66	-	-	-	-	-	-	173	101	60	17	17	-

* Not previously published; estimated on basis of weather records.

a From files of Geological Survey.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1933	746	026	Sept. 8, 1933	0	-	-	-
1934	761	4.5	Apr. 8, 1934	0	0.56	406	0.47
1935	786	27	May 31, 1935	0	2.04	1,480	-
1936	806	6.3	Apr. 26, 1936	0	-	-	-
1937	826	15	June 1, 1937	0	-	-	-
1938	856	12	Apr. 27, 1938	0	-	-	-
1939	876	9.8	Apr. 18, 1939	0	-	-	-
1940	896	5.8	Apr. 27, 1940	0	-	-	-

a Maximum during the period May 6 to Sept. 30.

1/ Published as South Fork Crow Creek, 1933-50.

Yearly discharge, in cubic feet per second of South Crow Creek near Hecla, Wyo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	61	Aug. 10, 1941	-	-	-	-	-
1942	956	37	May 5, 1942	-	-	-	-	-
1943	976	34	May 22, 1943	-	-	-	-	-
1944	1006	91	July 19, 1944	0	-	-	-	-
1945	(b)	#110	July 21, 1945	b0	-	-	-	-
1946	(b)	#9.2	May 28, 1946	b0	-	-	-	-
1947	(b)	-	-	-	-	-	-	-
1948	1116	9.8	Apr. 28, 1948	0	-	-	-	-
1949	1146	32	June 6, 1949	0	-	-	-	-
1950	1176	10	(c)	0	-	-	-	-

* Not previously published.

b From files of Geological Survey.

c May 27 or 28, 1950.

278. North Fork Crow Creek near Hecla, Wyo.

Location.--Lat 41°13'40", long. 105°11'50", in sec. 35, T. 15 N., R. 70 W., 800 ft upstream from high-water line of North Crow Creek Diversion Reservoir, 1½ miles downstream from dam for Upper North Crow Creek Reservoir, 5½ miles northwest of Hecla, and 9 miles northwest of Granite Canyon.

Drainage area.--27 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 6,920 ft (from topographic map).

Extremes.--1933-44: Maximum discharge not determined, occurred Sept. 8, 1933 (gage height, 8.65 ft); no flow at times in 1939, 1940.

Remarks.--Diversions above station for irrigation of about 100 acres. Flow partly regulated by Upper North Crow Creek Reservoir.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	1.74	3.69	7.17	5.21	-	-
1934	3.45	2.04	4.24	0.78	1.11	1.60	9.88	4.59	5.08	4.40	13.31	2.06	2.06
1935	.23	.25	.3	.30	.54	.54	.55	4.20	8.46	5.89	5.11	4.94	2.61
1936	3.67	3.36	-	-	-	-	-	3.16	4.47	6.56	1.90	1.14	-
1937	1.52	1.36	-	-	-	-	-	1.90	2.15	1.92	.88	.87	-
1938	1.21	1.16	-	-	-	-	-	8.59	7.54	9.13	1.70	4.68	-
1939	4.76	-	-	-	-	-	-	2.15	5.87	12.2	.16	.01	-
1940	.27	.16	.27	-	-	-	.82	1.62	6.62	.06	1.82	1.50	-
1941	.93	-	-	-	-	-	-	3.84	5.31	5.35	4.02	6.78	-
1942	2.14	-	-	-	-	-	-	56.1	18.3	8.41	3.55	5.72	-
1943	5.69	-	-	-	-	-	-	28.6	19.2	6.50	3.76	5.18	-
1944	5.51	2.54	-	-	-	-	-	12.6	8.30	3.34	3.17	8.16	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	104	227	441	310	-
1934	211	122	261	48	61	99	53	282	302	24	7.9	18	1,490
1935	14	15	18	19	30	33	33	256	503	362	314	288	1,890
1936	226	200	-	-	-	-	-	194	266	403	117	68	-
1937	93	81	-	-	-	-	-	117	128	118	53	52	-
1938	74	69	-	-	-	-	-	528	449	561	104	277	-
1939	293	-	-	-	-	-	-	132	349	751	9.7	-	-
1940	16	9.3	16	-	-	-	49	100	394	3.6	112	89	-
1941	57	-	-	-	-	-	-	236	316	329	247	403	-
1942	131	-	-	-	-	-	-	3,450	1,090	517	218	340	-
1943	350	-	-	-	-	-	-	1,760	1,140	399	251	308	-
1944	339	151	-	-	-	-	-	775	494	205	195	486	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	746	(a)	Sept. 8, 1933	-	-	-	-	-
1934	761	29	June 30, 1934	0.1	2.06	1,490	1.50	942
1935	786	54	May 30, 1935	0.1	2.61	1,890	-	-
1936	806	80	Aug. 2, 1936	-	-	-	-	-
1937	826	(a)	July 28, 1937	-	-	-	-	-
1938	856	(a)	July 27, 1938	-	-	-	-	-
1939	876	81	July 30, 1939	0	-	-	-	-
1940	896	(a)	Aug. 25, 1940	0	-	-	-	-
1941	926	(a)	July 25, 1941	-	-	-	-	-
1942	956	108	May 10, 1942	-	-	-	-	-
1943	976	58	May 24, 1943	-	-	-	-	-
1944	1006	138	July 19, 1944	-	-	-	-	-

a Maximum discharge not determined.

279. Crow Creek near Cheyenne, Wyo.

Location.--Lat 41°07'00", long. 104°44'05", in SE $\frac{1}{4}$ sec. 2, T. 13 N., R. 66 W., $1\frac{1}{2}$ miles downstream from sewage disposal plant and $4\frac{1}{2}$ miles east of State Capitol in Cheyenne.

Drainage area.--310 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 5,930 ft (from topographic map).

Extremes.--1922-24: Maximum discharge, observed, 296 cfs July 14, 1923 (gage height, 2.84 ft), from rating curve extended above 65 cfs; minimum daily, 2.0 cfs Apr. 16, 17, 23, 1923.

Flood of May 20, 1904, was estimated as 8,500 cfs at Cheyenne. Flood of June 2, 1929, reached a discharge of 8,200 cfs, by slope-area determination about 6 miles upstream.

Remarks.--In 1924 there were adjudicated rights for diversions above station for irrigation of 18,840 acres. Natural flow of stream affected by storage reservoirs. At present practically all flow above station is diverted for municipal supply and irrigation. Flow at station is mainly drainage and waste water from Cheyenne. City of Cheyenne has prior right to divert 12,481 cfs for municipal supply above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	+4.75	6.61	6.11	5.45	7.20	5.95	6.61	6.41	23.4	47.6	12.1	22.8	+12.9
1924	28.7	22.5	11.8	8.0	16.9	19.4	74.3	32.3	61.3	8.43	6.15	4.84	24.4
1925	7.42	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated on basis of weather records.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	+292	393	376	335	400	366	393	394	1,390	2,950	744	1,360	+9,370
1924	1,760	1,540	726	492	972	1,190	4,420	1,990	3,650	518	378	288	17,700
1925	456	-	-	-	-	-	-	-	-	-	-	-	-

* Not previously published; partly estimated on basis of weather records.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1923	586	296	July 14, 1923	2.0	+12.9	+9,370	16.6
1924	586	189	Apr. 16, 1924	-	24.4	17,700	-

* Not previously published.

280. South Platte River at Sublette, Colo.

Location.--Lat 40°18'14", long. 104°10'43" (revised), in NW $\frac{1}{4}$ sec. 23 (revised), T. 4 N., R. 61 W., 30 ft upstream from highway bridge, a quarter of a mile south of Sublette, and $3\frac{1}{2}$ miles east of Masters.

Drainage area.--12,900 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 4,419.48 ft above mean sea level, datum of 1929. Prior to Sept. 14, 1943, at site 175 ft downstream at datum 1.00 ft higher. Sept. 14, 1943, to Sept. 30, 1948, at present site at datum 1.00 ft higher.

Since June 1, 1950, supplementary water-stage recorder on secondary channel 600 ft to right at same datum.

Average discharge.--22 years (1926-41, 1943-50), 349 cfs.

Extremes.--1926-41, 1943-50: Maximum discharge, 17,100 cfs June 16, 1949 (gage height, 9.31 ft), from rating curve extended above 9,100 cfs; minimum daily, 29 cfs Feb. 3, 1941.

Remarks.--Diversions above station for irrigation of about 940,000 acres. Natural flow of stream also affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, and return flow from irrigated areas.

Cooperation.--Records for 1926-33, 1942, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second of South Platte River at Sublette, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	a1,750	a2,160	a3,140	a1,220	a354	a390	-
1927	a220	a95.2	a140	a206	a547	a240	a726	a511	a230	a413	a392	a240	a297
1928	a151	a75.2	a206	a160	a497	a136	a248	a1,050	a1,810	a786	a392	a286	a482
1929	a261	a81.0	a209	a507	a554	a224	a662	a412	a387	a213	a418	a593	a374
1930	a110	a149	a102	a510	a844	a253	a122	a192	a215	a203	a932	a343	a510
1931	a129	a87.6	a77.7	a65.1	a102	a345	a209	a350	a385	a166	a164	a162	a186
1932	a134	a157	a78.1	a72.0	a61.9	a76.0	a206	a145	a219	a170	a189	a158	a159
1933	a182	a71.6	a72.2	a64.1	a71.2	a153	a159	a573	a748	a273	a186	a368	a245
1934	132	76.7	50.4	50.4	141	150	193	224	187	119	102	157	151
1935	155	167	72.6	54.4	59.2	86.4	78.5	283	654	173	145	195	177
1936	126	89.8	61.7	50.7	145	212	233	192	439	165	266	211	182
1937	264	71.6	56.9	59.7	70.0	353	339	179	467	301	142	153	205
1938	102	171	54.8	49.7	46.8	144	306	662	782	366	237	1,592	375
1939	551	105	737	944	377	1,799	1,557	293	349	151	146	150	580
1940	154	164	93.1	84.8	64.2	90.7	191	126	132	146	94.9	209	129
1941	135	140	45.0	42.1	36.8	57.5	220	556	601	268	459	203	231
1942	a223	a98.1	a159	a207	a209	a987	-	-	-	-	-	-	-
1944	287	101	79.3	91.9	67.8	181	658	2,382	658	444	181	205	447
1945	178	103	61.3	90.6	80.7	82.0	277	297	282	277	788	372	233
1946	252	463	666	589	249	174	138	305	277	250	194	209	315
1947	183	159	97.0	265	194	713	223	1,131	5,642	1,639	323	392	912
1948	545	345	387	514	967	1,407	936	928	1,103	746	186	206	646
1949	223	56.5	89.6	177	205	82.3	238	355	8,068	264	225	231	886
1950	190	290	73.6	86.2	105	146	199	324	391	206	147	206	197

a From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	-	-	-	-	-	-	a105,000	a133,000	a187,000	a75,000	a20,500	a23,200	-
1927	a13,500	a5,680	a8,610	a12,700	a19,300	a14,800	a43,200	a19,100	a13,700	a25,800	a24,100	a14,300	a215,000
1928	a9,280	a4,560	a12,700	a9,840	a28,600	a8,360	a14,800	a64,600	a109,000	a48,300	a24,100	a17,000	a350,000
1929	a16,000	a4,820	a12,900	a31,200	a29,700	a13,800	a39,400	a23,000	a3,000	a13,100	a25,700	a35,800	a271,000
1930	a6,760	a8,670	a5,270	a19,100	a46,900	a14,300	a7,260	a11,800	a12,800	a12,500	a57,300	a20,400	a224,000
1931	a7,930	a4,020	a4,780	a4,000	a5,660	a21,200	a12,400	a21,500	a22,900	a10,200	a10,100	a9,640	a134,000
1932	a8,240	a9,340	a4,800	a4,430	a5,560	a4,670	a12,300	a8,920	a13,000	a10,400	a11,600	a9,400	a101,000
1933	a11,200	a4,260	a4,440	a3,940	a3,950	a9,410	a9,460	a35,200	a44,400	a16,800	a11,400	a23,000	a177,000
1934	8,120	4,560	3,100	3,100	7,830	9,220	11,500	13,800	11,100	7,320	6,270	9,340	95,280
1935	9,520	9,950	4,470	3,340	3,290	5,310	4,670	17,400	38,910	10,620	8,940	11,630	128,000
1936	7,720	5,340	3,790	3,120	8,330	13,060	13,860	11,830	26,110	10,120	16,350	12,560	132,200
1937	16,250	4,260	3,500	3,670	3,890	21,720	20,150	11,000	27,780	18,490	8,720	9,100	148,500
1938	6,280	10,170	3,370	3,060	2,600	8,870	18,180	40,680	46,540	22,510	14,550	94,710	271,500
1939	21,580	6,250	45,340	58,050	20,950	110,600	92,650	18,010	20,780	9,280	8,960	7,740	420,200
1940	9,480	9,780	5,720	5,220	3,680	5,580	11,390	7,750	7,750	9,100	5,840	12,400	93,840
1941	8,320	8,360	2,760	2,590	2,040	3,530	13,080	34,170	35,790	16,460	26,210	12,090	167,400
1942	a13,710	a5,640	a9,800	a12,740	a11,590	a60,690	-	-	-	-	-	-	-
1944	17,670	6,010	4,920	5,650	3,910	11,110	39,160	146,500	39,160	27,280	11,140	12,190	324,700
1945	10,930	6,130	3,770	5,570	4,480	5,040	10,250	18,260	16,750	17,010	48,440	22,160	168,800
1946	15,480	27,530	40,930	36,220	13,840	10,720	8,220	18,750	16,470	15,350	11,940	12,440	227,900
1947	11,250	9,460	5,970	16,300	10,780	43,850	13,260	69,530	335,700	100,800	19,880	23,330	660,100
1948	33,530	20,540	23,820	31,620	55,610	86,520	55,700	57,060	68,010	15,120	11,410	12,250	469,200
1949	13,690	3,580	5,510	10,870	11,570	5,060	14,170	21,830	481,200	47,100	15,820	13,720	641,600
1950	11,690	17,230	4,530	5,300	5,830	8,950	11,830	19,920	23,250	12,650	9,070	12,290	142,500

a From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	a8,090	Apr. 23, 1926	-	-	-	-	-
1927	(a)	a2,410	July 30, 1927	a68	a297	a215,000	a295	a213,000
1928	(a)	a8,060	June 5, 1928	a53	a482	a350,000	a492	a357,000
1929	(a)	-	-	a55	a374	a271,000	a357	a259,000
1930	(a)	a5,670	Aug. 16, 1930	a63	a310	a224,000	a303	a219,000
1931	(a)	a869	May 30, 1931	a56	a186	a134,000	a193	a140,000
1932	(a)	a1,210	July 31, 1932	a51	a139	a101,000	a135	a98,200
1933	(a)	a2,840	Sept. 13, 1933	a50	a245	a177,000	a239	a173,000
1934	761	498	May 15, 1934	41	131	95,280	143	103,400
1935	786	4,720	June 1, 1935	35	177	128,000	167	121,000
1936	806	1,300	June 6, 1936	43	182	132,200	192	139,300
1937	826	2,140	June 28, 1937	49	205	148,500	199	144,300
1938	856	10,700	Sept. 5, 1938	42	375	271,500	449	324,900
1939	876	4,740	Mar. 13, 1939	75	580	420,200	514	372,000
1940	896	782	July 5, 1940	60	129	93,840	122	88,300

* Not previously published.

a From reports of State engineer of Colorado.

b Maximum observed.

Yearly discharge, in cubic feet per second of South Platte River at Sublette, Colo.--Continued								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	2,170	June 24, 1941	29	231	167,400	*245	*177,300
1942	(a)	-	-	-	-	-	-	-
1944	1006	4,240	May 19, 1944	64	447	324,700	437	316,900
1945	1036	3,090	Aug. 11, 1945	55	233	168,800	320	231,900
1946	1056	1,510	July 21, 1946	67	315	227,900	236	170,600
1947	1086	c12,000	June 25, 26, 1947	56	912	660,100	983	711,300
1948	1116	2,750	Apr. 26, 1948	133	646	469,200	570	413,900
1949	1146	17,100	June 16, 1949	49	866	641,600	901	652,500
1950	1176	1,430	June 20, 1950	42	197	142,500	-	-

* Not previously published.

a From reports of State engineer of Colorado.

c Maximum daily.

281. South Platte River at Orchard, Colo.

Location.--Lat 40°19', long. 104°07', in SW $\frac{1}{4}$ sec. 8, T. 4 N., R. 60 W., a quarter of a mile southwest of Orchard, and 3 miles upstream from Kiowa Creek.

Drainage area.--13,000 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 4,395 ft (from topographic map). Prior to Feb. 3, 1905, slope or staff gages nearby at various datums.

Average discharge.--5 years (1896-1900, 1905-6), 1,060 cfs.

Extremes.--1895-1900, 1903, 1905-6: Maximum discharge observed, 11,200 cfs May 1, 2, 1900 (gage height, 8.50 ft, site and datum then in use), from rating curve extended above 4,700 cfs; no flow June 29, 30, 1898.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1903, 1905-6, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1896	-	-	759	775	*737	581	-	-	-	-	-
1897	a132	a459	*428	*363	*603	*745	*1,100	*936	*2,480	347	*808
1898	*341	1,110	1,230	1,070	*861	*683	*430	1,950	1,776	173	43
1899	215	*811	2,650	2,880	3,320	2,590	1,320	468	*1,320	*822	45
1900	429	799	1,540	1,630	1,270	683	4,180	8,620	4,840	171	114
1901	431	611	614	-	-	-	-	-	-	-	-
1903	-	-	-	-	-	-	-	-	-	-	c54
1905	-	-	-	-	a967	a289	b2,270	c5,930	c4,140	-	-
1906	c363	c352	b68	a213	a261	a300	c426	c1,040	c256	c284	c59
1907	c1,310	c1,710	*1,160	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

* Not previously published; estimated by Geological Survey on basis of partial record.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1896	-	-	46,700	47,700	*42,400	35,700	-	-	-	-	-
1897	a8,100a26,100	a26,300	*22,400	*35,500	*45,800	*65,700	*57,600	*147,000	*21,300	*49,700	5,470
1898	*21,000	66,000	75,800	65,700	*47,800	*41,100	*25,600	20,000	46,200	10,600	2,460
1899	13,200	48,300	63,000	77,000	84,000	46,000	78,800	28,600	*78,700	*107,000	*50,500
1900	26,400	47,500	94,900	100,000	70,400	42,000	249,000	530,000	276,000	10,500	7,010
1901	26,500	36,400	37,800	-	-	-	-	-	-	-	-
1903	-	-	-	-	-	-	-	-	-	-	c3,320
1905	-	-	-	-	a53,700	a17,800	b135,000	c365,000	c246,000	-	-
1906	b22,300b20,900	b4,180	a13,100	a14,500	a18,400	a25,500	c83,900	c15,200	c17,500	c3,630	b28,900
1907	b80,500	b102,000	*71,300	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

* Not previously published; estimated by Geological Survey on basis of partial record.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, Platte River.

c From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Platte River at Orchard, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1896	(a)	0	-	-	-	-	-	-
1897	(a), 1440	*4,760	June 14, 1897	-	b702	b509,000	*844	*611,000
1898	(c), 1440	3,210	May 28, 1898	0	*726	*526,000	*812	*588,000
1899	(d), 1440	3,970	(e)	9	*1,490	*1,080,000	*1,410	*1,020,000
1900	(f)	11,200	May 1, 2, 1900	113	2,020	1,460,000	1,930	1,590,000
1903	(g)	-	-	-	-	-	-	-
1905	(g)	-	-	-	-	-	-	-
1906	(g)	-	-	-	h343	h248,000	*628	*454,000

* Revised.

† Not previously published.

a 19th Ann. Rept., Pt. 4.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c 20th Ann. Rept., Pt. 4.

d 21st Ann. Rept., Pt. 4.

e Feb. 20 to Mar. 6, 1899.

f 22d Ann. Rept., Pt. 4.

g From reports of State engineer of Colorado.

h From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

282. Bijou Creek near Wiggins, Colo.

Location.--Lat 40°14'53", long. 104°02'08", in SW¼SW¼ sec. 6, T. 3 N., R. 59 W., at bridge on U. S. Highways 6 and 34, 2 miles northeast of Wiggins, and 5.7 miles downstream from Antelope Creek.

Drainage area.--1,420 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period April to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is 4,490 ft (from topographic map).

Extremes.--April to September 1950: Maximum discharge, 767 cfs July 31 (gage height, 4.89 ft), no flow on many days.

Maximum discharge probably occurred May 31, 1935. Discussion of this flood published in WSP 997.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	0	0	0.20	5.68	2.29	3.28	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	0	0	12	349	141	195	-

283. South Platte River at Fort Morgan, Colo.

Location.--Lat 40°16'08", long. 103°48'02", in sec. 31, T. 4 N., R. 57 W., at bridge on State Highway 52, half a mile north of Fort Morgan, and 3½ miles downstream from Bijou Creek.

Drainage area.--14,800 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 4,250 ft (from topographic map).

Average discharge.--7 years (1943-50), 516 cfs.

Extremes.--1943-50: Maximum discharge, 18,100 cfs June 16, 1949 (gage height, 10.66 ft); minimum daily, 31 cfs Apr. 20, 1950.

Maximum flood known, 84,300 cfs May 31, 1935, by slope-area determination of peak flow 1 mile upstream; flood came principally from Bijou Creek.

Remarks.--Diversions above station for irrigation of about 980,000 acres. Natural flow of stream also affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second of South Platte River at Fort Morgan, Colo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	157	188	209	237	211	340	816	1,918	411	186	157	159	417
1945	121	151	186	256	263	240	328	217	404	175	864	243	288
1946	321	521	751	686	450	322	172	181	138	196	219	219	348
1947	232	249	190	370	361	678	222	982	4,752	1,351	249	283	824
1948	527	409	472	620	823	1,313	920	970	811	152	178	169	614
1949	240	154	246	456	357	211	324	325	7,815	568	199	227	900
1950	239	362	218	244	263	295	201	188	249	151	143	122	222

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	9,630	11,210	12,880	14,570	12,120	20,950	48,540	118,000	24,470	11,480	9,660	9,470	302,900
1945	7,470	8,990	11,440	15,740	14,620	14,770	19,510	13,370	24,030	10,760	53,100	14,480	208,300
1946	19,720	30,980	46,160	42,210	25,010	19,820	10,250	11,150	8,210	12,050	13,440	13,010	252,000
1947	14,290	14,840	11,690	22,730	20,030	41,680	13,190	60,400	282,800	83,080	15,290	16,820	596,800
1948	32,590	24,360	28,990	38,150	47,690	81,080	54,730	59,850	48,240	9,350	10,930	10,080	445,800
1949	14,730	9,140	15,100	26,820	19,830	13,000	19,290	20,000	453,100	34,950	12,220	13,490	651,800
1950	14,870	21,510	13,430	15,030	14,600	16,130	11,950	11,460	14,840	9,290	8,790	7,230	160,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1944	1006	2,920	May 13, 1944	62	417	302,900	409	297,100
1945	1036	10,400	Aug. 21, 1945	56	288	208,300	383	277,200
1946	1056	2,710	Sept. 8, 1946	34	348	252,000	271	196,000
1947	1086, 1146	16,200	June 25, 1947	57	824	596,800	886	641,700
1948	1116	2,740	May 3, 1948	67	614	445,800	549	398,900
1949	1146	18,100	June 16, 1949	78	900	651,800	915	662,400
1950	1176	1,020	June 20, 1950	31	222	160,900	-	-

284. South Platte River at Balzac, Colo.

Location.--Lat 40°24'24", long. 103°27'58" (revised), in NE $\frac{1}{4}$ sec. 13, T. 5 N., R. 55 W., just upstream from highway bridge at Balzac siding, and 2 $\frac{1}{2}$ miles (revised) northeast of Union.

Drainage area.--17,700 sq mi, approximately.

Supplemental records available.--Records of chemical analyses for the period January to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 4,091.06 ft above mean sea level, datum of 1929. Prior to Oct. 18, 1935, slope or staff gage or water-stage recorder at various sites near present site at different datums. Oct. 18 to Dec. 16, 1935, staff gage and Dec. 17, 1935, to Aug. 20, 1947, water-stage recorder at site 250 ft upstream at present datum.

Since Oct. 1, 1936, supplementary water-stage recorder on secondary channel 600 ft to the left at datum 1.69 ft lower.

Average discharge.--34 years (1916-50), 384 cfs.

Extremes.--1917-50: Maximum gage height, 11.43 ft May 31, 1935 (discharge not determined); minimum daily discharge, 1.3 cfs Jan. 25, 1947.

Remarks.--Diversion above station for irrigation of about 1,065,000 acres. Natural flow of stream also affected by transmountain diversions, storage reservoirs, power developments, groundwater withdrawals, and return flow from irrigated areas.

Cooperation.--Records for 1917-33, not previously published by Geological Survey, furnished by State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	a174	a200	a150	a40	a425	a174	b115	b2200	b3,780	b278	b160	b311	a664
1918	b365	b179	b191	b291	b371	b158	b54.4	b128	b793	b476	b238	b82.6	b277
1919	b79.0	b114	a125	b478	b834	b74.1	b170	b107	b142	b184	b261	b249	a230
1920	b275	b373	b261	b58.7	b23.7	b19.9	b186	b1050	b273	b237	b250	b256	b273
1921	b305	b172	b87.8	b81.5	b40.1	b28.4	b295	b475	b12,200	b930	b468	b297	b1,270
1922	b338	b123	b353	b332	b414	b412	b81.6	b93.5	b185	b156	b234	b192	b241
1923	b123	b77.1	b22.0	b25.3	b21.5	b37.3	b29.6	b43.5	b4,880	b463	b282	b588	b544
1924	b1070	b2,000	b1010	b1,040	b1,170	b1,350	b1,960	b1,500	b5,230	b194	b102	b267	b1,400
1925	b34.0	b21.0	b28.7	b168	b247	b39.4	b98.6	b134	b125	b140	b156	b126	b109

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

b From reports of State engineer of Colorado.

Monthly and yearly mean discharge, in cubic feet per second of
South Platte River at Salza, Colo.--Continued.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	b79.6	b15.1	b26.3	b24.6	b143	b27.7	b785	b1,230	b2,270	b741	b108	b138	b465
1927	b113	b21.7	b26.6	b130	b144	b306	b905	b156	b127	b259	b248	b191	b219
1928	b81.0	b13.4	b37.4	b108	b359	b164	b136	b365	b1,400	b921	b215	b151	b527
1929	b142	b28.3	b98.6	b475	b665	b350	b611	b559	b150	b144	b195	b467	b321
1930	b75.6	b245	b247	b226	b190	b188	b52.5	b70.6	b144	b134	b158	b122	b262
1931	b35.8	b132	b115	b85.9	b209	b269	b197	b159	b209	b127	b198	b188	b160
1932	b199	b44.4	b66	b140	b100	b27.1	b121	b186	b194	b198	b244	b178	b142
1933	b87.0	b22.3	b15.9	b15.9	b19.2	b61.6	b139	b87.5	b326	b195	b501	b318	b150
1934	37.5	20.7	10.0	13.0	50.4	29.5	77.7	124	151	128	163	174	81.6
1935	83.3	80.9	24.9	13.8	17.3	25.1	136	732	3,615	103	123	182	425
1936	85.4	11.6	832	10.7	14.9	13.3	107	155	164	190	278	191	102
1937	115	879	933	12.8	12.6	13.7	131	179	165	187	136	192	95.4
1938	122	63.4	21.3	12.2	11.2	73.6	199	74.9	329	222	3371	503	246
1939	39.4	20.3	502	794	610	2,231	1,370	138	188	143	149	157	529
1940	141	98.5	81.7	17.1	15.9	17.6	53.3	122	125	136	147	211	97.4
1941	197	64.7	10.5	946	808	24.3	35.8	272	225	181	230	186	121
1942	18.4	16.1	31.3	30.8	34.3	136	3,356	7,490	4,133	253	194	317	1,422
1943	104	25.7	41.6	604	188	480	202	570	770	175	179	202	326
1944	174	17.9	15.3	15.9	88.4	19.5	286	1,613	287	150	173	155	249
1945	61.5	24.7	18.5	28.6	17.4	15.0	18.0	93.9	262	204	659	115	128
1946	89.2	50.2	460	517	264	275	129	199	143	163	150	132	215
1947	21.8	23.4	27.7	108	86.0	465	178	676	4,556	1,280	281	244	661
1948	141	137	170	242	1,064	1,416	794	781	534	153	177	209	482
1949	92.9	14.7	23.4	485	392	25.7	44.3	195	6,346	570	197	218	709
1950	51.0	20.8	16.0	15.4	84.5	236	154	210	223	159	138	143	121

b From reports of State engineer of Colorado.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	a10,700	a11,900	a9,210	a2,460	a23,600	a10,700	b5,840	b135,000	b25,000	b17,200	b9,840	b18,500	a481,000
1918	b22,400	b17,000	b17,800	b20,800	b9,720	b5,240	b7,890	b47,200	b40,000	b14,600	b4,920	b4,920	b187,000
1919	b4,880	b6,780	a7,600	b29,400	b3,300	b4,560	b10,100	b6,580	b8,450	b11,500	b16,000	b14,800	b159,000
1920	b16,900	b22,200	b16,000	b5,610	b1,360	b1,220	b11,100	b64,600	b16,200	b14,600	b15,400	b15,200	b198,000
1921	b18,800	b10,200	b5,400	b5,010	b2,230	b1,750	b17,600	b29,200	b26,000	b57,200	b28,800	b17,700	b920,000
1922	b20,700	b7,320	b21,700	b20,400	b25,000	b5,680	b5,750	b11,400	b9,720	b14,400	b10,110	b400	b174,000
1923	b7,560	b4,590	b1,350	b1,430	b1,190	b2,290	b1,770	b2,670	b29,000	b28,500	b3,000	b35,000	b394,000
1924	b65,800	b20,000	b27,100	b63,900	b67,300	b83,000	b17,000	b92,200	b31,000	b11,900	b6,270	b15,900	b1,020,000
1925	b2,090	b1,300	b1,760	b10,300	b13,700	b2,420	b5,870	b8,240	b7,440	b9,610	b9,590	b7,500	b78,800
1926	b4,890	b898	b1,620	b1,520	b7,940	b1,700	b46,700	b75,600	b35,000	b45,600	b6,540	b8,210	b336,000
1927	b6,950	b1,290	b1,640	b7,990	b8,000	b18,800	b53,900	b9,590	b7,560	b15,900	b15,200	b11,400	b158,000
1928	b4,980	b797	b2,500	b6,640	b20,600	b10,100	b8,090	b22,400	b40,830	b30,560	b13,200	b8,980	b237,000
1929	b8,730	b1,600	b5,950	b29,200	b36,900	b21,500	b36,400	b34,400	b6,930	b8,850	b12,000	b27,800	b232,000
1930	b4,650	b14,600	b15,200	b13,900	b66,100	b11,600	b5,120	b4,340	b8,570	b6,240	b31,900	b7,260	b189,000
1931	b2,200	b7,860	b7,070	b5,280	b11,600	b16,500	b11,700	b9,780	b12,400	b7,810	b12,200	b11,200	b116,000
1932	b12,200	b2,640	b4,060	b6,810	b5,750	b1,670	b7,200	b11,440	b11,500	b12,200	b15,000	b10,600	b105,000
1933	b5,350	b1,330	b970	b978	b1,070	b5,790	b6,370	b5,990	b19,400	b40,000	b18,900	b18,900	b108,000
1934	2,310	1,230	615	799	2,800	1,810	4,620	7,650	8,980	7,870	10,000	10,400	59,050
1935	5,120	4,810	1,530	849	962	1,540	8,080	44,990	215,100	6,310	7,580	10,800	307,700
1936	5,250	687	573	661	857	817	6,390	9,500	9,790	11,560	17,080	11,350	74,520
1937	7,080	523	573	709	703	840	7,800	11,010	9,830	10,240	8,360	11,430	69,100
1938	7,530	3,770	1,510	813	622	4,530	11,860	4,600	19,570	13,670	20,720	89,410	178,400
1939	2,420	1,210	30,880	48,810	35,860	137,200	81,500	8,510	11,200	8,780	9,170	9,320	382,900
1940	6,680	5,860	5,030	1,050	912	1,100	3,170	7,530	7,420	8,370	9,050	12,540	70,710
1941	12,080	3,850	647	582	445	1,490	2,130	16,740	13,360	11,140	14,120	11,080	87,690
1942	1,130	956	1,920	1,890	1,940	69,860	199,700	460,500	246,000	15,580	11,300	18,860	1,030,000
1943	6,420	1,530	25,600	37,130	9,330	29,480	11,990	35,070	45,790	10,790	10,990	12,040	236,200
1944	10,700	1,060	942	978	5,090	1,200	16,990	99,160	15,910	9,240	10,630	9,120	181,000
1945	3,780	1,470	1,130	1,780	966	924	1,070	5,770	15,590	12,520	40,100	6,870	92,360
1946	5,490	2,990	28,270	31,800	14,850	16,910	7,680	12,210	8,540	10,040	9,250	7,870	155,700
1947	1,340	1,390	1,700	6,820	4,770	28,590	10,610	41,590	271,100	78,670	17,200	14,550	478,000
1948	8,680	8,150	10,740	14,910	68,310	87,050	47,220	48,000	31,790	9,410	10,880	12,410	87,580
1949	5,710	873	1,440	29,790	21,780	1,580	2,640	12,010	377,600	35,030	12,130	12,970	515,500
1950	3,130	1,240	944	944	4,690	14,510	9,170	12,910	13,230	9,780	8,490	8,520	87,580

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

b From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1917	(a)	-	-	-	b664	b481,000	b682	b494,000	
1918	(a)	\$3,000	June 25, 1918	a26	a277	a200,000	b241	b175,000	
1919	(a)	\$1,190	Feb. 14, 1919	a20	b230	b167,000	a280	a203,000	
1920	(a)	\$2,300	May 8, 1920	a12	a273	a198,000	a245	a178,000	
1921	(a)	\$31,200	June 11, 1921	a22	a1,270	a920,000	a1,290	a935,000	
1922	(a)	\$1,110	Mar. 1, 1922	a17	a241	a174,000	a191	a138,000	
1923	(a)	\$17,000	June 13, 1923	a10	a544	a394,000	a867	a628,000	
1924	(a)	\$10,700	June 9, 1924	a43	a1,400	a1,020,000	a1,070	a774,000	
1925	(a)	\$42,540	July 31, 1925	a20	a109	a78,800	a12	a81,100	

† Not previously published.

a From reports of State engineer of Colorado.

b From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Maximum daily.

d Maximum observed.

Yearly discharge, in cubic feet per second of South Platte River at Balzac, Colo.--Continued								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	(a)	#46,050	June 16, 1926	a9	a465	a336,000	a468	a339,000
1927	(a)	#2,180	Apr. 20, 1927	a11	a219	a158,000	a216	a156,000
1928	(a)	#6,570	June 6, 1928	a9	a327	a237,000	a338	a246,000
1929	(a)	#2,110	Sept. 11, 1929	a20	a321	a232,000	a346	a250,000
1930	(a)	#2,830	Aug. 17, 1930	a11	a262	a189,000	a238	a172,000
1931	(a)	#1,510	Sept. 25, 1931	a11	a160	a116,000	a162	a117,000
1932	(a)	#4,780	July 31, 1932	-	a142	a103,000	a126	a91,600
1933	(a)	#4,090	Aug. 4, 1933	a14	a150	a108,000	a145	a105,000
1934	761	480	Feb. 27, 1934	6	81.6	59,050	91.7	66,380
1935	786	(e)	May 31, 1935	6	425	307,700	418	302,700
1936	806	4,950	Aug. 5, 1936	4.6	102	74,520	105	75,180
1937	826	*1,420	May 26, 1937	8.1	95.4	69,100	102	73,530
1938	856	15,600	Sept. 8, 1938	5.2	246	178,400	277	200,300
1939	876	11,300	Mar. 12, 1939	17	529	382,900	508	367,900
1940	896	1,100	Sept. 11, 1940	12	97.4	70,710	93.3	67,720
1941	926	855	June 10, 1941	6.8	121	87,690	104	75,120
1942	956	17,000	Apr. 27, 1942	9	1,422	1,030,000	1,463	1,059,000
1943	978	2,400	May 27, 1943	13	326	236,200	297	215,300
1944	1006	2,990	May 13, 1944	11	249	181,000	241	174,700
1945	1036	5,220	Aug. 22, 1945	10	128	92,360	170	122,700
1946	1056	2,080	Sept. 8, 1946	5.0	215	158,700	170	123,400
1947	1086	12,100	June 26, 1947	1.3	661	478,200	692	501,100
1948	1116	2,330	Mar. 17, 1948	28	482	350,100	456	330,900
1949	1146	14,600	June 17, 1949	11	709	513,600	706	510,900
1950	1176	674	June 21, 1950	10	121	87,580	-	-

* Revised.

* Not previously published.

* From reports of State engineer of Colorado.

d Maximum observed.

e Discharge not determined.

285. Lodgepole Creek near Federal, Wyo.

Location.--Lat 41°18'40", long. 105°13'00", in sec. 34, T. 16 N., R. 70 W., 1½ miles upstream from North Fork and 6 miles (revised) northwest of Federal.

Drainage area.--25 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 6,970 ft (from topographic map).

Extremes.--1933-38: Maximum discharge, 89 cfs May 31, 1935 (gage height, 2.93 ft), from rating curve extended above 28 cfs; no flow at times in most years.

Remarks.--Diversions above station for irrigation of about 200 acres.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	6.08	1.11	0.45	0.43	-
1934	0.97	1.35	1.04	1.11	1.26	2.07	2.37	1.33	.59	.07	0	0	1.01
1935	.45	.60	.33	.26	.37	.71	1.35	13.3	17.3	6.40	3.27	1.46	3.82
1936	1.56	*1.85	*1.7	-	-	-	-	2.86	.73	.04	.15	.03	-
1937	.51	.58	-	-	-	-	-	7.12	6.39	2.22	.40	.47	-
1938	1.60	1.74	-	-	-	-	-	13.5	7.40	3.19	1.01	3.18	-

* Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	562	68	28	26	-
1934	60	80	64	68	70	128	141	82	35	4.4	0	0	732
1935	28	36	20	16	21	43	81	815	1,030	393	201	87	2,770
1936	96	+110	+105	-	-	-	-	176	43	2.2	9.3	1.6	-
1937	32	35	-	-	-	-	-	438	380	136	24	28	-
1938	98	104	-	-	-	-	-	833	440	196	62	189	-

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	746	-	-	-	-	-	-	-
1934	761	6.4	Apr. 8, 1934	0	1.01	732	0.85	612
1935	786	89	May 31, 1935	0	3.82	2,770	*4.14	*3,000
1936	806	a12	Apr. 16, 1936	0	-	-	-	-
1937	826	b14	June 1, 1937	0	-	-	-	-
1938	856	28	Apr. 28, 1938	-	-	-	-	-

* Not previously published.

a Maximum during period Apr. 16 to Sept. 30.

b Maximum during period Apr. 27 to Sept. 30.

286. South Fork Lodgepole Creek near Federal, Wyo.

Location.--Lat 41°16'20", long. 105°13'00", in sec. 15, T. 15 N., R. 70 W., 5½ miles west (revised) of Federal and 9 miles upstream from mouth.

Drainage area.--16 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 7,080 ft (from topographic map).

Extremes.--1933-38: Maximum discharge, 410 cfs Sept. 8, 1933 (gage height, 4.95 ft), from rating curve extended above 16 cfs by logarithmic plotting; no flow at times during 1934, 1936-37.

Remarks.--Diversions above station for irrigation of about 100 acres.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	4.12	1.20	0.85	1.28	-
1934	0.82	1.01	1.25	1.37	1.70	2.33	11.77	0.93	4.43	1.14	1.18	1.52	1.03
1935	.49	.54	.42	.55	.58	.60	.98	7.66	9.64	3.23	1.49	1.41	2.30
1936	1.58	1.85	1.77	-	-	-	-	3.04	.98	.22	.75	.25	-
1937	1.19	1.53	-	-	-	-	-	4.99	4.90	1.56	.13	.62	-
1938	1.52	-	-	-	-	-	-	11.1	4.46	2.07	1.14	1.92	-

† Corrected.

* Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	-	-	245	74	52	75	-
1934	50	60	77	84	94	143	108	5	28	8.3	11	31	747
1935	30	32	26	34	32	37	59	471	574	198	92	84	1,670
1936	97	110	109	-	-	-	-	187	58	13	45	15	-
1937	73	91	-	-	-	-	-	307	292	96	7.7	37	-
1938	93	-	-	-	-	-	-	691	266	128	70	114	-

* Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1933	746	#410	Sept. 8, 1933	-	-	-	-	-	-
1934	761	4.9	Mar. 25, 1934	0	1.03	747	0.89	648	-
1935	786	210	July 18, 1935	.2	2.30	1,670	#2.62	#1,900	-
1936	806	#236	Aug. 2, 1936	0	-	-	-	-	-
1937	826	a12	June 1, 1937	0	-	-	-	-	-
1938	856	150	Aug. 10, 1938	-	-	-	-	-	-

* Not previously published.

a Maximum during period May to September.

287. Lodgepole Creek at Bushnell, Nebr. (upper station)

Location.--Lat 41°14', long. 103°54', on east line of sec. 31, T. 15 N., R. 57 W., at highway bridge at south edge of Bushnell.

Drainage area.--1,090 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is about 4,830 ft (from datum of gage 1½ miles downstream).

Extremes.--1931-32: Maximum discharge observed, 36 cfs Apr. 1, 1931 (gage height, 2.10 ft), from rating curve extended above 22 cfs; minimum daily discharge, 5 cfs July 11-14, 16, 17, 19, 1931.

Remarks.--Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	21.2	17.7	17.8	9.3	6.0	8.4	9.1	-
1932	11.9	16	15	14	18	22.8	20.6	17.7	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	1,300	1,050	1,090	553	369	516	541	-
1932	732	952	922	861	1,040	1,400	1,230	1,090	-	-	-	-	-

288. Lodgepole Creek at Bushnell, Nebr.

Location.--Lat 41°14', long. 103°51', in sec. 33, T. 15 N., R. 57 W., 1½ miles east of Bushnell and 1½ miles upstream from Oliver Reservoir.

Drainage area.--1,090 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 4,812.3 ft above mean sea level, datum of 1929. Prior to Mar. 26, 1938, staff gage at same site and datum.

Average discharge.--19 years (1931-50), 13.6 cfs.

Extremes.--1931-50: Maximum discharge, 16,500 cfs Sept. 15, 1950 (gage height, 9.98 ft), from rating curve extended above 2,700 cfs on basis of slope-area determination of peak flow; minimum daily, 1.2 cfs Dec. 14, 1935.

Remarks.--Natural flow of stream affected by diversions for irrigation, ground-water withdrawals, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1932	*13.9	*18.7	*17.5	*16.3	*21.0	*26.6	*24.0	*20.6	*17.5	11.7	*17.4
1933	13.6	13.7	13.9	27.0	17.6	20.6	19.0	18.6	9.4	8.2	*19.6
1934	17.5	19.1	20	17	15.9	15.4	13.6	9.8	7.8	6.5	13.4
1935	10.6	13.4	13.9	13.2	13.4	13.5	17.8	20.1	*69.9	12.3	*18.1
1936	14.9	18.5	13.4	16.2	17.0	18.1	17.3	13.6	10.1	4.24	12.9
1937	9.48	13.3	13.3	8.37	11.1	15.8	14.4	10.9	11.9	*12.9	8.08
1938	8.76	10.1	10.4	11.0	10.6	14.2	13.9	13.4	13.4	*18.9	*15.3
1939	15.1	15.6	15.5	13.5	12.6	19.1	21.5	13.3	8.85	5.21	12.7
1940	8.88	11.0	12.8	11.3	13.2	18.0	15.5	12.0	7.46	5.33	10.7
1941	9.96	10.6	10.7	11.2	12.6	13.4	13.4	10.9	*38.4	8.73	*12.9
1942	10.3	10.8	10.6	9.74	11.8	15.9	16.2	20.0	14.1	12.9	12.8
1943	11.5	13.0	13.6	13.2	15.3	13.8	16.0	17.7	13.0	9.9	12.7
1944	10.5	13.0	12.8	12.0	15.1	16.6	17.7	13.5	13.7	14.3	15.1
1945	10.5	10.9	11.1	12.6	14.3	12.5	17.4	14.9	20.6	11.4	13.7
1946	14.8	14.5	14.0	14.0	15.1	16.3	14.0	20.7	11.8	8.74	13.4
1947	9.32	11.1	12.3	12.6	13.3	13.5	14.0	11.5	11.8	9.92	11.4
1948	10.2	12.4	12.8	10.8	12.6	14.9	12.1	9.53	6.89	*25.9	*12.6
1949	9.29	9.04	8.78	2.92	8.14	21.2	15.1	*17.3	13.8	10.1	*11.3
1950	10.6	10.4	8.21	8.05	10.4	11.1	10.3	9.05	7.44	5.94	12.2

* Revised.

* Not previously published; estimated on basis of records for gaging station 1½ miles upstream

Monthly and yearly runoff, in acre-feet											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1932	*853	*1,110	*1,080	*1,000	*1,210	*1,640	*1,430	*1,270	*1,040	719	*12,630
1933	856	815	855	1,660	978	1,270	1,130	1,140	559	504	*14,200
1934	1,080	1,140	1,230	1,050	883	946	807	601	466	397	9,700
1935	653	799	853	811	744	831	1,060	1,240	*4,160	756	*13,100
1936	918	1,100	827	994	976	1,110	1,030	835	599	261	9,400
1937	583	789	815	515	617	973	857	671	706	1,220	*9,020
1938	539	604	640	679	590	873	829	823	799	*1,160	*11,080
1939	930	930	954	832	699	1,180	1,280	818	527	320	9,230
1940	546	654	786	694	757	1,110	920	741	444	328	7,790
1941	612	632	660	689	700	823	797	672	*2,290	537	*9,350
1942	632	640	649	599	656	980	964	1,230	839	791	9,260
1943	708	774	835	815	851	855	954	1,090	776	611	9,200
1944	645	772	797	738	871	1,020	1,050	831	815	879	9,480
1945	643	651	684	778	793	772	1,040	916	1,230	702	9,900
1946	912	865	863	861	839	1,000	832	1,270	703	537	9,660
1947	573	659	753	773	739	828	831	708	705	610	8,240
1948	625	736	789	664	723	918	722	586	410	*1,590	*9,150
1949	571	538	540	180	452	1,300	900	*1,080	821	622	*8,160
1950	655	619	505	495	577	684	616	557	443	365	8,830

* Revised.

* Not previously published; estimated on basis of records for gaging station 1½ miles upstream.

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30			Mean	Runoff in acre-feet	Calendar year
		Discharge	Maximum Date	Minimum day			
1932	731	151	June 27, 1932	-	*17.4	*12,630	*16.7
1933	746, 1390	*3,010	Aug. 27, 1933	4	*19.6	*14,200	*20.8
1934	761	117	Aug. 8, 1934	5	13.4	9,700	11.8
1935	786, 1390	*1,630	June 11, 1935	2	*18.1	*13,100	*18.8
1936	806	90	Aug. 1, 1936	1.2	12.9	9,400	12.0
1937	826, 1390	*665	Aug. 18, 1937	†2.7	*12.5	*9,020	*11.9
1938	856, 1390	*1,280	Sept. 3, 1938	5.5	*15.3	*11,080	*16.7
1939	876	112	May 31, 1939	4.4	12.7	9,230	11.6
1940	896	52	Sept. 6, 1940	3.8	10.7	7,790	10.6

* Revised.

† Corrected.

* Not previously published.

Yearly discharge, in cubic feet per second of Lodgepole Creek at Bushnell, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926, 1390	*562	June 10, 1941	6.7	*12.9	*9,350	*12.9	*9,360
1942	956	44	Sept. 5, 1942	7.7	12.8	9,280	13.3	9,680
1943	976	56	July 1, 1943	4	12.7	9,200	12.6	9,090
1944	1006	135	July 10, 1944	7	13.1	9,480	12.8	9,280
1945	1036	*518	June 23, 1945	7	13.7	9,900	14.6	10,560
1946	1056	-	-	6.7	13.4	9,660	12.4	9,010
1947	1086	22	June 23, 1947	6.3	11.4	8,240	11.6	8,410
1948	1116, 1390	*3,900	July 14, 1948	5.3	*12.6	*9,150	*11.9	*8,650
1949	1146, 1390	*334	May 15, 1949	2	*11.3	*8,160	*11.5	*8,290
1950	1176	16,500	Sept. 15, 1950	3.8	12.2	8,830	-	-

* Revised.

* Not previously published.

289. Lodgepole Creek at Sidney, Nebr.

Location.--Lat 41°08'20", long. 102°58'20", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T. 14 N., R. 49 W., half a mile south of Sidney in city park.

Drainage area.--2,190 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 4,090 ft (from topographic map).

Extremes.--1931-32: Maximum discharge observed, 17 cfs Apr. 23, 1932 (gage height, 2.00 ft), from rating curve extended above 5 cfs; no flow June 19, 1932.

A discharge of 1,610 cfs was determined by current-meter measurement at a site about one-half mile downstream on June 6, 1949, published in reports of Nebraska State engineer.

Remarks.--Natural flow affected by small diversions upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	3.94	4.02	2.19	1.57	1.45	0.80	0.74	-
1932	0.87	0.5	0.5	0.6	0.7	.47	2.78	.82	.59	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	242	239	135	93	89	49	44	-
1932	53	30	31	37	40	29	165	50	35	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716	-	-	-	-	-	-	-
1932	731	-	-	0	-	-	-	-

290. Lodgepole Creek at Ralton, Nebr.

Location.--Lat 41°02', long. 102°24', in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 12, T. 12 N., R. 45 W., at Ralton, 2 miles north of Colorado-Nebraska State line.

Drainage area.--2,800 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 3,590 ft (from topographic map).

Extremes.--March to September 1931: Maximum discharge observed, 44 cfs Mar. 23, 1931 (gage height, 2.8 ft); no flow Mar. 6, 1931.

Remarks.--Natural flow affected by ground-water withdrawals and diversion for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	20.7	22.0	12.6	8.1	4.2	1.7	5.0	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	1,270	1,310	775	482	258	106	298	-

291. South Platte River at Julesburg, Colo.1/

Location.--Lat 40°58'38", long. 102°14'54", in NE $\frac{1}{4}$ sec. 33, T. 12 N., R. 44 W., 300 ft downstream from bridge on State Highway 51, 0.5 mile southeast of Julesburg, 3 miles (revised) upstream from Colorado-Nebraska State line, and 8 miles downstream from Lodgepole Creek.

Drainage area.--22,800 sq mi, approximately.

Supplemental records available.--Records of Chemical analyses and water temperatures for the period October 1945 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 3,446.76 ft above mean sea level, datum of 1929.

Prior to May 12, 1908, staff gage at site 1,700 ft downstream at different datum.

May 12, 1908, to Mar. 17, 1915, staff gage at same site at datum 2.0 ft higher.

Mar. 18, 1915, to May 10, 1922, chain gages at same site at datum 1.0 ft higher.

May 11, 1922, to Sept. 30, 1924, chain gages and water-stage recorder at site about 8.5 miles upstream at Ovid at different datum.

Oct. 1, 1924, to June 29, 1940, chain gages and water-stage recorder at same site at datum 1.0 ft higher.

Auxiliary chain gages on several secondary channels since May 5, 1915 at various datums. Since Oct. 1, 1941, auxiliary water-stage recorder on secondary channel 1,600 ft to left, at datum 1.0 ft higher prior to Aug. 31, 1950, and at same datum thereafter.

Average discharge.--48 years (1902-50), 485 cfs.

Extremes.--1902-50: Maximum discharge, 31,300 cfs June 2, 1935, from rating curve extended above 16,000 cfs; no flow Aug. 18-20, 1902, July 25, to Aug. 7, 1903.

Remarks.--Records indicate flow passing Colorado-Nebraska State line. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of 1,220,000 acres above station, and return flow from irrigated areas. Records, May 11, 1922, to Sept. 30, 1924, obtained at Ovid, adjusted to make records equivalent.

Cooperation.--Records 1915-30 not previously published by the Geological Survey, furnished by State engineer of Colorado.

Water year	Monthly and yearly mean discharge, in cubic feet per second												The year
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1902	-	-	-	-	-	-	46	37	28	†21	†2.5	153	-
1903	129	37	a100	a150	a250	a280	*361	*34.7	*13.8	*2.15	*94.8	*560	a121
1904	*56.85	a49.1	a340	a280	a260	56.3	17.3	95.61	1,660	182	49.4	23.7	a250
1905	76.8	109	a280	a300	a320	581	1,900	5,910	4,800	199	695	41.8	a1,270
1906	68.8	310	b220	a250	a350	a650	636	302	42.6	38.9	21.1	30.5	a242
1907	679	1,550	c569	d470	c450	d519	c336	d1,500	d1,430	c407	c455	c252	c702
1908	c374	d402	c488	c407	c313	c325	c84	c136	57.6	61.6	52.7	39.5	c229
1909	680	154	c181	c241	c301	c651	1,070	421	2,850	d1,560	c155	d1,720	c757
1910	1,170	1,340	c800	c650	d1,000	d1,200	287	45.3	8.33	5.74	19.2	17.3	c560
1911	23.0	23.0	151	605	463	153	25.9	24.1	16.7	10.9	54.6	11.7	129
1912	20.4	26.6	18.2	a100	a325	a180	288	114	31.6	60.4	618	589	a196
1913	411	345	e400	c325	e299	e350	e390	e130	e35	e28	e30	e25	e231
1914	e40	e70	e200	e150	e400	e799	d1,650	5,910	4,470	190	234	445	e1,210
1915	e337	e783	e750	e598	e600	e750	f1,240	f3,080	f2,370	f115	f247	f148	e917
1916	f781	f982	f979	e898	e899	f403	f61.0	f74.5	f50.0	f26.2	f28.9	f36.0	e434
1917	f111	f198	e250	f298	f680	f515	f432	f1,780	f4,720	f521	f35.8	f75.5	e794
1918	f541	f393	f486	a550	a600	a400	f143	f112	f130	f353	f286	f210	a350
1919	f482	f443	f506	e449	a550	f552	f516	f307	f47.8	f22.3	f20.2	f148	a333
1920	f519	e360	e299	f274	f248	f342	f707	f1,450	f321	f90.5	f67.8	f363	e420
1921	f346	f287	f293	f218	f181	f199	f256	f283	f10,600	f352	f53.1	f118	f1,090
1922	f521	f528	f486	f502	f712	f688	f233	a254	a45	a25	a20	a25	a333
1923	a45	a155	a190	a340	a345	a290	a265	a365	f6,160	a460	a375	a330	a770
1924	d1,200	d2,560	d1,640	a1,380	d1,700	d1,460	d2,100	d1,500	d5,170	a50	a50	a185	a1,550
1925	f280	f380	f329	f340	f590	f363	f114	f54.4	f45.3	f25.7	f24.6	f33.8	f212
1926	f117	f335	f391	f499	f478	f270	f419	f1,250	f1,910	f669	f111	f105	f546
1927	f400	f394	f364	f422	f455	f693	f1,310	f350	f166	f30.7	f218	f74.8	f405
1928	f357	f365	f343	f386	f425	f414	f65.3	f243	f1,520	f820	f270	f28.0	f436
1929	f221	f432	f394	f580	f850	f870	f893	f753	f33.5	f32.9	f19.7	f28.0	f443
1930	f126	f457	f563	f354	f1,860	f648	f178	f392	f66.7	f43.9	f421	f102	f423

* Revised.

† Corrected.

a Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b Only monthly figures revised; revised daily figures not available.

c Revised; supersedes figure (acre-feet) published in Water Resources of Nebraska, Nebraska State Planning Board.

d From Water Resources of Nebraska, Nebraska State Planning Board. Published figure is in acre-feet.

e From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

f From reports of State engineer of Colorado.

1/ Published as "near Julesburg" 1903-08, 1915, 1916, and as "at Ovid" 1922-24.

Monthly and yearly mean discharge, in cubic feet per second of South Platte River at Julesburg, Colo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	401	403	541	386	443	568	660	69.7	44.1	36.3	24.7	27.5	299
1932	61.6	103	271	464	450	248	106	92.8	37.1	25.6	34.4	21.4	159
1933	58.1	104	122	247	361	262	53.3	308	50.8	56.3	97.8	249	161
1934	155	187	302	312	209	242	76.2	91.9	283	35.9	20.3	29.7	162
1935	45.7	46.9	130	160	78.9	113	57.9	769	3,241	59.8	25.2	46.2	395
1936	81.4	96.8	242	269	328	140	70.1	48.4	56.1	20.0	71.3	35.3	121
1937	63.6	82.4	113	144	345	207	91.0	38.2	56.8	26.6	27.1	28.3	100
1938	45.3	86.4	131	164	296	81.8	66.4	220	189	64.4	44.5	36.4	228
1939	299	321	579	1,110	867	2,200	1,587	144	72.5	35.6	28.3	56.8	605
1940	49.0	53.0	66.3	111	269	268	66.0	41.5	45.1	22.2	18.3	19.1	85.1
1941	32.8	75.0	80.9	104	195	107	103	45.0	160	65.6	66.3	50.5	89.5
1942	138	250	264	285	300	1,389	2,441	8,220	3,902	611	45.7	155	1,509
1943	451	419	728	1,052	816	926	476	503	868	58.7	21.1	23.0	525
1944	86.0	104	212	275	359	312	465	1,754	94.2	202	45.8	37.4	330
1945	80.3	208	346	357	353	278	209	102	559	108	730	105	286
1946	465	405	579	986	778	556	267	76.4	56.5	21.5	22.1	99.6	357
1947	117	295	322	514	369	475	356	169	4,195	2,332	105	142	764
1948	312	538	553	546	252	1,765	859	228	395	194	40.0	41.0	558
1949	126	326	331	432	855	460	363	242	6,682	667	106	286	896
1950	376	405	334	351	475	587	299	71.6	42.2	57.0	125	136	270

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	2,740	2,280	1,670	1,290	1154	9,100	-
1903	7,950	2,200	a6,150	a9,200	a13,900	a17,200	*21,500	*21,300	*821	*132	*5,333	9,100	a87,300
1904	3359	a2,920	a20,700	a17,200	a15,000	3,500	1,030	5,880	99,000	11,200	3,040	1,410	a181,000
1905	4,720	6,490	a17,200	a18,400	a17,800	35,700	113,000	564,000	286,000	12,200	42,700	2,490	a921,000
1906	4,230	18,400	a13,500	a15,400	a19,400	a40,000	37,800	18,600	2,530	2,390	1,300	1,810	a175,000
1907	41,800	92,200	a35,000	a28,900	a25,000	a31,900	a20,000	79,900	a85,100	a25,100	a28,000	a15,000	a508,000
1908	a23,000	a23,900	a30,000	a25,000	a18,000	a20,000	a5,000	a8,360	3,430	3,790	3,240	2,350	a166,000
1909	43,680	9,160	a11,000	a14,800	a16,700	a40,000	63,700	25,900	a68,000	a83,600	a9,550	a102,000	a548,000
1910	71,900	79,700	a9,200	a52,300	a55,000	a50,000	73,800	17,100	2,790	500	353	1,180	a405,000
1911	1,410	1,370	9,280	37,200	25,700	9,430	1,540	1,480	996	668	3,360	694	93,100
1912	1,250	1,580	1,120	a5,150	a18,700	a11,100	17,100	7,010	1,880	3,710	38,000	35,000	a145,000
1913	25,300	20,500	a24,600	a20,000	a16,600	a21,500	a23,200	a7,980	a2,080	a1,720	a1,840	a1,490	a167,000
1914	a2,460	a4,160	a12,300	a9,210	a22,200	a49,100	a98,000	a63,000	a26,000	a1,700	14,400	26,600	a879,000
1915	a20,700	a46,600	a46,100	a36,800	a33,300	a46,100	a73,800	a189,000	a141,000	a7,070	a15,200	a6,810	a664,000
1916	a48,000	a58,400	a60,200	a55,200	a51,700	a24,800	a3,630	a4,580	a2,980	a1,610	a1,780	a2,140	a315,000
1917	a6,820	a11,800	a15,400	a18,300	a36,700	a31,700	a25,700	a109,000	a291,000	a32,000	a2,080	a4,490	a575,000
1918	a33,300	a21,700	a29,900	a35,800	a33,500	a24,600	a3,610	a2,890	a7,740	a21,700	a17,800	a12,500	a253,000
1919	a29,600	a26,400	a31,300	a27,600	a30,500	a32,100	a30,700	a18,900	a2,840	a1,370	a1,240	a8,810	a241,000
1920	a31,900	a21,400	a16,400	a16,800	a14,300	a21,000	a42,000	a99,200	a19,100	a5,560	a4,170	a21,600	a305,000
1921	a21,300	a17,100	a18,000	a33,400	a10,100	a12,200	a15,200	a17,400	a31,000	a21,600	a3,270	a7,020	a788,000
1922	a32,000	a31,400	a29,900	a30,900	a39,500	a42,300	a13,900	a14,400	a2,680	a1,540	a1,230	a1,490	a241,000
1923	a2,770	a9,220	a11,700	a20,900	a19,200	a17,800	a15,800	a22,400	a36,700	a28,300	a3,000	a19,600	a558,000
1924	a73,800	a140,000	a101,000	a84,900	a97,800	a89,800	a125,000	a92,200	a309,000	a3,070	a1,840	a11,000	a1,130,000
1925	a17,200	a22,600	a20,200	a20,900	a23,200	a23,600	a6,780	a2,120	a2,700	a1,460	a1,510	a2,010	a153,000
1926	a7,190	a20,000	a24,000	a30,700	a26,500	a16,600	a24,900	a76,900	a14,000	a1,100	a6,820	a6,250	a395,000
1927	a24,600	a23,400	a22,400	a25,900	a25,300	a42,600	a78,000	a21,500	a9,880	a1,890	a3,400	a4,450	a293,000
1928	a22,000	a21,700	a21,100	a23,700	a24,400	a25,500	a3,890	a14,900	a90,400	a50,400	a16,600	a1,670	a316,000
1929	a13,600	a25,700	a24,200	a35,700	a47,200	a53,500	a53,100	a46,300	a1,990	a2,020	a1,210	a16,100	a321,000
1930	a7,750	a27,200	a24,300	a20,500	a103,000	a39,800	a10,600	a24,100	a3,970	a2,700	a25,900	a6,070	a306,000
1931	24,700	24,000	33,300	23,700	24,600	34,900	39,300	4,290	2,620	2,230	1,520	1,640	217,000
1932	3,790	6,130	16,700	28,500	25,900	15,200	6,510	5,710	2,210	1,570	2,120	1,270	115,000
1933	2,340	1,190	7,500	15,200	20,000	16,100	3,170	18,900	3,020	3,460	6,010	14,800	117,000
1934	9,530	11,100	16,600	19,200	11,600	14,900	4,530	5,850	16,800	2,210	1,250	1,770	117,000
1935	2,810	2,790	7,980	9,610	4,380	6,940	3,450	47,290	92,800	3,680	1,550	2,750	286,200
1936	5,010	5,760	14,850	16,570	18,870	8,620	4,170	2,980	3,340	1,230	4,380	2,100	87,880
1937	3,910	4,900	6,830	6,880	19,170	12,740	5,420	2,350	3,380	1,640	1,680	1,680	72,660
1938	2,780	5,140	8,070	10,070	16,420	5,030	5,140	13,530	11,220	3,960	2,740	61,150	165,200
1939	18,410	19,080	35,590	68,230	49,170	35,300	94,460	7,740	4,510	2,190	1,740	1,700	459,000
1940	3,010	3,160	4,070	6,850	15,470	16,460	3,930	2,550	2,690	1,360	1,130	1,130	61,790
1941	2,020	4,460	4,970	6,590	10,840	6,600	6,110	2,760	9,520	4,060	4,080	3,010	64,800
1942	8,480	14,890	16,260	17,510	17,170	85,400	28,520	20,050	40,232	30,580	2,810	9,210	1,092,000
1943	26,480	24,910	44,740	64,700	46,340	56,950	29,320	30,910	51,670	3,610	1,300	1,370	380,300
1944	5,290	6,180	13,030	16,910	20,660	19,160	27,670	107,900	5,610	12,420	2,820	2,230	239,900
1945	4,930	12,390	21,270	21,940	19,620	17,080	12,410	6,240	33,250	6,630	44,860	6,240	206,900
1946	28,570	24,090	35,610	60,600	43,190	34,170	15,870	4,690	3,380	1,320	1,360	5,930	258,800
1947	7,180	17,530	19,800	19,280	20,470	29,190	21,180	10,400	249,600	143,400	6,450	8,470	553,000
1948	19,190	32,030	33,990	33,600	72,040	108,600	51,130	17,730	23,510	11,900	2,460	2,460	408,600
1949	7,750	19,410	20,460	26,560	47,490	28,280	21,580	14,890	597,800	41,030	6,500	17,020	648,800
1950	23,130	24,100	20,520	21,590	26,350	36,080	17,770	4,400	2,510	3,510	7,710	8,100	195,800

* Revised.

† Corrected.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b Only monthly figures revised; revised daily figures not available.

c Revised; supersedes figure published in Water Resources of Nebraska, Nebraska State Planning Board.

d From Water Resources of Nebraska, Nebraska State Planning Board.

e From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

f From reports of State engineer of Colorado.

Yearly discharge, in cubic feet per second of South Platte River at Julesburg, Colo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1902	84	a662	Sept. 28-30, 1902	0	-	-	-	-
1903	99, 1440	*a1,590	Apr. 7, 1903	*0	b121	b87,500	b132	b95,200
1904	151	a6,500	June 6, 1904	4	b250	b181,000	b256	b186,000
1905	172	a12,400	June 11, 12, 1905	9	b1,270	b921,000	b1,280	b928,000
1906	208	a1,800	Apr. 13, 1906	7	b242	b175,000	b425	b508,000
1907	-	-	-	-	c702	c508,000	c575	c416,000
1908	246	-	-	-	c229	c166,000	c156	c113,000
1909	266	a5,040	June 15, 1909	-	c757	c548,000	c1,000	c725,000
1910	286	*a16,800	Mar. 11, 1910	1	c560	c405,000	c299	c217,000
1911	306	d700	Jan. 8-26, 1911	7	129	93,100	118	85,000
1912	326	a1,460	Aug. 9, 1912	7	b196	b143,000	b288	b209,000
1913	356	-	-	-	e231	e167,000	e159	e115,000
1914	396	a15,400	June 8, 1914	15	e1,210	e879,000	e1,340	e974,000
1915	(f)	d4,500	June 12, 1915	80	e917	e664,000	e992	e718,000
1916	(f)	-	-	16	e434	e315,000	e251	e182,000
1917	(f)	d9,100	June 1, 1917	24	e794	e575,000	f867	f828,000
1918	(f)	d1,120	June 29, 1918	14	b350	b253,000	b350	b254,000
1919	(f)	-	-	14	b333	b241,000	b312	b226,000
1920	(f)	d2,490	May 12, 1920	6	e420	e305,000	f400	f290,000
1921	(f)	d30,800	June 16, 1921	24	f1,090	f788,000	f1,140	f824,000
1922	(f)	d1,640	Mar. 11, 1922	-	b333	b241,000	b237	b172,000
1923	(f)	d16,000	(g)	-	b770	b558,000	b1,170	b849,000
1924	(f)	d11,000	June 10, 1924	-	b1,550	b1,130,000	b1,200	b874,000
1925	(f)	-	-	18	f212	f153,000	f200	f144,000
1926	(f)	d5,400	June 19, 1926	37	f546	f395,000	f572	f414,000
1927	(f)	d2,400	Apr. 21, 1927	22	f405	f293,000	f397	f288,000
1928	(f)	d5,820	June 8, 1928	19	f436	f316,000	f434	f315,000
1929	(f)	d1,880	Apr. 26, 1929	14	f443	f321,000	f452	f327,000
1930	(f)	d5,220	Feb. 17, 1930	23	f423	f306,000	f440	f319,000
1931	716	d1,880	Apr. 2, 1931	14	299	217,000	224	161,000
1932	731	d903	Jan. 12, 1932	16	159	115,000	144	105,000
1933	746	d659	May 13, 1933	20	161	117,000	193	140,000
1934	761	3,480	June 16, 1934	16	162	117,100	126	91,490
1935	786	31,500	June 2, 1935	20	395	286,200	412	298,300
1936	806	d480	Feb. 29, 1936	17	121	87,880	107	78,000
1937	826	642	Feb. 14, 1937	24	100	72,660	101	72,910
1938	856	7,980	Sept. 10, 1938	25	228	165,200	307	222,300
1939	876	9,330	Mar. 14, 1939	25	605	438,000	518	375,200
1940	896	349	Mar. 16, 1940	15	85.1	61,790	86.8	63,000
1941	926	661	June 13, 1941	27	89.5	64,800	128	92,980
1942	956	16,200	May 5, 1942	32	1,509	1,092,000	1,587	1,149,000
1943	976	2,090	May 30, 1943	15	525	380,300	426	308,700
1944	1006	3,080	May 15, 1944	20	330	239,900	350	254,000
1945	1036	1,960	Aug. 15, 1945	42	286	206,900	354	256,500
1946	1056	d1,630	Dec. 29, 1945	15	357	258,800	297	215,000
1947	1086	15,000	June 29, 1947	41	764	553,000	820	593,600
1948	1116	2,450	Mar. 19, 1948†	28	563	408,600	511	371,000
1949	1146	16,800	June 19, 1949	53	896	648,600	924	668,700
1950	1176	1,080	Aug. 6, 1950	28	270	195,800	-	-

* Revised.

† Corrected.

‡ Not previously published.

a Observed.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Revised; supersedes figure published in Water Resources of Nebraska, Nebraska State Planning Board.

d Maximum daily.

e From Congressional documents, 73d Cong., 2d sess., H. Doc. 197, Platte River.

f From reports of State engineer of Colorado.

g June 15, 18, 21, 1925.

292. South Platte River at Big Spring, Nebr.

Location.--Lat 41°03', long. 102°04', on east line of sec. 36, T. 13 N., R. 42 W., on up-stream side of highway bridge, a quarter of a mile south of Big Springs.

Drainage area.--23,200 sq mi, approximately.

Supplemental records available.--September to November 1902, gage heights and discharge measurements only.

Gage.--Chain and weight gage. Datum of gage is 3,364.85 ft above mean sea level.

Extremes.--March to November 1903; Maximum discharge observed, 1,920 cfs Apr. 29, 1903; no flow on many days.

Remarks.--Natural flow of stream affected by storage reservoirs, power developments, diversions and ground-water withdrawals, and diversions for irrigation and return flow from irrigated areas.

PLATTE RIVER BASIN

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Monthly and annual mean discharge, in cubic feet per second of
South Platte River at Big Spring, Nebr.

Water year	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1903	-	560	-	-	-	42	-	61	-

Monthly and annual runoff, in acre-feet

Water year	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1903	-	33,522	-	-	-	2,582	-	3,751	-

293. South Platte River at Paxton, Nebr.^{1/}

Location.--Lat 41°07', long. 101°21', in sec. 8, T. 13 N., R. 35 W., at highway bridge half a mile south of Paxton.

Drainage area.--23,700 sq mi, approximately. 23,500 sq mi, approximately, for former site at Ogallala.

Gage.--Water-stage recorder. Datum of gage is 3,048.84 ft above mean sea level, datum of 1929. Prior to October 1939, staff gage at site 19 miles upstream at an altitude of 3,210 ft (from topographic map). October 1939 to Apr. 1, 1940 staff gage, and Apr. 2, 1940, to Oct. 15, 1947, water-stage recorder at described site and datum. Oct. 16, 1947, to June 24, 1948, water-stage recorder at datum 1.00 ft lower.

Extremes.--1939-50: Maximum discharge, 16,900 cfs May 7, 1942 (gage height, 7.84 ft); maximum gage height, 8.0 ft Apr. 30, 1942; minimum daily discharge, 0.1 cfs Sept. 26-29, 1940; no flow at times prior to 1939.

Remarks.--Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. South Platte Canal diverts 6 miles above station; diversion began Nov. 13, 1946. These factors have been changing throughout the history of this station.

Cooperation.--Records for 1923 and 1937-39, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and annual mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	a334	a269	a327	a140	a453	a3,280	a646	a408	a219	-
1924	a1,140	a2,560	a2,010	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	789	80.8	34.0	10.5	8.1	2.5	-
1932	13.7	54.0	276	437	493	272	107	107	48.8	10.4	19.5	5.8	152
1933	15	50	100	320	300	350	90	357	44.6	38.3	50.5	310	168
1937	-	-	-	-	-	-	-	a35	a67	a8	a4	a9	-
1938	-	-	-	-	-	-	-	a262	a302	a96	a26	a969	-
1939	-	-	-	-	-	-	-	a175	a93	a13	a3	a2	-
1940	14.5	24.3	35.7	41.5	312	312	116	54.5	60.4	20.4	3.96	247	82.2
1941	10.3	49.8	86.8	147	192	148	126	77.5	145	77.4	16.3	17.1	90.3
1942	118	224	266	338	305	1,220	1,990	9,959	4,760	1,275	64.5	120	1,731
1943	390	426	628	892	790	770	590	386	9,767	92.8	15.7	11.7	493
1944	29.6	96.8	186	245	504	430	496	1,757	151	273	41.4	19.0	353
1945	42.7	146	308	381	375	305	235	128	581	104	565	104	272
1946	499	457	401	888	773	654	392	144	94.2	26.0	7.2	95.1	367
1947	125	191	34.2	11.4	29.0	7.9	7.7	6.12	347	1,927	31.2	95.1	401
1948	65.2	8.8	8.7	8.2	898	911	361	13.8	12.2	7.0	47.0	12.6	192
1949	20.0	60.7	9.23	9.63	374	44.2	28.4	40.46	362	394	63.0	251	629
1950	124	9.2	10.2	9.3	18.1	15.0	245	106	22.0	10.8	16.6	10.7	49.8

† Corrected.

a From reports of State engineer of Nebraska.

Monthly and annual runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	a20,500	a4,900	a20,100	a8,310	a27,800	a15,000	a39,700	a25,100	a13,000	-
1924	a70,300	a40,000	a23,000	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	46,900	4,970	2,020	646	498	149	-
1932	842	3,210	17,000	26,900	28,400	16,700	6,070	6,580	2,900	640	1,200	345	111,000
1933	922	2,980	6,150	19,700	16,700	21,500	5,360	22,000	2,650	2,360	3,110	18,400	122,000
1937	-	-	-	-	-	-	-	a2,130	a3,970	a484	a278	a516	-
1938	-	-	-	-	-	-	-	a16,090	a17,970	a5,920	a1,610	a5,840	-
1939	-	-	-	-	-	-	-	a10,780	a5,550	a787	a188	a111	-
1940	891	1,450	2,200	2,550	17,950	19,180	6,880	3,350	3,590	1,250	243	147	59,680

† Corrected.

a From reports of State engineer of Nebraska.

^{1/} Published as "at Ogallala" prior to October 1939.

Monthly and annual runoff, in acre-feet of South Platte River at Paxton, Nebr.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	631	2,970	5,340	9,030	10,680	9,100	7,470	4,770	8,630	4,760	1,000	1,020	65,400
1942	7,270	13,330	16,340	20,760	16,960	75,040	118,400	612,400	285,300	78,370	3,970	7,150	1,253,000
1943	23,990	25,300	38,600	54,840	43,880	47,350	35,080	23,750	56,950	5,700	968	698	357,100
1944	1,820	5,760	11,450	15,090	28,970	26,410	29,500	108,000	8,960	16,770	2,540	1,130	256,400
1945	2,650	8,670	18,910	23,440	20,840	18,770	13,960	7,890	34,590	6,370	34,750	6,200	197,000
1946	30,700	27,200	24,680	54,600	42,900	40,240	23,330	8,820	5,600	1,600	444	5,660	265,800
1947	7,670	11,370	2,100	700	1,610	488	458	375	139,700	118,500	1,920	5,660	290,600
1948	3,890	528	556	504	51,060	56,010	21,510	851	724	430	2,890	748	139,700
1949	1,230	3,610	568	592	20,760	2,720	1,570	2,490	378,600	24,200	3,870	14,940	455,200
1950	7,630	549	629	587	1,010	922	14,570	6,500	1,310	666	1,020	639	36,030

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1923	(a)	-	June 15, 1923	-	-	-	†966	†699,000
1924	(a)	-	-	-	-	-	-	-
1931	716	-	-	-	-	-	-	-
1932	731	-	-	0	152	111,000	137	99,700
1933	746	-	-	0	162	122,000	-	-
1937	(a)	-	-	0	-	-	-	-
1938	(a)	-	-	0	-	-	-	-
1939	(a)	-	-	-	-	-	-	-
1940	898	477	June 7, 1940	.1	82.2	59,680	88.3	64,080
1941	928	329	June 17, 1941	1	90.3	65,400	129	93,400
1942	956	16,900	May 7, 1942	42	1,731	1,253,000	1,801	1,304,000
1943	976	1,730	May 31, 1943	9	493	357,100	398	288,200
1944	1006	2,700	May 16, 17, 1944	10	353	256,400	369	267,600
1945	1056	1,360	Aug. 16, 1945	19	272	197,000	344	249,400
1946	1056	-	-	3	367	265,800	282	204,300
1947	1068	13,000	June 29, 1947	5	401	290,600	379	274,400
1948	1116	3,610	Mar. 17, 1948	5	192	139,700	193	140,100
1949	1146	16,500	June 21, 1949	1	629	455,200	633	458,600
1950	1176	489	Oct. 13, 1949	4	49.8	36,030	-	-

† Corrected.

a From reports of State engineer of Nebraska.

294. South Platte River at North Platte, Nebr.

Location--Lat 41°07', long. 100°46', in sec. 9, T. 13 N., R. 30 W., near left bank on downstream side of bridge on U. S. Highway 83, three-quarters of a mile south of city of North Platte, and 4 miles upstream from confluence with North Platte River.

Drainage area--24,300 sq mi, approximately.

Supplemental records available--Gage-height records collected at same gage since March 1922 are contained in reports of U. S. Weather Bureau.

Gage--Water-stage recorder. Datum of gage is 2,795.20 ft above mean sea level (city of North Platte benchmark). Prior to Dec. 8, 1936, staff gages, and Dec. 8, 1936, to July 18, 1945, water-stage recorders in same vicinity at different datums.

Extremes--1897, 1914-15, 1917-50: Maximum discharge, 37,100 cfs June 3, 1935 (gage height, 9.12 ft, present datum); no flow at times during summers of most years prior to 1938.

Remarks--Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation--Records for 1917-31, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	-	1,899	13	1,068	0	-
1898	0	0	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	6,100	265	0	-	-
1915	-	-	-	-	-	-	-	4,680	2,890	255	440	294	-
1917	-	-	-	-	-	-	-	al,240	a5,850	a453	a0	†a7.6	-
1918	†a543	b150	b130	b189	b299	b529	b375	a180	a68	b102	p194	b116	†b240
1919	a259	b249	b220	b329	b499	b898	b629	a409	a285	a68	b27	b40	b325
1920	b95	b249	b229	b340	b508	a915	a928	al,110	a316	b59	b15	a203	b413

† Corrected.

a From reports of State engineer of Nebraska.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

Monthly and yearly mean discharge, in cubic feet per second of South Platte River at North Platte, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	a198	b145	b135	b200	b310	b538	a351	a359	a9,340	a1,690	a129	a59	bl,110
1922	a455	b500	b539	b808	b798	b894	a253	a397	a50	a11	a5,0	a0	tb399
1923	a0	ta70	ta26	a295	a439	a330	a198	a437	a3,660	a926	a587	a226	ta598
1924	ta947	a2,000	al,610	al,220	al,130	al,380	al,680	al,190	a4,460	a0	a0	ta44	al,310
1925	b237	b323	b359	a471	ta834	a272	a122	a23	a40	a0	a0	a0	tb220
1926	a2	a260	a337	a335	a500	a390	a179	al,440	al,850	a566	a61	a23	a494
1927	a298	a405	a370	a800	al,000	al,250	al,690	a672	al,154	al,1	al,131	a0	a562
1928	al,193	a290	a250	a425	ta470	ta565	a95	a221	al,750	al,010	a424	a3	ta474
1929	a99	a502	a451	a250	a357	a668	a908	a800	a34	a0	ta7	al,163	c355
1930	a68	a533	a350	a600	al,480	cl,010	a106	a775	a218	a4	ta238	al,10	c450
1931	a780	c468	al,008	ta667	ta586	a460	ta647	ta65,4	ta216	a0	a0	ta,4	c392
1932	2.2	*0	*80,4	468	429	332	220	85,5	*305	2,3	.3	3,3	*137
1933	0	0	0	*187	*221	*322	*141	327	305	0	20,1	234	*123
1934	81.8	144	274	400	154	226	28,8	25,1	139	2,8	0	1,3	123
1935	0	0	72,3	186	122	106	54,9	644	*3,450	132	.2	.2	*394
1936	.7	40,4	78,2	191	200	234	90,1	55,9	450	0	0	0	77,6
1937	0	10,5	65,3	45,6	272	334	163	71,4	767	9,8	4,5	16,6	89,2
1938	28,2	44,4	129	165	226	158	118	228	310	109	25,3	907	20,5
1939	512	354	460	905	748	1,948	1,689	419	176	58,9	36,7	44,9	595
1940	55,1	54,9	71,4	166	340	354	192	126	145	40,9	25,4	32,1	133
1941	52,6	74,8	116	186	214	240	237	159	200	153	63,5	74,1	147
1942	190	266	321	439	372	1,191	1,568	8,208	3,361	1,089	139	247	1,457
1943	435	500	688	756	947	795	702	398	1,060	201	83,2	75,6	550
1944	89,8	167	243	351	545	533	592	1,695	312	336	125	99,6	424
1945	131	225	389	599	441	383	350	249	717	210	569	236	359
1946	548	503	439	1,012	926	782	542	267	223	100	86,9	217	468
1947	291	324	153	138	167	135	151	122	2,216	2,194	153	195	521
1948	179	134	133	142	932	1,023	510	129	136	114	151	117	306
1949	124	206	131	90,5	487	278	256	230	6,364	768	157	350	778
1950	299	136	138	108	159	158	354	265	145	176	194	184	193

* Revised.

† Corrected.

a From reports of State engineer of Nebraska.

b From Congressional documents: see footnote on preceding page.

c Revised; supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	-	112,986	797	65,677	0	-
1898	0	0	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	363,000	16,300	0	-	-
1915	-	-	-	-	-	-	-	-	288,000	172,000	15,700	27,100	17,500
1917	-	-	-	-	-	-	-	-	a76,400	a48,000	a0	a466	-
1918	a33,400	b9,910	b7,980	b11,600	b16,600	b32,500	b22,300	al,100	b4,040	b6,260	b11,900	b6,900	tb173,000
1919	a15,900	b14,800	b13,500	b20,200	b27,700	b55,200	b37,400	a25,100	a1,100	a4,160	bl,690	b2,380	b235,000
1920	b5,820	b14,800	b14,100	b20,900	b29,200	a56,300	a55,200	a68,300	a18,800	b3,640	b921	a12,100	b300,000
1921	a12,200	b8,610	b8,290	b12,300	b17,200	b33,100	ta20,900	a22,100	a58,000	al,000	a7,930	a3,510	b806,000
1922	a28,000	b35,700	b33,100	b49,700	b44,300	b55,000	a15,700	a2,980	a2,980	a677	a510	a0	tb289,000
1923	a0	ta4,140	ta6,180	ta24,700	ta24,700	ta30,000	ta30,000	ta30,000	ta30,000	ta30,000	ta30,000	ta30,000	ta33,000
1924	a58,200	al,900	a99,300	ta75,200	ta64,900	ta84,700	al,000	ta73,500	ta26,000	a5,340	a0	a2,610	a949,000
1925	b14,600	b19,200	b22,100	a29,000	ta6,300	ta15,700	a7,260	al,400	a2,360	a0	a0	a0	tb159,000
1926	a139	a15,500	a20,700	a20,700	a27,800	a24,000	a10,700	a80,300	al,000	a34,800	a3,730	al,370	a358,000
1927	a18,300	a22,100	a22,800	a49,200	a55,500	a77,100	al,000	a41,300	a9,160	a59	a8,070	a0	a407,000
1928	a11,900	a17,300	a15,400	a26,100	ta27,000	a34,700	a5,680	a13,600	al,000	a29,200	a168	ta344,000	-
1929	a6,070	a29,900	a27,800	a15,800	a41,100	a54,000	a49,200	a2,030	a0	a410	al,900	0	c257,000
1930	a4,200	a31,700	a21,500	a36,900	a81,100	a62,000	a6,320	a47,700	a13,000	a228	al,600	a6,580	c326,000
1931	a48,000	a27,800	a62,000	a41,000	a32,600	a28,300	a38,500	a4,020	al,280	a0	a0	a24	c284,000
1932	135	0	*4,940	28,800	24,700	20,400	13,100	5,130	*1,810	141	18	198	*99,400
1933	0	0	*11,500	*12,300	*19,800	*8,380	20,100	1,810	0	1,240	13,900	*89,000	-
1934	5,030	8,560	16,860	24,620	8,530	13,880	1,710	1,540	8,270	175	0	79	89,250
1935	0	0	4,440	11,410	6,790	6,490	3,260	39,610	*205,500	8,090	14	10	*285,600
1936	44	2,410	4,810	11,750	11,500	14,370	5,360	3,440	2,680	0	0	0	56,360
1937	0	2,225	5,240	2,800	15,120	20,530	9,680	4,590	4,570	603	280	988	64,820
1938	1,740	2,640	7,900	10,170	12,540	9,690	7,030	14,010	18,430	6,680	1,560	53,990	146,400
1939	19,170	21,060	28,270	55,670	41,550	119,700	100,500	25,740	10,500	3,620	2,260	2,670	430,700
1940	3,390	3,270	4,390	10,210	19,570	21,780	11,420	7,760	8,630	2,520	1,560	1,910	96,410
1941	3,240	4,450	7,130	11,430	11,870	14,770	14,080	9,800	11,920	9,380	3,900	4,410	106,400
1942	11,660	15,850	19,760	26,970	20,640	73,250	93,330	504,700	200,000	65,720	8,560	14,690	1,055,000
1943	26,740	29,720	42,320	46,500	52,590	48,900	41,800	24,490	63,080	12,340	5,120	4,500	399,100
1944	5,520	9,920	14,940	20,330	31,550	33,170	35,230	104,200	16,570	20,660	7,550	5,920	307,600
1945	8,050	13,590	23,890	24,560	24,490	23,580	20,820	15,280	42,990	12,900	36,230	14,170	260,000
1946	33,710	29,920	27,010	62,220	51,430	48,100	32,280	16,420	13,280	6,170	5,350	12,920	338,800
1947	17,900	19,270	9,430	8,480	9,290	8,300	9,000	7,480	131,900	134,900	9,430	11,630	377,000
1948	11,030	7,960	8,160	8,710	53,590	62,910	30,350	7,900	8,100	7,020	9,300	6,990	222,000
1949	7,600	12,270	8,060	5,560	27,040	17,080	15,250	14,120	378,700	47,240	9,640	20,800	563,400
1950	18,400	8,100	8,490	6,620	8,810	9,730	21,090	16,270	8,650	10,830	11,940	10,940	139,900

* Revised.

† Corrected.

a From reports of Nebraska State engineer.

b See footnote to preceding table.

c Revised; supersedes figure published in reports of Nebraska State engineer.

Yearly discharge, in cubic feet per second of South Platte River at North Platte, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1897	(a)	*4,427	June 21, 1897	0	-	-	-	-
1898	(a)	-	-	0	-	-	-	-
1914	386	11,800	June 10, 1914	0	-	-	-	-
1915	436	11,400	May 28, 1915	-	-	-	-	-
1917	-	*11,400	June 1, 1917	0	-	-	-	-
1918	-	-	-	-	tb240	tb173,000	tb231	tb167,000
1919	-	-	-	0	b325	b235,000	b312	b226,000
1920	-	-	-	-	b413	b300,000	b406	b294,000
1921	-	*24,000	June 13, 1921	15	b1,110	b806,000	tb1,207	tb874,000
1922	-	*4,660	Mar. 9, 1922	0	tb399	tb289,000	tb274	tb198,000
1923	-	*21,800	June 18, 1923	0	tc598	tc433,000	c970	c702,000
1924	-	*11,000	June 8, 1924	0	cl,310	c949,000	tb1,003	tb728,000
1925	-	*1,320	Feb. 11, 1925	0	tb220	tb159,000	tb192	tb139,000
1926	-	c5,600	June 21, 1926	0	c494	c358,000	c534	c386,000
1927	-	*2,540	Apr. 20, 1927	0	c562	c407,000	c533	c386,000
1928	-	*4,210	June 10, 1928	0	tc474	tc344,000	tc500	tc363,000
1929	-	*1,690	(d)	0	e355	e257,000	e346	e250,000
1930	-	*1,830	May 12, 1930	0	e450	e326,000	e561	e406,000
1931	-	e1,600	Apr. 4, 1931e	0	e392	e284,000	*208	*151,000
1932	731, 1390	*1,020	Mar. 16, 17, 1932	0	*137	*99,400	*130	*94,200
1933	746, 1390	*1,060	Apr. 20, 1933*	0	*123	*89,000	*165	*119,500
1934	761	1,060	June 22, 1934	0	123	89,250	87.4	63,240
1935	786, 1390	37,100	June 3, 1935	0	*394	*285,600	*398	*288,400
1936	806	942	Mar. 4, 1936	0	77.6	56,360	75.7	54,960
1937	826	-	-	0	89.5	64,820	89.4	71,240
1938	856	4,980	Sept. 13, 1938	13	202	146,400	280	202,600
1939	876	7,460	Mar. 16, 1939	24	595	430,700	516	373,300
1940	896	712	Feb. 12, 1940	20	133	96,410	758	100,200
1941	926	384	Apr. 4, 1941	40	147	106,400	192	138,800
1942	956	14,700	May 7, 1942	68	1,457	1,055,000	1,529	1,107,000
1943	976	1,840	June 14, 1943	61	550	†398,100	455	329,700
1944	1006	2,600	May 17, 1944	74	424	307,600	444	322,500
1945	1036	1,250	Aug. 28, 1945	99	359	260,000	422	305,400
1946	1056	1,470	Jan. 7, 1946	65	468	338,800	407	294,800
1947	1086	12,000	June 30, 1947	50	521	377,000	494	357,600
1948	1116	2,580	Mar. 18, 1948	70	306	222,000	307	222,800
1949	1146	16,200	June 21, 1949	35	778	583,400	788	570,400
1950	1176	569	Apr. 17, 1950	-	193	139,900	-	-

* Revised.

† Corrected.

* Not previously published.

a 19th Ann. Rept., Pt. 4.

b See footnote to preceding tables.

c From reports of State engineer of Nebraska.

d Apr. 27-30, May 1, 6, 7, 11, 1929.

e Revised; supersedes figure published in reports of Nebraska State engineer.

295. Platte River at Brady, Nebr.

Location.--Lat 41°02', long. 100°23', on two channels in secs. 11 and 23, T. 12 N., R. 27 W., just downstream from bridges on county highway half a mile and $2\frac{1}{2}$ miles, respectively, south of Brady and 18 miles downstream from confluence of North Platte and South Platte Rivers.

Drainage area.--56,900 sq mi, approximately.

Gage.--Water-stage recorders on two channels. Altitude of gages is approximately 2,640 ft (from report of State engineer). No information available on gages operated by State engineer prior to Nov. 18, 1938. Nov. 18, 1938, to Sept. 30, 1942, gage on north channel at datum 1 ft higher.

Extremes.--1938-50: Maximum discharge, 15,400 cfs May 7, 1942; no flow Aug. 22-24, 1941.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. Tri-County main supply canal (capacity, about 2,000 cfs) diverts 8 miles above station; diversion started Nov. 26, 1940. River flows in two channels for which separate records are computed; figures given herein represent combined discharge.

Cooperation.--Records for 1937-38, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second of Platte River at Brady, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	a563	a1,359	a469	a167	a674	-
1938	-	-	-	-	-	-	-	a1,854	a1,409	a1,264	a552	a3,021	-
1939	a2,006	a2,259	a1,967	a2,276	a1,904	4,746	3,768	1,106	621	794	247	148	#1,820
1940	1,115	1,674	1,191	970	1,446	1,604	1,437	752	629	534	179	119	968
1941	707	920	506	313	126	152	241	144	453	533	143	410	273
1942	577	687	850	129	116	741	970	7,970	2,721	1,514	680	713	1,326
1943	946	125	344	294	537	324	786	245	294	300	809	981	353
1944	815	938	927	127	176	218	277	853	136	133	928	872	269
1945	109	210	492	191	189	154	173	165	276	220	945	278	285
1946	156	151	204	216	216	234	141	209	215	553	645	146	259
1947	317	235	193	222	217	188	244	179	1,776	948	803	562	562
1948	195	207	228	236	824	896	339	221	153	436	557	295	381
1949	114	152	200	183	732	636	427	309	5,431	1,121	802	186	851
1950	165	153	160	126	161	211	199	213	121	196	372	176	190

† Corrected.

* Not previously published.

a From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	a34,510	a80,880	a28,840	a10,300	a40,110	-
1938	-	-	-	-	-	-	-	a14,100	a83,860	a77,690	a40,080	a79,800	-
1939	a123,550	a134,320	a120,950	a139,980	a105,760	291,800	224,200	68,020	36,920	48,830	15,180	8,780	#1,318,000
1940	68,540	99,610	73,220	59,640	83,310	98,600	85,510	46,230	37,400	32,810	11,010	7,080	703,000
1941	43,460	54,770	31,100	19,270	6,980	9,330	14,330	8,850	2,690	3,270	879	2,440	197,400
1942	3,550	4,090	5,100	7,910	6,550	45,570	57,730	490,000	161,900	93,090	41,790	42,420	959,700
1943	5,820	7,450	21,120	18,090	28,840	19,900	46,770	15,040	17,500	18,460	49,730	5,840	255,600
1944	5,010	5,590	5,700	7,630	10,100	13,410	16,500	52,470	8,090	8,150	57,070	5,220	195,100
1945	6,680	12,480	30,250	11,760	10,490	9,440	10,320	10,130	16,440	13,540	58,090	16,520	206,100
1946	9,590	8,990	12,510	13,410	12,100	14,370	8,420	12,840	12,770	33,990	39,680	8,680	187,400
1947	19,490	13,990	11,880	13,850	12,060	11,590	14,500	11,020	83,640	09,200	58,260	47,770	407,000
1948	12,000	12,330	14,030	14,490	47,420	55,070	20,160	13,570	9,090	26,790	34,250	17,570	276,800
1949	7,000	9,070	12,330	11,250	40,660	39,200	25,420	19,000	323,200	68,920	49,290	11,080	616,400
1950	10,150	9,150	9,850	7,870	10,060	12,960	11,860	13,110	7,210	12,030	22,850	10,440	137,500

* Not previously published.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1937	(a)	-	-	-	-	-	-
1938	(a)	-	-	-	-	-	-
1939	876	#6,800	Sept. 14, 1938	21	#1,620	#1,318,000	#1,631
1940	926	8,670	Mar. 16, 1939	38	968	703,000	814
		2,900	Mar. 3, 1940				
1941	926	*1,680	Dec. 3, 1940*	0	273	197,400	112
1942	956	15,400	May 7, 1942	34	1,326	959,700	1,356
1943	976	2,370	June 16, 1943	50	353	255,600	328
1944	1008	1,835	May 18, 1944	62	269	195,100	314
1945	1036	1,570	Aug. 22, 1945	92	285	206,100	259
1946	1056	1,200	July 25, 1946	85	259	187,400	278
1947	1086	10,400	July 1, 1947	50	562	407,000	553
1948	1116	3,080	Feb. 17, 1948	74	381	276,800	368
1949	1146	14,500	June 22, 1949	96	851	616,400	852
1950	1176	917	July 22, 1950	66	190	-	-

* Revised.

† Corrected.

* Not previously published.

a From reports of State engineer of Nebraska.

296. Platte River near Cozad, Nebr.

Location.--Lat 40°50', long. 99°59', in sec. 18, T. 10 N., R. 23 W., on downstream side of county highway bridges $1\frac{1}{2}$ miles south of Cozad.

Drainage area.--57,200 sq mi, approximately.

Gage.--Water-stage recorders on two channels. Altitude of gages is approximately 2,470 ft (from report of State engineer). No information on gages operated by State engineer prior to installation of water-stage recorders on north channel, Mar. 17, 1939, and south channel, May 4, 1940. South channel gage at datum 4.02 ft higher May 4 to Sept. 30, 1940, 3.02 ft higher Oct. 1, 1940, to July 20, 1947, 2.02 ft higher July 21 to Sept. 22, 1947, and 1.53 ft higher Sept. 23, 1947, to July 18, 1949. North channel gage at datum 1.00 ft higher Mar. 17, 1939, to Sept. 30, 1940.

Extremes.--1932, 1936-38, 1939-50: Maximum discharge, 16,600 cfs May 10, 1942; no flow at times during 1937-40.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1932, 1937-40, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second of Platte River near Cozad, Nebr.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	†a147	a112	a258	-
1937	-	-	-	-	-	-	-	-	a128†a1,030	a28	a26	†a154	-
1938	-	-	-	-	-	-	-	-	a1,660a1,030	a691	†a438	a2,170	-
1939	-	-	-	-	-	-	a3,415	a628	a238	a279	a86	a2	-
1940	a374	a459	a854	a1,054	a1,722	a1,570	a944	a290	a596	a32	a5	a2	a654
1941	71.3	599	430	439	316	331	404	233	96.7	82.9	7.5	76.1	256
1942	117	207	138	349	169	700	918	7,910	203	1,379	96.4	818	1,331
1943	123	148	380	308	541	360	694	250	364	71.4	99.9	109	285
1944	125	142	132	198	283	288	488	904	140	114	193	50.1	255
1945	112	190	720	253	252	223	242	227	374	147	278	195	268
1946	126	217	208	303	298	358	203	157	86.1	115	73.4	100	186
1947	593	361	318	368	367	274	394	233	1,597	2,034	214	374	595
1948	183	259	303	277	793	1,048	434	152	212	219	314	60.7	353
1949	123	232	244	235	825	849	705	456	4,981	817	121	117	801
1950	747	1,212	220	211	294	328	322	288	52.1	34.2	49.7	103	321

† Corrected.

a From reports of State engineer of Nebraska.

Water year	Monthly and yearly runoff, in acre-feet												
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	a9,010	a6,900	†a5,300	-
1937	-	-	-	-	-	-	-	a7,740	†a61,330	a1,720	a1,580	a9,150	-
1938	-	-	-	-	-	-	-	a10,400	a61,270	a42,460	a26,930	†a29,200	-
1939	-	-	-	-	-	-	a203,200	a36,680	a14,190	a17,180	a5,310	a113	-
1940	a23,000	a27,320	a52,540	a64,820	a99,040	a96,510	a56,180	a17,840	a35,450	a1,980	a316	a94	a475,100
1941	4,380	35,630	26,440	26,980	17,530	20,320	24,050	14,300	5,760	5,100	458	4,530	185,500
1942	7,200	12,290	8,460	21,480	9,390	43,020	54,630	486,400	181,600	84,800	5,930	†a8,680	963,900
1943	7,570	8,820	23,400	18,920	30,030	22,140	41,320	15,370	21,670	4,390	6,140	6,490	206,300
1944	7,700	8,440	8,130	12,150	16,260	17,730	29,010	55,590	8,340	7,040	11,860	2,980	185,200
1945	6,880	11,310	44,250	15,550	13,980	13,680	14,370	13,950	22,260	9,060	17,070	11,590	194,000
1946	7,720	12,900	12,820	18,660	18,540	21,860	12,080	9,640	5,120	7,070	4,510	5,980	134,900
1947	36,470	21,470	19,560	22,600	20,380	16,820	23,450	14,310	95,040	25,100	13,140	22,260	430,600
1948	11,240	15,440	18,620	17,040	45,610	64,330	25,850	9,340	12,650	13,470	19,280	3,610	256,500
1949	7,590	13,810	15,010	14,440	45,800	52,200	41,960	28,040	296,400	50,240	7,440	6,990	579,900
1950	45,940	72,130	13,530	12,970	16,310	20,000	19,130	17,760	3,100	2,100	3,060	6,160	232,200

† Corrected.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	(a)	-	-	-	-	-	-	-
1937	(a)	-	-	-	-	-	-	-
1938	(a)	7,200	Sept. 15, 1938†	-	-	-	-	-
1939	(a)	-	-	-	-	-	-	-
1940	(a)	45,500	June 9, 1940†	0	a654	a475,100	604	438,700
1941	928	1,370	Nov. 22, 1940	3	256	185,500	203	147,000
1942	958	16,600	May 10, 1942	5	1,331	963,900	1,348	975,700
1943	978	4,200	June 28, 1943†	8	285	206,300	263	190,700
1944	1006	1,980	May 12, 1944	13	255	185,200	308	223,400
1945	1036	2,050	June 10, 1945	23	268	194,000	228	165,000
1946	1056	577	Jan. 11, 1946	10	186	134,900	247	179,000
1947	1086	12,100	June 23, 1947	16	595	430,600	550	398,400
1948	1116	3,640	July 29, 1948	7	353	256,500	341	247,600
1949	1146	13,600	June 23, 1949	13	801	579,900	933	675,100
1950	1176	2,380	Nov. 11, 1949	7	321	232,200	-	-

† Not previously published.

a From reports of State engineer of Nebraska.

297. Platte River near Lexington, Nebr.

Location.--Lat 40°44', long. 99°45', in sec. 20, T. 9 N., R. 21 W., on highway bridge $2\frac{1}{2}$ miles south of Lexington.

Drainage area.--58,000 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,380 ft (from topographic map). Apr. 2, 1902 to Nov. 30, 1906, chain gage at same site at different datum. Apr. 13, 1916 to Nov. 30, 1921, staff gage at same site at different datum.

Extremes.--1902-6; 1916-24: Maximum discharge, 35,600 cfs June 14, 1921; no flow on numerous days during 1902-6, 1919, and 1922.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for irrigation seasons for 1916-22 and records for complete years 1923-24, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second of Platte River near Lexington, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	a2,200	5,490	5,135	*2,771	27	302	-
1903	1,191	a1,300	1,678	a1,980	b3,400	b6,500	3,893	*5,200	6,471	3,708	1,009	237	b5,050
1904	1,140	a1,340	a1,410	a1,740	a1,450	a1,400	1,218	4,298	12,570	4,071	760	286	a2,630
1905	1,662	2,392	a1,680	a2,150	a2,450	b5,200	4,990	15,800	22,100	7,770	1,090	1,100	b5,530
1906	a699	a1,090	a1,440	a2,340	a4,680	a5,850	6,420	*7,470	9,970	3,010	745	1,060	b3,710
1907	2,480	14,310	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	c1,570	c1,980	c480	d1,460	d1,060	-
1917	-	-	-	-	-	-	-	b11,000	d18,500	d9,590	d1,530	d3,740	-
1918	d4,600	a3,900	b3,200	a3,010	a3,850	a3,850	a2,790	b5,300	b4,100	d3,010	d1,700	d1,510	b5,800
1919	a3,740	b2,900	b3,500	a2,980	b3,100	b2,500	c3,120	d2,400	d3,070	d757	d242	d1,480	b2,470
1920	d2,900	b3,000	b2,700	a2,680	a4,280	a4,640	a6,080	d7,180	d10,100	d3,820	d1,880	d2,230	b4,280
1921	d2,250	c2,620	a2,960	b2,600	a2,160	a2,200	d2,070	d2,840	d18,600	d2,230	d2,500	d2,450	b3,780
1922	d3,800	c3,850	a2,290	b2,700	b2,800	e4,480	d2,720	c5,270	d2,800	d1,190	d976	d161	b2,750
1923	d846	d1,740	d1,900	d1,800	c2,360	c2,860	d2,160	c4,180	c7,300	c3,370	d5,570	d2,130	c2,020
1924	d4,120	d4,520	c4,570	d2,600	c5,930	d5,580	d9,110	c10,900	d11,400	d2,050	d1,200	d2,450	c5,360
1925	d4,520	c3,550	d3,000	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess.; H. Doc. 197, Platte River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes records previously published by State engineer of Nebraska.

d From reports of State engineer of Nebraska.

e Revised; supersedes records previously published by State engineer of Nebraska.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	a131	337.55	a306	*170.4	†1.67	17.968	-
1903	75.232	a77.2	103.16a	a120b	189	b400	231.65	†19.7	385.051	228.057	62.041	†14.092	b2,210
1904	70.096	a79.6	a86.4	a107	a82.0	a85.9	72.48	284.1	748	250.3	46.73	15.83	a1,910
1905	102.2	142.3a	102.1a	135	b197	297	†970	1,320	478	†66.8	†85.2	-	b4,010
1906	a43.0	a64.6	a88.5	a144a	260	a360	a382	*459	593	185	45.8	†62.8	b2,690
1907	152	†256	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	c96.3	c118	c29.5	c89.7	c63.0	-
1917	-	-	-	-	-	-	-	b676	d1,100	d590	d93.9	d223	-
1918	d285	a232	b197	a185a	214	a237	a177	b326	b244	d185	d105	d89.8	b2,470
1919	a250	b173	b215	a182b	172	b154	c185	d148	d183	d45.3	d14.9	d87.8	b1,790
1920	d178	b179	b166	a165a	246	a285	a362	c442	c801	c235	c116	c133	b3,110
1921	c139	c156	a182	b160a	120	a135	d123	d175	d1,110	d137	d154	d146	b2,740
1922	d235	c228	a141	b166b	156	e275	d162	d324	d167	d73.3	d60	d9.59	b1,990
1923	d52.1	d104	d117	b111b	131	c176	d129	c257	c434	c207	d343	d127	c2,190
1924	c253	d269	d281	d160	b341	d345	d542	d672	d681	d126	d73.9	d146	c3,890
1925	d278	c211	c184	-	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

b Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected; supersedes records previously published by State engineer of Nebraska.

d From reports of State engineer of Nebraska.

e Revised; supersedes records previously published by State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1902	84, 1390	†15,500	May 17, 1902	0	-	-	-	-	-
1903	99	-	-	0	a3,050	a2,210,000	a3,020	a2,190,000	-
1904	131	†20,000	June 17, 1904	0	b2,630	b1,810,000	b2,780	b2,020,000	-
1905	208	†50,200	June 16, 1905	0	a5,530	a4,010,000	a5,350	a3,860,000	-
1906	208, 1390	†17,200	June 7, 1906	0	a3,710	a2,690,000	-	-	-
1907	208	-	-	-	-	-	-	-	-
1916	(c)	†5,000	May 24, 1916	-	-	-	-	-	-
1917	(c)	†22,300	June 11, 1917	-	-	-	-	-	-
1918	(c)	†10,400	June 29, 1918	-	a3,600	a2,470,000	a3,290	a2,380,000	-
1919	(c)	-	-	0	a2,470	a1,790,000	a2,340	a1,700,000	-
1920	(c)	†16,500	June 22, 1920	-	a4,280	a3,110,000	a4,220	a3,060,000	-
1921	(c)	†35,600	June 14, 1921	-	a3,780	a2,740,000	a3,950	a2,860,000	-
1922	(c)	†11,400	Mar. 11, 1922	0	a2,750	a1,990,000	a2,301	a1,670,000	-
1923	(c)	†16,200	June 17, 1923	390	†3,020	†2,190,000	†3,750	†2,720,000	-
1924	(c)	†19,100	June 9, 1924	250	†5,560	†3,890,000	†5,180	†3,760,000	-
1925	(c)	-	-	-	-	-	-	-	-

† Corrected.

‡ Not previously published.

a Revised; supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c From reports of State engineer of Nebraska.

298. Plum Creek near Smithfield, Nebr.

Location.--Lat 40°39'40", long. 99°42'00", in NW¼SW¼ sec. 15, T. 8 N., R. 21 W., about 100 ft downstream from county highway bridge and 6½ miles northeast of Smithfield.

Drainage area.--268 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 2,390 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 2,800 cfs June 23, 1947 (gage height, 18.63 ft); no flow on many days each year.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	2.92	0.15	-	-
1947	130	0.34	0	0	4.37	12.5	0.12	0.89	179	1.10	0	.19	27.4
1948	0	0	0	.67	2.23	55.6	0	.20	121	52.7	16.5	.54	20.8
1949	0	0	0	0	18.4	3.07	.71	5.96	23.6	4.49	7.97	2.60	5.45
1950	1.6	0	0	0	14.8	.40	0	20.9	.64	4.45	1.87	.12	3.68

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	180	9.5	587	-
1947	7,960	20	0	0	243	766	7.1	55	10,680	68	0	11	19,810
1948	0	0	0	41	128	3,420	0	12	7,230	3,240	010	32	15,110
1949	0	0	0	0	1,020	189	42	367	1,400	276	490	155	3,940
1950	99	0	0	0	823	25	0	1,290	39	274	115	7.1	2,670

Yearly discharge, in cubic feet per second										Calendar year	
Year	W.S.P. no.	Water year ending Sept. 30					Runoff in acre-feet	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Momentary maximum		Minimum day	Mean					
1946	1056	-	-	-	-	-	-	-	-	-	-
1947	1086	2,800	June 23,	1947	0	27.4	19,810	16.3	11,830		
1948	1116	2,230	June 23,	1948	0	20.8	15,110	20.8	15,110		
1949	1146	1,220	June 6,	1949	0	5.45	3,940	5.59	4,040		
1950	1176	404	May 30,	1950	0	3.68	2,670	-	-		

299. Platte River near Overton, Nebr.1/

Location.--Lat 40°41', long. 99°32', in sec. 12, T. 8 N., R. 20 W., just downstream from highway bridge, 4 miles south of Overton and 4 miles downstream from Plum Creek.

Drainage area.--58,400 sq mi, approximately.

Supplemental records available.--July 27 to Sept. 20, 1914, gage heights and discharge measurements only.

Gage.--Water-stage recorder. Altitude of gage is 2,320 ft (from report of State engineer). July 1914 to October 1917, staff or chain gage at site 8 miles downstream at different datum. June 1918 to Sept. 12, 1928, staff gage at present site at datum 2 ft higher. Sept. 13, 1928, to Sept. 30, 1930, staff gage at present site and datum.

Extremes.--1915-52: Maximum discharge, 37,600 cfs June 5, 1935 (gage height, 6.25 ft); no flow at times during 1919, 1922, 1925, 1928, 1930-41.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Most of records for 1914-30, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	a4,390	a2,350	a1,950	a1,630	a2,250	a3,740	a3,360	7,940	9,000	4,260	6,420	2,930	a4,200
1916	a2,930	a2,350	a1,950	a1,630	a1,560	a1,630	a1,850	a1,510	a2,770	b312	a1,710	b852	a1,750
1917	a1,630	a1,850	a1,630	a1,460	a2,340	a4,070	a5,210	a3,500	a24,100	a1,900	a1,450	a4,150	a6,110
1918	a4,850	a3,190	a2,440	a2,110	a2,160	a2,930	a3,700	a5,120	a4,040	a3,270	a1,970	a1,570	a3,120
1919	a3,780	a2,820	a3,500	a2,750	a3,000	a2,280	a3,130	a2,100	a2,770	a794	a1,66	a976	a2,330
1920	a2,920	a2,810	a2,520	d2,000	a4,050	a5,770	a6,490	a11,700	a10,900	a5,260	a1,840	a2,450	a4,910
1921	a2,110	a2,620	a2,600	a2,760	a2,160	a2,280	a2,390	a3,240	a18,600	a1,890	a2,710	a2,460	a3,780
1922	b3,290	a3,490	e2,720	e2,940	e2,700	a4,230	e3,090	a5,390	a5,180	a1,210	a1,070	a168	d2,790
1923	a1,400	e1,800	e2,000	a3,170	a4,150	a2,640	a2,320	a4,550	a9,230	a2,900	a4,100	a2,250	d3,450
1924	a6,050	a5,800	a4,810	a2,600	a5,520	a5,580	a9,110	a13,300	a11,400	a2,050	a1,200	a2,450	a5,610
1925	a4,520	a3,560	a3,000	a5,400	a5,400	a3,030	a2,820	a1,750	a1,630	a13	a2,090	d1,520	b2,750

a From reports of State engineer of Nebraska.

b Corrected, supersedes figure published in reports of State engineer of Nebraska.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

d Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

1/ Published as "near Elm Creek" 1914-15.

Monthly and yearly mean discharge, in cubic feet per second of Platte River near Overton, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	a2,920	a3,530	a3,070	a5,590	b4,350	a2,820	a3,570	a4,210	a7,160	a4,430	a2,730	a2,750	a3,920
1927	b4,150	a3,870	a3,300	a3,500	a3,500	a5,200	a6,590	a3,320	a4,210	a1,700	a5,040	a1,720	b4,080
1928	a4,400	a3,700	a3,000	a5,000	a5,000	a4,190	a3,160	a3,460	a11,800	a4,500	a1,980	a820	a4,240
1929	b2,460	a4,400	a2,800	a1,610	a3,140	a4,880	a6,100	a6,670	a10,800	a2,180	a3,320	a3,220	b4,000
1930	a3,620	a3,820	a3,800	a3,000	a3,000	a3,450	b4,080	b6,070	a3,680	a69	a1,690	a2,720	a3,260
1931	4,780	3,130	3,840	3,490	4,240	4,250	3,600	1,760	323	0	0	0	2,440
1932	711	1,670	2,280	1,960	2,350	2,600	1,880	1,160	1,150	143	945	135	1,540
1933	1,990	2,390	2,280	2,720	2,060	2,870	2,620	4,640	1,120	0	531	2,450	2,100
1934	2,053	2,512	2,580	2,700	2,065	2,075	1,297	552	0	0	0	0	1,242
1935	0	0	1,110	1,530	2,227	1,549	806	3,830	9,096	341	53	870	1,702
1936	222	1,341	1,130	1,332	1,536	2,441	774	746	294	0	0	0	616
1937	0	471	890	332	2,259	3,200	1,193	105	992	0	0	528	781
1938	580	1,474	1,939	2,285	2,591	2,292	1,012	2,069	990	509	236	2,970	1,570
1939	1,012	2,166	1,641	2,514	1,728	3,943	3,718	658	484	150	168	0	1,500
1940	197	352	734	899	1,871	2,272	561	223	672	4	1	9	640
1941	0	461	377	326	326	340	377	307	176	124	540	416	243
1942	751	169	156	336	474	1,066	1,111	9,012	4,207	1,589	193	1,134	1,636
1943	635	814	1,677	1,705	1,841	1,605	2,185	1,372	1,243	184	238	394	1,152
1944	567	1,094	1,148	1,318	1,193	1,334	1,314	2,272	529	283	479	486	1,003
1945	835	1,242	1,913	1,368	1,574	1,364	998	950	2,055	634	664	700	1,188
1946	1,088	1,099	1,002	1,507	1,455	1,621	874	969	653	392	387	766	982
1947	1,855	1,203	1,475	1,257	1,315	1,556	1,529	839	3,188	3,262	792	1,024	1,609
1948	1,194	1,153	1,530	1,668	1,930	2,603	1,696	879	845	538	883	446	1,280
1949	691	1,591	1,308	1,005	1,756	2,708	2,589	1,981	5,906	1,825	557	887	1,691
1950	1,439	1,732	1,756	1,423	1,845	1,976	1,758	1,261	667	373	272	708	1,263

a From reports of State engineer of Nebraska.

b Corrected, supersedes figure published in reports of State engineer of Nebraska.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1915	a270	a140	a120	a100	a125	a230	a200	488	536	262	395	174	a3,040
1916	a180	a140	a120	a100	a90	a100	a110	a93	b165	b19.2	a105	a51	a1,270
1917	a100	a110	a100	a90	a130	a250	a310	a331	a1434	a726	a89	a247	a4,420
1918	a298	a190	a250	a130	a120	a180	a220	a315	a240	a201	a121	a93.5	c2,258
1919	a233	a168	a151	a169	a167	a140	a186	a129	a185	a48.8	a10.2	a58.1	d1,689
1920	a143	a167	a155	a184	a233	a355	a386	a722	a640	a324	a113	a146	d5,568
1921	a130	a156	a160	a170	a120	a140	a142	a199	a105	a104	a167	a146	a2,739
1922	a202	a208	a167	a181	a150	c260	a184	a332	a189	a74.5	a65.9	a10	d2,023
1923	a86.3	a107	a123	a195	a231	a162	a138	a280	a549	a179	a313	a154	d2,497
1924	a372	a345	a296	a160	a317	a343	a542	a672	a681	a126	a75.9	a146	d4,074
1925	a278	a212	a185	a211	a311	a186	a168	a108	a96.8	a315	a129	b90.4	b1,976
1926	b180	a210	a189	a344	b241	a174	c212	a259	b426	a272	a168	b164	c2,839
1927	b255	a219	a203	a215	a194	a320	a392	a369	a250	a105	a310	a102	b2,954
1928	a270	a220	a184	a307	a288	a258	a188	a213	a699	a277	a122	a48.8	d3,075
1929	b151	a262	a172	a99.2	a175	a300	a363	a410	a640	a134	a194	a192	b2,898
1930	a222	a227	a234	a184	a167	a218	a243	a373	a219	a4.26	a104	a162	d2,357
1931	294	186	236	215	235	261	214	108	19.2	0	0	0	1,770
1932	45.7	99.4	140	121	135	160	112	71.3	68.4	8.79	5.81	8.03	975
1933	122	142	139	167	114	176	156	285	66.6	0	3.57	146	1,520
1934	126	137.6	146.4	166	114.7	127.6	77.2	3.27	0	0	0	0	899
1935	0	0	68.23	94.08	123.7	95.23	47.96	235.5	541.3	20.97	323	5.17	1,232
1936	13.63	79.81	69.5	81.9	88.32	150.1	46.06	45.88	17.51	0	0	0	592.7
1937	0	28.05	54.75	20.42	125.5	196.8	70.97	6.47	59.03	0	0	3.14	565.1
1938	35.69	87.71	119.2	140.5	143.9	140.9	60.25	127.2	58.89	31.33	14.48	176.7	1,137
1939	62.2	128.9	100.9	154.6	95.96	242.4	221.2	40.48	28.82	9.2	1.04	0	1,086
1940	12.11	20.97	45.15	55.29	104.5	139.7	33.41	13.74	40	d26	d3079	d52	465
1941	0	28.61	23.19	20.05	18.11	20.91	22.45	18.65	10.44	7.65	3.32	2.49	176.1
1942	4.62	10.05	9.62	20.65	26.3	65.55	66.12	554.1	250.3	97.73	11.84	67.5	1,184
1943	39.05	46.45	103.1	104.9	102.2	98.71	130	84.34	73.98	11.34	14.63	23.47	834.2
1944	34.87	65.09	70.58	81.06	68.95	82.04	78.22	139.7	31.5	17.4	29.46	28.94	727.8
1945	51.36	73.89	117.6	84.13	87.43	63.87	59.41	58.41	122.3	38.97	40.85	41.62	859.8
1946	66.92	65.39	61.61	92.68	80.8	99.68	52.03	59.57	38.87	24.1	23.78	45.56	711
1947	114.1	71.6	90.71	77.3	73.01	95.66	91.01	51.58	189.7	200.5	48.70	60.96	1,165
1948	73.43	68.58	94.1	102.5	111	160	100.9	54.08	50.3	33.09	54.29	26.53	928.8
1949	54.77	94.68	80.41	61.79	96.44	166.5	142.2	121.8	351.5	112.2	34.25	52.78	1,369
1950	88.45	103.1	108	87.49	102.4	121.5	104.5	77.55	39.67	22.92	16.74	42.11	914.4

a From reports of State engineer of Nebraska.

b Corrected, supersedes figure published in reports of State engineer of Nebraska.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of Platte River near Overton, Nebr.									
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1915	406	19,600	May 29, 1915	-	a4,200	a3,040,000	a4,070	a2,950,000	
1916	(a)	\$5,200	May 24, 1916	-	a1,750	a1,270,000	a1,570	a1,143,000	
1917	(a)	\$29,300	June 2, 1917	-	a6,110	a4,420,000	a6,560	a4,747,000	
1918	(a)	-	-	-	*3,120	*2,258,000	b3,090	b2,236,000	
1919	(a)	\$9,000	Oct. 10, 1918	-	b2,330	b1,689,000	b2,120	b1,538,000	
1920	(a)	\$21,500	May 18, 1920	-	b4,910	b3,568,000	b4,890	b3,549,000	
1921	(a)	\$37,000	June 14, 1921	-	a3,780	a2,739,000	a3,960	a2,870,000	
1922	(a)	\$9,400	May 23, 1922	-	b2,790	b2,023,000	c2,440	c1,763,000	
1923	(a)	\$22,000	June 17, 1923	-	b3,450	b2,497,000	a4,410	a3,194,000	
1924	(a)	-	-	-	a5,610	a4,074,000	a5,150	a3,736,000	
1925	(a)	-	-	-	t2,730	t1,976,000	t2,600	t1,880,000	
1926	(a)	\$15,500	June 20, 1926	500	*3,920	*2,839,000	*4,060	*2,937,000	
1927	(a)	\$12,800	Apr. 19, 1927	0	t4,060	t2,954,000	a4,080	a2,952,000	
1928	(a)	\$23,000	June 12, 1928	0	a4,240	a3,075,000	t4,110	t2,986,000	
1929	(a)	\$19,000	June 7, 1929	1	t4,000	t2,896,000	a4,140	a2,986,000	
1930	(a)	\$9,940	May 13, 1930	0	a3,260	a2,357,000	t3,300	t2,390,000	
1931	716	10,600	Apr. 4, 1931	0	2,440	1,770,000	1,850	1,335,000	
1932	731	6,120	Mar. 18, 1932	0	1,340	973,000	1,510	1,093,000	
1933	746	8,440	Apr. 23, 1933	0	2,100	1,520,000	2,110	1,524,000	
1934	761	5,210	Feb. 1, 1934	0	1,242	899,000	769	557,000	
1935	786	37,600	June 5, 1935	0	1,702	1,232,000	1,833	1,327,000	
1936	806	-	Mar. 5, 1936	0	816	592,700	706	512,600	
1937	826	\$7,050	Mar. 20, 1937	0	781	565,100	1,001	724,900	
1938	856	7,680	Feb. 28, 1938	0	1,570	1,137,000	1,639	1,186,000	
1939	876	9,660	Mar. 16, 1939	0	1,500	1,086,000	1,204	871,900	
1940	896	8,940	Mar. 2, 1940	0	640	465,000	604	438,500	
1941	926	2,330	Mar. 16, 1941	0	243	176,100	205	146,800	
1942	956	15,200	May 10, 1942	2	1,636	1,184,000	1,866	1,181,000	
1943	976	3,860	Apr. 12, 1943	27	1,152	834,200	1,125	814,100	
1944	1006	4,070	May 12, 1944	46	1,003	727,800	1,102	800,100	
1945	1036	5,530	June 11, 1945	33	1,188	859,800	1,120	810,900	
1946	1056	3,490	Mar. 16, 1946	52	982	711,000	1,096	793,500	
1947	1086	18,700	June 23, 1947	216	1,609	1,165,000	1,553	1,125,000	
1948	1116	5,990	June 23, 1948	28	1,280	928,800	1,271	922,500	
1949	1146	15,100	June 24, 1949	140	1,891	1,569,000	1,987	1,439,000	
1950	1176	3,210	Nov. 14, 1949	135	1,263	914,400	-	-	

* Revised.

† Corrected.

* Not previously published.

a From reports of State engineer of Nebraska.

b Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c From Congressional Documents: 73d Cong. 2d sess., H. Doc. 197, Platte River.

300. Buffalo Creek near Darr, Nebr.

Location.--Lat 40°54'00", long. 99°50'00", in NE $\frac{1}{4}$ sec. 28, T. 11 N., R. 22 W., 12 ft downstream from county road bridge and $6\frac{1}{2}$ miles northeast of Darr.

Drainage area.--63 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,466.7 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 9,000 cfs June 22, 1947 (gage height, 18.4 ft, from floodmark), from rating curve extended above 630 cfs on basis of slope-area determination of peak flow; no flow on many days.

Remarks.--Flow affected at times by waste from Gothenburg canal which is spilled into Buffalo Creek above station.

Monthly and yearly mean discharge, in cubic feet per second											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1947	\$24.9	0	0	0	0.87	0.44	0	0.75	169	7.97	3.42
1948	3.60	1.93	0	.23	2.35	16.6	0	1.27	22.8	23.0	7.15
1949	9.23	.003	0	0	5.07	.07	.04	0	4.68	5.43	2.67
1950	2.78	0	0	0	.69	.01	0	3.89	3.17	5.02	2.86

* Not previously published; partly estimated on basis of weather records and State records of Gothenburg canal.

Monthly and yearly runoff, in acre-feet											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1947	\$1,530	0	0	0	48	27	0	46	10,030	490	\$17.1
1948	221	115	0	14	135	1,020	0	78	1,350	1,410	5,130
1949	567	0	0	0	282	4.6	2.6	0	278	334	1,930
1950	171	0	0	0	38	.8	0	239	169	308	2,070

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second of Buffalo Creek near Darr, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1086	9,000	June 22, 1947	0	#17.1	#12,370	15.4	11,180
1948	1116	1,440	June 21, 1948	0	7.15	5,180	7.47	5,410
1949	1146	-	-	0	2.67	1,930	2.12	1,540
1950	1176	167	July 9, 1950	0	2.86	2,070	-	-

* Not previously published.

301. Buffalo Creek near Overton, Nebr.

Location.--Lat 40°44'00", long. 99°30'20", in SE $\frac{1}{4}$ sec. 20, T. 9 N., R. 19 W., just downstream from bridge on U. S. Highway 30, $\frac{1}{2}$ miles east of Overton and 10 miles upstream from mouth.

Drainage area.--175 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2,297.08 ft above mean sea level, datum of 1929.

Extremes.--1949-50: Maximum discharge, 215 cfs Sept. 11, 1949 (gage height, 6.90 ft); minimum daily, 2 cfs Dec. 12-14, 1949, Jan. 3-5, 1950.

Remarks.--Flow affected by spill from irrigation canals above station and small diversions by pumping.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	69.1	53.3	46.2	-
1950	7.81	3.23	2.76	2.97	5.24	4.80	4.47	25.1	39.3	40.6	50	71.1	21.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	4,250	3,270	2,750	-
1950	480	192	171	182	291	295	266	1,540	2,340	2,500	3,070	4,230	15,560

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1146	-	-	-	-	-	-	-
1950	1176	124	May 31, 1950	2	21.5	15,560	-	-

302. Elm Creek near Overton, Nebr.

Location.--Lat 40°50'40", long. 99°30'20", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 10 N., R. 19 W., 250 ft downstream from county highway bridge and $7\frac{1}{4}$ miles northeast of Overton.

Drainage area.--31 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 2,390 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, about 8,000 cfs June 22, 1947 (gage height, 19.65 ft), from rating curve extended above 250 cfs on basis of velocity-area study; no flow on many days.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	3.85	-
1947	40.0	0	0	0	2.36	2.46	0	0	82.8	9.84	0	0	11.4
1948	0	0	0	1.51	.86	14.7	0	0	11.4	4.94	.79	0	2.86
1949	0	0	0	0	6.9	.53	.07	.51	2.30	5.92	0	1.20	1.41
1950	0	0	0	0	1.74	.04	0	.32	.54	.12	.67	.25	.30

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	191	-
1947	2,460	0	0	0	131	49	0	0	4,930	605	0	0	8,280
1948	0	0	0	93	49	903	0	0	680	304	49	0	2,080
1949	0	0	0	0	381	33	4.4	32	137	364	0	71	1,020
1950	0	0	0	0	97	2.4	0	20	32	7.1	41	15	214

Yearly discharge, in cubic feet per second of Elm Creek near Overton, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1086	-	-	0	-	-	-	-
1947	1086	8,000	June 22, 1947	0	11.4	8,280	8.03	5,820
1948	1116	747	June 27, 1948	0	2.86	2,080	2.86	2,080
1949	1146	399	July 6, 1949	0	1.41	1,020	1.41	1,020
1950	1176	53	June 18, 1950	0	.30	214	-	-

303. Platte River near Odessa, Nebr.

Location.--Lat 40°40', long. 99°15', in sec. 16, T. 8 N., R. 17 W., on downstream side of pier of highway bridge, 2½ miles south of Odessa and 5 miles downstream from Elm Creek.

Drainage area.--58,800 sq. mi, approximately.

Supplemental records available.--Records of chemical analyses for the period January to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,197.07 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1938, staff gage, and Oct. 7, 1938, to Sept. 30, 1942, water-stage recorder at datum 1.00 ft higher.

Extremes.--1937-1950: Maximum discharge, 22,700 cfs June 24, 1947 (gage height, 5.52 ft); no flow for periods in each year prior to 1947.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas.

Cooperation.--Records for 1937-38, not previously published by Geological Survey, furnished by State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	a5,290	a1,280	a32	a753	a0	a0	a0	a0	-
1938	a273	a1,110	b1,740	b2,090	a2,330	a2,020	b683	a1,650	a760	a30	a6	a2,620	a1,290
1939	419	1,498	1,915	2,763	1,684	4,003	3,040	376	415	69.8	0	0	1,347
1940	.1	5.1	464	677	1,586	2,033	148	2.7	362	.03	0	0	437
1941	0	158	158	75.8	190	92.6	212	61.6	54.1	0	0	0	82.4
1942	24.4	188	41.6	93.4	361	854	778	686	4,659	1,316	7.5	1,327	1,535
1943	546	522	1,475	1,555	1,691	1,482	1,875	1,115	1,067	361	16.4	206	971
1944	257	767	854	1,028	962	1,497	1,517	380	537	255	327	420	901
1945	850	1,291	2,171	1,446	1,392	1,154	780	638	2,175	309	351	786	1,116
1946	1,067	1,017	917	1,577	1,475	1,485	751	773	516	180	42.0	734	874
1947	2,362	1,236	1,484	1,326	1,491	1,712	1,600	935	4,417	5,503	696	854	1,802
1948	1,116	1,140	1,582	1,865	2,493	1,133	1,877	712	678	285	633	228	1,309
1949	761	1,448	1,365	1,027	1,957	1,050	2,272	1,016	5,976	1,864	286	675	1,884
1950	1,117	1,377	1,746	1,347	2,232	1,198	1,807	1,418	804	399	224	632	1,268

a From reports of State engineer of Nebraska.

b Corrected, supersedes figure published in reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	202,400	76,100	a1,980	a4,820	a0	a0	a0	-
1938	a16,800	a65,890	a106,800	a128,600	a129,300	a124,400	a40,620	a101,200	a45,320	a18,480	a341	a155,700	a933,500
1939	25,700	69,160	117,700	169,900	93,540	246,100	80,900	23,100	24,720	4,290	0	0	975,200
1940	4	301	28,510	41,630	91,200	125,000	8,830	167	21,520	2	0	0	317,200
1941	0	9,430	9,690	4,660	10,530	5,700	12,640	3,790	3,220	0	0	0	59,660
1942	1,500	11,190	2,560	5,740	20,060	52,510	46,260	54,100	277,200	80,910	460	78,940	1,111,000
1943	21,290	31,060	90,660	95,620	94,350	91,150	111,600	68,590	65,510	22,190	1,010	12,260	705,300
1944	15,770	45,840	52,480	63,210	55,350	92,030	90,290	46,400	31,960	15,680	20,120	24,970	655,900
1945	58,440	76,820	133,500	98,900	77,320	70,950	46,390	39,230	129,400	16,990	21,590	46,750	806,300
1946	65,580	60,520	56,380	96,950	81,930	91,320	44,680	47,560	30,730	11,090	2,580	43,690	633,000
1947	145,200	73,520	91,250	81,560	85,230	105,300	95,190	57,380	262,800	215,400	42,820	50,840	1,304,000
1948	68,620	67,830	97,290	114,500	143,300	192,600	111,700	43,780	40,360	17,520	38,900	13,580	950,000
1949	46,790	86,190	83,940	63,130	108,700	187,500	135,400	124,000	355,600	114,600	17,590	40,190	1,364,000
1950	68,660	81,940	107,300	82,810	123,800	135,200	107,500	87,220	47,840	24,540	13,790	37,620	918,200

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second of Platte River near Odessa, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	(a)	\$5,800	Mar. 21, 1937	-	-	-	-	-
1938	(a)	-	-	0	al,290	a933,500	1,350	976,600
1939	876	7,540	Mar. 18, 1939	0	1,347	975,200	1,065	771,400
1940	896	6,700	Mar. 3, 1940	0	457	317,200	424	307,500
1941	928	995	Apr. 3, 1941	0	82.4	59,660	77.1	55,790
1942	958	17,500	May 10, 1942	0	1,555	1,111,000	1,712	1,239,000
1943	976	4,650	Apr. 11, 1943	0	971	703,300	931	674,200
1944	1006	5,040	Apr. 25, 1944	0	901	653,900	1,114	808,800
1945	1038	6,410	June 10, 1945	0	1,116	808,300	997	722,000
1946	1058	3,150	Mar. 17, 1946	0	874	633,000	1,050	760,500
1947	1086	22,700	June 24, 1947	140	1,802	1,304,000	1,697	1,228,000
1948	1118	5,500	June 24, 1948	1	1,309	950,000	1,285	933,200
1949	1148	14,800	June 25, 1949	88	1,884	1,364,000	1,940	1,405,000
1950	1176	4,100	May 30, 1950	81	1,268	918,200	-	-

* Not previously published.

a From reports of State engineer of Nebraska.

304. Platte River near Grand Island, Nebr.

Location.--Lat 40°53', long. 98°17', in sec. 36, T. 11 N., R. 9 W., 30 ft downstream from bridge on U. S. Highway 34, 2 miles upstream from Chicago, Burlington & Quincy Railroad bridge, and 5 miles southeast of Grand Island.

Drainage area.--59,500 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 1,840 ft (from report of State engineer). Prior to Oct. 23, 1933, chain gage on upstream side of bridge 30 ft upstream at same datum.

Extremes.--1933-50: Maximum discharge, 30,000 cfs June 6, 1935 (gage height, 5.99 ft), from rating curve extended above 18,000 cfs; maximum gage height, 6.08 ft Mar. 4, 1949 (backwater from ice); no flow at times during 1934-44, 1946, 1948.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	1,388	1,909	2,226	1,900	2,196	2,513	1,304	520	0	0	0	0	1,119
1935	0	0	187	843	2,118	1,477	293	2,946	8,200	297	0	57.1	1,353
1936	0	961	1,501	1,068	889	3,665	563	883	234	0	0	0	817
1937	0	792	84.2	7.1	892	3,022	991	260	777	12.3	0	0	529
1938	41.4	70	1,693	2,231	1,912	2,714	948	1,732	920	302	1.51	704	1,245
1939	482	1,208	1,639	2,597	1,232	3,919	3,264	514	284	74	0	0	1,269
1940	0	167	62.6	193	1,751	2,285	557	117	274	0	0	0	432
1941	0	0	58.4	137	608	233	496	231	190	1.0	0	0	159
1942	0	0	0	37.0	415	951	790	8,617	4,823	1,511	*55.71	364	*1,556
1943	384	582	1,248	1,465	2,233	1,368	1,913	1,401	1,333	618	16.5	10.0	1,039
1944	174	816	798	1,435	1,495	1,853	2,313	2,826	674	206	49.0	180	1,067
1945	667	993	1,324	1,300	1,891	1,402	1,097	968	2,522	487	237	642	1,119
1946	1,047	1,168	742	1,575	1,582	1,726	702	764	668	147	32.5	811	909
1947	2,736	1,632	1,263	1,296	1,404	1,973	1,801	906	3,908	3,028	340	520	1,734
1948	818	1,095	1,374	1,326	2,000	3,558	1,693	778	614	510	662	169	1,199
1949	560	1,202	1,264	781	1,623	3,830	2,619	2,383	5,587	256	257	701	1,910
1950	1,103	1,554	1,063	1,025	1,960	1,922	1,791	1,678	746	556	305	616	1,178

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	85,330	113,600	137,000	116,800	122,000	154,900	77,570	3,200	0	0	0	0	810,400
1935	0	0	11,490	51,820	117,500	90,790	17,450	181,200	487,900	18,260	0	3,400	979,800
1936	0	57,190	92,300	65,680	51,120	225,300	33,490	54,290	13,900	0	0	0	593,300
1937	0	0	5,180	438	49,530	185,800	58,990	15,980	46,220	758	0	0	362,900
1938	2,540	47,100	104,100	100,370	200,060	200,166,800	56,580	106,500	54,770	18,590	89	101,400	901,700
1939	29,660	71,880	100,800	159,700	68,430	241,000	194,200	31,620	16,910	4,550	0	0	918,800
1940	0	93	3,850	11,890	100,700	140,500	33,130	7,170	16,290	0	0	0	313,600
1941	0	0	3,590	8,420	33,780	14,320	29,530	14,230	11,320	61	0	0	115,300
1942	0	0	0	2,270	23,240	58,460	47,010	529,800	287,000	92,930	*3,300	82,370	1,126,000
1943	23,600	34,610	76,720	89,990	124,000	82,120	113,800	86,120	79,300	38,000	1,020	598	751,900
1944	10,730	48,700	48,700	88,970	88,200	85,980	113,900	137,700	173,800	40,100	12,640	3,010	1,070,700
1945	40,990	59,090	81,420	79,950	105,000	86,220	85,270	59,330	150,100	29,930	14,590	38,180	810,100
1946	64,360	69,370	45,610	96,830	87,890	106,100	41,760	46,950	39,770	9,010	2,000	48,250	657,900
1947	189,200	97,130	77,670	79,680	77,990	121,300	107,200	55,700	232,500	186,200	20,930	30,970	1,255,000
1948	50,310	65,140	84,500	81,540	115,000	218,800	100,800	47,850	36,540	19,070	40,680	10,050	870,300
1949	34,420	71,540	77,690	98,040	90,490	235,500	155,900	146,500	332,400	132,600	15,820	41,700	1,583,000
1950	67,810	92,500	65,360	63,030	108,900	112,000	100,100	103,000	44,420	34,160	18,770	36,630	853,100

* Revised.

Yearly discharge, in cubic feet per second of Platte River near Grand Island, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	781	7,580	Mar. 5, 1934	0	1,119	810,400	671	486,000
1935	786, 956	30,000	June 6, 1935	0	1,353	979,800	1,544	1,118,000
1936	806	-	-	0	817	593,300	618	449,000
1937	826	5,390	Mar. 7, 1937	0	529	362,900	706	511,500
1938	856	-	-	0	1,245	901,700	1,313	950,500
1939	876	9,720	Mar. 19, 1939	0	1,269	918,800	995	720,400
1940	896	8,000	Mar. 5, 1940	0	432	313,600	432	313,300
1941	926	-	-	0	159	115,300	154	111,700
1942	956, 1390	15,300	May 6, 1942	0	*1,556	1,126,000	1,742	1,281,000
1943	976	4,930	July 5, 1943	0	1,039	751,900	1,002	725,500
1944	1006	5,450	May 15, 1944	0	1,067	774,400	1,167	847,500
1945	1036	6,420	June 11, 1945	5	1,119	810,100	1,116	807,900
1946	1056	4,150	Mar. 17, 1946	0	909	657,900	1,135	821,600
1947	1086	20,500	June 23, 1947	16	1,734	1,255,000	1,537	1,112,000
1948	1116	15,900	Mar. 19, 1948	0	1,199	870,300	1,177	854,000
1949	1146	14,100	June 26, 1949	39	1,910	1,385,000	1,968	1,425,000
1950	1176	4,310	May 9, 1950	92	1,176	653,100	-	-

* Revised.

305. Wood River near Riverdale, Nebr.

Location.--Lat 40°47'50", long. 99°11'50", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31, T. 10 N., R. 16 W., at bridge on State Highway 40, 1 $\frac{1}{2}$ miles northwest of Riverdale.

Drainage area.--379 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period March 1947 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Altitude of gage is 2,170 ft (from topographic map).

Extremes.--1946-50: Maximum discharge, 20,000 cfs June 22, 1947 (gage height, 19.75 ft), from rating curve extended above 3,000 cfs on basis of contracted-opening determination of peak flow; no flow at times during 1946.

Remarks.--Natural flow affected by a few small diversions for irrigation above station. pump located in gage pool occasionally diverts entire flow during dry periods.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	12.4	0.35	40.4	-
1947	163	5.87	3.79	3.37	9.43	9.04	5.80	3.79	700	37.6	2.92	1.30	78.3
1948	1.54	2.39	2.84	11.8	27.1	143	3.62	3.20	44.0	35.2	22.8	.69	25.0
1949	.90	2.20	2.64	2.02	40.0	17.0	8.79	9.31	97.9	14.7	1.43	16.3	17.4
1950	3.75	2.79	3.07	3.07	18.9	8.94	4.62	15.7	16.3	27.5	5.78	18.8	10.7

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	762	22	2,400	-
1947	10,040	349	233	207	524	556	345	233	41,630	2,310	180	77	56,680
1948	95	142	174	726	1,560	8,820	215	197	2,620	2,170	1,400	41	18,160
1949	56	131	162	124	2,220	1,040	523	572	5,830	902	88	973	12,620
1950	230	166	189	189	1,050	550	275	968	969	1,690	355	1,120	7,750

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	-	-	-	-	-	-	-
1947	1086	20,000	June 22, 1947	1.2	78.3	56,680	64.2	46,470
1948	1116	1,820	Mar. 17, 1948	.2	25.0	18,160	24.9	18,100
1949	1146	1,200	June 10, 1949	-	17.4	12,620	17.8	12,860
1950	1176	707	July 9, 1950	.6	10.7	7,750	-	-

306. Wood River near Gibbon, Nebr.

Location.--Lat 40°46'10", long. 98°48'00", in NW $\frac{1}{4}$ sec. 9, T. 9 N., R. 13 W., 10 ft downstream from county highway bridge 2 $\frac{1}{4}$ miles northeast of Gibbon.

Drainage area.--572 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2024.88 ft above mean sea level, datum of 1929. Prior to July 26, 1994, wire-weight gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 1,680 cfs July 10, 1950 (gage height, 15.74 ft); minimum daily, 0.1 cfs Oct. 2, 1949.

Remarks.--Numerous small diversions for irrigation above the station.

Monthly and yearly mean discharge, in cubic feet per second of Wood River near Gibbon, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	14.5	15.0	239	20.7	2.92	29.1	-
1950	3.59	4.37	4.11	3.69	20.9	11.2	8.35	26.0	21.0	132	27.5	35.9	25.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	864	924	14,240	1,270	180	1,730	-
1950	221	260	253	227	1,160	690	497	1,600	1,250	8,150	1,690	2,140	18,140

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1949	1176	1,600	June 9, 1949	-	-	-	-
1950	1176	1,680	July 10, 1950	0.1	25.0	18,140	-

307. Dry Creek at Cairo, Nebr.

Location.--Lat 41°00'10", long. 98°36'30", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 18, T. 12 N., R. 11 W., 15 ft downstream from bridge on State Highway 60 at north limits of Cairo and 8 miles upstream from mouth.

Drainage area.--25 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,938.37 ft above mean sea level, unadjusted.

Extremes.--1949-50: Maximum discharge, 354 cfs May 19, 1950 (gage height, 6.77 ft); no flow most of time.

Remarks.--No diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	0.04	0	0.86	-
1950	0.71	0	0	0	0.86	0.14	0	3.56	6.20	4.84	.84	0	1.43

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	0	51	-
1950	43	0	0	0	48	8.3	0	219	369	297	52	0	1,040

308. Prairie Creek near Silver Creek, Nebr.

Location.--Lat 41°19'15", long. 97°41'40", in NW $\frac{1}{4}$ sec. 29, T. 16 N., R. 3 W., 200 ft downstream from bridge on State Highway 39, 1 $\frac{1}{2}$ miles northwest of town of Silver Creek, and 11 miles upstream from mouth.

Drainage area.--406 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,549.02 ft above mean sea level, unadjusted.

Extremes.--1949-50: Maximum discharge, 889 cfs July 13, 1950 (gage height, 6.62 ft); minimum daily, 1 cfs Jan. 4-8, 1950.

Remarks.--A few small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	23.6	-
1950	9.07	7.15	4.83	2.11	2.46	45.3	19.9	38.9	26.7	200	43.4	14.3	35.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	1,410	-
1950	558	425	297	130	137	2,780	1,180	2,390	1,590	12,300	2,670	865	25,320

309. Platte River near Duncan, Nebr./

Location.--Lat 41°22', long. 97°29', in sec. 12, T. 16 N., R. 2 W., 25 ft downstream from county road bridge, 1½ miles south of Duncan, and 12 miles upstream from Loup River.

Drainage area.--61,600 sq mi, approximately.

Supplemental records available.--July 1910 to December 1911, gage heights and discharge measurements only in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,478.55 ft above mean sea level, datum of 1929. June 1895 to September 1915 and June to October 1928, staff or chain gage at site 7 miles downstream at different datums. October 1928 to Feb. 20, 1935, staff gage at present site and datum.

Extremes.--1895-1915, 1928-50: Maximum discharge, 44,100 cfs (revised) June 23, 1905 (gage height, 6.50 ft, site and datum then in use), from rating curve extended above 34,000 cfs; no flow at times.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of this station.

Cooperation.--Records for June to October 1928, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	-	14,027	3,685	722	-	-
1896	-	-	-	-	-	-	-	-	7,510	1,629	423	0	-
1897	649	-	-	-	-	-	-	*11,140	*14,932	2,771	-	-	-
1898	-	-	-	-	-	-	-	5,851	11,278	-	-	-	-
1899	-	-	-	-	-	-	-	*8,215	*9,714	*12,971	*4,252	*5,019	-
1900	-	-	-	-	-	-	-	*4,771	*6,502	14,696	2,883	-	-
1901	a356	a355	a570	a720	b998	b2,050	*8,134	5,300	9,363	a858	*18	*45	a2,380
1902	*300	672	a700	b868	b929	2,817	1,076	5,462	6,426	5,267	404	337	a2,090
1903	1,798	796	a1,250	a1,970	a3,500	b9,770	4,339	*9,040	*8,694	5,847	3,507	1,175	a4,320
1904	613	1,926	a1,640	a1,800	a1,500	a1,520	a1,360	*3,579	12,880	*5,337	*372	*4.2	a2,700
1905	1,037	a1,500	b998	b1,360	b1,800	b4,900	7,800	*21,084	*30,880	10,770	3,217	2,978	a7,360
1906	*940	a1,060	a1,400	a1,900	a4,000	a5,000	6,530	8,180	9,220	3,480	1,580	846	a3,670
1907	1,640	a4,080	b5,980	b5,330	b5,980	b5,610	3,770	4,450	14,000	10,000	2,500	756	b4,670
1908	1,990	2,030	b2,130	b2,100	b1,900	1,930	991	2,350	11,800	4,250	888	b75	b2,700
1909	b394	b1,400	b2,180	b3,290	b2,990	b4,910	3,680	5,620	15,300	10,600	4,560	5,100	b4,840
1910	4,530	3,020	b3,040	-	-	-	-	-	-	-	-	-	-
1912	-	-	-	-	-	-	b3,040	2,780	1,140	837	5,810	4,790	-
1913	5,490	5,160	1,750	b2,650	b2,390	b3,560	4,600	*3,180	507	*81	*0	*0	c2,530
1914	341	603	500	b750	b684	a2,000	1,580	8,180	8,180	855	62.31	650	a2,120
1915	2,240	1,650	b1,100	b1,640	b1,490	b1,950	b6,080	7,760	12,400	4,820	7,970	5,460	b4,390
1928	-	-	-	-	-	-	-	-	d12,900	d4,790	d2,360	d58	-
1929	a1,120	3,640	*2,700	*1,650	*3,200	*5,910	5,020	5,410	*9,650	1,930	14.91	1,600	*3,470
1930	5,570	3,260	632	1,000	4,980	3,460	3,180	*6,920	*4,500	115	788	2,280	*2,870
1931	4,380	3,330	3,520	3,130	4,270	3,250	*3,870	1,860	231	72	*1.5	7.6	*2,310
1932	20.5	769	1,510	1,020	*4,870	4,010	1,760	1,230	2,210	297	105	33.7	*1,470
1933	696	1,350	800	2,130	2,260	3,660	2,220	3,870	1,090	138	5.1	726	1,570
1934	1,111	1,912	2,100	2,000	2,300	3,063	1,372	563	72	0	0	0	1,155
1935	0	88	23.3	645	1,582	1,426	205	3,172	9,530	658	1.11	128	1,455
1936	2.0	936	1,214	585	1,068	*3,568	560	789	195	10	0	0	*745
1937	0.17	1.5	5.3	0.1	618	3,192	1,158	378	681	114	6.14	0.04	512
1938	0.2	412	1,498	2,505	2,161	3,362	906	2,083	1,097	299	2.61	1,660	1,329
1939	436	961	1,499	2,422	966	4,929	3,439	669	393	603	0.88	0	1,319
1940	0	4	4.7	110	1,442	2,799	607	164	274	30	4.1	0	439
1941	0	1.1	2.6	42	298	307	457	236	365	154	0	8.2	142
1942	3.0	12.9	15.7	4.5	269	925	876	8,945	4,211	*1,624	49.61	1,653	1,561
1943	394	629	886	1,205	2,419	1,226	1,868	1,326	1,491	707	2.34	18	1,002
1944	14.9	721	594	1,334	1,543	2,005	2,933	3,605	998	311	38.1	237	1,192
1945	553	1,006	1,232	1,518	1,494	1,533	1,244	1,119	3,087	855	180	558	1,193
1946	1,146	1,144	848	1,572	1,787	2,134	848	743	775	768	5.0	716	978
1947	5,019	1,969	1,532	1,195	1,648	2,316	2,317	895	5,124	3,740	296	275	2,026
1948	707	1,025	1,294	1,166	1,608	3,993	1,688	820	738	555	913	49.8	1,215
1949	372	1,201	1,265	653	1,074	4,626	3,417	2,959	6,079	2,832	261	687	2,120
1950	1,073	1,776	1,144	869	1,961	2,467	1,938	1,885	873	1,000	482	501	1,326

* Revised.

† Corrected.

* Not previously published estimated on basis of hydrographic comparison with other Platte River stations.

a Revised; supersedes figure (acre-feet) published in H. Doc. 197, 75d Cong., 2d sess., Platte River.

b From Congressional documents; 75d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

c Corrected; supersedes figure (acre-feet) published in H. Doc. 197, 75d Cong., 2d sess., Platte River.

d From reports of State engineer of Nebraska.

1/ Published as "near Columbus" 1895-1915 and 1928.

Monthly and yearly runoff, in acre-feet of Platte River near Duncan, Nebr.

Monthly and yearly runoff, in acre-feet of Platte River near Duncan, Nebr.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	-	834,700	226,600	44,400	-	-
1896	-	-	-	-	-	-	-	-	446,900	100,200	26,000	-	-
1897	39,900	-	-	-	-	-	-	*684,982	*688,500	*170,407	40,000	0	-
1898	-	-	-	-	-	-	-	359,766	871,086	-	-	-	-
1899	-	-	-	-	-	-	-	*488,800	*597,300	*71,800	*376,300	-	-
1900	-	-	-	-	-	-	-	*283,900	*1,137,700	*874,473	*77,269	-	-
1901	21,900	21,100	35,000	44,300	49,900	126,000	*484,000	325,884	557,137	52,700	*1,100	*2,680	a1,720,000
1902	*1,840	40,000	43,000	53,400	51,600	173,000	64,023	355,845	582,347	523,805	24,837	20,051	a1,510,000
1903	110,554	47,365	176,900	121,000	194,000	261,000	258,188	*555,878	*177,329	559,512	15,637	69,917	a3,130,000
1904	37,692	114,605	101,000	111,000	86,300	93,500	80,480	700	*220,054	476,400	*328,167	*22,873	*250 a1,960,000
1905	63,780	189,300	355,200	383,500	399,700	351,000	484,100	*1,296,000	*1,940,000	562,200	200,977,800	177,200	a5,330,000
1906	*57,800	163,100	186,100	117,000	222,000	307,000	339,000	503,000	549,000	214,000	97,200	50,300	a2,660,000
1907	101,000	243,000	239,000	205,000	221,000	222,000	224,000	274,000	833,000	106,150	54,000	45,000	b3,580,000
1908	122,000	121,000	131,000	129,000	109,000	119,000	59,000	144,000	702,000	261,000	54,600	b4,450	b1,960,000
1909	24,200	83,300	134,000	202,000	166,000	302,000	219,000	546,000	910,000	552,000	280,000	184,000	b3,500,000
1910	279,000	180,000	187,000	-	-	-	-	-	-	-	-	-	-
1912	-	-	-	-	-	-	-	181,000	171,000	67,800	51,500	357,000	285,000
1913	*399,000	307,000	108,000	163,000	133,000	219,000	274,000	196,000	30,200	*496	40	40	c1,630,000
1914	21,000	35,900	30,700	46,100	39,000	123,000	94,000	505,000	604,800	52,600	3,830	98,200	a1,530,000
1915	138,000	98,200	67,500	101,000	65,800	120,000	362,000	477,000	738,000	290,000	490,000	206,000	b3,180,000
1928	-	-	-	-	-	-	-	-	4769,000	1295,000	145,000	43,470	-
1929	168,800	217,000	166,000	101,000	178,000	363,000	299,000	333,000	574,000	119,000	916	95,200	*2,510,000
1930	220,000	194,000	38,900	61,500	277,000	213,000	189,000	426,000	*287,000	7,070	48,500	136,000	*2,080,000
1931	269,000	198,000	216,000	192,000	237,000	200,000	231,000	114,000	13,700	449	92	452	*1,670,000
1932	1,280	45,800	92,800	82,700	298,000	247,000	105,000	75,600	132,000	18,540	6,460	2,010	*1,070,000
1933	42,800	80,300	49,200	131,000	126,000	225,000	132,000	238,000	64,900	855	314	43,200	1,130,000
1934	68,290	113,800	129,100	123,000	127,700	188,400	81,660	3,500	462	3	0	0	835,900
1935	0	53	1,430	39,660	87,890	87,660	12,200	195,100	567,100	40,440	68	7,610	1,039,000
1936	123	55,670	74,680	35,970	61,340	219,400	33,290	48,500	11,590	61	0	0	*540,600
1937	11	116	325	60	34,200	196,300	68,900	23,240	40,520	7,040	378	24	371,000
1938	14	24,530	92,130	154,100	102,000	206,700	53,940	128,100	65,290	18,370	163	98,800	962,100
1939	26,820	57,190	92,160	49,900	53,620	303,100	204,600	41,160	23,410	3,710	54	0	954,700
1940	0	22	290	674	82,970	172,100	36,130	10,070	16,270	182	254	0	319,000
1941	2	79	163	2,590	16,440	18,890	27,180	14,500	21,730	946	2	490	102,900
1942	186	768	964	2,740	14,950	46,870	52,120	50,000	250,600	99,840	3,050	98,360	1,130,000
1943	24,250	37,420	54,510	74,120	134,300	75,410	11,100	81,550	88,730	43,440	144	11	725,000
1944	918	42,930	36,540	82,040	88,740	23,300	174,500	221,700	59,410	19,120	2,340	14,120	865,700
1945	33,970	59,830	75,770	94,320	82,950	94,240	74,040	68,820	183,700	52,580	11,080	33,170	865,500
1946	70,480	68,060	52,170	96,630	99,250	131,200	50,460	45,700	46,110	4,730	309	42,620	707,700
1947	185,600	117,000	94,210	73,490	91,500	142,400	137,900	55,050	304,000	902,290	18,210	16,370	1,467,000
1948	43,500	61,000	79,560	71,680	92,510	245,500	100,400	50,410	43,920	34,150	58,130	2,965	891,700
1949	22,890	71,480	77,770	40,170	59,680	284,500	203,500	181,900	561,700	74,100	16,050	40,900	1,534,000
1950	65,970	105,700	70,770	37,410	108,900	151,700	115,300	15,900	51,950	61,460	29,620	29,790	960,100

* Revised.

† Corrected.

* Not previously published, estimated on basis of hydrographic comparison with other Platte River stations.

a Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

c Corrected, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

d From reports of State engineer of Nebraska.

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					
		Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date	day			
1895	(a)	-	-	-	-	-	-
1896	(a)	*15,600	June 10, 1896	0	-	-	-
1897	(b), 1390	*24,400	June 12, 1897	-	-	-	-
1898	(c)	*24,700	June 2, 1898	-	-	-	-
1899	(d), 1390	*23,300	June 30, 1899	-	-	-	-
1900	(e), 1390	*29,240	May 7, 1900	-	-	-	-
1901	75, 1390	*23,200	Apr. 17, 1901	-	f2,380	f1,720,000	f2,390
1902	84	*13,900	May 19, 1902	0	f2,090	f1,510,000	f2,300
1903	99, 1390	*19,000	June 1, 1903	190	f4,320	f3,130,000	f4,350
1904	151, 1390	*20,200	June 17, 1904	0	f2,700	f1,960,000	f2,640
1905	172, 1390	*44,100	June 23, 1905	0	f7,360	f5,330,000	f7,360
1906	208	*23,300	May 3, 1906	8	f3,670	f2,660,000	g4,190
1907	246	*25,450	June 11, 1907	65	g4,670	g3,380,000	g4,380
1908	246	*34,250	June 8, 1908	-	g2,700	g1,960,000	g2,510
1909	266	*25,450	June 13, 1909	-	g4,840	g3,500,000	g5,400
1910	266	-	-	0	-	-	-

* Revised.

* Not previously published.

a 18th Ann. Rpt., Pt. 4.

b 19th Ann. Rpt., Pt. 4.

c 20th Ann. Rpt., Pt. 4.

d 21st Ann. Rpt., Pt. 4.

e 22d Ann. Rpt., Pt. 4.

f Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

g From Congressional documents; 73d Cong., 2d sess., H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second of Platte River near Duncan, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1911	306	-	-	0	-	-	-	-
1912	326	-	-	-	-	-	-	-
1913	356	*12,070	May 3, 1913	0	h2,530	h1,830,000	h1,520	h1,100,000
1914	386	*20,080	June 13, 1914†	0	f2,120	f1,530,000	f2,420	f1,750,000
1915	406	*24,400	June 21, 1915	-	g4,390	g3,180,000	-	-
1928	(1)	*18,100	June 16, 1928	0	-	-	-	-
1929	686, 1390	*19,100	Mar. 12, 1929*	3	*3,470	*2,510,000	*3,480	*2,520,000
1930	701, 1390	*15,000	June 5, 1930	7	*2,870	*2,080,000	*3,190	*2,510,000
1931	716, 1390	*10,200	Oct. 14, 1930*	0	*2,310	*1,670,000	*1,560	*1,130,000
1932	731, 1390	*20,500	Feb. 27, 1932	5	*1,470	*1,070,000	*1,520	*1,100,000
1933	746	8,490	Apr. 25, 1933	0	1,570	1,130,000	1,760	1,270,000
1934	761	10,500	Mar. 5, 1934	0	1,155	835,800	727	526,200
1935	786, 956	*30,000	June 7, 1935	0	1,435	1,039,000	1,613	1,168,000
1936	806, 1390	-	-	0	*745	*540,600	*566	*410,600
1937	826	6,450	Mar. 6, 1937	0	512	371,000	673	487,500
1938	856	-	-	0	1,329	962,100	1,411	1,022,000
1939	876	11,800	Mar. 20, 1939	0	1,319	954,700	1,076	778,900
1940	896	10,600	Mar. 6, 1940	0	439	319,000	439	318,800
1941	926	1,210	Mar. 13, 1941	0	142	102,800	145	104,700
1942	956	16,000	May, 12, 1942	0	1,561	1,130,000	1,719	1,245,000
1943	976	6,100	Mar. 23, 1943	0.1	1,002	725,000	952	689,200
1944	1006	7,090	Apr. 27, 1944	0	1,192	865,700	1,315	954,800
1945	1036	6,700	June 12, 1945	11	1,193	863,500	1,222	884,600
1946	1056	4,430	Mar. 18, 1946	1	978	707,700	1,263	914,000
1947	1086	23,800	June 24, 1947	8	2,026	1,467,000	1,732	1,254,000
1948	1116	14,000	Mar. 20, 1948	10	1,215	881,700	1,198	869,800
1949	1146	13,000	June 27, 1949	40	2,120	1,534,000	2,216	1,604,000
1950	1176	4,700	Mar. 18, 1950	160	1,326	960,100	-	-

* Revised.

† Corrected.

‡ Not previously published.

f Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

g From Congressional documents; 73d Cong., 2d sess., H. Doc. 197, Platte River.

h Corrected, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

i From reports of State engineer of Nebraska.

310. Middle Loup River near Mullen, Nebr.

Location.--Lat 42°03'55", long. 101°02'15" in sec. 8, T. 24 N., R. 32 W., at county highway bridge $1\frac{1}{2}$ miles north of Mullen.

Drainage area.--1,120 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 3,055 ft, (from topographic map).

Extremes.--1946-48: Not determined.

Remarks.--Monthly summaries only, based on discharge measurements and records for station at Dunning.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	137	137	128	137	124	136	150	131	195	127	120	129	138
1948	131	133	134	133	123	134	133	132	130	126	131	126	131

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	8,420	8,150	7,870	8,420	6,890	8,360	8,930	8,050	11,600	7,810	7,380	7,680	99,560
1948	8,080	7,900	8,250	8,170	7,440	8,240	7,890	8,130	7,710	7,860	8,040	7,470	95,180

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1947	1086	-	-	-	138	99,560	137
1948	1116	-	-	-	131	95,180	-

311. Middle Loup River near Seneca, Nebr.

Location.--Lat 42°02'40", long. 100°56'10", in SW $\frac{1}{4}$ sec. 17, T. 24 N., R. 31 W., a quarter of a mile north of Keiso siding on Chicago, Burlington & Quincy Railroad, and 5 miles west of Seneca.

Drainage area.--1,140 sq mi, approximately, of which about 60 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Altitude of gage is 3,000 ft (from topographic map).

Extremes.--1948-50: Maximum discharge, 457 cfs Aug. 8, 1950; maximum gage height, 2.61 ft Jan. 7, 1949 (backwater from ice); minimum daily discharge, 152 cfs Sept. 9, 1948, Aug. 31, Sept. 1, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	178	190	184	187	172	-
1949	189	186	195	202	216	237	237	232	207	191	173	180	204
1950	181	181	193	192	201	202	202	198	184	184	195	212	194

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	11,020	11,290	11,340	11,470	10,210	-
1949	11,620	11,090	11,980	12,440	11,970	14,560	14,110	14,250	12,340	11,750	10,650	10,740	147,500
1950	11,150	10,770	11,870	11,790	11,140	12,440	12,010	12,240	10,940	11,300	12,000	12,640	140,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1116	-	-	-	-	-	-	-
1949	1146	328	Mar. 26, 1949	152	204	147,500	202	146,600
1950	1176	457	Aug. 8, 1950	157	194	140,300	-	-

312. Middle Loup River at Dunning, Nebr.

Location.--Lat 41°49'50", long. 100°06'20", in SW $\frac{1}{4}$ sec. 33, T. 22 N., R. 24 W., just downstream from highway bridge at north limits of Dunning, a quarter of a mile upstream from bridge on State Highway 2, and 1 $\frac{1}{4}$ miles upstream from Dismal River.

Drainage area.--1,760 sq mi, approximately, of which about 80 sq mi contribute directly to surface runoff.

Supplemental records.--Records of suspended-sediment loads for the period April 1946 to September 1950, and water temperature records for the period April 1948 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,607.17 ft above mean sea level, datum of 1929. Prior to Sept. 12, 1946, staff gage at same site and datum.

Average discharge.--5 years (1945-50), 379 cfs.

Extremes.--1945-50: Maximum discharge, 821 cfs Oct. 4, 1946 (gage height, 4.44 ft); maximum gage height, 7.02 ft Mar. 31, 1949 (backwater from ice); minimum daily discharge, 150 cfs Feb. 11, Mar. 11, 1948.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	397	390	372	423	426	415	390	372	345	327	347	385	382
1947	456	393	408	388	374	401	410	373	452	361	341	363	392
1948	371	364	362	400	370	385	381	353	342	361	358	362	368
1949	373	397	383	322	426	477	431	406	386	358	348	370	389
1950	349	384	336	348	368	414	370	380	344	355	355	357	365

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	24,420	23,200	22,880	26,010	23,680	25,520	23,190	22,890	20,520	20,090	21,360	22,890	276,600
1947	26,800	23,580	25,070	23,940	20,770	24,640	24,380	22,940	26,890	22,200	20,950	21,620	283,600
1948	22,800	21,640	22,280	24,800	21,280	23,830	22,670	21,710	20,350	22,180	22,020	21,520	266,900
1949	22,910	23,610	23,560	19,800	23,640	29,340	25,640	24,940	22,970	22,060	21,410	22,000	281,900
1950	21,480	22,880	20,640	21,400	21,420	25,460	22,040	23,350	20,490	21,850	21,810	21,230	264,000

PLATTE RIVER BASIN

Yearly discharge, in cubic feet per second of Middle Loup River at Dunning, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	1056	-	-	-	-	-	-	-
1946	1056	571	Mar. 16, 1946	294	382	276,600	389	281,400
1947	1086	821	Oct. 4, 1946	220	392	283,600	380	275,000
1948	1116	557	Mar. 14, 1948	150	368	266,900	372	270,200
1949	1146	-	-	160	389	281,900	382	276,800
1950	1176	540	Aug. 10, 1950	160	365	264,000	-	-

313. Dismal River near Gem, Nebr.

Location.--Lat 41°47', long. 100°17', in sec. 24, T. 21 N., R. 26 W., 4 miles north of Gem and 10 miles southwest of Dunning.

Drainage area.--1,360 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 2,690 ft (from topographic map).

Extremes.--1946-50: Not determined.

Remarks.--Monthly summaries only, based on discharge measurements and records for station at Dunning.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	272	270	255	277	277	267	284	256	281	260	262	274	270
1948	271	263	276	247	233	278	267	274	269	251	252	267	262
1949	268	266	273	270	300	285	295	270	271	258	272	261	274
1950	275	283	275	252	296	283	291	283	263	302	284	301	283

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	16,700	16,060	15,660	17,040	15,380	16,400	16,930	15,880	16,720	16,000	16,090	16,280	195,200
1948	16,640	15,660	16,980	15,180	13,400	17,110	15,880	16,920	16,000	15,440	15,480	15,910	190,500
1949	16,460	15,840	16,760	16,600	16,660	17,520	17,550	16,600	16,150	15,840	16,710	15,520	199,200
1950	16,880	16,960	16,940	15,470	16,440	17,790	16,720	17,490	16,010	18,530	17,430	17,890	204,600

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1086	-	-	-	270	195,200	271	196,000
1948	1116	-	-	-	262	190,500	262	190,300
1949	1146	-	-	-	274	198,200	276	199,900
1950	1176	-	-	-	283	204,600	-	-

314. Dismal River at Dunning, Nebr.

Location.--Lat 41°49'23", long. 100°06'05", in sec. 4, T. 21 N., R. 24 W., at bridge on State Highway 2, at southeast corner of Dunning and 1 mile upstream from mouth.

Drainage area.--1,780 sq mi, approximately, of which about 50 sq mi contribute directly to surface runoff.

Gage.--Staff gage. Datum of gage is 2,606.3 ft above mean sea level, datum of 1929. Mar. 16 to June 30, 1932, staff gage at site a quarter of a mile upstream at datum 0.5 ft lower.

Average discharge.--5 years (1945-50), 311 cfs.

Extremes.--1932, 1945-50: Maximum discharge, 741 cfs June 11, 1932 (gage height, 5.84 ft, site and datum then in use); minimum daily, 100 cfs Jan. 25, 1950.

Remarks.--Only one permit pending for diversion for irrigation above the station.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	359	357	331	337	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	317	341	320	328	356	330	305	294	275	269	290	285	309
1947	318	311	291	341	348	310	327	296	367	302	285	304	316
1948	299	310	317	289	274	327	306	323	304	301	298	313	305
1949	305	305	319	321	352	335	349	317	312	293	307	317	319
1950	309	307	299	278	328	323	322	302	290	328	292	319	308

Monthly and yearly runoff, in acre-feet of Dismal River at Dunning, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	22,100	21,200	20,400	20,100	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	19,500	20,270	19,690	20,150	19,760	20,280	18,150	18,090	16,340	16,520	17,860	16,950	223,600
1947	19,560	18,490	17,910	20,970	19,540	19,030	19,470	18,200	21,850	18,560	17,520	18,080	229,000
1948	18,410	18,430	19,480	17,760	15,760	20,080	18,190	19,890	18,110	18,480	18,330	18,600	221,500
1949	18,780	18,160	19,600	19,740	19,540	20,620	20,760	19,460	18,600	18,040	18,880	18,860	231,000
1950	19,010	18,270	18,400	17,120	18,100	19,860	19,140	18,550	17,230	20,070	17,930	19,010	222,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1932	731	741	June 11, 1932	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-
1946	1056	-	-	245	309	223,600	304	220,100	
1947	1098	572	Oct. 5, 1946	220	318	229,000	317	229,300	
1948	1116	412	July 18, 1948	240	308	221,500	306	221,700	
1949	1146	492	Apr. 9, 1949	240	319	231,000	319	230,200	
1950	1176	703	Oct. 10, 1949	100	308	222,700	-	-	

315. Middle Loup River at Walworth, Nebr.

Location.--Lat 41°39'20", long. 99°34'00", in NW¼ sec. 1, T. 19 N., R. 20 W., 40 ft downstream from highway bridge, and a quarter of a mile northeast of Walworth.

Drainage area.--4,340 sq mi, approximately, of which about 430 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,377.57 ft above mean sea level, unadjusted. Prior to July 8, 1943, staff gage at site 40 ft upstream at same datum.

Average discharge.--10 years (1940-50), 790 cfs.

Extremes.--1940-50: Maximum discharge, 2,990 cfs Oct. 5, 1946; maximum gage height, 5.42 ft Feb. 26, 1947 (backwater from ice); minimum daily discharge, 200 cfs Nov. 13, 1940.

Remarks.--Diversions for irrigation of about 1,000 acres above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	772	855	634	724	1,042	693	735	800	723	721	716	774	763
1942	*847	*831	*757	*726	*891	*998	*874	*1,007	*777	*717	*664	*808	*823
1943	*805	*757	*764	*862	*920	*835	*890	*762	*787	*714	700	761	*778
1944	864	790	706	836	821	933	859	805	809	756	706	716	812
1945	775	872	688	702	836	856	810	882	841	722	709	813	792
1946	748	730	660	855	927	921	758	745	676	612	681	764	755
1947	878	778	719	722	736	864	814	792	1,232	715	704	737	807
1948	777	795	799	721	889	835	846	746	750	716	698	709	773
1949	705	732	660	625	836	1,012	1,000	938	870	702	737	784	799
1950	802	828	675	629	941	912	908	818	706	805	797	792	800

* Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	47,470	50,870	38,950	44,500	57,880	42,630	43,720	49,170	43,030	44,330	44,010	46,030	552,600
1942	*52,090	*49,420	*46,570	*44,650	*49,510	*60,730	*52,000	*61,950	*46,230	*44,080	*40,830	*48,060	*596,100
1943	*49,500	*45,030	*46,990	*40,680	*51,080	*51,410	*52,950	*46,880	*46,820	*45,920	*45,010	*45,270	*563,500
1944	53,150	46,990	48,330	51,390	47,210	61,040	51,090	49,510	48,150	46,500	43,440	42,610	589,400
1945	47,670	51,900	42,350	45,140	46,430	52,620	48,220	54,200	50,020	44,380	43,570	46,720	573,200
1946	46,000	43,450	40,600	52,600	51,470	56,630	45,080	45,790	40,200	37,620	41,880	45,450	546,800
1947	53,960	46,300	44,210	44,410	41,000	53,130	48,450	48,700	73,290	43,950	43,300	43,840	584,500
1948	47,770	47,300	49,150	44,350	51,150	51,340	50,330	45,880	44,640	44,050	42,930	42,160	561,000
1949	43,330	43,560	40,560	38,440	46,430	62,200	59,480	57,680	51,770	43,180	45,310	46,630	578,600
1950	49,300	49,260	41,480	38,700	52,280	56,050	53,900	50,270	42,010	49,530	48,980	47,120	578,900

* Not previously published.

Yearly discharge, in cubic feet per second of Middle Loup River at Walworth, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	-	-	200	763	552,600	*778	*563,400
1942	1390	*2,340	Mar. 4, 1942	*382	*823	*596,100	*814	*589,800
1943	1390	*1,780	Mar. 20, 1943	*210	*779	*563,500	*789	*570,500
1944	1006	-	-	210	812	589,400	803	580,800
1945	1036	1,960	May 27, 1945	240	792	573,200	775	561,400
1946	1056	2,040	Feb. 22, 1946	270	755	546,800	775	561,200
1947	1098	2,990	Oct. 5, 1946	280	807	584,500	807	584,300
1948	1116	-	-	340	773	561,000	750	544,300
1949	1148	-	-	250	799	578,600	817	591,200
1950	1176	-	-	260	800	578,900	-	-

* Not previously published.

316. Middle Loup River at Sargent, Nebr.

Location.--Lat 41°37', long. 99°22', in sec. 10, T. 19 N., R. 18 W., at bridge on U.S. Highway 83, and 1 mile south of Sargent.

Drainage area.--4,490 sq mi, approximately, of which about 490 sq mi contribute directly to surface runoff.

Gage.--Chain gage. Datum of gage is 2,273.94 ft above mean sea level, unadjusted.

Extremes.--1936-38: Maximum discharge, 2,280 cfs Apr. 27, 1938 (gage height, 4.58 ft); minimum daily, 135 cfs Dec. 7, 1937.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	701	913	994	858	826	711	722	653	771	-
1938	831	717	696	706	779	943	952	956	850	793	720	801	812
1939	818	768	767	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	43,120	50,690	61,120	51,070	50,790	42,300	44,420	40,180	45,890	-
1938	51,120	42,660	42,810	43,810	43,250	58,010	56,620	58,810	50,570	48,770	44,260	47,690	588,000
1939	50,320	45,670	47,190	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	826	1,290	Mar. 24, 1937	-	-	-	792	566,200
1938	856	2,290	Apr. 27, 1938	135	812	588,000	821	594,500
1939	856	-	-	-	-	-	-	-

317. Middle Loup River near Comstock, Nebr.

Location.--Lat 41°29', long. 99°13', in sec. 6, T. 17 N., R. 16 W., at county-line bridge three quarters of a mile downstream from the "Narrows" and $5\frac{1}{2}$ miles southeast of Comstock.

Drainage area.--4,650 sq mi, approximately, of which only about 810 sq mi contribute directly to surface runoff.

Gage.--Chain gage. Altitude of gage is 2,190 ft (from topographic map).

Extremes.--1936-37: Maximum discharge, 1,500 cfs Mar. 20 (gage height, 2.65 ft); minimum daily during period December to July, 570 cfs Jan. 2.

Remarks.--No diversions or regulation.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	672	898	1,077	900	808	760	700	-	-	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	41,300	49,840	66,240	53,550	49,710	45,250	43,070	-	-	-

318. Middle Loup River at Arcadia, Nebr.

Location.--Lat 41°25'20", long. 99°08'10", in sec. 26, T. 17 N., R. 16 W., at southwest edge of Arcadia, just downstream from bridge on State Highway 57.

Drainage area.--4,730 sq mi, approximately, of which about 830 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,146.3 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 23, 1938, chain gage at bridge just upstream at datum 1.23 ft lower.

Average discharge.--13 years (1937-50), 792 cfs.

Extremes.--1937-50: Maximum gage-height, 6.24 ft June 22, 1947 (discharge not determined); minimum daily discharge, 92 cfs Dec. 11, 1941.

Remarks.--Middle Loup Public Power and Irrigation District began diversion above station Mar. 30, 1938.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	-	-	719	707	761	-
1938	876	677	665	788	804	1,108	1,165	1,145	907	793	667	728	861
1939	756	753	897	913	452	1,036	767	817	853	543	537	557	741
1940	758	839	763	572	936	1,034	811	619	722	420	475	535	706
1941	699	891	799	1,035	1,051	782	560	645	612	526	441	811	735
1942	894	762	786	795	963	1,040	1,020	973	901	562	604	773	839
1943	876	983	806	632	872	932	944	715	802	614	502	685	779
1944	875	825	757	855	975	1,098	1,117	1,025	795	652	490	718	848
1945	834	828	723	756	913	930	926	905	876	649	625	647	800
1946	750	757	682	855	983	1,033	713	647	581	473	465	662	709
1947	1,079	856	747	771	810	988	947	767	1,852	753	473	663	887
1948	726	843	751	707	890	916	843	596	681	600	730	533	734
1949	697	808	651	734	853	1,298	1,128	973	868	562	557	790	827
1950	844	877	760	714	910	940	947	879	613	902	783	785	830

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	-	-	-	44,190	43,450	45,290	-
1938	53,960	40,270	40,870	46,480	44,670	68,190	69,300	70,400	53,960	48,780	41,000	43,300	623,100
1939	45,240	44,780	55,180	56,140	25,100	63,690	45,660	50,260	50,770	33,370	32,990	33,120	536,300
1940	46,620	49,910	46,930	35,140	53,970	63,560	48,270	38,060	42,970	25,840	29,180	31,840	512,300
1941	42,890	53,030	49,120	63,660	58,380	49,070	33,310	39,670	36,440	32,360	27,110	48,270	532,300
1942	54,980	45,370	49,300	49,880	55,490	64,160	60,960	59,950	33,610	34,540	37,140	46,010	607,200
1943	53,890	58,490	49,590	39,860	46,410	57,330	56,150	43,940	47,710	37,750	30,850	40,730	563,700
1944	53,830	49,090	46,530	52,540	56,100	57,490	66,440	63,010	47,530	40,120	30,140	42,720	615,500
1945	51,260	49,240	44,450	46,510	50,700	57,180	55,080	55,620	52,240	39,890	38,450	38,510	579,100
1946	46,100	45,060	41,930	52,580	49,060	63,540	42,770	39,770	34,590	29,470	28,830	39,390	513,100
1947	66,340	49,740	46,140	47,420	45,000	60,600	56,340	47,150	10,200	45,050	29,070	39,460	642,300
1948	44,620	50,130	46,170	43,460	51,170	56,340	50,160	36,670	40,520	36,870	44,890	31,680	532,700
1949	42,880	48,110	40,050	45,100	47,700	79,810	66,990	59,800	52,710	34,570	34,270	46,990	599,000
1950	51,980	52,190	46,760	43,990	50,520	57,820	56,350	54,080	36,840	55,440	48,120	46,730	600,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1937	826	-	-	-	-	-	-	-	-
1938	856	4,110	May 12, 1938	120	861	623,100	875	633,300	-
1939	876	6,600	June 25, 1939	127	741	536,300	738	534,600	-
1940	896	3,550	June 6, 1940	299	706	512,300	708	513,900	-
1941	926	2,620	Sept. 22, 1941	157	735	532,300	740	535,900	-
1942	958	3,950	Sept. 2, 1942	92	859	607,200	857	620,500	-
1943	976	42,630	June 14, 1943	200	779	583,700	761	551,200	-
1944	1008	3,090	June 14, 1944	315	948	615,500	842	611,000	-
1945	1036	9,700	May 27, 1945	250	800	579,100	784	567,300	-
1946	1058	2,590	June 18, 1946	220	709	513,100	749	542,000	-
1947	1088	-	June 22, 1947	401	887	642,300	858	621,200	-
1948	1116	42,000	Feb. 18, 1948	260	734	532,700	720	522,800	-
1949	1146	3,440	Apr. 1, 1949	250	827	599,000	855	618,800	-
1950	1176	3,120	May 19, 1950	180	850	600,600	-	-	-

* Not previously published.

319. Middle Loup River at Loup City, Nebr.

Location.--Lat 41°16'40", long. 98°59'50", in NE $\frac{1}{4}$ sec. 14, T. 15 N., R. 15 W., 50 ft downstream from bridge on State Highway 92, 1 mile west of Loup City, and $1\frac{1}{2}$ miles upstream from Cob Creek.

Gage.--Water-stage recorder. Datum of gage is 2,059.9 ft above mean sea level, datum of 1929. December 1936 to April 1938, chain gage at bridge just upstream at different datum.

Extremes.--1936-38, 1949-50: Maximum discharge recorded 4,220 cfs May 19, 1950 (gage height, 2.03 ft), from rating curve extended above 2,200 cfs; minimum daily observed, 120 cfs Jan. 27, 1938.

Remarks.--Middle Loup Public Power and Irrigation District began diversions above station Mar. 30, 1938.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	667	928	1,118	977	875	872	742	730	906	-
1938	880	799	689	802	850	1,273	1,377	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	545	548	749	-
1950	834	880	734	678	915	992	973	936	633	898	805	733	834

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	40,990	51,550	68,720	58,160	53,800	51,890	45,600	44,880	53,910	-
1938	54,110	47,540	42,380	49,300	47,180	78,260	81,950	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	33,500	33,680	44,580	-
1950	51,300	52,350	45,130	41,710	50,840	60,990	57,870	57,560	37,670	55,240	49,500	43,640	603,800

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	826	3,000	June 4, 1937	-	-	-	-	-
1938	856	-	-	-	-	-	-	-
1949	1146	-	-	-	-	-	-	-
1950	1176	4,220	May 19, 1950	170	834	603,800	-	-

a Maximum observed.

320. Middle Loup River at Boelus, Nebr.

Location.--Lat 41°04'00", long. 98°42'45", in sec. 29, T. 13 N., R. 12 W., at county highway bridge, half a mile south of Boelus, and 4 miles (revised) upstream from South Loup River.

Gage.--Chain gage. Datum of gage is 1,903.35 ft above mean sea level, unadjusted.

Extremes.--1936-38: Maximum discharge observed, 7,590 cfs July 19, 1937, from rating curve extended above 2,300 cfs; minimum observed, 52 cfs Dec. 7, 1936 (discharge measurement).

Remarks.--Middle Loup Public Power and Irrigation District began diversion above station Mar. 30, 1938. Records represent combined flow of river and Boelus power canal.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	363	1,000	1,723	867	824	963	800	625	789	-
1938	816	730	691	832	897	1,200	1,027	1,111	766	828	585	724	851

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	22,290	55,520	105,900	51,610	50,850	57,290	49,200	38,430	46,960	-
1938	50,160	43,420	42,460	51,150	49,820	73,770	61,110	68,310	45,600	50,930	35,980	43,050	615,800

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	826	7,590	July 19, 1937	-	-	-	-	-
1938	856	3,340	May 12, 1938	140	851	615,800	-	613,900

a Discharge measurement, minimum observed.

321. South Loup River near Cumro, Nebr.

Location.--Lat 41°02'45", long. 99°23'20", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 12 N., R. 18 W., at bridge on county road, 600 ft downstream from Cat Creek and $\frac{1}{2}$ miles southeast of Cumro.

Drainage area.--1,340 sq mi, approximately, of which about 700 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,207.68 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 7,200 cfs June 22, 1947 (gage height, 10.90 ft); minimum daily, 70 cfs Dec. 30, 1946, result of freeze-up.

Remarks.--Minor irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	179	128	91.1	128	-
1947	320	174	150	135	191	170	184	144	590	209	121	121	209
1948	124	144	155	159	211	275	150	125	145	189	141	104	160
1949	118	137	146	111	160	234	244	194	202	128	107	198	164
1950	140	148	132	123	182	198	178	188	143	163	132	132	154

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	10,680	7,720	5,800	7,650	-
1947	19,670	10,340	9,230	8,330	10,590	10,470	10,950	8,830	35,113	12,830	7,440	7,190	151,000
1948	7,620	8,590	9,540	9,760	12,130	16,930	8,920	7,710	6,820	11,620	8,870	6,180	116,300
1949	7,240	8,140	8,970	8,850	8,870	14,410	14,530	11,910	12,010	7,740	6,560	11,820	119,000
1950	8,580	8,810	8,140	7,540	10,120	12,080	10,440	11,370	8,500	10,030	8,110	7,850	111,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	*1,310	June 18, 1946	-	-	-	-	-
1947	1088	7,200	June 22, 1947	70	208	151,000	190	137,500
1948	1116	1,470	Mar. 15, 1948	90	150	116,300	158	114,900
1949	1146	2,260	Sept. 6, 1949	90	164	119,000	166	120,200
1950	1176	608	July 9, 1950	85	154	111,600	-	-

* Not previously published.

322. South Loup River at Ravenna, Nebr.

Location.--Lat 41°00'35", long. 98°54'45", on line between secs. 16 and 17, T. 12 N., R. 14 W., at county highway bridge, three-quarters of a mile south of Ravenna and 1 mile upstream from Mud Creek.

Drainage area.--1,660 sq mi, approximately, of which about 890 sq mi contribute directly to surface runoff.

Gage.--Wire-weight gage. Datum of gage is 1,983.73 ft above mean sea level, unadjusted.

Average discharge.--10 years (1940-50), 218 cfs.

Extremes.--1940-50: Maximum gage height, 12.6 ft June 22, 1947, from floodmark (discharge not determined); minimum daily discharge, 28 cfs Mar. 6, 1945.

Remarks.--A number of small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	120	176	288	237	300	285	274	293	271	156	72.3	151	216
1942	144	147	136	157	204	239	171	232	502	158	128	440	221
1943	159	171	184	133	176	185	237	153	644	261	104	102	209
1944	127	147	132	158	187	213	341	367	240	160	106	104	190
1945	135	146	130	144	217	156	194	284	775	160	167	123	219
1946	150	155	118	172	192	231	165	172	196	133	75.6	156	159
1947	462	235	173	166	254	232	239	165	1,579	308	121	121	336
1948	132	165	170	141	218	450	185	152	294	268	236	99.7	211
1949	128	157	137	127	194	376	325	253	439	133	113	319	224
1950	158	169	143	123	223	247	223	260	177	254	151	165	191

Monthly and yearly runoff, in acre-feet of South Loup River at Ravenna, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	7,380	10,460	16,470	14,580	16,670	17,530	16,280	18,000	16,120	9,570	4,440	9,000	156,500
1942	8,830	8,730	8,580	9,630	11,350	14,710	10,190	14,240	29,840	9,690	7,870	26,190	159,600
1943	9,780	10,170	11,310	8,190	9,800	11,380	14,110	9,760	38,340	16,050	6,380	6,050	151,300
1944	7,830	8,720	8,150	9,620	10,780	13,110	20,280	22,560	14,290	9,860	6,510	6,160	137,900
1945	8,310	8,680	7,980	8,880	12,080	9,740	11,560	17,470	46,120	9,810	10,290	7,300	158,200
1946	9,220	9,250	7,240	10,590	10,670	14,190	9,800	10,580	11,670	8,200	4,650	9,300	115,400
1947	28,430	14,000	10,650	10,200	14,100	14,280	14,230	10,140	23,980	18,960	7,410	7,190	243,600
1948	8,090	8,790	12,460	8,700	12,420	27,670	11,010	9,350	17,470	17,700	14,540	5,950	153,100
1949	7,500	9,360	8,450	7,800	10,770	23,130	19,350	15,590	26,120	8,180	6,980	18,960	162,200
1950	9,730	10,080	8,780	7,540	12,690	15,200	13,290	15,960	10,530	15,630	9,300	9,850	138,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					Calendar year	
		Water year ending Sept. 30		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Momentary maximum						
		Discharge	Date					
1941	928	3,050	June 2, 1941	48	216	156,500	205	148,200
1942	956	4,810	Sept. 5, 1942	50	221	159,600	228	165,000
1943	978	-	June 14, 1943	75	209	151,300	200	144,800
1944	1006	2,930	May 2, 1944	45	190	137,900	190	138,100
1945	1036	-	June 9, 1945	28	219	158,200	220	159,000
1946	1056	2,010	June 18, 1946	54	159	115,400	197	142,700
1947	1086	-	June 22, 1947	35	336	243,600	302	218,800
1948	1116	-	Mar. 15, 1948*	85	211	153,100	207	150,100
1949	1146	5,550	June 9, 1949	86	224	162,200	229	165,500
1950	1176	2,160	July 9, 1950	50	191	138,600	-	-

* Not previously published.

323. Mud Creek near Broken Bow, Nebr.

Location.--Lat 41°22'30", long. 99°35'10", in NW $\frac{1}{4}$ sec. 11, T. 16 N., R. 20 W., 6 ft downstream from bridge on State Highway 2 and 3 miles southeast of Broken Bow.

Gage.--Water-stage recorder. Altitude of gage is 2,415 ft (from topographic map). Prior to Aug. 5, 1949, wire-weight gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 410 cfs July 23, 1950 (gage height, 7.75 ft); minimum daily, 0.2 cfs on many days in August 1949.

Remarks.--A few small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	1.15	-	-	-	-	0.92	0.28	1.08	-
1950	0.68	0.84	0.75	0.66	1.15	1.64	1.56	1.85	1.22	9.69	5.78	1.18	2.27

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	64	-	-	-	-	57	17	64	-
1950	42	50	46	41	64	101	93	113	73	596	355	70	1,640

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1176	-	-	-	-	-	-	-
1950	1176	410	July 23, 1950	0.5	2.27	1,640	-	-

324. Mud Creek near Sweetwater, Nebr.

Location.--Lat 41°02'05", long. 98°59'45", in N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 3, T. 12 N., R. 15 W., 12 ft downstream from bridge on State Highway 2, 1 mile southeast of Sweetwater, and 8 miles from mouth.

Drainage area.--678 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2,014.17 ft above mean sea level, unadjusted.

Extremes.--1946-50: Maximum gage height, 23.20 ft June 22, 1947 (discharge not determined); minimum daily discharge, 2.2 cfs Aug. 2, 3, 1946.

Maximum stage known since at least 1929, that of June 22, 1947, from information by local resident.

Remarks.--Minor irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second of Mud Creek near Sweetwater, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	154	28.7	27.3	29.7	73.6	36.9	37.4	33.6	61,002	74.6	25.7	22.6	128
1948	20.0	27.6	26.7	39.6	102	308	39.6	30.6	89.0	85.1	111	16.7	74.8
1949	18.1	22.2	22.5	25.9	71.6	69.4	51.3	46.6	106	35.9	14.5	57.7	44.8
1950	22.3	23.5	22.2	18.2	42.8	44.6	42.1	68.4	56.7	191	127	38.6	58.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	-	-	440	1,850	-
1947	9,480	1,710	1,680	1,830	4,100	2,270	2,230	2,080	59,620	4,600	1,580	1,340	92,520
1948	1,230	1,640	1,640	2,430	5,890	18,920	2,360	1,880	5,300	5,230	6,800	996	54,320
1949	1,110	1,320	1,380	1,590	3,990	4,270	3,050	2,860	6,340	2,210	891	3,430	32,440
1950	1,370	1,400	1,370	1,120	2,360	2,760	2,500	4,200	3,370	11,720	7,820	2,300	42,290

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056	-	-	-	-	-	-	-	-
1947	1096	-	June 22, 1947	14	128	92,520	116	84,160	
1948	1116	2,940	Mar. 16, 1948	13	74.8	54,320	75.9	53,620	
1949	1146	1,040	June 9, 1949	13	44.8	32,440	45.3	32,770	
1950	1176	1,330	Aug. 14, 1950	12	58.4	42,290	-	-	

325. South Loup River at St. Michael, Nebr.

Location.--Lat 41°02'00", long. 98°44'30", in NW¼NW¼ sec. 12, T. 12 N., R. 13 W., at county highway bridge, 0.8 mile northeast of St. Michael and 5 miles upstream from Sweet Creek.

Drainage area.--2,560 sq mi, approximately, of which about 1,650 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for the period June 1946 to September 1950 are published in reports of the Geological Survey.

Gage.--Wire-weight gage. Datum of gage is 1,921.28 ft above mean sea level, unadjusted. Prior to June 22, 1947, water-stage recorder, and June 25 to Sept. 30, 1947, wire-weight gage, at present site at datum 2.00 ft higher.

Average discharge.--7 years (1943-50), 287 cfs.

Extremes.--1943-50: Maximum flood occurred June 22, 1947, discharge and gage height not determined; minimum daily discharge, 40 cfs Feb. 11, 1944, Mar. 6, 1945, result of freezeup.

Remarks.--Minor irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	143	175	161	165	217	245	443	527	300	200	121	132	236
1945	150	191	145	170	263	205	224	333	1,114	277	186	134	282
1946	160	175	156	188	212	254	176	197	272	148	80	194	182
1947	619	272	202	195	326	294	231	201	2,741	392	146	143	483
1948	145	197	197	193	378	763	220	187	435	377	305	118	300
1949	140	184	173	145	271	473	391	331	531	161	124	370	273
1950	166	192	173	157	309	309	255	336	267	419	266	208	256

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	8,600	10,440	9,900	10,120	12,510	15,060	26,370	32,380	17,850	12,300	7,440	7,830	171,000
1945	9,220	11,350	8,940	10,120	14,600	12,590	13,340	20,490	66,270	17,010	11,570	8,000	203,800
1946	9,810	10,450	8,370	11,540	11,800	15,600	10,610	12,110	16,160	9,090	4,880	11,560	132,000
1947	38,070	16,160	12,420	12,000	18,220	18,050	17,310	12,340	163,100	24,090	9,080	8,520	349,400
1948	8,940	11,720	12,090	11,640	21,820	46,910	13,100	11,480	25,870	23,160	23,670	7,040	217,600
1949	8,580	10,950	10,810	8,910	15,070	29,000	23,240	20,380	31,570	9,890	7,850	22,040	197,900
1950	11,460	11,420	10,620	9,650	17,160	19,020	15,150	20,780	15,900	25,760	16,360	12,380	185,700

Yearly discharge, in cubic feet per second of South Loup River at St. Michael, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1944	1008	-	-	40	236	171,000	236	171,400
1945	1038	-	-	40	282	203,800	280	203,800
1946	1056	2,050	June 18, 1946	50	182	132,000	235	170,000
1947	1086	-	June 22, 1947	70	483	349,400	436	315,500
1948	1116	6,350	Mar. 16, 1948	101	300	217,600	297	215,000
1949	1146	4,170	June 9, 1949	99	273	197,900	278	201,200
1950	1176	1,890	June 18, 1950	85	256	185,700	-	-

326. Oak Creek near Dannebrog, Nebr.

Location.--Lat 41°57'00", long. 98°36'30", in NW $\frac{1}{4}$ sec. 8, T. 13 N., R. 11 W., 200 ft downstream from bridge on State Highways 58 and 60, 2 miles upstream from unnamed tributary, and $3\frac{1}{2}$ miles west of Dannebrog.

Drainage area.--122 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,879.45 ft above mean sea level, unadjusted. Prior to July 8, 1949, wire-weight gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 1,780 cfs July 9, 1950 (gage height, 17.00 ft); no flow for many days in August 1949.

Remarks.--A few small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1949	-	-	-	-	-	-	-	-	-	-	2.75	4.34
1950	1.04	1.11	1.13	0.98	6.28	7.80	2.19	22.5	20.4	136	9.41	17.8

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1949	-	-	-	-	-	-	-	-	-	-	169	258
1950	64	66	70	60	348	480	150	1,390	1,220	8,370	579	12,870

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1176	-	-	0	-	-	-	-
1950	1176	1,780	July 9, 1950	0.2	17.8	12,870	-	-

327. Middle Loup River at St. Paul, Nebr.

Location.--Lat 41°11'55", long. 98°26'50", in sec. 10, T. 14 N., R. 10 W., at St. Paul, 600 ft upstream from bridge on U. S. Highway 281 and 6 miles upstream from confluence with North Loup River.

Drainage area.--7,720 sq mi, approximately, of which about 3,200 sq mi contribute directly to surface runoff.

Supplemental records.--Records of suspended-sediment loads for the period Apr. 11, 1946 to September 1948 and records of water temperature and suspended-sediment loads for the period October 1948 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1776.61 ft above mean sea level, datum of 1929. Prior to April 1899, staff gage at site 600 ft downstream at datum 2.06 ft higher. April 1899 to November 1903, staff gages at several sites about 600 to 800 ft downstream at datum 1.87 ft higher. Aug. 15, 1928 to June 13, 1934, chain gage at site 600 ft downstream at datum 2.00 ft higher. June 14, 1934 to June 23, 1947, water-stage recorder at site 300 ft upstream at datum 2.00 ft higher. June 26 to July 25, 1947, staff gage at site 600 ft downstream at datum 9.61 ft lower.

Average discharge.--43 years (1894-1915, 1928-50), 1,298 cfs.

Extremes.--1895-99, 1902-03, 1928-50: Maximum discharge, 72,000 cfs June 23, 1947 (gage height, 10.69 ft, site and datum then in use), from rating curve extended above 55,000 cfs; minimum daily since 1929, 102 cfs Jan. 8, 1937, result of freeze up.

Remarks.--Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second of Middle Loup River at St. Paul, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a1,160	a1,110	a955	b1,300	b1,550	b1,550	c1,160	1,173	1,396	861	973	877	b1,170
1896	*840	c1,230	c1,290	c1,110	c1,560	c1,460	1,364	1,154	*2,063	1,271	975	993	b1,260
1897	1,041	c1,170	c1,000	1,500	1,500	1,600	2,000	1,274	1,037	865	673	675	c1,190
1898	1,169	1,100	1,100	c1,480	c1,380	c1,350	a1,330	a1,670	a1,920	a929	a1,270	a956	a1,300
1899	c1,010	e973	e833	c1,020	c1,080	c1,280	c1,340	1,036	1,444	1,007	1,207	1,019	c1,100
1900	1,109	a955	a823	a1,010	c1,070	c1,270	a1,600	a1,770	b1,500	b1,350	b1,400	b1,300	b1,260
1901	a1,070	a1,110	a1,030	a1,260	a1,330	a1,450	a1,550	a1,120	a1,650	a745	a657	a1,360	a1,190
1902	b1,150	a1,120	a1,080	a1,330	a1,420	a1,590	a1,150	a1,540	a1,550	a2,700	a2,270	a1,530	b1,540
1903	c1,240	c1,020	c090	c1,080	c1,290	c1,740	c1,650	*2,580	*2,112	*1,671	*2,173	1,330	d1,550
1904	1,234	b1,300	a1,500	a1,680	a1,740	a1,620	a1,590	a1,420	a2,080	a2,030	a1,120	a1,150	b1,540
1905	b1,450	b950	a799	a986	a1,670	a2,390	a2,620	a4,060	a3,670	a4,330	a3,320	a2,690	b2,430
1906	a1,570	a2,090	a1,800	a2,200	a2,340	a2,500	a2,660	a2,190	a1,380	a1,330	b1,500	a1,240	b1,900
1907	a1,560	a1,480	a1,270	a1,120	a1,090	a1,450	a1,310	a1,570	a2,240	a1,780	a1,120	a1,170	a1,430
1908	a1,080	a1,210	a1,190	a1,180	a1,140	a1,620	a1,610	a2,580	b3,070	a1,900	a1,300	a1,280	a1,500
1909	a1,180	a1,190	a1,120	a1,450	a1,450	a1,450	a1,390	a1,520	a2,390	a2,480	a1,470	a1,200	a1,620
1910	a1,170	a1,160	a1,190	a1,070	a1,120	a1,400	a1,160	a1,350	a978	a1,000	a1,400	a1,350	a1,200
1911	b1,100	a1,110	a1,100	a1,140	a1,170	a1,300	a1,270	a1,260	a1,010	a799	a1,100	a1,270	b1,130
1912	a1,170	a1,280	a1,100	a1,160	a1,350	a1,560	a4,520	a2,480	a1,810	a961	a1,060	a1,320	a1,640
1913	a1,040	a1,250	a1,120	a1,360	a1,440	a1,670	a2,080	a2,070	a1,340	a1,060	a938	a970	a1,360
1914	a1,040	a1,250	a1,070	a1,270	a1,190	a1,140	a1,210	a1,490	b3,010	a955	a1,150	a1,080	b1,320
1915	a1,060	a1,030	a885	a1,080	b1,280	a1,330	a2,710	a1,640	a3,000	a2,620	b2,240	a2,140	b1,750
1928	-	-	-	-	-	-	-	-	-	-	-	-	946
1929	1,140	1,360	487	550	743	2,080	1,530	2,070	1,720	1,250	877	1,020	1,240
1930	1,000	748	487	714	2,420	1,350	1,800	2,010	2,610	753	1,400	1,300	1,370
1931	1,680	1,310	1,220	1,470	1,610	1,450	1,220	1,140	898	766	767	778	1,190
1932	1,160	1,020	1,590	944	1,440	1,540	1,110	1,470	3,000	1,280	1,320	1,010	1,410
1933	1,120	849	738	1,110	912	1,630	1,280	1,450	806	1,130	1,280	1,060	1,110
1934	1,021	1,159	1,280	1,050	1,100	1,080	1,162	935	880	724	880	896	1,020
1935	1,269	1,357	708	758	1,523	1,180	1,589	2,130	2,739	1,454	1,497	1,379	1,461
1936	1,577	1,401	1,011	689	848	2,972	1,160	1,051	917	582	669	815	1,126
1937	827	814	806	295	1,030	2,352	1,116	1,169	1,377	851	742	1,209	1,048
1938	1,115	700	766	881	1,058	1,470	1,102	2,186	1,222	1,781	620	848	1,165
1939	893	962	1,499	1,210	756	1,307	1,083	1,009	1,458	673	561	526	960
1940	820	1,057	1,022	578	1,137	1,558	918	821	1,609	381	471	656	916
1941	992	915	792	1,033	1,421	1,494	1,333	1,352	1,278	681	441	906	1,049
1942	888	754	907	865	919	1,514	1,085	1,410	1,995	616	868	1,116	1,116
1943	1,067	1,292	681	638	1,054	1,208	1,167	849	1,269	1,330	581	930	1,052
1944	941	1,032	872	1,008	1,468	1,546	*1,943	*1,684	*1,405	918	604	880	*1,191
1945	1,033	1,037	791	1,037	1,090	1,054	1,260	1,509	2,260	934	848	791	1,155
1946	949	905	860	1,205	1,295	1,256	929	919	1,178	701	489	983	953
1947	1,787	1,135	946	892	1,177	1,355	1,412	970	4,912	1,185	584	796	1,433
1948	889	1,141	1,055	1,018	1,601	2,461	1,033	835	1,616	1,128	1,347	662	1,232
1949	841	1,042	856	783	1,079	2,035	1,590	1,293	1,998	739	694	1,183	1,176
1950	1,084	1,006	809	697	1,198	1,446	1,275	1,501	957	1,787	1,257	989	1,168

* Revised.

† Corrected.

a From reports of State engineer of Nebraska. Monthly figures only published in acre-feet.

b Revised, supersedes figure (acre-feet) published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure in acre-feet.

d Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a71,600a65,900a58,700b79,900b86,100b95,300c69,300d72,100	83,100	52,900	59,800	52,200	b847,000							
1896	51,600c73,000c19,200c68,200c78,100c90,800d81,100	71,000	*125,000	a78,200	59,900	59,100	e913,000						
1897	64,000b69,400c61,500	92,232	83,306	98,380	d119,008	78,335	61,708	53,188	a1,381	40,168	e853,000		
1898	71,879	65,454	67,638	a91,100b76,800b83,000c79,300d102,300e114,100	a57,100	a77,900	a56,900	a844,000					
1899	b62,000b57,900c51,200c62,800c69,800c78,500c79,600	63,702	85,924	61,918	74,216	80,635	c798,000						
1900	68,190a58,800a50,800a62,000a61,500a77,800a85,200a109,000b99,300a83,000	b6,100	b77,400	b917,000									
1901	a65,800a68,300a63,400a77,300a74,000a89,200a92,300a68,800a98,400a45,800a40,400	a81,000	a853,000										
1902	b70,700b66,400b67,300b82,000b78,700a97,800a68,400a94,600a92,200a166,200a139,800	a91,300	b1,115,000										
1903	c76,000c60,500c54,100c66,400c71,500c107,000c98,000	*158,638	*125,693	*102,724	*133,628	79,141	e1,130,000						
1904	*75,868b77,400a92,100a103,500a100,100a99,700a94,900a87,300a123,900a125,100a68,800a67,400	b1,116,000											
1905	b89,200b56,500a49,100a60,600a92,500a146,900a155,900a249,400a230,400a266,000a205,900a160,000	b1,760,000											
1906	a96,400a124,500a110,700a135,000a129,800a153,600a159,400a134,500a82,000a81,800b92,200a74,000	b1,373,000											
1907	a95,900a87,800a77,800a88,700a60,600a89,200a77,800a96,400a133,100a109,700a68,700a69,600	a1,035,000											
1908	a66,500a72,000a73,000a66,700a68,600a85,800a89,700a89,700a146,400a182,700a73,000a79,700a74,900	a1,092,000											
1909	a72,500a70,600a68,700a89,200a79,200a69,200a82,000a93,500a142,100a152,200a90,200a71,500	a1,101,000											
1910	a72,000a69,200a73,000a65,800a62,000a86,300a69,200a82,000a58,200a61,500a66,300a80,600	a866,000											

* Revised.

† Corrected.

a From reports of State engineer of Nebraska.

b Revised, supersedes figures published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Corrected, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly runoff, in acre-feet of Middle Loup River at St. Paul, Nebr.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	b67,600a55,800	a67,700a70,100	a64,900a79,700	a75,400a77,300	a60,100a49,100	a67,700a75,800	a81,193,000						
1912	a72,000a76,000	a67,700a71,500	a77,900a96,200	a269,000a152,000	a107,800a59,100	a65,300a78,700							
1913	a65,900a74,400	a69,700a65,500	a79,700a102,600	a123,500a104,700	a79,700a64,900	a57,700a57,700	a984,000						
1914	a63,900a74,400	a65,800a77,900	a66,500a70,100	a72,000a72,000	a61,600a79,000	a59,700a70,000	a64,000	b954,000					
1915	a64,900a61,500	a54,400a66,300	b71,100a82,000	a101,200a101,000	a178,400a161,200	a138,000a27,400	b1,268,000						
1928	-	-	-	-	-	-	-	-	-	-	56,300	-	-
1929	70,100	80,900	29,900	33,800	41,300	128,000	91,000	127,000	102,000	76,900	53,900	60,700	896,000
1930	61,500	44,400	29,900	43,900	34,000	83,000	107,000	124,000	155,000	45,100	68,100	77,400	991,000
1931	103,000	78,000	75,000	90,400	89,400	89,200	72,600	70,100	53,400	47,100	47,200	46,300	862,000
1932	71,300	60,700	97,800	59,000	82,800	94,700	66,000	90,400	119,000	78,700	81,200	60,100	1,020,000
1933	68,900	60,600	50,600	68,200	50,600	100,000	75,000	89,200	48,000	69,500	78,700	63,100	807,000
1934	62,800	68,970	78,700	64,560	61,090	86,410	69,130	57,470	52,370	44,540	52,890	59,290	738,200
1935	78,030	80,730	43,530	46,600	84,580	72,550	94,530	131,000	163,000	89,400	92,030	82,080	1,058,000
1936	84,670	83,370	62,180	42,370	48,800	182,700	69,050	64,650	54,580	35,770	41,150	48,480	817,800
1937	50,880	48,460	49,560	18,140	57,230	144,600	66,400	71,880	81,960	52,510	45,640	71,950	759,000
1938	68,560	41,660	47,110	54,190	58,770	90,390	65,550	134,400	84,620	109,500	38,110	50,480	843,300
1939	54,930	57,220	92,160	74,400	41,970	80,350	64,470	82,020	74,880	41,590	54,500	31,310	709,600
1940	50,410	62,880	62,610	35,540	65,410	95,810	54,600	50,460	95,740	23,400	28,950	39,010	665,000
1941	61,020	54,460	48,710	63,510	78,920	91,240	70,290	85,120	76,050	41,870	27,140	53,900	759,200
1942	54,570	44,850	55,740	53,210	51,030	93,080	64,430	86,720	118,700	37,620	53,390	94,900	808,200
1943	65,610	76,890	41,880	39,230	58,550	74,160	69,440	52,190	111,200	81,800	35,710	55,310	762,000
1944	57,880	61,400	53,630	61,980	85,610	95,070	115,600	103,500	83,630	56,430	37,160	52,350	*864,200
1945	63,510	48,610	63,790	60,520	64,810	74,980	92,790	134,500	57,420	52,140	47,080	821,800	
1946	58,360	53,840	40,580	74,120	71,920	77,240	55,280	56,540	70,090	43,110	30,040	58,480	689,600
1947	109,800	67,520	58,200	60,990	65,360	83,350	84,000	59,630	292,300	72,870	35,900	47,380	1,037,000
1948	54,660	67,880	65,470	62,580	62,070	51,300	61,450	51,360	96,140	69,580	82,810	39,390	894,500
1949	51,710	61,980	52,660	48,160	59,940	125,200	64,600	79,520	118,000	45,460	42,690	70,420	851,200
1950	66,630	59,880	49,720	42,960	66,510	88,940	75,850	92,290	56,950	109,900	77,300	58,870	845,700

* Revised.

a From reports of State engineer of Nebraska.

b Revised, supersedes figure published in reports of State engineer of Nebraska.

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					Calendar year	
		Water year ending Sept. 30					Mean	Runoff in acre-feet
		Discharge	Maximum	Minimum	Mean	Runoff in acre-feet		
			Date	day				
1895	(a)	\$5,800	June 3, 1895	-	b1,170	b847,000	b1,180	b854,000
1896	(c), 1390	16,000	June 6, 1896	-	d1,260	d913,000	d1,250	d904,000
1897	(e)	\$4,290	Apr. 3, 1897	-	f1,190	f863,000	1,208	872,669
1898	(e)	\$5,200	Oct. 27, 1897	-	g1,300	g944,000	g1,260	g910,000
1899	(h)	\$19,000	June 26, 1899	-	f1,100	f798,000	g1,110	g802,000
1900	(h)	-	-	-	b1,260	b917,000	b1,290	b937,000
1901	(g)	-	-	-	g1,190	g863,000	b1,200	b872,000
1902	(g)	-	-	-	b1,540	b1,115,000	g1,720	g1,102,000
1903	99, 1390	\$9,610	May 30, 1903	-	d1,560	d1,130,000	b1,640	b1,186,000
1904	99	-	-	-	b1,540	b1,116,000	b1,470	b1,068,000
1905	(g)	-	-	-	b2,430	b1,760,000	g2,620	g1,897,000
1906	(g)	-	-	-	b1,900	b1,373,000	b1,800	b1,303,000
1907	(g)	-	-	-	g1,430	g1,035,000	g1,360	g985,000
1908	(g)	-	-	-	g1,500	g1,092,000	g1,500	g1,092,000
1909	(g)	-	-	-	b1,520	g1,101,000	g1,520	g1,105,000
1910	(g)	-	-	-	g1,200	g866,000	b1,180	b853,000
1911	(g)	-	-	-	b1,130	b821,000	g1,150	g836,000
1912	(g)	-	-	-	g1,640	g1,193,000	g1,630	g1,185,000
1913	(g)	-	-	-	g1,360	g984,000	g1,360	g981,000
1914	(g)	-	-	-	b1,520	b954,000	b1,290	b931,000
1915	(g)	-	-	-	b1,750	b1,268,000	-	-
1928	668	-	-	-	-	-	-	-
1929	686	9,400	Mar. 11, 1929	302	1,240	896,000	1,180	850,000
1930	701	8,050	June 4, 1930	-	1,370	991,000	1,540	1,110,000
1931	716	8,280	Oct. 12, 1930	-	1,190	862,000	1,150	836,000
1932	731	18,000	Mar. 17, 1932	550	1,410	1,020,000	1,320	956,000
1933	746	4,830	July 15, 1933	-	1,110	807,000	1,180	855,000
1934	761	4,610	June 17, 1934	361	1,020	758,200	1,008	730,000
1935	786	14,800	June 1, 1935	-	1,461	1,052,000	1,500	1,096,000
1936	806	-	-	300	1,126	817,800	1,014	786,400
1937	826	8,500	June 28, 1937	102	1,048	759,000	1,060	767,500
1938	856	12,000	July 7, 1938	150	1,165	843,300	1,230	890,500
1939	876	7,650	May 3, 1939	350	980	709,600	941	681,400
1940	896	8,600	June 10, 1940	215	916	685,000	900	653,100

* Not previously published.

a Bull. 140.

b Revised, supersedes figure published in reports of State engineer of Nebraska.

c 18th Ann. Rept., Pt. 4.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e 19th Ann. Rept., Pt. 4.

f From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

g From reports of State engineer of Nebraska.

h 21st Ann. Rept., Pt. 4.

Yearly discharge, in cubic feet per second of Middle Loup River at St. Paul, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	9,500	May 20, 1941	165	1,049	759,200	1,036	750,200
1942	956	13,400	Sept. 3, 1942	192	1,116	808,200	1,157	837,500
1943	976, 1056	17,800	June 15, 1943	140	1,052	762,000	1,037	750,500
1944	1006, 1390	4,800	Apr. 24, 1944	310	*1,191	*864,200	*1,192	*865,100
1945	1056	14,100	June 10, 1945	440	1,135	821,800	1,106	800,800
1946	1056	6,250	June 19, 1946	120	953	689,600	1,067	772,400
1947	1086	72,000	June 23, 1947	170	1,433	1,037,000	1,367	989,800
1948	1116	-	-	531	1,232	894,500	1,202	872,800
1949	1146	10,800	June 9, 1949	160	1,176	851,200	1,189	861,100
1950	1176	9,600	July 9, 1950	180	1,168	845,700	-	-

* Revised.

328. North Loup River at Brewster, Nebr.

Location.--Lat 41°56'25", long. 99°51'40", in NW¼NW¼ sec. 27, T. 23 N., R. 22 W., on bridge on State Highway 7 at the northeast limits of Brewster.

Drainage area.--1,890 sq mi, approximately, of which about 140 sq mi contribute directly to surface runoff.

Gage.--Staff gage. Datum of gage is 2,467.7 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1945-50), 362 cfs.

Extremes.--1945-50: Maximum discharge, 1,000 cfs Mar. 4, 1949; maximum gage height observed, 4.20 ft Feb. 25, 26, 1950 (backwater from ice); minimum daily discharge, 100 cfs Jan. 26, 1948.

Remarks.--Minor irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	344	340	296	361	375	450	328	331	286	247	273	342	331
1947	392	396	568	365	352	383	456	325	468	322	279	318	370
1948	305	364	376	311	391	330	337	332	332	303	268	290	330
1949	315	348	317	295	412	617	494	471	457	324	311	326	390
1950	375	369	322	365	454	432	430	461	359	360	348	377	387

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	21,170	20,240	18,190	22,180	20,830	27,670	19,540	20,350	17,000	15,220	16,810	20,360	239,600
1947	24,130	23,590	23,710	22,410	19,540	23,540	27,130	19,980	27,860	19,790	17,080	18,900	267,700
1948	16,730	21,650	23,080	19,140	22,470	20,310	20,080	20,430	19,740	18,620	17,690	17,290	239,200
1949	19,580	20,680	19,470	19,130	22,670	37,920	29,420	28,950	27,190	19,950	19,100	19,380	282,400
1950	23,050	21,940	19,790	22,470	25,240	26,560	25,590	28,350	21,340	22,140	21,580	22,410	280,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	1056	-	-	-	-	-	-	-
1946	1056	605	Sept. 10, 1946	130	331	239,600	347	251,400
1947	1086	4800	Feb. 16, 1947	190	370	267,700	359	259,700
1948	1116	4850	Feb. 18, 1948	100	330	239,200	324	235,300
1949	1146	*1,000	Mar. 4, 1949	150	390	282,400	397	287,700
1950	1176	*700	Feb. 25, 26, 1950	200	387	280,300	-	-

* Not previously published.

329. North Loup River at Taylor, Nebr.

Location.--Lat 41°46'25", long. 99°22'40", in sec. 22, T. 21 N., R. 18 W., 450 ft up-stream from bridge on U. S. Highway 83 at north edge of Taylor.

Drainage area.--2,210 sq mi, approximately, of which about 180 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,248.21 ft above mean sea level, datum of 1929. Prior to Sept. 28, 1938, chain gage at bridge 450 ft downstream at same datum.

Average discharge.--13 years (1937-50), 431 cfs.

Extremes.--1936-50: Maximum discharge, 2,480 cfs Sept. 2, 1942; maximum gage height, 7.80 ft Feb. 21, 1947 (ice jam); minimum daily discharge, 45 cfs July 26, 1941.

Remarks.--North Loup Public Power and Irrigation District canal began diversion from river in November 1937 at point 6 miles above station. Several smaller diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second of North Loup River at Taylor, Nebr.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	440	331	464	527	452	417	442	319	296	380	-
1938	431	490	428	368	508	620	665	619	439	409	340	411	477
1939	386	439	481	485	402	520	436	392	455	263	281	296	403
1940	348	441	408	403	573	577	404	300	284	147	175	200	354
1941	295	416	473	738	481	515	513	388	305	246	188	287	403
1942	407	419	407	509	485	521	512	782	485	289	274	442	459
1943	419	470	413	435	580	537	497	364	419	220	157	312	400
1944	338	457	435	478	564	602	648	584	649	363	205	300	487
1945	394	476	465	501	483	519	592	434	570	373	299	319	451
1946	398	503	413	483	515	631	427	392	293	225	173	350	399
1947	576	538	481	480	449	572	623	431	687	383	193	311	477
1948	349	424	471	391	498	472	456	343	353	238	328	255	381
1949	323	430	384	371	489	749	663	564	491	319	300	370	454
1950	438	487	411	419	575	557	580	610	404	425	447	452	483

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	27,050	20,340	25,790	32,420	26,920	25,620	26,280	19,590	18,180	22,600	-
1938	26,510	29,140	26,290	22,630	29,230	39,140	39,550	39,040	28,150	25,150	20,920	24,470	345,200
1939	23,720	28,100	29,610	29,810	22,310	31,970	25,920	24,080	27,050	16,190	17,300	17,620	291,700
1940	21,380	26,250	25,100	24,760	32,980	35,480	24,070	18,420	16,930	9,050	10,740	11,890	257,000
1941	18,150	24,730	29,100	45,370	26,720	31,660	30,520	23,880	18,150	15,100	11,540	17,060	292,000
1942	25,060	24,950	25,040	31,270	26,930	32,040	30,480	48,090	28,890	16,550	16,830	26,330	332,500
1943	25,770	27,950	25,390	26,770	32,210	33,020	29,590	22,400	24,940	13,520	9,670	18,580	289,800
1944	20,760	27,200	26,720	29,400	32,420	37,030	38,540	35,880	38,590	22,320	12,580	17,840	359,300
1945	24,210	28,340	28,580	30,620	26,840	31,940	35,200	26,660	33,910	22,920	16,370	18,980	326,800
1946	24,460	29,940	25,380	29,710	28,600	38,770	25,380	24,080	17,460	13,860	10,650	20,840	289,100
1947	35,430	32,030	29,570	29,490	24,930	35,170	37,090	26,500	40,850	23,550	11,860	18,510	345,000
1948	21,450	25,240	28,980	24,020	28,620	29,040	27,130	21,110	21,010	14,660	20,200	15,190	276,600
1949	19,840	25,580	23,590	22,830	27,150	46,040	39,430	34,670	29,240	19,590	18,470	22,030	328,500
1950	26,940	28,980	25,250	25,750	31,950	34,250	34,520	37,510	24,030	26,110	27,460	26,890	349,600

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	856	†870	Mar. 7, 1937	-	-	-	414	299,700
1938	856	1,510	Apr. 7, 1938	196	477	345,200	473	342,700
1939	876	†1,700	June 25, 1939	151	405	291,700	393	284,500
1940	896	1,030	Mar. 3, 1940	84	354	257,000	353	256,300
1941	926	-	-	45	403	292,000	408	295,000
1942	956	2,480	Sept. 2, 1942	154	459	332,500	465	336,500
1943	976	1,260	June 15, 1943	104	400	289,800	394	285,400
1944	1006	1,700	June 16, 1944	119	467	339,300	476	345,700
1945	1036	1,260	June 10, 1945	188	451	326,800	449	325,400
1946	1056	1,010	Mar. 17, 1946	128	399	289,100	423	306,400
1947	1086	1,710	Oct. 5, 1946	133	477	345,000	447	323,600
1948	1116	†870	Feb. 19, 1948	140	381	276,600	372	270,000
1949	1146	1,420	Apr. 10, 1949	150	454	328,500	470	340,600
1950	1176	1,140	May 7, 1950	150	483	349,600	-	-

* Revised.

† Not previously published.

330. Calamus River near Harrop, Nebr.

Location.--Lat 41°56'50", long. 99°23'10", in sec. 22, T. 23 N., R. 18 W., at highway bridge 6 miles southeast of Harrop.

Drainage area.--983 sq mi, most of which does not contribute directly to surface runoff.

Supplemental records available.--August 1931 to February 1932, and July 1932 to June 1939, periodic discharge measurements only.

Gage.--Staff gage. Altitude of gage is 2,260 ft (from topographic map).

Extremes.--March to July 1932: Maximum daily discharge, 348 cfs July 2; minimum daily, 196 cfs May 23, 24.

Remarks.--Natural flow of stream is mainly from ground water.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	285	227	221	254	-	-	-	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	16,300	13,500	13,600	15,100	-	-	-	-

331. Calamus River near Burwell, Nebr.

Location.--Lat 41°47'25", long. 99°11'05", in NW $\frac{1}{4}$ sec. 9, T. 21 N., R. 16 W., 300 ft downstream from highway bridge, $\frac{1}{2}$ miles upstream from mouth, and 3 miles northwest of Burwell.

Drainage area.--1,260 sq mi, approximately, of which about 110 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Altitude of gage is 2,160 ft (from topographic map). Prior to Apr. 20, 1945, staff gage at site 300 ft upstream at same datum.

Average discharge.--10 years (1940-50), 268 cfs.

Extremes.--1940-50: Maximum discharge, 770 cfs Mar. 20, 1943; maximum gage height, 5.19 ft Mar. 19, 1950 (backwater from ice); minimum daily discharge, 100 cfs Feb. 5, 6, 1946.

Remarks.--Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	241	252	257	246	231	257	261	252	249	217	206	248	243
1942	264	259	237	241	264	288	281	311	262	241	230	263	262
1943	275	282	255	232	282	349	289	269	305	240	235	248	272
1944	257	265	250	267	266	290	305	293	314	252	231	238	269
1945	257	250	244	267	286	271	276	261	282	247	238	242	260
1946	251	259	247	278	269	286	244	250	226	222	216	247	250
1947	296	283	283	268	281	271	285	244	264	252	250	248	275
1948	256	266	275	260	286	268	263	253	256	227	242	236	257
1949	246	286	257	235	293	366	372	305	327	260	278	276	291
1950	285	285	273	251	274	338	358	341	307	299	301	316	302

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	14,840	14,970	15,790	15,100	12,840	15,830	15,530	15,520	14,830	13,330	12,650	14,750	176,000
1942	16,230	15,390	14,570	14,820	14,650	17,750	16,720	19,110	15,590	14,790	14,160	16,010	189,800
1943	16,920	16,800	15,690	14,240	15,680	21,450	17,220	16,530	18,140	14,740	14,440	14,780	196,600
1944	15,780	15,740	15,350	16,590	15,320	17,830	18,170	17,990	18,690	15,470	14,160	14,170	195,100
1945	15,780	14,900	15,030	16,400	15,870	16,640	16,400	16,070	16,790	15,170	14,640	14,430	188,100
1946	15,460	15,430	15,190	17,080	14,940	17,690	14,490	15,380	13,440	13,660	13,310	14,680	180,800
1947	18,190	16,850	16,200	16,470	15,590	16,680	16,820	15,000	21,640	15,500	15,390	14,630	199,000
1948	15,720	15,840	16,880	15,980	16,440	16,350	15,630	15,700	15,210	13,980	14,870	13,960	186,500
1949	15,130	17,010	15,830	14,420	16,280	22,530	22,150	18,750	19,460	15,980	17,080	16,410	211,000
1950	17,550	16,970	16,770	15,450	15,220	20,760	21,290	20,970	18,250	18,370	18,490	18,810	218,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	358	Sept. 24, 1941	186	243	176,000	244	176,600
1942	956	472	Sept. 2, 1942	170	262	189,800	267	193,000
1943	976	#770	Mar. 20, 1943	160	272	196,600	268	194,100
1944	1006	534	June 16, 1944	160	269	195,100	267	193,900
1945	1036	418	July 16, 1945	180	260	188,100	260	188,500
1946	1056	#730	Jan. 3, 1946	100	250	180,800	257	185,900
1947	1086	606	June 22, 1947	160	275	199,000	271	196,200
1948	1116	#470	Feb. 17, 1948	130	257	186,500	256	186,100
1949	1146	635	Apr. 8, 1949	160	291	211,000	296	214,400
1950	1176	592	Mar. 26, 1950	130	302	218,900	-	-

* Not previously published.

332. North Loup River near Burwell, Nebr.

Location.--Lat 41°47', long. 99°07', in sec. 19, T. 21 N., R. 15 W., (revised) $1\frac{1}{4}$ miles east of Burwell and 4 miles downstream from Calamus River.

Gage.--Chain gage.

Extremes.--1936-38: Maximum discharge observed, 1,900 cfs May 12, 1938 (gage height, 5.00 ft); maximum observed gage height, 6.40 ft Feb. 13, 1937 (top of ice); minimum daily discharge, 240 cfs Jan. 4, 1937.

Remarks.--North Loup River Public Power and Irrigation District began diverting water from river above station in November 1937. There are also a number of smaller diversions for irrigation above the station.

Monthly and yearly mean discharge, in cubic feet per second of North Loup River near Burwell, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	745	558	768	884	738	733	673	562	575	661	-
1938	717	708	657	572	617	902	995	976	763	662	592	656	735

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	45,800	34,340	42,670	54,380	43,890	45,080	40,070	34,550	35,350	39,330	-
1938	44,090	42,150	40,400	35,180	34,250	55,480	59,190	60,010	45,420	40,710	36,400	39,020	532,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	828	1,530	July 18, 1937	240	-	-	686	496,300
1938	856	1,900	May 12, 1938	280	735	532,300	-	-

333. North Loup River near Ord, Nebr.

Location.--Lat 41°35', long. 98°53', in sec. 26, T. 19 N., R. 14 W., 2 miles east of Ord.

Gage.--Chain gage.

Extremes.--1936-38: Maximum discharge observed, 3,440 cfs Sept. 4, 1937 (gage height, 3.76 ft), from rating curve extended above 1,800 cfs; maximum gage height observed, 5.22 ft Feb. 19, 20, 1937 (top of ice); minimum daily discharge, 154 cfs Jan. 3, 1937.

Remarks.--North Loup River Public Power and Irrigation District began diverting water from river above station in November 1937. There are also a number of smaller diversions for irrigation above the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	706	538	778	927	791	788	682	635	610	730	-
1938	751	703	647	625	704	1,040	973	1,050	807	701	609	733	779

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	43,430	33,080	43,180	57,020	47,050	48,490	40,590	39,060	37,480	43,450	-
1938	46,210	41,860	39,770	38,400	39,070	65,970	57,880	64,580	48,020	43,080	37,480	43,600	563,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	828	3,440	Sept. 4, 1937	154	-	-	714	517,200
1938	856	2,160	May 12, 1938	250	770	563,900	-	-

334. North Loup River at Scotia, Nebr.

Location.--Lat 41°27'30", long. 98°42'40", in SW $\frac{1}{4}$ sec. 8, T. 17 N., R. 12 W., 30 ft downstream from trestle on Union Pacific Railroad spur, 0.9 mile southwest of Scotia, and half a mile upstream from Wallace Creek.

Drainage area.--4,100 sq mi, approximately, of which about 910 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,893.33 ft above mean sea level, datum of 1929 (tentative adjustment). Prior to Oct. 1, 1938, chain gage at railroad trestle 30 ft upstream at same datum.

Average discharge.--14 years (1936-50), 793 cfs.

Extremes.--1936-50: Maximum gage height, 8.18 ft June 22, 1947 (discharge not determined); minimum daily discharge, 105 cfs Aug. 7, 1941.

Remarks.--Diversions above station for irrigation. Flow includes practically all return water from North Loup irrigation project.

Monthly and yearly mean discharge, in cubic feet per second of North Loup River at Scotia, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	*670	*740	756	534	776	1,015	794	765	735	647	576	689	*724
1938	758	706	653	676	759	1,134	984	1,156	921	817	634	753	830
1939	710	719	829	946	583	964	827	747	865	413	489	609	726
1940	621	874	748	566	815	1,052	768	617	788	300	333	344	651
1941	574	690	829	807	902	1,055	922	694	709	392	234	645	702
1942	913	824	801	637	520	749	887	1,340	1,210	454	414	913	806
1943	772	800	735	620	881	822	920	669	892	553	236	651	710
1944	552	725	684	823	905	916	1,120	1,309	1,114	607	338	583	805
1945	758	818	703	869	918	953	948	1,236	1,113	767	497	566	845
1946	733	800	546	879	944	1,011	698	695	646	417	248	722	693
1947	1,115	970	793	835	974	965	1,005	744	2,094	681	305	592	920
1948	684	877	981	771	1,147	1,150	804	625	992	561	815	487	822
1949	676	895	774	764	879	1,110	976	1,068	561	522	753	885	885
1950	870	886	744	689	996	1,268	1,081	1,189	756	1,565	902	798	980

* Not previously published; estimated on basis of records for station near St. Paul.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	*41,200*	*44,030	46,510	32,820	43,090	62,410	47,250	47,060	43,750	39,810	35,390	40,990	*524,300
1938	46,810	42,040	40,140	41,550	42,130	69,730	58,520	71,100	54,790	50,230	38,990	44,820	600,600
1939	43,650	42,810	50,990	59,190	32,360	59,270	49,230	45,950	51,490	25,380	30,080	36,260	525,700
1940	38,190	52,000	45,990	34,830	46,900	64,710	45,690	37,930	46,370	18,470	20,450	20,450	472,500
1941	35,300	41,040	50,960	49,650	50,110	64,840	54,880	42,670	42,180	24,090	14,410	38,370	508,500
1942	56,130	49,030	49,260	39,190	28,850	46,070	52,780	82,440	72,250	27,890	25,480	54,340	583,700
1943	47,480	47,630	45,160	38,140	48,950	50,530	54,720	41,120	53,080	34,010	14,500	38,740	514,100
1944	33,920	43,140	42,080	50,620	52,050	56,320	66,680	80,460	66,310	37,350	20,760	34,700	584,400
1945	46,600	48,700	43,200	53,410	50,990	58,590	56,430	75,970	66,240	47,150	30,570	33,710	611,600
1946	45,090	47,610	33,560	54,030	52,420	62,170	41,550	42,750	38,450	25,670	15,250	42,980	501,500
1947	68,580	57,720	48,750	51,330	54,110	59,320	59,800	45,730	124,600	41,870	18,750	35,200	685,800
1948	42,060	52,180	60,300	47,420	65,970	69,510	47,870	38,420	59,040	34,510	50,130	28,960	596,400
1949	41,560	53,250	47,600	46,990	48,810	89,570	77,970	60,010	63,570	34,510	32,110	44,800	640,800
1950	53,520	52,730	45,780	42,350	55,320	77,990	64,350	73,110	44,970	36,220	55,450	47,380	709,200

* Not previously published; estimated on basis of records for station near St. Paul.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1937	826	4,200	July 19, 1937	260	*724	*524,300	720	521,400	
1938	856	4,870	July 3, 1938	230	830	600,600	842	609,300	
1939	876	*8,800	June 25, 1939	220	726	525,700	724	524,400	
1940	896	*6,750	June 5, 1940*	170	651	472,500	639	463,600	
1941	926	*3,360	Sept. 24, 1941	105	702	508,500	740	535,600	
1942	956	7,560	32	250	806	583,700	787	569,600	
1943	976	3,860	June 12, 1943	149	710	514,100	681	492,900	
1944	1006	6,380	June 12, 1944	172	805	584,400	832	603,700	
1945	1036	-	May 27, 1945	120	845	611,600	828	599,300	
1946	1056	4,370	June 18, 1946	146	693	501,500	760	550,300	
1947	1086	-	June 22, 1947	185	920	665,800	891	645,200	
1948	1116	16,100	June 16, 1948	235	822	596,400	805	584,200	
1949	1146	4,960	June 13, 1949	250	885	640,800	898	650,400	
1950	1176	12,200	July 9, 1950	120	980	709,200	-	-	

* Revised.

* Not previously published.

a June 20, Sept. 2, 1942.

335. Davis Creek near Cotesfield, Nebr.

Location.--Lat 41°23'50", long. 98°41'00", in SW $\frac{1}{4}$ sec. 34, T. 17 N., R. 12 W., three-quarters of a mile upstream from mouth and $3\frac{1}{2}$ miles northwest of Cotesfield.

Supplemental records available.--December 1947 to September 1948 (at site 0.8 mile upstream) and October 1948 to May 1949, periodic discharge measurements only.

Gage.--Water-stage recorder. Datum of gage is 1,870.8 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Extremes.--1949-50: Maximum discharge, 1,230 cfs July 9, 1950 (gage height, 9.54 ft), from rating curve extended above 700 cfs on basis of slope-area determination of peak flow; minimum daily, 0.4 cfs Jan. 4, 5, 1950.

Remarks.--No known diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	21.8	1.85	3.39	2.30	-
1950	1.40	2.28	1.99	1.05	6.75	13.5	5.22	8.46	2.30	66.0	5.00	1.68	9.73

Monthly and yearly runoff, in acre-feet of Davis Creek near Cotesfield, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	1,300	116	208	137	-
1950	86	136	122	65	375	831	311	520	137	4,060	307	100	7,050

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1949	1146	-	-	-	-	-	-
1950	1176	1,230	July 9, 1950	0.4	9.73	7,050	-

336. North Loup River near St. Paul, Nebr.

Location.--Lat 41°15'35", long. 98°26'50", in sec. 22, T. 15 N., R. 10 W., 60 ft downstream from bridge on U. S. Highway 281, 3 miles north of St. Paul, and 4 miles upstream from confluence with Middle Loup River.

Drainage area.--4,460 sq mi, approximately, of which about 1,270 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for the period April 1946 to September 1950 and water temperatures for the period April to November 1948 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,762.39 ft above mean sea level, unadjusted. Prior to Aug. 16, 1928, staff gages at several sites within 1 mile of present site at various datums. Aug. 16, 1928, to Mar. 19, 1934, chain gage at present site and datum.

Average discharge.--43 years (1894-1915, 1928-50), 991 cfs.

Extremes.--1894-1915, 1928-50: Maximum discharge, 90,000 cfs (estimated) June 6, 1896 (gage height, 14.9 ft, from floodmark, datum then in use); minimum daily since 1931, 85 cfs Aug. 8, 1941.

Remarks.--Natural flow of stream affected by diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a872	a953	a821	b1,100	b1,350	b1,350	c1,050	1,189	1,531	864	984	1,094	b1,090
1896	1,146	c1,020	c1,200	c1,030	c1,280	c1,370	1,305	1,040	*2,756	1,102	904	913	d1,250
1897	958	c1,080	c980	1,000	1,000	1,320	961	1,183	954	728	788	c992	
1898	1,013	1,000	1,000	a1,110	a1,030	a1,010	a995	a1,250	a1,430	a930	a945	a713	d1,020
1899	c938	c904	c773	c948	c1,000	c1,190	c1,250	1,141	1,533	1,034	1,049	888	c1,050
1900	907	a713	a613	a753	a798	a943	a1,190	a1,320	a1,240	b1,050	b1,100	b1,000	b970
1901	a799	a832	a769	a938	a992	a1,080	a1,160	a834	a1,230	a556	a491	a1,020	a889
1902	b850	a832	a816	a995	a1,060	a1,190	a857	a1,150	a1,160	a2,020	a1,700	a1,150	b1,150
1903	c1,140	c950	c816	c999	c1,200	c1,620	c1,530	*1,348	1,089	*1,350	*1,485	835	d1,200
1904	997	1,316	a1,100	a1,260	a1,300	a1,210	a1,190	a1,068	a1,550	a1,520	a838	a845	a1,160
1905	b1,250	b150	a597	a755	a1,240	a1,780	b2,100	a3,030	a2,890	a3,230	a2,470	a2,010	b1,840
1906	a1,170	a1,560	a1,340	a1,640	a1,740	a1,860	a1,990	a1,630	a1,030	a990	a1,110	a928	a1,410
1907	a1,160	a1,100	a943	a834	a814	a1,080	a975	a1,170	a1,670	a1,330	a833	a874	a1,070
1908	a805	a904	a886	a834	a854	a1,210	a1,120	a1,780	a2,290	a886	a968	a939	a1,120
1909	a880	a886	a834	a1,080	a1,060	a1,080	a1,030	a1,140	a1,780	a1,850	a1,090	a897	a1,140
1910	a875	a867	a886	a799	a834	a1,050	a867	a995	a729	a746	a1,050	a1,010	a893
1911	b800	a825	a823	a851	a871	a968	a946	a938	a755	a597	a823	a951	b845
1912	a875	a963	a821	a867	a1,010	a1,170	a3,370	a1,850	a1,350	a717	a794	a986	a1,230
1913	a773	a933	a834	a1,010	a1,070	a1,240	a1,550	a1,550	a1,000	a787	a701	a724	a1,010
1914	a773	a933	a799	a943	a891	a851	a904	a1,110	b2,500	a712	a857	a802	b1,000
1915	a787	a771	a680	a805	a852	a895	a2,020	a1,230	a2,240	a1,960	a1,680	a1,600	a1,300
1928	-	-	-	-	-	-	-	-	-	-	-	-	789
1929	933	1,100	700	700	750	1,690	1,260	1,290	1,180	941	693	795	1,000
1930	906	682	433	560	1,540	989	1,490	1,370	1,350	699	1,090	881	1,000
1931	1,080	1,040	933	1,090	1,440	1,150	1,040	911	765	703	702	728	962
1932	837	881	1,210	678	1,420	956	973	1,120	2,000	792	757	758	1,030
1933	886	779	643	857	692	1,050	1,030	1,230	662	875	836	802	864
1934	743	891	824	750	770	787	793	703	606	492	629	812	733
1935	795	806	551	638	1,260	895	1,575	1,459	1,603	825	661	702	976

* Revised.

Not previously published.

a From reports of State engineer of Nebraska. Published figure is in acre-feet.

b Revised, supersedes figure (acre-feet) published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure is in acre-feet.

d Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Monthly and yearly mean discharge, in cubic feet per second of
North Loup River near St. Paul, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	774	836	805	608	736	2,589	886	982	658	469	541	811	875
1937	691	755	689	531	754	1,282	816	847	732	666	590	692	754
1938	701	647	572	735	825	1,168	862	1,030	784	813	449	680	770
1939	677	781	877	1,031	650	937	872	710	794	390	404	488	718
1940	568	816	758	517	1,009	1,104	787	647	966	252	289	326	668
1941	570	684	764	746	1,086	1,105	1,015	814	848	413	221	708	744
1942	763	813	822	801	605	1,073	931	1,490	1,307	469	493	993	881
1943	758	821	709	578	921	901	852	576	958	676	259	668	715
1944	603	787	770	855	976	1,010	1,249	1,402	1,206	681	385	651	879
1945	785	816	636	832	1,027	1,036	919	1,168	1,295	932	539	554	877
1946	771	844	607	889	911	980	702	776	683	411	238	765	713
1947	1,167	993	843	759	1,023	1,063	1,087	748	2,516	723	287	582	979
1948	713	903	993	733	1,223	1,391	849	637	1,126	647	1,141	466	908
1949	664	855	717	647	799	1,701	1,336	1,043	1,615	597	531	743	899
1950	853	841	741	662	1,001	1,426	1,071	1,223	750	1,675	902	812	999

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	55,600	56,700	50,500	67,600	75,000	83,000	62,400	73,100	91,100	53,100	60,500	65,100	b792,000
1896	70,500	60,400	673,700	653,300	672,500	84,000	77,600	63,900	164,000	67,800	55,600	54,300	d908,000
1897	58,900	84,200	567,200	61,488	55,537	61,488	79,081	59,090	70,393	58,860	44,763	46,889	c718,000
1898	62,287	59,504	61,488	68,008	50,573,300	62,000	59,200	76,800	88,200	62,000	58,100	42,400	a735,000
1899	57,700	53,800	47,500	58,300	55,500	50,73,000	74,200	70,157	91,220	63,578	64,501	52,840	c762,000
1900	55,770	42,400	37,700	46,300	45,900	48,000	71,000	81,300	74,000	64,600	67,600	69,500	b704,000
1901	49,100	49,500	47,300	57,700	55,100	66,600	68,900	51,300	73,400	54,200	50,200	40,400	a844,000
1902	52,300	49,500	45,500	61,200	58,700	73,000	51,000	70,800	69,800	51,200	40,400	38,200	b832,000
1903	67,000	56,500	50,200	61,400	66,500	69,500	99,000	82,800	64,800	83,000	91,200	49,686	c867,000
1904	61,303	78,307	67,800	77,300	74,800	74,400	70,800	65,100	104,92	50,043	40,050	50,300	a857,000
1905	676,900	44,600	36,700	45,200	69,100	100,100	700,125	000	166,000	172,000	196,500	152,100	b1,335,000
1906	471,900	49,900	42,600	100,700	96,800	90,000	114,800	118,200	100,400	161,200	160,900	168,400	a1,024,000
1907	471,600	49,500	45,500	61,200	58,700	73,000	51,000	70,800	69,800	51,200	40,400	38,200	a773,000
1908	49,500	53,800	47,500	58,300	55,500	50,73,000	74,200	70,157	91,220	63,578	64,501	52,840	a815,000
1909	54,100	52,700	45,100	56,600	55,900	50,46,600	51,200	69,800	106,100	113,600	67,300	55,400	a822,000
1910	53,300	45,100	45,500	49,100	46,300	46,400	51,600	61,200	43,400	45,300	64,400	60,100	a646,000
1911	49,200	49,100	45,000	60,452,300	48,400	48,500	50,459,500	46,300	57,700	44,900	36,700	50,600	b612,000
1912	53,800	57,300	50,500	53,300	58,000	100,71,800	200,800	113,600	80,500	44,100	48,800	50,580	a891,000
1913	47,500	55,500	45,000	52,300	55,900	50,476,500	92,200	95,100	59,500	48,400	43,100	43,100	a734,000
1914	47,500	55,500	49,100	58,000	49,500	50,452,300	53,800	68,400	148,800	43,800	52,700	47,700	b727,000
1915	48,400	45,900	40,600	49,500	47,300	50,461,200	20,300	75,500	13,500	10,300	60,990	100	a941,000
1928	-	-	-	-	-	-	-	-	-	-	-	46,900	-
1929	57,400	65,500	43,000	43,000	41,600	104,000	75,000	79,300	70,200	57,900	42,600	46,700	726,000
1930	55,700	40,600	26,600	40,600	85,500	60,800	88,900	84,300	80,300	43,000	67,300	52,400	7726,000
1931	66,400	61,900	57,400	67,000	80,000	70,700	61,900	56,000	45,500	43,200	43,200	43,300	696,000
1932	51,500	52,400	74,400	41,700	81,700	58,800	57,900	68,900	119,000	48,700	46,500	43,900	745,000
1933	54,500	46,400	39,500	52,700	38,400	64,600	61,300	75,600	39,400	53,800	51,400	47,700	625,000
1934	45,700	53,040	50,640	46,120	42,760	48,410	47,210	43,240	36,080	30,260	38,660	48,350	530,500
1935	48,880	47,940	33,910	39,250	69,980	55,040	93,720	89,690	95,390	50,750	40,650	41,760	706,900
1936	47,600	49,770	49,470	37,400	42,310	59,200	52,700	59,160	39,160	28,810	33,240	36,330	635,200
1937	42,500	44,920	42,390	32,630	41,870	78,830	48,580	52,110	43,540	40,960	36,290	41,170	545,800
1938	43,100	38,480	35,150	45,170	45,810	71,800	51,290	63,320	46,650	49,980	27,590	39,260	557,600
1939	41,650	46,450	53,900	63,360	36,090	57,640	51,890	43,660	47,280	23,960	24,840	29,060	519,800
1940	34,950	48,540	46,640	31,810	58,030	67,900	46,850	39,800	57,500	15,490	17,780	19,420	484,700
1941	35,020	40,680	46,970	45,980	60,310	67,950	60,400	50,040	50,440	25,420	13,600	42,150	538,900
1942	46,920	48,400	50,520	49,220	33,500	65,980	55,390	91,600	77,740	29,810	30,290	59,110	637,500
1943	45,350	48,830	47,580	35,620	51,130	55,420	49,510	35,450	57,050	41,590	14,880	39,720	517,900
1944	37,100	46,810	47,580	53,200	56,130	62,090	74,340	86,210	71,760	40,590	23,660	38,720	638,000
1945	48,300	48,550	39,130	51,130	57,020	63,730	54,670	71,800	77,080	57,310	33,170	32,980	634,900
1946	47,440	50,200	37,350	54,640	50,610	60,260	41,740	47,720	40,640	25,280	14,810	45,540	518,000
1947	71,740	59,080	51,850	46,840	56,850	65,560	64,860	46,000	49,700	44,460	17,660	34,820	609,500
1948	45,870	53,750	61,070	45,060	70,330	85,330	50,540	39,160	72,360	39,760	70,170	27,730	708,300
1949	40,830	50,780	44,110	39,790	44,350	04,600	79,490	64,160	49,310	36,700	32,660	44,210	651,000
1950	52,460	50,020	46,170	40,700	55,800	87,690	63,750	75,230	44,620	103,000	55,450	48,300	723,000

* Revised.

† Corrected.

‡ Not previously published.

a From reports of State engineer of Nebraska.

b Revised, supersedes figures published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong. 2d sess., H. Doc. 197, Platte River.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of North Loup River near St. Paul, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean Runoff in acre-feet
		Discharge	Date				
1895	(a)	-	-	-	b1,090	b792,000	b1,150
1896	(c), 1390	90,000	June 6, 1896	-	d1,250	d908,000	d1,220
1897	(e)	\$4,500	Apr. 4, 1897	-	f992	f718,000	g996
1898	(e)	-	-	-	g1,020	g735,000	g982
1899	(h)	\$7,690	June 27, 1899	-	fl,050	f762,000	gl,020
1900	(h)	-	-	-	b970	b704,000	b984
1901	(g)	-	-	-	g889	g644,000	b898
1902	(g)	-	-	-	b1,150	b832,000	gl,180
1903	99	\$10,000	July 3, 1903	-	d1,200	d867,000	gl,240
1904	99	-	-	-	gl,180	g857,000	b1,110
1905	(g)	-	-	-	b1,840	b1,335,000	b1,970
1906	(g)	-	-	-	gl,410	gl,024,000	gl,340
1907	(g)	-	-	-	gl,070	g773,000	gl,020
1908	(g)	-	-	-	gl,120	g815,000	gl,120
1909	(g)	-	-	-	gl,140	g822,000	gl,140
1910	(g)	-	-	-	g893	g646,000	b877
1911	(g)	-	-	-	b845	b612,000	g863
1912	(g)	-	-	-	gl,230	g891,300	gl,220
1913	(g)	-	-	-	gl,010	g734,000	gl,010
1914	(g)	-	-	-	b1,000	b727,000	b981
1915	(g)	-	-	-	gl,300	g941,000	-
1928	666	-	-	-	-	-	-
1929	686	27,000	June 18, 1929	-	1,000	726,000	943
1930	701	9,850	June 14, 1930	-	1,000	\$726,000	1,090
1931	716	5,880	Oct. 12, 1930	126	962	696,000	953
1932	731	12,600	May 31, 1932	180	1,030	746,000	974
1933	746	8,060	July 8, 1933	-	864	625,000	877
1934	761	3,240	Sept. 2, 1934	373	733	530,500	707
1935	786	11,200	Apr. 25, 1935	-	976	706,900	999
1936	808	-	Mar. 4, 1936	280	875	635,200	951
1937	826	4,150	May 26, 1937	433	754	545,800	736
1938	856	5,220	July 7, 1938	180	770	557,600	805
1939	876	5,000	June 26, 1939	185	718	519,800	702
1940	896	5,800	June 4, 1940	149	668	484,700	657
1941	926	3,700	Mar. 9, 1941	85	744	536,900	776
1942	956, 376	11,300	Sept. 3, 1942	185	881	637,500	869
1943	976	9,240	June 13, 1943	101	715	517,900	706
1944	1008	5,850	June 12, 1944	143	879	636,000	885
1945	1036	15,800	May 27, 1945	130	877	634,900	876
1946	1056	4,180	June 18, 1946	108	713	516,000	779
1947	1086	36,000	June 22, 1947	196	979	708,600	946
1948	1116	11,600	June 17, 1948	170	908	659,500	877
1949	1146	5,330	June 13, 1949	254	899	651,000	917
1950	1176	16,800	July 9, 1950	180	999	723,000	-

† Corrected.

* Not previously published.

a Bull. 140

b Revised supersedes figure published in reports of State engineer of Nebraska.

c 18th Ann. Rept. Pt. 4

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e 19th Ann. Rept., Pt. 4.

f From Congressional documents: 73d Cong., 2d. sess., H. Doc. 197, Platte River.

g From reports of State engineer of Nebraska.

h 21st Ann. Rept., Pt. 4.

337. Spring Creek at Cushing, Nebr.

Location.--Lat 41°18'00", long. 98°22'50", in SW $\frac{1}{4}$ sec. 5, T. 15 N., R. 9 W., half a mile northwest of Cushing and 2 $\frac{1}{2}$ miles upstream from mouth.

Supplemental record available.--December 1947 to May 1949, periodic discharge measurements only.

Gage.--Water-stage recorder. Altitude of gage, 1,770 ft (from topographic map).

Extremes.--1949-50: Maximum discharge, 2,560 cfs July 22, 1950 (gage height. 15.00 ft), from rating curve extended above 1,500 cfs by logarithmic plotting; minimum daily, 2.5 cfs Dec. 10, 11, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	39.4	7.45	8.86	6.45	-
1950	4.14	4.43	4.00	4.02	13.2	21.4	7.15	17.9	6.39	135	14.1	4.42	19.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	2,340	458	545	384	-
1950	254	264	246	247	733	1,310	426	1,100	590	8,320	865	263	14,410

Yearly discharge, in cubic feet per second of Spring Creek at Cushing, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1949	1146	-	-	-	-	-	-
1950	1176	2,560	July 22, 1950	2.5	19.9	14,410	-

338. Cedar River near Spalding, Nebr.

Location.--Lat 41°43'20", long. 98°27'45", in NW $\frac{1}{4}$ sec. 5, T. 20 N., R. 10 W., 40 ft downstream from highway bridge and 10 $\frac{1}{2}$ miles northwest of Spalding.

Drainage area.--794 sq mi, approximately, of which about 50 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder.

Average discharge.--6 years (1944-50) 141 cfs.

Extremes.--1944-50: Maximum discharge, 4,000 cfs June 23, 1947 (gage height, 7.50 ft), from rating curve extended above 640 cfs on basis of slope-area determination of peak flow; minimum daily, 30 cfs Jan. 30, 1946.

Remarks.--Low and medium flow regulated by power plant above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	#116	#121	#118	#126	#124	#145	137	138	164	136	110	100	#128
1946	123	121	84.1	106	110	118	104	117	122	106	108	127	112
1947	183	173	128	99.2	134	143	183	119	520	146	104	109	170
1948	119	131	127	120	156	140	127	121	131	112	105	113	125
1949	105	114	122	91.5	108	185	297	179	179	110	110	120	143
1950	121	127	125	84.4	121	178	176	201	188	324	184	176	167

* Not previously published; estimated on basis of records for station near Fullerton.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	#7,130	#7,200	#7,280	#7,750	#6,890	#8,920	8,170	8,500	9,760	8,470	6,760	5,950	#92,760
1946	7,580	7,210	5,170	6,510	6,100	7,320	6,180	7,170	7,250	6,650	6,820	7,570	81,330
1947	11,240	10,270	7,870	6,100	7,440	8,770	10,890	7,340	30,940	8,980	6,420	6,480	122,700
1948	7,330	7,820	7,820	7,380	8,980	8,590	7,550	7,420	7,790	6,910	6,450	6,720	90,760
1949	6,480	6,790	7,480	5,610	6,020	11,350	17,700	11,000	10,640	6,770	6,750	7,170	103,800
1950	7,460	7,540	7,690	5,190	6,700	10,930	10,610	12,360	11,050	19,940	11,300	10,450	121,200

* Not previously published; estimated on basis of records for station near Fullerton.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1945	1036	497	July 16, 1945	-	#128	#92,760	#126
1946	1056	264	June 19, 1946	30	112	81,330	125
1947	1086	4,000	June 23, 1947	40	170	122,700	181
1948	1116	554	Feb. 16, 1948	60	125	90,760	122
1949	1146	765	Apr. 7, 1949	77	143	103,800	146
1950	1176	1,320	July 8, 1950	55	167	121,200	-

* Not previously published.

339. Cedar River near Fullerton, Nebr.

Location.--Lat 41°23'45", long. 98°00'15", on line between SE $\frac{1}{4}$ sec. 33, T. 17 N., R. 6 W., and NE $\frac{1}{4}$ sec. 4, T. 16 N., R. 6 W., on downstream side of pier of bridge on State Highway 52, 3 miles northwest of Fullerton, and 5-3/4 miles upstream from mouth.

Drainage area.--1,200 sq mi, approximately, of which about 480 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,640.40 ft above mean sea level, datum of 1929 (tentative). Prior to Nov. 5, 1942, staff gage, Nov. 5, 1942, to June 23, 1947, water-stage recorder, and June 24, 1947, to Apr. 6, 1948, staff gage, all at same site and datum.

Average discharge.--10 years (1940-50), 242 cfs.

Extremes.--1931-32, 1940-50: Maximum discharge, 10,100 cfs July 19, 1950 (gage height, 9.64 ft); minimum daily, 33 cfs Dec. 11, 1941.

Remarks.--Natural flow of stream affected by power developments, ground-water withdrawals for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second of Cedar River near Fullerton, Nebr.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	183	194	240	155	210	301	219	198	*422	-	-	-	-
1941	185	162	170	184	240	*289	281	*247	*392	147	108	*203	*212
1942	184	172	150	165	180	232	179	200	225	129	129	173	172
1943	144	163	152	141	418	174	201	*262	*675	*208	116	147	*231
1944	151	169	150	180	239	201	311	355	318	197	157	165	215
1945	171	166	176	198	193	242	220	252	323	207	145	135	204
1946	184	171	131	194	237	226	176	303	317	177	142	218	204
1947	297	285	165	173	259	249	289	336	1,456	299	147	155	336
1948	170	206	200	193	666	298	197	183	365	282	328	147	266
1949	162	181	182	137	181	331	441	286	340	180	167	191	231
1950	191	180	147	143	205	346	284	334	318	1,580	337	244	345

* Revised.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	11,500	11,500	14,800	9,530	12,100	18,500	13,000	12,200	*25,100	-	-	-	-
1941	10,130	9,850	10,480	11,310	13,330	*16,540	15,530	*15,160	*23,310	9,030	8,660	*12,060	*153,200
1942	11,340	10,240	8,010	10,170	8,300	14,270	10,840	12,300	13,410	7,920	7,900	10,270	124,800
1943	8,880	9,890	9,370	8,690	25,210	10,690	11,940	*16,130	*40,140	*12,680	7,160	8,730	*167,500
1944	9,290	10,070	8,230	11,070	7,750	12,330	16,830	21,610	16,800	25,100	9,680	9,810	186,400
1945	10,530	11,060	10,840	12,160	10,730	14,850	13,070	15,520	19,230	12,710	8,900	8,030	147,600
1946	10,060	10,160	8,070	11,920	13,160	13,680	10,480	16,600	18,890	10,880	8,780	12,950	147,800
1947	18,240	15,760	10,140	10,640	14,380	15,290	17,210	20,660	85,470	18,370	9,060	8,220	244,400
1948	10,440	12,270	12,300	11,840	38,310	18,300	11,890	11,270	21,700	16,080	20,180	8,770	193,200
1949	9,950	11,360	11,210	8,430	8,930	20,340	26,260	17,600	20,240	11,070	10,290	11,370	187,000
1950	11,780	11,320	9,030	8,780	11,370	21,230	16,920	20,540	18,940	84,850	20,700	14,520	250,000

* Revised.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	751	-	-	-	-	-	-	-
1932	731, 1390	-	June 9, 1932	-	-	-	-	-
1941	926, 1390	*6,600	June 22, 1941	67	*212	*153,200	*211	*152,800
1942	858	1,100	June 20, 1942	33	172	124,800	170	123,100
1943	976, 1390	5,890	June 15, 1943	40	*231	*167,600	*237	*168,100
1944	1008	2,320	June 13, 1944	82	215	156,400	221	160,300
1945	1038	1,850	May 27, 1945	70	204	147,600	198	143,500
1946	1056	4,580	May 30, 1946	65	204	147,800	228	163,600
1947	1088	7,510	June 23, 1947	45	338	244,400	325	235,300
1948	1116	9,760	Feb. 28, 1948	80	268	193,200	263	190,600
1949	1148	2,180	June 1, 1949	78	231	187,000	230	166,600
1950	1176	10,100	July 19, 1950	60	345	250,000	-	-

* Revised.

* Not previously published.

340. Loup River power canal near Genoa, Nebr.

Location.--Lat 41°25', long. 97°46', in sec. 28, T. 17 N., R. 4 W., 2 miles downstream from point of diversion and $3\frac{1}{2}$ miles southwest of Genoa.

Gage.--Water-stage recorder and concrete weir. Altitude of gage is 1,580 ft (from topographic map).

Extremes.--1936-50: Maximum daily discharge, 3,410 cfs Apr. 27, 1944; minimum daily, 30 cfs Jan. 4, 1937.

Remarks.--Canal diverts from Loup River in sec. 6, T. 16 N., R. 4 W. Water is used in power plants near Monroe and Columbus and is returned to Platte River $1\frac{1}{2}$ miles downstream from Loup River. Diversion began Dec. 2, 1936.

Cooperation.--Records for water years 1937 and 1938 furnished by Loup River Public Power District.

Monthly and yearly mean discharge, in cubic feet per second of the
Loup River power canal near Genoa, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	894.4	119	83.0	110	128	135	196	583	568	553	-
1938	544	552	440	482	569	627	623	642	534	648	687	680	585
1939	573	508	478	588	462	506	537	794	778	716	864	994	651
1940	1,060	1,371	851	812	887	929	1,378	1,501	1,339	685	846	924	1,047
1941	1,485	1,431	256	1,265	1,660	1,765	2,331	1,812	2,026	892	697	1,759	1,527
1942	1,990	1,795	1,299	1,007	949	1,630	1,957	1,872	2,202	1,158	1,162	1,780	1,568
1943	1,763	1,785	1,448	1,318	1,756	1,118	1,662	1,565	1,774	1,502	796	1,410	1,487
1944	1,548	1,858	1,255	1,358	1,502	1,537	2,629	2,044	2,199	1,530	941	1,478	1,637
1945	1,775	1,728	628	1,318	1,086	1,798	2,193	1,911	2,308	1,745	1,352	1,292	1,596
1946	1,747	1,702	1,018	1,724	1,544	2,292	1,737	1,704	1,591	1,221	792	1,828	1,574
1947	2,438	2,322	1,378	1,388	1,567	1,749	2,256	1,946	2,133	2,015	896	1,425	1,792
1948	1,712	1,973	1,176	521	695	1,438	1,988	1,583	1,988	1,692	2,114	1,204	1,506
1949	1,651	1,655	1,275	1,287	1,540	1,970	2,701	2,607	2,600	1,516	1,308	1,925	1,834
1950	2,059	2,103	759	1,163	1,858	1,497	2,448	2,592	1,888	1,993	2,004	1,979	1,859

a Partial month Dec. 2-31.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	85,800	7,340	4,610	6,790	7,520	8,330	11,680	23,570	22,620	21,000	-
1938	33,440	32,830	27,030	29,630	31,600	38,570	37,450	39,460	31,770	39,900	42,280	39,270	423,200
1939	35,250	30,220	29,380	36,170	25,670	31,090	31,940	48,800	45,270	44,000	53,140	29,160	471,100
1940	65,180	81,580	52,320	49,950	51,000	57,130	82,010	92,310	79,700	42,100	52,050	55,000	760,300
1941	91,320	85,160	77,230	77,780	92,180	108,500	138,700	111,400	120,600	54,870	42,840	104,700	1,105,000
1942	122,400	106,800	79,860	61,930	52,680	100,200	116,500	115,000	131,000	71,180	71,470	105,900	1,135,000
1943	108,400	106,200	89,040	81,030	97,510	68,740	98,900	96,210	105,500	92,350	48,940	85,920	1,077,000
1944	95,170	110,600	77,160	83,310	74,890	94,510	156,400	125,700	130,800	94,100	57,850	87,350	1,188,000
1945	109,100	102,800	58,640	81,020	60,320	110,500	130,500	117,500	137,400	107,300	85,120	76,900	1,155,000
1946	107,400	101,300	62,570	106,000	85,750	140,900	103,400	104,800	94,690	75,070	48,680	108,800	1,139,000
1947	149,900	138,100	84,730	85,240	87,020	140,500	134,300	119,700	126,900	123,900	55,120	84,810	1,297,000
1948	105,200	117,400	72,290	32,020	39,950	88,320	117,000	97,350	118,400	100,130	130,000	71,620	1,094,000
1949	101,500	98,490	78,390	79,110	85,510	121,200	160,700	160,300	154,700	93,240	80,410	114,600	1,328,000
1950	126,800	125,100	46,650	71,540	103,200	92,030	145,700	159,400	112,400	122,500	123,200	117,800	1,346,000

a Partial month Dec. 2-31.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum day		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1937	956	-	-	-	-	-	286	206,700	
1938	956	1,070	Nov. 24-26, 1937	40	585	423,200	587	424,700	
1939	956	1,290	Sept. 1, 1939	52	651	471,100	795	575,300	
1940	956	2,080	June 11, 1940	44	1,047	760,300	1,123	814,960	
1941	956	3,070	June 11, 1941	56	1,527	1,105,000	1,603	1,161,000	
1942	956	3,020	June 29, 1942	103	1,568	1,135,000	1,580	1,129,000	
1943	978	3,050	July 5, 1943	90	1,487	1,077,000	1,459	1,056,000	
1944	1008	3,410	Apr. 27, 1944	49	1,637	1,188,000	1,593	1,156,000	
1945	1036	2,990	Apr. 17, 1945	34	1,596	1,155,000	1,624	1,176,000	
1946	1056	3,000	June 20, 1946	52	1,574	1,139,000	1,714	1,241,000	
1947	1086	3,020	June 23, 1947	40	1,792	1,297,000	1,684	1,219,000	
1948	1116	2,910	(a)	43	1,506	1,094,000	1,484	1,077,000	
1949	1146	3,100	May 22, 1949	74	1,834	1,328,000	1,862	1,348,000	
1950	1176	3,000	May 21, 1950	58	1,859	1,346,000	-	-	

a June 25, Aug. 13, 1948.

341. Loup River near Genoa, Nebr.

Location.--Lat 41°25'05", long. 97°43'25", in NW¹ sec. 25, T. 17 N., R. 4 W., at bridge on State Highway 39, 2 miles south of Genoa, 3 miles upstream from Beaver Creek, and 6 miles downstream from diversion dam of Loup River Public Power District.

Drainage area.--14,400 sq mi, approximately, of which about 6,000 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,540.13 ft above mean sea level, unadjusted. Aug. 17, 1928, to June 30, 1932, chain gage at present site at datum 1.49 ft higher. Apr. 26 to Dec. 22, 1949, wire-weight gage at present site and datum.

Extremes.--1928-32, 1943-50: Maximum discharge, 90,000 cfs June 23, 1947 (gage height, 10.12 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum daily, 7 cfs Feb. 3, 4, 1947.

Remarks.--Natural flow of stream affected by power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Diversion to Loup River power canal began Dec. 2, 1936. Records since October 1943 are not equivalent to previous records unless records for Loup River power canal near Genoa are added.

Monthly and Yearly mean discharge, in cubic feet per second of Loup River near Genoa, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	1,950	-
1929	2,280	2,880	1,400	1,450	1,750	4,930	4,390	3,900	3,360	2,630	1,730	2,330	2,760
1930	2,410	1,550	940	1,500	4,400	2,820	3,820	4,370	4,230	1,710	2,680	2,560	†2,730
1931	5,010	2,960	2,390	2,930	3,380	2,830	2,700	2,490	2,360	1,790	1,560	1,520	2,490
1932	1,960	1,860	3,010	1,560	3,470	2,940	2,390	2,840	5,870	-	-	-	-
1944	40.0	136	381	791	1,595	1,031	864	1,421	747	176	88.5	60.3	607
1945	53.4	186	918	714	1,432	812	236	817	1,946	459	98.9	108	642
1946	49.2	237	230	327	645	308	80.4	284	722	74.7	41.1	210	264
1947	934	192	657	294	892	1,114	530	156	7,365	351	119	86.7	1,048
1948	61.6	318	883	1,282	3,026	3,389	94.8	53.6	1,279	369	991	83.9	979
1949	55.1	481	504	230	389	2,644	966	242	1,431	51.0	49.6	243	607
1950	61.7	55.8	777	314	324	2,126	160	551	2914	574	602	99.8	840

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	116,000	-
1929	140,000	171,000	86,100	89,200	97,200	303,000	261,000	240,000	200,000	182,000	106,000	139,000	1,990,000
1930	148,000	92,200	57,800	92,200	244,000	173,000	227,000	269,000	252,000	105,000	165,000	152,000	1,980,000
1931	185,000	176,000	47,000	80,000	189,000	174,000	161,000	153,000	140,000	110,000	95,900	90,400	1,800,000
1932	21,000	111,000	185,000	95,900	200,000	181,000	142,000	175,000	349,000	-	-	-	-
1944	2,460	8,070	23,430	48,620	91,720	63,370	51,390	87,390	44,450	10,800	5,440	3,590	440,700
1945	3,280	10,580	56,460	45,930	79,520	49,910	14,030	50,260	115,800	28,240	6,080	6,450	464,500
1946	3,020	14,110	14,110	20,110	35,800	18,940	4,790	17,450	42,990	4,590	2,530	12,480	190,900
1947	57,460	11,420	40,420	18,100	49,540	68,500	31,540	9,570	438,200	21,580	7,310	5,160	758,800
1948	3,790	18,890	54,280	78,840	174,000	207,100	5,640	3,290	76,080	22,690	60,940	4,980	710,500
1949	3,390	28,650	30,990	14,110	21,620	162,600	57,500	14,880	85,130	3,130	3,050	14,460	439,800
1950	3,790	3,320	47,790	19,280	17,990	130,700	9,500	33,900	17,340	281,500	37,000	5,940	607,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	-	-	-	-	-	-	-
1929	686	20,000	Mar. 12, 1929	-	2,760	1,990,000	2,620	1,900,000
1930	701	11,200	June 4, 1930	-	†2,730	1,980,000	3,020	2,190,000
1931	716	9,350	June 21, 1931	1,200	2,490	1,800,000	2,360	1,710,000
1932	731	29,200	May 31, 1932	-	-	-	-	-
1944	1006	8,140	Apr. 24, 1944	10	607	440,700	658	477,100
1945	1036	18,800	June 10, 1945	21	642	464,500	588	425,500
1946	1056	11,000	June 18, 1946	11	264	190,900	372	269,000
1947	1086	90,000	June 23, 1947	7	1,048	758,800	1,004	728,500
1948	1116	-	-	15	979	710,500	960	696,600
1949	1146	14,100	June 1, 1949	8	607	439,800	596	451,400
1950	1176	39,300	July 9, 1950	16	840	607,800	-	-

† Corrected.

a Maximum observed.

342. Beaver Creek at Loretto, Nebr.

Location.--Lat 41°45'50" long. 98°04'50", in E½ sec. 26, T. 21 N., R. 7 W., just downstream from county highway bridge at west edge of Loretto.

Drainage area.--311 sq mi, of which about 100 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for period June 1946 to September 1950 and water temperature for period April 1948 to March 1949 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1785.95 ft above mean sea level, datum of 1929. Prior to May 14, 1945, staff gage at bridge just upstream at present datum. May 15, 1945, to Aug. 16, 1946, water-stage recorder at site 60 ft upstream from bridge at present datum.

Average discharge.--6 years (1944-50), 74.7 cfs.

Extremes.--1944-50: Maximum discharge, 4,570 cfs June 2, 1950 (gage height, 11.74 ft); minimum daily, 22 cfs Aug. 2, 1946.

Remarks.--A few small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second of Beaver Creek at Loretto, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	45.6	43.6	40.8	53.0	57.7	75.1	82.9	122	221	58.8	35.5	34.7	72.5
1946	41.5	47.1	40.6	46.0	48.0	78.8	50.2	72.5	45.7	28.9	31.0	40.1	47.6
1947	56.1	71.3	55.4	52.6	87.8	71.2	109	60.0	232	44.2	28.5	29.7	74.2
1948	39.4	53.8	55.0	52.1	119.8	92.3	58.5	50.5	54.4	60.8	75.8	35.1	*65.5
1949	41.0	52.8	61.1	50.3	62.3	224	199	108	112	43.4	35.9	44.0	86.2
1950	47.9	50.9	49.1	38.4	56.6	145	81.6	101	206	322	82.5	61.5	104

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	2,800	2,590	2,510	3,260	3,200	4,620	4,930	7,530	13,140	3,620	2,180	2,060	52,440
1946	2,550	2,800	2,500	2,830	2,670	4,850	2,990	4,460	2,720	1,780	1,910	2,390	34,450
1947	3,450	4,240	3,280	3,240	4,870	4,380	6,470	3,690	13,850	2,720	1,760	1,770	53,700
1948	2,420	3,200	3,580	3,200	*7,960	5,670	3,480	3,100	3,240	3,740	4,660	2,090	*46,140
1949	2,520	3,140	3,760	3,090	3,460	13,770	11,850	6,620	6,680	2,670	2,210	2,620	62,390
1950	2,950	3,030	3,020	2,360	3,140	8,930	4,860	6,210	12,270	19,800	5,070	3,660	75,300

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1945	1038	-	-	29	72.5	52,440	72.4	†52,390	
1946	1058	538	May 30, 1946	22	47.8	34,450	51.9	37,570	
1947	1088	*1,680	June 12, 1947	24	74.2	53,700	71.4	51,730	
1948	1118, 1390	*1,620	Feb. 28, 1948	25	*63.5	*46,140	*64.1	*46,560	
1949	1148	544	Mar. 8, 1949	30	86.2	62,390	86.6	62,390	
1950	1178	4,570	June 2, 1950	30	104	75,300	-	-	

* Revised.

† Corrected.

343. Beaver Creek at Genoa, Nebr.

Location.--Lat 41°26'20" long. 97°44'30", in W¹/₂SE¹/₄ sec. 14, T. 17 N., R. 4 W., on downstream side of pier of bridge on State Highway 22, 0.2 mile upstream from Union Pacific Railroad bridge, 1 mile southwest of Genoa, and 3 miles upstream from mouth.

Drainage area.--627 sq mi, of which about 410 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,548.75 ft above mean sea level, unadjusted. Prior to Nov. 5, 1942, chain gage at same site and datum.

Average discharge.--10 years (1940-50), 137 cfs.

Extremes.--1940-50: Maximum discharge, 21,200 cfs July 19, 1950 (gage height, 18.70 ft), from rating curve extended above 8,500 cfs; minimum daily, 25 cfs Dec. 15, 1943.

Remarks.--Natural flow of stream affected slightly by ground-water withdrawals for irrigation. Diurnal fluctuation at low flow caused by powerplants above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	44.0	47.6	69.5	71.6	188	144	164	136	156	74.8	39.7	128	103
1942	67.5	73.7	78.0	73.9	79.2	151	84.8	103	418	92.3	104	179	125
1943	65.2	72.0	74.8	67.7	211	86.6	103	100	453	124	50.3	46.5	120
1944	56.9	64.7	59.3	71.9	95.8	113	201	405	208	109	121	81.3	132
1945	67.7	74.1	71.0	78.1	98.0	150	115	129	324	175	64.7	50.8	116
1946	82.9	89.3	55.8	58.1	87.4	110	80.1	117	148	48.8	43.4	78.5	79.2
1947	140	112	89.2	79.0	148	158	168	185	681	98.0	47.6	50.6	159
1948	58.5	79.6	73.9	79.0	392	290	85.8	86.5	144	172	178	59.1	141
1949	60.4	76.9	80.8	70.8	82.7	320	277	189	321	96.5	105	80.6	149
1950	77.0	79.5	74.0	62.7	86.1	283	124	158	475	1,248	198	93.8	248

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	2,710	2,830	4,270	4,400	9,300	8,840	9,780	8,340	9,300	4,810	2,440	7,470	74,270
1942	4,150	4,380	4,870	4,540	4,400	9,280	5,050	6,350	24,720	5,670	8,410	10,840	90,260
1943	4,010	4,290	4,800	4,170	11,700	5,450	6,140	6,180	28,950	7,850	3,090	2,760	88,990
1944	3,500	3,850	3,850	4,420	5,510	8,950	11,970	24,920	12,370	6,870	7,420	4,840	98,070
1945	4,180	4,410	4,380	4,680	5,440	9,250	6,840	7,920	19,280	10,730	3,980	3,010	84,040
1946	3,870	4,130	3,430	3,570	3,740	6,770	4,760	7,200	8,780	3,010	2,670	4,670	56,600
1947	8,630	6,640	5,360	4,860	8,100	9,690	9,430	10,040	40,500	6,030	2,930	3,020	115,200
1948	3,590	4,740	4,540	4,860	22,520	17,840	5,580	5,320	8,550	10,950	2,930	3,510	102,600
1949	3,710	4,580	4,970	4,340	4,590	19,690	16,490	11,650	19,100	5,960	7,090	5,390	107,600
1950	4,730	4,730	4,550	3,860	4,780	17,400	7,380	9,570	28,250	76,720	12,190	5,590	179,800

Yearly discharge, in cubic feet per second of Beaver Creek at Genoa, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	1,130	Sept. 3, 1941	28	103	74,270	107	77,660
1942	958	*5,750	June 21, 1942	31	125	90,260	124	89,960
1943	976	2,730	June 15, 1943	37	120	86,990	118	85,090
1944	1006	2,970	May 13, 1944	25	132	96,070	135	98,000
1945	1036	1,120	June 9, 1945	40	116	84,040	114	82,540
1946	1056	1,870	May 30, 1946	27	78.2	56,600	90.9	65,800
1947	1086	2,410	June 22, 1947	34	159	115,200	148	107,500
1948	1116	3,700	Feb. 28, 1948	35	141	102,600	142	103,000
1949	1146	3,400	June 2, 1949	41	149	107,600	150	108,300
1950	1176	21,200	July 13, 1950	35	248	179,800	-	-

* Revised.

344. Loup River at Columbus, Nebr. 1/

Location.--Lat 41°24'50" long. 97°22'00" in sec. 30, T. 17 N., R. 1 E., on downstream side of bridge on U. S. Highway 30 at Columbus, 3½ miles upstream from mouth, and 14 miles downstream from Lookingglass Creek.

Drainage area.--15,200 sq mi, approximately, of which about 6,530 sq mi contribute directly to surface runoff.

Gage.--Wire-weight gage. Datum of gage is 1,430.29 ft above mean sea level, unadjusted. Oct. 13, 1894, to Sept. 30, 1915, staff or chain gage at sites half a mile or 2 miles upstream at different datums.

Mar. 9, 1931, to July 26, 1933, staff gage at site half a mile upstream.

July 27, to Nov. 20, 1933, June 3, to Dec. 3, 1935, and May 20, 1936, to Aug. 27, 1950, chain or wire-weight gage at present site.

Nov. 21, 1933, to June 2, 1935, water-stage recorder 1,500 ft downstream.

Dec. 4, 1935, to May 19, 1936, water-stage recorder 350 ft downstream.

All gages Mar. 9, 1931, to Aug. 27, 1950, at datum 2.00 ft higher than present gage.

Extremes.--1894-1915, 1931, 1933-50: Maximum discharge, 85,000 cfs June 23, 1947 (gage height, 12.0 ft present datum, from flood mark), from rating curve extended above 30,000 cfs by logarithmic plotting.

1915, 1933-50: Minimum daily discharge, 20 cfs Feb. 2-6, 1946.

Remarks.--Natural flow of stream affected by power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. The Loup River power canal diverts water from the stream at point 25 miles upstream and returns to Platte River below the mouth of Loup River. Diversion began Dec. 2, 1936 and records since that date do not include flow of Loup River power canal.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1895	a2,460	a2,680	a2,310	a2,780	a3,240	a3,250	2,754	2,986	*4,147	2,122	2,288	2,427
1896	2,450	3,010	a3,180	a2,720	a3,520	a3,580	4,081	2,985	*4,808	2,712	2,625	2,480
1897	2,732	a2,940	a2,440	a2,980	a3,150	a3,530	3,895	2,496	2,498	3,490	*1,878	1,837
1898	*3,169	a3,340	a2,890	a3,110	a2,900	a2,850	2,784	5,054	4,028	1,946	2,855	2,042
1899	2,477	a2,370	a2,030	a2,500	a2,830	a3,120	3,280	3,035	3,893	2,155	2,357	2,142
1900	1,914	a2,000	a1,720	a2,110	a2,320	a2,650	3,352	*3,360	*2,963	*2,679	*2,777	*2,591
1901	*2,610	a2,670	a2,180	a2,630	a2,790	a3,040	3,254	2,346	3,467	1,608	1,377	2,853
1902	2,243	*2,335	a2,290	a2,800	a2,970	a3,330	2,408	3,226	3,250	5,888	4,787	3,216
1903	3,011	*2,505	a2,150	a2,630	a3,130	a4,240	4,027	4,085	3,188	*3,942	5,373	2,783
1904	2,798	3,685	a3,140	a3,530	a3,850	a3,400	3,343	3,031	4,384	4,288	2,380	2,392
1905	2,941	1,981	a1,690	a2,070	a2,490	a5,010	5,492	6,665	8,117	9,087	6,945	5,837
1906	4,082	4,358	a3,770	a4,800	a4,900	a5,240	5,580	4,590	2,890	2,780	3,120	2,600
1907	3,280	3,090	a2,850	a2,340	a2,290	a3,040	a2,740	a3,290	a4,690	a3,740	a2,340	a2,450
1908	a2,280	a2,540	a2,490	a2,340	a2,400	a3,400	a3,160	a4,990	a6,440	a2,490	a2,720	a2,840
1909	a2,470	a2,490	a2,340	a3,040	a2,990	a3,040	a2,890	a3,190	a5,010	a5,190	a3,070	a2,520
1910	a2,480	a2,440	a2,490	a2,240	a2,340	a2,940	a2,440	a2,800	a2,050	a2,100	a2,940	a2,840
1911	a2,150	a2,320	a2,310	a2,390	a2,450	a2,720	a2,680	a2,630	a2,120	a1,680	a2,310	a2,670
1912	a2,680	b3,340	a2,340	a2,740	a2,580	a3,790	5,193	5,193	5,790	2,092	2,230	2,780
1913	2,450	a2,710	a2,340	a2,850	a3,010	a3,500	4,350	4,340	2,800	2,210	1,970	2,030
1914	2,180	a2,620	a2,240	a2,850	a2,390	a2,390	2,530	3,120	a6,840	2,000	a2,410	a2,250
1915	2,210	2,160	1,850	2,280	2,390	2,790	5,680	3,450	*6,980	5,500	*5,490	*5,000
1931	-	-	-	-	-	2,770	2,730	2,500	2,210	1,810	1,550	1,580
1934	2,250	2,535	2,875	1,900	2,208	2,408	2,748	1,818	1,884	1,256	1,588	2,336
1935	2,510	2,408	1,491	3,253	2,448	2,448	4,471	4,751	7,571	3,911	2,376	2,875

* Revised.

† Corrected.

* Not previously published as a complete month, missing days computed or estimated.

a From reports of State engineer of Nebraska.

b Revised, supersedes figure (acre-feet) published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River. Published figure in acre-feet.

d Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Corrected, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

1/ Published as "near Columbus", 1900-1901.

Monthly and yearly mean discharge, in cubic feet per second of Loup River at
Columbus, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1896	2,004	2,359	2,134	1,353	1,527	6,628	2,418	2,997	1,931	1,078	1,398	1,878	2,329
1897	1,962	2,184	2,448	614	1,975	2,755	2,198	2,807	3,172	2,198	1,284	2,294	2,153
1898	1,733	1,847	1,897	1,193	1,355	3,126	2,060	3,103	2,827	2,278	725	1,908	1,907
1899	1,398	1,879	2,023	1,958	1,123	3,126	2,008	2,356	1,816	676	481	1,76	1,890
1900	414	556	893	558	1,266	3,206	901	564	1,966	83.2	113	75.6	667
1901	224	538	547	968	2,114	1,531	578	770	1,163	558	61.1	263	768
1902	248	286	493	911	1,108	1,957	399	1,262	2,317	295	274	1,331	905
1903	187	227	287	148	1,236	1,078	894	298	2,965	980	100	126	703
1904	108	203	488	677	1,862	1,177	1,395	2,259	994	516	323	225	865
1905	182	433	850	859	1,402	927	460	1,023	2,368	955	232	186	617
1906	157	393	494	597	1,078	483	227	807	1,296	152	110	395	474
1907	1,360	533	715	418	1,070	1,272	852	483	8,508	895	210	178	1,322
1908	165	427	893	1,334	3,288	3,793	308	241	1,385	621	1,108	172	1,139
1909	148	461	633	255	4,495	3,343	1,483	615	1,728	214	214	390	634
1910	186	199	863	384	451	2,278	330	808	789	5,590	998	248	1,116

† Corrected.

Monthly and yearly runoff, in acre-feet

Monthly and yearly rainfall, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	1150,800	1593,000	1419,200	1700,000	1800,000	2000,000	183,800	182,400	*246,800	130,500	140,700	144,400	b2,011,000
1896	150,800	179,100	194,000	167,000	181,000	221,000	242,900	183,600	*281,000	188,800	181,700	148,400	d2,290,000
1897	168,000	189,000	150,000	184,000	175,000	215,000	219,887	153,473	148,641	121,459	*115,400	109,300	d2,020,000
1898	*194,000	199,000	184,000	181,000	174,000	186,254	215,781	239,325	118,856	163,251	119,187	d2,210,000	
1899	152,306	141,000	125,000	154,000	142,000	182,000	195,173	186,618	231,850	132,508	144,727	*15,419	e1,930,000
1900	117,887	139,000	106,000	130,000	129,000	163,000	199,468	*208,987	*162,388	*164,747	*170,757	*15,419	d1,837,000
1901	*160,475	159,000	133,000	182,000	155,000	167,000	193,623	144,250	208,300	98,934	84,668	169,785	d1,880,000
1902	137,818	139,842	141,000	172,000	185,000	205,000	143,385	196,334	193,375	348,533	293,118	191,487	d2,330,000
1903	185,116	149,046	132,000	182,000	174,000	228,000	239,633	251,171	199,698	*240,035	30,373	164,410	d2,480,000
1904	171,818	21,800	185,000	217,000	213,000	209,000	198,900	186,400	289,700	232,300	146,500	142,300	d2,410,000
1905	160,800	119,000	103,000	127,000	194,000	306,000	326,800	332,800	485,000	567,500	427,500	335,400	d3,890,000
1906	251,000	261,200	232,000	233,000	272,000	322,000	333,000	288,000	172,000	171,000	192,000	155,000	e2,930,000
1907	202,000	184,000	163,000	144,000	127,000	187,000	183,000	202,000	279,000	230,000	144,000	146,000	d2,170,000
1908	613,000	151,000	153,000	144,000	138,000	209,000	189,000	330,700	338,000	153,000	187,000	152,000	d2,290,000
1909	613,000	149,000	144,000	167,000	188,000	187,000	172,000	186,000	289,000	319,000	189,000	150,000	d2,310,000
1910	613,000	149,000	153,000	156,000	130,000	181,000	148,000	172,000	122,000	129,000	161,000	169,000	d1,920,000
1911	613,000	138,000	142,000	147,000	138,000	187,000	156,000	182,000	124,000	103,000	142,000	159,000	d1,710,000
1912	613,000	190,000	141,000	148,000	183,000	201,000	166,000	319,000	228,000	124,000	137,000	185,000	b2,640,000
1913	151,000	181,000	144,000	175,000	187,000	215,000	259,000	287,000	167,000	131,000	121,000	121,000	d2,080,000
1914	134,000	159,000	138,000	163,000	139,000	147,000	151,000	192,000	439,000	123,000	149,000	134,000	d2,080,000
1915	136,000	129,000	114,000	139,000	133,000	172,000	338,000	212,000	*414,000	338,000	*336,000	*289,000	*2,760,000
1931	-	-	-	-	-	170,000	182,000	154,000	132,000	111,000	98,300	94,000	-
1934	138,300	150,800	178,800	116,800	122,800	148,100	183,400	111,600	112,100	78,000	97,680	159,000	1,553,000
1935	154,300	143,200	83,120	91,870	180,700	180,800	268,100	292,100	460,500	172,900	148,100	153,200	2,294,000
1936	123,200	151,100	131,200	83,220	67,610	149,700	143,900	184,300	114,900	66,280	88,170	99,650	1,690,000
1937	120,800	128,800	150,500	50,040	109,700	189,400	130,700	180,300	188,700	134,600	78,940	136,500	1,559,000
1938	106,800	89,020	79,780	73,370	75,250	192,300	122,000	190,700	180,300	139,900	44,550	107,600	1,380,000
1939	85,880	93,840	124,400	119,200	82,700	192,200	119,400	146,000	114,000	55,980	29,610	10,660	1,151,000
1940	25,460	31,800	54,890	34,290	74,690	197,300	53,610	23,640	117,100	5,120	6,950	4,510	629,400
1941	15,790	32,030	33,610	59,520	117,400	94,130	34,300	47,320	89,230	34,380	4,990	15,640	556,300
1942	15,220	17,040	30,330	58,040	61,410	120,300	23,780	78,830	137,900	16,170	16,870	79,180	655,000
1943	11,630	13,800	17,620	9,100	69,640	66,320	63,180	18,550	176,600	80,290	6,170	7,510	608,700
1944	6,830	12,080	29,890	53,810	107,100	72,370	82,990	138,800	59,180	31,780	19,850	13,360	629,000
1945	9,980	28,750	62,240	52,620	57,850	67,020	27,390	62,850	143,000	80,590	14,250	11,040	591,500
1946	9,620	23,410	29,780	23,820	59,750	29,690	13,480	37,310	77,230	9,360	6,790	22,930	343,200
1947	63,590	31,700	43,980	25,800	59,420	78,200	50,680	29,710	486,270	42,630	12,930	10,460	987,200
1948	10,140	25,400	54,900	82,020	189,100	102,330	200,130	14,810	82,420	38,200	89,000	10,210	826,700
1949	9,370	27,440	38,940	15,650	27,510	209,500	88,270	37,820	102,700	14,070	13,130	23,220	803,400
1950	11,460	17,660	54,290	23,560	25,060	139,900	19,620	55,710	46,920	343,700	61,590	14,780	806,300

* Revised.

* Not previously published as a complete month, missing data computed or estimated.

a From reports of State engineer of Nebraska.

b Revised, supersedes figure published in reports of State engineer of Nebraska.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Corrected, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of Loup River at Columbus, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	(a), 1390	#20,300	June 3, 1895	-	b2,780	b2,011,000	b2,680	b2,080,000
1896	(c)	70,000	June 6, 7, 1896	-	d3,160	d2,290,000	d2,100	d2,250,000
1897	(e), 1390	#28,200	July 1, 1897	-	d2,790	d2,020,000	d2,920	d2,110,000
1898	(f), 1390	#18,000	Oct. 28, 1897	-	d3,050	d2,210,000	d2,720	d1,870,000
1899	(h)	#12,200	June 28, 1899	-	d2,660	d1,930,000	d2,560	d1,850,000
1900	(j), 1390	#15,600	June 17, 1900	-	d2,540	d1,837,000	d2,690	d1,950,000
1901	75, 1390	#14,100	June 16, 1901	-	d2,560	d1,850,000	d2,510	d1,820,000
1902	84	#15,200	July 3, 1902	-	d3,220	d2,330,000	d3,280	d2,380,000
1903	99	#20,000	Aug. 27, 1903	-	d5,430	d2,460,000	d3,530	d2,600,000
1904	151	#20,000	June 10, 1904	-	d3,630	d2,410,000	d3,080	d2,230,000
1905	172	-	May 14, 1905*	-	d5,100	d5,690,000	d5,570	d4,040,000
1906	208	#34,000	May 1, 1906	-	14,040	d2,930,000	d3,770	d2,730,000
1907	(g), 208	#16,000	Aug. 7, 1907	-	d3,000	d2,170,000	d2,850	d2,050,000
1908	(g)	#26,800	June 5, 1908	-	d3,150	d2,290,000	d3,150	d2,290,000
1909	(g)	#20,400	July 6, 1909	-	d3,190	d2,310,000	d3,190	d2,310,000
1910	(g)	#6,100	Aug. 16, 1910	-	d2,510	d1,820,000	d2,460	d1,780,000
1911	(g)	#13,300	May 14, 1911	-	d2,560	d1,710,000	b2,480	b1,790,000
1912	328	-	Mar. 29, 1912*	-	b5,500	b2,540,000	k3,450	k2,510,000
1913	356	#11,000	May 3, 1913	-	d2,880	d2,080,000	d2,840	d2,080,000
1914	386	-	June 13, 1914†	-	d2,790	d2,020,000	d2,720	d1,970,000
1915	406, 1390	-	June 4, 1915	850	*3,810	*2,760,000	-	-
1931	716	-	-	-	-	-	-	-
1934	781	9,620	Aug. 14, 1934	502	2,146	1,553,000	2,041	1,478,000
1935	786	41,500	Apr. 26, 1935	341	3,169	2,294,000	3,190	2,309,000
1936	806	-	Mar. 5, 1936	530	2,329	1,690,000	2,321	1,685,000
1937	956	21,300	July 13, 1937	220	2,153	1,559,000	1,994	1,445,000
1938	956	16,300	Sept. 13, 1938	160	1,907	1,380,000	1,934	1,400,000
1939	956	12,200	May 22, 1939	89	1,590	1,151,000	1,324	958,900
1940	956	19,000	June 7, 1940	44	867	629,400	822	596,600
1941	956	#14,400	June 22, 1941	31	768	556,300	745	539,500
1942	956	25,700	Sept. 3, 1942	50	905	655,000	877	635,100
1943	976	33,800	June 15, 1943	60	703	508,700	711	514,600
1944	1006	9,180	Apr. 24, 1944	68	865	628,000	919	687,400
1945	1036	19,600	June 10, 1945	20	817	591,500	782	566,400
1946	1056	12,400	June 19, 1946	66	474	343,200	607	439,600
1947	1086	85,000	June 23, 1947	80	1,322	957,200	1,227	888,400
1948	1116	32,300	Feb. 29, 1948	123	1,139	826,700	1,118	811,600
1949	1146	12,300	June 2, 1949	109	834	603,400	836	605,500
1950	1176	42,100	July 10, 1950	153	1,118	808,300	-	-

* Revised.

† Corrected.

‡ Not previously published.

a Bull. 140.

b Revised, supersedes figure published in reports of State engineer of Nebraska.

c 18th Ann. Rept., Pt. 4.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e 19th Ann. Rept., Pt. 4.

f 20th Ann. Rept., Pt. 4.

g From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

h 21st Ann. Rept., Pt. 4.

i Corrected, supersedes figure published in H. Doc. 197, 73d Cong. 2d sess., Platte River.

j 22nd Ann. Rept., Pt. 4.

k From reports of State engineer of Nebraska.

345. Shell Creek at Newman Grove, Nebr.

Location.--Lat 41°44'30", long. 97°45'00", in NW¼NW¼ sec. 2, T. 20 N., R. 4 W., just downstream from county highway bridge, 1 miles east of Newman Grove and 5 miles downstream from North Branch.

Drainage area.--122 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,674.87 ft above mean sea level, datum of 1929 (preliminary). Prior to Aug. 15, 1949, wire-weight gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 12,000 cfs July 18, 1950 (gage height, 20.20 ft), from rating curve extended above 2,000 cfs on basis of computation of peak flow through bridge and over road embankments; minimum daily, not determined.

Remarks.--There are no known diversions above station.

Monthly and yearly mean discharge, in cubic feet per second of Shell Creek at Newman Grove, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	3.90	0.60	-
1950	0.83	1	0.5	0.5	4.1	64.3	1.56	2.99	181	*365	13.7	1.93	*53.6

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	240	36	-
1950	51	60	31	31	226	3,950	93	184	10,750	*22,460	843	116	*38,790

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1176	-	-	-	-	-	-	-
1950	1176, 1390	12,000	July 18, 1950	-	*53.6	*38,790	-	-

* Revised.

346. Shell Creek near Columbus, Nebr.

Location.--Lat 41°31'30", long. 97°17'00", in sec. 23, T. 18 N., R. 1 E., 80 ft upstream from highway bridge, 1 mile upstream from Loseke Creek, and 7 miles northeast of Columbus.

Drainage area.--270 sq mi, approximately.

Gage.--Water-stage recorder.

Extremes.--1947-50: Maximum discharge, 5,970 cfs June 3, 1950 (gage height, 21.38 ft); minimum daily, 0.7 cfs Oct. 16, 1949.

Flood of June 2, 1947, reached a stage of 21.7 ft, from floodmark (discharge, 4,600 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	-	7.32	-
1948	6.26	11.2	11.8	19.2	304	292	14.4	17.6	110	104	121	5.21	84.0
1949	6.11	11.0	16.8	12.5	14.9	118	38.5	70.9	247	31.5	20.1	15.6	50.2
1950	8.48	7.91	9.94	6.9	3	251	19.9	41.9	320	365	90.6	11.8	95.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	-	436	-
1948	385	668	724	1,180	17,510	17,940	855	1,080	6,520	6,370	7,480	310	61,000
1949	376	653	1,030	768	823	7,240	2,290	4,360	14,680	1,930	1,230	951	36,320
1950	522	470	611	428	167	15,450	1,190	2,580	19,020	22,410	5,570	700	69,120

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1116	-	-	-	-	-	-	-
1948	1116	2,480	Mar. 1, 1948	3.2	84.0	61,000	84.4	61,280
1949	1148	3,800	June 2, 1949	2.9	50.2	36,320	49.6	35,880
1950	1176	5,970	June 3, 1950	.7	95.5	69,120	-	-

347. Platte River at North Bend, Nebr.

Location.--Lat 41°27'10", long. 96°45'50", in SE $\frac{1}{4}$ sec. 7, T. 17 N., R. 6 E., at bridge on State Highway 79, 1 mile south of North Bend and 5 miles downstream from Shell Creek.

Gage.--Wire-weight gage. Datum of gage is 1,264.25 ft above mean sea level, unadjusted.

Extremes.--1949-50: Maximum discharge, 25,000 cfs July 12, 1950, computed from graph based on gage readings; maximum gage height, 6.0 ft Mar. 7, 1950 from graph based on gage readings (backwater from ice); minimum daily discharge, 680 cfs Aug. 10, 1949.

Remarks.--Natural flow of stream affected by transmountain diversions storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	7,496	6,413	9,740	4,795	1,957	3,198	-
1950	3,051	3,829	2,673	2,081	4,471	+6,700	4,728	5,131	3,685	7,387	3,603	2,937	+4,190

† Corrected.

† Corrected.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	446,100	394,300	579,800	294,800	120,300	180,200	-
1950	187,800	27,800	184,300	127,800	248,300	412,000	281,300	315,500	218,100	454,200	221,500	174,700	†3,033,000

† Corrected.

† Corrected.

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1949	1146	-	-	-	-	-	-
1950	1176	25,000	July 12, 1950	1,500	†4,190	†3,033,000	-

† Corrected.

348. Platte River near Fremont, Nebr. 1/

Location.--Lat 41°24', long. 96°30', in sec. 35, T. 17 N., R. 8 E., at highway bridge $\frac{1}{2}$ miles south of Fremont.

Drainage area.--77,100 sq mi, approximately.

Gage.--Nonrecording gage. Altitude of gage is 1,160 ft (from topographic map). May 1911 to July 1913 chain gage at highway bridge about 6 mi downstream at different datum.

Extremes.--1911-15: Maximum discharge recorded, 29,500 cfs June 5, 1915 (gage height, 5.2 ft); minimum, not determined.

Remarks.--Natural flow of stream affected by storage reservoirs, diversion for irrigation and return flow from irrigated areas.

Monthly and yearly mean discharge, in cubic feet per second													
Water Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	1,590	2,100	2,320	2,260	-
1912	4,550	4,300	4,740	-	-	16,500	8,960	7,070	4,830	2,350	6,400	7,930	-
1913	9,820	8,780	3,360	-	-	-	10,300	8,260	3,730	-	1,940	1,720	-
1914	2,550	-	-	-	-	-	4,560	10,800	11,500	3,390	2,460	4,280	-
1915	4,710	3,940	-	-	-	-	-	11,100	17,300	11,200	12,700	8,300	-

Monthly and yearly runoff, in thousands of acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	-	-	-	-	-	-	-	-	94.6	129	143	134	-
1912	279	286	291	-	-	1,010	533	435	287	143	518	472	-
1913	592	523	207	-	-	-	613	507	222	-	119	102	-
1914	157	-	-	-	-	-	271	864	864	208	151	255	-
1915	290	234	-	-	-	-	-	682	1,030	688	781	494	-

Yearly discharge, in cubic feet per second							
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1911	308	-	-	-	-	-	-
1912	328	-	-	-	-	-	-
1913	356	-	-	-	-	-	-
1914	388	22,800	June 15, 1914	-	-	-	-
1915	408	28,500	June 5, 1915	-	-	-	-

1/ Published as "near Leshara" prior to July 1913.

349. Elkhorn River at O'Neill, Nebr.

Location.--Lat 42°26'30", long. 98°38'40", in sec. 31, T. 29 N., R. 11 W., at highway bridge half a mile south of O'Neill.

Drainage area.--651 sq mi.

Gage.--Chain gage. Prior to May 23, 1932 staff gage at same site and datum.

Extremes.--1931-32: Maximum discharge observed, 319 cfs June 1, 1932 (gage height 3.08 ft), from rating curve extended above 100 cfs; minimum observed, 8 cfs Mar. 8-12, 1932.

Remarks.--No known diversions.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	82.4	78.0	65.4	30.5	20.2	18.1	17.9	-
1932	28.1	40	40	35	45	75.3	61.8	59.5	134	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	5,070	4,640	3,900	1,810	1,240	1,110	1,070	-
1932	1,730	2,380	2,460	2,150	2,590	4,630	3,680	3,660	7,970	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	716	a155	Apr. 1, 1931	12	-	-	-	-	-
1932	731	b319	June 1, 1932	8	-	-	-	-	-

a Maximum observed during period March to September.

b Maximum observed during period March to June.

350. Elkhorn River at Ewing, Nebr.

Location.--Lat 42°16'10", long. 98°20'20", in sec. 35, T. 27 N., R. 9 W., 50 ft downstream from bridge on State Highway 108, three-quarters of a mile north of Ewing, and 1½ miles upstream from South Fork Elkhorn River.

Gage.--Water-stage recorder.

Extremes.--1947-50: Maximum discharge, 7,280 cfs Apr. 7, 1949 (gage height, 10.74 ft); minimum daily, 28 cfs Sept. 17-19, 1948, Nov. 27, 1949.
Maximum stage known, 11.32 ft June 23, 24, 1947, from floodmark (discharge, 6,600 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	47.2	34.4	-
1948	41.5	66.3	55.7	51.5	68.9	106	102	78.2	88.3	73.5	76.9	38.4	70.6
1949	51.1	51.8	62.6	45.7	53.6	1,200	2,030	290	280	72.8	53.2	72.7	355
1950	62.8	68.9	58.2	38.0	54.2	311	883	490	338	369	258	176	243

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	2,900	2,050	-
1948	2,550	3,950	3,420	3,170	3,960	6,520	6,070	4,810	5,280	4,520	4,730	2,290	51,250
1949	3,140	3,080	3,850	2,810	2,980	73,690	20,600	17,840	16,670	4,470	3,270	4,330	256,700
1950	3,680	4,100	3,580	2,340	3,010	19,100	40,860	30,100	20,080	22,690	15,880	10,450	175,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1118	*6,600	June 23, 24, 1947	-	-	-	-	-	-
1948	1116	193	June 29, 1948	28	70.6	51,250	70.8	51,400	-
1949	1146	7,280	Apr. 7, 1949	28	355	256,700	357	258,200	-
1950	1176	1,810	Apr. 2, 1950	29	243	175,800	-	-	-

* Revised.

351. South Fork Elkhorn River at Ewing, Nebr.

Location.--Lat 42°15'10", long. 98°20'20", on west line of sec 2, T. 26 N., R. 9 W., on downstream side of bridge on State Highway 108 at southeast limits of Ewing.

Gage.--Water-stage recorder. Prior to Nov. 10, 1948, staff gage at same site and datum.

Extremes.--1947-50: Maximum discharge, 1,760 cfs Apr. 5, 1949; maximum gage height, 6.12 ft Mar. 7, 1949 (backwater from ice); minimum daily discharge, 15 cfs Jan. 4-6, 16, Dec. 29, 1948 (may have been less during period of no gage-height record in 1949). Flood of June 1947 reached a stage of 7.22 ft, from floodmark.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	33.2	28.5	-
1948	30.6	43.8	29.4	21.3	48.3	57.2	42.3	38.4	49.2	33.7	49.6	35.7	39.9
1949	35.5	36.5	36.6	22.7	25.7	41.1	44.9	127	73.8	36.4	27.7	46.4	111
1950	37.5	42.1	33.2	25.7	31.1	136	135	154	179	275	159	134	112

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	2,040	1,700	-
1948	1,880	2,610	1,810	1,310	2,780	3,520	2,520	2,360	2,930	2,070	3,050	2,120	28,960
1949	2,180	2,170	2,250	1,400	1,430	25,280	26,710	7,820	4,390	2,240	1,700	2,760	80,330
1950	2,310	2,500	2,040	1,580	1,730	8,380	8,020	9,440	10,680	16,900	9,770	7,980	81,330

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1116	-	-	-	-	-	-	-
1948	1116	-	-	15	39.9	28,960	-	29,260
1949	1146	1,760	Apr. 5, 1949	15	111	80,330	111	80,580
1950	1176	-	-	17	112	81,330	-	-

352. Elkhorn River at Neligh, Nebr.

Location.--Lat 42°07'20", long. 98°01'40", in sec. 20, T. 25 N., R. 6 W., 10 ft downstream from bridge on State Highway 14 at Neligh.

Drainage area.--2,200 sq mi, approximately, of which about 1,800 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,713.88 ft above mean sea level, datum of 1949. Prior to Apr. 16, 1933, staff gage at site 30 ft downstream at present datum. Apr. 16, 1933, to Jan. 23, 1939, chain gage at bridge 10 ft upstream at present datum.

Average discharge.--20 years (1930-50), 241 cfs.

Extremes.--1930-50: Maximum discharge, about 12,000 cfs June 23, 1947 (gage height, 12.53 ft), from main channel rating curve extended above 4,900 cfs and field estimate of flow through break in highway fill; minimum daily, 12 cfs July 2, 1932.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*180	*240	*200	*190	*260	*299	322	215	95.3	55.2	40.9	50.9	*178
1932	102	160	160	135	180	273	266	208	*232	138	*161	94.9	*175
1933	125	161	138	165	145	249	199	325	105	95.1	140	95.4	162
1934	104	123	140	135	150	195	182	126	85.8	48.2	27.8	82.3	115
1935	90.8	124	165	156	183	183	301	506	891	139	60.0	89.5	240
1936	106	142	163	122	132	340	286	364	188	44.8	35.2	63.9	166
1937	79.9	117	110	67.5	107	228	176	173	121	154	94.7	55.2	124
1938	92.3	107	96.4	91.0	128	204	222	592	239	154	80.5	79.0	174
1939	84.2	125	132	138	130	194	176	127	100	47.2	44.2	30.3	111
1940	71.2	94.4	86.0	67.2	96.4	203	209	176	161	52.4	45.5	35.7	108
1941	70.6	84.7	126	149	160	191	318	185	159	105	47.5	66.5	136
1942	118	130	131	111	169	254	294	854	679	255	133	165	275
1943	144	158	136	119	150	188	293	165	483	136	84.1	110	180
1944	112	155	119	156	168	242	615	1,462	1,180	289	131	115	385
1945	144	155	145	149	205	297	366	268	582	168	106	89.8	222
1946	117	139	120	135	170	377	236	262	217	102	82.2	125	173
1947	453	416	248	190	257	334	785	256	2,222	503	115	92.8	536
1948	117	172	176	138	207	252	211	164	196	168	238	106	179
1949	128	133	165	146	175	2,008	3,141	661	551	175	149	195	635
1950	185	187	177	125	150	695	1,132	634	776	969	654	398	525

* Revised.

* Not previously published; estimated on basis of records for station at Waterloo.

Monthly and yearly runoff, in acre-feet of Elkhorn River at Neligh, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	11,100	14,300	12,300	11,700	14,400	18,400	19,200	13,200	5,550	3,390	2,510	3,030	*129,100
1932	6,270	9,520	9,840	8,300	10,400	16,800	15,800	12,800	*13,800	8,360	*9,880	5,650	*127,400
1933	7,690	9,580	8,460	10,100	8,050	15,300	11,800	20,000	6,250	5,850	8,610	5,680	117,000
1934	6,420	7,300	8,610	8,300	8,330	11,380	10,800	7,720	5,110	2,960	1,710	3,710	82,350
1935	5,580	7,360	10,150	9,620	10,140	11,240	17,920	31,140	55,020	8,570	3,690	5,320	175,800
1936	6,500	8,470	10,010	7,470	7,590	20,930	17,030	22,360	11,170	2,760	2,160	3,800	120,200
1937	4,920	6,940	8,750	4,150	5,940	14,000	10,480	10,610	7,200	9,460	5,220	3,280	89,550
1938	5,670	6,370	5,930	5,600	7,110	12,560	13,180	36,370	14,240	9,500	4,950	4,700	128,200
1939	5,180	7,440	8,130	8,470	7,210	11,940	10,440	7,820	5,960	2,900	2,720	1,800	80,010
1940	4,380	5,620	5,290	4,130	5,540	12,500	12,420	10,820	9,580	3,220	2,800	2,120	78,420
1941	4,340	5,040	7,740	9,170	8,900	11,720	18,950	11,400	9,470	6,480	2,920	3,960	100,100
1942	7,280	7,740	8,040	6,840	9,380	15,610	17,500	52,440	40,380	15,690	8,160	9,830	198,900
1943	8,880	9,420	8,350	7,290	8,340	11,570	17,410	10,180	28,740	8,330	5,170	6,540	130,200
1944	6,890	9,200	7,330	9,590	9,640	14,860	36,620	89,900	70,230	17,790	8,070	6,860	287,000
1945	8,640	9,240	8,910	9,160	11,380	18,260	21,800	16,460	34,610	10,340	6,550	5,340	160,900
1946	7,170	8,260	7,380	8,330	9,440	23,180	14,020	16,100	12,920	6,270	5,050	7,410	125,500
1947	27,870	24,730	15,280	11,660	14,280	20,520	46,710	15,720	167,900	30,910	7,090	5,520	388,200
1948	7,190	10,250	10,840	8,470	11,900	15,490	12,540	10,100	11,680	10,310	14,620	6,290	129,700
1949	7,840	7,940	10,170	8,990	9,720	123,400	186,900	40,660	32,780	10,760	9,190	11,620	460,000
1950	11,360	11,120	10,880	7,720	8,330	42,700	67,360	51,260	46,150	59,600	40,230	23,700	380,400

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	716, 1390	-	-	-	*178	*129,100	*182	*117,000	
1932	731, 1390	*408	June 11, 1932	12	*176	*127,400	*178	*127,500	
1933	746	598	May 18, 1933	58	162	117,000	157	114,000	
1934	761	458	Apr. 3, 1934	19	115	82,350	115	83,110	
1935	786, 1008	4,610	June 3, 1935	43	240	175,800	243	175,800	
1936	808	634	May 13, 1936	25	186	120,200	157	113,900	
1937	828	*630	July 30, 1937	39	124	89,550	123	88,810	
1938	858	1,020	May 18, 1938	45	130	126,200	178	129,000	
1939	878	368	May 26, 1939	19	111	80,010	103	74,550	
1940	898	663	June 20, 1940	28	108	78,420	111	80,280	
1941	928	594	Apr. 22, 1941	34	138	100,100	146	106,000	
1942	956, 1008	2,890	May 18, 1942	45	275	198,900	280	202,500	
1943	978	1,380	June 17, 1943	58	180	130,200	175	127,000	
1944	1008	4,010	May 6, 1944	50	395	287,000	400	290,800	
1945	1036	1,210	June 10, 1945	68	222	160,900	216	156,700	
1946	1056	1,280	May 24, 1946	63	173	125,500	236	170,600	
1947	1096	412,000	June 23, 1947	60	536	368,200	482	348,600	
1948	1116	878	Aug. 11, 1948	76	179	129,700	175	127,400	
1949	1146	8,890	Apr. 7, 1949	36	635	460,000	646	467,400	
1950	1176	3,270	Apr. 2, 1950	90	526	380,400	-	-	

* Revised.

* Not previously published.

a About.

353. Elkhorn River at Norfolk, Nebr. 1/

Location.--Lat 42°00'10", long. 97°25'30", in NW¼ sec. 3, T. 23 N., R. 1 W., on downstream handrail of bridge on U. S. Highway 81, 1 mile south of Norfolk and 3-3/4 miles upstream from North Branch.

Drainage area.--2,790 sq mi, approximately, of which about 2,400 sq mi contribute directly to surface runoff.

Supplemental records available.--Gage-height records at present site since May 1941 are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage. Datum of gage is 1,504.95 ft above mean sea level, datum of 1929. July 1896 to November 1903, staff gage at site a quarter of a mile downstream at different datum. Aug. 16, 1947, to Mar. 5, 1949, water-stage recorder at site 250 ft downstream at present datum.

Average discharge.--5 years (1945-50), 585 cfs.

Extremes.--1896-1903, 1945-50: Maximum discharge, 12,600 cfs June 26, 1947; maximum gage height, 12.25 ft, Feb. 28, 1948 (backwater from ice); minimum daily discharge, 60 cfs Dec. 10, 1945.

Flood of May 13, 1944 reached a stage of 11.8 ft (discharge, 14,300 cfs).

1/ Published as South Fork Elkhorn River at Norfolk, 1896 and as "near Norfolk", 1900-2.

Monthly and yearly mean discharge, in cubic feet per second of Elkhorn River at Norfolk, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1896	-	-	-	-	-	-	-	-	-	a195	210	173	-
1897	210	-	-	1,000	900	800	\$2,831	539	302	244	206	158	-
1898	209	200	200	-	-	-	464	704	*1,115	317	285	195	-
1899	236	a299	-	-	-	-	-	*701	*485	376	254	168	-
1900	217	-	-	-	-	-	*565	*711	516	223	203	220	-
1901	265	a356	-	-	-	-	648	489	1,271	765	172	269	-
1902	323	332	-	-	-	a559	651	616	490	710	354	642	-
1903	1,265	a420	-	-	-	a2,650	856	1,610	1,998	1,007	1,177	539	-
1904	248	-	-	-	-	-	-	-	-	-	-	-	-
1946	190	266	192	255	278	567	395	426	358	177	146	216	288
1947	603	636	484	304	412	559	962	455	3,825	829	199	192	785
1948	186	276	276	225	578	527	341	254	542	291	613	201	342
1949	198	211	241	250	278	2,360	3,339	947	775	305	228	304	786
1950	269	279	217	169	238	889	1,307	1,043	1,104	1,470	1,149	511	724

* Revised.

† Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1896	-	-	-	-	-	-	-	-	-	a12,000	12,900	10,300	-
1897	12,900	-	-	61,488	49,983	49,190	168,500	33,142	17,970	15,003	12,667	9,402	-
1898	12,851	11,901	12,298	-	-	-	27,610	43,288	66,350	19,492	17,524	11,603	-
1899	14,511a	17,800	-	-	-	-	-	*43,110	28,850	23,119	15,617	9,997	-
1900	13,343	-	-	-	-	-	*33,596	43,729	18,800	13,700	12,500	13,100	-
1901	16,300a	21,200	-	-	-	-	38,600	30,100	75,600	47,000	10,600	16,000	-
1902	19,900	19,700	-	-	-	a34,400	38,730	37,870	29,154	43,680	21,764	38,200	-
1903	77,770a	28,000	-	-	-	a163,000	50,956	96,996	118,899	61,918	72,371	32,073	-
1904	15,249	-	-	-	-	-	-	-	-	-	-	-	-
1946	11,700	15,800	11,200	15,850	15,480	34,870	23,490	28,170	21,350	10,870	8,990	12,840	208,400
1947	37,060	37,840	29,780	18,680	22,910	34,390	87,270	27,950	227,600	50,960	12,240	11,420	568,100
1948	11,440	18,440	16,960	13,820	33,240	32,410	20,280	15,840	20,370	17,670	37,670	11,850	248,100
1949	12,190	12,640	14,920	15,370	15,430	46,100	198,700	58,250	46,100	16,780	14,020	19,110	589,400
1950	16,560	16,820	13,380	10,410	13,180	54,680	77,740	64,130	65,710	90,910	70,880	30,410	524,400

* Revised.

† Corrected.

‡ Not previously published.

a From Congressional Documents: 73d Cong. 2d Sess; H. Doc. 197, Platte River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1896	(a)	-	-	-	-	-	-	-	-
1897	(b)	a8,390	Apr. 8, 1897	-	-	-	-	-	-
1898	(c), 1390	a3,670	June 5, 1898	-	-	-	-	-	-
1899	(d), 1390	a1,380	June 28, 1899	-	-	-	-	-	-
1900	(e), 1390	a1,250	Apr. 29, 1900	-	-	-	-	-	-
1901	75	-	-	-	-	-	-	-	-
1902	84	a2,940	Sept. 30, 1902	-	-	-	-	-	-
1903	96	a9,400	May 30, 1903	-	-	-	-	-	-
1946	1058	1,800	May 30, 1946	80	288	208,400	379	274,400	
1947	1086	12,600	June 26, 1947	128	785	568,100	702	508,200	
1948	1118	-	-	130	342	248,100	554	242,800	
1949	1148	8,780	Apr. 8, 1949	100	768	589,400	796	576,400	
1950	1178	8,200	Aug. 12, 1950	130	724	524,400	-	-	

* Not previously published.

a 18th Ann. Rept., Pt. 4.

b 19th Ann. Rept., Pt. 4.

c 20th Ann. Rept., Pt. 4.

d 21st Ann. Rept., Pt. 4.

e 22d Ann. Rept., Pt. 4.

354. Logan Creek near Uehling, Nebr.

Location.--Lat 41°42'50", long. 96°31'15", on south line of SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 9, T. 20 N., R. 8 E., on downstream side of highway bridge, 2 miles southwest of Uehling and 8 miles upstream from mouth.

Drainage area.--1,030 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,210.56 ft above mean sea level, datum of 1929. Prior to Oct. 5, 1945, chain gage at same site and datum.

Average discharge.--9 years (1941-50), 151 cfs.

Extremes.--1941-50: Maximum discharge, 13,700 cfs June 11, 1944 (gage height, 17.65 ft, from floodmarks), from rating curve extended above 5,800 cfs on basis of velocity-area study; minimum daily, 14 cfs Dec. 28, 1941, Nov. 27, 1942.
Flood of June 5, 1940, reached a stage of 18.6 ft, from floodmark (discharge, 20,000 cfs, from rating curve extended above 5,800 cfs on basis of velocity-area study).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	191	80.7	100	59.5	40.9	348	-
1942	104	49.8	39.8	45.2	41.0	279	111	79.1	193	84.4	59.0	119	101
1943	43.5	39.8	39.0	39.0	143	57.4	45.9	39.9	191	89.7	46.2	31.6	66.4
1944	32.8	40.4	31.9	48.1	122	70.2	123	554	1,247	416	249	79.3	250
1945	58.8	87.5	44.0	50.0	115	237	108	170	943	480	110	70	201
1946	60.3	52.5	37.4	45.3	312	162	62.2	153	142	72.1	54.5	52.1	101
1947	77.3	116	53.1	59.2	154	187	172	97.9	463	119	57.7	58.2	135
1948	57.7	53.9	43	50	413	279	70.8	55.2	85.4	101	105	49.2	112
1949	40.4	38.2	37.9	40.8	40.0	963	219	247	349	218	103	136	204
1950	71.4	62.5	53.3	36.8	63.2	666	103	130	206	320	242	74.0	187

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	-	-	-	-	-	-	11,350	4,980	5,980	3,660	2,520	20,740	-
1942	6,420	2,950	2,450	2,780	2,280	17,140	6,800	4,860	11,510	5,190	3,630	7,080	72,890
1943	2,670	2,360	2,400	2,400	7,930	3,530	2,730	2,450	11,360	5,520	2,840	1,880	48,070
1944	2,020	2,410	1,980	2,980	7,010	4,320	7,310	34,080	74,210	25,580	15,300	4,720	181,800
1945	3,490	4,020	2,710	3,070	6,590	14,560	6,400	10,450	55,120	27,670	6,760	4,170	145,800
1946	3,710	3,120	2,300	2,790	17,320	11,200	3,700	9,390	8,450	4,430	3,350	3,100	72,860
1947	4,750	6,930	3,260	3,640	8,530	11,490	10,240	6,020	26,750	7,290	3,550	3,540	97,790
1948	3,550	3,200	2,620	3,050	23,760	17,150	4,220	3,390	5,090	6,220	6,430	2,830	61,600
1949	2,490	2,280	2,330	2,510	2,220	59,190	13,050	15,220	20,770	13,390	6,320	8,070	147,800
1950	4,390	3,720	3,270	2,280	3,510	53,280	6,110	7,970	12,250	19,670	14,680	4,410	135,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1941	928	a3,580	Sept. 18, 1941	-	-	-	-	-	-
1942	956	a2,270	Mar. 6, 1942	14	101	72,890	94.6	68,500	
1943	976	a1,220	June 16, 1943	14	66.4	48,070	64.9	47,030	
1944	1008	13,700	June 11, 1944	18	250	181,800	256	185,700	
1945	1036	a3,940	June 6, 1945	25	201	145,800	200	144,700	
1946	1058	1,500	June 29, 1946	25	101	72,860	109	75,670	
1947	1086	3,150	June 12, 1947	30	135	97,790	127	92,220	
1948	1116	6,000	Feb. 29, 1948	-	112	61,600	109	79,330	
1949	1146	6,000	June 2, 1949	25	204	147,800	210	152,100	
1950	1176	6,350	Mar. 5, 1950	-	187	135,700	-	-	

a Maximum observed.

355. Elkhorn River at Waterloo, Nebr.^{1/}

Location.--Lat 41°19'50", long. 96°17'50" in SE $\frac{1}{4}$ sec. 21, T. 16 N., R. 10 E., 90 ft downstream from county bridge, just downstream from Rawhide Creek and 3 $\frac{1}{2}$ miles north of Waterloo.

Drainage area.--6,900 sq mi, approximately, of which about 6,500 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder at present site after July 2, 1940. Altitude of gage is 1,120 ft (from topographic map).

Apr. 28, 1899, to Nov. 21, 1903, July 20, 1913, to Sept. 30, 1915, staff gages at sites 6 miles upstream at different datums.

May 19, 1911, to July 19, 1913, weight-tape gage at site 3 $\frac{1}{2}$ miles downstream at different datum.

Aug. 18, 1928, to Apr. 12, 1934, chain gage, Apr. 13, 1934, to June 8, 1940, water-stage recorder, June 9, to July 1, 1940, chain gage, all at site 3 $\frac{1}{2}$ miles downstream at datum 1,109.60 ft above mean sea level.

Average discharge.--30 years (1899-1903, 1911-15, 1928-50), 1,022 cfs.

Extremes.--1899-1903, 1911-15, 1928-50: Maximum discharge, 100,000 cfs June 12, 1944 (gage height, 16.6 ft, from floodmark in gage well), from current-meter measurement of rating curve extended above 22,000 cfs on basis of peak flow in main channel and velocity-area studies of overflow section; minimum observed, 50 cfs Nov. 12, 1940. Maximum stage known since at least 1880, that of June 12, 1944.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	1,567	1,701	871	563	326	-
1900	361	a420	a239	a270	a150	a400	742	1,166	610	562	627	1,331	a573
1901	824	1,034	a578	a668	a369	a968	1,065	1,136	1,869	1,373	421	514	a903
1902	599	627	*600	*700	*750	a1,370	974	.931	781	3,633	1,453	1,001	*1,120
1903	2,034	1,051	a948	a1,090	a1,310	a3,400	1,938	*3,966	4,319	2,518	*3,548	3,250	b2,460
1904	1,884	1,599	-	-	-	-	-	-	-	-	-	-	-
1911	-	-	-	-	-	-	-	a1,100	1,060	908	533	344	-
1912	935	1,170	1,000	a1,150	a643	a1,680	a3,290	1,450	1,210	698	551	588	a1,230
1913	751	676	450	a520	a609	a1,600	2,270	2,870	1,330	a424	385	265	c1,010
1914	368	487	a776	a888	a479	a748	823	1,370	2,290	561	249	498	a794
1915	435	492	a490	a569	b700	1,410	b3,350	*3,070	*4,404	*5,905	2,270	3,000	b2,180
1928	-	-	-	-	-	-	-	-	-	-	a329	304	-
1929	584	763	a651	a441	a301	1,350	1,320	1,400	2,470	1,600	917	508	a1,000
1930	553	591	150	250	1,100	811	1,090	3,820	1,220	407	948	518	955
1931	546	707	599	558	779	763	819	724	700	300	208	385	588
1932	379	584	688	727	998	2,500	1,010	1,770	2,170	474	1,250	598	1,100
1933	492	483	379	485	427	1,130	993	1,090	405	935	429	415	641
1934	325	398	450	400	576	632	638	327	943	485	151	289	462
1935	299	389	283	297	451	610	851	1,317	1,761	474	409	294	615
1936	279	365	368	268	286	*2,386	718	725	563	173	210	635	*583
1937	235	281	295	220	367	1,030	637	796	1,033	571	590	369	538
1938	358	330	300	279	355	803	759	1,084	655	1,163	354	906	612
1939	287	375	394	359	275	1,129	570	571	441	290	201	878	417
1940	150	240	248	202	256	632	599	599	4,395	446	672	230	718
1941	242	284	316	422	1,015	1,178	1,182	759	861	469	199	632	625
1942	507	469	411	318	445	1,425	893	1,171	2,045	1,135	563	715	843
1943	428	425	358	417	1,103	591	657	528	1,871	750	317	246	635
1944	266	368	328	389	554	816	1,558	4,485	11,300	1,920	1,054	717	1,971
1945	477	480	405	539	1,027	2,547	1,122	1,461	4,487	2,685	694	432	1,361
1946	443	440	391	439	1,121	1,149	770	882	1,089	524	317	466	665
1947	1,041	1,251	812	577	835	1,183	1,894	1,198	7,716	1,992	517	384	1,610
1948	373	574	543	507	1,511	2,798	853	849	898	840	1,742	762	1,002
1949	461	528	483	555	508	6,999	5,030	2,347	2,842	1,163	654	875	1,875
1950	590	555	458	355	542	3,508	1,763	1,720	2,310	3,320	3,029	929	1,584

* Revised.

† Not previously published; estimated on the basis of records in Lower Loup Basin.

‡ From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River, Published figure in acre-feet.

b Revised, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

c Corrected, supersedes figure (acre-feet) published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

^{1/} Published as "at Arlington" 1899-1903, July 1915-1915.

Monthly and yearly runoff, in acre-feet of Elkhorn River at Waterloo, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	-	-	-
1900	22,197	25,000	14,700	16,800	18,610	24,800	44,152	98,351	101,217	53,558	34,618	19,398	a416,000
1901	50,668	61,527	35,800	41,100	20,500	59,500	63,372	69,850	111,213	84,422	25,888	30,585	a654,000
1902	36,831	37,309	38,900	43,000	41,700	84,000	57,950	57,240	46,485	22,550	89,341	59,560	a814,000
1903	125,050	62,530	58,300	67,000	72,700	206,000	115,200	245,206	256,998	154,703	216,182	193,388	b1,780,000
1904	115,843	83,300	-	-	-	-	-	-	-	-	-	-	-
1911	-	-	-	-	-	-	-	a87,500	63,100	55,800	32,800	20,500	-
1912	57,500	69,800	61,500	70,800	37,000	103,000	a196,000	87,900	72,000	42,900	57,200	35,000	a890,000
1913	44,900	40,200	27,700	32,000	33,800	98,300	135,000	178,000	79,100	28,100	23,700	15,800	c735,000
1914	22,500	29,000	47,700	54,800	28,800	46,000	49,000	84,200	136,000	34,500	15,300	29,800	a575,000
1915	26,700	29,500	30,100	35,000	38,900	86,700	198,000	a69,000	a62,000	a65,000	40,000	179,000	b1,578,000
1928	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	35,900	45,400	40,000	27,100	16,700	83,000	78,600	86,100	147,000	98,400	37,900	30,200	a726,000
1930	34,000	35,200	9,220	15,400	61,100	49,900	64,900	235,000	72,600	25,000	58,300	30,800	691,000
1931	35,800	42,100	36,800	34,300	43,300	48,900	48,700	44,500	41,700	18,400	12,800	22,900	426,000
1932	25,300	34,800	42,300	44,700	57,400	154,000	80,100	109,000	129,000	29,100	76,900	35,800	796,000
1933	30,300	28,700	23,300	29,800	23,700	69,500	59,100	67,000	24,100	57,500	26,400	24,700	484,000
1934	20,010	23,560	27,670	24,600	32,010	38,840	37,870	20,110	56,140	29,800	8,040	16,000	336,800
1935	18,400	23,140	16,190	18,290	25,080	37,480	49,470	60,980	104,800	29,160	25,150	17,490	446,800
1936	17,130	21,720	22,610	16,370	16,430	a46,700	42,710	44,590	33,530	10,680	12,890	37,780	*423,100
1937	14,470	16,710	18,130	13,530	21,500	63,340	37,880	48,940	61,440	35,110	36,280	21,980	389,500
1938	21,990	19,680	18,460	17,170	19,730	49,380	43,970	66,630	38,960	17,510	21,790	53,910	443,200
1939	17,660	22,330	24,220	22,080	15,280	69,410	33,940	35,100	26,240	17,850	12,360	5,230	301,700
1940	9,240	14,300	15,250	12,390	14,750	38,850	36,650	56,820	261,500	27,440	41,310	13,700	521,200
1941	14,890	18,920	19,450	25,930	56,390	72,300	70,320	46,650	51,240	28,830	12,220	37,620	452,800
1942	31,200	27,930	25,260	19,670	24,730	87,850	53,130	71,990	121,500	69,610	34,620	42,520	610,100
1943	26,300	25,310	22,040	25,630	61,230	36,370	39,080	32,350	111,300	48,120	19,490	14,630	459,800
1944	16,360	21,920	20,160	23,910	31,670	50,190	92,710	72,750	70,670	50,118,000	64,810	42,660	1,431,000
1945	29,360	28,580	24,910	33,180	67,060	156,600	66,770	89,850	267,000	163,900	42,650	25,680	986,500
1946	27,260	26,210	24,060	27,000	62,280	70,680	45,850	54,260	64,790	32,220	19,470	27,720	481,800
1947	64,000	74,450	49,930	35,500	46,390	72,710	112,700	73,630	459,200	202,120	51,770	22,840	1,168,000
1948	22,940	34,150	33,420	31,180	86,900	171,900	49,560	39,910	53,450	51,660	107,100	45,310	727,500
1949	28,350	31,410	28,460	34,100	28,090	430,400	299,500	144,300	189,100	71,530	40,200	52,090	1,357,000
1950	36,280	35,000	28,790	23,640	50,130	203,300	104,900	105,600	137,400	204,200	186,200	55,220	1,147,000

* Revised.

† Corrected.

* Not previously published; estimated on the basis of records in Lower Loup Basin.

a From Congressional documents: see footnote to preceding table.

b Revised; see footnote to preceding table.

c Corrected; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1899	(a)	*3,700	June 13, 1899	-	-	-	-
1900	(b)	*4,180	Sept. 13, 1900	-	c573	c416,000	c691
1901	75	*4,740	June 23, 1901	-	c903	c654,000	*852
1902	64	*7,780	July 10, 1902	-	*1,120	*814,000	*1,310
1903	99	*8,680	July 3, 1903	-	d2,460	d1,770,000	-
1904	98	-	-	-	-	-	-
1911	306	*3,670	June 30, 1911	-	-	-	-
1912	326	-	-	-	c1,230	c890,000	c1,120
1913	356	*5,740	May 18, 1913	-	e1,010	e735,000	c993
1914	386	*5,750	June 16, 1914	-	c794	c575,000	c778
1915	408, 1390	*19,600	July 17, 1915	-	d2,180	d1,578,000	-
1928	886	-	-	-	-	-	-
1929	886	6,620	June 19, 1929	-	c1,000	c726,000	c943
1930	701	12,600	May 12, 1930	-	955	691,000	1,003
1931	716	2,120	Nov. 21, 1930	-	588	426,000	574
1932	731	10,900	May 7, 1932	214	1,100	796,000	1,071
1933	746	7,020	July 13, 1933	-	641	464,000	623
1934	761	8,040	June 9, 1934	121	462	354,800	444
1935	768	-	-	130	615	445,600	621
1936	806, 1390	*16,000	Mar. 8, 1936	76	*583	*423,100	*566
1937	826	2,920	June 20, 1937	131	536	389,300	553
1938	856	7,450	July 8, 1938	145	612	443,200	618
1939	876	7,500	May 13, 1939	64	417	301,700	382
1940	896	22,900	June 7, 1940	104	718	521,200	735

* Revised.

* Not previously published.

a 21st Ann. Rept. Pt. 4.

b 22d Ann. Rept. Pt. 4.

c From Congressional documents: 73d Cong., 2d sess., H. Doc. 197, Platte River.

d Revised, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

e Corrected, supersedes figure published in H. Doc. 197, 73d Cong., 2d sess., Platte River.

Yearly discharge, in cubic feet per second of Elkhorn River at Waterloo, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	7,080	Mar. 10, 1941	78	625	452,800	671	485,900
1942	956	8,500	June 20, 1942	200	843	810,100	828	599,400
1943	976	8,570	June 14, 1943	218	635	459,800	614	444,800
1944	1008	100,000	June 12, 1944	120	1,971	1,431,000	2,005	1,455,000
1945	1038	13,600	July 17, 1945	180	1,381	986,500	1,384	980,200
1946	1056	5,720	Feb. 7, 1946	220	865	481,800	819	592,800
1947	1088	14,100	June 13, 1947	250	1,810	1,186,000	1,475	1,068,000
1948	1116	-	-	290	1,002	727,500	999	725,200
1949	1146	21,000	Mar. 7, 1949	250	1,875	1,357,000	1,886	1,385,000
1950	1176	16,700	Mar. 6, 1950	190	1,584	1,147,000	-	-

* Revised.

* Not previously published.

356. Platte River near Ashland, Nebr.

Location.--Lat 41°03'30", long. 96°19'30", on line between secs. 29 and 32, T. 13 N., R. 10 E., on downstream side of pair of bridge on U. S. Highway 6, 100 ft downstream from Chicago, Burlington and Quincy Railroad bridge, 2 miles upstream from Salt Creek, and 3 miles northeast of Ashland.

Drainage area.--83,800 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,052.51 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1929, chain gage at former highway bridge half a mile upstream at datum 3.32 ft higher. Oct. 1, 1929, to Oct. 7, 1933, staff or chain gage at former bridge; Oct. 14, 1933, to Dec. 10, 1938, water-stage recorder at site 950 ft upstream from former bridge; Dec. 11, 1938 to June 16, 1946, water-stage recorder at site of former bridge; all at datum 2.28 ft higher than present datum.

Extremes.--1928-50: Maximum discharge, 107,000 cfs June 12, 1944, includes overbank flow caused by breaking of dikes; minimum daily, 285 cfs Aug. 18, 1941.

Remarks.--Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions and ground-water withdrawals for irrigation, and return flow from irrigated areas. These factors have been changing throughout the history of the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	2,120	-
1929	4,180	7,470	4,240	3,500	3,400	12,400	10,700	10,600	16,000	6,630	2,140	4,270	7,120
1930	6,870	5,860	2,000	3,100	10,800	6,820	8,600	16,100	10,700	2,380	4,420	5,650	8,860
1931	8,140	7,500	6,580	6,510	8,820	7,070	7,830	5,860	3,790	1,910	1,740	2,340	5,800
1932	2,400	3,840	5,880	3,190	8,920	11,600	8,420	5,610	12,500	2,350	5,680	2,860	5,790
1933	3,610	3,580	2,400	4,500	4,320	8,780	6,500	8,810	3,670	4,850	2,590	3,530	4,770
1934	3,256	4,436	4,551	3,807	5,390	5,818	3,958	2,051	2,847	1,473	1,832	2,133	3,408
1935	2,692	2,663	1,787	2,333	5,398	5,247	5,406	9,548	20,460	3,725	2,464	3,148	5,595
1936	2,278	3,872	3,584	2,086	1,992	12,850	3,749	4,220	2,695	875	1,074	1,996	3,435
1947	1,695	2,275	1,909	829	2,983	10,160	3,970	3,595	4,943	2,449	1,934	2,125	3,257
1938	2,229	2,662	2,936	3,912	2,580	8,011	4,322	6,518	4,720	5,913	1,616	4,808	4,199
1939	2,283	3,078	4,099	4,135	2,172	7,788	6,200	3,868	3,828	2,034	1,608	922	3,510
1940	1,470	1,948	2,028	1,288	2,357	5,708	3,579	3,049	7,499	1,033	1,569	898	2,694
1941	1,642	2,173	1,871	1,888	4,847	5,160	4,981	3,744	4,593	1,741	658	2,610	2,987
1942	2,905	2,796	2,465	2,483	3,018	6,704	4,089	12,440	12,540	4,648	1,887	5,409	5,137
1943	2,763	2,971	2,900	2,672	6,225	4,448	5,221	4,020	9,030	4,455	1,196	1,563	4,080
1944	1,717	3,022	2,116	3,675	4,898	6,282	9,968	11,900	15,800	4,825	2,331	3,187	5,798
1945	2,898	3,750	3,261	4,190	4,921	7,610	5,586	6,817	14,370	7,242	2,572	2,190	5,425
1946	3,718	3,520	2,397	4,437	6,389	6,461	3,858	3,866	5,424	2,171	1,260	3,234	3,873
1947	6,492	6,875	4,961	3,277	5,278	7,240	8,250	5,219	27,153	9,717	2,021	2,215	7,539
1948	2,553	3,908	4,188	3,035	6,593	14,350	5,123	3,335	4,898	3,877	6,920	2,380	5,073
1949	2,527	3,833	3,407	2,882	4,380	19,760	12,430	6,672	13,880	6,699	2,378	3,668	7,051
1950	3,789	4,575	3,198	2,539	5,004	10,470	6,560	7,537	8,521	11,410	6,845	3,525	8,012

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	126,000	-
1929	257,000	444,000	261,000	215,000	189,000	762,000	637,000	652,000	952,000	408,000	132,000	254,000	5,160,000
1930	410,000	337,000	123,000	191,000	600,000	419,000	512,000	690,000	637,000	100,445	202,272	300,336	4,970,000
1931	501,000	454,000	403,000	400,000	479,000	435,000	466,000	348,000	226,000	117,000	107,000	139,000	4,080,000
1932	148,000	17,000	47,000	19,000	313,000	371,000	323,000	345,000	744,000	103,444	30,348	101,700	4,210,000
1933	226,000	13,000	148,000	277,000	200,000	339,000	367,000	458,000	218,000	100,988	100,519	102,210	3,450,000
1934	200,800	264,000	278,000	280,221	800,299	400,357	700,238	800,126	1,100,189	400,800	55,944	800,129	2,487,000
1935	165,600	170,400	109,900	143,400	299,700	322,800	321,800	587,100	1,217,000	229,000	151,500	187,400	3,905,000

Monthly and yearly runoff, in acre-feet of Platte River near Ashland, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	140,100	128,500	220,400	128,300	114,600	790,100	223,100	259,500	160,400	53,780	66,020	118,800	2,494,000
1937	116,500	135,400	117,600	50,990	185,700	624,800	236,300	221,000	294,100	150,600	118,900	126,500	2,358,000
1938	137,100	183,400	180,500	240,600	143,500	492,600	257,200	400,800	280,900	353,600	99,370	286,100	3,040,000
1939	139,100	183,200	252,000	254,200	120,600	478,900	358,900	237,800	227,800	125,100	98,840	54,870	2,541,000
1940	80,410	115,900	124,700	77,970	135,600	350,900	212,900	187,500	446,200	63,490	96,500	53,420	1,955,000
1941	101,000	129,300	115,100	116,100	269,200	317,300	296,400	230,200	273,300	107,000	40,460	167,200	2,163,000
1942	178,600	166,400	151,600	152,700	167,500	412,200	243,300	764,600	746,000	298,100	116,100	103,521,900	3,719,000
1943	169,900	176,800	301,164,300	164,300	273,400	510,700	247,200	205,537,300	272,600	70,73,550	92,980		2,954,000
1944	106,600	179,800	130,100	226,000	281,600	386,200	593,200	731,800	945,000	296,700	143,300	189,600	4,209,000
1945	178,200	222,000	200,500	257,700	273,300	467,900	320,500	419,200	854,800	445,300	158,100	130,300	3,928,000
1946	228,600	209,400	147,400	272,800	354,800	397,300	229,600	237,700	322,600	133,500	77,450	192,500	2,804,000
1947	522,100	409,100	506,200	201,500	293,000	445,200	490,900	320,900	1,618,000	597,500	124,300	131,800	5,458,000
1948	163,100	232,400	253,700	186,600	351,800	882,100	304,800	205,000	287,900	238,400	425,500	141,800	3,683,000
1949	155,400	228,100	209,500	177,200	243,300	1,215,000	739,700	533,200	825,700	411,900	146,200	219,500	5,105,000
1950	231,700	272,200	196,600	156,100	277,900	643,600	390,300	463,500	398,000	701,900	420,300	209,800	4,352,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	-	-	-	-	-	-	-
1929	686	a	Mar. 13, 1929	-	7,120	5,180,000	7,000	5,070,000
1930	701	39,800	Feb. 19, 1930	-	6,860	4,970,000	7,510	5,440,000
1931	716	18,300	Oct. 14, 1930	1,270	5,600	4,060,000	4,740	3,430,000
1932	731	58,000	Feb. 29, 1932	1,000	5,790	4,210,000	5,820	4,080,000
1933	740	19,800	May 8, 1933	-	4,770	3,480,000	4,990	3,613,000
1934	761	14,200	Mar. 8, 1934	386	3,408	2,467,000	2,998	2,170,000
1935	786	44,400	June 7, 1935	474	5,395	3,908,000	5,879	4,038,000
1936	806	48,000	Mar. 5, 1936	800	5,458	2,494,000	5,148	2,284,000
1937	826	24,800	Mar. 6, 1937	418	3,287	2,358,000	3,405	2,485,000
1938	856	40,100	July 8, 1938	750	4,199	3,040,000	4,358	3,139,000
1939	876	13,400	Mar. 21, 1939	573	3,510	2,641,000	3,174	2,298,000
1940	896	*32,500	June 8, 1940	463	2,694	1,956,000	2,713	1,970,000
1941	926	21,700	May 22, 1941	285	2,967	2,183,000	3,198	2,314,000
1942	956	*44,100	June 21, 1942	520	5,137	3,719,000	5,178	3,747,000
1943	976	56,000	June 14, 1943	652	4,080	2,854,000	3,829	2,844,000
1944	1006	107,000	June 19, 1944	980	5,798	4,898,000	6,053	4,594,000
1945	1036	36,800	June 13, 1945	1,160	5,425	3,922,000	5,404	5,912,000
1946	1056	21,800	June 19, 1946	553	3,873	2,804,000	4,774	3,456,000
1947	1086	79,400	June 25, 1947	920	7,559	5,458,000	6,727	4,870,000
1948	1116	58,500	Mar. 1, 1948	1,200	5,073	3,683,000	4,996	3,827,000
1949	1146	*46,000	Mar. 8, 1949	1,310	7,051	5,105,000	7,189	5,212,000
1950	1176	47,900	July 20, 1950	2,000	6,012	4,352,000	-	-

* Revised.

* Not previously published.

a Discharge uncertain, previously published figures of 36,000 cfs too low.

357. Salt Creek at Lincoln, Nebr.

Location.--Lat 40°50'50", long. 96°40'50", in SW $\frac{1}{4}$ sec. 7, T. 10 N., R. 7 E., on downstream side of pier of bridge on North 27th Street at north edge of Lincoln, and 1 mile downstream from Oak Creek.

Gage.--Water-stage recorder at stages above 6.2 ft. Wire-weight gage. Datum of gage is 1,113.6 ft above mean sea level, datum of 1929.

Extremes.--1949-50: Maximum discharge, 27,800 cfs May 9, 1950 (gage height, 26.05 ft); minimum daily, 31 cfs Sept. 10, 1950.

Flood of May 9, 1950 may have been equaled or exceeded in discharge by flood of July 6, 1908 which reached a stage of 33.6 ft. Channel changes since 1908 have materially altered the stage-discharge relation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	130	58.7	55.2	47.4	167	154	64.1	863	120	90.9	180	87.9	169

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	8,000	3,490	3,390	2,910	9,280	9,480	3,810	53,080	7,130	5,590	11,080	5,230	122,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1176	27,800	May 9, 1950	31	169	122,500	-	-

358. Wahoo Creek at Ithaca, Nebr.

Location.--Lat 41°08'40", long. 96°32'20", in northeast corner sec. 32, T. 14 N., R. 8 E., on downstream side of bridge on State Highway 63, half a mile south of Ithaca.

Drainage area.--272 sq mi.

Gage.--Wire-weight gage and crest-stage indicator. Datum of gage is 1,110.31 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 8, 1950, chain gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 5,430 cfs Feb. 28, 1950 (gage height, 21.08 ft); minimum daily, 10 cfs Jan. 3-5, 1950.

Remarks.--Several small pump diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	41.6	25.6	23.6	19.4	166	144	27.4	92.2	41.6	38.1	124	20.0	63.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	2,560	1,620	1,450	1,190	9,220	8,840	1,630	5,670	2,480	2,340	7,620	1,190	45,710

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1950	1176	5,430	Feb. 28, 1950	10	63.1	45,710	-	-	

359. Silver Creek at Ithaca, Nebr.

Location.--Lat 41°09'50", long. 96°31'25", in NE $\frac{1}{4}$ sec. 28 (corrected), T. 14 N., R. 8 E., on downstream side of highway bridge, half a mile east of Ithaca.

Drainage area.--72 sq mi, approximately.

Gage.--Wire-weight gage and crest-stage indicator. Datum of gage is 1,120.96 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 8, 1950, staff gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 940 cfs Feb. 28, 1950 (gage height, 10.80 ft); minimum daily, 3.9 cfs July 30 to Aug. 4, 1950.

Remarks.--No known diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	6.37	5.30	8.41	5.24	+24.5	35.7	5.51	7.79	4.95	4.95	33.7	5.07	12.3

† Corrected

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	392	318	517	322	1,360	2,200	328	478	295	305	2,070	302	8,880

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1950	1176	940	Feb. 28, 1950	3.9	12.3	8,880	-	-	

360. Salt Creek near Ashland, Nebr.

Location.--Lat 41°02'50", long. 96°20'30", in SW $\frac{1}{4}$ sec. 31, T. 13 N., R. 10 E., on downstream side of bridge on U. S. Highway 6, 1 mile east of Ashland, and 2 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--1,640 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1,046.64 ft above mean sea level, datum of 1929 (tentative adjustment). Prior to Mar. 4, 1949, water-stage recorder at same site and datum.

Extremes.--1947-50: Maximum discharge observed, 26,100 cfs Mar. 6, 1949 (gage height, 14.14 ft); minimum daily, 47 cfs July 24, 1948.
Flood of June 13, 1947, reached a stage of 15.13 ft, from floodmark (discharge, 21,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	100	106	115	121	1,422	1,951	188	200	269	869	749	360	554
1949	115	224	154	149	349	3,959	291	932	1,777	421	256	479	761
1950	243	132	110	100	138	511	148	1,009	202	269	477	133	292

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	6,170	6,310	7,090	7,430	81,780	118,700	11,200	12,280	15,980	53,440	46,030	21,450	387,900
1949	7,040	13,320	8,220	9,190	19,360	243,400	17,310	57,330	105,700	25,870	15,760	28,480	551,000
1950	14,950	7,840	6,790	6,150	7,680	31,430	8,800	62,050	12,050	16,560	29,330	7,890	211,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1948	1116	20,100	Mar. 19, 1948	47	534	387,900	547	396,900	
1949	1146	a28,100	Mar. 6, 1949	72	761	551,000	765	552,000	
1950	1176	a19,300	May 9-10, 1950	53	292	211,500	-	-	

a Maximum observed.

WAUBONSIE CREEK BASIN

361. Waubonsie Creek near Bartlett, Iowa

Location.--Lat 40°53', long. 95°45', in NE $\frac{1}{4}$ sec. 11, T. 70 N., R. 43 W., at bridge on Fremont County highway M, 2.5 miles east of Bartlett, and 4.5 miles west of Tabor..

Drainage area.--30 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 936.96 ft above mean sea level, datum of 1929. Auxiliary water-stage recorder for stages above 15.7 ft Jan. 10, 1946, to May 15, 1947, June 5, 1947 to May 8, 1950; and above 12.0 ft May 16 to June 4, 1947, at same site and datum.

Extremes.--1946-50: Maximum discharge, 14,500 cfs May 8, 1950 (gage height, 37.8 ft, from floodmark), from rating curve extended above 800 cfs on basis of slope-area determinations at gage heights 32.83 ft and 37.8 ft; minimum daily, 0.1 cfs Aug. 2-4, 1946.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	10.1	13.7	5.25	3.79	7.78	1.58	5.28	94.6	-
1947	14.2	1.79	1.29	2.59	3.08	5.11	15.4	5.87	152	22.3	5.97	2.20	19.1
1948	5.10	2.25	1.98	1.54	11.5	19.8	5.88	2.89	3.72	4.61	7.61	16.2	6.54
1949	1.51	7.00	2.34	14.3	23.8	34.8	5.81	6.91	78.2	6.50	4.31	8.68	16.0
1950	3.55	2.95	2.08	.76	3.62	17.8	5.74	139	77.4	55.1	21.3	8.40	26.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	559	841	312	233	463	85	324	5,630	-
1947	872	107	80	147	170	314	915	361	9,020	1,370	367	131	13,850
1948	190	134	121	95	661	1,220	219	178	221	284	468	962	4,750
1949	95	417	144	877	1,310	2,130	346	425	4,850	400	265	517	11,570
1950	219	176	128	47	201	1,100	342	8,550	4,600	2,030	1,310	500	19,200

WAUBONSIE CREEK BASIN

Yearly discharge, in cubic feet per second of Waubonsie Creek near Bartlett, Iowa											
Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1946	1176	12,500	Sept. 4, 1946	0.1	-	-	-	-	-	-	-
1947	1176	9,400	June 4, 1947	.6	19.1	0.637	8.67	13,850	18.3	8.29	13,240
1948	1176	82,700	Feb. 27, 1948	.6	8.54	.218	2.97	4,750	6.83	3.10	4,980
1949	1176	10,300	June 27, 1949	1.0	16.0	.533	7.25	11,570	15.8	7.17	11,440
1950	1176	14,500	May 8, 1950	.5	26.5	.983	12.02	19,200	-	-	-

a About.

WEeping WATER CREEK BASIN

362. Weeping Water Creek at Union, Nebr.

Location.--Lat 40°48'50", long. 95°55'45", in NW¼ sec. 26, T. 10 N., R. 13 E., at bridge on U. S. Highway 34, a quarter of a mile west of Union and three-quarters of a mile downstream from South Branch Weeping Water Creek.

Drainage area.--238 sq mi.

Supplemental records available.--1947-49, peak stages only, furnished by Corps of Engineers, and December 1949 to February 1950, gage heights only in files of Geological Survey, Lincoln, Nebr., district office.

Gage.--Wire-weight gage. Datum of gage is 938.78 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 28, 1950, chain gage at same site and datum.

Extremes.--March to September 1950: Maximum discharge, 60,300 cfs May 9, 1950 (gage height, 29.8 ft, from floodmark), from rating curve extended above 11,000 cfs on basis of determination of peak flow through bridges and over highway embankment; minimum daily, 4.4 cfs Apr. 20, 1950.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. The year
1950	-	-	-	-	-	41.8	11.6	910	120	154	541	40.9 -

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. The year
1950	-	-	-	-	-	2,570	689	55,970	7,150	9,460	33,260	2,440 -

MISSOURI RIVER MAIN STEM

363. Missouri River at Nebraska City, Nebr.

Location.--Lat 40°40'35", long. 95°50'10", in SW¼ sec. 10, T. 8 N., R. 14 E., at Waubonsie Highway Bridge at Nebraska City.

Drainage area.--414,400 sq mi, approximately.

Supplemental records available.--Gage-height records collected in this vicinity August 1878 to December 1899 are contained in reports of Missouri River Commission.

Gage.--Water-stage recorder. Datum of gage is 903.94 ft above mean sea level, datum of 1929.

Aug. 1, 1878, to Oct. 30, 1888, inclined masonry gage 0.5 mile downstream and Oct. 31, 1888, to Dec. 31, 1899, cable gage on railroad bridge 50 ft downstream at 491.80 ft lower datum (St. Louis directrix).

Aug. 12, 1929, to June 27, 1930, chain gage on railroad bridge and June 27, 1930, to Oct. 22, 1931, wire-weight gage at present site and datum.

Average discharge.--21 years (1929-50), 33,350 cfs.

Extremes.--1929-50: Maximum discharge, 214,000 cfs June 14, 1944 (gage height, 19.70 ft); maximum gage height, 25.8 ft Mar. 6, 1949 (ice jam); minimum discharge, 1,600 cfs Dec. 31, 1946 (discharge measurement); minimum gage height observed, 1.2 ft Jan. 1, 1940.

Remarks.--Flow partly regulated by Fort Peck Reservoir.

Monthly and yearly mean discharge, in cubic feet per second, of Missouri River at Nebraska City, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929													
1930	24,000	24,100	10,200	15,400	30,500	58,800	52,900	64,400	55,900	34,400	24,800	18,800	34,900
1931	25,300	24,900	15,100	14,700	25,300	24,800	28,400	21,500	58,000	25,900	15,100	12,800	22,200
1932	15,400	15,300	12,100	11,500	19,800	42,000	42,400	48,800	93,400	61,500	31,600	20,300	34,200
1933	18,800	15,900	7,450	15,800	14,000	37,900	42,500	48,100	70,800	46,000	19,600	25,500	30,200
1934	18,700	16,720	14,550	11,850	19,130	30,200	28,080	24,690	35,150	24,550	11,480	10,090	20,000
1935	11,050	14,020	8,163	7,708	16,710	21,460	28,590	36,400	78,280	56,540	25,640	14,220	28,400
1936	11,500	12,400	10,150	7,584	8,521	82,820	36,980	34,530	41,390	24,540	15,830	15,070	23,270
1937	11,070	12,440	10,840	8,710	10,552	31,930	34,710	24,240	31,970	57,200	26,300	11,580	28,020
1938	12,580	12,990	7,903	10,740	12,820	47,980	29,570	30,110	47,220	84,780	33,890	40,410	30,980
1939	24,110	20,400	14,350	17,180	15,635	35,150	67,130	33,150	54,360	45,480	21,150	13,110	29,720
1940	11,680	13,390	13,280	5,009	8,103	18,990	27,350	27,030	39,570	25,690	26,000	18,150	19,380
1941	14,410	11,980	9,701	10,700	14,450	20,930	34,440	25,140	58,400	31,190	22,680	30,250	23,660
1942	28,240	21,100	13,700	10,280	15,720	30,130	33,610	89,370	92,500	50,170	30,180	31,650	36,990
1943	25,010	26,870	11,350	12,770	23,180	32,610	97,820	35,740	85,610	82,180	34,030	33,680	41,490
1944	30,170	31,950	18,380	18,990	22,790	32,980	90,850	54,360	123,500	92,380	44,580	32,280	49,360
1945	26,500	31,780	15,680	19,210	32,040	74,880	46,710	34,450	77,460	62,780	37,480	28,050	40,570
1946	32,580	23,770	10,950	14,840	21,880	37,330	30,080	27,940	50,240	44,070	23,800	33,270	29,230
1947	44,060	30,420	14,320	14,820	21,450	33,410	85,890	58,800	110,800	88,290	45,410	34,520	48,110
1948	38,540	34,390	16,660	15,120	24,990	64,550	64,540	40,230	77,500	71,820	52,470	36,140	44,780
1949	40,720	37,540	15,670	15,680	22,950	63,030	104,000	47,950	61,210	44,110	32,950	34,870	45,080
1950	33,290	28,190	13,350	11,460	17,080	44,420	119,500	68,280	64,990	66,140	44,140	36,540	44,840

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929													
1930	1,480	1,450	627	824	1,690	3,600	3,150	3,960	3,210	2,120	1,520	1,120	25,500
1931	1,580	1,480	928	904	1,410	1,520	1,890	1,310	2,140	1,590	806	782	16,100
1932	824	910	744	695	1,080	2,580	2,520	3,000	5,580	3,770	1,940	1,210	24,800
1933	1,030	948	458	859	778	2,330	2,530	2,980	4,210	2,850	1,210	1,520	21,900
1934	988	995	593	731	1,092	1,857	1,552	1,518	2,092	1,610	705	800	14,480
1935	680	854	502	474	928	1,520	1,701	2,258	4,687	3,478	1,453	846	19,110
1936	707	722	624	466	490	3,662	2,199	2,123	2,463	1,609	832	896	16,890
1937	681	740	666	413	586	1,963	2,065	1,490	3,688	3,517	1,617	688	18,110
1938	772	737	486	660	701	2,949	1,759	1,861	2,810	5,211	2,071	2,405	22,410
1939	1,482	1,214	882	1,058	702	2,161	3,994	2,038	3,235	2,873	1,300	780	21,520
1940	718	797	815	308	468	1,045	1,627	1,862	2,355	1,580	1,599	1,080	14,050
1941	888	712	598	858	803	1,287	2,049	1,548	3,475	1,918	1,394	1,800	17,120
1942	1,614	1,258	842	631	762	1,853	2,000	5,495	5,504	3,085	1,858	1,884	26,780
1943	1,538	1,581	698	785	1,287	2,005	5,821	2,197	4,975	5,053	2,092	2,004	30,040
1944	1,855	1,901	1,130	1,168	1,311	2,028	5,406	3,343	7,352	5,680	2,740	1,920	36,830
1945	1,740	1,890	982	1,181	1,779	4,603	2,778	2,117	4,609	3,660	2,304	1,580	29,370
1946	2,002	1,414	673	912	1,215	2,295	1,790	1,718	2,989	2,710	1,463	1,980	21,180
1947	2,709	1,810	881	911	1,131	2,084	5,099	3,492	6,892	5,429	2,988	2,084	34,650
1948	2,389	2,047	1,037	930	1,437	3,969	3,840	2,474	4,611	4,404	3,227	2,150	32,500
1949	2,504	2,284	883	983	1,275	5,105	6,188	2,938	5,642	2,712	2,028	2,078	33,840
1950	2,047	1,677	821	704	948	2,731	7,110	4,197	5,272	4,067	2,714	2,174	32,460

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	maximum Date					
1929	888							
1930	701	95,200	May 11, 1930	4,500	34,900	25,500,000	35,500	25,700,000
1931	716	58,800	June 24, 1931	9,200	22,200	16,100,000	20,200	14,600,000
1932	731	138,000	June 17-19, 1932	7,800	34,200	24,800,000	34,100	24,800,000
1933	748	112,000	May 29, 1933	3,230	30,200	21,900,000	30,800	22,500,000
1934	761	135,000	Mar. 5, 1934	4,000	20,400	14,480,000	18,840	15,840,000
1935	788	106,000	June 25, 24, 1935	3,810	26,400	19,110,000	26,450	19,150,000
1936	808	113,000	Mar. 10, 1936	5,070	23,270	18,890,000	25,320	18,930,000
1937	828	111,000	June 25, 1937	5,800	25,020	18,110,000	24,890	18,020,000
1938	856	125,000	July 12, 1938	3,800	30,960	22,410,000	33,150	24,000,000
1939	876	149,000	Apr. 6, 1939	6,600	29,720	21,520,000	27,990	20,070,000
1940	898	89,500	June 8, 1940	3,700	19,360	14,050,000	19,170	13,920,000
1941	928	106,000	June 19, 1941	4,380	23,650	17,120,000	25,750	18,840,000
1942	958	134,000	May 21, 1942	5,800	38,990	26,780,000	37,130	26,890,000
1943	978	181,000	Apr. 14, 1943	9,200	44,480	30,040,000	45,970	31,110,000
1944	1006	214,000	June 14, 1944	6,000	49,360	35,830,000	48,950	35,540,000
1945	1056	129,000	June 17, 1945	13,000	40,570	29,370,000	39,880	28,870,000
1946	1056	98,700	June 24, 1946	5,000	29,230	21,180,000	31,040	22,470,000
1947	1086	172,000	July 1, 2, 1947	1,800	48,110	34,880,000	46,180	34,880,000
1948	1116	135,000	July 29, 1948	7,120	44,780	32,500,000	45,100	32,740,000
1949	1146	182,000	Apr. 13, 1949	8,000	46,080	32,840,000	43,480	31,480,000
1950	1176	185,000	Apr. 28, 1950	5,200	44,840	32,460,000	-	-

NISHNABOTNA RIVER BASIN

364. West Nishnabotna River at White Cloud, Iowa

Location.--Lat 40°57', long. 95°34', in sec. 2, T. 71 N., R. 41 W., at highway bridge, 3 miles above mouth of Silver Creek, near Chicago, Burlington & Quincy Railroad and Wabash Railway crossing at White Cloud, and 4 miles southeast of Malvern.

Drainage area.--920 sq mi, approximately.

Gage.--Chain gage.

Average discharge.--5 years (1918-23), 376 cfs.

Extremes (revised).--1918-24: Maximum discharge, 10,600 cfs July 30, 1922 (gage height, 19.4 ft, from graph based on gage readings), from rating curve extended above 3,000 cfs; minimum, 9 cfs Sept. 10, 14-18, 22, 1918.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	782	71.3	31.6	16.2	-
1919	590	415	192	123	386	275	664	365	1,290	590	112	277	438
1920	327	294	257	172	288	836	*993	958	483	528	*546	220	*493
1921	230	481	214	189	419	248	272	480	*343	193	178	*682	*326
1922	145	164	170	a125	a644	262	475	184	154	*835	*549	130	a316
1923	77.4	99.0	70	60	56.9	841	235	308	479	351	851	426	305
1924	232	148	148	*150	*325	*520	a362	206	-	-	-	-	-

* Revised.

† Not previously published; estimated on basis of gage-height records, weather records, and records for nearby stations.

a Revised; supersedes figure (acre-feet) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	46,550	4,380	1,940	962	-
1919	56,250	24,710	11,780	7,560	21,430	16,980	39,540	22,480	76,890	56,270	8,890	16,510	317,200
1920	20,120	17,510	15,790	10,570	16,550	51,410	59,100	58,890	28,730	32,480	33,540	13,080	*357,800
1921	14,160	29,210	13,180	11,540	23,250	15,260	16,210	29,500	20,410	11,890	10,930	*40,610	*236,200
1922	8,800	9,750	10,480	a7,890	a35,750	16,120	28,240	10,070	9,180	*51,370	*33,760	7,710	a228,900
1923	4,780	5,890	4,300	3,890	3,160	39,390	14,000	18,910	28,490	20,350	52,300	25,340	220,600
1924	14,290	8,830	9,110	*9,220	16,690	31,970	a21,520	12,670	-	-	-	-	-

* Revised.

† Not previously published; see footnote to preceding table.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year					
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet	
1918	508	-	-	9	-	-	-	-	-	-	-	-
1919	508	7,500	Oct. 28, 1918	48	438	0.476	6.47	317,200	411	5.07	297,800	-
1920	506,1210	*9,130	Apr. 19, 1920	95	*493	*.536	*7.30	*357,800	*497	*7.37	*350,900	-
1921	526,1210	*8,710	Sept. 20, 1921	90	*326	.354	*4.42	*236,200	*288	*4.25	*208,700	-
1922	546,1210	*10,600	July 30, 1922	50	a316	a.343	a4.69	a228,900	a297	a4.41	a214,800	-
1923	566	*8,710	Aug. 11, 1923	-	305	.332	4.50	220,600	329	4.85	237,900	-
1924	586	*b8,080	June 8, 1924*	-	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

b Maximum for period Oct. 1, 1923, to June 21, 1924.

365. West Nishnabotna River at Randolph, Iowa

Location.--Lat 40°52', long. 95°35', in NE¹/₄ sec. 17, T. 70 N., R. 41 W., at bridge on State Highway 184, 0.3 mile downstream from Deer Creek, 0.5 mile west of Randolph, and about 17 miles upstream from confluence with East Nishnabotna River.

Drainage area.--1,310 sq mi, approximately.

Gage.--Wire-weight gage. Since June 30, 1949, auxiliary water-stage recorder which operates above gage height 8.4 ft. Datum of gage is 956.55 ft above mean sea level, unadjusted.

Extremes.--1948-50: Maximum discharge, 29,600 cfs May 9, 1950 (gage height, 21.93 ft); maximum gage height, 24.8 ft Mar. 5, 1949, from graph based on gage readings (ice jam); minimum daily discharge, 50 cfs Jan. 18 to Feb. 5, 1950.

Flood of June 1947 reached a stage of about 24 ft, from information by local residents (discharge not determined).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	145	493	275	270	-
1949	82.9	171	149	800	708	2,065	388	408	968	309	178	252	539
1950	161	86.2	61.4	51.5	904	730	122	1,218	851	587	867	145	461

Monthly and yearly runoff, in acre-feet of West Nishnabotna River at Randolph, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	8,680	30,300	16,900	16,050	-
1949	5,100	10,180	9,150	49,210	39,290	127,000	23,090	25,090	57,460	19,020	10,640	14,990	390,400
1950	9,930	5,130	3,770	3,170	50,200	44,880	7,250	74,890	50,680	34,270	40,980	8,650	333,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff		
		Discharge	Date						Inches	Acre-feet	
1948	1146	-	-	-	-	-	-	-	-	-	-
1949	1146	a16,000	Mar. 5, 1949	68	539	0.411	5.58	390,400	533	5.50	365,700
1950	1176	29,800	May 9, 1950	50	461	.352	4.77	333,800	-	-	-

a About.

366. East Nishnabotna River at Red Oak, Iowa

Location.--Lat 41°00'55", long. 95°14'30", in sec. 29, T. 72 N., R. 38 W., at bridge on U. S. Highway 34, 0.5 mile west of Red Oak, 28 miles downstream from Indian Creek, and 49 miles upstream from confluence with West Nishnabotna River.

Drainage area.--890 sq mi, approximately.

Gage.--Wire-weight gage at present site since May 29, 1936. Since July 30, 1939, auxiliary water-stage recorder for stages above 3.2 ft. Datum of gages is 1,010.45 ft above mean sea level, unadjusted. May 22, 1918, to July 4, 1925, chain gage at Coolbaugh Street bridge 0.5 mile downstream at datum 0.40 ft lower.

Average discharge.--20 years (1918-24, 1936-50), 344 cfs.

Extremes.--1918-25, 1936-50: Maximum discharge, 36,200 cfs June 13, 1947 (gage height, 28.23 ft), from rating curve extended above 14,000 cfs on basis of an overflow profile and extended channel rating; minimum daily, 6 cfs (estimated) Aug. 18, 1936.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	533	78.2	58.7	23.1	-
1919	104	54.0	41.9	45.7	145	307	998	642	1,370	382	92.6	270	369
1920	418	445	108	58.2	180	789	731	699	†468	366	281	191	+395
1921	103	146	87.9	a85	a200	a131	111	128	453	*123	217	568	a195
1922	159	152	79.1	40.3	438	226	580	209	234	395	640	483	301
1923	147	a221	a100	a110	a70	a800	a355	228	326	202	472	439	a274
1924	586	200	176	a150	a246	482	315	169	2,580	715	508	*338	a520
1925	209	180	a140	a125	a440	199	131	65.8	351	-	-	-	-
1936	-	-	-	-	-	-	-	-	266	24.5	17.0	689	-
1937	87.9	45.3	65.3	23.1	546	1,108	146	337	101	72.1	136	14.9	223
1938	16.5	21.1	14.6	14.2	24.3	32.3	42.0	178	228	95.0	70.6	364	91.5
1939	41.9	63.4	25.0	27.2	136	741	58.4	35.2	230	322	719	27.8	204
1940	28.8	19.9	17.7	12.3	17.2	278	82.0	67.6	138	445	776	38.7	162
1941	29.1	55.7	49.6	57.0	139	163	244	123	967	191	87.5	247	195
1942	368	349	225	381	339	528	290	872	747	685	187	238	435
1943	96.5	75.1	62.7	77.2	585	179	114	483	564	224	509	170	261
1944	49.1	69.6	43.3	63.2	146	243	519	1,578	1,216	637	920	249	479
1945	164	111	71.9	74.5	380	1,202	953	2,188	1,428	467	235	127	618
1946	106	96.7	47.1	440	*743	*726	246	463	570	175	*977	692	*438
1947	804	482	246	191	261	384	1,131	851	4,891	564	186	107	937
1948	86.0	142	109	44.9	470	1,470	232	147	82.8	423	194	61.6	289
1949	41.5	115	84.6	509	439	1,620	321	310	506	313	90.2	79.4	370
1950	73.9	38.8	42.0	32.7	629	442	75.8	522	542	193	115	32.5	226

* Revised.

† Corrected.

a Revised; supersedes figure (acre-feet) published in H. Doc. 236, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in acre-feet of East Nishnabotna River at Red Oak, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918									31,740	4,810	3,610	1,370	-
1919	8,370	5,220	2,580	2,810	8,030	18,900	59,370	39,480	81,380	25,470	5,890	18,090	287,400
1920	25,680	26,490	8,660	3,580	10,350	48,480	43,520	42,980	27,750	22,480	17,250	11,390	286,800
1921	6,320	8,690	5,410	25,030	11,110	28,080	6,590	7,860	26,930	17,560	15,310	33,800	210,900
1922	9,770	9,030	4,870	2,480	24,220	15,910	34,500	12,840	13,950	24,300	39,350	28,780	218,000
1923	9,020	15,170	26,150	26,780	25,890	36,890	21,140	14,030	19,390	12,410	29,050	28,120	219,000
1924	25,710	11,890	10,800	29,220	14,140	29,810	18,740	10,580	15,700	43,980	31,230	20,130	237,500
1925	12,840	9,520	28,610	27,690	24,420	12,250	7,800	4,050	20,810				-
1926													-
1927	5,410	2,700	4,020	1,420	30,340	68,120	8,700	20,740	8,040	4,450	8,380	887	181,200
1928	1,010	1,280	900	875	1,350	1,990	2,500	10,980	13,580	8,840	4,340	21,650	66,240
1929	2,580	3,770	1,540	1,870	7,570	45,590	3,480	2,170	15,680	19,800	44,200	1,680	147,700
1930	1,770	1,180	1,090	754	988	17,090	4,880	4,160	8,240	27,380	47,730	2,300	117,800
1931	1,790	3,510	3,050	3,510	7,700	10,040	14,520	7,560	57,540	11,750	5,580	14,710	140,900
1932	22,630	20,780	13,810	23,450	18,820	38,440	17,280	53,800	44,430	42,090	11,470	14,180	314,900
1933	5,940	4,470	5,080	4,750	32,490	11,010	6,770	29,720	33,580	15,790	31,270	10,110	189,000
1934	3,020	4,140	2,860	3,890	8,400	14,880	30,870	97,030	12,380	39,150	56,560	14,810	347,900
1935	10,110	6,580	4,420	4,580	21,090	73,810	56,690	134,500	84,850	28,750	14,470	7,540	447,400
1936	6,540	5,750	2,890	27,060	41,240	44,610	14,850	28,440	33,900	10,770	80,050	41,200	317,100
1937	49,410	28,660	15,130	11,730	14,490	23,820	67,280	52,300	291,100	34,680	11,410	6,380	806,200
1938	5,290	8,460	6,700	2,760	27,020	90,440	13,830	9,040	4,920	26,010	11,980	3,870	210,100
1939	2,550	6,830	5,200	31,310	24,590	99,590	19,090	19,030	30,110	19,280	5,550	4,720	287,600
1940	4,580	2,510	2,580	2,010	34,950	27,150	4,510	32,070	32,270	11,880	7,060	1,840	185,300

* Revised.

a Revised; supersedes figure published in H. Doc. 236, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acres-feet		Inches	Acres-feet
1918	508	25,740	May 29, 1918	b13	-	-	-	-	-	-	-
1919	508	3,300	June 13, 1919	15	369	0.415	5.84	287,400	434	6.82	314,000
1920	508	2,920	Apr. 21, 1920	-	1395	.444	6.04	286,800	342	5.23	248,200
1921	526,1240	*2,800	Sept. 21, 1921*	-	0195	0.219	0.296	0140,900	0199	03.04	0144,100
1922	546	*3,740	Sept. 2, 1922	-	301	.338	4.59	218,000	0307	04.69	0222,600
1923	566	*2,700	Sept. 29, 1923*	-	0274	0.308	0.417	0198,000	0298	04.56	0216,100
1924	586,1240	*10,000	June 26, 1924	-	0520	0.584	0.796	0377,500	0499	07.63	0582,100
1925	606	d1,850	June 25, 1925	-	-	-	-	-	-	-	-
1926	898	*3,800	Sept. 16, 1926	f6	-	-	-	-	-	-	-
1927	898	9,600	Mar. 4, 1927	12	225	.251	3.39	161,200	210	3.21	152,200
1928	858	3,810	Sept. 14, 1928	7	91.5	.103	1.40	86,240	98.0	1.49	70,960
1929	876	9,070	Aug. 12, 1929	16	204	.229	3.11	147,700	199	3.04	143,800
1930	898	5,000	Aug. 13, 1930	9	162	.182	2.48	117,600	168	2.57	121,700
1931	928	4,580	June 4, 1931	26	195	.219	2.97	140,800	262	4.01	189,900
1932	958	*8,100	July 20, 1932	74	435	.489	6.84	314,900	377	5.78	273,200
1933	978	*8,610	Feb. 4, 1933	40	261	.293	3.98	189,000	263	3.86	185,300
1934	1008	*8,600	Aug. 2, 1934	15	479	.538	7.32	347,900	498	7.55	359,200
1935	1086	16,100	May 23, 1935	55	618	.694	9.42	447,400	610	9.50	441,500
1936	1056,1240	*12,000	(g)	25	*438	*.492	*6.89	*317,100	*548	*8.33	*395,100
1937	1086	36,200	June 13, 1937	60	837	.940	12.77	606,200	737	11.24	535,400
1938	1118	16,400	Mar. 19, 1938	32	289	.325	4.43	210,100	281	4.30	204,200
1939	1148	15,800	Mar. 5, 1939	25	370	.418	5.83	287,600	363	5.53	282,600
1940	1178	8,580	Feb. 28, 1940	10	228	.254	3.45	163,300	-	-	-

* Revised.

† Corrected.

a Maximum for period May 22 to Sept. 30, 1918.

b Minimum day for period May 22 to Sept. 30, 1918.

c Revised; supersedes figure published in H. Doc. 236, 73d Cong., 2d sess., Missouri River.

d Maximum for period Oct. 1, 1924 to July 4, 1925.

e Maximum for period May 29 to Sept. 30, 1926.

f Estimated.

g Feb. 6, Aug. 28, 1946*.

367. Nishnabotna River above Hamburg, Iowa 1/

Location.--Lat 40°38', long. 95°37' in SW 1/4 sec. 11, T. 67 N., R. 42 W., 1,000 ft below Chicago, Burlington & Quincy Railroad bridge, 1.5 miles downstream from confluence of East Nishnabotna and West Nishnabotna Rivers, and 2 miles northeast of Hamburg.

Drainage area.--2,800 sq mi, approximately.

Gage.--Staff gage. Datum of gage is 894.17 ft above mean sea level, datum of 1929.

Mar. 6, 1922, to Sept. 30, 1923, chain gage at site 6 miles downstream at different datum.

Oct. 5, 1928, to Sept. 6, 1929, chain gage at site 1,000 ft upstream at datum 0.42 ft higher.

Sept. 7, 1929, to Feb. 11, 1935, chain gage, and Feb. 12, 1935, to June 5, 1947, wire-weight gage, at present site and datum.

June 6 to July 22, 1947, staff gage 1,000 ft upstream at different datum.

Average discharge.--23 years (1922-23, 1928-50), 895 cfs.

Extremes.--1922-23, 1928-50: Maximum discharge, 55,500 cfs June 24, 1947 (gage height, 26.03 ft, present site and datum, from floodmark); minimum, 4.5 cfs Aug. 30, 1934 (gage height, 1.58 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	732	2,500	546	820	510	1,810	895	-
1923	276	553	251	278	186	1,620	950	695	1,620	889	1,460	996	8817
1929	388	896	1,100	425	470	*4,170	2,190	1,350	1,180	2,020	403	354	*1,250
1930	*403	594	418	278	895	413	317	572	*824	156	196	102	*414
1931	113	148	105	105	123	115	124	239	*1,810	351	*317	694	*335
1932	871	*8,340	1,480	2,880	2,860	2,000	1,420	1,780	*2,810	1,30	2,990	825	1,880
1933	443	495	494	*1,030	374	537	599	378	*613	251	*342	*387	*462
1934	128	106	134	298	185	185	129	68.2	368	*225	16.8	267	*170
1935	194	288	113	*800	481	505	92.8	*228	1,318	295	222	92.8	*386
1936	*187	312	91.6	83.8	555	3,631	362	395	687	52.8	34.3	*1,543	*672
1937	278	94.9	131	99.22	377	*8,482	410	*811	*815	*447	367	44.1	*653
1938	39.8	42.9	27.1	31.5	76.0	138	185	440	542	804	700	1,242	331
1939	112	145	72.3	72.1	361	3,113	161	108	948	249	1,049	73.2	629
1940	84.8	49.2	48.6	21.3	30.3	670	221	173	262	990	2,456	167	434
1941	86.1	140	124	178	330	369	487	242	2,594	513	151	2,264	535
1942	1,601	1,041	778	1,001	847	1,451	839	2,296	2,540	688	823	865	1,922
1943	298	234	310	221	1,808	912	482	1,221	2,734	705	1,061	338	850
1944	126	168	119	175	271	553	1,184	2,965	5,000	1,722	1,569	592	1,197
1945	578	347	192	262	684	2,423	2,457	5,429	4,802	1,257	1,717	565	1,796
1946	398	385	285	1,070	2,288	1,765	659	1,082	1,761	619	1,228	2,008	1,115
1947	1,808	1,100	637	527	771	1,073	2,732	1,999	16,430	2,804	863	375	2,672
1948	328	444	341	280	1,680	4,110	2,080	844	311	879	592	424	921
1949	161	308	284	1,068	1,206	4,747	802	748	2,078	783	316	226	1,080
1950	314	190	200	115	1,427	1,561	259	2,345	1,392	692	951	275	625

* Revised.

a Revised; supersedes figure (acre-feet) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	45,000	149,000	33,800	48,800	92,700	111,000	53,200	-
1923	16,900	32,900	15,400	17,100	10,300	99,500	56,800	42,800	98,700	54,600	89,500	59,500	a592,000
1929	23,900	53,300	67,800	28,100	26,100	256,000	130,000	83,000	70,200	24,000	24,800	21,100	*906,000
1930	*24,800	35,300	29,700	17,100	83,000	25,400	18,900	55,200	37,100	9,590	11,400	6,070	*500,000
1931	6,950	8,810	6,480	6,480	6,830	7,070	7,380	14,700	95,700	21,600	19,500	41,300	*243,000
1932	59,700	*139,000	89,200	400,000	147,000	23,000	84,500	109,000	156,000	89,500	184,000	49,100	1,350,000
1933	27,200	29,500	30,400	*81,500	80,800	33,500	35,800	23,200	13,300	15,400	*21,000	23,600	*334,000
1934	7,880	6,320	8,220	18,300	9,180	9,500	7,700	4,190	21,810	13,610	1,030	15,310	*123,400
1935	11,950	17,120	6,950	*30,750	25,070	30,910	5,460	*14,040	78,230	16,120	13,680	5,530	*257,500
1936	10,270	18,550	5,630	3,890	31,830	235,600	21,550	24,280	39,100	3,250	2,110	*91,790	*487,800
1937	16,910	5,640	8,050	6,100	132,000	152,600	24,400	*29,880	24,690	27,610	22,580	2,630	*473,000
1938	2,430	2,550	1,870	1,840	4,220	8,500	11,000	27,030	32,280	30,970	43,030	73,880	239,500
1939	6,900	8,640	4,450	4,430	20,050	191,400	10,750	6,680	56,420	76,820	4,350	4,550	455,400
1940	3,950	2,930	3,000	1,310	1,740	41,200	13,170	10,820	15,580	60,860	151,000	9,340	314,700
1941	5,290	8,360	7,800	10,810	19,310	22,670	28,990	14,880	154,400	31,330	9,280	75,210	367,300
1942	98,430	61,970	47,703	61,530	47,050	68,920	49,330	41,800	39,200	103,700	58,280	51,470	922,800
1943	18,340	13,890	19,070	13,860	10,400	58,070	27,470	75,080	12,700	43,580	65,210	20,110	615,200
1944	7,710	10,020	7,350	10,780	15,580	34,010	70,440	182,300	997,500	108,950	86,500	31,220	889,300
1945	35,430	20,650	11,780	16,110	38,000	49,000	46,200	33,800	278,500	132,600	105,800	32,740	1,500,000
1946	24,490	21,100	17,550	65,820	127,000	108,500	39,220	65,320	104,800	38,070	75,480	119,500	806,900
1947	98,750	65,430	39,160	32,410	42,790	65,980	162,800	22,900	977,800	78,500	53,050	22,320	1,662,000
1948	20,230	26,450	20,990	17,850	93,020	252,600	65,020	39,590	18,510	80,210	58,400	24,680	675,500
1949	9,830	18,130	15,620	84,100	66,960	291,900	47,750	48,010	213,800	49,130	19,420	17,480	789,000
1950	19,340	11,290	12,300	7,070	79,230	96,010	15,390	14,200	82,830	54,680	58,460	16,360	597,300

* Revised.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

1/ Previously published as "near Hamburg".

Yearly discharge, in cubic feet per second of Nishnabotna River above Hamburg, Iowa											
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1922	546	11,800	Apr. 12, 1922	a280	-	-	-	-	-	-	-
1923	566,1240	*8,800	Mar. 27, 1923*	165	b817	b0.280	b3.79	b592,000	-	-	-
1929	731,1240	*21,100	Mar. 13, 1929	219	*1,250	*.446	*6.08	*906,000	*1,170	*5.69	*847,000
1930	731,1240	*3,020	Feb. 8, 1930	54	*414	*.148	*2.02	*300,000	*326	*1.59	*236,000
1931	731,1240	*9,350	June 22, 1931	20	*335	*.120	*1.63	*243,000	*702	*3.41	*508,000
1932	731,1240	*11,100	Nov. 25, 1931*	201	1,860	.664	9.05	1,350,000	*1,580	7.70	*1,150,000
1933	746,1240	*8,020	Jan. 22, 1933	63	*462	*.165	*2.24	*334,000	*373	*1.81	*270,000
1934	786,1240	5,620	June 9, 1934	4.5	*170	*.061	*.82	*123,400	*189	*.91	*137,000
1935	786,1240	*8,500	June 26, 1935	9	*356	*.127	*1.73	*257,800	*354	*1.72	*256,200
1936	806,1240	20,600	Mar. 5, 1936	10	*672	*.240	*3.25	*487,800	*667	*3.22	*484,000
1937	826,1240	*16,500	Mar. 5, 1937*	19	*653	*.233	*3.15	*473,000	*620	*3.00	*449,000
1938	856	*9,850	Sept. 14, 1938	15	331	.118	1.62	239,500	349	1.71	252,800
1939	876	*22,100	Mar. 12, 1939	46	629	.225	3.04	455,400	615	2.97	445,300
1940	896	*10,700	Aug. 12, 1940	15	434	.155	2.11	314,700	449	2.19	326,100
1941	926	14,600	June 9, 1941	48	535	.191	2.58	387,300	793	3.82	574,100
1942	956	11,700	June 20, 1942	195	1,282	.458	6.20	928,500	1,066	5.15	771,700
1943	976	*11,100	May 16, 1943	130	850	.304	4.11	615,200	814	3.94	589,000
1944	1006	11,800	June 15, 1944	45	1,197	.428	5.82	869,300	1,256	6.11	912,100
1945	1036	21,000	May 23, 1945	90	1,796	.641	8.72	1,300,000	1,790	8.68	1,296,000
1946	1056	11,300	Sept. 4, 1946	220	1,115	.398	5.40	806,900	1,308	6.34	847,100
1947	1086	55,500	June 24, 1947	281	2,872	.919	12.48	1,882,000	2,880	11.57	1,728,000
1948	1116	36,300	Mar. 20, 1948	123	931	.332	4.52	675,500	898	4.36	651,500
1949	1146	32,200	Mar. 7, 1949	118	1,090	.369	5.28	789,000	1,089	5.28	788,500
1950	1176	19,900	May 10, 1950	80	828	.288	4.00	597,300	-	-	-

* Revised.

a Minimum day for period Mar. 1 to Sept. 30, 1922.

b Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

LITTLE NEMAHA RIVER BASIN

368. Little Nemaha River at Auburn, Nebr.

Location.--Lat 49°23'30", long. 95°48'40", in NW¼ sec. 23, T. 5 N., R. 14 E., on downstream side of pier of bridge on State Highway 3, 1 mile downstream from Longs Creek and 1 mile east of Auburn.

Drainage area.--801 sq mi.

Gage.--Water-stage recorder for stages above 9.02 ft, wire-weight gage for lower stages. Datum of gage is 889.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1943.

Extremes.--1949-50: Maximum discharge, 164,000 cfs May 9, 1950 (gage height, 27.65 ft, from floodmark); from rating curve extended above 29,000 cfs on basis of computations of flow through bridge and culvert openings and over highway and railway embankments at gage heights 24.96 and 27.65 ft; minimum daily, 25 cfs Dec. 12, 1949 and Jan. 6, 1950.

Remarks.--A few permits for small pump irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	235
1950	85.3	61.1	41.5	41.6	126	144	61.6	2,028	333	280	618	541

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	15,990
1950	4,010	3,640	2,550	2,570	7,020	8,880	3,670	124,700	19,830	17,190	37,990	247,000

369. Tarkio River at Blanchard, Iowa ¹/₂

Location.--Lat 40°35'40", long. 95°13'25", on line between SE¹/₄ sec. 20 and NE¹/₄ sec. 29, T. 67 N., R. 38 W., at bridge on State Highway 333, 1 mile north of Blanchard and 8.2 miles downstream from Snake Creek.

Drainage area.--200 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 940.32 ft above mean sea level, datum of 1929. Prior to Mar. 5, 1940, water-stage recorder at same site and 5.00 ft higher datum. Prior to Aug. 7, 1934, chain gage at same site and 5.00 ft higher datum.

Average discharge.--5 years (1934-39), 43.0 cfs.

Extremes.--1934-40: Maximum discharge, 9,980 cfs Mar. 12, 1939 (gage height, 23.12 ft, present datum), from rating curve extended above 3,200 cfs on basis of slope-area determination of peak flow; no flow Nov. 20, Dec. 10, 11, 1937, Feb. 11, 12, 1939.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	4.47	5.28	2.49	0.419	0.247	9.86	-
1935	14.0	9.06	3.73	28.3	17.5	10.9	1.77	44.1	143	30.1	1.20	6.24	25.7
1936	10.8	27.6	10.0	8.09	121	197	42.6	86.4	39.7	1.14	.786	43.1	48.7
1937	36.9	3.97	14.2	1.28	226	197	34.7	138	72.8	53.3	1.18	.352	64.1
1938	.509	.439	.297	.393	2.07	1.40	14.4	47.2	35.4	1.74	74.5	44.5	18.7
1939	.448	4.22	1.00	1.49	9.59	343	6.46	2.20	179	100	42.4	.247	58.0
1940	.68	.56	.55	.20	1.73	19.0	13.7	9.21	7.01	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	265	324	148	26	15	587	-
1935	859	539	229	1,740	972	667	105	2,710	8,520	1,850	74	371	18,640
1936	685	1,640	617	497	6,940	12,120	2,540	5,310	2,360	70	48	2,560	35,370
1937	2,270	256	874	79	12,570	12,130	2,060	8,460	4,330	3,280	72	21	46,380
1938	51	26	18	24	115	86	857	2,900	2,110	1,107	4,560	2,650	13,500
1939	28	251	62	91	532	21,080	384	135	10,630	6,150	2,610	15	41,970
1940	42	33	34	12	100	1,170	813	566	417	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30										Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		Inches	Acre-feet
1934	761	a182	Sept. 26, 1934	0.03	-	-	-	-	-	-	-	-	-	-
1935	786	1,920	May 31, 1935	.19	25.7	0.128	1.73	18,640	27.5	1.85	19,930	-	-	-
1936	808	4,330	Apr. 28, 1936	.56	48.7	.244	3.32	35,370	49.4	3.36	35,820	-	-	-
1937	826	5,620	May 21, 1937	.03	64.1	.320	4.36	46,380	59.5	4.05	43,080	-	-	-
1938	856	4,240	Aug. 20, 1938	0	18.7	.094	1.27	13,500	19.0	1.29	13,770	-	-	-
1939	876	9,980	Mar. 12, 1939	.02	58.0	.290	3.94	41,970	57.6	3.92	41,740	-	-	-
1940	896	b168	Apr. 29, 1940	.1	-	-	-	-	-	-	-	-	-	-

a Maximum for period Mar. 13 to Sept. 30, 1934.

b Maximum for period Oct. 1, 1939, to June 30, 1940.

370. West Tarkio Creek near Westboro, Mo.

Location.--Lat 40°32'30" long. 95°23'00" in NW¹/₄ sec. 13, T. 66 N., R. 40 W., at bridge on county highway C, $3\frac{1}{2}$ miles west of Westboro and 6 miles upstream from confluence with Middle Tarkio Creek.

Drainage area.--105 sq mi.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 926.80 ft above mean sea level, datum of 1929. Prior to July 19, 1934, chain gage at same site and datum.

Average discharge.--5 years (1934-39), 23.4 cfs.

Extremes.--1934-40: Maximum discharge, 8,720 cfs July 29, 1937 (gage height, 22.10 ft), from rating curve extended above 2,630 cfs on basis of slope-area determination of peak flow; no flow Dec. 9, 10, 1938, Feb. 11, 1939.

¹/₂ Previously published as East Tarkio Creek.

Monthly and yearly mean discharge, in cubic feet per second of West Tarkio Creek near Westboro, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	1.80	4.11	1.42	0.075	0.048	6.57	-
1935	17.0	3.59	2.08	10.4	7.40	4.71	.957	28.1	109	12.5	.853	2.44	16.5
1936	5.54	12.4	4.51	3.11	62.3	84.4	36.6	61.1	30.1	1.01	.915	17.5	26.5
1937	17.4	2.08	5.46	1.08	127	86.2	18.5	58.6	36.3	64.1	2.33	.224	34.4
1938	.383	.357	.393	.378	1.07	.975	4.25	14.8	42.7	.831	37.1	31.0	11.2
1939	.826	2.73	1.00	1.22	2.29	1.73	4.56	7.13	102	31.1	9.70	.200	28.2
1940	.36	.43	.54	.39	1.37	9.82	6.77	6.56	2.28	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	107	253	84	4.6	3.0	391	-
1935	1,040	214	128	639	411	289	57	1,730	6,500	770	52	145	11,980
1936	340	739	277	191	3,580	5,190	2,180	3,780	1,790	62	56	1,040	19,200
1937	1,070	124	336	66	7,080	5,500	1,100	3,830	2,160	940	143	15	24,940
1938	24	21	24	23	69	60	253	909	2,540	51	2,280	1,840	8,085
1939	39	163	62	75	127	10,610	271	438	6,080	910	596	12	20,380
1940	22	26	33	24	79	604	403	403	138	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1934	826	172	Sept. 26, 1934	-	-	-	-	-	-	-	-
1935	826	4,640	June 17, 1935	0.06	16.5	0.157	2.14	11,980	16.5	2.13	11,950
1936	826	5,310	Apr. 28, 1936	.35	26.5	.252	3.43	19,200	26.7	3.46	19,360
1937	826	8,720	July 29, 1937	.06	34.4	.328	4.45	24,940	32.4	4.19	25,480
1938	826	5,500	June 11, 1938	.01	11.2	.107	1.44	8,085	11.4	1.47	8,280
1939	876	6,810	Mar. 11, 1939	.01	28.2	.269	3.64	20,380	27.9	3.61	20,200
1940	896	5,760	July 27, 1940	-	-	-	-	-	-	-	-

* Not previously published.

371. Tarkio River at Fairfax, Mo.

Location.--Lat 40°20'20", long. 95°24'20", in SE¹ sec. 22, T. 64 N., R. 40 W., at county highway bridge, 0.5 mile west of Fairfax and 2 miles downstream from unnamed creek.

Drainage area.--508 sq mi.

Gage.--Wire-weight gage. Datum of gage is 867.66 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1931, chain gage at same site at datum 2.0 ft higher. Oct. 1, 1931, to Dec. 8, 1934, chain gage at present site and datum.

Average discharge.--28 years (1922-50), 163 cfs.

Extremes.--1922-50: Maximum discharge, 16,300 cfs June 20, 1942, from rating curve extended above 11,000 cfs; maximum gage height, 22.33 ft July 7, 1929, from floodmark; no flow on several days in July and August 1934.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	234	47.7	59.2	431	166	66.6	-
1923	78.7	362	41.9	36.7	13.2	48.1	56.0	122	116	31.3	62.3	35.5	83.6
1924	18.1	8.33	9.81	6.03	79.9	110	27.5	8.94	929	407	74.2	43.7	143
1925	12.8	15.0	22.7	54.2	217	64.2	57.4	13.5	220	30.1	124	96.2	75.9
1926	98.6	33.2	22.1	262	181	28.1	17.9	22.0	168	178	23.3	1,500	193
1927	261	161	101	64.1	116	109	508	182	107	43.0	29.8	19.6	141
1928	119	28.6	11.7	31.5	127	31.7	86.7	50.1	261	383	107	608	152
1929	75.9	358	363	139	175	977	642	446	550	1,480	156	113	459
1930	258	223	127	102	216	110	87.5	180	207	69.0	49.1	37.7	138
1931	39.5	51.4	35.3	28.6	29.2	42.0	37.1	27.9	186	12.9	31.4	178	57.9
1932	169	362	291	411	389	222	142	391	425	159	350	82.4	282
1933	41.6	48.7	99.5	59.4	38.2	66.2	71.0	70.0	87.6	57.5	138	88.0	72.4
1934	20.8	15.3	23.9	35.9	24.4	27.5	10.2	27.9	25.3	.98	.21	71.6	23.6
1935	175	40.3	22.8	45.7	44.0	24.3	7.81	174	518	61.4	7.11	22.2	95.1
1936	36.0	78.9	25.7	14.6	121	341	121	260	122	7.71	4.69	143	106
1937	63.4	13.9	25.1	8.29	319	396	188	137	75.5	254	26.8	3.42	125
1938	4.06	5.55	7.45	4.65	11.5	10.5	35.0	77.4	145	27.6	201	95.5	52.2
1939	3.34	13.4	5.9	8.2	13.9	620	25.3	13.2	374	176	97.6	1.20	114
1940	2.31	3.06	3.55	1.4	5.6	45.4	25.4	25.2	18.2	230	497	22.2	74.2
1941	5.13	14.2	17.2	21.5	59.4	38.1	77.3	106	857	52.3	7.92	394	136
1942	938	448	241	342	275	727	199	811	1,062	168	127	115	455
1943	44.4	36.8	87.5	49.7	96.9	98.5	28.9	78.0	892	138	233	62.4	149
1944	21.3	23.3	17.2	28.4	45.4	112	435	803	760	131	168	78.7	218
1945	124	57.0	103	127	138	557	482	656	565	344	490	73.5	311
1946	70.1	51.3	26.4	185	104	454	243	173	270	84.5	45.7	140	152
1947	96.6	85.7	61.1	33.1	34.2	57.1	398	180	1,963	275	61.1	32.0	271
1948	29.6	50.7	61.5	34.8	138	481	169	77.6	51.8	33.1	43.0	18.6	99.1
1949	17.1	34.0	22.2	200	605	509	115	190	837	145	59.8	79.2	239
1950	77.7	38.6	30.1	29.2	245	110	34.0	276	429	137	212	97.0	142

Monthly and yearly runoff, in acre-feet of Tarkio River at Fairfax, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	13,900	2,930	3,520	26,500	10,200	3,980	-
1923	4,840	21,500	2,580	2,280	733	2,980	3,330	7,800	8,900	1,920	3,830	2,110	80,500
1924	1,110	488	803	371	4,800	8,760	1,640	580	55,300	25,000	4,580	2,800	104,000
1925	787	893	1,400	3,530	12,100	3,950	3,420	830	13,100	1,850	7,620	5,720	55,000
1926	6,080	1,980	1,360	16,100	10,100	1,730	1,070	1,350	10,000	10,900	1,430	77,400	139,000
1927	16,000	9,580	6,210	3,940	6,440	6,700	30,200	11,200	6,370	2,640	1,830	1,170	102,000
1928	7,320	1,700	718	1,940	7,300	1,950	5,160	3,080	15,500	22,300	6,580	38,200	110,000
1929	4,870	21,300	22,300	6,650	9,720	60,100	38,200	27,400	32,700	81,000	9,590	6,720	332,000
1930	15,900	13,300	7,810	6,870	12,000	6,760	5,810	11,100	12,300	4,240	3,020	2,240	100,000
1931	2,430	5,080	2,170	1,760	1,620	2,580	2,210	1,720	11,100	793	1,930	10,800	42,000
1932	10,400	21,500	17,900	25,300	22,400	13,800	6,450	84,000	55,300	9,780	21,500	4,900	205,000
1933	2,560	2,900	8,120	3,550	2,120	4,070	4,220	4,300	5,210	3,540	8,480	5,240	52,400
1934	1,280	910	1,470	2,210	1,350	1,690	604	1,710	1,510	80	13	4,280	17,070
1935	10,760	2,400	1,400	2,810	2,440	1,480	465	10,710	30,840	3,780	437	1,320	68,850
1936	2,220	4,700	1,580	899	6,970	20,990	7,190	15,990	7,240	474	288	8,480	77,020
1937	3,800	828	1,540	510	17,740	24,330	11,180	8,410	4,480	15,630	1,840	204	90,400
1938	250	330	458	288	638	845	2,080	4,780	8,850	1,700	12,340	5,680	37,820
1939	205	798	565	504	774	58,150	1,500	810	22,230	10,920	6,000	71	82,250
1940	142	192	218	85	319	2,790	1,510	1,550	1,080	14,140	30,580	1,320	55,890
1941	318	845	1,080	1,320	3,300	2,340	4,800	6,500	51,000	3,220	487	23,420	98,410
1942	57,690	26,630	14,820	21,030	15,270	44,680	11,230	49,840	83,170	10,540	7,510	6,840	329,000
1943	2,730	2,190	5,380	3,080	5,320	2,980	1,720	4,800	55,090	8,470	14,350	3,720	107,800
1944	1,510	1,390	1,080	1,620	2,610	6,880	25,880	48,380	45,190	8,070	10,340	4,680	158,400
1945	7,650	5,390	6,350	7,800	7,660	34,280	28,650	40,360	33,640	21,180	30,120	4,370	228,400
1946	4,310	3,080	1,820	10,140	5,760	27,890	14,470	10,640	16,040	5,200	2,810	8,580	110,290
1947	5,940	5,100	3,750	2,040	1,900	3,510	23,710	11,070	116,800	16,910	3,760	1,900	198,400
1948	1,620	3,020	3,780	2,140	7,930	29,590	10,040	4,770	3,080	2,040	2,640	1,100	71,850
1949	1,050	2,020	1,360	12,510	33,600	31,310	6,880	11,680	55,780	8,900	3,670	4,710	175,200
1950	4,780	2,300	1,850	1,800	13,820	6,780	2,030	17,100	25,540	8,400	13,070	5,770	103,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30										Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		Inches	Acre-feet	
1923	568	1,100	May 11, 1923	1.5	83.6	0.165	2.23	60,500	46.7	1.24	33,800				
1924	568	6,610	June 12, 1924	2.0	145	.281	3.82	104,000	144	3.85	104,000				
1925	608	4,530	June 18, 1925	1	75.9	.149	2.02	55,000	84.7	2.25	61,300				
1926	628	7,940	Sept. 3, 1926	3	193	.550	5.13	139,000	224	5.96	162,000				
1927	846	1,740	Oct. 3, 1927	5	141	.278	3.79	102,000	111	2.98	80,200				
1928	668	7,080	Sept. 12, 1928	9	152	.299	4.04	110,000	204	5.48	146,000				
1929	698	15,000	July 7, 1929	48	459	.904	12.25	332,000	443	11.84	321,000				
1930	701	1,560	June 19, 1930	18	138	.272	3.69	100,000	97.8	2.60	70,800				
1931	716	5,310	June 15, 1931	6	57.9	.114	1.54	42,000	116	3.10	84,100				
1932	731	6,000	May 30, 1932	29	282	.555	7.56	205,000	230	6.15	167,000				
1933	748	3,570	Aug. 21, 1933	7	72.4	.143	1.93	52,400	81.5	1.63	44,500				
1934	761	710	Sept. 26, 1934	0	25.8	.0465	.62	17,070	38.6	1.03	27,970				
1935	768	6,670	June 1, 1935	.7	95.1	.187	2.56	68,590	86.7	2.33	62,790				
1936	806	5,080	Apr. 28, 1936	2.0	106	.209	2.83	77,020	103	2.75	74,790				
1937	856	8,750	July 30, 1937	2.4	125	.246	3.34	90,400	118	3.15	85,170				
1938	856	9,480	Aug. 6, 1938	1.0	52.2	.103	1.40	37,820	52.7	1.41	38,150				
1939	876	10,900	Mar. 12, 1939	.4	114	.224	3.04	82,230	112	3.01	81,400				
1940	898	6,150	Aug. 27, 1940	.2	74.2	.146	1.99	55,890	76.5	2.05	55,870				
1941	928	12,400	June 9, 1941	1.8	136	.288	3.85	98,410	270	7.23	195,300				
1942	956	16,300	June 20, 1942	33	485	.886	12.15	329,000	332	8.87	240,200				
1943	978	7,560	June 10, 1943	15	149	.293	3.98	107,800	140	3.74	101,300				
1944	1006	7,960	May 3, 1944	8	218	.429	5.85	158,400	237	6.34	172,000				
1945	1058	9,400	Aug. 5, 1945	31	311	.612	8.31	225,400	300	8.01	217,020				
1946	1086	4,780	Sept. 4, 1946	10	152	.299	4.05	110,290	160	4.27	118,100				
1947	1086	14,000	June 18, 1947	13	271	.533	7.24	198,400	263	7.01	180,200				
1948	1116	7,340	Mar. 19, 1948	4.8	99.1	.195	2.66	71,950	93.4	2.50	67,780				
1949	1146	14,100	June 28, 1949	7	239	.470	6.39	173,200	246	6.56	177,800				
1950	1176	11,200	May 8, 1950	18	142	.260	3.79	103,000	-	-	-				

372. Missouri River at Rulo, Nebr.

Location.--Lat 40°03'15", long. 95°25'15", in NW¼NW¼ sec. 17, T. 1 N., R. 18 E., at bridge on U. S. Highway 159 at Rulo, 3.2 miles upstream from Nemaha River.

Drainage area.--418,905 sq mi.

Supplemental records available.--Gage-height record collected at site 80 ft upstream 1886-99 are contained in reports of Missouri River Commission.

Gage.--Water-stage recorder. Datum of gage is 837.23 ft above mean sea level, datum of 1929. Prior to Sept. 13, 1950, wire-weight gage at site 80 ft upstream at same datum.

Extremes.--1949-50: Maximum discharge, 185,000 cfs Apr. 29, 1950; maximum gage height, 21.6 ft Apr. 30, 1950; minimum daily discharge, 4,900 cfs Dec. 23, 1949; minimum gage height observed, 2.8 ft Dec. 22, 1949.

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1309.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	34,570	29,780	14,510	12,370	17,480	45,070	119,500	80,450	57,780	69,990	48,900	37,090	47,390

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	2,126	1,771	892.2	760.7	970.7	2,772	7,112	4,947	3,438	4,303	3,007	2,207	34,310

NEMAHA RIVER BASIN

373. Turkey Creek near Seneca, Kans.

Location.--Lat 39°57', long. 96°06', in SW¼ sec. 20, T. 1 S., R. 12 E., at Nemaha County highway crossing about 2 miles downstream from mouth of Clear Creek and 5 miles upstream from Nemaha River.

Drainage area.--276 sq mi.

Gage.--Water-stage recorder. Altitude of gage is 1,160 ft above mean sea level (from topographic map).

Extremes.--1949-50: Maximum discharge, 12,000 cfs June 28, 1949 (gage height, 25.17 ft, from floodmarks), from rating curve extended above 7,400 cfs on basis of velocity-area determination of peak flow; minimum not determined, occurred during period of ice effect.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	*26	*32	*11	*185	*444	158	124	287	1,011	404	55.8	247	*246
1950	24.0	18.1	14.7	9.3	30.3	37.3	24.0	458	75.7	142	253	93.2	99.3

* Not previously published; estimated on basis of weather records and records for Nemaha River at Falls City, Nebr.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	*1,800	*1,800	*876	*11,380	*24,680	9,730	7,380	17,670	60,180	24,850	3,420	14,720	*178,200
1950	1,480	1,080	802	573	1,880	2,280	1,430	28,180	4,380	8,750	15,580	5,540	71,880

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1146	12,000	June 28, 1949	-	*246	*178,200	*246	*177,500
1950	1176	7,020	May 9, 1950	-	99.3	71,880	-	-

* Not previously published.

374. Nemaha River at Falls City, Nebr.

Location.--Lat 40°02'00", long. 95°35'30", on line between secs. 22 and 23, T. 1 N., R. 16 E., on downstream side of bridge on U. S. Highway 73, 1 mile south of Falls City and 13 miles upstream from mouth.

Drainage area.--1,340 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 861.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1943, tentative (levels by Corps of Engineers).

Average discharge.--6 years (1944-50), 620 cfs.

Extremes.--1944-50: Maximum discharge, 34,200 cfs June 2, 1949 (gage height, 28.8 ft, from floodmark); minimum daily, 8 cfs July 15, 1946.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	1,991	1,836	1,528	477	1,028	536	-
1945	557	166	191	308	314	1,132	1,668	3,149	1,591	531	220	89.3	830
1946	99.2	81.3	47.1	108	91.7	418	116	117	407	124	33.7	924	295
1947	373	213	104	123	82.4	244	659	469	3,910	486	65.6	62.8	645
1948	37.0	44.6	74.0	51.8	357	932	346	158	203	541	619	323	308
1949	164	198	69.2	154	2,998	968	485	979	5,160	1,352	386	1,128	1,234
1950	159	106	99.4	84.5	233	165	87.4	1,713	302	497	1,029	344	405

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	118,500	100,800	90,900	29,330	63,210	31,890	-
1945	34,240	9,890	11,720	18,960	17,440	69,630	99,270	193,600	94,700	32,650	13,510	5,310	600,900
1946	6,100	4,840	2,900	8,650	5,090	25,680	6,930	7,180	24,220	7,620	2,070	114,500	213,800
1947	22,920	12,670	6,360	7,550	4,580	14,980	98,700	28,850	232,700	29,870	4,030	3,740	467,000
1948	2,280	2,650	4,550	3,170	20,520	57,280	20,610	9,730	12,070	33,270	38,040	19,240	223,400
1949	10,090	11,760	4,250	70,950	166,500	59,500	28,850	60,210	307,000	83,110	23,750	67,120	893,100
1950	9,790	6,340	6,110	5,200	12,920	10,170	5,200	105,300	17,970	30,570	63,280	20,480	293,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1944	1006	17,200	Apr. 23, 1944	-	-	-	-	-
1945	1036	22,100	May 14, 1945	43	830	600,900	772	558,900
1946	1056	27,300	Sept. 4, 1946	8	295	213,800	334	241,900
1947	1086	26,100	June 12, 1947	25	645	467,000	600	434,500
1948	1116	14,000	Mar. 19, 1948	25	308	223,400	331	240,000
1949	1146	34,200	June 2, 1949	17	1,234	893,100	1,228	889,200
1950	1176	26,300	May 9, 1950	50	405	293,300	-	-

NODAWAY RIVER BASIN

375. West Nodaway River at Villisca, Iowa

Location.--Lat 40°55'45", long. 94°59'40", in sec. 28, T. 71 N., R. 36 W., at Chicago, Burlington & Quincy Railroad bridge (Clarinda branch), 0.5 mile west of Villisca, and 1 mile above confluence with Middle Nodaway River.

Drainage area.--360 sq mi, approximately.

Gage.--Chain gage. Prior to Oct. 1, 1919, chain gage at same site and 2.00 ft higher datum.

Average discharge.--6 years (1918-24), 111 cfs.

Extremes (revised).--1918-25: Maximum discharge, 6,200 cfs (estimated) June 9, 1924 (gage height, 12.4 ft, from graph based on gage readings), from rating curve extended above 320 cfs by logarithmic plotting and comparison with previous rating curves; minimum observed, 1 cfs in some years.

Monthly and yearly mean discharge, in cubic feet per second of West Nodaway River at Villisca, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	142	9.03	36.7	3.10	-
1919	64.0	21.4	21.5	17.2	28.9	344	922	421	658	116	32.3	207	237
1920	179	197	108	107	333	205	280	269	95.1	98.3	48.7	19.2	161
1921	17.0	31.8	12.6	6.2	26.6	41.3	42.8	45.6	69.8	20.0	20.8	69.1	33.5
1922	22.3	12.3	7.2	a4	a42.8	22.4	94.3	32.7	58.9	88.7	80.6	40.7	a42.1
1923	14.5	33.8	10	5	4	50.6	47.9	22.8	44.3	17.9	50.5	55.1	29.7
1924	39.0	a7.4	a1	a2	a120	45.8	34.8	15.4	1,020	266	244	137	a160
1925	17.2	a15.2	a20	a7	a95	a35	12.4	a8.4	55.3	-	-	-	-

† Corrected.

* Not previously published; estimated on basis of weather records and records for nearby stations.
a Revised; supersedes figure (acre-feet) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	8,460	555	2,260	184	-
1919	3,940	1,270	1,310	1,060	1,600	21,160	54,880	25,860	39,180	7,130	1,980	12,300	171,700
1920	11,020	11,750	6,640	6,590	19,180	12,580	16,840	16,520	5,680	6,040	3,000	1,140	116,800
1921	1,050	1,890	774	581	1,480	2,540	2,550	2,800	4,150	1,230	1,280	4,110	24,240
1922	1,370	730	440	a246	a2,380	1,380	5,610	2,010	3,500	5,450	4,950	2,420	a20,490
1923	891	2,010	615	307	222	3,110	2,850	1,400	2,630	1,100	3,110	3,280	21,520
1924	2,400	a438	a61	a123	a6,900	2,820	2,060	944	60,560	16,370	14,990	8,150	a115,800
1925	1,060	a904	a1,230	a430	a5,280	a2,150	740	a516	3,290	-	-	-	-

† Corrected.

* Not previously published; estimated on basis of weather records and records for nearby stations.
a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1918	506	a1,420	May 28, 1918	1	-	-	-	-	-	-	-
1919	506	*5,100	Mar. 18, 1919*	1	237	0.658	8.94	171,700	269	10.14	194,600
1920	506	*3,500	May 12, 1920*	7	161	.447	6.08	116,800	125	4.74	91,060
1921	526	*408	June 3, 1921	1	33.5	.093	1.26	24,240	31.8	1.20	23,060
1922	546	*3,900	July 29, 1922	2	b42.1	b.117	b1.59	b30,490	b43.5	b1.64	b31,460
1923	566	263	Mar. 23, 1923	-	29.7	.082	1.12	21,520	b28.9	b1.09	b20,910
1924	586	6,200	June 9, 1924	1	b160	b.444	b6.03	b115,800	b160	b6.05	b116,100
1925	606	c940	June 15, 1925	1	-	-	-	-	-	-	-

* Revised.

a Maximum for period May 20 to Sept. 30, 1918.

b Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

c Maximum for period Oct. 1, 1924, to July 4, 1925.

376. Nodaway River at Clarinda, Iowa

Location.--Lat 40°44'10", long. 95°00'30", in NE $\frac{1}{4}$ sec. 32, T. 69 N., R. 36 W., at bridge on State Highway 2, 0.5 mile downstream from Neele Branch, 1.2 miles east of city square of Clarinda, and 7.5 miles upstream from East Nodaway River.

Drainage area.--740 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 960.36 ft above mean sea level, datum of 1929. May 17, 1918, to July 4, 1925, chain gage at same site and datum.

Average discharge.--20 years (1918-24, 1936-50), 293 cfs.

Extremes.--1918-25, 1936-50: Maximum discharge, 31,100 cfs June 13, 1947 (gage height, 25.3 ft, from floodmark), from rating curve extended above 15,000 cfs on basis of an overflow profile and extended channel rating; minimum observed (revised), 1 cfs Sept. 5, 9, 12, 14, 1918, Dec. 9, 27-31, 1923.

Maximum stage known, 25.4 ft, from floodmarks, in August 1903.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	317	65.4	168	a8.4	-
1919	a189	a55	a55	a45	a70	a800	2,130	976	1,460	233	39.8	652	a557
1920	a550	a600	a320	a310	a950	a569	753	806	384	224	50.5	42.1	a461
1921	26.5	37.9	33.5	15	73.0	44.7	59.6	21.3	275	72.6	*73.9	299	101
1922	67.3	55.9	14.8	a12	a178	118	305	91.8	196	421	277	300	a169
1923	66.4	66.5	15	20	15	77.8	142	91.3	370	61.5	171.	124	102
1924	117	21.8	2.1	a6	a360	275	101	62.5	920	292	251	214	a299
1925	96.4	25.9	a35	a15	232	98.8	45.1	28.3	178	-	-	-	-

* Revised.

* Not previously published; estimated or partly estimated on basis of weather records and records for several of the nearest stations.

a Revised; supersedes figure (acre-feet) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly mean discharge, in cubic feet per second of Nodaway River at Clarinda, Iowa.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year.
1936	-	-	-	-	-	-	-	-	*129	18.3	9.81	*287	-
1937	*91.0	27.4	53.0	12.7	*87.0	*1,074	160	569	99.7	97.1	57.5	6.8	*242
1938	7.5	8.3	10.6	8.9	15.5	14.0	46.5	232	304	34.5	*188	*148	*84.9
1939	8.8	19.0	11.1	12.8	108	1,054	19.9	10.3	406	325	227	7.7	186
1940	15.7	10.6	10.0	6.52	11.3	88.7	48.8	42.0	99.3	353	825	25.4	130
1941	13.9	32.3	29.2	62.0	207	86.1	224	154	1,516	79.0	23.3	510	242
1942	955	706	379	567	377	*826	286	1,322	1,742	520	153	178	*585
1943	72.0	48.5	98.6	62.8	306	186	76.8	285	1,105	262	530	165	264
1944	35.9	51.1	28.4	62.0	103.	387	993	1,774	1,356	212	319	186	459
1945	141	77.4	72.0	145	357	1,222	966	1,441	619	192	106	45.2	450
1946	45.6	42.8	17.3	289	222	486	228	350	769	88.8	186	265	247
1947	394	213	111	87.7	95.9	251	983	534	4,779	284	69.2	31.9	849
1948	27.7	53.9	67.4	25.2	*308	1,170	145	86.2	28.3	*326	94.0	26.5	*195
1949	22.8	82.3	52.9	194	621	738	238	223	597	326	53.5	32.4	262
1950	49.4	31.3	23.0	22.3	315	252	48.7	599	356	141	192	86.1	176

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	18,890	4,020	*10,320	*498	-
1919	*11,620	*3,280	*3,580	*2,770	*3,890	*4,190	126,700	60,020	87,000	14,320	2,450	38,810	*403,400
1920	*33,820	*35,700	*19,680	*18,060	*54,640	*34,990	44,830	49,540	22,830	13,800	3,130	2,510	*334,500
1921	1,630	2,260	2,060	922	4,050	2,750	3,550	13,090	16,350	4,460	*4,540	17,770	*73,430
1922	4,140	3,320	908	878	8,900	7,290	18,130	5,850	11,640	25,910	17,010	17,850	*122,500
1923	4,080	3,960	922	1,230	833	4,780	8,430	5,610	22,040	3,780	10,520	7,370	73,560
1924	7,180	1,300	129	3,360	20,700	16,930	6,000	3,850	14,300	17,950	15,420	12,760	*216,900
1925	5,920	1,540	2,150	892	12,900	6,080	2,690	1,740	10,610	-	-	-	-
1936	-	-	-	-	-	-	-	-	*7,670	1,120	603	*17,110	-
1937	*5,600	1,830	3,260	780	*37,180	*66,040	9,530	35,010	5,930	5,970	3,530	407	*174,900
1938	462	492	653	545	853	859	2,770	14,280	18,070	2,120	*11,530	*8,820	*61,480
1939	541	1,130	684	787	5,980	64,780	1,180	635	24,170	18,990	13,980	460	134,300
1940	964	631	613	401	653	5,460	2,900	2,580	5,910	21,700	60,740	1,510	94,060
1941	857	1,920	1,800	3,810	11,520	5,300	13,330	9,480	90,230	4,880	1,430	30,370	174,900
1942	57,480	41,990	23,320	34,880	20,920	*50,790	17,030	81,280	44,150	31,950	9,380	10,600	*423,800
1943	4,430	2,880	6,070	3,860	16,990	11,450	4,570	16,320	65,730	16,110	32,590	9,820	190,800
1944	2,210	3,040	1,740	3,810	5,910	23,620	59,110	109,100	80,700	13,040	19,840	11,100	335,200
1945	6,700	4,910	4,310	8,930	19,930	76,150	57,470	68,600	36,610	11,830	6,520	2,690	326,600
1946	2,810	2,550	1,060	16,570	12,340	29,880	13,600	21,550	45,730	5,460	11,410	15,740	178,700
1947	24,200	12,670	6,800	5,390	5,330	15,410	59,110	32,820	284,400	17,450	4,250	1,900	469,700
1948	1,700	3,210	4,140	1,550	*17,580	71,690	8,640	4,070	1,680	20,040	5,780	1,580	*141,000
1949	1,400	4,900	3,250	11,900	34,480	45,350	14,190	13,710	35,540	20,020	3,290	1,930	190,700
1950	3,040	1,860	1,410	1,370	17,470	15,480	2,900	36,860	21,160	8,670	11,790	5,130	127,100

* Revised.

* Not previously published; see footnote to preceding table.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30										Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		Inches	Acre-feet	
1918	506	*4,630	May 29, 1918*	b1	-	-	-	-	-	-	-	-	-	-	-
1919	506	*7,900	Apr. 11, 1919	2	*557	*0.753	*10.21	*403,400	*855	*12.01	*474,400	-	-	-	-
1920	506	*5,140	May 12, 1920	5	*461	*.623	*8.47	*334,500	*346	*6.36	*251,300	-	-	-	-
1921	526,1240	*2,140	June 3, 1921*	10	101	.136	*1.86	*73,430	*105	*1.91	*75,850	-	-	-	-
1922	546	*4,900	July 29, 1922	-	c169	c.228	c5.10	c122,500	c170	c3.12	c123,100	-	-	-	-
1923	566	*1,600	June 9, 1923	-	102	.158	1.87	73,560	101	1.87	73,200	-	-	-	-
1924	586	*9,840	June 9, 1924	1	c299	c.404	c5.49	c216,900	c300	c5.52	c217,900	-	-	-	-
1925	606	*d5,700	June 14, 1925	-	-	-	-	-	-	-	-	-	-	-	-
1936	826,1240	*e2,440	Sept. 12, 1936	f4	-	-	-	-	-	-	-	-	-	-	-
1937	826,1240	*12,100	Mar. 4, 1937*	6	*242	*.327	*4.42	*174,900	*229	*4.20	*166,000	-	-	-	-
1938	856,1240	*9,600	May 31, 1938	5	*84.9	*.115	*1.54	*61,450	*86.9	*1.56	*62,210	-	-	-	-
1939	876	13,000	Mar. 12, 1939	6	186	.251	3.40	134,300	185	3.40	134,200	-	-	-	-
1940	896	4,690	Aug. 13, 1940	5	130	.176	2.39	94,060	133	2.44	96,430	-	-	-	-
1941	926	11,000	June 9, 1941	13	242	.327	4.43	174,900	405	7.43	293,100	-	-	-	-
1942	956,1240	*9,300	Oct. 7, 1941	29	*585	*.791	*10.74	*423,800	*434	*7.96	*314,300	-	-	-	-
1943	976	*7,320	June 16, 1943	18	264	.357	4.84	190,800	255	4.69	184,400	-	-	-	-
1944	1006	*9,650	June 4, 1944	14	459	.620	8.44	335,200	474	8.71	344,000	-	-	-	-
1945	1036	*10,900	May 14, 1945	26	450	.608	8.26	325,600	434	7.97	314,200	-	-	-	-
1946	1056	11,100	June 18, 1946	5	247	.334	4.53	178,700	298	5.47	216,000	-	-	-	-
1947	1086	31,100	Mar. 13, 1947	19	649	.877	11.89	469,700	601	11.01	432,100	-	-	-	-
1948	1116,1240	12,800	Mar. 19, 1948	8	*195	*.264	*3.59	*149,700	*196	*3.61	*142,200	-	-	-	-
1949	1146	11,000	June 1, 1949	10	262	.354	4.81	190,000	258	4.74	186,700	-	-	-	-
1950	1176	15,400	May 9, 1950	6	178	.238	3.22	127,100	-	-	-	-	-	-	-

* Revised.

* Not previously published.

a Maximum for period May 17 to Sept. 30, 1918.

b Minimum day for water year.

c Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

d Maximum for period Oct. 1, 1924, to July 4, 1925.

e Maximum for period May 28 to Sept. 30, 1936.

f Minimum day for period May 28 to Sept. 30, 1936.

377. Nodaway River near Burlington Junction, Mo.

Location.--Lat 40°26'40", long. 95°05'20", in NW $\frac{1}{4}$ sec. 17, T. 65 N., R. 37 W., at bridge on State Highway 4, a quarter of a mile upstream from Mill Creek, 0.5 mile downstream from Wabash Railroad bridge, and 1 $\frac{1}{2}$ miles west of Burlington Junction.

Drainage area.--1,240 sq mi, approximately.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 896.17 ft above mean sea level, datum of 1929.

Prior to Oct. 26, 1928, chain gage on former bridge at same site and approximately same datum.

Oct. 26, 1928, to June 9, 1929, chain gage half a mile upstream set to read same as former gage at low water.

June 10, 1929, to Dec. 6, 1934, chain gage and Dec. 7, 1934, to June 28, 1939, wire-weight gage at present site and datum.

Average discharge.--28 years (1922-50), 461 cfs.

Extremes.--1922-50: Maximum discharge, 32,000 cfs June 14, 1947 (gage height, 19.0 ft); maximum gage height observed, 19.69 ft Mar. 5, 1949 (ice jam); minimum discharge, 1.1 cfs Aug. 7, 1934.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	(a)	(a)	(a)	(a)	(a)	(a)	548	136	170	1,020	464	480	-
1923	39.7	269	55.4	69.2	32.4	499	270	166	422	149	382	91.3	204
1924	141	45.1	34.0	25.6	836	633	172	69.45	050	646	599	602	566
1925	70.3	46.4	68.1	33.4	660	161	129	35.3	272	37.3	299	87.3	154
1926	90.4	41.4	30.7	285	1,090	69.0	42.8	67.9	857	239	39.62	000	395
1927	564	162	82.9	70.9	248	247	1,170	340	152	70.1	37.0	52.4	265
1928	316	29.2	20.4	33.2	432	72.5	117	54.71	610	1,300	493	539	416
1929	211	1,170	2,010	359	254	2,710	2,500	1,060	1,090	1,550	212	98.3	1,110
1930	218	415	242	136	660	193	188	792	919	89.0	64.2	30.7	325
1931	30.5	54.5	32.7	23.6	40.3	67.6	72.3	62.4	726	62.2	57.0	365	132
1932	581	1,780	1,120	1,420	1,320	680	503	628	943	221	1,830	323	944
1933	125	202	260	329	118	267	333	196	40.7	62.8	238	197	198
1934	61.9	32.5	44.5	104	50.9	75.3	34.3	50.5	27.4	8.62	13.9	293	66.2
1935	292	129	46.1	284	287	341	36.8	455	1,856	189	61.3	61.2	335
1936	158	212	66.9	37.7	613	1,241	172	442	195	26.7	11.9	375	295
1937	191	40.5	93.3	62.5	949	1,567	311	954	184	252	64.4	11.8	388
1938	12.5	11.8	13.4	15.4	20.4	17.2	46.8	379	628	59.2	450	258	160
1939	12.3	34.0	17.1	13.7	150	2,001	69.4	31.5	892	570	293	17.2	344
1940	26.9	17.5	12.1	8.2	16.9	165	75.4	107	98.3	569	1,287	61.5	206
1941	22.4	36.7	33.3	60.4	347	129	315	310	5,144	134	41.11	183	473
1942	2,647	1,532	738	1,053	617	1,558	435	2,238	1,477	700	293	242	1,134
1943	142	96.1	225	90.2	434	236	107	508	2,682	376	681	199	479
1944	51.9	72.3	54.2	90.5	131	426	1,616	2,683	1,873	321	491	235	670
1945	249	105	97.8	265	642	2,323	2,274	2,453	1,540	563	400	87.8	918
1946	72.8	54.8	30.6	456	402	1,169	420	742	986	168	214	334	421
1947	469	231	156	106	179	355	1,703	959	9,468	534	97.5	48.5	1,182
1948	38.4	71.9	88.6	50.3	399	1,675	227	145	71.9	387	167	44.5	282
1949	42.5	138	88.6	407	1,381	1,486	381	294	1,608	542	96.0	55.1	536
1950	81.4	43.5	45.0	38.0	575	440	83.3	928	776	260	386	152	316

a Figure published in H. Doc. 238, 75d Cong., 2d sess., Missouri River, is unreliable; insufficient data available to derive reliable figure of runoff.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	(a)	(a)	(a)	(a)	(a)	(a)	32,600	8,340	10,100	62,800	28,500	28,600	-
1923	2,440	16,000	3,410	4,250	1,800	30,700	16,100	10,200	25,100	9,160	23,500	5,430	148,000
1924	8,670	2,680	2,090	1,570	48,100	38,900	10,200	4,270	181,000	39,700	36,800	35,900	410,000
1925	4,520	2,760	4,190	2,050	36,700	9,900	7,680	2,170	16,200	2,290	18,400	5,190	112,000
1926	5,580	2,460	1,890	17,500	60,500	4,240	2,550	4,180	51,000	14,700	2,430	119,000	286,000
1927	34,700	9,640	5,100	4,360	13,600	15,200	69,600	20,900	9,040	4,310	2,280	3,120	192,000
1928	19,400	1,740	1,250	2,040	24,800	4,460	6,960	3,360	95,800	79,900	30,300	32,100	302,000
1929	13,000	69,600	124,000	22,100	14,100	67,000	149,000	65,200	64,900	95,300	13,000	5,850	803,000
1930	13,400	24,700	14,900	8,360	36,700	11,900	11,200	48,700	54,700	5,470	3,950	1,830	236,000
1931	1,890	3,240	2,010	1,450	2,240	4,180	4,300	3,840	43,200	3,820	3,500	21,700	95,300
1932	35,700	106,000	6,900	87,300	75,900	40,300	29,900	38,600	56,100	13,800	113,000	19,200	685,000
1933	7,690	12,000	16,000	20,200	6,550	16,400	19,800	12,100	2,420	3,860	14,600	11,700	143,000
1934	3,810	2,940	2,740	6,400	2,820	4,630	2,040	3,110	1,630	530	856	17,410	47,920
1935	17,940	7,660	2,830	17,470	15,930	21,000	2,190	28,000	110,400	11,640	3,770	3,640	242,500
1936	9,740	12,630	4,120	2,320	35,250	76,310	10,260	27,190	11,620	1,640	732	22,310	214,100
1937	11,770	2,410	5,740	3,840	52,700	96,340	18,490	58,690	10,940	15,520	3,960	700	281,100
1938	772	704	824	946	1,130	1,080	2,890	23,300	37,360	3,640	27,680	15,350	115,700
1939	758	2,050	1,050	838	8,310	123,000	4,130	1,930	53,050	35,030	17,990	1,030	249,100
1940	1,650	1,040	742	904	974	10,150	4,490	6,570	5,950	34,960	79,160	3,660	149,800

a See footnote to preceding table.

Monthly and yearly runoff, in acre-feet of Nodaway River near Burlington Junction, Mo.--Continued.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1,370	2,180	2,050	3,720	19,280	7,930	18,730	19,050	187,100	8,250	2,520	70,580	342,600
1942	162,800	91,180	45,370	64,760	34,270	95,780	25,860	137,800	87,880	43,080	18,020	14,590	821,000
1943	8,760	5,720	13,840	5,550	24,110	14,520	6,370	31,230	159,600	23,110	41,900	11,860	346,800
1944	3,190	4,300	3,330	5,560	7,510	28,190	96,130	164,900	111,500	19,710	30,160	13,970	486,400
1945	15,310	6,260	6,010	16,260	35,840	42,800	135,300	150,900	91,660	34,640	24,580	5,220	664,600
1946	4,470	3,250	1,880	28,050	22,300	71,850	25,020	45,650	58,700	10,360	13,190	19,880	304,600
1947	28,870	13,750	9,500	6,460	9,950	21,830	101,300	58,950	663,400	32,850	6,000	2,890	855,800
1948	2,360	4,280	5,450	3,090	22,960	103,000	13,480	8,930	4,280	23,780	10,240	2,650	204,500
1949	2,610	8,200	5,450	25,050	76,710	91,400	22,660	18,100	95,700	33,320	5,900	3,280	388,400
1950	5,000	2,590	2,760	2,330	31,930	27,040	4,960	57,050	46,160	15,960	23,720	9,030	228,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1922	586	-	-	-	-	-	-	-	-	-	-
1923	586	3,480	Mar. 28, 1923	18	204	0.185	2.23	148,000	193	2.10	140,000
1924	586	10,200	June 28, 1924	20	563	.456	6.20	410,000	563	6.17	408,000
1925	606	5,000	June 14, 1925	6	154	.124	1.68	112,000	153	1.66	110,000
1926	626	18,200	Sept. 3, 1926	12	395	.319	4.33	286,000	450	4.93	326,000
1927	646	6,800	Oct. 3, 1926	8	265	.214	2.92	192,000	228	2.51	185,000
1928	666	12,800	July 21, 1928	11	416	.335	4.58	302,000	669	7.36	486,000
1929	686	21,000	July 6, 1929	46	1,110	.895	12.13	805,000	896	9.80	649,000
1930	701	6,220	May 7, 1930	15	325	.262	3.56	236,000	282	2.88	190,000
1931	716	4,100	Sept. 25, 1931	7	132	.106	1.43	95,300	413	4.51	299,000
1932	731	15,400	Aug. 15, 1932	25	944	.761	10.36	685,000	703	7.71	510,000
1933	746	1,750	Apr. 1, 1933	21	198	.160	2.18	143,000	161	1.77	116,000
1934	761	2,150	Sept. 27, 1934	1.1	66.2	.0534	.72	47,920	93.7	1.02	67,860
1935	786	10,600	May 31, 1935	17	335	.270	3.66	242,500	332	3.63	240,500
1936	806	6,520	Feb. 25, 1936	6	295	.238	3.24	214,100	286	3.15	207,600
1937	826	17,100	Mar. 4, 1937	4	388	.313	4.26	281,100	384	3.98	283,500
1938	856	19,800	May 31, 1938	4.8	160	.129	1.74	115,700	162	1.77	117,200
1939	876	19,500	Mar. 12, 1939	4.6	344	.277	3.77	249,100	344	3.76	246,700
1940	896	8,140	July 28, 1940	7	206	.166	2.27	148,800	209	2.30	151,900
1941	926	22,100	June 9, 1941	15	473	.381	5.17	342,600	879	9.62	636,300
1942	956	19,000	May 5, 1942	51	1,134	.915	12.41	821,000	760	8.31	549,900
1943	976	17,200	June 10, 1943	43	479	.386	5.23	346,600	453	4.95	329,000
1944	1006	20,300	May 2, 1944	23	670	.540	7.34	486,400	693	7.59	503,200
1945	1036	16,500	May 14, 1945	37	918	.740	10.03	664,600	893	9.77	646,600
1946	1056	13,900	Mar. 28, 1946	12	421	.340	4.62	304,600	480	5.26	347,200
1947	1086	32,000	June 14, 1947	30	1,182	.953	12.94	855,800	1,127	12.33	815,700
1948	1116	19,700	Mar. 19, 1948	9	282	.227	3.08	204,500	287	3.14	208,700
1949	1146	23,500	June 2, 1949	20	536	.432	5.86	389,400	528	5.78	382,500
1950	1176	17,400	May 9, 1950	29	316	.255	3.46	228,500	-	-	-

MISSOURI RIVER MAIN STEM

378. Missouri River at St. Joseph, Mo.

Location.--Lat 39°45'10" long. 94°51'28", in sec. 17, T. 57 N., R. 35 W., at St. Joseph & Grand Island Railroad bridge in St. Joseph and at mile 460.3.

Drainage area.--424,300 sq mi, approximately.

Supplemental records available.--Gage-height records collected in vicinity 1873-99 are contained in reports of Missouri River Commission; since 1900 in reports of the U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 788.19 ft above mean sea level, datum of 1929. Prior to Oct. 21, 1931, chain gage and Oct. 21, 1931, to Dec. 31, 1933, water-stage recorder at same site at datum 5.50 ft higher.

Average discharge.--22 years (1928-50), 36,650 cfs.

Extremes.--1928-50: Maximum discharge observed, 196,000 cfs June 4, 1929; maximum gage height, 21.35 ft Mar. 7, 1949 (ice jam); minimum discharge, 2,300 cfs Jan. 9, 1937; minimum gage height, 0.00 ft Dec. 18, 19, 1940.

Maximum stage known, 27.2 ft, present datum, Apr. 29, 1881 (discharge, about 370,000 cfs, computed by Corps of Engineers).

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1309.

Monthly and yearly mean discharge, in cubic feet per second of Missouri River at St. Joseph, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	52,600	58,200	-
1929	27,000	32,900	20,500	13,300	20,200	72,100	80,500	53,600	139,000	79,300	29,500	20,200	49,000
1930	25,600	26,800	12,800	14,200	32,600	59,700	53,700	67,300	57,400	35,000	25,300	29,500	36,600
1931	25,800	25,800	15,800	14,800	25,800	25,400	29,500	21,900	38,900	29,300	13,900	15,800	23,500
1932	16,000	22,100	17,700	20,400	26,100	45,200	46,700	51,500	98,400	67,600	38,400	23,900	39,500
1933	17,800	17,500	8,890	17,700	14,600	36,900	45,100	47,800	70,900	50,900	21,200	26,900	31,400
1934	16,350	16,790	15,610	12,490	19,770	29,850	26,290	24,610	35,540	26,250	11,680	11,040	20,510
1935	12,320	15,250	8,918	8,291	17,390	23,020	28,350	39,420	84,570	61,140	24,830	15,330	28,240
1936	12,130	13,910	10,550	8,000	10,420	8,950	39,290	37,580	45,150	26,350	14,080	18,710	25,510
1937	12,080	12,510	10,690	6,720	14,840	38,480	36,330	27,000	58,680	61,980	29,520	12,990	26,710
1938	12,480	12,940	7,600	10,680	13,110	46,190	32,800	34,080	47,650	86,450	36,950	42,840	32,110
1939	25,390	20,940	14,640	16,710	14,000	41,800	67,600	32,380	59,070	48,610	24,100	14,380	31,680
1940	11,840	13,450	13,780	5,026	8,400	18,520	27,510	28,140	40,060	27,900	31,560	19,580	20,490
1941	14,650	13,150	9,946	11,410	15,430	21,520	33,920	27,100	65,250	33,360	22,870	35,550	25,470
1942	35,520	27,500	16,530	15,370	18,280	35,170	36,310	95,140	100,100	55,320	34,070	34,060	41,730
1943	26,320	26,360	15,530	14,370	26,030	31,990	99,180	40,450	94,820	85,570	36,170	34,330	44,030
1944	30,420	32,650	18,770	18,980	22,590	35,330	96,460	66,450	123,300	101,400	50,500	36,800	52,770
1945	30,630	32,790	16,750	21,690	35,370	81,460	58,640	51,780	66,600	68,180	42,400	27,380	46,350
1946	34,500	25,380	9,978	15,950	25,750	43,750	33,970	30,450	58,360	47,380	26,640	41,190	32,590
1947	46,710	33,920	16,390	15,550	20,780	33,870	93,110	61,330	138,400	100,800	44,380	36,050	53,460
1948	39,580	37,570	18,250	15,170	26,450	73,850	68,860	43,170	75,800	57,900	37,810	47,240	47,240
1949	40,800	40,760	17,170	17,360	27,710	91,660	105,400	49,240	81,270	51,240	35,400	38,440	49,700
1950	35,370	30,420	15,760	12,260	19,250	43,420	115,700	81,650	57,450	69,740	52,000	38,400	47,710

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	5,230	2,270	-	-
1929	1,680	1,960	1,280	818	1,120	4,430	4,790	3,300	8,270	4,880	1,810	1,200	35,500
1930	1,570	1,590	787	873	1,810	3,670	3,200	4,140	3,420	2,150	1,580	1,760	26,500
1931	1,590	1,540	972	910	1,430	1,580	1,760	1,350	2,310	1,800	855	940	17,000
1932	984	1,320	1,090	1,250	1,500	2,780	2,780	3,170	5,860	4,160	380	1,420	28,700
1933	1,090	1,040	547	1,090	811	2,270	2,680	2,940	4,220	3,130	1,300	1,600	22,700
1934	1,006	998.9	959.6	788.3	1,098	1,835	1,564	1,513	2,115	1,614	718.4	656.9	14,850
1935	757.4	907.4	548.4	506.7	965.8	1,416	1,687	2,424	5,032	3,753	1,527	912.4	20,440
1936	746	827.5	648.3	491.9	599.4	4,273	2,338	2,311	2,686	1,620	864.1	1,114	19,520
1937	742.8	744.2	657.3	413.2	824.1	2,243	2,162	1,860	3,492	3,811	815	773.2	18,340
1938	767.2	769.7	467.3	656.5	728.1	2,840	1,952	2,094	2,935	5,312	2,72	2,549	23,250
1939	1,561	1,245	900.3	1,027	777.5	2,570	4,022	1,990	3,515	2,981	432	855.5	22,940
1940	727.7	800.1	847.1	509	463.2	1,139	1,637	1,730	2,364	1,715	1,940	1,165	14,880
1941	900.7	782.6	611.6	701.5	857	1,323	2,137	1,667	3,883	2,051	1,406	2,116	18,440
1942	2,184	1,636	1,016	822.3	904.3	2,162	2,160	5,850	5,956	3,401	2,095	2,027	30,210
1943	1,618	1,569	832.1	883.6	1,448	1,967	5,901	2,487	5,642	5,262	2,224	2,043	31,870
1944	1,870	1,955	1,154	1,167	1,300	2,172	5,740	4,086	7,337	6,243	1,105	2,190	38,310
1945	1,884	1,951	1,030	1,346	1,964	5,008	3,489	3,184	5,272	4,192	607	1,629	33,560
1946	2,121	1,510	813.5	980.6	1,430	2,690	2,022	1,872	3,354	2,912	638	2,451	23,590
1947	2,872	2,019	1,008	958.3	1,154	2,082	5,541	3,771	8,234	6,192	729	2,145	38,710
1948	2,434	2,238	1,122	965.4	1,522	4,541	3,978	2,655	4,513	4,580	560	2,190	34,300
1949	2,509	2,425	1,056	1,067	1,539	5,636	6,271	3,028	4,856	3,150	1,177	2,288	35,980
1950	2,175	1,810	969.3	753.7	1,069	2,670	6,887	5,021	3,419	4,283	1,197	2,285	44,540

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1928	666	-	-	-	-	-	-	-	-
1929	686	196,000	June 4, 1929	9,600	49,000	35,500,000	47,800	34,600,000	
1930	701	106,000	May 14, 1930	8,800	36,600	26,500,000	36,800	26,700,000	
1931	716	65,600	June 23, 1931	8,900	23,500	17,000,000	22,500	16,300,000	
1932	731	156,000	June 20, 1932	11,900	39,500	28,700,000	38,500	28,000,000	
1933	748	112,000	May 30, 1933	3,730	31,400	22,700,000	31,800	23,000,000	
1934	761	94,700	Mar. 6, 1934	4,490	20,510	14,850,000	19,470	14,100,000	
1935	786	116,000	June 29, 1935	4,200	28,240	20,440,000	28,250	20,450,000	
1936	806	108,000	Mar. 12, 1936	3,500	25,510	18,520,000	25,400	18,440,000	
1937	826	100,000	June 28, 1937	2,300	26,710	19,340,000	26,520	19,200,000	
1938	856	124,000	July 17, 1938	3,700	32,110	23,250,000	34,460	24,950,000	
1939	876	141,000	Apr. 19, 1939	5,900	31,680	22,940,000	29,840	21,600,000	
1940	896	65,600	June 10, 1940	3,700	20,490	14,880,000	20,380	14,800,000	
1941	926	115,000	June 11, 1941	4,110	25,470	18,440,000	28,980	20,980,000	
1942	956	134,000	June 25, 1942	7,000	30,210	30,210,000	40,610	29,400,000	
1943	976	154,000	Apr. 18, 1943	10,500	44,030	31,870,000	45,350	32,850,000	
1944	1008	161,000	(a)	4,950	52,770	38,310,000	52,610	36,200,000	
1945	1036	152,000	June 16, 1945	10,500	46,350	33,560,000	45,500	32,940,000	
1946	1056	114,000	June 19, 1946	2,980	32,590	23,590,000	34,870	25,250,000	
1947	1086	180,000	June 16, 1947	4,000	53,460	38,710,000	53,320	38,600,000	
1948	1116	158,000	Mar. 20, 1948	7,000	47,240	34,300,000	47,520	34,940,000	
1949	1146	170,000	Mar. 7-8, 1949	6,880	49,700	35,980,000	48,270	34,950,000	
1950	1176	178,000	Apr. 29-30, 1950	7,000	47,710	34,540,000	-	-	

a Apr. 19, June 18, 1944.

379. Missouri River at Leavenworth, Kans.

Location.--Lat 39°19'02" long. 94°54'22", in NE $\frac{1}{4}$ sec. 36, T. 8 S., R. 22 E., at Chicago Great Western Railroad bridge in Leavenworth and at mile 408.2.

Drainage area.--425,000 sq mi (revised), approximately.

Supplemental records available.--Gage-height records collected in vicinity 1873-99 are contained in reports of Missouri River Commission.

Gage.--Chain gage. Datum of gage is 713.53 ft above mean sea level.

Average discharge.--7 years (1922-29), 52,540 cfs.

Extremes.--1922-29: Maximum discharge, 241,000 cfs July 7, 8, 1923; maximum gage height, 49.3 ft June 28, 1924, May 17, 18, June 29, 30, 1927; minimum discharge, 3,450 cfs Dec. 22, 1924.

Maximum stage known, 53.0 ft Apr. 29, 30, 1881.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	83,200	61,600	114,000	87,700	49,300	22,800	-
1923	17,700	25,700	12,900	18,700	20,900	30,200	70,900	47,500	34,000	48,000	89,000	38,500	55,100
1924	71,300	39,000	28,800	15,000	26,500	55,600	87,200	57,100	37,000	98,400	48,900	25,600	57,500
1925	25,100	27,700	13,400	13,400	33,300	47,100	69,200	48,600	33,000	97,200	41,800	24,600	47,800
1926	29,200	30,900	15,700	19,800	35,200	39,600	33,700	45,600	58,000	47,700	32,300	50,900	36,500
1927	35,400	23,200	15,400	18,300	33,900	44,400	103,000	113,000	73,000	138,000	56,800	36,700	66,100
1928	34,300	27,200	12,400	25,200	41,400	57,600	63,700	53,800	10,000	04,000	63,000	39,300	52,700
1929	28,700	40,600	23,000	14,500	21,700	73,900	86,100	54,600	47,000	81,000	32,300	21,400	52,100

* Revised.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	4,950	3,790	6,800	5,390	3,030	1,360	-
1923	1,090	1,530	793	1,150	1,160	2,410	4,200	2,920	7,970	9,100	5,470	2,160	40,000
1924	4,380	2,320	1,770	984	1,520	3,420	5,190	3,510	8,150	6,050	2,880	1,520	41,700
1925	1,540	1,650	824	824	1,850	2,900	4,120	2,990	7,910	5,980	2,570	1,460	34,600
1926	1,800	1,840	985	1,220	1,950	2,430	2,010	2,800	3,450	2,930	1,990	3,030	26,400
1927	2,180	11,380	947	1,130	1,880	2,730	3,130	6,950	14,300	4,480	3,480	2,190	47,800
1928	2,110	1,620	762	1,550	2,380	3,540	3,790	3,310	6,550	6,400	3,870	2,340	38,200
1929	1,760	2,420	1,410	892	1,210	4,540	5,120	3,360	8,750	4,980	1,990	1,270	37,700

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1922	546, 1340	*180,000	June 27, 28, 1922	-	-	-	-	-	-
1923	586	241,000	July 7, 8, 1923	-	55,100	40,000,000	62,100	45,000,000	-
1924	586	221,000	June 28, 1924	13,600	57,500	41,700,000	51,300	37,200,000	-
1925	606	235,000	June 18, 1925	3,500	47,800	34,600,000	48,600	35,200,000	-
1926	626	75,000	June 23, 1926	6,350	36,500	26,400,000	36,400	26,300,000	-
1927	646	213,000	(a)	9,200	68,100	47,800,000	66,000	47,800,000	-
1928	666	146,000	June 18, 1928	6,250	52,700	38,200,000	54,200	39,300,000	-
1929	686	212,000	June 4, 1929	10,600	52,100	57,700,000	-	-	-

a May 17, 18, June 29, 30, 1927.

PLATTE RIVER BASIN (IOWA-MISSOURI)

380. Platte River at Conception Junction, Mo.

Location.--Lat 40°16'15" long. 94°42'15", on line between NW $\frac{1}{4}$ sec. 14 and SW $\frac{1}{4}$ sec. 11, T. 63 N., R. 34 W., at county highway bridge half a mile west of Conception Junction.

Drainage area.--492 sq mi.

Supplemental records available.--May 1924 to September 1925, gage heights and discharge measurements only.

Gage.--Chain gage. Altitude of gage is 940 ft (from topographic map). Prior to Aug. 6, 1928, at site 1 mile upstream at different datum.

Average discharge.--6 years (1921-23, 1928-32), 219 cfs.

Extremes.--1921-23, 1928-32: Maximum discharge, 12,200 cfs July 6, 1929 (gage height, 21.70 ft); minimum, 0.1 cfs Sept. 19, 1931.

Monthly and yearly mean discharge, in cubic feet per second of Platte River at
Conception Junction, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	53.6	77.7	-
1922	39.4	22.9	2.71	0.87	20.1	96.0	99.6	164	77.5	104.0	109	199	156
1923	46.7	376	28.6	19.9	14.3	225	178	181	170	48.1	72.4	103	122
1924	64.4	19.2	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	469	-
1929	180	959	327	50.3	114	1,210	1,340	256	438	623	10.9	15.2	461
1930	104	111	50.7	20.6	135	66.0	66.2	348	442	35.9	18.1	13.3	117
1931	4.71	7.21	7.23	2.68	5.18	20.1	17.9	3.75	72.3	2.18	10.6	154	25.4
1932	351	1,290	489	741	375	184	207	77.2	327	71.5	1,010	45.3	430

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	3,300	4,620	-
1922	2,420	1,360	167	53	1,120	5,900	5,930	10,100	4,610	64,000	6,700	11,800	114,000
1923	2,870	22,400	1,760	1,220	795	13,800	10,600	11,100	10,100	2,980	4,450	6,120	88,200
1924	3,960	1,140	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	27,900	-
1929	11,100	57,100	20,100	3,090	6,320	74,100	79,900	15,700	26,000	38,300	672	902	333,000
1930	6,400	6,600	3,120	1,270	7,500	4,060	3,940	21,400	26,300	2,210	1,110	791	84,700
1931	290	429	445	165	288	1,240	1,070	231	4,300	134	652	9,160	18,400
1932	21,600	76,800	30,100	45,600	21,600	11,300	12,300	4,750	19,500	4,400	62,100	2,700	313,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1921	528	-	-	-	-	-	-	-	-	-	-
1922	548	8,730	July 10, 1922	0.5	156	0.317	4.34	114,000	189	5.22	137,000
1923	566	3,900	Nov. 13, 1922	6	122	.248	3.36	88,200	-	-	-
1924	586	-	-	-	-	-	-	-	-	-	-
1928	666	-	-	-	-	-	-	-	-	-	-
1929	686	12,200	July 6, 1929	6	461	.937	12.72	333,000	361	9.96	261,000
1930	701	4,200	June 16, 1930	2.7	117	.238	3.22	84,700	96.4	2.66	69,700
1931	716	1,810	Sept. 25, 1931	1.1	25.4	.052	.71	18,400	214	5.55	146,000
1932	731	10,200	Nov. 24, 1931	2.1	430	.874	11.90	313,000	-	-	-

381. One Hundred and Two River near Maryville, Mo. 1/

Location (revised).--Lat 40°23'15", long. 94°49'35", in SE 1/4 sec. 34, T. 65 N., R. 35 W., at county highway bridge 2 1/2 miles northeast of Maryville and 3 1/2 miles downstream from Norway Creek.

Drainage area.--500 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 969.90 ft above mean sea level, datum of 1929. Prior to June 20, 1934, staff gage at site 3 miles downstream at datum 5.68 ft lower.

Average discharge.--18 years (1932-50), 176 cfs.

Extremes.--1932-50: Maximum discharge, 14,200 cfs June 14, 1947 (gage height, 21.2 ft, from floodmark); no flow at times in August, September 1934, July 25, 26, 1940. Stage equal to that of June 14, 1947, was reached at an unknown date prior to establishment of station, from floodmark.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	10.2	64.3	138	44.3	23.1	109	120	85.2	12.4	17.0	291	217	93.1
1934	36.7	12.4	20.2	33.2	10.3	19.1	*13	*38	*5	3.26	.83	30.7	*18.7
1935	56.6	184	31.4	48.9	131	109	15.6	340	1,232	130	5.63	21.7	189
1936	19.1	86.7	19.0	8.4	22.2	414	64.8	142	16.4	2.57	2.70	189	82.5
1937	35.3	4.97	18.6	17.0	357	388	98.8	143	54.6	270	7.49	2.40	115
1938	1.98	2.13	5.77	4.91	3.06	3.68	44.0	86.5	340	2.96	152	40.6	57.2
1939	1.38	6.76	3.13	3.72	11.2	837	26.5	13.2	696	366	19.7	3.01	167
1940	1.84	1.83	1.56	1.00	4.00	41.6	29.2	85.3	14.0	112	315	6.50	51.8
1941	2.01	4.16	5.77	21.3	142	48.6	45.5	90.9	145	21.8	2.47	424	160
1942	1,233	945	304	671	203	878	78.1	477	462	89.3	216	49.2	470
1943	64.2	18.1	93.8	41.0	178	79.8	32.5	357	2,210	66.9	520	41.7	290
1944	7.5	8.4	6.4	16.2	47.0	246	1,104	974	129	14.1	136	30.7	227
1945	57.6	14.7	108	95.3	380	801	1,039	828	576	228	133	39.4	357
1946	31.9	10.3	12.9	288	63.6	721	152	426	241	24.1	7.36	16.0	188
1947	13.0	16.9	6.95	13.2	26.1	102	913	288	5,187	71.9	7.48	5.12	384
1948	4.75	5.33	9.07	3.11	124	629	85.8	83.3	45.4	18.8	34.7	3.69	87.6
1949	5.62	5.82	3.43	130	597	336	104	32.8	589	104	19.3	8.93	157
1950	7.6	5.36	5.31	5.11	238	110	16.5	314	161	125	154	31.2	97.1

* Not previously published; estimated on basis of records for adjacent stations.

1/ Published as "at Maryville" prior to June 20, 1934.

Monthly and yearly runoff, in acre-feet of One Hundred and Two River near Maryville, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	627	3,820	8,500	2,730	1,280	6,730	7,130	4,010	738	1,050	17,860	12,920	67,400
1934	2,260	728	1,240	2,040	570	1,170	*771	*2,340	*297	200	51	1,830	*13,500
1935	3,480	9,760	1,930	3,010	7,260	6,730	928	20,880	73,290	8,020	346	1,290	136,900
1936	1,180	5,160	1,170	518	1,280	25,480	3,860	8,740	976	158	166	11,230	59,920
1937	2,170	296	1,020	1,050	19,840	23,860	5,880	8,820	3,250	16,610	461	143	83,400
1938	122	127	355	302	170	228	2,620	5,320	20,230	182	9,370	2,420	41,440
1939	85	402	193	229	824	51,480	1,570	815	41,440	22,500	1,210	179	120,700
1940	113	109	96	61	230	2,560	1,740	5,240	835	6,860	19,340	387	37,570
1941	123	248	355	1,310	7,870	2,990	2,710	5,590	69,140	1,340	152	25,240	116,100
1942	75,840	56,250	18,720	41,270	11,250	53,980	4,650	29,360	27,470	5,490	13,270	2,930	340,500
1943	3,950	1,080	5,770	2,520	9,880	4,910	1,930	21,970	31,500	4,110	19,670	2,480	209,800
1944	462	498	391	998	2,710	15,130	65,720	59,890	7,700	869	8,340	1,830	164,500
1945	3,540	877	6,640	5,860	21,080	49,280	61,850	50,810	34,260	14,050	8,170	2,340	258,700
1946	1,960	611	793	17,720	3,530	44,320	9,060	26,190	14,320	1,480	452	950	121,400
1947	800	1,010	427	811	1,450	6,270	54,340	17,750	189,700	4,420	460	305	277,700
1948	292	317	558	191	7,120	38,870	5,100	5,700	2,700	1,160	2,140	220	63,580
1949	345	227	211	7,990	33,140	20,680	6,160	2,020	35,020	6,400	1,190	532	113,900
1950	470	319	328	314	13,200	6,770	984	19,300	9,590	7,680	9,460	1,860	70,270

* Not previously published; estimated on basis of records for adjacent stations.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1933	761	2,920	Aug. 22, 1933	2	93.1	0.181	2.46	67,400	81.1	2.14	58,700
1934	761	500	May 14, 1934	0	*18.7	*.038	*.49	*13,500	*33.8	*.91	*24,400
1935	786	10,300	June 1, 1935	.1	189	.378	5.11	136,900	179	4.81	129,300
1936	806	6,330	Feb. 26, 1936	1.0	82.5	.165	2.23	59,920	77	2.09	55,890
1937	826	4,530	Mar. 4, 1937	1.1	115	.250	3.12	85,400	111	3.00	80,520
1938	856	4,900	June 1, 1938	.8	57.2	.114	1.55	41,440	57.3	1.58	41,520
1939	876	12,600	Mar. 13, 1939	1	187	.334	4.51	120,700	166	4.49	120,400
1940	896	3,640	May 8, 1940	0	51.8	.104	1.41	37,570	52.3	1.42	37,980
1941	926	11,800	June 10, 1941	1	160	.320	4.36	116,100	368	10.00	266,200
1942	956	8,280	Nov. 2, 1941	6	470	.940	12.77	340,500	277	7.52	200,500
1943	976	10,300	June 12, 1943	3.2	290	.580	7.85	209,800	277	7.49	200,300
1944	1006	10,900	May 2, 1944	3	227	.454	6.18	164,500	240	6.54	174,200
1945	1036	6,080	May 14, 1945	7	357	.714	9.69	258,700	347	9.40	251,000
1946	1056	6,180	Mar. 28, 1946	3.0	168	.338	4.55	121,400	166	4.52	120,300
1947	1086	14,200	June 14, 1947	2	384	.768	10.42	277,700	382	10.37	276,700
1948	1116	6,330	Mar. 19, 1948	2.3	87.6	.175	2.38	63,590	871	2.36	63,200
1949	1146	10,600	June 2, 1949	1.8	157	.314	4.27	113,900	158	4.28	114,200
1950	1176	7,080	May 10, 1950	3	97.1	.194	2.62	70,270	-	-	-

* Not previously published.

382. White Cloud Creek near Maryville, Mo.

Location.--Lat 40°23'22", long. 94°54'33" in NW¼NW¼ sec. 1, T. 64 N., R. 36 W., at bridge on U. S. Highway 71, 4 miles upstream from Big Slough and 4½ miles northwest of Maryville.

Drainage area.--6.06 sq mi.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,070 ft (from topographic map).

Extremes.--1948-50: Maximum discharge, 4,100 cfs June 1, 1949 (gage height, 13.41 ft), from rating curve extended above 130 cfs on basis of contracted-opening determination of peak flow; no flow on many days.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	0.89	0.360	0.182	2.07	2.81	3.00	2.49	1.06	21.8	2.89	0.573	0.459	3.19
1950	.321	.290	.401	.208	1.75	.609	.691	2.37	1.42	4.84	7.20	1.06	1.76

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	55	21	11	127	156	184	148	65	1,500	178	35	27	2,310
1950	20	17	25	13	97	37	41	146	84	285	443	63	1,270

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1949	1146	4,100	June 1, 1949	0	3.19	0.526	7.14	2,310	3.15	7.05	2,280
1950	1176	328	July 17, 1950	0	1.76	.290	3.94	1,270	-	-	-

383. Platte River near Agency, Mo. 1/

Location.--Lat 39°41'20", long. 94°42'15", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 10, T. 56 N., R. 34 W., at bridge on U. S. Highway 169, $1\frac{1}{2}$ miles downstream from Third Fork and $3\frac{1}{2}$ miles north-east of Agency.

Drainage area.--1,760 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 807.38 ft above mean sea level, datum of 1929. Prior to May 13, 1932, chain gage at site 4 miles downstream at different datum. May 13, 1932, to Dec. 12, 1934, chain gage at present site and datum.

Average discharge.--23 years (1924-29, 1932-50), 784 cfs.

Extremes.--1924-30, 1932-50: Maximum discharge, 50,000 cfs June 23, 1947; maximum gage height, 30.46 ft June 23, 1947; no flow at times in July and August 1934.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	5,580	1,270	290	372	-
1925	68.7	55.1	227	65.8	664	352	552	344	1,840	126	789	785	484
1926	1,010	448	172	592	837	365	475	146	1,310	271	154	7,850	1,120
1927	5,950	359	216	111	420	636	5,320	688	674	147	239	82	1,070
1928	873	95.9	43.7	77.2	423	107	255	80.52	690	1,910	446	3,070	854
1929	873	4,100	1,410	174	1,040	5,270	4,880	1,520	5,680	2,270	217	90.8	2,110
1930	337	844	211	108	961	303	294	1,120	1,240	259	-	-	-
1932	-	-	-	-	-	-	-	-	2,030	411	1,700	158	-
1933	43.6	176	460	206	79.1	230	471	363	67.4	172	492	578	279
1934	104	36.6	52.8	68.9	34.0	58.0	70.3	108	90.6	14.4	2.82	168	87.4
1935	236	914	245	137	344	331	110	2,036	5,718	367	28.3	71.4	673
1936	31.6	284	80.4	33.0	1,129	1,806	91.8	788	172	10.2	4.07	505	392
1937	182	21.0	94.7	217	1,695	1,844	379	696	220	1,310	95.2	12.8	541
1938	11.1	7.06	7.74	13.2	14.2	12.7	75.9	395	744	19.2	241	138	140
1939	4.71	13.4	5.59	7.63	15.51	5.67	288	64.61	646	581	93.5	8.11	359
1940	4.25	13.0	6.82	2.72	14.0	172	77.8	280	321	172	815	43.4	160
1941	9.4	17.0	15.4	78.0	366	138	408	234	3,216	82.6	20.31	135	470
1942	2,643	2,166	798	1,590	567	2,409	364	1,352	4,285	424	694	341	1,471
1943	258	188	488	155	686	241	138	1,569	7,555	358	652	145	1,029
1944	44.7	35.6	31.0	87.3	123	700	4,914	4,522	1,282	85.11	216	129	1,095
1945	284	151	702	462	993	2,552	4,097	4,182	5,445	878	512	178	1,519
1946	291	59.4	70.3	1,626	273	2,469	581	1,160	915	149	42.9	106	651
1947	72.3	65.1	36.3	43.5	110	567	3,388	1,058	13,640	522	49.7	35.8	1,616
1948	30.2	47.8	157	37.1	437	1,977	464	554	614	475	294	46.4	429
1949	38.7	48.1	25.6	858	2,541	1,544	494	165	2,692	1,096	159	158	787
1950	310	81.3	66.1	131	977	480	112	1,088	820	523	1,553	199	527

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	213,000	78,400	17,900	22,100	-
1925	4,220	3,290	14,000	4,050	36,900	21,600	32,900	21,200	109,000	7,750	48,500	46,700	350,000
1926	61,800	26,700	10,600	36,400	46,500	22,400	28,200	8,980	78,200	16,700	9,440	467,000	813,000
1927	242,000	21,300	13,500	8,820	23,300	39,100	317,000	42,300	40,100	9,040	14,700	3,690	773,000
1928	41,400	5,710	2,690	4,750	24,300	6,580	15,200	4,950	172,000	18,000	27,400	183,000	606,000
1929	53,700	244,000	86,800	10,700	58,000	324,000	290,000	81,000	219,000	40,000	13,400	5,400	1,526,000
1930	20,700	50,200	13,000	6,840	53,400	18,600	17,500	69,000	74,000	15,900	-	-	-
1932	-	-	-	-	-	-	-	-	121,000	25,300	105,000	9,400	-
1933	2,680	10,450	28,290	12,650	4,390	14,140	28,050	22,340	4,010	10,580	50,270	34,390	202,000
1934	6,410	2,190	3,240	4,240	1,890	3,570	4,180	6,650	5,590	868	161	10,020	48,820
1935	14,510	54,380	15,050	8,030	19,090	20,590	6,530	125,200	40,200	22,540	1,740	4,250	632,300
1936	1,940	16,900	4,940	2,030	29,320	98,730	5,460	48,320	10,220	630	250	30,080	284,400
1937	11,190	1,250	5,800	13,320	93,570	101,100	22,520	42,790	13,070	80,550	5,910	764	391,800
1938	680	420	476	810	787	779	4,490	24,290	44,250	1,180	14,800	8,200	101,200
1939	290	797	344	469	859	96,380	17,130	3,970	97,940	35,710	5,750	483	260,100
1940	262	778	419	167	803	10,590	4,630	16,010	19,110	10,550	50,100	2,580	116,000
1941	577	1,010	944	4,790	20,300	8,470	24,280	14,390	91,400	5,080	1,250	87,540	340,000
1942	162,500	28,900	49,080	95,910	31,510	48,100	21,640	83,130	255,000	26,080	42,660	20,270	1,065,000
1943	15,850	11,190	29,980	9,520	38,110	14,830	8,240	96,490	449,500	22,020	40,690	8,650	745,100
1944	2,750	2,000	1,900	4,140	7,070	43,060	292,400	278,100	76,260	5,110	74,770	7,140	794,700
1945	17,480	9,000	43,180	28,380	55,120	156,900	243,800	257,100	205,000	53,960	19,210	10,570	1,100,000
1946	17,870	3,540	4,320	99,970	15,170	151,800	34,600	71,350	54,420	9,190	2,640	6,300	471,200
1947	4,440	3,870	2,230	2,680	6,120	34,850	201,600	85,080	111,500	32,070	3,060	2,130	1,170,000
1948	1,850	2,830	9,680	2,280	25,130	21,600	27,630	34,050	35,510	29,190	18,060	2,760	311,600
1949	2,380	2,860	1,570	40,460	41,100	94,940	29,410	10,140	180,200	67,400	9,800	9,430	569,700
1950	19,040	4,840	4,060	8,040	54,250	29,510	6,650	68,930	48,780	32,160	95,470	11,870	381,600

1/ Published as "at Agency" prior to 1932.

Yearly discharge, in cubic feet per second of Platte River near Agency, Mo.

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	586	-	-	-	-	-	-	-	-	-	-
1925	806	15,200	June 4, 1925	34	484	0.270	3.67	350,000	591	4.49	428,000
1926	826	22,600	Sept. 18, 1926	39	1,120	.626	8.53	813,000	1,370	10.39	990,000
1927	846	14,500	Oct. 7, 1926	25	1,070	.598	8.07	773,000	753	5.69	546,000
1928	866	15,300	Sept. 14, 1928	24	834	.466	6.36	606,000	1,300	9.87	941,000
1929	886	22,300	June 3, 1929	55	2,110	1.18	15.99	1,526,000	1,690	12.85	1,225,000
1930	701	-	-	-	-	-	-	-	-	-	-
1932	731	-	-	-	-	-	-	-	-	-	-
1933	761	5,560	Sept. 27, 1933	6	279	.159	2.15	202,200	238	1.83	173,000
1934	761	1,020	May 14, 1934	0	67.4	.0383	.51	48,820	167	1.28	120,900
1935	786	21,800	June 4, 1935	4.1	873	.496	6.75	632,300	790	6.11	572,100
1936	806	8,150	Mar. 5, 1936	1.4	392	.223	3.03	284,400	394	2.97	278,800
1937	826	11,400	Feb. 13, 1937	6	541	.307	4.18	391,800	518	4.00	375,200
1938	856	6,380	June 2, 1938	1.4	140	.080	1.08	101,200	140	.080	101,000
1939	876	9,010	Mar. 15, 1939	1	359	.204	2.76	260,100	358	2.76	260,100
1940	896	4,870	Aug. 15, 1940	2	160	.091	1.23	116,000	161	1.24	117,000
1941	926	15,900	June 13, 1941	6	470	.267	3.62	340,000	936	7.21	678,000
1942	956	28,600	June 26, 1942	53	1,471	.836	11.34	1,065,000	1,079	8.33	781,300
1943	976	24,600	June 16, 1943	50	1,029	.585	7.94	745,100	980	7.40	694,700
1944	1006	36,500	May 5, 1944	15	1,095	.822	8.46	794,700	1,181	9.14	857,700
1945	1036	21,300	May 17, 1945	48	1,519	.863	11.73	1,100,000	1,458	11.26	1,056,000
1946	1056	17,100	Jan. 6, 1946	22	651	.370	5.03	471,200	630	4.86	456,000
1947	1086	50,000	June 23, 1947	7	1,616	.918	12.46	1,170,000	1,621	12.50	1,173,000
1948	1116	11,000	Mar. 20, 1948	14	429	.244	3.31	311,600	419	3.24	304,000
1949	1146	13,000	June 4, 1949	18	787	.447	6.07	569,700	700	6.28	590,800
1950	1176	13,000	Aug. 15, 1950	27	527	.299	4.06	381,600	-	-	-

384. Jenkins Branch at Gower, Mo.

Location--Lat 39°37'29", long. 94°36'01", in SW 1/4 sec. 34, T. 56 N., R. 33 W., at culvert on U. S. Highway 169, 0.8 mile north of Gower and 4.4 miles upstream from mouth.

Drainage area--2.72 sq mi.

Gage--Water-stage recorder and concrete control. Altitude of gage is 905 ft (from topographic map).

Extremes--May to September 1950: Maximum discharge, 671 cfs July 19 (gage height, 4.51 ft), from rating curve extended above 240 cfs by logarithmic plotting; minimum, 0.07 cfs Sept. 14-18 (gage height. 0.75 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	1.79	0.517	3.04	1.61	0.982	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	110	31	167	99	58	-

385. Arikaree River at Haigler, Nebr.

Location.--Lat 40°01', long. 101°57', in sec. 28, T. 1 N., R. 41 W., 120 ft downstream from Chicago, Burlington & Quincy Railroad bridge, a quarter of a mile downstream from bridge on U. S. Highway 34, half a mile northwest of Haigler, and half a mile upstream from confluence with North Fork Republican River.

Drainage area.--1,460 sq mi, approximately, of which about 1,330 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for the period March 1947 to September 1950 and water temperatures for the period April to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 3,242.36 ft above mean sea level, datum of 1929. Prior to June 5, 1935, staff gage at site 320 ft upstream at datum 3 ft higher. June 5, 1935, to Nov. 20, 1938, staff gage at site 120 ft upstream from present site at datum 1 ft higher. Nov. 21, 1938 to Sept. 30, 1940, water-stage recorder at present site at datum 1 ft higher.

Average discharge. 19 years (1931-50), 30.9 cfs.

Extremes.--1931-50: Maximum discharge, 50,000 cfs May 31, 1935 (gage height, 12.2 ft, present datum, from floodmarks), from rating curve extended above 130 cfs on basis of slope-area determination of peak flow; no flow for periods in most years.

Remarks.--Natural flow of stream affected by ground-water withdrawals and diversion for irrigation of about 1,500 acres in Colorado, and by return flow from Pioneer Canal.

Cooperation.--Records for October 1931 to February 1932, not previously published by Geological Survey, furnished by State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	a10.9	a14.3	a15.3	a15.2	a26.4	28.5	22.5	24.1	26.0	14.8	87.2	8.5	a24.5
1933	13.4	14.6	12.4	16.9	30.0	27.7	23.1	39.3	6.10	118	59.6	38.5	33.5
1934	14.5	18.5	23	24	21	21.5	21.5	8.6	40.8	1.40	49.4	5.3	20.8
1935	6.0	19.0	22	17	20.5	17.3	26.6	709	599	30.2	39.8	7.9	127
1936	7.3	12.1	13.3	14.2	20.0	21.4	26.0	89.2	38.4	0.8	9.3	12.1	22.0
1937	14.5	15.2	8.95	10.0	67.0	25.2	6.0	10.9	20.9	4.75	111.75	22.5	17.0
1938	8.42	9.16	8.48	12.0	7.76	12.7	13.6	85.1	19.3	39.5	111	140	38.7
1949	7.45	17.0	28.5	16.2	4.89	24.3	17.0	12.5	23.6	17.9	3.95	1.18	14.6
1940	7.31	3.38	3.27	5.02	27.4	34.5	12.2	8.57	6.14	8.47	4.07	133	20.9
1941	13.1	6.1	4.0	4.3	14.2	15.1	41.9	23.4	72.8	105	86.2	20.0	34.0
1946	24.6	14.9	20.1	17.0	23.4	285	28.1	18.2	46.4	2.0	10.3	58.2	46.0
1943	39.8	26.7	24.4	15.1	23.2	17.5	16.3	21.0	17.9	3.0	7	3.0	17.4
1944	6.57	7.96	1.48	9.37	31.4	13.3	78.0	27.9	8.92	13.3	17.1	6.26	18.3
1945	10.5	7.77	5.83	14.4	25.8	8.42	29.3	21.9	27.1	7.65	5.15	7.73	14.2
1946	9.76	9.46	3.44	17.1	19.6	30.5	9.62	48.4	24.9	74.3	4.48	5.58	21.2
1947	12.0	31.8	19.4	21.5	27.8	80.8	63.8	40.4	47.3	18.6	4.48	3.25	30.6
1948	3.89	3.17	4.23	4.1	19.1	29.1	9.68	39.1	283	9.04	5.05	1.85	33.9
1949	10.8	6.19	10.9	1.85	48.1	39.0	53.8	88.1	59.4	14.2	20.1	13.8	30.3
1950	20.4	14.8	9.24	14.6	26.8	21.2	17.6	29.4	8.25	10.3	69.2	28.4	22.5

a From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	a667	a851	a941	a952	a1,619	1,750	1,340	1,480	1,550	910	5,360	508	a17,810
1933	824	869	762	1,040	1,670	1,700	1,370	2,420	363	7,260	3,680	2,290	24,200
1934	891	1,100	1,410	1,480	1,170	1,320	1,280	526	2,430	86	3,040	317	15,050
1935	369	1,130	1,350	1,050	1,140	1,060	1,580	43,610	35,640	1,850	2,450	470	91,700
1936	450	722	817	873	1,150	1,320	1,550	5,480	2,280	50	571	722	15,980
1937	891	904	550	617	3,720	1,550	476	670	1,240	292	46	1,340	12,300
1938	518	545	398	755	431	780	808	5,110	1,195	2,430	6,810	8,300	28,020
1939	458	1,010	1,740	994	272	1,490	1,010	771	411	1,100	243	70	10,570
1940	449	201	201	309	1,570	2,120	728	527	366	522	250	7,930	15,170
1941	803	363	244	266	788	926	2,490	1,440	4,330	6,470	5,300	1,190	24,610
1942	1,520	887	1,230	1,050	1,300	17,550	1,670	1,120	2,760	121	633	3,460	33,360
1943	2,450	1,590	1,500	928	1,290	1,070	958	1,290	1,070	186	46	178	12,560
1944	404	474	91	576	1,610	825	4,640	1,710	531	816	1,050	373	13,290
1945	643	462	356	887	1,430	517	1,740	1,350	1,610	471	317	460	10,240
1946	600	563	212	1,050	1,090	1,870	572	2,970	1,480	4,570	29	333	15,340
1947	736	1,890	1,190	1,320	1,550	4,970	3,800	2,490	2,820	1,140	30	194	22,130
1948	239	189	260	250	1,100	1,790	577	2,410	16,830	556	310	110	24,620
1949	661	366	668	114	2,670	2,400	3,200	5,420	3,530	876	1,230	820	12,960
1950	1,250	881	558	895	1,490	1,300	1,050	1,810	491	631	4,250	1,690	16,310

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second of Arikaree River at Haigler, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	731	2,330	Aug. 27, 1932	0	a24.5	a17,810	a24.5	a17,800
1933	748	-	July 9, 1933	0.2	33.5	24,200	34.8	25,170
1934	761	3,520	June 15, 1934*	0	20.8	15,050	20.0	14,500
1935	786	50,000	May 31, 1935	3	127	91,700	125	90,840
1936	806	16,300	May 29, 1936	0	22.0	15,980	22.5	16,340
1937	826	434	Sept. 7, 1937	0	17.0	12,300	15.8	11,410
1938	858	7,700	Sept. 3, 1938	.5	38.7	28,020	41.1	29,760
1939	876	3,700	July 31, 1939	0	14.6	10,570	11.3	8,210
1940	896	19,500	Sept. 3, 1940	0	20.9	15,170	21.7	15,730
1941	926	7,070	July 12, 1941	1	34.0	24,610	37.1	26,840
1942	956	5,510	Mar. 13, 1942	0	46.0	33,390	49.6	35,200
1943	976	210	July 30, 1943	0	17.4	12,560	11.0	7,990
1944	1008	2,450	Aug. 23, 1944	0	18.3	13,290	19.0	13,780
1945	1036	b570	June 24, 1945	.1	14.2	10,240	14.0	10,160
1946	1056	3,830	July 19, 1946	0	21.2	15,340	24.6	17,780
1947	1086	2,400	Apr. 28, 1947	0	30.6	22,130	28.2	19,000
1948	1116	-	June 16, 1948	.1	35.9	24,820	35.3	25,830
1949	1146	1,580	May 11, 1949*	0	30.3	21,960	31.7	22,960
1950	1176	4,060	Aug. 26, 1950	0	22.5	16,310	-	-

* Not previously published.

a From reports of State engineer of Nebraska.

b Not previously published, computed from partially estimated gage-height record.

Note.--Records of the period January 1925 to September 1931, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharge based thereon and have not been included in this compilation.

386. North Fork Republican River near Wray, Colo.

Location.--Lat 40°04', long. 102°18' (revised) in SE $\frac{1}{4}$ sec. 9, T. 1 N., R. 44 W., 2 miles upstream from Chief Creek and 3.3 miles west of Wray.Drainage area.--816 sq mi, of which about 136 sq mi contribute directly to surface runoff.Gage.--Water-stage recorder. Prior to Aug. 2, 1940, staff gage at same site and datum.Average discharge.--9 years (1937-46), 21.7 cfs.Extremes.--1937-46: Maximum discharge observed, 270 cfs July 13, 1938 (gage height, 9.82 ft), from rating curve extended above 150 cfs; minimum daily, 6.9 cfs Apr. 4, 1938.Remarks.--Diversions for irrigation of about 400 acres above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	21.2	18.2	17.7	19.9	15.2	17.8	-
1938	19.6	21.0	22.1	22.1	22.7	23.0	23.9	25.5	24.7	30.8	20.8	18.3	22.9
1939	18.4	22.3	25.7	23.6	23.1	24.7	22.6	19.8	18.2	18.0	19.1	17.1	21.0
1940	19.2	21.4	22.0	22.5	24.7	24.8	22.4	25.5	19.8	14.5	15.4	19.4	20.9
1941	19.2	20.8	23.9	22.4	23.0	22.0	25.1	23.7	23.1	21.4	22.2	21.0	22.3
1942	23.3	22.4	22.6	23.5	24.0	23.1	24.6	24.0	21.7	15.6	16.7	26.3	22.3
1943	24.7	23.4	23.1	23.2	20.9	23.2	23.0	23.1	21.0	16.4	14.3	15.2	21.0
1944	18.9	21.1	22.5	23.9	23.4	22.7	27.1	25.3	20.5	17.5	19.6	16.9	21.6
1945	18.9	25.1	24.4	23.7	24.7	22.3	23.3	22.0	23.6	23.4	24.8	21.8	23.1
1946	23.8	23.7	23.8	21.8	20.1	23.2	20.3	23.8	17.2	19.1	13.3	15.9	20.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	-	-	-	-	-	-	1,260	1,120	1,050	1,220	934	1,060	-
1938	1,210	1,250	1,360	1,360	1,280	1,410	1,420	1,570	1,470	1,890	1,280	1,090	16,570
1939	1,130	1,330	1,580	1,450	1,290	1,520	1,340	1,220	1,080	1,100	1,180	1,020	15,240
1940	1,180	1,270	1,350	1,380	1,420	1,530	1,330	1,570	1,180	895	944	1,150	15,200
1941	1,180	1,240	1,470	1,370	1,280	1,350	1,490	1,460	1,380	1,310	1,360	1,250	16,140
1942	1,430	1,330	1,390	1,440	1,530	1,420	1,460	1,480	1,290	953	1,030	1,580	18,120
1943	1,520	1,390	1,420	1,420	1,360	1,420	1,370	1,420	1,250	1,010	879	904	15,160
1944	1,160	1,260	1,390	1,470	1,350	1,390	1,610	1,560	1,220	1,080	1,210	1,010	15,710
1945	1,160	1,500	1,500	1,460	1,370	1,370	1,380	1,350	1,400	1,440	1,520	1,300	16,750
1946	1,460	1,410	1,460	1,340	1,120	1,430	1,210	1,460	1,020	1,180	815	948	14,850

Yearly discharge, in cubic feet per second of North Fork Republican River near Wray, Colo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	856	a124	July 24, 1937	-	-	-	-	-
1938	856	a270	July 13, 1938	6.9	22.9	16,570	23.2	16,780
1939	876	a84	July 31, 1939	15	21.0	15,240	20.7	15,000
1940	896	a149	May 17, 1940	8.2	20.9	15,200	21.1	15,290
1941	928	161	Aug. 19, 1941	14	22.3	16,140	22.7	16,400
1942	958	*174	Sept. 2, 1942	14	22.5	16,120	22.5	16,300
1943	976	45	Oct. 15, 1942	12	21.0	15,160	20.2	14,640
1944	1006	163	Aug. 23, 1944	14	21.6	15,710	22.1	16,060
1945	1036	80	Sept. 28, 1945	17	23.1	16,750	23.4	16,920
1946	1056	*205	July 7, 1946	12	20.5	14,850	-	-

* Revised.

a Maximum observed.

387. North Fork Republican River at Colorado-Nebraska State line¹/

Location.--Lat 40°04'20", long. 102°03'00", in sec. 10, T. 1 N., R. 42 W., 100 ft east of Colorado-Nebraska State line.

Drainage area.--320 sq mi, approximately, of which about 130 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 3,336.09 ft above mean sea level, datum of 1929. Prior to Oct. 17, 1934, staff gage at same site and datum.

Average discharge.--19 years (1931-51), 48.9 cfs.

Extremes.--1931-50: Maximum discharge, 2110 cfs (revised) Apr. 28, 1947 (gage height, 5.92 ft) from rating curve extended above 800 cfs on basis of slope-area determination of peak flow; no flow Aug. 25, 26, 1932.

Remarks.--Natural flow of stream affected by irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*54	*40	*60	*66	*120	*80	84.6	28.6	21.6	8.1	10.9	18.3	*50
1932	31.6	51.7	75	80	85	106	64.2	31.5	24.9	35.6	30.0	36.7	56.9
1933	43	72.1	80.2	76	66	85.1	45.8	65.9	9.1	27.6	34.6	54.2	53.3
1934	41.8	53.3	75	73	79.3	72.0	43.2	11.9	*54.3	5.3	9.6	17.7	*44.5
1935	32.4	35.7	65.7	62.9	55.8	75.7	41.8	55.7	68.8	7.0	28.6	42.9	49.2
1936	20.3	51.8	68.5	59.0	60.6	77.3	68.2	43.4	45.8	6.29	25.5	23.2	45.7
1937	42.2	55.7	54.4	50.8	53.8	57.8	51.2	13.2	23.4	10.9	6.79	20.5	36.6
1938	31.2	46.4	60.1	56.4	51.5	57.3	85.3	64.5	48.1	41.9	12.7	37.1	49.3
1939	25.4	45.9	60.5	61.0	53.5	55.8	55.9	18.5	19.9	6.44	9.76	9.87	35.1
1940	28.3	42.8	55.4	59.4	63.5	70.1	60.8	23.1	31.4	5.68	4.12	53.9	41.2
1941	41.9	46.8	58.4	58.2	60.9	65.2	66.3	49.6	50.2	29.9	33.9	33.8	49.5
1942	64.6	65.1	65.0	68.7	70.1	76.3	70.5	66.7	44.2	13.9	12.0	56.6	56.0
1943	64.5	66.5	70.7	64.9	65.6	64.0	64.2	49.2	26.3	6.12	6.60	16.3	47.0
1944	29.5	47.0	71.6	63.4	66.9	75.1	83.2	72.5	27.6	32.8	11.7	21.2	50.2
1945	42.3	50.8	72.0	67.6	62.4	64.4	66.3	43.7	36.1	18.4	15.5	28.0	47.2
1946	42.0	54.1	59.0	63.2	58.7	71.7	50.2	36.8	20.7	29.3	8.31	24.6	43.2
1947	41.2	64.0	60.7	59.8	64.5	61.8	60.0	70.2	63.8	22.8	8.19	14.8	50.6
1948	26.0	60.3	72.9	65.9	73.9	71.9	64.5	57.0	75.8	50.4	13.2	21.3	54.3
1949	31.3	62.5	65.0	52.1	71.9	77.9	85.7	82.0	79.9	32.5	41.7	48.0	60.7
1950	54.6	75.5	69.7	69.0	76.4	70.5	62.3	36.7	17.2	36.1	72.4	54.0	57.8

* Revised.

* Not previously published; estimated on the basis of record for South Fork Republican near Benkleman.

¹/ Published as North Fork Arikaree River, 1931-32.

Monthly and annual discharge, in acre-feet of North Fork Republican River at Colorado-Nebraska State line

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*3,320	*2,380	*3,690	*4,060	*6,660	*5,530	5,030	1,760	1,290	498	670	1,090	*35,980
1932	1,940	3,080	4,610	4,920	4,890	6,520	3,820	1,940	1,480	2,180	3,690	2,180	41,300
1933	2,640	4,290	4,930	4,670	3,670	4,000	2,730	4,050	541	1,700	2,130	3,230	36,600
1934	2,570	3,170	4,610	4,490	4,400	4,430	2,570	732	*3,230	327	593	1,060	*32,180
1935	1,990	2,120	4,040	3,870	3,100	4,650	2,490	3,430	5,160	428	1,760	2,550	35,590
1936	1,250	3,080	4,210	3,630	3,490	4,750	4,060	2,670	2,720	387	1,570	1,590	33,200
1937	2,600	3,510	3,340	3,120	2,990	3,540	3,050	812	1,390	670	418	1,220	26,460
1938	1,920	2,760	3,700	3,470	2,860	3,520	5,080	3,970	2,860	2,580	778	2,210	35,710
1939	1,560	2,730	3,720	3,750	2,970	3,420	3,320	1,140	1,180	396	600	587	25,370
1940	1,610	2,550	3,410	3,650	3,650	4,310	3,610	1,420	1,870	349	253	3,210	29,890
1941	2,580	2,780	3,590	3,580	3,380	4,010	3,950	3,050	2,990	1,840	2,080	2,010	35,840
1942	3,970	3,870	4,000	4,220	3,900	4,690	4,190	4,100	2,630	855	740	3,370	40,540
1943	3,970	3,960	4,350	3,990	3,650	3,940	3,820	3,030	1,560	376	406	968	34,020
1944	1,810	2,800	4,400	3,900	3,850	4,620	4,950	4,460	1,840	2,020	722	1,260	36,450
1945	2,600	3,020	4,450	4,160	3,460	3,960	3,940	2,690	2,150	1,150	955	1,670	34,160
1946	2,580	3,220	3,630	3,890	3,260	4,410	2,990	2,260	1,230	1,800	511	1,470	31,250
1947	2,530	3,810	3,730	3,680	3,580	3,800	4,760	4,310	3,800	1,400	504	883	36,790
1948	1,600	3,590	4,480	4,050	4,250	4,420	3,840	3,500	4,510	3,100	815	1,270	39,420
1949	1,930	3,720	4,000	3,200	3,990	4,790	5,100	5,040	4,760	2,000	2,560	2,860	43,950
1950	3,360	4,490	4,290	4,240	4,240	4,340	3,710	2,260	1,020	2,220	4,450	3,210	41,830

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1931	716	a190	Apr. 1, 1931	-	*50	*35,980	*50
1932	731	387	July 30, 1932	0	56.9	41,500	60.1
1933	746	213	July 9, 1933	6	53.3	38,600	51.2
1934	761, 1390	*612	June 15, 1934	4	*44.5	*32,180	*41.4
1935	786	367	June 1, 1935	3	49.2	35,590	49.7
1936	807	433	May 29, 1936	3.6	45.7	33,200	46.7
1937	826	139	July 24, 1937	2.6	36.6	26,460	35.3
1938	856	628	May 30, 1938	1.7	49.3	35,710	48.8
1939	876	127	Aug. 1, 1939	2.7	35.1	25,370	34.4
1940	896	1,220	Sept. 3, 1940	2.1	41.2	29,890	43.1
1941	926	386	June 5, 1941	3.4	49.5	35,840	53.5
1942	956	224	Sept. 2, 1942	4.9	56.0	40,540	56.6
1943	976	144	Oct. 15, 1943	4.3	47.0	34,020	42.5
1944	1006	158	Aug. 22, 1944	5.3	50.2	36,450	51.6
1945	1036	245	Sept. 27, 1945	6.1	47.2	34,160	46.3
1946	1056	210	July 8, 1946	4.7	43.2	31,250	44.1
1947	1086	*2,110	Apr. 28, 1947	3.8	50.8	36,790	50.3
1948	1116	637	June 15, 1948	7.7	54.3	39,420	54.4
1949	1146	350	Aug. 16, 1949	6.2	60.7	43,950	64.1
1950	1176	324	Aug. 10, 1950	7.0	57.9	41,830	-

* Revised.

* Not previously published.

a Maximum for year based on incomplete records.

Note.--Records for May to June 1915, March to August 1926, January 1927 to March 18, 1931 published in Report of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

388. Buffalo Creek near Haigler, Nebr.

Location.--Lat 40°02', long. 101°52', in NW¹ sec. 20, T. 1 N., R. 40 W., 90 ft downstream from county highway bridge, three-quarters of a mile upstream from mouth, and 4 miles northeast of Haigler.

Drainage area.--180 sq mi, approximately, of which about 21 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 3,204.57 ft above mean sea level, datum of 1929.

Average discharge.--10 years (1940-50), 9.45 cfs.

Extremes.--1940-50: Maximum discharge not determined, occurred Aug. 11, 1950; maximum gage height, 4.62 ft Dec. 30, 1946 (backwater from ice) and Aug. 11, 1950; minimum daily discharge, 0.1 cfs Aug. 4-6, 1943.

Remarks.--Natural flow of stream affected by irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second of Buffalo Creek near Haigler, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	8.74	9.49	9.89	9.85	10.1	10.5	10.8	9.72	7.15	8.96	6.42	7.41	9.08
1942	8.85	9.45	10.2	12.7	12.3	12.1	12.5	10.7	11.8	6.22	4.56	11.7	10.2
1943	12.6	11.7	11.2	11.0	11.2	11.8	11.3	11.6	8.65	1.36	.50	3.57	8.86
1944	6.96	7.73	9.24	8.55	11.2	11.8	14.2	12.5	9.03	8.85	4.64	5.91	9.20
1945	8.82	10.3	9.61	11.3	9.58	9.81	9.29	8.80	8.41	5.22	4.70	7.48	8.60
1946	8.46	8.04	13.7	10.4	10.4	11.1	8.47	8.86	8.10	7.99	2.12	4.40	8.51
1947	9.01	12.1	10.4	11.2	11.9	10.7	10.9	9.88	11.0	7.46	3.88	5.45	9.46
1948	8.25	9.86	9.85	9.95	10.4	10.4	9.32	9.79	12.7	11.0	10.0	9.68	10.1
1949	10.6	8.88	10.8	9.71	11.7	12.9	14.0	12.0	10.5	5.73	3.79	8.68	9.92
1950	9.17	8.55	9.96	9.78	10.5	10.6	10.7	12.0	6.10	8.08	19.7	11.4	10.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	538	565	608	605	560	645	640	596	425	552	395	441	6,570
1942	544	563	629	783	682	746	748	659	700	382	280	697	7,410
1943	774	698	686	674	623	723	674	716	515	85	31	212	6,410
1944	428	460	568	525	642	724	945	768	537	544	285	352	6,680
1945	542	614	591	694	532	603	553	541	501	321	289	445	6,230
1946	520	478	844	639	580	581	504	546	482	492	131	262	6,180
1947	554	718	642	688	660	659	647	608	653	459	239	324	6,850
1948	507	587	606	612	597	641	555	602	755	678	617	575	7,330
1949	653	528	663	597	649	795	831	738	625	352	233	516	7,180
1950	564	509	612	601	582	654	656	739	563	497	1,210	677	7,640

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	31	July 11, 1941	4.1	9.08	6,570	9.11	6,600
1942	956	92	Sept. 2, 1942	2.8	10.2	7,410	10.8	7,830
1943	976	50	Oct. 15, 1942	.1	8.86	6,410	7.89	5,710
1944	1006	61	Apr. 23, 1944	.8	9.20	6,680	9.63	6,970
1945	1036	63	Sept. 27, 1945	1.5	8.60	6,230	8.73	6,320
1946	1056	35	Mar. 16, 1946	.9	8.51	6,160	8.60	6,230
1947	1096	34	Apr. 28, 1947	.8	9.46	6,850	9.17	6,640
1948	1116	-	June 27, 1948	5.5	10.1	7,330	10.3	7,480
1949	1146	-	-	7	9.92	7,180	9.70	7,020
1950	1176	-	Aug. 11, 1950	3.1	10.6	7,640	-	-

Note.--Records for the periods February to November 1922 and January 1924 to September 1931, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharge based thereon and have not been included in this compilation.

389. Rock Creek at Parks, Nebr.

Location.--Lat 40°02'30", long. 101°43'40", in NW¹ sec. 21, T. 1 N. R. 39 W., at west edge of Parks, 100 ft downstream from county highway bridge and half a mile upstream from mouth.

Drainage area.--180 sq mi, approximately, of which about 14 sq mi contribute directly to surface runoff.

Gage.--Water stage recorder. Datum of gage is 3,093.35 ft above mean sea level, datum of 1929.

Average discharge.--10 years, 14.4 cfs.

Extremes.--1940-50: Maximum discharge not determined; maximum gage height, 3.92 ft Jan. 26, 1949 (backwater from ice); minimum daily discharge, 3.1 cfs Feb. 19-23, 1943.

Remarks.--Flow regulated at times by a series of small dams and by reservoir at State fish hatchery 7 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	13.6	15.9	17.1	15.8	14.9	14.9	17.3	16.7	18.7	14.8	12.9	13.9	15.6
1942	14.5	14.4	13.8	17.9	15.0	16.0	15.7	15.5	14.6	12.0	12.4	13.8	14.6
1943	14.4	19.7	17.1	14.8	9.98	11.4	11.6	12.6	12.2	11.2	11.0	11.1	13.1
1944	11.8	12.4	15.2	17.9	16.9	14.2	17.8	14.1	11.9	15.9	11.3	10.9	14.2
1945	12.5	13.4	13.9	14.2	13.6	13.5	15.3	14.3	13.8	13.0	12.5	12.9	13.6
1946	13.8	13.4	13.3	14.3	15.3	15.8	11.8	15.4	12.5	11.6	11.0	13.0	13.4
1947	13.5	14.7	13.9	12.5	14.9	14.6	13.8	15.2	14.6	13.4	10.2	11.7	13.6
1948	14.0	15.0	15.5	15.0	15.4	15.9	14.5	14.8	16.0	15.2	14.0	12.8	14.6
1949	15.5	16.0	16.4	12.5	17.5	18.1	15.1	17.1	18.1	12.7	13.5	14.4	15.8
1950	15.0	15.3	14.3	14.8	16.0	16.0	15.7	14.9	14.7	16.0	17.7	16.1	15.5

Monthly and yearly runoff, in acre-feet of Rock Creek at Parks, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	837	946	1,050	972	829	916	1,030	1,030	1,110	910	791	829	11,250
1942	895	859	851	1,100	833	982	932	956	867	740	762	819	10,600
1943	885	1,170	1,050	910	554	701	688	778	727	688	677	659	9,490
1944	728	740	932	1,100	972	873	1,060	865	708	979	693	650	10,300
1945	772	799	853	871	754	827	912	881	821	801	766	768	9,820
1946	849	795	819	877	851	972	704	946	748	725	675	772	9,730
1947	829	875	855	768	829	899	823	936	871	821	627	698	9,830
1948	859	895	954	924	889	974	885	912	954	932	859	762	10,780
1949	952	952	1,010	766	974	1,110	1,080	1,050	1,080	780	827	855	11,440
1950	920	908	881	912	889	986	934	914	877	986	1,090	956	11,250

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	-	June 8, 1941	10	15.6	11,250	15.2	11,020
1942	958	-	Jan. 14, 1942	10	14.6	10,600	15.3	11,100
1943	976	44	Dec. 3, 1942	3.1	13.1	9,490	12.1	8,780
1944	1006	-	July 12, 1944	9.5	14.2	10,300	14.3	10,320
1945	1036	53	Sept. 27, 1945	11	13.6	9,820	13.6	9,860
1946	1056	-	May 23, 1946	5.4	13.4	9,730	13.6	9,830
1947	1086	24	July 22, 1947	5	13.6	9,830	13.8	9,980
1948	1116	54	May 23, 1948	11	14.8	10,780	15.1	10,980
1949	1146	41	June 8, 1949	7	15.8	11,440	15.5	11,230
1950	1176	-	July 29, 1950	11	15.5	11,250	-	-

Note.--Records for the periods January 1925 to September 1931 and October 1932 to September 1933, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharge based thereon and have not been included in this compilation.

390. Republican River at Benkelman, Nebr. 1/

Location.--Lat 40°01'55", long. 101°32'30", in SE 1/4 SW 1/4 sec. 19, T. 1 N., R. 37 W., on downstream side of bridge on U. S. Highway 34, 0.6 mile south of Chicago, Burlington & Quincy Railroad track, 1 mile southwest of Benkelman, 2 miles upstream from South Fork Republican River, and 11 miles downstream from Rock Creek.

Drainage area.--4,770 sq mi, approximately, of which about 1,700 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,975.34 ft above mean sea level, datum of 1929. Prior to Dec. 17, 1946, staff gages at several sites within 1 1/2 miles of present site at various datums.

Average discharge.--9 years (1894-95, 1902-6, 1946-50), 93.4 cfs.

Extremes.--1894-95, 1902-6, 1946-50: Maximum discharge, 5,500 cfs June 15, 1948; maximum gage height, 7.80 ft Aug. 9, 1940; no flow for several days during 1895, 1904, 1906, and 1947.

Maximum flood known occurred May 31, 1935, gage height 13.1 ft (present datum, from information furnished by State Highway Department).

Remarks.--Natural flow of stream affected by irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a58	a49	a59	a55	a60	78	59	25	155	120	34	0	b62
1903	a133	a85	a76	a85	a94	a150	a110	a50	59	39	32	39	a79
1904	49	a50	a56	a75	a95	89.1	64.9	53.9	91.2	40.5	29.3	14.9	a59
1905	61.3	64.6	a58	a80	a106	151	183	129	65.9	73.8	50.5	61.5	a90
1906	86.9	a92	a86	a98	a130	a144	135	108	48.4	24.7	30.6	39.9	a85
1907	83.3	147	-	-	-	-	-	-	-	-	-	-	-
1947	*140	*180	*100	105	118	189	197	136	125	51.5	6.40	21.5	*112
1948	42.6	82.1	99.7	83.2	151	145	89.1	165	381	90.9	43.3	25.1	116
1949	53.9	104	102	76.0	164	186	221	202	235	47.3	50.5	78.4	125
1950	110	115	85.6	108	136	121	111	104	42.6	51.9	249	122	113

* Not previously published; estimated on basis of records for station at Culbertson.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure is in acre-feet.

b Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess, Kansas River.

1/ Published as North Fork of Republican River, 1894-95.

Monthly and yearly runoff, in acre-feet of Republican River at Benkelman, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year	
1895	a3,560	a2,910	a3,620	a3,370	a3,320	4,640	3,520	1,540	9,220	7,380	2,090	0	b45,200	
1903	a8,160	a5,040	a4,660	a5,210	a5,200	a9,200	a6,530	a3,060	3,511	2,398	1,968	2,321	a57,300	
1904	3,013	a2,980	a3,430	a4,600	a5,450	5,478	3,862	3,314	5,427	2,490	1,802	887	a42,700	
1905	3,769	3,844	a3,560	a4,910	a5,870	†9,260	10,900	7,930	3,920	4,540	3,110	3,660	a65,200	
1906	5,340	a5,460	a5,280	a6,020	a7,210	a8,840	-	8,030	6,640	2,880	1,520	1,880	2,370	a61,500
1907	5,120	8,750	-	-	-	-	-	-	-	-	-	-	-	-
1947	†8,610	†9,520	†6,150	6,430	6,530	11,650	11,740	8,580	7,410	3,160	393	1,280	†81,250	
1948	2,620	4,880	6,130	5,120	8,670	8,930	5,300	10,160	22,690	5,590	2,660	1,500	84,250	
1949	3,310	6,180	6,280	4,670	9,100	11,090	13,140	12,400	14,000	2,910	3,100	4,660	90,840	
1950	6,790	6,840	5,260	6,640	7,570	7,440	6,580	6,370	2,530	3,190	15,300	7,240	81,750	

† Corrected.

* Not previously published; estimated on basis of records for station at Culbertson.

a From Congressional documents; 73d Cong., 2d sess., H. Doc. 195, Kansas River.

b Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	Bull. 140	-	-	0	a62	a45,200	-	-
1903	99	-	-	-	b79	b57,300	b67	b48,800
1904	131	c227	June 24, 1904	0	b59	b42,700	b61	b44,500
1905	208	c328	Apr. 24, 1905	-	b90	b65,200	b97	b70,200
1906	208	c398	Apr. 27, 1906	0	b85	b61,500	-	-
1907	208	-	-	-	-	-	-	-
1947	1086	4,620	Apr. 28, 1947	-	†112	†81,250	97.5	70,600
1948	1116	5,500	June 15, 1948	9	116	84,250	119	86,390
1949	1146	1,190	May 21, 1949	0.6	125	90,840	130	93,960
1950	1176	3,900	Aug. 9, 1950	12	113	81,750	-	-

* Not previously published.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents; 73d Cong., 2d sess., H. Doc. 195, Kansas River.

c Same as maximum daily discharge.

Note.--Records for the periods January 1924 to December 1929, and October 1930 to September 1931, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

391. South Fork Republican River near Idalia, Colo.

Location.--Lat 39°36', long 102°19', in SE¹ sec. 20, T. 5 S., R. 44 W., at bridge on county road, 1,000 ft upstream from Sand Creek, 5 miles upstream from Landsman Creek, 7 miles south of Idalia, and 9 miles upstream from Bonny Dam.

Drainage area.--1,250 sq mi, approximately.

Gage.--Water-stage recorder.

Extremes.--May to September 1950: Maximum discharge, 339 cfs Aug. 13; maximum gage height, 2.93 ft Aug. 13 (backwater from Sand Creek); minimum daily discharge, 1.4 cfs June 28.

Maximum flood known since at least 1865, 103,000 cfs May 31, 1935, by slope-area determination 3 miles downstream.

Remarks.--Divisions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	11.0	11.6	25.7	19.8	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	657	725	1,580	1,180	-

392. Landsman Creek near Hale, Colo.

Location.--Lat 39°34'40", long 102°14'50", in SW $\frac{1}{4}$ sec. 36, T. 5 S., R. 44 W., 300 ft downstream from bridge on State Highway 51, 3 miles southwest of Bonny Dam, and 7 miles southwest of Hale.

Drainage area.--450 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 3,720 ft (from topographic map).

Extremes.--June to September 1950: Maximum discharge, 289 cfs July 19 (gage height, 4.84 ft); minimum daily, 0.3 cfs July 14-18.

Maximum stage known, about 11 ft, May 30, 31, 1935, from information by local resident.

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	0.67	1.51	3.34	0.97	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	40	93	205	58	-

393. South Fork Republican River near Hale, Colo.

Location.--Lat 39°38'20", long. 102°06'30", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 7, T. 5 S., R. 42 W., 1 $\frac{1}{2}$ miles upstream from Beaver Creek, 2 miles east of Hale, and 4 $\frac{1}{4}$ miles upstream from Colorado-Kansas State line.

Drainage area.--1,760 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 3,560 ft (from topographic map of Hale reservoir site).

Extremes.--1946-48: Maximum discharge, 3,790 cfs May 28, 1947 (gage height, 4.71 ft); maximum gage height, 4.87 ft Apr. 28, 1947; no flow Aug. 11-13, 1947.

Greatest known flood occurred May 31, 1935, stage and discharge not determined.

A discharge of 103,000 cfs was determined at a site near Newton, Colo. about 8 miles upstream with a drainage area of approximately 1,270 sq mi.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	34.2	49.0	37.9	50.7	44.2	43.1	75.9	106	48.3	18.7	6.95	9.08	43.7
1948	27.1	40.3	35.7	37.0	52.3	45.3	41.7	34.7	70.1	27.6	32.5	15.9	38.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	2,100	2,910	2,330	3,120	2,450	2,650	4,520	6,530	2,870	1,150	427	540	31,600
1948	1,670	2,400	2,200	2,280	3,010	2,790	2,480	2,130	4,170	1,700	2,000	948	27,780

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1086	3,790	May 28, 1947	0	43.7	31,600	42.2	30,530	
1948	1116	899	June 5, 1948	11	38.3	27,780	-	-	

394. South Fork Republican River near Colorado-Kansas State line

Location.--Lat 39°40'10", long. 102°00'40", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 27, T. 4 S., R. 42 W., at downstream side of highway bridge, 2 miles downstream from Colorado-Kansas State line, 5 miles downstream from Beaver Creek, 11 miles downstream from Bonny Dam, and 15 miles southwest of St. Francis, Kans.

Drainage area.--1,860 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the periods October 1946 to September 1947 and October 1948 to September 1950 and records of chemical analysis for the period October 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 3,469.85 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum gage height, 6.94 ft Aug. 17, 1949 (discharge not determined); no flow at times during 1947, 1949, and 1950.

Greatest known flood occurred May 31, 1934, stage and discharge not determined. A discharge of 103,000 cfs was determined at a site near Newton, Colo., about 14 miles upstream where drainage area is approximately 1,270 sq mi.

Remarks.--Flow regulated by Bonny Reservoir since July 6, 1950.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	32.9	54.2	42.7	58.1	60.6	63.2	95.3	123	52.3	18.1	5.8	4.5	50.6
1948	23.2	38.7	41.1	40.3	76.5	44.5	44.1	41.6	118	32.6	40.3	11.5	45.8
1949	31.0	49.1	52.7	28.9	62.5	65.0	75.0	95.3	82.6	21.3	114	50.5	60.6
1950	46.4	48.3	45.2	55.2	58.4	50.3	46.0	41.6	17.5	8.69	41.4	27.5	40.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	2,030	3,230	2,630	3,570	3,370	3,880	5,670	7,560	3,110	990	359	286	36,660
1948	1,430	2,300	2,520	2,480	4,400	2,740	2,620	2,580	7,000	2,010	2,480	685	33,220
1949	1,900	2,920	3,240	1,780	3,470	3,990	4,460	5,860	4,920	1,310	7,020	3,010	43,880
1950	2,950	2,870	2,780	3,400	3,240	3,090	2,740	2,560	1,050	534	2,540	1,640	29,290

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1947	1086	a	May 28, 1947	0	50.6	36,660	48.4
1948	1116	a	June 15, 1948	3	45.8	33,220	48.3
1949	1146	a	Aug. 17, 1949	0	60.6	43,880	61.2
1950	1176	405	Aug. 12, 1950	0	40.5	29,290	-

a Discharge unknown. Previously published figures unreliable.

395. South Fork Republican River near Benkelman, Nebr. 1/

Location.--Lat 40°00'25", long. 101°32'30", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 1 N., R. 37 W., on downstream side of bridge on State Highway 61, 1 mile downstream from Kansas-Nebraska State line, 2 $\frac{1}{2}$ miles southwest of Benkelman, and 4 miles upstream from mouth.

Drainage area.--2,580 sq mi, approximately, of which about 2,550 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,992.91 ft above mean sea level, datum of 1929. Prior to Aug. 27, 1937, staff gages at several sites within 3 $\frac{1}{2}$ miles of present site, at various datums. Aug. 27, 1937, to Mar. 4, 1940, staff gage at site a quarter of a mile downstream at present datum. Mar. 5, 1940, to Dec. 9, 1947, wire-weight gage at present site and datum.

Average discharge.--20 years (1894-95, 1902-06, 1930-32, 1937-50), 67.2 cfs.

Extremes.--1894-95, 1903-6, 1931-32, 1937-50: Maximum discharge not determined, probably occurred during flood of June 24, 1945; maximum gage height observed, 8.60 ft July 12, 1941 (from floodmark), but may have been higher during flood of June 24, 1945; no flow at times during 1906, 1931, 1937-40, 1942-50.

Maximum discharge known, 150,000 cfs May 31, 1935 (gage height, 10.1 ft, at site a quarter of a mile downstream, present datum, from floodmark), by slope-area determination.

Remarks.--Natural flow of stream affected by irrigation developments above station, and since July 6, 1950, by storage in Bonny Reservoir.

Cooperation.--Records for December 1930 to March 1931 and July to September 1932, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

1/ Published as South Fork of Republican River at Benkelman 1894-95, 1903-6 and as Republican River at Benkelman 1931-32.

Monthly and yearly mean discharge, in cubic feet per second of South Fork Republican River near Benkelman, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a33	a20	a41	a30	a39	a60	a35	a5	a140	a94	a10	a20	a43.6
1903	a95	a46	a42	a50	a71	a140	a95	a40	37	15	25	a15	a55.8
1904	39	a57	a43	a68	a65	60.1	21.1	92.4	132	39.3	24.0	13.0	b55.9
1905	57.5	59.4	a29	a56	a95	a159	141	100	68.6	35.4	a48	a52	b74.7
1906	a65	a65	a55	a80	a120	a132	129	99.3	†9.03	10.9	0	0	b63.4
1907	21.8	48.0	-	-	-	-	-	-	-	-	-	-	-
1931	c59	c43	d63	d72	d134	d100	62.3	57.9	47.8	1.2	49.1	2.1	c57.2
1932	10.0	50	75	90	75	58.4	61.2	75.3	192	d13	d76	d10	d72.5
1937	-	-	-	-	-	-	-	-	-	-	-	99.5	-
1938	36.1	33.5	39.7	48.8	50.1	56.6	72.3	207	107	137	53.4	169	84.4
1939	18.1	23.5	33.8	35.8	14.6	79.4	56.9	17.6	68.0	34.6	12.4	0	33.0
1940	0	17.9	17.3	9.87	64.5	87.6	41.4	35.3	30.4	10.5	0	*88.7	*33.4
1941	6.3	24.3	43.0	48.5	51.9	78.1	97.7	31.6	249	350	126	47.8	96.4
1942	99.3	57.4	49.2	64.3	92.5	227	99.1	64.3	147	43.8	184	114	103
1943	65.1	61.2	77.0	77.5	64.6	60.2	50.3	49.3	25.1	0	0	0	44.1
1944	0	2.3	20.0	45.8	91.5	63.3	153	85.1	39.4	348	9.6	0	71.7
1945	18.6	34.4	30.2	53.4	74.3	41.9	78.2	52.1	*191	28.9	55.5	3.0	*54.7
1946	22.6	39.3	28.2	53.1	109	66.4	30.5	122	43.8	616	10.6	15.4	96.9
1947	77.7	86.0	57.1	40.9	59.6	101	117	*198	226	87.2	1.65	0	*87.8
1948	4.39	25.1	41.7	39.8	61.9	77.5	48.4	53.7	455	49.2	36.9	0	73.9
1949	12.5	37.4	53.2	24.6	121	92.0	127	132	155	23.3	225	79.8	89.8
1950	58.3	53.8	47.5	42.4	92.6	50.0	46.7	52.0	7.67	5.50	135	27.0	51.4

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195 Kansas River. Published figure in acre-feet.

b Revised, supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

d From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a2,020	a1,190	a2,510	a1,840	a2,160	a3,680	a2,080	a308	a8,300	a5,760	a610	a1,190	a31,600
1903	a5,830	a2,730	a2,580	a3,070	a3,930	a8,600	a5,640	a2,460	2,202	922	1,537	a890	a40,400
1904	2,398	a3,380	a2,640	a4,170	a4,870	3,695	1,256	5,682	7,855	2,416	1,476	774	b40,600
1905	3,536	3,534	a1,780	a3,440	a5,260	a9,750	8,390	6,149	4,082	2,177	a2,940	a3,090	b54,100
1906	a3,980	a3,860	a3,380	a4,900	a6,650	a8,100	7,680	6,110	†537	670	0	0	b45,900
1907	1,340	2,860	-	-	-	-	-	-	-	-	-	-	-
1931	c5,630	c2,560	d3,870	d4,450	d7,440	d6,140	3,710	3,560	2,840	74	3,020	129	c41,400
1932	615	2,980	4,610	5,530	4,310	3,590	3,640	4,510	11,400	d823	d4,700	d5,950	d52,600
1937	-	-	-	-	-	-	-	-	-	-	-	5,860	-
1938	2,220	1,990	2,440	3,000	2,780	3,490	4,300	12,700	6,390	8,390	3,280	10,070	61,050
1939	1,110	1,400	2,080	2,200	811	4,880	3,380	1,100	4,050	2,130	765	0	23,910
1940	0	1,060	1,060	607	3,730	5,390	2,470	2,170	1,810	649	0	*5,280	*24,230
1941	387	1,450	2,640	2,980	2,880	4,800	5,820	1,940	14,840	21,510	7,720	2,840	69,810
1942	5,920	3,410	3,020	3,990	5,140	13,950	5,890	3,960	8,770	2,700	11,310	6,800	74,860
1943	4,000	3,640	4,730	4,780	3,600	3,700	2,990	3,000	1,490	0	0	0	31,910
1944	0	139	1,230	2,820	5,260	3,890	9,130	5,230	2,340	21,400	589	0	52,030
1945	1,140	2,040	1,850	3,280	4,130	2,570	4,650	3,200	*11,360	1,780	3,410	179	*39,590
1946	1,390	2,340	1,730	3,260	6,030	4,080	1,810	7,480	2,610	37,870	652	914	70,170
1947	4,780	5,120	3,510	2,510	3,320	6,230	6,980	*12,150	13,480	5,360	101	0	*63,540
1948	270	1,500	2,580	2,450	3,560	4,760	2,880	3,300	27,090	3,030	2,270	0	53,670
1949	766	2,230	3,270	1,510	6,690	5,660	7,580	8,110	9,200	1,430	13,630	4,760	65,030
1950	3,580	3,200	2,920	2,610	5,140	3,070	2,780	3,200	456	341	6,280	1,600	37,180

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

b Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

d From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second of South Fork Republican River near Benkelman, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30.				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	(a)	-	-	-	a43.6	a31,600	-	-
1903	99	-	-	-	a55.8	a40,400	a52.1	a37,700
1904	131	-	-	-	b55.9	b40,600	b56.5	b41,000
1905	172	-	-	-	b74.7	b54,100	a78.0	a56,500
1906	208	-	-	-	b63.4	b45,900	-	-
1931	716	667	June 5, 1931	-	c57.2	c41,400	d54.7	d39,600
1932	731	750	May 26, 1932	-	d72.5	d52,600	-	-
1937	856	-	-	-	-	-	-	-
1938	856	2,690	Sept. 1, 1938	0	84.4	61,050	81.5	58,990
1939	876	2,360	June 24, 1939	0	33.0	23,910	29.6	21,440
1940	926, 1390	*3,610	Sept. 4, 1940*	0	*33.4	*24,230	*36.6	*26,580
1941	926	13,100	July 12, 1941	0	96.4	69,810	107	77,680
1942	956	7,920	Aug. 3, 1946	0	103	74,860	103	74,880
1943	976	279	Jan. 23, 1943	0	44.1	31,910	28.9	20,910
1944	1006	9,590	July 12, 1944	0	71.7	52,030	76.8	55,690
1945	1036, 1390	-	June 24, 1945	0	*54.7	*39,590	*55.3	*40,020
1946	1056	8,900	July 19, 1946	0	96.9	70,170	108	78,120
1947	1086, 1390	4,530	July 22, 1947	0	*87.8	*63,540	*75.2	*54,460
1948	1116	-	June 14, 1948	0	73.9	55,870	76.6	55,610
1949	1146	3,430	Aug. 31, 1949	0	89.8	65,030	94.6	69,460
1950	1176	3,880	Aug. 2, 1950	0	51.4	37,180	-	-

* Revised.

a From Congressional documents; 73d Cong., 2d sess. H. Doc. 195, Kansas River.

b Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

c Revised, supersedes figure published in reports of State engineer of Nebraska.

d From reports of State engineer of Nebraska.

Note.--Records for January 1924 to December 1929, October 1930 to March 1931 and July 1932 to September 1933 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharge based thereon and have not been included in this compilation except for the periods October 1930 to March 1931 and July to September 1932 which were checked by hydrographic comparison with records for stations on nearby streams.

396. Republican River at Max, Nebr.^{1/}

Location--Lat 40°06'10", long. 101°23'50", in NE¹/₄ sec. 32, T. 2 N., R. 36 W., at county highway bridge three-quarters of a mile south of Max.

Drainage area--7,580 sq mi (revised), approximately, of which about 4,450 sq mi (revised) contribute directly to surface runoff.

Supplemental records available--Records of chemical analyses and water temperatures for the period October 1945 to December 1946 are published in reports of Geological Survey.

Gage--Staff gage. Datum of gage is 2,877.32 ft above mean sea level, datum of 1929. Prior to May 31, 1935, staff gage at datum 2.00 ft higher. June 26, 1935, to Mar. 3, 1936, staff gage at site 300 ft downstream at datum 1.00 ft lower. Mar. 4, 1936, to Nov. 20, 1938, July 16 to Aug. 17, 1941, and Mar. 15 to Dec. 11, 1942, staff gages at described site and datum. Nov. 21, 1938, to July 12, 1941 and Aug. 18, 1941, to Mar. 14, 1942, water-stage recorder at site 160 ft upstream at described datum. Dec. 12, 1942, to June 24, 1945, water-stage recorder at site 80 ft downstream at described datum.

Average discharge--17 years (1928-45), 186 cfs.

Extremes--1928-45: Maximum discharge, 190,000 cfs May 31, 1935 (gage height, 13.8 ft present datum, from floodmarks), from rating curve extended above 9,000 cfs on basis of slope-area determination of peak flow; no flow at times during summer months of many years.

Remarks--Many diversions above station for irrigation.

^{1/} Published as "near Max" in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Monthly and yearly mean discharge, in cubic feet per second of Republican River at Max, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	75.6	-
1929	120	204	a175	a160	a120	256	247	229	133	80.6	19.3	99.6	a153
1930	115	167	b125	b100	b168	165	176	246	206	63.4	151	122	a151
1931	211	146	131	147	276	259	262	134	136	5	37.9	7.3	145
1932	48.8	156	160	180	150	146	146	181	244	78.2	174	35.2	140
1933	112	156	153	140	147	207	124	199	25.4	79.1	687	641	223
1934	132	112	185	170	196	257	187	28	209	8	59.1	10	129
1935	42.2	96.7	172	175	173	196	1235	786	2,676	240	165	138	669
1936	71.6	140	165	135	145	180	221	682	186	13.5	37.5	10.8	164
1937	65.5	77.0	124	82.4	161	320	124	229	144	26.3	23.4	151	125
1938	66.3	80.1	112	110	169	154	186	477	155	202	101	295	176
1939	59.0	80.0	120	159	59.6	211	156	57.8	151	71.9	40.3	.43	97.4
1940	33.2	70.8	84.7	84.1	266	217	117	65.4	54.3	29.0	1.6	228	103
1941	69.0	80.2	123	227	141	154	204	134	421	473	226	106	197
1942	198	144	105	187	221	647	253	212	253	41.0	204	206	223
1943	245	204	317	183	212	167	127	141	81.0	1.4	.3	.4	140
1944	32.8	71.6	81.0	118	268	246	457	273	134	371	57.6	17.6	175
1945	74.0	125	149	135	183	159	189	162	370	57.9	85.4	42.0	148

a Revised, supersedes figure (acre feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure in acre-feet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	4,500	-
1929	7,380	12,100	a10,800	a9,840	a6,660	15,700	14,700	14,100	7,910	4,960	1,220	5,930	a11,000
1930	7,070	9,940	b7,690	b6,150	b9,330	10,100	10,500	15,100	12,300	3,900	9,280	7,260	a109,000
1931	13,000	8,680	8,060	9,040	15,300	15,900	15,600	8,240	6,090	31	2,330	434	105,000
1932	3,000	8,090	9,840	11,100	8,630	8,980	11,100	14,500	4,810	10,700	2,080	102,000	102,000
1933	6,890	9,280	9,410	8,610	8,160	12,700	7,380	12,200	1,510	4,860	42,200	38,100	161,000
1934	8,120	6,650	11,380	10,450	10,900	15,800	11,150	1,720	12,450	492	3,630	595	93,540
1935	2,600	5,750	10,580	10,760	9,600	12,070	7,690	232,800	159,200	14,770	10,160	8,230	484,200
1936	4,400	8,330	10,150	8,300	8,340	11,090	13,120	41,960	9,890	829	2,300	641	119,400
1937	4,030	4,580	7,650	3,840	8,920	19,650	7,360	14,080	8,570	1,620	1,440	8,980	90,720
1938	4,080	4,770	6,810	6,780	9,400	9,490	11,090	29,350	9,200	12,430	6,210	17,530	127,300
1939	5,630	4,760	7,350	9,750	3,310	12,950	9,260	3,550	9,010	4,420	2,480	25	70,500
1940	2,040	4,210	5,210	15,170	15,300	13,350	6,940	4,020	3,230	1,780	101	13,560	74,910
1941	4,240	4,770	7,570	13,930	7,820	9,490	12,130	8,230	25,040	29,070	13,870	6,340	142,500
1942	12,200	8,550	6,440	11,510	12,270	39,760	15,040	13,010	15,050	2,520	12,540	12,230	161,100
1943	15,080	12,140	19,520	11,240	11,750	10,260	7,550	8,640	4,820	87	14	22	101,100
1944	2,020	4,260	4,980	7,240	15,420	15,110	27,180	16,760	7,960	22,830	2,310	1,050	127,100
1945	4,550	7,430	9,140	12,000	9,320	9,760	11,090	9,980	22,040	3,540	5,860	2,500	107,200

a Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	666	-	-	-	-	-	-	-
1929	686	1,160	June 7, 1929	0	a153	a111,000	a146	a106,000
1930	701	1,810	June 4, 1930	0	a151	a109,000	a157	a114,000
1931	716	803	June 13, 1931	0	145	105,000	132	95,900
1932	731	1,810	Aug. 1, 1932	4	140	102,000	146	106,000
1933	746	5,620	Aug. 29, 1933	0	223	161,000	224	162,000
1934	761	3,970	June 15, 1934	0	129	93,340	119	86,120
1935	766	190,000	May 31, 1935	13	669	484,200	674	488,200
1936	806	-	May 30, 1936	1	164	119,400	156	113,300
1937	826	*10,700	May 11, 1937	0	125	90,720	125	90,140
1938	856	4,200	May 31, 1938	1.0	176	127,300	176	127,200
1939	876	*9,330	June 24, 1939	0	97.4	70,500	91.5	66,220
1940	896	8,000	Sept. 4, 1940	0	103	74,910	110	80,030
1941	926	12,000	July 12, 1941	18	197	142,500	211	153,100
1942	956	*6,810	Aug. 4, 1942	0	223	161,100	250	180,700
1943	976	*1,240	Dec. 13, 1942	0	140	101,100	90.7	65,640
1944	1006	*10,300	July 13, 1944	3	175	127,100	189	137,000
1945	1036	*24,500	June 24, 1945	-	148	107,200	-	-

* Revised.

* Not previously published.

a Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Note.--In the list of supplemental peak discharges for 1941 published in WSP 926 the peak published as June 1 (2 a.m.) 2,910 cfs should have been June 2 (2 a.m.) 4,940 cfs.

397. Republican River at Trenton, Nebr.

Location.--Lat 40°09'50", long. 101°00'50", on west line SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 2, T. 2 N., R. 33 W., on downstream side of bridge on State Highway 25, half a mile upstream from Elm Creek, three-quarters of a mile south of Trenton, and 3 miles downstream from Trenton Dam.

Drainage area.--8,120 sq mi, approximately, of which about 4,910 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of chemical analyses for the period November 1946 to September 1949 and records of suspended-sediment loads and water temperatures for the period November 1946 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,662.87 ft above mean sea level, datum of 1929. Prior to Sept. 13, 1948, wire-weight gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 16,800 cfs June 16, 1948 (gage height, 5.64 ft); no flow at times during each year.
Maximum flood known since about 1826 occurred May 31, 1935 (discharge, about 200,000 cfs). Discharge of 21,100 cfs measured June 3, 1946 (gage height, 6.0 ft).

Remarks.--Natural flow of stream affected by irrigation developments above station and since July 6, 1950, by storage in Bonny Reservoir.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	*230	*260	182	147	265	362	309	327	462	168	2.43	0	*225
1948	12.8	90.3	112	121	190	225	136	1981	137	153	41.1	1.57	200
1949	26.9	111	129	62.3	301	515	365	420	451	67.7	227	206	222
1950	147	160	124	156	295	204	155	172	25.5	85.1	563	140	185

* Not previously published; estimated on basis of records for station at Culbertson.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	*14,100	*15,500	11,210	9,060	14,740	22,230	18,590	20,090	27,480	10,350	148	0	*163,000
1948	787	5,380	6,910	7,450	10,940	13,950	8,090	12,010	67,660	9,450	2,530	84	145,100
1949	1,680	6,600	7,960	3,830	16,740	19,340	21,740	25,840	26,840	4,170	13,940	12,280	180,900
1950	9,060	9,540	7,650	8,370	16,590	12,540	9,200	10,500	1,520	5,230	35,840	8,350	134,300

* Not previously published; estimated on basis of records for station at Culbertson.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1947	1086	10,200	June 6, 1947	0	*225	*163,000	187
1948	1116	16,800	June 16, 1948	0	200	145,100	204
1949	1146	5,960	Aug. 31, 1949	0	222	160,900	236
1950	1176	11,500	Aug. 3, 1950	0	185	134,300	-

* Not previously published.

398. Republican River at Culbertson, Nebr.

Location.--Lat 40°13'15", long. 100°50'15", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 17, T. 3 N., R. 31 W., on the downstream side of bridge on State Highway 17, three-quarters of a mile south of Culbertson and 1.1 miles upstream from Frenchman Creek.

Drainage area.--8,200 sq mi, approximately, of which about 5,000 sq mi contribute directly to surface runoff.

Supplemental records available.--June 1913 to September 1915, fragmentary gage heights and discharge measurements only.

Gage.--Chain gage. Datum of gage is 2,563.23 ft above mean sea level, datum of 1929. March 11, 1931 to May 30, 1935 staff gages in immediate vicinity of described site at different datum. Flood of May 13, 1935 destroyed gage, bridge and benchmark.

June 28, 1935, to Feb. 24, 1942 staff gages at described site and datum.

Average discharge.--20 years (1930-50), 219 cfs.

Extremes.--1913-15, 1930-50: Maximum discharge, about 200,000 cfs May 31, 1935 (gage height, 11.4 ft, from floodmarks), based on slope-area determinations at stations at Max and near Bloomington; no flow for periods in most years.

Remarks.--Natural flow of stream affected by irrigation developments above station and since July 6, 1950, by storage in Bonny Reservoir.

Cooperation.--Records for October 1, 1930 to March 10, 1931, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second of Republican River at Culbertson, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	a162	a155	a254	a175	a265	a199	212	113	116	4.6	31.1	13.2	a141
1932	60.0	165	170	190	160	156	150	122	*232	98.4	160	18.8	*140
1933	72.0	127	155	185	175	182	136	240	146.4	41.8	1310	639	277
1934	134	150	210	195	220	184	145	24.6	147	2.8	10.1	.3	118
1935	19.5	88.7	182	200	195	221	137	5,954	5,503	384	243	154	776
1936	59.3	99.2	180	135	173	231	241	762	340	5.0	64.6	.6	191
1937	60.7	97.4	121	70.7	175	251	182	317	373	43.4	33.7	163	157
1938	90.0	105	99.5	142	184	170	183	513	342	*297	*143	366	*219
1939	45.5	83.0	119	177	60.5	343	219	56.9	476	91.7	91.6	0	147
1940	1.1	42.6	73.3	77.1	331	275	123	45.2	120	19.4	3.9	173	106
1941	55.4	186	213	273	170	167	365	164	842	552	356	131	290
1942	192	173	136	116	239	809	241	223	371	31.6	261	308	259
1943	185	172	338	160	264	136	126	139	159	4	0	0	139
1944	0	24.7	55.5	273	294	267	656	313	156	555	28.9	2.0	218
1945	55.6	101	166	235	243	147	206	159	388	90.2	99.7	26.0	159
1946	83.7	106	60.5	130	188	237	97.6	283	153	615	15.9	16.7	163
1947	262	293	191	193	311	387	249	327	411	225	3.51	0	237
1948	4.4	76.1	119	125	204	247	117	172	1,246	168	39.6	2.67	208
1949	31.3	111	128	58.7	266	397	352	552	374	49.1	281	221	234
1950	146	158	97.5	94.2	200	214	165	176	31.7	56.2	701	128	181

* Revised.

a From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	a10,000	a9,240	a15,600	a10,700	a14,700	a12,700	12,800	6,950	6,900	283	1,910	786	a102,000
1932	3,690	9,820	10,500	11,700	9,200	9,590	8,393	7,500	*13,820	8,080	9,840	1,120	*101,800
1933	4,430	7,560	9,530	11,400	9,720	11,200	8,099	14,800	2,760	2,570	80,600	38,000	201,000
1934	8,240	8,960	12,910	11,990	12,230	11,330	8,660	1,510	8,770	171	623	20	85,410
1935	1,200	5,280	11,170	12,300	10,840	13,590	8,140	243,100	208,400	23,630	14,930	9,170	561,800
1936	3,640	5,900	11,040	8,290	9,960	14,210	14,310	46,850	20,210	305	3,970	38	138,700
1937	3,730	5,800	7,420	4,350	9,710	15,410	10,820	19,480	22,200	2,670	2,070	9,690	113,400
1938	5,530	6,260	6,120	8,730	10,190	10,460	10,900	13,520	20,340	*18,230	*8,810	21,770	*158,900
1939	2,680	4,940	7,300	10,870	3,560	21,110	13,020	3,500	28,340	5,640	5,630	0	106,400
1940	67	2,540	4,510	4,740	19,030	16,890	7,330	2,780	7,150	1,190	240	10,290	76,760
1941	3,410	11,190	13,120	16,800	9,460	10,290	21,730	10,100	50,110	33,920	21,910	7,820	209,900
1942	11,820	10,290	8,830	7,140	13,290	49,760	14,360	13,740	22,100	1,940	16,060	18,350	187,700
1943	11,390	10,230	20,760	9,860	14,670	8,350	7,520	8,540	9,450	26	0	0	100,800
1944	0	1,470	3,410	16,790	16,920	16,430	39,010	19,220	9,310	34,150	1,780	121	158,600
1945	3,420	6,040	10,200	14,420	13,490	9,020	12,250	9,790	23,080	5,540	6,130	1,550	114,900
1946	5,150	6,310	3,720	7,980	10,460	14,560	5,810	17,420	9,100	50,120	976	996	132,600
1947	16,130	17,420	11,740	11,860	17,280	23,790	14,820	20,090	24,450	13,880	216	0	171,600
1948	268	4,530	7,300	7,700	11,740	15,190	6,990	10,570	74,130	10,310	2,430	159	151,300
1949	1,920	6,600	7,780	3,610	14,790	24,440	20,980	33,970	22,230	3,020	17,250	13,160	169,600
1950	9,120	9,420	5,990	5,790	11,080	13,130	9,800	10,790	1,890	3,450	43,090	7,620	131,200

* Revised.

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	716	a490	Apr. 2, 1931	0	b141	b102,000	b126	b91,500	
1932	731, 1390	*11,400	June 19, 1932*	0	*140	*101,800	*137	*99,270	
1933	746	*34,500	Aug. 28, 1933	0	277	201,000	289	209,200	
1934	761	2,030	June 15, 1934	0	118	85,410	101	72,950	
1935	786	c200,000	May 31, 1935	2	776	561,800	780	564,700	
1936	806	d80,000	May 30, 1936	0	191	138,700	186	135,100	
1937	826	*25,600	June 1, 1937*	0	157	113,400	158	114,300	
1938	856, 1390	*10,700	May 31, 1938*	0	*219	*158,900	*215	*155,900	
1939	876	*33,400	June 20, 1939	0	147	106,400	136	98,550	
1940	896	4,930	Sept. 4, 1940	0	106	76,760	134	97,360	
1941	926	19,400	July 13, 1941	1	290	209,900	294	213,100	
1942	956	8,060	Sept. 3, 1942	0	259	187,700	275	199,100	
1943	976	3,010	June 10, 1943	0	139	100,800	87.4	63,290	
1944	1006	*14,400	July 13, 1944	0	218	158,600	239	173,400	
1945	1036	8,780	June 24, 1945	0	159	114,900	153	110,400	
1946	1056	29,400	July 3, 1946	1	183	132,600	225	162,700	
1947	1086	13,000	June 6, 1947	0	237	171,600	191	139,400	
1948	1116	16,700	June 16, 1948	0	208	151,300	214	155,500	
1949	1146	8,530	Aug. 18, 1949	0	234	169,600	246	178,000	
1950	1176	12,000	Aug. 9, 1950	0	181	131,200	-	-	

* Revised.

* Not previously published.

a Maximum observed.

b From reports of State engineer of Nebraska.

c Published as "about", based on slope-area determinations at stations at Max and near Bloomington.

d Not previously published, qualified as "about".

Note.--Records for January to December 1922, January 1924 to December 1929 and October 1930 to March 1931 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon. With the exception of October 1930 to March 1931 which was compared hydrographically with other nearby stream records, these State records have not been included in this compilation.

399. Frenchman Creek near Champion, Nebr.

Location.--Lat. 40°29', long. 101°48', in sec. 19, T. 6 N., R. 39 W., 300 ft downstream from highway and 2½ miles west of Champion.

Drainage area.--910 sq mi, approximately, of which about 550 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder.

Average discharge.--8 years (1932-40), 26.6 cfs.

Extremes.--1932-40: Maximum gage height, 9.75 ft June 6, 1940 (discharge not determined, previously published figure too high); minimum daily discharge, 6.5 cfs June 11, 12, 1939.

Remarks.--Station destroyed by flood of June 6, 7, 1940. Natural flow of stream affected by irrigation developments and by diversions above station into Champion Lake.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	-	25.2	27.6	-
1933	28.0	23.0	23.7	40.7	40.2	24.7	22.6	26.9	29.9	46.4	23.5	30.6	30.0
1934	30.5	26.2	31.6	37.3	32.4	24.6	20.8	19.8	61.7	25.2	21.5	17.4	29.0
1935	24.0	22.8	25.4	31.6	28.6	23.6	10.9	42.3	39.9	19.1	27.9	26.6	26.9
1936	19.3	20.7	25.6	35.9	38.0	22.4	21.6	30.2	22.5	25.1	19.9	28.5	25.6
1937	20.6	20.1	18.6	36.1	35.5	19.5	16.6	22.4	30.6	17.9	26.8	18.9	23.6
1938	16.5	16.4	28.2	24.2	30.2	14.4	22.2	39.5	24.0	45.6	20.9	23.9	25.5
1939	14.9	18.1	17.9	31.5	29.0	28.0	22.2	12.6	27.0	21.7	28.6	28.7	23.3
1940	17.1	15.7	16.5	22.9	30.9	27.2	21.8	21.5	*90	*31	*25	*25	*28.6

* Not previously published; estimated on basis of records for stations below Champion, near Hamlet, and at Culbertson.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	-	-	1,550	1,640	-
1933	1,720	1,370	1,460	2,500	2,230	1,520	1,360	1,650	1,780	2,850	1,440	1,820	21,700
1934	1,870	1,560	1,950	2,290	1,800	1,510	1,240	1,220	3,670	1,550	1,320	1,040	21,020
1935	1,480	1,360	1,560	1,940	1,590	1,450	651	2,600	2,370	1,170	1,720	1,530	19,480
1936	1,190	1,230	1,580	2,210	2,190	1,380	1,280	1,860	1,340	1,550	1,220	1,700	18,730
1937	1,270	1,200	1,150	2,220	1,970	1,200	990	1,380	1,820	1,100	1,650	1,130	17,080
1938	1,020	976	1,730	1,490	1,680	884	1,320	2,430	1,430	2,810	1,280	1,420	18,470
1939	918	1,080	1,100	1,940	1,610	1,720	1,320	777	1,610	1,330	1,770	1,710	16,880
1940	1,050	932	1,010	1,410	1,780	1,670	1,300	1,320	*5,360	*1,910	*1,540	*1,490	*20,770

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	731	-	-	-	-	-	-	-
1933	746	71	(a)	10	30.0	21,700	31.1	22,530
1934	761	b849	June 17, 1934	11	29.0	21,020	27.7	20,040
1935	786	397	May 28, 1935	8	26.9	19,480	26.4	19,080
1936	806	93	Aug. 20, 1936	10	25.6	18,730	25.2	18,350
1937	826	168	May 11, 1937	9	23.6	17,080	23.7	17,190
1938	856	*863	May 30, 1938	7.5	25.5	18,470	24.6	17,840
1939	876	110	June 25, 1939	6.5	23.3	16,880	23.2	16,780
1940	896	(c)	June 6, 1940	-	*28.6	*20,770	-	-

* Revised. Supplemental peak discharge for July 19, 1938, revised to 851 cfs.

* Not previously published.

a July 9, Aug. 29, 1933.

b Revised; revision in WSP 856 erroneously noted the revision to be for 1937.

c Revised; discharge unknown; previously published figure too high. The previously published figure for the supplemental peak discharge for June 7, 1940, is also too high.

400. Frenchman Creek below Champion, Nebr.

Location.--Lat 40°28'00", long. 101°43'10", in SW $\frac{1}{4}$ sec. 22, T. 6 N., R. 39 W., 0.4 mile downstream from bridge on State Highway 48 at Champion and three-quarters of a mile upstream from Sand Creek.

Drainage area.--940 sq mi, approximately, of which only about 570 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Altitude of gage is approximately 3,240 ft (from topographic map for Harvey Reservoir in Report on Survey for Flood Control Republican River, by Corps of Engineers).

Average discharge.--16 years (1934-50), 41.6 cfs.

Extremes.--Maximum discharge, 2,850 cfs June 7, 1940 (gage height, 13.7 ft), from rating curve extended above 1,100 cfs; minimum daily, 5 cfs Mar. 27, 29, Apr. 3, July 3, 1938.

Remarks.--Natural flow of stream affected by irrigation developments above the station. Some regulation at low flow from a power plant a short distance above the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	*32	*33	*30	*34	*32	35.4	24.6	59.7	51.8	30.0	44.5	45.1	*37.6
1936	39.1	42.9	43.6	54.9	53.7	42.6	39.0	39.2	36.3	39.9	32.9	39.5	41.9
1937	34.2	32.2	35.9	44.5	45.0	32.0	25.7	32.0	37.1	31.4	37.8	31.2	34.9
1938	25.1	24.6	36.9	30.1	34.5	23.2	30.9	50.5	41.3	58.0	30.2	39.5	35.4
1939	25.4	25.5	25.2	39.5	36.5	34.5	41.1	24.1	43.7	32.5	36.2	34.7	33.2
1940	28.1	26.7	26.4	30.1	37.0	34.1	34.9	30.3	148	55.9	42	40	44.3
1941	42	41.2	52.5	49.0	34.3	33.4	51.8	38.7	34.9	33.6	36.5	36.1	40.4
1942	46.8	35.2	39.9	52.6	54.0	50.2	48.1	46.5	52.4	32.8	32.5	50.5	45.0
1943	49.4	53.1	44.1	51.7	53.6	36.5	40.5	36.1	70.0	37.5	47.7	38.3	46.1
1944	39.5	43.9	40.2	50.1	53.8	51.2	46.1	44.8	34.6	40.0	49.0	31.4	43.7
1945	49.1	50.3	37.2	53.8	45.4	37.2	45.8	36.7	50.1	34.5	36.4	51.6	43.9
1946	43.4	34.3	40.4	44.9	42.6	37.7	38.0	35.2	27.5	33.7	29.8	61.4	39.0
1947	47.5	52.6	42.9	49.8	48.2	37.3	38.4	43.3	55.2	44.0	26.7	39.3	43.7
1948	49.1	47.7	48.8	56.8	57.4	51.0	35.6	31.7	39.3	40.4	30.8	35.5	43.6
1949	48.2	53.6	54.2	54.5	58.9	41.0	57.3	52.2	55.5	36.9	38.7	53.5	50.3
1950	49.8	45.6	49.2	51.7	52.0	38.2	40.9	46.9	30.5	34.5	31.6	48.5	43.3

* Not previously published; estimated on basis of records for stations near Champion, near Hamlet, and at Culbertson.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	*1,970	*1,960	*1,840	*2,090	*1,780	2,170	1,470	3,610	3,080	1,840	2,740	2,680	27,230
1936	2,400	2,550	2,680	3,380	3,090	2,620	2,320	2,410	2,160	2,450	2,020	2,350	30,430
1937	2,100	1,920	2,210	2,740	2,500	1,970	1,530	1,970	2,120	1,930	2,330	1,860	25,270
1938	1,550	1,460	2,270	1,850	1,920	1,430	1,840	3,100	2,460	3,570	1,850	2,350	25,850
1939	1,560	1,520	1,550	2,430	2,030	2,120	2,440	1,480	2,600	2,000	2,220	2,070	24,020
1940	1,730	1,590	1,620	1,850	2,130	2,090	2,080	1,860	8,790	3,440	2,580	2,380	32,140
1941	2,580	2,450	3,230	3,010	1,900	2,050	3,080	2,380	2,080	2,070	2,240	2,150	29,220
1942	2,880	2,090	2,450	3,240	3,000	3,080	2,860	2,860	3,120	2,020	2,000	3,000	32,600
1943	3,040	3,160	2,710	3,180	2,980	2,240	2,410	2,220	4,170	2,310	2,690	2,280	33,390
1944	2,430	2,610	2,470	3,080	3,090	3,150	2,740	2,750	2,060	2,460	3,010	1,870	31,720
1945	3,020	2,990	2,290	3,310	2,520	2,280	2,750	2,260	2,980	2,120	2,240	3,070	31,810
1946	2,670	2,040	2,480	2,760	2,370	2,320	2,260	2,170	1,630	2,070	1,830	3,650	28,250
1947	2,920	3,130	2,640	3,050	2,680	2,290	2,290	2,660	3,290	2,710	1,640	2,340	31,640
1948	3,020	2,840	3,000	3,490	3,300	3,140	2,120	1,950	2,340	2,480	1,890	2,110	31,680
1949	2,970	3,190	3,330	3,350	3,270	2,520	3,410	3,210	3,300	2,270	2,380	3,180	36,380
1950	3,060	2,720	3,030	3,180	2,890	2,350	2,440	2,880	1,810	2,120	1,950	2,890	31,320

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second of Frenchman Creek below Champion, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	786	886	May 28, 1935	-	*37.6	*27,230	*40.2	*29,090
1936	806	273	Apr. 19, 1936	11	41.9	30,430	40.0	29,050
1937	828	504	May 10, 1937	11	34.9	25,270	33.6	24,320
1938	856	1,060	May 30, 1938	5	35.4	25,650	34.5	25,000
1939	876	520	June 24, 1939	11	33.2	24,020	33.6	24,330
1940	896, 1210	2,850	June 7, 1940	7.3	44.3	32,140	*48.9	*35,460
1941	926	141	June 5, 1941	9	40.4	29,220	39.2	28,380
1942	956	258	Sept. 1, 1942	14	45.0	32,600	47.1	34,090
1943	976, 1210	1,340	Jan. 14, 1943	19	46.1	33,390	*44.2	*31,990
1944	1006	308	Jan. 26, 1944	15	43.7	31,720	44.8	32,510
1945	1056	769	Sept. 28, 1945	18	43.9	31,810	42.4	30,700
1946	1056	653	Sept. 11, 1946	16	39.0	28,250	41.1	29,750
1947	1086	651	June 24, 1947	10	43.7	31,640	43.9	31,810
1948	1116	99	Mar. 17, 1948	24	43.6	31,680	44.5	32,310
1949	1146	159	Dec. 1, 1948	19	50.3	36,380	49.3	35,700
1950	1176	122	Dec. 9, 1949	15	43.3	31,320	-	-

* Revised.

† Not previously published; see footnote to preceding tables.

401. Frenchman Creek near Imperial, Nebr.

Location.--Lat 40°25'20", long. 101°37'30", in NW¼ sec. 3, T. 5 N., R. 38 W., a quarter of a mile downstream from county highway bridge, 6 miles upstream from Enders Dam, and 6 miles south of Imperial.

Drainage area.--1,220 sq mi, approximately, of which about 760 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Prior to Mar. 7, 1941, chain gage at bridge a quarter of a mile upstream at different datum. Mar. 7 to Sept. 30, 1941, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--10 years (1940-50), 72.3 cfs.

Extremes.--1940-50: Maximum discharge, 1,860 cfs June 14, 1943 (gage height, 7.00 ft); minimum daily, 23 cfs June 17, 1946.

Flood of June 7, 1940 reached a stage of 12.4 ft, from floodmarks, present site and datum (discharge not determined).

Remarks.--Natural flow of stream affected by irrigation developments and regulation at low flow from power plants above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	70	70.4	76.3	78.7	67.5	65.2	79.2	67.2	57.2	58.8	62.0	62.8	67.9
1942	77.1	65.7	66.8	81.2	87.8	83.0	76.2	74.8	85.6	60.5	53.8	84.1	74.6
1943	75.6	79.5	75.9	80.8	81.6	65.9	67.2	63.8	123	66.8	67.0	61.4	75.6
1944	58.7	68.7	61.3	73.1	80.8	77.9	82.7	78.5	60.6	61.6	68.9	50.9	68.6
1945	71.9	76.6	66.2	76.2	75.5	65.2	69.3	60.9	83.1	58.9	61.5	77.4	70.1
1946	81.3	63.5	63.3	75.2	72.2	63.8	63.6	65.1	53.5	63.7	49.0	81.8	66.3
1947	76.4	81.8	72.5	78.2	76.8	66.1	63.8	72.1	80.7	72.6	52.7	62.4	71.3
1948	75.9	75.0	83.0	89.2	86.4	82.5	63.6	58.4	69.6	69.4	57.5	60.9	72.6
1949	74.8	84.1	87.3	87.9	98.8	67.4	95.7	91.1	88.0	69.7	63.4	81.7	82.3
1950	81.6	80.1	80.4	83.4	83.0	67.2	70.6	†77.7	59.5	63.3	57.5	76.5	73.3

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	4,300	4,190	4,690	4,840	3,750	4,010	4,710	4,130	3,400	3,610	3,610	3,730	49,170
1942	4,740	3,910	4,110	4,990	4,880	5,100	4,530	4,600	5,090	3,720	3,310	5,000	53,980
1943	4,650	4,730	4,670	4,970	4,530	4,050	4,000	3,920	7,340	4,110	4,120	3,660	54,750
1944	3,610	4,090	3,770	4,500	4,650	4,790	4,920	4,830	3,600	3,790	4,240	3,030	49,820
1945	4,420	4,560	4,070	4,810	4,190	3,890	4,120	3,750	4,940	3,620	3,780	4,610	50,760
1946	5,000	3,780	3,890	4,620	4,010	3,930	3,780	4,000	3,180	3,920	3,010	4,870	47,990
1947	4,700	4,870	4,450	4,810	4,260	4,060	3,790	4,440	4,800	4,460	3,240	3,720	51,600
1948	4,670	4,460	5,100	5,490	4,970	5,070	3,780	3,590	4,140	4,260	3,540	3,650	52,700
1949	4,600	5,010	5,370	5,400	5,490	4,140	5,690	5,800	5,240	4,290	3,900	4,860	59,590
1950	5,020	4,770	4,940	5,130	4,610	4,130	4,200	4,780	3,540	3,890	3,550	4,550	53,110

Yearly discharge, in cubic feet per second of Frenchman Creek near Imperial, Nebr.

Daily discharge, in cubic feet per second of Frenchman Creek near Imperial, Nebr.								
Year	W.S. P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	146	Jan. 30, 1941	32	67.9	49,170	67.4	48,750
1942	956	460	Sept. 2, 1942	29	74.6	53,980	76.4	55,270
1943	976	1,860	June 14, 1943	48	75.6	54,750	72.0	52,170
1944	1006	272	Aug. 5, 1944	36	68.6	49,820	70.8	51,400
1945	1056	328	Sept. 29, 1945	32	70.1	50,760	69.6	50,380
1946	1056	284	Sept. 11, 1946	23	66.3	47,990	68.2	49,340
1947	1086	208	June 24, 1947	35	71.3	51,600	71.6	51,810
1948	1116	200	June 27, 1948	48	72.6	52,700	73.6	53,450
1949	1148	230	May 20, 1949	44	82.3	59,590	82.0	59,340
1950	1176	146	May 12, 1950	37	73.3	53,110		

Note.--Records for the period January 1924 to December 1930, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharge based thereon and have not been included in this compilation.

402. Frenchman Creek near Enders, Nebr.

Location.--Lat 40°25'05", long. 101°30'35", in NW¼NW¼ sec. 10, T. 5 N., R. 37 W., a quarter of a mile downstream from Enders Dam and 2½ miles southeast of Enders.

Drainage area.--1,300 sq mi, approximately, of which about 820 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for the period November 1946 to September 1947 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 3,031.22 ft above mean sea level, datum of 1929 (Bureau of Reclamation benchmark). Prior to June 14, 1948, at site 800 ft upstream at datum 1.03 ft higher.

Extremes.--1946-50: Maximum discharge, 278 cfs Nov. 20, 1948 (gage height, 3.88 ft), from rating curve extended above 150 cfs; minimum daily, 53 cfs June 17, 18, Aug. 10, Dec. 29, 1946.

Remarks.--Natural flow of stream affected by irrigation diversions, power developments, and withdrawals from ground water.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946					-	87.5	80.0	81.3	70.7	77.6	66.1	96.0	-
1947	91.4	98.9	89.1	91.5	95.8	80.7	82.6	85.4	97.1	87.9	72.6	78.2	87.5
1948	86.5	90.5	91.3	99.7	99.5	104	83.0	77.6	84.1	84.0	71.5	71.7	86.9
1949	90.6	109	111	101	120	91.6	118	111	111	86.2	77.5	93.9	102
1950	98.2	96.6	96.7	98.7	103	86.5	90.6	97.5	77.1	74.5	73.2	89.4	90.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946					-	5,380	4,780	5,000	4,210	4,770	4,060	5,710	-
1947	5,620	5,890	5,490	5,620	5,320	4,960	4,920	5,250	5,780	5,410	4,480	4,860	63,390
1948	5,320	5,390	5,610	6,130	5,720	6,390	4,940	4,770	5,010	5,160	4,400	4,260	63,090
1949	5,570	6,500	6,850	6,240	6,670	5,640	7,050	6,810	6,590	5,300	4,770	5,590	73,580
1950	6,040	5,740	5,940	6,070	5,700	5,320	5,390	6,000	4,590	4,580	4,500	5,320	65,200

Yearly discharge, in cubic feet per second

Monthly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	244	Sept. 12, 1946	-	-	-	-	-
1947	1086	236	June 25, 1947	53	87.5	63,390	86.6	62,720
1948	1116	188	Feb. 13, 1948	56	86.9	63,090	90.5	65,690
1949	1148	278	Nov. 20, 1948	58	102	73,580	100	72,390
1950	1176	273	Oct. 14, 1949	55	90.1	65,200		

403. Frenchman Creek near Hamlet, Nebr.

Location.--Lat 40°22'30", long. 101°12'50", in NW $\frac{1}{4}$ sec. 29, T. 5 N., R. 34 W., 120 ft downstream from county highway bridge, a quarter of a mile downstream from Chicago, Burlington & Quincy Railroad bridge, and $\frac{1}{2}$ miles east of Hamlet.

Drainage area.--1,480 sq mi, approximately, of which about 960 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,797.61 ft above mean sea level, datum of 1929. Prior to Apr. 20, 1932, and June 8 to July 14, 1940, staff gage, and Apr. 20, 1932, to June 7, 1940, water stage recorder at bridge on U. S. Highway 6 a quarter of a mile upstream at datum 1.66 ft higher.

Average discharge.--22 years (1928-50), 101 cfs.

Extremes.--1929-50: Maximum discharge, 2,400 cfs June 7, 1940 (gage height, 10.95 ft, site and datum then in use); minimum daily, 49 cfs Nov. 21, 1930.
Flood of Aug. 3, 1928 reached a stage of about 11 ft (original site and datum) from information by local resident.

Remarks.--Natural flow of stream affected by minor irrigation development above station.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a93.7	a163	a79.9	a69.9	a74.9	a144	a128	108	112	72.3	69.3	86.1	a100
1930	85.7	90.8	80	70	101	93.2	92.4	105	102	86.6	81.2	70.9	88.1
1931	92.2	83.0	106	111	119	114	118	97.7	90.3	73.1	123	78.1	100
1932	87.4	88.7	92.1	110	128	107	95.6	90.3	111	88.5	98.4	79.3	97.8
1933	101	104	89.9	119	113	106	104	104	75.3	78.6	105	120	102
1934	99.5	106	112	115	114	135	104	84.7	130	68.3	79.0	88.5	103
1935	94.7	115	105	103	99.5	110	107	183	176	78.6	73.5	83.7	111
1936	87.0	106	106	115	120	121	120	136	93.4	64.3	73.1	83.1	102
1937	77.1	83.3	88.7	82.3	111	108	82.8	88.4	125	86.6	74.9	76.2	90.2
1938	78.5	85.4	88.8	92.6	97.0	91.9	96.3	97.2	139	104	70.7	100	95.1
1939	76.8	87.4	82.6	96.4	86.8	93.6	95.6	72.2	106	73.7	72.2	72.7	84.5
1940	74.8	78.6	78.8	76.2	103	102	85.4	72.3	338	103	89.2	87.0	107
1941	86.0	87.4	106	109	110	97.7	119	115	120	103	79.7	81.5	101
1942	104	96.1	102	115	119	122	122	125	126	81.5	78.6	128	110
1943	113	118	117	111	113	100	99.0	91.0	150	87.5	83.9	76.6	105
1944	84.4	95.5	94.6	105	113	114	121	123	102	97.6	85.1	72.0	101
1945	92.6	102	100	107	112	98.2	105	92.2	126	86.4	81.1	96.5	99.8
1946	112	94.1	95.8	115	109	103	96.1	100	89.0	93.2	73.5	112	99.4
1947	126	113	105	109	114	104	104	105	123	105	75.2	79.9	105
1948	103	105	104	116	126	118	98.4	90.9	96.3	94.4	79.9	78.0	101
1949	98.8	117	119	108	142	112	137	135	155	101	82.9	103	117
1950	109	108	111	115	123	105	104	112	86.5	83.6	82.9	97.0	103

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure in acre-feet.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a5,780	a9,680	a4,910	a4,300	a4,160	a8,840	a7,600	6,640	6,660	4,450	4,260	5,120	a72,400
1930	5,270	5,400	4,920	4,300	5,610	5,730	5,500	6,460	6,070	5,320	4,990	4,220	63,800
1931	5,670	4,940	6,520	6,820	6,610	7,010	7,020	6,010	5,370	4,490	7,560	4,650	72,700
1932	5,370	5,280	5,660	6,760	7,360	6,580	5,690	5,590	6,800	5,260	6,050	4,750	70,900
1933	6,210	6,130	5,530	7,320	6,280	6,520	6,190	6,400	4,480	4,830	6,460	7,140	73,600
1934	6,120	6,340	6,900	7,080	6,340	8,270	6,220	5,210	7,760	4,200	4,860	5,270	74,570
1935	5,830	6,820	6,440	6,360	5,530	6,770	6,370	11,270	10,450	4,850	4,520	4,980	80,130
1936	5,350	6,280	6,510	7,050	6,910	7,420	7,150	8,340	5,560	3,950	4,500	4,950	73,970
1937	4,740	4,360	5,460	5,060	6,170	6,670	4,930	5,430	7,450	5,320	4,610	4,540	65,340
1938	4,890	5,080	5,460	5,710	5,390	5,650	5,730	5,980	8,250	6,400	4,350	5,960	68,850
1939	4,710	5,200	5,090	5,920	4,820	5,760	5,570	4,440	6,340	4,530	4,440	4,330	61,150
1940	4,600	4,680	4,850	4,680	5,940	6,270	5,080	4,450	20,140	6,310	5,490	5,180	77,670
1941	5,290	5,200	6,530	6,890	6,120	6,010	7,060	7,040	7,110	6,360	4,900	4,850	73,160
1942	6,400	5,720	6,260	7,070	6,600	7,480	7,240	7,670	7,510	5,010	4,830	7,640	76,290
1943	6,930	7,000	7,170	6,840	6,300	6,180	5,890	5,600	8,910	5,380	5,160	4,570	75,910
1944	5,190	5,680	5,820	6,480	6,480	7,000	7,200	7,560	6,100	6,020	5,230	4,280	73,040
1945	5,690	6,100	6,170	6,610	6,210	6,040	6,250	5,670	7,470	5,310	4,990	5,740	72,250
1946	6,890	5,600	5,890	7,070	6,050	6,360	5,720	6,170	5,300	5,730	4,520	6,690	71,990
1947	7,770	6,720	6,460	6,720	6,360	6,400	6,220	6,450	7,310	6,500	6,630	4,750	76,290
1948	6,360	6,270	6,410	7,100	7,250	7,230	5,860	5,590	5,730	5,800	4,910	4,640	73,150
1949	6,070	6,970	7,300	6,610	7,960	6,890	7,150	8,300	9,230	6,230	5,100	6,120	84,830
1950	6,730	6,450	6,840	7,070	6,810	6,450	6,210	6,690	5,150	5,140	5,100	5,770	74,610

† Corrected.

a From Congressional Documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

Yearly discharge in cubic feet per second of Frenchman Creek near Hamlet, Nebr.

Year	W.S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	*704	June 6, 1929	-	a100	a72,400	a93.4	a67,600
1930	701	*505	Aug. 29, 1930	56	88.1	63,800	90.2	65,300
1931	716	*1,960	Aug. 9, 1931	49	100	72,700	99.3	71,800
1932	731	567	July 31, 1932	61	97.8	70,300	100	72,600
1933	746	572	Sept. 11, 1933	56	102	73,600	104	75,000
1934	761	*918	June 15, 1934	57	103	74,570	103	74,300
1935	786	2,200	May 27, 1935	63	111	80,190	109	79,240
1936	806	738	May 28, 1936	53	102	73,970	97.8	70,990
1937	826	1,970	June 15, 1937	60	90.2	65,340	90.6	65,610
1938	856	335	June 2, 1938	52	95.1	68,850	94.5	68,420
1939	876	922	June 24, 1939	54	84.5	61,150	85.2	60,280
1940	896	2,400	June 7, 1940	61	107	77,670	111	80,560
1941	926,1390	867	July 12, 1941	66	101	73,160	103	74,520
1942	956,1390	634	Apr. 30, 1942	66	110	79,430	113	82,150
1943	976	702	June 16, 1943	69	105	75,910	98.7	71,500
1944	1006	418	June 13, 1944	62	101	73,040	102	74,310
1945	1036	444	June 5, 1945	64	99.8	72,250	100	72,670
1946	1056	986	Sept. 9, 1946	60	99.4	71,990	103	74,560
1947	1086	1,000	Oct. 4, 1946	50	105	76,290	103	74,380
1948	1116	195	July 14, 1948	71	101	75,150	103	74,450
1949	1146	790	June 7, 1949	60	117	84,830	117	84,510
1950	1176	374	May 7, 1950	66	103	74,610	-	-

* Revised.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

404. Frenchman Creek at Palisade, Nebr. 1/

Location.--Lat 40°20'50", long. 101°07'40", in SE 1/4 sec. 36, T. 5 N., R. 34 W., just downstream from bridge on U.S. Highway 6, three-eighths of a mile upstream from Chicago, Burlington & Quincy Railroad bridge, 1 mile west of Palisade, and 2 miles upstream from Stinking Water Creek.

Drainage area.--1,500 sq mi, approximately, of which about 980 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,747.49 ft above mean sea level, datum of 1929. October 1894 to October 1896, staff gage just upstream from railroad bridge three-eighths of a mile downstream from present gage at different datum.

Extremes.--1894-96, 1950: Maximum discharge not determined; minimum daily discharge observed, 50 cfs June 28, 1895, June 18, 1896.

Remarks.--Natural flow of stream affected by irrigation developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a105	+104	97	a70	a80	105	137	129	+131	158	96	78	a108
1896	111	a100	a80	a95	a95	a90	a100	114.4	103.6	93.9	75.7	81.6	a95
1897	82.5	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	85.0	86.3	97.9	-

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure in acre-feet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	a6,440	+6,210	5,960	a4,300	a4,430	+6,470	+8,140	7,930	+7,790	+9,740	+5,880	+4,670	a78,000
1896	6,820	a5,940	a4,900	a5,820	a5,450	a5,520	a5,940	7,010	6,190	5,780	4,670	4,880	a69,000
1897	5,040	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	5,220	5,310	5,820	-

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

1/ Published as Frenchman River at Palisade, 1894-96.

Yearly discharge, in cubic feet per second of Frenchman Creek at Fallsade, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	230	(a)	June 1, 1895	-	b108	b78,000	b106	b77,000
1896	(c)	d800	June 30, 1896	-	b95	b69,000	-	-
1897	(c)	-	-	-	-	-	-	-
1950	1176	-	-	-	-	-	-	-

a Maximum gage height, 4.35 ft, discharge not determined.

b From Congressional documents: 73d Cong., 2d sess. H. Doc. 195, Kansas River.

c 18th Ann. Rept., Pt. 4.

d Maximum daily discharge not available.

405. Stinking Water Creek near Wauneta, Nebr.

Location.--Lat 40°29'20", long. 101°19'50", in NE $\frac{1}{4}$ sec. 18, T. 6 N., R. 35 W., half a mile downstream from county highway bridge, $1\frac{1}{2}$ miles downstream from Spring Creek, and 6 miles northeast of Wauneta.

Drainage area.--1260 sq mi, approximately, of which only about 340 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Altitude of gage is 2,930 ft (from topographic map in Report on Survey for Flood Control Republican River by Corps of Engineers). Prior to May 18, 1943, at site half a mile upstream at different datum.

Average discharge.--10 years (1940-50), 24.5 cfs.

Extremes.--1940-50: Maximum discharge, 626 cfs June 6, 1949 (gage height, 6.59 ft); minimum daily discharge, 5.5 cfs Sept. 3, 1943.

Remarks.--There are several small diversions by pumping above the station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	17.1	21.4	28.0	31.6	29.8	27.9	31.4	24.9	21.7	11.7	9.13	13.2	22.3
1942	25.1	22.7	22.2	25.5	29.6	41.3	29.0	42.2	33.2	13.4	13.6	37.2	27.9
1943	23.2	27.7	31.6	25.2	27.4	30.8	22.2	20.2	35.4	11.1	6.98	7.44	22.4
1944	12.9	16.7	18.3	16.8	29.5	35.2	45.5	28.1	22.8	17.4	9.69	9.18	21.8
1945	15.1	20.9	21.5	23.5	26.2	24.3	27.5	23.3	34.5	11.6	12.1	13.7	21.1
1946	19.3	21.0	19.6	25.5	25.8	32.5	20.5	28.9	19.0	20.2	9.7	19.9	21.8
1947	34.5	31.6	24.9	24.7	28.9	31.0	31.6	26.1	*56.4	25.0	11.2	13.2	*28.2
1948	17.6	26.0	28.8	26.1	28.0	34.7	22.9	24.3	26.3	17.2	15.8	10.3	23.2
1949	17.8	25.4	23.5	21.6	52.0	42.3	49.5	*48.4	41.2	18.0	12.7	17.2	*30.6
1950	27.0	28.4	25.0	22.9	30.8	30.9	32.2	28.2	21.2	22.8	16.7	18.7	25.4

* Revised.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1050	1270	1720	1950	1650	1720	1870	1530	1290	720	562	788	16,120
1942	1540	1350	1370	1560	1640	2540	1730	2590	1980	823	835	2210	20,170
1943	1430	1650	1940	1550	1520	1890	1320	1240	2110	680	429	443	16,200
1944	792	996	1120	1040	1700	2170	2710	1730	1350	1070	596	546	15,820
1945	926	1240	1320	1440	1460	1490	1640	1430	2050	716	744	813	15,270
1946	1190	1250	1210	1560	1430	2000	1220	1780	1130	1240	595	1180	15,790
1947	2120	1880	1530	1920	1610	1910	1880	1610	*3350	1540	686	783	*20,420
1948	1080	1550	1770	1600	1610	2140	1360	1490	1560	1060	974	613	16,810
1949	1090	1510	1440	1330	2890	2600	2940	*2970	2450	1100	781	1020	*22,120
1950	1660	1690	1540	1410	1710	1900	1920	1750	1260	1400	1030	1110	18,360

* Revised.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	956	100	June 23, 1941	8.4	22.3	16,120	22.6	16,340
1942	956	424	Oct. 4, 1941	9	27.9	20,170	28.9	20,930
1943	976	447	June 13, 1943	5.5	22.4	16,200	19.5	14,090
1944	1006	112	Apr. 24, 1944	-	21.8	15,820	22.6	16,400
1945	1036	531	June 5, 1945	-	21.1	15,270	21.3	15,430
1946	1056	*450	Sept. 9, 1946	-	21.8	15,790	24.4	17,660
1947	1086, 1390	*408	June 21, 1947	-	*28.2	*20,420	*26.6	*19,290
1948	1116	168	July 14, 1948	-	23.2	16,810	22.7	16,450
1949	1146, 1390	*626	June 6, 1949	8.5	*30.6	*22,120	*31.7	*22,980
1950	1176	74	July 27, 1950	13	25.4	18,360	-	-

* Revised.

* Not previously published.

406. Stinking Water Creek near Palisade, Nebr.

Location.--Lat 40°22'10", long. 101°06'50", at southwest corner of NW $\frac{1}{4}$ sec. 30, T. 5N., R. 33 W., 25 ft downstream from county highway bridge, $\frac{1}{4}$ miles upstream from mouth, and $\frac{1}{4}$ miles northwest of Palisade.

Drainage area.--1,390 sq mi, approximately, of which about 430 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,740.99 ft above mean sea level, datum of 1929.

Extremes.--1949-50: Maximum discharge, 442 cfs July 25, 1950 (gage height, 8.02 ft); minimum daily, 22 cfs Aug. 18, 23, 1950.

Remarks.--Natural flow of stream affected by irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	37.5	39.7	35.3	34.0	50.1	48.2	50.2	44.7	36.3	42.8	27.1	28.6	39.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	2,310	2,360	2,170	2,090	2,780	2,960	2,990	2,750	2,160	2,630	1,670	1,700	28,570

407. Frenchman Creek at Culbertson, Nebr.^{1/}

Location.--Lat 40°13'40", long. 100°49'50", in sec. 17, T. 3 N., R. 31 W., at Culbertson, at bridge on State Highway 17, half a mile upstream from Chicago, Burlington & Quincy Railroad bridge, and $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--3,090 sq mi, approximately, of which only about 1,570 sq mi contribute directly to surface runoff.

Supplemental records available.--June 1913 to September 1915, gage heights and discharge measurements only.

Gage.--Chain gage. Datum of gage is 2,561.93 ft above mean sea level, datum of 1929.

Mar. 11, 1931 to May 31, 1935, staff gage at same site at datum 1.00 ft higher. June 1, 1935, to Feb. 24, 1942, staff gage at same site and datum.

Average discharge.--20 years (1930-50), 126 cfs.

Extremes.--1930-50: Maximum discharge, 15,000 cfs (estimated) May 31, 1935; minimum daily, 7 cfs Aug. 13, 14, 26, 1936.

Remarks.--Natural flow of stream affected by irrigation and power developments above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*82	*115	*140	*150	*160	*145	145	108	49.2	46.6	*135	39.2	*108
1932	70.5	145	150	155	170	208	147	86.1	137	46.0	62.0	19.2	*116
1933	48.7	103	134	180	200	198	137	98.5	24.6	23.7	*149	208	*125
1934	114	93.7	195	190	194	178	128	30.6	165	38.6	27.7	70.9	118
1935	50.5	67.2	164	176	165	180	116	522	384	118	36.5	88.5	172
1936	69.8	131	158	164	180	190	135	156	111	26.4	21.5	28.1	114
1937	22.5	99.0	152	116	162	157	111	42.6	165	44.1	24.6	31.2	93.3
1938	37.4	90.0	149	159	164	145	139	144	167	69.5	38.1	88.2	116
1939	40.3	73.8	154	160	145	163	167	56.2	97.4	47.2	23.0	23.2	93.7
1940	31.5	42.8	111	113	176	189	154	69.7	381	48.1	38.5	49.9	116
1941	90.6	114	207	181	188	168	187	144	173	111	33.0	57.4	137
1942	139	152	154	148	183	204	213	228	212	79.1	44.2	168	160
1943	152	162	168	159	177	173	145	41.0	135	28.3	18.7	21.1	115
1944	58.4	127	143	146	185	191	242	200	165	128	40.7	33.3	138
1945	88.5	131	153	153	169	153	153	89.0	194	79.1	58.2	84.8	125
1946	136	139	131	160	166	168	135	103	112	133	27.4	109	126
1947	204	188	167	160	175	173	169	130	192	155	34.5	46.7	149
1948	82.1	145	168	183	180	196	140	73.7	110	71.8	41.7	27.8	116
1949	73.6	149	173	115	224	221	251	227	267	70.3	35.4	74.1	156
1950	101	164	166	128	194	182	179	119	62.1	78.4	62.2	64.5	124

* Revised.

† Corrected.

* Not previously published; estimated on basis of records for station near Hamlet.

^{1/} Published as Frenchman River, 1913-14.

Monthly and yearly runoff, in acre-feet of Frenchman Creek at Culbertson, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*3,810	*6,840	*8,610	*9,220	*8,890	*9,920	8,630	6,640	2,930	2,870	*8,280	2,330	\$77,970
1932	4,330	8,630	9,220	9,530	9,780	12,700	8,750	5,290	8,150	2,830	3,810	1,140	84,200
1933	2,990	6,130	8,240	11,100	11,100	12,200	8,150	6,060	1,460	1,460	*9,150	12,400	*90,440
1934	7,000	5,570	11,990	11,880	10,760	10,940	7,590	1,880	9,830	2,370	1,700	4,220	85,530
1935	3,110	4,000	10,080	10,840	9,160	11,080	6,890	32,080	22,860	7,230	2,250	5,290	124,900
1936	4,290	7,780	9,710	10,090	10,340	11,670	8,020	9,620	6,620	1,620	1,310	1,670	82,740
1937	1,390	5,890	9,340	7,130	9,010	9,650	6,580	2,620	9,870	2,710	1,510	1,960	67,580
1938	2,300	5,360	9,130	9,780	9,110	9,110	8,290	8,840	9,950	4,270	2,340	5,250	83,730
1939	2,480	4,390	8,220	9,630	8,120	9,880	9,960	3,460	5,790	2,900	1,410	1,380	67,820
1940	1,930	2,550	6,810	6,920	10,260	11,640	9,150	4,290	22,670	2,960	2,390	2,970	84,540
1941	5,570	6,790	12,760	11,120	10,460	10,340	11,130	8,830	10,270	6,820	2,030	3,410	99,530
1942	8,520	9,040	9,500	9,080	10,140	12,560	12,580	14,000	12,640	4,860	2,710	9,990	115,600
1943	9,340	9,630	10,350	9,770	9,820	10,660	8,650	3,140	8,040	1,740	1,150	1,280	85,550
1944	3,590	7,560	8,800	9,000	10,620	11,770	14,390	12,310	9,790	7,890	2,500	2,020	100,200
1945	5,440	7,810	9,450	9,400	9,560	9,400	9,090	5,470	11,570	4,860	3,580	5,050	90,460
1946	8,390	8,290	8,060	9,840	9,200	10,310	8,040	6,350	6,650	8,150	1,680	6,510	91,470
1947	12,530	11,160	10,250	9,860	9,690	10,650	10,040	8,010	11,410	9,520	2,120	2,780	108,000
1948	3,820	8,660	10,500	11,250	10,380	12,060	8,320	4,530	6,560	4,420	2,570	1,650	84,820
1949	4,530	8,890	10,620	7,090	12,420	15,600	14,320	13,940	15,880	4,320	2,180	4,410	112,500
1950	6,190	9,730	10,230	7,850	10,790	11,170	10,660	7,310	3,700	4,820	3,830	3,840	90,120

* Revised.

* Not previously published; estimated on basis of records for station near Hamlet.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	716, 1390	a652	Aug. 10, 1931	-	*108	\$77,970	*112	*80,890
1932	731	408	(b)	9	*116	84,200	109	79,340
1933	746, 1390	*4,410	Aug. 28, 1933	12	*125	*90,440	135	97,640
1934	761	*1,310	June 15, 1934	15	118	85,530	108	78,160
1935	786	15,000	May 31, 1935	8	172	124,900	179	129,500
1936	806	491	May 29, 1936	7	114	82,740	107	77,580
1937	826	3,120	June 1, 1937	12	93.3	67,580	93.5	67,730
1938	856	*1,060	July 2, 1938	14	116	83,730	113	82,030
1939	876	1,750	June 20, 1939	8.1	93.7	67,820	88.4	64,020
1940	896	4,250	June 9, 1940	*14	116	84,540	135	96,370
1941	926	962	June 2, 1941	20	137	99,530	140	101,500
1942	956	1,120	June 24, 1942	24	160	115,600	163	117,900
1943	976	604	June 17, 1943	10	115	83,550	102	74,180
1944	1006	1,070	June 12, 1944	23	138	100,200	142	103,000
1945	1036	1,310	Sept. 27, 1945	19	125	90,460	128	92,520
1946	1056	758	Sept. 10, 1946	15	126	91,470	139	100,700
1947	1086	1,180	Oct. 6, 1946	20	149	108,000	134	96,860
1948	1116	654	May 30, 1948	16	116	84,520	118	85,780
1949	1146	1,380	June 7, 1949	24	156	112,800	159	114,900
1950	1176	1,200	July 24, 1950	23	124	90,120	-	-

* Revised.

† Corrected.

* Not previously published.

a Revised, maximum for the year.

b July 31, Aug. 1, 1932.

Note.--Records for January 1922 to March 1931 published in reports of State engineer of Nebraska consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

408. Blackwood Creek near Culbertson, Nebr.

Location.--Lat 40°14'20", long. 100°48'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 10, T. 3 N., R. 31 W., 60 ft upstream from bridge on U. S. Highways 6 and 34, a quarter of a mile north of Chicago, Burlington & Quincy Railroad bridge, $\frac{1}{4}$ miles east of Culbertson, and 2 miles upstream from mouth.

Drainage area.--290 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,555.25 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 1,600 cfs June 22, 1947 (gage height 13.67 ft), from rating curve extended above 50 cfs on basis of subsequent rating curves defined below 800 cfs; no flow Jan. 4-6, 1950.

Remarks.--Natural flow of stream affected by irrigation development above station, return flow from irrigated areas, and waste from Culbertson Canal.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	11.3	13.4	2.14	9.84	-
1947	34.0	.61	.44	.40	.43	.40	.49	8.57	41.5	27.4	1.42	.97	9.78
1948	1.87	.66	.31	.30	.26	9.19	.97	3.36	27.3	16.2	6.06	2.35	5.74
1949	4.94	2.05	.50	.27	3.14	.70	.59	3.37	16.0	2.95	2.87	4.10	3.43
1950	10.9	1.56	.53	.23	.40	.44	.36	8.82	3.23	20.7	7.61	8.06	5.30

Monthly and yearly runoff, in acre-feet of Blackwood Creek near Culbertson, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	-	674	886	131	586	-
1947	2,090	36	27	25	24	24	23	527	2,470	1,680	87	58	7,080
1948	115	39	19	15	15	585	58	206	1,620	994	372	140	4,180
1949	303	122	31	17	174	43	35	207	951	181	176	244	2,480
1950	670	93	33	14	22	27	21	542	192	1,270	468	480	3,830

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	a394	June 18, 1946	-	-	-	-	-
1947	1086	#1,600	June 22, 1947	0.1	9.78	7,080	7.04	5,100
1948	1116	595	June 25, 1948	.1	5.74	4,160	6.13	4,450
1949	1146	238	June 7, 1949	.1	3.43	2,480	3.90	2,820
1950	1176	643	June 25, 1950	0	5.30	3,830	-	-

* Not previously published.

a Probably maximum for water year.

409. Driftwood Creek near McCook, Nebr.

Location.--Lat 40°08'50", long. 100°39'50", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T. 2 N. R. 30 W., at downstream side of county highway bridge, half a mile downstream from flume on Meeker Canal, 4 miles southwest of McCook, and 4 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--360 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,493.78 ft above mean sea level, datum of 1929.

Extremes.--1946-50: Maximum discharge, 4,740 cfs Aug. 7, 1950 (gage height, 25.43 ft, from high-water mark), from rating curve extended above 3,000 cfs; no flow at times during 1946-50.

Remarks.--Natural flow of stream occasionally affected by waste from Meeker Canal.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	1.42	0.27	0.33	14.4	0.05	61.0	-
1947	137	1.23	0.68	0.52	0.62	1.96	.82	3.49	85.8	12.4	.17	.05	20.5
1948	.23	.18	.32	.28	2.40	1.00	.20	11.6	37.8	3.91	1.35	.35	4.93
1949	.18	.19	.32	.23	5.09	.73	.44	11.7	31.7	.58	8.68	.29	4.98
1950	.98	.09	.12	.20	.40	.25	.42	1.36	1.29	76.0	156	.52	20.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	95	16	20	885	3.43	630	-
1947	8,410	73	42	32	35	121	37	215	5,100	783	11	3.2	14,840
1948	14	11	20	17	139	61	12	714	2,250	240	83	21	3,580
1949	11	11	20	14	283	45	26	720	1,890	36	532	17	3,600
1950	60	5.6	7.1	12	22	15	25	84	77	4,679	9,610	31	14,620

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	a3,400	Sept. 9, 1946	0	-	-	-	-
1947	1086	2,270	June 25, 1947	0	20.5	14,840	8.79	6,360
1948	1116	1,520	June 21, 1948	0	4.93	3,580	4.93	3,580
1949	1146	780	June 18, 1949	0	4.98	3,600	5.02	3,640
1950	1176	4,740	Aug. 7, 1950	0	20.2	14,620	-	-

a Maximum for water year.

410. Republican River at McCook, Nebr.

Location.--Lat 40°11'44", long. 100°37'10", in sec 32, T. 3 N., R. 29 W., on upstream side of highway bridge half a mile south of McCook and 2 miles downstream from Driftwood Creek.

Drainage area.--8,960 sq mi (revised), approximately, of which about 5,760 sq mi contribute directly to surface runoff.

Gage.--Staff gage. Altitude of gage is 2,460 ft (from topographic map).

Extremes.--1931-32: Maximum discharge observed, 5,450 cfs June 19, 1932 (gage height, 7.5 ft), from rating curve extended above 4,600 cfs, but may have been exceeded in July 1932; no flow several days during July and August 1931.
Maximum flood known since about 1826 occurred May 31, 1935 (discharge, about 245,000 cfs).

Remarks.--Natural flow of stream affected by irrigation development above station.

Cooperation.--Records for October 1930 to March 1931, not previously published by Geological Survey, furnished by the State engineer of Nebraska.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	a497	b344	a419	b394	a402	a394	374	193	185	30.8	84.2	23.6	a276
1932	63.9	185	180	210	225	341	314	240	598	-	-	-	-

a Corrected, superseded figure published in reports of State engineer of Nebraska.

b From reports of State engineer of Nebraska.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	a29,900a20,500a25,800a24,200a22,300a23,800	22,300	11,900	11,000	1,890	5,180	1,400	a200,000	-	-	-	-	-
1932	3,950	11,000	11,100	12,900	12,900	21,100	18,700	14,800	35,500	-	-	-	-

a From reports of State engineer of Nebraska.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1931	716	800	June 5, 1931	0	a276	a200,000	a207	a155,000	-
1932	731	-	-	-	-	-	-	-	-

a From reports of State engineer of Nebraska.

Note.--Records for the period January 1924 to December 1929, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharges based thereon and have not been included in this compilation.

411. Red Willow Creek near McCook, Nebr.

Location.--Lat 40°21', long. 100°39', in NW $\frac{1}{4}$ sec. 6, T. 4 N., R. 29 W., at bridge on U. S. Highway 83 and 10 miles north of McCook.

Drainage area.--600 sq mi, approximately, of which about 300 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,496.50 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1940-47), 33.7 cfs.

Extremes.--1940-47: Maximum discharge, 30,000 cfs June 22, 1947 (gage height, 22.4 ft), from rating curve extended above 2,500 cfs on basis of contracted-opening determination of peak flow; minimum daily observed, 4.2 cfs Sept. 4, 1943.

Remarks.--A few diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	13.5	17.1	20.5	26.1	24.7	25.3	28.8	35.3	126	42.1	13.4	59.1	35.8
1942	*31.1	23.0	21.8	23.1	27.8	51.8	*86.8	42.9	83.5	20.0	15.7	69.1	*41.2
1943	19.6	21.8	25.3	23.2	25.9	26.5	28.8	21.4	24.3	14.8	8.56	6.50	20.5
1944	12.3	20.4	18.5	19.1	28.7	55.2	68.4	35.8	59.5	61.5	45.8	12.7	34.8
1945	13.7	21.0	24.0	23.0	32.6	26.1	26.1	38.6	102	12.6	30.1	35.3	31.9
1946	19.4	19.6	18.7	15.4	19.0	32.6	22.1	55.0	32.6	21.9	14.9	32.1	25.3
1947	86.4	30.9	24.9	23.8	29.5	29.4	34.8	24.3	*210	*35	*15	*13	*46.3

* Revised.

* Not previously published; estimated on basis of records for station near Red Willow.

Monthly and annual discharge, in acre-feet of Red Willow Creek near McCook, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	855	1,020	1,260	1,600	1,370	1,550	1,710	2,170	7,500	2,590	821	3,510	25,930
1942	*1,910	1,370	1,540	1,420	1,540	3,180	*5,160	2,640	4,970	1,230	952	4,110	*28,850
1943	1,210	1,300	1,560	1,420	1,440	1,630	1,710	1,310	1,450	898	527	397	14,840
1944	758	1,210	1,140	1,180	1,650	2,160	4,070	2,200	2,350	5,010	2,820	754	25,300
1945	845	1,250	1,480	1,410	1,810	1,600	1,550	2,380	6,080	778	1,850	2,100	23,110
1946	1,190	1,170	1,150	944	1,060	2,000	1,320	3,380	1,940	1,350	914	1,910	18,330
1947	5,310	1,840	1,530	1,470	1,640	1,810	2,070	1,490	12,500	*2,150	*922	*744	*33,510

* Revised.

† Not previously published; estimated on basis of records for station near Red Willow.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1941	928	*1,320	June 10, 1941	8	35.8	25,930	*57.9	*27,440	
1942	956	1,390	Apr. 19, 1942	8.8	*41.2	29,830	*40.4	*29,280	
1943	976	300	July 3, 1943	4.2	20.5	14,840	19.2	13,880	
1944	1006	1,780	July 31, 1944	8.4	34.8	25,300	35.5	26,770	
1945	1036	3,120	June 5, 1945	-	31.9	23,110	31.8	23,050	
1946	1058	2,730	May 29, 1946	6.3	25.3	18,330	32.4	23,500	
1947	1086	30,000	June 22, 1947	-	*46.3	*33,510	-	-	

* Revised.

† Corrected.

* Not previously published; estimated on basis of records for station near Red Willow.

412. Red Willow Creek near Red Willow, Nebr.

Location.--Lat 40°14'10" long. 100°30'00", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 3 N., R. 38 W., at downstream side of bridge on U. S. Highways 6 and 34, three quarters of a mile north of Red Willow, and 2 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--710 sq mi, approximately, of which about 400 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads and water temperatures for the period January to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,398.64 ft above mean sea level, datum of 1929. Prior to May 26, 1945, wire-weight gage at bridge 1 $\frac{1}{2}$ miles upstream at datum 11.16 ft higher.

Average discharge.--11 years (1939-50), 42.5 cfs.

Extremes.--1939-50: Maximum discharge, 30,000 cfs June 22, 1947 (gage height, 18.36 ft), from rating curve extended above 6,800 cfs on basis of slope-area determination of peak flow; minimum observed, 3.6 cfs Aug. 21, 1940.

Remarks.--Natural flow of stream affected by minor irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	9.70	15.6	15.4	12.3	18.1	32.7	34.7	22.0	75.6	20.2	14.3	20.2	24.1
1941	16.4	20.1	25.7	46.5	30.9	28.8	38.6	46.5	172	51.1	18.5	104	49.7
1942	46.8	27.0	27.6	28.5	34.5	62.9	93.3	56.3	110	26.4	23.4	79.0	51.2
1943	23.7	27.0	31.4	28.2	29.9	30.3	33.7	25.0	31.6	22.8	22.3	8.8	26.2
1944	15.6	22.7	17.8	22.4	32.0	38.6	91.4	51.7	48.3	102	60.8	17.2	43.5
1945	18.5	25.6	28.9	28.7	37.2	31.0	29.8	64.1	147	19.0	54.9	57.4	45.0
1946	24.0	24.6	24.6	23.0	23.5	38.3	26.3	62.9	45.3	35.0	19.3	39.1	32.2
1947	156	38.9	29.8	28.0	31.9	34.4	41.1	29.9	287	43.4	18.3	15.8	62.6
1948	20.0	29.1	32.3	30.5	33.7	57.9	32.5	28.2	186	71.0	81.9	17.1	50.0
1949	19.6	27.4	21.8	22.9	48.9	45.3	61.3	51.0	81.6	37.3	31.7	20.3	38.9
1950	30.7	32.5	32.8	28.2	52.0	46.4	42.9	48.9	27.5	110	42.7	34.2	44.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	596	928	946	758	1,040	2,010	2,060	1,350	4,510	1,240	882	1,200	17,520
1941	1,010	1,200	1,580	2,860	1,720	1,770	2,290	2,960	10,220	3,400	1,140	6,180	35,970
1942	2,880	1,610	1,700	1,750	1,750	3,870	5,650	3,460	6,550	1,620	1,440	4,700	37,040
1943	1,460	1,800	1,930	1,730	1,650	1,860	2,010	1,540	1,690	1,400	1,370	526	18,980
1944	958	1,350	1,090	1,380	1,840	2,370	5,440	3,180	2,880	6,300	3,740	1,020	31,550
1945	1,140	1,520	1,780	1,770	2,070	1,910	1,770	3,940	8,760	1,170	3,370	3,410	32,610
1946	1,470	1,480	1,520	1,410	1,310	2,350	1,570	3,870	2,690	2,150	1,190	2,320	23,330
1947	9,590	2,310	1,840	1,600	1,770	2,120	2,450	1,840	17,080	2,670	1,120	950	45,320
1948	1,230	1,730	2,020	1,870	1,940	3,560	1,930	1,740	9,880	4,360	5,040	1,020	36,320
1949	1,210	1,630	1,340	1,410	2,720	2,780	3,650	3,140	4,870	2,290	1,950	1,210	28,200
1950	1,690	1,930	2,020	1,740	2,890	2,850	2,550	3,000	1,840	6,780	2,620	2,040	31,950

Yearly discharge, in cubic feet per second of Red Willow Creek near Red Willow, Nebr.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	896	-	-	-	-	-	-	-
1940	896	1,250	June 7, 1940	3.7	24.1	17,520	26.0	18,840
1941	926	4,610	June 2, 1941	8	49.7	35,970	52.9	38,370
1942	956	4,400	Apr. 18, 1942	13	51.2	37,040	49.5	35,840
1943	976	739	Aug. 21, 1943	5	26.2	18,980	24.0	17,380
1944	1006	-	July 11, 1944	6	43.5	31,550	44.9	32,590
1945	1036	*3,500	May 31, 1945	12	45.0	32,610	45.1	32,640
1946	1058	1,360	May 30, 1946	11	32.2	23,330	45.0	32,600
1947	1098	50,000	June 22, 1947	10	62.6	45,320	50.5	36,580
1948	1118	14,800	June 21, 1948	15	50.0	36,320	48.9	*35,520
1949	1148	1,820	June 13, 1949	10	38.9	28,200	41.2	29,860
1950	1176	1,070	July 31, 1950	15	44.1	31,950	-	-

* Revised.

† Corrected.

413. Medicine Creek above Harry Strunk Lake, Nebr.^{1/}

Location.--Lat 40°30'10", long. 100°19'20", in SW $\frac{1}{4}$ sec. 7, T. 6 N., R. 26 W., a third of a mile downstream from top of Harry Strunk Lake flood-control pool, 2 $\frac{1}{2}$ miles upstream from top of irrigation pool, 3 $\frac{1}{2}$ miles southeast of Stockville, and 13 $\frac{1}{2}$ miles upstream from Medicine Creek Dam.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,380.94 ft above mean sea level, datum of 1929 (Bureau of Reclamation benchmark).

Extremes.--1950: Maximum discharge, 3,030 cfs (gage height, 7.80 ft) July 26, 1950; minimum daily, 30 cfs Jan. 25, 1950.

Maximum stage known since at least 1874, 24.4 ft June 22, 1947, from floodmark.

Remarks.--Several small irrigation diversions above the station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	76.8	71.7	69.5	61.4	47.9	148	54.8	47.8	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	4,270	4,410	4,140	5,000	2,850	9,100	3,370	2,850	-

414. Mitchell Creek above Harry Strunk Lake, Nebr.^{2/}

Location.--Lat 40°28'20", long. 100°15'25", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 6 N., R. 26 W., at top of Harry Strunk Lake flood-control pool, 2 $\frac{1}{2}$ miles southwest of Orfino, 9 $\frac{1}{2}$ miles upstream from Medicine Creek Dam, and 14 miles northwest of Cambridge.

Drainage area.--53 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,376.95 ft above mean sea level, datum of 1929 (Bureau of Reclamation benchmark).

Extremes.--1950: Maximum discharge during period May to September, 220 cfs July 4 (gage height, 6.33 ft, from high-water mark); no flow on many days.

Flood of June 21, 1948, reached a stage of about 26 ft, from floodmarks (discharge unknown)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	2.27	0.16	4.70	0.70	0.66	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	140	9.7	289	43	39	-

^{1/} Published as "above Medicine Creek Reservoir" prior to October 1950.

^{2/} Published as "above Medicine Creek Reservoir" prior to October 1950.

415. Harry Strunk Lake, Nebr.

Location.--Lat 40°22'40", long. 100°13'00" in NW¼ sec. 25, T. 5 N., R. 26 W., in control house at outlet tube of Medicine Creek Dam on Medicine Creek, 7 miles northwest of Cambridge.

Gage.--Pressure gage. Datum of gage is at mean sea level, datum of 1929.

Extremes--1949-50: Maximum contents observed, 33,800 acre-ft Sept. 30, 1950 (elevation, 2,362.55 ft); reservoir was filling and top of storage pool elevation had not been attained; storage began Aug. 8, 1949.

Remarks.--Reservoir is formed by earth-fill dam; storage began Aug. 8, 1949. Capacity, 34,100 acre-ft between elevations 2,335.0 ft (sill of outlet gates) and 2,366.1 ft (top of storage pool and crest of slot in spillway). Top of flood-control pool and crest of main spillway at elevation 2,386.2 ft (capacity, 92,300 acre-ft). Top of superstorage flood-control pool at elevation 2,400.0 ft (capacity, 150,000 acre-ft). Dead storage 5,960 acre-ft (below elevation 2,335.0 ft, sill of outlet gates). Figures given herein represent total capacity or contents at 8 a.m. Water used for irrigation in Frenchman-Cambridge Irrigation Project.

Cooperation.--Record of elevations and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, on last day of month, of Harry Strunk Lake, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949													
1950	5,590	7,290	9,160	10,680	14,140	16,550	18,600	22,700	23,680	31,170	32,580	33,800	

a Contents interpolated.

Note.--All readings except as noted are taken daily at 8 a. m.

416. Medicine Creek below Harry Strunk Lake, Nebr. 1/

Location.--Lat 40°22'20", long. 100°13'20", at center of sec. 25, T. 5 N., R. 26 W., half a mile downstream from Medicine Creek Dam, and 6½ miles northwest of Cambridge.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,295.26 ft above mean sea level, datum of 1929. Prior to Apr. 24, 1950, staff gage at site half a mile upstream, at different datum.

Extremes.--1950: Maximum discharge during period January to September, 49 cfs May 28 (gage height, 2.32 ft); minimum daily, 2.5 cfs June 15.

Remarks.--Flow regulated by Harry Strunk Lake; storage began Aug. 8, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950				-	5.26	4.29	3.79	3.93	3.08	3.95	4.23	5.02	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950				-	292	264	226	241	183	243	260	298	-

1/ Published as "below Medicine Creek Dam" prior to October 1950.

417. Medicine Creek at Cambridge, Nebr.1/

Location.--Lat 40°17'50", long. 100°10'40", in sec. 19, T. 4 N., R. 25 W., 100 ft upstream from county highway bridge, three-quarters of a mile north of Cambridge, $2\frac{1}{2}$ miles upstream from mouth, and $7\frac{1}{2}$ miles downstream from Medicine Creek Dam.

Drainage area.--1,070 sq mi, approximately, of which about 680 sq mi contribute directly to surface runoff; 10 sq mi less prior to October 1943.

Supplemental records available.--Records of suspended-sediment loads for the period November 1945 to December 1949 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,252.86 ft above mean sea level, datum of 1929.

Dec. 10, 1936, to Oct. 1, 1940, chain gage and Oct. 2, 1940, to Apr. 13, 1942, water-stage recorder, at site 1.1 miles upstream at datum 8.49 ft higher.

Apr. 14, 1942, to Sept. 30, 1943, water-stage recorder at site 1 mile upstream at datum 8.49 ft higher.

Aug. 24, 1944, to June 21, 1947, water-stage recorder at site 2 miles downstream to Apr. 25, 1948, wire-weight gage at site $1\frac{1}{2}$ miles downstream and Sept. 25, 1947, at datum 8.64 ft lower than present datum.

Average discharge.--11 years (1936-43, 1944-48), 92.7 cfs; flow regulated thereafter.

Extremes.--1936-43, 1944-50: Maximum discharge, 120,000 cfs June 22, 1947 (gage height, 28.59, present site and datum, from floodmark), from rating curve extended above 39,000 cfs on basis of slope-area determination of peak flow; minimum daily, 0.5 cfs June 19, 1950.

Maximum stage known since at least 1874, that of June 22, 1947. Flood of June 1935 reached a stage of 18.6 ft (site and datum of 1936-44), from floodmark identified by local resident.

Remarks.--Natural flow of stream regulated by irrigation development above station and by Harry Strunk Lake (see p. 449); storage began Aug. 8, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	*42	*45	*47	39.5	51.4	63.6	50.5	45.3	108	75.0	90.2	47.0	*58.5
1938	40.3	50.5	49.6	45.8	51.5	62.4	65.9	119	88.2	130	43.3	43.7	64.4
1939	30.7	40.7	36.2	42.6	42.7	63.0	81.4	49.3	162	57.2	47.6	19.6	55.9
1940	30.5	41.0	43.0	47.3	65.2	64.3	75.5	52.1	333	161	91.6	103	92.0
1941	45.9	48.7	76.8	116	118	64.3	75.7	221	266	209	59.9	221	127
1942	68.0	57.8	52.5	57.7	57.5	192	353	113	188	44.8	60.0	132	114
1943	49.5	59.1	66.6	54.8	71.0	58.4	61.9	53.6	98.6	63.6	42.1	53.2	80.9
1944	-	-	-	-	-	-	-	-	-	-	-	-	35.3
1945	44.6	57.0	52.6	62.7	80.9	59.5	54.7	120	362	55.1	60.9	104	92.4
1946	52.4	51.4	42.9	59.1	58.6	65.0	46.8	129	98.3	64.3	29.5	53.4	62.6
1947	374	65.2	57.0	53.5	69.2	70.6	62.5	57.2	128	150	50	50	182
1948	51.8	65.1	59.1	50.3	70.6	166	57.0	53.2	526	111	68.3	44.5	110
1949	46.9	57.8	56.5	49.4	111	89.9	77.5	84.6	85.5	63.2	13.8	3.93	61.3
1950	5.60	12.4	3.04	3.61	6.00	7.01	4.31	11.6	3.21	6.22	11.3	5.19	6.63

* Not previously published; estimated on basis of records for Frenchman Creek near Hamlet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	*2,580	*2,680	*2,890	2,430	2,850	3,910	3,000	2,790	6,430	4,490	5,540	2,790	*42,380
1938	2,480	3,000	3,050	2,820	2,860	3,840	3,920	7,300	4,060	8,020	2,660	2,600	46,610
1939	1,890	2,420	2,220	2,620	2,370	3,870	4,850	3,030	9,610	3,520	2,930	1,160	40,490
1940	1,880	2,440	2,640	2,910	3,750	3,950	4,490	3,200	19,830	9,880	5,630	6,180	56,760
1941	2,820	2,900	4,720	7,150	6,530	3,960	4,500	13,590	15,810	12,850	3,680	13,130	91,640
1942	4,180	3,440	3,230	3,550	3,190	11,820	12,020	6,930	11,190	2,760	3,690	7,850	82,850
1943	3,060	3,520	4,090	3,370	3,940	3,690	3,290	5,870	3,910	2,590	3,170	44,080	82,850
1944	-	-	-	-	-	-	-	-	-	-	-	-	2,100
1945	2,740	3,390	3,230	3,860	4,490	3,660	3,260	7,400	21,530	3,390	3,750	6,200	66,890
1946	3,220	3,060	2,640	3,640	3,250	4,000	2,780	7,900	5,850	3,960	1,820	3,180	45,300
1947	23,000	3,880	3,500	3,290	3,850	4,340	3,720	3,520	67,090	9,220	3,070	2,980	131,500
1948	3,180	3,880	3,630	3,090	4,060	10,200	3,390	3,270	33,500	6,800	4,200	2,550	79,550
1949	2,680	3,440	3,470	3,030	6,160	5,530	4,610	5,200	5,090	3,890	848	234	44,380
1950	544	737	187	222	333	434	256	711	191	382	693	309	4,300

* Not previously published; estimated on basis of records for Frenchman Creek near Hamlet.

1/ Published as "near Cambridge" 1936-43.

Yearly discharge, in cubic feet per second of Medicine Creek at Cambridge, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	826	1,860	June 2, 1937	-	58.5	42,380	59.1	42,760
1938	856	2,190	July 2, 1938	6	64.4	46,610	61.6	44,610
1939	876	7,200	June 20, 1939	16	55.9	40,490	56.5	40,920
1940	896	9,740	June 7, 1940	10	92.0	66,760	96.8	70,240
1941	926	9,740	May 20, 1941	21	127	91,640	127	92,050
1942	956	15,000	Apr. 19, 1942	21	114	82,850	114	82,660
1943	976	4,390	Sept. 3, 1943	25	60.9	44,080	-	-
1944	1036	-	-	-	-	-	-	-
1945	1036	14,700	June 5, 1945	27	92.4	66,890	91.8	66,450
1946	1056	3,110	May 30, 1946	26	62.6	45,300	92.2	66,760
1947	1086	120,000	June 22, 1947	-	182	131,500	154	111,800
1948	1116	38,600	June 21, 1948	20	110	79,650	108	78,750
1949	1146	853	July 9, 1949	2.0	61.3	44,380	49.5	35,860
1950	1176	614	Aug. 6, 1950	.5	6.63	4,800	-	-

* Not previously published; estimated on basis of records for Frenchman Creek near Hamlet.

Note.--Records for the period January 1925 to September 1931, published in reports of State engineer of Nebraska, consist of discharge measurements and daily discharge based thereon and have not been included in this compilation.

418. Republican River at Cambridge, Nebr.

Location.--Lat 40°17'05", long. 100°08'45", in NW¹/₄SE¹/₄ sec. 28, T. 4 N., R. 25 W., 400 ft south of U. S. Highways 6 and 34, three-quarters of a mile downstream from Medicine Creek, 1 mile east of Cambridge, and 1.3 miles upstream from Cambridge diversion dam.

Drainage area.--14,300 sq mi, approximately, of which about 8,870 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 2,239.07 ft above mean sea level, datum of 1929. Prior to July 13, 1948, staff gage 150 ft upstream at same datum. July 13, 1948, to Sept. 25, 1950, cantilever chain gage at present site and datum.

Average discharge.--5 years (1945-50), 516 cfs.

Extremes.--1945-50: Maximum discharge, 160,000 cfs June 22, 1947 (gage height, 16.7 ft, from floodmarks), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum daily, 6.4 cfs Aug. 14, 1949. Maximum stage known 17.6 ft, from floodmark, May 31-June 1, 1935 (discharge about 280,000 cfs).

Remarks.--Natural flow of stream affected by irrigation development above station, and since 1949 by storage in Bonny and Enders Reservoirs and Harry Strunk Lake.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	215	-
1946	292	314	250	403	487	513	309	625	475	1,140	91.5	239	429
1947	1,660	688	466	369	478	636	613	566	2,645	619	83.2	61.9	741
1948	91.0	288	321	305	498	702	342	365	2,039	656	260	77.3	493
1949	128	302	346	185	742	791	809	924	1,215	243	200	324	514
1950	238	350	242	230	470	453	388	438	114	568	106	244	404

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	12,770	-
1946	17,980	18,700	15,350	24,760	27,040	31,640	18,380	38,430	28,270	70,120	5,630	14,200	310,400
1947	102,100	40,960	28,650	22,710	26,530	39,130	35,480	36,010	157,400	38,090	5,110	3,680	535,800
1948	5,600	17,170	19,720	18,750	29,640	45,170	20,590	22,460	121,500	40,350	15,980	4,600	358,100
1949	7,900	17,960	21,500	11,400	41,240	48,640	45,130	56,820	72,290	14,930	12,290	19,290	372,200
1950	14,680	20,840	14,910	14,120	26,080	27,870	23,170	26,930	8,780	34,730	68,040	14,540	292,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	1056	-	-	-	-	-	-	-
1946	1056	-	July 3, 1946	30	429	310,400	594	430,100
1947	1086	160,000	June 22, 1947	19	741	536,800	563	407,600
1948	1116	-	June 21, 1948	51	493	358,100	500	362,900
1949	1146	8,080	June 19, 1949	6.4	514	372,200	519	375,400
1950	1176	7,750	Aug. 7, 1950	22	404	292,700	-	-

419. Republican River near Orleans, Nebr.

Location.--Lat 40°07'50", long. 99°29'50", in NE¼ sec. 19, T. 2 N., R. 19 W., 45 ft upstream from bridge on State Highway 89, 100 ft downstream from Chicago, Burlington & Quincy Railroad bridge, 2 miles west of Orleans, 2½ miles upstream from Sappa Creek, and 23 miles upstream from Harlan County Dam.

Drainage area.--15,400 sq mi, approximately, of which about 9,700 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of suspended-sediment loads for the period October 1947 to September 1948 and chemical analyses for the period December 1949 to September 1950 in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,972.57 ft above mean sea level, datum of 1929. Prior to June 2, 1948, wire-weight gage on downstream side of bridge 45 ft downstream at same datum.

Extremes.--1947-50: Maximum discharge, 40,600 cfs June 22, 1948 (gage height, 11.25 ft), from rating curve extended above 29,000 cfs; minimum daily, 31 cfs Aug. 9, 1949, July 1, 1950.

Greatest flood known occurred June 1, 1935. Flood of June 23, 1947, reached a stage of 14.00 ft from floodmark (discharge not determined).

Remarks.--Natural flow of stream affected by irrigation development above station, and since 1949, by storage in Bonny and Enders Reservoirs, and Harry Strunk Lake.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	82.1	268	282	353	534	913	385	292	2,732	788	282	104	584
1949	108	292	367	222	772	924	915	1,154	1,270	281	228	260	563
1950	235	258	239	215	618	476	401	694	194	581	962	251	435

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	5,050	15,850	17,340	23,580	30,740	56,150	22,920	17,960	162,600	48,300	17,350	6,180	424,000
1949	6,830	17,390	22,540	13,630	42,860	56,830	54,470	70,950	75,550	17,290	14,040	15,450	407,800
1950	14,460	21,320	14,710	13,230	34,330	29,240	23,880	42,670	11,540	35,710	59,180	14,960	315,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1948	1116	40,600	June 22, 1948	40	584	424,000	595
1949	1146	5,410	June 18, 1949	51	563	407,800	568
1950	1176	6,080	July 27, 1950	51	435	315,200	-

420. Sappa Creek near Oberlin, Kans.

Location.--Lat 39°50', long 100°30', in NE¼ sec. 6, T. 3 S., R. 28 W., on right bank 150 ft upstream from bridge on U. S. Highway 36, 1 mile upstream from dam in Sappa-Oberlin State Park, 1.5 miles east of Oberlin, 7 miles downstream from confluence of North and South Forks, and at mile 100.7.

Drainage area.--1,050 sq mi, approximately, of which an unknown portion is noncontributing.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,522.50 ft above mean sea level, datum of 1929. Prior to June 30, 1932, staff gage at site 100 ft upstream at datum 0.48 ft higher, and June 16, 1944, to Jan. 15, 1945, wire-weight gage at site 150 ft downstream at datum 1.72 ft lower.

Average discharge.--11 years (1928-32, 1943-50), 23.2 cfs.

Extremes.--1928-32, 1943-50: Maximum discharge, 10,600 cfs (revised) July 16, 1944 (gage height, 15.28 ft, revised, present datum, from floodmark), by computation of peak flow over dam; no flow at times during 1947-49.

Remarks.--A few small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second of Sappa Creek near Oberlin, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a5	a2	a1	a1	a2	a3	3.63	32.6	37.9	14.2	2.35	0.48	a8.6
1930	71.32	66	.70	.87	17.1	1.41	5.21	13.5	a119	a11.0	a25.2	a13.5	a17.2
1931	16.8	14.5	9.68	*8.3	14.3	28.3	13.3	13.2	2.28	77.1	4.35	22.9	
1932	2.0	5.2	5.7	4.2	20.7	5.4	5.5	5.5	7.3	*10	*3	*4	*6.3
1944	*1.1	*6	*1.0	*5.5	*4.4	*5.6	*42	*68	*70	594	31.2	5.4	*69.8
1945	2.9	3.0	4.0	3.82	5.28	5.51	7.04	9.86	6.54	8.71	5.45	.32	5.21
1946	.28	.35	.61	.41	.36	.79	.48	4.79	11.2	44.3	2.21	1.70	5.69
1947	356	33.5	16.8	6.4	8.4	29.3	14.1	11.8	48.7	15.3	1.34	.61	45.7
1948	.34	.46	.43	.53	1.86	1.65	.47	26.3	103	28.4	45.3	4.78	17.8
1949	1.90	1.23	1.88	1.19	31.7	16.8	16.4	99.6	87.5	38.5	*148	32.0	*39.8
1950	10.7	7.6	6.5	5.5	10.6	8.2	7.5	9.0	2.8	58.5	59.8	3.4	16.0

* Revised.

* Not previously published; estimated on basis of weather records and records for North Fork Solomon River near Kirwin.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a184	a119	a61	a61	a111	a184	218	2,000	2,260	873	144	27	a6,240
1930	20	39	43	54	950	87	310	830	a7,090	a578	a1,550	a803	a12,500
1931	4,360	998	889	595	*462	881	1,690	819	783	139	4,740	258	*16,600
1932	121	309	349	260	1,190	210	329	339	434	*615	*184	*238	*4,580
1944	*6	*36	*61	*337	*254	*345	*2,500	*4,180	*4,170	36,540	1,920	323	*50,670
1945	180	177	246	235	293	339	419	606	389	535	335	19	3,770
1946	17	21	38	25	20	48	27	294	664	2,720	136	101	4,110
1947	21,880	1,990	1,030	391	468	1,800	841	716	2,900	958	85	30	30,070
1948	20	27	26	32	107	101	28	1,620	6,130	1,750	2,780	284	12,900
1949	117	73	115	73	1,760	1,030	978	6,120	5,210	2,370	*9,080	1,900	*28,820
1950	660	454	403	341	587	502	444	555	165	3,600	3,680	202	11,590

* Revised.

* Not previously published; see footnote to preceding table.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	*600	May 29, 1929	0.1	a8.6	a6,240	*8.3		*5,980
1930	701	1,380	June 19, 1930	.1	a17.2	a12,500	25.7		18,600
1931	716, 1340	1,170	Aug. 10, 1931	1	22.9	*16,600	*15.4		*11,100
1932	731	138	June 4, 5, 1932	-	*6.3	*4,580	-		-
1944	1008	*10,600	July 18, 1944	-	*69.8	*50,670	*70.5		*51,170
1945	1036	128	July 8, 1945	.1	5.21	3,770	4.48		3,250
1946	1066	241	July 2, 1946	.1	5.69	4,110	40.0		28,940
1947	1086	*3,750	Oct. 7, 1946	0	45.7	33,070	11.4		8,240
1948	1116	1,150	June 18, 1948	0	17.8	12,900	18.1		13,140
1949	1146, 1340	*2,500	Aug. 19, 1949	0	*39.8	*28,820	*41.5		*30,040
1950	1176	968	July 25, 1950	1	16.0	11,590	-		-

* Revised.

* Not previously published.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

421. Sappa Creek near Beaver City, Nebr.

Location.--Lat 40°02'15", long 99°53'45", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T. 1 N., R. 23 W., 200 ft downstream from bridge on U. S. Highway 283, 7 miles southwest of Beaver City, and at mile 42.6.

Drainage area.--1,500 sq mi, approximately.

Supplemental records available.--Records of chemical analyses for the period October 1948 to September 1949, suspended-sediment loads for the period April 1947 to September 1950, and water temperatures for the period January 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,154.63 ft above mean sea level, datum of 1929. Prior to Sept. 11, 1945, wire-weight gage on bridge 200 ft upstream at datum 2.56 ft higher.

Average discharge.--14 years (1936-50), 51.7 cfs.

Extremes.--1936-50: Maximum discharge, 5,500 cfs July 17, 1944 (gage height, 18.70 ft, site and datum then in use), from rating curve extended above 2,500 cfs; no flow at times in 1937-40, 1943.

Remarks.--Diversions above station for irrigation.

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Monthly and yearly mean discharge, in cubic feet per second of Sappa Creek near Beaver City, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	#1	#1	#2	#1	#2	#3	#3	7.84	289	22.2	96.6	47.1	#39.5
1938	1.43	.38	.80	1.74	1.09	5.35	20.8	70.1	154	45.2	8.37	10.0	26.6
1939	0	0	0	.24	1.56	3.43	1.62	67.9	147	22.8	8.54	0	21.0
1940	0	0	0	0	1.68	2.23	.34	19.7	10.1	149	66.3	65.7	26.4
1941	3.88	.43	1.13	1.66	6.95	2.05	29.4	53.8	557	253	103	271	107
1942	25.4	16.0	13.5	10.6	12.1	15.4	102	49.4	235	102	146	42.8	64.2
1943	12.6	8.42	9.71	10.8	12.9	12.3	20.1	74.9	101	9.54	9.59	19.7	19.4
1944	.17	.89	1.43	7.60	6.07	7.73	58.6	93.9	94.6	632	154	19.6	90.6
1945	11.6	12.3	10.8	9.8	12.5	12.4	17.1	15.0	41.4	144	18.2	1.08	25.7
1946	1.15	1.33	2.59	2.98	5.41	14.4	2.46	24.8	8.68	172	4.07	9.62	21.0
1947	454	63.8	35.5	20.6	18.4	56.4	26.9	22.1	376	81.8	16.5	1.96	98.3
1948	1.74	3.42	4.68	5.2	10.4	33.4	6.02	7.14	222	81.8	40.8	6.61	35.1
1949	.36	3.36	3.9	1.9	84.7	35.7	24.6	221	317	58.3	172	47.9	80.7
1950	21.2	14.8	12.4	10.1	14.4	19.3	13.7	21.6	15.2	377	271	24.5	58.9

* Not previously published; estimated on basis of weather records and records for Republican River at Max, Nebr. and Frenchman Creek at Culbertson, Nebr.

Monthly and yearly runoff in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	#61	#60	#123	#61	#111	#184	#179	482	17,200	1,370	5,940	2,800	#28,570
1938	88	22	49	107	61	329	1,240	4,310	9,150	2,780	515	595	19,250
1939	0	0	0	15	31	211	96	4,170	8,740	1,400	525	0	15,190
1940	0	0	0	0	96	137	20	1,210	599	9,140	4,080	3,910	19,190
1941	259	26	70	102	386	126	1,750	3,310	33,160	15,580	6,330	16,140	77,220
1942	1,560	950	831	853	672	946	6,070	3,030	13,980	6,270	8,960	2,550	46,470
1943	772	501	597	686	718	758	1,200	460	6,000	586	690	1,170	14,020
1944	11	53	88	467	349	475	3,480	5,770	5,630	38,850	9,490	1,110	65,750
1945	714	733	664	501	696	762	1,020	922	2,460	9,870	1,120	64	18,630
1946	70	79	159	183	300	885	146	1,530	516	10,550	251	572	15,240
1947	27,910	3,790	2,180	1,270	1,020	3,470	1,600	1,360	22,380	5,030	1,010	117	71,140
1948	107	203	287	317	599	2,050	358	439	13,210	5,030	2,610	393	25,500
1949	22	200	242	117	4,700	2,190	1,460	13,610	18,880	3,580	10,590	2,850	58,440
1950	1,310	881	764	619	797	1,180	813	1,330	902	23,160	16,670	1,460	49,890

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	826	*3,900	June 3, 1937	-	*39.5	28,570	*39.3	*28,490
1938	856	1,380	July 16, 1938	0	26.6	19,250	26.4	19,090
1939	876	*1,600	May 26, 1939	0	21.0	15,190	21.0	15,190
1940	896	*2,450	July 28, 1940	0	26.4	19,190	26.9	19,530
1941	926	*2,910	June 10, 1941	0	107	77,220	111	80,220
1942	956	*1,600	June 13, 1942	4	64.2	46,470	62.2	45,000
1943	976	1,140	June 11, 1943	0.2	19.4	14,020	17.0	12,300
1944	1006	5,500	July 17, 1944	0	90.6	65,750	93.3	67,710
1945	1036	1,120	July 1, 1945	.4	25.7	18,630	23.2	16,820
1946	1056	1,570	July 2, 1946	.3	21.0	15,240	67.4	46,810
1947	1086	*3,600	June 22, 1947	.3	98.3	71,140	52.3	37,850
1948	1116	968	June 26, 1948	.5	35.1	25,500	34.9	25,370
1949	1146	*1,900	June 12, 1949	.1	80.7	58,440	84.2	60,930
1950	1176	3,990	Aug. 6, 1950	5.6	68.9	49,890	-	-

* Revised.

* Not previously published.

422. Beaver Creek at Ludell, Kans.

Location.--Lat 39°51', long 100°58', in SE $\frac{1}{4}$ sec. 25, T. 2 S., R. 33 W., on highway bridge just west of Ludell, Rawlins County, 6 miles downstream from Little Beaver Creek, and at mile 129.5.

Drainage area.--1,460 sq. mi.

Gage.--Water-stage recorder. Datum of gage is 2,753.93 ft above mean sea level, datum of 1929. Mar. 18, 1929, to June 30, 1932, staff gage 120 ft upstream from present site on railroad bridge at datum 1.7 ft higher. Sept. 18, 1945, to Oct. 4, 1946, wire-weight gage at present site and datum.

Average discharge.--9 years (1928-32, 1945-50), 12.2 cfs.

Extremes.--1928-32, 1945-50: Maximum discharge, 3,300 cfs Sept. 8, 1930 (gage height, 15.0 ft, from floodmarks, datum then in use), from rating curve extended above 21 cfs by logarithmic plotting on basis of velocity-area study and parallel rating defined to 1,500 cfs; no flow on several days nearly every year.

Remarks.--Flood peaks at Ludell, Kans., affected by storage in city lake at Atwood.

Monthly and yearly mean discharge, in cubic feet per second of Beaver Creek at Ludell, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a3	a2	a5	a1	a2	5	13.0	15.2	18.7	†7.6	†1.4	†1.0	a5.9
1930	†.60	†.58	†.50	†.50	†4.4	†3.7	†8.0	14.6	12.5	†2.4	†3.8	†27.5	*6.5
1931	*10.9	7.5	6.9	4.0	8.4	10.8	15.0	11.7	10.8	2.2	†2.6	†.2	*7.6
1932	.10	.16	.27	.38	†1.7	2.6	4.2	*14.4	*21.9	*6	*2	*3	*4.7
1946	.10	.03	.19	.95	2.00	6.24	4.95	7.23	5.01	19.0	1.02	58.8	8.76
1947	45.3	19.5	13.7	9.6	10.1	20.1	14.8	12.1	44.4	9.77	1.39	.03	16.8
1948	.01	.09	.03	.10	.17	2.95	.67	8.36	110	46.1	24.3	.59	16.0
1949	.14	.08	.07	.31	15.7	23.8	32.0	53.0	57.2	16.0	79.5	56.4	27.9
1950	12.5	10.8	6.6	5.5	10.9	14.3	14.2	13.2	4.43	50.5	40.2	5.3	15.8

* Revised.

† Corrected.

* Not previously published; estimated on basis of weather records.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 75d Cong., 2d sess., Kansas River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a184	a119	a61	a61	a111	a307	774	935	1,110	464	83	60	a4,270
1930	37	35	31	31	242	226	474	898	744	144	231	†1,530	*4,720
1931	*668	444	422	246	464	662	895	718	641	137	161	11	*5,470
1932	6	10	17	23	100	163	250	*883	*1,980	*369	*123	*179	*4,100
1946	6.3	2.0	.12	58	111	384	295	444	298	1,170	635	500	6,340
1947	2,780	1,160	841	593	559	1,240	883	744	2,640	601	86	1.6	12,130
1948	.4	5.2	1.8	6.1	9.7	181	40	514	6,530	2,830	1,490	35	11,640
1949	8.5	5.0	4.6	19	873	1,470	1,900	3,260	3,400	981	4,890	5,360	20,170
1950	770	645	407	341	805	877	843	813	264	3,110	2,470	517	†11,460

* Revised.

† Corrected.

* Not previously published; estimated on basis of weather records.

a Revised; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	*245	July 23, 1929	-	a5.9	a4,270	a5.5	a4,010	
1930	701, 1390	*3,300	Sept. 8, 1930	-	*6.53	*4,720	*8.5	*6,160	
1931	716, 1390	*320	June 5, 1931	0.1	*7.56	*5,470	*5.5	*3,970	
1932	731, 1390	*510	May 26, 1932	-	*4.7	*4,100	-	-	
1946	1086	*1,600	Sept. 10, 1946	0	8.76	6,340	15.3	11,100	
1947	1086	564	Oct. 7, 1946	0	16.8	12,130	10.2	7,360	
1948	1116	*1,100	June 28, 1948	0	16.0	11,640	16.1	11,650	
1949	1146	*758	May 20, 1949	0	27.9	20,170	30.3	21,980	
1950	1176	563	Aug. 6, 1950	.2	15.8	†11,460	-	-	

* Revised.

† Corrected.

* Not previously published.

a Revised; see footnote to preceding tables.

423. Beaver Creek at Cedar Bluffs, Kans.

Location.--Lat 39°59', long. 100°35', in NE¼ sec. 10, T. 1 S., R. 29 W., 100 ft downstream from bridge on U. S. Highway 83, a quarter of a mile north of Cedar Bluffs, and 1½ miles south of Kansas-Nebraska State line.

Drainage area.--1,710 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,520.33 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1945-50), 23.7 cfs.

Extremes.--1945-50: Maximum discharge, 955 cfs Oct. 8, 1946 (gage height, 16.58 ft), from rating curve extended above 300 cfs by logarithmic plotting. No flow at times during 1946-49.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*.3	*.4	*.7	*1.2	*2.4	*5.9	*4.6	*8.0	6.7	35.8	1.35	†44.8	*9.2
1947	198	34.9	26.9	16.9	17.1	20.3	21.5	18.0	90.1	20.4	18.1	.95	†40.5
1948	.02	.47	.78	1.3	1.8	4.2	2.19	10.5	68.5	61.7	24.7	1.37	14.8
1949	.15	1.3	.48	.4	8.73	34.1	33.9	92	66.3	22.6	69.5	52.7	32.0
1950	14.2	13.4	8.9	6.5	11.8	17.4	16.4	21.3	6.4	90.3	55.9	6.91	21.8

† Corrected.

* Not previously published; estimated on basis of weather records and records for stations on Beaver Creek at Ludell, Kans., and near Beaver City, Nebr.

Monthly and yearly runoff, in acre-feet of Beaver Creek at Cedar Bluffs, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	#18	#24	#44	#73	#133	#363	#274	#492	397	2,080	85	2,680	#6,640
1947	12,200	2,080	1,650	1,040	950	1,250	1,280	1,110	5,360	1,250	1,110	57	29,340
1948	12	28	48	81	103	256	131	647	4,070	3,900	1,520	82	10,770
1949	93	77	30	25	495	2,100	2,020	5,680	3,940	1,390	4,280	3,130	23,150
1950	875	797	545	397	653	1,070	978	1,310	379	4,930	3,440	411	15,780

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1116	391	July 4, 1946	0	#9.2	#6,640	#31.1	#22,480
1947	1116	955	Oct. 8, 1946	0	#40.5	29,340	18.6	13,480
1948	1116	300	June 22, 1948	0	14.8	10,770	14.9	10,810
1949	1146	356	May 22, 1949	0	52.0	25,150	34.9	25,250
1950	1176	868	July 24, 1950	.6	21.8	15,780	-	-

† Corrected.

* Not previously published.

424. Beaver Creek near Beaver City, Nebr.

Location.--Lat 40°07'30", long. 99°53'45", in W½SW¼ sec. 23, T. 2 N., R. 23 W., at bridge on U. S. Highway 283, 3½ miles west of Beaver City, and at mile 24.7.

Drainage area.--2,060 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,164.96 ft above mean sea level, datum of 1929. May 18, 1937, to Aug. 13, 1947, wire-weight gage at same site and datum.

Average discharge.--14 years (1936-50), 36.2 cfs.

Extremes.--1936-50: Maximum discharge, 3,800 cfs July 19, 1944 (gage height, 13.8 ft, from floodmark); no flow at times during 1937-40, 1945.

Flood of 1905 reached a stage of 18.7 ft, from information by local residents (discharge not determined).

Remarks.--Small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	#1	#1	#2	#1	#2	#3	#4	30.6	82	24.6	68.7	13.4	#19.5
1938	.70	.24	.46	.58	1.65	4.47	7.51	45.1	124	55.7	26.0	3.50	22.5
1939	.14	.62	.94	.43	1.31	4.48	14.6	#36.1	120	44.7	7.56	.10	#19.1
1940	.16	.24	.30	.57	.93	.85	.50	5.60	34.8	34.9	25.2	45.5	12.4
1941	15.7	.61	.74	1.19	6.30	2.59	58.9	22.3	274	52.6	62.1	85.0	48.3
1942	29.8	11.9	11.6	5.8	17.6	22.2	76.8	56.4	245	48.1	94.9	45.6	55.3
1943	6.68	6.96	10.8	7.90	16.5	14.8	26.9	12.0	34.4	6.18	1.76	18.4	13.5
1944	.20	.45	.57	.90	3.33	2.79	40.9	66.1	103	407	104	21.5	63.0
1945	11.5	10.2	11.0	10.1	10.7	20.4	22.2	21.7	60.9	74.2	24.5	4.04	23.5
1946	.62	.82	1.5	1.61	2.52	5.42	4.03	18.8	18.3	65.8	.74	21.3	11.9
1947	400	30.8	43.0	27.1	16.0	37.9	34.1	27.6	239	114	28.2	5.81	84.2
1948	2.32	3.10	3.57	5.1	7.9	10.2	7.32	8.01	174	101	33.2	6.31	30.1
1949	.65	2.86	4.5	1.5	39.1	39.1	39.7	226	163	38.8	87.3	57.1	58.4
1950	18.5	15.1	13.4	7.7	11.8	28.3	19.9	65.6	28.6	187	117	20.8	44.8

* Revised.

* Not previously published; estimated on basis of weather records.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	#61	#60	#123	#61	#111	#184	#238	1,880	4,880	1,510	4,230	795	#14,130
1938	43	14	29	36	92	275	447	2,770	7,380	3,430	1,600	208	16,320
1939	8.3	37	58	26	17	275	870	*2,220	7,110	2,750	465	5.8	*13,840
1940	9.9	14	18	35	54	52	50	545	2,070	2,150	1,550	2,700	9,030
1941	966	36	46	73	350	159	3,510	1,370	16,320	3,240	3,820	5,080	34,950
1942	1,830	709	713	359	980	1,370	4,570	3,470	14,550	2,960	5,840	2,720	40,070
1943	411	414	652	466	914	897	1,600	736	2,050	380	103	1,100	9,750
1944	12	27	35	49	192	172	2,430	4,060	6,110	25,000	6,370	2,80	45,740
1945	707	608	676	621	595	1,250	1,320	1,330	3,620	4,560	1,510	240	17,040
1946	38	49	92	99	140	333	240	1,150	1,090	4,050	451	270	8,600
1947	24,570	1,830	2,650	1,660	889	2,330	2,030	1,700	14,210	6,990	1,740	346	60,940
1948	142	185	219	315	456	630	436	493	10,340	6,190	2,040	375	21,820
1949	40	170	276	91	2,170	2,410	2,360	13,900	9,670	2,380	5,370	400	42,240
1950	1,140	900	825	476	653	1,740	1,180	4,030	1,580	11,480	7,170	240	32,410

* Revised.

† Corrected.

* Not previously published; estimated on basis of weather records.

Yearly discharge, in cubic feet per second of Beaver Creek near Beaver City, Nebr.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1937	828	*1,670	Aug. 3, 1937	-	*19.5	*14,130	*19.3
1938	856	*550	July 16, 1938	0	22.5	16,320	22.6
1939	878, 1340	*1,140	May 28, 1939	0	*19.1	*13,840	*19.0
1940	898	*600	Sept. 24, 1940*	0	12.4	9,030	13.8
1941	928	*850	June 8, 1941	0	48.3	54,950	51.3
1942	956	1,450	Aug. 2, 1942	4	55.3	*40,070	52.9
1943	976	*510	Apr. 11, 1943	.1	13.5	9,750	12.5
1944	1006	3,800	July 19, 1944	.1	63.0	45,740	65.7
1945	1036	282	July 12, 1945	.8	23.5	17,040	21.0
1946	1056	454	May 30, 1946	0	11.9	8,600	51.7
1947	1086	3,140	June 22, 1947	2.9	84.2	60,940	44.8
1948	1116	1,240	June 23, 1948	1.2	30.1	21,820	30.0
1949	1146	1,820	May 6, 1949	.5	58.4	42,240	61.6
1950	1176	2,400	July 26, 1950	3	44.8	32,410	-

* Revised.

† Corrected.

* Not previously published.

425. Sappa Creek near Stamford, Nebr.

Location.--Lat 40°08'00", long. 99°33'15", in NW¼ sec. 23, T. 2 N., R. 20 W., 40 ft south of Chicago, Burlington & Quincy Railroad track, 500 ft downstream from county highway bridge, 2 miles east of Stamford, and 5½ miles upstream from mouth.

Drainage area.--3,840 sq mi, approximately.

Supplemental records available.--Records of chemical analyses for the period October 1948 to September 1949, suspended-sediment loads for the period March 1947 to September 1950, and water temperatures for the period November 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water stage recorder. Datum of gage is 1,981.31 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1945-50), 123 cfs.

Extremes.--1945-50: Maximum discharge, 7,430 cfs June 22, 1947 (gage height, 20.10 ft), from rating curve extended above 4,800 cfs; no flow for part of June 13, 1946 (field observation).

Remarks.--Natural flow of stream affected by minor irrigation developments upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*3.2	*3.7	*7.2	2.8	5.6	22.4	6.11	52.2	53.1	201	11.0	71.9	*36.9
1947	965	145	86.7	58.6	51.6	100	64.1	62.1	878	223	51.5	16.5	226
1948	7.03	9.17	12.6	18.1	30.1	81.6	19.7	12.0	361	227	84.8	15.9	73.2
1949	0.43	4.51	4.3	1.7	111	96.8	69.4	522	577	111	265	110	156
1950	58.0	32.5	26.4	16.0	25.4	46.8	37.8	112	45.2	442	544	77.3	124

* Not previously published; estimated on basis of records for station near Beaver City.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*196	*220	*442	171	309	1,380	363	3,210	3,160	12,350	678	4,280	*26,740
1947	59,340	6,820	5,330	3,600	2,870	6,160	3,820	3,820	52,250	13,620	3,170	982	163,600
1948	432	546	785	1,110	1,750	5,030	1,170	737	21,480	13,960	5,210	946	53,140
1949	27	268	262	105	6,160	5,950	4,130	32,110	34,360	6,840	16,270	6,540	113,000
1950	3,570	1,940	1,620	982	1,410	2,880	2,250	6,870	2,690	27,180	33,430	4,600	89,420

* Not previously published; estimated on basis of records for station near Beaver City.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1944	1056	84,760	July 19, 1944	-	-	-	-
1946	1056	968	July 6, 1946	b0.1	*36.9	*26,740	137
1947	1086	7,430	June 22, 1947	8.6	226	163,600	127
1948	1116	1,460	June 28, 1948	1.3	73.2	53,140	71.5
1949	1146	2,120	May 9, 1949	.1	156	113,000	165
1950	1176	3,500	Aug. 8, 1950	15	124	89,420	-

* Not previously published.

a Discharge measurement on crest. This flood was maximum for year at station near Beaver City.

b Minimum recorded during part of year.

426. Prairie Dog Creek at Norton, Kans.

Location.--Lat 39°50', long. 99°53', on line between secs. 2 and 3, T. 3 S., R. 23 W., at bridge on U. S. Highway 283, half a mile south of Norton, and at mile 66.0.

Drainage area.--721 sq mi.

Supplemental records available.--Records of suspended-sediment loads for the period March 1947 to September 1950, chemical analyses for the period October 1948 to September 1949, and water temperatures for the period December 1948 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 2,217.91 ft above mean sea level, datum of 1929. Apr. 13 to May 7, 1944, wire-weight gage at same site and datum.

Average discharge.--7 years (1943-50), 49.1 cfs.

Extremes.--1943-50: Maximum discharge, 8,080 cfs June 22, 1947 (gage height, 22.38 ft); no flow during part of day Sept. 6, 1946.

Remarks.--A few small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	*4	*5	*6	*9	*8	*10	*89.3	130	69.9	360	108	19.3	*68.7
1945	10.9	10.5	10.5	10.5	10.4	10.5	11.8	13.3	51.2	56	5.65	2.17	17.0
1946	2.1	3.3	3.3	4.9	8.5	8.4	4.9	13.8	33.4	110	4.4	10.9	17.4
1947	466	56.3	18.2	20.3	16.5	51.1	17.8	17.3	373	51.1	20.4	6.8	91.7
1948	2.95	4.67	6.3	6.33	21.0	23.2	8.80	21.7	77.6	52.5	13.7	5.35	20.3
1949	2.1	4.3	3.6	3.2	78.1	34.1	15.9	170	265	61.1	42.6	9.1	57.1
1950	23.2	8.85	8.24	6.8	12.4	13.0	9.36	9.23	7.18	324	390	31.6	71.4

* Not previously published; estimated on basis of records for Beaver Creek near Beaver City, Nebr.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	*246	*298	*369	*553	*460	*615	*5,320	7,970	4,160	22,110	6,660	1,150	*49,910
1945	669	622	643	649	579	645	701	819	3,040	3,440	348	129	12,280
1946	127	194	200	301	472	514	292	851	1,990	6,750	269	647	12,610
1947	28,670	2,160	1,120	1,250	916	3,140	1,060	1,060	22,200	3,140	1,250	405	66,370
1948	181	278	385	389	1,210	1,430	523	1,330	4,620	3,230	843	318	14,740
1949	127	256	222	198	4,340	2,100	946	10,470	15,750	3,760	2,620	543	41,330
1950	1,430	527	507	419	690	799	557	567	427	19,910	24,000	1,880	51,710

* Not previously published; estimated on basis of records for Beaver Creek near Beaver City, Nebr.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1944	1006	*7,860	July 31, 1944	-	*68.7	*49,910	*70.2	*30,930	
1945	1036	1,170	July 8, 1945	1.5	17.0	12,280	15.0	10,870	
1946	1056	2,340	July 4, 1946	1	17.4	12,610	60.8	44,040	
1947	1086	8,080	June 22, 1947	3	91.7	66,370	48.7	35,260	
1948	1116	1,250	June 27, 1948	2	20.3	14,740	20.0	14,500	
1949	1146	3,050	July 18, 1949	1	57.1	41,330	59.6	43,190	
1950	1176	3,040	July 26, 1950	3.5	71.4	51,710	-	-	

* Revised.

* Not previously published.

427. Prairie Dog Creek near Woodruff, Kans.

Location.--Lat 40°00'50", long. 99°21'55", in NW¼ sec. 33, T. 1 N., R. 18 W., 50 ft downstream from bridge on U. S. Highway 383, 0.9 mile north of Kansas-Nebraska State line, 4½ miles northeast of Woodruff, Kans., and 5½ miles south of Alma, Nebr.

Drainage area.--1,050 sq mi, approximately; about 100 sq mi less for period 1929-32.

Gage.--Water-stage recorder. Datum of gage is 1,943.08 ft above mean sea level, datum of 1929. Mar. 19, 1929, to June 30, 1932, chain gage at site 18 miles upstream at different datum.

Average discharge.--10 years (1928-32, 1944-50), 60.5 cfs.

Extremes.--1928-32, 1944-50: Maximum discharge, 15,000 cfs June 23, 1947 (gage height, 21.04 ft), from rating curve extended above 6,500 cfs on basis of contracted-opening determination of 11,300 cfs for peak of May 29, 1953; no flow Oct. 29, 1945, Oct. 10 to Nov. 2, 1948, and June 25, 26, 1950.

Remarks.--Natural flow of stream affected by irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second of Prairie Dog Creek near Woodruff, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a75	a12	a0.60	a0.50	a14	a15	20.4	33.1	91.1	*301	36.3	13.6	b51.6
1930	71.1	7.53	6.52	5.19	19.0	11.0	29.2	49.5	193	22.7	56.6	54.8	43.8
1931	*188	56.5	23.2	22.5	19.6	16.6	27.8	23.0	21.9	8.52	133	21.0	*47.2
1932	14.1	10.9	9.0	7.5	230	20.4	14.7	47.3	55.3	*16	*25	*50	*41
1945	*14	*13	*13	*13	*13	*13	*15	*16	122	154	8.34	2.17	*33
1946	1.27	2.85	3.10	5.00	7.75	13.5	5.33	90.0	48.8	107	6.84	33.9	27.3
1947	429	49.5	26.0	18.7	26.9	68.6	20.0	23.4	1041	88.4	35.1	8.92	153
1948	5.79	7.70	9.12	9.37	29.6	58.6	11.4	8.94	123	71.5	23.3	5.54	30.2
1949	0.04	2.91	4.0	2.2	71.0	45.3	21.2	422	496	74.3	99.9	17.9	105
1950	48.3	12.1	10.8	7.65	17.4	19.9	13.2	13.1	4.83	240	430	44.0	72.8

* Revised.

* Not previously published; estimated on the basis of nearby streams in Kansas River Basin.

a From Congressional documents: 73d Cong., 2d sess., H. Doc., 195 Kansas River. Published figures in acre-feet.

b Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a4,610	a714	a37	a31	a780	a953	1,210	2,040	5,420	*18,540	2,250	809	b37,370
1930	4,370	448	389	319	1,060	676	1,740	3,040	11,500	1,400	3,480	3,260	31,700
1931	*11,580	3,360	1,430	1,380	1,090	1,020	1,850	1,410	1,300	524	8,190	1,250	*34,180
1932	865	647	551	462	13,300	1,250	873	2,910	3,290	*984	*1,540	*2,980	*29,650
1945	*861	*774	*799	*799	*722	*799	*893	*984	7,270	9,470	513	129	*24,010
1946	78	170	191	307	430	830	317	5,540	2,900	6,560	420	2,020	19,760
1947	26,400	2,950	1,600	1,150	1,490	4,220	1,190	1,440	61,940	5,430	2,160	531	110,500
1948	358	458	561	576	1,700	3,600	676	550	7,290	4,400	1,430	330	21,930
1949	2.4	173	248	137	3,940	2,780	1,260	25,950	29,520	4,570	6,140	1,070	75,790
1950	2,970	720	664	470	972	1,220	787	807	287	14,740	26,450	2,620	52,710

* Revised.

* Not previously published; estimated on the basis of nearby streams in Kansas River basin.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195 Kansas River.

b Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1929	686, 1390	*6,680	July 25, 1929	-	a51.6	a37,370	a51.4
1930	701	1,200	June 20, 1930	-	43.8	31,700	*59.2
1931	716, 1390	*2,560	Oct. 12, 1930	4	*47.2	*34,180	27
1932	731	1,400	Feb. 21, 1932	-	*41	*29,650	-
1945	1056	1,580	June 24, 1945	-	*33	*24,010	*30
1946	1056	1,400	May 31, 1946	0	27.5	19,760	69.4
1947	1086	*15,000	June 23, 1947	3	153	110,500	112
1948	1116	972	June 29, 1948	0.2	30.2	21,930	28.9
1949	1146	2,020	June 7, 1949	0	105	75,790	110
1950	1176	1,340	July 29, 1950	0	72.8	52,710	-

* Revised.

* Not previously published.

a Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

428. Turkey Creek at Naponee, Nebr.

Location.--Lat 40°04'30", long. 99°08'20", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 4, T. 1 N., R. 16 W., on up-stream side of bridge on State Highway 3 at Naponee, three-quarters of a mile upstream from mouth.

Drainage area.--160 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1870.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to June 18, 1948, staff gage at same site and datum.

Extremes.--1948-50: Maximum discharge, 1,920 cfs Sept. 20, 1950 (gage height, 9.50 ft), from rating curve extended above 1,200 cfs; minimum daily, 6.0 cfs Sept. 16, 20, 1948.

Remarks.--Several small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	12.9	10.9	53.5	11.5	8.88	7.37	-
1949	9.68	11.0	12.3	14.4	27.8	16.6	17.2	46.2	42.4	15.0	9.73	10.1	19.3
1950	11.4	11.6	11.9	11.2	18.1	14.8	12.8	19.7	11.4	16.4	9.62	30.1	15.0

Monthly and yearly runoff, in acre-feet of Turkey Creek at Naponee, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	768	670	3,180	708	547	439	-
1949	595	657	758	887	1,550	1,020	1,020	2,840	2,520	922	598	599	13,970
1950	700	690	752	689	1,010	899	770	1,210	678	1,130	591	1,790	10,890

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1948	1146	*804	June 28, 1948	-	-	-	-
1949	1146	*688	May 8, 1949	7.6	19.3	13,970	19.5
1950	1176	1,920	Sept. 20, 1950	7.8	15.0	10,890	-

* Revised.

429. Republican River near Bloomington, Nebr.

Location.--Lat 40°04'00", long. 99°02'10", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 1 N., R. 15 W., 600 ft downstream from county highway bridge, 2 miles south of Bloomington, 2 $\frac{1}{2}$ miles downstream from Cottonwood Creek, $\frac{9}{16}$ miles downstream from Turkey Creek, and 13 $\frac{1}{4}$ miles downstream from Harlan County Dam.

Drainage area.--20,800 sq mi, approximately, of which about 15,100 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1,824.15 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Apr. 13, 1935, chain gage at site 600 ft upstream at datum 1.00 ft higher and Apr. 13, 1935, to Nov. 18, 1938 at present datum.

Average discharge.--21 years (1929-50), 726 cfs.

Extremes.--1929-50: Maximum discharge, 260,000 cfs June 1, 1935 (gage height, 20.4 ft, from floodmarks, site then in use), by slope-area determination; minimum daily 6.8 cfs Oct. 6, 7, 1936.

Remarks.--Natural flow of stream affected by irrigation development above station, and, since 1949, by storage in Bonny and Enders Reservoirs, and Harry Strunk Lake.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a457	a435	a447	a355	a290	a1,140	a914	922	1,840	1,140	195	144	a689
1930	270	401	599	548	464	495	819	1,580	2,280	435	517	778	714
1931	1,610	906	623	555	734	746	930	680	692	155	406	76.7	676
1932	64.6	208	194	240	961	697	500	441	1,650	293	437	335	498
1933	86.6	147	350	425	376	531	1,120	1,180	227	137	807	1,570	580
1934	319	351	575	510	459	560	443	145	1,133	86.3	43.6	407	417
1935	84.8	199	246	430	408	485	462	1,972	9,343	803	1,072	1,199	1,385
1936	301	434	408	324	248	744	430	2,285	868	59.2	26.9	133	524
1937	40.5	203	290	146	625	567	352	396	1,695	537	783	431	503
1938	114	203	229	419	428	512	616	1,178	1,397	954	620	685	613
1939	103	163	277	292	271	577	600	564	1,698	544	368	15.4	456
1940	12.7	72.3	195	131	266	641	402	343	1,189	683	393	360	390
1941	313	198	257	371	577	539	735	993	4,340	2,433	1,275	1,639	1,137
1942	621	477	428	580	647	1,120	1,472	1,077	2,702	677	977	1,352	990
1943	434	499	525	347	644	596	976	380	1,141	229	52.7	108	491
1944	21.2	143	191	301	558	629	1,955	1,450	2,035	078	1,042	191	964
1945	204	336	397	471	571	497	634	576	2,810	798	321	249	651
1946	294	301	184	355	548	575	347	780	603	1,386	291	845	543
1947	4,575	1,009	677	414	596	921	709	745	6,667	1,323	257	125	1,502
1948	80.1	283	325	460	656	1,244	456	337	2,693	1,213	463	167	696
1949	107	284	333	227	804	1,126	1,023	2,291	2,638	538	595	441	866
1950	371	398	266	223	637	616	488	882	338	1,208	1,941	479	857

a From Congressional documents: 73d Cong. 2d sess., H. Doc. 195, Kansas River. Published figure in acre-feet.

Monthly and yearly runoff, in acre-feet of Republican River near Bloomington, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	26,900	25,900	27,500	21,800	16,100	70,100	54,400	56,700	109,000	70,100	12,000	8,570	499,000
1930	16,600	23,900	24,500	21,400	25,800	30,400	48,700	84,800	136,000	26,600	31,800	46,300	517,000
1931	99,000	53,900	38,300	54,100	40,800	45,900	55,300	41,800	41,200	9,530	25,000	4,560	489,000
1932	3,970	12,400	11,900	14,800	55,300	42,900	29,800	27,100	98,200	18,000	28,900	19,900	361,000
1933	5,320	8,750	21,500	26,100	20,900	32,600	56,800	72,600	13,500	8,420	49,800	93,400	419,000
1934	19,630	20,910	35,580	31,360	25,480	34,400	26,340	8,910	67,410	5,310	2,680	24,230	302,000
1935	5,220	11,850	15,110	26,430	22,640	29,800	27,500	121,300	55,900	49,390	65,900	71,500	1,002,000
1936	18,520	25,820	25,100	19,920	14,280	45,730	25,580	140,500	51,680	3,840	1,850	7,900	380,300
1937	2,490	12,090	17,850	8,960	34,730	34,840	20,940	24,330	100,900	32,990	48,130	25,670	363,900
1938	7,010	12,070	14,100	25,770	23,800	31,510	56,650	72,410	83,140	58,640	38,120	40,740	444,000
1939	6,350	9,710	17,010	17,950	15,080	35,470	35,710	34,650	101,000	33,450	22,650	914	329,900
1940	783	4,300	11,970	8,060	15,420	39,410	23,900	21,080	70,740	42,020	24,150	21,410	283,200
1941	19,230	11,760	15,800	22,820	32,070	33,140	43,760	61,050	258,200	149,600	78,380	97,520	823,300
1942	38,170	28,380	26,300	23,340	35,910	68,870	87,560	66,230	160,800	40,990	60,060	80,450	717,060
1943	26,670	29,690	32,270	21,340	35,780	36,640	58,080	23,340	67,870	14,060	3,240	6,400	355,400
1944	1,300	8,490	11,760	18,510	30,960	38,680	115,100	89,150	121,100	189,200	64,050	11,350	699,600
1945	12,520	19,970	24,410	28,940	31,700	29,920	37,740	35,430	167,200	49,090	19,740	14,800	471,500
1946	18,100	17,900	11,290	21,820	30,460	35,370	20,630	47,980	35,970	85,250	17,890	50,280	392,800
1947	281,300	60,050	41,620	25,450	35,090	58,090	42,170	45,800	95,700	81,370	15,800	7,430	1,087,000
1948	4,930	16,840	19,980	28,250	37,750	76,500	27,120	20,750	180,300	74,580	28,450	9,950	505,400
1949	6,600	16,920	20,450	13,960	44,630	69,210	61,250	140,900	157,000	33,100	36,570	26,220	626,800
1950	22,840	23,700	16,370	13,690	35,400	37,850	29,070	54,210	20,090	74,260	119,400	28,490	475,400

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	10,600	June 9, 1929	-	a689	a499,000	a689	a494,000
1930	701	11,000	June 5, 1930	126	714	517,000	898	643,000
1931	716	10,400	Oct. 14, 1930	17	676	489,000	451	326,500
1932	731	7,370	Feb. 24, 1932	32	498	361,000	508	368,500
1933	746	9,280	Apr. 22, 1933	14	580	419,000	635	460,600
1934	761	6,800	June 17, 1934	10	417	302,000	357	258,300
1935	786	260,000	June 1, 1935	49	1,385	1,002,000	1,436	1,040,000
1936	806	12,100	May 9, 1936	7	524	380,300	473	343,300
1937	826	10,300	June 3, 1937	6.8	503	363,900	504	364,700
1938	858	9,860	June 1, 1938	39	613	444,000	613	443,800
1939	876	13,600	June 27, 1939	8.8	456	329,900	434	313,900
1940	896	20,000	July 1, 1940	8	390	283,200	431	313,000
1941	926	19,500	July 27, 1941	53	1,137	823,300	1,200	869,400
1942	956	16,800	Apr. 20, 1942	110	990	717,060	985	712,800
1943	976	6,960	Apr. 11, 1943	14	491	355,400	398	298,300
1944	1006	9,500	Apr. 24, 1944	12	964	699,600	1,012	735,000
1945	1036	15,000	June 6, 1945	18	651	471,500	638	461,800
1946	1056	8,810	Sept. 7, 1946	44	543	392,800	1,006	738,500
1947	1086	140,000	June 23, 1947	60	1,502	1,087,000	1,031	746,100
1948	1116	22,000	June 23, 1948	59	696	505,400	699	507,600
1949	1146	6,730	May 21, 1949	52	866	626,800	892	645,800
1950	1176	8,950	Aug. 9, 1950	68	657	475,400	-	-

a From Congressional documents: 73 Cong., 2d sess., H. Doc. 195, Kansas River.

430. Center Creek at Franklin, Nebr.

Location.--Lat 40°05'30", long. 98°57'50", in SE 1/4 sec. 36, T. 2 N., R. 15 W., on downstream side of bridge on State Highway 3 at Franklin, 1 1/4 miles upstream from mouth.

Drainage area.--111 sq mi.

Gage.--Staff gage. Datum of gage is 1,828.07 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Extremes.--1948-50: Maximum discharge, 3,150 cfs Sept. 20, 1950 (gage height, 6.8 ft from floodmark), from rating curve extended above 420 cfs on basis of slope-area determination of peak flow; no flow at times during 1948 and 1949.

Remarks.--Two small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	4.26	3.83	4.34	2.69	5.42	1.31	-
1949	3.09	5.75	4.49	2.1	8.9	6.64	6.97	36.3	8.32	3.12	1.47	2.76	7.50
1950	3.95	4.52	4.08	4.1	3.69	4.75	5.43	5.83	2.51	1.79	1.42	48.0	7.44

Monthly and yearly runoff, in acre-feet of Center Creek at Franklin, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	254	235	258	165	333	78	-
1949	190	342	276	129	496	406	415	2,230	495	192	90	168	5,430
1950	243	269	250	250	203	292	323	358	150	105	87	2,860	5,390

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet		
		Discharge	Date							
1948	1176	-	-	0	-	-	-	-	-	-
1949	1176	3,685	May 6, 1949	0	7.50	5,430	7.44	5,380	-	-
1950	1176	3,150	Sept. 20, 1950	.5	7.44	5,390	-	-	-	-

a Maximum observed.

431. Thompson Creek at Riverton, Nebr.

Location.--Lat 40°05'25", long. 98°45'45", in NW¹ sec. 2, T. 1 N., R. 13 W., 8 ft downstream from bridge on State Highway 3, at west edge of Riverton, half a mile upstream from mouth.

Drainage area.--295 sq mi

Gage.--Water-stage recorder. Datum of gage is 1,753.38 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1948, staff gage at site 200 ft downstream at datum 2.16 ft higher. Oct. 1, 1948, to July 11, 1950, at present site at datum 1.32 ft higher than present datum.

Extremes.--1948-50: Maximum discharge, 12,200 cfs July 9, 1950 (gage height, 13.22 ft, present datum), by slope-area determination; minimum daily, 9.2 cfs Sept. 25, 1948.

Remarks.--Natural flow of stream affected by irrigation development above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	23.1	17.9	23.8	20.3	15.4	13.4	-
1949	21.4	22.9	25.0	18.2	31.8	32.6	30.7	107	119	27.9	18.2	20.7	39.6
1950	24.9	24.7	19.5	22.8	25.7	22.7	20.8	29.5	20.8	134	21.3	67.7	36.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	1,380	1,100	1,420	1,250	946	800	-
1949	1,510	1,360	1,540	1,120	1,760	2,010	1,820	6,580	7,100	1,720	1,120	1,230	28,650
1950	1,530	1,470	1,200	1,400	1,430	1,390	1,240	1,820	1,240	8,220	1,310	4,030	28,280

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet		
		Discharge	Date							
1948	1148	-	-	-	-	-	-	-	-	-
1949	1148	3,260	June 9, 1949	10	39.6	28,650	39.5	28,640	-	-
1950	1176	12,200	July 9, 1950	10	36.3	26,280	-	-	-	-

432. Elm Creek at Amboy, Nebr.

Location.--Lat 40°05', long. 98°26', in SE¹/₄SW¹/₄ sec. 34, T. 2 N., R. 10 W., at bridge on State Highway 3, at east edge of Amboy, 200 ft east of Chicago, Burlington & Quincy Railroad track, 2¹/₂ miles upstream from mouth, and 4¹/₂ miles east of red Cloud.

Drainage area.--54 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1666.33 ft above mean sea level, datum of 1929. Prior to Feb. 10, 1949, staff gage at same site and datum.

Extremes.--1948-50: Maximum discharge, 3,860 cfs Sept. 20, 1950 (gage height, 8.45 ft); minimum daily, 11 cfs Aug. 24, 1949, but may have been less during period of doubtful gage-height record in 1948.

Remarks.--No known diversions above the station.

Monthly and yearly mean discharge, in cubic feet per second of Elm Creek at Amboy, Nebr.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	16	14	20	23	13	12	-
1949	14	17	16	16	28.9	35.9	16.5	66.5	56.7	16.1	13.0	15.7	26.0
1950	18.7	16.8	15.9	15.6	14.8	16.3	16.7	17.9	14.8	38.7	16.1	62.8	22.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	952	861	1,190	1,410	799	714	-
1949	861	1,010	984	984	1,600	2,210	984	4,090	3,370	990	801	934	18,820
1950	1,150	998	976	960	813	1,000	998	1,100	865	2,580	992	3,740	15,970

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1948	1146	412	June 22, 1948	-	-	-	-	-	-
1949	1146	*1,100	May 21, 1949	11	26.0	18,820	26.4	19,090	-
1950	1176	3,860	Sept. 20, 1950	12	22.1	15,970	-	-	-

* Revised.

433. Republican River near Hardy, Nebr. 1/

Location.--Lat 40°00', long. 97°56', in sec. 6, T. 1 S., R. 5 W., at county highway bridge, 1½ miles southwest of Hardy, and at mile 145.1.

Drainage area.--22,400 sq mi, approximately, of which about 16,700 sq mi contribute directly to surface runoff.

Supplemental records available.--Records of chemical analyses for the period December 1949 to September 1950 are contained in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,501.46 ft above mean sea level, datum of 1929. Prior to June 1, 1932, chain gage at site at Bostwick, 20 miles upstream at different datums. Altitude of gage, 1,580 ft (from river profile map).

Average discharge.--19 years (1914, 1932-50), 843 cfs.

Extremes.--1904-15, 1931-50: Maximum discharge, about 225,000 cfs June 2, 1935 (gage height, 19.4 ft), based on records for stations upstream; no flow Aug. 9-19, 1934.

Remarks.--Some regulation at low flow by powerplant 8 miles above station. Many diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	-	-	-	-
1905	514	523	-	-	-	al,396	1,060	1,927	al,592	1,658	472	181	-
									2,949	5,734	5,082	725	-
1906	479	-	-	-	-	-	a699	1,610	466	a664	553	253	-
1907	371	610	-	-	-	-	518	590	699	435	125	77.5	-
1908	122	240	-	-	-	460	287	337	1,620	812	878	203	-
1909	609	546	680	-	-	a803	b650	555	1,680	1,250	238	690	-
1910	201	358	-	-	-	a626	359	388	264	1161	120	496	-
1911	201	239	-	300	459	463	273	285	150	1,080	5,850	708	-
1912	424	299	250	-	-	b2,080	*1,460	*826	*818	*359	*1,080	320	-
1913	356	426	409	-	-	a858	697	1,070	323	144	10.9	15.2	-
1914	32.6	45.0	a324	a420	a509	577	585	799	*2,300	*1,060	243	173	a570
1915	76.3	*177	-	-	-	a893	a803	al,040	a9,630	a5,600	a5,400	al,320	-
1931	-	-	-	-	-	-	b967	*1,124	966	222	566	102	-
1932	-	-	-	-	-	-	817	591	489	2,040	353	440	-
1933	75.8	147	300	425	405	809	1,110	1,350	263	256	900	1,800	635
1934	400	360	553	530	495	623	494	207	1,120	119	17.9	320	433
1935	94.3	238	248	311	548	524	518	1,807	10,390	1,028	1,213	1,750	1,546
1936	383	454	513	307	261	733	561	2,020	1,221	118	35.0	166	566
1937	60.8	183	286	162	702	696	393	415	1,739	886	765	465	560
1938	139	151	211	414	456	581	540	1,468	1,684	924	829	839	686
1939	123	185	255	285	275	687	853	613	2,350	696	432	32.1	563
1940	19.6	69.2	134	102	205	754	439	498	1,298	620	537	238	409

* Revised.

† Corrected.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b Only monthly figure revised; revised daily figures not available.

1/ Published as "near Superior" 1896-1903, and as "at Bostwick" 1904-15, 1931-32.

Monthly and yearly mean discharge, in cubic feet per second of Republican River near Hardy, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	274	261	301	453	608	561	809	1,055	5,710	1,936	1,041	1,577	1,209
1942	757	573	495	449	790	1,184	1,885	1,290	3,590	869	1,179	1,963	1,247
1943	504	563	493	467	926	637	1,437	464	1,784	366	82.7	128	650
1944	42.2	150	195	354	507	781	1,751	1,933	2,270	3,156	1,588	398	1,095
1945	259	372	361	542	656	596	863	1,302	2,450	1,472	390	158	784
1946	358	296	221	401	689	622	414	637	920	1,558	398	1,471	664
1947	4,194	1,375	884	553	578	960	953	876	5,927	1,468	372	150	1,524
1948	106	273	352	496	868	1,494	590	800	2,682	1,224	545	199	767
1949	106	314	358	224	1,128	1,697	1,242	3,161	4,171	822	615	582	1,198
1950	516	447	346	273	641	781	541	1,014	532	2,362	2,270	1,193	914

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	a94,720	101,900	29,020	10,770	-
1905	51,600	31,120	-	-	-	a85,810	63,070	118,500	75,500	352,600	189,500	43,140	-
1906	29,450	-	-	-	-	-	a41,600	99,000	27,700	40,800	34,000	15,100	-
1907	22,100	36,300	-	-	-	-	30,800	36,300	41,600	26,700	7,560	4,610	-
1908	7,500	14,000	-	-	-	28,300	17,100	20,700	96,400	49,900	54,000	12,100	-
1909	37,400	32,500	41,800	-	-	a48,400	38,700	34,100	100,000	76,900	14,600	41,100	-
1910	12,400	21,300	-	-	-	a36,500	21,400	23,900	15,700	7,130	68,900	29,500	-
1911	12,400	14,200	-	18,400	25,500	28,500	16,200	17,500	8,930	66,400	560,000	42,100	-
1912	26,100	17,800	15,400	-	-	a128,000	a86,700	a50,800	a48,700	a21,500	a66,400	a19,100	-
1913	21,900	25,300	25,100	-	-	a52,800	41,500	65,800	19,200	8,850	670	904	-
1914	2,000	2,680	a19,900	a25,800	a28,300	35,500	22,900	49,100	a137,000	a65,000	14,900	10,300	a413,380
1915	4,690	10,500	-	-	-	a54,900	a47,800	a63,800	a57,000	a22,000	a32,000	a78,400	-
1931	-	-	-	-	-	b57,540	a59,100	57,500	13,600	34,800	6,070	-	-
1932	-	-	-	-	-	b63,700	50,200	35,200	30,100	a121,700	21,700	27,100	23,200
1933	4,660	8,750	18,400	26,100	22,500	37,400	66,000	83,000	15,600	14,500	55,300	a107,000	459,000
1934	24,570	21,400	34,030	32,590	26,920	38,290	29,390	12,750	66,630	6,780	1,100	19,020	313,500
1935	5,800	14,170	15,230	19,150	30,420	32,210	30,840	a111,100	a18,200	63,210	74,610	a104,100	1,119,000
1936	23,580	27,010	31,540	18,890	15,020	45,040	33,360	a124,200	72,680	7,270	2,150	9,870	410,600
1937	3,740	10,870	17,580	9,950	39,000	42,920	23,410	25,540	a105,500	54,510	47,050	27,870	405,600
1938	6,530	9,000	12,970	25,470	25,320	35,733	32,160	89,660	100,200	56,810	51,000	49,940	496,800
1939	7,560	11,030	15,650	17,500	15,250	41,000	50,740	37,710	39,800	42,800	26,580	1,910	407,500
1940	1,200	4,120	8,240	6,300	11,820	46,360	28,110	30,520	77,260	38,130	33,000	14,150	297,200
1941	16,830	15,540	18,530	26,640	33,780	34,520	48,130	64,900	a39,700	a19,000	64,030	95,830	875,400
1942	46,520	34,100	30,430	27,600	45,870	72,770	12,100	79,330	a213,600	53,410	72,500	16,800	903,000
1943	31,000	33,480	30,300	28,730	51,410	39,140	85,490	28,540	a106,100	23,720	5,080	7,630	470,600
1944	2,580	8,950	11,990	21,750	29,150	48,050	a104,200	a118,900	a38,100	a12,800	97,650	23,710	734,800
1945	15,900	22,110	22,180	33,320	36,450	36,630	51,370	80,080	a45,900	90,510	24,010	9,400	567,800
1946	22,000	17,620	13,570	24,660	38,250	38,220	24,610	39,140	54,750	95,670	24,450	87,520	480,500
1947	257,900	81,820	53,100	33,990	32,090	59,010	56,690	53,860	a52,700	90,250	22,900	8,910	1,103,000
1948	6,490	16,230	21,680	30,530	49,020	91,680	35,120	24,620	a59,600	75,260	33,480	11,670	556,500
1949	6,490	18,700	22,040	15,800	62,670	a4,300	73,910	a194,400	a49,200	50,250	37,800	34,620	867,400
1950	31,730	26,610	21,300	16,770	35,600	48,010	32,200	62,340	31,670	a45,200	a39,600	71,010	682,000

* Revised.

† Corrected.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b Only monthly figure revised; revised daily figures not available.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1904	131	#9,460	July 5, 1904	-	-	-	-	-
1905	172	#30,000	July 4, 1905	-	-	-	-	-
1906	208	#5,220	May 2, 1906	-	-	-	-	-
1907	246, 1340	#3,540	June 7, 1907	-	-	-	-	-
1908	246, 1340	#12,900	June 18, 1908	-	-	-	-	-
1909	266, 1340	#10,100	Sept. 19, 1909	-	-	-	-	-
1910	286	#6,200	Aug. 20, 1910	-	-	-	-	-
1911	306	#21,300	Aug. 3, 1911	-	-	-	888	643,000
1912	326, 1340	#8,150	Mar. 28, 1912	-	-	-	-	-
1913	356	#3,130	May 10, 1913	-	-	-	-	-
1914	386, 1340	#11,500	June 17, 1914	#20	a570	a413,380	-	-
1915	406	#38,000	June 19, 1915	-	-	-	-	-
1931	716, 1340	-	May 5, 1931	-	-	-	-	-
1932	731	32,000	Feb. 28, 1932	-	-	-	-	-
1933	746	6,200	Apr. 22, 1933	20	635	459,000	#701	#507,400
1934	761	6,000	June 18, 1934	0	433	313,500	371	268,700
1935	786	225,000	June 2, 1935	58	1,546	1,119,000	1,610	1,166,000

* Revised.

† Not previously published.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Note.--Records for June 1896 to November 1903, published as "near Superior" in 18th to 22d Ann. Repts., inclusive, Pt. 4, and Water-Supply Papers 75, 84, and 99, have been found in error on the basis of restudy of the original data and comparison with records at nearby stations. Those records are not published herein and should not be used.

Yearly discharge, in cubic feet per second of Republican River near Hardy, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	898	10,100	May 9, 1936	15	586	410,600	497	360,600
1937	828	9,100	June 4, 1937	24	560	405,600	558	404,000
1938	856	7,620	June 1, 1938	60	686	496,800	691	500,500
1939	876	11,700	June 23, 1939	10	563	407,500	535	386,800
1940	896	9,750	June 10, 1940	5	409	297,200	461	334,600
1941	926, 1006	24,800	June 9, 1941	84	1,209	875,400	1,292	935,600
1942	956	14,000	June 25, 1942	121	1,247	903,000	1,225	886,800
1943	976	11,100	Apr. 12, 1943	35	850	470,600	552	399,400
1944	1006	9,230	Apr. 25, 1944	27	1,095	794,600	1,145	831,500
1945	1036	18,500	July 17, 1945	48	784	567,800	775	560,780
1946	1056	11,800	July 7, 1946	60	664	480,500	1,133	820,090
1947	1086	100,000	June 24, 1947	84	1,524	1,103,000	1,043	754,800
1948	1116	13,700	June 24, 1948	85	767	556,500	770	553,300
1949	1146	20,000	June 9, 1949	58	1,198	867,400	1,243	899,900
1950	1176	30,000	July 10, 1950	110	914	662,000	-	-

434. White Rock Creek at Lovewell, Kans.

Location.--Lat 39°53', long. 97°58', in NW¼ sec. 14, T. 2 S., R. 6 W., on county bridge 1 mile northeast of Lovewell.

Drainage area.--358 sq mi.

Supplemental records available.--Records of suspended-sediment loads and water temperature for the period February to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,513.95 ft above mean sea level, datum of 1929. Prior to Sept. 13, 1947, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 68.6 cfs.

Extremes.--1945-50: Maximum discharge, 23,300 cfs July 10, 1950 (gage height, 21.62 ft), from rating curve extended above 3,800 cfs by logarithmic plotting on basis of current-meter measurement of 20,800 cfs made at site about 8 miles upstream; no flow Aug. 21 to Sept. 9, Sept. 12 to Nov. 6, Nov. 14-20, 1948.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*4	*2	*1	*1	*2	*7	*3	*5.37	*41.9	*97.0	0.55	*246	*34.1
1947	39.2	76	7	5	9.42	15.6	*169	27.7	*444	24.1	6.17	1.82	*68.2
1948	2.9	3.48	4.03	3.8	71.1	113	5.82	6.72	25.5	66.0	15.3	.21	26.4
1949	0	.9	.69	15.3	282	83.4	6.8	193	368	17.7	4.51	36.6	82.3
1950	127	3.9	4.7	3.5	3.8	5.42	3.05	125	6.77	925	198	151	132

* Revised.

* Not previously published; estimated on basis of weather records and record for Republican River near Hardy, Nebr., and North Fork Solomon River at Kirwin, Kans.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*246	*119	*61	*61	*111	*430	*179	*330	2,500	*5,960	34	*14,630	*24,660
1947	2,410	4,520	429	309	523	958	10,080	1,700	26,440	1,480	379	108	*49,340
1948	179	207	248	232	4,090	6,960	346	413	1,510	4,060	940	12	19,200
1949	0	53	42	939	15,650	5,130	407	11,860	21,920	1,090	277	2,180	59,570
1950	7,630	232	289	216	208	333	182	7,690	403	56,870	12,190	8,990	95,430

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1116, 1340	*2,000	Sept. 8, 15, 1946	*0.2	*34.1	*24,660	*43.6	*31,590
1947	1116, 1340	*3,400	June 27, 1947	.8	*68.2	*49,340	*58.9	*42,610
1948	1116	1,140	Mar. 20, 1948	0	25.4	19,200	25.7	18,680
1949	1146	2,570	June 14, 1949	0	82.3	59,570	95.7	67,820
1950	1176	23,300	July 10, 1950	.3	132	95,430	-	-

* Revised.

* Not previously published.

435. Republican River at Scandia, Kans.

Location.--Lat 39°48', long 97°47', in NE¼ sec. 17, T. 3 S., R. 4 W., at bridge on U. S. Highway 36 at Scandia, 4 miles downstream from Dry Creek, 4 miles upstream from School Creek, and at mile 125.2.

Drainage area.--22,930 sq mi, approximately, of which about 17,230 sq mi contribute directly to surface runoff.

Gage.--Wire-weight gage. Datum of gage is 1,422.91 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Mar. 31, 1938, staff, chain, or wire-weight gage at site 700 ft downstream at same datum.

Average discharge.--22 years (1919-25, 1928-44), 824 cfs.

Extremes.--1919-50: Maximum discharge, 215,000 cfs June 2, 1935 (gage height, 17.8 ft, from floodmarks), from rating curve extended above 30,000 cfs on basis of velocity-area studies; no flow Aug. 9-21, 1934.

Flood of June 20, 1915, reached a stage of 14.2 ft, from floodmark (discharge, about 60,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	*1,540	-
1920	410	516	452	552	901	634	1,260	1,210	507	364	590	1,220	715
1921	420	565	546	566	908	623	780	1,030	1,640	603	439	550	719
1922	154	a207	a226	a196	a241	a685	554	1,040	605	1,360	469	916	a488
1923	24.3	383	299	517	485	563	466	3,040	5,130	2,270	1,860	1,080	1,340
1924	677	681	586	477	787	1,040	756	552	452	1,160	750	187	675
1925	205	385	253	195	+1,080	749	702	542	1,180	b325	b683	b319	c544
1928	-	-	-	-	-	-	-	-	-	-	-	568	-
1929	*519	*475	*490	372	306	*1,280	*983	*830	*1,930	*716	*255	*135	*692
1930	*297	392	425	249	671	484	751	2,120	2,290	343	485	856	778
1931	1,540	917	614	616	728	695	905	1,330	829	222	524	123	754
1932	146	255	405	368	1,870	1,010	550	552	2,040	393	590	438	711
1933	169	201	275	424	+454	617	1,270	1,430	310	327	890	1,780	+678
1934	*405	*360	545	550	503	713	556	221	1,060	136	19	331	*448
1935	105	255	250	312	575	555	501	2,368	11,200	1,074	1,189	1,842	1,677
1936	466	442	565	315	256	810	613	2,164	1,146	151	245	172	597
1937	60.4	195	323	+189	798	764	458	468	1,894	946	724	456	603
1938	144	188	233	409	406	593	561	1,512	1,769	962	951	1,007	731
1939	155	174	263	368	270	714	734	698	2,672	887	516	236	623
1940	19.6	63	130	103	174	727	416	535	1,358	614	572	223	411
1941	274	283	308	391	565	573	944	1,277	7,678	2,140	1,309	1,857	1,459
1942	1,041	748	573	618	925	1,314	1,773	1,350	4,090	1,008*	1,399	2,594	*1,446
1943	577	580	550	494	978	641	1,629	509	3,133	463	106	111	807
1944	42	137	208	333	522	807	1,808	2,255	2,631	3,173	2,231	567	1,230

* Revised.

† Corrected.

a Only monthly figures revised; revised daily figures not available.

b From Congressional documents; 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure is in acre-feet.

c Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	*94,700
1920	25,200	30,700	27,800	33,900	51,800	39,000	75,000	74,400	30,200	22,400	36,300	32,600	519,000
1921	25,800	33,600	33,600	34,800	50,400	38,300	46,400	63,300	97,600	37,100	27,000	32,700	521,000
1922	9,470*	12,300*	13,900*	12,100*	13,400*	40,900	33,000	64,000	36,100	83,600	28,800	5,450	*353,000
1923	1,490	22,800	18,400	31,808	26,900	34,600	27,700	187,000	305,000	140,000	114,000	84,500	974,000
1924	41,600	40,500	36,000	29,300	45,300	64,000	45,000	32,700	26,900	71,300	46,100	11,100	490,000
1925	12,600	21,700	15,600	12,000	76,000	46,100	41,800	33,000	70,200	20,000	46,100	19,000	b394,000
1928	-	-	-	-	-	-	-	-	-	-	-	33,700	-
1929	*31,900*	*28,300*	*30,200	22,900	17,000	*78,500	*58,500	*51,000*	*15,000	*44,400*	*15,700*	*8,040	*501,000
1930	*18,300	23,300	26,100	15,300	37,300	29,800	44,700	130,000	136,000	21,100	29,600	50,900	563,000
1931	94,500	54,600	37,700	37,900	40,400	42,700	53,800	61,700	49,300	15,700	32,200	7,290	546,000
1932	8,980	15,100	24,900	22,800	108,000	62,000	32,800	33,900	121,000	24,200	36,300	28,100	515,000
1933	10,400	12,000	16,900	26,100*	25,200	38,000	75,500	87,900	18,500	20,100	54,700	106,000	491,000
1934	*24,900*	*21,400	35,500	33,800	27,800	43,900	35,100	13,600	83,100	6,550	1,190	19,700	*324,200
1935	6,460	15,160	15,390	19,170	31,960	34,140	29,800	146,600	666,500	66,060	73,090	109,600	1,214,000
1936	28,680	26,270	34,750	19,390	14,700	49,820	36,470	134,300	68,210	9,280	1,510	10,230	433,800
1937	3,710	11,580	19,680	11,590	44,290	46,990	27,240	28,760	112,700	56,140	44,510	27,140	+436,500
1938	8,630	11,170	14,360	25,140	22,670	36,460	33,370	92,960	106,400	59,140	58,470	59,960	528,900
1939	9,530	10,360	16,160	22,660	15,010	43,880	43,660	42,920	159,000	54,570	31,700	1,760	451,200
1940	1,220	3,750	7,990	6,330	10,040	44,680	24,750	32,890	80,820	37,750	35,190	13,250	296,700
1941	16,870	15,650	18,910	24,010	31,360	35,210	56,160	78,550	456,900	131,600	80,490	110,500	1,056,000
1942	64,030	44,480	35,220	39,020	61,390	80,820	105,500	83,010	423,000	61,980	*86,040	*154,300	*1,048,000
1943	35,470	34,490	33,850	30,370	54,340	39,440	96,850	31,290	186,400	26,490	6,520	6,590	584,100
1944	2,580	6,150	12,770	20,840	30,030	49,630	107,600	138,900	156,600	195,100	137,200	33,750	693,200

* Revised.

† Corrected.

a From Congressional documents, see footnote to preceding table.

b Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Yearly discharge, in cubic feet per second of Republican River at Scandia, Kans.

yearly discharge, in cubic feet per second at Republican River at Stanley, Kans.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1919	506, 1340	*22,500	Sept. 19, 1919	-	-	-	-	-
1920	506	-	-	102	715	519,000	728	529,000
1921	528	8,670	May 20, 1921	110	719	521,000	a640	*483,000
1922	546	8,670	July 28, 1922	14	a488	*353,000	a497	*360,000
1923	568	*27,500	June 12, 1923	3	1,340	974,000	1,450	1,049,000
1924	586	6,850	July 21, 1924	134	675	490,000	581	422,000
1925	606	5,220	June 24, 1925	*90	b544	b394,000	-	-
1928	666	*11,000	Aug. 4, 1928*	-	-	-	-	-
1929	686, 1340	*7,680	June 10, 1929	*69	*692	*501,000	*661	*478,000
1930	701, 1340	8,820	June 6, 1930	*114	778	563,000	942	682,000
1931	716	10,800	May 5, 1931	24	754	546,000	564	408,000
1932	731	7,270	Feb. 25, 1932	56	711	516,000	697	506,000
1933	746	8,620	Apr. 22, 1933	40	t678	491,000	*733	*531,400
1934	761, 1340	6,150	June 18, 1934	0	*448	*324,200	389	281,400
1935	786	215,000	June 2, 1935	39	1,677	1,214,000	1,750	1,267,000
1936	806	*15,000	May 10, 1936	12	597	433,600	522	379,100
1937	826	8,080	June 6, 1937	28	603	t436,500	t620	t435,700
1938	856	8,170	June 1, 1938	64	731	528,900	733	530,600
1939	876	10,300	June 24, 1939	10	623	451,200	591	428,100
1940	896	8,170	June 10, 1940	16	411	298,700	464	337,100
1941	926, 1006	48,000	June 9, 1941	80	1,459	1,056,000	1,586	1,149,000
1942	956, 1340	27,200	Aug. 26, 1942	240	*1,448	*1,048,000	*1,393	*1,008,000
1943	976	*22,300	June 11, 1943*	34	807	584,100	696	503,800
1944	1006	*17,900	Aug. 26, 1944	29	1,230	893,200	-	-

* Revised.

† Corrected.

* Not previously published.

a Only monthly figures revised; revised daily figures not available.

b Revised; supersedes figure published in H. Doc. 195, 75d Cong., 2d sess., Kansas River.

436. West Buffalo Creek near Jewell, Kans.

Location.--Lat 39°40', long. 98°11', in NW¼ sec. 25, T. 4 S., R. 8 W., 1 mile northwest of Jewell and 1 mile upstream from dam of city of Jewell.

Drainage area.--15.2 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,549.30 ft above mean sea level, unadjusted.

Extremes.--1934-38: Maximum discharge, 3,520 cfs Sept. 1, 1935 (gage height, 12.09 ft), from rating curve extended above 1,500 cfs; no flow during long periods.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	0	0	1.03	0	0	0	-
1935	0	0	0	0	0	0	0	43.6	38.7	.03	2.27	26.6	9.43
1936	0	0	0	0	0	0	0	.688	0	.526	0	.705	.142
1937	0	0	0	0	.582	.083	0	0	4.54	0	0	0	.425
1938	0	0	0	0	0	0	0	0	3.45	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	0	0	61	0	0	0	-
1935	0	0	0	0	0	0	0	2,680	2,300	1.6	140	1,700	6,820
1936	0	0	0	0	0	0	0	41	0	20	0	42	103
1937	0	0	0	0	32	5.1	0	0	270	0	0	0	307
1938	0	0	0	0	0	0	0	0	205	-	-	-	-

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	786	447	June 22, 1934	0	-	-	-	-
1935	786	3,520	Sept. 1, 1935	0	9.43	6,820	9.43	6,820
1936	806	82	May 10, 1936	0	.142	103	.142	103
1937	826	814	June 13, 1937	0	.425	307	.425	307
1938	856	200	June 11, 1938	0	-	-	-	-

* Not previously published.

437. West Buffalo Creek at Jewell, Kans.

Location.--Lat 39°40', long. 98°10', in SE $\frac{1}{4}$ sec. 25, T. 4 S., R. 8 W., just upstream from spillway of Jewell city dam.

Drainage area.--16.8 sq mi.

Gage.--Water-stage recorder and sharp-crested wier. Datum of gage is 1,540.20 ft above mean sea level, unadjusted.

Extremes.--1934-38: Maximum discharge, 3,560 cfs Sept. 1, 1935 (gage height, 11.40 ft, from high-water marks in gage house), from rating curve extended above 3,000 cfs; no flow during long periods.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	0	0	0	0	0	0	0	47.5	47.3	0.11	1.46	33.4	10.8
1936	0	0	0	0	0	0	0	.339	0	.126	0	.630	.091
1937	0	0	0	0	0	.061	0	0	4.20	0	0	0	.392
1938	0	0	0	0	0	0	0	0	4.60	-	-	-	-

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	0	0	0	0	0	0	0	2,920	2,610	6.9	89.7	1,990	7,820
1936	0	0	0	0	0	0	0	21	0	7.8	0	37	66
1937	0	0	0	0	30	3.7	0	0	250	0	0	0	284
1938	0	0	0	0	0	0	0	0	274	-	-	-	-

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1935	786	3,560	Sept. 1, 1935	0	10.8	7,820	10.8	7,820	
1936	806	32	Sept. 23, 1936	0	.091	66	.091	66	
1937	826	795	June 13, 1937	0	.392	284	.392	284	
1938	856	266	June 11, 1938	0	-	-	-	-	

438. Republican River at Concordia, Kans.

Location.--Lat 39°35'40", long 97°38'55", in sec. 27, T. 5 S., R. 3 W., at bridge on U. S. Highway 81, 0.5 mile north of Concordia, 7 miles downstream from Buffalo Creek, and at mile 102.4.

Drainage area.--23,540 sq mi, approximately, of which about 17,840 sq mi contribute directly to surface runoff.

Supplemental records available.--Gage-height records collected in this vicinity since 1931 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,333.62 ft (revised), above mean sea level, datum of 1929. Prior to Oct. 8, 1947, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 1,305 cfs.

Extremes.--1945-50: Maximum discharge, 75,000 cfs June 25, 1947 (gage height, 14.90 ft); minimum, 68 cfs Oct. 17, 1948.

Flood of June 2, 1935, reached a stage of 17.0 ft (from floodmarks), site and datum then in use by U. S. Weather Bureau (discharge, about 207,000 cfs).

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	*425	*338	*231	*414	*685	*694	*441	607	1,205	2,810	409	2,293	*879
1947	4,520	1,725	946	617	588	969	1,802	1,144	*8,464	*2,181	*490	183	*1,969
1948	112	266	378	501	903	1,627	631	458	2,635	2,524	713	287	919
1949	117	321	412	690	1,354	2,073	1,246	3,458	4,906	1,013	719	771	1,420
1950	742	462	388	290	646	817	585	1,869	611	4,541	3,521	1,471	1,340

* Revised.

* Not previously published; estimated on basis of weather records and records for stations at Hardy, Nebr., and Clay Center, Kans.

Monthly and yearly runoff, in acre-feet of Republican River at Concordia, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	28,130	20,110	14,200	25,460	38,040	42,870	28,280	37,350	71,700	172,600	25,130	38,400	*836,200
1947	278,000	102,800	58,200	37,950	32,520	59,560	107,200	70,340	503,600	134,100	30,130	10,910	*1,425,000
1948	6,900	15,820	23,280	30,820	51,970	100,000	37,530	28,180	156,800	155,200	43,840	17,080	667,400
1949	7,180	19,080	25,330	42,430	75,170	127,400	74,140	212,600	291,900	82,280	44,230	45,880	1,028,000
1950	45,650	27,460	23,850	17,840	35,850	50,230	34,780	102,600	48,240	279,200	216,500	87,510	969,700

* Revised.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056,1340	17,900	Sept. 7, 1946	-	*879	*636,200	*1,401	*1,015,000	
1947	1086,1340	75,000	June 25, 1947	120	*1,969	*1,425,000	*1,426	*1,032,000	
1948	1118	15,800	June 28, 1948	98	919	667,400	927	673,000	
1949	1148	17,000	June 9, 1949	85	1,420	1,028,000	1,482	1,073,000	
1950	1176	32,600	July 10, 1950	150	1,340	969,700	-	-	

* Revised.

* Not previously published.

439. Republican River at Clay Center, Kans. 1/

Location.--Lat 39°21', long 97°08', in SW $\frac{1}{4}$ sec. 17, T. 8 S., R. 3 E., at bridge on State Highway 15, 1 mile south of Clay Center, 4 miles downstream from Five Creeks, and at mile 42.1.

Drainage area.--24,570 sq mi, of which only 18,870 sq mi contribute directly to surface runoff.

Supplemental records available.--Gage-height records collected in this vicinity August 1904 to October 1917 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,159.21 ft (revised) above mean sea level, datum of 1929.

June 21, 1917, to Feb. 14, 1934, chain gage at Wakefield, 15 $\frac{1}{2}$ miles downstream at datum 39.88 ft lower.

Feb. 8, 1934, to June 2, 1935, water-stage recorder, June 3, 1935, to May 7, 1936, chain gage, May 8, 1936, to Jan. 18, 1949, water-stage recorder, and Jan. 19 to Sept. 22, 1949, wire-weight gage all at present site and datum.

Average discharge.--33 years (1917-50), 1,131 cfs.

Extremes.--1917-50: Maximum discharge, 195,000 cfs June 3, 1935 (gage height, 25.74 ft, from floodmarks), from rating curve extended above 61,000 cfs on basis of velocity-area studies; no flow Aug. 10, 1934 (revised).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	*1,760	248	200	190	-
1918	474	319	231	250	421	638	634	1,010	1,310	850	845	371	598
1919	680	617	575	662	1,020	1,340	1,590	1,960	4,830	953	352	1,750	1,350
1920	600	571	552	652	964	702	1,460	1,720	599	497	572	1,750	884
1921	492	609	597	603	949	844	754	1,250	1,750	1,160	416	365	797
1922	165	206	273	214	282	271	598	940	819	2,410	649	181	626
1923	45.7	494	515	450	559	638	555	3,270	8,790	3,440	1,990	1,010	1,780
1924	1,020	732	624	518	610	990	1,110	665	564	1,360	928	215	796
1925	203	351	230	230	1,220	615	763	540	1,400	380	804	371	603
1926	228	372	362	308	707	572	502	379	490	955	1,390	5,910	846
1927	715	392	492	421	651	615	4,510	1,440	3,350	1,800	2,940	845	1,520
1928	600	378	362	412	852	791	668	755	3,310	4,390	4,480	669	1,390
1929	687	922	684	491	389	1,560	1,640	1,590	*3,390	927	*520	182	*1,080
1930	376	508	569	343	868	670	919	3,220	2,870	634	662	971	1,050
1931	1,440	1,100	775	656	898	831	988	1,300	801	340	544	263	828
1932	311	385	441	394	1,800	1,300	749	606	1,950	557	584	925	827
1933	192	257	294	408	490	680	1,250	1,340	308	368	*716	1,930	*684
1934	411	355	506	540	b355	628	518	441	956	185	*13.4	*300	*448
1935	78.7	193	219	267	546	510	515	2,169	11,320	1,565	1,305	5,528	1,639
1936	864	783	791	418	328	995	581	2,338	1,324	217	58.4	176	742
1937	114	171	302	201	917	1,021	505	442	2,148	1,285	850	481	700
1938	147	153	208	368	438	628	554	2,450	3,466	1,186	1,173	689	973
1939	182	197	255	386	290	851	1,111	683	2,855	864	571	84.8	694
1940	36.8	53.9	125	68.9	201	782	488	556	1,336	388	774	353	432

* Revised.

* Not previously published; partly estimated on basis of weather records.

a Only monthly figure revised; revised daily figures not available.

b Not previously published; computed from published record for Wakefield Feb. 1-7 and Clay Center Feb. 8-28.

1/ Published as "at Wakefield" prior to February 1934.

Monthly and yearly mean discharge, in cubic feet per second of Republican River at Clay Center, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	301	233	297	364	601	588	877	1,152	8,071	2,325	1,681	2,218	1,553
1942	5,211	1,118	868	713	975	1,493	1,706	1,633	5,082	1,370	1,560	3,197	1,908
1943	679	649	553	524	1,173	718	1,762	1,039	5,963	741	253	153	1,174
1944	98.8	146	214	323	517	863	2,332	3,224	2,981	3,505	3,434	1,196	1,574
1945	400	461	433	573	835	988	2,237	7,170	3,696	4,003	707	313	1,828
1946	486	376	240	426	882	759	535	601	1,337	3,291	628	3,070	1,036
1947	4,573	2,293	1,013	750	887	1,191	2,875	1,383	9,541	2,211	585	245	2,273
1948	152	270	415	510	945	2,601	823	358	2,628	3,597	753	299	1,148
1949	139	318	468	747	2,159	2,490	1,354	4,336	5,852	1,335	611	754	1,689
1950	786	476	404	325	655	882	597	2,349	1,286	5,712	4,141	2,177	1,661

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	805,000	15,200	12,300	11,300	-
1918	29,100	19,000	14,200	15,400	23,400	51,500	37,700	82,100	78,000	40,000	39,700	22,100	432,000
1919	40,600	36,700	35,400	40,700	56,800	82,400	94,600	121,000	287,000	58,600	21,600	104,000	979,000
1920	36,900	34,000	33,900	40,100	55,400	43,200	86,900	108,000	35,800	30,600	20,000	104,000	642,000
1921	30,300	36,200	36,700	37,100	52,700	39,600	44,900	78,900	104,000	71,300	25,600	21,700	577,000
1922	10,100	12,300	16,800	13,100	14,500	45,600	35,600	57,800	48,700	148,000	39,900	10,800	453,000
1923	2,810	29,400	19,200	27,700	21,600	39,200	33,000	201,000	52,000	12,000	22,000	80,100	1,290,000
1924	62,700	43,800	38,400	51,900	48,800	80,900	68,000	40,900	33,600	83,600	57,100	12,800	578,000
1925	12,500	20,900	14,100	14,100	67,800	50,100	45,400	33,200	83,500	23,400	49,400	22,100	436,000
1926	14,000	22,100	23,500	18,900	39,300	35,200	29,900	23,300	29,200	58,700	85,500	33,000	613,000
1927	44,000	23,300	30,500	25,900	36,200	50,100	268,000	88,500	199,000	98,400	181,000	58,100	1,100,000
1928	36,900	22,500	22,300	25,300	49,000	46,600	39,700	45,200	197,000	70,000	214,000	39,800	1,010,000
1929	42,200	54,900	42,100	30,200	21,600	95,900	97,800	97,800	97,800	57,000	32,000	9,640	*782,000
1930	23,100	30,200	35,000	21,100	48,200	41,200	54,700	198,000	171,000	39,000	41,900	57,800	761,000
1931	88,700	65,500	47,800	40,300	49,900	51,100	58,800	79,900	47,700	20,900	33,500	15,700	800,000
1932	19,100	22,900	27,100	24,200	104,000	80,200	44,800	37,300	116,000	34,300	35,900	55,100	600,000
1933	11,800	15,300	19,100	25,100	27,200	40,800	74,300	82,200	18,200	23,800	44,000	15,000	*496,000
1934	25,280	21,120	31,130	33,220	29,720	36,580	30,850	27,130	56,900	11,960	*821	17,850	*324,800
1935	4,840	11,460	13,450	16,400	30,340	31,550	30,620	133,300	873,300	96,240	80,210	209,900	1,331,000
1936	53,180	46,580	48,610	25,710	18,840	61,150	34,800	143,800	78,800	13,360	3,590	10,490	538,700
1937	7,030	10,180	18,560	12,390	50,910	62,800	30,030	27,170	127,800	78,980	52,270	28,620	508,700
1938	9,020	9,110	12,810	22,650	24,340	36,630	32,970	150,600	206,300	72,940	72,130	52,880	704,400
1939	11,220	11,700	15,680	23,710	16,090	52,500	68,120	42,000	189,900	54,380	35,140	3,880	502,100
1940	2,270	3,210	7,710	11,590	11,590	48,080	29,070	34,180	79,470	23,630	47,570	20,980	513,400
1941	18,510	13,890	18,250	22,360	33,360	36,180	52,170	70,850	480,300	143,000	100,103	400,132	1,124,000
1942	197,400	66,550	53,270	43,850	54,150	91,780	101,500	100,400	302,400	84,250	95,950	190,200	1,382,000
1943	41,760	38,640	34,020	32,190	65,150	44,170	104,800	83,910	354,800	45,590	15,540	9,100	849,600
1944	8,080	8,700	13,180	19,840	29,730	53,090	138,800	198,200	177,400	215,500	211,200	71,150	1,143,000
1945	24,590	27,450	26,630	35,230	46,380	60,610	133,100	440,900	219,900	246,100	43,470	18,650	1,323,000
1946	29,880	22,400	14,740	26,210	37,900	46,870	31,880	36,960	79,580	202,400	38,480	182,700	749,800
1947	261,200	16,500	62,290	46,120	39,170	73,240	171,100	83,810	667,700	166,000	34,760	14,600	1,645,000
1948	9,320	16,040	25,490	51,350	54,350	159,900	48,000	46,830	156,400	221,200	46,300	17,780	833,700
1949	8,460	18,940	28,630	45,960	19,000	53,100	80,570	266,600	336,500	82,100	37,550	44,880	1,223,000
1950	48,300	28,340	24,840	20,000	36,390	52,990	35,510	144,400	76,510	351,200	254,600	129,500	1,203,000

* Revised.

* Not previously published; estimated on basis of weather records.

a Only monthly figure revised; revised daily figures not available.

b Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.F. no.	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum		Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date	day	day				
1917	478	-	-	-	-	-	-	-	-
1918	478	4,830	May 24,	1918	113	598	432,000	667	483,000
1919	508	18,200	June 10,	1919	80	1,350	979,000	1,340	971,000
1920	508	-	-	-	198	884	642,000	881	640,000
1921	526	4,980	June 5,	1921	58	797	577,000	a709	a513,000
1922	546	9,340	July 27,	1922	48	a526	a453,000	a643	a465,000
1923	568	20,100	June 4,	1923	22	1,780	1,290,000	1,910	1,380,000
1924	586	5,700	July 27,	1924	126	798	578,000	862	481,000
1925	608	4,940	Feb. 13,	1925	78	603	436,000	619	448,000
1926	628	14,800	Sept. 15,	1926	90	846	613,000	898	651,000
1927	646	18,100	Apr. 19,	1927	-	1,520	1,100,000	1,500	1,080,000
1928	668	12,000	Aug. 4,	1928	-	1,390	1,010,000	1,470	1,070,000
1929	686, 1340	*8,770	Apr. 19,	1929*	70	*1,080	*782,000	*1,010	*731,000
1930	701	9,720	May 8,	1930	97	1,050	761,000	1,210	875,000
1931	718	7,430	May 6,	1931	15	828	600,000	645	467,000
1932	731	8,780	Sept. 1,	1932	64	827	600,000	794	577,000
1933	746, 1340	7,220	Apr. 24,	1933	67	*684	*496,000	*729	*528,000
1934	761, 1340	3,830	June 20,	1934	*1	*448	*324,600	*382	*276,800
1935	786	195,000	June 3,	1935	47	1,839	1,331,000	*2,003	1,450,000

* Revised.

a Only monthly figure revised; revised daily figures not available.

b May 9, July 11, 1950.

Yearly discharge, in cubic feet per second of Republican River at Clay Center, Kans.--Continued

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1936	806	8,790	May 11, 1936	34	742	538,700	587
1937	826	10,200	July 12, 1937	40	700	508,700	693
1938	856	14,800	May 17, 1938	85	873	704,400	983
1939	876	10,200	June 24, 1939	41	694	502,100	658
1940	896	7,310	June 11, 1940	28	432	313,400	483
1941	926, 1006	50,800	June 10, 1941	125	1,553	1,124,000	1,921
1942	956	17,200	Oct. 9, 1941	270	1,908	1,382,000	1,828
1943	976	27,700	June 18, 1943	102	1,174	849,800	1,054
1944	1006	22,200	Aug. 26, 1944	88	1,574	1,143,000	1,684
1945	1036	43,200	May 22, 1945	187	1,828	1,323,000	1,811
1946	1056	25,700	July 17, 1946	150	1,036	749,800	1,606
1947	1086	62,400	June 26, 1947	174	2,273	1,645,000	1,680
1948	1116	19,100	Mar. 19, 1948	131	1,148	833,700	1,156
1949	1146	18,600	June 28, 1949	127	1,689	1,223,000	1,752
1950	1176	26,600	(b)	250	1,661	1,203,000	-

b May 9, July 11, 1950.

440. Republican River at Milford, Kans.1/

Location.--Lat 39°02'37", long 96°49'32", at highway bridge at north end of Washington Street, Junction City, Geary County, about 3 miles upstream from confluence with Smoky Hill River.

Drainage area.--24,900 sq mi. approximately, of which only about 19,200 sq mi contribute directly to surface runoff.

Gage.--Staff gage. Datum of gage is 1,054.68 ft above mean sea level, datum of 1929.

Average discharge.--10 years (1895-1905) 1,416 cfs.

Extremes.--1896-1905: Maximum discharge, 115,000 cfs May 29, 1903 (gage height, 19.6 ft). From rating extended above 28,000 cfs on basis of records for stations upstream; minimum daily, 57 cfs Nov. 16, 1899.

Maximum stage known, 21.17 ft (datum in use during 1895-1905) June 3, 1935 (discharge, about 168,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	*241	a160	a3,901	*1,790	*1,880	*714	-
1896	*238	*270	*381	*356	*751	*600	*1,580	*2,466	*1,753	*2,499	*1,011	*843	*1,031
1897	*465	*638	*611	*579	*942	*659	*1,980	*1,199	*1,530	*1,830	*841	*240	*941
1898	*223	*565	*577	*754	*984	*839	*768	*2,202	*2,299	*579	*201	*153	*826
1899	*175	*245	*203	*289	*215	*1,251	*806	*1,521	*2,753	*1,373	*695	*139	*806
1900	*251	*131	*294	*476	*501	*1,509	*1,473	*1,363	*586	*396	*289	*760	*652
1901	*313	*125	*210	*278	*344	*958	*1,546	*873	*516	*265	*138	*864	*533
1902	*519	*452	*393	*585	*387	*885	*648	*2,139	*3,316	*8,673	*2,238	*1,746	*1,845
1903	*1,546	*850	*380	*327	*640	*4,282	*800	14,260	9,120	*2,809	*3,615	*978	*3,310
1904	*598	*873	*812	*894	*598	*972	*1,767	*1,633	*6,707	*4,361	*1,068	*537	*1,732
1905	*685	*794	*690	*524	*1,339	*2,018	*1,213	*3,375	*4,918	*9,002	*3,865	*1,203	*2,483
1906	*847	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; partly estimated on basis of weather records.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	*14,370	a9,810	a232,100	*110,000	*115,600	*42,510	-
1896	*14,820	*16,060	*23,410	*21,870	*43,210	*36,890	*82,080	*151,700	*104,300	*153,600	*82,190	*38,270	*748,200
1897	*28,580	*37,940	*37,580	*35,810	*52,500	*40,480	*117,800	*73,690	*91,070	*112,500	*39,430	*14,270	*681,500
1898	*13,700	*33,800	*35,500	*48,370	*54,880	*39,290	*45,580	*135,400	*136,800	*35,500	*12,560	*9,120	*597,900
1899	*10,750	*14,610	*12,500	*17,770	*11,320	*76,810	*47,950	*93,550	*162,800	*44,450	*42,600	*8,280	*583,800
1900	*15,420	*7,800	*18,090	*29,280	*27,610	*80,470	*87,670	*83,180	*34,890	*24,350	*17,800	*45,240	*472,000
1901	*19,280	*7,430	*12,920	*17,090	*19,090	*57,700	*92,000	*53,700	*30,670	*16,320	*8,490	*51,440	*386,100
1902	*31,890	*26,910	*24,150	*34,730	*21,490	*54,410	*38,580	*121,500	*197,300	*533,500	*137,500	*105,900	*1,338,000
1903	*95,030	*38,700	*23,370	*20,130	*35,520	*263,500	*47,580	*876,700	*42,900	*172,700	*222,300	*58,170	*2,396,000
1904	*36,760	*51,970	*49,930	*54,950	*34,410	*59,770	*105,100	*100,400	*399,100	*268,200	*85,030	*31,940	*1,258,000
1905	*42,120	*47,220	*42,450	*32,250	*74,360	*124,100	*72,170	*207,500	*292,500	*553,500	*237,700	*71,610	*1,798,000
1906	*52,080	-	-	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; partly estimated on basis of weather records.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

1/ Published as "at Junction City", 1895-98, and as "at Junction", 1899-1905.

Yearly discharge, in cubic feet per second of Republican River at Milford, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	1390	*14,800	June 8, 1895	-	-	-	-	-
1896	1390	*21,800	July 18, 1896	*102	*1,031	*748,200	*1,100	*798,200
1897	1390	*15,800	Apr. 24, 1897	*152	*941	*681,300	*912	*680,000
1898	1390	*10,200	May 15, 1898	*76	*826	*597,900	*764	*553,000
1899	1390	*20,100	June 4, 1899	*84	*808	*583,800	*811	*587,300
1900	1390	*5,600	Mar. 9, 1900	*57	*652	*472,000	*650	*470,300
1901	1390	*6,160	Apr. 13, 1901	*86	*533	*386,100	*593	*429,400
1902	1390	*30,800	July 12, 1902	*250	*1,845	*1,336,000	*1,947	*1,410,000
1903	1390	*115,000	May 29, 1903*	*300	*3,310	*2,396,000	*3,285	*2,378,000
1904	1390	*28,400	June 28, 1904	*278	*1,732	*1,258,000	*1,723	*1,251,000
1905	1390	*50,400	July 8, 1905	*300	*2,483	*1,798,000	-	-
1906	1390	-	-	-	-	-	-	-

* Revised.

* Not previously published.

441. Rose Creek near Wallace, Kans.

Location.--Lat 38°53', long. 101°38', in NE $\frac{1}{4}$ sec. 34, T. 13 S., R. 39 W., 1 mile upstream from mouth and $2\frac{1}{2}$ miles southwest of Wallace.

Drainage area.--28.5 sq mi.

Gage.--Water-stage recorder. Datum of gage is 3,296.11 ft above mean sea level, datum of 1929. Prior to July 11, 1947, wire-weight gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 3,870 cfs Aug. 31, 1949 (gage height, 11.00 ft), from rating curve extended above 150 cfs on basis of slope-area determination of peak flow; minimum, 0.2 cfs June 27, 1950.

Flood of 1939 or 1940 reached a stage of about 10.4 ft, from information by local resident (discharge, about 2,750 cfs).

Remarks.--Some diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	3.52	2.98	1.79	0.69	2.46	-
1947	4.10	4.24	4.35	4.0	4.56	9.15	5.72	7.98	5.18	2.77	2.31	2.54	4.75
1948	3.20	3.55	3.44	3.95	4.26	4.74	3.78	3.19	3.27	3.92	2.76	2.17	3.52
1949	2.6	3.4	3.5	3.1	3.4	3.1	5.8	7.1	15.5	2.8	*18.1	7.9	*6.4
1950	6.0	4.8	5.0	6.3	5.0	4.3	3.7	2.83	1.44	7.3	19.5	5.2	5.98

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	-	216	177	110	43	146	-
1947	252	252	268	246	253	562	340	491	308	171	142	151	3,440
1948	197	211	212	243	245	291	225	196	195	241	170	129	2,560
1949	163	202	218	188	188	190	347	436	922	173	*1,110	472	*4,610
1950	389	298	307	387	280	266	218	174	86	446	1,200	311	4,330

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	-	-	-	-	-	-	-
1947	1086	*100	May 16, 1947	1.2	4.75	3,440	4.54	3,280
1948	1116	12.2	July 17, 1948	1.7	3.52	2,560	3.47	2,520
1949	1146, 1390	3,870	Aug. 31, 1949	2	*6.4	*4,610	*6.9	*4,990
1950	1176	760	Aug. 13, 1950	.4	5.98	4,330	-	-

* Revised.

442. North Fork Smoky Hill River near McAllaster, Kans.

Location.--Lat 39°01', long. 101°22', in NW $\frac{1}{4}$ sec. 18, T. 12 S., R. 36 W., $1\frac{1}{4}$ miles north-east of McAllaster on U. S. Highway 40 in Logan County.

Drainage area.--670 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 3,086.02 ft above mean sea level, datum of 1929. Prior to July 18, 1947, wire-weight gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 4,110 cfs June 5, 1949, and Aug. 11, 1950, from rating curve extended above 500 cfs on basis of contracted-opening determination at gage height 10.95 ft (June 6, 1951); maximum gage height, 8.65 ft Aug. 11, 1950; no flow on many days each year.

Maximum stage known, about 16.0, date unknown, from information by local resident.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	*3	*3.5	*1.5	1.8	1.4	2.8	2.3	3.8	2.48	0.28	0	0	*1.89
1948	0	0	0	.25	.68	1.8	2.0	1.22	*24.3	*2.73	*8.10	.02	*3.47
1949	.003	.81	1.36	.70	1.99	3.58	2.68	2.35	69.5	3.47	8.58	11.2	8.78
1950	5.3	2.1	1.3	1.4	1.7	2.0	1.5	.87	.19	.49	62.6	2.1	6.89

* Revised.

* Not previously published; estimated on basis of weather records.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	*184	*198	*91	111	81	171	139	220	147	16	0	0	*1,360
1948	0	0	0	15	51	110	121	75	*1,480	*168	*498	1.2	*2,520
1949	.2	48	64	43	110	220	159	145	4,140	214	528	669	6,360
1950	325	123	81	83	95	123	87	53	11	30	3,850	125	4,990

* Revised.

* Not previously published; estimated on basis of weather records.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1947	1118	*107	May 16, 1947	*0	*1.89	*1,370	1.22	885	
1948	1116, 1440	*970	June 25, 1948	0	*3.47	*2,520	*3.66	*2,650	
1949	1146	4,110	June 5, 1949	0	8.78	8,360	9.33	6,780	
1950	1176	4,110	Aug. 11, 1950	0	6.89	4,990	-	-	

* Revised.

* Not previously published.

443. Smoky Hill River at Elkader, Kans.

Location.--Lat 38°48', long 100°51', in sec. 34, T. 14 S., R. 32 W., at bridge on U. S. Highway 83 at Elkader, 0.1 mile downstream from Ladder Creek, 24 miles north of Scott City, and at mile 430.9.

Drainage area.--3,555 sq mi.

Gage.--Water-stage recorder (high water only) and wire-weight gage. Datum of gage is 2,624.62 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 39.7 cfs.

Extremes.--1939-50: Maximum discharge, 10,500 cfs (revised) Oct. 7, 1946 (gage height, 7.55 ft); no flow at times during 1940-48.

Maximum stage known, 13.2 ft May 30, 1938, from floodmark (discharge, 71,000 cfs, slope-area determination of peak flow).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	6.2	5.9	3.4	5.8	6.3	114	75.7	60.3	23.3
1941	4.7	1.6	1.0	5.8	11.7	6.8	23.2	43.9	518	596	66.6	10.8	108
1942	8.4	13.6	11.4	15.0	25.4	22.6	111	47.8	51.3	11.3	10.5	*1.1	27.3
1943	4.5	4.4	8.2	9.0	10.8	11.7	16.5	10.9	4.6	.8	1.7	0	6.9
1944	0	0	.8	6.7	5.0	4.5	47.1	80.5	14.3	20.8	4.4	1.5	15.5
1945	6.3	4.5	5.2	4.8	7.9	6.8	4.6	4.1	11.5	2.6	35.2	0	7.8
1946	0	.6	1.0	1.0	.7	1.0	1.0	1.5	7.7	128	.7	.2	12.1
1947	624	30.2	18.3	5.9	12.8	45.4	27.4	44.8	57.5	10.8	4.5	0	74.3
1948	0	.33	6.1	3.5	5.8	15.6	8.5	2.4	69.8	25.2	33.6	.39	14.2
1949	.3	4.0	4.3	2.6	8.3	10.2	9.2	37.8	325	39.8	74.3	158	55.8
1950	41.2	21.7	16.8	17.6	21.6	13.2	14.0	10.0	4.8	274	580	65.2	91.3

Monthly and yearly runoff, in acre-feet of Smoky Hill River at Elkader, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	359	363	200	355	373	7,000	4,660	3,590	16,900
1941	290	95	60	357	649	420	1,380	2,700	30,830	36,670	4,090	643	78,180
1942	516	811	698	920	1,410	1,390	6,800	2,940	3,050	692	843	87	19,740
1943	280	260	504	551	591	718	980	672	272	52	103	0	4,980
1944	0	0	49	415	286	276	2,800	4,950	851	1,280	288	97	11,280
1945	367	268	321	298	436	419	272	250	684	161	2,160	0	5,650
1946	0	36	61	61	40	60	60	95	458	7,850	44	12	8,780
1947	38,400	1,800	1,000	365	700	2,790	1,630	2,760	3,420	668	280	0	53,810
1948	0	20	373	216	331	960	506	147	4,150	1,550	2,060	23	10,340
1949	18	236	266	163	462	629	549	2,320	19,330	2,450	4,570	9,380	40,370
1950	2,530	1,290	1,030	1,080	1,200	809	831	615	288	16,840	35,670	3,880	66,060

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	928	3,770	July 1, 1940	0	23.3	16,900	23.9	17,340
1941	928	*8,000	July 2, 1941	0	108	78,180	110	79,780
1942	956	1,780	Apr. 18, 1942	0	27.3	19,740	25.9	18,780
1943	978	201	Aug. 10, 1943	0	6.9	4,980	5.5	3,990
1944	1008	738	May 1, 1944	0	15.5	11,280	16.8	12,190
1945	1036	1,720	Aug. 6, 1945	0	7.8	5,650	6.6	4,780
1946	1058	5,170	July 19, 1946	0	12.1	8,780	68.9	49,880
1947	1086	*10,500	Oct. 7, 1946	0	74.3	53,810	18.0	13,000
1948	1116	1,270	July 16, 1948	0	14.2	10,340	14.4	10,460
1949	1146	*5,620	June 7, 1949	.2	55.8	40,370	61.8	44,700
1950	1176	5,840	July 30, 1950	1	91.3	66,060	-	-

* Revised.

444. Hackberry Creek near Gove, Kans.

Location.--Lat 38°57', long. 100°29', in sec. 1, T. 13 S., R. 29 W., at bridge on State Highway 23, half a mile south of Gove.

Drainage area.--426 sq mi.

Gage.--Water-stage recorder. Datum of gage is 2,592.72 ft above mean sea level, datum of 1929. Prior to Mar. 3, 1948, wire-weight gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 6,800 cfs Aug. 7, 1950 (gage height, 15.33 ft); no flow at times each year.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	1.17	1.76	4.23	2.10	2.25	27.3	1.61	0.03	0	-
1948	0	0	0.01	.01	0	.52	.18	.14	60.1	28.2	14.9	1.4	8.77
1949	.29	.41	.28	.05	6.8	9.5	2.19	17.4	42.9	4.1	76.5	2.31	13.6
1950	3.22	.82	.69	.55	.98	.88	.60	4.4	1.2	93.2	452	11.3	48.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	0	-	72	98	260	125	138	1,630	99	2	0	-
1948	0	0	0.4	.6	0	32	11	8.5	3,580	1,740	915	83	6,370
1949	18	25	17	3.2	377	587	131	1,070	2,550	254	4,700	137	9,870
1950	198	49	43	34	54	54	36	270	72	5,730	27,790	672	35,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1116	-	-	0	-	-	3.34	2,420
1948	1116	1,610	June 28, 1948	0	8.77	6,370	8.85	6,430
1949	1146	2,110	May 20, 1949	0	13.6	9,870	14.0	10,100
1950	1176	6,800	Aug. 7, 1950	0	46.3	35,000	-	-

* Not previously published.

445. Smoky Hill River near Ransom, Kans.

Location.--Lat 38°47', long. 99°54', in SW $\frac{1}{4}$ sec. 33, T. 14 S., R. 23 W., at bridge on U. S. Highway 283 at headwaters of Cedar Bluffs Reservoir, and 11 miles north of Ransom.

Drainage area.--5,370 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 2,139.26 ft above mean sea level (from stages in Cedar Bluffs Reservoir 1951). Prior to Mar. 30, 1950, wire-weight gage at same site and datum.

Extremes.--February to September 1950: Maximum discharge, 12,900 cfs, July 31, 1950 (gage height, 10.15 ft); minimum, not determined.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	36.6	21.3	18.5	55.1	16.2	928	1,730	133	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	2,030	1,310	1,100	3,390	962	57,090	106,300	7,910	-

446. Smoky Hill River near Ellis, Kans.

Location.--Lat 38°46', long. 99°34', on line between secs. 4 and 5, T. 15 S., R. 20 W., at bridge 11.5 miles south of Ellis, and at mile 346.3.

Drainage area.--5,630 sq mi, approximately.

Supplemental records available.--Records of suspended sediment loads for the period March 1947 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,992.73 ft above mean sea level (levels by Bureau of Reclamation). Prior to June 20, 1942, wire-weight gage at same site and datum.

Average discharge.--8 years (1942-50), 105 cfs.

Extremes.--1942-50: Maximum discharge, 11,600 cfs (revised) May 2, 1944 (gage height, 10.70 ft); no flow at times during 1943, 1946. Flood of May 30, 1938 reached a stage about 6 ft higher than that of May 2, 1944.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	46.5	39.2	50.7	566	152	281	38.2	61.4	23.7	-
1943	21.3	10.4	12.8	13.4	28.4	21.7	56.6	23.2	20.7	8.2	5.0	26.6	20.4
1944	1.0	1.7	1.7	6.5	13.2	21.5	87.5	566	69.5	159	119	15.7	89.5
1945	12.7	12.2	23.4	15.7	18.2	12.7	27.0	43.3	29.8	12.7	31.9	2.3	20.2
1946	2.7	2.0	.8	3.5	4.3	16.1	3.0	8.1	49.7	147	22.2	211	39.2
1947	1,178	157	61.1	53.3	46.8	77.0	83.5	98.3	111	42.2	11.7	1.8	182
1948	1.88	5.9	10.3	5.7	9.0	30.0	12.6	5.5	119	146	243	15.9	50.7
1949	6.5	9.0	10.9	4.4	25.9	55.7	31.9	275	979	109	158	165	170
1950	63.1	34.8	33.8	28.9	46.6	29.8	21.2	80.2	25.7	882	2,024	165	291

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	2,860	2,180	3,120	33,650	9,560	16,700	2,350	3,770	1,410	-
1943	1,310	617	787	821	1,580	1,330	3,370	1,430	1,230	379	307	1,580	14,740
1944	61	103	107	403	758	1,320	5,210	34,820	4,130	9,800	7,320	934	64,970
1945	781	728	1,440	964	1,010	783	1,610	2,660	1,770	783	1,960	139	14,630
1946	167	119	40	214	238	988	179	496	2,960	9,020	1,360	12,580	28,360
1947	72,440	9,320	3,750	3,280	2,600	4,730	4,970	6,040	6,580	2,590	718	105	117,100
1948	115	353	631	353	520	1,840	752	335	7,060	9,000	14,940	944	36,840
1949	399	534	672	268	14,370	3,430	1,900	16,900	58,240	6,700	9,680	9,830	122,900
1950	3,880	2,070	2,080	1,780	2,590	1,830	1,260	4,930	1,530	54,220	124,400	9,810	210,400

KANSAS RIVER BASIN

Yearly discharge, in cubic feet per second of Smoky Hill River near Ellis, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1942	976,1440	*8,980	Apr. 19, 1942	-	-	-	108	78,110
1943	976	1,750	Sept. 4, 1943	0	20.4	14,740	17.0	12,500
1944	1006,1440	*11,800	May 2, 1944	*1	89.5	64,970	93.2	67,840
1945	1036	570	Aug. 6, 1945	1	20.2	14,630	16.6	12,000
1946	1056,1440	4,600	Sept. 7, 1946*	0	39.2	28,360	157	113,500
1947	1086	9,860	Oct. 5, 1946	1	162	117,100	45.2	32,710
1948	1116,1440	*2,940	Aug. 3, 1948	.3	50.7	36,840	51.4	37,350
1949	1146,1440	6,450	June 8, 1949	*1	170	122,900	179	129,400
1950	1176	11,100	July 31, 1950	4	291	210,400	-	-

* Revised.

† Not previously published.

447. Smoky Hill River at Pfeifer, Kans.

Location.--Lat 38°43', long 99°09', in SW $\frac{1}{4}$ sec. 30 (revised) T. 15 S., R. 16 W., on highway bridge 1 mile east of Pfeifer, 9 miles south of Victoria, and at mile 314.8.

Drainage area.--6,070 sq mi, approximately.

Gage.--Chain gage. Altitude of gage is 1,825 ft (from river-profile map).

Extremes.--1929 to June 1932: Maximum discharge, 6,750 cfs May 11, 1929 (gage height, 12.0 ft, revised); minimum daily, 1 cfs Jan. 13-22, 1930.
Maximum flood known occurred May 30, 1938, (stage and discharge not determined).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	*34.6	24.3	280	32.1	103	14.0	37.1	-
1930	33.3	26.9	17.9	8.7	20.5	*15.0	12.2	64.6	*431	77.9	93.3	84.3	*73.5
1931	*625	230	94.1	56.0	45.7	51.6	240	182	137	79.2	27.7	7.3	*149
1932	9.8	11.9	17.2	7.6	17.8	24.7	19.3	20.7	*183	-	-	-	-

* Revised.

† Not previously published; estimated on basis of weather records and records for station at Ellsworth.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	*2,130	1,450	17,200	1,910	6,330	861	2,210	-
1930	2,050	1,600	1,100	537	1,140	*920	726	3,970	*25,700	4,790	5,740	5,020	*53,300
1931	*58,500	13,700	5,780	3,450	2,540	3,180	14,300	11,200	8,150	4,870	1,710	434	*108,000
1932	603	708	1,060	464	1,030	1,520	1,150	1,270	*10,900	-	-	-	-

* Revised.

† Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	886	6,750	May 11, 1929	-	-	-	-	-
1930	701, 1440	*3,560	June 6, 1930	*1	*73.5	*53,300	*147	*107,000
1931	716, 1440	*4,160	Oct. 13, 1930	3	*149	*108,000	72.1	52,200
1932	731, 1440	-	-	-	-	-	-	-

* Revised.

† Not previously published.

448. Big Creek near Hays, Kans.

Location.--Lat 38°51', long. 99°19', in SW $\frac{1}{4}$ sec. 10, T. 14 S., R. 18 W., at highway bridge half a mile upstream from Custer Island Park dam, 3 miles southeast of Hays, and 25 miles upstream from mouth.

Drainage area.--594 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,955.13 ft above mean sea level, datum of 1929. Prior to Nov. 20, 1947, wire-weight gage.

Extremes.--1946-50: Maximum discharge, 6,380 cfs (revised) Oct. 6, 1946 (gage height, 19.65 ft); no flow at times in 1946, 1948-50.

Monthly and yearly mean discharge, in cubic feet per second of Big Creek near Hays, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	+2.9	3.17	4.56	4.26	17.6	93.3	-
1947	465	53.4	13.0	11.0	7.5	11.9	19.7	21.2	318	8.6	1.79	1.47	78.0
1948	.55	2.52	3.80	2.69	2.01	9.39	5.54	3.81	36.0	168	46.2	6.19	24.1
1949	2.11	4.53	6.27	2.4	113	23.2	13.4	37.1	170	23.9	29.1	9.80	35.5
1950	7.86	6.17	5.37	5.35	4.86	6.22	4.88	58.0	5.16	121	266	25.7	43.8

* Not previously published; estimated on basis of weather records and record for Smoky Hill River near Ellis, Kans.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	+173	195	272	262	1,080	5,550	-
1947	28,580	3,180	801	674	417	730	1,170	1,310	18,910	532	110	87	56,500
1948	34	150	233	166	116	577	330	234	2,140	10,320	2,840	369	17,510
1949	130	270	385	145	6,300	1,420	796	2,280	10,100	1,470	1,790	583	25,670
1950	483	367	330	329	270	382	291	3,570	307	7,460	16,380	1,530	31,700

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056	2,220	Sept. 30, 1946	#0	-	-	-	-	-
1947	1098	*6,380	Oct. 6, 1946	.5	78.0	56,500	33.6	24,360	
1948	1116	1,250	July 15, 1948	0	24.1	17,510	24.6	17,880	
1949	1146	1,690	June 29, 1949	0	35.5	25,670	36.0	26,060	
1950	1176	2,550	July 26, 1950	0	43.8	31,700	-	-	

* Revised.

* Not previously published.

449. Smoky Hill River near Russell, Kans.

Location.--Lat 38°47', long 98°51', in NW¼ sec. 2, T. 15 S., R. 14 W., at bridge on U. S. Highway 281, a quarter of a mile upstream from Landon Creek, 7.7 miles south of Russell, and at mile 287.0.

Drainage area.--6,965 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,689.05 ft above mean sea level, datum of 1929. Prior to Sept. 11, 1940, wire-weight gage at same site and datum.

Average discharge.--11 years (1939-50), 207 cfs.

Extremes.--1939-50: Maximum discharge, 17,400 cfs (revised) June 18, 1942 (gage height, 18.70 ft); no flow at times during 1940, 1943.

Flood of May 30, 1938 reached a stage of about 29.0 ft (revised) from floodmarks, (discharge about 70,000 cfs from rating curve extended above 37,500 cfs by logarithmic plotting).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	*2.2	2.3	2.0	1.6	4.8	9.1	5.5	31.5	54.3	497	327	215	*96.8
1941	52.3	46.0	27.3	23.4	26.3	31.2	47.2	154	1,586	1,193	508	210	326
1942	125	67.2	41.6	52.2	64.7	59.9	885	312	1,336	123	177	78	275
1943	36.8	32.4	33.2	32.6	52.2	41.4	86.9	30.8	54.0	10.5	7.6	33.8	37.4
1944	3.7	2.4	3.0	9.8	19.3	40.5	389	1,092	147	678	528	116	255
1945	42.4	28.7	44.4	43.3	41.3	31.6	44.8	228	559	85.7	30.4	8.7	98.8
1946	8.0	8.1	6.0	13.8	12.9	21.6	12.5	22.9	39.8	116	41.0	423	60.1
1947	1,774	290	106	68.3	67.0	98.9	157	191	883	99.1	22.6	4.9	315
1948	3.1	11.1	17.0	11.1	17.3	61.3	33.7	24.4	122	523	267	45.8	97.3
1949	14.5	22.9	22.1	20.1	71.6	150	73	344	1,453	236	180	203	473
1950	359	57.2	46.4	37.1	63.4	49.3	33.5	198	50.4	720	3,157	394	437

* Not previously published; estimated on basis of weather records for station at Ellsworth.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	*133	135	123	101	278	559	327	1,930	3,230	30,550	20,100	12,820	*70,290
1941	3,220	2,740	1,680	1,440	1,460	1,920	2,810	9,480	94,360	73,350	31,210	12,500	236,200
1942	7,660	4,000	2,560	3,210	3,590	3,680	52,680	19,200	79,500	7,560	10,880	4,640	199,200
1943	2,260	1,930	2,040	2,010	2,900	2,540	5,170	1,890	3,210	645	468	2,010	27,070
1944	228	145	186	601	1,110	2,490	23,140	67,130	8,730	41,670	32,490	6,930	184,800
1945	2,610	1,710	2,730	2,660	2,290	1,940	2,660	14,040	33,240	5,270	1,870	516	71,540
1946	492	490	371	851	718	1,330	744	1,410	2,370	7,110	2,520	25,150	43,540
1947	109,100	17,230	6,510	4,200	3,720	6,080	9,330	11,730	52,520	6,090	1,390	290	228,200
1948	191	660	1,050	682	998	3,770	2,010	1,500	7,240	32,180	17,650	2,730	70,660
1949	893	1,360	1,360	1,240	39,790	9,250	4,340	21,040	86,450	14,490	11,050	12,090	203,400
1950	22,100	3,400	2,850	2,280	3,410	3,030	1,990	12,190	3,000	44,250	194,100	23,420	316,000

* Not previously published; estimated on basis of weather records for station at Ellsworth.

Yearly discharge, in cubic feet per second of Smoky Hill River near Russell, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	896	5,640	July 3, 1940	0	*96.8	*70,290	107	77,540
1941	928,1340	*12,800	June 10, 1941	13	328	236,200	335	242,800
1942	956,1340	*17,400	June 18, 1942	7	275	199,200	264	191,200
1943	976	1,280	Sept. 4, 1943	0	37.4	27,070	29.6	21,400
1944	1006,1340	*12,000	May 3, 1944	2	255	184,800	284	191,500
1945	1036,1340	*8,160	June 24, 1945*	5	98.8	71,540	90.9	65,830
1946	1056	7,070	Sept. 8, 1946	4	60.1	43,540	242	175,000
1947	1086	12,600	Oct. 8, 1946	2	315	228,200	134	97,250
1948	1116	1,830	July 17, 1948	1.5	97.3	70,660	99.7	72,370
1949	1146	8,130	June 8, 1949	-	281	203,400	315	228,100
1950	1176,1340	*11,800	Aug. 14, 1950*	16	437	316,000	-	-

* Revised.

* Not previously published.

450. Smoky Hill River at Ellsworth, Kans.

Location.--Lat 38°44', long 98°14' in SE¹ sec. 20, T. 15 S., R. 8 W., at bridge on State Highway 14 in Ellsworth, 2 miles downstream from Turkey Creek, and at mile 238.0.

Drainage area.--7,580 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,509.02 ft. (revised) above mean sea level, datum of 1929. Prior to Oct. 31, 1905 staff gage at present site at datum 1.61 ft higher. July 23, 1918, to July 4, 1925, and Aug. 1, 1928, to Nov. 29, 1939, chain or wire-weight gages at present site and datum.

Average discharge.--38 years (1895-1905, 1918-24, 1928-50), 219 cfs (revised).

Extremes.--1895-1905, 1918-25, 1928-50: Maximum discharge, 61,000 cfs June 1, 1938 (gage height, 27.2 ft. from flood-marks); minimum observed, 1 cfs (revised) July 28, 29, Aug. 4-7, 1901.

Flood in August 1927 reached a stage of 25.7 ft. from floodmarks (discharge, 44,800 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	*12.4	1,060	1,694	*212	*46.1	-
1896	*19.5	*18.6	*18.4	*169	*17.2	*17.2	*121	*34.5	*353	*255	*145	*77.0	*91.0
1897	*66	*74	*59	*55	*107	35	158	173	87	38	95	*45	*81
1898	*55	*42	*22	*28	*58	*28	20	136	281	43	*24	*128	*70
1899	*27.9	*11.9	*7.9	*25.0	*5.3	*29.1	*23.4	*11.4	*514	*902	*181	*62.0	*151
1900	*43	*46	*26	*28	*10	*52	156	147	241	117	47	140	*68
1901	78	28	*19	*17	*12	33	124	47	48	*5	*45	62	*43
1902	36	11	*14	*20	*20	39	18	87	821	891	1,020	1,030	*355
1903	588	125	*40	*34	*51	431	182	2,700	948	180	735	81	*514
1904	58	70	*40	*32	a26	*44	*41	*215	*307	*1,020	*178	*66	*176
1905	*79.9	*36.1	*31.2	*19.9	*54.5	*52.5	*25.6	*599	*422	*825	*427	*28.0	*202
1906	*18.5	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	64.1	36.1	*284
1919	86.8	57.9	46.0	48.6	87.9	182	537	925	846	160	74.5	*352	*88.5
1920	170	107	81.1	115	74.6	52.9	75.4	171	65.7	34.1	56.6	55.0	-
1921	24.0	47.6	38.0	61.5	40.8	26.4	75.1	70.6	254	*275	63.4	17.7	*83.0
1922	65.1	14.0	19.0	18.1	28.3	52.6	772	218	130	210	44.7	69.8	126
1923	10.1	21.7	14.3	18.2	17.5	19.1	11.0	332	801	284	430	641	219
1924	351	139.7	95.1	76.3	110	116	234	120	81.6	57.7	121	42.6	127
1925	25.2	23.5	17.2	67.6	71.3	44.2	368	77.1	190	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	1,910	148	-
1929	94.6	107	85.1	67.5	59	92.4	71.3	190	230	869	165	91.2	264
1930	67.9	68.2	64.2	29.6	63.8	49.9	36.0	247	1,240	144	342	276	218
1931	676	317	162	104	81.0	87.4	594	279	245	109	51.3	19.3	228
1932	20.6	31.2	31.8	27.9	48.9	53.5	40.4	60.9	285	361	246	1,070	189
1933	79.8	47.6	41.9	37.4	34.5	32.7	34.0	75.2	35.7	139	952	1,140	221
1934	136	82.9	94.7	56.0	45.9	49.6	37.5	105	843	77.6	44.0	144	142
1935	20.6	16.9	16.1	16.6	16.1	16.4	16.3	1,543	3,223	827	126	185	502
1936	167	71.3	46.1	33.2	37.1	40.0	37.8	442	468	32.6	13.6	35.0	119
1937	22.1	18.9	15.3	4.3	81.5	29.2	16.1	23.8	288	541	156	269	122
1938	43.4	26.5	18.7	18.1	20.1	51.3	70.7	1,282	5,561	289	300	217	468
1939	32.9	34.0	22.6	22.9	19.3	45.6	214	36.7	711	247	225	21.7	136
1940	7.5	9.4	8.2	6.2	10.4	16.4	11.0	50.3	54.4	436	248	360	102
1941	77.5	61.5	36.1	29.4	31.3	35.8	53.9	136	1,755	1,213	765	852	421
1942	469	131	70.1	71.4	82.4	87.5	988	393	1,773	187	237	217	390.9
1943	61.1	42.6	44.2	46.1	65.0	51.3	148	57.8	152	47.4	19.7	62.3	66.1
1944	33.4	10.6	8.7	13.9	26.0	49.0	606	1,390	243	957	821	233	352
1945	744	45.1	51.4	47.9	52.6	47.5	118	817	828	179	57.7	30.6	196

* Revised.

* Not previously published.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b Rounded.

Monthly and yearly mean discharge, in cubic feet per second of Smoky Hill River at
Elsworth, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	20.1	19.1	17.0	25.3	23.0	29.2	27.2	45.5	41.1	131	46.4	849	89.0
1947	1,769	407	129	77.9	80.8	98.2	277	236	964	157	54.2	13.8	357
1948	7.5	13.1	20.9	12.6	54.6	200	53.0	39.5	155	733	357	79.5	145
1949	27.6	37.2	39.0	61.9	822	213	94.7	348	1,795	351	182	209	342
1950	414	81.3	55.7	39.3	68.7	67.5	44.9	245	271	1,561	3,300	490	561

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1895	-	-	-	-	-	-	-	*760	*63,090	*54,200	*13,010	*2,740	-
1896	*1,200	*1,110	*1,130	*1,040	*988	*1,060	*7,200	*2,120	*21,020	*15,660	*8,940	*4,580	*66,050
1897	*4,040	*4,390	*2,420	*3,370	*5,930	a2,160	a9,400	10,600	15,170	a2,340	a5,850	*2,830	*58,500
1898	*2,180	*2,500	*1,370	*1,570	*3,220	*1,720	1,190	a8,360	a16,700	a2,640	*1,460	*7,590	*50,500
1899	*1,720	*708	*488	*1,540	*294	*1,790	*1,390	*698	*50,580	*55,440	*11,160	*3,690	*109,500
1900	*2,640	*2,740	*1,740	*1,710	*579	*3,200	a9,280	a9,040	a14,300	a7,190	2,890	a8,530	*53,600
1901	a4,800	a1,670	*1,170	*1,040	*668	a2,030	a7,380	2,890	a2,860	*313	*2,780	a3,690	*31,300
1902	a2,210	a655	*883	*1,250	*1,080	a2,400	a1,070	a5,350	a48,800	a54,800	a62,800	a61,500	*243,000
1903	a36,200	a7,440	*2,480	*2,100	*2,840	a28,500	a10,800	168,000	56,400	a11,000	a45,200	4,820	*372,000
1904	a3,570	a4,160	*2,480	b1,970	b1,470	*2,690	*2,450	*13,200	*18,300	*62,800	*11,000	*3,900	*128,000
1905	*4,910	*2,150	*1,920	*1,220	*3,030	*3,230	*1,530	*24,540	*25,120	*50,750	*26,240	*1,670	*146,300
1906	*1,010	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	3,940	2,150	-
1919	5,340	3,450	2,830	3,000	4,880	11,200	32,000	*58,900	50,300	9,840	4,580	*21,000	*205,000
1920	10,500	6,370	4,990	7,070	4,290	3,250	4,490	10,500	3,910	2,100	3,480	3,270	64,200
1921	1,480	2,840	2,430	3,780	2,270	1,820	4,470	4,340	15,100	*16,900	3,900	1,050	*60,100
1922	312	833	1,170	1,110	1,570	3,230	45,900	13,400	7,740	12,900	2,750	564	91,500
1923	821	1,290	879	1,120	972	1,170	655	20,400	47,700	17,500	28,400	38,100	157,000
1924	21,800	8,030	5,850	4,690	6,330	7,130	13,900	7,380	4,880	3,510	7,440	2,550	93,300
1925	1,550	1,400	1,060	468	3,960	2,720	21,900	4,740	11,300	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	117,000	8,410	-
1929	5,820	6,370	5,230	4,150	3,280	5,680	4,240	73,200	13,700	53,400	10,100	5,430	191,000
1930	4,180	4,060	3,950	1,820	3,540	3,070	2,140	15,200	73,800	8,850	21,000	16,400	158,000
1931	41,500	18,900	9,940	6,400	4,500	5,380	35,400	17,200	14,600	6,720	3,150	1,150	165,000
1932	1,270	1,850	1,960	1,710	2,870	3,290	2,410	3,740	16,900	22,200	15,100	63,900	137,000
1933	4,910	2,850	2,580	2,300	1,920	2,010	2,020	4,620	2,120	8,530	58,500	67,800	180,000
1934	8,360	4,830	5,820	3,450	2,550	3,060	2,230	6,440	50,150	4,770	2,700	8,590	103,000
1935	1,270	984	990	1,020	1,000	1,010	972	94,870	191,800	50,840	7,720	11,010	363,500
1936	10,290	4,240	2,830	2,040	2,130	2,460	2,250	27,190	27,840	2,020	839	2,080	86,200
1937	1,360	1,120	942	266	4,530	1,790	960	1,470	17,160	33,290	9,570	16,000	88,460
1938	2,670	1,580	1,150	1,110	1,110	1,930	4,210	78,820	211,900	17,780	18,440	12,890	353,600
1939	2,020	2,030	1,400	1,410	1,070	2,810	12,730	2,260	42,320	15,200	13,840	1,290	98,380
1940	460	561	506	379	599	1,130	657	3,090	3,240	26,800	15,220	21,430	74,070
1941	4,770	3,660	2,220	1,800	1,740	2,200	3,210	8,360	104,400	74,580	47,030	50,700	304,700
1942	28,840	7,790	4,310	4,390	4,580	5,380	58,770	24,190	105,500	11,480	14,580	12,900	282,700
1943	3,750	2,530	2,720	2,830	3,610	3,160	8,800	3,550	9,040	2,920	1,210	3,710	47,840
1944	2,050	633	536	857	1,500	3,010	36,080	85,470	14,470	58,860	38,160	13,660	255,500
1945	4,580	2,690	3,160	2,950	2,920	2,920	7,010	50,230	49,250	10,990	3,550	1,820	142,100
1946	1,230	1,130	1,050	1,560	1,280	1,800	1,820	2,790	2,440	8,030	2,850	38,640	164,420
1947	108,700	24,220	7,930	4,790	4,490	5,040	16,470	14,530	57,380	9,650	3,330	829	258,400
1948	458	780	1,290	774	3,140	12,270	3,150	2,430	9,220	45,100	21,970	4,730	105,300
1949	1,700	2,210	2,400	3,780	45,650	13,090	5,630	21,390	106,700	21,570	11,180	12,460	247,800
1950	25,480	4,840	3,420	2,420	3,810	4,150	2,670	15,050	16,120	96,010	202,900	29,190	406,100

* Revised.

† Corrected.

* Not previously published.

a Rounded.

b Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River

Yearly discharge, in cubic feet per second of Smoky Hill at Ellsworth, Kans.								
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1895	1440	*26,000	July 5, 1895	-	-	-	-	-
1896	1440	*4,550	June 7, 1896	*12	*91.0	*66,050	*101	*73,460
1897	1440	*545	Apr. 4, 1897	15	*81	*58,500	*74	*50,700
1898	1440	*1,100	May 29, 1898	*3	*70	*50,500	*66	*47,400
1899	1440	*12,400	July 8, 1899	*2	*151	*109,500	*157	*113,700
1900	1440	*750	July 2, 1900	*5	*88	*63,600	*89	*64,200
1901	75,1440	*682	Apr. 11, 1901	*1	*43	*31,300	*38	*27,400
1902	84,1440	*12,400	Sept. 24, 1902	8	*335	*243,000	*394	*285,000
1903	(a)	*18,600	May 29, 1903	*30	*514	*372,000	*464	*336,000
1904	1440	*8,750	July 6, 1904	*22	*176	*128,000	*175	*127,000
1905	1440	*6,630	June 30, 1905	*10	*200	*146,300	-	-
1906	1440	-	-	-	-	-	-	-
1918	478	-	-	-	-	-	-	-
1919	506,1440	*b5,000	May 5, 1919	*29	*284	*205,000	*298	*216,000
1920	506	*c735	May 23, 1920	*8	88.5	64,200	67.6	49,000
1921	526,1440	*b2,410	July 6, 1921	6	*83.0	*60,100	*77.0	*55,700
1922	546	b12,900	Apr. 24, 1922	2	126	91,500	127	92,000
1923	566,1176	b7,880	Sept. 19, 1923	1.6	217	157,000	262	189,000
1924	586	b1,350	Aug. 22, 1924	22	129	93,300	85.2	61,800
1925	606	b2,560	Apr. 3, 1925	-	-	-	-	-
1928	666	18,800	Aug. 4, 1928	-	-	-	-	-
1929	686,1440	*15,200	May 12, 1929	-	264	*191,000	256	183,000
1930	701,1440	*13,600	June 5, 1930	-	218	158,000	299	216,000
1931	716	3,580	Oct. 8, 1930	12	228	165,000	137	99,600
1932	731	8,470	Sept. 12, 1932	14	189	137,000	196	142,000
1933	746	7,260	Sept. 1, 1933	21	221	160,000	233	168,900
1934	761	7,630	June 19, 1934	14	142	103,000	120	87,180
1935	786	12,800	June 29, 1935	12	502	363,500	522	377,600
1936	806,1440	*4,320	May 10, 1936	10	119	86,200	99.6	72,270
1937	826,1440	*4,320	July 14, 1937	2	122	88,460	125	90,440
1938	856	61,000	June 1, 1938	14	498	353,600	488	353,600
1939	876	9,100	June 16, 1939	13	136	99,380	130	94,460
1940	896	4,680	July 4, 1940	3	102	74,070	115	83,200
1941	926	18,300	Sept. 2, 1941	16	421	304,700	463	335,000
1942	956	17,000	June 19, 1942	11	390	282,700	346	250,800
1943	976	3,840	June 16, 1943	4	66.1	47,840	58.1	42,050
1944	1006	12,900	May 4, 1944	5	352	255,500	362	262,700
1945	1036	13,100	May 21, 1945	19	196	142,100	187	135,000
1946	1056	5,680	Sept. 9, 1946	13	89.0	*64,420	279	201,900
1947	1086	11,200	Oct. 10, 1946	7	357	258,400	166	120,000
1948	1116	3,780	July 17, 1948	6	145	105,300	150	109,100
1949	1146	11,000	June 9, 1949	15	342	247,800	380	275,200
1950	1176	13,300	July 19, 1950	19	561	406,100	-	-

* Revised.

† Corrected.

‡ Not previously published.

a WSP 99, 796-B, 1440.

b Maximum observed.

c Maximum daily discharge.

451. Kanopolis Reservoir near Kanopolis, Kans.

Location.--Lat 38°37', long. 97°58', in NE $\frac{1}{4}$ sec. 3, T. 17 S., R. 6 W., in shaft of control tower at dam on Smoky Hill River, 12 miles southeast of Kanopolis, 25 miles southwest of Salina, and 207.8 miles upstream from mouth of Smoky Hill River.

Drainage area.--7,857 sq mi.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929.

Extremes.--1943-50: Maximum contents, 248,400 acre-ft, Sept. 1-2, 1950 (elevation, 1,491.03 ft); minimum contents since conservation pool was first filled, 38,330 acre-ft Feb. 5, 1950 (elevation, 1,454.44 ft).

Remarks.--Reservoir is formed by earth-fill dam; storage began Feb. 17, 1948, and dam was completed in same year. Capacity, 450,000 acre-ft between elevations 1,415 ft (sill of outlet gate) and 1,508 ft. Crest of uncontrolled spillway is at elevation 1,507 ft. Storage capacity of 397,000 acre-ft above elevation 1,459 ft is provided for flood control. Storage capacity of 53,000 acre-ft below elevation 1,459 ft is provided for conservation and recreation.

Cooperation.--Elevations and contents furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1948	-	-	-	-	3,020	3,770	4,140	5,460	16,630	64,530	55,930
1949	53,340	53,380	53,000	64,040	98,060	54,240	52,440	89,680	71,670	64,530	60,040
1950	63,240	61,830	42,260	38,580	39,300	41,240	41,580	53,680	60,840	138,700	173,600

452. Smoky Hill River near Langley, Kans.

Location.--Lat 38°37', long 97°57', in SE $\frac{1}{4}$ sec. 35, T. 16 S., R. 6 W., at county highway bridge, 0.6 mile downstream from Kanopolis Dam, 5 miles north of Langley, and at mile 207.2.

Drainage area.--7,857 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,402.66 ft above mean sea level (Corps of Engineers benchmark).

Average discharge.--7 years (1940-47), 307 cfs (before storage began in Kanopolis Reservoir); 3 years (1947-50), 293 cfs.

Extremes.--1940-50: Maximum discharge, 21,800 cfs (revised) Oct. 20, 1941 (gage height, 25.2 ft); minimum daily, 0.4 cfs Jan. 23, 1948.
Flood in June 1938 reached a stage of 26.9 ft., from information by Corps of Engineers.

Remarks.--Flow regulated by Kanopolis Reservoir after July 29, 1946 (see preceding page).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	84.7	63.8	43.6	34.3	31.9	38.7	51.1	127	1,634	1,128	807	1,129	431
1942	1,240	175	112	81.9	103	120	1,279	473	1,773	238	380	523	541
1943	208	66.2	64.7	58.4	96.0	71.3	144	84.8	169	50.2	22.0	58.1	90.6
1944	47.1	18.4	15.7	19.3	33.2	64.0	735	1,520	270	945	644	288	384
1945	86.9	56.4	60.9	59.8	63.5	81.9	300	808	817	227	72.5	45.3	224
1946	30.5	29.5	21.2	35.1	34.4	38.1	37.0	66.8	38.7	133	56.3	714	102
1947	1,676	562	177	98.6	90.8	129	345	268	864	185	71.1	20.9	375
1948	11.7	18.7	33.5	25.4	18.0	263	48.4	16.2	14.8	54.9	45.6	91.8	
1949	50.5	45.5	47.8	66.1	479	968	146	246	1,182	610	237	281	360
1950	369	97.5	390	120	66.3	33.6	26.8	32.6	168	630	1,373	1,750	423

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	5,210	3,790	2,680	2,110	1,770	2,380	3,040	7,800	97,260	69,370	49,630	67,200	312,200
1942	76,230	10,440	6,870	5,040	5,700	7,360	76,060	29,070	105,500	14,640	23,370	31,140	391,400
1943	12,690	3,940	3,980	3,590	5,330	4,390	8,540	5,200	10,050	3,090	1,350	3,480	65,610
1944	2,900	1,100	964	1,230	1,910	3,950	45,710	95,460	16,060	58,090	59,570	15,960	278,900
1945	5,350	3,360	3,740	3,680	3,520	5,040	17,850	49,670	48,610	13,980	4,460	2,690	162,000
1946	1,670	1,760	1,300	2,160	1,910	2,340	2,200	4,100	2,300	8,200	3,460	42,500	74,100
1947	103,000	33,440	10,910	6,060	5,040	7,930	20,510	16,370	51,380	11,400	4,370	1,240	271,600
1948	720	1,110	2,060	1,560	1,040	16,160	2,880	994	881	2,770	33,740	2,710	66,620
1949	3,110	2,710	2,940	4,060	26,600	59,540	8,670	15,130	70,360	37,500	14,600	15,540	260,800
1950	22,700	5,800	24,020	7,360	3,680	2,070	1,590	2,010	9,970	36,740	84,400	104,100	306,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	926	15,700	Sept. 3, 1941	15	431	312,200	544	394,100
1942	956	*21,800	Oct. 20, 1941	13	541	391,400	440	318,500
1943	976	†5,490	Oct. 3, 1942	8	90.6	65,610	69.0	49,960
1944	1006	11,300	May 5, 1944	10	384	278,900	394	286,400
1945	1036	10,100	May 22, 1945	25	224	162,000	213	154,400
1946	1056	a2,100	Sept. 10, 1946	5	102	74,100	299	216,500
1947	1086	a3,260	Oct. 13, 1946	11	375	271,600	177	128,200
1948	1116	a2,130	Aug. 11, 1948	.4	91.8	66,620	98.5	71,500
1949	1146	a3,100	June 20, 1949	38	360	260,800	421	304,500
1950	1176	a4,130	Sept. 21, 1950	12	423	306,400	-	-

* Revised.

† Corrected.

a Regulated by Kanopolis Reservoir.

453. Smoky Hill River at Lindsborg, Kans.

Location.--Lat 38°34', long 97°40', in SE $\frac{1}{4}$ sec. 17, T. 17 S., R. 3 W., at First Street Bridge in Lindsborg, 300 ft downstream from mill dam, and at mile 170.9.

Drainage area.--8,110 sq mi.

Supplemental records available.--January 1905 to September 1923 (fragmentary) in report of Kansas State Board of Agriculture, Division of Water Resources, entitled "Stream-Flow Data 1928 to 1935".

Gage.--Water-stage recorder. Datum of gage is 1,297.09 ft (revised) above mean sea level, datum of 1929. Prior to Dec. 25, 1917, chain gage at railroad bridge 450 ft downstream (corrected) at datum 0.22 ft lower. Dec. 25, 1917, to Feb. 23, 1934, wire-weight or chain gages at present site and datum.

Average discharge.--17 years (1930-47), 291 cfs (before storage began in Kanopolis Reservoir); 3 years (1947-50), 348 cfs.

Extremes.--1930-50: Maximum discharge, 26,000 cfs June 3, 1938 (gage height, 32.55 ft); minimum daily, 2 cfs Apr. 13, 25, 1935.

Flood of May 1903 reached a stage of 33.9 ft, from floodmarks (discharge, 32,000 cfs, from rating curve extended above 26,000 cfs).

Remarks.--Flow regulated by Kanopolis Reservoir after July 29, 1946 (see p. 46u).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	94.3	75.2	69.4	650	1,390	205	249	316	-
1931	675	330	203	134	122	119	537	396	279	145	72.5	33.1	254
1932	28.6	41.3	49.1	32.6	55.9	74.6	59.5	65.5	422	476	82.1	862	186
1933	138	86.0	70.9	75.4	61.6	57.1	47.3	75.2	37.0	104	1,100	1,250	259
1934	174	96.7	113	71.7	58.0	58.8	45.6	110	712	132	79.9	177	152
1935	27.8	24.7	22.7	20.4	25.5	24.7	20.5	1,533	2,876	1,495	238	243	547
1936	231	100	65.0	48.7	41.6	59.5	38.9	461	478	54.2	20.7	46.6	137
1937	29.3	22.5	19.5	10.5	14.8	41.6	23.6	38.5	491	484	200	280	148
1938	59.2	37.7	24.6	24.8	24.5	41.7	57.8	1,066	5,686	344	406	261	503
1939	102	68.9	36.8	37.2	23.3	54.4	209	52.2	718	335	437	67.7	179
1940	28.6	26.6	23.3	13.4	29.0	30.7	20.8	113	126	375	185	378	113
1941	91.2	67.4	49.5	40.3	37.6	43.2	49.0	108	1,572	1,137	841	1,365	450
1942	2,147	293	179	111	131	150	1,591	614	1,791	382	589	621	701
1943	382	102	89.9	75.5	134	94.9	161	112	179	71.2	40.9	64.5	125
1944	93.9	30.3	23.9	31.3	42.3	91.5	1,102	1,568	338	914	645	337	437
1945	113	78.6	82.5	76.0	85.3	160	518	803	808	321	98.1	94.0	270
1946	50.1	42.0	29.8	53.5	46.6	53.7	48.6	81.3	39.7	116	48.7	648	104
1947	1,577	580	198	118	107	148	418	289	878	233	87.9	33.7	390
1948	22.8	23.8	36.8	25.4	73.6	302	78.9	36.6	169	246	526	63.8	135
1949	61.4	75.2	58.6	218	573	1,051	186	339	1,221	755	271	309	425
1950	349	118	393	151	88.4	55.2	39.7	50.7	157	917	1,697	1,756	484

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	-	-	-	-	5,240	4,620	4,130	40,000	82,700	12,600	15,300	18,800	-
1931	41,500	19,600	12,500	8,240	6,800	7,290	31,900	24,300	16,600	8,900	4,460	1,970	184,000
1932	1,760	2,460	3,020	2,010	3,210	4,590	3,540	4,020	25,100	29,300	5,050	51,300	135,000
1933	8,460	5,120	4,360	4,640	3,420	3,510	2,810	4,620	2,200	6,390	67,800	74,500	188,000
1934	10,700	5,760	6,960	4,410	3,220	3,620	2,710	6,780	42,390	8,120	4,920	10,540	110,100
1935	1,710	1,470	1,400	1,250	1,420	1,520	1,220	94,270	171,100	91,770	14,660	14,450	396,200
1936	14,170	5,970	3,990	2,990	2,390	3,680	2,320	28,380	28,430	3,330	1,270	2,770	99,650
1937	1,800	1,340	1,200	643	8,220	2,560	1,410	2,360	29,210	29,780	12,320	16,560	107,500
1938	3,640	2,250	1,510	1,520	1,360	2,560	3,440	66,790	219,300	21,150	24,950	15,560	364,000
1939	6,300	4,100	2,260	2,290	1,290	3,350	12,460	3,210	42,700	20,590	26,880	4,030	129,400
1940	1,770	1,580	1,430	825	1,670	1,890	1,240	6,950	7,480	23,050	11,380	22,520	81,780
1941	5,610	4,010	3,040	2,490	2,090	2,650	2,920	6,640	93,510	69,920	51,690	81,200	325,800
1942	132,000	17,420	11,030	6,820	7,260	9,220	94,650	37,770	106,600	23,470	23,950	36,960	507,200
1943	23,480	6,060	5,530	4,650	7,430	5,830	9,580	6,870	10,680	4,360	2,520	3,840	90,850
1944	5,770	1,800	1,470	1,920	2,440	5,630	65,560	96,400	20,110	56,200	39,640	20,080	317,000
1945	6,980	4,680	5,070	4,670	4,740	9,820	30,840	49,350	47,950	19,740	6,030	5,590	195,500
1946	3,080	2,500	1,830	3,290	2,590	3,300	2,890	5,000	2,360	7,120	2,990	38,560	75,510
1947	96,970	34,530	12,150	7,240	5,970	9,090	24,880	17,780	52,240	14,300	5,410	2,010	282,600
1948	1,400	1,420	2,260	1,560	4,230	18,570	4,690	2,250	10,070	15,100	32,340	3,800	97,690
1949	3,780	4,470	3,610	13,420	31,820	64,600	11,100	20,860	72,650	40,430	16,660	18,400	307,800
1950	21,480	7,030	24,180	9,250	4,910	3,390	2,360	3,120	9,360	56,360	104,400	104,500	350,300

Yearly discharge, in cubic feet per second of Smoky Hill River at Lindsborg, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1930	701	*6,420	June 7, 1930	-	-	-	-	-
1931	716	*3,080	Oct. 9, 1930	22	254	184,000	183	118,000
1932	731	*5,750	Sept. 15, 1932	26	186	135,000	201	146,000
1933	746	6,500	Aug. 24, 1933	-	259	198,000	267	193,000
1934	806	5,220	June 20, 1934	27	152	110,100	127	91,980
1935	786	*6,630	June 30, 1935	2	547	396,200	574	415,800
1936	806	2,540	May 12, 1936	10	137	99,650	110	79,860
1937	826	3,880	June 10, 1937	3	148	107,500	153	110,600
1938	856	26,000	June 3, 1938	9	503	364,000	510	369,300
1939	876	4,410	June 17, 1939	4	179	129,400	168	121,600
1940	896	3,320	July 5, 1940	5	113	81,780	124	89,660
1941	926	12,100	Sept. 4, 1941	18	450	325,800	654	473,600
1942	956	24,400	Oct. 20, 1941	17	701	507,200	527	381,800
1943	976	5,190	Oct. 4, 1942	31	125	90,850	89.5	64,820
1944	1006	8,110	May 6, 1944	10	437	317,000	447	324,700
1945	1036	7,100	May 24, 1945	49	270	195,500	257	186,100
1946	1056	a1,870	Sept. 10, 1946	22	104	75,510	292	211,800
1947	1086	a3,220	Oct. 17, 1946	24	390	282,600	196	144,000
1948	1116	a3,950	June 29, 1948	17	135	87,690	144	104,500
1949	1146	a3,000	June 21, 1949	40	425	307,800	482	348,600
1950	1176	a5,320	July 19, 1950	33	484	350,300	-	-

* Revised.

a Regulated by Kanopolis Reservoir.

454. Smoky Hill River near Mentor, Kans.1/

Location.--Lat 38°48', long 97°35', in sec. 31, T. 14 S., R. 2 W., at highway bridge, 1 mile south of Salina, 4 miles north of Mentor, and at mile 131.5.

Drainage area.--8,230 sq mi.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 1,211.74 ft. above mean sea level (levels by Corps of Engineers). Dec. 1, 1923, to June 30, 1932, chain gage at site 10 miles (revised) upstream at datum 20.6 ft higher. Oct. 1, 1947, to Sept. 18, 1948, wire-weight gage only at present site and datum.

Average discharge.--6 years (1924-30), 363 cfs (before storage began in Kanopolis Reservoir); 3 years (1947-50), 387 cfs.

Extremes.--1923-32, 1947-50: Maximum discharge, 25,500 cfs (revised) Aug. 17, 1927 (gage height, 26.2 ft, from floodmark site and datum then in use), from rating curve extended above 5,700 cfs on basis of flood routing study and slope-area determination at gage height, 25.8 ft. (datum in use 1923-32) for flood of July 13, 1951; minimum observed, 7 cfs Nov. 13, 1947.

Flood of May 1903 reached a stage of 26.5 ft, from floodmarks (site and datum in use 1923-32).

Remarks.--Flow regulated by Kanopolis Reservoir after July 29, 1946 (see p. 480).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	117	75.4	137	162	*357	*205	130	112	200	53.0	-
1925	30.2	28.3	33.9	32.6	93.6	63.9	322	102	195	204	308	298	142
1926	81.4	44.5	33.3	20.0	60.8	70.6	91.1	69.2	87.9	30.6	19.5	343	77.1
1927	158	159	50.5	27.4	60.3	66.5	376	197	2,030	391	*5,630	*867	*671
1928	381	210	168	148	180	168	212	148	1,020	*669	*2,870	312	*544
1929	166	169	155	82.0	89.2	155	132	1,480	1,140	1,440	351	185	462
1930	152	116	68.4	56.9	126	103	87.3	587	1,210	242	262	385	282
1931	678	-	-	-	-	-	-	-	299	158	98.4	48.1	-
1932	38.6	51.0	57.5	39.5	66.5	83.9	76.0	79.4	429	-	-	-	-
1948	31.1	31.4	42.6	33.5	141	359	108	57.1	287	367	544	87.6	175
1949	77.7	97.3	68.6	241	580	1,066	218	412	1,342	805	308	327	461
1950	320	154	389	194	99.6	70.2	54.6	69.6	164	877	2,010	1,879	525

* Revised.

1/ Published as "near Salina", 1948-49.

Monthly and yearly runoff, in acre-feet of Smoky Hill River near Mentor, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	7,190	4,640	7,880	9,960	*21,200	*12,800	7,740	6,890	12,300	3,150	-
1925	1,880	1,680	2,080	2,000	5,200	3,930	19,200	6,270	11,600	12,500	18,900	17,700	103,000
1926	3,780	2,650	2,050	1,230	3,380	4,340	5,420	4,250	5,230	1,880	1,200	20,400	55,800
1927	9,720	9,460	3,110	1,680	3,350	4,060	22,400	12,100	121,000	24,000	*223,000	*51,800	*485,000
1928	23,400	12,500	10,300	9,100	10,400	10,300	12,600	9,100	*60,700	*41,100	*377,000	18,800	*395,000
1929	10,200	10,100	8,300	5,040	4,950	9,530	7,860	91,000	*68,000	88,500	21,800	9,820	335,000
1930	9,350	6,900	4,210	3,500	7,000	6,330	5,190	36,100	72,000	14,900	16,100	22,900	204,000
1931	41,700	-	-	-	-	-	-	-	17,800	9,740	6,050	2,860	-
1932	2,370	3,030	3,540	2,430	3,830	5,180	4,520	4,880	25,500	-	-	-	-
1948	1,910	1,870	2,620	2,080	8,090	22,100	6,450	3,510	17,100	22,580	33,450	5,210	127,000
1949	4,780	5,790	4,220	14,820	32,220	65,520	12,990	25,350	79,860	49,510	18,840	19,430	333,400
1950	19,650	7,980	23,930	11,920	5,530	4,310	3,260	4,290	9,780	53,930	123,600	111,800	360,000

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	586,1440	*3,030	Apr. 30, 1924	-	-	-	*127	*92,000
1925	606	2,100	June 25, 1925	-	142	103,000	146	106,000
1926	626	3,770	Sept. 17, 1926	12	77.1	55,800	96.2	69,600
1927	646,1440	*25,500	Aug. 17, 1927	-	*671	*485,000	*704	*509,000
1928	666,1440	*13,000	Aug. 4, 1928	107	*544	*395,000	*519	*378,000
1929	686	*13,000	May 16, 1929*	64	462	335,000	451	327,000
1930	701	4,200	June 8, 1930	-	282	204,000	-	-
1931	716	2,460	Oct. 9, 1930	-	-	-	-	-
1932	731	-	-	-	-	-	-	-
1948	1118	3,510	June 29, 1948	9	175	127,000	186	135,300
1949	1146	2,920	June 22, 1949	60	461	333,400	511	370,200
1950	1176	4,380	(a)	49	525	380,000	-	-

* Revised.

a Aug. 2, Sept. 16, 1950.

455. Saline River near Russell, Kans.

Location.--Lat 38°58', long. 98°51', at east edge sec. 34, T. 12 S., R. 14 W., at bridge on U. S. Highway 281, 2 miles downstream from Salt Creek and 5 miles north of Russell.

Drainage area.--1,502 sq mi.

Supplemental records available.--Records of Chemical analysis for period October 1945 to September 1949, suspended sediment loads for period October 1946 to September 1950, and water temperatures for period October 1947 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,551.88 ft above mean sea level, datum of 1929. Prior to Jan 22, 1946, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 136 cfs.

Extremes.--1946-50: Maximum discharge 14,300 cfs July 26, 1950 (gage height, 18.40 ft); minimum, 5 cfs Aug. 21, 22, 1946 (gage height, 4.05 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	18.5	19.4	16.2	18.7	22.4	23.7	18.9	27.2	32.9	49.1	10.0	243	41.3
1947	1,077	220	81.5	46.0	46.6	62.9	83.2	97.5	747	101	25.5	9.5	216
1948	8.6	12.4	17.7	11.4	15.9	46.0	28.8	30.6	236	360	145	27.1	78.6
1949	15.8	25.0	21.9	19.4	45.3	101	54.4	97.1	496	84.1	44.2	38.9	118
1950	77.8	30.3	24.2	19.8	42.2	32.9	20.0	190	45.1	736	1,257	182	†225

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	1,140	1,150	998	1,150	1,240	1,460	1,010	1,670	1,960	3,020	617	14,470	29,880
1947	66,230	13,090	5,010	2,830	2,590	3,870	4,950	5,380	44,450	6,180	1,570	565	156,700
1948	530	736	1,090	898	912	2,830	1,710	1,880	14,020	22,130	8,930	1,610	57,080
1949	974	1,490	1,340	1,190	25,170	6,220	3,240	5,970	29,490	5,170	2,720	2,310	85,280
1950	4,780	1,800	1,490	1,220	2,340	2,020	1,190	11,660	2,690	45,280	77,260	10,820	†162,600

† Corrected.

Yearly discharge, in cubic feet per second of Saline River near Russell, Kans.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1946	1056	5,620	Sept. 7, 1946	5	41.3	29,880	153
1947	1086	11,000	Oct. 9, 1946	6	216	156,700	103
1948	1116	2,840	June 30, 1948	6	78.6	57,080	80.6
1949	1146	2,870	June 7, 1949	-	118	85,280	124
1950	1176	14,300	July 26, 1950	15	+225	+162,600	-

† Corrected.

456. Paradise Creek near Paradise, Kans.

Location.--Lat 39°04', long. 98°51', on line between secs. 26 and 27, T. 11 S., R. 14 W., at bridge on U. S. Highway 281, 4½ miles southeast of Paradise.

Drainage area.--212 sq mi.

Supplemental records available.--Records of chemical analyses for the period March 1947 to September 1949, suspended-sediment loads for the period March 1947 to September 1950, and water temperatures for the period June 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,601.66 ft above mean sea level, datum of 1929. Prior to June 25, 1947, wire-weight gage at same site and datum.

Extremes.--1947-50: Maximum discharge, 4,130 cfs July 16, 1950 (gage height, 17.47 ft); no flow on many days each year.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	+0.10	0.51	13.7	0.39	0	20.3	-
1947	39.3	14.5	0.15	0.31	0.86	1.05	28.9	2.35	129	1.47	0	0	18.1
1948	.01	.01	.10	0	.12	4.38	.14	4.89	94.1	42.5	1.21	.11	12.2
1949	.03	.15	.13	8.44	101	4.63	1.87	7.51	58.2	7.00	.96	.83	15.2
1950	20.0	.18	.20	.35	.30	.10	.10	124	8.0	185	72.8	2.41	33.4

* Not previously published; estimated on basis of weather records and records for Wolf Creek near Sylvan Grove, Kans.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	+5.6	31	814	24	0	1,210	-
1947	2,420	861	9.5	19	48	85	1,720	144	7,890	90	0	0	15,070
1948	.6	.8	6.0	0	6.7	270	8.1	301	5,600	2,610	74	6.3	8,880
1949	2.0	8.7	7.7	519	5,600	285	111	462	3,460	430	59	49	10,990
1950	1,230	11	12	22	17	6.1	6.0	7,600	479	10,160	4,480	143	24,170

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1946	1056	*650	June 19, 1946	0	-	-	-
1947	1086	1,700	June 12, 1947	0	18.1	13,070	14.6
1948	1116	1,200	June 28, 1948	0	12.2	8,880	12.3
1949	1146	(a)	Feb. 18, 1949	0	15.2	10,990	16.9
1950	1176	4,130	July 16, 1950	0	33.4	24,170	-

* Revised.

a Not determined, occurred during period of ice effect.

457. Saline River near Wilson, Kans.

Location.--Lat 38°56', long. 98°32', in SE¼ sec. 10 (revised), T. 13 S., R. 11 W., 100 ft. upstream from highway bridge, three-quarters of a mile upstream from Hell Creek, 8 miles northwest of Wilson, and at mile 135.0.

Drainage area.--1,900 sq mi, approximately.

Supplemental records available.--Records of chemical analyses for the period February 1948 to September 1950 and water temperatures for the period March 1948 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,442.72 ft. above mean sea level, datum of 1929. Prior to Apr. 8, 1931, chain or wire-weight gages and Apr. 8, 1931, to Nov. 25, 1938, water-stage recorder on highway bridge at same datum.

Average discharge.--21 years (1929-50), 133 cfs (revised).

Extremes.--1929-50: Maximum discharge, 21,900 cfs June 2, 1935 (gage height, 24.79 ft.), from rating curve extended above 10,000 cfs; minimum, 1 cfs Jan. 23-25, 1935, Jan. 6, 1937, and Jan. 13, 1946.

Flood of July-August 1928 reached a stage of about 26.8 ft. from floodmarks (discharge, 25,700 cfs, from rating curve extended above 10,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second of Saline River near Wilson, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	61.1	290	92.4	42.9	-
1930	52.0	66.1	38.7	9.0	51.8	44.8	35.9	115	222	36.5	89.6	44.9	100
1931	271	149	107	96.1	86.6	82.3	377	266	152	288	230	51.8	180
1932	24.4	30.4	35.8	21.9	56.6	53.2	45.1	80.6	191	46.8	39.6	272	74.3
1933	60.2	37.4	32.3	39.9	42.0	38.2	27.8	48.3	17.5	46.1	20.0	21.4	56.0
1934	8.8	16.6	31.5	23.5	16.5	16.1	10.3	26.4	405	19.4	6.4	64.5	54.9
1935	8.0	7.1	7.2	7.7	6.5	5.3	7.9	64.9	2,327	243	58.3	95.9	301
1936	69.1	28.5	25.0	20.4	13.3	28.6	69.3	341	44.6	16.8	11.0	74.7	62.0
1937	15.4	7.7	8.4	3.6	84.0	17.6	9.2	31.1	170	21.8	48.3	116	43.7
1938	12.5	7.0	5.1	10.7	11.6	27.2	56.6	595	861	74.5	57.0	148	155
1939	17.5	17.5	14.1	16.4	13.0	32.7	130	15.0	438	265	142	13.4	93.0
1940	9.7	10.4	9.5	4.8	14.9	16.6	10.9	317	80.4	55.6	59.0	136	60.8
1941	23.5	51.4	19.7	21.6	20.0	19.3	126	1,301	217	262	587	225	225
1942	176	86.5	47.2	39.9	53.8	58.1	299	163	220	44.1	111	55.3	113
1943	25.6	25.9	29.6	29.0	38.1	29.1	109	33.0	425	210	39.1	46.0	86.4
1944	15.1	15.3	12.8	20.8	31.2	47.9	171	593	90.7	563	560	139	190
1945	55.8	40.6	38.9	42.3	39.2	31.2	51.1	229	794	291	65.2	42.8	143
1946	30.3	27.1	17.8	19.8	35.6	34.2	27.8	30.3	54.0	83.1	16.8	327	58.3
1947	1,202	255	65.4	53.1	68.4	73.7	143	107	1,002	164	41.0	16.8	268
1948	14.1	22.3	29.8	23.8	40.3	72.3	36.6	32.2	298	491	158	33.3	105
1949	22.2	33.6	31.7	28.1	574	152	70.8	127	562	114	52.9	52.2	148
1950	155	38.9	33.7	20.6	48.0	38.1	27.7	330	77.7	1,088	1,480	235	302

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	3,640	17,800	5,680	2,550	-
1930	3,200	3,950	2,580	555	2,880	2,750	2,140	7,070	13,200	2,240	5,510	26,700	72,600
1931	18,650	8,880	6,800	5,910	4,810	5,060	22,430	16,380	9,050	17,700	14,120	3,080	113,700
1932	1,500	1,810	2,200	1,350	3,270	2,680	4,970	11,400	2,880	2,440	16,200	53,800	53,800
1933	3,700	2,250	1,990	2,450	2,350	1,650	2,970	1,040	2,840	1,230	1,270	26,000	26,000
1934	543	988	1,940	1,440	916	988	613	1,820	24,100	1,190	391	5,030	39,780
1935	494	420	440	478	359	323	468	52,190	138,500	14,910	3,580	5,710	217,900
1936	4,250	1,700	1,540	1,250	764	1,650	4,120	20,940	2,680	1,030	678	4,440	45,020
1937	825	456	514	220	4,870	1,080	549	2,040	10,090	1,330	2,970	6,900	31,640
1938	768	419	365	859	645	1,670	3,370	36,590	51,250	4,560	3,500	8,790	112,600
1939	1,080	1,040	887	1,010	724	2,010	7,760	920	26,080	16,310	8,710	785	67,310
1940	597	619	585	298	859	1,140	651	19,470	4,790	3,420	3,630	8,070	44,130
1941	1,450	3,080	1,210	1,350	1,110	1,180	4,150	7,740	77,390	13,350	16,140	34,940	163,000
1942	10,810	5,150	2,900	2,460	2,990	3,570	17,800	10,010	13,100	2,710	6,830	3,290	81,620
1943	1,570	1,540	1,820	1,780	2,120	1,790	6,500	2,030	25,280	12,940	2,400	2,740	62,510
1944	928	910	785	1,280	1,800	2,950	10,170	36,460	5,400	34,630	34,420	8,270	158,000
1945	5,310	2,410	2,390	2,600	2,180	1,920	3,040	14,080	47,240	17,900	4,010	2,540	103,600
1946	1,860	1,610	1,090	1,220	1,980	2,100	1,860	3,210	5,110	1,040	19,450	42,180	42,180
1947	73,910	15,180	5,280	3,260	3,800	4,530	8,520	6,560	59,650	10,070	2,520	1,000	194,300
1948	869	1,330	1,770	1,460	2,320	4,440	2,180	1,980	17,760	30,200	9,710	1,880	76,000
1949	1,360	2,000	1,950	1,730	31,880	9,330	4,210	7,810	33,400	7,030	3,250	3,100	107,000
1950	9,550	2,310	2,070	1,270	2,670	2,340	20,280	4,630	66,910	91,030	13,980	218,700	218,700

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	806	3,150	July 27, 1929	-	-	-	132	-	-
1930	806	4,140	Sept. 10, 1930	-	100	72,800	-	95,200	-
1931	858	2,390	Oct. 6, 1930	29	180	1130,700	144	104,000	-
1932	731	2,300	Sept. 13, 1932	-	74.3	53,900	77.6	56,400	-
1933	746	1,000	July 17, 1933	4	36.0	26,000	29.8	21,600	-
1934	761	5,500	June 17, 1934	2	54.9	39,780	52.0	37,640	-
1935	858	21,900	June 2, 1935	2	301	217,900	309	224,000	-
1936	856	4,290	May 10, 1936	4	62.0	45,020	54.2	39,330	-
1937	826	1,560	May 21, 1937	2	43.7	31,640	43.4	31,400	-
1938	856	9,550	June 1, 1938	4	156	112,600	158	114,000	-
1939	878	7,440	Apr. 15, 1939	5	95.0	67,310	91.3	66,120	-
1940	898	10,900	May 8, 1940	3	60.8	44,130	66.2	48,050	-
1941	928	11,000	June 11, 1941	10	225	163,000	243	176,200	-
1942	958	2,810	June 19, 1942	8	113	81,620	93.5	67,690	-
1943	976	6,970	June 17, 1943	13	86.4	62,510	85.2	60,200	-
1944	1006	8,110	July 26, 1944	9	190	138,000	198	145,500	-
1945	1036	9,680	June 27, 1945	21	143	103,600	138	100,100	-
1946	1058	6,470	Sept. 8, 1946	6	58.3	42,180	182	132,000	-
1947	1086	9,240	Oct. 10, 1946	14	268	194,300	144	103,900	-
1948	1116	2,740	July 1, 1948	12	105	76,000	107	77,340	-
1949	1146	3,640	June 8, 1949	15	148	107,000	160	115,700	-
1950	1176	11,400	July 27, 1950	8	302	218,700	-	-	-

† Corrected.

458. Wolf Creek near Sylvan Grove, Kans.

Location.--Lat 39°01', long. 98°28', on line between secs. 7 and 18, T. 12 S., R. 10 W., 3 miles upstream from mouth and 4.5 miles west of Sylvan Grove.

Drainage area.--261 sq mi.

Supplemental records available.--Records of suspended-sediment loads for the period April 1947 to September 1950 and water temperatures for the period February to September 1949 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,419.60 ft above mean sea level (levels by Bureau of Reclamation). Prior to Sept. 20, 1946, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 26.1 cfs.

Extremes.--1945-50: Maximum discharge, 3,880 cfs July 16, 1950 (gage height, 24.99 ft); no flow at times during July and August 1946.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	3.4	3.7	3.8	6.0	3.9	4.6	3.1	4.3	1.7	15.8	0.4	76.9	10.6
1947	66.5	33.8	3.1	4.0	4.0	4.6	49.8	5.9	178	13.8	1.5	1.0	30.3
1948	.86	1.48	1.94	2.09	7.44	15.6	2.89	19.3	111	28.6	1.86	.37	16.0
1949	.72	.59	.49	42.7	202	7.01	3.96	15.8	135	9.64	1.76	.98	33.7
1950	43.7	2.57	3.58	3.40	3.73	3.25	2.58	33.4	5.63	248	116	6.37	40.0

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	210	222	234	367	216	282	186	262	103	972	26	4,580	7,660
1947	4,090	2,010	188	244	222	282	2,960	361	10,610	849	89	60	21,960
1948	53	88	119	129	428	958	172	1,180	6,580	1,760	114	22	11,800
1949	44	35	50	2,620	11,200	431	236	971	8,040	593	108	59	24,370
1950	2,690	153	208	209	207	200	154	2,050	335	15,250	7,140	379	28,980

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056	1,670	Sept. 8, 1946	0	10.6	7,660	18.3	13,280	
1947	1086	2,250	June 23, 1947	1	50.3	21,960	22.0	15,940	
1948	1118	1,860	June 28, 1948	.2	16.0	11,800	15.8	11,450	
1949	1148	2,680	June 9, 1949	.3	33.7	24,370	37.7	27,310	
1950	1178	3,880	July 16, 1950	.5	40.0	28,980	-	-	

459. Saline River at Tescott, Kans.

Location.--Lat 39°00', long. 97°53', in SE¹ sec. 16, T. 12 S., R. 5 W., at highway bridge half a mile south of Tescott, half a mile upstream from Dry Creek, and at mile 54.5.

Drainage area.--2,820 sq mi.

Supplemental records available.--Records of chemical analyses for the period December 1949 to September 1950 and water temperatures for period April to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,265.34 ft above mean sea level, datum of 1929. Prior to Nov. 23, 1934, chain gage at same site and datum.

Average discharge.--31 years (1919-50), 189 cfs.

Extremes (revised).--1919-50: Maximum discharge, 8,900 cfs Aug. 17, 1927 (gage height, 29.6 ft, from graph based on gage readings); no flow at times during 1935, 1936.

Remarks.--Some diurnal fluctuation caused by power plants above station. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second of Saline River at Tescott, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	166	102	82.9	88.5	61.1	61.5	146	207	128	90.9	46.0	a263 †46.6	102
1921	16.3	55.5	25.3	31.2	27.5	18.5	82.7	183	90.9	112	54.9	352	87.3
1922	19.8	36.7	45.0	19.7	28.7	60.2	197	174	144	342	38.2	26.5	†96.2
1923	13.7	18.3	11.8	16.4	19.7	26.4	21.8	368	705	159	66.1	102	127
1924	93.9	37.3	37.0	32.8	47.0	64.6	80.3	48.9	36.3	15.7	7.1	5.8	42.2
1925	4.8	5.6	12.9	2.3	20.5	24.2	104	34.6	120	93.9	346	353	93.3
1926	60.3	56.3	22.3	12.5	36.8	31.0	38.2	31.8	68.8	184	58.3	236	67.9
1927	89.7	112	b75.8	b59.8	67.2	101	321	275	1,780	196	1,770	467	b443
1928	109	83.2	73.3	72.7	80.3	66.8	63.6	70.8	408	1,450	2,360	260	429
1929	144	144	145	115	79.5	149	152	297	215	230	113	69.7	165
1930	58.2	70.4	68.0	42.5	59.6	52.9	45.7	234	274	56.2	83.3	504	128
1931	297	191	143	106	90.2	91.1	364	284	174	267	244	65.1	194
1932	42.2	49.9	48.2	36.4	59.1	67.3	56.3	69.5	174	127	31.5	370	93.5
1933	82.5	51.0	45.8	48.7	37.3	39.8	59.0	50.5	20.2	38.0	33.5	26.0	44.2
1934	19.4	30.8	40.2	22.0	21.1	25.5	21.4	68.8	481	45.7	18.9	61.9	76.6
1935	13.9	9.2	6.2	8.2	14.3	8.7	16.0	180	2,254	926	199	362	415
1936	167	52.6	41.6	22.5	14.7	30.2	17.9	413	104	22.8	18.9	131	86.9
1937	34.8	19.2	19.1	12.5	213	37.5	22.5	42.0	231	47.5	64.7	147	72.7
1938	16.9	14.6	9.7	13.1	12.5	51.0	55.9	1,155	1,410	161	73.7	151	261
1939	24.2	28.8	21.7	24.6	18.6	42.3	264	29.6	410	30.7	180	25.5	115
1940	13.5	16.4	16.5	11.3	30.2	24.7	16.1	246	80.8	58.5	287	218	85.3
1941	45.8	73.0	34.8	29.4	32.0	43.2	74.8	194	1,323	257	390	1,059	294
1942	794	180	103	91.6	74.6	91.8	496	479	766	92.0	211	603	332
1943	94.3	56.3	59.8	46.5	87.2	53.8	128	68.9	434	286	71.7	107	124
1944	34.5	27.1	24.5	43.5	43.1	74.3	660	1,019	162	734	570	266	310
1945	93.2	72.6	71.0	63.5	59.6	64.9	220	756	839	778	118	71.3	269
1946	55.1	54.0	47.8	61.9	55.4	54.8	48.2	46.6	60.9	117	29.2	1,249	155
1947	1,140	433	152	112	104	119	326	140	1,271	217	68.3	35.3	343
1948	31.2	37.8	46.6	31.9	93.8	165	62.8	123	390	1,022	243	57.8	194
1949	39.8	62.3	52.3	255	824	232	120	359	695	218	91.9	75.7	264
1950	228	64.7	56.5	46.1	58.0	56.1	46.2	419	149	1,303	1,605	370	372

† Corrected.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents; 73d Cong. 2d sess. H. Doc. 195, Kansas River. Published figure is in acre-feet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	10,200	6,070	5,100	5,440	3,510	3,780	8,690	12,700	7,500	5,590	2,830	a15,700 †2,770	74,200
1921	1,000	3,300	1,560	1,920	1,530	1,080	4,920	11,300	5,410	6,890	3,380	20,900	63,200
1922	1,220	2,180	2,770	1,210	1,590	3,700	11,700	10,700	8,570	21,000	2,350	1,580	68,600
1923	842	1,090	726	1,010	1,090	1,620	1,300	22,600	42,000	9,780	4,060	6,070	92,200
1924	5,770	2,220	2,280	2,020	2,700	3,970	4,780	3,010	2,160	965	438	347	30,700
1925	295	333	793	141	1,140	1,490	6,190	2,130	7,140	5,770	21,300	21,000	67,700
1926	3,710	3,350	1,370	789	2,040	1,910	2,270	1,960	4,090	10,100	3,580	14,000	49,100
1927	5,520	6,680	b4,680	b3,680	3,730	6,210	19,100	16,900	108,000	12,100	109,000	27,800	b321,000
1928	6,700	4,950	4,510	4,470	4,620	4,110	3,780	4,350	24,300	89,200	45,000	15,500	311,000
1929	†8,880	8,570	8,920	7,070	4,420	9,160	9,040	18,500	12,800	14,100	6,950	4,150	112,000
1930	3,580	4,190	4,180	2,610	3,310	3,250	2,720	14,400	16,300	3,460	5,120	30,000	93,100
1931	18,280	11,340	8,790	6,500	5,010	5,600	21,680	17,450	10,320	16,440	14,980	3,870	140,200
1932	2,590	2,970	2,840	2,240	3,400	4,140	3,350	4,280	10,300	7,790	1,940	22,000	67,900
1933	5,070	3,030	2,820	3,000	2,070	2,430	3,510	3,110	1,200	2,330	1,930	1,490	32,000
1934	1,190	1,830	2,470	1,350	1,170	1,570	1,270	4,220	28,630	2,810	1,160	4,870	52,540
1935	853	549	379	502	795	558	952	72,530	132,900	56,920	12,220	21,560	300,700
1936	10,260	3,130	2,560	1,380	847	1,850	1,070	25,410	6,170	1,400	1,160	7,800	63,040
1937	2,140	1,140	1,170	768	11,800	2,300	1,340	2,580	13,730	2,920	3,980	8,750	52,620
1938	1,160	871	595	803	696	3,130	3,330	71,000	83,890	9,910	4,530	8,960	188,900
1939	1,490	1,710	1,340	1,520	1,030	2,600	15,730	1,820	24,420	18,900	11,040	1,520	83,120
1940	833	976	1,020	694	1,740	1,520	958	15,140	4,810	3,600	17,640	15,000	61,930
1941	2,800	4,350	2,140	1,810	1,780	2,650	4,450	11,930	78,710	15,830	23,340	63,020	212,900
1942	48,850	10,710	6,320	5,630	4,140	5,840	29,540	29,450	45,580	5,680	12,940	35,880	240,300
1943	5,800	3,350	3,680	2,860	4,840	3,310	7,640	4,240	25,850	17,610	4,410	6,390	89,980
1944	2,120	1,610	1,510	2,680	2,480	4,570	39,280	62,670	10,810	45,140	35,030	17,040	224,900
1945	5,730	4,320	4,360	3,910	3,310	3,990	13,120	46,480	49,920	47,830	7,270	4,240	194,500
1946	3,390	3,210	2,940	3,810	3,080	3,370	2,870	2,870	3,620	7,200	1,790	74,350	112,500
1947	70,120	25,780	9,380	6,860	5,790	7,300	19,390	8,600	75,650	13,350	4,200	2,100	248,500
1948	1,920	2,250	2,870	1,960	4,920	11,370	3,730	7,580	23,230	62,850	14,960	3,440	141,000
1949	2,450	3,710	3,220	15,650	45,750	14,280	7,120	22,090	53,260	13,430	5,850	4,500	191,100
1950	14,010	3,850	3,470	2,830	3,220	3,450	2,750	25,780	8,850	80,150	98,660	22,010	269,000

† Corrected.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River.

Yearly discharge, in cubic feet per second of Saline River at Tescott, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1919	506	-	-	-	-	-	-	-
1920	508	-	-	5	102	74,200	81.2	58,700
1921	528	2,910	Sept. 16, 1921	4	87.3	63,200	87.7	63,500
1922	546	2,150	July 11, 1922	5	196.2	68,600	90.0	65,100
1923	568	2,700	June 10, 1923	4.2	127	92,200	138	99,800
1924	586	240	Oct. 17, 1923	5	42.2	50,700	50.1	21,900
1925	606	2,860	Sept. 1, 1925	-	93.3	67,700	103	74,700
1926	626	*1,920	Sept. 15, 1926	1	67.9	49,100	a79.5	a57,600
1927	646	*8,900	Aug. 17, 1927*	10	a443	a321,000	a443	a321,000
1928	666	*8,050	July 12, 1928	42	429	311,000	443	322,000
1929	686	1,550	May 14, 1929	54	155	112,000	135	97,900
1930	701	1,980	Sept. 13, 1930	20	128	93,100	165	119,600
1931	856	1,580	Oct. 9, 1930	34	194	140,200	152	110,200
1932	731	1,800	Sept. 2, 1932	15	93.5	67,900	97.0	70,400
1933	746	595	July 21, 1933	3	44.2	32,000	36.7	26,560
1934	761	2,750	June 20, 1934	2	72.6	52,540	67.5	48,830
1935	786	*8,640	June 3, 1935	0	415	300,700	435	314,900
1936	806	2,350	May 13, 1936	3	86.9	63,040	71.0	51,540
1937	826	1,270	Sept. 13, 1937	7	72.7	52,620	70.2	50,790
1938	856	5,730	June 4, 1938	5	261	188,900	264	190,800
1939	876	3,320	Apr. 18, 1939	6	115	83,120	112	81,410
1940	896	2,610	May 11, 1940	3	85.3	61,930	94.2	68,390
1941	926	5,690	June 15, 1941	5	294	212,800	372	269,400
1942	956	6,290	Sept. 3, 1942	14	332	240,300	259	187,300
1943	976	3,120	June 21, 1943	29	124	89,980	114	82,390
1944	1006	5,340	May 7, 1944	11	310	224,900	322	234,100
1945	1056	*5,180	July 1, 1945	40	269	194,500	262	189,600
1946	1056	4,940	Sept. 9, 1946	17	155	112,500	288	208,200
1947	1086	*5,230	Oct. 14, 1946	30	343	248,500	208	150,300
1948	1116	*4,310	July 21, 1948	20	194	141,000	197	143,300
1949	1146	3,290	June 12, 1949	20	264	191,100	280	203,100
1950	1176	4,640	July 20, 1950	30	372	269,000	-	-

* Revised.

† Corrected.

a From Congressional documents; 73d Cong. 2d sess. H. Doc. 195, Kansas River.

460. Smoky Hill River near New Cambria, Kans.

Location.--Lat 38°52'30", long. 97°24'35", on east line of sec. 34, T. 13 S., R. 1 W., at highway bridge, one mile downstream from Gypsum Creek, 5 miles east of New Cambria, and 7 miles upstream from Solomon River.

Drainage area.--11,980 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1,147.6 ft above mean sea level, datum of 1929.

Extremes.--1949-50: Maximum discharge, 11,400 cfs July 20, 1950 (gage height, 26.00 ft); minimum observed, 120 cfs Mar. 13, 1950.

Remarks.--Flow regulated by Kanopolis Reservoir (see p. 480)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	199	873	2,511	1,627	454	886	2,524	1,253	437	445	-
1950	617	242	449	262	205	162	130	521	508	2,613	3,869	2,423	1,009

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	12,250	53,670	139,500	100,000	27,020	54,590	150,200	77,060	26,880	26,470	-
1950	37,930	14,400	27,620	16,100	11,400	9,950	7,750	32,050	30,230	160,700	237,900	144,200	730,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1146	-	-	-	-	-	1,016	735,000
1950	1176	11,400	July 20, 1950	120	1,008	730,200	-	-

461. North Fork Solomon River at Kirwin, Kans.

Location.--Lat 39°40', long. 99°07', in SW $\frac{1}{4}$ sec. 34, T. 4 S., R. 16 W., at highway bridge half a mile south of Kirwin, three-quarters of a mile downstream from Bow Creek, $\frac{1}{2}$ miles upstream from Deer Creek, and at mile 66.5.

Drainage area.--1,370 (revised) sq mi, approximately.

Supplemental records available.--Records of water temperatures and suspended-sediment loads for the period February to September 1950 are published in reports of Geological Survey.

Gage.--Water stage recorder. Datum of gage is 1,656.95 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to June 30, 1932, chain gage, and Dec. 18, 1941, to June 24, 1942, wire-weight gage, both at same site and datum.

Average discharge.--16 years (1919-24, 1928-31, 1942-50) 74.1 cfs (revised).

Extremes.--1919-25, 1928-32, 1941-50: Maximum discharge, 24,000 cfs (revised) Sept. 18, 1919 (gage height, 22.5 ft), from rating curve extended above 10,000 cfs on basis of slope-area and contracted-opening determination at gage height 22.3 ft; no flow at times during 1943, 1948.

Flood of June 1915 reached a stage of about 27 ft, from information by local residents.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	188	108	97.5	84.5	66.5	53.2	65.4	79.7	34.9	82.0	74.5	1,030	41.5
1921	34.0	31.7	24.4	31.9	35.5	37.6	14.8	76.8	171	92.1	29.2	20.9	52.5
1922	111.5	16.0	8.97	3.5	18.7	31.5	32.2	51.0	27.9	147	44.0	4.67	133.3
1923	2.18	10.5	6.16	11.4	11.0	23.4	32.1	247	575	221	71.5	64.7	107
1924	38.6	30.3	31.1	17.0	46.6	45.2	45.4	33.6	22.4	30.2	29.6	8.2	31.3
1925	6.31	13.0	9.1	2.0	33.0	35.6	43.6	38.1	117	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	101	-
1929	97.2	43.4	40.0	11.1	6.46	47.2	44.3	57.7	70.8	*240	46.8	19.1	*60.9
1930	61.5	45.4	33.4	17.1	40.1	29.0	63.8	*112	130	13.2	85.0	25.7	54.7
1931	83.6	82.6	39.1	32.3	32.5	34.5	53.7	41.3	25.4	103	120	9.87	55.1
1932	19.5	27.0	24.4	13.9	64.8	38.1	31.1	28.6	86.2	-	-	-	-
1942	-	-	-	38.1	36.1	34.5	152	66.4	168	40.7	386	274	-
1943	46.4	33.7	30.8	28.5	38.5	25.5	192	39.3	173	27.8	10.8	7.8	53.5
1944	1.2	5.0	4.3	8.1	16.0	22.6	*195	196	*342	*634	*252	38.1	*143
1945	26.5	27.0	18.0	25.9	29.0	26.9	72.1	58.2	*153	134	8.9	1.9	*48.4
1946	4.3	9.6	5.5	13.4	18.4	36.6	14.0	46.0	*142	110	5.9	43.8	*39.0
1947	*467	90.3	33.3	22.4	29.0	53.2	84.9	72.7	860	115	40.2	5.2	*156
1948	2.6	6.9	8.8	5.5	19.5	39.0	22.3	29.6	136	82.9	31.1	1.42	32.0
1949	49	71	1.34	3.5	6.150	65.0	36.3	164	473	106	103	17.1	92.5
1950	43.2	19.3	14.4	9.5	*1.7	27.9	21.6	21.4	11.6	391	1,036	94.7	146

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	11,600	6,430	6,000	5,200	3,830	3,270	3,890	4,900	2,080	3,810	4,580	2,470	58,100
1921	2,090	1,890	1,500	1,960	1,970	2,310	2,670	4,720	10,200	5,660	1,800	1,240	38,000
1922	1896	952	552	215	1,040	1,940	1,920	3,140	1,660	9,040	2,700	278	†24,100
1923	134	825	378	701	611	1,440	1,910	15,200	34,200	13,600	4,400	3,850	77,000
1924	2,370	1,800	1,910	1,050	2,680	2,780	2,580	2,080	1,330	1,860	1,810	486	22,700
1925	368	774	560	123	1,830	2,190	2,590	2,340	6,960	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	6,010	-
1929	5,980	2,580	2,460	682	359	2,900	2,640	3,550	4,210	*14,800	2,880	1,140	*44,200
1930	3,780	2,700	2,050	1,050	2,230	1,780	3,800	6,890	7,740	812	5,230	1,530	39,600
1931	5,140	4,920	2,400	1,980	1,800	2,120	3,200	2,540	1,510	6,320	7,400	587	39,900
1932	1,200	1,610	1,500	855	3,730	2,340	1,850	1,760	5,130	-	-	-	-
1942	-	-	-	2,340	2,010	2,120	9,020	10,010	2,500	23,750	16,280	-	-
1943	2,850	2,010	1,890	1,750	2,140	1,570	11,440	2,420	10,270	1,710	866	1,140	38,760
1944	73	298	264	496	922	1,400	*11,580	12,050	*20,330	*38,990	*15,490	2,270	*104,200
1945	1,630	1,600	1,110	1,590	1,610	1,650	4,290	3,580	*9,120	8,230	547	115	*35,070
1946	264	589	335	825	1,020	2,250	831	3,930	*6,450	6,750	365	2,610	*29,200
1947	*28,730	5,370	2,050	1,380	1,610	3,270	5,050	4,470	51,180	7,080	2,470	309	*113,000
1948	161	411	541	341	1,120	2,400	1,330	1,820	8,090	5,100	1,910	25	23,250
1949	44	1.80	218	40	8,310	4,000	2,180	10,100	28,150	6,490	6,330	1,020	66,940
1950	2,660	1,150	883	587	1,760	1,710	1,290	1,310	688	24,050	63,720	5,640	105,400

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second of North Fork Solomon River at Kirwin, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1919	506,1440	*24,000	Sept. 18, 1919	-	-	-	-	-
1920	506	a882	Oct. 9, 1919	-	79.9	58,100	54.4	39,500
1921	526	b1,440	June 2, 1921	1.7	52.5	38,000	48.0	†34,700
1922	546	b1,200	July 25, 1922	.9	†33.3	†24,100	31.8	23,100
1923	566	b2,950	June 11, 12, 1923	.5	107	77,000	113	82,000
1924	586	b674	July 13, 1924	0	31.3	22,700	25.3	18,400
1925	606	1,970	June 22, 1925	-	-	-	-	-
1928	666	-	-	-	-	-	-	-
1929	686,1440	*9,900	July 25, 1929*	4	*60.9	*44,200	*57.5	*41,700
1930	701	2,160	Aug. 24, 1930	1	54.7	39,800	60.1	43,500
1931	716	*2,260	Aug. 24, 1931	2	55.1	39,900	44.4	31,800
1932	731	-	-	-	-	-	-	-
1942	956	*6,540	Aug. 14, 1942	-	-	-	109	78,880
1943	976	5,200	Apr. 11, 1943	0	53.5	38,760	45.1	32,650
1944	1006,1440	*12,200	June 18, 1944*	1	*143	*104,200	*149	*107,900
1945	1036,1440	*3,140	June 24, 1945	1	*48.4	*35,070	*44.1	*31,900
1946	1056,1440	*2,800	June 19, 1946	2	*39.0	*28,200	*37.3	*63,180
1947	1086,1440	11,500	June 23, 1947	2	*156	*113,000	108	77,930
1948	1116	*1,200	July 19, 1948	0	32.0	23,250	31.0	22,480
1949	1146	3,700	June 13, 1949	0	92.5	86,940	98.5	71,290
1950	1176	23,000	Aug. 12, 1950	1	146	105,400	-	-

* Revised.

† Corrected.

a Maximum daily mean discharge.

b Maximum observed.

c Maximum during period December to September.

462. North Fork Solomon River near Downs, Kans.

Location.--Lat 39°31', long. 98°36', on south line sec. 19, T. 6 S., R. 11 W., at bridge on U. S. Highway 24, 3 miles west of Downs, 4½ miles upstream from Oak Creek, and at mile 16.4.

Drainage area.--2,390 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,460.32 ft (revised) above mean sea level, datum of 1929. Prior to Dec. 5, 1946, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 226 cfs.

Extremes.--1945-50: Maximum discharge, 22,500 cfs Aug. 13, 1950 (gage height, 28.23 ft); minimum daily, 1 cfs Jan. 26 to Feb. 4, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	13.7	20.2	165	20.1	29.2	42.5	21.2	193	372	118	390	617	154
1947	696	169	42.6	29.8	48.3	85.8	285	174	1,573	238	75.9	19.6	285
1948	12.6	19.6	25.7	20.3	106	122	32.6	25.3	268	141	51.8	5.6	68.9
1949	5.2	6.9	9.6	3.0	668	139	54.4	618	1,835	179	194	59.2	311
1950	130	40.6	35.9	29.8	45.7	47.9	34.8	123	21.7	648	2,247	247	309

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	843	1,200	708	1,240	1,620	2,610	1,260	11,860	22,160	7,260	23,990	36,720	111,500
1947	42,190	10,050	2,620	1,830	2,680	5,150	16,860	10,720	93,600	14,620	4,670	1,160	206,200
1948	776	1,170	1,580	1,250	6,090	7,520	1,940	1,580	15,940	8,680	3,180	333	50,020
1949	198	411	589	168	58,220	8,530	3,240	37,990	109,200	11,000	11,940	3,520	225,000
1950	7,980	2,430	2,210	1,830	2,540	2,950	2,050	7,560	1,290	39,860	138,200	14,680	223,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1056	*7,250	Aug. 27, 1946	6	154	111,500	226	183,600
1947	1086	8,900	June 7, 1947	13	285	206,200	214	154,800
1948	1116	2,310	June 28, 1948	3	68.9	50,020	65.7	47,690
1949	1146	15,600	June 14, 1949	1	311	225,000	327	236,400
1950	1176	22,500	Aug. 13, 1950	8	309	223,600	-	-

* Not previously published.

463. South Fork Solomon River at Webster, Kans.

Location.--Lat 39°24', long. 99°26', on east line sec. 33, T. 7 S., R. 19 W., at highway bridge 0.2 mile south of Webster and at mile 91.4.

Drainage area.--1,150 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,841.99 ft above mean sea level, datum of 1929 (levels by U. S. Bureau of Reclamation). Prior to May 17, 1946, wire-weight gage at same site and datum.

Average discharge.--5 years (1945-50), 99.2 cfs (revised).

Extremes.--1945-50: Maximum discharge, 27,000 cfs (revised), July 25, 1950 (gage height, 10.72 ft), from rating curve extended above 11,000 cfs on basis of slope-area determination at gage height 14.9 ft for peak of July 12, 1951; maximum gage height, 11.12 ft June 22, 1948; no flow at times 1946-49.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	31.4	23.6	52.8	50.6	*206	-	-	-	-
1946	0	0	.05	6.2	14.6	19.6	5.91	24.7	35.7	*97.6	0	*273	*40.1
1947	*.005	124	45.1	26.2	38.1	70.4	39.4	38.9	243	46.0	.12	0	*141
1948	0	.12	1.07	.67	14.6	45.5	13.0	*67.8	*443	79.2	118	1.35	*84.7
1949	.17	4.36	10.9	1.19	219	75.0	51.8	113	428	62.2	26.1	3.25	81.3
1950	16.3	19.0	16.8	12.0	36.7	33.6	24.0	19.3	15.0	*703	1029	68.8	*169

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	1,740	1,460	3,140	3,120	*12,280	-	-	-	-
1946	0	0	2.8	379	819	1,220	352	1,520	2,520	*6,000	0	*16,220	*29,030
1947	*61,680	7,400	2,770	1,610	2,120	4,330	2,340	2,390	14,450	2,830	7.1	0	*101,900
1948	0	7.1	66	41	840	2,790	774	*4,170	*26,360	4,870	970	80	*48,970
1949	11	259	670	73	12,150	4,610	3,080	6,930	25,460	3,830	1,600	193	58,870
1950	1,000	1,130	1,030	738	2,040	2,060	1,430	1,190	891	*43,250	63,290	4,090	*122,100

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1945	1116,1440	*7,300	June 24, 1945	-	-	-	-	-	-
1946	1116,1440	*9,300	Sept. 7, 1946	0	*40.1	*29,030	*139	*100,900	
1947	1116,1440	*11,700	Oct. 7, 1946	0	*141	*101,900	*41.6	*30,150	
1948	1116,1440	*25,300	June 22, 1948	0	*64.7	*48,970	*65.9	*47,640	
1949	1146	8,300	June 13, 1949	0	81.3	58,870	84.4	61,090	
1950	1176,1440	*27,000	July 25, 1950	0	*169	*122,100	-	-	

* Revised.

† Corrected.

464. South Fork Solomon River at Alton, Kans.

Location.--Lat 39°27', long. 98°57', in SW $\frac{1}{4}$ sec. 12, T. 7 S., R. 15 W., at highway bridge half a mile south of Alton, and at mile 47.6.

Drainage area.--1,720 sq mi, approximately.

Supplemental records available.--Records of suspended-sediment loads for the period June 1946 to September 1950 and water temperatures for the period June 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,598.20 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Sept. 30, 1923, staff gage at same site at datum 2 ft higher. Oct. 1, 1923, to June 30, 1932 chain gage at same site and datum.

Average discharge.--16 years (1919-24) (1928-31) (1942-50), 82.0 cfs (revised).

Extremes.--1919-25, 1928-32, 1942-50: Maximum discharge, 42,800 cfs (revised) Aug. 1, 1928 (gage height, 24.5 ft); no flow Jan. 1, 1948.

Monthly and yearly mean discharge, in cubic feet per second of South Fork Solomon River at Alton, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	*586	-
1920	209	143	136	110	88.9	69.0	105	149	87.8	19.1	112	36.8	106
1921	23.9	49.5	41.2	43.8	44.1	34.3	47.4	41.6	*73.0	35.9	10.5	25.3	39.1
1922	7.57	21.0	17.4	6.87	25.4	44.9	57.5	*74.0	45.6	25.3	12.7	*43	*27.9
1923	24	2.94	12.1	15.6	17.8	25.3	28.7	199	382	183	642	53.4	82.2
1924	47.3	34.3	32.0	11.2	42.8	52.4	60.0	31.7	22.9	31.7	8.70	-	31.3
1925	.85	7.6	8.0	2.1	31.0	28.5	35.3	28.9	*117	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	172	-
1929	130	96.4	95.2	32.0	48.2	71.1	63.0	121	80.7	*124	60.1	23.4	*79.2
1930	32.2	41.5	27.0	18.4	51.6	36.8	37.8	115	153	34.3	66.2	*176	*65.6
1931	156	115	81.9	64.5	49.8	49.6	113	69.9	69.5	320	91.2	20.5	101
1932	20.0	28.2	36.8	14.4	62.8	73.4	50.9	34.4	67.7	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	21.3	113	46.9	-
1943	11.1	18.4	15.3	27.9	36.4	25.4	202	36.4	401	122	18.9	16.6	77.1
1944	4.3	4.9	3.1	7.9	16.6	38.3	119	462	91.4	256	284	24.8	110
1945	10.3	14.7	13.9	26.9	29.2	27.5	64.0	66.2	178	222	10.1	4.0	55.7
1946	3.2	3.6	3.0	13.5	17.8	23.6	9.5	34.5	125	55.5	1.5	208	41.2
1947	804	146	45.2	34.3	41.0	54.8	58.1	308	60.8	8.2	2.7	136	136
1948	1.24	2.13	3.00	2.45	3.6	29.7	14.5	48.2	356	125	151	8.03	62.0
1949	3.12	4.16	9.90	1.54	414	106	68.6	114	558	98.2	41.6	10.7	116
1950	19.8	21.2	17.8	15.5	35.9	34.5	25.4	32.8	15.3	585	232	113	182

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	*34,900
1920	12,900	8,510	8,360	6,760	5,110	4,240	6,250	9,160	5,220	1,170	6,890	2,190	76,800
1921	1,470	2,950	2,530	2,690	2,450	2,110	2,820	2,560	4,340	2,210	646	1,510	28,300
1922	465	1,250	1,070	422	1,300	2,760	3,420	*4,550	2,590	1,560	781	26	*20,200
1923	15	175	744	972	989	1,620	1,710	12,200	22,700	11,300	3,950	3,180	59,600
1924	2,910	2,040	1,970	669	2,460	3,220	3,570	1,950	1,560	1,950	535	46	22,700
1925	52	454	490	151	1,720	1,750	2,100	1,780	*6,960	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	10,200	-
1929	8,000	5,740	5,850	1,970	2,680	4,370	3,750	7,440	4,800	*7,800	3,700	1,390	*57,300
1930	1,980	2,470	1,660	1,130	2,870	2,280	2,250	7,070	9,100	2,110	4,070	*10,500	*47,500
1931	9,620	6,860	5,040	3,970	2,760	3,050	6,730	4,300	4,140	19,700	5,610	1,220	73,000
1932	1,230	1,680	2,260	887	3,610	4,510	3,030	2,120	4,030	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	1,310	6,940	2,790	-
1943	680	1,090	938	1,720	2,020	1,560	11,990	2,360	23,650	7,470	1,160	990	55,830
1944	266	290	192	484	956	2,380	7,090	28,440	5,440	15,730	17,460	1,470	80,180
1945	635	873	857	1,660	1,620	1,690	3,810	4,070	10,570	13,850	619	240	40,290
1946	194	212	182	833	988	1,470	567	2,120	7,420	3,410	93	12,350	29,840
1947	49,410	8,700	2,780	2,110	2,280	3,960	3,260	3,450	18,510	3,740	504	161	98,680
1948	76	127	185	151	204	1,920	884	2,960	21,200	7,690	9,260	478	45,020
1949	192	248	609	94	22,970	6,510	4,060	7,010	33,190	6,040	2,560	635	84,140
1950	1,220	1,260	1,090	950	1,190	2,120	1,510	2,020	912	35,960	75,740	6,750	131,500

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1919	506,1440	*23,500	Sept. 19, 1919	-	-	-	-	-	-
1920	506	*1,500	Aug. 19, 1920	1	106	76,800	74.3	-	53,900
1921	526	*540	June 5, 1921	1.2	39.1	28,300	33.3	-	24,100
1922	546,1440	*315	May 30, 1922	.1	*27.9	*20,200	*25.3	-	*18,300
1923	568	*3,000	June 11, 1923	.2	82.2	59,600	90.5	-	65,500
1924	588	179	July 21, 1924	.3	31.3	22,700	23.1	-	16,800
1925	606,1440	*2,100	June 22, 1925*	-	-	-	-	-	-
1928	666	*42,800	Aug. 1, 1928*	-	-	-	-	-	-
1929	686,1440	*2,900	July 25, 1929	10	5	*57,300	*60.5	-	*43,800
1930	701,1440	*1,820	Sept. 10, 1930	5	*65.6	*47,500	*66.8	-	*62,900
1931	716	*6,300	July 5, 1931	16	101	73,000	78.2	-	56,600
1932	731	a1,040	June 6, 1932	-	-	-	-	-	-
1942	956	b2,740	Aug. 14, 1942	-	-	-	-	-	-
1943	976	*17,500	June 16, 1943	3	77.1	55,830	74.4	-	53,870
1944	1006	6,290	May 2, 1944	1	110	80,180	115	-	81,800
1945	1036	3,200	June 25, 1945	3	55.7	40,290	53.2	-	38,520
1946	1056	4,640	Sept. 8, 1946	1	41.2	29,840	124	-	30,140
1947	1086	8,800	Oct. 8, 1946	2	136	98,680	52.7	-	38,160
1948	1116	6,440	June 23, 1948	.3	62.0	45,020	62.9	-	45,680
1949	1146	6,580	June 14, 1949	-	116	84,140	120	-	86,600
1950	1176	9,960	July 26, 1950	2	182	131,500	-	-	-

* Revised.

* Not previously published.

a Maximum during period October to June.

b Maximum during period June to September.

465. South Fork Solomon River at Osborne, Kans.

Location.--Lat 39°26', long. 98°42', on west line sec. 20, T. 7 S., R. 12 W., at bridge on U. S. Highway 281, half a mile south of Osborne, 0.6 mile downstream from Covert Creek, and at mile 26.1.

Drainage area.--2,024 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,505.09 ft (revised) above mean sea level, datum of 1929. Prior to Dec. 12, 1946, wire-weight gage at same site and datum.

Extremes.--1946-50: Maximum discharge, 10,000 cfs Aug. 29, 1950 (gage height, 20.13 ft); no flow Aug. 21, 1946, Apr. 21, 1948.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	17.6	53.6	181	136	8.6	238	-
1947	792	175	52.5	38.0	48.0	67.7	103	78.0	483	79.7	10.7	4.5	162
1948	4.1	5.9	5.1	4.0	17.6	49.2	17.9	75.3	337	169	147	11.7	70.4
1949	4.8	6.9	13.4	8.7	487	117	80.9	126	804	135	63.2	18.3	152
1950	87.3	29.3	23.9	24.5	44.0	43.2	33.7	197	18.9	643	1,666	166	252

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	-	-	-	-	-	-	1,050	3,290	10,780	8,370	541	14,180	-
1947	48,720	10,420	3,230	2,330	2,670	4,160	6,130	4,800	28,730	4,900	660	286	117,000
1948	250	351	311	248	1,010	3,030	1,070	4,830	20,080	10,370	9,070	696	51,120
1949	298	412	925	558	27,080	7,180	4,810	7,760	47,850	8,280	3,880	1,090	109,900
1950	5,370	1,740	1,470	1,510	2,450	2,660	2,010	12,140	1,130	39,530	102,400	9,860	182,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1946	1056	3,120	Sept. 8, 1946	-	-	-	-	-	-
1947	1086	8,650	Oct. 9, 1946	4	162	117,000	76.8	55,560	-
1948	1116	2,470	June 23, 1948	1	70.4	51,120	71.3	51,740	-
1949	1146	5,790	June 14, 1949	4	152	109,900	162	117,000	-
1950	1176	10,000	Aug. 29, 1950	1	252	182,300	-	-	-

466. East Limestone Creek near Ionia, Kans.

Location.--Lat 39°42', long. 98°21', in NW $\frac{1}{4}$ sec. 21, T. 4 S., R. 9 W., 2.5 miles north of Ionia and 3 miles upstream from Elm Creek.

Drainage area.--27.3 sq mi.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,580 ft (from topographic map).

Extremes.--1934-38: Maximum discharge, 3,920 cfs May 28, 1935 (gage height, 16.35 ft), from rating curve extended above 2,800 cfs; no flow during long periods.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	0.04	0	0.08	0.29	-
1935	0	0	0	0	0	0	0	45.7	80.3	0.09	0.92	28.7	12.9
1936	0	0	0	0	0	0	0	0	0	2.37	0	0.001	0.201
1937	0	0	0	0	0.614	0.001	0	0	17.7	0.113	0	0	1.51
1938	0	0	0	0	0	0	0.011	5.83	8.15	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	2.2	0	5.2	17	-
1935	0	0	0	0	0	0	0	2,810	4,780	5.4	56.4	1,710	9,360
1936	0	0	0	0	0	0	0	0	0	146	0	0.04	146
1937	0	0	0	0	34	0.04	0	0	0	6.9	0	0	1,090
1938	0	0	0	0	0	0	0.64	358	485	-	-	-	-

Yearly discharge, in cubic feet per second of East Limestone Creek near Ionia, Kans.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1934	786	437	Sept. 3, 1934	0	-	-	-
1935	786	3,920	May 28, 1935	0	12.9	9,360	12.9
1936	806	472	July 1, 1936	0	.201	146	.201
1937	826	1,550	June 13, 1937	0	1.51	1,090	1.51
1938	856	1,210	June 11, 1938	0	-	-	-

* Not previously published.

467. Elm Creek near Ionia, Kans.

Location.--Lat 39°40', long. 98°21', in SW $\frac{1}{4}$ sec. 28, T. 4 S., R. 9 W., 0.7 mile northeast of Ionia and 1.2 miles upstream from East Limestone Creek.

Drainage area.--22.7 sq mi.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,570 ft (from topographic map).

Extremes.--1934-38: Maximum discharge, 4,490 cfs Sept. 1, 1935 (gage height, 18.05 ft), from rating curve extended above 3,400 cfs; no flow during long periods.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	0.51	0	0	0	-
1935	0	-	0	0	0	0	0	37.8	69.7	.02	1.57	44.2	12.7
1936	.103	0	0	0	0	0	0	.106	0	.105	0	.024	.109
1937	0	0	0	0	.784	.037	0	.004	12.9	.016	0	0	1.12
1938	0	0	0	0	0	0	.022	5.10	6.33	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	30.6	0	0	0	-
1935	0	0	0	0	0	0	0	2,320	4,150	1.2	96.42	630	9,200
1936	6.3	0	0	0	0	0	0	6.5	0	65	0	1.4	79
1937	0	0	0	0	44	2.3	0	.24	767	.99	0	0	815
1938	0	0	0	0	0	0	1.31	314	377	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1934	786	429	June 22, 1934	0	-	-	-
1935	786	4,490	Sept. 1, 1935	0	12.7	9,200	12.7
1936	806	159	July 1, 1936	0	.109	79	.100
1937	826	1,300	June 13, 1937	0	1.12	815	1.12
1938	856	692	June 11, 1938	0	-	-	-

* Not previously published.

468. East Limestone Creek at Ionia, Kans.

Location.--Lat 39°40', long. 98°20', in SW $\frac{1}{4}$ (corrected) sec. 33, T. 4 S., R. 9 W., in Jewell County, 100 ft downstream from highway bridge in Ionia and 150 ft downstream from Elm Creek.

Drainage area.--51.6 sq mi.

Gage.--Staff gage. Altitude of gage is 1,565 ft (from topographic map).

Extremes.--1934-35: Maximum discharge, 7,250 cfs June 1, 1935 (gage height, 19.44 ft), from rating curve extended above 900 cfs on basis of comparison with combined peak flows of station near Ionia and Elm Creek near Ionia; no flow during long periods.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	0.45	0	0	0.17	-
1935	0	0	0	0	0	0	0	78.2	163	-	-	-	-

* Not previously published.

Monthly and yearly runoff, in acre-feet of East Limestone Creek at Ionia, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	0	0	0	*26.6	-	0	*10.1	-
1935	0	0	0	0	0	0	0	4,810	9,700	-	-	-	-

* Not previously published.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Maximum Date					
1934	786	-	-	0	-	-	-	-
1935	786	7,250	June 1, 1935	0	-	-	-	-

469. Solomon River at Beloit, Kans.

Location.--Lat 39°27', long. 98°07', in SW $\frac{1}{4}$ sec. 9, T. 7 S., R. 7 W., in Beloit 150 ft upstream from dam at city water plant, $1\frac{1}{2}$ miles upstream from Leban Creek, and at mile 130.6.

Drainage area.--5,430 sq mi, approximately.

Supplemental records available.--Fragmentary gage-height records collected at same site since January 1905 are contained in reports of U. S. Weather Bureau and Kansas Water Commission.

Records of chemical analyses for the period December 1949 to August 1950, suspended-sediment loads for the period May 1948 to September 1950, and water temperatures for the period February 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder and wire-weight gage (450 ft downstream and below dam).

Datum of gages is 1,339.01 ft (revised) above mean sea level, datum of 1929. Apr. 14, 1929 to Mar. 18, 1930, chain gage, and Mar. 19, 1930, to Oct. 6, 1938, water-stage recorder, at site 450 ft downstream, and Oct. 7, 1938 to Mar. 28, 1946, water-stage recorder at site 250 ft downstream, all at present datum.

Average discharge.--21 years (1929-50), 382 cfs.

Extremes.--1929-50: Maximum discharge, 37,800 cfs June 3, 1935 (gage height, 34.5 ft, from floodmark), from rating curve extended above 25,000 cfs on basis of velocity-area studies; no flow at times during 1939-41, 1946 (regulated).

Remarks.--Prior to 1946, considerable regulation at low flows by power plant just upstream, occasional regulation by manipulation of sluice gate in dam thereafter.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	313	1,400	423	178	124	-
1930	158	151	86.1	56.4	105	82.0	100	428	458	72.5	198	297	181
1931	348	264	149	109	118	106	235	*514	161	*635	*475	*69.8	*267
1932	*100	*74.6	*73.4	*40.0	*282	*162	*93.5	*77.5	*316	*74.6	*185	*355	*151
1933	84.7	29.3	22.8	23.0	40.6	42.6	*326	*170	31.2	*155	*93.9	*185	*100
1934	17.2	22.3	44.1	25.7	29.2	37.1	36.1	55.0	991	36.1	28.8	249	130
1935	6.2	13.0	10.7	9.5	16.9	13.1	15.21	514	4,976	392	545	1,148	719
1936	123	68.0	52.0	32.5	28.1	53.1	35.5	652	133	26.7	15.6	447	139
1937	59.8	17.6	24.2	10.8	177	76.5	27.8	45.51	308	350	250	169	208
1938	32.3	16.5	17.7	27.0	27.6	61.6	214	908	1,112	408	202	98.1	261
1939	22.9	9.9	9.5	14.6	10.5	82.5	83.1	109	731	284	798	13.6	180
1940	2.7	5.4	6.8	3.9	6.9	27.1	19.2	412	105	116	65.9	209	82.1
1941	21.8	41.1	18.5	18.4	32.2	39.4	281	131	4,468	663	425	2,110	681
1942	1,229	378	163	214	132	184	618	588	989	292	864	910	548
1943	117	92.9	88.2	66.0	320	88.0	944	132	2,220	341	88.5	81.7	377
1944	36.9	38.7	32.3	37.3	55.1	94.3	854	1,694	1,219	1,585	1,059	296	584
1945	93.8	90.1	88.5	91.8	99.5	92.6	348	855	814	1,757	109	54.0	377
1946	47.3	45.8	38.6	44.7	67.9	87.5	65.2	145	688	677	439	2,816	428
1947	1,566	726	173	114	99.4	195	710	536	3,233	508	114	54.0	668
1948	39.8	49.3	56.0	55.2	111	291	91.8	177	760	939	285	49.4	241
1949	34.7	32.0	39.6	185	2,193	363	172	959	3,403	551	314	158	684
1950	547	113	100	91.8	130	130	95.31	374	124	3,006	5,140	1,108	1,011

* Revised.

Monthly and yearly runoff, in acre-feet of Solomon River at Beloit, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	19,200	83,300	26,000	10,900	7,380	-
1930	9,720	8,990	5,290	3,470	5,830	5,040	5,950	26,300	26,100	4,460	12,200	17,700	131,000
1931	21,400	15,700	9,170	6,690	6,540	6,510	14,000	31,600	9,600	39,100	29,200	4,160	*194,000
1932	*6,180	*4,440	*4,510	*2,480	16,200	*9,930	*5,570	*4,770	*18,800	*4,590	*11,400	*21,100	*110,000
1933	5,210	1,740	1,400	1,410	2,250	2,630	*19,400	*10,400	1,850	*9,530	*5,770	*11,000	*72,600
1934	1,060	1,320	2,710	1,580	1,620	2,280	2,150	3,380	58,950	2,220	1,770	14,830	93,870
1935	383	776	658	585	938	805	906	93,120	296,100	24,090	33,530	68,340	520,200
1936	7,540	4,050	3,200	2,000	1,620	3,280	2,110	40,070	7,940	1,640	961	28,590	101,000
1937	5,660	1,050	1,490	670	9,840	4,700	1,660	2,800	77,830	15,660	15,370	10,050	148,900
1938	1,990	982	1,090	1,660	1,540	3,800	12,740	55,850	66,180	25,060	12,450	5,720	189,100
1939	1,410	591	581	912	583	3,840	4,940	6,680	43,480	17,460	49,050	807	130,300
1940	165	321	420	240	395	1,670	1,140	25,360	6,240	7,150	4,050	12,430	59,580
1941	1,340	2,450	1,140	1,130	1,790	2,420	16,710	8,070	285,900	40,800	26,120	25,500	493,400
1942	75,540	22,480	10,050	13,170	7,310	11,340	36,780	36,180	58,820	17,960	53,100	54,140	396,800
1943	7,170	5,530	5,420	4,060	17,790	5,410	56,200	8,150	132,100	20,960	5,440	4,860	273,100
1944	2,270	2,300	1,990	2,290	3,170	5,800	50,810	104,200	72,550	96,210	65,100	17,650	424,300
1945	5,760	5,360	5,440	5,640	5,510	5,700	20,710	52,570	48,410	108,000	6,710	3,210	273,000
1946	2,910	2,720	2,380	2,750	3,770	5,380	3,880	18,890	40,970	41,610	26,990	167,500	309,800
1947	96,520	43,180	10,610	7,040	5,520	12,020	42,260	32,960	192,400	31,260	7,000	3,220	483,800
1948	2,450	2,940	3,440	3,590	6,380	17,910	5,460	10,880	45,220	57,760	16,270	2,940	175,000
1949	2,140	1,900	2,440	10,170	21,800	22,280	10,220	58,940	202,500	33,900	19,280	9,420	495,000
1950	33,630	6,740	6,170	5,650	7,240	7,980	5,670	84,510	7,370	184,800	16,000	65,940	731,700

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1929	686	11,900	June 8, 1929	-	-	-	-	-	-
1930	701	*3,010	Sept. 11, 1930	5	181	131,000	212	153,000	
1931	716	14,440	May 6, 1931	*5	*287	*194,000	*224	*183,000	
1932	1440	*4,020	Sept. 13, 1932	*1	*151	*110,000	*142	*103,000	
1933	746	14,440	*3,870	Apr. 23, 1933	1	*100	*72,600	*95.9	*69,300
1934	761	7,100	June 19, 1934	2	130	93,870	125	90,800	
1935	786	37,800	June 3, 1935	1	719	520,200	736	533,200	
1936	806	5,910	May 12, 1936	.1	139	101,000	127	92,390	
1937	828	5,100	June 6, 1937	1	206	146,800	203	246,700	
1938	856	6,180	May 27, 1938†	1	261	189,100	259	187,600	
1939	876	10,400	Aug. 16, 1939	0	180	130,300	178	128,700	
1940	896	4,120	May 9, 1940	0	82.1	59,580	87.6	63,600	
1941	926	33,600	June 11, 1941	4	681	493,400	824	596,500	
1942	956	8,120	Oct. 10, 1941	49	548	396,800	424	306,900	
1943	976	12,900	June 18, 1943	40	377	273,100	361	261,500	
1944	1006	15,300	May 4, 1944	20	584	424,300	598	434,300	
1945	1036	12,200	July 19, 1945	22	377	273,000	365	264,500	
1946	1056	14,400	Sept. 8, 1946	22	428	309,800	624	451,800	
1947	1086	8,850	Oct. 11, 1946	42	668	483,800	473	342,500	
1948	1116	6,680	July 21, 1948	28	241	175,000	238	172,700	
1949	1146	11,200	June 16, 1949	19	684	495,000	739	535,100	
1950	1176	23,600	Aug. 15, 1950	42	1,011	731,700	-	-	

* Revised.

† Corrected.

Note.--Records for April 1895 to June 1897, published in 18th and 19th Ann. Repts., Pt 4 have been found in error on the basis of restudy of the original data. Those records are not published herein and should not be used.

470. Solomon River at Niles, Kans. 1/

Location.--Lat 38°58'08", long. 97°28'34", in NW¼ sec. 31, T. 12 S., R. 1 W., at highway bridge, three quarters of a mile west of Niles, and at mile 16.9.

Drainage area.--6,770 sq mi, approximately; 6,550 sq mi, approximately, at site used October 1917 to May 1919.

Gage (revised).--Water-stage recorder. Datum of gage is 1,160.97 ft above mean sea level, datum of 1929. Prior to Nov. 30, 1903, wire-weight gage at present site at different datum. Oct. 1, 1917, to May 31, 1919, staff gage at site 27 miles upstream at different datum. June 1, 1919, to Sept. 30, 1922, chain gage at present site at datum 2 ft higher. Oct. 1, 1922, to Apr. 25, 1934, chain gage at present site and datum.

Average discharge.--39 years (1897-1903, 1917-50), 541 cfs (revised).

Extremes.--1897-1903, 1917-50: Maximum discharge, 30,000 cfs (revised) June 3, 1903 (gage height, 33.8 ft, datum then in use), from rating curve extended above 9,000 cfs on basis of records for station at Beloit; minimum observed, 1 cfs Sept. 4, 1926.

1/ Published as "near Bennington", 1918-19.

Monthly and yearly mean discharge, in cubic feet per second of Solomon River at Niles, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	a296	1,083	838	193	106	-
1898	97	114	a78	a96	a146	131	146	243	534	156	56	79	*158
1899	58	a86	a92	a106	a122	177	128	304	1,790	580	272	88	*315
1900	126	†84	a82	a102	a71	a236	760	532	230	135	242	294	*240
1901	116	71	75	a70	a89	152	452	142	157	27	18	243	*132
1902	67	89	a74	a82	a92	101	89	285	1,590	2,490	847	1,590	*587
1903	2,260	601	a572	a303	a306	1,870	a425	5,550	7,020	a1,260	3,820	970	*2,060
1904	427	456	-	-	-	-	-	-	-	-	-	-	-
1918	49.7	47.3	59.1	50	92.7	119	95.8	391	1,310	299	201	509	268
1919	369	101	78.4	97.2	156	172	553	1,300	3,030	522	224	1,900	*706
1920	875	493	311	331	270	219	611	482	284	257	579	606	443
1921	116	142	130	129	128	113	253	608	580	384	224	127	243
1922	59.4	60.7	66.6	41.7	79.2	125	179	210	208	267	124	41.5	102
1923	16.2	50.8	34.4	42.5	41.1	65.8	90.9	1,560	3,740	919	282	418	644
1924	203	122	108	98.1	133	154	177	106	88.2	76.0	294	49.4	134
1925	26.2	33.5	40.6	17.6	76.7	75.1	187	139	448	85.8	360	125	134
1926	31.3	59.5	42.6	21.6	79.7	78.1	68.8	78.8	263	821	351	1,850	295
1927	494	†408	158	130	177	265	2,310	619	3,630	563	3,030	†7,700	1,120
1928	441	194	135	145	198	154	138	295	1,620	3,930	3,570	494	951
1929	581	521	251	159	185	404	1,280	590	2,080	678	355	171	589
1930	191	190	143	128	187	140	152	999	902	135	507	465	328
1931	352	332	195	151	156	147	221	603	212	674	575	95.5	312
1932	109	78.5	95.3	95.5	252	184	156	123	351	550	384	993	270
1933	119	64.2	46.5	65.7	65.3	67.3	374	211	69.7	128	234	278	144
1934	32.8	29.9	69.7	41.2	52.2	60.8	55.6	75.4	973	98.8	38.8	199	143
1935	24.0	29.5	37.7	25.3	38.0	39.3	44.4	1,199	6,421	1,408	434	1,719	947
1936	278	137	122	91.1	49.5	99.1	71.3	657	215	59.0	39.5	382	184
1937	171	49.0	57.4	48.8	58.9	187	64.0	87	41,524	344	296	333	307
1938	55.8	38.8	37.7	39.6	49.5	82.9	91.4	552	615	507	96.1	372	372
1939	30.9	43.0	29.8	36.2	33.0	118	150	138	1,274	340	1,121	53.7	281
1940	34.3	27.0	28.2	27.5	47.6	49.7	41.7	357	125	120	354	227	120
1941	60.9	64.7	47.5	45.7	51.2	66.6	241	353	3,687	1,093	656	2,232	713
1942	2,885	617	329	885	270	319	953	1,407	2,354	525	904	5,790	1,228
1943	396	222	209	171	584	193	1,187	588	2,914	651	207	149	614
1944	103	87.6	66.4	85.1	104	207	1,790	2,635	1,337	1,678	1,270	724	845
1945	219	185	205	183	195	246	973	2,156	1,791	3,041	353	197	817
1946	159	139	104	102	144	146	137	177	680	810	478	5,066	674
1947	1,906	1,289	388	295	238	329	1,327	743	3,660	920	244	139	955
1948	109	111	127	114	262	772	200	642	989	3,769	578	270	687
1949	128	182	125	560	1,966	1,053	313	1,417	5,273	761	417	245	859
1950	628	183	187	153	175	182	136	1,537	414	4,480	4,699	2,231	1,263

* Revised.

† Corrected.

a Only monthly figures revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1897	-	-	-	-	-	-	-	-	*18,200	64,400	51,600	11,900	6,320
1898	5,980	6,780	*4,820	*5,890	*8,124	8,060	8,690	14,900	31,800	9,590	3,440	4,700	*113,000
1899	3,570	*3,900	*5,650	*6,510	*6,800	10,900	7,620	18,700	106,000	35,700	16,740	5,240	*228,000
1900	7,750	†4,970	*5,030	*5,080	*3,950	*14,500	45,200	32,700	13,700	8,300	14,900	17,500	*174,000
1901	7,130	4,220	4,610	*4,320	*3,850	9,350	26,900	8,730	9,340	1,660	1,110	14,500	*95,700
1902	4,120	5,890	*4,540	*5,020	*5,120	6,210	5,300	17,500	82,800	153,000	52,100	82,800	*425,000
1903	139,000	35,800	*22,900	*18,600	*17,000	115,000	*25,300	*41,000	48,000	*77,700	223,000	57,700	*1,490,000
1904	26,300	27,100	-	-	-	-	-	-	-	-	-	-	-
1918	3,060	2,810	3,630	3,070	5,150	7,320	5,710	24,000	78,000	18,400	12,400	30,300	194,000
1919	22,700	6,010	4,820	5,980	8,660	10,600	32,900	*80,200	180,000	32,100	13,800	13,000	*511,000
1920	53,800	29,300	19,100	20,400	15,500	13,500	36,400	29,600	16,900	15,800	35,600	36,100	322,000
1921	7,130	8,450	7,990	7,930	7,110	6,950	13,900	37,400	34,500	25,600	13,800	7,560	176,000
1922	3,850	3,610	4,100	2,580	4,400	7,750	10,700	12,900	12,400	16,400	7,620	2,470	98,600
1923	998	3,050	2,120	2,610	2,280	3,900	5,410	95,900	223,000	56,500	17,500	24,900	438,000
1924	12,500	7,250	6,640	6,030	7,850	9,470	10,600	8,550	5,250	4,670	18,100	2,940	97,600
1925	1,610	1,990	†2,620	1,090	4,260	4,620	11,100	8,550	26,700	5,280	22,100	7,440	97,200
1926	1,920	3,540	2,620	1,330	4,430	4,800	4,090	4,850	15,600	50,500	21,600	98,200	213,000
1927	30,400	24,300	9,720	7,990	9,830	16,300	137,000	38,100	216,000	34,600	186,000	*401,000	*811,000
1928	27,100	11,500	8,500	8,920	11,400	9,470	8,210	18,100	96,400	42,000	220,000	29,400	691,000
1929	23,400	19,100	15,400	9,780	10,300	24,800	76,200	36,300	124,000	41,600	20,800	10,200	412,000
1930	11,700	11,300	8,790	7,870	10,400	8,610	9,040	61,400	53,700	8,300	18,900	27,700	238,000
1931	21,600	19,800	12,000	9,310	8,670	9,030	13,200	37,100	12,600	41,400	35,400	5,680	226,000
1932	6,700	4,680	5,880	5,870	14,500	11,500	8,070	7,550	20,900	33,800	23,600	53,200	198,000
1933	7,310	3,820	2,860	4,040	3,630	4,140	22,200	13,000	4,150	7,890	14,400	16,600	104,000
1934	2,020	1,780	4,280	2,530	2,900	3,750	3,400	57,880	6,080	2,390	11,850	103,400	103,400
1935	1,470	1,750	2,320	1,560	2,110	2,420	2,640	73,710	382,100	86,590	26,710	102,300	686,700
1936	17,070	8,140	7,510	5,600	2,850	6,090	4,240	40,380	12,770	3,630	2,430	22,750	133,500
1937	10,540	2,910	3,100	3,090	31,430	10,270	3,810	5,390	90,690	21,130	18,230	19,820	220,300
1938	3,430	2,310	2,070	2,500	2,750	5,100	4,440	95,450	96,110	31,160	17,280	5,720	269,500
1939	1,900	2,560	1,830	2,220	1,830	7,250	8,910	8,470	75,790	20,880	68,910	3,200	203,800
1940	2,110	1,610	1,730	1,080	2,740	3,060	2,480	21,970	7,450	7,400	21,760	13,530	86,920

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet of Solomon River at Niles, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	5,740	5,850	2,920	2,810	2,840	4,110	14,350	21,730	219,400	67,180	40,360	132,800	516,100
1942	177,400	56,590	20,250	25,890	15,000	19,630	56,720	36,530	140,100	32,260	55,590	225,500	889,300
1943	24,350	13,210	12,870	10,500	32,420	11,890	69,440	34,950	173,400	40,030	12,720	8,890	444,800
1944	6,330	5,210	4,080	5,230	5,990	12,720	106,500	162,000	79,570	103,200	78,100	43,060	612,000
1945	13,490	11,050	12,620	11,270	10,800	15,120	57,920	132,500	106,500	187,000	21,730	11,710	591,700
1946	9,770	8,280	6,380	6,270	7,970	8,980	8,130	10,890	40,480	49,790	29,420	501,500	487,900
1947	117,200	76,720	23,880	18,120	13,200	20,230	78,990	45,710	217,800	56,590	14,980	8,250	691,700
1948	6,690	6,600	7,800	7,030	15,060	47,490	11,910	59,450	58,850	231,700	35,550	16,050	494,200
1949	7,900	9,620	7,570	34,450	109,200	64,740	18,620	87,120	194,800	46,760	25,620	14,580	621,000
1950	38,630	10,890	10,240	9,430	9,710	11,190	8,120	94,480	24,630	275,500	268,900	132,700	914,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1897	(a)	\$5,800	July 2, 1897	-	-	-	-	-
1898	(b)	\$1,260	June 10, 1898	35	*156	*113,000	*150	*108,000
1899	(c)	\$6,440	June 5, 1899	-	*315	*228,000	*321	*232,000
1900	(d)	\$4,710	Apr. 20, 1900	37	*240	*174,000	*237	*172,000
1901	75	\$2,200	Apr. 12, 1901	7	*132	*95,700	*130	*94,300
1902	84	\$7,350	July 2, 1902	38	*587	*425,000	*840	*608,000
1903	99,1440	\$30,000	June 3, 1903	-	*2,060	*1,490,000	-	-
1918	478	8,130	June 6, 1918	13	258	194,000	301	218,000
1919	506,1440	10,200	Sept. 26, 1919	26	*706	*511,000	*800	*579,000
1920	506	\$5,100	Oct. 1, 1919	119	443	322,000	335	243,000
1921	526	5,150	May 10, 1921	17	243	176,000	227	164,000
1922	546	1,280	Apr. 24, 1922	12	122	88,600	115	83,300
1923	566	9,300	June 11, 1923	7.1	604	438,000	632	458,000
1924	586	2,490	Aug. 19, 1924	15	134	97,600	106	77,400
1925	606	1,950	Aug. 3, 1925	-	134	97,200	137	99,200
1926	626	5,350	Sept. 21, 1926	1	295	213,000	373	270,000
1927	646	9,860	June 20, 1927	75	1,120	*811,000	1,100	*794,000
1928	666	10,200	Aug. 9, 1928	85	951	691,000	966	702,000
1929	686	8,660	June 12, 1929	105	569	412,000	533	386,000
1930	701	4,710	June 5, 1930	48	328	238,000	358	259,000
1931	716	4,040	May 8, 1931	67	312	226,000	282	190,000
1932	731	6,800	Sept. 2, 1932	45	270	196,000	266	193,000
1933	746	3,720	Apr. 25, 1933	30	144	104,000	136	98,130
1934	761	4,860	June 22, 1934	19	143	103,400	139	100,900
1935	786,926	20,000	June 7, 1935	16	947	685,700	985	712,900
1936	806	4,290	May 14, 1936	16	184	133,500	162	117,300
1937	826	4,940	June 8, 1937	17	304	220,300	292	211,600
1938	856	5,850	June 3, 1938	20	372	269,300	370	267,800
1939	876	6,000	Aug. 20, 1939	14	281	203,600	260	202,900
1940	896	3,970	Aug. 28, 1940	12	120	86,920	127	91,960
1941	926	15,200	June 17, 1941	19	713	516,100	1,022	739,900
1942	956	18,800	Sept. 4, 1942	100	1,228	889,300	974	705,400
1943	976	8,650	June 17, 1943	68	614	444,600	566	409,800
1944	1006	9,390	May 9, 1944	40	843	612,000	873	633,500
1945	1036	9,880	May 25, 1945	130	817	591,700	800	579,000
1946	1056	18,200	Sept. 8, 1946	57	674	487,900	941	681,200
1947	1086	7,690	Oct. 16, 1946	106	959	691,700	694	495,000
1948	1116	16,200	July 20, 1948	85	667	484,200	672	488,200
1949	1146	7,680	Mar. 2, 1949	110	858	621,000	906	655,600
1950	1176	12,000	Aug. 20, 1950	110	1,263	914,400	-	-

* Revised.

* Not previously published.

a 19th Ann. Rept., Pt. 4.

b 20th Ann. Rept., Pt. 4.

c 21st Ann. Rept., Pt. 4.

d 22d Ann. Rept., Pt. 4.

e Maximum peak discharge; maximum discharge during the year 8,100 cfs at 12 p.m. Sept. 30, 1902, stage rising.

471. Smoky Hill River at Solomon, Kans.1/

Location.--Lat 38°54', long 97°22', in SE $\frac{1}{4}$ sec. 19, T. 13 S., R. 1 E., at highway bridge 500 ft downstream from Solomon River, 1 mile south of Solomon and at mile 85.3.

Drainage area.--18,830 sq mi, approximately (revised). 18,880 sq mi, approximately (revised), at site used 1918-21.

Supplemental records available.--April to July 1904, gage heights and one discharge measurement only. Gage height records collected at site near Abilene (SE $\frac{1}{4}$ sec. 23, T. 13 S., R. 1 E.) from 1904 to 1922 and at Solomon from 1922 to 1934 are contained in reports of U. S. Weather Bureau.

Gage.--Chain gage. Altitude of gage is 1,130 ft (from river profile map). Apr. 27, to July 15, 1904, staff gage at different datum. Feb. 3, 1918, to Sept. 30, 1921, chain gage at site about 9 miles downstream in SE $\frac{1}{4}$ sec. 23, T. 13 S., R. 1 E., at different datum.

Average discharge.--15 years (1918-21, 1922-34), 931 cfs.

Extremes.--1918-21, 1922-34: Maximum discharge observed, 18,400 cfs Aug. 10, 1928 (gage height, 28.0 ft); minimum observed, 25 cfs Oct. 14, 1924 (corrected). Flood of June 3, 1903, reached a stage of 30.4 ft (revised), from floodmarks, at site and datum used 1922-34.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	a216	349	502	759	2,050	457	240	508	-
1919	665	151	109	191	425	1,300	2,040	3,530	5,720	1,050	520	2,130	1,480
1920	1,320	805	651	710	661	565	1,000	1,050	509	414	1,050	878	802
1921	239	245	213	233	233	242	419	952	1,060	830	b424	b582	*474
1923	*44.0	234	96.7	101	111	134	128	*2,330	6,120	1,950	749	997	*1,080
1924	690	377	303	223	323	371	588	841	294	223	624	142	401
1925	65.3	74.2	98.2	65	170	159	616	260	797	423	1,070	858	387
1926	158	174	127	76.7	197	213	249	221	462	938	373	2,050	435
1927	765	611	265	214	274	389	2,530	1,150	6,910	1,490	7,030	3,560	2,100
1928	1,140	636	503	401	518	441	545	545	3,020	6,210	8,370	1,350	1,990
1929	850	797	610	424	355	1,080	1,660	2,840	3,680	2,790	1,070	519	1,400
1930	550	589	463	383	489	397	361	2,370	3,190	561	632	1,460	949
1931	1,280	1,020	640	450	424	416	1,030	1,330	874	1,190	928	275	824
1932	235	256	279	239	438	386	287	272	1,210	2,010	586	2,240	700
1933	405	196	185	191	184	203	712	581	162	305	1,460	1,740	528
1934	356	156	215	125	145	190	154	316	2,205	386	145	602	413
1935	109	*105	*80	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; estimated on the basis of weather records and records for stations on nearby streams.

a Revised; supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b Only monthly figures revised; revised daily figures not available.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	a12,000	21,500	29,900	46,700	22,000	29,100	14,800	30,200	-
1919	40,900	8,980	6,700	11,700	23,800	79,900	121,000	217,000	340,000	64,800	32,000	27,000	1,070,000
1920	81,200	47,900	40,000	43,700	38,000	34,700	59,500	64,800	30,300	25,500	64,600	52,200	582,000
1921	14,700	14,600	13,100	14,300	12,900	14,900	24,900	58,500	63,100	51,000	*26,100	*34,700	*343,000
1923	*2,710	13,900	5,950	6,210	6,160	8,240	7,500	145,000	564,000	120,000	46,100	59,300	*783,000
1924	42,400	22,400	18,600	13,700	18,600	22,800	35,000	39,400	17,500	13,700	38,400	8,450	291,000
1925	4,020	4,420	6,040	4,000	9,440	9,780	56,700	16,000	47,400	26,000	65,800	51,100	281,000
1926	9,720	10,400	7,810	4,720	10,900	13,100	14,800	13,600	27,500	57,700	22,900	22,000	315,000
1927	47,000	36,400	18,300	13,200	15,200	23,900	51,000	70,700	411,000	91,600	432,000	212,000	1,520,000
1928	70,100	37,800	30,900	24,700	29,800	27,100	32,400	33,500	80,000	82,000	515,000	79,100	1,440,000
1929	52,300	47,400	37,500	26,100	19,700	66,400	98,800	175,000	219,000	172,000	85,800	30,900	1,010,000
1930	32,600	33,900	28,500	23,600	27,200	24,400	21,500	146,000	190,000	34,500	38,900	88,900	688,000
1931	78,800	60,400	39,300	27,700	23,500	25,600	61,000	81,500	52,000	73,100	57,100	16,400	595,000
1932	14,400	14,000	17,100	14,700	25,200	23,700	17,100	18,800	72,200	124,000	36,100	33,000	508,000
1933	24,900	11,700	11,400	11,700	10,200	12,500	42,500	35,700	9,670	18,700	89,700	104,000	382,000
1934	21,900	8,120	13,240	7,670	8,050	11,670	9,140	19,430	31,200	23,740	8,910	35,790	299,000
1935	6,680	*6,250	*4,920	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; see footnote to preceding table.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

1/ Published as "near Abilene", 1918-21.

Yearly discharge, in cubic feet per second of Smoky Hill River at Solomon, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum observed		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	476	9,250	June 7, 1918	-	-	-	-	-
1919	506	12,800	June 14, 15, 1919*	-	1,480	1,070,000	1,840	1,190,000
1920	506	7,080	Aug. 27, 1920	195	802	592,000	828	456,000
1921	526	5,760	May 11, 12, 1921	-	*474	*343,000	-	-
1923	566, 1440	14,200	June 13, 1923	33	*1,080	*783,000	*1,170	*844,000
1924	586	4,450	May 1, 1924	76	401	291,000	306	222,000
1925	606	3,850	June 27, 1925	25	387	281,000	406	294,000
1926	626	6,870	Sept. 18, 1926	-	435	315,000	535	387,000
1927	646	13,700	Aug. 21, 1927	172	2,100	1,520,000	2,150	1,560,000
1928	666	18,400	Aug. 10, 1928	284	1,990	1,440,000	1,980	1,440,000
1929	686	12,000	July 13, 1928	212	1,400	1,010,000	1,340	969,000
1930	701	10,800	May 9, 1930	245	949	688,000	1,060	772,000
1931	716	4,700	May 9, 1931	158	824	596,000	640	463,000
1932	731	11,300	July 9, 1932	-	700	508,000	703	511,000
1933	746	6,750	Aug. 25, 1933	86	528	382,000	522	378,000
1934	761	11,200	June 22, 1934	60	413	299,000	*378	*273,400

* Revised.

* Not previously published.

472. Smoky Hill River at Enterprise, Kans.

Location.--Lat 38°54', long. 97°07', in NE $\frac{1}{4}$ sec. 20, T. 13 S., R. 3 E., in Enterprise, at Atchison, Topeka & Santa Fe Railroad bridge, 18.4 miles (corrected) upstream from Chapman Creek, and at mile 55.2.

Drainage area.--19,200 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,097.85 ft (revised) above mean sea level, datum of 1929. Prior to Jan. 29, 1935, wire-weight gage at same site and datum.

Average discharge.--16 years (1934-50), 1,527 cfs.

Extremes.--1934-50: Maximum discharge, 37,800 cfs Oct. 20, 1941 (gage height, 30.20 ft, from graph based on gage readings); minimum, about 10 cfs (revised) Apr. 23, 1935 (regulated by power plant then in operation); minimum daily, 45 cfs Jan. 31, 1937. Maximum stage known, about 32 ft in May 1903 (discharge, 90,000 cfs).

Remarks.--Flow regulated by Kanopolis Reservoir beginning July 29, 1946.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	109	111	82.7	73.2	98.0	98.1	96.0	3,466	10,530	5,210	1,057	2,227	1,930
1936	1,076	417	328	242	173	319	214	1,789	945	214	121	468	529
1937	431	107	109	77.8	319	327	136	213	2,490	968	640	874	633
1938	187	126	87.2	102	103	180	209	3,608	6,734	1,365	994	593	1,193
1939	229	214	154	154	116	261	624	500	2,080	1,091	2,009	190	621
1940	100	96.6	96.9	55.0	126	149	108	827	476	507	691	933	348
1941	272	220	166	129	149	163	353	715	5,873	2,492	2,293	5,612	1,532
1942	8,747	784	995	795	679	790	3,312	3,521	6,664	1,607	1,749	6,411	3,092
1943	2,047	716	676	720	1,155	505	1,625	1,104	4,444	1,343	451	387	1,259
1944	378	248	213	239	284	740	5,776	6,351	2,305	3,697	3,233	1,788	2,107
1945	636	472	664	505	555	1,116	3,935	4,246	3,466	6,913	1,013	757	2,034
1946	523	368	368	421	373	420	370	630	838	1,110	713	7,384	1,121
1947	4,579	685	914	678	606	863	3,256	1,622	6,686	1,878	561	300	2,051
1948	235	226	287	268	709	1,931	538	889	2,331	8,134	1,611	770	1,504
1949	329	482	343	2,122	5,776	2,928	872	2,655	5,998	2,007	912	730	2,067
1950	1,162	427	609	476	415	370	298	2,028	1,109	7,756	9,153	4,845	2,411

Monthly and yearly runoff, in acre-feet of Smoky Hill River at Enterprise, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	6,680	6,800	5,090	4,500	5,440	6,030	5,710	13,100	26,300	20,400	64,990	132,500	1,397,000
1936	66,140	24,800	20,170	14,860	9,930	19,620	12,750	10,000	56,220	13,180	7,420	27,850	382,900
1937	26,490	6,360	6,690	4,790	73,260	20,090	8,090	13,460	48,200	59,500	39,350	52,020	459,300
1938	11,520	7,480	5,980	6,260	5,710	11,080	12,430	221,900	400,700	83,850	61,120	35,270	863,400
1939	14,050	12,720	9,480	9,470	6,450	16,060	37,150	18,450	23,800	67,090	123,500	11,310	449,500
1940	6,180	5,750	5,960	3,380	7,270	9,180	6,430	50,840	28,300	31,160	42,490	55,530	252,500
1941	16,740	13,110	10,190	7,940	8,290	10,030	20,980	43,950	549,500	153,200	141,000	53,900	1,109,000
1942	537,900	106,100	61,180	48,890	37,720	48,600	197,100	216,500	596,500	98,830	107,800	581,500	2,238,000
1943	125,900	42,620	41,590	44,240	64,140	31,020	96,670	87,890	264,500	82,600	27,720	23,010	911,900
1944	23,250	14,740	13,070	14,700	16,320	45,500	343,700	390,500	137,200	225,500	198,800	106,400	1,530,000
1945	39,130	28,080	40,840	31,040	30,800	68,620	234,200	261,100	206,200	425,100	62,500	45,070	1,472,000
1946	32,160	21,900	22,640	25,900	20,730	25,820	22,020	38,780	49,880	68,230	43,810	439,400	811,200
1947	281,500	159,700	56,200	41,710	33,640	53,050	193,700	99,720	597,800	115,500	34,470	17,830	1,485,000
1948	14,420	13,420	17,670	16,490	40,800	118,700	31,990	54,670	138,700	500,100	99,050	45,820	1,092,000
1949	20,250	28,690	21,120	30,500	320,800	180,100	51,900	165,200	556,900	123,400	56,090	43,420	1,496,000
1950	71,440	25,430	37,440	29,280	23,050	22,750	17,710	24,500	65,980	477,000	562,800	288,300	1,748,000

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	786	20,200	June 9, 1935	60	1,930	1,397,000	2,058	1,490,000
1936	806	7,000	May 15, 1936	73	528	382,900	429	311,400
1937	826	7,300	June 11, 1937	45	633	458,300	613	443,700
1938	856	12,200	June 7, 1938	63	1,193	963,400	1,208	874,600
1939	876	8,540	Aug. 20, 1939	60	621	449,500	596	431,200
1940	896	4,050	Sept. 10, 1940	49	348	252,500	378	274,600
1941	926	16,400	June 19, 1941	87	1,532	1,109,000	2,450	1,774,000
1942	956	37,800	Oct. 20, 1941	210	3,092	2,238,000	2,408	1,743,000
1943	976	13,500	June 17, 1943	241	1,259	911,900	1,040	752,800
1944	1006	17,800	May 10, 1944	120	2,107	1,530,000	2,186	1,587,000
1945	1036	30,400	July 18, 1945	356	2,034	1,472,000	1,991	1,441,000
1946	1056	20,500	Sept. 13, 1946	235	1,121	811,200	1,702	1,232,000
1947	1086	15,200	Oct. 19, 1946	240	2,061	1,485,000	1,427	1,033,000
1948	1116	27,000	July 21, 1948	180	1,504	1,092,000	1,538	1,116,000
1949	1146	11,100	Feb. 13, 1949	229	2,067	1,496,000	2,156	1,561,000
1950	1176	18,200	July 20, 1950	270	2,411	1,746,000	-	-

473. Kansas River at Ogden, Kans.

Location.--Lat 39°06'15", long. 96°41'55", in SE 1/4 sec. 7, T. 11 S., R. 7 E. at highway bridge three-quarters of a mile south of Ogden, 10 miles downstream from confluence of Smoky Hill and Republican Rivers, and at mile 166.8.

Drainage area.--45,240 sq mi, approximately, of which about 39,540 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 1020.83 ft above mean sea level (levels by Corps of Engineers). Prior to June 15, 1934, chain gage at same site and datum.

Average discharge.--33 years (1917-50), 2,645 cfs (revised).

Extremes.--1917-50: Maximum discharge, 170,000 cfs June 3, 1935 (gage height, 28.03 ft), from rating curve extended above 60,000 cfs on basis of slope-area determination at gage height, 30.53 ft for flood of July 12, 1951; minimum, 51 cfs Aug. 20, 1934. Flood in May 1903 reached a stage of about 28.5 ft, from information by Corps of Engineers (discharge about 236,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second of Kansas River at Ogden, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	583	2,190	850	-
1918	835	571	485	500	650	1,220	1,090	1,810	3,520	1,270	1,130	967	1,170
1919	1,890	1,050	851	1,050	1,520	4,250	4,430	6,360	11,200	2,390	1,150	3,920	3,310
1920	2,020	1,280	1,310	1,440	1,640	1,190	2,760	2,930	1,450	1,010	2,020	2,890	1,820
1921	756	872	726	*778	1,190	842	1,160	2,480	2,980	2,000	1,190	935	1,320
1922	338	320	362	253	494	1,530	1,960	2,290	1,720	3,850	1,310	428	1,250
1923	198	1,640	578	672	472	873	355	5,500	16,200	6,350	2,870	2,300	3,210
1924	2,100	1,330	1,080	820	1,320	1,430	1,840	1,540	1,020	1,610	2,170	595	1,420
1925	342	443	425	320	1,350	1,210	1,590	947	2,370	906	1,760	1,360	1,080
1926	460	532	466	443	913	775	946	583	924	1,830	1,800	6,210	1,320
1927	2,080	*1,250	*850	*740	*820	*1,130	8,480	3,240	12,100	4,350	11,500	5,960	*4,380
1928	2,420	1,260	830	883	1,670	1,400	1,650	1,430	7,070	11,800	12,500	2,470	3,800
1929	1,640	2,320	1,400	1,310	1,100	3,220	4,510	5,940	7,760	4,400	2,030	1,020	3,060
1930	1,080	1,240	1,020	882	1,360	1,130	1,720	6,870	7,630	1,520	1,410	2,850	2,390
1931	2,960	2,260	1,610	1,110	1,370	1,330	2,190	2,930	1,830	1,540	1,610	748	1,790
1932	609	922	786	688	2,160	1,840	1,160	1,100	3,610	3,430	1,140	3,150	1,710
1933	834	590	493	624	697	1,060	2,260	2,220	595	669	1,740	4,350	1,360
1934	984	571	732	682	699	846	725	884	3,079	760	159	789	907
1935	275	360	395	407	622	594	562	5,709	*25,620	7,055	2,045	5,371	*4,070
1936	2,254	1,557	1,370	894	684	1,527	1,134	4,160	4,171	524	225	600	1,430
1937	718	298	445	287	2,698	1,428	735	723	2,332	2,598	1,623	1,474	1,432
1938	362	269	304	426	599	855	796	5,800	10,500	2,512	1,592	2,225	2,225
1939	550	496	444	537	413	1,232	1,777	1,318	5,649	2,595	3,009	422	1,523
1940	218	186	224	116	385	941	625	1,582	1,813	949	1,380	1,503	810
1941	693	507	534	516	883	840	1,283	1,905	14,090	4,732	4,162	7,878	3,157
1942	15,550	4,460	2,396	2,093	2,018	2,584	4,770	7,008	13,340	4,180	3,341	11,090	6,076
1943	3,721	1,712	1,497	1,471	3,191	1,493	3,601	2,627	12,700	3,409	1,053	754	3,084
1944	612	499	496	597	851	2,290	10,590	11,650	5,944	7,109	7,732	4,303	4,398
1945	1,742	1,373	2,315	1,585	1,793	3,135	8,676	11,680	8,915	13,060	3,035	1,574	4,922
1946	1,604	1,055	819	1,143	1,323	1,488	1,183	1,829	2,560	4,532	1,400	10,590	2,438
1947	9,168	5,645	2,264	1,639	1,653	2,595	7,353	3,772	16,070	5,553	1,496	759	4,828
1948	556	637	886	802	1,484	5,520	1,669	1,858	4,808	15,240	3,053	1,307	3,003
1949	664	917	899	2,890	7,643	5,981	2,672	7,383	11,570	4,403	1,857	1,594	4,008
1950	1,988	1,131	1,047	957	1,211	1,213	1,033	4,168	2,958	17,170	14,230	7,255	4,573

* Revised.

† Not previously published; estimated on basis of records for station at Wamego.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	34,600	135,000	39,700	-
1918	51,300	34,000	29,800	30,700	36,100	75,000	64,900	111,000	269,000	79,100	69,500	57,500	847,000
1919	116,000	62,500	52,300	64,800	84,400	261,000	264,000	391,000	668,000	147,000	70,700	233,000	2,410,000
1920	24,000	75,000	80,600	88,500	94,300	73,200	164,000	180,000	86,300	62,100	124,000	172,000	1,320,000
1921	46,500	51,900	44,600	*47,800	66,100	51,800	69,000	152,000	177,000	125,000	73,200	55,600	*958,000
1922	20,800	19,000	23,500	15,600	27,400	94,100	117,000	141,000	102,000	237,000	80,600	25,500	904,000
1923	11,800	97,600	35,400	41,300	26,200	53,700	55,600	358,000	984,000	589,000	176,000	37,000	*2,330,000
1924	129,000	79,100	66,400	50,700	75,900	87,900	115,000	94,700	60,700	99,000	133,000	34,800	1,030,000
1925	21,000	26,400	26,100	19,700	75,000	74,400	94,600	58,200	141,000	55,700	108,000	80,900	781,000
1926	28,300	31,700	29,900	27,200	50,700	47,700	58,300	35,800	55,000	111,000	100,370,000	957,000	957,000
1927	128,000	*74,200	*52,300	*45,500	*45,500	*69,500	505,000	199,000	720,000	267,000	707,000	355,000	*3,170,000
1928	149,000	75,000	51,000	54,300	96,100	86,100	98,200	87,300	421,000	726,000	769,000	147,000	2,760,000
1929	101,000	58,000	86,100	80,600	61,100	198,000	268,000	365,000	462,000	271,000	25,000	60,700	1,980,000
1930	66,400	73,800	62,700	54,200	75,500	69,500	102,000	422,000	454,000	93,500	66,700	70,100	1,730,000
1931	182,000	134,000	99,200	88,100	76,000	81,900	131,000	180,000	109,000	94,900	99,200	44,400	1,300,000
1932	37,500	54,900	48,300	42,300	24,000	113,000	69,200	67,400	215,000	200,211,000	69,800	197,000	1,240,000
1933	51,300	35,100	30,300	39,400	38,700	65,300	134,000	137,000	35,400	53,400	107,000	259,000	985,000
1934	60,530	35,500	45,020	41,940	39,820	52,000	43,160	54,580	183,200	46,730	9,750	46,920	658,400
1935	16,910	21,430	24,310	25,020	34,530	36,520	33,440	351,000	325,000	433,800	125,800	319,600	*2,947,000
1936	138,600	92,670	84,260	54,940	39,370	93,900	67,460	255,800	129,200	32,210	13,810	35,700	1,038,000
1937	44,160	16,990	27,350	17,660	49,300	87,790	43,750	44,460	257,800	159,700	99,790	87,700	1,036,000
1938	22,290	16,030	18,700	26,210	33,280	51,350	47,370	356,600	62,000	150,650	154,400	94,750	1,611,000
1939	33,790	29,530	27,350	33,040	22,910	75,740	108,700	81,060	356,100	47,300	185,000	25,090	1,103,000
1940	13,430	11,050	13,800	7,150	22,140	57,670	37,160	84,960	107,900	59,370	84,870	69,420	598,100
1941	42,640	30,180	32,840	31,700	49,030	51,630	76,370	117,100	108,838	200,291	100,255	90,468	800
1942	956,100	265,400	147,300	128,700	112,100	158,900	283,900	430,900	793,700	257,000	205,400	659,600	4,399,000
1943	228,800	101,900	92,050	90,470	76,700	91,780	214,300	161,600	753,000	709,000	64,770	44,880	2,233,000
1944	37,630	29,710	30,470	36,680	48,940	140,800	630,000	716,100	353,700	704,370	100,475	40,258	3,193,000
1945	107,100	81,720	42,400	97,498	99,590	192,800	516,300	718,100	103,524	500,803	204,780	93,680	3,563,000
1946	98,640	62,800	50,340	70,290	73,470	81,520	70,380	112,500	152,300	266,300	86,080	630,400	1,765,000
1947	585,700	355,900	39,200	100,800	91,810	159,500	437,500	331,900	986,000	34,400	81,870	45,180	3,495,000
1948	34,180	37,900	54,680	49,320	85,370	339,400	99,330	114,100	266,100	100,810	107,700	77,750	2,180,000
1949	40,830	54,580	55,250	77,700	424,500	367,700	159,000	453,900	688,200	270,700	141,200	94,870	2,901,000
1950	122,300	67,300	64,400	58,820	67,260	74,580	61,450	256,300	176,000	356,000	675,200	431,700	3,311,000

* Revised.

† Corrected.

† Not previously published; estimated on basis of records for station at Wamego.

Yearly discharge, in cubic feet per second of Kansas River at Ogden, Kans.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1917	476	-	-	-	-	-	-
1918	476	a11,400	June 8, 1918	-	1,170	847,000	1,330
1919	506	a25,300	Mar. 16, 1919	495	3,310	2,410,000	3,400
1920	506	-	-	615	1,820	1,320,000	1,640
1921	526,1440	a8,310	May 10, 12, 1921	265	1,320	*958,000	*1,210
1922	546	a11,900	July 12, 1922	110	1,250	904,000	1,360
1923	566	a32,600	June 10, 1923	120	3,210	2,330,000	3,390
1924	586	a18,700	Aug. 22, 1924	330	1,420	1,030,000	1,140
1925	606	5,990	June 28, 1925	-	1,080	781,000	1,100
1926	626	*21,000	Sept. 15, 1926*	342	1,320	957,000	*1,550
1927	646	*28,700	June 17, 1927*	-	*4,580	*3,170,000	*4,410
1928	666	25,700	Aug. 4, 1928	-	3,800	2,760,000	3,870
1929	686	23,100	May 12, 1929	-	3,060	1,980,000	2,890
1930	701	23,700	May 8, 1930	-	2,590	1,730,000	2,680
1931	716	9,750	May 7, 1931	360	1,790	1,300,000	1,410
1932	731	a14,200	July 6, 1932	380	1,710	1,240,000	1,670
1933	746	17,800	Sept. 13, 1933	268	1,360	985,000	1,390
1934	761	11,100	June 22, 1934	78	907	656,400	801
1935	786,1440	170,000	June 3, 1935	109	*4,070	*2,947,000	*4,420
1936	806	8,890	May 12, 1936	140	1,430	1,038,000	1,117
1937	826	13,600	July 12, 1937	178	1,432	1,036,000	1,388
1938	856	24,300	June 11, 1938	195	2,225	1,611,000	2,272
1939	876	22,300	June 19, 1939	177	1,523	1,103,000	1,451
1940	896	7,580	June 12, 1940	70	810	588,100	903
1941	926	53,200	June 12, 1941	165	3,157	2,285,000	4,901
1942	956	53,200	Oct. 22, 1941	950	6,078	4,399,000	4,769
1943	976	46,400	June 16, 1943	605	3,084	2,233,000	2,635
1944	1006	38,200	Aug. 26, 1944	250	4,398	3,193,000	4,719
1945	1036	42,800	Apr. 16, 1945	970	4,922	3,563,000	4,757
1946	1056	26,600	Sept. 16, 1946	560	2,438	1,765,000	3,580
1947	1086	60,500	June 27, 1947	580	4,828	3,495,000	3,567
1948	1116	75,000	July 20, 1948	510	3,003	2,180,000	3,036
1949	1146	22,200	June 15, 1949	645	4,008	2,901,000	4,150
1950	1176	59,900	July 19, 1950	700	4,573	3,311,000	-

* Revised.

* Not previously published.

a Maximum observed.

474. Big Blue River near Crete, Nebr.

Location.--Lat 40°35'40", long. 96°57'35", in S $\frac{1}{2}$ sec. 3, T. 7 N., R. 4 E., on downstream side of bridge on State Highway 82, 1.8 miles south of Missouri Pacific Railroad station in Crete, 3.3 mile downstream from Walnut Creek, and 3.6 miles upstream from Squaw Creek.

Drainage area.--2,680 sq mi, approximately.

Gage.--Wire-weight gage read twice daily. Datum of gage is 1,311.5 ft above mean sea level, datum of 1929.

Extremes.--1945-50: Maximum discharge, 27,600 cfs July 10, 1950 (gage height, 28.74 ft).

Remarks.--Stage-discharge relation for low water affected by backwater from power dam downstream; discharge computed only for stages above 10 ft for period 1945-47 and for stages above 12 ft for period 1948-50.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1945	1056	a7,900	June 17, 1945	-	-	-	-
1946	1056	5,800	June 21, 1946	-	-	-	-
1947	1086	8,820	June 14, 1947	-	-	-	-
1948	1116	15,800	Mar. 20, 1948	-	-	-	-
1949	1146	20,900	Mar. 8, 1949	-	-	-	-
1950	1176	27,600	July 10, 1950	-	-	-	-

a Maximum for period Mar. 14 to Sept. 30, probably maximum for year by comparison with nearby stations.

475. Big Blue River at Beatrice, Nebr.

Location.--Lat 40°15', long. 96°45', in sec. 4, T. 3 N., R. 6 E., on upstream side of Sixth Street bridge at Beatrice and 300 ft downstream from Chicago, Burlington and Quincy Railroad bridge.

Drainage area.--3,820 sq mi (revised).

Supplemental records available.--Gage-height records collected at same site since June 1905, (fragmentary) are contained in reports of U. S. Weather Bureau.

Gage.--Non-recording gage. Datum of gage is 1,219.63 ft above mean sea level (U. S. Weather Bureau bench mark).

Average discharge.-- 5 years (1910-15), 628 cfs.

Extremes.--1910-15: Maximum gage height, 26.0 ft July 23, 1911 (discharge not determined); minimum not determined.

Floods since 1915 have exceeded stage of 1911 flood at times according to records of U. S. Weather Bureau, however gage was in pool of dam 1 mile downstream probably completed in 1924.

Remarks.--Low flow somewhat regulated by power plants above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	361	323	310	325	415	332	316	375	250	1,830	560	569	500
1912	736	294	351	a350	a798	a3,690	a2,000	629	380	240	710	230	a868
1913	596	242	197	a203	a312	373	302	917	300	210	142	100	a326
1914	135	270	400	314	325	678	433	304	2,860	457	307	812	605
1915	433	281	a289	a299	a249	719	810	442	1,470	1,990	2,250	739	a841

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure is in acre-feet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	22,200	19,200	19,100	20,000	23,000	20,400	18,800	23,100	14,900	115,000	34,400	33,900	362,000
1912	45,500	17,500	20,400	a21,500	a45,900	a27,000	a19,000	38,700	22,600	14,800	45,700	15,700	a630,000
1913	36,800	14,400	12,100	a12,500	a17,300	a22,900	18,000	56,400	17,900	12,900	8,750	5,950	a236,000
1914	8,300	16,100	24,800	19,300	18,000	41,700	25,800	18,700	170,000	28,100	18,900	48,300	436,000
1915	26,600	16,700	a17,800	a18,400	a19,400	44,200	27,200	87,500	a22,000	a137,000	44,000	a609,000	a609,000

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 195, Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1911	306	-	July 23, 1911	150	500	362,000	531	385,000	
1912	326	#21,600	Mar. 20, 1912	-	a868	a630,000	a840	a610,000	
1913	356	#9,400	May 21, 1913	-	a326	a236,000	a307	a222,000	
1914	386	12,300	June 16, 1914†	62	605	438,000	a622	a450,000	
1915	406	8,290	July 16, 1915	-	a841	a609,000	-	-	

† Corrected.

‡ Not previously published.

a From Congressional documents, 73d Cong., 2d sess., H. Doc. 195, Kansas River.

476. Big Blue River at Barneston, Nebr. 1/

Location.--Lat 40°03', long. 96°35', in NE 1/4 SW 1/4 sec. 13, T. 1 N., R. 7 E., in tailrace of power plant, three-quarters of a mile northwest of Barneston, 2 miles upstream from Plum Creek, and 5 miles upstream from Nebraska-Kansas State line.

Drainage area.--4,420 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,164 ft above mean sea level, datum of 1929, Kansas City supplementary adjustment of 1943. Prior to June 9, 1941, water stage recorder at site one mile downstream at datum 0.44 ft lower. June 9 to Nov. 17, 1941, float gage at present site and datum.

Average discharge.--18 years, 696 cfs.

Extremes.--1932-50: Maximum discharge, 57,700 cfs June 9, 1941 (gage height, 34.3 ft); minimum daily, 1 cfs Nov. 30, 1945.

Remarks.--Low flow regulated by powerplant at Barneston, which has pondage of about 1,500 acre-ft. No large tributaries between station and Nebraska-Kansas State line.

1/ Published as "at Barneston" prior to 1950.

Monthly and yearly mean discharge, in cubic feet per second of Big Blue River at Barneston, Nebr.												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1932	-	-	-	-	-	-	-	-	2,526	630	1,200	451
1933	140	143	165	158	144	216	183	449	1,485	278	620	248
1934	79.0	97.3	135	115	118	146	132	96.0	30.7	21.1	346	115
1935	228	154	132	198	197	179	378	2,018	5,858	635	69.2	304
1936	125	212	146	132	1,063	1,074	205	435	207	38.9	32.1	69.0
1937	75.4	77.5	89.7	67.6	308	315	135	187	492	453	340	117
1938	92.3	104	115	122	128	233	223.1	468	1,359	828	332	605
1939	90.5	151	127	134	134	837	312	154	837	416	274	50.6
1940	79.9	95.2	112	95.1	116	233	160	171	266	67.0	501	90.4
1941	61.5	119	139	157	657	787	394	352	4,072	183	191	2,784
1942	1,128	577	654	844	279	880	2681	900	1,727	424	471	911
1943	176	167	179	230	1,535	236	212	468	5,090	1,050	291	109
1944	116	139	126	146	157	251	1,391	1,698	4,279	1,260	1,431	1,168
1945	382	287	226	257	309	987	1,369	3,864	5,392	1,679	527	177
1946	325	195	165	254	551	387	196	205	1,100	972	184	172
1947	361	886	204	191	278	547	1,863	469	8,025	739	197	145
1948	137	121	134	252	2,250	5,160	452	234	499	1,030	1,350	564
1949	154	245	205	1,165	2,116	5,769	711	2,445	4,374	1,717	953	2,844
1950	614	262	212	211	311	770	266	3,056	998	3,208	1,214	663

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1932	-	-	-	-	-	-	-	-	138,400	58,700	73,800	27,800
1933	8,610	8,510	10,100	9,720	8,000	13,300	10,900	27,600	8,630	17,000	38,100	14,800
1934	4,860	5,790	8,320	2,060	6,570	9,000	7,830	5,900	4,120	1,890	1,300	20,600
1935	13,990	9,190	8,110	12,060	10,950	11,010	22,350	124,100	228,400	59,030	5,480	18,090
1936	7,690	12,640	9,010	8,130	61,160	66,030	12,220	26,750	12,330	2,390	1,970	4,110
1937	4,620	4,610	5,510	4,160	17,090	19,360	8,050	11,490	29,280	27,880	20,890	6,960
1938	5,670	6,170	7,090	7,510	6,980	14,320	15,290	90,270	80,860	50,890	20,390	36,000
1939	5,560	9,000	7,820	7,820	7,450	51,490	18,550	9,460	49,790	25,570	16,870	3,010
1940	4,910	5,670	6,690	5,850	6,680	14,500	9,510	10,520	15,960	4,120	30,800	5,380
1941	3,780	7,080	8,530	9,660	36,470	48,410	23,440	21,650	242,300	11,280	11,760	165,700
1942	69,330	34,310	40,230	51,870	15,490	54,080	15,850	116,800	102,800	26,080	28,980	54,230
1943	10,840	9,910	11,020	14,130	85,230	14,660	12,590	28,760	302,900	64,580	17,920	6,470
1944	7,140	8,260	7,750	8,970	9,040	15,430	82,770	104,400	254,600	77,470	87,990	69,530
1945	23,500	17,090	13,920	15,780	17,170	60,720	81,480	237,600	201,800	103,200	32,410	10,540
1946	20,000	11,600	10,150	15,610	30,620	23,770	11,660	12,590	65,420	59,760	11,300	10,260
1947	22,170	52,710	12,550	11,740	15,420	21,320	110,900	28,860	477,500	45,410	12,090	9,480
1948	8,410	7,190	8,220	15,480	129,400	317,400	26,900	14,410	29,690	63,440	83,150	33,580
1949	9,470	14,580	12,610	71,630	117,500	354,700	42,330	150,300	260,500	105,600	58,620	169,200
1950	37,750	15,610	13,030	12,980	17,270	47,350	15,840	187,900	59,380	197,300	74,640	39,470

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	731, 896	-	-	-	-	-	-	-
1933	748	5,550	Aug. 23, 1933	44	242	175,000	231	166,900
1934	761	2,100	Sept. 4, 1934	8	115	83,240	132	95,560
1935	786, 896	13,000	June 2, 1935	8	694	502,800	692	500,800
1936	806	*12,400	Feb. 25, 1935	24	309	224,400	289	209,800
1937	826	3,240	July 25, 1937	19	221	159,900	227	164,100
1938	856	7,550	Sept. 13, 1938	23	469	339,400	474	342,900
1939	876	9,880	Mar. 12, 1939	24	294	212,800	287	207,800
1940	896	4,000	Aug. 27, 1940	29	166	120,500	169	122,400
1941	926	57,700	June 9, 1941	35	815	590,100	987	714,500
1942	956	15,700	May 12, 1942	67	843	610,000	688	498,000
1943	976	23,600	June 12, 1943	46	800	579,000	788	570,400
1944	1006	16,300	June 14, 1944	51	1,010	753,400	1,053	764,700
1945	1036	26,900	May 22, 1945	40	1,126	815,200	1,108	802,400
1946	1056	8,770	July 16, 1946	1	392	282,700	*	328,400
1947	1086	34,400	June 23, 1947	62	1,131	819,200	1,044	755,500
1948	1116	17,200	Mar. 22, 1948	3	1,016	737,200	1,033	750,100
1949	1146	26,900	June 28, 1949	36	1,888	1,367,000	1,929	1,397,000
1950	1176	21,300	May 10, 1950	144	992	718,500	-	-

* Revised.

477. Big Blue River at Hull, Kans.

Location.--Lat 39°55', long 96°38', in NW¼ sec. 3, T. 2 S., R. 7 E., at highway bridge, a quarter of a mile west of Hull, 2 miles upstream from Deer Creek, and at mile 88.3.

Drainage area.--4,540 sq mi (revised), approximately.

Gage.--Water-stage recorder. Datum of gage 1,139.63 ft above mean sea level, datum of 1929. Prior to Mar. 18, 1931, staff or chain gage at same site and datum.

Average discharge.--17 years (1919-24, 1928-40), 473 cfs.

Extremes.--1919-25, 1928-40: Maximum discharge, 15,300 cfs June 2, 1935 (gage height, 22.30 ft); minimum observed, 2 cfs (regulated) Sept. 8, 14, 1922 (gage height, 1.20 ft).

Maximum stage known, 31.7 ft in May 1903.

Remarks.--Low-water flow regulated by power plant at Barneston, Nebr., 13 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	1,450	-
1920	855	610	302	402	775	325	992	798	704	576	611	323	605
1921	227	315	258	247	293	272	†285	3911	080	1,040	379	609	450
1922	239	255	253	164	293	478	309	259	234	1,050	235	77.9	322
1923	91.3	231	162	189	120	141	532	6821	810	142	263	633	413
1924	2,690	176	124	131	282	228	318	2631	580	1,970	572	370	730
1925	120	133	185	140	535	160	238	2681	970	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	366	-
1929	893	829	270	230	768	1,420	1,170	4881	930	485	249	139	735
1930	161	154	132	128	369	118	267	2,880	874	210	1,670	726	644
1931	94.6	493	314	177	174	142	235	672	687	349	275	739	362
1932	†720	1,030	350	487	1,500	853	259	3012	230	709	1,210	601	†849
1933	234	219	209	218	229	285	221	514	162	303	735	644	332
1934	153	154	190	200	175	183	177	142	97.9	52.4	30.5	473	168
1935	279	174	123	116	142	200	365	2,296	4,031	617	116	588	737
1936	200	289	162	127	1,164	1,586	248	562	238	58.4	42.9	85.0	395
1937	95.0	88.0	114	96.5	349	465	167	184	471	439	366	131	247
1938	91.5	96.7	114	123	153	277	260	1,598	453	1,036	311	607	512
1939	84.7	169	126	138	139	902	410	154	218	601	494	36.2	374
1940	63.2	66.9	81.2	91.8	124	257	159	175	317	68.9	†521	†93.8	†169

† Corrected.

‡ Not previously published; estimated on basis of records for station at Barneston, Nebr.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	-	-	-	-	-	-	-	-	86,300
1920	52,600	36,300	18,600	24,700	44,600	20,000	59,000	49,100	41,900	35,400	37,600	19,200	439,000
1921	14,000	18,700	15,900	15,200	16,300	16,700	17,000	24,000	64,300	64,000	23,300	36,200	326,000
1922	14,700	15,200	15,600	10,100	16,300	29,500	18,400	15,900	13,900	64,600	14,400	4,640	232,000
1923	5,610	13,700	9,960	10,400	6,660	8,670	31,700	41,900	108,000	8,730	16,200	37,700	299,000
1924	165,000	10,500	7,620	8,060	16,200	14,000	18,900	16,200	94,000	121,000	35,200	22,000	529,000
1925	7,390	7,910	11,400	8,610	29,700	9,840	14,200	16,500	117,000	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	21,700	-
1929	54,900	49,300	16,600	14,100	42,700	87,300	69,600	30,100	115,000	29,800	15,300	8,270	533,000
1930	9,900	9,160	8,120	7,870	20,500	7,260	15,900	77,000	52,100	12,900	103,000	43,200	467,000
1931	5,820	29,400	19,300	10,900	9,690	8,750	14,000	41,300	40,900	21,500	16,900	44,000	262,000
1932	†44,300	61,000	21,500	30,000	86,300	52,500	15,400	18,500	133,000	43,600	74,400	35,700	†616,000
1933	14,400	15,000	12,800	13,400	12,700	17,500	13,200	31,600	9,630	18,600	45,200	38,300	240,000
1934	9,430	9,140	11,700	12,270	9,720	11,240	10,520	8,700	5,820	3,220	1,870	28,170	121,800
1935	17,180	10,560	7,560	7,110	7,900	12,320	21,720	141,200	239,800	37,950	7,110	23,080	533,300
1936	12,320	17,180	9,970	7,830	66,940	97,540	14,760	34,560	14,180	3,590	2,640	5,060	286,600
1937	5,840	5,240	7,030	5,930	19,380	28,580	9,910	11,290	28,040	27,010	22,500	7,790	178,500
1938	5,630	5,760	7,030	7,560	8,480	17,060	15,480	98,230	86,480	63,680	19,100	36,140	370,600
1939	5,210	10,040	7,740	8,490	7,730	55,470	24,430	9,450	72,490	36,950	30,350	2,160	270,500
1940	3,890	3,980	4,990	5,640	7,140	15,800	9,460	10,790	18,850	4,230	32,040	†5,580	†122,400

† Corrected.

‡ Not previously published; estimated on basis of records for station at Barneston, Nebr.

Yearly discharge, in cubic feet per second of Big Blue River at Hull, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1919	508	*a10,000	Sept. 28, 1919	-	-	-	-	-
1920	508	4,480	Oct. 2, 1919	130	605	439,000	524	819,000
1921	528	*10,900	July 4, 1921	140	450	326,000	445	322,000
1922	548	7,540	July 10, 1922	2	322	232,000	299	217,000
1923	568	*10,500	Apr. 23, 1923	14	413	299,000	626	453,000
1924	568	14,500	Oct. 3, 1923	46	730	529,000	513	372,000
1925	608	b12,400	June 18, 1925	-	-	-	-	-
1928	668	-	-	-	-	-	-	-
1929	688	*11,800	June 22, 1929*	70	735	533,000	606	439,000
1930	701	11,400	May 15, 1930	53	644	467,000	682	494,000
1931	718	13,100	Sept. 25, 1931	-	562	262,000	462	335,000
1932	731	10,200	Nov. 24, 1932	61	†849	1616,200	730	530,000
1933	748	8,700	Aug. 23, 1933	85	332	240,000	518	230,400
1934	761	1,490	Sept. 4, 1934	16	168	121,800	†175	†126,600
1935	786	15,300	June 2, 1935	50	737	533,300	743	537,600
1936	808	11,500	Feb. 24, 1936	18	395	286,600	365	265,200
1937	828	2,480	Mar. 24, 1937	46	247	178,500	247	178,800
1938	858	9,370	July 17, 1938	31	512	370,600	518	375,200
1939	876	11,800	June 25, 1939	20	374	270,500	360	260,400
1940	896	*4,000	Aug. 27, 1940	*28	*169	*122,400	-	-

* Revised.

† Corrected.

* Not previously published.

a Maximum during period Aug. 23 to Sept. 30, 1919.

b Maximum during period Oct. 1, 1924 to July 2, 1925.

478. Little Blue River near Endicott, Nebr. 1/

Location.--Lat 40°05'10", long. 97°08'10", in sec. 6, T. 1 N., R. 3 E., 300 ft downstream from county highway bridge, 1½ miles upstream from Chicago, Burlington & Quincy Railroad bridge, 1½ miles upstream from Rose Creek, and 2 miles northwest of Endicott.

Drainage area.--2,340 sq mi, approximately, for present site; 2,320 sq mi, approximately, for former site near Fairbury.

Gage.--Water-stage recorder. Datum of gage is 1,270.06 ft above mean sea level, datum of 1929, Kansas City supplementary adjustment of 1943. May 23, 1908, to Sept. 30, 1915, chain gage at bridge 3½ miles upstream at different datum. Apr. 26, 1929, to July 30, 1930, chain gage at bridge 300 ft upstream from present site at datum 1.00 ft higher. July 31, 1930, to Sept. 30, 1933, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--28 years (1908-15, 1929-50), 356 cfs.

Extremes.--1908-15, 1929-50: Maximum discharge, 31,000 cfs June 9, 1941 (gage height, 16.23 ft), from rating curve extended above 26,000 cfs; minimum observed, 14 cfs Nov. 22, 1929 (discharge measurement).

Remarks.--Some regulation at low stages by powerplants above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	a5505	140	1,770	1,370	225	-
1909	179	178	184	183	213	197	180	354	180	1,350	204	858	421
1910	209	498	477	320	361	267	197	412	710	225	378	264	358
1911	174	170	172	167	150	144	156	147	112	272	643	262	215
1912	347	187	194	a189	a688	*2,205	711	492	416	159	493	222	b526
1913	331	174	220	a200	a188	304	206	651	305	118	90.0	73.1	a239
1914	106	141	282	a250	a200	a192	183	198	809	294	189	187	a253
1915	135	159	a174	a179	a258	271	297	270	*3280	1,970	1,790	511	b775
1929	a359	a314	a255	a105	a281	a424	a408	169	225	150	116	108	b244
1930	136	118	85	75	123	136	245	1,170	537	145	241	196	268
1931	117	175	133	128	131	134	152	406	396	153	230	149	192
1932	179	292	172	150	556	305	163	167	537	172	195	123	249
1933	127	127	116	148	128	132	153	245	104	115	281	170	154
1934	118	120	142	146	131	144	125	111	78.1	55.4	50.8	124	112
1935	93.0	110	115	105	116	122	252	*1,877	2,404	281	99.1	287	*488

* Revised.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River. Published figure in acre-feet.

b Revised, supersedes figure (acre-feet) published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

1/ Published as "near Fairbury", 1908-15.

Monthly and yearly mean discharge, in cubic feet per second of Little Blue River near Endicott, Nebr.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	124	140	152	154	402	177	138	185	101	91.7	48.5	89.6	146
1937	90.7	100	118	88.5	174	156	128	185	161	355	140	128	151
1938	111	106	96.9	128	123	142	149	659	465	312	309	302	243
1939	112	121	110	80.5	117	252	437	141	*914	319	125	69.4	*232
1940	85.1	110	112	95.3	118	155	127	131	112	67.9	90.6	82.9	107
1941	975	127	151	136	151	337	295	1862	382	188	147	761	408
1942	283	292	241	308	179	225	211	270	847	268	905	1,103	428
1943	175	146	144	158	627	165	291	1582	005	275	114	61.9	356
1944	97.5	112	113	119	152	150	386	8681	082	320	920	796	423
1945	222	164	158	164	152	171	724	2,418	1,464	997	251	120	587
1946	140	125	109	146	205	155	141	156	377	413	151	500	216
1947	498	653	160	142	155	257	595	4872	597	415	129	103	514
1948	98.6	126	122	143	1,004	1,691	248	202	246	282	394	186	394
1949	112	156	132	171	859	2,401	514	1,963	4,157	407	357	1,300	1,022
1950	416	174	155	153	163	170	160	774	460	2,068	563	1,308	550

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	233,800	506,000	109,000	84,200	13,400	-
1909	11,000	10,600	11,300	11,500	11,800	12,100	10,700	21,800	70,200	83,000	12,500	39,000	505,000
1910	12,900	29,600	29,300	19,700	20,000	16,400	11,100	25,300	42,200	13,800	23,200	15,700	259,000
1911	10,700	10,100	10,600	10,300	8,350	8,850	9,280	9,040	6,680	16,700	39,500	15,600	156,000
1912	21,500	11,100	11,900	11,800	13,600	13,600	42,300	30,300	24,800	9,780	30,500	13,200	358,000
1913	20,400	10,400	13,500	12,300	10,500	18,700	12,300	40,000	18,000	7,260	5,530	4,350	173,000
1914	6,520	8,390	17,300	15,400	11,100	11,800	10,900	12,200	48,100	18,100	11,800	11,100	185,000
1915	8,500	9,460	10,700	11,000	14,400	16,700	17,700	16,600	195,000	121,000	110,000	50,400	561,000
1929	22,100	18,700	15,700	15,450	15,800	26,100	24,100	10,400	15,200	9,220	7,130	6,450	177,000
1930	8,560	6,900	5,250	4,610	6,830	8,480	14,600	71,900	32,000	8,920	14,800	11,700	194,000
1931	7,190	10,400	8,180	7,870	7,280	8,240	9,040	25,000	23,600	9,410	12,000	8,870	159,000
1932	11,000	17,400	10,600	9,220	32,000	18,800	9,700	10,500	32,000	10,600	12,000	7,320	181,000
1933	7,810	7,560	7,130	9,100	7,110	8,120	9,100	15,100	6,190	7,070	17,300	10,100	112,000
1934	7,240	7,110	8,720	9,000	7,300	8,860	7,460	6,840	4,850	5,410	3,120	7,370	81,080
1935	5,720	6,520	7,100	6,460	6,460	7,480	15,000	*115,400	143,000	17,280	6,090	17,080	*353,600
1936	7,650	8,310	8,140	8,230	23,150	10,870	8,220	11,380	6,030	5,640	2,970	5,030	105,900
1937	5,580	5,970	7,240	5,440	9,670	9,620	7,650	10,150	9,600	21,820	8,590	7,620	109,000
1938	6,840	6,300	5,960	7,900	6,820	8,760	8,860	40,520	27,640	19,190	19,020	17,960	175,800
1939	6,890	7,220	6,750	4,950	6,500	15,480	26,030	8,670	*54,400	19,630	7,660	4,130	*168,300
1940	5,230	6,530	6,890	5,860	6,780	9,540	7,580	8,040	6,640	4,170	5,570	4,950	77,760
1941	5,990	7,530	8,030	8,330	8,380	20,710	17,530	11,470	141,800	11,530	9,080	45,310	285,700
1942	17,370	17,390	14,800	18,980	9,960	13,820	12,540	16,580	50,390	18,460	55,850	65,850	309,600
1943	10,850	8,710	8,940	9,740	8,350	10,120	17,300	9,820	119,300	16,910	7,020	4,870	257,900
1944	5,980	6,640	6,920	7,500	7,570	9,230	22,990	53,340	63,170	19,680	56,590	47,510	306,900
1945	13,660	9,760	9,750	10,050	8,470	10,540	43,060	148,700	87,180	61,300	15,440	7,110	425,000
1946	8,600	7,420	6,710	9,000	11,390	9,520	8,370	9,570	22,420	25,370	8,040	29,740	156,200
1947	30,600	38,870	9,850	8,760	8,610	15,820	35,390	29,920	154,500	25,520	7,930	6,160	371,900
1948	6,060	7,480	7,490	8,810	57,740	104,000	14,780	12,430	14,630	17,360	24,230	11,070	286,100
1949	6,860	8,080	8,120	10,510	47,730	147,800	18,680	120,700	247,400	25,050	21,950	77,370	740,000
1950	25,590	10,320	9,510	9,400	9,080	10,470	9,520	47,600	27,370	127,100	34,600	77,860	398,400

* Revised.

† Corrected.

a From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

b Revised, supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1908	246	*15,900	June 6, 1908	-	-	-	-	-	-
1909	266	*10,600	June 23, 1909	100	421	305,000	479	344,000	
1910	286	*7,900	June 9, 1910	-	358	259,000	303	219,000	
1911	306	*3,370	Aug. 22, 1911	70	215	156,000	233	169,000	
1912	326	*10,000	Mar. 21, 1912	-	a526	a382,000	a526	a382,000	
1913	356	*6,220	May 21, 1913	63	b259	b173,000	b222	b161,000	
1914	368	4,480	June 14, 1914	78	b253	b183,000	b247	b179,000	
1915	406	1,390	June 11, 1915	-	a775	a561,000	-	-	
1929	686	-	-	-	a244	a177,000	a195	a141,000	
1930	701	3,560	May 12, 1930	-	268	194,000	276	200,000	
1931	718	2,440	May 30, 1931	16	192	139,000	210	152,000	
1932	751	3,510	June 3, 1932	105	249	181,000	226	164,000	
1933	748	2,710	Aug. 22, 1933	72	154	112,000	155	112,000	
1934	761	420	Sept. 27, 1934	38	112	81,080	107	77,350	
1935	(d)	20,800	May 20, 1935	56	*488	*353,600	*495	*358,400	

* Revised.

† Not previously published.

a Revised; supersedes figure published in H. Doc. 195, 73d Cong., 2d sess., Kansas River.

b From Congressional documents: 73d Cong., 2d sess., H. Doc. 195, Kansas River.

c Revised; discharge is approximate.

d WSP 786 and 1390.

Yearly discharge, in cubic feet per second of Little Blue River near Endicott, Nebr.--Continued

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1936	806	2,920	Feb. 24, 1936	36	146	105,900	139	100,600	
1937	826	1,540	July 27, 1937	70	151	109,000	151	109,500	
1938	856	2,640	June 22, 1938	50	245	175,800	245	177,500	
1939	876, 1390	*8,650	June 21, 1939	60	*232	*168,300	*229	*166,100	
1940	896	474	May 22, 1940	49	107	77,760	111	80,660	
1941	926	31,000	June 9, 1941	63	408	295,700	447	323,700	
1942	956	14,600	Aug. 28, 1942	101	428	309,600	398	288,200	
1943	976	13,500	June 12, 1943	70	356	257,900	345	249,600	
1944	1006	8,080	June 13, 1944	60	423	306,900	442	320,500	
1945	1036	*18,400	May 27, 1945	94	587	425,000	573	414,600	
1946	1056	2,520	June 21, 1946	60	216	156,200	294	212,700	
1947	1086	13,500	June 23, 1947	50	514	371,900	438	317,000	
1948	1116	11,900	Feb. 28, 1948	70	394	286,100	397	288,100	
1949	1146	28,500	June 14, 1949	85	1,022	740,000	1,053	762,400	
1950	1176	12,700	Sept. 21, 1950	100	550	398,400	-	-	

* Revised.

479. Little Blue River at Waterville, Kans.

Location.--Lat 39°42', long. 96°45', in SE $\frac{1}{4}$ sec. 16, T. 4 S., R. 6 E., at highway bridge, half a mile north of Waterville, 1 mile downstream from Corn Creek, and 6 (revised) miles upstream from mouth.

Drainage area.--3,440 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 1,110.87 ft (revised) above mean sea level, datum of 1929. Prior to Mar. 23, 1938, chain gage at same site and datum.

Average discharge.--24 years (1922-24, 1928-50), 600 cfs (revised).

Extremes.--1922-25, 1928-50: Maximum discharge, 50,400 cfs June 10, 1941 (gage height, 26.20 ft, from floodmarks), from rating curve extended above 25,000 cfs on basis of velocity-area study; minimum observed, 28 cfs Aug. 12, 1934.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	289	1,180	133	100	-
1923	104	164	138	155	141	159	346	784	*2,920	1,400	440	446	*599
1924	510	193	176	169	249	283	308	285	325	783	363	148	317
1925	131	154	157	104	331	214	211	207	*1,460	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	141	-
1929	513	450	362	149	402	607	582	774	950	200	135	136	436
1930	208	195	177	143	311	170	341	2,660	1,220	237	636	294	551
1931	166	449	193	261	185	216	343	551	461	196	308	818	345
1932	605	678	258	313	1,230	538	278	261	894	379	343	303	503
1933	158	157	167	203	193	211	218	447	140	131	894	639	298
1934	157	153	179	189	171	179	148	260	102	65.2	44.9	180	152
1935	111	142	113	95.6	146	157	293	2,417	4,245	541	210	401	738
1936	210	204	150	122	514	230	165	334	122	82.8	48.6	178	195
1937	108	106	128	95.6	453	314	133	167	245	402	171	128	203
1938	116	108	95.5	132	141	166	172	1,608	1,606	885	583	323	497
1939	135	161	122	97.8	113	288	898	166	1,635	600	141	78.5	368
1940	90.5	106	110	87.7	122	177	141	143	122	62.9	200	117	123
1941	88.5	121	151	164	198	374	317	208	4,470	283	225	1,235	647
1942	1,941	597	475	628	380	590	324	563	1,652	385	1,166	1,644	884
1943	296	214	202	165	935	225	425	477	4,376	535	140	87.0	664
1944	98.3	115	113	125	144	206	728	1,307	2,686	1,034	2,332	1,109	833
1945	305	214	205	203	312	666	*1,886	7,253	2,822	511	377	189	*1,423
1946	214	194	125	230	276	268	190	199	464	1,447	191	560	364
1947	748	1,094	248	190	166	355	1,862	728	5,954	768	181	131	1,029
1948	116	150	169	110	1,554	2,912	384	329	535	560	536	306	637
1949	134	195	157	627	1,862	2,952	512	2,143	5,076	1,003	488	1,806	1,404
1950	607	247	214	194	244	233	202	2,013	816	1,961	1,419	5,176	1,293

* Revised.

Monthly and yearly runoff in acre-feet of Little Blue River at Waterville, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	17,200	*72,500	8,180	5,950	-
1923	6,400	9,760	8,480	9,530	7,830	9,780	20,600	48,200	*74,000	*85,900	27,100	26,500	*434,000
1924	31,400	11,500	10,800	10,400	14,500	17,400	18,300	17,500	19,300	48,100	22,300	8,810	230,000
1925	8,060	9,160	9,650	6,400	18,400	13,200	12,600	12,700	*86,800	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	8,390	-
1929	31,500	26,800	22,300	9,180	22,300	37,300	34,600	47,600	55,300	12,300	8,300	8,090	316,000
1930	12,900	11,600	10,900	8,790	17,300	10,500	20,300	164,000	72,600	14,600	39,100	17,500	400,000
1931	10,200	26,700	11,900	16,000	10,300	13,300	20,400	33,900	27,400	12,000	18,900	48,600	250,000
1932	37,200	40,300	15,900	19,200	71,000	33,100	16,500	16,100	53,200	23,300	21,100	18,000	365,000
1933	9,720	9,370	10,300	12,500	10,700	13,000	13,000	27,500	8,340	8,040	55,000	38,000	215,000
1934	9,630	9,110	11,020	11,630	9,520	11,000	8,810	16,000	6,080	4,010	2,760	10,680	110,300
1935	6,820	8,430	6,980	5,760	8,240	9,640	17,450	148,600	252,600	33,240	12,930	23,890	534,600
1936	12,900	12,110	9,220	7,490	29,550	14,150	9,840	20,540	7,270	5,090	2,990	10,590	141,700
1937	6,610	6,510	7,860	5,880	25,170	19,300	7,890	10,300	14,580	24,740	10,520	7,630	146,800
1938	7,110	6,420	5,870	8,120	7,610	10,240	10,260	98,850	95,580	54,380	35,830	19,240	359,800
1939	8,310	8,610	7,500	6,010	6,270	17,730	53,460	10,230	97,310	36,900	8,660	4,670	266,700
1940	5,570	6,290	6,770	5,390	7,020	10,900	8,380	8,770	7,270	3,870	12,290	6,980	89,500
1941	5,440	7,200	9,260	10,090	11,020	23,020	18,850	12,760	266,000	17,390	13,810	73,480	468,300
1942	119,300	35,530	29,240	38,630	21,120	36,270	19,270	34,590	98,310	23,640	71,700	97,800	625,400
1943	18,180	12,720	12,440	10,130	51,920	13,860	25,270	29,310	260,400	32,900	8,580	5,180	480,900
1944	6,040	6,840	6,970	7,690	8,270	12,690	43,350	80,050	159,800	63,590	43,400	65,990	604,700
1945	18,740	12,750	12,580	12,510	17,300	40,970	112,200	446,000	168,200	154,400	23,150	11,220	*1,030,000
1946	13,150	11,530	7,660	14,150	15,350	16,450	11,320	12,220	27,630	88,980	11,770	33,350	263,600
1947	45,990	65,110	15,250	11,660	9,230	21,800	110,800	44,740	354,300	47,220	11,100	7,810	745,000
1948	7,110	8,940	10,400	6,740	89,400	179,100	22,870	20,220	31,830	34,430	32,940	18,230	462,200
1949	8,260	11,630	9,640	38,530	103,400	81,500	30,450	132,100	302,000	61,670	30,020	107,400	1,017,000
1950	37,310	14,690	13,170	11,900	13,550	14,350	12,050	23,800	48,530	305,100	87,270	189,000	870,700

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1922	546,1440	-	-	-	-	-	-
1923	566,1440	*8,910	July 13, 1923	94	*599	*434,000	*639
1924	586	*3,500	Oct. 2, 1923	118	317	230,000	280
1925	606,1440	-	-	-	-	-	-
1928	666	-	-	-	-	-	-
1929	686	6,210	May 11, 1929	98	436	316,000	373
1930	701	10,500	May 7, 1930	-	551	400,000	570
1931	716	10,100	Sept. 1, 1931	79	345	250,000	407
1932	731	8,280	Aug. 31, 1932	112	503	365,000	414
1933	746	10,100	Aug. 24, 1933	79	298	215,000	298
1934	761	2,490	May 15, 1934	28	152	110,300	142
1935	786	25,500	June 2, 1935	50	739	534,600	755
1936	806	7,190	Feb. 24, 1936	37	195	141,700	177
1937	826	2,030	Mar. 4, 1937	69	203	146,800	201
1938	856	*10,400	July 17, 1938*	75	497	359,800	505
1939	876	11,700	Apr. 15, 1939	69	368	266,700	359
1940	898	3,600	Aug. 27, 1940	50	123	89,500	128
1941	928	50,400	June 10, 1941	79	647	468,300	871
1942	956	11,600	Oct. 9, 1941	165	864	625,400	669
1943	978	25,400	June 13, 1943	75	664	480,900	632
1944	1008	*24,200	Aug. 25, 1944	60	833	604,700	866
1945	1036,1440	40,900	May 28, 1945	155	*1,423	*1,030,000	*1,406
1946	1056	34,700	July 16, 1946	76	364	263,600	494
1947	1086	24,400	June 24, 1947	106	1,029	745,000	891
1948	1118	19,000	Mar. 19, 1948	30	637	462,200	641
1949	1148	17,800	June 28, 1949	83	1,404	1,017,000	1,454
1950	1176	37,500	July 19, 1950	130	1,203	870,700	-

* Revised.

480. Big Blue River at Randolph, Kans.

Location.--Lat 39°27', long. 96°43', in SW $\frac{1}{4}$ sec. 12, T. 7 S., R. 6 E., at bridge on State Highway 13, half a mile upstream from Fancy Creek, three-quarters of a mile east of Randolph, and at mile 32.3.

Drainage area.--9,100 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 1,034.90 ft (revised) above mean sea level, datum of 1929. Prior to May 15, 1934, chain or staff gage at same site and datum.

Average discharge.--32 years (1918-50), 1,542 cfs.

Extremes.--1918-50: Maximum discharge, 98,000 cfs June 10, 1941 (gage height, 30.81 ft). From rating curve extended above 53,000 cfs on basis of velocity-area determinations of peak flow; minimum, 31 cfs Aug. 10, 1934 (gage height, 1.85 ft). Flood of May 31, 1903 reached a stage of 30.6 ft from flood mark.

Remarks.--Stage-discharge relation occasionally affected for short periods by undefined amounts of backwater from Fancy Creek, resulting in published discharges in excess of true values.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	2,710	1,340	679	499	1,150	-
1919	950	638	411	518	948	1,810	2,840	3,170	1,480	823	479	2,590	1,780
1920	1,450	1,120	646	1,040	1,700	834	2,570	1,520	1,290	872	892	1,070	1,250
1921	472	554	497	574	530	475	520	1,050	1,980	3,960	863	766	11,030
1922	347	346	352	322	403	920	720	516	562	2,740	440	274	666
1923	245	437	321	318	312	389	1,050	1,890	6,370	1,980	904	1,030	1,250
1924	3,230	473	442	482	679	666	709	546	2,320	3,010	580	420	1,170
1925	332	327	296	277	853	577	599	514	4,930	7002	510	520	1,030
1926	379	408	380	411	726	484	441	751	1,230	764	712	3,870	1874
1927	1,880	1,470	1569	638	873	742	5,850	1,390	2,570	1,0706	490	2,360	2,140
1928	1,930	652	557	651	866	550	846	714	2,070	1,8001	310	655	1,050
1929	1,300	1,610	654	553	1,520	3,180	2,260	1,920	5,120	966	430	387	1,650
1930	527	661	429	341	836	455	815	7,190	3,470	6472	660	1,230	1,610
1931	431	1,080	519	457	451	505	741	1,420	1,410	689	736	1,990	867
1932	1,430	2,180	895	1,020	2,870	1,750	720	678	3,560	1,2401	550	1,440	1,600
1933	444	409	412	442	428	496	513	1,350	399	5101	580	1,300	692
1934	363	336	345	359	308	407	344	442	218	148	76.1	669	534
1935	404	367	262	174	316	361	520	4,807	9,503	1,847	382	1,570	1,707
1936	515	614	410	265	1,976	2,096	607	1,621	457	155	98.9	273	754
1937	300	210	264	199	1,782	1,320	354	405	803	754	646	264	601
1938	227	213	223	266	288	429	404	3,842	3,509	2,4621	182	952	1,172
1939	247	352	280	303	272	1,512	1,877	397	3,558	1,339	907	144	915
1940	169	199	221	181	321	517	340	354	427	1371	218	321	370
1941	145	254	261	318	848	1,182	795	664	9,614	572	806	3,573	1,570
1942	6,130	1,702	1,587	2,372	985	2,273	925	3,431	4,709	1,0932	594	2,712	2,471
1943	741	506	552	528	2,590	585	658	1,413	14,020	1,934	580	273	2,007
1944	268	303	260	313	326	567	3,529	4,740	6,956	2,5476	410	3,423	2,470
1945	1,019	836	906	820	946	2,824	5,962	16,300	7,600	5,6130	272	559	3,744
1946	684	504	320	637	848	909	585	531	1,475	3,391	567	1,763	1,019
1947	1,524	2,141	612	452	837	989	5,393	1,568	1,906	1,906	532	420	2,720
1948	298	329	361	465	3,048	9,841	1,204	822	1,349	2,5835	191	1,017	76,048
1949	471	567	485	3,240	6,843	8,845	1,925	5,390	12,870	3,4080	719	5,416	4,234
1950	1,328	626	488	450	582	1,115	591	5,534	2,329	9,7055	696	3,934	2,555

† Corrected.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	167,000	79,700	41,800	30,700	68,400	-
1919	57,200	38,000	25,300	51,900	52,600	111,000	157,000	195,000	586,000	50,600	29,500	154,000	1,290,000
1920	89,200	66,600	39,700	64,000	97,800	51,500	153,000	93,500	76,800	53,600	54,800	63,700	904,000
1921	29,000	33,000	30,600	35,300	29,400	29,200	30,900	64,800	118,000	243,000	53,100	45,600	742,000
1922	21,300	20,600	21,600	19,800	22,400	56,600	42,800	31,700	33,400	168,000	27,100	16,300	482,000
1923	15,100	26,000	19,700	19,600	17,300	23,900	62,500	104,000	379,000	22,000	55,600	61,500	906,000
1924	199,000	28,100	27,200	29,600	39,100	41,000	42,200	33,600	158,000	185,000	64,600	25,000	852,000
1925	20,400	19,500	18,200	17,000	47,400	35,500	35,600	31,600	293,000	43,000	154,000	30,900	746,000
1926	23,300	24,300	23,400	25,300	40,300	29,800	26,200	46,200	73,200	47,000	43,800	230,000	633,000
1927	116,000	97,500	55,000	39,200	48,500	45,600	336,000	85,500	153,000	95,800	399,000	40,000	1,550,000
1928	119,000	38,800	34,200	40,000	49,800	33,800	50,300	43,900	122,000	111,000	80,600	39,000	765,000
1929	79,900	95,800	40,200	34,000	84,400	138,000	134,000	118,000	305,000	59,400	26,400	23,000	1,190,000
1930	32,400	39,300	26,400	21,000	46,400	28,000	48,500	442,000	206,000	39,800	164,000	73,200	1,170,000
1931	26,500	64,000	31,900	28,100	25,000	31,100	44,100	87,000	83,700	42,300	45,200	119,000	628,000
1932	88,200	29,000	55,000	82,500	165,000	107,000	42,800	41,800	212,000	76,400	95,500	86,000	1,160,000
1933	27,300	24,400	25,300	27,200	23,800	30,500	50,500	83,000	23,700	51,400	97,100	77,100	501,000
1934	22,200	19,970	23,300	22,040	17,010	25,050	20,450	27,150	12,970	9,100	4,680	39,830	241,800
1935	24,820	21,630	16,120	10,710	17,570	22,220	30,930	295,600	565,600	113,600	23,500	93,410	1,236,000

† Corrected.

Monthly and yearly runoff, in acre-feet of Big Blue River at Randolph, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	31,680	36,520	25,190	16,320	113,700	128,900	36,100	99,680	27,180	9,540	6,080	16,280	547,200
1937	18,430	12,480	16,240	12,260	98,990	81,150	21,080	24,950	47,810	46,390	39,740	15,730	435,200
1938	13,940	12,680	13,740	16,330	16,020	26,350	24,020	256,200	208,800	151,400	72,650	56,680	848,800
1939	15,200	20,950	17,250	18,640	15,090	80,700	111,700	24,430	211,700	82,540	55,800	8,570	662,400
1940	11,640	11,820	13,580	11,160	18,790	31,820	20,260	21,760	25,400	8,420	74,890	19,090	268,600
1941	8,790	15,140	16,030	19,550	47,080	72,700	47,300	40,840	572,100	35,150	49,540	212,600	1,137,000
1942	376,900	101,300	97,580	145,900	54,720	139,800	55,080	211,000	280,200	67,230	98,060	161,400	1,789,000
1943	45,570	30,120	33,960	32,500	143,800	35,980	39,140	86,860	834,100	118,900	35,640	16,220	1,455,000
1944	16,480	18,020	15,960	19,240	18,740	34,850	210,000	291,500	413,900	156,600	394,100	203,700	1,795,000
1945	62,680	49,770	55,720	50,410	52,510	173,600	354,800	102,000	452,200	345,100	78,180	33,280	2,710,000
1946	42,070	50,020	19,700	39,180	47,110	55,920	34,820	32,630	87,750	208,500	34,840	104,900	737,400
1947	95,720	27,400	37,660	27,800	35,390	60,750	320,900	96,440	982,600	117,200	34,530	24,870	1,969,000
1948	18,300	19,590	22,210	28,580	175,300	605,100	71,820	50,510	80,250	159,800	198,200	60,540	1,487,000
1949	28,930	33,740	29,850	199,200	380,000	543,800	114,600	331,400	765,800	209,600	105,700	322,300	3,085,000
1950	81,540	37,280	29,990	27,640	32,320	68,580	35,180	340,300	138,600	596,800	227,300	234,100	1,850,000

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1918	476	17,400	May 28, 1918*	-	-	-	-	-
1919	506	22,300	June 11, 1919	285	1,780	1,290,000	1,880	1,360,000
1920	506	29,970	Apr. 12, 1920	360	1,250	904,000	1,100	801,000
1921	526	22,000	July 2, 1921	260	1,030	742,000	985	715,000
1922	546	14,500	July 12, 1922	240	868	482,000	862	479,000
1923	566	22,200	June 9, 1923	225	1,250	906,000	1,520	1,100,000
1924	586	13,800	Oct. 2, 1923	301	1,170	852,000	904	656,000
1925	606	20,200	June 19, 1925	-	1,030	746,000	1,050	759,000
1926	626	16,100	Sept. 15, 1926	221	1,874	633,000	1,100	800,000
1927	647	*23,700	Apr. 19, 1927	-	2,140	1,550,000	2,080	1,500,000
1928	666	13,800	Oct. 6, 1927	305	1,050	763,000	1,080	787,000
1929	686	*26,300	June 1, 1929	*278	1,650	1,190,000	1,490	1,070,000
1930	701	29,900	May 8, 1930	-	1,610	1,170,000	1,650	1,190,000
1931	716	17,300	Sept. 26, 1931	248	867	628,000	1,070	778,000
1932	731	16,900	Nov. 25, 1931	292	1,600	1,160,000	1,330	966,000
1933	746	11,700	Aug. 24, 1933	239	892	501,000	674	488,000
1934	761	2,200	May 15, 1934	42	334	241,800	333	241,000
1935	786	*42,800	June 3, 1935	120	1,707	1,236,000	1,749	1,266,000
1936	806	15,300	Feb. 25, 1936	68	754	547,200	690	500,900
1937	826	8,080	Feb. 13, 1937	116	601	435,200	592	428,400
1938	856	22,800	May 17, 1938	155	1,172	848,800	1,190	861,800
1939	876	23,000	Apr. 16, 1939	120	915	662,400	892	646,000
1940	896	8,980	Aug. 27, 1940	76	370	268,600	374	271,500
1941	926	98,000	June 10, 1941	89	1,570	1,137,000	2,310	1,675,000
1942	956	47,100	Oct. 9, 1941	431	2,471	1,789,000	1,827	1,325,000
1943	976	45,800	June 16, 1943	229	2,007	1,453,000	1,925	1,394,000
1944	1006	*51,300	Aug. 26, 1944	180	2,470	1,793,000	2,632	1,911,000
1945	1036	55,400	May 23, 1945	380	3,744	2,710,000	3,638	2,634,000
1946	1056	33,700	July 17, 1946	200	1,019	737,400	1,249	904,400
1947	1086	51,100	June 25, 1947	315	2,720	1,969,000	2,446	1,771,000
1948	1116	37,100	Mar. 20, 1948	224	2,048	1,487,000	2,093	1,519,000
1949	1146	45,800	June 29, 1949	335	4,234	3,065,000	4,311	3,121,000
1950	1176	40,000	July 20, 1950	*260	2,555	1,850,000	-	-

* Revised.

† Corrected.

* Not previously published.

481. Kansas River at Wamego, Kans.

Location.--Lat 39°12', long 96°18', in SE $\frac{1}{4}$ sec. 9, T. 10 S., R. 10 E., at bridge on State Highway 99 at Wamego, 3 miles downstream from Antelope Creek, and at mile 129.1.

Drainage area.--55,240 sq mi, approximately, of which about 49,540 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 953.66 ft above mean sea level, datum of 1929, Kansas City supplementary adjustment of 1943. Prior to Aug. 1, 1934, chain gage at same site and datum.

Average discharge.--31 years (1919-50) 4,398 cfs.

Extremes.--1919-50: Maximum discharge, 177,000 cfs, June 4, 1935 (gage height, 23.79 ft); minimum, 73 cfs, Dec. 14, 1940, result of freeze-up.
Flood of May 1903 reached a stage of 26.3 ft, determined by U. S. Weather Bureau from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second of Kansas River at Wamego, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	2,440	6,390	7,480	10,100	18,200	3,840	1,720	6,310	-
1920	4,170	2,610	1,930	2,570	3,620	1,990	5,860	4,620	2,770	1,870	2,780	4,580	3,270
1921	1,180	1,440	1,560	1,520	1,670	1,450	1,710	4,180	5,670	6,610	2,390	1,750	2,590
1922	822	644	688	603	907	2,400	3,120	3,210	2,120	6,820	1,980	843	2,030
1923	431	2,150	957	1,060	858	1,240	2,050	6,670	22,400	9,370	4,180	3,290	4,590
1924	6,070	1,940	1,603	1,440	1,990	1,990	2,450	2,230	3,280	4,520	3,580	1,320	2,720
1925	905	815	803	494	1,900	1,900	2,310	1,610	7,490	1,770	4,430	2,120	2,200
1926	915	762	888	847	1,290	1,280	1,720	1,640	1,800	2,570	2,000	10,300	2,160
1927	4,590	2,040	1,330	1,210	1,220	1,830	15,900	4,680	15,100	5,370	18,200	8,430	6,500
1928	4,490	1,730	1,410	1,690	2,800	2,070	2,860	2,210	8,820	13,800	14,800	3,660	5,040
1929	2,860	5,040	2,530	2,030	3,410	7,330	8,470	9,310	14,800	6,470	3,230	1,530	5,580
1930	1,690	1,820	1,520	1,290	2,530	1,710	2,730	15,400	11,800	2,620	4,650	4,490	4,360
1931	3,870	3,520	2,390	1,630	1,960	2,020	3,270	4,460	3,200	2,270	2,620	3,130	2,870
1932	2,130	3,430	2,190	2,090	4,980	3,920	2,170	1,870	7,230	4,790	2,770	4,320	3,470
1933	1,370	1,050	1,030	1,260	1,200	1,500	2,570	3,630	1,280	1,490	3,060	5,730	2,090
1934	1,536	973	1,172	1,110	1,114	1,445	1,109	1,343	3,069	966	271	1,318	1,283
1935	674	609	641	597	951	972	859	9,874	34,450	9,606	2,965	7,607	5,801
1936	3,173	2,747	1,957	1,467	2,681	3,266	1,352	5,875	2,698	747	473	940	2,283
1937	1,146	541	626	508	4,618	2,984	1,211	1,124	5,114	3,516	2,399	1,728	2,105
1938	695	610	634	741	951	1,280	1,226	9,256	13,610	4,796	3,724	2,516	3,557
1939	868	904	777	890	675	2,543	3,634	1,718	9,109	3,786	3,845	670	2,454
1940	430	418	442	302	683	1,490	982	1,843	2,286	1,134	2,524	1,908	1,204
1941	877	760	706	796	1,757	2,141	2,186	2,893	23,740	5,181	4,854	11,500	4,755
1942	23,370	6,687	4,273	4,659	3,095	5,160	5,647	10,920	19,060	6,018	5,189	14,070	9,034
1943	4,793	2,302	2,330	2,087	6,656	2,209	4,383	4,288	27,390	5,765	1,808	1,023	5,372
1944	989	883	835	988	1,135	3,447	15,570	17,930	13,560	10,180	15,740	9,253	7,551
1945	3,208	2,364	4,005	2,654	2,899	6,079	15,600	28,540	16,800	19,590	4,560	2,231	9,092
1946	2,525	1,708	1,204	1,940	2,117	2,527	1,892	2,516	3,869	7,485	2,179	12,140	3,505
1947	11,200	7,900	3,046	2,601	2,390	4,112	14,130	5,842	32,610	8,199	2,142	1,282	7,935
1948	990	1,038	1,337	1,387	4,190	16,470	3,015	3,116	6,088	19,150	7,024	2,638	5,571
1949	1,322	1,520	1,418	6,008	14,320	15,620	5,577	13,470	24,080	8,367	3,635	7,370	8,500
1950	3,490	1,764	1,565	1,427	1,821	2,391	1,618	9,122	5,996	26,290	17,320	11,320	7,072

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1919	-	-	-	-	136	393	445	621	1,080	236	106	375	-
1920	256	155	119	158	208	122	349	284	165	115	171	273	2,380
1921	72.6	85.7	83.6	93.5	92.8	89.2	102	257	337	406	147	104	1,870
1922	50.5	38.3	42.3	37.1	50.4	148	186	197	126	419	122	50.2	1,470
1923	26.5	128	58.8	65.2	46.4	76.2	122	410	1,330	607	257	196	3,320
1924	373	115	100	88.5	114	122	146	137	195	278	220	78.6	1,970
1925	55.6	48.5	49.4	30.4	106	117	137	99.0	446	109	272	126	1,600
1926	56.3	45.3	54.6	52.1	71.6	78.7	102	101	107	158	123	613	1,560
1927	282	121	81.8	74.4	67.8	113	827	288	898	330	1,120	502	4,710
1928	276	103	86.7	104	161	127	170	136	525	848	910	218	3,660
1929	176	299	156	125	189	451	504	572	881	397	199	91.0	4,040
1930	104	108	93.5	79.3	141	105	162	947	702	161	286	267	3,160
1931	258	209	147	100	109	124	195	274	191	140	161	186	2,070
1932	131	204	135	128	286	241	129	115	430	295	170	257	2,520
1933	84.5	62.2	63.6	77.3	66.9	92.0	153	223	73.4	92.0	188	341	1,520
1934	94.43	57.80	72.04	68.25	61.88	88.86	65.97	82.52	182.8	59.39	16.67	78.43	929.0
1935	41.42	36.22	39.42	36.70	52.80	59.76	51.13	607.1	205.0	590.6	182.3	452.6	4,200
1936	195.1	163.4	120.4	90.23	154.2	200.8	80.45	361.3	160.4	45.93	29.43	55.95	1,658
1937	70.47	32.17	38.51	31.11	256.3	183.5	72.05	69.12	304.3	216.2	147.5	102.8	1,524
1938	42.73	36.29	38.83	45.58	51.72	78.72	72.94	567.9	822.0	294.9	229.0	149.7	2,430
1939	53.34	53.76	47.80	54.71	37.47	156.3	216.2	105.6	542.0	232.8	236.4	39.88	1,776
1940	26.47	24.89	27.18	18.58	39.29	91.60	58.44	113.3	136.0	69.74	155.2	113.5	874.2
1941	53.94	45.25	43.43	48.94	97.57	131.7	130.2	177.9	1,412	318.6	298.5	684.0	3,442
1942	336.7	262.8	286.5	171.9	317.3	336.0	671.7	1,134	370.0	319.1	837.2	6,540	5,540
1943	294.7	137.0	143.3	128.4	369.8	135.8	280.8	263.7	1,630	354.5	111.1	60.89	3,890
1944	60.61	52.53	51.33	60.75	75.89	212.0	926.3	1,102	794.7	626.1	968.1	550.6	5,481
1945	197.3	140.7	246.3	163.2	161.0	373.8	928.3	1,755	999.4	1,205	280.4	132.7	6,583
1946	155.3	101.7	74.04	119.3	117.6	155.4	112.6	154.7	230.2	460.2	134.0	722.6	2,538
1947	689.9	470.1	187.3	159.9	132.8	252.8	840.9	359.2	1,941	504.2	131.7	76.28	5,745
1948	60.95	61.79	82.23	85.29	241.0	1013	179.4	191.7	362.3	178	431.9	157.0	4,044
1949	81.28	90.47	87.17	869.4	795.6	960.5	331.8	829.5	1,435	514.5	225.5	438.5	6,154
1950	214.8	105.0	96.23	67.77	101.1	147.0	96.18	560.9	356.8	616	1065	673.6	5,120

Yearly discharge, in cubic feet per second of Kansas River at Wamego, Kans.

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date							
1919	508	43,000	June 12, 1919	-	-	-	-	-	-	-
1920	508	16,400	Apr. 13, 1920	-	3,270	2,380,000	2,880	2,090,000	-	-
1921	526	24,600	June 17, 1921	730	2,590	1,870,000	2,430	1,760,000	-	-
1922	546	25,000	July 13, 1922	440	2,030	1,470,000	2,140	1,550,000	-	-
1923	566	46,600	June 10, 1923	330	4,590	3,320,000	5,110	3,700,000	-	-
1924	586	21,500	Oct. 3, 1923	970	2,720	1,970,000	2,120	1,530,000	-	-
1925	606	24,400	June 20, 1925	-	2,200	1,600,000	2,210	1,600,000	-	-
1926	626	31,000	Sept. 16, 1926	590	2,160	1,560,000	2,610	1,890,000	-	-
1927	646	44,100	Apr. 20, 1927	1,050	6,500	4,710,000	6,470	4,690,000	-	-
1928	666	28,200	July 11, 1928	-	5,040	3,680,000	5,270	3,850,000	-	-
1929	686	38,600	June 2, 1929	1,050	5,580	4,040,000	5,130	3,710,000	-	-
1930	701	53,400	May 8, 1930	-	4,360	3,160,000	4,760	3,440,000	-	-
1931	716	19,100	Sept. 1, 1931	650	2,870	2,070,000	2,690	1,950,000	-	-
1932	731	22,200	Nov. 25, 1931	590	3,470	2,520,000	3,120	2,260,000	-	-
1933	746	19,800	Sept. 14, 1933	530	2,090	1,520,000	2,114	1,531,000	-	-
1934	761	11,400	June 24, 1934	230	1,283	929,000	1,135	821,700	-	-
1935	786	177,000	June 4, 1935	358	5,801	4,200,000	6,301	4,562,000	-	-
1936	806	15,400	Feb. 26, 1936	310	2,283	1,658,000	1,618	1,320,000	-	-
1937	826	*20,300	Feb. 8, 1937*	370	2,105	1,524,000	2,073	1,501,000	-	-
1938	856	29,200	June 24, 1938	450	3,357	2,430,000	3,408	2,467,000	-	-
1939	876	26,000	June 23, 1939	402	2,454	1,776,000	2,348	1,700,000	-	-
1940	896	9,110	Sept. 7, 1940	250	1,204	874,200	1,293	938,300	-	-
1941	926	117,000	June 11, 1941	116	4,755	3,442,000	7,455	5,396,000	-	-
1942	956	72,600	Oct. 10, 1941	1,900	9,034	6,540,000	6,932	5,019,000	-	-
1943	976	90,700	June 17, 1943	940	5,372	3,890,000	4,806	3,480,000	-	-
1944	1006	79,200	Aug. 27, 1944	580	7,551	5,481,000	8,129	5,901,000	-	-
1945	1036	86,700	May 24, 1945	1,590	9,092	6,583,000	8,743	6,330,000	-	-
1946	1056	43,700	July 18, 1946	820	3,505	2,538,000	4,908	3,553,000	-	-
1947	1086	72,700	June 26, 1947	1,060	7,935	5,745,000	6,358	4,604,000	-	-
1948	1116	64,400	July 21, 1948	901	5,571	4,044,000	5,645	4,099,000	-	-
1949	1146	54,000	June 30, 1949	780	8,500	6,154,000	8,717	6,511,000	-	-
1950	1176	85,500	July 20, 1950	670	7,072	5,120,000	-	-	-	-

* Revised.

482. Vermillion Creek near Wamego, Kans. 1/

Location.--Lat 39°21'00", long. 96°13'10", in NW¹ sec. 20, T. 8 S., R. 11 E., at highway bridge, 1 mile upstream from Indian Creek, 14 miles northeast of Wamego, and at mile 19.3.

Drainage area.--243 sq mi (revised).

Gage.--Wire-weight gage. Datum of gage is 991.93 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--9 years (1936-45), 81.6 cfs.

Extremes.--1936-46: Maximum discharge, 23,500 cfs Oct. 9, 1941 (gage height, 29.40 ft), from rating curve extended above 4,000 cfs on basis of velocity-area study; no flow at times during 1937, 1939, 1940.

Flood in 1915 reached a stage of 30.9 ft, from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	321	46.0	1.7	0.9	11.8	-
1937	11.5	1.9	2.5	1.4	205	132	11.5	7.4	4.7	2.4	0	0	30.5
1938	.04	.50	.07	.15	.56	.45	.46	183	53.5	51.6	12.8	.59	25.6
1939	.25	11.9	.55	1.04	.50	61.0	75.8	9.02	188	22.7	4.17	.36	31.1
1940	.32	.49	.99	1.0	8.1	3.1	1.7	9.3	17.3	.43	37.1	6.70	7.22
1941	.07	.62	.84	1.10	5.58	3.19	*73.9	22.5	183	12.0	75.9	4.43	*31.8
1942	845	167	87.5	100	54.2	105	55.5	178	290	14.2	63.3	103	173
1943	45.8	25.3	85.0	26.0	144	36.6	50.1	68.9	535	31.9	9.1	3.6	87.2
1944	3.2	3.0	2.2	5.5	5.3	81.6	539	99.4	368	99.4	60.5	445	61.4
1945	30.7	34.5	226	66.4	75.6	179	486	555	610	178	31.0	20.8	208
1946	18.1	11.0	6.2	34.2	11.9	113	58.0	22.2	25.0	-	-	-	-

* Revised.

1/ Published as Red Vermillion Creek prior to 1938.

Monthly and yearly runoff, in acre-feet of Vermillion Creek near Wamego, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	19,730	2,730	102	55	701	-
1937	708	113	153	85	11,380	8,100	682	454	278	147	0	0	22,100
1938	2.4	18	4.4	9.5	20	28	27	11,260	3,180	3,170	786	35	18,540
1939	15	708	34	64	28	3,750	4,510	554	11,200	1,400	257	21	22,540
1940	20	29	61	61	466	192	103	569	1,030	30	2,280	398	5,240
1941	4.2	37	52	68	311	198	*4,400	1,380	10,880	735	4,670	267	*23,010
1942	51,970	9,910	5,380	6,180	3,010	6,450	3,500	10,980	17,280	895	3,890	6,140	125,300
1943	2,810	1,500	5,230	1,600	7,990	2,250	2,890	4,240	51,810	1,960	561	214	63,140
1944	198	179	133	339	307	5,020	32,060	22,660	5,910	3,720	27,340	3,650	101,500
1945	1,890	2,050	13,920	4,080	4,200	10,980	28,900	34,140	36,310	10,920	1,910	1,240	150,500
1946	1,110	655	379	2,100	662	6,950	3,450	1,360	1,490	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1936	806	-	-	-	-	-	-
1937	826	2,300	Feb. 12, 1937	0	30.5	22,100	29.2
1938	856	6,970	May 17, 1938	0	25.6	18,540	26.6
1939	876	4,420	June 25, 1939†	0	51.1	22,540	30.2
1940	896	510	Aug. 28, 1940	0	7.22	5,240	7.20
1941	926,1440	2,930	Aug. 26, 1941	0	*31.8	*23,010	*125
1942	956	23,500	Oct. 9, 1941	3	173	125,300	93.4
1943	976	5,600	June 16, 1943	1	87.2	63,140	74.7
1944	1006	12,100	Aug. 27, 1944	1	140	101,500	164
1945	1036	9,750	June 15, 1945	7	208	150,500	186
1946	1056	-	-	-	-	-	-

* Revised.

† Corrected.

483. Kansas River at Topeka, Kans.

Location.--Lat 39°04', long. 95°40', in SE $\frac{1}{4}$ sec. 30, T. 11 S., R. 16 E., at Topeka Avenue bridge in Topeka, 2.2 miles upstream from Soldier Creek, and at mile 85.5.

Drainage area.--56,710 sq mi, approximately, of which about 51,010 sq mi contribute directly to surface runoff.

Supplemental records available.--April to August 1904, gage heights only. Gage-height records collected in this vicinity since August 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 854.57 ft (revised) above mean sea level, datum of 1929.

Apr. 24 to Aug. 31, 1904 staff gage at Chicago, Rock Island, and Pacific Railroad bridge 400 ft upstream at different datum.

June 12, 1917, to Apr. 3, 1918, chain gage at Chicago, Rock Island, and Pacific Railroad bridge at datum 0.75 ft higher.

Apr. 4, to May 30, 1918, water-stage recorder; May 31, to Oct. 1, 1918, staff gage; and Oct. 2, 1918, to Sept. 30, 1927, water-stage recorder at site 130 ft downstream at datum 0.75 ft higher.

Oct. 1, 1927 to Sept. 30, 1934, chain gage at Melan bridge 1,700 ft downstream at present datum.

Oct. 1, 1934 to Sept. 30, 1939, water-stage recorder at Sardou bridge 7,300 ft downstream at datum 1.74 ft lower.

Average discharge.--33 years (1917-50), 4,920 cfs (revised).

Extremes.--1917-50: Maximum discharge, 154,000 cfs June 5, 1935 (gage height, 26.65 ft, site and datum then in use); minimum, 112 cfs Dec. 16, 1940, result of freezeup. Flood of May 30, 1903, reached a stage of 31.4 ft (revised), from flood marks, referenced to site and datum used October 1927 to September 1934; discharge about 300,000 cfs (revised).

Monthly and yearly mean discharge, in cubic feet per second of Kansas River at Topeka, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	1,900	3,710	2,240	-
1918	1,630	1,140	898	899	1,300	2,070	1,490	4,410	5,350	1,980	1,810	1,980	2,090
1919	2,510	1,920	1,120	1,930	2,670	8,750	9,070	11,300	19,800	4,200	2,090	5,430	5,890
1920	4,480	2,760	2,000	2,500	3,820	2,400	6,060	4,970	3,010	2,620	2,930	4,960	3,530
1921	1,170	1,280	1,230	1,460	1,970	1,700	1,700	5,840	6,380	7,530	3,030	2,100	2,960
1922	855	734	764	789	1,110	3,560	5,330	4,290	2,870	7,960	2,100	846	2,620
1923	672	3,170	1,160	1,100	996	1,360	2,140	6,880	25,400	11,000	4,790	3,120	5,150
1924	5,540	2,020	1,790	1,500	2,110	2,360	2,700	2,140	3,710	4,600	3,790	1,650	2,830
1925	797	756	851	533	2,270	1,810	3,150	1,710	8,670	2,200	4,150	2,130	2,410
1926	977	885	910	843	1,720	1,650	2,930	1,850	2,200	2,550	2,630	11,400	2,530
1927	5,940	2,790	1,550	1,560	1,710	2,210	17,900	6,580	15,400	6,180	18,000	8,930	7,390
1928	5,850	2,510	2,000	2,050	2,770	2,450	4,290	2,810	9,300	14,500	15,600	3,300	5,650
1929	2,780	6,690	3,460	2,490	4,200	8,310	11,700	10,600	17,000	6,950	3,730	1,820	6,630
1930	1,850	1,880	1,740	1,360	2,610	1,960	3,500	17,700	13,200	3,090	4,570	5,040	4,870
1931	3,720	3,590	2,570	1,970	2,050	2,080	3,390	5,040	3,900	2,470	3,000	4,500	3,190
1932	2,400	6,710	3,480	3,030	5,330	4,670	2,900	2,870	7,910	6,080	3,380	4,870	4,450
1933	1,410	1,190	1,130	1,310	1,350	1,660	3,080	4,250	1,430	1,530	2,910	5,920	12,270
1934	1,720	1,113	1,392	1,219	1,290	1,466	1,166	1,592	2,993	1,112	269	1,296	1,364
1935	615	961	883	752	1,007	962	822	10,970	34,670	10,160	3,024	8,237	6,092
1936	3,224	2,805	2,045	1,757	3,122	4,002	1,459	8,206	3,743	986	450	1,015	2,738
1937	1,352	614	768	545	5,509	3,822	1,461	1,171	5,232	3,451	2,429	1,668	2,292
1938	768	667	626	721	892	1,284	1,226	10,970	14,790	5,073	3,975	2,400	3,624
1939	676	912	794	910	717	2,724	4,034	1,825	9,747	4,001	4,102	748	2,823
1940	460	429	498	334	680	1,737	1,017	1,964	2,466	1,177	2,472	2,061	1,267
1941	941	770	805	808	1,810	2,228	2,446	2,972	23,510	6,002	5,693	11,290	4,915
1942	27,960	8,378	5,198	5,312	4,044	5,696	6,249	12,940	21,890	7,275	5,640	15,900	10,570
1943	5,592	2,781	3,282	2,906	7,334	2,838	4,537	5,015	32,430	6,544	2,201	1,324	6,348
1944	1,145	1,020	920	1,069	1,377	4,540	22,530	21,330	14,440	11,250	19,050	11,610	9,199
1945	3,844	2,727	6,909	3,279	3,611	8,188	20,290	31,820	20,580	21,980	5,459	2,595	10,990
1946	3,122	2,000	1,403	2,565	2,508	3,525	2,501	3,149	4,425	8,014	2,958	13,030	4,098
1947	11,230	7,990	3,798	2,874	2,630	5,674	16,720	6,649	36,230	8,770	2,660	1,443	8,859
1948	1,084	1,093	1,504	1,488	3,343	17,250	4,110	3,931	6,679	19,520	7,843	2,948	5,929
1949	1,496	1,858	1,430	6,839	16,720	16,130	5,995	14,100	25,200	9,540	4,123	7,343	9,170
1950	3,589	1,915	1,598	1,489	1,878	2,610	1,683	9,609	6,912	30,450	19,350	11,970	7,827

† Corrected.

a From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River. Published figure is in acre-feet.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	117	228	133	-
1918	100	67.8	859.5	861.4	872.0	127	88.7	271	318	122	111	118	1,520
1919	154	114	69.9	119	148	538	540	695	1,180	258	129	323	4,270
1920	275	164	125	154	220	148	361	306	179	161	180	295	2,570
1921	71.9	76.2	75.6	89.8	109	105	101	359	380	463	186	125	2,140
1922	52.6	43.7	47.0	48.3	61.6	219	317	264	171	469	129	50.3	1,890
1923	41.3	189	71.3	67.6	55.3	83.6	127	423	1,510	676	295	186	3,730
1924	341	120	110	92.2	121	145	161	132	221	285	233	98.2	2,060
1925	49.0	45.0	52.3	32.8	126	111	187	105	516	156	255	127	1,740
1926	60.1	52.7	56.0	51.8	95.5	101	174	114	131	157	162	678	1,830
1927	365	166	95.3	83.6	95.0	136	1070	405	916	380	1110	531	5,350
1928	360	149	123	126	159	151	255	173	553	892	959	196	4,100
1929	171	398	213	153	233	511	696	652	1,010	427	229	108	4,800
1930	114	112	107	836	145	114	208	1,090	786	190	281	300	3,530
1931	228	214	158	121	114	128	201	310	232	152	184	268	2,310
1932	148	399	214	186	307	287	173	176	470	374	208	290	3,230
1933	86.8	70.8	69.5	80.4	75.0	102	183	261	85.3	94.4	179	353	1,640
1934	105.8	66.22	85.57	74.93	71.66	90.29	69.36	97.89	178.1	68.39	16.56	77.10	1,020
1935	50.13	57.16	54.32	46.21	55.93	59.17	48.94	674.8	2,063	624.4	185.9	490.1	4,410
1936	198.2	166.9	125.8	108.0	179.6	246.1	86.80	504.6	2,227	60.60	27.70	60.40	1,987
1937	83.11	36.55	44.62	33.54	506.0	222.7	86.94	71.97	311.3	214.1	149.4	99.28	1,660
1938	47.08	39.68	38.47	44.32	49.53	78.97	72.97	674.3	879.6	311.9	244.4	142.8	2,624
1939	53.84	54.27	46.82	55.95	39.82	167.5	243.0	112.2	580.0	246.0	252.2	44.49	1,899
1940	28.27	25.51	30.63	20.51	39.13	106.8	60.53	114.6	146.7	72.4	152.0	122.6	919.7
1941	57.68	45.80	49.50	49.71	100.5	137.0	145.5	182.7	1,399	369.0	350.0	671.8	3,558
1942	719	498.5	319.6	326.6	224.6	350.3	371.8	795.6	1,303	447.3	346.8	946.0	7,649
1943	343.8	165.5	201.8	178.7	407.3	174.5	270.0	308.4	1,930	402.4	155.3	78.8	4,596
1944	70.37	60.72	56.59	65.47	79.28	279.2	1341	1312	859.4	691.8	172	691.0	6,679
1945	236.4	162.2	424.8	201.6	200.6	503.2	1,207	1,956	1,225	1,352	335.7	154.4	7,959
1946	191.9	119.0	86.24	157.7	139.2	216.8	148.8	193.6	263.3	492.7	181.9	775.3	2,966
1947	690.7	475.4	233.6	176.7	146.0	348.9	995.0	408.8	2,156	539.2	157.4	85.98	6,414
1948	65.68	65.05	86.32	91.52	192.7	1061	244.5	241.7	397.4	4,200	482.2	175.3	4,304
1949	91.97	101.6	94.08	420.5	926.7	991.9	356.7	667.1	1,500	596.7	253.5	438.9	6,639
1950	220.7	113.9	98.26	91.54	104.3	160.5	100.1	590.8	411.3	1,372	1190	712.3	5,666

† Corrected.

a From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River.

Yearly discharge, in cubic feet per second of Kansas River at Topeka, Kans.									
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1917	456	-	-	-	-	-	-	-	-
1918	476	24,400	May 29, 1918	-	a2,090	a1,520,000	a2,250	a1,630,000	-
1919	506	68,000	Mar. 16, 1919	740	5,890	4,270,000	6,200	4,490,000	-
1920	506	26,000	July 13, 1920	1,170	3,530	2,570,000	3,070	2,230,000	-
1921	526	43,100	May 10, 1921	950	2,960	2,140,000	2,850	2,080,000	-
1922	546	46,000	July 12, 1922	535	2,620	1,890,000	2,850	2,050,000	-
1923	566	73,700	June 10, 1923	590	5,150	3,750,000	5,520	3,990,000	-
1924	586	18,600	Aug. 23, 1924	1,040	2,830	2,060,000	2,250	1,630,000	-
1925	606	25,600	June 4, 18, 1925	480	2,410	†1,740,000	2,440	1,760,000	-
1926	626	37,600	Sept. 16, 1926	750	2,530	1,830,000	3,160	2,290,000	-
1927	646	67,000	Apr. 19, 1927	-	7,390	5,550,000	7,400	5,360,000	-
1928	666	37,900	July 12, 1928*	1,120	5,650	4,100,000	5,850	4,250,000	-
1929	686	68,300	Apr. 20, 1929	1,310	6,630	4,800,000	6,020	4,350,000	-
1930	701	69,000	May 8, 1930	-	4,970	3,530,000	5,240	3,600,000	-
1931	716	26,700	Sept. 2, 1931	940	3,190	2,310,000	3,410	2,470,000	-
1932	731	25,600	Nov. 24, 1931	940	4,450	3,230,000	3,720	2,700,000	-
1933	746	16,400	Aug. 26, 1933	710	†2,270	1,640,000	2,038	1,671,000	-
1934	761	10,600	June 25, 1934	200	1,384	†1,002,000	1,251	905,900	-
1935	786	154,000	June 5, 1935	518	6,092	4,410,000	6,546	4,740,000	-
1936	806	17,000	Feb. 25, 1936	331	2,738	1,987,000	2,288	1,661,000	-
1937	826	17,000	July 13, 1937	390	2,292	1,660,000	2,238	1,620,000	-
1938	856	33,800	May 19, 1938	290	3,624	2,624,000	3,668	2,656,000	-
1939	876	26,800	June 26, 1939	450	2,623	1,899,000	2,522	1,826,000	-
1940	896	8,380	Aug. 29, 1940	280	1,267	919,700	1,362	988,400	-
1941	926	102,000	June 12, 1941	268	4,915	3,558,000	8,208	5,942,000	-
1942	956	90,800	Oct. 10, 1941	2,300	10,570	7,649,000	8,043	5,823,000	-
1943	976	101,000	June 17, 1943	1,150	6,348	4,596,000	5,625	4,073,000	-
1944	1006	98,800	Apr. 23, 1944	600	9,199	6,679,000	10,070	7,314,000	-
1945	1036	96,500	Apr. 17, 1945	2,020	10,990	7,959,000	10,410	7,533,000	-
1946	1056	43,400	July 18, 1946	900	4,098	2,966,000	5,482	3,969,000	-
1947	1086	75,300	June 27, 1947	1,140	8,859	6,414,000	7,227	5,232,000	-
1948	1116	73,800	July 21, 1948	968	5,929	4,304,000	6,037	4,383,000	-
1949	1146	54,500	June 30, 1949	1,070	9,170	6,639,000	9,358	6,775,000	-
1950	1176	94,200	July 19, 1950	1,050	7,827	5,666,000	-	-	-

* Revised.

† Corrected.

‡ Not previously published.

§ From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River.

484. Soldier Creek near Topeka, Kans.

Location.--Lat 39°06', long. 95°43', in NW¼ sec. 14, T. 11 S., R. 15 E., at highway bridge, 1½ miles upstream from Halfday Creek, 4 miles northwest of Topeka, and 7 miles upstream from mouth.

Drainage area.--268 sq mi.

Gage.--Wire-weight gage. Datum of gage is 866.95 ft (revised) above mean sea level, datum of 1929. Prior to July 27, 1935, chain gage at site 2 miles downstream at different datum.

Average discharge.--18 years (1929-32, 1935-50), 129 cfs.

Extremes.--1929-32, 1935-50: Maximum discharge, 9,910 cfs Apr. 23, 1944 (gage height, 28.2 ft, from graph based on gage readings); no flow at times during 1931, 1935-40.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1929	-	-	-	-	-	-	-	-	1,010	99.5	7.94	6.40
1930	14.3	24.4	13.5	9.65	44.2	10.6	148	404	418	8.03	58.5	314
1931	233	177	66.6	32.6	33.5	60.0	106	75.6	60.7	31.4	242	444
1932	54.6	100	214	269	128	111	106	125	177	266	33.7	41.5
1935	-	-	-	-	-	-	-	-	-	-	2.1	41.5
1936	13.7	43.5	7.2	10.4	155	13.4	67.9	468	35.8	1.6	.6	146
1937	16.3	2.47	4.25	48.5	382	150	36.5	19.0	18.1	2.36	3.51	0
1938	0	0	1.5	.2	.4	1.0	4.6	484	60.5	109	21.6	3.9
1939	.90	5.85	5.66	5.94	5.98	129	218	13.7	263	27.7	12.6	.07
1940	0	.03	.1	.07	3.4	4.7	19.4	25.8	25.7	1.1	10.7	15.2
1941	0	.39	1.33	8.31	27.8	12.0	103	27.9	*262	3.33	85.8	8.51
1942	*1,044	228	171	112	82.4	83.0	83.6	249	835	79.9	113	347
1943	87.7	41.4	187	110	118	45.2	28.7	115	949	76.7	14.1	6.0
1944	4.6	6.4	7.5	12.5	9.3	158	1,464	445	113	40.8	339	42.3
1945	79.8	40.1	463	73.9	107	366	842	678	799	197	21.6	22.3
1946	25.8	10.3	6.7	30.1	16.2	137	104	66.6	73.8	11.7	14.9	40.1
1947	23.6	5.1	22.2	6.4	5.5	68.5	403	201	462	33.4	18.6	.79
1948	1.51	2.72	9.3	1.7	94.0	288	49.1	184	384	108	77.9	5.6
1949	2.53	6.7	3.4	231	359	87.7	132	229	509	186	78.2	126
1950	104	29.4	29.5	45.6	35.0	29.1	25.8	221	78.2	*163	386	44.8

* Revised.

Monthly and yearly runoff, in acre-feet of Soldier Creek near Topeka, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	60,100	6,120	486	381	-
1930	879	1,450	818	593	2,450	664	8,810	24,800	24,900	494	3,600	18,700	88,200
1931	14,300	10,500	4,100	2,000	1,860	3,680	6,310	4,650	3,610	1,930	14,900	25,400	94,200
1932	3,360	65,300	13,200	16,600	7,360	6,800	6,310	7,710	10,500	16,400	2,070	2,470	158,000
1935	-	-	-	-	-	-	-	-	-	-	-	131	-
1936	841	2,590	440	637	8,940	826	4,040	28,780	2,130	100	368	670	58,030
1937	1,000	147	261	2,980	21,210	9,250	2,170	1,170	957	145	204	0	39,490
1938	0	0	93	14	20	60	274	29,750	3,600	6,690	1,330	230	42,060
1939	56	348	348	368	332	7,910	12,970	845	15,630	1,700	775	4.2	41,280
1940	0	2	6	4	194	292	1,150	1,590	1,530	69	660	906	6,400
1941	0	23	82	511	1,540	741	6,110	1,710	*15,610	204	5,280	508	*32,320
1942	*64,200	13,560	10,540	6,870	4,570	5,110	4,980	15,280	49,680	4,910	6,830	2,650	*207,500
1943	5,400	2,460	11,470	6,760	6,570	2,780	1,710	7,030	56,460	4,720	867	357	106,800
1944	284	383	460	770	534	9,740	87,080	27,350	6,710	2,510	20,830	2,520	159,200
1945	4,910	2,390	28,450	4,540	5,970	22,490	50,080	41,690	47,540	12,100	1,330	1,320	282,800
1946	1,580	611	415	1,850	900	8,410	6,180	4,100	4,390	720	914	380	32,450
1947	1,450	303	1,360	393	303	4,210	23,980	12,370	27,470	2,050	1,140	47	75,080
1948	93	162	568	103	5,410	17,690	2,920	11,340	22,880	6,650	4,790	353	72,940
1949	155	397	208	14,180	19,920	5,390	7,880	14,060	30,280	11,450	4,610	7,480	116,200
1950	6,370	1,750	1,810	2,810	1,940	1,790	1,540	12,970	4,650	*71,500	23,720	2,680	*133,500

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	-	-	-	-	-	-	-
1930	701	*3,900	Sept. 16, 1930	0	122	88,200	157	114,000
1931	716	5,290	Oct. 16, 1930	0	130	94,200	203	147,000
1932	731	5,780	Nov. 17, 1931	6	218	158,000	-	-
1935	786	9,560	May 28, 1935	0	-	-	-	-
1936	806	5,770	May 1, 1936	0	79.9	58,030	76.5	55,570
1937	826	4,080	Feb. 8, 1937	0	54.6	39,490	52.7	38,180
1938	856	3,780	May 19, 1938	0	58.1	42,060	59.0	42,720
1939	876	6,420	Apr. 15, 1939	0	57.0	41,280	56.0	40,540
1940	896	1,180	May 21, 1940	0	8.9	6,400	8.96	6,500
1941	926,1440	3,920	June 9, 1941	0	*44.6	*32,320	*166	*120,500
1942	956,1440	8,870	Oct. 10, 1941	16	*286	*207,500	191	138,300
1943	976	6,340	June 16, 1943	2	147	106,600	122	88,430
1944	1006	9,910	Apr. 23, 1944	2	219	159,200	267	193,800
1945	1036	9,050	Apr. 16, 1945	6	308	222,800	262	189,700
1946	1056	2,040	Mar. 26, 1946	-	44.8	32,450	45.5	32,960
1947	1086	4,910	June 23, 1947	0.3	104	75,080	101	72,790
1948	1116	4,110	June 24, 1948	-	100	72,940	100	72,880
1949	1146	7,850	May 29, 1949	.5	161	116,200	173	125,400
1950	1176,1440	*8,580	July 19, 1950	14	*184	*133,500	-	-

* Revised.

Note.--Records for October 1932 to July 1935 published in water supply papers 746, 761, and 786 have been found in error on basis of restudy of the original data. These records are not published herein and should not be used.

485. Delaware River at Valley Falls, Kans.

Location.--Lat 39°21', long 95°27', in SW $\frac{1}{4}$ sec. 18, T. 8 S., R. 18 E., at highway bridge, 200 ft downstream from Walnut Creek, 300 ft upstream from Atchison, Topeka and Santa Fe Railway bridge, a quarter of a mile north of Valley Falls, and at mile 30.6.

Drainage area.--922 sq mi.

Gage.--Wire-weight gage. Datum of gage is 884.55 ft above mean sea level, datum of 1929. Prior to May 27, 1930, chain gage at same site and datum. May 27, 1930, to Apr. 12, 1938, chain gage at site 300 ft downstream at same datum.

Average discharge.--28 years (1922-50), 379 cfs (revised).

Extremes.--1922-50: Maximum discharge, 53,900 cfs (revised), June 16, 1925 (gage height, 29.72 ft, from floodmark); minimum, about 0.1 cfs at times in 1934.

Monthly and yearly mean discharge, in cubic feet per second of Delaware River at Valley Falls, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	378	6.13	10.7	-
1923	5.51	390	19.4	24.8	16.0	85.2	56.8	93.1	371	104	41.0	95.3	108
1924	205	44.1	39.1	19.1	122	125	64.4	51.8	540	94.5	217	245	146
1925	30.6	14.3	75.8	41.7	58.5	66.4	403	131	5,220	349	412	490	*601
1926	134	149	165.9	119	272	173	544	†93.2	148	18.7	68.7	239	167
1927	1,230	114	62.8	58.0	148	320	2,590	428	896	120	408	743	583
1928	1,720	309	183	203	467	135	490	163	592	269	525	296	446
1929	51.7	1,770	521	445	449	196	2,270	†720	†1,728	213	33.5	20.1	†695
1930	113	105	41.2	16.7	218	83.0	429	1,020	981	34.8	86.5	483	299
1931	213	194	76.9	54.7	62.8	125	187	113	129	127	1070	1,190	296
1932	195	2,800	893	1,180	424	295	530	492	713	618	54.4	160	691
1933	36.0	40.8	43.3	52.7	52.0	88.4	60.5	337	88.4	127	17.6	143	91.0
1934	26.4	14.0	20.2	20.2	14.4	27.7	16.0	17.5	12.8	.68	97.7	417	56.8
1935	32.3	379	47.9	21.7	29.8	25.5	25.82	015	1,811	241	25.9	53.6	393
1936	37.1	159	50.3	323	595	81.2	78.6	972	317	8.7	4.3	324	220
1937	128	10.4	68.5	87.2	758	553	169	201	92.5	96.3	18.2	22.3	180
1938	2.4	4.2	5.9	5.0	5.5	9.4	107	1,554	322	355	435	11.2	238
1939	7.4	10.2	7.4	9.8	4.2	444	441	31.1	992	88.5	78.0	2.8	176
1940	2.6	5.4	3.3	3.1	33.3	64.0	23.7	132	282	3.5	96.6	39.4	57.3
1941	3.9	6.7	10.4	35.7	187	43.1	346	104	1,362	45.3	367	113	216
1942	2,631	668	406	335	173	224	153	859	1,212	80.5	929	1,585	775
1943	198	100	493	278	478	109	100	504	4,923	129	191	15.1	569
1944	11.7	18.5	26.7	46.5	38.6	554	3,638	1,643	374	71.5	304	127	654
1945	185	93.3	957	144	299	1,257	2,288	1,953	2,568	270	36.4	129	848
1946	70.0	33.4	15.6	144	59.2	367	175	127	325	49.7	12.9	170	129
1947	75.9	19.5	45.5	30.3	20.9	404	1,267	565	2,362	299	40.0	11.7	428
1948	15.6	15.0	76.4	32.3	297	697	412	399	996	288	420	19.8	305
1949	13.1	28.1	21.5	789	1,438	301	340	404	3,185	1,811	172	1,135	794
1950	855	149	133	171	150	117	78.4	548	395	1,878	741	216	441

* Revised.

† Corrected.

* Not previously published; estimated on basis of weather records and records for Kansas River at Topeka and Banner Springs.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	23,200	377	637	-
1923	339	23,200	1,190	1,520	889	5,240	3,380	5,720	22,100	8,400	2,520	5,550	78,000
1924	12,500	2,620	2,400	1,170	7,020	7,560	3,830	3,170	32,100	5,810	13,300	14,800	106,000
1925	1,880	851	4,540	2,560	3,250	4,080	24,000	8,060	11,000	21,500	25,300	28,600	*436,000
1926	8,240	8,870	4,060	7,320	15,100	10,600	32,400	†5,730	8,810	1,150	4,220	14,200	121,000
1927	69,500	6,780	3,860	3,570	8,220	19,700	154,000	26,300	53,300	7,380	25,100	44,200	422,000
1928	106,000	18,400	11,300	12,500	26,900	8,300	29,200	10,000	35,200	16,500	32,300	17,600	324,000
1929	3,180	105,000	32,000	27,400	24,900	12,100	135,000	44,300	103,000	13,100	2,080	1,200	†503,000
1930	6,950	8,250	2,530	1,030	12,100	5,100	25,500	62,700	58,400	2,140	5,320	28,700	217,000
1931	13,100	11,500	4,730	3,370	3,490	7,670	11,200	6,960	7,670	7,830	65,600	70,800	214,000
1932	12,000	167,000	54,900	71,100	24,400	18,200	31,500	29,600	42,400	38,000	3,340	9,510	502,000
1933	2,200	2,430	2,660	3,240	2,890	5,430	3,600	20,700	5,280	7,820	1,080	8,530	66,000
1934	1,630	833	1,240	1,240	801	1,700	954	1,080	763	41	6,010	24,800	41,090
1935	1,980	22,570	2,950	1,330	1,650	1,560	1,540	23,900	107,800	14,820	1,590	3,190	284,900
1936	2,280	9,470	3,090	1,990	34,240	4,990	4,680	59,740	18,850	536	282	19,270	159,400
1937	7,960	617	4,210	5,360	42,090	33,990	10,030	12,330	5,500	5,920	1,120	1,330	130,400
1938	149	248	365	309	308	577	8,380	95,580	19,140	21,830	26,750	668	172,300
1939	452	609	454	601	236	27,330	26,220	1,910	59,000	5,440	4,680	169	127,100
1940	161	323	204	190	1,920	3,930	1,410	8,130	16,810	212	5,940	2,340	41,570
1941	238	397	639	2,200	10,410	2,650	20,590	6,360	81,060	2,790	22,580	6,740	156,700
1942	161,800	39,770	24,940	20,600	9,620	13,790	9,080	52,790	72,110	4,950	57,140	94,330	560,900
1943	12,150	5,960	30,320	17,120	26,540	6,720	5,960	30,960	255,400	7,940	11,760	899	411,700
1944	720	1,100	1,640	2,860	2,220	34,080	216,500	101,000	22,270	4,400	80,180	7,550	474,500
1945	11,390	5,550	58,960	8,890	16,610	772,600	136,200	120,152,800	16,580	2,240	7,680	614,100	
1946	4,300	1,990	962	8,860	3,290	22,590	10,390	7,830	19,360	3,060	793	10,120	93,540
1947	4,670	1,160	2,800	1,860	1,160	24,830	76,600	34,740	140,600	18,380	2,460	698	310,000
1948	962	893	4,700	1,990	17,070	42,870	24,520	24,500	59,270	17,690	25,830	1,180	221,500
1949	805	1,670	1,320	48,530	79,880	18,490	20,260	24,820	189,500	11,300	10,550	67,560	574,700
1950	40,290	8,850	8,190	10,490	8,330	7,180	4,660	33,680	23,500	115,500	45,540	12,840	319,000

* Revised.

† Corrected.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second of Delaware River at Valley Falls, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	546	86,060	July 12, 1922	-	-	-	-	-
1923	566	5,360	Nov. 12, 1922	1.3	108	78,000	97.9	70,800
1924	586	74,630	June 26, 1924	4	146	106,000	132	95,800
1925	606,1440	*53,900	June 16, 1925	9	*601	*436,000	*620	*450,000
1926	626	2,930	Apr. 11, 1926	6	167	121,000	248	180,000
1927	646	12,900	Apr. 19, 1927	-	583	422,000	659	477,000
1928	666	*16,200	Oct. 7, 1927	4	446	524,000	453	329,000
1929	686	*41,800	Apr. 20, 1929†	7	*685	*503,000	*523	*379,000
1930	701	10,100	Sept. 15, 1930	4	299	217,000	318	230,000
1931	716	*12,200	Sept. 1, 1931	13	296	214,000	578	418,000
1932	731	16,700	Nov. 17, 1931	17	691	502,000	379	275,000
1933	746	4,290	May 28, 1933	5	91.0	66,000	86.1	62,300
1934	761	5,530	Sept. 26, 1934	.1	56.8	41,090	89.7	64,890
1935	786	18,900	May 28, 1935	4	393	284,900	376	272,200
1936	806	9,170	Feb. 24, 1936	1	220	159,400	217	157,200
1937	826	6,450	Feb. 12, 1937	1	189	130,400	164	118,400
1938	856	*11,200	May 4, 1938	1	238	172,300	239	173,100
1939	876	*11,200	June 26, 1939	1	176	127,100	174	126,300
1940	896	9,480	June 20, 1940	1	57.3	41,570	58.1	42,160
1941	926	14,400	June 10, 1941	3	216	156,700	527	381,900
1942	956	26,800	Oct. 9, 1941	7	775	560,900	529	382,800
1943	976	*30,600	June 9, 1943	7	569	411,700	507	*366,700
1944	1006	44,000	May 3, 1944	3	654	474,500	753	546,800
1945	1036	45,900	June 16, 1945	10	848	614,100	754	545,600
1946	1056	6,960	June 29, 1946	4	129	93,540	131	94,920
1947	1086	30,000	June 23, 1947	1	428	310,000	425	307,900
1948	1116	16,000	June 25, 1948	4	305	221,500	301	218,700
1949	1146	27,500	July 7, 1949	8	794	574,700	868	628,200
1950	1176	28,000	July 18, 1950	28	441	319,000	-	-

* Revised.

† Corrected.

* Not previously published.

a Maximum during period June 16 to Sept. 30, 1922.

486. Kansas River at Lecompton, Kans.

Location.--Lat 39°02'59", long. 95°23'30" in E½ sec. 34, T. 11 S., R. 18 E., on downstream side of highway bridge at Lecompton, half a mile downstream from Delaware River, and at mile 64.7.

Drainage area.--58,420 sq mi, approximately, of which about 52,720 sq mi contribute directly to surface runoff.

Supplemental records available.--January to November 1896, April to July 1906 (gage heights only).

Gage.--Wire-weight gage. Datum of gage is 821.84 ft (revised) above mean sea level, datum of 1929.

Average discharge.--14 years (1936-50), 7,009 cfs.

Extremes.--1936-50: Maximum discharge, 144,000 cfs, June 17, 1943 (gage height, 22.68 ft); minimum, not determined.

Flood of May 31, 1903 reached a stage of 27.9 ft, from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	1,762	9,807	3,797	1,067	549	1,509	-
1937	1,498	585	812	712	6,764	4,525	1,799	1,515	5,526	3,907	2,817	1,959	2,671
1938	798	661	606	767	972	1,325	1,390	12,990	15,190	5,213	4,610	2,574	3,938
1939	1,083	990	799	945	785	3,313	4,953	2,128	10,930	4,312	4,308	740	2,943
1940	498	510	564	371	744	1,855	1,161	2,178	2,785	1,190	2,694	2,266	1,402
1941	959	818	869	1,050	2,267	2,310	3,353	3,461	26,670	6,290	6,195	12,122	5,500
1942	32,010	9,551	5,872	6,068	4,507	6,088	6,559	14,180	24,300	7,645	8,801	17,860	11,820
1943	5,994	3,183	4,347	3,426	7,921	3,079	4,699	6,019	40,760	7,448	2,748	1,457	7,533
1944	1,307	1,168	1,037	1,215	1,503	5,701	29,620	23,900	14,590	11,460	20,510	12,580	10,390
1945	4,202	2,909	9,347	7,303	4,298	9,920	24,900	34,020	23,280	23,450	5,890	2,466	12,420
1946	3,367	2,286	1,646	2,818	2,643	4,028	3,237	3,790	4,988	7,918	3,245	13,250	4,433
1947	11,040	7,739	3,622	2,915	2,807	6,115	19,230	7,439	39,510	9,384	2,979	1,693	9,512
1948	1,162	1,171	1,415	1,600	3,277	18,220	4,508	4,937	8,031	20,320	8,998	2,956	6,390
1949	1,525	1,819	1,552	7,848	19,640	17,580	6,885	14,220	28,390	13,050	4,530	8,681	10,390
1950	4,855	2,175	1,788	1,903	2,053	2,777	2,002	11,084	6,528	34,410	20,790	12,210	8,789

Monthly and yearly runoff, in thousands of acre-feet of Kansas River at Lecompton, Kans.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	92.14	34.79	49.93	43.77	375.7	278.2	107.1	93.17	328.8	240.3	173.2	116.6	1,934
1938	49.05	39.31	37.25	47.14	53.98	81.48	82.72	798.8	803.8	320.5	285.4	153.1	2,851
1939	66.59	56.90	49.14	58.12	43.58	203.7	295.1	130.9	650.4	265.1	264.9	44.04	2,130
1940	30.64	30.33	34.66	22.83	42.80	114.0	69.06	133.9	165.7	73.17	165.6	134.8	1,017
1941	58.97	48.65	53.42	64.57	125.9	142.0	199.5	212.8	1,587	386.7	380.9	721.3	3,982
1942	968.5	568.3	361.1	373.0	250.3	374.4	390.3	871.7	1,446	470.0	418.2	1,063	8,554
1943	368.5	189.4	267.3	210.7	439.9	189.3	279.6	370.1	2,425	457.9	169.0	86.70	5,453
1944	80.37	69.48	63.75	74.70	86.48	350.5	1,763	1,469	988.4	704.8	1,261	748.6	7,540
1945	258.4	173.1	574.8	227.7	238.7	610.0	1,481	2,092	1,385	1,442	562.1	146.7	8,992
1946	207.1	136.0	101.2	173.3	147.1	247.5	192.6	233.0	296.8	486.8	199.5	788.2	3,209
1947	678.7	460.5	222.7	179.2	155.9	376.0	1,144	457.4	2,351	577.0	183.2	100.1	6,886
1948	71.42	69.68	86.98	98.38	188.5	1,120	268.1	305.6	477.9	249.9	528.5	175.9	4,638
1949	93.80	108.3	95.44	482.5	1,091	1,081	410.3	874.4	1,689	802.7	278.5	516.6	7,524
1950	299.1	129.4	109.9	110.9	114.0	170.8	119.1	681.2	507.5	211.6	1,278	726.5	6,362

Yearly discharge, in cubic feet per second												
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year					
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date									
1936	806	-	-	-	-	-	-	-	-	-	-	-
1937	826,876	19,200	July 13, 1937	350	2,671	1,934,000	2,600	1,882,000	2,600	1,882,000	2,600	1,882,000
1938	856	52,200	May 19, 1938	330	3,958	2,851,000	4,005	2,900,000	4,005	2,900,000	4,005	2,900,000
1939	876	32,400	June 26, 1939	510	2,943	2,130,000	2,834	2,051,000	2,834	2,051,000	2,834	2,051,000
1940	896	110,800	June 21, 1940	300	1,402	1,017,000	1,492	1,083,000	1,492	1,083,000	1,492	1,083,000
1941	926	103,000	June 13, 1941	390	5,500	3,982,000	9,280	6,718,000	9,280	6,718,000	9,280	6,718,000
1942	956	114,000	Oct. 11, 1941	3,430	11,820	8,554,000	8,953	6,482,000	8,953	6,482,000	8,953	6,482,000
1943	976	144,000	June 17, 1943	1,290	7,553	5,453,000	6,888	4,942,000	6,888	4,942,000	6,888	4,942,000
1944	1008	129,000	Apr. 24, 1944	650	10,390	7,540,000	11,480	8,335,000	11,480	8,335,000	11,480	8,335,000
1945	1036	139,000	Apr. 17, 1945	1,940	12,420	8,992,000	11,640	8,430,000	11,640	8,430,000	11,640	8,430,000
1946	1056	43,200	July 19, 1946	960	4,433	3,209,000	5,700	4,127,000	5,700	4,127,000	5,700	4,127,000
1947	1086	77,200	June 27, 1947	1,380	9,512	6,886,000	7,945	5,752,000	7,945	5,752,000	7,945	5,752,000
1948	1116	71,500	July 21, 1948	1,040	6,390	4,638,000	6,485	4,707,000	6,485	4,707,000	6,485	4,707,000
1949	1146	59,200	June 14, 1949	1,080	10,390	7,524,000	10,720	7,764,000	10,720	7,764,000	10,720	7,764,000
1950	1176	125,000	July 19, 1950	1,000	8,789	6,362,000	-	-	-	-	-	-

† Corrected.

Note.--Records for April 1899 to December 1905, published in Water-Supply Papers 11, 27, 39, 50, 52, 66, 75, 84, 99, 131, 172, and 796-B, have been found in error on basis of restudy of the original data. These records are not published herein and should not be used.

487. Wakarusa River near Lawrence, Kans.

Location.--Lat 38°55', long. 95°16', in NW¹/₄ sec. 24, T. 13 S., R. 19 E., at bridge on U. S. Highway 59, 4 miles southwest of Lawrence, and at mile 13.3.

Drainage area.--458 sq mi.

Gage.--Wire-weight gage. Datum of gage is 799.24 ft above mean sea level, datum of 1929. Prior to Mar. 7, 1939, chain gage at same site and datum.

Average discharge.--21 years (1929-50), 171 cfs.

Extremes.--1929-50: Maximum discharge, 18,500 cfs Apr. 23, 1944 (gage height, 30.00 ft, from graph based on gage readings); no flow at times.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	767	860	36.1	11.9	18.3	-
1930	7.68	19.1	4.81	3.03	32.2	6.61	3.83	79.5	95.2	2.93	0.56	0.37	21.1
1931	12.06	10.6	5.94	2.42	8.82	34.0	143	134	77.8	58.2	23.4	104	42.6
1932	11.4	1290	230	156	65.9	76.3	187	69.8	234	287	7.1	10.3	218
1933	2.19	1.50	3.52	3.55	1.18	9.06	209	364	13.9	51.3	32.9	11.8	59.1
1934	0	0	0	0	0	0.3	1.0	162	5.1	0	0	5.2	14.6
1935	0.1	42.0	1.6	1.5	3.5	5.1	2.7	1,918	1,187	15.3	4.3	21.6	269
1936	29.7	183	30.5	38.6	68.9	18.6	7.6	257	2.60	0.09	0	24.9	55.0
1937	2.2	0.9	5.4	52.0	459	92.9	40.6	7.6	10.2	11.5	66.0	0	59.7
1938	0	0	0.3	0.1	0	0.5	32.2	382	82.7	23.3	1.0	0	44.1
1939	0	0	0	0	0	0.1	47.4	0	218	3.4	20.1	0	23.8
1940	0	0	0	0	1.3	4.9	20.8	321	25.4	0.9	62.4	54.5	41.3
1941	.3	23.5	25.2	323	145	69.1	174	152	291	33.6	79.1	18.1	111
1942	1041	488	194	77.9	141	170	452	559	343	23.7	171	444	343
1943	225	99.9	466	179	140	74.6	42.9	485	453	104	48.6	30.3	280
1944	38.6	17.2	28.9	60.9	46.2	90.4	2,275	324	136	18.4	138	16.5	332
1945	145	154	1,099	118	105	899	1,661	1,157	810	1,413	19.3	20.6	638
1946	83.8	9.1	8.3	189	50.9	271	254	434	681	36.2	286	38.3	196
1947	2.8	12.0	28.5	321	10.6	580	1,274	115	311	74.9	30.4	30.5	208
1948	1.70	1.70	11.7	7.6	120	407	64.6	290	134	544	22	11.6	162
1949	2.7	9.5	4.7	430	755	337	228	344	113	288	36.1	8.6	210
1950	51.5	11.3	8.1	44.5	21.4	16.1	16.4	248	445	1,392	712	64.4	256

† Corrected.

Monthly and yearly runoff, in acre-feet of Wakarusa River near Lawrence, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	47,200	39,300	2,220	732	109	-
1930	472	1,140	296	186	1,790	406	228	4,890	5,660	180	35	22	15,300
1931	127	629	365	149	490	2,090	8,520	8,210	4,630	3,580	1,440	621	30,800
1932	702	77,000	14,100	9,590	3,790	4,690	11,100	4,290	13,900	17,600	454	615	158,000
1933	135	89	216	218	65	557	12,400	22,400	829	3,160	2,020	704	42,800
1934	0	0	0	0	0	20	61	9,960	301	0	0	188	10,530
1935	40	2,500	99	91	192	315	159	117,900	70,630	942	262	1,290	194,400
1936	1,820	10,890	1,880	2,370	3,960	1,150	454	15,780	155	56	0	1,480	39,940
1937	133	52	333	3,200	25,510	5,710	2,420	478	605	708	4,060	0	43,210
1938	0	0	18	6	0	30	1,920	23,520	4,920	1,430	60	20	31,910
1939	0	0	0	0	0	40	2,820	0	12,990	206	1,230	0	17,250
1940	0	0	0	0	75	300	1,240	19,730	1,510	56	3,840	3,240	29,990
1941	20	1,400	1,550	19,840	8,060	4,250	10,370	9,350	17,300	2,060	4,860	1,080	80,140
1942	53,980	29,020	11,910	4,790	7,810	0,430	26,900	34,390	20,380	1,460	10,540	2,410	248,000
1943	13,850	5,940	29,870	10,990	7,780	4,590	2,550	29,850	86,440	6,390	2,990	1,800	203,000
1944	2,370	1,020	1,780	3,740	2,660	5,570	135,400	19,900	8,080	1,130	8,470	982	241,100
1945	8,930	9,140	67,600	7,250	5,860	5,280	98,860	71,160	48,180	8,870	1,180	1,220	461,500
1946	5,150	540	512	11,600	2,820	16,650	15,090	26,710	40,520	2,230	17,610	2,280	141,700
1947	173	716	1,750	1,980	5,935	6,640	75,820	7,070	18,500	4,610	1,870	1,810	150,500
1948	105	101	7,230	468	6,920	25,060	3,840	17,820	7,970	3,480	13,800	690	117,500
1949	165	563	290	26,440	41,950	20,710	13,580	21,150	6,750	17,730	2,220	514	152,000
1950	3,170	670	500	2,740	1,190	992	976	15,270	26,460	5,570	43,780	3,630	185,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. '30					Calendar year	
		Momentary maximum		Minimum	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	a*10,900	May 12, 1929	-	-	-	-	-
1930	701	1,220	June 20, 1930	0	21.1	15,300	22.3	14,500
1931	716	1,100	June 16, 1931	0	42.6	30,800	168	122,000
1932	731	10,500	Nov. 24, 1931	0	218	158,000	91.6	66,450
1933	746	*3,150	May 21, 1933*	0	59.1	42,800	58.5	42,350
1934	761	2,470	May 14, 1934	0	14.6	10,530	18.1	13,130
1935	786, 976	14,100	May 27, 1935	0	269	194,400	285	206,400
1936	806	3,590	May 12, 1936	0	55.0	39,940	35.6	25,870
1937	826	6,220	Feb. 8, 1937	0	59.7	43,210	59.0	42,710
1938	856	*3,510	May 19, 1938*	0	44.1	31,910	44.0	31,890
1939	876	3,240	June 20, 1939	0	23.8	17,250	23.8	17,250
1940	896	6,300	May 18, 1940	0	41.3	29,990	45.4	32,960
1941	926	2,490	June 10, 1941	0	111	80,140	251	182,100
1942	956	9,540	Oct. 21, 1941	0	343	248,000	266	192,800
1943	976	13,200	June 17, 1943	1	280	203,000	219	158,600
1944	1006	18,500	Apr. 23, 1944	2	332	241,100	443	321,600
1945	1036	*16,800	Apr. 16, 1945	2	638	461,500	528	382,100
1946	1056	*13,400	June 20, 1946	1	196	141,700	191	138,100
1947	1086	*11,600	Apr. 5, 1947	0.4	208	150,500	215	155,500
1948	1116	6,680	July 21, 1948	0.4	162	117,500	153	111,100
1949	1146	*12,100	July 7, 1949	1	210	162,000	215	155,400
1950	1176	*12,200	July 19, 1950	1	256	185,200	-	-

* Revised.

a Maximum during period Apr. 27 to Sept. 30, 1929.

488. Stranger Creek near Tonganoxie, Kans.

Location (revised).--Lat 39°06'06", long. 95°01'08", in NE $\frac{1}{4}$ sec. 13, T. 11 S., R. 21 E., at highway bridge 0.7 mile upstream from Tonganoxie Creek, 3.5 miles east of Tonganoxie, and at mile 17.1.

Drainage area.--406 sq mi.

Gage.--Water-stage recorder. Datum of gage is 796.95 ft above mean sea level (levels by Corps of Engineers). Prior to June 2, 1939, wire-weight or chain gage at same site and datum.

Average discharge.--21 years (1929-50), 188 cfs.

Extremes.--1929-50: Maximum discharge, 18,900 cfs (revised) Oct. 10, 1941 (gage height, 27.70 ft); no flow at times during 1934-41, 1946.

Monthly and yearly mean discharge, in cubic feet per second of Stranger Creek near Tonganoxie, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	311	1,561	67.4	10.5	4.3	-
1930	122	117	18.7	9.26	91.1	26.5	219	646	168	5.55	6.65	65.2	125
1931	86.5	83.9	62.5	26.6	33.2	75.1	122	216	131	69.3	174	203	107
1932	43.2	1,730	317	539	138	155	459	127	378	113	19.6	15.3	334
1933	3.10	4.97	17.4	9.10	7.43	36.4	30.3	262	32.6	5.71	62.4	10.0	40.6
1934	1.5	1.1	2.1	2.7	2.4	4.3	9.0	24.6	6.9	.6	0	43.7	8.2
1935	17.5	46.7	5.0	6.8	10.0	9.3	4.31,173	969	15.3	1.9	128	199	
1936	199	408	73.1	33.8	148	52.5	28.6	483	85.8	2.5	+0.3	113	135
1937	29.6	2.9	15.8	31.1	499	118	61.1	85.4	36.8	125	49.1	37.5	88.2
1938	1.1	3	3.7	4.1	3.0	16.7	54.6	564	117	109	377	17.2	107
1939	3.5	10.1	7.5	5.9	3.0	202	518	45.4	270	8.9	67.1	.3	94.9
1940	.1	1.4	.7	.5	10.5	*36.0	16.1	250	216	75.3	222	93.5	*77.1
1941	2.2	36.3	42.2	160	249	82.5	368	116	670	17.7	183	51.0	163
1942	1,459	440	228	140	185	163	176	323	981	120	499	177	405
1943	103	60.9	287	84.0	1.8	54.5	3.8	282	1,844	239	181	6.7	271
1944	6.4	8.5	12.4	24.8	22.9	372	1,686	352	131	15.6	279	40.0	245
1945	41.9	123	942	95.4	120	650	1,525	897	1,028	393	20.1	10.0	468
1946	29.1	7.8	4.6	130	25.6	229	206	118	297	32.5	14.1	6.4	91.7
1947	9.4	12.5	35.4	12.3	5.9	247	849	199	1,172	155	10.8	18.1	226
1948	27.6	9.4	182	9.3	124	586	84.6	91.3	437	214	98.6	5.8	156
1949	2.02	12.9	6.4	192	705	314	245	358	752	*758	13.5	368	*307
1950	250	59.2	35.6	103	106	46.6	415	820	237	1,068	463	49.3	277

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	19,100	*92,900	4,140	646	256	-
1930	7,500	6,960	1,150	569	5,060	1,630	13,000	39,700	10,000	341	409	3,880	90,200
1931	5,430	4,990	3,830	1,640	1,850	4,500	7,290	13,300	7,780	4,260	10,700	12,100	77,600
1932	2,660	103,000	19,500	33,100	7,910	9,530	27,300	7,780	22,500	6,970	1,200	908	243,000
1933	190	296	1,070	559	413	2,240	1,800	16,100	1,940	351	3,840	597	29,400
1934	81	65	129	169	133	268	536	1,510	411	36	0	2,600	5,940
1935	1,070	2,780	305	420	555	569	256	72,110	57,630	942	117	7,840	144,400
1936	12,240	24,310	4,490	2,080	8,490	3,230	1,700	29,680	5,100	151	2	6,730	98,200
1937	1,820	173	974	1,910	27,710	7,250	3,640	5,250	2,190	7,690	3,020	2,230	63,850
1938	65	20	230	254	169	1,030	3,250	34,690	8,990	6,890	25,200	1,020	77,610
1939	216	599	460	361	169	12,440	30,850	2,790	16,090	549	4,120	20	68,660
1940	6	81	44	32	603	*2,210	956	15,560	12,850	4,630	13,640	5,570	*55,980
1941	137	2,280	2,590	9,810	13,800	5,070	21,930	7,100	39,860	1,090	11,270	3,030	118,000
1942	89,740	26,160	13,990	8,580	9,170	10,000	10,490	19,870	57,200	7,400	30,070	10,510	293,200
1943	6,320	3,630	17,670	5,170	5,150	3,350	1,890	17,540	109,800	14,670	11,150	397	196,500
1944	391	508	760	1,520	1,320	22,880	100,300	21,660	7,800	962	17,150	2,380	177,600
1945	2,570	7,340	57,910	5,740	6,640	39,990	90,760	55,130	61,200	24,150	1,240	595	353,300
1946	1,790	466	284	7,960	1,420	14,080	12,240	7,240	17,650	2,000	885	383	66,380
1947	579	744	2,180	568	529	15,210	50,520	12,270	69,750	9,510	666	1,090	163,600
1948	1,700	559	11,210	759	7,150	36,020	5,040	5,620	26,010	13,150	6,060	345	113,400
1949	124	770	391	11,820	39,140	19,290	14,560	22,030	44,760	*46,610	829	21,890	*222,200
1950	15,390	3,520	2,190	6,320	5,890	2,870	2,470	50,450	14,100	85,670	28,480	2,930	200,300

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet		
		Discharge	Date							
1929	686,1440	15,300	Apr. 21, 1929	-	-	-	-	-	-	-
1930	701	3,250	May 9, 1930	1	125	90,200	123	88,800		
1931	716	2,200	Aug. 5, 1931	3	107	77,600	261	189,000		
1932	731	8,700	Nov. 24, 1931	3	334	243,000	164	119,000		
1933	745	2,540	Mar. 10, 1933	1	40.6	29,400	38.8	28,120		
1934	761	619	Sept. 28, 1934	0	8.2	5,940	15.6	9,820		
1935	786	7,050	May 29, 1935	0	199	144,400	250	181,300		
1936	806	*7,460	Oct. 14, 1935*	0	135	98,200	82.8	60,130		
1937	826	2,700	Feb. 8, 1937	0	88.2	63,850	84.5	61,200		
1938	856	3,340	Aug. 23, 1938	0	107	77,610	109	78,570		
1939	876	5,880	Apr. 16, 1939	0	94.9	68,660	93.3	67,520		
1940	896,1440	3,330	June 20, 1940	0	*77.1	*55,980	*85.8	*60,860		
1941	926	6,500	June 11, 1941	0	163	118,000	335	242,800		
1942	956	*16,800	Oct. 10, 1941	24	405	293,200	264	190,900		
1943	976	9,900	June 17, 1943	4	271	196,500	236	170,600		
1944	1006	11,000	Apr. 23, 1944	4	245	177,600	336	243,800		
1945	1036	15,500	Dec. 5, 1944	2	488	353,300	398	288,000		
1946	1056	2,700	June 19, 1946	0	91.7	66,380	93.0	67,340		
1947	1086	6,500	June 25, 1947	1	226	163,600	240	175,800		
1948	1116	3,280	Dec. 4, 1947	2	15.8	113,400	139	101,300		
1949	1146,1440	*5,500	July 8, 1949*	2.5	*307	*222,200	*334	*242,000		
1950	1176	7,300	May 19, 1950	6	277	200,300	-	-		

* Revised.

489. Kansas River at Bonner Springs, Kans.

Location.--Lat 39°03'20" long. 94°52'45", in NE $\frac{1}{4}$ sec. 32, T. 11 S., R. 23 E., on downstream side of bridge on State Highway 7 at Bonner Springs, half a mile downstream from Wolf Creek, and at mile 20.8.

Drainage area.--59,890 sq mi, approximately, of which about 54,190 sq mi contribute directly to surface runoff.

Gage.--Water-stage recorder. Datum of gage is 747.01 ft above mean sea level datum of 1929. Prior to Apr. 24, 1934, chain gage at same site and datum.

Average discharge.--33 years (1917-50), 6,187 cfs.

Extremes.--1917-50: Maximum discharge, 147,000 cfs June 18, 1943 (gage height, 25.23); minimum, 260 cfs, Feb. 20, 1939.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	4,110	2,910	-
1918	1,980	1,470	1,450	1,600	1,850	2,350	1,850	6,150	5,660	2,200	1,890	2,418	2,570
1919	2,150	2,960	1,720	2,610	3,690	14,400	12,300	12,700	20,400	5,010	2,000	4,710	7,100
1920	4,950	2,840	2,300	2,760	3,460	2,490	7,480	5,370	3,360	4,700	3,080	6,010	4,060
1921	1,620	1,790	1,740	2,010	2,230	3,050	2,740	11,800	8,030	8,450	5,730	3,800	4,430
1922	1,670	1,300	1,350	1,250	1,630	6,070	11,200	6,610	3,910	11,100	3,210	1,570	4,260
1923	868	4,740	1,670	1,680	1,380	1,950	2,550	6,290	28,700	12,200	4,940	3,460	5,860
1924	6,860	2,590	2,170	1,820	2,580	2,690	3,310	2,810	4,580	5,590	5,400	3,300	3,850
1925	1,260	1,040	1,400	805	2,780	2,250	4,810	3,020	16,400	3,770	4,730	3,010	3,750
1926	1,560	1,520	1,230	1,190	2,780	2,480	5,560	2,570	2,460	2,300	2,200	11,600	3,090
1927	9,030	3,070	2,040	1,800	2,250	3,040	30,400	9,580	19,500	8,010	20,300	11,900	10,100
1928	10,300	3,310	2,360	2,410	4,390	2,710	4,920	2,950	9,160	14,700	16,400	4,850	6,560
1929	3,370	12,700	5,320	3,050	6,580	9,770	19,600	13,100	23,000	6,790	3,590	1,840	9,030
1930	2,080	2,210	1,680	1,390	3,070	2,000	3,990	20,700	14,000	3,460	4,480	5,880	5,420
1931	4,400	4,360	3,200	2,180	2,460	2,660	3,970	5,720	4,640	3,120	5,020	6,860	4,050
1932	3,110	16,200	5,460	5,580	5,520	5,620	4,700	3,600	9,680	7,760	3,670	5,110	6,310
1933	1,770	1,300	1,170	1,400	1,420	1,690	3,220	6,006	3,760	2,040	2,980	6,850	2,550
1934	1,943	1,348	1,548	1,361	1,377	1,578	1,514	2,047	2,883	1,180	455	1,518	1,547
1935	1,167	1,800	1,220	890	1,194	1,144	914	18,860	40,700	11,150	3,250	8,498	7,559
1936	3,897	4,312	2,756	2,045	3,865	4,530	1,908	10,040	4,212	1,108	552	1,551	3,400
1937	1,653	621	733	697	7,934	4,746	2,042	1,708	5,278	3,772	3,101	1,893	2,611
1938	850	648	637	807	1,060	1,391	1,606	14,540	15,720	5,946	4,540	2,988	4,319
1939	1,311	1,095	831	963	864	3,890	5,583	2,201	11,060	4,763	4,657	830	3,175
1940	530	519	568	408	796	1,697	1,263	3,634	3,432	1,451	3,070	2,830	1,704
1941	965	966	997	1,864	2,976	2,507	4,372	3,836	27,150	6,598	6,851	11,750	5,871
1942	36,920	11,710	6,675	6,437	5,525	6,656	7,274	16,320	26,590	9,076	7,183	18,530	13,280
1943	6,571	3,445	5,408	3,803	8,113	3,274	4,618	7,307	44,690	8,111	3,686	1,619	8,332
1944	1,467	1,378	1,125	1,360	1,714	6,203	35,520	26,810	16,020	11,530	20,060	13,310	11,540
1945	4,832	3,265	12,630	4,095	4,388	13,060	29,660	39,040	27,930	27,340	6,573	2,913	14,710
1946	3,913	2,278	1,635	3,154	2,783	5,045	4,104	4,777	6,371	8,333	3,768	13,570	4,978
1947	10,960	8,043	3,828	2,976	2,827	6,963	21,770	8,024	39,910	11,790	3,056	1,557	10,130
1948	1,295	1,251	2,141	1,684	5,514	20,710	5,460	6,044	6,135	21,040	8,760	2,835	6,959
1949	1,587	1,865	1,704	9,083	20,800	19,030	8,278	15,990	30,170	15,750	4,661	6,882	11,400
1950	5,133	2,645	2,024	2,298	2,573	2,994	2,148	12,060	9,583	36,570	23,290	12,720	9,590

a From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River. Published figure is in acre-feet.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	-	-	-	-	-	-	-	-	-	253	173	-
1918	122	87.5	889.0	898.2	1103	144	110	378	337	135	116	143	21,860
1919	132	176	106	173	205	885	732	781	1,210	308	148	280	5,140
1920	303	169	141	170	200	153	445	330	201	289	189	358	2,950
1921	99.6	107	107	124	124	188	163	726	478	520	352	226	3,210
1922	103	77.4	83.0	76.9	90.5	373	666	406	233	682	197	93.4	3,080
1923	53.4	282	103	103	76.6	120	152	387	1,710	750	304	206	4,250
1924	422	154	133	112	148	165	197	173	273	344	332	197	2,650
1925	77.5	61.9	86.1	49.5	154	138	286	186	976	232	291	179	2,720
1926	95.9	90.5	76.2	75.2	154	152	331	158	146	141	135	690	2,240
1927	555	183	125	111	125	187	1,810	589	1,160	493	1,250	708	7,300
1928	633	197	145	148	253	167	293	181	545	904	1,010	289	4,760
1929	207	756	327	188	365	601	1,170	806	1,370	418	221	109	6,540
1930	128	132	103	85.5	170	123	237	1,270	833	213	275	350	3,920
1931	270	259	197	134	136	163	236	352	276	192	309	408	2,930
1932	191	965	336	343	318	346	280	221	575	477	225	304	4,580
1933	109	77.7	72.1	86.2	78.9	116	191	369	105	125	183	407	1,920
1934	119.5	80.25	95.03	84.91	76.48	97.05	76.17	125.9	171.8	72.55	27.95	90.31	1,120
1935	71.77	107.1	75.01	54.70	66.29	70.36	54.40	160	2,422	685.6	199.8	505.6	5,473

a From Congressional documents; 73d Cong. 2d sess., H. Doc. 195, Kansas River.

KANSAS RIVER BASIN

Monthly and yearly runoff, in thousands of acre-feet of Kansas River at Bonner Springs, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	239.6	256.6	169.4	125.8	222.3	278.6	113.6	617.4	250.6	68.03	33.96	92.27	2,468
1937	101.6	36.96	45.08	42.83	440.6	291.8	121.5	105.0	314.1	231.9	190.7	112.7	2,035
1938	52.29	38.55	39.15	49.64	58.85	85.55	95.57	694.3	935.2	365.6	333.9	177.8	3,126
1939	80.58	65.17	51.12	59.58	47.98	239.2	332.2	135.3	658.1	293.3	286.4	49.42	2,298
1940	32.61	30.86	36.14	25.09	45.92	116.7	75.49	223.4	204.2	89.24	188.8	168.4	1,237
1941	59.55	57.51	61.28	114.6	165.4	154.2	260.2	235.9	616	405.7	421.2	699.1	4,250
1942	2270	697.0	410.4	395.8	306.8	409.3	432.9	1,004	1,570	558.0	441.7	1,103	9,599
1943	404.0	205.0	332.5	233.8	450.7	201.3	274.7	449.3	659	498.7	226.6	96.36	6,032
1944	90.10	82.02	69.19	84.86	98.58	504.4	2,113	1,649	953.0	709.0	1,233	791.8	8,378
1945	297.1	194.3	776.4	251.8	243.7	804.4	1,777	2,401	1,662	1,569	404.2	173.3	10,650
1946	240.6	155.6	100.5	193.9	154.6	310.2	244.2	293.7	379.1	512.7	231.7	807.3	3,604
1947	675.4	478.6	235.4	183.0	157.0	428.1	1,296	493.3	375	724.8	186.7	98.62	7,332
1948	79.66	74.42	131.6	103.6	202.1	1,273	324.9	371.6	484.1	1,294	558.7	174.7	5,062
1949	97.61	111.0	104.7	558.5	1,165	1,170	492.6	983.1	1,195	1,868.6	286.6	528.5	8,251
1950	315.6	157.4	124.5	141.3	142.9	184.1	127.8	741.5	570.2	2,249	1,432	757.0	6,943

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1917	478	-	-	-	-	-	-
1918	478	a48,800	May 30, 1918	805	b2,570	b1,860,000	b2,730
1919	506	a109,000	Mar. 17, 1919	915	7,100	5,140,000	7,380
1920	506	a27,400	July 14, 1920	1,570	4,060	2,950,000	3,650
1921	528	a76,500	May 11, 1921	1,280	4,430	3,210,000	4,360
1922	546	a66,400	Apr. 10, 1922	950	4,260	3,080,000	4,500
1923	566	a88,600	June 11, 1923	670	5,860	4,250,000	6,240
1924	586	a16,800	Oct. 4, 1923	1,120	3,850	2,650,000	2,980
1925	606	70,700	June 19, 1925	-	3,750	2,720,000	3,800
1926	626	39,200	Sept. 18, 1926	850	3,090	2,240,000	3,930
1927	646	92,700	Apr. 20, 1927	1,510	10,100	7,300,000	10,200
1928	666	38,100	Oct. 3, 1927	-	6,560	4,760,000	6,990
1929	686	110,000	Apr. 21, 1929	1,630	9,030	6,540,000	7,750
1930	701	72,200	May 9, 1930	-	5,420	3,920,000	5,920
1931	716	38,800	Sept. 2, 1931	1,420	4,050	2,930,000	5,110
1932	731	63,600	Nov. 24, 1931	1,170	6,310	4,550,000	4,610
1933	746	16,300	Aug. 27, 1933	755	2,650	1,920,000	2,704
1934	761	10,200	June 26, 1934	305	1,547	1,120,000	1,490
1935	786	122,000	June 6, 1935	642	7,559	5,473,000	8,127
1936	806	25,600	May 2, 1936	410	3,400	2,468,000	2,736
1937	826	28,400	Feb. 8, 1937	340	2,811	2,035,000	2,737
1938	856	49,700	May 20, 1938	380	4,319	3,126,000	4,411
1939	876	33,100	June 27, 1939	481	3,175	2,298,000	3,040
1940	896	14,300	May 16, 1940	290	1,704	1,237,000	1,612
1941	926	101,000	June 14, 1941	511	5,871	4,250,000	10,290
1942	956	115,000	Oct. 11, 1941	2,900	13,260	9,599,000	9,993
1943	976	147,000	June 18, 1943	1,440	8,332	6,032,000	7,365
1944	1008	144,000	Apr. 24, 1944	700	11,540	8,378,000	12,960
1945	1036	139,000	Apr. 18, 1945	2,370	14,710	10,650,000	13,620
1946	1056	38,700	July 19, 1946	1,100	4,978	3,604,000	6,239
1947	1086	81,900	June 23, 1947	1,320	10,130	7,332,000	8,602
1948	1116	80,100	July 22, 1948	900	6,959	5,052,000	6,997
1949	1146	60,200	June 14, 1949	1,270	11,400	8,251,000	11,790
1950	1176	118,000	July 20, 1950	1,100	9,590	6,943,000	-

* Not previously published.

a Maximum observed.

b From Congressional documents; 75d Cong. 2d sess., H. Doc 195, Kansas River.

490. Missouri River at Kansas City, Mo.

Location.--Lat 39°06'43", long. 94°35'16", in sec. 32, T. 50 N., R. 33 W., at Chicago, Burlington & Quincy Railroad bridge at Kansas City, 1 mile downstream from Kansas River and at mile 377.5.

Drainage area.--489,200 sq mi, approximately.

Supplemental records available.--January 1879 to December 1890, monthly discharges only, in H. Doc. 238, 73d Cong., 2d sess., Missouri River. Gage-height records collected at same site 1873-99 are contained in reports of Missouri River Commission; since 1900 in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 715.79 ft above mean sea level, datum of 1929.

Prior to Nov. 20, 1928, wire-weight gage, Nov. 20, 1928, to May 3, 1931, chain gage, and May 4, 1931, to Aug. 23, 1934, water-stage recorder at present site and datum. Aug. 24, 1934, to May 15, 1947, water-stage recorder at site 200 ft upstream at same datum.

May 16, 1947, to Feb. 28, 1948, wire-weight gage at present site and datum.

Average discharge.--53 years (1897-1950), 57,030 cfs.

Extremes.--1897-1950: Maximum discharge, about 548,000 cfs June 2, 1903, computed by Corps of Engineers (gage height, 34.95 ft); minimum discharge, about 1,500 cfs Jan. 9, 10, 1937 (gage height, -2.70 ft).
Maximum stage known, 38.0 ft June 16, 1844 (discharge, about 625,000 cfs, computed by Corps of Engineers).

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1390.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year.
1898	22,000	25,000	15,000	23,000	30,000	38,000	48,000	88,000	189,000	123,000	52,000	38,000	56,000
1899	31,000	28,000	27,000	28,000	28,000	43,000	27,000	126,000	189,000	83,000	91,000	38,000	77,000
1900	26,000	28,000	26,000	24,000	25,000	54,000	67,000	94,000	114,000	88,000	50,000	46,000	54,000
1901	39,000	40,000	25,000	24,000	35,000	49,000	84,000	58,000	143,000	84,000	45,000	40,000	55,000
1902	38,000	34,000	24,000	26,000	26,000	51,000	70,000	71,000	123,000	176,000	73,000	62,000	66,000
1903	65,000	39,000	25,000	30,000	31,000	83,000	61,000	112,000	223,000	112,000	115,000	96,000	83,000
1904	50,000	43,000	26,000	30,000	31,000	47,000	116,000	115,000	179,000	168,000	61,000	40,000	75,000
1905	33,000	30,000	21,000	13,000	28,000	74,000	51,000	81,000	112,000	150,000	76,000	71,000	62,000
1906	37,000	40,000	30,000	27,000	34,000	46,000	94,000	69,000	134,000	91,000	69,000	59,000	61,000
1907	43,000	43,000	25,000	30,000	55,000	86,000	87,000	66,000	159,000	192,000	107,000	49,000	79,000
1908	40,000	34,000	27,000	21,000	41,000	56,000	50,000	79,000	350,000	174,000	77,000	42,000	78,000
1909	40,000	40,000	27,000	22,000	34,000	81,000	70,000	61,000	171,000	222,000	75,000	48,000	75,000
1910	35,000	60,000	39,000	67,000	38,000	106,000	59,000	72,000	77,000	47,000	37,000	34,000	56,000
1911	26,000	23,000	15,000	19,000	36,000	37,000	44,000	36,000	63,000	73,000	52,000	41,000	39,000
1912	46,000	26,000	25,000	14,000	25,000	67,000	182,000	78,000	96,000	84,000	61,000	47,000	83,000
1913	50,000	46,000	26,000	21,000	25,000	43,000	112,000	94,000	114,000	96,000	56,000	41,000	60,000
1914	37,000	35,000	39,000	23,000	21,000	48,000	60,000	66,000	147,000	98,000	43,000	54,000	56,000
1915	42,000	35,000	21,000	23,000	57,000	65,000	116,000	109,000	237,000	265,000	171,000	61,000	102,000
1916	76,000	50,000	35,000	30,000	61,000	109,000	132,000	107,000	121,000	158,000	78,000	47,000	84,000
1917	39,000	40,000	22,000	23,000	31,000	56,000	142,000	107,000	224,000	145,000	60,000	37,000	77,000
1918	33,000	33,000	25,000	24,000	38,000	77,000	88,000	74,000	119,000	109,000	64,000	55,000	62,000
1919	41,000	48,000	36,000	30,000	47,000	78,000	113,000	81,000	107,000	58,000	26,000	26,000	58,000
1920	33,000	31,000	20,000	29,000	36,000	68,000	132,000	151,000	140,000	147,000	58,000	42,000	74,000
1921	29,000	34,000	31,000	25,000	40,000	46,000	48,000	69,000	138,000	113,000	55,000	45,000	56,000
1922	29,000	31,000	24,000	22,000	33,000	69,000	108,000	71,000	140,000	116,000	54,000	28,000	60,000
1923	19,000	34,000	15,000	21,000	22,000	43,000	75,000	55,000	154,000	161,000	95,000	41,000	82,000
1924	79,000	42,000	31,000	19,000	31,000	61,000	93,000	62,000	151,000	107,000	53,000	31,000	63,000
1925	26,000	29,000	15,000	14,000	38,000	50,000	75,000	52,000	154,000	104,000	46,000	50,000	53,000
1926	33,000	34,000	17,000	22,000	40,000	43,000	40,000	52,000	64,000	51,000	35,000	82,000	42,000
1927	54,000	27,000	18,000	20,000	37,000	49,000	47,000	24,000	194,000	146,000	77,000	49,000	79,000
1928	46,000	31,000	15,000	28,000	47,000	61,000	69,000	57,000	126,000	123,000	75,700	45,500	60,300
1929	32,000	57,800	31,700	21,000	30,100	89,700	110,000	77,300	178,000	91,000	35,500	22,800	64,700
1930	26,100	31,800	14,900	15,800	36,800	62,400	58,100	91,200	73,400	39,600	30,100	36,600	43,200
1931	30,400	30,600	19,500	17,400	28,400	28,300	34,000	28,100	43,100	34,000	19,800	24,000	28,100
1932	20,900	47,100	25,200	29,600	31,500	51,600	55,500	56,600	115,000	77,200	44,100	29,300	46,600
1933	19,900	19,400	11,000	19,700	16,000	38,500	50,600	54,900	72,600	53,600	25,200	34,300	34,700
1934	19,340	16,020	17,980	13,440	21,340	31,100	28,020	26,420	38,240	26,210	12,480	13,200	22,300
1935	14,190	18,140	11,130	9,175	11,110	24,590	29,000	63,150	34,600	77,410	28,530	24,980	37,840
1936	16,730	19,500	13,550	9,125	15,730	76,590	43,510	48,690	50,410	28,550	14,950	21,080	29,900
1937	14,710	13,230	11,400	7,611	24,500	42,950	38,790	30,220	51,210	69,770	34,670	15,370	30,410
1938	15,230	14,350	7,908	11,460	14,350	45,130	37,450	50,740	64,130	92,750	43,780	45,990	36,920
1939	27,320	22,490	15,800	17,310	15,340	47,060	74,100	34,070	72,920	55,840	30,570	15,680	35,760
1940	12,360	13,960	14,790	5,010	9,308	21,050	28,470	33,190	43,760	30,340	35,970	23,690	22,680
1941	16,160	14,450	11,050	15,520	19,320	23,970	40,520	31,560	97,990	41,740	29,540	48,930	32,470
1942	78,290	44,250	25,610	21,060	23,650	44,190	47,330	115,800	134,200	69,790	44,000	55,780	58,820
1943	34,490	31,410	20,860	20,030	34,510	35,360	103,800	51,210	153,800	96,160	41,900	36,820	54,900
1944	32,910	34,760	21,400	20,200	24,590	47,010	143,500	101,700	142,300	118,500	73,100	52,990	87,640
1945	37,230	36,690	35,110	26,250	41,790	101,200	99,320	101,100	124,900	100,400	52,130	30,540	65,750
1946	38,620	28,280	12,420	22,130	28,300	50,070	39,160	35,370	60,140	55,880	30,340	51,610	37,690
1947	56,070	41,110	20,440	17,710	22,360	42,540	23,000	72,950	133,100	20,800	46,730	36,260	66,090
1948	40,230	39,360	21,850	17,870	28,080	98,390	74,810	50,790	86,820	99,520	69,640	40,240	55,730
1949	41,500	42,050	20,030	26,260	50,390	113,500	114,000	65,220	115,900	73,540	40,520	50,960	62,730
1950	42,160	32,300	19,380	14,760	22,700	44,250	115,300	99,340	70,970	110,700	76,580	52,770	58,620

† Corrected.

Monthly and yearly runoff, in thousands of acre-feet of Missouri River at Kansas City, Mo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	1,500	1,500	1,000	1,400	1,700	2,300	2,800	5,400	10,000	7,500	3,200	2,200	40,300
1899	1,900	1,700	1,600	1,700	1,500	2,700	7,500	7,700	10,100	11,200	5,600	2,200	55,400
1900	1,600	1,700	1,600	1,500	1,400	3,300	4,000	5,800	6,800	5,400	3,100	2,700	38,900
1901	2,400	2,400	1,500	1,500	1,900	3,000	5,000	3,600	8,500	5,200	2,800	2,400	40,200
1902	2,300	2,000	1,400	1,600	1,500	3,100	4,200	4,300	7,900	10,800	4,500	3,700	47,300
1903	4,000	2,500	1,500	1,900	1,700	5,100	3,600	6,900	13,300	6,900	1,100	5,700	60,000
1904	5,100	2,500	1,600	1,800	1,800	2,900	6,900	7,100	10,600	10,300	3,800	2,400	54,800
1905	2,600	1,800	1,300	800	1,500	4,500	5,100	5,000	6,700	9,200	4,400	4,200	44,800
1906	2,300	2,400	1,800	1,700	1,900	2,800	5,600	4,300	8,000	5,600	4,300	3,500	44,200
1907	2,600	2,500	1,500	1,800	5,100	5,300	5,200	4,100	9,400	12,200	6,800	2,900	57,200
1908	2,400	2,000	1,700	1,300	2,300	3,400	3,000	4,800	17,900	10,700	4,700	2,500	56,700
1909	2,500	2,400	1,700	1,300	1,900	5,600	4,200	3,700	10,200	13,700	4,800	2,900	54,700
1910	2,200	5,600	2,400	4,100	2,100	6,500	3,500	4,400	4,600	2,900	2,300	2,100	40,700
1911	1,800	1,300	900	1,100	2,000	2,300	2,600	2,200	3,700	4,500	2,200	2,400	27,800
1912	2,800	1,600	1,500	900	1,400	4,100	10,800	4,800	5,700	5,200	3,800	2,800	45,400
1913	5,100	2,700	1,600	1,300	1,400	2,700	6,600	5,800	6,800	5,900	4,400	2,400	43,700
1914	2,300	2,200	2,400	1,400	1,200	3,000	3,600	4,100	8,700	6,000	2,700	5,200	40,800
1915	2,600	2,100	1,300	1,400	5,200	4,000	6,900	6,700	14,100	16,300	10,500	4,800	73,900
1916	4,700	5,000	2,200	1,800	3,500	6,700	7,900	6,600	7,200	9,700	4,800	2,800	60,900
1917	2,400	2,400	1,400	1,400	1,700	3,500	8,500	6,600	13,400	8,900	7,700	2,200	56,100
1918	2,000	1,900	1,500	1,500	2,100	4,700	5,200	4,500	7,100	6,700	9,800	5,300	44,400
1919	2,500	2,900	2,200	1,900	2,600	4,800	6,700	5,000	6,400	3,500	1,600	1,600	41,700
1920	2,500	1,900	1,200	1,800	2,100	4,200	7,800	9,300	8,400	9,000	5,600	2,500	53,800
1921	1,800	2,000	1,900	1,500	2,200	2,800	2,900	4,200	8,200	7,000	3,400	2,700	40,600
1922	1,800	1,800	1,500	1,300	1,800	4,200	6,300	4,400	8,300	7,100	3,500	1,600	43,400
1923	1,200	2,000	900	1,300	1,200	2,700	4,400	3,400	9,800	9,900	8,800	2,400	45,000
1924	4,800	2,500	1,900	1,200	1,800	3,700	5,500	3,800	9,000	6,600	3,500	1,800	45,900
1925	1,600	1,700	900	900	2,100	3,100	4,500	3,200	9,200	6,400	10,000	1,800	38,400
1926	2,000	2,000	1,100	1,400	2,200	2,600	2,400	3,200	3,800	3,100	2,100	4,900	30,800
1927	5,300	1,600	1,100	1,300	2,100	3,000	8,700	7,600	11,600	9,000	4,900	2,900	57,000
1928	2,800	1,800	900	1,700	2,700	3,700	4,100	3,500	7,500	7,800	6,500	2,700	43,700
1929	1,970	5,440	1,950	2,290	1,670	5,520	6,550	4,750	10,600	5,600	1,180	1,360	46,900
1930	1,730	1,890	916	972	2,040	3,840	3,460	5,610	4,370	2,450	1,830	2,180	31,300
1931	1,870	1,820	1,200	1,070	1,580	1,740	2,020	1,730	2,560	2,090	1,220	1,430	20,300
1932	1,290	2,800	1,550	1,820	1,810	3,170	3,300	3,480	6,840	4,750	7,100	1,740	35,300
1933	1,220	1,150	676	1,210	889	2,370	3,010	3,390	4,330	3,300	1,550	2,040	25,100
1934	1,189	1,072	1,105	827	1,185	1,912	1,668	1,624	2,275	1,735	767	786	16,140
1935	872.3	1,060	654.4	564.1	1,061	1,512	1,726	3,983	6,010	4,760	1,754	1,487	27,390
1936	1,029	1,161	833.4	581.1	904.7	4,709	2,589	2,994	3,000	1,756	919.1	1,255	21,710
1937	904.5	787.2	700.8	468	1,361	2,641	2,308	1,858	3,642	4,290	1,144	914.4	22,020
1938	813.4	854	486.1	704.7	797	2,775	2,228	3,120	3,816	5,705	2,692	2,736	26,730
1939	1,680	1,338	971.4	1,085	852.1	2,894	4,409	2,095	4,339	3,433	1,880	932.8	25,890
1940	760.1	830.7	909.7	308.1	535.4	1,294	1,694	2,041	2,604	1,865	2,212	1,410	16,460
1941	993.5	859.9	679.4	954	1,073	1,474	2,411	1,941	5,831	2,568	1,816	2,911	23,510
1942	4,814	2,633	1,574	1,295	1,314	2,717	2,836	7,118	7,988	4,291	2,705	5,319	42,580
1943	2,121	1,889	1,283	1,251	1,917	2,174	6,174	3,149	9,149	5,913	2,576	2,191	39,750
1944	2,024	2,069	1,316	1,242	1,414	2,891	5,529	6,254	8,469	7,274	4,495	5,129	49,110
1945	2,289	2,302	2,159	1,614	2,321	6,223	5,910	6,155	7,430	6,175	2,205	1,817	47,600
1946	2,374	1,683	763.6	1,361	1,572	3,078	2,330	2,175	3,579	3,436	1,865	3,071	27,290
1947	5,448	2,446	1,257	1,089	1,242	2,616	7,321	4,485	11,480	7,428	2,873	2,157	47,840
1948	2,473	2,342	1,344	1,099	1,615	6,050	4,452	3,123	5,166	6,119	2,282	2,394	40,460
1949	2,552	2,502	1,232	1,615	2,798	6,980	6,782	4,010	6,897	4,522	2,491	3,034	45,420
1950	2,592	1,922	1,192	907.5	1,261	2,721	6,860	6,108	4,223	6,808	4,709	5,140	42,440

Yearly discharge, in cubic feet per second of Missouri River at Kansas City, Mo.

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1898	-	-	-	-	56,000	40,300,000	58,000	41,700,000
1899	-	-	-	-	77,000	55,400,000	76,000	55,100,000
1900	-	-	-	-	54,000	38,900,000	56,000	40,300,000
1901	-	-	-	-	55,000	40,200,000	55,000	39,600,000
1902	-	-	-	-	66,000	47,300,000	68,000	49,400,000
1903	-	548,000	June 2, 1903	-	83,000	60,000,000	82,000	59,400,000
1904	-	-	-	-	75,000	54,800,000	73,000	52,700,000
1905	172	-	-	-	62,000	44,800,000	64,000	46,200,000
1906	172	-	-	-	61,000	44,200,000	61,000	44,300,000
1907	-	-	-	-	79,000	57,200,000	78,000	56,700,000
1908	-	-	-	-	78,000	56,700,000	79,000	57,200,000
1909	-	-	-	-	75,000	54,700,000	78,000	56,300,000
1910	-	-	-	-	56,000	40,700,000	50,000	36,300,000
1911	-	-	-	-	39,000	27,800,000	41,000	29,900,000
1912	-	-	-	-	63,000	45,400,000	65,000	46,900,000
1913	-	-	-	-	60,000	43,700,000	60,000	43,200,000
1914	-	-	-	-	56,000	40,800,000	55,000	39,900,000
1915	-	-	-	-	102,000	73,900,000	107,000	77,800,000
1916	-	-	-	-	84,000	60,900,000	79,000	57,200,000
1917	-	-	-	-	77,000	56,100,000	76,000	55,300,000
1918	-	-	-	-	62,000	44,400,000	64,000	46,600,000
1919	-	-	-	-	58,000	41,700,000	54,000	39,200,000
1920	-	-	-	-	74,000	53,600,000	75,000	54,400,000
1921	-	-	-	-	56,000	40,600,000	55,000	40,000,000
1922	-	-	-	-	60,000	43,400,000	59,000	42,400,000
1923	-	-	-	-	62,000	45,000,000	69,000	50,100,000
1924	-	-	-	-	63,000	45,900,000	56,000	40,900,000
1925	-	-	-	-	53,000	38,400,000	54,000	39,300,000
1926	-	-	-	-	42,000	30,800,000	44,000	31,700,000
1927	-	-	-	-	79,000	57,000,000	78,000	56,500,000
1928	-	-	-	-	60,300	43,700,000	62,700	45,520,000
1929	686	254,000	June 5, 1929	16,200	64,700	46,900,000	60,800	44,100,000
1930	701	149,000	May 9, 1930	9,500	43,200	31,300,000	43,700	31,700,000
1931	716	64,000	June 24, 1931	10,700	28,100	20,300,000	29,100	21,100,000
1932	731	178,000	June 21, 1932	12,900	48,600	35,300,000	45,000	32,700,000
1933	746	109,000	May 31, 1933	5,160	34,700	25,100,000	35,100	25,400,000
1934	761	87,100	Mar. 7, 1934	6,220	22,300	16,140,000	21,290	15,420,000
1935	786	230,000	June 6, 1935	5,100	37,840	27,390,000	38,370	27,780,000
1936	806	117,000	Mar. 12, 1936	3,420	29,900	21,710,000	29,040	21,080,000
1937	826	102,000	June 30, 1937	1,500	30,410	22,020,000	30,080	21,780,000
1938	856	137,000	July 19, 1938	3,500	36,920	26,730,000	39,400	28,560,000
1939	876	135,000	Apr. 10, 1939	6,780	35,760	25,890,000	33,700	24,400,000
1940	896	68,100	June 21, 1940	1,700	22,680	16,460,000	22,720	16,500,000
1941	926	215,000	June 13, 1941	6,380	32,470	23,510,000	41,440	30,000,000
1942	956	206,000	June 22, 1942	8,700	58,820	42,580,000	53,640	38,840,000
1943	976	336,000	June 18, 1943	14,300	54,900	39,750,000	55,090	39,880,000
1944	1006	311,000	Apr. 24, 1944	8,370	67,640	49,110,000	69,490	50,450,000
1945	1036	242,000	June 18, 1945	15,200	65,750	47,600,000	63,080	45,670,000
1946	1058	123,000	June 20, 1946	5,090	37,690	27,290,000	40,910	29,600,000
1947	1086	261,000	June 27, 1947	4,700	66,090	47,840,000	64,720	46,850,000
1948	1116	208,000	Mar. 21, 1948	9,000	55,730	40,460,000	55,910	40,590,000
1949	1146	195,000	Mar. 8, 1949	10,900	62,730	45,420,000	61,930	44,840,000
1950	1176	198,000	July 21, 1950	9,040	58,620	42,440,000	-	-

Note.--Discharge has been computed for period 1898-1922 from gage heights and discharges measurements made during 1905 and 1928-31; for period 1923-28 from records for Missouri River at Leavenworth, Kans., Platte River at Agency, Mo., Kansas River at Bonner Springs, Kans., and estimates of flow from ungaged area. Computed results have been published (acre-feet) in Geological Survey Circular 108. Original records for 1905, published in Water-Supply Paper 172 were found in error and superseded in Circular 108.

491. Blue River near Kansas City, Mo.

Location.--Lat 38°57'25", long. 94°33'32", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T. 48 N., R. 33 W., at bridge on County Highway W, 0.4 mile downstream from Indian Creek and 1.7 miles south-east of Kansas City.

Drainage area.--188 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 753.73 ft above mean sea level (levels by Corps of Engineers). Prior to July 1, 1939, wire-weight gage at same site and datum.

Average discharge.--11 years (1939-50), 155 cfs.

Extremes.--1939-50: Maximum discharge, 26,400 cfs Apr. 23, 1944 (gage height, 35.88 ft); no flow September 1939 to February 1940 and in August 1946.

Maximum stage known, about 39 ft Nov. 17, 1928, from information by city of Kansas City.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	84.8	261	4.90	82.0	0.05	-
1940	0	0	0	0	2.66	32.1	161	297	238	19.3	158	17.4	77.2
1941	.66	41.9	49.7	445	197	66.4	390	59.2	166	52.1	2.94	41.6	125
1942	463	189	101	47.0	113	136	304	203	312	184	127	78.1	189
1943	103	149	250	95.2	59.5	49.0	42.7	334	372	55.0	77.6	1.84	133
1944	3.76	2.31	2.85	11.3	17.7	203	1,279	290	60.7	10.5	96.7	11.9	165
1945	30.9	24.7	251	47.2	68.5	499	862	634	607	176	4.63	22.7	270
1946	16.5	4.71	3.74	253	53.1	97.4	154	278	26.4	1.72	15.8	7.43	76.4
1947	59.3	27.8	74.4	25.4	9.1	355	1,049	169	816	23.5	.94	39.0	220
1948	18.4	13.7	191	55.4	64.5	451	62.0	27.9	143	501	80.5	25.1	137
1949	3.71	12.1	10.0	208	406	242	119	257	353	80.5	22.4	87.0	148
1950	546	57.2	44.4	87.2	59.5	37.2	36.5	30.9	171	364	429	56.6	162

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	5,210	15,520	301	5,040	2.8	-
1940	0	0	0	0	153	1,970	9,610	18,250	14,140	1,190	9,720	1,040	56,070
1941	41	2,490	3,060	27,370	10,940	4,080	23,200	3,640	9,860	3,200	181	2,470	90,530
1942	28,490	11,250	6,220	2,890	5,270	5,390	18,110	12,490	18,590	11,320	7,810	4,850	136,500
1943	6,360	8,860	15,340	5,850	3,300	3,010	2,540	20,540	22,120	3,380	4,770	109	98,180
1944	231	137	175	692	1,020	12,450	76,100	17,640	3,610	647	5,950	710	119,600
1945	1,900	1,470	15,430	2,900	3,800	30,680	51,320	39,000	36,150	10,840	2851	350	195,100
1946	1,010	280	230	15,550	2,950	5,990	9,170	17,070	1,570	106	969	442	55,340
1947	3,650	1,660	4,570	1,560	504	21,820	62,420	10,400	48,590	1,440	58	320	159,000
1948	1,130	817	11,720	3,410	3,710	27,720	3,680	1,710	8,500	30,810	4,950	1,500	99,670
1949	228	722	615	12,660	22,520	14,880	7,100	15,790	21,010	4,950	1,505	1,180	107,000
1950	33,570	3,400	2,730	5,360	3,310	2,280	2,170	1,900	10,180	22,380	26,360	3,370	117,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	876, 926	-	-	-	-	-	-	-	-	-	-
1940	896, 926	7,000	June 23, 1940	0	77.2	0.411	5.63	56,070	84.9	6.18	61,660
1941	926	6,460	Apr. 4, 1941	.2	125	.665	9.03	90,530	181	13.07	130,900
1942	956	7,890	July 25, 1942	9	169	1.01	13.61	136,500	167	12.06	121,100
1943	976	5,850	June 10, 1943	.7	133	.707	9.59	96,180	91.4	6.80	66,160
1944	1006	26,400	Apr. 23, 1944	.8	165	.878	11.91	119,600	190	13.74	137,800
1945	1036	11,100	Apr. 16, 1945	.2	270	1.44	19.46	195,100	246	17.73	177,800
1946	1056	7,890	May 10, 1946	0	76.4	.406	5.53	55,340	88.0	6.37	63,700
1947	1086	14,100	June 23, 1947	.1	220	1.17	15.88	159,000	225	16.25	162,800
1948	1116	9,540	July 26, 1948	.2	137	.729	9.94	99,670	121	8.73	87,560
1949	1146	8,800	June 6, 1949	1.9	148	.787	10.67	107,000	201	14.48	145,200
1950	1176	16,400	Oct. 21, 1949	3.3	162	.862	11.67	117,000	-	-	-

492. Little Blue River near Lake City, Mo.

Location.--Lat 39°06'00", long. 94°18'00", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 35, T. 50 N., R. 31 W., at bridge on State Highway 78, 3 miles southwest of Lake City and 10 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--184 sq mi.

Gage.--Wire-weight gage. Datum of gage is 719.15 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 6,000 cfs Mar. 20, 1948 (gage height, 24.97 ft, from floodmark); minimum observed, 1.7 cfs June 11, 12, 1948 (gage height, 3.30 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	74.8	30.7	200	343	114	49.5	-
1949	5.13	32.0	19.7	225	433	285	136	321	350	84.1	25.8	122	168
1950	309	48.9	27.1	115	67.0	44.7	74.0	55.7	91.5	153	189	24.6	101

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	4,450	1,890	11,880	21,120	7,000	2,950	-
1949	315	1,910	1,210	13,860	24,060	17,510	8,080	19,730	20,840	5,170	1,590	7,270	121,500
1950	18,990	2,910	1,670	7,070	3,720	2,750	4,410	3,430	5,440	9,430	11,640	1,470	72,950

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30								Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff			
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		
1948	1116	6,000	Mar. 20, 1948	-	-	-	-	-	-	-	-	-	
1949	1146	2,800	May 22, 1949	3.1	168	0.913	12.36	121,500	196	14.43	141,700	-	
1950	1176	5,580	Oct. 22, 1949	6	101	.549	7.44	72,950	-	-	-	-	

CROOKED RIVER BASIN

493. Crooked River near Richmond, Mo.

Location.--Lat 39°20', long. 93°59', in NW $\frac{1}{4}$ sec. 7, T. 52 N., R. 27 W., at bridge on State Highway 13, 4 miles north of Richmond, 8 $\frac{1}{2}$ miles upstream from West Fork Crooked River, and 24 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--159 sq mi.

Gage.--Wire-weight gage. Datum of gage is 706.34 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 3,300 cfs June 2, 1949 (gage height, 21.8 ft); no flow Sept. 13, 17, 28, 29, 1948.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	301	36.4	42.3	203	33.3	50.7	6.77	-
1949	.93	11.9	14.2	135	457	169	78.9	136	355	28.4	25.0	126	125
1950	35.8	23.6	28.0	115	59.4	36.4	59.4	49.3	21.7	54.1	50.5	3.80	44.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	18,480	2,170	2,600	12,070	2,050	3,110	403	-
1949	57	706	875	8,270	25,380	10,400	4,690	8,360	21,110	1,750	1,540	7,500	90,640
1950	2,200	1,410	1,720	7,060	3,300	2,240	3,540	3,030	1,290	3,330	3,100	226	32,450

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet	
1948	1116	-	-	0	-	-	-	-	-	-	-	
1949	1146	3,300	June 2, 1949	.4	125	0.788	10.69	90,640	130	11.13	94,330	
1950	1176	1,110	Jan. 1, 1950	1.4	44.8	.282	3.83	32,450	-	-	-	

494. Missouri River at Waverly, Mo.

Location.--Lat 39°12'51", long. 93°30'57", in sec. 14, T. 51 N., R. 24 W., at bridge on U. S. Highway 65 at Waverly and at mile 297.2.

Drainage area.--491,200 sq mi, approximately.

Supplemental records available.--Gage-height records collected at same site 1878-79, 1883-99 are contained in reports of Missouri River Commission; since 1915 in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 645.49 ft above mean sea level, datum of 1929. Prior to Apr. 1, 1929, staff gage, Apr. 1 to Oct. 22, 1929, chain gage, and Oct. 23, 1929, to Dec. 31, 1933, wire-weight gage at same site at datum 5.00 ft lower. Jan. 1 to Apr. 4, 1934, wire-weight gage, Apr. 5, 1934, to June 13, 1943, water-stage recorder, and June 14, 1943, to Sept. 15, 1944, wire-weight gage at present site and datum.

Average discharge.--22 years (1928-50), 45,840 cfs.

Extremes.--1928-50: Maximum discharge, 347,000 cfs Apr. 24, 1944; maximum gage height, 25.14 ft June 24, 1947; minimum discharge, about 1,700 cfs Jan. 9, 1940; minimum gage height, 0.4 ft, present datum, Jan. 12, 1930.

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1309.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	32,000	58,000	32,000	21,000	31,000	107,000	29,000	77,800	182,000	94,600	37,100	23,700	468,800
1930	28,700	32,300	15,300	16,000	37,200	62,800	58,300	91,600	73,700	40,100	30,200	36,900	43,600
1931	30,500	30,700	19,900	17,000	28,500	28,800	34,200	28,900	43,800	34,700	19,900	24,100	28,300
1932	21,300	48,800	27,200	31,100	31,100	51,700	56,900	57,800	115,000	79,700	45,200	29,800	49,600
1933	20,200	19,600	11,900	19,700	16,100	37,600	52,100	54,800	73,300	54,900	25,400	34,100	35,000
1934	20,150	17,750	18,730	13,110	21,510	30,490	28,370	26,160	37,780	28,840	12,790	13,430	22,410
1935	14,650	19,070	12,210	9,240	19,960	24,790	29,320	65,880	139,700	81,870	29,000	25,420	39,260
1936	17,370	20,530	14,680	9,468	16,300	77,310	44,640	49,290	51,360	29,340	15,300	21,240	30,610
1937	15,130	13,290	11,360	9,368	28,760	45,910	39,170	30,990	56,820	71,790	36,600	15,780	31,180
1938	13,370	14,710	7,903	11,360	14,380	42,970	40,040	51,450	64,080	92,510	45,450	46,400	37,190
1939	27,870	22,840	16,190	17,040	15,510	45,660	75,350	33,400	73,640	56,890	31,250	16,220	36,030
1940	12,430	13,940	15,050	5,023	9,224	21,050	28,320	34,070	45,620	30,710	36,340	24,630	22,890
1941	15,480	14,630	11,100	16,320	20,700	23,720	41,230	31,870	97,210	42,980	29,330	46,200	32,640
1942	76,870	46,450	26,870	20,990	24,660	42,720	49,930	114,800	131,800	71,960	44,740	56,930	59,210
1943	36,490	34,130	21,900	20,700	34,190	36,220	104,700	55,140	156,200	97,520	43,040	36,870	56,310
1944	32,650	34,620	22,340	19,980	23,630	45,930	49,400	99,270	138,200	147,700	74,720	53,780	67,390
1945	36,030	39,040	37,670	25,410	41,460	105,800	108,200	99,120	120,000	97,220	51,350	29,560	66,190
1946	58,480	28,410	12,590	22,850	28,110	50,460	40,770	35,670	58,560	55,600	30,030	50,090	37,640
1947	55,450	40,710	21,990	16,750	22,350	44,780	125,800	72,440	192,100	127,200	46,740	36,880	66,950
1948	39,920	40,370	25,120	18,360	27,200	103,500	75,820	50,990	85,430	98,830	69,330	39,960	56,180
1949	40,570	41,920	21,120	26,570	27,070	109,500	114,900	65,110	110,800	73,340	41,190	51,320	62,270
1950	42,250	33,210	19,530	15,280	22,500	45,280	110,100	101,100	71,340	110,000	79,300	52,430	58,730

* Not previously published; estimated on basis of records for station at Kansas City.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	1,970	3,450	1,970	1,290	1,720	6,580	7,680	4,780	10,800	5,820	2,280	1,410	49,800
1930	1,760	1,920	941	984	2,070	3,860	3,470	5,630	4,390	2,470	1,860	2,200	31,600
1931	1,880	1,830	1,220	1,050	1,580	1,770	2,040	1,780	2,590	2,130	1,220	1,430	20,500
1932	1,310	2,900	1,670	1,910	1,790	3,180	3,390	3,550	6,840	4,900	2,780	1,770	36,000
1933	1,240	1,170	732	1,210	894	2,310	3,100	3,370	4,360	3,580	1,560	1,030	25,400
1934	1,239	1,056	1,151	806	1,195	1,875	1,688	1,608	2,248	1,773	766.6	799.3	16,220
1935	900.8	1,135	750.5	568.1	1,108	1,524	1,745	4,051	8,311	5,034	1,783	1,513	28,420
1936	1,068	1,222	903.1	582.1	937.4	4,753	2,656	3,031	3,056	1,804	941	1,264	22,220
1937	930.4	790.6	698.4	514.5	597	2,700	2,331	1,906	3,500	4,412	250	938.8	22,570
1938	822.3	875.2	486	698.7	798.7	2,642	2,383	3,163	3,813	5,682	794	2,761	26,920
1939	1,714	1,359	995.4	1,048	861.6	2,808	4,484	2,064	4,382	3,491	1,920	985.2	26,090
1940	784.2	829.7	925.7	629.8	550.6	1,294	1,685	2,095	2,596	1,882	235	1,466	16,620
1941	951.9	870.6	682.8	1,003	1,149	1,456	2,453	1,960	5,785	2,643	1,803	2,868	23,630
1942	4,728	2,764	1,652	1,290	1,370	2,627	2,971	7,053	7,843	4,425	751	3,388	42,870
1943	2,244	2,031	1,347	1,273	1,899	2,227	6,228	3,391	9,292	5,992	6,648	2,194	40,770
1944	2,008	2,060	1,373	1,229	1,359	2,824	8,691	6,104	8,224	7,054	5,594	5,200	48,920
1945	2,338	2,323	2,316	1,562	2,302	6,503	6,441	6,095	7,143	5,973	1,157	1,759	47,920
1946	2,366	1,690	774.4	1,405	1,561	3,103	2,426	2,193	3,484	3,411	846	2,981	27,250
1947	4,409	2,422	1,352	1,030	1,241	2,753	7,465	4,454	11,450	7,822	874	2,194	46,470
1948	2,455	2,402	1,421	1,129	1,565	6,363	4,511	3,135	5,084	6,077	4,263	2,378	40,780
1949	2,495	2,494	1,299	1,634	2,636	6,731	6,835	4,004	6,656	4,509	5,533	5,054	45,080
1950	2,598	1,976	1,201	939.6	1,250	2,784	6,550	6,218	4,245	6,764	4,876	5,120	42,520

* Not previously published; estimated on basis of records for station at Kansas City.

Yearly discharge, in cubic feet per second of Missouri River at Waverly, Mo.

Yearly discharge, in cubic feet per second of Missouri river at Waverly, Mo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	263,000	June 5, 1929	-	\$68,800	\$49,800,000	\$65,000	\$47,000,000
1930	701	146,000	May 9-10,1930	8,200	43,600	31,600,000	44,000	31,900,000
1931	716	65,500	June 25, 1931	10,900	28,300	20,500,000	29,700	21,500,000
1932	731	167,000	June 23, 1932	11,100	49,600	36,000,000	45,800	33,300,000
1933	746	111,000	June 1, 1933	5,960	35,000	25,400,000	35,400	25,700,000
1934	761	82,600	Mar. 8, 1934	7,000	22,410	16,220,000	21,500	15,570,000
1935	766	215,000	June 8, 1935	6,080	39,260	28,420,000	39,820	28,850,000
1936	806	120,000	Mar. 13, 1936	4,700	30,610	22,220,000	29,540	21,440,000
1937	826	105,000	June 30, 1937	4,250	31,180	22,570,000	30,650	22,330,000
1938	856	137,000	July 20, 1938	3,600	37,190	26,920,000	39,790	26,810,000
1939	876	133,000	Apr. 11, 1939	7,200	36,030	26,090,000	33,900	24,540,000
1940	896	70,800	June 21, 1940	1,700	22,890	16,620,000	22,870	16,600,000
1941	926	185,000	June 14, 1941	6,620	32,640	23,630,000	41,810	30,260,000
1942	956	200,000	June 27, 1942	8,500	59,210	42,870,000	54,350	39,350,000
1943	976	310,000	June 19, 1943	13,200	58,310	40,770,000	56,060	40,590,000
1944	1006	347,000	Apr. 24, 1944	11,100	67,390	46,920,000	69,500	50,460,000
1945	1036	240,000	Apr. 18, 1945	15,900	66,190	47,920,000	63,220	45,770,000
1946	1056	116,000	June 20, 21, 1946	6,500	37,640	27,250,000	40,890	29,600,000
1947	1086	273,000	June 25, 26, 1947	4,500	66,950	48,470,000	65,700	47,560,000
1948	1116	215,000	Mar. 21, 22, 1948	10,900	40,780	40,780,000	56,190	40,790,000
1949	1146	187,000	Mar. 8, 1949	10,300	62,270	45,080,000	61,560	44,570,000
1950	1176	197,000	July 21, 1950	10,000	58,730	42,520,000	-	-

* Not previously published.

WAKENDA CREEK BASIN

495. Wakenda Creek at Carrollton, Mo.

Location.--Lat 39°21', long. 93°30', in NE¹SE¹ sec. 5, T. 52 N., R. 23 W., at bridge on U. S. Highway 65 in Carrollton, half a mile downstream from Brush Creek and 14 miles upstream from mouth.

Drainage area.--248 sq mi.

Gage.--Wire-weight gage. Datum of gage is 641.17 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 7,000 cfs Mar. 20, 1948 (gage height, 22.64 ft, from floodmark); minimum observed, 1.8 cfs Sept. 29, 1948; minimum gage height, 5.72 ft June 16, 1950.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	543	49.9	43.5	526	200	22.3	47.8	-
1949	4.71	22.6	18.0	297	636	244	103	434	549	70.2	26.8	102	206
1950	60.6	12.1	46.7	177	106	20.8	70.3	24.7	114	353	812	27.2	153

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	33,410	2,970	2,670	31,290	12,310	1,370	2,840	-
1949	290	1,350	1,110	18,240	35,350	15,000	6,130	26,670	32,670	4,310	1,650	6,080	148,800
1950	3,730	722	2,870	10,900	5,990	1,280	4,180	1,520	6,760	21,730	49,900	1,620	111,100

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1116	7,000	Mar. 20, 1948	-	-	-	-	-	-	-	-
1949	1146	4,500	June 3, 1949	1.9	206	0.831	11.24	148,800	212	11.59	153,400
1950	1176	6,460	Aug. 16, 1950	2.2	153	.617	8.59	111,100	-	-	-

496. East Fork Big Creek near Bethany, Mo.

Location.--Lat 40°17'50", long. 94°01'55", in SE $\frac{1}{4}$ sec. 34, T. 64 N., R. 28 W., at bridge on U. S. Highway 69, 2 miles north of Bethany and 4 miles upstream from confluence with West Fork.

Drainage area.--95 sq mi, approximately.

Gage.--Water-stage recorder and concrete control. Datum of gage is 854.74 ft above mean sea level, datum of 1929. Prior to June 26, 1934, wire-weight gage at site 70 ft upstream at same datum.

Average discharge.--16 years (1934-50), 48.5 cfs.

Extremes.--1934-50: Maximum discharge, 8,120 cfs June 6, 1947 (gage height, 17.65 ft), from rating curve extended above 2,600 cfs on basis of velocity-area study; no flow at times in most years.

Maximum stage known, 23.8 ft July 6, 1909.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	7.63	5.98	22.8	0.068	2.48	12.0	-
1935	26.8	182	43.0	17.8	32.6	25.8	11.2	300	552	5.22	.025	.957	63.0
1936	120	12.2	2.25	1.58	107	81.5	1.97	19.5	.817	0	0	17.3	20.0
1937	18.6	.607	6.97	43.6	349	222	50.2	58.1	7.99	81.5	2.20	0	68.4
1938	0	0	0	.029	0	.029	.720	4.42	1.97	0	16.2	3.52	2.27
1939	0	0	0	0	0	104	42.5	.13	96.6	36.1	36.4	.01	26.5
1940	0	0	0	0	.22	26.7	13.4	68.5	12.9	35.8	48.3	.39	17.4
1941	0	0	.25	7.37	27.1	11.8	9.60	13.1	155	1.10	.003	5.91	18.9
1942	69.3	59.7	56.5	78.2	73.4	160	15.8	93.1	376	6.84	10.1	13.8	83.2
1943	20.3	29.6	54.8	8.0	58.6	13.2	11.7	187	279	3.24	37.2	11.2	59.2
1944	3.04	1.63	3.50	5.22	9.39	64.9	505	153	88.5	.55	31.7	3.65	55.6
1945	21.7	13.1	78.1	17.7	116	141	169	332	164	35.7	2.29	26.2	92.8
1946	15.6	9.92	16.3	240	10.3	162	27.1	74.4	164	27.5	4.62	21.2	64.9
1947	7.16	4.53	2.95	11.1	3.06	86.9	242	44.9	932	9.96	.50	.20	111
1948	.58	1.50	17.8	2.62	98.5	99.6	14.4	31.6	14.0	1.87	3.45	.38	23.6
1949	.08	.30	.28	13.9	173	95.3	18.9	2.90	16.6	5.23	1.73	19.0	27.7
1950	1.39	1.18	4.30	7.91	93.8	16.5	10.7	41.3	59.1	1.40	22.5	16.3	22.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	454	366	1,360	4.2	152	716	-
1935	1,770	10,810	2,640	1,090	1,810	1,580	664	18,430	20,920	321	1.5	57	60,090
1936	7.4	725	138	85	6,140	5,010	117	1,200	49	0	0	1,030	14,500
1937	1,140	56	4282	680	19,580	13,640	2,990	3,570	4755	1,010	135	0	49,480
1938	0	0	0	1.8	0	0	43	272	117	0	996	209	1,640
1939	0	0	0	0	0	0	0	2,530	8.1	5,750	220	2,240	19,160
1940	0	0	0	0	121,640	796	4,210	7662	2,200	2,970	23	12,620	20,060
1941	0	0	15	453	1,510	726	571	807	9,210	67	.2	352	13,710
1942	4,260	3,550	3,480	810	4,070	840	819	5,730	21,800	421	6.1	823	60,200
1943	1,250	1,760	3,370	494	3,250	810	694	11,490	16,580	199	2,290	664	42,850
1944	187	97	215	321	5405	220	18,170	8,160	5,260	34	1,950	217	40,370
1945	1,340	780	4,810	1,090	6,430	670	10,050	20,420	9,750	190	141	1,560	67,210
1946	957	590	1,000	1,730	5739	990	1,610	4,570	9,750	690	284	1,260	47,000
1947	440	270	181	681	1705	350	14,380	2,760	55,470	613	31	12	80,360
1948	36	89	1,100	161	5,660	120	857	1,940	834	115	212	22	17,150
1949	3.8	18	17	852	9,590	860	1,120	178	990	198	106	1,130	20,060
1950	123	70	264	487	5,210	1,010	638	2,540	3,510	86	1,380	1,090	16,410

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1934	761	590	June 23, 1934	0	-	-	-	-	-	-	-
1935	786	3,500	May 31, 1935	0	63.0	0.874	11.88	60,090	63.2	9.04	45,740
1936	806	980	May 23, 1936	0	20.0	.211	2.87	14,500	21	3.02	15,240
1937	826	1,610	Jan. 30, 1937	0	68.4	.720	9.78	49,480	66.1	9.46	47,880
1938	856	210	Aug. 21, 1938	0	2.27	.024	.32	1,640	2.27	.32	1,640
1939	896	2,060	Aug. 2, 1939	0	26.5	.279	3.78	19,160	26.5	3.78	19,160
1940	896	1,780	May 8, 1940	0	17.4	.183	2.49	12,620	17.4	2.49	12,630
1941	926	2,950	June 9, 1941	0	18.9	.199	2.70	13,710	34.5	4.93	25,000
1942	956	6,600	June 26, 1942	.1	83.2	.876	11.87	60,200	76.4	10.91	55,310
1943	976	3,110	May 16, 1943	0	59.2	.623	8.48	42,850	51.1	7.31	36,970
1944	1006	3,210	Apr. 22, 1944	0	55.6	.595	7.97	40,370	64.5	9.23	46,900
1945	1036	4,120	May 15, 1945	0	92.6	.977	13.26	67,210	86.8	12.41	62,830
1946	1056	6,770	June 30, 1946	.2	64.9	.683	9.29	47,000	62.6	8.96	45,350
1947	1086	8,120	June 6, 1947	.2	111	1.17	15.85	80,360	111	15.92	80,690
1948	1116	2,310	May 6, 1948	.1	23.6	.248	3.38	17,150	22.0	3.14	16,000
1949	1146	2,000	Feb. 24, 1949	0	27.7	.292	3.97	20,060	28.3	4.04	20,480
1950	1176	1,300	Sept. 20, 1950	0	22.7	.239	3.23	16,410	-	-	-

497. Grand River near Gallatin, Mo.

Location.--Lat 39°55'35", long. 93°56'35", in SW¼ sec. 16, T. 59 N., R. 27 W., at bridge on State Highway 6, 100 ft downstream from Chicago, Rock Island & Pacific Railway bridge, 1 mile northeast of Gallatin, and 6 miles upstream from Honey Creek.

Drainage area.--2,850 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 712.56 ft above mean sea level, datum of 1929. Prior to Jan. 31, 1922, chain gage at site 100 ft upstream at same datum. From Jan. 31, 1922, to Apr. 8, 1936, chain gage and Apr. 9 to Nov. 15, 1936, wire-weight gage at site 1,100 ft upstream at datum 0.17 ft higher. Nov. 16, 1936, to Nov. 14, 1937, wire-weight gage at present site and datum.

Average discharge.--29 years (1921-50), 1,096 cfs (revised).

Extremes.--1921-50: Maximum discharge, 69,100 cfs June 24, 1947; maximum gage height, 37.02 ft June 2, 1929 (present site and datum); minimum discharge, 2.4 cfs Oct. 24, 25, 1938; minimum gage height, 0.55 ft Oct. 26, 1940.
Maximum stage known, about 40 ft July 8, 1909, from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	92.8	292	613	-
1922	65.8	90.2	24.9	25.4	49.8	514	837	906	174	*7,340	459	781	*951
1923	661	5,830	219	155	98.8	986	941	398	691	1,010	591	385	830
1924	518	113	126	118	594	1,420	368	96.85	3,300	2,540	360	512	985
1925	87.8	69.1	231	74.21	640	760	1,300	335	2,470	159	847	2,300	843
1926	2,290	960	350	1,020	1,550	591	923	200	2,520	154	122	11,600	1,840
1927	5,520	403	304	160	774	680	7,910	972	1,760	145	260	89.4	1,660
1928	893	102	82.5	110	664	261	466	126	2,880	3,160	985	3,360	1,090
1929	1,820	8,610	1,240	399	1,560	5,430	6,170	554	6,680	4,020	141	79.5	3,040
1930	402	463	127	88.61	510	447	318	1,590	988	231	110	115	525
1931	98.1	78.2	108	32.2	49.2	386	802	286	464	87.6	143	1,810	360
1932	1,910	8,060	2,150	4,210	851	931	925	340	2,210	443	1,460	138	1,970
1933	51.0	202	583	298	181	274	370	603	65.2	138	2,025	1,245	506
1934	205	55.7	88.0	84.7	47.0	116	503	166	157	15.1	18.6	340	149
1935	253	2,993	909	519	733	545	405	5,377	8,288	861	49.5	283	1,763
1936	23.5	415	113	42.21	961	1,555	289	902	95.3	13.3	7.1	390	478
1937	296	45.7	99.6	276	1,978	2,009	366	1,252	279	1,672	92.5	22.0	693
1938	17.6	14.4	17.6	25.7	17.9	18.7	73.8	416	513	26.6	328	73.4	129
1939	3.79	618	615	7.84	5.61	539	435	75.92	215	617	390	11.7	444
1940	9.5	13.8	8.5	3.9	21.7	538	164	748	499	105	942	46.9	261
1941	9.38	17.9	18.5	311	592	227	421	335	3,526	86.5	22.3	375	488
1942	1,569	2,324	1,224	1,151	1,730	3,702	508	1,624	6,308	308	324	488	1,765
1943	305	489	1,163	531	1,070	420	302	2,896	8,615	543	1,373	168	1,483
1944	56.8	54.7	51.6	97.9	179	1,426	7,620	5,960	2,540	204	1,862	177	1,515
1945	307	273	2,023	446	1,209	2,466	5,188	7,703	5,860	883	132	201	2,225
1946	461	80.4	179	75.58	362	3,355	898	1,944	1,127	887	90.6	99.3	1,099
1947	97.2	56.4	51.8	81.8	74.4	1,064	4,724	1,573	22,670	793	74.5	47.1	2,583
1948	41.4	58.1	380	68.51	193	2,553	542	804	623	199	144	40.3	551
1949	25.5	29.7	23.5	444	5,058	2,085	622	202	1,626	582	375	273	762
1950	341	99.9	106	215	1,888	603	274	1,567	1,658	471	2,032	231	784

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	5,710	18,000	36,500	-
1922	4,050	5,370	1,530	1,560	2,770	31,600	49,800	55,700	10,400	451,000	28,200	46,500	*888,000
1923	40,600	228,000	13,500	9,530	5,480	80,600	56,000	24,500	41,100	62,100	36,300	22,900	601,000
1924	31,900	6,720	7,750	7,260	34,200	87,300	21,900	5,940	315,000	156,000	22,100	18,600	715,000
1925	5,400	4,110	14,200	4,560	91,100	46,700	77,400	20,600	147,000	978	52,100	18,600	610,000
1926	141,000	57,100	21,500	62,700	86,100	36,300	54,900	12,300	150,000	9,470	7,500	690,000	1,330,000
1927	401,000	24,000	18,700	9,840	43,000	41,800	471,000	59,800	105,000	8,920	16,000	5,320	1,200,000
1928	54,900	6,070	5,070	6,760	38,200	16,000	27,700	7,750	171,000	194,000	60,600	200,000	788,000
1929	112,000	512,000	76,200	24,500	86,600	34,000	367,000	34,100	397,000	203,000	8,670	4,750	2,200,000
1930	24,700	27,000	7,610	5,450	83,900	27,500	18,900	37,800	58,700	14,200	6,760	6,840	380,000
1931	6,030	4,650	6,640	1,980	2,730	23,700	47,700	17,600	27,600	5,390	8,790	108,000	261,000
1932	117,000	480,000	32,000	259,000	49,000	57,200	55,100	20,900	32,000	27,200	89,800	8,210	1,430,000
1933	3,140	12,020	35,820	18,310	10,050	16,830	22,000	37,080	3,880	8,460	124,500	74,080	366,000
1934	12,580	3,310	5,410	5,210	2,610	7,130	29,910	10,200	9,340	930	1,140	20,210	108,000
1935	15,560	78,100	55,910	31,910	40,690	33,530	24,100	330,600	493,200	52,930	3,050	16,830	1,276,000
1936	1,450	24,700	6,920	2,590	112,600	95,590	17,210	55,480	5,670	817	434	23,230	346,900
1937	18,200	2,720	6,120	16,980	99,900	123,600	21,790	76,970	16,600	102,800	5,080	1,310	502,100
1938	1,080	858	1,080	1,580	994	1,150	4,390	25,590	30,530	1,640	20,200	4,370	93,460
1939	233	487	378	482	311	94,630	25,790	4,670	31,800	37,950	23,980	694	321,400
1940	581	823	524	242	1,250	33,110	9,780	46,000	29,680	6,440	57,910	2,790	189,100

* Revised.

Monthly and yearly runoff, in acre-feet of Grand River near Gallatin, Mo.--Continued													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	577	1,060	1,130	19,150	32,850	13,930	25,050	20,620	209,800	5,320	1,370	22,340	353,200
1942	96,450	38,300	75,280	70,770	96,060	227,600	30,250	99,870	375,400	18,960	19,890	29,030	1,278,000
1943	18,760	29,080	71,510	32,880	59,440	25,800	17,990	178,100	152,600	33,390	84,420	10,020	1,074,000
1944	3,490	3,260	3,170	6,020	10,320	87,850	453,400	243,500	151,200	12,520	114,500	10,540	1,100,000
1945	18,860	16,240	124,400	27,430	87,160	151,600	308,700	473,600	348,700	54,300	8,140	11,960	1,611,000
1946	28,350	4,780	11,020	218,800	20,130	206,300	53,480	119,500	67,080	54,550	5,570	5,910	795,500
1947	5,970	3,360	3,190	5,030	4,130	65,400	281,100	96,740	349,000	45,780	4,580	2,600	1,970,000
1948	2,540	3,460	2,140	4,210	68,630	157,000	32,260	49,460	37,080	12,260	2,400	2,400	400,300
1949	1,570	1,770	1,440	27,300	189,900	128,200	37,000	12,390	96,770	35,810	23,080	16,250	551,500
1950	20,940	5,950	6,490	13,200	104,800	37,090	16,320	96,370	98,680	23,980	24,900	13,770	567,500

Yearly discharge, in cubic feet per second												
Year	W.S.P. no.	Water year ending Sept. 30					Calendar year					
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	Mean	Runoff
		Discharge	Date				Inches	Acre-feet			Inches	Acre-feet
1921	528	-	-	-	-	-	-	-	-	-	-	-
1922	546,1280	*51,400	July 12, 1922	20	*951	*0.423	*5.73	*688,000	*1,330	*8.00	*960,000	
1923	566	19,100	Nov. 15, 1922	77	830	.369	5.00	601,000	504	3.04	365,000	
1924	586	22,400	June 27, 1924	10	985	.438	5.96	715,000	954	5.76	692,000	
1925	606	20,800	June 4, 1925	33	843	.375	5.07	610,000	1,110	6.72	797,000	
1926	626	53,200	Sept. 17, 1926	39	1,840	.818	11.09	1,330,000	2,150	12.95	1,550,000	
1927	646	37,100	Oct. 5, 1926	35	1,680	.738	10.03	1,200,000	1,140	6.88	827,000	
1928	666	32,600	July 24, 1928	24	1,090	.484	6.55	788,000	1,961	11.84	1,420,000	
1929	686	56,800	June 2, 1929	37	3,040	1.35	18.36	2,200,000	2,160	13.02	1,560,000	
1930	701	6,800	June 6, 1930	25	525	.235	3.18	380,000	466	2.83	337,000	
1931	716	12,800	Sept. 26, 1931	18	360	.160	2.18	261,000	1,340	8.10	972,000	
1932	731	33,600	Nov. 25, 1931	50	1,970	.876	11.90	1,430,000	1,040	6.26	749,000	
1933	786	16,600	Aug. 22, 1933	23	508	.225	3.05	366,000	465	2.79	336,000	
1934	786	6,420	Apr. 4, 1934	3	149	.066	.90	108,000	464	2.81	336,200	
1935	786	40,100	June 4, 1935	12	1,763	.784	10.85	1,276,000	1,464	8.85	1,080,000	
1936	806	16,400	Feb. 26, 1936	4.3	478	.212	2.89	346,900	470	2.83	340,900	
1937	826	15,700	Mar. 5, 1937	4	693	.308	4.18	502,100	660	3.98	478,000	
1938	856	5,480	June 1, 1938	7	129	.057	.77	93,460	126	.76	91,500	
1939	876	18,900	June 22, 1939	2.6	444	.197	2.68	321,400	445	2.69	322,200	
1940	896	10,900	May 8, 1940	3	261	.116	1.57	189,100	262	1.58	190,000	
1941	926	26,500	June 11, 1941	4.7	488	.217	2.94	353,200	912	5.50	660,500	
1942	956	34,200	June 25, 1942	37	1,765	.784	10.84	1,278,000	1,502	9.06	1,087,000	
1943	976	25,900	June 12, 1943	56	1,463	.659	8.36	1,074,000	1,332	8.05	964,400	
1944	1006	35,700	Apr. 24, 1944	24	1,515	.673	9.17	1,100,000	1,721	10.42	1,249,000	
1945	1036	43,600	May 17, 1945	47	2,225	.989	13.44	1,611,000	2,066	12.47	1,496,000	
1946	1056	31,900	Jan. 8, 1946	45	1,099	.488	6.64	795,500	1,055	6.38	763,800	
1947	1086	69,100	June 24, 1947	18	2,583	1.15	15.58	1,870,000	2,605	15.70	1,886,000	
1948	1116	16,000	Mar. 20, 1948	19	551	.245	3.33	400,300	519	3.13	376,900	
1949	1146	19,400	Feb. 25, 1949	14	762	.339	4.60	551,500	801	4.84	580,100	
1950	1176	13,600	May 10, 1950	36	784	.348	4.71	567,500	-	-	-	

* Revised.

498. Thompson River at Davis City, Iowa 1/

Location.--Lat 40°38'25", long. 93°48'20", in SE 1/4 sec. 35, T. 68 N., R. 26 W., at bridge on U. S. Highway 69 at Davis City, 5 1/2 miles upstream from Iowa-Missouri State line, and 9 miles downstream from Elk Creek.

Drainage area.--702 sq mi.

Gage.--Water-stage recorder. Datum of gage is 875.55 ft above mean sea level, unadjusted (Corps of Engineers benchmark). May 14, 1918, to July 2, 1925, chain gage, and July 14, 1941, to Feb. 24, 1942, wire-weight gage at same site and datum.

Average discharge.--15 years (1918-24, 1941-50), 379 cfs.

Extremes.--1918-25, 1941-50: Maximum discharge, 21,300 cfs (revised) June 14, 1947 (gage height, 20.14 ft), from rating curve extended above 15,000 cfs on basis of velocity-area study; minimum daily, about 1 cfs Sept. 18-24, 27-29, Oct. 15, 18, 1918. Flood of Aug. 8, 1885, reached a stage of 22.8 ft, from floodmark (discharge, 30,000 cfs, revised), from rating curve extended above 15,000 cfs on basis of velocity-area study. Minimum flow known, 0.10 cfs Aug. 16, 1934, discharge measurement.

1/ Previously published as Grand River.

Monthly and yearly mean discharge, in cubic feet per second of Thompson River at Davis City, Iowa

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	547	*31.5	33.6	8.47	-
1919	44.8	79.5	53.6	54.8	158	809	1,100	1,270	2,330	74.2	19.9	175	513
1920	140	489	24.2	14.5	525	1,090	1,640	767	392	357	113	820	527
1921	32.4	36.2	38.6	20	141	136	313	430	432	25.8	36.3	181	151
1922	56.4	40.7	16.6	*12	*50.7	219	138	554	101	*1550	*525	405	*307
1923	88.5	*956	75.8	*50	*40	750	*319	*209	*158	148	152	113	*255
1924	90.2	29.4	26.4	*45	*470	729	131	*41.82	0.040	*231	*119	185	*541
1925	29.4	26.8	*57	*19	*343	91.5	59.7	24.3	339	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	12.2	817	-
1942	1,410	1,211	620	934	378	696	198	691	543	292	78.5	113	599
1943	88.5	96.8	183	83.1	310	182	99.6	585	1,301	242	172	57.7	282
1944	17.1	24.0	14.0	27.4	65.5	337	1,639	1,341	630	105	364	185	395
1945	109	76.5	197	87.8	680	1,540	1,554	1,266	595	159	47.4	112	534
1946	95.8	37.2	71.1	108	238	797	373	554	740	77.6	176	112	366
1947	226	165	62.6	67.6	117	483	2,237	587	4,750	263	28.1	12.5	744
1948	22.2	58.1	134	24.4	201	923	227	199	24.4	64.0	40.2	14.3	162
1949	4.97	31.0	13.3	105	519	571	227	83.0	671	224	95.5	61.5	214
1950	22.1	16.7	21.6	63.5	550	406	64.2	931	1,012	159	238	23.9	290

* Revised.

† Corrected.

‡ Not previously published; estimated or partly estimated on basis of weather records and records for several of the nearest stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	-	-	-	-	-	-	-	-	32,520	*1,930	2,070	504	-
1919	2,760	4,730	3,290	3,370	8,790	49,770	65,520	77,950	138,800	4,560	1,230	10,420	371,200
1920	8,590	29,090	1,490	893	30,200	66,780	97,650	47,160	23,350	21,930	6,930	48,800	382,900
1921	1,990	2,150	2,370	1,230	7,820	9,340	18,600	28,460	25,710	1,590	2,230	10,780	109,300
1922	3,470	2,420	1,020	*738	*2,820	13,460	8,210	34,060	6,030	*94,100	*32,180	24,080	*222,800
1923	5,440	*56,910	4,680	*3,070	*2,220	46,150	*18,970	*12,850	*9,430	9,120	9,330	6,750	*154,900
1924	5,540	1,750	1,620	*2,770	*27,030	44,810	7,770	2,570	221,500	*14,210	*7,290	11,000	*247,900
1925	1,800	1,590	*3,500	*1,170	19,050	5,620	3,550	1,490	20,170	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	748	48,590	-
1942	86,690	72,090	38,110	57,430	21,000	42,780	11,780	41,880	32,300	17,940	4,830	6,710	433,500
1943	5,440	5,770	11,230	5,110	17,210	11,160	5,930	35,860	77,400	14,860	10,800	3,440	204,000
1944	1,050	1,430	861	1,680	3,770	20,710	97,540	82,470	37,480	8,460	22,590	10,990	286,900
1945	6,730	4,550	12,140	5,400	37,760	94,710	92,490	77,850	35,390	9,790	2,910	6,660	386,400
1946	5,770	2,210	4,370	68,120	13,210	49,010	22,180	34,050	44,040	4,770	10,800	6,680	265,200
1947	13,670	9,820	3,850	4,160	6,520	29,670	33,100	36,090	282,600	16,160	1,730	741	538,300
1948	1,370	3,460	8,250	1,500	11,540	56,750	13,480	12,250	1,450	3,940	2,470	852	117,300
1949	306	1,850	815	6,490	28,840	35,110	13,500	5,100	39,950	13,790	5,880	3,660	155,300
1950	1,360	998	1,330	3,910	30,520	24,930	3,820	57,240	60,220	9,800	14,650	1,420	210,200

* Revised.

† Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Water year ending Sept. 30														Calendar year			
Year	W.S.F. no.	Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		Mean	Runoff				
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet						
1918	506,1240	*85,680	June 6, 1918	b1	-	-	-	-	-	-	-	-	-	-			
1919	506	12,500	June 4, 1919	-	513	0.731	9.91	371,200	552	10.67	399,600	-	-	-			
1920	506	*8,350	(c)	-	527	.751	10.23	382,900	482	9.35	350,200	-	-	-			
1921	526	*5,500	May 11, 1921	9	151	.215	2.92	109,300	151	2.93	109,700	-	-	-			
1922	546,1240	*13,200	July 18, 1922	4	*307	.437	*5.94	*222,600	*390	*7.55	*282,700	-	-	-			
1923	566,1240	*7,760	Nov. 13, 1922	-	*255	.363	*4.93	*184,900	*175	*3.38	*126,800	-	-	-			
1924	586,1240	10,200	June 26, 1924	-	*341	.488	*6.62	*247,900	*359	*6.56	*245,800	-	-	-			
1925	606	*63,860	June 3, 1925	-	-	-	-	-	-	-	-	-	-	-			
1941	1006	44,440	Sept. 17, 1941	e6	-	-	-	-	-	-	-	-	-	-			
1942	1006	8,380	June 20, 1942	25	599	.853	11.58	433,500	358	6.91	259,100	-	-	-			
1943	1006	6,910	June 13, 1943	17	282	.402	5.46	204,000	255	4.95	184,900	-	-	-			
1944	1006	8,810	Aug. 23, 1944	6	395	.563	7.65	286,800	423	8.18	306,900	-	-	-			
1945	1036	8,700	Apr. 17, 1945	11	534	.761	10.32	386,400	518	10.03	376,300	-	-	-			
1946	1056	*11,500	Jan. 6, 1946	20	366	.521	7.09	265,200	387	7.49	280,400	-	-	-			
1947	1086	*21,300	June 14, 1947	6.6	744	1.06	14.37	538,300	724	13.99	523,900	-	-	-			
1948	1116	4,860	Mar. 20, 1948	6.0	162	.231	3.15	117,500	148	2.88	107,200	-	-	-			
1949	1146	4,190	June 26, 1949	2.8	214	.305	4.16	155,300	215	4.19	156,000	-	-	-			
1950	1176	12,000	May 10, 1950	6.2	290	.413	5.63	210,200	-	-	-	-	-	-			

* Revised.

† Not previously published.

a Maximum for period May 14 to Sept. 30, 1918.

b Minimum day for water year.

c Mar. 24, May 13, 1920*.

d Maximum for period Oct. 1, 1924, to July 2, 1925.

e Maximum for period July 14 to Sept. 30, 1941.

f Minimum for period July 14 to Sept. 30, 1941.

499. Weldon River near Mercer, Mo.

Location.--Lat 40°33', long. 93°36', in SW $\frac{1}{4}$ sec. 3, T. 66 N., R. 24 W., at county highway bridge, 4 $\frac{1}{4}$ miles northwest of Mercer and 5 miles upstream from Little River.

Drainage area.--246 sq mi.

Gage.--Wire-weight gage. Altitude of gage is 890 ft (by barometer).

Average discharge.--11 years (1939-50), 162 cfs.

Extremes.--1939-50: Maximum discharge, 28,000 cfs June 5, 1947 (gage height, 25.71 ft), from rating curve extended above 14,000 cfs; no flow at times in 1940, 1941, and 1944.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1940	0.55	0.85	0.85	0.16	1.14	52.3	91.3	226	12.4	280	190	72.3
1941	.81	2.15	4.31	45.6	95.8	57.2	30.8	8.07	156	8.19	.03	50.2
1942	344	238	96.5	144	123	176	32.8	216	1,055	75.7	6.22	28.9
1943	60.4	67.8	191	48.3	201	81.2	104	649	853	39.7	7.46	26.0
1944	2.93	3.02	2.35	14.3	22.2	150	668	476	324	7.17	96.3	97.6
1945	108	45.9	171	26.5	252	523	423	807	423	71.9	12.0	247
1946	62.2	45.3	174	817	104	472	138	139	714	52.2	262	98.4
1947	128	68.5	30.4	86.6	35.8	235	877	139	2,479	75.6	2.55	343
1948	3.63	7.26	33.9	8.95	298	273	75.7	37.7	12.1	42.2	6.75	3.16
1949	.85	2.30	2.23	17.9	280	219	60.4	26.5	85.1	82.1	42.5	175
1950	16.2	4.43	14.7	19.4	275	78.1	53.5	252	583	37.3	85.0	31.4

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1940	34	51	52	9.9	65	3,210	5,430	13,890	737	17,220	1,690	52,510
1941	50	128	265	2,680	5,320	3,510	1,830	496	9,290	504	2,980	27,060
1942	21,120	14,160	5,940	8,840	6,850	10,830	1,950	13,250	62,760	4,660	382	1,720
1943	3,720	4,030	11,760	2,970	11,160	4,990	6,200	39,880	50,760	2,440	459	1,550
1944	180	180	144	877	1,280	9,230	29,770	29,270	19,290	441	520	5,810
1945	6,660	2,730	10,510	630	15,990	32,130	25,150	49,620	25,180	4,420	758	8,030
1946	3,820	2,700	10,700	50,210	5,770	28,990	8,220	8,570	42,470	3,210	16,120	5,850
1947	7,840	4,080	1,870	3,350	1,990	14,360	52,180	8,520	147,500	4,650	157	110
1948	223	432	2,080	550	17,140	16,760	4,500	2,320	720	2,600	415	188
1949	52	137	137	1,100	15,560	13,440	3,600	1,630	5,070	5,050	2,620	10,400
1950	999	264	908	1,190	15,250	4,800	3,180	15,490	34,870	2,290	5,230	1,870

Yearly discharge, in cubic feet per second											
Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff		Mean	Runoff		
		Discharge	Date			Per square mile	Inches		Inches	Acre-feet	
1940	896	15,200	July 27, 1940	0	72.3	0.294	4.01	52,510	72.8	4.03	52,810
1941	926	2,350	June 9, 1941	0	37.4	.152	2.07	27,060	93.7	5.18	67,830
1942	956	19,400	June 20, 1942	1.5	211	.858	11.62	152,500	181	9.96	130,800
1943	976	14,900	May 15, 1943	.3	193	.785	10.66	139,900	167	9.21	121,900
1944	1006	10,900	May 2, 1944	0	155	.630	8.55	112,400	192	10.04	131,800
1945	1036	16,700	May 14, 1945	.5	247	1.00	13.64	178,900	243	13.44	176,100
1946	1056	19,700	Jan. 5, 1946	3.2	258	1.05	14.24	186,600	253	13.97	183,200
1947	1086	28,000	June 5, 1947	.6	343	1.39	18.95	248,600	328	18.11	237,500
1948	1116	8,580	Feb. 27, 1948	.2	66.0	.268	3.65	47,930	62.7	3.46	45,520
1949	1146	13,700	Sept. 12, 1949	.3	81.2	.330	4.46	58,800	83.7	4.61	60,640
1950	1176	21,000	June 19, 1950	.9	119	.484	6.56	86,150	-	-	-

500. Weldon River at Mill Grove, Mo.

Location.--Lat 40°18', long. 93°36', in SE $\frac{1}{4}$ sec. 28, T. 64 N., R. 24 W., at county highway bridge in Mill Grove, 8 $\frac{1}{4}$ miles upstream from West Muddy Creek.

Drainage area.--494 sq mi.

Gage.--Wire-weight gage. Datum of gage is 785.77 ft above mean sea level, datum of 1929. Prior to Dec. 4, 1934, chain gage at same site and datum.

Average discharge.--21 years (1929-50), 239 cfs.

Extremes.--1929-50: Maximum discharge, 27,600 cfs June 5, 1947 (gage height, 22.79 ft); minimum, 0.2 cfs Aug. 29, 1936, Dec. 11-13, 1937; minimum gage height observed, 0.70 ft Oct. 4, 1948.

Maximum stage known, about 23.9 ft in July 1909.

Monthly and yearly mean discharge, in cubic feet per second of Weldon River at Mill Grove, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	85.7	777	548	32.1	59.3	-
1930	246	209	35.8	16.1	303	127	86.6	212	61.3	9.37	6.46	3.67	108
1931	3.28	4.81	5.93	3.26	4.32	26.6	166	31.1	69.3	26.7	14.5	293	53.6
1932	655	1,700	600	790	235	209	479	125	342	47.3	1,780	36.5	585
1933	16.0	78.3	233	128	45.0	119	103	144	14.4	15.8	47.1	229	98.1
1934	75.3	10.1	11.6	20.1	6.13	25.2	120	30.8	68.6	1.40	4.86	114	40.6
1935	82.3	583	242	129	195	276	61.2	1,654	2,147	243	11.5	39.5	472
1936	5.54	115	24.6	8.2	358	489	31.1	66.9	8.14	1.93	1.11	80.3	96.5
1937	47.0	16.0	21.6	96.3	1,013	560	175	554	207	129	47.4	1.67	217
1938	1.19	1.65	1.42	5.00	5.51	5.23	19.8	72.4	107	21.8	225	41.7	42.7
1939	1.20	3.69	2.06	3.37	7.04	981	439	23.8	720	249	152	4.37	208
1940	4.11	4.76	2.78	1.29	9.7	74.4	126	340	24.9	458	641	13.6	143
1941	6.8	13.4	14.0	90.2	204	77.0	41.7	60.7	498	17.3	2.65	118	93.7
1942	464	638	284	379	299	395	90.7	397	1,586	132	75.4	48.5	398
1943	72.9	151	305	101	280	128	114	980	1,346	61.3	26.8	26.7	298
1944	7.40	14.1	6.34	22.1	48.4	310	1,207	677	419	17.6	147	106	248
1945	215	75.5	349	64.0	564	801	854	1,233	898	120	30.9	132	441
1946	122	60.6	205	1,438	160	839	220	336	742	72.6	273	129	386
1947	136	86.1	44.9	119	65.0	394	1,436	303	4,140	128	8.32	6.34	567
1948	19.1	30.6	164	28.6	437	521	117	69.2	27.5	47.2	5.92	7.78	122
1949	2.68	4.26	2.96	36.3	566	389	118	45.6	182	136	130	241	151
1950	28.3	12.2	28.8	49.7	577	170	126	461	1,082	64.8	217	157	244

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	5,270	46,200	33,700	1,970	3,530	-
1930	15,100	12,400	2,200	990	16,800	7,810	5,150	13,000	3,650	576	1,397	218	78,300
1931	202	286	365	200	240	1,640	9,880	1,910	4,120	1,640	892	17,400	38,800
1932	40,300	101,000	36,900	48,600	13,500	12,900	28,500	7,890	20,400	2,910	109,000	2,170	424,000
1933	984	4,660	14,300	7,870	2,550	7,320	6,130	8,850	857	972	2,900	13,600	71,000
1934	4,630	603	715	1,240	340	1,550	7,150	1,890	4,080	86	299	6,800	29,360
1935	5,060	34,680	14,850	7,940	10,830	17,000	3,640	101,700	27,700	14,930	706	2,350	341,400
1936	341	6,840	1,510	504	20,620	28,860	1,850	4,110	484	118	68	4,780	70,080
1937	2,890	952	1,330	5,920	56,260	34,410	10,410	21,790	12,330	7,960	2,910	100	157,300
1938	134	98	87	308	306	322	1,180	4,450	6,350	1,340	13,820	2,480	30,880
1939	74	220	127	207	391	54,150	26,110	1,460	42,830	15,310	9,330	260	150,500
1940	253	283	171	79	559	4,570	7,480	20,920	1,480	28,170	39,390	811	104,200
1941	419	795	863	5,550	11,350	4,730	2,480	3,730	29,610	1,060	163	7,040	87,790
1942	28,520	37,980	17,480	23,310	16,580	24,280	5,400	24,440	94,360	8,090	4,630	2,890	288,000
1943	4,480	8,980	18,740	6,220	15,560	7,880	6,780	60,250	80,080	3,770	1,650	1,590	216,000
1944	455	856	390	1,360	2,790	19,040	71,830	41,640	24,920	1,080	9,010	6,330	179,700
1945	13,200	4,490	21,450	3,940	31,320	49,280	49,650	75,790	52,840	7,390	1,900	7,840	319,100
1946	7,500	3,610	12,600	88,450	8,910	51,610	13,080	20,660	44,160	4,460	16,780	7,700	279,500
1947	8,360	5,130	2,760	7,330	3,610	24,200	85,430	18,800	26,400	7,840	512	377	410,500
1948	1,170	1,820	10,110	1,760	25,110	32,050	6,960	4,250	1,630	2,900	364	465	89,590
1949	1,649	253	1,62	2,230	31,450	23,320	7,000	2,800	10,330	8,350	8,010	14,340	109,500
1950	1,740	728	1,770	3,060	32,060	10,470	7,470	28,320	64,410	3,990	13,320	9,370	176,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year					
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff			Mean	Inches
		Discharge	Date						Inches	Acre-feet	Acre-feet		
1929	716	414,000	June 2, 1929	-	-	-	-	-	-	-	-	-	-
1930	716	2,910	Oct. 29, 1929	1.6	108	0.219	2.97	78,300	68.3	1.88	49,400	-	-
1931	716	3,320	Sept. 26, 1931	1.6	53.6	1.09	1.46	38,800	299	8.20	216,000	-	-
1932	731	12,400	Aug. 2, 1932	4.4	585	1.18	18.09	424,000	367	10.08	266,000	-	-
1933	746	5,400	Sept. 27, 1933	2.0	95.1	1.19	2.71	71,000	79	2.18	57,000	-	-
1934	761	2,280	Apr. 4, 1934	.3	40.6	.082	1.12	29,360	108	2.96	78,000	-	-
1935	786	13,200	June 3, 1935	.8	472	.955	12.96	341,400	408	11.22	295,500	-	-
1936	806	2,900	Feb. 26, 1936	.2	96.5	.195	2.66	70,080	91.7	5.68	66,570	-	-
1937	826	5,540	Feb. 20, 1937	.5	217	.439	5.97	157,300	211	5.79	152,400	-	-
1938	856	2,380	Aug. 16, 1938	.2	42.7	.086	1.15	30,880	42.8	1.18	30,880	-	-
1939	876	14,000	Mar. 12, 1939	.9	208	.421	5.71	150,500	208	5.72	150,800	-	-
1940	896	7,300	May 8, 1940	1	143	.289	3.95	104,200	145	4.00	105,500	-	-
1941	926	6,740	June 9, 1941	1.8	93.7	1.90	2.58	67,790	207	5.68	150,000	-	-
1942	956	18,000	June 21, 1942	7	398	.806	10.94	288,000	326	8.98	236,200	-	-
1943	976	17,400	May 16, 1943	3.1	298	.603	8.19	216,000	256	7.03	185,500	-	-
1944	1006	11,700	May 3, 1944	2.0	248	.502	6.81	179,700	299	8.23	217,100	-	-
1945	1036	16,200	May 15, 1945	3.9	441	.893	12.13	319,100	419	11.55	303,700	-	-
1946	1056	23,800	Jan. 6, 1946	4.9	386	.781	10.61	279,500	376	10.32	272,100	-	-
1947	1086	27,600	June 5, 1947	3.2	567	1.15	15.59	410,500	563	15.47	407,400	-	-
1948	1116	7,600	Feb. 28, 1948	.9	122	.247	3.35	88,590	105	2.88	76,090	-	-
1949	1146	8,560	Sept. 12, 1949	.9	151	.306	4.15	109,500	156	4.50	113,200	-	-
1950	1176	22,200	June 19, 1950	6	244	.494	6.72	176,700	-	-	-	-	-

* Not previously published.

a Maximum during period April to September, 1929.

501. Thompson River at Trenton, Mo.1/

Location.--Lat 40°04'45", long. 93°38'35", in SW 1/4 sec. 18, T. 61 N., R. 24 W., at bridge on State Highway 6, 1 mile west of Trenton and 1 1/2 miles downstream from Weldon River.

Drainage area.--1,670 sq mi, approximately.

Supplemental records available.--Gage heights collected in the vicinity 1910-14 and since 1925 are contained in reports of the U. S. Weather Bureau.

Gage.--Wire-weight gage. Datum of gage is 721.58 ft above mean sea level, datum of 1929. Prior to Aug. 3, 1928, chain gage at site 12 miles upstream at different datum. Aug. 3, 1928, to Sept. 15, 1930, chain gage at present site and datum. Sept. 16, 1930, to Sept. 4, 1934, chain gage, and Sept. 5, 1934, to May 31, 1945, wire-weight gage at site 1 1/2 miles downstream at datum 3.46 ft lower.

Average discharge.--24 years (1921-23, 1928-50), 875 cfs.

Extremes.--1921-23, 1928-50: Maximum discharge, 95,000 cfs June 6, 1947 (gage height, 25.7 ft, from floodmark), from rating curve extended above 73,000 cfs; minimum, 1.1 cfs Aug. 10, 1934.

Maximum stage known, 30.7 ft July 6, 1909, present site and datum, from information by local residents (discharge, 50,000 cfs, determined by Corps of Engineers, occurred before new channel was dredged).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	61.5	93.1	57.1	38.7	158	643	921	844	334	203	185	214	-
1923	245	2,930	258	159	115	1,480	809	341	431	5,320	632	1,200	867
1928	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	1,520	4,720	1,110	152	1,610	5,690	4,450	609	2,740	1,180	128	189	1,830
1930	750	719	160	89.3	983	491	403	1,110	1,110	134	58.4	38.8	499
1931	43.1	27.8	67.9	31.0	26.6	214	678	221	685	175	125	1,000	273
1932	1,940	5,620	2,100	5,180	1,100	884	1,500	846	1,500	332	3,770	193	1,900
1933	67.8	231	592	345	1.94	299	544	874	59.5	97.1	413	556	339
1934	183	44.2	51.0	68.9	35.4	62.9	207	36.8	166	6.00	192	298	117
1935	258	1,929	570	458	694	948	294	5,494	7,442	880	73.4	87.6	1,592
1936	35.6	350	103	44.2	835	1,241	158	293	71.7	16.1	9.32	307	286
1937	309	47.2	69.6	263	510	1,922	668	1,447	502	500	93.4	16.5	723
1938	14.5	16.2	35.8	25.4	23.7	17.6	72.2	152	472	105	806	270	168
1939	11.8	15.8	13.2	16.2	29.7	25.45	814	68.6	709	831	547	28.2	556
1940	18.3	22.9	20.3	6.1	50.7	443	342	682	118	501	3,236	131	470
1941	46.4	52.5	70.9	332	676	345	350	281	2,751	99.8	31.9	846	483
1942	2,782	2,310	981	1,562	1,474	1,647	458	1,980	5,943	433	241	242	1,502
1943	179	355	731	255	766	419	435	2,391	4,802	424	351	102	930
1944	47.6	43.0	31.6	64.3	161	998	4,881	5,176	1,567	161	615	389	1,008
1945	527	228	1,072	245	1,777	3,403	5,955	4,188	5,456	521	135	234	1,640
1946	382	115	323	5,682	441	2,584	859	1,946	1,949	436	600	251	1,140
1947	485	294	186	237	234	1,415	5,147	1,312	16,480	610	89.9	72.4	2,190
1948	93	131	408	88.2	964	2,366	473	495	199	146	63	63.1	457
1949	21.7	42.9	27.7	192	2,136	1,631	641	180	1,896	816	352	363	677
1950	112	51.5	69.2	181	1,536	788	280	1,586	2,420	257	619	295	675

* Not previously published; estimated on basis of records for station at Davis City, Iowa.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	3,780	5,540	3,510	2,580	8,780	39,500	54,800	51,900	19,900	12,500	11,400	12,700	-
1923	15,100	174,000	15,900	9,780	6,390	91,000	48,100	21,000	25,600	16,000	42,600	20,800	627,000
1928	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	93,500	281,000	68,200	9,350	89,400	227,000	265,000	37,400	63,000	72,600	7,750	11,200	1,330,000
1930	46,100	42,800	9,840	5,490	54,600	30,200	24,000	68,200	66,000	8,240	3,590	2,310	361,000
1931	2,650	1,650	4,180	1,910	1,480	13,200	40,300	13,600	40,800	10,800	7,890	59,500	198,000
1932	119,000	334,000	29,000	96,000	63,300	54,400	89,300	59,700	89,300	20,400	232,000	11,500	1,380,000
1933	4,170	13,700	36,400	21,200	10,800	18,000	32,400	41,400	5,540	5,560	25,400	33,100	245,000
1934	11,240	2,650	3,140	4,240	1,970	3,870	12,330	5,340	9,660	369	11,810	17,710	84,510
1935	15,870	114,900	35,050	28,050	39,530	58,310	17,490	337,600	442,800	54,100	4,510	5,210	1,153,000
1936	2,190	20,810	6,360	2,720	48,050	76,290	9,410	18,010	4,260	992	573	18,240	207,900
1937	19,000	2,810	4,280	16,180	166,700	18,200	39,770	88,950	29,880	30,720	5,740	980	523,200
1938	891	964	2,200	1,560	1,320	1,080	4,300	9,360	28,110	6,470	49,570	16,100	121,900
1939	728	958	812	994	1,650	1,560	48,450	4,220	101,700	51,080	33,600	1,680	402,400
1940	1,130	1,360	1,250	377	2,920	27,240	20,340	41,940	7,000	30,810	199,000	7,810	341,200
1941	2,850	3,120	4,360	20,440	37,520	21,240	20,830	17,270	63,700	6,140	1,960	50,330	349,800
1942	171,100	137,500	60,290	96,070	81,700	101,300	27,120	21,700	34,600	26,610	14,820	14,430	1,087,000
1943	11,010	21,100	44,920	15,070	42,560	25,740	25,910	147,000	285,800	26,100	21,600	6,080	673,500
1944	2,930	2,560	1,950	3,950	9,250	61,390	290,400	195,300	93,240	9,880	37,820	23,150	731,800
1945	32,390	13,580	65,890	15,050	98,700	209,200	235,300	257,500	205,800	32,030	8,270	13,950	1,187,000
1946	23,470	6,830	19,880	225,400	24,480	58,900	51,090	119,600	118,000	25,810	56,900	14,920	825,300
1947	29,950	17,510	10,220	14,600	12,970	87,020	306,300	80,670	98,200	37,520	5,530	4,310	1,586,000
1948	5,720	7,800	25,060	5,420	55,470	45,500	29,130	50,460	11,820	8,950	3,870	3,750	332,000
1949	1,330	2,550	1,700	11,790	118,600	300,300	39,150	9,830	112,800	50,150	21,610	21,620	490,400
1950	6,910	3,060	4,250	11,150	85,300	48,450	16,680	97,520	44,000	15,780	38,060	17,550	488,700

* Not previously published; estimated on basis of records for station at Davis City, Iowa.

1/ Published as "near Hickory" prior to 1929.

Yearly discharge, in cubic feet per second of Thompson River at Trenton, Mo.

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acre-feet	Mean	Inches Acre-feet
1921	526	-	-	-	-	-	-	-	-	-
1922	546	16,000	July 13, 1922	22	867	0.510	6.93	627,000	1,130	9.06 820,000
1923	566	12,500	Nov. 16, 1922	60	#672	#.395	#5.37	#486,000	-	- 271,000
1928	666	#27,000	July 23, 1928	-	-	-	-	-	-	-
1929	666	26,700	Nov. 18, 1928	53	1,830	1.10	14.89	1,330,000	1,360	11.02 981,000
1930	701	5,980	Oct. 30, 1929	24	499	.299	4.06	361,000	374	3.05 271,000
1931	716	5,100	Sept. 25, 1931	15	273	.162	2.22	198,000	1,070	8.63 771,000
1932	731	26,700	Dec. 31, 1931	57	1,900	1.13	15.39	1,380,000	1,170	9.49 850,000
1933	746	13,500	Sept. 26, 1933	29	339	.202	2.74	245,000	288	2.32 208,000
1934	761	5,130	June 23, 1934	1.1	117	.0696	.94	84,510	322	2.60 233,200
1935	786	24,000	June 1, 1935	15	1,592	.948	12.86	1,153,000	1,404	11.33 1,016,000
1936	806	5,650	Feb. 25, 1936	3.6	286	.170	2.31	207,900	282	2.28 204,800
1937	826	13,900	Feb. 20, 1937	6	723	.430	5.81	523,200	692	5.56 501,200
1938	856	6,340	Sept. 1, 1938	6	168	.1	1.34	121,900	166	1.33 120,400
1939	876	22,700	Mar. 13, 1939	4.6	556	.331	4.50	402,400	557	4.51 403,600
1940	896	15,700	Aug. 18, 1940	4	470	.280	3.80	341,200	479	3.87 347,800
1941	926	32,300	June 10, 1941	23	483	.288	3.90	349,800	978	7.91 708,300
1942	956	35,400	June 27, 1942	91	1,502	.894	12.13	1,087,000	1,099	8.87 795,600
1943	976	26,800	May 16, 1943	56	930	.554	7.52	673,500	834	6.74 603,900
1944	1006	34,800	Apr. 22, 1944	14	1,008	.600	8.16	731,800	1,152	9.33 856,200
1945	1036	28,500	June 16, 1945	74	1,640	.978	13.27	1,187,000	1,555	12.58 1,126,000
1946	1056	45,800	Jan. 6, 1946	50	1,140	.683	9.26	825,300	1,150	9.35 832,700
1947	1086	95,000	June 6, 1947	40	2,190	1.31	17.81	1,586,000	2,164	17.59 1,567,000
1948	1116	20,400	Mar. 19, 1948	20	457	.274	3.71	332,000	412	3.34 299,000
1949	1146	19,200	Feb. 24, 1949	10	677	.405	5.50	490,400	689	5.60 499,100
1950	1176	22,300	June 19, 1950	34	675	.404	5.50	488,700	-	-

* Not previously published.

502. Medicine Creek near Galt, Mo.

Location.--Lat 40°07'58", long. 93°21'50", in NW 1/4 sec. 34, T. 62 N., R. 22 W., at bridge on State Highway 6, 1 1/2 miles upstream from West Medicine Creek and 1 1/2 miles east of Galt.

Drainage area.--225 sq mi.

Gage.--Wire-weight gage. Datum of gage is 769.21 ft above mean sea level, datum of 1929. Prior to Dec. 3, 1934, chain gage at site 125 ft downstream at following datums: prior to Oct. 1, 1924, at datum 4.97 ft higher; Oct. 1, 1924, to Sept. 30, 1926, at datum 2.97 ft higher than present datum; Oct. 1, 1926, to Dec. 2, 1934, at datum 0.03 ft lower than present datum.

Average discharge.--29 years (1921-50), 141 cfs.

Extremes.--1921-50: Maximum discharge, 24,200 cfs June 6, 1947 (gage height, 18.9 ft, from floodmark); no flow at times in 1934, 1936, 1937, 1940.

Flood of July 1909 reached a discharge of 8,000 cfs, determined by Corps of Engineers.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	23.3	21.1	19.7	9.42	82.4	201	309	96.0	18.5	875	63.2	60.7	155
1923	15.7	406	30.0	20.5	15.8	297	164	72.5	61.8	23.2	82.9	17.3	101
1924	31.5	13.5	47.2	36.2	150	373	80.8	11.5	604	50.7	120	11.5	127
1925	1.81	3.70	10.3	5.23	197	44.5	344	#33	#420	#18	#9	#74	#94.6
1926	342	140	145	218	142	74	137	15.1	295	23.2	13.4	1010	#211
1927	424	86.8	75.5	16.8	107	136	671	55.5	325	15.5	10.3	3.57	160
1928	133	13.8	11.0	9.0	161	78.1	60.6	14.9	459	93.3	147	460	135
1929	#190	#1000	#90	47.5	291	292	807	77.9	477	212	17.1	42.4	#292
1930	244	207	35.2	13.5	238	141	70.4	126	70.7	9.15	5.89	2.17	95.9
1931	3.6	3.37	6.1	2.49	3.54	33.7	330	101	97.6	10.2	5.30	108	58.3
1932	415	1,020	389	359	74.1	101	190	143	192	43.3	1,010	35.7	331
1933	20.5	36.3	96.0	66.5	34.5	79.9	97.8	244	11.8	4.41	5.85	80.8	65.1
1934	9.24	2.75	2.98	5.08	3.19	11.3	21.2	10.4	8.98	6.60	7.74	34.9	9.25
1935	35.5	268	169	124	165	154	44.8	918	948	269	6.19	7.45	259
1936	4.56	17.7	10.8	3.88	150	119	13.9	21.2	4.60	.68	.22	42.1	31.9
1937	10.3	4.49	7.65	86.0	623	149	74.4	169	91.1	32.2	31.6	1.46	103
1938	1.37	1.32	7.89	3.62	3.55	2.43	10.8	7.07	53.7	3.22	31.8	9.8	11.4
1939	.95	1.78	1.01	2.33	.52	450	281	14.1	206	76.3	33.8	2.53	89.6
1940	2.17	2.46	1.42	.03	3.78	42.5	36.3	133	25.7	44.4	312	5.98	51.4

* Revised.

† Corrected.

* Not previously published; record for May to September 1925 computed in conventional manner, remaining periods estimated on basis of records for Locust Creek near Milan.

Monthly and yearly mean discharge, in cubic feet per second of Medicine Creek near Galt, Mo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	3.64	5.98	10.1	47.1	88.4	39.7	27.0	30.4	477	43.6	3.01	21.4	65.5
1942	169	174	116	94.3	214	132	63.4	186	616	45.4	76.7	15.3	158
1943	9.8	109	254	63.3	98.1	78.2	99.3	701	34.6	8.86	4.67	103	187
1944	3.39	4.3	3.05	8.55	20.1	145	697	224	172	6.53	32.7	103	117
1945	249	58.8	206	44.7	239	391	434	671	883	67.5	7.82	48.9	274
1946	39.5	15.4	63.0	372	37.8	475	117	175	162	39.1	164	54.1	144
1947	103	51.7	51.3	67.2	36.4	148	963	250	2,555	215	9.48	17.1	369
1948	10.2	11.5	70.8	19.4	350	509	57.4	63.8	22.4	7.3	4.26	3.51	95.5
1949	2.19	2.84	2.48	24.5	303	338	95.8	40.5	424	130	117	128	132
1950	17.1	7.78	32.3	1128	281	120	130	241	994	52.6	153	31.2	180

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	9,040	3,610	-
1922	1,430	1,260	1,210	579	4,580	12,400	18,400	5,900	1,100	53,800	3,890	7,500	112,000
1923	965	24,200	1,840	1,260	878	18,300	9,760	4,460	3,680	1,430	5,100	1,030	72,900
1924	1,940	805	2,900	2,230	8,630	22,900	4,800	707	35,900	3,120	7,580	684	92,000
1925	111	220	633	322	10,900	2,740	20,500	†2,030	†25,000	†11,110	†553	†4,400	†68,500
1926	21,000	8,330	8,920	13,400	7,890	4,550	8,150	928	17,600	1,430	824	59,900	*153,000
1927	26,100	5,160	4,640	1,030	5,940	8,360	39,900	3,410	19,300	953	635	212	118,000
1928	8,190	821	676	553	9,260	4,680	3,610	916	27,300	5,740	9,040	27,400	98,200
1929	†11,700	59,500	†5,530	2,920	16,200	18,000	48,000	4,790	28,400	13,000	1,050	2,520	*212,000
1930	15,000	12,500	2,160	850	13,200	8,670	4,190	7,750	4,210	563	362	129	69,400
1931	221	201	375	153	197	2,070	19,600	6,210	5,810	627	326	6,430	42,200
1932	25,500	60,700	23,900	4,260	8,210	11,300	8,790	11,400	2,660	62,100	2,120	240,000	240,000
1933	1,260	2,180	5,900	4,090	1,920	4,910	5,820	15,000	702	271	360	4,800	47,200
1934	568	163	183	313	177	698	1,260	641	534	37	46	2,090	6,700
1935	2,180	15,940	10,360	7,620	9,140	9,440	2,660	56,450	56,440	16,540	391	444	187,600
1936	280	1,050	666	238	8,640	7,290	829	1,300	274	42	13	2,500	23,120
1937	632	267	471	5,290	34,580	9,140	4,430	10,370	5,420	1,980	1,940	87	74,610
1938	84	79	485	223	197	150	645	435	3,190	198	1,950	583	8,220
1939	58	106	62	143	29	27,680	16,740	869	12,280	4,690	2,080	151	64,890
1940	133	146	87	1.6	217	2,610	2,160	8,170	1,250	2,730	19,200	356	37,340
1941	224	356	618	2,900	4,910	2,440	1,610	1,870	28,380	2,680	185	1,280	47,450
1942	10,420	10,360	7,120	5,800	11,870	8,150	3,770	11,460	36,670	2,790	4,710	909	114,000
1943	803	6,490	15,630	3,890	5,450	4,810	5,910	33,480	41,720	2,130	545	273	120,900
1944	208	256	187	525	1,150	8,770	41,500	13,760	10,230	401	2,010	6,140	85,140
1945	15,310	3,500	12,680	2,750	13,270	24,010	25,850	41,270	52,530	4,150	481	2,910	198,700
1946	2,430	914	3,870	22,860	2,100	29,190	6,950	10,740	9,660	2,410	10,100	3,220	104,400
1947	6,310	3,070	3,160	4,130	2,020	9,110	57,330	15,350	52,000	13,200	583	1,020	267,300
1948	629	684	4,360	1,190	20,120	31,300	3,420	3,930	1,330	449	262	209	67,890
1949	134	169	153	1,510	16,820	20,800	5,700	2,490	25,200	7,980	7,220	7,590	95,770
1950	1,050	463	1,990	7,900	15,590	7,370	7,760	14,790	59,170	3,240	9,420	1,980	130,600

* Revised.

† Not previously published.

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet, per second											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1921	526	-	-	-	-	-	-	-	-	-	-
1922	546	2,960	July 13, 1922	1	155	0.684	9.31	112,000	186	11.23	135,000
1923	566	2,230	Nov. 15, 1922	1.8	101	.449	6.05	72,900	77.1	4.28	51,500
1924	586	3,170	June 28, 1924	2	127	.564	7.67	92,000	120	7.28	87,300
1925	608	3,000	Apr. 25, 1925	1	†94.6	*.420	5.71	†68,500	†146	†8.81	†106,000
1926	626,1340	4,640	Sept. 17, 1926	2	*211	*.938	†12.74	*153,000	*208	*12.55	*151,000
1927	646	3,720	Apr. 19, 1927	2	160	.711	9.64	116,000	124	7.46	89,400
1928	666	6,260	Sept. 12, 1928	1	135	.600	8.19	98,200	†228	†13.77	†165,000
1929	688	-	-	3	*292	*1.30	*17.82	*212,000	*227	*13.68	*164,000
1930	701	1,890	Oct. 31, 1929	1.2	95.9	.426	5.78	69,400	56.2	3.40	40,700
1931	716	3,910	Apr. 20, 1931	1.6	58.3	.259	3.53	42,200	210	12.62	151,000
1932	731	7,760	Aug. 2, 1932	3.2	331	1.47	19.97	240,000	191	11.58	139,000
1933	746	1,660	May 13, 1933	1.7	65.1	.289	3.92	47,200	53.5	3.22	38,800
1934	761	456	Sept. 13, 1934	0	9.25	.0411	.54	6,700	47.3	2.85	34,260
1935	786	6,500	June 18, 1935	.8	259	1.15	15.64	187,600	223	13.43	161,100
1936	806	1,210	Feb. 25, 1936	0	31.9	.142	1.94	23,120	31.0	1.88	22,500
1937	826	6,340	Feb. 21, 1937	0.6	103	.458	6.22	74,610	102	6.15	73,880
1938	856	1,090	June 2, 1938	0	11.4	.051	.69	8,220	10.8	.66	7,800
1939	876	12,300	Mar. 12, 1939	.1	89.6	.398	5.40	64,890	89.8	5.41	65,030
1940	898	2,820	Aug. 18, 1940	0	51.4	.228	3.12	37,340	52.6	3.19	36,170
1941	926	10,000	June 9, 1941	1.6	65.5	.291	3.94	47,450	102	6.16	74,160
1942	956	12,400	June 26, 1942	4.3	158	.702	9.49	114,000	150	9.06	108,900
1943	976	10,700	May 16, 1943	1.8	167	.742	10.06	120,900	137	8.23	99,860
1944	1006	7,180	Apr. 21, 1944	5	117	.520	7.10	85,140	160	9.67	116,000
1945	1036	7,010	June 16, 1945	2.8	274	1.22	16.56	198,700	241	14.53	174,400
1946	1056	4,560	Jan. 6, 1946	6	144	.640	8.69	104,400	152	9.14	109,800
1947	1086	24,200	June 6, 1947	3.9	369	1.64	22.29	267,300	360	21.71	260,400
1948	1116	11,000	May 19, 1948	1.3	95.5	.416	5.66	67,890	86.3	5.22	62,670
1949	1146	12,700	June 14, 1949	1	132	.587	7.97	95,770	136	8.24	98,810
1950	1176	13,000	June 15, 1950	2.5	180	.800	10.89	130,600	-	-	-

* Revised.

† Not previously published; see footnote to preceding table.

503. Medicine Creek near Sturges, Mo.

Location.--Lat 39°52'45", long. 93°26'45", on line between sec. 35, T. 59 N., R. 23 W., and sec. 2, T. 58 N., R. 23 W., at county highway bridge 3 miles east of Sturges.

Drainage area.--368 sq mi.

Gage.--Chain gage. Datum of gage is 691.60 ft above mean sea level.

Extremes.--1929-33: Maximum discharge, 10,400 cfs Apr. 21, 1929 (gage height, 15.74 ft); minimum, 2.5 cfs Jan. 9-20, 1931; minimum gage height, 3.08 ft Sept. 14, 1931.

Flood of July 1909 reached a discharge of 12,000 cfs, determined by Corps of Engineers.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	507	-	-	-	-	-	-	-	164	613	559	32.1	130
1930	-	345	55.8	33.9	366	213	147	289	84.0	16.4	7.84	4.63	171
1931	6.11	5.27	18.8	4.34	4.79	78.0	484	159	382	20.2	13.7	233	117
1932	620	1,750	621	695	147	203	349	251	371	168	1,140	86.2	534
1933	48.4	78.8	236	125	61.0	122	186	470	32.2	16.1	18.7	143	129

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	-	10,100	36,500	34,400	1,970	7,740
1930	31,200	20,500	3,430	2,080	20,300	13,100	8,750	17,800	5,000	1,010	482	276	124,000
1931	376	314	1,160	267	268	4,800	28,800	9,780	22,700	1,240	842	13,900	84,400
1932	38,100	104,000	38,200	42,700	8,460	12,500	20,800	15,400	22,100	10,300	70,100	5,130	388,000
1933	2,980	4,690	14,500	7,690	3,390	7,500	11,100	28,900	1,920	990	1,150	8,510	93,300

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-foot		Inches	Acre-foot
1929	716	10,400	Apr. 21, 1929	-	-	-	-	-	-	-	-
1930	716	3,800	Oct. 30, 1929	4	171	0.465	6.32	124,000	97.6	3.60	70,600
1931	716	5,700	June 6, 1931	2.5	117	.318	4.30	84,400	363	13.40	263,000
1932	731	9,190	Nov. 24, 1931	7	534	1.45	19.79	388,000	316	11.72	230,000
1933	746	3,660	Dec. 24, 1932	3.2	129	.351	4.75	93,300	-	-	-

* Not previously published.

504. Locust Creek near Milan, Mo.

Location.--Lat 40°11'00", long. 93°10'10", in SW $\frac{1}{4}$ sec. 8, T. 62 N., R. 20 W., at bridge on county highway, $\frac{3}{2}$ miles southwest of Milan.

Drainage area.--225 sq mi.

Gage.--Chain gage. Altitude of gage is 780 ft (by barometer).

Average discharge.--12 years (1921-33), 152 cfs.

Extremes.--1921-33: Maximum discharge, 3,880 cfs Nov. 18, 1928 (gage height, 20.07 ft); minimum, 0.1 cfs Aug. 8, 1930.

Discharge for flood of July 1909, 8,000 cfs, determined by Corps of Engineers.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	119	148	-
1922	18.7	15.6	24.4	9.0	67.5	192	324	71.8	10.6	666	57.7	20.7	123
1923	4.28	365	10.7	11.8	8.16	319	99.3	35.0	36.7	48.3	85.3	16.1	86.4
1924	76.6	21.8	90.3	65.1	158	294	53.4	11.0	522	74.3	78.3	10.8	121
1925	2.06	4.03	31.0	5.58	159	113	381	21.5	507	12.4	4.35	46.8	105
1926	265	124	147	196	200	86.8	200	16.8	142	5.03	4.58	975	195
1927	506	87.1	78.2	13.0	147	177	854	135	321	4.65	2.65	2.57	191
1928	165	11.2	26.8	42.9	196	54.6	165	9.26	301	79.1	237	378	158
1929	246	110	151	43.2	210	686	640	75.6	422	248	25.0	107	319
1930	414	204	29.9	14.7	242	137	65.4	83.7	50.1	3.63	2.15	1.72	103
1931	1.34	9.23	22.1	2.46	2.67	51.1	337	144	226	11.5	3.13	127	77.6
1932	313	967	295	441	62.8	94.2	188	92.1	124	68.2	936	33.6	302
1933	34.0	34.9	190	80.9	29.6	63.0	90.2	146	52.1	3.12	13.3	62.7	67.1

† Corrected.

Monthly and yearly runoff, in acre-feet of Locust Creek near Milan, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	7,320	8,810	-
1922	1,150	928	1,500	553	3,750	11,800	19,300	4,410	631	41,000	3,540	1,230	89,800
1923	263	21,700	858	726	453	19,600	5,910	2,150	2,180	2,970	5,240	958	82,800
1924	4,710	1,500	5,550	4,000	9,090	18,100	3,180	876	31,100	4,570	4,810	643	87,700
1925	127	240	1,910	343	8,830	6,950	22,700	1,320	30,200	762	267	2,780	76,400
1926	16,500	7,580	9,040	12,100	11,100	5,340	11,900	1,030	8,450	309	282	58,000	141,000
1927	31,100	3,990	4,810	799	8,160	10,900	50,800	8,300	19,100	286	163	153	139,000
1928	10,100	666	1,650	2,640	11,300	3,360	9,820	569	17,900	4,860	14,600	22,500	100,000
1929	15,100	60,100	8,060	2,680	11,700	42,200	38,100	4,650	25,100	15,200	1,540	6,370	231,000
1930	25,500	12,100	1,840	904	13,400	8,420	3,890	5,150	2,980	223	†132	102	74,600
1931	82	549	1,360	151	148	3,140	20,100	8,950	13,400	707	192	7,560	56,200
1932	19,200	57,500	18,100	27,100	3,610	5,790	11,200	5,660	7,380	4,190	57,600	2,000	219,000
1933	2,090	2,080	11,700	4,970	1,640	3,870	5,370	8,980	3,100	192	818	3,730	48,500

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1921	526	-	-	-	-	-	-	-	-	-	-
1922	546	2,890	July 18, 1922	1	123	0.547	7.48	89,800	150	9.07	109,000
1923	566	2,240	Nov. 14, 1922	2	86.4	.384	5.25	62,800	71.5	4.32	51,700
1924	586	2,490	June 27, 1924	1	121	.538	7.30	87,700	108	6.53	78,400
1925	606	3,200	Apr. 25, 1925	2	105	.467	6.36	76,400	148	8.89	107,000
1926	626	3,260	Sept. 16, 17, 1926	2	195	.867	11.76	141,000	205	12.36	148,000
1927	646	2,770	Oct. 5, 1926	1	191	.849	11.55	139,000	153	9.28	111,000
1928	666	2,980	June 19, 1928	1	138	.613	8.35	100,000	235	14.24	171,000
1929	686	5,880	Nov. 19, 1928	4	319	1.42	19.24	231,000	258	15.58	187,000
1930	701	2,440	(a)	.1	103	.458	76.21	74,600	51.4	3.10	37,200
1931	716	2,650	June 6, 1931	.2	77.6	.345	4.69	56,200	206	12.43	149,000
1932	731	3,230	Aug. 18, 1932	6	302	1.34	18.28	219,000	193	11.68	140,000
1933	746	2,260	Dec. 26, 1932	.4	87.1	.298	4.05	48,500	-	-	-

† Corrected.

a Oct. 31, Nov. 1, 1929.

505. Locust Creek near Linneus, Mo.

Location (revised).--Lat 39°53'45", long. 93°14'10", in NW¼NE¼ sec. 34, T. 59 N., R. 21 W., at county highway bridge, 3 miles northwest of Linneus and 5 miles downstream from West Locust Creek.

Drainage area.--550 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 692.61 ft above mean sea level, datum of 1929. Prior to Feb. 18, 1935, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 348 cfs.

Extremes.--1928-50: Maximum discharge, 38,000 cfs June 6, 1947 (gage height, 26.93 ft, from floodmarks), from rating curve extended above 15,000 cfs on basis of slope-area determination of peak flow; no flow July 17 to Aug. 11, 1934.

Discharge for flood of July 1909, 18,000 cfs, determined by Corps of Engineers.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	600	2,400	330	120	520	1,600	1,900	407	1,230	804	58.1	302	852
1930	1,170	483	81.7	48.3	496	288	251	479	366	34.9	12.4	13.5	310
1931	7.45	69.2	163	10.5	18.4	212	1,160	469	857	32.2	15.2	312	276
1932	702	2,270	757	992	247	299	378	195	368	168	1,600	130	698
1933	140	102	375	333	128	136	220	454	57.7	23.5	54.4	65.2	180
1934	7.67	4.92	9.6	13.5	6.1	32.1	91.6	33.9	47.2	40	1.91	51.3	21.4
1935	132	546	472	367	476	417	340	2,647	1,998	1,033	35.2	29.8	709
1936	8.0	112	74.8	48.8	394	213	44.2	46.4	11.8	.95	.67	308	104
1937	77.8	14.8	23.0	350	990	482	91.0	483	72.9	39.3	8.37	2.34	215
1938	2.02	2.58	2.70	6.80	17.2	12.3	95.2	23.2	57.7	1.23	51.7	11.4	23.5
1939	5.18	31.7	3.58	8.05	4.97	842	804	27.5	113	159	160	3.37	263
1940	4.50	5.12	5.59	1.3	52.4	250	238	195	105	16.9	278	5.28	96.9
1941	3.69	5.30	10.9	153	293	123	202	94.6	1,038	129	5.13	9.41	170
1942	580	513	353	252	790	497	324	738	962	64.1	166	27.6	456
1943	46.5	175	803	151	275	169	186	1,060	1,690	107	38.9	7.4	392
1944	5.02	5.7	4.66	22.9	61.2	429	2,103	514	515	12.7	59.2	95.4	316
1945	138	139	353	79.0	408	874	1,132	2,156	135	19.5	253	556	
1946	106	21.2	53.6	1,027	88.3	1,137	369	403	217	39.1	164	23.2	307
1947	110	69.7	173	125	79.8	1,425	1,487	802	5,820	487	14.1	44.6	796
1948	82.4	110	357	74.0	735	1,337	134	211	120	43.8	8.9	10.3	268
1949	5.96	6.72	5.31	121	706	665	287	141	1,423	360	128	202	333
1950	72.4	26.2	65.8	358	344	171	201	685	1,792	96.3	124	84.6	333

* Not previously published; estimated on basis of records for station near Milan.

Monthly and yearly runoff, in acre-feet of Locust Creek near Linneus, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	36,900	143,000	20,300	7,380	28,900	98,400	113,000	25,000	73,200	49,400	3,570	18,000	\$617,000
1930	71,900	28,700	5,020	2,970	27,500	17,700	14,900	29,500	21,800	2,150	762	803	224,000
1931	458	4,120	10,000	646	1,020	13,000	69,000	28,800	51,000	1,980	935	18,600	200,000
1932	43,200	135,000	46,500	61,000	14,200	18,400	22,500	11,300	21,900	11,600	111,000	7,740	504,000
1933	8,610	6,070	23,100	20,500	7,110	12,200	13,100	27,900	3,430	1,440	3,340	3,760	131,000
1934	471	293	591	827	338	1,970	5,450	2,080	281	24	117	3,050	15,490
1935	8,120	32,490	29,040	22,540	26,430	25,640	20,220	162,700	118,900	63,520	2,170	1,780	513,600
1936	492	6,640	4,600	3,000	22,650	13,120	2,630	2,980	701	59	41	18,310	75,220
1937	4,780	879	1,410	21,520	54,990	29,680	5,410	29,710	4,340	2,410	515	139	150,000
1938	124	152	166	418	953	756	5,870	4,350	3,430	76	3,180	678	17,030
1939	319	1,890	206	495	276	51,760	47,820	1,690	68,240	9,800	9,840	200	190,500
1940	277	305	344	79	3,010	15,350	14,180	11,970	6,240	1,160	17,110	314	70,320
1941	227	315	670	9,420	16,250	7,560	12,030	5,820	61,780	7,950	315	560	122,900
1942	35,650	30,530	21,730	15,470	43,860	30,550	19,280	45,400	57,230	3,940	10,190	1,840	315,500
1943	2,860	10,430	49,360	9,310	15,250	10,370	11,090	85,180	100,600	6,550	2,390	442	283,800
1944	309	339	286	1,410	3,520	26,350	25,100	51,630	30,620	780	5,840	5,550	229,500
1945	8,490	8,270	21,700	4,860	22,680	53,730	60,220	69,610	128,300	8,280	1,200	15,050	402,400
1946	6,510	1,260	3,300	63,150	4,900	89,940	21,980	24,810	12,890	2,400	10,050	1,380	222,600
1947	6,780	4,150	10,640	7,710	4,430	28,430	84,820	49,310	56,300	29,970	867	2,650	576,100
1948	5,080	6,550	21,920	4,550	42,250	82,200	8,000	13,000	7,140	2,690	547	614	194,500
1949	367	400	326	7,440	39,210	40,890	17,050	8,680	84,660	22,160	7,870	11,990	241,000
1950	4,450	1,560	4,050	22,010	19,120	10,510	11,940	42,140	106,600	5,920	7,610	5,040	241,000

* Not previously published; estimated on basis of records for station near Milan.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1929	686	-	-	-	852	1.55	21.01	\$617,000	722	17.81	\$523,000
1930	701	7,920	June 30, 1930	4	310	.564	7.83	224,000	183	4.52	153,000
1931	716	8,900	Apr. 20, 1931	3.6	276	.502	6.79	200,000	566	13.97	410,000
1932	731	8,900	Nov. 23, 1931	12	696	1.27	17.21	504,000	438	10.82	317,000
1933	746	4,390	Dec. 24, 1932	3.8	180	.327	4.46	131,000	130	3.22	94,100
1934	761	900	Apr. 5, 1934	0	21.4	.0389	.53	15,490	116	2.86	83,790
1935	786	11,800	June 2, 1935	2.1	709	1.29	17.50	513,600	629	15.53	455,600
1936	806	3,100	(a)	.2	104	.189	2.56	75,220	97.2	2.39	70,560
1937	826	5,110	Jan. 30, 1937	1.9	215	.391	5.30	155,800	206	5.07	149,100
1938	856	639	(b)	.6	23.5	.045	.58	17,030	26.2	6.64	19,010
1939	896	15,400	June 21, 1939	1.1	263	.478	6.48	190,500	261	6.44	169,000
1940	896	3,110	Aug. 18, 1940	1	96.9	.176	2.38	70,320	97.3	2.39	70,600
1941	926	11,800	June 11, 1941	2.7	170	.309	4.20	122,900	290	7.15	209,600
1942	956	19,000	June 26, 1942	4.9	436	.793	10.75	315,500	401	9.89	290,200
1943	976	10,800	June 10, 1943	6	392	.713	9.65	283,800	307	7.55	222,100
1944	1006	20,100	Apr. 23, 1944	1	316	.575	7.82	229,500	368	9.10	267,100
1945	1036	16,500	June 16, 1945	6	556	1.01	13.71	402,400	518	12.77	375,000
1946	1056	8,920	Jan. 6, 1946	4.7	307	.558	7.60	222,600	322	7.96	233,100
1947	1086	39,000	June 6, 1947	4.2	796	1.45	19.63	576,100	812	20.04	588,000
1948	1116	11,900	Mar. 20, 1948	3.2	268	.487	6.62	194,500	223	5.51	162,100
1949	1146	9,570	June 15, 1949	2.0	333	.605	8.22	241,000	345	8.53	250,000
1950	1176	13,200	June 16, 1950	10	333	.605	8.22	241,000	-	-	-

* Not previously published.

a Feb. 26, Sept. 28, 1936.

b Apr. 10, June 7, 1938.

506. Grand River near Sumner, Mo.

Location.--Lat 39°38'25", long. 93°16'25" in NE¼ sec. 29, T. 56 N., R. 21 W., at Chicago, Burlington & Quincy Railroad bridge, 2 miles southwest of Sumner and 2½ miles downstream from Locust Creek.

Drainage area.--6,880 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 630.87 ft above mean sea level, datum of 1929. Prior to July 11, 1926, chain gage at same site and datum. July 11, 1926, to Feb. 19, 1935, chain gage, and Feb. 20, 1935, to July 9, 1939, wire-weight gage at site 80 ft downstream at same datum.

Since Aug. 5, 1942, auxiliary staff gage 3¼ miles downstream; Mar. 15, 1939, to Aug. 4, 1942, auxiliary gages at various sites.

Average discharge.--27 years (1923-50), 3,783 cfs.

Extremes.--1923-50: Maximum discharge, 180,000 cfs June 7, 8, 1947 (gage height, 39.5 ft, from floodmark); minimum observed, 10 cfs Aug. 12, 1934; minimum gage height, 2.19 ft Aug. 22, 23, 31, Sept. 1, 1936.

Flood of July 9, 1909, reached a stage of 36.7 ft, from floodmark (discharge, 150,000 cfs, determined by Corps of Engineers).

Monthly and yearly mean discharge, in cubic feet per second of Grand River near Sumner, Mo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	#2,100	#570	#620	#580	#2,400	\$5,500	\$1,500	419	14,208	830	1,720	1,100	\$3,290
1925	420	296	591	306	5,670	1,820	6,590	1,460	7,430	867	1,450	4,570	2,420
1926	6,530	5,180	2,610	5,840	6,350	2,370	6,220	771	8,670	896	687	28,100	5,780
1927	15,700	1,570	1,840	768	5,420	5,140	24,100	3,370	7,110	806	816	327	5,230
1928	7,580	575	381	611	4,490	1,200	2,080	524	10,500	590	3,130	11,900	4,100
1929	5,420	27,900	4,810	2,100	4,080	21,700	21,200	4,520	19,200	720	483	689	9,940
1930	2,930	5,150	634	370	4,990	2,000	1,610	5,350	2,780	939	272	273	2,090
1931	221	237	588	132	174	1,420	5,990	1,500	4,230	452	335	5,100	1,690
1932	5,900	29,000	7,210	14,700	3,070	3,200	3,460	1,480	6,000	360	8,470	842	7,060
1933	493	891	2,470	1,600	862	1,220	1,930	4,010	556	589	2,140	1,810	1,540
1934	479	141	172	157	128	262	889	352	308	52.8	214	1,269	367
1935	1,044	7,328	5,446	1,892	5,096	2,930	1,663	23,750	28,160	4,204	349	629	6,538
1936	174	1,131	483	359	6,440	4,824	671	1,785	320	71.9	41.0	1,452	1,459
1937	1,908	190	169	1,559	14,360	6,797	1,649	4,798	1,649	2,826	493	95.3	2,970
1938	68.1	71.1	84.6	102	131	214	804	1,133	1,621	126	945	430	478
1939	58.0	104	54.8	56.4	57.0	5,921	4,156	316	8,168	2,087	2,064	119	1,932
1940	79.7	95.2	66.8	32.1	142	2,253	902	2,204	1,071	990	5,041	308	1,109
1941	111	139	162	1,426	2,527	988	1,637	997	8,948	619	112	1,277	1,555
1942	6,309	7,414	4,868	5,442	8,049	9,843	5,080	6,150	19,960	586	1,282	875	6,104
1943	605	2,118	5,849	1,806	5,158	1,602	1,541	8,981	24,200	857	2,544	485	4,529
1944	212	195	164	594	667	5,033	22,820	10,290	6,273	575	4,111	1,035	4,298
1945	1,272	1,407	5,457	1,198	4,497	10,900	14,470	18,110	19,920	905	419	981	6,786
1946	1,641	363	861	14,210	1,504	10,330	3,143	6,580	3,187	2,187	987	554	3,836
1947	1,042	631	1,178	759	530	5,955	18,900	6,815	67,270	181	345	395	9,013
1948	255	487	2,240	497	4,598	11,540	1,923	2,523	3,332	821	400	186	2,398
1949	103	145	123	1,261	9,902	6,998	3,155	988	8,205	586	1,482	1,688	3,034
1950	995	349	583	2,555	5,208	2,359	1,551	4,634	7,614	4,227	3,597	913	2,595

* Not previously published; estimated on basis of records for station near Gallatin.

Monthly and yearly runoff, in thousands of acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	#129	#33.9	#38.1	#35.7	#138	#338	#89.3	25.8	845	543	106	65.5	#2,390
1925	25.8	17.6	36.3	18.8	204	112	392	89.8	442	53.3	89.2	272	1,750
1926	402	189	160	256	353	146	370	47.4	516	55.1	42.2	1,670	4,190
1927	965	93.4	113	47.2	190	193	1,430	207	423	49.6	50.2	19.5	3,760
1928	454	34.2	23.4	37.7	258	73.8	124	32.2	625	405	192	708	2,970
1929	333	1,650	296	129	227	1,330	1,260	278	1,140	475	29.7	41	7,190
1930	180	187	39	22.8	277	123	95.8	329	165	57.7	16.7	16.2	1,510
1931	13.6	13.7	36.2	8.12	9.66	87.3	356	92.2	252	27.8	20.6	303	1,220
1932	363	1,750	443	904	177	197	206	91	357	83.6	521	50.1	5,120
1933	30.3	53	152	47.9	75	115	247	115	35.1	23.9	132	108	1,120
1934	29.47	8.41	10.58	9.85	7.11	16.12	52.88	21.61	18.3	3.24	13.16	75.53	266
1935	64.18	436	211.9	116.3	171.9	180.2	98.94	460	1,676	258.5	21.47	37.45	4,753
1936	10.7	67.33	29.68	22.06	370.4	298.6	39.91	109.8	19.07	4.42	2.52	86.37	1,059
1937	117.3	11.33	10.38	95.86	797.4	417.9	98.11	295	98.15	173.8	30.29	5.55	2,151
1938	4.19	4.23	5.2	6.25	7.26	13.16	47.84	69.69	96.47	7.75	58.1	25.62	345.8
1939	3.57	6.21	3.36	3.47	3.17	364.1	247.3	19.42	486	128.3	126.9	7.11	1,599
1940	4.90	5.55	4.11	1.97	8.18	138.6	53.68	135.5	63.72	60.85	309.9	18.51	805.3
1941	6.84	8.26	9.98	87.69	140.4	60.62	97.4	61.3	532.5	38.05	6.89	76	1,126
1942	387.9	441.2	287	211.7	447	605.6	183.3	378.1	1,187	159	78.83	51.98	4,419
1943	37.22	126	359.7	111	175.4	98.47	91.68	552.2	1,140	114.2	144.1	28.84	3,279
1944	13.01	11.61	10.1	24.25	38.34	309.4	1,358	632.5	373.2	35.34	252.8	61.6	3,120
1945	78.19	83.71	335.6	73.69	249.7	670.1	860.8	1,113	1,185	178.6	25.77	58.67	4,913
1946	100.8	21.59	52.92	873.7	83.52	635.3	187	404.6	189.6	134.5	60.67	32.98	2,777
1947	54.09	37.57	72.41	46.68	29.45	566.2	1,125	419	4,003	317.3	21.18	23.49	6,525
1948	35.67	29	137.7	30.55	26.5	709.4	114.5	155.1	198.3	60.5	24.59	11.06	1,741
1949	6.36	8.61	7.58	77.51	549.9	430.2	187.8	60.73	489.7	187.9	91.12	99.28	2,197
1950	61.19	20.77	23.57	157.1	289.2	145.1	80.38	284.9	453.1	87.76	221.2	54.3	1,879

* Not previously published; estimated on basis of records for station near Gallatin.

Yearly discharge, in cubic feet per second of Grand River near Sumner, Mo.

Water year ending Sept. 30												Calendar year			
Year	W.S.P. no.	Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff					
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet				
1922	-	\$51,000	July 1922	-	-	-	-	-	-	-	-				
1923	-	\$54,000	November 1922	-	-	-	-	-	-	-	-				
1924	586	36,600	July 1, 1924	-	\$3,290	0.478	\$6.50	\$2,390,000	\$3,130	\$6.18	\$2,270,000				
1925	606	33,000	Apr. 27, 1925	170	2,420	3.352	4.78	1,750,000	3,350	6.61	2,420,000				
1926	626	56,400	Sept. 21, 1926	330	5,780	.840	11.42	4,190,000	6,360	12.56	4,610,000				
1927	646	47,800	Apr. 22, 1927	240	5,230	.760	10.30	3,780,000	4,320	8.49	3,120,000				
1928	666	46,900	Sept. 17, 1928	162	4,100	.596	8.07	2,970,000	6,530	12.92	4,730,000				
1929	686	110,000	June 4, 1929	210	9,940	1.44	19.62	7,190,000	7,350	14.50	5,320,000				
1930	701	18,200	Feb. 10, 1930	114	2,090	.304	4.13	1,510,000	1,610	3.20	1,170,000				
1931	716	35,600	Apr. 22, 1931	105	1,690	.246	3.35	1,220,000	5,100	10.08	3,690,000				
1932	731	84,600	Nov. 26, 1931	180	7,060	1.03	13.97	5,120,000	3,890	7.69	2,820,000				
1933	746	22,800	Dec. 26, 1932	115	1,540	.224	3.02	1,120,000	1,280	2.52	929,000				
1934	761	8,280	Apr. 5, 1934	10	367	.0533	.73	266,000	1,284	2.55	929,700				
1935	766	72,000	June 4, 1935	79	6,538	.950	12.90	4,733,000	5,703	11.24	4,128,000				
1936	806	41,000	Feb. 28, 1936	29	1,459	.212	2.89	1,059,000	1,502	2.98	1,090,000				
1937	826	36,800	Mar. 6, 1937	71	2,970	.432	5.87	2,151,000	2,798	5.52	2,026,000				
1938	856	8,120	June 2, 1938	42	478	.069	.94	345,800	477	.95	345,300				
1939	876	45,300	June 24, 1939	35	1,932	.281	3.82	1,399,000	1,934	3.82	1,400,000				
1940	896	18,000	Mar. 3, 1940	17	1,109	.161	2.20	805,300	1,124	2.24	815,800				
1941	926	45,500	June 12, 1941	58	1,555	.226	3.07	1,126,000	3,062	6.04	2,217,000				
1942	956	89,900	June 28, 1942	320	6,104	.887	12.04	4,419,000	5,285	10.42	3,825,000				
1943	976	60,600	June 19, 1943	251	4,529	.658	8.94	3,279,000	3,855	7.62	2,791,000				
1944	1006	115,000	Apr. 25, 1944	115	4,298	.625	8.52	3,120,000	4,956	9.77	3,583,000				
1945	1036	86,200	May 18, 1945	154	6,786	.986	13.38	4,913,000	6,341	12.51	4,590,000				
1946	1056	89,300	Jan. 8, 1946	137	3,836	.558	7.58	2,777,000	3,834	7.57	2,776,000				
1947	1086	180,000	June 7, 1947	143	9,013	1.31	17.77	6,525,000	9,024	17.80	6,534,000				
1948	1116	61,000	Mar. 21, 1948	106	2,398	.349	4.74	1,741,000	2,178	4.30	1,581,000				
1949	1146	54,000	Feb. 26, 27, 1949	86	3,034	.441	5.98	2,197,000	3,149	6.21	2,280,000				
1950	1176	35,200	June 20, 1950	195	2,595	.377	5.13	1,879,000	-	-	-				

* Not previously published.

507. Yellow Creek near Rothville, Mo.

Location.--Lat 39°38', long. 93°05', on line between NW¼ sec. 31, T. 56 N., R. 19 W., and NE¼ sec. 36, T. 56 N., R. 20 W., at bridge on State Highway 11, 2½ miles southwest of Rothville and 3 miles downstream from East Yellow Creek.

Drainage area.--405 sq mi.

Gage.--Wire-weight gage. Datum of gage is 664.37 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1948, chain gage at same site and datum.

Extremes.--1929-32, 1948-50: Maximum discharge, 9,000 cfs June 17, 1950 (gage height, 21.40 ft); minimum daily, 0.2 cfs Oct. 1-4, 25-28, 31, 31, 1948.
Maximum stage known, 23.1 ft in June 1947, from floodmark, from information by Corps of Engineers and local residents. Flood of July 1909 reached a discharge of 15,000 cfs, determined by Corps of Engineers.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	\$1,300	282	844	112	20.2	72.3	-
1930	428	269	63.1	43.1	460	158	180	185	202	259	13.9	7.17	187
1931	2,58	8,08	91.8	4,98	12.5	180	783	247	766	23.3	15.1	99	185
1932	205	1,580	394	850	222	211	129	32.2	202	-	-	-	-
1949	85	1,53	1,01	166	682	336	176	106	941	333	80.3	186	246
1950	71.2	17.2	153	472	187	153	178	179	948	33.5	49.0	64.8	208

* Not previously published; partly estimated on basis of records for adjacent stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	\$77,400	17,400	50,200	6,900	1,240	4,300	-
1930	26,300	16,000	3,880	2,650	25,500	9,730	10,700	11,400	12,000	15,900	855	426	135,000
1931	159	481	5,640	306	694	11,100	46,600	15,200	45,600	1,430	928	5,890	134,000
1932	12,600	94,000	24,200	52,300	12,800	13,000	7,680	1,980	12,000	-	-	-	-
1949	53	91	62	10,220	37,880	20,670	10,470	6,510	55,970	20,490	4,940	11,090	178,400
1950	4,380	1,030	9,390	29,000	10,390	9,420	10,610	11,020	56,400	2,060	3,020	3,850	150,600

* Not previously published; partly estimated on basis of records for adjacent stations.

Yearly discharge, in cubic feet per second of Yellow Creek near Rothville, Mo.											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1929	686	-	-	-	-	-	-	-	-	-	-
1930	701	2,630	July 2, 1930	1	187	0.423	5.74	135,000	132	4.43	95,400
1931	716	5,450	Apr. 23, 1931	.8	185	.419	5.68	134,000	357	11.95	259,000
1932	731	-	-	-	-	-	-	-	-	-	-
1949	1146	7,400	June 3, 1949	.2	246	.607	8.25	178,400	267	8.92	193,000
1950	1176	9,000	June 17, 1950	1.0	208	.514	6.97	150,600	-	-	-

CHARITON RIVER BASIN

508. Chariton River near Centerville, Iowa

Location.--Lat 40°44'05", long. 92°48'25", in NW¼ sec. 34, T. 69 N., R. 17 W., at bridge on State Highway 2, 2.5 miles downstream from Cooper Creek, and 3 miles east of Centerville.

Drainage area.--727 sq mi.

Gage.--Water-stage recorder and concrete control. Datum of gage is 825.68 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1938-50), 409 cfs.

Extremes.--1938-50: Maximum discharge, 21,700 cfs June 20, 1946 (gage height, 24.20 ft, from floodmark); minimum, 0.1 cfs Oct. 11, 1938, Sept. 30, Oct. 1, 1940.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1938	-	-	-	-	-	-	-	-	268	45.3	215	43.1
1939	1.63	27.8	9.06	17.1	13.6	1,920	814	45.1	384	109	533	5.62
1940	1.79	3.50	2.61	1.85	5.35	174	191	367	18.9	8.56	184	13.4
1941	1.56	3.06	4.79	18.8	206	52.9	35.2	24.2	567	63.2	3.74	280
1942	610	761	317	556	278	382	66.3	112	764	410	112	62.6
1943	53.2	272	468	195	447	230	241	1,635	1,958	136	298	113
1944	10.2	26.3	16.9	25.3	114	564	2,234	1,290	1,344	12.5	203	163
1945	362	114	467	83.0	1,071	1,094	1,092	1,638	871	118	9.43	70.5
1946	135	66.5	126	1,461	204	1,789	350	205	2,541	939	676	359
1947	415	211	130	217	156	781	2,429	567	4,665	170	6.25	5.75
1948	3.69	8.31	74.8	14.8	661	1,330	123	173	19.0	25.0	14.0	6.24
1949	2.43	9.35	4.17	66.5	587	895	*283	76.2	905	538	380	80.3
1950	35.9	19.5	28.5	210	784	505	246	492	1,892	142	66.9	4.51

* Revised.

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1938	-	-	-	-	-	-	-	-	15,940	2,790	13,190	2,560
1939	100	1,650	557	1,050	754	118,000	48,470	2,770	22,880	6,670	32,750	334
1940	110	208	160	101	308	10,690	11,390	22,570	1,120	526	10,060	797
1941	96	182	295	1,160	11,460	3,250	2,090	1,490	33,750	3,890	230	16,690
1942	37,520	45,260	19,520	32,980	15,470	23,460	3,950	6,900	45,460	25,190	6,890	3,720
1943	3,270	16,170	28,770	11,970	24,800	14,160	14,320	100,500	116,500	8,340	18,320	6,750
1944	628	1,570	1,040	1,560	6,530	34,700	32,900	79,310	80,000	766	12,490	9,730
1945	22,230	6,800	28,730	5,100	59,470	67,260	64,990	12,900	51,620	7,260	590	4,190
1946	8,310	3,960	7,740	89,840	11,320	10,000	20,830	12,620	151,200	57,750	41,540	21,360
1947	25,490	12,530	8,010	13,320	8,850	48,060	44,500	34,840	277,600	10,430	384	342
1948	227	494	4,600	908	58,040	81,670	7,340	10,610	1,130	1,540	860	371
1949	149	556	256	4,090	32,600	55,010	16,830	4,680	53,840	33,090	23,350	4,780
1950	2,210	1,180	1,750	12,940	43,540	31,060	14,660	30,250	112,600	8,700	4,110	268

* Revised.

Yearly discharge, in cubic feet per second of Chariton River near Centerville, Iowa

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acres-feet	Mean	Inches
1938	876	11,730	June 2, 1938	b0.6	-	-	-	-	-	-
1939	876	16,500	Mar. 13, 1939	.1	326	0.448	6.08	236,000	324	6.04
1940	896	2,150	May 10, 1940	.1	80.0	.110	1.49	58,040	80.1	1.50
1941	926	4,080	June 9, 1941	.1	103	.142	1.91	74,580	244	4.54
1942	956	4,140	June 23, 1942	8.5	368	.506	6.88	266,300	293	5.48
1943	976	9,610	May 17, 1943	8	503	.692	9.38	363,900	441	8.23
1944	1036, 1240	*13,000	Apr. 24, 1944	2.1	498	.685	9.32	361,200	573	10.72
1945	1036	12,600	May 17, 1945	5.8	596	.820	11.12	431,300	544	10.14
1946	1056	21,700	June 20, 1946	10.3	741	1.02	13.84	536,500	777	14.52
1947	1086	20,500	June 7, 1947	2.2	807	1.11	15.07	584,100	751	14.02
1948	1116	4,510	Mar. 19, 1948	1.4	204	.281	3.81	147,800	198	3.69
1949	1146, 1240	4,790	June 25, 1949	1.5	*317	*.436	*5.91	*229,200	322	6.02
1950	1176	10,800	June 21, 1950	2.0	364	.501	6.79	263,200	-	-

* Revised.

a Maximum for period May 6 to Sept. 30, 1938.

b Minimum day for period May 6 to Sept. 30, 1938.

509. Chariton River at Novinger, Mo.

Location.--Lat 40°14'05", long. 92°41'00", in SE¼NW¼ sec. 27, T. 63 N., R. 16 W., at bridge on State Highway 6, 1,000 ft downstream from Chicago, Burlington and Quincy Railroad bridge, 0.8 mile east of Novinger, and 2 miles upstream from Spring Creek.

Drainage area.--1,370 sq mi, approximately.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 737.65 ft above mean sea level, datum of 1929. Prior to Sept. 6, 1932, chain gage at site 50 ft upstream at same datum. Sept. 6, 1932, to Nov. 19, 1934, chain gage and Nov. 20, 1934, to Dec. 19, 1939, wire-weight gage at present site and datum.

Average discharge.--20 years (1930-50), 746 cfs.

Extremes.--1930-50: Maximum discharge, 22,900 cfs June 7, 13, 1947 (gage height, 28.50 ft); minimum, 0.1 cfs Aug. 31, Sept. 1, 1936.
Maximum stage known, 28.6 ft in June 1917 (discharge, 27,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*13	*18	*95	*15	24.3	333	1,540	592	580	69.3	26.3	630	*409
1932	1,610	5,050	1,800	2,630	566	763	672	488	722	183	5,610	280	1,530
1933	148	243	829	580	210	391	909	1,050	243	34.5	82.4	370	426
1934	88.8	21.7	27.8	35.9	16.9	77.7	428	103	24.9	5.22	2.30	246	89.5
1935	69.6	527	684	518	778	913	386	4,293	5,698	2,411	84.8	67.4	1,371
1936	17.0	244	132	85.9	583	1,270	181	189	35.2	3.32	1.29	375	257
1937	272	39.6	55.6	178	2,303	1,678	282	1,189	328	88.6	44.8	4.56	528
1938	5.87	4.18	13.4	29.7	61.3	58.6	268	218	392	68.6	292	97.6	125
1939	20.5	266	32.5	51.8	37.15	544	2,350	129	896	344	845	20.1	715
1940	13.6	12.4	8.8	4.0	42.2	497	613	638	81.5	17.1	455	29.1	202
1941	5.87	9.51	15.0	137	573	137	129	175	2,003	119	7.28	303	296
1942	1,344	1,569	678	880	1,266	774	400	531	617	589	188	101	758
1943	52.2	409	1,090	603	903	446	573	3,173	485	431	397	118	972
1944	17.8	38.6	30.9	37.7	157	1,300	4,459	1,922	194	44.7	280	245	887
1945	512	284	867	152	1,683	1,994	1,968	3,785	3,995	211	25.4	120	1,293
1946	221	81.7	174	3,074	355	3,527	867	4,793	093	1,713	878	587	1,262
1947	486	383	427	330	302	1,273	4,316	1,367	9,687	1,149	27.2	56.2	1,640
1948	30.7	105	473	132	1,271	2,639	327	541	82.9	90.7	20.5	23.9	494
1949	6.15	23.1	16.2	183	1,304	2,169	892	1,982	210	1,418	630	423	784
1950	145	74.7	134	851	1,515	980	593	1,002	4,697	400	236	23.0	877

* Not previously published; estimated on basis of records for station near Keytesville.

Monthly and yearly runoff, in acre-feet of Chariton River at Novinger, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	*798	*1,070	*5,840	*922	1,350	20,500	91,600	36,400	94,000	4,260	1,620	37,500	*296,000
1932	99,000	500,000	11,000	162,000	32,600	46,900	40,000	30,000	43,000	11,300	22,000	18,700	1,110,000
1933	9,100	14,500	51,000	35,700	11,700	24,000	54,100	84,800	14,500	2,120	5,070	22,000	308,000
1934	5,460	1,290	1,710	2,210	935	4,780	25,480	6,330	1,480	321	141	14,630	64,770
1935	4,280	31,380	42,060	31,860	43,190	56,110	22,990	264,000	539,000	148,300	5,210	4,010	992,400
1936	1,050	14,500	9,110	5,280	33,550	78,120	9,560	11,610	2,090	204	79	22,290	186,400
1937	16,710	2,350	3,420	10,970	127,900	103,200	16,770	73,120	19,500	5,450	2,760	271	382,400
1938	258	249	825	1,830	3,410	3,610	15,940	13,390	23,310	4,220	17,940	5,810	90,770
1939	1,260	15,810	2,000	3,170	2,060	217,900	139,800	7,920	53,310	21,150	51,960	1,200	517,500
1940	837	738	541	248	2,430	30,580	36,460	39,240	4,850	1,050	27,980	1,730	146,700
1941	361	566	924	8,440	31,850	8,430	7,700	10,740	19,200	7,290	448	18,020	214,000
1942	82,670	93,360	41,710	54,120	70,310	47,580	23,790	32,680	48,620	36,240	11,540	6,010	548,600
1943	3,210	24,320	66,990	37,060	50,150	27,420	34,110	195,100	100,207	40,000	26,490	7,010	703,700
1944	1,090	2,290	1,800	2,320	9,050	79,950	265,400	118,200	130,600	2,750	15,980	14,550	644,100
1945	31,480	16,910	53,330	9,320	93,480	22,600	117,100	232,800	237,700	12,980	1,560	7,140	936,400
1946	13,590	4,960	10,670	189,000	19,700	216,900	51,580	29,470	94,100	105,300	53,970	34,900	914,000
1947	29,900	22,790	26,260	20,270	15,800	73,290	256,800	1,030	578,400	70,670	1,370	5,350	1,187,000
1948	1,890	6,250	29,110	8,120	73,110	74,600	19,450	33,250	4,930	5,580	1,260	1,420	359,000
1949	378	1,370	994	11,270	72,450	33,400	53,060	12,040	31,500	87,200	38,770	25,160	567,600
1950	6,890	4,440	8,210	12,300	84,110	60,270	35,270	61,590	279,500	24,600	14,490	1,370	635,000

* Not previously published; estimated on basis of records for station near Keytesville.

Yearly discharge, in cubic feet per second

Yearly discharge, in cubic feet per second													
Year	W.S.P. no.	Water year ending Sept. 30							Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff			
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		
1931	731	7,160	June 7, 1931	-	*409	*0.299	*4.03	*296,000	*1,100	*10.92	*798,000		
1932	731	15,400	Nov. 24, 1931	22	1,530	1.12	15.26	1,110,000	935	9.29	679,000		
1933	746	6,500	Dec. 25, 1932	11	426	.311	4.22	308,000	335	3.31	242,000		
1934	761	3,250	Sept. 12, 1934	.5	89.5	.0653	.89	64,770	185	1.85	134,000		
1935	786	12,600	June 2, 1935	.31	371	1.00	13.58	992,400	1,296	12.83	938,300		
1936	806	4,000	Feb. 26, 1936	.1	257	.188	2.55	186,400	255	2.54	185,300		
1937	826	6,820	Feb. 21, 1937	2.0	528	.385	5.23	382,400	499	4.94	361,300		
1938	856	1,690	June 4, 1938	1.8	125	.091	1.26	90,770	150	1.51	108,500		
1939	896	12,900	Mar. 17, 1939	2.8	715	.522	7.11	517,500	691	6.86	500,400		
1940	896	3,690	Aug. 18, 1940	3	202	.147	2.00	146,700	202	2.00	146,400		
1941	926	9,860	June 11, 1941	3.3	296	.216	2.94	214,000	594	5.90	429,900		
1942	956	6,900	Nov. 2, 1941	14	758	.553	7.51	548,600	588	5.82	425,400		
1943	976	10,600	May 21, 1943	21	972	.709	9.63	703,700	849	8.41	614,400		
1944	1006	15,200	Apr. 23, 1944	10	867	.647	8.78	644,100	1,020	10.10	740,500		
1945	1036	16,400	June 17, 1945	14	1,293	.944	12.83	936,400	1,193	11.85	863,800		
1946	1056	15,500	June 23, 1946	21	1,262	.921	12.51	914,000	1,331	13.18	963,900		
1947	1086	22,900	June 7, 1947	10	1,640	1.20	16.26	1,187,000	1,582	15.70	1,146,000		
1948	1116	11,600	Mar. 20, 1948	7	494	.561	4.94	359,000	447	4.46	324,500		
1949	1146	7,640	June 16, 1949	4.3	784	.572	7.76	567,600	810	8.01	586,400		
1950	1176	16,700	June 20, 1950	14	877	.640	8.69	635,000	-	-	-		

* Not previously published.

510. Chariton River at Elmer, Mo.

Location.--Lat 39°56'50", long. 92°39'35", in SW 1/4 sec. 2, T. 59 N., R. 16 W., at Atchison, Topeka and Santa Fe Railway bridge three-quarters of a mile southwest of Elmer.

Drainage area.--1,660 sq mi, approximately.

Gage.--Chain gage. Datum of gage is 687.85 ft above mean sea level. Prior to Oct. 1, 1924, at datum 6.00 ft higher, and Oct. 1, 1924, to Sept. 30, 1926, at datum 3.00 ft higher than present datum.

Average discharge.--9 years (1921-30), 1,080 cfs.

Extremes.--1921-30: Maximum discharge, 22,500 cfs Nov. 17, 1926; maximum gage height, 27.56 ft Sept. 21, 1926; minimum discharge, 14 cfs Sept. 26, 1927, Sept. 25-30, 1930; minimum gage height, 2.20 ft Aug. 23-27, Sept. 3, 5, 1930.

Monthly and yearly mean discharge, in cubic feet per second of Chariton River at Elmer, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	620	1,900	-
1922	432	319	318	112	621	1,610	2,040	698	464	2,110	542	291	798
1923	60.11	120	120	110	110	1,840	382	356	306	234	301	129	425
1924	234	96.3	510	212	734	1,540	593	97.5	1,610	856	604	120	614
1925	36.9	35.7	136	40.6	652	571	1,380	345	1,640	345	159	278	463
1926	2,040	901	775	953	1,490	512	1,470	248	2,490	243	271	7,690	1,570
1927	5,900	541	761	156	1,320	1,590	7,470	1,460	2,870	134	81.1	56.8	1,690
1928	2,950	147	142	411	1,350	280	924	111	2,790	858	751	5,090	1,180
1929	1,520	6,350	1,880	511	915	4,400	5,600	1,500	2,450	2,080	197	590	2,310
1930	1,310	1,370	289	187	1,680	731	501	641	926	112	51.4	25.5	643

* Not previously published; estimated on basis of discharge measurements, gage height and weather records, and records for Locust Creek near Milan.

* Revised; discharges for period Feb. 10 to Mar. 11, 1923, as published in WSP 566 are in error, no daily figures available for this period.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	38,100	113,000	-
1922	26,600	19,000	19,600	6,890	34,500	99,000	121,000	42,900	27,600	130,000	33,300	17,300	578,000
1923	3,700	66,700	7,380	8,410	6,110	113,000	22,700	20,700	18,200	14,400	18,500	7,670	4307,000
1924	14,400	5,750	31,400	13,000	42,200	94,700	35,300	6,000	108,000	51,400	37,100	7,140	446,000
1925	2,270	2,120	8,580	2,500	36,200	35,100	82,100	21,200	97,600	21,200	9,780	16,500	335,000
1926	125,000	55,600	47,700	58,600	82,800	31,500	87,500	15,200	149,000	14,900	16,700	458,000	1,140,000
1927	240,000	32,200	46,800	9,590	73,300	97,800	44,000	91,000	171,000	8,240	4,990	3,380	1,220,000
1928	180,000	8,750	8,730	25,300	105,000	17,200	55,000	6,820	166,000	52,800	46,200	84,000	856,000
1929	93,500	378,000	103,000	51,400	50,800	271,000	33,000	92,200	146,000	127,000	12,100	35,100	1,670,000
1930	80,600	81,500	17,800	11,500	93,300	44,900	29,800	39,400	55,100	6,890	3,160	1,520	465,000

* Revised; see footnote to preceding table.

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum		Per square mile	Runoff		Mean	Runoff	
		Discharge	Date	day	Mean		Inches	Acre-feet		Inches	Acre-feet
1921	526	-	-	-	-	-	-	-	-	-	-
1922	546	7,350	July 13, 1922	60	798	0.481	6.52	578,000	481	6.66	590,000
1923	566	5,560	Nov. 14, 1922	39	425	1.256	3.48	4307,000	369	3.17	4281,000
1924	586	6,000	Mar. 29, 1924	44	614	1.370	5.04	446,000	561	4.61	406,000
1925	606	7,200	Apr. 27, 1925	23	463	1.279	3.79	335,000	758	6.22	548,000
1926	626	18,700	Sept. 21, 1926	27	1,570	1.946	12.89	1,140,000	1,701	13.92	1,230,000
1927	646	21,800	Apr. 21, 1927	14	1,690	1.02	13.81	1,220,000	1,521	12.45	1,100,000
1928	666	17,800	Oct. 2, 1927	38	1,180	1.711	9.67	856,000	1,699	13.92	1,230,000
1929	686	22,500	Nov. 17, 1928	77	2,310	1.39	18.90	1,670,000	1,765	14.44	1,280,000
1930	701	6,200	Nov. 1, 1929	14	643	1.387	5.26	465,000	-	-	-

* Not previously published.

511. Chariton River near Keytesville, Mo.

Location.--Lat 39°26'55", long. 92°52'10", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 25, T. 54 N., R. 18 W., at county highway bridge, 4 $\frac{1}{2}$ miles northeast of Keytesville and 5 $\frac{1}{4}$ miles upstream from Puzzle Creek.

Drainage area.--1,950 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 616.37 ft above mean sea level, datum of 1929. Prior to Aug. 25, 1929, staff gage and Aug. 25, 1929, to Feb. 19, 1935, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 1,160 cfs.

Extremes.--1928-50: Maximum discharge, 25,600 cfs June 8, 9, 1947 (gage height, 25.3 ft, from floodmarks); minimum, 4.6 cfs Aug. 7, 9, 10, 1934.

Monthly and yearly mean discharge, in cubic feet per second of Chariton River near Keytesville, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	1,700	7,000	1,850	1,600	1,050	4,850	16,150	2,180	2,980	2,200	283	600	2,620
1930	1,290	1,660	331	248	1,920	797	563	713	968	352	63.2	40.1	735
1931	29.0	35.9	153	31.1	51.2	468	2,110	891	2,580	157	62.2	605	594
1932	1,700	5,780	2,680	5,570	808	932	944	554	756	373	4,880	440	1,980
1933	318	391	1,810	1,070	410	764	1,400	2,340	585	301	238	232	811
1934	234	52.0	47.4	48.7	43.2	122	569	171	25.8	13.4	51.6	636	187
1935	269	933	1,339	1,020	1,340	1,489	873	6,117	389	5,257	202	156	2,034
1936	46.5	380	237	125	1,346	1,838	185	417	65.1	19.2	8.0	901	460
1937	474	86.3	91.5	502	1,102	2,360	414	1,690	566	165	275	21.3	876
1938	14.4	15.4	19.8	101	172	386	1,096	453	881	102	251	135	301
1939	34.7	307	54.3	72.1	42.5	4,170	2,914	247	2,004	668	1,237	70.4	989
1940	32.2	35.6	26.2	14.0	68.4	958	857	752	199	28.8	511	53.1	296
1941	18.3	23.4	70.2	539	746	221	315	219	2,062	152	40.5	311	388
1942	2,129	2,268	1,128	958	2,323	1,469	1,108	1,314	2,064	955	266	137	1,533
1943	79.8	484	1,285	989	1,232	589	763	4,526	475	690	493	151	1,395
1944	43.1	62.4	44.5	66.5	211	2,668	6,248	3,352	2,800	83.2	263	395	1,270
1945	648	469	1,185	223	1,923	2,870	2,889	4,246	2,662	747	78.2	389	1,877
1946	435	131	209	4,516	510	4,293	1,271	1,191	5,034	1,974	896	726	1,611
1947	610	498	827	469	455	1,807	6,360	2,139	4,830	2,572	74.1	119	2,549
1948	55.7	179	893	285	1,806	5,039	515	711	204	318	50.5	38.0	842
1949	20.7	49.5	35	583	2,224	2,966	1,354	586	1,110	2,090	785	784	1,189
1950	340	146	32	1,509	1,733	1,245	971	1,251	5,720	842	497	167	1,219

* Not previously published; estimated on basis of records for station at Elmer.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	105,000	417,000	108,000	56,900	58,300	298,000	368,000	134,000	77,000	135,000	17,400	35,700	1,890,000
1930	79,300	99,800	20,400	15,200	107,000	49,000	33,500	43,800	57,600	21,600	3,890	2,390	532,000
1931	1,780	2,140	9,410	1,910	2,840	28,800	26,000	54,800	54,000	9,650	3,820	36,000	451,000
1932	105,000	544,000	165,000	220,000	46,500	57,500	56,200	34,100	45,000	22,900	299,000	26,200	1,420,000
1933	19,600	23,300	99,000	65,800	22,800	47,000	83,300	144,000	34,800	18,500	14,600	13,800	586,000
1934	14,390	3,090	2,910	2,990	2,400	7,530	33,860	10,520	1,540	821	3,170	37,850	121,100
1935	16,530	55,540	82,340	62,690	74,400	91,580	51,940	376,100	439,700	200,200	12,420	9,310	1,473,000
1936	2,860	22,600	14,590	7,710	77,440	113,000	11,000	25,640	3,890	1,180	490	53,620	334,000
1937	29,150	5,140	5,630	30,890	27,800	45,100	24,650	103,900	33,690	10,140	16,880	1,270	634,200
1938	887	914	1,220	6,190	9,530	23,710	65,250	27,880	52,410	6,250	15,460	8,010	217,700
1939	2,130	18,260	3,340	4,440	2,360	256,400	173,400	15,160	119,500	41,090	76,060	4,190	716,100
1940	1,980	2,120	1,610	859	3,940	58,920	60,980	46,260	11,820	1,770	31,420	3,180	214,800
1941	1,120	1,390	4,310	33,170	41,430	13,600	18,740	13,470	122,100	9,350	2,490	18,500	279,700
1942	130,900	35,000	89,550	58,890	129,000	90,310	65,920	80,810	22,800	57,460	16,380	8,150	965,000
1943	4,910	29,850	79,090	60,790	68,430	36,220	45,420	278,400	400,250	6,800	42,410	30,340	1,010,000
1944	2,650	5,720	2,740	4,090	12,120	39,500	371,800	206,500	534,500	5,110	16,140	23,490	922,400
1945	39,650	27,890	72,970	13,730	106,800	76,500	171,900	296,600	378,600	45,900	4,810	23,140	1,359,000
1946	26,740	7,810	12,830	27,700	28,310	264,000	75,620	73,200	180,500	502,210	55,070	43,200	1,166,000
1947	37,510	29,620	50,870	28,850	25,290	111,000	378,400	31,500	80,882	200,558	2,460	7,070	1,845,000
1948	3,430	10,650	54,800	17,540	103,900	509,800	30,620	43,710	12,120	19,560	3,110	2,260	611,600
1949	1,270	2,940	2,150	35,860	23,500	100,820	40,840	23,750	80,800	128,500	48,290	46,640	860,800
1950	20,910	8,690	19,880	92,760	96,260	76,530	57,800	76,940	405,400	81,750	30,550	9,940	882,400

* Not previously published; estimated on basis of records for station at Elmer.

Yearly discharge, in cubic feet per second													
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year					
		Momentary maximum			Minimum			Mean			Runoff		
		Discharge	Date		Discharge	Date		Mean	Per square mile	Inches	Runoff	Mean	Runoff
1929	686	24,000	Nov. 18, 1928	85	2,620	1.34	18.25	1,890,000	2,010	14.03	1,460,000		
1930	701	6,800	Nov. 2, 1929	24	735	.377	5.12	532,000	480	3.34	347,000		
1931	716	9,690	June 8, 1931	11	594	.305	4.14	431,000	1,422	9.90	1,030,000		
1932	731	17,500	(a)	87	1,960	1.01	13.64	1,420,000	1,306	9.11	949,000		
1933	746	12,500	Dec. 25, 1932	35	811	.416	5.62	586,000	643	4.46	485,000		
1934	761	4,780	Apr. 5, 1934	4.6	187	.0858	1.16	121,100	352	2.44	255,100		
1935	786	18,000	June 3, 1935	25	2,034	1.04	14.16	1,473,000	1,876	13.07	1,359,000		
1936	806	9,200	Feb. 27, 1936	5	480	.236	3.22	334,000	460	3.22	333,900		
1937	826	8,700	Feb. 22, 1937	15	875	.449	6.10	634,200	825	5.75	597,300		
1938	856	6,020	Apr. 11, 1938	5	301	.154	2.10	217,700	329	2.30	238,400		
1939	878	12,000	Mar. 18-20, 1939	13	989	.507	6.89	716,100	962	6.71	698,100		
1940	896	4,350	Mar. 4, 1940	12	296	.152	2.06	214,800	297	2.08	215,800		
1941	926	8,570	June 14, 1941	10	386	.198	2.68	279,700	840	5.94	808,100		
1942	956	21,000	June 26, 1942	68	1,333	.884	9.28	865,000	1,026	7.15	742,800		
1943	976	13,000	May 20, 1943	40	1,395	.715	9.73	1,010,000	1,251	8.74	906,900		
1944	1008	17,200	Apr. 24, 1944	20	1,270	.651	8.86	922,400	1,452	10.13	1,054,000		
1945	1036	16,200	June 19, 1945	40	1,877	.963	13.06	1,359,000	1,748	12.16	1,265,000		
1946	1056	17,200	Jan. 5, 1946	56	1,611	.826	11.22	1,166,000	1,709	11.90	1,237,000		
1947	1086	25,600	June 8-9, 1947	28	2,549	1.31	17.73	1,845,000	2,481	17.26	1,796,000		
1948	1116	13,500	Mar. 20-23, 1948	17	842	.432	5.88	611,600	756	5.28	549,000		
1949	1146	9,620	June 26, 1949	14	1,189	.610	8.27	880,800	1,249	8.68	904,000		
1950	1176	14,900	June 23, 1950	53	1,219	.625	8.49	882,400	-	-	-		

* Not previously published.

a Nov. 27, 1931, Aug. 20, 21, 1932.

512. Mussel Fork near Musselfork, Mo.

Location.--Lat 39°31', long. 92°57', in SW 1/4 sec. 32, T. 55 N., R. 18 W., at bridge on State Highway 5, 1 1/2 miles upstream from Long Branch and 4 1/2 miles southwest of Musselfork.

Drainage area.--267 sq mi.

Gage.--Wire-weight gage. Datum of gage is 639.25 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 2,650 cfs June 17, 18, 1950 (gage height, 18.7 ft, from graph based on gage readings); minimum daily, 0.2 cfs Oct. 1-4, 1948.
Maximum stage known, 20.7 ft in June 1947, from information by local resident.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	1.18	3.78	1.98	239	521	202	126	109	532	183	99.2	168	179
1950	86.5	30.9	162	332	163	98.1	182	150	477	54.1	99.8	55.8	157

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	73	225	122	14,720	28,930	12,420	7,520	6,680	31,630	11,230	6,100	10,000	129,600
1950	5,320	1,840	9,990	20,410	9,060	6,030	10,660	9,220	28,390	3,320	6,140	3,320	113,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1949	1148	2,480	June 3, 1949	0.2	179	0.670	9.10	129,600	202	10.27	146,400
1950	1176	2,650	June 17, 18, 1950	5	157	.568	7.98	113,900	-	-	-

MISSOURI RIVER MAIN STEM

513. Missouri River at Glasgow, Mo.

Location.--Lat 39°13'20", long. 92°50'55", in center sec. 17, T. 51 N., R. 17 W., at bridge on State Highway 240 at Glasgow, 75 ft downstream from Chicago & Alton Railroad bridge, 1 mile downstream from Chariton River, and at mile 237.5.

Drainage area.--502,875 sq mi.

Supplemental records available.--Gage-height records collected in vicinity 1878-99 are contained in reports of Missouri River Commission and 1903-14 in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 586.11 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1950, wire-weight gage at same site and datum.

Extremes.--1949-50: Maximum discharge, 210,000 cfs July 20, 1950; maximum gage height, 24.80 ft July 21, 1950; minimum discharge observed, 11,300 cfs Feb. 1, 1950 (gage height, 6.00 ft).

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1390.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	44,100	34,400	22,170	22,310	31,320	47,770	115,700	107,000	87,170	118,900	86,220	54,420	64,470

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	2,712	2,047	1,363	1,372	1,740	2,937	6,886	6,577	5,187	7,313	5,302	3,238	46,670

514. Lamine River at Clifton City, Mo.

Location.--Lat 38°45'20", long. 93°01'10" in NW 1/4 sec. 16, T. 46 N., R. 19 W., at county highway bridge, 300 ft upstream from Missouri-Kansas-Texas Railroad bridge, three-quarters of a mile east of Clifton City, and 8 miles downstream from Otter Creek.

Drainage area.--598 sq mi.

Gage.--Wire-weight gage. Datum of gage is 621.91 ft above mean sea level, datum of 1929. Prior to Dec. 21, 1934, chain gage at same site and datum.

Average discharge.--26 years (1922-50), 508 cfs.

Extremes.--1922-50: Maximum discharge, 60,000 cfs May 18, 1943 (gage height, 32.0 ft), from rating curve extended above 30,000 cfs; no flow at times in 1934, 1936, and on Oct. 22, 1939.

Maximum stage known, 35.3 ft Sept. 18, 1905, from floodmark.

Monthly and yearly mean discharge, in cubic feet per second											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1922	-	-	-	-	-	-	-	-	-	58.8	67.5
1923	53.5	209	40.8	145	191	767	369	200	523	571	265
1924	20.7	65.5	319	303	709	275	154	365	1,380	632	359
1925	77.9	31.1	21.4	370	1,030	614	384	132	273	13.0	259
1926	289	840	481	229	598	422	1,070	83.8	148	67.4	548
1927	2,230	749	507	504	385	1,990	5,450	1,940	671	106	1,050
1928	615	192	817	594	655	88.4	711	77.7	200	192	462
1929	120	1,020	522	1,030	466	944	2,310	4,060	1,720	49.6	1,030
1930	115	81.9	49.1	279	1,410	105	60.8	50.1	55.7	40.2	183
1931	24.1	15.4	42.9	11.0	123	372	138	891	480	9.96	253
1932	163	832	195	554	189	76.8	39.9	20.4	102	43.6	223
1933	23.3	21.7	170	657	328	394	335	1,170	46.3	6.48	375
1934	100	17.4	52	36.6	18.2	125	192	57	28.5	7.63	92.4
1935	706	1,015	1,183	1,053	314	674	294	1,774	4,351	428	995
1936	29.1	1,485	144	59.7	302	238	125	57.7	5.49	1.18	288
1937	160	165	175	1,288	1,054	1,246	367	2,038	1,577	35.5	676
1938	3.06	7.56	13.0	92.4	326	544	915	1,759	704	216	391
1939	21.8	158	154	89.0	468	618	2,357	750	514	49.6	433
1940	1.83	6.73	6.52	923	123	263	274	335	506	7.73	156
1941	2.44	8.39	42.5	571	101	30.9	867	61.4	250	75.5	206
1942	2,839	1,375	450	138	944	768	564	710	2,116	89.0	892
1943	303	341	1,528	228	236	191	578	4,978	1,753	46.7	860
1944	150	116	154	82.8	670	1,454	3,430	522	51.2	67.0	591
1945	212	23.7	46.1	75.5	410	1,572	1,786	1,112	1,853	255	710
1946	471	66	67.2	1,093	622	455	437	1,294	48.0	17.9	427
1947	27	1,218	283	141	53.7	809	2,341	407	1,869	465	632
1948	161	449	204	253	280	872	162	571	5,887	1,443	699
1949	16.3	370	44.7	1,461	1,096	613	206	549	2,022	107	590
1950	708	86.2	729	735	294	436	709	955	906	79.3	571

Monthly and yearly runoff, in acre-feet											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1922	-	-	-	-	-	-	-	-	-	3,620	4,020
1923	3,290	12,400	2,510	8,920	10,600	47,200	21,900	12,300	31,100	35,100	192,000
1924	1,270	3,900	19,600	18,600	40,800	16,900	9,160	22,400	82,100	38,900	261,000
1925	4,790	1,850	1,320	22,800	57,200	50,100	22,800	8,120	16,200	799	187,000
1926	17,800	50,000	29,600	14,100	33,200	25,900	63,700	5,150	8,810	5,370	396,000
1927	137,000	44,600	31,200	31,000	21,400	22,000	205,000	19,000	39,900	6,520	782,000
1928	37,800	11,400	50,200	36,500	37,700	5,440	42,300	4,780	71,400	11,800	335,000
1929	7,580	60,700	32,100	63,300	25,900	58,000	137,000	250,000	102,000	3,050	747,000
1930	7,070	4,870	5,020	17,200	78,300	6,460	3,620	3,080	3,310	2,470	132,000
1931	1,480	916	2,640	678	6,830	22,900	8,210	54,800	29,200	612	183,000
1932	10,000	49,500	12,000	34,100	10,900	4,720	2,370	1,250	6,070	2,690	162,000
1933	1,430	1,290	71,900	40,400	18,300	24,200	19,900	71,900	2,870	398	271,000
1934	6,160	1,030	3,200	2,250	1,010	7,700	11,450	3,500	1,690	469	66,860
1935	43,390	60,390	72,750	64,760	17,410	41,450	17,510	109,100	258,900	26,330	720,400
1936	1,790	88,390	8,890	3,670	17,350	14,610	7,440	3,550	326	11	209,200
1937	9,940	9,840	10,760	79,190	58,530	76,590	21,610	25,300	93,840	2,190	489,200
1938	188	450	801	5,680	18,080	33,470	54,470	108,100	41,920	13,310	283,000
1939	1,340	9,390	9,480	5,470	25,880	37,990	140,300	46,110	30,610	3,050	313,500
1940	113	400	401	567	7,060	16,160	16,280	20,570	30,080	475	113,600
1941	150	499	2,610	35,140	5,610	1,900	51,570	3,770	14,880	4,640	149,200
1942	174,500	81,840	27,650	9,480	52,400	47,210	33,530	43,650	25,900	5,470	648,000
1943	18,650	20,280	93,940	14,040	13,090	11,720	34,380	106,100	4,500	2,670	622,500
1944	9,220	6,900	9,450	5,090	38,540	89,430	204,100	32,100	3,050	4,120	428,700
1945	13,010	1,410	2,840	4,640	22,740	96,670	106,300	68,360	10,200	15,700	514,300
1946	28,940	3,930	4,130	67,190	34,520	28,010	26,000	79,570	2,860	1,100	309,300
1947	1,660	72,450	16,170	8,680	2,980	49,720	139,300	25,020	110,900	28,590	457,600
1948	9,900	26,740	12,530	15,570	16,080	53,600	9,660	35,090	231,300	88,730	507,300
1949	1,000	22,030	2,750	89,810	60,860	37,720	12,250	33,708	20,300	6,570	427,400
1950	43,530	5,130	44,850	45,210	16,310	26,780	42,220	58,740	53,900	4,880	413,100

Yearly discharge, in cubic feet per second of Lamine River at Clifton City, Mo.

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acre-feet	Mean	Inches Acre-feet
1922	546	#15,200	March 1922	-	-	-	-	-	-	-
1923	566	#9,300	July 4, 1923	6	265	0.443	6.02	192,000	274	6.22 198,000
1924	586	7,640	June 25, 1924	1	359	.600	8.17	261,000	356	7.65 244,000
1925	606	10,100	Mar. 19, 1925	2	259	.433	5.88	187,000	382	8.68 277,000
1926	626	11,300	Sept. 10, 1926	5	548	.916	12.43	396,000	708	16.06 512,000
1927	646	25,000	Apr. 1, 1927	4	1,050	1.76	23.92	762,000	897	20.37 648,000
1928	666	7,620	Oct. 3, 1927	7	462	.773	10.53	335,000	462	10.55 336,000
1929	686	33,000	May 19, 1929	3	1,030	1.72	23.45	747,000	915	20.76 662,000
1930	701	7,260	Feb. 7, 1930	.9	183	.306	4.13	132,000	169	3.83 122,000
1931	716	8,500	Sept. 25, 1931	1.6	253	.423	5.74	183,000	345	7.82 250,000
1932	731	11,200	Nov. 23, 1931	3.2	223	.375	5.06	162,000	228	5.15 165,000
1933	746	17,900	Dec. 25, 1932	2.8	375	.627	8.50	271,000	288	6.48 207,000
1934	761	5,190	Sept. 29, 1934	0	92.4	.155	2.08	65,660	322	7.30 233,000
1935	786	25,000	June 27, 1935	4	995	1.66	22.60	720,400	888	20.17 643,000
1936	806	13,200	Nov. 5, 1935	0	288	.482	6.57	209,200	194	4.42 140,600
1937	826	22,200	May 23, 1937	.5	676	1.13	15.33	489,200	636	14.42 460,200
1938	856	16,600	May 24, 1938	2.2	391	.654	8.90	283,000	417	9.48 301,800
1939	876	40,200	Apr. 16, 1939	.1	433	.725	9.82	313,500	406	9.22 294,200
1940	896	4,280	June 12, 1940	0	156	.261	3.56	113,600	160	3.64 115,900
1941	926	18,600	Apr. 20, 1941	.2	206	.344	4.70	149,200	594	13.51 429,900
1942	956	21,400	Oct. 31, 1941	13	892	1.49	20.28	646,000	684	15.52 494,900
1943	976	60,000	May 18, 1943	2.5	860	1.44	19.51	622,500	712	16.15 515,200
1944	1006	32,500	Apr. 23, 1944	5	591	.988	13.45	428,700	579	13.18 420,400
1945	1036	12,200	Apr. 17, 1945	4.8	710	1.19	16.13	514,300	758	16.75 534,000
1946	1056	14,500	May 11, 1946	3.5	427	.714	9.70	309,300	501	11.37 362,600
1947	1076	14,300	Apr. 26, 1947	1.3	632	1.06	14.34	457,600	575	13.05 416,500
1948	1116	32,500	June 23, 1948	3.9	899	1.17	15.90	507,300	667	15.17 483,900
1949	1146	12,400	June 7, 1949	7	590	.987	13.40	427,400	684	15.52 495,100
1950	1176	12,200	June 4, 1950	20	571	.955	12.94	413,100	-	-

* Revised.

* Not previously published.

515. Blackwater River at Blue Lick, Mo.

Location.--Lat 38°59'30", long. 93°12'15" on line between secs. 27 and 34, T. 49 N., R. 21 W., at bridge on U. S. Highway 65, three-quarters of a mile downstream from Finney Creek and 1 mile south of Blue Lick.

Drainage area.--1,120 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 593.79 ft above mean sea level, datum of 1929. Prior to July 25, 1925, chain gage at site 50 ft downstream at datum 0.10 ft lower. July 25, 1925, to Sept. 30, 1933, and May 23 to Sept. 24, 1938, chain gage at present site and datum.

Average discharge.--23 years (1922-33, 1938-50), 730 cfs.

Extremes.--1922-33, 1938-50: Maximum discharge, 54,000 cfs Nov. 18, 1928 (gage height, 41.25 ft, from floodmarks), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum observed, 0.5 cfs Nov. 13, 1928, Aug. 13, 1931, Nov. 26, 1938; minimum gage height, 0.96 ft July 6, 1926.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	125	114	154	-
1923	23.6	162	22.7	26.2	37.4	816	314	135	2,540	1,010	63.2	159	442
1924	321	69.1	850	557	1,220	473	109	464	1,970	1,140	204	332	639
1925	57.6	6.67	13.3	505	320	572	738	190	544	70.0	141	575	262
1926	151	176	659	470	1,330	294	2,390	243	85	357	339	1,190	631
1927	2,110	297	159	601	2,480	5,390	2,290	991	59.8	217	80.0	-	1,300
1928	5,580	194	587	622	1,810	140	240	85.61	330	780	484	292	1,825
1929	35,116	1,100	778	1,220	1,460	1,630	3,970	4,050	4,060	309	27.5	11.7	980
1930	239	144	16.0	35.81	530	66.3	36.8	85.5	119	14.9	1.61	108	188
1931	26.2	33.7	51.9	3.70	76.1	275	127	302	264	13.5	146	289	134
1932	96.91	570	143	638	227	55.2	32.1	9.93	834	440	670	43.9	396
1933	6.95	62.5	729	243	194	492	243	1,640	33.6	1.78	31.4	177	324
1938	-	-	-	-	-	-	-	-	1,000	203	121.	68.2	-
1939	12.9	91.9	9.83	6.17	32.7	386	1,601	206	522	44.1	162.	.96	255
1940	.98	2.37	4.18	1.6	69.3	428	531	368	583	80.1	961	27.1	251
1941	2.34	85.1	178	1,320	225	50.0	291	70.0	514	481	52.9	272	296
1942	2,225	1,582	664	192	1,062	1,074	1,628	1,584	4,283	686	40.8	902	1,319
1943	573	569	1,541	293	458	232	111	5,446	1,423	335	114	119	943
1944	238	15.1	39.6	55.0	498	2,566	8,377	1,369	544	85.61	509	46.3	1,108
1945	157	148	298	155	378	2,730	2,634	1,593	2,690	334	22.51	108	1,019
1946	666	49.9	22.7	71.42	992	539	535	800	1,323	216	56.0	234	553
1947	235	558	229	120	34.91	492	4,441	753	4,141	1,430	79.0	225	1,141
1948	154	493	719	394	516	2,193	456	832	4,218	2,275	103	60.1	1,033
1949	10.3	248	15.01	230	2,630	1,015	321	802	5,466	876	78.2	783	940
1950	1,924	76.3	880	1,629	365	178	281	593	1,444	527	1,328	622	827

Monthly and yearly runoff, in acre-feet of Blackwater River at Blue Lick, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	7,690	7,010	9,160	-
1923	1,450	9,640	1,400	1,610	2,080	50,200	18,700	8,300	151,000	62,100	3,890	9,460	320,000
1924	19,700	4,110	52,300	34,200	70,200	29,100	6,490	28,500	117,000	70,100	12,500	19,800	464,000
1925	3,540	597	818	31,100	17,800	35,200	43,900	11,700	32,400	4,300	8,670	342	190,000
1926	9,280	10,500	40,500	28,900	73,900	18,100	142,000	14,900	4,940	22,000	20,800	70,800	457,000
1927	150,000	17,700	22,000	9,780	33,400	152,000	356,000	40,000	59,000	3,880	13,300	4,780	942,000
1928	220,000	11,500	56,100	38,200	82,600	8,610	14,300	4,030	75,100	46,700	29,800	17,400	588,000
1929	2,160	83,900	47,800	75,000	91,100	100,000	236,000	249,000	43,000	19,000	1,690	696	1,420,000
1930	14,700	8,570	984	2,200	85,000	4,080	2,180	4,030	7,080	916	99	6,430	136,000
1931	1,610	2,010	3,190	228	4,230	16,900	7,560	18,600	15,700	830	8,980	17,200	97,000
1932	5,960	93,400	8,790	39,200	12,600	3,390	1,910	611	49,600	27,100	41,200	2,610	286,000
1933	427	3,720	44,800	14,900	10,800	30,300	14,500	101,000	2,000	109	1,930	10,500	235,000
1938	-	-	-	-	-	-	-	-	59,490	12,470	7,440	4,080	-
1939	795	5,470	605	378	1,820	23,750	95,260	12,640	31,050	2,710	9,970	57	184,500
1940	60	141	257	97	3,980	28,310	31,570	23,730	34,670	492	59,080	1,610	182,000
1941	144	5,060	10,970	81,140	12,480	3,070	17,310	4,300	30,590	29,580	3,250	16,180	214,100
1942	136,800	94,160	40,850	11,830	58,970	66,020	96,880	97,370	253,700	42,210	2,510	53,670	955,000
1943	35,240	33,850	94,780	18,030	25,460	14,260	6,590	34,800	84,690	20,600	7,010	7,070	682,400
1944	14,660	899	2,440	3,380	28,660	157,800	379,500	84,180	32,370	5,260	92,790	2,760	804,700
1945	9,670	8,830	18,330	9,400	20,980	167,900	156,800	97,950	160,100	20,540	1,580	65,920	737,800
1946	40,980	2,930	4,390	128,700	29,950	32,890	47,630	81,330	12,850	3,450	14,580	1,210	400,600
1947	14,450	33,220	14,050	7,400	1,940	91,760	264,200	46,320	46,400	87,930	4,860	13,370	825,900
1948	9,460	29,530	44,200	23,590	29,670	134,800	27,110	51,190	251,000	139,900	6,330	3,580	750,200
1949	645	14,740	924	75,600	46,000	62,400	19,100	49,330	206,200	53,890	4,810	46,570	680,200
1950	118,300	4,540	54,090	100,200	20,260	10,930	16,720	36,480	85,930	32,380	81,670	36,990	598,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff	
		Discharge	Date				Inches	Acre-feet	Mean	Inches
1922	546	-	-	-	-	-	-	-	-	-
1923	566	9,280	July 4, 1923	1	442	0.395	5.34	320,000	530	6.42
1924	596	10,800	June 30, 1924	1	639	.571	7.79	464,000	541	6.59
1925	606	7,060	June 19, 1925	.6	262	.234	3.20	190,000	339	4.14
1926	626	10,000	Apr. 8, 1926	.8	631	.563	7.65	457,000	781	9.47
1927	646	17,400	Mar. 22, 1927	1	1,300	1.16	15.78	942,000	1,440	17.42
1928	666	21,800	Oct. 4, 1927	1	825	.737	10.02	598,000	1,020	12.46
1929	746, 1006	54,000	Nov. 18, 1928	.5	1,960	1.75	23.80	1,420,000	1,420	17.29
1930	746	*7,990	Feb. 10, 1930	.8	188	.168	2.31	136,000	164	2.01
1931	746	*3,200	Sept. 24, 1931	.5	134	.120	1.61	97,000	274	3.31
1932	746	*9,680	Nov. 26, 1931	.8	396	.354	4.79	286,000	313	3.80
1933	746	*6,900	May 14, 1933	1.0	324	.289	3.92	235,000	-	-
1938	856	-	-	-	-	-	-	-	-	-
1939	876	9,810	Apr. 18, 1939	.5	255	.228	3.09	184,500	246	2.98
1940	896	5,300	Apr. 20, 1940	.7	251	.224	3.06	182,000	272	3.51
1941	926	3,890	Jan. 28, 1941	.9	298	.264	3.56	214,100	649	7.84
1942	956	13,400	June 29, 1942	.8	1,319	1.18	15.99	955,000	1,170	14.20
1943	976	27,900	May 20, 1943	1.9	943	.842	11.43	682,400	741	8.97
1944	1006	32,400	Apr. 24, 1944	3.7	1,108	.989	13.47	804,700	1,134	13.80
1945	1036	12,600	June 10, 1945	1.8	1,019	.910	12.34	737,800	1,035	12.53
1946	1056	11,300	Jan. 8, 1946	1.3	553	.494	6.72	400,600	572	6.95
1947	1086	12,900	Apr. 7, 1947	1.3	1,141	1.02	13.85	825,900	1,170	14.18
1948	1116	15,600	June 25, 1948	3.0	1,033	.922	12.56	750,200	942	11.45
1949	1146	9,760	June 9, 10, 1949	3.2	940	.839	11.39	680,200	1,162	14.08
1950	1176	13,200	Oct. 23, 1949	6	827	.759	10.03	598,500	-	-

* Not previously published.

516. Missouri River at Boonville, Mo.

Location.--Lat 38°58'40", long. 92°45'15" in sec. 35, T. 49 N., R. 17 W., at Missouri-Kansas-Texas Railroad bridge at Boonville and at mile 196.7.

Drainage area.--505,700 sq mi, approximately.

Supplemental records available.--Gage-height records collected at same site 1873-99 are contained in reports of Missouri River Commission; since 1900, in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 565.02 ft above mean sea level, datum of 1929.

Prior to Oct. 1, 1928, chain gage at site 0.4 mile downstream at datum 3.14 ft lower.

Oct. 1, 1928, to May 9, 1931, chain gage at site 50 ft upstream from present site at same datum.

May 10, 1931, to Apr. 12, 1934, water-stage recorder at site 0.4 mile downstream from present site at different datum.

Average discharge.--25 years (1925-50), 56,470 cfs.

Extremes.--1925-50: Maximum discharge, 504,000 cfs Apr. 27, 1944; maximum gage height, 32.02 ft June 27, 1947; minimum discharge, about 1,800 cfs Jan. 10, 1940; minimum gage height, -0.85 ft Jan. 13, 1937.

Maximum stage known, 32.7 ft June 21, 1844 (discharge, about 710,000 cfs, computed by Corps of Engineers). Flood of June 6, 1903, reached a stage of 30.5 ft (discharge, about 612,000 cfs, computed by Corps of Engineers).

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1390.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	44,300	40,700	32,000	29,800	56,900	54,800	64,400	52,300	90,900	56,800	37,700	121,000	56,500
1927	84,800	36,300	28,100	25,800	45,900	69,500	229,000	169,000	219,000	51,000	80,400	51,200	99,200
1928	79,800	35,600	22,400	30,400	63,800	61,600	101,000	56,500	152,000	138,000	84,500	66,900	74,300
1929	40,400	124,000	46,600	25,800	34,900	132,000	175,000	107,000	206,000	107,000	40,700	25,800	88,800
1930	33,600	40,200	16,800	17,200	49,500	66,300	61,000	99,100	79,700	43,100	30,600	37,900	47,700
1931	31,100	31,200	21,800	17,100	29,100	32,100	43,900	34,400	52,300	36,300	21,900	31,300	31,800
1932	31,500	85,100	44,000	53,900	35,500	56,500	64,200	60,100	123,000	88,700	60,300	31,700	60,900
1933	21,400	21,400	20,400	24,500	18,000	40,200	58,100	65,900	74,100	58,400	28,700	36,300	39,000
1934	23,340	17,770	19,940	13,140	21,980	30,870	31,330	26,950	37,210	30,220	14,320	17,810	23,730
1935	18,830	30,140	23,120	15,840	27,650	33,290	32,610	106,900	198,500	97,130	31,400	27,180	53,560
1936	18,550	25,280	17,080	10,080	23,900	87,010	47,080	52,230	52,830	30,650	15,970	25,530	33,860
1937	21,800	14,740	12,610	13,690	61,300	58,280	44,300	45,190	60,790	78,380	39,810	17,480	38,900
1938	13,570	15,360	8,050	12,150	14,940	42,730	50,190	64,620	71,190	93,160	48,130	46,520	40,190
1939	30,240	24,130	17,760	17,620	16,380	57,890	90,590	35,740	87,200	61,670	36,900	17,440	41,180
1940	12,920	14,270	15,560	4,918	9,693	26,810	31,320	39,100	45,920	32,510	44,560	26,410	25,370
1941	16,290	15,810	12,660	23,120	26,260	25,520	45,010	33,430	105,500	46,800	30,140	51,180	35,850
1942	97,580	64,370	35,880	27,170	43,260	60,210	62,890	129,900	156,900	91,980	45,930	61,590	73,240
1943	39,580	58,580	34,110	25,650	42,120	40,180	106,200	93,680	192,100	102,700	48,910	39,050	66,630
1944	33,980	34,930	23,850	19,990	26,640	62,270	197,400	128,200	41,700	118,800	79,330	58,280	76,870
1945	41,380	40,940	44,660	26,770	49,130	121,500	137,000	125,700	157,900	104,900	53,300	35,250	79,280
1946	43,330	30,440	14,500	48,830	32,240	66,400	49,430	50,440	62,990	62,320	34,490	50,610	45,580
1947	58,920	46,220	26,290	19,150	23,990	57,300	164,700	80,470	283,700	155,100	48,290	38,540	83,490
1948	40,360	43,190	28,630	21,440	32,190	25,300	80,000	58,460	97,330	104,700	71,360	41,070	62,130
1949	40,280	43,160	21,780	32,610	67,280	121,200	123,300	68,500	129,100	83,060	43,230	56,290	68,960
1950	47,470	34,470	24,450	24,730	33,490	49,420	114,300	109,900	88,620	114,700	89,280	54,400	65,620

Monthly and yearly runoff, in thousands of acre-feet of Missouri River at Boonville, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	2,720	2,420	1,970	1,830	2,160	3,370	3,830	3,220	5,410	3,490	3,320	7,200	40,900
1927	2,210	2,160	1,730	1,590	2,550	4,270	13,600	10,400	9,280	9,940	3,053	71,800	71,800
1928	4,910	2,120	1,390	1,870	5,670	3,790	6,010	3,470	9,040	8,480	2,000	3,980	53,900
1929	2,480	7,390	2,870	1,590	1,940	8,120	10,400	6,580	12,300	6,580	2,500	1,540	64,300
1930	2,070	2,390	1,030	1,060	2,750	4,080	3,630	6,090	4,680	2,650	1,880	2,250	34,600
1931	1,910	1,860	1,340	1,050	1,620	1,970	2,610	2,120	3,110	2,230	1,350	1,860	23,000
1932	1,920	5,060	2,710	3,310	2,040	3,470	3,820	3,700	7,320	5,270	710	1,890	44,200
1933	1,320	1,270	1,250	1,510	1,000	2,470	3,460	4,050	4,410	3,590	760	2,160	29,100
1934	1,435	1,058	1,226	808	1,221	1,698	1,864	1,657	2,214	1,858	980	1,063	17,180
1935	1,158	1,793	1,422	974	2,536	2,047	1,940	6,576	11,610	5,972	1,931	1,617	38,780
1936	1,141	1,504	1,050	619	3,375	5,350	2,800	3,212	3,144	1,884	982	2,519	24,580
1937	1,340	876	775	841	3,404	3,584	2,636	2,778	3,617	4,819	1,448	1,040	28,160
1938	834	914	495	747	829	2,628	2,987	3,973	4,236	5,728	959	2,768	29,100
1939	1,859	1,436	1,092	1,083	909	3,560	5,390	2,197	5,189	3,792	2,269	1,038	29,810
1940	794	849	956	302	557	1,648	1,863	2,404	2,733	1,999	2,740	1,572	18,420
1941	1,002	940	778	61	422	1,459	2,678	2,055	6,276	2,877	1,853	3,044	25,950
1942	6,000	3,830	2,208	1,671	2,403	3,702	3,742	7,985	9,339	5,656	2,824	3,665	53,020
1943	2,433	2,296	2,097	1,577	2,339	2,471	6,316	5,759	11,430	6,312	1,884	2,324	48,240
1944	2,089	2,079	1,466	1,223	1,532	3,829	11,750	7,757	8,432	7,302	4,876	3,468	55,800
1945	2,544	2,436	2,746	1,646	2,729	7,470	8,150	7,731	9,395	6,451	2,277	2,098	56,670
1946	2,664	1,811	891	55	003	1,791	4,083	2,941	3,101	3,748	3,832	2,121	33,000
1947	5,623	2,750	1,760	1,318	1,332	3,523	9,799	4,948	8,880	9,542	3,669	2,293	60,440
1948	2,482	2,570	1,760	1,318	1,332	7,708	4,760	3,595	5,792	6,439	4,588	2,444	45,110
1949	2,477	2,568	1,339	2,005	5,736	7,453	7,337	4,212	7,680	5,107	1,658	3,350	49,920
1950	2,919	2,051	1,503	1,520	1,660	3,038	6,802	6,760	5,273	7,053	5,490	3,237	47,510

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	628	175,000	Sept. 25, 1926	22,000	56,500	40,900,000	59,300	42,900,000
1927	646	381,000	Apr. 23, 1927	19,000	99,200	71,800,000	98,500	71,100,000
1928	666	224,000	June 20, 1928	12,400	74,300	53,900,000	80,300	58,200,000
1929	666	344,000	June 7, 1929	18,400	88,800	64,300,000	78,800	57,000,000
1930	701	150,000	May 11, 1930	9,550	47,700	34,600,000	47,200	34,200,000
1931	716	79,200	June 9, 1931	11,600	31,800	23,000,000	38,100	27,600,000
1932	731	221,000	Nov. 28, 1931	16,300	60,900	44,200,000	52,900	38,400,000
1933	746	105,000	June 2, 1933	6,200	39,000	28,200,000	38,800	28,100,000
1934	761	77,000	Mar. 9, 1934	8,020	23,730	17,180,000	24,630	17,830,000
1935	766	306,000	June 4, 1935	5,980	53,560	38,780,000	52,630	38,100,000
1936	806	134,000	Mar. 14, 1936	5,140	33,860	24,580,000	32,890	23,890,000
1937	826	123,000	July 25, 1937	5,400	38,900	28,160,000	37,860	27,410,800
1938	856	142,000	July 19, 1938	4,100	40,190	29,100,000	43,180	31,240,000
1939	876	170,000	Apr. 18, 1939	10,700	41,180	29,810,000	38,710	28,030,000
1940	896	76,700	Aug. 17, 1940	1,800	25,370	18,420,000	25,540	18,540,000
1941	926	201,000	June 17, 1941	8,760	35,850	25,950,000	48,720	35,270,000
1942	956	312,000	June 29, 1942	8,150	73,240	53,020,000	66,040	47,610,000
1943	976	356,000	June 22, 1943	8,200	66,630	48,240,000	84,990	47,050,000
1944	1006	504,000	Apr. 27, 1944	12,200	76,870	55,800,000	79,750	57,900,000
1945	1036	280,000	Apr. 20, 1945	12,900	78,260	56,670,000	75,020	54,310,000
1946	1056	150,000	Jan. 10, 1946	7,200	45,580	33,000,000	49,200	35,620,000
1947	1086	448,000	June 27, 1947	5,640	83,490	60,440,000	81,870	59,270,000
1948	1116	247,000	Mar. 24, 1948	12,500	62,130	45,110,000	61,540	44,680,000
1949	1146	196,000	Mar. 9, 1949	12,600	68,960	49,920,000	69,080	50,011,000
1950	1176	209,000	July 20, 1950	13,200	65,620	47,510,000	-	-

517. Moniteau Creek near Fayette, Mo.

Location.--Lat 39°07'15", long. 92°33'40", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14, T. 50 N., R. 15 W., at county highway bridge, 1 mile downstream from Hungry Mother Creek, $7\frac{1}{2}$ miles east of Fayette, and 15 miles upstream from mouth.

Drainage area.--81 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 607.93 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 2,760 cfs Dec. 22, 1949 (gage height, 18.48 ft, from floodmark), from rating curve extended above 2,000 cfs; no flow at times in 1948. Maximum stage known, 22.9 ft, probably in April 1944, from information by local resident.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	*90	8.46	13.4	2.24	7.94	0.22	1.58	-
1949	0.21	22.5	14.2	163	143	63.1	19.5	73.8	91.9	15.8	6.24	22.9	52.4
1950	108	5.91	93.2	84.5	50.3	27.4	34.7	15.2	59.2	22.9	9.92	1.37	42.9

* Not previously published; partly estimated on basis of weather records and records for adjoining stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	*5,530	504	824	133	488	13	82	-
1949	13	1,340	872	10,000	7,950	3,880	1,180	4,540	5,470	971	384	1,360	37,940
1950	6,850	352	5,730	5,200	2,790	1,680	2,060	937	3,530	1,410	610	82	31,030

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1116	-	-	-	-	-	-	-	-	-	-
1949	1146	2,570	June 1, 1949	0	52.4	0.647	8.79	37,940	55.9	11.23	48,450
1950	1176	2,760	Dec. 22, 1949	.1	42.9	.530	7.20	31,030	-	-	-

PETITE SALINE CREEK BASIN

518. Petite Saline Creek near Boonville, Mo.

Location.--Lat 38°55'00", long. 92°39'20", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 48 N., R. 16 W., at bridge on county road, half a mile downstream from Clarks Fork Creek, 7 miles south-east of Boonville, and 14 $\frac{1}{2}$ miles upstream from mouth.

Drainage area.--182 sq mi.

Gage.--Wire-weight gage. Datum of gage is 573.40 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 6,120 cfs Oct. 21, 1949 (gage height, 23.50 ft); minimum observed, 0.8 cfs Oct. 5, 1948 (gage height, 2.63 ft). Maximum stage known prior to 1949, 23.2 ft in June 1921, from information by local resident (discharge, 5,860 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	*155	27.8	122	373	280	13.2	7.95	-
1949	3.56	162	16.5	349	468	186	62.0	242	415	30.2	55.4	469	200
1950	401	24.5	233	256	136	87.0	123	313	363	21.5	271	9.67	183

* Not previously published; partly estimated on basis of weather records and records for nearby stations.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	*9,520	1,680	7,530	22,170	17,240	814	473	-
1949	219	9,640	1,020	21,480	26,020	10,200	3,690	14,900	24,710	1,860	3,410	27,930	145,100
1950	24,630	1,460	14,340	14,540	7,530	3,500	7,330	19,240	21,580	1,320	16,680	575	132,700

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second of Petite Saline Creek near Boonville, Mo.											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1116	-	-	-	-	-	-	-	-	-	-
1949	1146	5,110	Sept. 13, 1949	0.8	200	1.10	14.94	145,100	241	18.00	174,600
1950	1176	6,120	Oct. 21, 1949	3.5	183	1.01	13.69	132,700	-	-	-

MOREAU RIVER BASIN

519. Moreau River near Jefferson City, Mo.

Location.--Lat 38°30'25", long. 92°15'20", in $\frac{1}{2}$ sec. 4, T. 43 N., R. 12 W., at bridge on U. S. Highway 54, 5 miles southwest of Jefferson City and $5\frac{1}{2}$ miles downstream from confluence of North and South Moreau Creeks.

Drainage area.--531 sq mi.

Gage.--Wire-weight gage. Datum of gage is 562.73 ft above mean sea level, datum of 1929.

Extremes.--1947-50: Maximum discharge, 23,000 cfs June 23, 1948 (gage height, 27.0 ft, from floodmark), from rating curve extended above 16,000 cfs; minimum observed, 4.6 cfs Oct. 3, 4, 1948 (gage height, 1.34 ft).
Flood in 1905 reached a stage of 38.20 ft, flood in 1943, 35.11 ft, and flood in 1929, 32.91 ft, from floodmarks and information by local resident.

Monthly and yearly mean discharges, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. The year
1948	-	-	440	132	226	992	78.7	225	2,548	998	60.6	36.1 -
1949	11.0	656	157	1,591	1,043	832	412	397	1,721	199	102	494 629
1950	1,024	45.2	409	1,044	342	767	1,150	772	707	168	554	60.3 568

* Not previously published; partly estimated on basis of records for Lamine River at Clifton City and rainfall records.

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept. The year
1948	-	-	2,440	8,130	12,990	60,970	4,680	13,860	151,600	55,190	3,720	2,150 -
1949	877	39,050	9,650	97,940	57,920	51,150	24,510	24,400	102,400	12,230	6,290	29,410 455,500
1950	62,960	2,690	25,120	64,170	19,010	47,160	68,440	47,480	42,080	10,330	32,830	3,590 428,900

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1116	-	-	-	-	-	-	-	500	12.81	362,700
1949	1146	16,500	June 7, 1949	4.6	629	1.18	16.09	455,500	686	17.55	496,900
1950	1176	14,200	Oct. 22, 1949	10	588	1.11	15.05	425,900	-	-	-

520. Marais des Cygnes River at Melvern, Kans.^{1/}

Location.--Lat 38°31', long 95°38', in SW^{1/4} sec. 3, T. 18 S., R. 16 E., at highway bridge half a mile north of Melvern, 1^{1/2} miles upstream from Long Creek, and at mile 441.3.

Drainage area.--363 sq mi.

Gage.--Wire-weight gage. Datum of gage is 939.11 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50) 226 cfs (revised).

Extremes.--1939-50: Maximum discharge, 29,000 cfs Apr. 23, 1944 (gage height, 26.7 ft, from graph based on gage readings); no flow at times in many years.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	7.6	119	13.9	0.3	0	*58.0	*16.6
1941	0	37.5	21.5	478	79.6	54.7	220	72.2	733	85.7	590	63.2	203
1942	1,713	422	138	55.9	131	97.5	364	288	398	25.9	105	198	330
1943	175	55.9	357	91.1	153	47.6	27.1	511	1,395	114	7.6	1.7	244
1944	4.2	4.3	12.2	14.9	12.2	528	2,179	133	96.3	11.7	215	11.7	267
1945	225	125	1,267	66.3	85.6	519	1,451	593	453	480	41.7	211	462
1946	192	13.9	10.6	208	70.7	210	180	*293	299	59.3	80.2	46.8	*137
1947	54.5	53.8	75.2	36.1	12.9	715	1,048	88.9	509	15.1	3.2	1.6	212
1948	.84	.41	69.3	3.3	45.5	338	86.1	104	168	875	39.3	89.0	151
1949	1.19	3.8	2.0	363	818	251	153	519	531	190	7.9	1.81	233
1950	207	17.9	18.3	54.0	22.3	28.4	30.0	236	606	313	1,059	45.0	222

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	450	7,330	829	20	0	*3,450	*12,080
1941	0	2,230	1,320	29,270	4,420	3,360	13,120	4,440	43,600	5,330	36,270	3,760	147,100
1942	105,300	25,120	8,460	3,440	7,290	6,000	21,650	17,720	23,700	1,590	6,460	11,810	238,500
1943	10,740	3,320	21,930	5,600	8,470	2,930	1,610	31,440	83,010	7,000	470	101	176,600
1944	258	256	750	914	704	32,440	129,600	8,150	5,730	722	13,210	698	193,400
1945	13,810	7,450	77,900	4,070	4,750	31,900	86,330	36,470	26,950	29,500	2,570	12,540	334,200
1946	11,850	827	655	12,770	3,930	12,910	10,700	*18,010	17,790	2,410	4,930	2,780	*99,540
1947	3,350	3,210	4,690	2,204	718	43,990	62,220	4,240	30,290	930	196	95	156,100
1948	51	24	4,260	204	2,620	20,760	3,940	6,360	10,000	53,850	2,420	5,290	109,800
1949	73	224	125	22,300	45,450	15,410	9,130	31,910	31,590	11,650	466	108	168,500
1950	12,750	1,070	1,130	3,320	1,240	1,750	1,790	14,510	36,080	19,220	64,110	2,680	160,600

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1940	926, 1340	*2,650	Sept. 5, 1940*	0	*16.6	*12,080	*21.5	*15,630	
1941	926	a11,600	Aug. 26, 1941	0	203	147,100	390	282,400	
1942	956	a15,200	Oct. 14, 1941	3	330	238,500	187	135,600	
1943	976	a7,770	June 17, 1943	0	244	176,600	196	141,900	
1944	1006	29,000	Apr. 23, 1944	0	267	193,400	401	291,300	
1945	1036	a24,200	Apr. 16, 1945	1	462	334,200	343	248,400	
1946	1056, 1340	a8,540	June 20, 1946	2	*137	*99,540	*135	*97,480	
1947	1086	b8,620	Mar. 13, 1947	.1	216	156,100	206	149,200	
1948	1116	b19,400	July 21, 1948	0	151	109,800	146	105,900	
1949	1146	b10,000	May 28, 1949	0	233	168,500	253	183,000	
1950	1176	*b16,700	Aug. 13, 1950	.1	222	160,600	-	-	

* Revised.

a Observed.

b From graph based on gage readings.

^{1/} Prior to October 1948, published as Osage River at Melvern.

521. Salt Creek near Lyndon, Kans.

Location.--Lat 38°37', long. 95°38', in SW $\frac{1}{4}$ sec. 34, T. 16 S., R. 16 E., on downstream side of highway bridge, 2 $\frac{1}{2}$ miles east of Lyndon, and at mile 12.6.

Drainage area.--111 sq mi.

Gage.--Wire-weight gage. Datum of gage is 955.78 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 72.1 cfs (revised).

Extremes.--1939-50: Maximum discharge 17,900 cfs Apr. 22, 1944 and Apr. 16, 1945 (gage height, 16.0 ft, from floodmark), from rating curve extended above 6,000 cfs on basis of slope-area determination at gage height 17.0 ft; no flow at times.

Remarks.--Stage of 20.3 ft, previously published for flood of 1935, is considered to be in error on the basis of comparison with recent floods and should not be used.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	0	41.8	1.3	0	0	0	3.7
1941	0	9.5	7.5	181	22.1	18.1	98.8	36.4	158	5.2	79.0	22.6	53.1
1942	514	110	47.6	14.5	36.3	21.8	48.8	55.2	127	4.3	24.0	175	98.5
1943	50.9	18.4	142	26.6	30.8	13.0	9.8	185	412	17.3	1.1	7	75.7
1944	2.4	.2	2.5	3.4	4.3	129	730	24.8	21.3	8.2	63.2	8.8	82.5
1945	200	77.5	368	21.6	28.2	275	632	216	193	293	2.0	64.3	198
1946	11.8	4.0	1.1	42.5	19.5	58.7	84.0	190	*65.8	1.9	29.1	10.9	*43.5
1947	5.81	18.5	7.8	7.09	3.6	*178	361	17.2	188	5.0	.11	0	*65.3
1948	.03	.21	12.0	.78	5.80	82.6	19.0	9.16	9.91	295	25.3	21.3	41.4
1949	.68	4.77	.98	151	258	88.3	32.9	*59.4	190	113	5.1	1.42	*73.8
1950	*46.3	5.73	12.0	11.8	10.4	7.44	13.1	47.3	111	*112	*267	44.3	*57.9

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	0	2,570	77	0	0	0	2,850
1941	0	585	464	11,140	1,230	1,110	5,760	2,240	9,410	317	4,860	1,540	38,440
1942	31,590	6,550	2,930	895	2,020	1,340	2,890	3,400	7,550	262	1,470	10,390	71,290
1943	3,130	1,100	8,750	1,630	1,710	801	585	11,380	24,550	1,060	67	40	54,800
1944	149	10	151	206	248	7,950	43,450	1,530	1,270	504	3,880	524	59,870
1945	12,290	4,810	22,480	1,330	1,570	16,890	37,580	13,270	11,470	18,000	125	3,820	143,400
1946	728	238	87	2,610	1,080	3,610	5,000	11,670	*3,920	119	1,790	651	*31,480
1947	357	988	480	436	200	*10,340	21,460	1,060	11,060	309	6.7	0	*47,300
1948	1.6	12	740	47	333	5,690	1,130	583	590	18,130	1,560	1,270	30,070
1949	42	284	60	9,250	14,220	5,430	1,960	*3,680	11,320	6,920	190	85	*53,440
1950	*2,850	341	735	724	579	458	778	2,910	6,590	*6,890	*16,450	2,630	*41,940

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Yearly discharge, in cubic feet per second					Calendar year	
		Water year ending Sept. 30		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Momentary maximum						
		Discharge	Date					
1940	896	a945	May 21, 1940	0	3.7	2,650	5.1	3,680
1941	928	a2,940	June 8, 1941	0	53.1	38,440	108	78,480
1942	958	a6,730	Oct. 20, 1941	0	98.5	71,290	59.7	45,200
1943	978	*a5,360	June 18, 1943	0	75.7	54,800	58.2	42,130
1944	1008	17,900	Apr. 22, 1944	0	82.5	59,870	136	98,940
1945	1036	17,900	Apr. 16, 1945	0	198	143,400	145	105,100
1946	1056,1340	a5,780	May 10, 1946	0	*43.5	*31,480	*44.6	*32,280
1947	1086,1340	*b4,920	Mar. 13, 1947	0	*65.3	*47,300	*63.9	*46,230
1948	1116	b6,440	July 20, 1948	0	41.4	30,070	40.9	29,700
1949	1146,1340	b5,210	June 7, 1949	.1	*73.8	*53,440	*78.7	*56,980
1950	1176,1340	b6,100	Aug. 12, 1950	0	*57.9	*41,940	-	-

* Revised.

a Observed.

b From graph based on gage readings.

522. Hundred and Ten Mile Creek near Quenemo, Kans. 1/

Location.--Lat 38°39', long. 95°34', in SW $\frac{1}{4}$ sec. 18, T. 16 S., R. 17 E., on downstream side of highway bridge, 0.9 mile (revised) downstream from Dragoon Creek, 5 $\frac{1}{2}$ miles northwest of Quenemo, and 6.6 miles upstream from mouth.

Drainage area.--321 sq mi.

Gage.--Water-stage recorder. Datum of gage is 921.98 ft above mean sea level (levels by Kansas State Board of Agriculture). Prior to Sept. 5, 1940, wire-weight gage at same site and datum.

Average discharge.--11 years (1939-50), 206 cfs.

Extremes.--1939-50: Maximum discharge, 34,700 cfs Apr. 22, 1944 (gage height, 27.34 ft); minimum 0.1 cfs Sept. 27, 1944 and Oct. 22, 23, 1947.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	3.3	326	6.4	0.4	0	2.2	28.6
1941	0	5.4	8.3	245	77.9	46.4	102	133	456	28.5	204	13.4	110
1942	1,196	372	112	50.0	79.7	83.5	246	339	228	17.1	38.1	328	258
1943	135	53.1	447	108	94.9	57.8	40.8	454	1,926	130	7.8	2.2	287
1944	6.04	3.1	10.6	23.2	15.4	61.2	2,476	137	85.8	34.4	354	16.5	313
1945	237	151	984	77.5	96.2	545	1,315	632	671	1,065	12.8	61.5	469
1946	104	9.7	6.2	157	46.4	195	199	541	547	25.3	140	108	174
1947	8.3	26.0	42.9	20.8	10.5	559	943	70.4	390	13.8	1.7	1.5	174
1948	.61	.58	32.0	7.1	29.9	167	56.3	134	86.9	850	67.6	9.9	120
1949	2.9	4.7	2.3	445	646	191	123	261	204	92.3	4.3	4.15	162
1950	40.8	12.4	6.8	24.6	12.5	10.5	10.6	114	423	409	668	70.4	152

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0	0	198	20,040	381	22	0	129	20,770
1941	0	323	510	15,040	4,330	2,840	6,090	8,170	27,110	1,750	12,540	797	79,500
1942	73,540	22,140	6,870	3,080	4,430	5,140	14,610	20,850	13,560	1,050	2,340	19,540	187,100
1943	8,280	3,160	27,500	6,680	5,270	3,550	2,430	27,920	14,800	8,010	480	131	208,000
1944	371	182	651	1,430	887	37,620	47,300	8,420	5,100	2,110	21,790	1,100	227,000
1945	14,580	9,010	60,500	4,770	5,340	33,550	78,230	38,840	39,960	65,490	787	3,660	354,700
1946	6,380	575	383	9,630	2,690	12,000	11,820	33,260	32,550	1,560	8,610	6,450	125,900
1947	510	1,550	2,640	1,280	583	34,390	56,140	4,330	23,190	847	107	87	125,700
1948	37	35	1,970	436	1,720	10,260	2,160	8,260	5,170	52,260	4,160	589	87,060
1949	177	278	141	27,330	35,850	11,760	7,340	16,030	12,110	5,680	266	247	117,200
1950	2,510	740	417	1,510	696	645	629	6,990	25,150	25,140	41,090	4,190	109,700

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	926	6,240	May 21, 1940	0	28.6	20,770	29.8	21,600
1941	926	5,080	June 8, 1941	0	110	79,500	250	181,200
1942	1116	12,800	Oct. 20, 1941	3	258	187,100	171	123,500
1943	1116	17,500	June 16, 1943	1	287	208,000	235	170,300
1944	1116	34,700	Apr. 22, 1944	.2	313	227,000	427	309,700
1945	1116	25,000	(a)	1	469	354,700	384	277,900
1946	1116	16,900	June 20, 1946	3	174	125,900	170	123,300
1947	1116	8,810	Mar. 13, 1947	1	174	125,700	170	123,000
1948	1116	10,000	July 26, 1948	.1	120	87,060	118	85,610
1949	1146	6,200	Jan. 25, 1949	.6	162	117,200	166	120,300
1950	1176	6,580	June 3, 1950	.5	152	109,700	-	-

a Apr. 16, June 30, 1945

1/ Published as Dragoon Creek near Quenemo, Kans. 1939-41.

523. Marais des Cygnes River near Quenemo, Kans.^{1/}

Location.--Lat 38°35', long 95°28', in NW¼ sec. 12, T. 17 S., R. 17 E., at bridge on county highway, 0.2 mile downstream from Atchison, Topeka and Santa Fe Railway bridge, 2½ miles downstream from Hundred and Ten Mile Creek, 3 miles east of Quenemo, and at mile 419.8.

Drainage area.--1,030 sq mi, approximately.

Gage.--Chain gage. Datum of gage is 891.86 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--15 years (1922-37), 316 cfs (revised).

Extremes.--1922-38: Maximum discharge, 69,400 cfs (revised) Nov. 17, 1928 (gage height, 38.38 ft, from floodmark), from rating curve extended above 20,000 cfs by logarithmic plotting and unit-runoff study at gage height 40.35 ft for flood of July 11, 1951; no flow at times in 1926, 1931, 1933, 1934, 1936-38.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	-	-	-	-	-	-	-	392	61.7	2	-
1923	1.23	110	5.87	4.10	2.14	11.7	40.2	458	2,240	456	14.1	8.93	261
1924	124	66.8	96.1	29.7	152	264	143	121	73.4	126	172	28.8	117
1925	59	6.1	4.9	190	128	38.4	343	93.3	399	3.9	1.24	.96	104
1926	2.03	18.4	3.42	2.74	57.2	50.0	682	171	159	1.12	1.54	309	120
1927	1,270	103	87.3	88.3	183	398	3,670	1,430	1,540	415	1,430	176	899
1928	429	53.1	36.6	62.6	392	138	495	+93.0	2,320	577	289	55.8	408
1929	12.8	*3,397	935	761	603	498	1,690	1,820	1,070	691	68.0	11.1	*960
1930	119	206	27.7	219	231	30.3	21.8	559	278	4.45	.88	1.50	124
1931	.98	11.7	9.35	2.16	5.98	41.2	169	260	216	26.8	1.06	.87	62.1
1932	1,412	100	326	176	122	154	288	142	1,260	1,760	20.9	8.9	527
1933	3.71	1.57	3.94	2.74	2.18	8.77	220	774	18.5	12.2	34.5	82.2	98
1934	4.0	1.4	1.8	2.1	1.8	1.9	+31.6	522	28.1	.9	0	63.4	55.6
1935	7.6	317	59.5	67.7	31.1	27.7	11.62	460	3,909	37.4	186	201	609
1936	231	1,114	185	175	50.0	50.1	8.0	256	8.9	.4	.1	33.6	176
1937	13.6	1.2	4.3	114	1,314	433	197	323	198	22.1	136	27.9	225
1938	.3	1.0	.9	1.0	1.3	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	756	-	-	-	-	-	-	-	24,100	3,790	119	-
1923	-	6,550	361	252	118	719	2,390	28,200	133,000	15,700	867	531	189,000
1924	7,620	3,960	5,910	1,830	8,740	16,200	8,510	7,440	4,370	7,750	10,600	1,710	84,600
1925	3,630	363	301	11,700	7,110	2,360	20,400	5,740	23,700	240	78	57	75,700
1926	125	1,090	210	168	3,180	3,070	40,800	10,500	9,480	69	95	18,400	87,000
1927	78,100	6,130	5,370	5,430	10,200	23,900	218,000	87,900	91,800	25,500	87,900	10,500	651,000
1928	26,400	3,180	2,250	3,850	22,500	8,480	29,500	+5,710	138,000	35,500	17,800	3,320	296,000
1929	787	*200,000	57,500	46,800	33,500	30,600	101,000	112,000	63,700	42,500	4,180	680	*695,000
1930	7,320	12,300	1,700	1,350	12,800	1,860	1,300	34,400	16,500	274	54	89	89,900
1931	60	698	575	133	331	2,530	10,100	16,000	12,900	1,650	65	52	45,100
1932	96,512	25,000	20,100	10,800	7,010	9,470	16,000	8,710	74,900	108,000	1,290	528	382,000
1933	228	81	242	169	121	540	13,100	47,600	1,100	750	2,120	4,890	70,900
1934	248	63	113	127	95	115	71,880	32,080	1,870	54	0	3,770	740,240
1935	466	18,870	3,660	4,160	1,730	1,700	688	151,200	232,600	2,300	11,420	11,970	440,800
1936	14,230	66,300	11,390	10,770	2,880	3,080	476	15,720	532	26	6	2,000	127,400
1937	837	73	266	7,020	72,990	26,610	11,740	19,800	11,800	1,360	8,360	1,660	162,600
1938	18	60	54	61	73	-	-	-	-	-	-	-	-

* Revised.

† Corrected.

^{1/} Published as Osage River near Quenemo, Kans.

Yearly discharge, in cubic feet per second of Marais des Cygnes River near Quenemo, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	566	-	-	-	-	-	-	-
1923	566, 806	17,600	June 11, 1923	1	261	189,000	276	199,000
1924	586	*2,420	Aug. 7, 1924	1	117	84,600	98.5	71,400
1925	606	5,600	June 3, 1925	.1	104	75,700	101	72,800
1926	626	4,230	Sept. 13, 1926	0	120	87,000	242	175,000
1927	646, 806	19,900	Apr. 19, 1927	1	899	651,000	819	593,000
1928	666, 806	12,200	June 2, 1928	8	408	296,000	*723	*525,000
1929	(a)	*69,400	Nov. 17, 1928	3	*960	*395,000	629	456,000
1930	701	4,770	May 8, 1930	.2	124	89,900	96.6	70,000
1931	716	*2,140	May 31, 1931	0	62.1	45,100	261	189,000
1932	731, 806	20,600	July 6, 1932	0	527	382,000	327	237,000
1933	746	7,590	May 19, 1933	0	98	70,900	97.8	70,800
1934	761	7,140	May 15, 1934	0	55.6	*40,240	86.7	62,790
1935	786, 806	*36,000	June 1, 1935*	0	609	440,800	704	509,700
1936	806	7,540	Nov. 28, 1935	0	176	127,400	50.5	36,670
1937	826	8,140	Feb. 8, 1937	0	225	162,600	223	161,600
1938	856	-	-	0	-	-	-	-

* Revised.

† Corrected.

a In WSP 686, 716, 806, 1440.

524. Marais des Cygnes River near Ottawa, Kans.1/

Location.--Lat 38°37', long 95°15', in NW¼ sec. 6, T. 17 S., R. 20 E., 100 ft upstream from East Seventh Street Bridge, half a mile east of Ottawa city limits, three-quarters of a mile downstream from Skunk Creek, and at mile 398.0.

Drainage area.--1,260 sq mi, approximately.

Supplemental records available.--Gage-height records collected at Ottawa 1911-14 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 858.08 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Aug. 26, 1902, to Oct. 31, 1905, wire-weight, staff, or chain gage at Main Street Bridge in Ottawa 13/4 miles upstream at different datum.

Average discharge.--34 years (1902-5, 1919-50), 636 cfs, (revised).

Extremes.--1902-5, 1918-50: Maximum discharge, 87,400 cfs (revised) Nov. 17, 1928 (gage height, 38.65 ft) from rating curve extended above 44,000 cfs on basis of slope-area determination at gage height, 42.50 ft for peak of July 11, 1951; no flow at times in 1920, 1930-34, 1936-37, 1939-41.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	-	-	-	-	-	2020	-
1903	1,850	497	918	345	473	1,120	975	2,920	2,180	349	1,770	438	1,140
1904	2,200	1,320	401	338	213	1,250	2,150	5,170	6,140	5,950	237	447	1,990
1905	20.8	13.0	†11.9	†9.2	425	984	288	822	188	2,150	487	5,510	726
1906	102	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	265	95.4	465	320	1,050	703	371	739	192	6.21	3.8	-
1920	2.81	1.65	.71	2.4	3.96	16.6	113	148	561	251	90.2	1,550	226
1921	94.4	68.3	219	372	159	535	325	1,270	1,140	85.9	1,450	99.0	488
1922	12.5	17.5	22.2	18.3	34.1	120	*340	893	111	563	101	8.50	*609
1923	3.80	13.1	34.7	34.9	24.8	35.3	90.7	676	3,070	294	12.3	26.1	357
1924	211	77.6	151	45.3	220	352	160	218	105	222	162	86.4	168
1925	82.7	19.3	27.2	233	149	51.3	383	143	428	8.3	3.8	6.2	127
1926	17.5	51.8	13.3	5.06	120	89.7	835	179	134	3.69	2.33	286	143
1927	1,320	125	129	143	241	459	4,900	1,590	1,790	416	1,610	199	1,080
1928	806	78.3	36.7	85.8	570	192	533	79	42,230	529	358	73.9	461
1929	17.1	8230	1,190	915	698	605	1,860	1,940	1,270	680	74.5	9.17	1,280
1930	83.1	254	58.2	47.8	546	62.0	53.4	601	293	6.16	2.55	1.47	164
1931	-	10.3	7.6	3.4	13.8	59.4	211	248	275	31.1	3.6	2.5	72.1
1932	902	570	419	206	158	204	308	188	1,410	2000	37.5	11.3	624
1933	7.55	4.43	5.48	11.2	7.14	16.4	206	968	14.3	12.1	43.6	80.8	116
1934	9.5	4.6	3.2	8.6	5.2	2.8	33.1	544	24.7	.74	.75	109	63.0
1935	17.8	452	92.3	88.8	45.0	29.5	13.2	945	*3,329	42.8	170	206	*784
1936	253	1,270	232	224	51.8	62.6	10.9	315	7.9	1.1	.5	8.0	203
1937	22.8	3.1	1.7	134	1,558	431	220	326	197	25.9	117	32.3	245
1938	1.4	1.1	1.0	1.3	2.2	94.3	260	2,613	2,807	122	43.2	12.5	498
1939	1.1	2.0	2.2	2.0	1.5	5.9	122	149	200	2.3	39.3	0	43.9
1940	.003	.3	.07	.2	1.1	2.3	94.7	782	97.9	.2	11.2	142	94.9

* Revised.

† Corrected.

1/ Published as Osage River at Ottawa, 1902-05 and as Osage River near Ottawa, 1918-47.

Monthly and yearly mean discharge, in cubic feet per second of Marais des Cygnes River
near Ottawa, Kans.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	1.4	140	121	2011	443	192	773	283	2,009	452	*1,280	120	*651
1942	6546	2,007	556	224	425	326	1,487	1,082	1,253	98.2	372	1,638	*1,339
1943	860	260	1,014	412	427	225	169	2,148	5,142	489	38.9	9.3	*966
1944	44.7	11.6	42.8	62.7	53.0	1,632	8,859	672	428	94.5	978	81.5	1,072
1945	906	466	5,820	282	316	2,934	6,988	2,905	2,243	3,992	148	377	2,125
1946	624	44.7	42.6	1,015	219	812	993	1,985	985	97.3	483	292	637
1947	370	492	219	154	55.7	2,123	4,874	344	2,775	128	11.6	19.3	960
1948	9.7	12.3	384	131	199	1,443	269	381	456	290	226	208	557
1949	12.5	58.5	20.4	1,462	2,578	1,188	639	955	1,160	1,419	84.7	30.5	791
1950	592	91.8	53.4	238	106	94.3	138	802	1,565	1,889	5,683	300	805

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1902	-	-	-	-	-	-	-	-	-	-	-	-	-
1903	101,000	29,000	56,400	21,200	26,300	68,900	58,000	180,000	130,000	21,500	109,000	26,100	828,000
1904	135,000	78,800	24,700	20,800	12,200	76,900	129,000	318,000	365,000	243,000	14,600	26,600	1,440,000
1905	1,280	774	*730	7563	23,600	60,500	17,100	50,600	11,200	132,000	29,900	197,000	525,000
1906	6,270	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	15,800	5,740	28,600	17,800	64,600	41,800	22,800	44,000	11,800	382	226	-
1920	173	98	44	146	229	1,020	6,720	9,100	33,400	15,400	5,550	92,200	164,000
1921	5,800	4,060	13,500	22,900	8,830	32,900	19,300	78,100	67,800	5,280	89,200	5,890	354,000
1922	769	1,040	1,360	1,130	1,890	*73,800	*239,000	54,900	6,600	34,600	6,210	506	*441,000
1923	234	7,800	2,130	2,150	1,380	2,170	5,400	41,600	182,000	18,100	758	1,550	*285,000
1924	13,000	4,620	9,280	2,850	12,700	21,600	9,520	15,400	6,250	13,600	9,960	5,140	122,000
1925	5,080	1,150	1,670	14,300	8,280	3,150	22,800	8,790	25,500	510	234	369	91,800
1926	1,080	3,080	819	311	6,660	5,520	49,700	11,000	7,980	227	143	17,000	104,000
1927	81,200	7,440	7,950	8,790	13,400	28,200	291,000	97,800	107,000	25,600	99,000	11,800	779,000
1928	49,600	4,660	2,260	5,280	32,800	11,800	31,700	4,880	133,000	32,500	22,000	4,400	335,000
1929	1,050	371,000	72,200	56,300	38,800	37,200	111,000	119,000	75,600	41,800	4,580	546	929,000
1930	5,110	15,100	3,580	2,940	30,300	3,810	3,170	37,000	17,400	379	157	87	119,000
1931	44	611	468	208	766	3,650	12,500	15,300	16,400	1,910	222	151	52,200
1932	581	153,000	25,700	12,700	9,080	12,600	18,300	11,600	84,100	123,000	2,310	672	453,000
1933	464	264	337	688	397	1,010	12,200	59,500	850	744	2,680	4,810	83,900
1934	581	276	194	532	286	173	1,370	33,460	1,470	44	46	6,500	45,530
1935	1,100	26,880	5,670	5,460	2,500	1,820	827	181,100	17,100	2,630	10,480	12,260	*567,800
1936	15,550	75,560	14,270	13,790	2,980	3,850	643	19,390	466	65	32	474	147,100
1937	1,400	182	103	8,210	85,390	26,520	13,110	20,060	11,710	1,590	7,220	1,920	177,400
1938	87	65	61	79	125	5,780	15,480	160,700	167,000	7,480	2,650	748	360,200
1939	67	119	137	125	81	361	7,250	9,166	11,920	141	2,420	0	31,780
1940	2	20	4	14	65	141	5,640	48,070	5,820	12	690	8,430	66,910
1941	83	8,320	7,450	123,600	24,610	11,790	45,980	17,380	119,500	27,810	*77,490	7,140	*471,100
1942	*402,500	119,400	34,170	13,760	23,590	20,050	88,510	66,520	74,580	6,040	22,850	97,480	*969,400
1943	40,580	15,460	*99,250	25,300	23,700	13,860	10,060	132,100	306,000	30,080	2,390	551	*699,300
1944	2,750	690	2,630	3,880	3,050	100,300	527,200	41,350	25,450	5,810	60,120	4,850	778,100
1945	55,700	27,730	234,900	17,340	17,540	180,400	415,800	178,600	133,500	245,400	9,110	22,450	1,538,000
1946	38,350	2,660	2,620	62,400	12,180	49,900	59,100	121,900	58,610	5,980	29,720	17,390	460,800
1947	22,740	29,300	13,490	9,480	3,090	130,500	290,000	21,130	165,100	7,870	712	1,150	694,600
1948	595	734	23,620	8,050	11,450	88,710	15,980	23,440	27,120	178,300	13,910	12,400	404,500
1949	772	3,480	1,250	91,120	143,200	73,060	38,000	58,740	69,000	87,250	5,210	1,810	572,900
1950	36,390	5,460	3,280	14,600	5,870	5,800	8,200	49,330	93,120	116,100	226,400	17,870	582,400

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second, of Marais des Cygnes River near Ottawa, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1902	701	-	-	-	-	-	-	-
1903	701	*13,400	May 24, 1903	38	1,140	828,000	1,210	878,000
1904	701	*56,800	May 30, 1904	18	1,990	1,440,000	1,660	1,210,000
1905	701	*16,400	Sept. 19, 1905	-	726	525,000	-	-
1906	701	-	-	-	-	-	-	-
1919	506	*9,510	Mar. 18, 1919	0	-	-	321	232,000
1920	506	11,600	Sept. 14, 1920	-	226	164,000	258	187,000
1921	526	12,000	Aug. 11, 1921	14	488	354,000	460	333,000
1922	(a)	*27,300	Apr. 10, 1922	3	*609	*441,000	*619	*448,000
1923	566,1006	17,800	June 11, 1923	3	367	*285,000	390	282,000
1924	586	2,550	Oct. 16, 1923	1	168	122,000	142	103,000
1925	606	5,320	June 4, 1925	3	127	91,800	123	88,900
1926	626	3,710	Apr. 12, 1926	.6	143	104,000	270	195,000
1927	646,1006	19,500	Apr. 21, 1927	17	1,080	779,000	1,020	739,000
1928	666	10,900	Oct. 2, 1927	8	481	335,000	995	725,000
1929	686,1006	*97,400	Nov. 17, 1928	6	1,280	929,000	702	509,000
1930	701	3,610	May 8, 1930	0	164	119,000	133	96,400
1931	716	1,690	June 12, 1931	0	72.1	52,200	317	230,000
1932	731	14,800	Nov. 25, 1931	0	624	453,000	380	275,000
1933	746	7,050	May 19, 1933	0	116	83,900	116	83,930
1934	761	7,160	May 15, 1934	0	63.0	45,530	108	78,130
1935	(b)	43,200	June 2, 1935*	2	*784	*567,800	*883	*639,600
1936	806	7,620	Nov. 28, 1935	0	203	147,100	59.7	43,380
1937	826	8,490	Feb. 8, 1937	0	245	177,400	243	175,900
1938	856	17,700	June 13, 1938	1	498	360,200	498	360,300
1939	876	2,680	June 21, 1939	0	43.9	31,780	43.5	31,480
1940	896	6,480	May 21, 1940	0	94.9	68,910	117	84,740
1941	926,1440	*11,300	Aug. 28, 1941	0	*651	*471,100	*1,397	*1,011,000
1942	(c)	*26,800	Oct. 22, 1941	12	*1,539	*969,400	*785	*568,700
1943	976,1440	13,800	June 18, 1943	5	*866	*699,300	760	550,100
1944	1006	*73,000	Apr. 23, 1944	1	1,072	778,100	1,502	1,090,000
1945	1036	*70,100	Apr. 16, 1945	8	2,125	1,538,000	1,746	1,264,000
1946	1056	12,500	May 12, 1946	10	637	460,800	667	482,700
1947	1086	18,800	Mar. 15, 1947	2	960	634,600	903	654,000
1948	1116	15,300	July 23, 1948	1	557	404,300	530	384,900
1949	1146	13,100	July 7, 1949	6	791	572,900	846	612,500
1950	1176	14,800	Aug. 15, 1950	6	805	582,400	-	-

* Revised.

† Corrected.

* Not previously published.

a WSP 546, 1006, 1440.

b WSP 786, 1006, 1440.

c WSP 956, 1006, 1440.

525. Pottawatomie Creek near Garnett, Kans.

Location.--Lat 38°20', long. 95°15', in SW $\frac{1}{4}$ sec. 6, T. 20 S., R. 20 E., at bridge on U. S. Highway 59, 0.2 mile downstream from confluence of North Pottawatomie and Cedar Creeks, 0.4 mile (revised) upstream from Atchison, Topeka & Santa Fe Railway bridge, 4 miles north of Garnett, and at mile 40.7.

Drainage area.--334 sq mi.

Gage.--Wire-weight gage. Datum of gage is 873.0 ft above mean sea level, datum of 1929.

Average discharge.--11 years (1939-50), 263 cfs (revised).

Extremes.--1939-50: Maximum discharge, 23,600 cfs Apr. 23, 1944 (gage height, 30.6 ft, from graph based on gage readings), from rating curve extended above 14,000 cfs on basis of contracted-opening determination at gage height, 32.3 ft for flood of July 11, 1951; no flow at times during most years.

Flood of Nov. 17, 1928 (revised) reached a stage of approximately 32.2 ft, from information by local resident (discharge, 44,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	0.3	1.7	*216	114	99.8	1.2	18.3	95.7	*45.1
1941	.7	134	78.3	912	123	32.9	238	38.0	762	29.9	357	588	274
1942	1,802	441	279	44.0	122	262	752	115	691	46.3	146	585	441
1943	356	63.9	421	64.6	78.6	48.8	26.6	1,198	884	21.1	8.2	1.1	264
1944	36.7	5.3	26.6	43.5	57.5	662	1,661	272	275	19.3	795	20.6	322
1945	245	37.0	592	50.5	103	629	1,253	480	197	*256	355	704	*410
1946	232	10.4	13.1	501	126	160	611	135	5.0	11.1	110	29.6	162
1947	19.3	57.8	120	13.8	8.8	301	1,589	250	565	39.2	1.0	183	260
1948	8.0	2.2	171	61.4	96.2	961	101	259	115	86.3	23.5	347	253
1949	2.5	28.8	3.2	*555	506	.474	86.2	104	*313	641	8.3	1.08	*226
1950	185	15.7	4.5	72.1	29.0	29.2	84.7	128	186	723	*1,258	51.0	*234

* Revised.

Monthly and yearly runoff, in acre-feet of Pottawatomie Creek near Garnett, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	0	0	0	0	18	103	*12,840	6,990	5,940	71	1,130	5,700	*32,790
1941	44	7,990	4,820	56,050	6,810	2,030	14,180	2,340	45,370	1,840	21,940	35,010	198,400
1942	110,800	26,250	17,130	2,700	6,750	16,110	44,750	7,080	41,130	2,850	8,970	34,810	319,300
1943	20,660	3,800	25,890	3,970	4,360	5,000	1,580	73,860	52,580	1,300	504	67	191,400
1944	2,260	194	1,630	2,680	3,310	40,690	98,850	16,740	16,390	1,180	48,900	1,230	234,100
1945	15,050	2,200	36,410	3,110	5,740	38,690	74,570	29,530	11,710	*15,760	21,830	41,890	*296,500
1946	14,280	617	805	30,830	6,390	9,840	36,340	8,270	300	682	6,750	1,760	117,500
1947	1,190	3,440	7,410	849	490	18,520	94,540	15,370	33,640	2,410	61	10,880	188,800
1948	490	129	10,500	3,780	5,540	59,110	6,030	15,950	6,830	53,080	1,440	20,670	183,500
1949	157	1,720	198	*34,110	28,100	29,170	5,130	8,420	*18,650	39,410	508	64	*163,600
1950	11,270	932	276	4,430	1,610	1,900	5,040	7,870	11,070	44,480	*77,330	3,030	*169,100

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1940	896, 1390	*5,060	Apr. 17, 1940*	0	*45.1	*32,790	*62.8	*45,650
1941	956, 1390	*10,500	Aug. 26, 1941*	0	274	199,400	469	359,700
1942	956	22,400	Oct. 14, 1941	3	441	319,300	298	215,500
1943	976	13,700	May 18, 1943	0	264	191,400	200	145,100
1944	1008	23,600	Apr. 23, 1944	0	322	234,100	391	283,600
1945	1036, 1390	21,800	Apr. 16, 1945	1	*410	*296,500	*357	*258,500
1946	1056	11,300	Apr. 23, 1946	0	162	117,500	157	113,800
1947	1086, 1390	14,800	Apr. 5, 1947*	0	260	188,800	260	187,900
1948	1116	23,000	July 20, 1948	1	253	183,500	240	174,500
1949	1146, 1390	13,400	July 7, 1949	.1	*226	*163,600	*240	*174,000
1950	1176, 1390	*13,600	Aug. 13, 1950	.1	*234	*169,100	-	-

* Revised.

526. Pottawatomie Creek at Lane, Kans.

Location--Lat 38°27', long. 95°05', in NW $\frac{1}{4}$ sec. 34, T. 18 S., R. 21 E., at Lane and 16 miles above mouth.

Drainage area--513 sq mi.

Gage--Chain gage. Altitude of gage is 840 ft (from topographic map).

Extremes--1929-32: Maximum discharge, 7,670 cfs Nov. 25, 1931 (gage height, 25.25 ft); no flow Aug. 9-16, 1930, Sept. 7-21, 1931.
Flood of Nov. 17, 1928 reached a stage of 32.84 ft (revised).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	*1,150	*751	172	31.1	3.80	-
1930	20.0	75.6	7.97	4.00	*212	23.4	108	379	115	230	.232	9.53	*78.7
1931	1.07	2.42	26.0	7.87	29.9	60.3	191	332	294	8.23	.797	.083	79.4
1932	.74	1,170	186	172	122	80.0	86.9	56.2	497	-	-	-	-

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	-	*70,800	*44,700	10,600	1,910	226	-
1930	1,230	4,500	490	246	*11,800	1,440	6,440	23,500	6,830	142	14	467	*57,000
1931	66	144	1,600	484	1,660	3,710	11,400	20,400	17,500	506	49	5	57,000
1932	46	69,700	11,400	10,600	7,020	4,920	5,170	3,460	29,500	-	-	-	-

* Revised.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	716, 1440	-	Nov. 17, 1928	-	-	-	-	-
1930	716, 1440	*2,850	Feb. 7, 1930	0	*78.7	*57,000	*72.6	*52,600
1931	716	*3,550	May 19, 1931*	0	79.4	57,500	189	137,000
1932	731	*7,670	Nov. 25, 1931	-	-	-	-	-

* Revised.

* Not previously published.

527. Marais des Cygnes River at Trading Post, Kans.1/

Location.--Lat 38°15', long 94°41', in SE¹/₄ sec. 5, T. 21 S., R. 25 E., at bridge on U. S. Highway 69 at Trading Post, 1 mile upstream from Big Sugar Creek, and at mile 316.0.

Drainage area.--2,910 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 761.61 ft above mean sea level, datum of 1929. Prior to Feb. 4, 1935, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 1,747 cfs, (revised).

Extremes.--1928-50: Maximum discharge, 106,000 cfs (revised) Nov. 18, 1928 (gage height, 34.45); no flow at times in many years.

Remarks.--Stage-discharge relation affected by undetermined amounts of backwater from Big Sugar Creek on some days. About 5 percent of the daily discharges, generally between 2,000 cfs and 20,000 cfs, may be affected. Estimated error in monthly figures probably less than 20 percent for two thirds of the months containing backwater periods.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	58.3	5,200	3,180	5,070	1,420	1,470	6,590	6,560	4,290	1,670	114	28.4	*3,960
1930	207	549	108	85.1	2,360	158	1,870	1,870	670	33.5	22.5	20.3	*508
1931	6.84	29.6	91.0	22.3	92.5	250	646	1,260	856	56.2	55.2	5.13	282
1932	2,904	960	1,220	819	480	472	602	428	2,780	3,000	59.8	12.3	*1,230
1933	5.7	5.8	40.4	37.4	31.8	237	501	3,090	118	220	244	325	410
1934	27.0	9.3	31.4	21.5	14.5	32.4	95.6	1,202	38.2	4.6	0	304	150
1935	55.1	2,190	518	866	412	254	257	*7,543	13,210	198	293	353	*2,173
1936	655	3,752	915	623	571	256	63.7	771	35.8	.6	0	23.8	636
1937	80.1	10.2	68.7	525	2,610	2,039	943	1,965	2,439	42.2	112	31.1	890
1938	1	3	2.1	1.6	2.4	554	1,422	9,623	8,580	241	63.5	22.8	1,715
1939	1.1	2.7	4.8	7.4	5.3	14.2	204	236	448	29.2	145	.2	91.4
1940	0	0	0	0	5.8	190	814	1,704	889	80.2	373	435	375
1941	2.2	524	513	*5,652	*1,978	458	1,949	481	5,745	733	1,476	1,452	*1,573
1942	4,180	5,290	1,715	610	923	1,716	4,713	2,582	3,316	489	724	5,960	3,361
1943	1,832	885	3,792	1,233	894	541	561	10,770	7,986	1,341	597	33.8	2,554
1944	275	47.4	197	248	345	5,261	18,910	5,448	2,117	219	4,006	571	2,941
1945	1,734	656	6,435	691	970	6,829	24,280	6,545	6,122	8,403	787	923	*4,554
1946	2,199	129	102	4,036	1,014	1,928	3,914	3,665	1,182	256	1,563	657	1,729
1947	834	1,178	1,103	427	149	4,286	14,130	2,185	8,940	520	33.7	811	2,868
1948	531	114	1,426	688	601	6,184	945	1,836	2,406	10,600	753	706	*2,253
1949	30.6	182	51.6	334	5,947	3,288	2,126	1,933	3,409	4,618	516	237	2,107
1950	2014	278	245	930	487	318	641	1,626	2,824	5,758	8,584	963	2,078

* Revised.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	3,580	100,000	196,000	112,000	78,900	90,400	392,000	403,000	255,000	102,000	7,010	1,690	*2,870,000
1930	12,700	32,700	6,640	5,230	151,000	9,720	10,600	115,000	39,900	2,060	1,380	1,210	*368,000
1931	420	1,760	5,600	1,370	5,160	15,400	38,400	77,600	50,900	3,460	3,400	305	204,000
1932	179	295,000	75,200	50,400	27,600	29,000	35,800	26,300	133,000	184,000	3,680	732	*894,000
1933	351	343	2,490	2,300	1,770	14,600	29,800	190,000	7,010	13,500	15,000	19,300	296,000
1934	1,660	555	1,930	1,320	803	1,990	5,690	73,910	2,270	284	0	18,100	108,500
1935	3,390	130,300	31,820	53,240	22,870	15,620	15,320	43,800	785,800	12,160	17,990	21,030	*1,573,000
1936	40,300	223,300	56,270	38,290	32,860	15,730	3,790	47,390	2,130	36	0	1,420	461,500
1937	5,700	608	4,220	32,280	144,900	125,400	56,090	120,800	145,100	2,590	6,910	1,850	844,400
1938	78	12	129	101	133	34,030	84,620	591,700	510,500	14,810	3,810	1,360	1,241,000
1939	65	163	298	456	325	875	12,120	14,480	26,640	1,790	8,930	12	66,150
1940	0	0	0	0	337	11,690	48,410	104,800	52,890	4,950	22,930	25,900	271,900
1941	137	31,190	31,570	347,500	109,900	28,140	116,000	29,570	22,800	45,050	90,790	86,380	*1,139,000
1942	871,600	14,700	105,500	37,520	51,270	105,500	280,500	158,000	197,300	30,090	44,530	235,600	2,433,000
1943	112,800	52,640	233,200	75,830	49,870	33,250	33,360	662,200	475,200	82,430	36,730	2,010	1,849,000
1944	16,930	2,820	12,130	15,240	19,730	323,500	125,000	212,000	126,000	13,440	246,300	22,060	2,135,000
1945	106,600	39,050	599,300	42,470	53,890	419,900	650,000	402,000	403,640	3,005,160	70,470	54,920	*3,297,000
1946	135,200	7,680	6,240	248,200	56,320	118,500	232,900	225,300	70,340	15,750	96,120	39,120	1,252,000
1947	51,280	70,080	67,840	26,250	8,290	263,500	840,700	134,300	332,000	31,980	2,070	48,240	2,077,000
1948	32,630	6,750	87,680	41,080	34,560	580,200	56,230	112,900	143,200	681,900	46,270	42,020	*1,635,000
1949	1,880	10,810	3,170	205,000	324,700	202,200	126,500	118,800	283,900	31,740	14,110	1,126,000	1,526,000
1950	123,900	16,570	15,070	57,180	27,050	19,530	38,120	99,960	168,000	354,100	27,800	57,270	1,504,000

* Revised.

† Corrected.

1/ Published as "Osage River at Trading Post", 1928-47.

Yearly discharge, in cubic feet per second of Marais des Cygnes River at Trading Post, Kans.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	701,1440	*106,000	Nov. 18, 1928	11	*3,960	*2,870,000	*2,340	*1,690,000
1930	701,1440	*11,700	Feb. 9, 1930*	.3	*508	*368,000	*447	*324,000
1931	716	*8,770	May 20, 1931	0	282	204,000	783	566,000
1932	731,1440	19,000	Nov. 29, 1931†	.1	*1,230	*894,000	*725	*527,000
1933	746	*10,100	May 22, 1933	1	410	296,000	411	297,400
1934	761	9,560	May 17, 1934	0	150	108,500	373	269,900
1935	786,1440	40,800	June 5, 1935	8	*2,173	*1,573,000	*2,396	*1,728,000
1936	808	14,200	Nov. 30, 1935	0	636	461,500	207	150,200
1937	828	16,000	June 10, 1937	2	890	644,400	879	636,000
1938	858	49,800	May 24, 1938	0	1,715	1,241,000	1,715	1,242,000
1939	876	2,650	June 22, 1939	0	91.4	66,160	90.7	65,630
1940	896	*8,890	May 23, 1940	0	575	271,900	461	334,800
1941	926,1440	*14,900	Jan. 19, 1941	0	*1,573	*1,139,000	*3,271	*2,568,000
1942	956	23,000	Oct. 27, 1941	41	3,561	2,433,000	2,127	1,540,000
1943	976	41,600	May 19, 1943	26	2,554	1,849,000	2,048	1,483,000
1944	1006	74,400	Apr. 25, 1944	21	2,941	2,135,000	3,648	2,648,000
1945	1036,1440	*57,000	Apr. 18, 1945	21	*4,554	*3,297,000	*4,007	*2,901,000
1946	1056	15,800	Jan. 8, 1946	20	1,729	1,252,000	1,784	1,292,000
1947	1086	28,800	Apr. 8, 1947	7	2,868	2,077,000	2,782	2,014,000
1948	1116,1440	*41,100	July 27, 1948	18	*2,253	*1,635,000	*2,100	*1,524,000
1949	1146	21,200	July 11, 1949	18	2,107	1,526,000	2,300	1,665,000
1950	1176	25,700	Aug. 20, 1950	15	2,078	1,504,000	-	-

* Revised.

† Corrected.

Note.--Records for Aug. 2, 1921 to Dec. 31, 1923, published in Water-Supply Papers 526, 566, 586, and 701 have been found in error on basis of restudy of the original data and comparison with records for nearby stations. Those records are not published herein and should not be used.

528. Big Sugar Creek at Farlinville, Kans.

Location.--Lat 38°14'25", long. 94°51'05" in NW¼ sec. 11, T. 21 S., R. 23 E., at bridge on State Highway 7 at Farlinville, 3¼ miles upstream from Richland Creek, 7½ miles upstream from Little Sugar Creek, and at mile 14.

Drainage area.--198 sq mi.

Gage.--Wire-weight gage. Datum of gage is 783.92 ft above mean sea level, datum of 1929. Feb. 21, 1929, to June 30, 1932, chain gage at datum 0.72 ft higher.

Extremes.--1929-32, 1948-50: Maximum discharge, 8,800 cfs (revised) Aug. 12, 1950 (gage height, 27.7 ft, from graph based on gage readings), no flow at times during 1929-31.

Maximum stage known occurred on Nov. 17, 1928 and was about 2 ft higher than that of Aug. 12, 1950, from information by local residents.

Monthly and yearly mean discharge, in cubic feet per second											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1929	-	-	-	-	-	101	*356	*509	133	7.61	1.47
1930	4.32	79.1	41.6	2.26	*211	10.6	27.1	*197	29.2	.76	18.8
1931	.96	1.27	18.1	3.26	18.2	52.8	71.6	135	*133	.97	0
1932	0	*172	60.6	71.9	61.9	18.2	35.4	121	47.5	-	-
1949	-	-	1.91	*332	*571	*237	70.8	*142	*139	*394	3.12
1950	22.8	2.18	1.51	29.0	29.6	21.5	267	129	*255	*492	27.3

* Revised.

Monthly and yearly runoff, in acre-feet											
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	The year
1929	-	-	-	-	-	6,220	*21,200	*31,300	7,930	468	90
1930	266	4,710	2,560	139	*11,700	655	1,810	*12,100	1,740	47	1,120
1931	59	75	1,110	200	1,010	3,250	4,270	8,310	*7,900	-	0
1932	0	*10,300	3,730	4,420	3,560	1,120	1,990	743	2,820	-	-
1949	-	-	117	*20,420	*31,740	*14,600	4,220	*8,700	*8,280	*24,200	192
1950	1,400	130	93	1,780	1,650	1,320	15,860	7,910	*15,180	*30,240	1,620

* Revised.

Yearly discharge, in cubic feet per second of Big Sugar Creek at Farlinville, Kans.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	716,1440	*85,450	May 18, 1929	0	-	-	-	-
1930	716,1440	*3,290	May 11, 1930	0	*50.7	*36,600	*50.0	*30,400
1931	716,1440	*2,470	May 19, 1931	0	*38.3	*26,300	*53.9	*39,100
1932	731,1440	*3,660	Nov. 24, 1931*	0	-	-	-	-
1949	1146,1440	*5,500	July 7, 1949	-	-	-	*158	*114,100
1950	1176,1440	*8,800	Aug. 12, 1950*	.6	*152	*110,000	-	-

* Revised.

* Not previously published.

a Maximum during period March to September.

529. Little Osage River at Fulton, Kans.

Location.--Lat 38°01'20", long. 94°42'50", on east line sec. 25, T. 23 S., R. 24 E.,
at bridge on U. S. Highway 69, three-quarters of a mile north of Fulton.

Drainage area.--295 sq mi.

Gage.--Wire-weight gage. Datum of gage is 776.37 ft above mean sea level, datum of
1929.

Extremes (revised).--1949-50: Maximum discharge, 15,500 cfs July 19, 1950 (gage height,
28.5 ft, from graph based on gage readings); no flow Oct. 12, 13, 1949.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	7.80	633	713	276	92.6	134	189	649	11.5	9.83	-
1950	1.46	4.16	23.7	57.1	26.7	45.6	103	263	161	1,081	699	97.0	216

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	480	38,950	39,590	16,990	5,510	8,240	11,220	39,880	710	585	-
1950	90	247	1,460	3,510	1,480	2,800	6,150	16,190	9,600	66,450	42,980	5,770	156,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean
		Discharge	Date				
1949	1176,1440	10,000	July 8, 1949	-	-	-	226
1950	1176	*15,500	July 19, 1950	0	216	156,700	-

* Supplemental peaks in 1949 revised, hence the 1440.

530. Little Osage River at Stotesbury, Mo.

Location.--Lat 37°58'51", long. 94°33'46", in S $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 21, T. 37 N., R. 33 W., on county
highway bridge half a mile north of Stotesbury, 1.3 miles downstream from Bitterroot
Creek.

Drainage area.--427 sq mi.

Gage.--Chain gage. Datum of gage is 746.5 ft above mean sea level, datum of 1929.

Extremes.--1929-32: Maximum discharge, 13,600 cfs May 13, 1929 (gage height, 28.29 ft);
no flow at times in 1930 and 1931.

Maximum stage known, 30.7 ft Oct. 4, 1927 (discharge, about 30,000 cfs, revised),
from rating curve extended above 12,000 cfs by logarithmic plotting.

Monthly and yearly mean discharge, in cubic feet per second, of Little Osage River at Statesbury, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	1,010	2,180	380	88.1	5.33	0.65	-
1930	0.22	20.8	6.71	14.4	426	19.6	8.0	324	149	9.89	0	1.74	79.4
1931	2.41	3.70	22.2	7.11	53.1	88.6	128	184	140	1.13	8.29	0	53.1
1932	.03	350	77.9	106	153	36.8	65.0	18.5	54.0	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	-	-	-	-	-	-	60,100	134,000	22,600	5,420	328	39	-
1930	14	1,240	413	885	23,700	1,210	476	19,900	8,870	608	0	104	57,400
1931	148	220	1,360	437	2,950	5,450	7,620	11,300	8,330	69	510	.2	38,400
1932	1.8	20,800	4,790	6,520	8,800	2,260	3,870	1,140	3,210	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff Inches	Acre-feet	Mean	Runoff	
		Discharge	Date							Inches	Acre-feet
1929	686										
1930	701	3,000	Feb. 8, 1930	0	79.4	0.186	2.52	57,400	79.5	2.53	57,500
1931	718	2,080	June 15, 1931	0	53.1	.124	1.69	38,400	86	2.73	62,300
1932	731			0							

531. Marmaton River near Fort Scott, Kans.

Location.--Lat 37°52', long 94°40', in NW $\frac{1}{4}$ sec. 21, T. 25 S., R. 25 E., at old military highway bridge, 2 miles northeast of Fort Scott, 2 $\frac{1}{2}$ miles downstream from Mill Creek, 2 $\frac{1}{2}$ miles west of the Kansas-Missouri State line, and at mile 30.2.

Drainage area.--411 sq mi.

Gage.--Water stage recorder and wire weight gage. Datum of gage is 752.60 ft above mean sea level, datum of 1929. Aug. 5, 1921, to Dec. 3, 1934, chain gage, and Dec. 4, 1934, to Jan. 31, 1939, water stage recorder and chain gage at present site and datum.

Average discharge.--24 years (1921-24, 1929-50), 308 cfs (revised).

Extremes.--1921-25, 1929-50: Maximum discharge, 37,400 cfs (revised) May 28, 1935 (gage height, 37.30 ft); no flow at times in 1934, 1936, 1939, 1942-45.

Maximum stage known, 42.34 ft Sept. 7, 1915. Flood of June 11, 1916 reached a stage of 40.6 ft and flood of Aug. 14, 1927 reached a stage of 39.35 ft, from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	-	*369	-
1922	15.1	5.59	10.1	30.6	24.1	670	*2,200	173	7.94	*211	1.0	5.56	*363
1923	4.16	231	16.0	10.4	23.0	*528	142	*225	*1,570	52.6	3.16	98.2	*225
1924	*464	240	*775	241	*706	171	*507	290	216	*1,040	246	134	*419
1925	219	242	103	525	452	293	*829	56.9	-	-	-	-	-
1929	-	-	-	-	-	-	-	*5,240	*267	77.1	4.77	1.23	-
1930	*.86	*9.46	*3.55	*3.87	*518	*18.9	*24.3	*256	*449	*2.80	*1.53	*41.6	*107
1931	9.64	37.0	82.0	33.7	74.3	149	210	*369	33.1	1.0	1.0	1.67	*85.4
1932	2.8	*403	100	156	141	37.2	61.1	25.8	64.3	2.5	6.75	11.0	*82.6
1933	2.42	1.43	70.5	61.1	*52.9	170	299	*1,000	35.6	59.5	69.9	*898	*227
1934	*178	76.9	142	112	32.1	129	*410	81.6	81.2	.5	.4	59.9	*110
1935	53.6	*431	169	273	238	191	259	*2,705	*1,474	32.5	2.7	9.1	*491
1936	*352	2,009	1162	104	*171	51.8	23.0	24.1	14.3	.4	.6	285	*264
1937	*1,365	94.9	34.5	341	451	617	293	*373	1,319	51.0	11.9	53.2	*417
1938	1.3	1.5	3.0	19.5	114	293	359	1,598	1,012	9.3	1.8	1.3	285
1939	1.6	1.3	1.0	1.1	1.5	2.0	*129	70.4	55.3	6.5	8.0	1.1	*23.1
1940	1.1	1.2	1.9	1.7	3.8	68.6	289	109	347	8.5	58.9	61.0	78.6
1941	1.1	8.7	42.7	642	208	53.0	709	35.0	807	2.8	315	298	553
1942	5,115	933	316	95.3	224	254	825	195	1,457	92.8	25.3	74.8	635
1943	82.0	62.9	551	129	118	189	90	388	1,022	26.2	6.5	1.4	475
1944	12.7	1.9	21.5	25.4	248	753	2,037	464	426	41.0	428	441	406
1945	524	110	409	85.9	249	836	1,480	620	789	699	491	354	555
1946	294	21.2	17.2	1,291	332	251	155	25.7	4.3	2.7	1.5	1.2	200
1947	1.4	261	25.0	15.9	3.9	235	1,175	818	620	22.1	2.7	10.9	265
1948	1.60	1.66	2.28	14.2	25.6	481	124	505	1,016	1,469	45.6	34.5	312
1949	18.5	365	12.1	1,243	1,009	463	181	689	1,039	20.5	85.8	442	356
1950	39.3	3.4	105	145	89.5	166	68.0	216	233	2,104	1,038	126	566

* Revised.

† Corrected.

Monthly and yearly runoff, in acre-feet, of Marmaton River near Fort Scott, Kans.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	-	*22,000	-
1922	928	533	621	1,880	1,540	105,000	131,000	10,600	472	*13,000	†62	331	*264,000
1923	256	15,800	986	639	1,280	*32,400	8,470	*13,800	*81,700	3,250	194	5,850	*163,000
1924	*28,500	14,500	*47,600	14,800	40,600	10,500	*30,200	17,800	12,900	*63,800	15,100	7,970	*304,000
1925	13,500	14,400	6,330	32,300	25,100	18,000	*49,300	3,500	-	-	-	-	-
1929	-	-	-	-	-	-	-	*199,000	*15,900	4,740	293	73	-
1930	*53	*563	*218	*238	*28,770	1,160	*1,450	*15,760	*26,730	*172	*94	*2,480	*77,700
1931	605	2,200	5,040	2,070	4,130	9,170	12,500	*23,900	1,970	61	61	99	*61,800
1932	171	*24,000	6,180	9,610	8,090	2,290	3,640	1,590	3,830	155	415	†60	*80,000
1933	149	85	4,340	3,760	2,940	10,400	17,800	*61,500	2,120	8,660	4,300	*53,300	*164,400
1934	*11,000	4,580	8,730	6,860	1,780	7,940	*24,420	5,640	4,830	28	24	3,560	*79,390
1935	3,300	*25,660	10,420	16,780	13,210	11,730	15,440	*66,300	*87,690	2,000	167	543	*353,200
1936	*21,670	19,600	*9,970	6,410	*9,850	3,190	1,370	1,480	849	22	40	16,960	*191,400
1937	*63,940	5,640	2,120	20,940	25,070	57,950	17,460	*22,930	78,480	3,140	732	3,170	*301,600
1938	79	87	184	1,200	6,320	18,000	21,370	98,240	60,220	573	113	79	206,500
1939	101	79	61	65	83	125	*7,660	4,330	3,290	397	492	63	*16,750
1940	69	73	117	103	216	4,220	17,170	6,710	20,620	526	3,620	3,630	57,070
1941	67	518	2,630	39,480	11,530	3,260	101,700	2,150	48,050	171	19,350	17,700	400,600
1942	91,500	55,510	19,440	5,860	12,460	15,630	49,110	11,970	86,670	5,700	1,560	4,450	459,900
1943	5,040	3,740	32,680	7,900	6,560	11,590	5,370	208,300	60,810	1,610	399	85	344,100
1944	760	115	1,320	1,560	14,280	46,270	121,200	28,520	25,360	2,520	26,340	26,240	294,500
1945	32,220	6,570	26,180	5,280	13,550	51,410	68,040	38,110	46,960	42,960	30,180	21,080	401,800
1946	18,080	1,260	1,060	79,350	18,460	15,450	9,250	1,580	258	165	95	71	145,100
1947	83	15,510	1,540	976	214	14,470	69,910	50,300	36,890	1,360	165	651	192,100
1948	98	99	140	873	1,470	29,590	7,370	31,070	60,430	90,340	2,680	2,050	226,200
1949	1,020	21,700	744	76,450	56,000	28,480	9,590	42,340	20,620	63,840	1,260	5,110	327,200
1950	2,420	202	6,450	8,790	4,970	10,220	4,040	13,300	13,860	29,300	63,840	7,510	264,900

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	526, 1390	-	-	-	-	-	-	-
1922	546, 1390	*28,700	Mar. 14, 1922	1	*363	*264,000	*382	*277,000
1923	566, 1390	13,500	June 10, 1923	1	*225	*163,000	*329	*238,000
1924	586, 1390	*8,000	July 12, 1924	2	*419	*304,000	*341	*248,000
1925	606, 1390	-	-	-	-	-	-	-
1929	686, 1390	*35,300	May 12, 1929	-	-	-	-	-
1930	701, 1390	*6,400	June 12, 1930	*0.7	*107	*77,700	*117	*84,700
1931	716, 1390	*13,800	May 19, 1931*	1	*85.4	*61,800	*116	*84,300
1932	731, 1390	*7,500	Nov. 23, 1931	1.3	*82.6	*60,000	*47.2	*34,300
1933	746, 1390	9,700	Sept. 29, 1933	1	*227	*164,400	*254	*184,000
1934	761, 1390	*5,140	Apr. 5, 1934	0	*110	*79,590	*130	*94,460
1935	786, 1390	*37,400	May 29, 1935	2	*491	*353,200	*642	*465,100
1936	806, 1390	*15,700	Nov. 4, 1935	0	*264	*191,400	*182	*131,900
1937	826, 1390	*16,900	June 14, 1937	1	*417	*301,600	*290	*210,200
1938	856, 1390	12,200	May 24, 1938	1	285	206,500	285	206,400
1939	876, 1390	*1,730	Apr. 16, 1939	1	*23.1	*16,750	*23.2	*16,760
1940	896, 1390	*4,440	Apr. 17, 1940	1	78.6	57,070	82.7	60,050
1941	926, 1390	*34,200	Sept. 7, 1941	1	553	400,600	917	663,800
1942	956	22,800	Oct. 5, 1941	0	635	459,900	324	234,800
1943	976, 1390	34,200	May 18, 1943	0	475	344,100	421	304,800
1944	1006	14,000	Apr. 11, 1944	1	406	294,500	491	356,300
1945	1036	11,100	Apr. 16, 1945	0	555	401,800	495	358,300
1946	1056, 1390	16,400	Jan. 6, 1946	1	200	145,100	196	141,800
1947	1086, 1390	7,700	May 21, 1947	1	265	192,100	242	175,300
1948	1116	23,400	July 27, 1948	.6	312	226,200	343	249,500
1949	1146	13,300	July 8, 1949	.8	452	327,200	432	312,800
1950	1176	13,800	July 19, 1950	2	365	264,900	-	-

* Revised.

532. Little Sac River near Springfield, Mo.

Location (revised).--Lat 37°17'30", long. 93°19'10", in SE $\frac{1}{4}$ sec. 26, T. 30 N., R. 22 W., 600 ft upstream from State Highway 13, half a mile upstream from South Dry Sac Creek, and 6 miles northwest of Springfield.

Drainage area.--40 sq mi, approximately.

Gage.--Staff gage. Altitude of gage is 1,080 ft (revised), from topographic map.

Extremes.--1927-31: Maximum discharge, 7,000 cfs June 28, 1928 (gage height, 12.30 ft); minimum, 0.1 cfs at times during 1929 and 1930.

Remarks.--Flow regulated by McDaniel Lake after Apr. 5, 1929.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	-	-	-	67.6	27.6	161	9.93	-
1928	55.5	91.5	93.1	37.9	37.3	84.0	162	49.2	305	33.3	18.5	4.13	80.6
1929	3.39	6.43	18.3	37.5	24.2	42.2	60.0	171	57.9	9.90	4.27	1.66	36.6
1930	5.05	6.61	6.99	46.7	63.9	17.1	5.79	14.3	20.9	2.41	2.33	.95	15.8
1931	1.96	3.32	4.23	2.71	29.9	21.5	28.2	32.8	-	-	-	-	-

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1927	-	-	-	-	-	-	-	-	4,020	1,700	9,900	591	-
1928	3,410	5,440	5,720	2,330	2,150	5,160	9,640	3,030	18,100	2,050	1,140	246	58,400
1929	208	383	1,130	2,310	1,340	2,590	3,570	10,500	3,450	609	263	99	26,500
1930	311	393	430	2,870	3,550	1,050	345	879	1,240	148	143	57	11,400
1931	121	198	260	167	1,660	1,320	1,680	2,020	-	-	-	-	-

Yearly discharge, in cubic feet per second												
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff			Mean	Runoff	
		Discharge	Date				Inches	Acre-feet			Inches	Acre-feet
1927	646	-	-	-	-	-	-	-	-	-	-	-
1928	666	7,000	June 28, 1928	2	80.6	2.02	27.41	58,400	62.8	21.37	45,600	
1929	686	1,630	May 6, 1929	.1	36.6	.915	12.42	26,500	39.0	12.14	25,900	
1930	701	420	Feb. 4, 1930	.1	15.8	.395	5.35	11,400	15.0	5.09	10,900	
1931	716	-	-	-	-	-	-	-	-	-	-	-

533. Sac River near Stockton, Mo.

Location.--Lat 37°42'30", long. 93°45'20", in W $\frac{1}{2}$ sec. 11, T. 34 N., R. 26 W., at bridge on State Highway 64, three-quarters of a mile upstream from Bear Creek and 2 miles east of Stockton.

Drainage area.--1,160 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 764.02 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1932, chain gage at site 57 ft downstream at same datum. Oct. 7, 1932, to Feb. 20, 1935, chain gage at present site and datum.

Average discharge.--29 years (1921-50), 1,115 cfs.

Extremes.--1921-50: Maximum discharge, 120,000 cfs May 19, 1943 (gage height, 31.8 ft); minimum, 0.8 cfs Aug. 30, 1936; minimum gage height, 1.62 ft Sept. 10, 1925. Maximum stage known prior to 1943, 29.3 ft in July 1909.

Monthly and yearly mean discharge, in cubic feet per second of Sac River near Stockton, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	1,490	1,100	-
1922	676	400	586	410	443	2,860	4,100	1,450	400	406	258	78.1	990
1923	91.9	150	104	244	498	1,050	626	1,550	490	1,170	137	201	693
1924	200	1,110	2,200	879	1,310	710	670	2,180	5,200	2,870	3,900	642	1,690
1925	314	388	956	1,100	1,180	1,280	1,170	636	246	96.9	60.4	2,150	793
1926	978	1,470	706	638	535	715	1,040	337	556	111	572	1,620	771
1927	2,040	1,060	1,390	1,860	1,270	2,220	3,840	2,340	2,840	3,670	5,560	484	2,870
1928	1,750	1,120	1,740	806	977	1,450	3,210	1,110	4,850	2,670	1,610	363	1,690
1929	1,154	146	932	1,170	770	1,100	3,800	6,380	1,770	511	219	103	1,430
1930	117	148	81	926	1,850	604	263	825	1,130	208	120	218	531
1931	149	178	603	177	716	726	694	1,640	341	268	2,440	244	684
1932	210	999	864	1,650	748	528	461	2,362	860	1,880	299	97.9	901
1933	98.5	135	2,300	1,280	647	841	2,360	4,700	883	631	430	648	1,240
1934	506	316	208	320	200	574	1,265	323	155	71.0	144	2,219	523
1935	909	1,221	1,397	1,590	820	3,924	1,123	1,715	5,661	871	287	159	1,634
1936	228	683	490	190	136	184	124	206	47.9	31.5	8,221	1,065	281
1937	1,590	1,314	366	5,599	2,289	924	2,203	2,245	4,721	607	277	300	1,676
1938	67.9	61.4	77.0	209	1,352	1,051	2,174	2,005	1,266	295	109	57.4	720
1939	94.3	200	86.1	87.0	730	851	1,543	2,799	735	299	191	57.7	639
1940	36.0	53.4	62.2	55.2	108	444	768	758	221	184	325	144	264
1941	43.0	83.0	327	765	655	314	4,162	710	462	151	178	381	680
1942	5,254	5,269	1,250	756	1,985	910	1,960	837	2,130	463	398	833	1,664
1943	484	1,402	2,747	1,343	4,995	930	1,107	11,350	1,184	467	336	133	2,017
1944	595	291	270	351	519	2,120	1,610	840	307	206	2,284	446	806
1945	714	211	273	234	1,111	4,879	8,452	2,737	2,275	828	206	2,999	2,151
1946	1,582	422	203	789	2,187	860	576	1,158	793	232	325	70	741
1947	54.4	187	962	461	234	860	5,031	1,367	985	1,225	148	108	1,050
1948	107	115	91.9	185	269	1,674	492	5,924	972	1,354	440	322	881
1949	111	770	266	2,231	3,098	2,123	854	833	1,273	679	202	588	1,076
1950	1,642	420	654	8,993	1,363	1,286	570	1,966	1,067	616	746	617	1,252

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	91,600	65,500	-
1922	41,800	23,600	36,000	25,200	24,600	164,000	244,000	89,200	23,800	24,200	15,900	4,850	717,000
1923	5,650	8,930	6,400	15,000	27,700	24,600	37,200	95,300	149,000	71,900	8,420	12,000	501,000
1924	12,300	66,000	35,000	54,000	75,400	43,700	39,900	34,000	209,000	176,000	240,000	58,200	1,220,000
1925	19,300	25,100	58,800	67,600	65,500	78,700	69,600	39,100	14,600	5,960	3,710	28,000	574,000
1926	60,100	87,500	43,400	39,200	29,700	44,000	61,900	20,700	33,100	6,820	35,200	96,400	558,000
1927	125,000	63,100	85,500	14,000	70,500	136,000	586,000	44,000	157,000	226,000	42,000	28,800	2,080,000
1928	108,000	68,600	107,000	49,600	56,200	89,200	191,000	68,200	289,000	77,500	99,000	21,600	1,220,000
1929	9,470	8,690	57,300	71,900	42,800	67,600	226,000	392,000	105,000	31,400	13,500	6,150	1,030,000
1930	7,190	8,810	4,980	56,900	103,000	37,100	15,600	50,700	67,200	12,800	7,380	13,000	365,000
1931	9,160	10,600	37,100	10,900	39,800	44,600	41,300	101,000	20,300	16,500	150,000	14,500	496,000
1932	12,900	59,400	53,100	101,000	43,000	32,500	27,400	14,500	70,000	16,000	18,400	5,830	654,000
1933	6,060	8,030	41,000	78,700	35,900	39,400	40,000	289,000	52,500	38,800	26,400	38,600	894,000
1934	31,130	18,780	12,670	19,690	11,110	35,320	75,280	19,880	9,250	4,360	8,830	132,100	378,400
1935	55,910	72,640	85,920	97,750	45,540	235,200	66,800	105,500	336,900	53,570	17,630	9,440	1,183,000
1936	14,030	40,670	30,100	11,070	7,830	11,280	7,380	12,680	2,850	1,940	506	63,390	203,700
1937	85,480	78,180	22,500	12,300	27,100	56,800	131,100	39,000	280,900	37,310	17,020	17,870	1,214,000
1938	4,180	3,680	4,730	12,830	75,100	64,610	129,400	23,300	75,310	19,170	6,720	3,420	521,400
1939	5,800	11,900	5,300	5,350	40,550	52,350	91,850	172,100	43,760	18,390	11,770	3,440	462,500
1940	2,210	3,180	3,390	3,390	6,110	27,280	45,710	46,630	13,150	11,290	19,960	8,550	191,300
1941	2,640	4,940	20,090	47,040	36,380	19,320	247,700	43,650	27,490	9,290	10,960	22,680	492,200
1942	523,100	194,500	76,860	46,490	10,200	55,930	116,600	51,480	126,800	28,490	24,350	49,580	1,204,000
1943	29,730	83,450	168,900	82,560	27,700	57,160	65,890	97,900	189,400	28,730	20,650	7,900	1,460,000
1944	24,280	17,340	18,580	21,570	29,850	130,400	95,810	51,660	18,260	12,670	40,400	26,530	585,400
1945	45,920	12,580	16,760	14,360	61,690	300,000	502,900	169,300	194,900	50,690	12,660	17,400	1,557,000
1946	84,960	25,100	12,470	48,500	21,500	52,880	34,260	71,190	47,190	14,250	19,960	4,160	536,400
1947	3,540	70,610	59,160	28,320	12,990	51,029	299,400	84,080	58,630	75,300	9,090	6,450	760,300
1948	6,590	6,820	5,650	11,260	15,480	102,900	29,250	36,370	295,900	83,270	27,400	19,170	639,700
1949	6,850	45,840	16,360	137,200	72,000	100,300	51,030	57,360	75,730	41,760	12,430	31,430	778,900
1950	101,000	24,980	40,200	245,500	75,700	79,080	33,920	22,100	63,510	37,990	45,680	36,700	906,500

Yearly discharge, in cubic feet per second of Sac River near Stockton, Mo.												
Year	W.S.P. no.	Water year ending Sept. 30							Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Runoff			
		Discharge	Date				Inches	Acres-feet	Mean	Inches	Acres-feet	
1921	526	-	-	-	-	-	-	-	-	-	-	-
1922	546	9,440	Mar. 14, 1922	65	990	0.853	11.57	717,000	879	10.27	637,000	-
1923	566	7,930	May 24, 1923	65	693	.597	8.09	501,000	958	11.22	693,000	-
1924	586	21,400	May 29, 1924	53	1,690	1.46	19.79	1,220,000	1,531	17.96	1,110,000	-
1925	606	23,900	Sept. 22, 1925	25	793	.694	9.27	574,000	917	10.73	664,000	-
1926	626	8,600	Nov. 8, 1925	33	771	.665	9.02	558,000	885	10.36	641,000	-
1927	646	34,800	Apr. 1, 1927	290	2,870	2.47	33.57	2,080,000	2,880	33.69	2,090,000	-
1928	666	19,300	June 29, 1928	174	1,680	1.45	19.76	1,220,000	1,399	16.43	1,020,000	-
1929	686	18,700	May 19, 1929	66	1,430	1.23	16.70	1,030,000	1,352	15.82	977,000	-
1930	701	8,600	Feb. 5, 1930†	48	531	.458	6.22	385,000	581	6.80	420,000	-
1931	716	24,300	Aug. 7, 1931	77	684	.590	8.01	496,000	779	9.12	564,000	-
1932	731	30,700	June 28, 1932	64	901	.777	10.58	654,000	942	11.06	694,000	-
1933	746	30,400	Dec. 25, 1932	57	1,240	1.07	14.46	694,000	1,108	12.96	802,000	-
1934	761	20,600	Sept. 12, 1934	7	523	.451	6.11	378,400	732	8.55	530,300	-
1935	786	36,200	Mar. 12, 1935	115	1,634	1.41	19.10	1,183,000	1,454	17.03	1,053,000	-
1936	806	11,800	Sept. 28, 1936	.8	281	.242	3.31	203,700	420	4.93	305,100	-
1937	826	34,300	June 14, 1937	73	1,676	1.44	19.61	1,214,000	1,437	16.82	1,040,000	-
1938	856	9,700	May 8, 1938	21	720	.621	8.43	521,400	735	8.59	531,900	-
1939	876	10,800	May 8, 1939†	23	639	.557	7.48	462,500	620	7.27	446,800	-
1940	926	6,630	May 1, 1940	28	264	.228	3.09	191,300	269	3.39	209,700	-
1941	926	57,000	Apr. 19, 1941	36	680	.586	7.96	492,200	1,463	17.12	1,059,000	-
1942	956	56,300	Oct. 5, 1941	107	1,664	1.43	19.46	1,204,000	1,232	14.41	892,000	-
1943	976	120,000	May 19, 1943	89	2,017	1.74	23.59	1,460,000	1,703	19.97	1,236,000	-
1944	1006	27,000	Aug. 27, 1944	84	808	.695	9.47	585,400	827	9.71	600,400	-
1945	1036	56,400	Apr. 14, 1945	98	2,151	1.85	25.18	1,557,000	2,219	25.98	1,607,000	-
1946	1056	8,790	Feb. 14, 1946	51	741	.639	8.66	536,400	756	8.83	547,000	-
1947	1086	52,800	Apr. 25, 1947	34	1,050	.905	12.29	760,500	893	10.45	646,200	-
1948	1116	47,400	June 22, 1948	48	881	.759	10.34	639,700	950	11.14	689,700	-
1949	1146	14,400	Feb. 16, 1949	87	1,076	.928	12.58	778,900	1,210	14.15	876,000	-
1950	1176	26,300	Oct. 23, 1949	117	1,252	1.08	14.64	906,500	-	-	-	-

† Corrected.

534. Cedar Creek near Pleasant View, Mo.

Location.--Lat 37°50'03", long. 93°52'31", in NE $\frac{1}{4}$ sec. 2, T. 35 N., R. 27 W., at bridge on State Highway 39, $\frac{1}{2}$ miles north of Pleasant View, $\frac{1}{4}$ miles downstream from Alder Creek, and $\frac{5}{8}$ miles upstream from mouth.

Drainage area.--420 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 739.5 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1926, chain gage and Oct. 1, 1948, to May 10, 1950, wire-weight gage at site 50 ft downstream at same datum.

Average discharge.--5 years (1923-26, 1948-50), 348 cfs.

Extremes.--1923-26, 1948-50: Maximum discharge, 16,000 cfs July 12, 1924 (gage height, 24.0 ft); minimum, 0.3 cfs Aug. 9-11, 1926; minimum gage height, 0.33 ft Sept. 10, 1925. Maximum stage known, 27.7 ft July 20, 1909, from floodmark.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	257	926	269	9.41	60.4	-
1924	65.7	154	632	346	738	224	182	876	922	1,133	453	111	487
1925	44.2	166	95.7	453	531	637	536	165	69.4	3.68	4.65	605	273
1926	215	542	137	220	166	197	455	48.6	69.0	5.56	198	670	241
1949	15.8	157	15.0	1,063	987	814	177	381	739	224	46.5	69.0	387
1950	228	30.8	149	564	318	317	124	408	183	1,099	641	138	353

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	15,800	55,100	16,500	579	3,590	-
1924	4,040	9,160	38,900	21,500	42,400	13,800	10,800	53,900	54,900	69,500	27,900	6,610	353,000
1925	2,720	9,880	5,880	27,900	29,500	39,200	31,900	10,100	4,130	226	286	36,000	198,000
1926	13,200	32,200	8,420	13,500	9,220	12,100	27,100	3,000	4,110	342	11,600	39,900	175,000
1949	971	9,340	924	65,350	54,840	50,070	10,510	23,440	43,980	13,790	2,860	4,110	280,200
1950	14,020	1,850	9,170	34,680	17,690	19,460	7,390	25,080	10,890	67,550	39,430	8,230	255,400

Yearly discharge, in cubic feet per second of Cedar Creek near Pleasant View, Mo.

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff		
		Discharge	Date						Inches	Acre-feet	Inches	Acre-feet
1923	566,1146	-	-	-	-	-	-	-	-	-	
1924	586,1146	16,000	July 12, 1924	8	487	1.16	15.77	353,000	440	14.27	320,000
1925	606,1146	8,440	Sept. 23, 1925	.5	273	.650	8.82	198,000	322	10.41	233,000
1926	626,1146	5,660	Nov. 8, 1925	.3	241	.574	7.78	175,000	-	-	-
1949	1146	6,530	Jan. 24, 1949	.4	387	.921	12.52	280,200	406	13.14	294,000
1950	1176	9,900	July 19, 1950	8	353	.840	11.42	255,400	-	-	-

† Corrected.

535. Sac River near Collins, Mo.

Location.--Lat 37°54', long. 93°45', in SW $\frac{1}{4}$ sec. 12, T. 36 N., R. 26 W., at highway bridge one-half mile east of Cobb, 1 mile downstream from Brush Creek, and $7\frac{1}{2}$ miles west of Collins.

Drainage area.--1,900 sq mi, approximately.

Gage.--Water-stage recorder. Altitude of gage is 700 ft (from topographic map). Prior to July 10, 1923, chain gage at same site and datum.

Extremes.--1923-25: Maximum discharge, 35,700 cfs May 30, 1924 (gage height, 26.4 ft), from rating curve extended above 19,000 cfs; minimum, 9 cfs Sept. 10, 1925 (gage height, 1.07 ft).
Flood of July 1909 reached a stage of 37.9 ft, from information from local residents.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	1,940	4,020	1,710	176	238	-
1924	281	1,390	3,100	1,400	2,620	1,100	987	4,350	5,400	5,900	6,100	765	2,790
1925	431	689	1,230	1,820	2,010	2,450	2,090	1,100	407	159	106	3,030	1,290

* Not previously published; estimated on basis of records for other stations in the basin.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	-	-	-	-	-	119,000	239,000	105,000	10,800	14,200	-
1924	17,300	82,700	190,000	85,900	151,000	67,800	58,700	267,000	321,000	363,000	375,000	45,500	2,020,000
1925	26,500	41,000	75,500	112,000	112,000	151,000	125,000	67,900	24,200	9,760	6,500	180,000	931,000

* Not previously published; estimated on basis of records for other stations in the basin.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1923	566	-	-	-	-	-	-	-	-	-	-
1924	586	35,700	May 30, 1924	-	\$2,790	1.47	20.00	\$2,020,000	\$2,590	18.54	\$1,880,000
1925	606	32,300	Sept. 23, 1925	17	1,290	.879	9.17	931,000	-	-	-

* Not previously published.

536. Osage River at Osceola, Mo.

Location.--Lat 38°03'44", long. 93°41'37", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 17, T. 38 N., R. 25 W., half a mile downstream from Gallinipper Creek, 1 mile downstream from hydroelectric plant of West Missouri Power Co., and 1 mile northwest of Osceola.

Drainage area.--8,220 sq mi, approximately.

Supplemental records available.--Gage-height records collected in this vicinity April 1910 to April 1938 and since February 1938 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 678.91 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1928, chain gage at site $1\frac{1}{2}$ miles upstream at datum 3.67 ft higher. Nov. 28, 1930, to Sept. 27, 1934, water-stage recorder 233 ft right and at same datum as present gage.

Average discharge.--31 years (1917-28, 1930-50), 5,330 cfs.

Extremes.--1917-28, 1930-50: Maximum discharge, 146,000 cfs May 21, 1943 (gage height, 41.48 ft, in gage well, 41.7 ft, from outside gage); minimum 4.0 cfs July 13, 1936; minimum gage height, 0.22 ft Aug. 11, 1941.

Maximum stage known prior to 1943, about 45 ft (revised) in June 1844 (discharge, about 150,000 cfs).

Remarks.--Low and medium flow regulated by powerplant 1 mile upstream since 1930.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	*279	*82.5	*92.5	*82.9	*686	*291	*1,730	*2,630	*1,180	*321	*252	*1,060	*721
1919	*899	*5,450	*3,150	*4,210	*2,760	*3,410	*3,400	*12,300	*6,550	*1,610	*270	*81.6	*3,680
1920	*4,730	*4,580	*2,210	*1,480	*1,170	*9,560	*5,110	*7,690	*2,730	*1,180	*1,990	*9,390	*4,320
1921	*2,650	*1,520	*813	*2,760	*2,230	*6,950	*10,100	*10,100	*7,150	*4,440	*10,300	*13,400	*6,040
1922	2,100	846	1,420	1,060	833	20,400	42,800	7,000	1,090	3,000	585	568	6,790
1923	172	1,500	331	459	972	5,420	2,090	3,770	19,100	4,100	319	793	3,250
1924	4,170	3,700	8,450	3,760	8,660	3,180	2,850	7,670	10,300	1,100	5,540	1,740	6,070
1925	1,360	1,770	1,950	4,670	5,610	4,750	10,900	1,990	3,110	219	201	3,900	3,340
1926	2,300	6,620	2,390	2,260	3,030	2,420	8,580	1,320	2,430	219	1,780	10,000	3,580
1927	18,700	3,750	4,150	5,030	5,250	13,400	52,400	12,200	16,200	6,890	29,300	1,570	14,100
1928	20,800	2,950	5,310	3,780	10,100	6,100	9,480	3,260	22,600	4,920	4,490	1,020	7,870
1931	a350	a450	1,550	418	1,560	2,450	2,900	5,690	1,850	428	2,990	413	a1,760
1932	490	7,010	4,880	4,080	2,660	1,540	1,690	862	7,370	5,500	415	184	3,030
1933	193	220	4,830	5,320	1,520	2,510	5,370	13,800	2,230	1,320	842	1,570	3,150
1934	1,592	545	746	798	376	2,276	3,264	2,073	487	76.1	94.8	2,620	1,164
1935	2,672	7,134	4,200	6,060	4,375	7,250	3,972	15,500	39,860	2,454	630	652	7,871
1936	1,854	12,120	4,191	1,472	1,469	980	455	1,476	201	45.3	7.5	2,803	2,243
1937	6,332	5,008	909	9,591	12,530	8,575	5,200	10,360	18,130	1,095	633	463	6,513
1938	89.6	78.8	118	293	1,898	3,360	9,969	17,010	19,070	835	216	83.1	4,407
1939	86.6	232.1	109	101	939	1,617	4,137	5,646	2,140	898	529	53.1	1,358
1940	28.3	73.9	78.8	99.4	223	1,619	3,739	4,160	2,604	375	1,540	1,067	1,300
1941	44.2	571	1,285	8,973	6,773	1,232	16,060	1,747	7,194	1,074	2,049	9,751	4,511
1942	55,410	23,810	5,640	2,510	5,914	5,069	11,350	7,219	15,990	2,905	1,978	8,204	10,490
1943	3,681	4,243	9,931	7,400	2,678	3,913	3,200	51,030	21,030	3,340	1,467	249	9,426
1944	1,443	418	778	856	2,716	16,120	25,030	17,090	4,340	868	8,952	5,737	7,033
1945	6,877	1,392	8,272	1,716	4,204	19,580	36,130	17,900	18,300	4,630	2,755	5,211	11,430
1946	6,690	893	496	10,930	6,804	4,912	8,594	5,773	2,151	847	3,668	787	4,190
1947	913	8,586	3,056	1,363	564	9,545	30,340	9,336	14,380	4,906	275	1,390	6,940
1948	840	344	1,726	1,120	1,121	11,550	2,502	4,050	14,390	1,150	8,590	1,833	5,365
1949	184	2,719	440	13,630	18,000	11,240	5,033	8,952	9,509	7,894	1,136	1,393	6,438
1950	4,297	895	1,998	7,846	3,435	4,070	2,919	7,836	7,991	18,640	15,760	5,772	6,858

* Not previously published; computed using U. S. Weather Bureau gage reading and rating based on measurements made 1921-24.

a Not previously published; estimated on basis of records for station at Warsaw.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1918	+17.2	+4.91	+5.69	+5.10	+36.1	+17.9	+103	+182	+70.2	+19.7	+15.5	+63.1	+522
1919	+55.3	+324	+194	+259	+153	+21.2	+202	+756	+390	+116.6	+4.86	+2,660	
1920	*291	*273	*136	*91.0	*87.3	*598	*304	*473	*162	*72.6	*122	*559	*3,140
1921	*163	*90.4	*50	*170	*124	*42.7	*601	*621	*425	*273	633	797	*3,990
1922	129	38.4	87.3	65.2	46.3	1,250	2,550	430	64.9	184	36	33.8	4,910
1923	10.6	89.3	20.4	28.2	54	333	124	232	1,140	252	19.6	47.2	2,350
1924	256	220	520	231	498	194	168	472	613	806	328	104	4,410
1925	83.6	105	120	287	323	292	649	122	185	13.5	12.4	226	2,420
1926	141	394	147	139	168	149	511	81.2	145	13.5	109	595	2,590
1927	1,150	223	255	309	292	824	3,120	750	964	424	1,800	93.4	10,200
1928	1,280	176	326	232	581	375	564	200	1,340	303	276	60.7	5,710
1931	a21.5	a26.8	95.3	25.7	86.6	151	173	349	110	26.3	184	24.6	a1,270
1932	30.1	417	288	250	153	94.7	101	53	439	338	25.5	9.76	2,200
1933	11.9	13.1	285	204	84.4	154	320	848	133	81.2	51.8	93.4	2,280
1934	97.96	32.45	45.87	49.09	20.87	78.43	195.4	127.5	29.96	4.69	54.93	155.9	842.8
1935	164.3	424.5	258.2	372.6	243	445.8	236.3	953.22	372	150.9	36.74	38.82	5,698
1936	114	721.5	257.7	90.54	84.48	60.24	27.07	90.75	11.94	2.78	464	166.8	1,628
1937	389.3	298	55.88	589.7	696	527.2	309.5	636.81	1,079	67.3	38.93	27.53	4,715
1938	5.51	4.69	7.24	18.02	105.4	206.6	593.21	1,046	1,135	51.35	13.28	4.95	3,191
1939	5.33	13.82	6.69	6.21	52.12	99.48	246.1	347.1	127.3	42.95	32.53	3.16	982.8
1940	1.74	4.39	4.85	6.11	12.8	99.56	222.5	255.8	155	23.05	94.71	63.48	944.0
1941	2.72	33.96	79	551.7	259.8	75.75	955.4	107.4	428.1	66.01	126	580.2	3,266
1942	2,177	4,417	346.8	154.4	326.4	311.7	675.4	443.9	951.6	178.6	121.6	488.2	7,595
1943	226.3	252.5	610.7	455	146.7	240.6	190.45	138	1,251	205.4	90.23	14.8	6,824
1944	88.72	24.84	47.82	52.62	156.2	991.3	1,490	1,051	256.2	53.36	550.4	341.3	5,106
1945	422.9	82.26	508.6	105.5	233.5	1,204	2,150	1,101	1,089	899.4	169.4	310.1	6,276
1946	411.3	53.13	29.88	672.1	377.9	302	392.4	355	128	39.79	225.5	46.83	3,034
1947	56.15	510.9	187.9	83.83	31.3	525.3	1,805	574	654.3	295.6	16.91	82.72	5,024
1948	51.64	20.49	106.1	68.84	64.47	710.3	148.9	249	85.1	993.1	525.2	97.15	3,894
1949	11.3	161.8	27.04	839.2	1,000	691.2	299.5	427.5	585.8	485.4	69.85	82.9	4,660
1950	264.2	52.65	122.8	482.4	190.8	250.2	173.7	481.8	475.81	158	969.1	343.5	4,965

* Not previously published; see footnote to preceding table.

a Not previously published; estimated on basis of records for station at Warsaw.

Yearly discharge, in cubic feet per second of Osage River at Osceola, Mo.

Water year ending Sept. 30												Calendar year		
Year	W.S.P. no.	Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff				
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet			
1918	-	\$16,100	Apr. 29, 1918	#52	\$721	#0.088	+1.19	\$522,000	\$1,470	\$2.44	\$1,070,000			
1919	-	\$31,100	May 20, 21, 1919	#52	\$3,680	#.450	+6.09	\$2,660,000	\$3,850	+6.38	\$2,790,000			
1920	-	\$41,800	Mar. 28, 1920	#52	\$4,320	#.528	+7.19	\$3,140,000	\$3,780	+6.28	\$2,740,000			
1921	526	31,500	Aug. 16, 1921	#360	\$6,040	.738	10.02	\$3,990,000	\$5,970	+9.92	\$3,940,000			
1922	606	65,000	Apr. 10, 1922	120	6,790	.830	11.28	\$4,910,000	6,600	10.86	\$4,790,000			
1923	566	38,700	June 17, 1923	120	3,250	.397	5.36	\$2,350,000	4,450	7.37	\$3,230,000			
1924	586	43,800	July 14, 1924	260	6,070	.742	10.10	\$4,410,000	5,120	8.52	\$3,720,000			
1925	606	32,000	Sept. 24, 1925	44	3,340	.408	5.53	\$2,420,000	3,860	6.39	\$2,790,000			
1926	626	31,100	Nov. 9, 1925	76	3,580	.438	5.94	\$2,590,000	4,890	8.11	\$3,540,000			
1927	646	70,900	Apr. 11, 1927	650	14,100	1.72	23.39	\$10,200,000	14,300	23.74	\$10,400,000			
1928	666	56,100	Oct. 8, 1927	84	7,870	.962	13.09	\$5,710,000	-	-	-			
1929	-	\$68,000	May 21, 1929	-	-	-	-	-	-	-	-			
1931	716	27,700	May 21, 1931	-	\$1,760	-	-	\$1,270,000	2,580	-	\$1,860,000			
1932	731	25,300	June 30, 1932	29	3,030	-	-	\$2,200,000	2,440	-	\$1,770,000			
1933	746	37,200	May 16, 1933	46	3,150	-	-	\$2,280,000	2,960	-	\$2,150,000			
1934	761	13,800	Sept. 13, 1934	10	1,164	-	-	\$42,800	2,091	-	\$1,514,000			
1935	786	59,700	June 9, 1935	16	7,871	-	-	\$5,698,000	8,211	-	\$5,945,000			
1936	806	26,200	Sept. 29, 1936	5	2,243	-	-	\$1,628,000	1,761	-	\$1,278,000			
1937	826	49,500	June 17, 1937	21	6,513	-	-	\$4,715,000	5,510	-	\$3,989,000			
1938	856	47,300	May 30, 1938	12	4,407	-	-	\$3,191,000	4,419	-	\$3,200,000			
1939	876	20,200	May 9, 1939	6	1,358	-	-	\$982,800	1,337	-	\$967,900			
1940	896	15,300	May 2, 1940	4.4	1,300	-	-	\$944,000	1,444	-	\$1,049,000			
1941	926	62,600	Apr. 21, 1941	6	4,511	-	-	\$3,266,000	9,795	-	\$7,091,000			
1942	956	71,100	Nov. 2, 1941	110	10,490	-	-	\$7,595,000	6,552	-	\$4,743,000			
1943	976	146,000	May 21, 1943	15	9,426	-	-	\$6,824,000	8,144	-	\$5,896,000			
1944	1006	69,500	May 1, 1944	39	7,033	-	-	\$5,106,000	8,207	-	\$5,958,000			
1945	1036	66,800	Apr. 17, 1945	91	11,430	-	-	\$8,276,000	10,710	-	\$7,756,000			
1946	1056	33,100	Aug. 14, 1946	23	4,190	-	-	\$3,034,000	4,550	-	\$3,294,000			
1947	1086	53,000	Apr. 27, 1947	19	6,940	-	-	\$5,024,000	6,143	-	\$4,447,000			
1948	1116	56,900	June 24, 1948	60	5,365	-	-	\$3,894,000	5,395	-	\$3,916,000			
1949	1146	38,700	Feb. 18, 1949	78	6,438	-	-	\$4,660,000	6,768	-	\$4,900,000			
1950	1176	43,500	July 19, 1950	194	6,858	-	-	\$4,965,000	-	-	-			

* Not previously published.

537. Pomme de Terre River at Hermitage, Mo.

Location.--Lat 37°56'45", long. 93°18'35", in SE 1/4 sec. 23, T. 37 N., R. 22 W., at bridge on U. S. Highway 54, a quarter of a mile east of Hermitage and 1 1/2 miles downstream from Mill (Crane) Creek.

Drainage area.--655 sq mi.

Gage.--Water-stage recorder. Datum of gage is 726.83 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1925, chain gage at site 1.60 miles upstream at different datum. Oct. 1, 1925, to Oct. 2, 1934, chain gage and Oct. 3, 1934, to July 28, 1937, wire-weight gage at present site and datum.

Average discharge.--29 years (1921-50), 662 cfs (revised).

Extremes.--1921-50: Maximum discharge, 70,000 cfs Aug. 8, 1927 (gage height, 36.45 ft, from floodmark), from rating curve extended above 41,000 cfs; no flow at times in July to September 1936.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	836	1,490	-
1922	367	291	596	248	269	2,310	3,310	656	92.0	190	87.5	15.8	702
1923	10.3	75.9	36.1	106	297	577	279	239	1,290	491	25.7	35.8	287
1924	45.1	468	1,186	464	823	372	555	1,920	1,800	1,120	966	217	830
1925	105	272	676	739	740	843	542	322	114	28.7	18.6	935	442
1926	397	960	361	337	471	541	724	255	185	36.9	337	1,180	479
1927	1,780	864	789	1,190	584	2,080	4,130	1,650	2,980	782	\$3,750	287	\$1,740
1928	1,450	1,090	1,400	499	685	884	2,060	721	2,600	329	1,660	131	1,120
1929	26	45.2	397	698	354	860	2,050	990	643	104	209	39.3	789
1930	119	161	102	827	1,170	361	131	466	450	26.7	13.8	332	341
1931	123	147	293	85.8	524	648	432	986	146	31.4	945	332	391
1932	321	939	523	1,180	426	306	205	68	41,130	318	51.7	18.6	456
1933	25.6	47	1,050	740	243	422	1,200	2,110	171	92.7	165	210	544
1934	307	107	85.9	110	64.2	427	892	140	46.4	29.1	31.4	659	241
1935	297	506	959	1,048	453	2,226	530	1,512	3,905	204	85.1	36.1	981
1936	20.1	434	122	57.2	106	101	193	205	10.6	33.6	12	514	148
1937	317	1,173	236	2,219	959	577	992	1,456	2,486	343	48.4	5.82	898
1938	6.65	23.3	20.8	105	792	643	1,107	1,512	280	60.3	9.70	14.8	378
1939	14.1	226	70.3	107	739	830	1,592	1,861	467	188	107	10.4	515
1940	6.06	21.9	26.9	44.0	130	745	581	570	347	68.7	462	151	263

* Revised.

Monthly and yearly mean discharge, in cubic feet per second of Pomme de Terre River at

Water year	Hermitage, Mo.--Continued												The year
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1941	12.3	30.8	256	745	311	131	2,708	219	166	42.7	15.0	312	409
1942	5,941	1,418	666	263	1,237	361	917	576	2,817	225	202	91.6	1,055
1943	90.5	531	1,856	439	220	581	7205,962	1,674	117	51.6	23.6	1,032	1,032
1944	213	130	97.6	208	456	1,409	1,164	732	71.2	36.8	436	200	515
1945	292	49.2	59.8	79.0	651	2,801	4,293	1,627	1,258	227	35.7	953	1,106
1946	776	163	75.9	698	1,349	338	566	551	291	44.1	765	37.4	551
1947	60.8	2,041	500	257	101	622	3,181	567	928	742	30.3	49.7	753
1948	74	75.6	40	153	177	1,244	205	314	3,579	568	119	79.9	550
1949	13.2	510	126	2,030	1,894	1,564	330	585	1,013	1,005	95.2	534	802
1950	1,170	154	559	2,594	815	909	321	752	818	469	643	174	871

Water year	Monthly and yearly runoff, in acre-feet												The year
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1921	-	-	-	-	-	-	-	-	-	-	51,400	88,900	-
1922	22,600	17,300	36,600	15,100	14,900	142,000	197,000	40,300	4,880	11,700	5,580	940	509,000
1923	633	4,520	2,220	6,520	16,500	35,500	16,800	14,700	76,800	30,200	1,580	2,130	208,000
1924	2,770	27,800	72,600	28,500	47,500	22,900	33,000	18,000	107,000	68,900	60,600	12,900	602,000
1925	6,460	16,200	41,600	45,400	41,100	51,800	32,300	19,800	6,780	1,760	1,160	55,600	320,000
1926	24,400	57,100	22,200	20,700	26,200	33,300	43,100	15,700	11,000	2,270	20,700	70,500	347,000
1927	109,000	51,400	48,500	73,200	32,400	28,000	246,000	101,000	177,000	48,100	230,000	17,100	*1,280,000
1928	89,200	64,800	86,100	30,700	39,400	54,400	23,000	44,300	55,000	20,200	102,000	7,800	817,000
1929	1,600	2,690	24,400	42,900	19,700	52,900	22,000	245,000	39,300	6,400	12,900	2,340	571,000
1930	7,320	9,590	6,270	50,800	65,000	22,200	7,800	28,700	26,800	1,760	848	19,900	247,000
1931	7,560	8,750	18,000	5,280	29,100	39,800	25,700	60,600	8,690	1,930	58,100	19,800	283,000
1932	19,700	55,900	32,200	72,600	24,500	18,800	12,200	4,210	67,200	19,600	3,180	1,110	331,000
1933	1,570	2,800	64,600	45,500	15,500	25,900	71,400	130,000	10,200	5,700	10,100	12,500	394,000
1934	18,900	6,350	5,280	6,790	3,560	26,280	53,090	8,580	2,680	1,790	1,930	59,230	174,700
1935	18,290	30,110	58,940	64,440	25,130	36,900	31,540	92,972	32,300	12,530	5,230	2,140	710,500
1936	1,240	25,830	7,500	3,520	6,120	6,230	11,480	12,590	633	2,070	75	30,590	107,800
1937	19,500	69,820	14,460	136,400	53,280	35,490	59,530	48,100	21,090	2,980	2,880	348	650,000
1938	407	1,580	1,280	6,450	43,990	39,520	65,850	92,980	16,660	3,710	597	883	273,700
1939	867	15,460	4,320	6,590	41,030	51,020	94,750	14,400	27,770	11,590	6,570	618	373,000
1940	372	1,300	1,650	2,710	7,480	45,800	34,580	35,030	20,620	4,220	28,410	9,000	191,200
1941	758	1,830	15,740	45,820	17,290	8,050	161,100	13,450	9,910	2,630	923	18,590	296,100
1942	242,300	84,580	40,940	16,150	68,680	22,170	54,540	35,590	167,600	13,850	12,450	5,450	763,900
1943	5,570	31,600	14,100	27,020	12,230	35,730	42,860	86,600	99,590	7,190	3,170	1,400	747,100
1944	13,100	7,760	6,000	12,800	26,230	86,640	69,260	45,010	4,240	2,270	88,320	11,690	373,500
1945	17,940	2,930	3,690	4,860	36,140	172,300	55,400	100,100	74,870	13,960	2,200	16,200	800,600
1946	47,720	9,730	4,670	42,890	74,910	20,770	33,680	33,870	17,330	2,710	108,500	2,230	399,000
1947	3,740	121,500	30,720	15,790	5,590	38,260	189,300	34,860	55,210	45,610	1,880	2,960	545,400
1948	4,550	4,510	2,460	9,420	10,160	76,510	12,170	19,330	212,900	34,950	7,320	4,750	399,000
1949	813	30,350	7,740	24,800	05,200	96,200	19,650	35,950	60,280	61,820	5,850	51,800	633,100
1950	71,940	9,180	34,370	59,500	45,240	55,870	19,120	107,700	48,690	28,850	39,560	10,330	670,400

* Revised.

† Corrected.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30										Calendar year		
		Momentary maximum			Minimum day	Mean	Per square mile	Runoff		Mean	Runoff			
		Discharge	Date	Inches				Acre-feet	Inches		Acre-feet			
1921	566	-	-	-	-	-	-	-	-	-	-	-	-	
1922	566	16,800	Mar. 14, 1922	9	702	1.07	14.56	509,000	607	12.57	440,000			
1923	566	7,600	June 4, 1923	9	287	1.438	5.96	208,000	420	8.71	304,000			
1924	586	24,600	May 29, 1924	11	830	1.27	17.24	602,000	776	16.11	563,000			
1925	606	11,400	Sept. 22, 1925	1	442	.875	9.14	320,000	497	10.29	359,000			
1926	626, 1146	9,000	Nov. 8, 1925	4	479	.731	9.93	347,000	626	12.94	452,000			
1927	731, 1280	70,000	Aug. 8, 1927	178	*1,740	*2.66	*36.18	*1,260,000	*1,790	*37.06	*1,290,000			
1928	731	*19,800	June 10, 1928	20	1,120	1.71	23.37	817,000	833	17.33	605,000			
1929	731	*23,700	May 7, 1929	12	789	1.20	16.36	571,000	782	16.19	566,000			
1930	731	*8,300	Feb. 4, 1930	5	341	.521	7.06	247,000	356	7.39	258,000			
1931	731	*16,100	May 20, 1931	12	391	.597	8.13	283,000	493	10.22	357,000			
1932	731	*11,500	June 28, 1932	6	456	.696	9.48	331,000	402	8.36	292,000			
1933	748	*19,100	Dec. 25, 1932	6	544	.831	11.24	394,000	491	10.15	355,000			
1934	761	5,530	Apr. 16, 1934	.2	241	.368	5.00	174,700	547	7.19	251,500			
1935	786	42,200	June 15, 1935	3.4	981	1.50	20.32	710,500	881	16.25	637,900			
1936	806	9,740	Sept. 28, 1936	0	148	.226	3.09	107,800	244	5.08	177,000			
1937	826	29,900	June 10, 1937	2.0	898	1.37	18.61	650,000	759	15.72	549,300			
1938	856	9,120	May 24, 1938	2.0	378	.577	7.85	273,700	400	8.29	289,300			
1939	876	17,100	Apr. 6, 1939	2.5	515	.786	10.68	373,000	494	10.25	357,600			
1940	896	8,060	May 1, 1940	2.2	263	.402	5.47	191,200	284	5.89	206,200			
1941	926	39,100	Apr. 19, 1941	2.5	409	.624	8.46	296,100	891	18.47	645,400			
1942	956	44,300	Oct. 5, 1941	26	1,055	1.61	21.89	736,900	756	15.68	547,600			
1943	976	39,900	May 19, 1943	7	1,032	1.58	21.38	747,100	860	17.82	622,600			
1944	1006	21,000	Aug. 27, 1944	6	515	.786	10.68	373,500	511	10.61	371,200			
1945	1036	30,700	Apr. 14, 1945	8	1,106	1.69	22.89	800,600	1,158	23.97	838,200			
1946	1056	33,700	Aug. 14, 1946	9	551	.841	11.40	399,000	681	14.10	492,800			
1947	1096	35,800	Apr. 25, 1947	6	753	1.15	15.62	545,400	554	11.48	401,000			
1948	1116	38,400	June 22, 1948	8	550	.840	11.43	399,000	587	12.21	426,400			
1949	1146	16,000	July 7, 1949	9	802	1.22	16.61	633,100	908	18.80	657,000			
1950	1176	18,900	Jan. 14, 1950	56	871	1.33	18.05	630,400	-	-	-			

* Revised.

† Not previously published.

538. South Grand River near Brownington, Mo.

Location.--Lat 38°15'45", long. 93°42'50", in NW¼ sec. 17, T. 40 N., R. 25 W., at county highway bridge, 150 ft downstream from St. Louis-San Francisco Railway bridge, 200 ft downstream from Deepwater Creek, and 1 mile north of Brownington.

Drainage area.--1,660 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 675.86 ft above mean sea level, datum of 1929. Prior to Oct. 4, 1934, chain gage at same site and datum.

Average discharge.--29 years (1921-50), 1,068 cfs.

Extremes.--1921-50: Maximum discharge, 63,900 cfs Nov. 19, 1928 (gage height, 39.9 ft, from floodmarks); no flow at times in 1934, 1936-40.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	1,390	8,840	-	-
1922	553	71.9	307	386	92.86	410	9,390	632	127	153	25.2	322	1,540
1923	92.6	331	43.8	21.1	54.71	320	467	439	3,330	519	31.8	73.7	560
1924	1,100	335	1,690	969	1,710	653	305	329	2,390	1,830	168	78.8	963
1925	84.5	53.6	57.5	656	743	832	3,350	265	1,110	34.4	26.9	101	605
1926	547	1,040	635	470	1,360	644	2,840	132	62.7	38.9	140	957	729
1927	2,430	553	376	496	768	5,170	7,640	2,680	2,540	785	924	91.6	1,870
1928	5,120	301	764	674	2,170	242	934	166	769	457	860	610	969
1929	728	7,980	1,440	2,320	930	1,580	4,350	5,830	5,260	939	18.9	25.8	2,560
1930	81.5	128	23.1	60.11	720	103	82.9	180	231	11.9	10.2	78.5	215
1931	41.9	60.7	70.8	8.46	159	298	295	616	212	1.66	337	237	195
1932	148	1,950	303	781	318	104	65.61	1,150	639	319	14.7	490	490
1933	10.6	14.9	399	282	271	602	419	1,690	99.4	2.55	22.0	120	330
1934	174	4.75	57.3	10.5	1.89	30.2	91.9	159	13.9	40.0	1.45	154	62.0
1935	260	1,441	576	1,145	732	568	648	4,160	10,740	733	14.8	41.5	1,748
1936	101	1,715	227	96.3	625	466	69.2	108	15.1	0	1,130	376	376
1937	1,102	168	122	1,009	5,629	2,617	692	2,042	1,930	166	27.0	23	1,110
1938	93	1.34	2.43	19.7	88.7	815	2,778	6,476	1,521	48.9	87	41.8	959
1939	5,43	15.2	35.5	1.75	8.88	103	1,020	262	1,038	59.2	321	34	238
1940	95	1.68	.32	.35	80.6	577	784	720	1,132	13.9	236	40.0	298
1941	20	21.2	66.6	799	809	129	948	213	874	134	241	606	483
1942	4,817	2,847	927	291	891	1,804	1,795	2,942	3,674	853	224	1,413	1,875
1943	1,101	884	2,812	682	480	405	370	1,010	4,523	124	163	30	1,898
1944	298	13.6	123	84.8	556	3,640	9,346	1,067	907	80.6	1,394	148	1,464
1945	843	170	770	208	737	3,563	5,037	4,682	4,559	2,217	149	521	1,958
1946	767	37.3	28.82	946	945	685	1,972	1,867	616	175	1,914	306	1,024
1947	304	1,363	714	239	95	32.424	7,324	1,715	6,485	695	26.0	483	1,813
1948	186	215	754	402	542	3,193	626	782	4,318	7,255	1,509	81.3	1,665
1949	9.84	318	32.2	594	3,940	2,043	686	932	3,094	1,081	562	1,332	1,365
1950	1,849	154	1,146	1,744	689	590	709	1,159	2,060	2,220	3,894	1,912	1,521

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	-	-	-	-	-	-	-	-	-	-	85,500	407,000	-
1922	34,000	4,280	18,900	23,700	5,150	394,000	559,000	38,900	7,560	9,410	1,550	19,200	1,120,000
1923	5,690	19,700	2,690	1,300	3,040	81,200	27,800	27,000	198,000	31,900	1,960	4,390	405,000
1924	67,600	19,900	104,000	59,600	98,400	40,200	18,100	20,200	42,000	13,000	11,400	4,690	699,000
1925	5,200	3,190	3,540	40,300	41,300	51,200	199,000	16,300	66,000	2,120	1,650	6,010	436,000
1926	33,600	61,900	39,000	28,900	75,500	39,600	69,000	8,120	3,730	2,390	8,610	56,900	527,000
1927	149,000	32,900	23,100	30,500	42,700	95,000	455,000	165,000	151,000	48,300	56,800	5,450	1,350,000
1928	229,000	17,900	47,000	41,400	25,000	14,900	55,600	10,200	45,800	28,100	52,900	36,300	704,000
1929	7,870	475,000	88,500	43,000	51,600	97,200	259,000	558,000	313,000	57,700	1,160	1,540	1,850,000
1930	5,010	7,620	1,420	3,700	95,500	6,330	4,930	11,100	13,700	732	627	4,670	155,000
1931	2,580	3,610	4,340	520	8,830	18,300	17,600	37,900	12,600	102	20,700	14,100	141,000
1932	9,160	115,000	18,600	48,000	18,300	6,400	7,740	4,030	68,400	39,300	19,600	875	355,000
1933	652	887	24,500	17,300	15,100	37,000	24,900	104,000	5,910	157	1,350	7,140	239,000
1934	10,670	283	3,520	648	110	1,960	5,470	9,770	824	2,460	98	9,450	44,850
1935	16,000	85,730	35,440	70,390	40,630	34,900	38,560	255,800	639,300	45,070	908	2,170	1,265,000
1936	6,180	102,000	13,950	5,920	35,970	29,870	4,120	6,650	899	.6	0	67,250	272,900
1937	67,730	10,020	7,480	62,060	201,600	160,900	41,180	25,600	114,900	10,210	1,660	14	803,400
1938	57	80	150	1,210	4,920	50,140	165,300	398,200	90,480	3,010	54	2,480	716,100
1939	334	904	2,180	108	493	6,320	60,690	16,110	61,780	3,640	19,710	20	172,300
1940	59	111	20	22	4,630	35,450	46,680	44,260	67,330	852	14,530	2,380	216,300
1941	12	1,260	4,100	10,800	44,910	7,900	56,390	13,100	51,980	8,250	14,790	36,070	349,400
1942	296,200	169,400	46,970	17,910	49,490	110,900	106,800	180,900	218,600	52,460	13,770	84,110	1,358,000
1943	67,680	52,620	172,900	41,940	26,650	24,900	22,030	677,000	269,100	7,610	10,040	1,830	1,374,000
1944	18,510	811	7,540	5,220	31,970	223,800	556,100	65,590	53,990	4,950	85,740	8,800	1,063,000
1945	51,800	10,090	47,370	12,760	40,920	219,100	299,700	287,900	271,300	36,300	9,140	51,020	1,417,000
1946	47,180	2,220	1,770	181,300	52,480	40,890	117,400	114,800	56,670	10,850	17,700	18,230	741,500
1947	18,680	81,090	43,910	14,680	4,740	149,000	435,800	105,700	385,900	42,740	1,600	28,760	1,313,000
1948	11,430	12,780	46,350	24,700	31,150	196,300	37,230	48,100	256,900	446,100	92,790	4,840	1,209,000
1949	605	15,910	1,980	59,500	215,900	125,600	40,820	57,300	184,100	68,450	34,580	79,250	987,900
1950	113,700	9,190	70,450	107,300	39,270	36,300	42,190	71,260	122,600	136,500	239,400	113,700	1,101,000

Yearly discharge, in cubic feet per second of South Grand River near Brownington, Mo.											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acres-feet		Inches	Acres-feet
1921	526	-	-	-	-	-	-	-	-	-	-
1922	546	21,100	Apr. 9, 1922	5	1,540	0.928	12.62	1,120,000	1,501	12.29	1,090,000
1923	568	17,500	June 13, 1923	1	560	.337	4.56	405,000	785	6.42	568,000
1924	586	11,500	June 29, 1924	5	963	.580	7.90	699,000	715	5.87	520,000
1925	606	13,300	Apr. 6, 1925	.5	603	.363	4.94	436,000	772	6.32	559,000
1926	626	12,200	Apr. 9, 1926	.7	729	.439	5.96	527,000	827	6.75	597,500
1927	646	16,500	Mar. 22, 1927	6	1,870	1.13	15.28	1,350,000	1,994	16.28	1,440,000
1928	666	18,600	Oct. 5, 1927	12	969	.584	7.96	704,000	1,351	11.11	982,000
1929	(a)	63,900	Nov. 19, 1928	2	2,560	1.54	20.94	1,850,000	1,790	14.65	1,500,000
1930	701	6,880	Feb. 11, 1930	.5	215	.150	1.77	155,000	210	1.72	152,000
1931	716	2,820	May 21, 1931	.5	195	.117	1.60	141,000	378	3.08	273,000
1932	731	9,580	Nov. 26, 1931	.5	490	.295	4.00	355,000	329	2.70	239,000
1933	746	4,840	May 13, 1933	.4	330	.199	2.72	239,000	314	2.58	227,000
1934	761	1,990	Sept. 30, 1934	0	62.0	.037	.50	44,850	231	1.89	167,500
1935	786	29,400	June 4, 1935	.1	1,748	1.05	14.30	1,265,000	1,727	14.12	1,250,000
1936	806	6,820	Sept. 28, 1936	0	376	.226	3.08	272,800	325	2.66	235,900
1937	826	12,800	May 24, 1937	0	1,110	.669	9.07	803,400	992	8.12	718,400
1938	858	31,100	May 26, 1938	0	989	.596	8.08	716,100	993	8.11	719,200
1939	876	8,040	Apr. 17, 1939	0	238	.143	1.93	172,300	234	1.90	169,100
1940	896	4,140	June 11, 1940	0	298	.180	2.44	216,300	305	2.50	221,500
1941	926	7,210	Apr. 20, 1941	0	483	.291	3.95	349,400	1,197	9.79	866,600
1942	956	14,200	Nov. 3, 1942	8	1,875	1.13	15.33	1,358,000	1,558	12.73	1,228,000
1943	976	52,700	May 20, 1943	3.6	1,898	1.14	15.50	1,374,000	1,530	12.51	1,108,000
1944	1006	43,600	Apr. 25, 1944	2.2	1,464	.882	12.01	1,053,000	1,578	12.93	1,145,000
1945	1036	16,200	Apr. 18, 1945	3.0	1,958	1.16	16.00	1,417,000	1,878	15.35	1,359,000
1946	1056	13,500	Jan. 8, 1946	1.9	1,024	.617	8.38	741,500	1,152	9.43	834,000
1947	1086	17,600	June 27, 1947	.6	1,813	1.09	14.82	1,313,000	1,712	13.98	1,239,000
1948	1116	25,900	July 28, 1948	2.6	1,665	1.00	13.64	1,209,000	1,597	13.09	1,160,000
1949	1146	11,400	Feb. 15, 1949	.9	1,365	.822	11.16	987,900	1,602	13.10	1,160,000
1950	1176	17,600	Aug. 30, 1950	22	1,521	.916	12.41	1,101,000	-	-	-

a WSP Nos. 686, 1006, 1036.

539. Osage River at Warsaw, Mo.

Location.--Lat 38°14'40", long. 92°23'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 17, T. 40 N., R. 22 W., at Warsaw.

Drainage area.--11,500 sq mi, approximately.

Supplemental records available.--Gage-height records collected in this vicinity since March 1917 are contained in reports of U. S. Weather Bureau.

Gage.--Inclined staff gage. Datum of gage is 631.80 ft (revised) above mean sea level (levels by U. S. Weather Bureau).

Average discharge.--6 years (1925-31), 9,160 cfs.

Extremes.--1925-31: Maximum discharge, 89,700 cfs May 19, 1929 (gage height, 34.8 ft); minimum, 42 cfs Aug. 18, 1930 (gage height, 1.10 ft).
Maximum stage known, 44.54 ft May 21, 22, 1943 (discharge, 220,000 cfs). Maximum stage known prior to 1943, 44.46 ft in June 1844 (discharge, about 185,000 cfs, revised).

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1926	4,530	10,300	4,500	3,680	5,510	4,810	13,400	2,090	2,740	370	3,360	14,100
1927	25,400	7,040	6,740	7,480	8,830	21,500	66,600	19,500	25,000	8,490	32,900	19,300
1928	27,000	4,370	8,550	5,930	13,700	7,370	13,700	4,700	25,000	7,640	7,910	1,830
1929	589	24,100	11,500	13,900	4,850	9,480	30,600	49,300	18,900	4,440	660	14,100
1930	421	1,280	450	3,110	11,900	1,830	786	5,160	5,080	465	160	1,520
1931	544	670	2,480	602	2,670	3,950	4,010	8,000	2,700	860	4,400	2,610

* Not previously published; estimated on basis of records for station at Osceola.

Monthly and yearly runoff, in thousands of acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1926	279	615	276	226	306	296	798	128	163	22.8	206	837
1927	1,560	419	414	460	490	1,320.5	960	1,200	1,490	522	2,020	117
1928	1,660	260	526	365	790	453	813	289	1,490	470	486	109
1929	36.2	430	707	853	269	583	1,820	3,030	1,120	273	40.6	8.87
1930	25.9	75.9	27.7	191	663	113	46.8	517	302	28.6	9.86	90.2
1931	33.4	39.9	152	37	148	243	239	492	416	36.9	271	35.7

* Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second of Osage River at Warsaw, Mo.

Water year ending Sept. 30												Calendar year		
Year	W.S.P. no.	Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff				
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet			
1926	626	42,400	Nov. 9, 1925	90	5,740	0.499	6.78	4,150,000	7,430	8.79	5,380,000			
1927	646	88,300	Apr. 17, 1927	740	19,300	1.68	22.80	14,000,000	19,400	22.88	14,000,000			
1928	668	66,900	Oct. 9, 1927	400	10,600	.922	12.57	7,710,000	10,200	12.13	7,440,000			
1929	686	89,700	May 19, 1929	100	14,100	1.23	16.69	10,200,000	11,200	13.27	8,130,000			
1930	701	32,400	Feb. 9, 1930	50	2,610	.227	3.10	1,890,000	2,750	3.26	1,990,000			
1931	716	-	-	-	± 2,610	± .227	± 3.07	± 1,890,000	-	-	-			

* Not previously published.

540. Bennett Spring at Bennett Springs, Mo. 1/

Location.--Lat 37°43'05", long 92°51'25", in NW¼ sec. 1, T. 34 N., R. 18 W., 300 ft downstream from spring outlet at Bennett Springs, 1½ miles upstream from Niangua River.

Gage.--Water-stage recorder. Datum of gage is 864.71 ft above mean sea level, datum of 1929. September 1916 to March 1920, staff gage in the vicinity datum unknown. Oct. 17, 1928, to Apr. 11, 1934, staff gage at site 1,780 ft downstream at datum 2.30 ft lower. Apr. 12 to Dec. 13, 1934, staff gage at present site and datum.

Average discharge.--16 years (1916-19, 1928-41), 144 cfs.

Extremes.--1916-19, 1928-41: Maximum discharge, about 4,800 cfs June 20, 1935 (gage height, 6.08 ft), from rating curve extended above 2,000 cfs; minimum, about 55 cfs Nov. 13, 1934.

Remarks.--Occasional runoff from drainage area of 42.4 sq mi included in records.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	a158	-
1917	a138	a133	a118	a107	a96	a103	a113	a124	a126	a99	a113	a124	a116
1918	a95	a88	a75	a78	a113	a84	a90	a144	a122	a107	a84	a95	a98
1919	a87	a95	a112	a119	a100	a116	a105	a141	a164	a119	a119	a114	a116
1920	a111	a154	a127	a107	a109	a125	-	-	-	-	-	-	-
1929	±135	152	149	163	142	204	315	488	214	165	176	139	±204
1930	152	142	130	215	218	179	147	127	119	109	100	120	146
1931	96.6	90.8	99.7	89.0	129	149	141	184	127	115	153	160	128
1932	101	122	135	193	138	131	129	121	182	142	103	94.1	132
1933	82.2	82.1	162	158	131	161	233	410	178	126	113	125	164
1934	143	98.7	89.4	90.2	81.3	120	126	92.3	88.6	79.7	95.9	122	102
1935	86.6	77.5	111	99.3	108	348	159	240	704	262	142	124	205
1936	131	106	87.3	88.3	85.0	85.2	84.8	103	85.0	93.3	77.5	92.4	93.4
1937	120	146	130	280	228	134	227	312	266	133	113	73.6	180
1938	81.3	76.0	78.9	92.4	176	158	246	361	208	233	165	83.3	163
1939	98.4	165	97.3	109	172	239	374	296	207	150	160	109	181
1940	±89.1	±102	±83.5	±78.6	±94.7	±201	±198	±169	±179	±95.2	±193	±98.0	±132
1941	±98.6	±107	±122	±170	±121	±102	±494	±153	±104	±93.4	±80.4	±116	±146

* Not previously published; computed from gage heights collected and discharge measurements made during period.

a From reports of Missouri Geological Survey and Water Resources.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	-	-	-	-	-	-	-	-	-	a8,200	-
1917	a8,460	a7,900	a7,240	a6,560	a5,310	a6,430	a6,700	a7,600	a7,500	a6,070	a6,940	a7,360	a84,070
1918	a5,850	a5,250	a4,800	a4,800	a6,280	a5,150	a5,340	a8,850	a7,250	a6,650	a5,150	a5,640	a70,750
1919	a5,350	a5,640	a6,890	a7,300	a5,540	a7,110	a6,240	a8,650	a9,250	a7,300	a7,500	a6,780	a85,840
1920	a6,800	a9,150	a7,800	a6,570	a6,260	a7,670	-	-	-	-	-	-	-
1929	±8,310	9,040	9,160	10,000	7,890	12,500	18,700	30,000	12,700	10,100	10,800	8,270	±147,000
1930	9,350	8,450	7,990	13,200	12,100	11,000	8,750	7,810	7,080	6,700	6,150	7,140	106,000
1931	5,940	5,400	6,130	5,470	7,160	9,160	8,390	11,300	7,560	7,070	9,410	9,520	92,500
1932	6,210	7,260	8,300	11,900	7,940	8,060	7,680	7,440	10,800	8,730	6,330	5,600	96,200
1933	5,050	4,690	9,960	9,720	7,280	9,900	13,900	25,200	10,600	7,750	6,950	7,440	119,000
1934	8,900	5,880	5,500	5,540	4,510	7,400	7,480	5,680	5,270	4,900	5,780	7,230	73,970
1935	5,350	4,610	6,900	6,110	6,020	21,380	9,450	14,740	41,890	16,120	8,730	7,370	148,600
1936	8,090	6,320	5,370	5,430	4,890	5,240	5,040	6,360	5,060	5,740	4,770	5,500	67,810
1937	7,390	8,670	7,970	17,200	12,680	8,210	13,520	19,170	15,850	8,150	6,920	4,380	130,100
1938	5,000	4,520	4,850	5,680	9,800	9,730	14,640	22,200	12,370	14,330	10,170	4,960	118,200
1939	6,050	9,920	5,980	6,670	9,560	14,720	22,230	18,210	12,290	9,200	9,860	6,480	131,100
1940	±5,480	±6,050	±5,130	±4,850	±5,450	±12,370	±11,760	±10,400	±10,640	±5,860	±11,860	±5,830	±95,660
1941	±6,070	±6,390	±7,480	±10,450	±6,740	±8,250	±29,400	±9,380	±6,220	±5,740	±4,940	±6,920	±106,000

* Not previously published; see footnote to preceding table.

a From reports of Missouri Geological Survey and Water Resources.

1/ Published as "at Brice" prior to 1939.

Yearly discharge, in cubic feet per second of Bennett Spring at Bennett Springs, Mo.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	(a)	-	-	-	-	-	-	-
1917	(a)	-	-	91	116	84,070	105	76,150
1918	(a)	-	-	69	98	70,750	101	72,940
1919	(a)	-	-	87	116	63,840	124	89,720
1920	(a)	-	-	-	-	-	-	-
1929	686	*2,710	May 6, 1929	-	*204	*147,000	203	147,000
1930	701	624	Jan. 14, 1930	96	146	106,000	135	97,400
1931	716	938	Sept. 2, 1931	86	128	92,500	134	96,800
1932	731	711	June 28, 1932	79	132	96,200	130	94,400
1933	746	2,030	May 13, 1933	75	164	119,000	164	119,000
1934	761	273	Apr. 16, 1934	76	102	73,970	97.4	70,530
1935	766	4,800	June 20, 1935	55	205	146,600	209	151,600
1936	806	847	May 2, 1936	67	93.4	67,810	99.2	72,060
1937	826	*4,650	Apr. 29, 1937	64	180	130,100	166	120,400
1938	856	1,240	May 23, 1938	64	163	118,200	174	125,700
1939	876	2,550	Apr. 5, 1939	76	181	131,100	*174	*125,900
1940	-	*1,030	June 28, 1940	*73	*132	*95,660	*136	*99,940
1941	-	*3,750	Apr. 19, 1941	*75	*146	*106,000	-	-

* Revised.

* Not previously published.

a From reports of Missouri Geological Survey and Water Resources.

541. Niangua River near Decaturville, Mo.

Location.--Lat 37°56'120", long. 92°50'30" in NW¼NE¼ sec. 19, T. 37 N., R. 17 W., 0.3 mile downstream from hydroelectric plant of Sho-Me Power Cooperative, Inc., and 8 miles northwest of Decaturville.

Drainage area.--627 sq mi.

Gage.--Water-stage recorder. Datum of gage is about 665.9 ft above mean sea level, datum of 1929. Prior to Aug. 28, 1930, staff gage at site 200 ft downstream at same datum.

Average discharge.--21 years (1929-50), 699 cfs.

Extremes.--1930-50: Maximum discharge, 33,400 cfs May 19, 1943 (gage height, 21.8 ft); minimum, 6 cfs Oct. 15, 1946.

Maximum stage known, about 28.0 ft in September 1914.

Remarks.--Regulation at medium and low flow from hydroelectric plant began September 23, 1930.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	*330	*410	*275	*875	*910	*540	387	369	295	191	166	310	*418
1931	158	190	315	188	491	600	481	911	285	183	907	458	431
1932	320	568	507	957	444	399	370	205	1,240	701	210	169	507
1933	153	179	990	687	353	538	1,280	2,200	394	223	248	203	624
1934	440	253	202	218	184	485	833	306	204	137	157	390	317
1935	336	327	654	648	308	2,105	780	1,401	4,236	783	276	179	1,003
1936	210	386	270	184	223	214	200	326	142	134	107	763	262
1937	442	936	298	1,771	1,105	531	906	1,756	2,000	394	195	138	869
1938	144	154	162	292	1,003	649	1,185	2,024	505	239	185	198	556
1939	168	577	231	265	882	983	1,934	1,741	547	260	284	166	667
1940	164	164	167	145	197	815	644	639	549	318	641	260	393
1941	147	164	378	747	408	241	2,523	370	266	174	183	435	500
1942	2,794	1,330	754	408	1,152	577	1,231	741	2,694	386	321	272	1,051
1943	233	814	1,690	703	377	661	776	4,960	1,813	404	277	224	1,102
1944	275	268	228	317	355	1,239	1,259	761	269	197	1,156	428	564
1945	478	241	207	223	766	2,552	4,186	1,484	1,570	456	307	1,953	1,197
1946	1,153	452	323	819	1,362	589	906	1,021	511	257	1,175	253	732
1947	242	1,594	766	451	300	659	3,052	891	657	545	219	240	799
1948	256	257	212	272	305	1,242	397	512	2,715	887	274	207	627
1949	185	510	252	1,363	1,580	1,394	636	696	1,658	918	490	904	876
1950	1,687	468	742	2,912	1,057	1,159	690	2,210	1,597	464	738	430	1,176

* Not previously published; estimated on basis of records for station near Roach.

Monthly and yearly runoff, in acre-feet of Niangua River near Decaturville, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1930	20,300	24,400	16,900	53,800	50,500	33,200	23,000	22,700	17,600	11,700	10,200	18,400	\$303,000
1931	9,720	11,500	19,400	11,600	27,500	36,900	28,600	56,000	17,000	11,300	55,800	27,500	312,000
1932	19,700	33,800	31,200	58,900	25,500	24,300	22,000	12,600	73,800	43,100	12,900	10,100	369,000
1933	9,410	10,700	60,900	42,200	19,800	33,100	76,200	35,000	23,400	13,700	15,200	12,100	452,000
1934	27,080	15,030	12,410	13,400	10,210	29,610	49,580	18,840	12,130	8,430	9,670	23,200	229,800
1935	20,680	19,460	40,190	39,820	17,110	29,400	45,220	86,110	252,000	48,140	16,940	10,680	725,800
1936	12,910	22,960	16,600	11,300	12,640	13,150	11,890	20,040	8,460	8,240	6,580	45,410	190,400
1937	27,200	55,680	18,320	108,900	61,580	32,650	53,880	108,000	19,000	24,240	12,010	8,240	629,500
1938	8,870	9,190	9,960	17,980	55,690	39,890	70,500	24,500	30,030	14,700	10,140	11,160	402,600
1939	10,320	34,310	14,230	16,310	48,960	60,440	115,100	107,100	32,550	15,960	17,450	9,890	482,600
1940	10,090	9,750	10,260	8,920	11,520	50,120	38,290	39,270	32,680	19,540	39,410	15,450	285,100
1941	9,060	9,770	23,230	45,920	22,650	14,800	150,100	22,770	15,830	10,690	11,250	25,890	362,000
1942	171,800	79,140	46,340	25,090	63,960	35,450	73,260	45,580	160,300	23,750	19,760	16,180	760,600
1943	14,330	48,480	16,200	43,230	20,920	40,640	46,200	305,000	107,900	24,850	17,050	13,350	798,100
1944	16,940	15,960	14,030	19,520	20,430	76,210	74,930	46,780	16,010	12,120	71,050	25,490	409,500
1945	29,370	14,350	12,720	13,700	42,530	156,900	249,100	91,230	93,450	28,050	18,850	16,200	866,400
1946	70,870	26,880	19,840	50,380	75,650	56,190	53,880	62,790	30,430	15,810	72,230	15,070	530,000
1947	14,900	94,870	47,090	27,740	16,660	40,530	181,600	54,780	39,110	33,530	15,440	14,260	578,500
1948	15,720	15,270	13,020	16,740	17,540	76,350	23,620	31,480	161,600	53,550	16,860	12,500	455,000
1949	11,390	30,340	15,480	83,810	87,750	85,730	37,850	42,770	98,660	56,430	30,100	53,790	634,100
1950	103,700	27,880	45,610	172,900	58,720	71,280	41,060	35,900	95,010	28,530	45,380	25,610	851,600

* Not previously published; estimated on basis of records for station near Roach.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet	
		Discharge	Date						
1930	701	\$5,700	Jan. 15, 1930*	\$109	\$418	\$303,000	\$389	\$281,000	
1931	716, 1116	9,210	Aug. 7, 1931	18	431	312,000	492	356,000	
1932	731, 1118	19,000	June 28, 1932	40	507	369,000	502	364,000	
1933	746, 1116	17,200	May 14, 1933	44	624	452,000	588	425,000	
1934	761	4,410	Apr. 17, 1934	32	317	229,800	353	255,600	
1935	786, 1116	19,300	Mar. 13, 1935	43	1,003	725,800	964	697,900	
1936	806	8,280	Sept. 28, 1936	48	262	190,400	329	239,100	
1937	826	11,100	Jan. 15, 1937	66	869	629,500	768	556,300	
1938	856	7,320	May 24, 1938	77	556	402,600	599	433,400	
1939	876	9,170	Apr. 17, 1939	83	667	482,600	627	453,900	
1940	896	6,020	May 2, 1940	38	393	285,100	409	297,100	
1941	926, 1116	29,000	Apr. 20, 1941	64	500	362,000	853	617,200	
1942	956, 1116	31,200	June 18, 1942	136	1,051	760,600	887	642,300	
1943	976	33,400	May 19, 1943	72	1,102	798,100	920	666,100	
1944	1006	11,600	Apr. 12, 1944	45	564	409,500	577	419,000	
1945	1036	26,200	Apr. 14, 1945	48	1,197	866,400	1,281	927,600	
1946	1056	13,500	Aug. 15, 1946	34	732	530,000	786	569,300	
1947	1086	29,000	Apr. 26, 1947	52	799	578,500	643	465,600	
1948	1116	17,200	June 23, 1948	53	627	455,000	645	468,200	
1949	1146	10,300	June 9, 1949	49	876	634,100	1,042	754,100	
1950	1176	20,700	Jan. 5, 1950	262	1,176	851,600	-	-	

* Revised.

* Not previously published.

542. Hahatonka Spring at Hahatonka, Mo.

Location.--Lat 37°58'31", long. 92°46'18", in SW¹/₄ NW¹/₄ sec. 2, T. 37 N., R. 17 W., at Hahatonka, a quarter of a mile below spring outlet and half a mile above mouth of the spring branch.

Gage.--Staff gage. Datum of gage is 646.2 ft above mean sea level.

Extremes.--1923-26: Maximum discharge not determined because of backwater; minimum, 43 cfs Feb. 23, 1923.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	\$50	\$60	57.2	50.3	46.9	59.1	54.6	49.5	75.7	\$65	\$55	\$50	\$56.1
1924	52.8	64.0	\$79.1	61.0	77.9	\$65.1	\$82.3	\$91.5	\$140	\$102	\$109	88.7	\$84.7
1925	64.3	65.8	\$83.0	89.1	87.8	\$102	105	85.8	70.4	63.7	64.0	\$93.3	\$81.1
1926	90.8	94.6	76.2	63.7	64.5	80.2	95.3	68.0	62.0	56.0	65.5	84.8	75.1

* Not previously published; estimated on basis of records for Niangua River near Roach.

Monthly and yearly runoff, in acre-feet of Hahatonka Spring at Hahatonka, Mo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	\$3,070	\$3,570	3,520	3,090	2,600	3,630	3,250	3,040	4,500	\$4,000	\$3,380	\$2,980	\$40,600
1924	3,250	3,810	4,860	3,750	4,480	4,000	\$4,900	\$5,630	\$8,600	\$6,250	\$6,680	\$5,280	\$61,500
1925	3,950	3,920	\$5,100	5,480	4,880	\$6,270	6,250	5,280	4,190	3,920	3,940	\$5,550	\$58,700
1926	5,580	5,630	4,690	3,920	3,580	4,930	5,670	4,180	3,690	3,440	4,030	5,050	54,400
* Not previously published; estimated on basis of records for Nianqua River near Roach.													

* Not previously published; estimated on basis of records for Niangua River near Roach.

Yearly discharge, in cubic feet per second								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1923	566	-	-	-	\$56.1	\$40,600	\$58.5	\$42,400
1924	586	-	-	49	\$84.7	\$61,500	\$85.9	\$62,500
1925	606	-	-	58	\$81.1	\$58,700	\$85.2	\$61,700
1926	626	-	-	51	75.1	54,400	-	-

* Not previously published.

543. Niangua River near Roach, Mo.

Location.--Lat 38°01'05" long. 92°49'15" in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 20, T. 38 N., R. 17 W., 2 $\frac{1}{2}$ miles upstream from Little Niangua River, and 4 miles northeast of Roach.

Drainage area.--698 sq mi.

Gage.--Staff gage. Datum of gage is 614.75 ft (revised) above mean sea level, datum of 1929.

Average discharge.--7 years (1923-30), 1,010 cfs (revised).

Extremes.--1922-30: Maximum discharge, 27,200 cfs Aug. 9, 1927 (gage height, 17.00 ft); minimum (unregulated), 160 cfs Aug. 26 to Sept. 2, 1923.
Maximum stage known, 23.8 ft in September 1914.

Monthly and yearly mean discharge, in cubic feet per second													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	239	255	314	523	340	313	721	396	235	211	-
1924	221	506	1,270	485	846	571	939	2,110	2,250	1,160	1,710	497	1,050
1925	371	368	1,440	886	790	947	853	783	367	256	238	715	668
1926	676	912	*398	*395	479	698	709	335	288	226	347	1,010	*538
1927	1,630	1,120	969	1,200	921	2,590	5,030	2,370	2,740	703	3,170	572	2,090
1928	959	1,430	1,470	608	611	1,110	2,440	862	3,120	774	664	370	1,200
1929	307	329	483	660	525	1,070	1,800	3,890	1,060	504	692	355	977
1930	443	545	379	1,120	1,160	707	482	491	409	262	248	487	557
1931	233	*270	*430	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; estimated on basis of records for station near Decaturville.

Monthly and yearly runoff, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1923	-	-	14,700	15,700	17,400	32,200	20,200	19,200	42,900	24,300	14,400	12,600	-
1924	13,600	30,100	77,900	29,800	48,700	35,100	55,900	30,000	34,000	71,100	105,000	29,600	761,000
1925	22,800	21,900	88,500	54,500	43,900	58,200	50,800	48,100	21,800	15,700	14,600	42,400	493,000
1926	41,600	54,300	*24,500	*24,300	26,600	42,900	42,200	20,600	17,100	13,900	21,300	60,100	*389,000
1927	100,000	66,600	59,600	74,000	51,200	59,000	239,000	146,000	282,000	43,200	195,000	34,000	1,510,000
1928	59,000	85,100	90,100	37,400	35,200	68,200	45,000	53,000	86,000	47,600	40,900	22,000	869,000
1929	18,900	19,600	29,700	40,600	29,200	65,600	107,000	239,000	62,900	31,000	42,500	21,100	707,000
1930	27,200	32,400	23,300	68,600	64,400	43,500	28,700	30,200	24,300	16,100	15,200	29,000	403,000
1931	14,300	*16,100	*26,400	-	-	-	-	-	-	-	-	-	-

* Revised.

* Not previously published; estimated on basis of records for station near Decaturville.

Yearly discharge, in cubic feet per second									
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Runoff in acre-feet	Mean
		Discharge	Date						
1923	566	1,810	June 12, 1923	-	-	-	-	-	443
1924	586	15,200	May 30, 1924	175	1,050	1.50	20.42	761,000	1,063
1925	606	12,600	Dec. 21, 1924	190	668	.957	12.98	493,000	*650
1926	626	12,800	Nov. 9, 1925	193	*538	*.771	10.46	*589,000	*685
1927	646	27,200	Aug. 9, 1927	329	2,090	2.99	40.56	1,510,000	2,097
1928	666	23,600	June 10, 1928	300	1,200	1.72	23.35	869,000	969
1929	686	15,900	May 7, 1929	300	977	1.40	19.01	707,000	997
1930	701	6,560	Jan. 15, 1930	218	557	.798	10.81	403,000	*621
									*10.11
									*377,000

* Revised.

* Not previously published.

544. Lake of the Ozarks near Bagnell, Mo.

Location.--Lat 38°12', long. 92°37', in SE $\frac{1}{4}$ sec. 19, T. 40 N., R. 15 W., at Bagnell Dam on Osage River, 2 miles southwest of Bagnell.

Drainage area.--14,000 sq mi, approximately.

Supplemental records available.--Gage-height records collected at same site since 1932 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912, or 1.18 ft below mean sea level, datum of 1929, determined by Union Electric Co. of Missouri. Prior to Apr. 15, 1931, staff gage at same site and datum. Elevations given herein are referred to adjustment of 1912.

Extremes.--1931-50: Maximum contents, 1,527,000 acre-ft May 22, 1943 (elevation, 665.45 ft); minimum, 322,100 acre-ft Feb. 13, 1948 (elevation, 639.95 ft).

Remarks.--Reservoir is formed by concrete gravity dam. Spillway is equipped with 12 taftor gates 34 ft wide by 22 ft high. Storage began in 1931. Usable capacity, 1,246,000 acre-ft between elevations 630.00 ft (maximum drawdown) and 660.00 ft (top of gates). Dead storage, 727,000 acre-ft. Figures given herein are of usable contents. Water is used for generating electricity.

Cooperation.--Records furnished by Union Electric Co. of Missouri.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931	-	-	-	-	-	-	45	114	911	918	1,233	1,188
1932	1,178	1,303	1,125	1,188	793	521	575	630	1,228	1,181	1,158	1,098
1933	1,017	968	1,288	1,094	672	456	761	1,504	1,156	1,119	1,036	965
1934	998	913	815	755	-	394	672	733	702	662	612	827
1935	929	1,288	1,040	985	758	1,004	865	1,294	1,303	1,149	1,129	1,019
1936	1,000	1,163	862	789	687	512	478	556	482	430	364	876
1937	1,057	1,119	1,007	1,242	1,269	1,263	1,121	1,288	1,187	1,169	1,090	1,006
1938	963	906	871	879	856	800	1,174	1,291	1,187	1,036	913	837
1939	746	773	751	746	725	603	987	1,174	1,148	1,065	1,033	826
1940	758	745	731	734	786	1,045	1,194	1,257	1,280	1,240	1,293	1,214
1941	1,177	1,162	1,206	1,305	1,135	1,109	1,240	1,207	1,245	1,203	1,239	1,267
1942	1,372	1,260	1,268	1,189	1,244	1,194	1,202	1,217	1,280	1,180	1,192	1,230
1943	1,148	1,189	1,339	1,043	923.2	1,046	1,117	1,232	1,216	1,132	1,106	1,076
1944	1,024	971.3	936.1	857	971.3	1,128	1,248	1,135	1,144	1,108	1,227	1,092
1945	1,041	994	1,083	969.8	1,101	1,202	1,234	1,236	1,213	1,152	1,130	1,211
1946	1,131	1,067	992.9	1,116	1,133	878	1,084	1,053	1,119	1,087	1,156	1,143
1947	1,188	1,143	1,001	945.6	836	1,039	1,194	1,102	1,247	1,176	937.6	866.1
1948	725	639.4	688.3	509.4	459.1	1,056	877.5	1,039	1,327	1,298	1,089	939.6
1949	767.8	951.2	792.5	1,238	1,048	1,059	986.5	1,067	1,180	1,167	1,099	1,144
1950	1,191	1,119	994.2	1,075	708.1	765.2	906.3	1,104	1,087	1,228	1,270	992.7

a Contents by capacity table used beginning Apr. 16, 1941; contents Apr. 30, 1941, by capacity table used prior to Apr. 16, 1941, was 1,269,000 acre-feet.

b Contents by capacity table used beginning July 1, 1942; contents July 31, 1942, by capacity table used prior to July 1, 1942, was 1,217,000 acre-feet.

c Contents by capacity table used beginning Nov. 1, 1949; contents Nov. 30, 1949, by capacity table used prior to Nov. 1, 1949, was 1,109,000 acre-feet.

545. Osage River near Bagnell, Mo.

Location.--Lat 38°12'26", long. 92°35'23", in N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 21, T. 40 N., R. 15 W., 1 $\frac{1}{2}$ miles upstream from Bagnell and 3 miles downstream from hydroelectric plant of Union Electric Co. of Missouri.

Drainage area.--14,000 sq mi, approximately.

Supplemental records available.--Gage-height records collected in this vicinity 1880-1931 are contained in reports of Missouri River Commission or U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 548.57 ft above mean sea level, datum of 1929, May 5, 1925, to Oct. 15, 1930, staff gage at present site and datum. Since Oct. 1, 1940, auxiliary water-stage recorder at powerplant 3 miles upstream.

Average discharge.--70 years (1880-1950), 9,840 cfs.

Extremes.--1880-1950: Maximum discharge, 220,000 cfs May 19, 1943 (gage height, 48.8 ft); minimum daily, 220 cfs Dec. 12, 1917.
Maximum stage known prior to 1943, 43.1 ft in June 1844 (discharge, 164,000 cfs).

Remarks.--Flow regulated by Lake of the Ozarks since Feb. 19, 1931 (see elsewhere in this report).

Cooperation.--Records prior to June 1925 not previously published by Geological Survey, furnished by Union Electric Co. of Missouri.

Monthly and yearly mean discharge, in cubic feet per second of Osage River near Bagnell, Mo.													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1881	1,160	891	651	475	17,100	15,100	2,560	6,810	3,000	3,070	277	256	4,210
1882	21,200	17,800	8,960	6,470	33,900	18,700	6,930	13,400	18,700	3,550	1,040	392	12,400
1883	593	1,810	1,380	1,450	28,900	7,320	2,090	8,390	17,300	9,920	4,560	496	6,850
1884	1,950	3,320	3,130	1,880	22,200	8,090	16,400	24,500	2,500	3,750	1,580	2,960	7,630
1885	16,700	5,540	16,900	22,800	17,600	15,800	30,500	25,300	13,000	20,400	3,210	37,500	18,800
1886	2,590	2,240	1,500	1,430	7,210	7,310	8,640	18,100	3,140	1,660	1,590	588	4,660
1887	754	801	697	500	2,950	2,000	7,110	3,560	3,260	1,420	417	446	1,980
1888	429	378	800	6,430	10,300	13,000	8,100	9,840	5,940	5,140	9,230	1,970	5,780
1889	1,580	4,230	6,500	15,500	4,940	30,500	16,300	24,000	50,400	8,000	4,420	5,870	12,700
1890	948	10,000	3,530	21,400	14,200	8,370	16,100	8,720	9,380	1,730	2,720	6,220	8,540
1891	8,640	8,220	2,950	6,430	15,000	12,600	26,500	9,060	40,800	12,700	4,760	676	12,100
1892	420	730	844	3,040	29,900	31,400	27,800	39,900	54,000	6,980	1,390	802	14,700
1893	968	832	2,790	1,100	3,220	6,930	31,800	32,200	23,700	6,050	1,460	588	9,300
1894	1,120	553	619	1,620	1,440	10,100	9,340	20,300	4,960	3,020	1,700	3,670	4,900
1895	529	452	3,260	676	1,640	4,920	4,050	2,830	6,320	21,200	14,700	8,020	5,770
1896	584	701	44,300	15,100	6,940	5,320	11,400	48,300	31,700	6,290	1,600	927	14,500
1897	762	1,490	2,550	27,600	20,000	34,000	10,400	7,400	5,480	10,800	582	376	10,100
1898	329	432	730	2,890	3,210	21,000	14,300	37,700	16,400	11,400	7,110	8,510	10,400
1899	5,760	7,030	12,100	4,610	5,130	16,400	17,600	14,900	12,400	6,400	846	480	8,660
1900	462	654	1,180	1,480	1,810	14,700	9,360	6,110	3,800	8,580	2,450	2,670	4,460
1901	6,740	7,420	2,780	5,670	1,830	14,600	19,100	3,080	543	980	4,520	3,900	5,950
1902	1,660	1,170	568	900	1,580	14,600	5,040	15,400	16,400	12,300	12,200	14,200	9,040
1903	4,020	3,410	3,690	3,470	12,200	36,600	16,100	26,400	33,800	5,810	8,070	5,980	13,300
1904	6,660	4,110	1,850	1,420	1,150	6,540	33,600	41,500	56,800	38,200	10,700	4,710	17,400
1905	984	410	518	3,460	5,200	12,200	5,720	12,500	6,110	18,300	30,900	24,100	10,100
1906	9,750	4,300	3,290	8,060	11,100	13,400	11,500	4,960	12,100	9,190	15,000	5,730	9,020
1907	3,050	3,350	6,160	13,000	7,290	8,870	7,400	31,100	14,500	6,520	5,940	3,110	9,230
1908	8,180	4,900	5,270	6,840	18,200	17,500	33,700	24,100	28,400	11,800	5,680	3,260	13,900
1909	7,960	5,990	8,870	2,180	16,000	13,100	10,700	22,800	14,300	36,700	1,620	865	11,800
1910	645	7,270	5,740	9,660	6,450	7,210	11,000	35,100	25,600	6,630	3,060	8,920	10,600
1911	1,240	602	631	632	9,550	14,300	14,200	5,150	1,620	1,400	2,330	5,880	4,750
1912	3,990	2,130	3,300	1,440	5,160	38,600	41,600	31,700	16,000	4,470	1,620	934	12,600
1913	1,400	2,110	702	1,920	4,850	22,200	20,400	7,670	2,580	1,600	1,010	927	5,600
1914	808	860	4,300	1,140	15,700	7,340	23,500	4,370	3,940	4,070	1,230	11,000	6,260
1915	15,500	843	1,030	2,610	22,500	21,100	7,530	20,100	58,000	34,100	18,000	48,100	20,500
1916	6,260	2,620	2,080	40,800	35,800	14,500	26,900	14,200	41,300	3,670	1,640	845	15,800
1917	695	718	462	1,250	792	2,210	2,820	3,490	10,200	1,040	3,290	2,110	2,870
1918	1,260	554	483	380	1,640	985	8,210	8,410	2,560	1,640	723	2,920	2,230
1919	1,030	8,460	5,820	6,590	5,410	6,260	4,460	24,600	14,500	3,790	2,700	1,600	*7,120
1920	*13,800	*17,300	5,600	3,590	3,270	*19,600	13,900	10,500	5,850	2,730	3,340	*19,500	*9,980
1921	6,260	3,450	1,740	4,400	4,970	*13,800	*23,200	*23,100	12,800	9,700	15,500	*28,000	*12,300
1922	5,930	2,580	4,840	3,530	2,860	*38,000	*86,300	*15,700	2,750	4,450	1,680	1,630	*14,200
1923	1,070	2,870	1,230	1,230	2,770	11,200	4,560	5,710	*26,500	7,090	1,090	981	*5,510
1924	6,040	6,450	*15,400	7,090	15,700	6,220	7,530	*13,200	*28,500	*22,900	9,830	3,510	11,800
1925	3,080	3,380	4,640	7,900	12,100	11,000	18,600	4,750	5,320	813	604	6,190	6,460
1926	5,950	13,800	5,680	4,390	6,500	6,800	15,900	3,090	3,320	875	4,440	16,800	7,240
1927	32,600	9,560	9,330	9,100	11,700	29,600	81,100	26,800	34,400	9,760	38,800	2,690	24,600
1928	31,600	7,210	12,000	7,850	16,100	9,610	19,300	7,180	29,700	10,400	9,130	2,990	13,600
1929	1,170	24,300	14,200	16,000	5,290	13,100	36,900	63,100	22,500	5,560	1,680	735	17,100
1930	1,150	2,390	1,260	6,590	14,800	3,560	1,680	6,500	5,930	1,140	508	2,550	3,920
1931	1,140	1,140	3,410	972	1,430	359	452	708	515	492	1,220	3,300	1,260
1932	3,550	10,900	10,300	7,370	11,400	7,350	2,000	8,628	1,200	8,610	1,890	1,390	5,550
1933	1,630	1,440	6,060	10,600	10,100	9,210	4,990	18,400	5,620	1,770	2,730	3,640	6,380
1934	2,766	2,181	2,993	2,350	4,945	5,317	1,855	2,000	1,455	825	961	1,077	2,361
1935	2,918	5,760	13,080	13,100	11,020	11,660	10,220	19,260	78,160	8,743	1,293	2,886	14,790
1936	2,834	14,440	10,200	3,214	4,411	5,245	2,113	1,170	1,521	757	886	745	3,950
1937	6,619	10,020	4,099	15,610	20,910	14,580	12,290	18,150	31,970	2,721	2,182	1,662	11,630
1938	920	1,175	978	1,139	6,223	9,062	14,660	32,150	25,520	3,988	2,209	1,843	8,303
1939	1,684	1,494	1,491	1,123	5,405	8,135	9,481	11,920	5,832	2,690	1,866	3,558	4,544
1940	1,161	788	717	586	617	2,118	4,879	5,852	7,232	1,274	2,904	2,724	2,567
1941	686	927	1,772	13,350	10,590	2,393	28,190	3,642	9,296	2,254	1,821	13,420	7,274
1942	59,310	39,270	10,100	5,769	11,440	10,020	17,600	16,090	33,250	6,781	2,917	10,580	18,590
1943	7,108	6,839	18,950	17,330	6,881	5,257	6,401	92,260	40,960	6,397	2,478	1,391	17,820
1944	4,005	2,272	2,727	3,421	4,358	25,790	42,520	29,460	5,908	2,130	13,100	10,000	12,140
1945	10,010	2,898	8,416	4,600	5,631	33,670	60,390	33,260	34,800	19,560	4,045	12,080	19,130
1946	13,640	3,195	2,524	16,640	13,340	11,910	9,467	12,660	2,875	1,745	17,050	1,955	8,930
1947	1,885	24,520	9,293	4,346	3,578	12,480	52,330	17,180	25,040	10,100	4,467	3,523	14,010
1948	4,582	2,929	2,554	5,821	4,153	11,510	8,009	4,013	51,680	30,360	17,270	4,468	10,620
1949	3,544	2,892	3,420	18,860	34,720	20,960	9,856	11,030	23,390	14,270	4,037	6,376	12,610
1950	11,340	3,685	9,112	18,950	14,910	9,024	5,706	16,050	19,830	21,230	25,130	15,280	14,210

* Revised by Union Electric Company; supersedes figure published in Surface Waters of Missouri, 1927-39, Vol. XXVI, 2d series.

Monthly and yearly runoff, in thousands of acre-feet of Osage River near Bagnell, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1881	71.2	53	40	29.2	950	951	152	419	1,178	189	17	15.2	3,040
1882	1,510	1,060	551	398	1,880	1,150	413	827	1,710	219	64.2	23.3	9,000
1883	36.5	108	84.9	88.9	610	450	125	515	1,030	610	280	29.5	4,970
1884	120	198	192	116	1,270	497	976	1,510	154	230	97	176	5,540
1885	1,030	330	1,040	1,400	979	973	1,820	1,560	771	1,260	197	2,250	13,600
1886	159	133	92.2	87.7	400	449	514	1,120	187	102	98	34.8	3,380
1887	46.4	47.7	42.6	30.7	144	123	423	219	194	87.5	25.7	26.5	1,430
1888	26.4	22.5	36.3	396	593	800	482	605	354	193	568	117	4,190
1889	84.8	251	400	951	269	1,880	972	1,480	1,810	492	272	350	9,210
1890	58.3	595	217	1,320	786	515	960	536	558	106	167	370	6,190
1891	544	489	181	395	724	777	1,580	557	2,430	781	293	40.2	8,790
1892	25.9	43.5	51.9	187	1,720	1,930	1,650	2,450	2,020	429	85.7	47.7	10,600
1893	59.5	49.5	172	67.7	179	426	1,890	1,980	1,410	372	90.1	35	6,730
1894	69.1	32.3	58	99.5	80.1	621	555	1,250	295	166	105	218	3,550
1895	32.5	26.9	200	41.6	91.1	302	241	174	376	1,510	907	477	4,180
1896	35.9	41.2	72.0	929	399	327	677	2,970	1,890	387	98.2	55.2	10,500
1897	46.9	88.6	157	1,700	1,110	2,090	617	455	326	662	35.8	22.4	7,310
1898	20.2	25.7	44.9	178	178	1,290	850	2,320	975	700	437	506	7,520
1899	354	418	745	283	285	1,010	1,050	919	736	393	52	28.6	6,270
1900	28.4	38.9	72.4	90.8	101	902	557	376	226	527	151	159	3,230
1901	414	441	171	549	102	900	1,140	189	32.3	60.9	278	232	4,310
1902	102	69.6	34.9	49.2	86.7	896	300	949	977	758	751	846	5,820
1903	247	203	227	214	678	2,250	957	1,620	2,010	357	496	568	9,620
1904	532	245	113	87.5	66.2	402	2,000	2,550	3,380	2,350	659	280	12,700
1905	60.5	24.4	31.9	213	289	748	340	768	364	1,120	1,900	1,440	7,300
1906	599	256	202	496	614	824	683	305	719	565	924	341	6,530
1907	188	199	379	797	405	545	441	1,910	862	401	365	185	6,680
1908	503	292	324	420	1,040	1,080	2,010	1,480	1,690	729	249	194	10,100
1909	489	356	545	134	891	804	635	1,400	853	2,260	99.8	51.5	9,550
1910	59.3	432	341	594	358	443	652	2,160	1,520	408	188	551	7,670
1911	76.2	35.8	42.5	38.9	530	880	845	316	96.3	86	144	350	3,440
1912	245	127	203	88.4	297	2,380	2,470	1,950	955	275	99.8	55.6	9,150
1913	86.2	126	43.1	118	269	1,360	1,210	471	153	98.5	61.9	55.1	4,050
1914	49.6	51.2	270	70.0	759	451	1,400	269	234	250	75.9	654	4,530
1915	827	50.2	63.6	160	1,250	1,300	448	1,230	3,450	2,100	1,110	2,860	14,800
1916	385	156	128	2,510	2,060	892	1,600	873	2,460	226	101	50.3	11,400
1917	42.7	42.7	45.6	76.6	44.1	136	168	522	608	63.7	202	126	2,080
1918	77.3	32.9	29.7	23.4	90.8	60.6	310	517	152	101	44.4	174	1,610
1919	63.3	504	358	405	301	385	265	*1,510	863	233	166	95.4	*5,150
1920	*948	*1,030	344	221	188	*1,210	829	644	336	168	205	*1,160	*7,180
1921	585	206	107	271	276	*851	*1,390	*1,420	763	597	953	*1,670	*8,880
1922	364	154	297	217	159	*2,330	*1,310	*963	164	273	102	97.1	*10,200
1923	65.8	171	75.5	75.7	154	688	271	351	*1,580	456	67.0	58.4	*3,980
1924	372	384	*945	436	902	382	448	*809	*1,700	*1,410	605	209	8,800
1925	190	200	285	486	670	678	1,110	292	316	50.0	37.2	369	4,680
1926	366	821	349	270	361	418	946	190	198	53.8	273	1,000	5,250
1927	2,000	569	574	560	650	1,820	4,830	1,650	2,050	600	2,390	160	17,900
1928	1,940	429	738	481	926	591	1,150	441	1,770	640	561	178	9,840
1929	71.9	450	873	984	294	806	2,200	3,880	1,340	342	103	43.7	12,380
1930	70.7	142	77.5	405	822	219	100	400	353	70.1	31.2	152	2,840
1931	70.1	67.8	210	59.8	79.4	22.1	26.9	43.5	30.8	30.3	75	196	912
1932	206	643	633	490	656	451	119	38.6	71.4	529	116	82.7	4,040
1933	100	85.7	373	652	561	566	297	1,130	334	109	168	217	4,590
1934	170	129.8	184.1	144.5	274.7	326.9	110.4	123	865.6	50.7	59.1	64.11	1,724
1935	179.3	342.8	804.4	805.7	611.9	729.4	607.9	1,184	4,651	537.6	794.9	171.8	10,710
1936	174.2	859	627.1	197.6	253.8	322.3	125.7	71.91	90.48	46.52	54.5	44.34	2,868
1937	407	596.4	252	959.8	1,161	896.6	731.3	1,116	1,902	167.3	134.1	98.91	8,422
1938	50.48	69.9	601.6	70.04	345.6	557.2	872.1	977	1,518	245.2	135.9	109.7	6,011
1939	103.6	88.9	918.9	630.7	300.2	500.2	564.1	732.5	347	165.4	114.8	211.7	3,290
1940	71.37	46.87	440.6	36.05	35.5	130.2	290.3	359.8	430.3	78.33	178.6	162.1	1,863
1941	42.17	55.17	109	821.1	588.3	147.11	677	223.8	553.2	138.6	112	798.2	5,266
1942	5.647	2,337	621.2	354.7	635.5	619	1,047	989.3	31,978	417	1,794	629.8	13,450
1943	437	407	1,165	1,065	382.2	323.3	380.95	673	2,437	393.4	152.4	82.75	12,900
1944	246.3	135.2	167.7	210.3	250.6	1,586	2,530	1,811	345.7	131	805.8	595.3	8,915
1945	615.3	172.4	517.5	282.9	312.7	071	3,593	2,045	2,071	1,205	248.7	719	13,580
1946	838.4	190.1	155.2	1,023	741	732.4	563.3	778.4	171.1	107.3	1,049	116.3	6,466
1947	115.9	459	571.2	267.3	198.7	767.43	114	1,057	1,490	620.8	274.7	209.6	10,150
1948	281.7	174.3	157.1	345.6	238.9	707.9	476.6	246.7	1,885	1,867	1,062	265.8	7,709
1949	205.6	172.1	210.3	160	1,928	1,289	586.5	678.2	21,392	877.4	246.3	379.4	9,127
1950	697.3	218.1	560.3	165	828.1	554.8	339.5	986.9	1,180	1,306	1,545	909.3	10,290

* See footnote to preceding table.

Yearly discharge, in cubic feet per second of Osage River near Bagnell, Mo.

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acres-feet		Inches	Acres-feet
1881	-	a31,500	Feb. 10, 1881	230	4,210	.501	4.07	3,040,000	8,010	7.76	5,780,000
1882	-	a119,000	Feb. 22, 23, 1882	325	12,400	.886	12.08	9,000,000	8,730	8.45	6,310,000
1883	-	a82,100	Feb. 17, 1883	355	6,850	.489	6.65	4,970,000	7,240	7.03	5,250,000
1884	-	a66,500	May 4, 1884	355	7,630	.545	7.44	5,540,000	10,200	9.97	7,450,000
1885	-	a86,500	Sept. 15, 1885	1,420	18,800	1.54	18.17	13,600,000	16,000	15.47	11,800,000
1886	-	a44,100	May 9, 1886	500	4,660	.333	4.52	3,380,000	4,320	4.19	3,130,000
1887	-	a30,000	Apr. 23, 1887	325	1,980	.141	1.91	1,430,000	1,900	1.85	1,380,000
1888	-	a45,800	Feb. 1, 1888	300	5,780	.413	5.62	4,190,000	6,670	6.49	4,840,000
1889	-	a72,200	May 31, 1889	460	12,700	.907	12.32	9,210,000	12,900	12.50	9,350,000
1890	-	a73,700	Jan. 15, 1890	460	8,540	.610	8.29	6,190,000	9,020	8.75	6,530,000
1891	-	a76,500	June 8, 1891	460	12,100	.864	11.78	8,790,000	10,600	10.31	7,700,000
1892	-	a94,500	June 4, 1892	585	14,500	1.05	14.25	10,600,000	14,900	14.47	10,800,000
1893	-	a91,000	May 1, 1893	460	9,500	.684	9.02	6,730,000	9,110	8.82	6,590,000
1894	-	a89,800	May 8, 1894	400	4,900	.350	4.73	3,550,000	5,070	4.90	3,670,000
1895	-	a54,900	July 9, 1895	400	5,770	.412	5.58	4,180,000	9,280	8.99	6,720,000
1896	-	a126,000	Dec. 22, 1895	420	14,500	1.04	14.11	10,500,000	11,100	10.74	8,020,000
1897	-	a102,000	Jan. 5, 1897	355	10,100	.721	9.80	7,310,000	9,820	9.53	7,110,000
1898	-	a66,500	Mar. 24, 1898	325	10,400	.743	10.10	7,520,000	12,400	12.01	8,950,000
1899	-	a54,500	Apr. 25, 1899	385	8,660	.619	8.40	6,270,000	6,760	6.58	4,900,000
1900	-	a48,200	Mar. 8, 1900	355	4,460	.319	4.32	3,230,000	5,670	5.50	4,120,000
1901	-	a41,900	Mar. 12, 1901	400	5,950	.425	5.76	4,310,000	4,820	4.67	3,490,000
1902	-	a52,600	May 27, 1902	500	8,040	.574	7.80	5,820,000	8,690	8.42	6,280,000
1903	-	a79,200	Mar. 10, 1903	500	13,500	.950	12.89	9,620,000	13,600	13.18	9,830,000
1904	-	a122,000	Apr. 27, 28, 1904	400	17,400	1.24	16.97	12,700,000	16,400	15.93	11,900,000
1905	-	a78,000	Aug. 1, 1905	300	10,100	.721	9.76	7,500,000	11,400	11.02	8,240,000
1906	-	a52,000	Aug. 26, 1906	2,000	9,020	.644	8.73	6,530,000	8,610	8.35	6,240,000
1907	-	a66,200	May 17, 1907	700	9,230	.659	8.95	6,680,000	9,710	9.41	7,050,000
1908	-	a87,800	Apr. 15, 1908	850	13,900	.993	13.55	10,100,000	14,300	13.35	10,400,000
1909	-	a78,000	May 13, 1909	300	11,800	.843	11.40	8,520,000	11,000	10.62	7,940,000
1910	-	a103,000	June 11, 1910	570	10,600	.757	10.27	7,670,000	9,680	9.39	7,010,000
1911	-	a49,600	Apr. 7, 1911	500	4,750	.339	4.61	3,440,000	5,330	5.17	3,860,000
1912	-	a108,000	May 1, 1912	530	12,600	.900	12.24	9,150,000	12,200	11.82	8,830,000
1913	-	a89,600	Mar. 27, 1913	620	5,600	.400	5.43	4,050,000	5,760	5.58	4,170,000
1914	-	a55,000	Sept. 17, 1914	600	6,260	.447	6.07	4,530,000	7,050	6.85	5,100,000
1915	-	a89,600	Sept. 24, 1915	650	20,500	1.46	19.89	14,800,000	20,100	19.53	14,600,000
1916	-	a118,000	Feb. 1, 1916	700	15,800	1.13	15.33	11,400,000	15,000	14.61	10,900,000
1917	-	a27,400	June 2-4, 1917	650	2,870	.205	2.78	2,080,000	2,880	2.78	2,090,000
1918	-	a42,500	Apr. 30, 1918	220	2,230	.159	2.14	1,610,000	3,310	3.19	2,400,000
1919	-	a60,600	May 19, 1919	615	*7,120	*.509	*6.90	*5,150,000	*8,910	*8.65	*6,450,000
1920	-	a101,000	Oct. 30, 1919	615	*9,890	*.706	*9.61	*7,180,000	*7,790	*7.57	*5,660,000
1921	-	a57,600	Mar. 31, 1921	1,390	*12,300	*.879	*11.89	*8,880,000	*12,400	*12.05	*9,000,000
1922	-	a120,000	Apr. 17, 1922	615	*14,200	*1.01	*13.76	*10,200,000	*13,500	*13.09	*9,750,000
1923	-	a54,000	June 18, 1923	615	*5,510	*.394	*5.34	*3,990,000	*7,430	*7.20	*5,380,000
1924	-	a64,500	July 17, 1924	1,050	11,800	.843	11.50	8,600,000	10,400	10.12	7,580,000
1925	606	a40,900	Apr. 7, 1925	324	6,460	.461	6.26	4,680,000	7,650	7.42	5,540,000
1926	626	52,400	Nov. 10, 1925	505	7,240	.517	7.02	5,250,000	9,470	9.18	6,850,000
1927	648	106,000	Apr. 17, 1927	1,500	24,600	1.76	23.87	17,900,000	24,600	23.82	17,800,000
1928	668	70,600	Oct. 11, 1927	1,020	13,600	.971	13.19	9,840,000	22,600	12.20	9,150,000
1929	686	106,000	May 21, 1929	610	17,100	1.22	16.57	12,380,000	14,200	13.76	10,300,000
1930	701	39,000	Feb. 10, 1930	405	3,920	.280	3.77	2,840,000	4,000	3.85	2,900,000
1931	716	18,500	Sept. 17, 1931	290	1,260	.090	1.22	912,000	2,820	-	2,050,000
1932	731	42,600	Nov. 27, 1931	315	5,550	-	-	4,040,000	4,290	-	3,110,000
1933	746	56,900	May 26, 1933	392	6,380	-	-	4,590,000	6,250	-	4,520,000
1934	761	16,800	Mar. 15, 1934	469	2,381	-	-	1,724,000	3,545	-	2,566,000
1935	786	115,000	June 3, 1935	473	14,790	-	-	10,710,000	15,250	-	11,040,000
1936	806	30,400	Nov. 11, 1935	435	3,950	-	-	2,868,000	3,393	-	2,463,000
1937	826	86,200	Nov. 11, 1937	517	11,630	-	-	8,422,000	10,150	-	7,347,000
1938	856	77,000	May 24, 1938	536	8,303	-	-	6,011,000	8,446	-	6,115,000
1939	876	22,800	May 9, 11, 1939	514	4,544	-	-	3,290,000	4,375	-	3,168,000
1940	896	36,100	June 24, 1940	486	2,567	-	-	1,863,000	2,628	-	1,908,000
1941	926	111,000	Apr. 20, 1941	514	7,274	-	-	5,268,000	16,110	-	11,660,000
1942	956	147,000	Oct. 5, 1941	671	18,590	-	-	15,450,000	12,240	-	8,959,000
1943	976	220,000	May 19, 1943	558	17,820	-	-	12,900,000	15,600	-	11,440,000
1944	1006	95,000	May 3, 1944	525	12,140	-	-	8,815,000	13,180	-	9,571,000
1945	1036	106,000	Apr. 17, 1945	628	19,130	-	-	13,850,000	18,960	-	13,750,000
1946	1056	91,800	Aug. 15, 1946	528	8,930	-	-	6,466,000	10,260	-	7,428,000
1947	1086	98,000	Apr. 27, 1947	572	14,010	-	-	10,150,000	11,900	-	8,613,000
1948	1116	105,000	Mar. 26, 1948	524	10,620	-	-	7,709,000	10,580	-	7,684,000
1949	1146	83,100	Feb. 18, 19, 1949	511	12,610	-	-	9,127,000	13,580	-	10,020,000
1950	1176	58,900	June 11, 1950	535	14,210	-	-	10,280,000	-	-	-

* See footnotes to preceding tables.
a Maximum daily discharge.

Note.--Records prior to June 1925, not previously published by Geological Survey, from Union Electric Company; published in Surface Waters of Missouri, 1927-39, Vol XXVI, 2d series.

546. Osage River near St. Thomas, Mo.

Location.--Lat 38°20'25", long. 92°13'25", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 35, T. 42 N., R. 12 W., 0.5 mile downstream from Sugar Creek and $2\frac{1}{2}$ miles south of St. Thomas.

Drainage area.--14,500 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 528.06 ft above mean sea level, datum of 1929.

Average discharge.--19 years (1931-50), 10,840 cfs.

Extremes.--1931-50: Maximum discharge, 216,000 cfs May 20, 1943 (gage height, 43.8 ft); minimum daily, 420 cfs Aug. 27, 1931.

Maximum stage known prior to 1943, about 39.4 ft in June 1844.

Remarks.--Flow regulated by Lake of the Ozarks (see elsewhere in this report).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	3,580	-
1932	3,560	11,800	10,800	8,950	11,500	7,430	2,210	715	1,320	9,970	2,210	1,640	5,980
1933	1,670	1,530	6,880	11,700	10,600	10,100	6,050	21,600	6,360	1,860	2,940	4,060	7,080
1934	3,346	2,422	3,141	2,491	5,156	6,097	2,208	2,045	1,647	831	1,199	1,834	2,688
1935	3,563	6,008	14,280	14,230	11,710	13,750	10,660	18,810	82,990	10,280	1,560	2,973	15,830
1936	2,944	15,070	10,600	3,487	4,871	5,224	2,486	1,256	1,491	929	985	2,347	4,293
1937	7,018	11,640	4,820	17,420	21,700	14,700	12,830	18,800	34,840	3,157	2,258	1,952	12,490
1938	947	1,281	1,176	1,452	6,506	9,659	14,770	33,630	26,530	4,425	2,192	1,968	8,703
1939	1,785	1,954	1,953	1,355	6,292	8,879	10,400	12,070	6,264	2,892	2,069	3,822	4,958
1940	1,257	924	781	640	912	3,058	5,247	6,318	7,598	1,412	2,968	3,051	2,843
1941	756	1,012	1,949	13,310	10,950	2,820	30,610	4,104	9,427	2,538	1,853	13,440	7,639
1942	57,510	40,570	10,340	6,023	11,970	10,350	17,560	17,730	34,440	8,486	3,228	10,480	19,040
1943	7,451	7,158	18,410	18,350	7,121	5,727	6,904	92,370	43,450	6,757	2,517	1,343	18,260
1944	4,335	2,482	2,795	3,634	4,331	25,850	42,270	31,110	6,200	2,374	12,860	10,670	12,420
1945	10,620	3,116	9,005	4,916	6,163	35,430	63,070	35,870	38,300	20,410	4,574	13,150	20,400
1946	15,320	3,634	2,830	17,550	14,670	12,760	9,859	13,990	3,311	2,069	20,010	2,125	9,859
1947	1,943	27,820	9,439	4,751	3,837	12,810	54,540	17,700	26,120	11,890	4,180	3,154	14,790
1948	4,501	2,962	2,308	5,460	4,581	11,890	8,140	4,144	32,170	31,490	17,570	4,509	10,830
1949	3,450	3,352	3,481	19,850	35,190	21,290	10,310	11,040	25,260	14,440	4,038	6,720	13,040
1950	11,900	3,844	9,237	21,190	15,000	9,601	6,000	16,930	21,040	21,410	24,850	15,690	14,750

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	213	-
1932	219	702	664	550	650	457	132	44	78.6	613	136	97.6	4,340
1933	103	91	411	719	589	621	361	1,330	378	114	17.5	242	4,980
1934	205.7	144.1	193.1	153.2	286.4	374.9	131.4	125.7	98.02	51.1	73.64	109.1	1,946
1935	219.1	357.5	878	875.3	650.1	845.2	634.1	1,156	4,938	631.8	95.9	176.9	11,460
1936	181	896.5	652	214.4	280.2	321.2	147.9	77.26	88.75	57.12	80.57	139.7	3,117
1937	431.5	692.4	296.4	1,071	1,205	903.9	763.3	1,156	2,073	194.1	138.8	116.1	9,042
1938	58.24	76.22	72.31	89.3	361.3	593.9	878.8	968	1,579	272.1	134.8	117.1	6,301
1939	108.5	116.5	120.1	83.34	348.9	545.9	618.7	742.5	372.7	177.8	127.2	227.4	3,589
1940	77.3	54.98	48.01	39.37	52.47	188	312.2	388.5	452.1	86.84	182.5	181.6	2,064
1941	46.46	60.22	119.9	818.7	607.9	173.4	1,821	252.4	561	156.1	114	799.6	5,531
1942	536	2,414	635.9	370.4	665	636.3	1,045	1,090	2,049	521.8	198.5	623.9	13,790
1943	458.1	425.9	1,132	1,128	395.5	362.1	410.8	6,680	2,588	415.5	154.8	79.92	13,220
1944	266.6	147.7	171.9	223.4	249.1	1,569	2,515	1,913	368.8	146	790.4	634.8	9,016
1945	653	185.4	553.7	502.3	342.32	179	3,753	2,205	2,279	1,255	281.2	782.3	14,770
1946	941.8	216.3	1,749	1,079	814.8	784.8	586.6	859.6	197	127.2	230	126.5	7,138
1947	113.3	1,655	580.4	292.1	213.1	787.93	245	1,088	1,555	730.7	257	187.7	10,710
1948	276.8	176.2	141.9	335.7	263.5	731.1	484.3	254.8	914	1,936	1,080	268.3	7,863
1949	212.1	199.4	214	1,220	1,954	1,309	613.8	678.7	1,503	887.9	248.3	599.9	9,440
1950	731.6	228.7	568	1,303	832.9	590.3	357	1,041	1,252	1,316	1,528	933.8	10,680

Yearly discharge, in cubic feet per second of Osage River near St. Thomas, Mo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in		Mean
		Discharge	Date			acre-feet	Mean	
1931	716	-	-	-	-	-	-	-
1932	751	45,500	Nov. 25, 1931	580	5,980	4,340,000	4,630	3,560,000
1933	746	59,900	May 26, 1933	551	7,080	4,980,000	7,000	4,910,000
1934	761	13,500	Mar. 3, 1934	554	2,888	1,946,000	3,948	2,858,000
1935	786	113,000	June 4, 1935	693	15,850	11,480,000	16,210	11,750,000
1936	806	31,500	Nov. 12, 1935	582	4,293	3,117,000	3,867	2,807,000
1937	826	88,200	June 11, 1937	649	12,490	9,042,000	10,810	7,828,000
1938	856	81,400	May 27, 1938	654	8,703	6,301,000	8,894	6,439,000
1939	876	25,400	Apr. 18, 1939	621	4,958	3,589,000	4,751	3,425,000
1940	896	33,800	June 25, 1940	570	2,843	2,064,000	2,907	2,110,000
1941	928	116,000	Apr. 22, 1941	545	7,639	5,531,000	16,420	11,890,000
1942	956	120,000	Oct. 7, 1941	1,020	19,040	13,790,000	12,730	9,216,000
1943	976	215,000	May 20, 1943	680	18,250	13,220,000	16,280	11,790,000
1944	1006	91,500	May 4, 1944	744	12,420	9,016,000	13,530	9,822,000
1945	1056	105,000	Apr. 18, 1945	800	20,400	14,770,000	20,320	14,710,000
1946	1056	107,000	Aug. 15, 1946	654	9,859	7,158,000	11,260	8,154,000
1947	1086	98,500	Nov. 3, 1946	727	14,790	10,710,000	12,360	8,951,000
1948	1116	103,000	June 27, 28, 1948	721	10,850	7,865,000	10,870	7,893,000
1949	1146	64,100	Feb. 19, 1949	618	13,040	9,440,000	14,290	10,540,000
1950	1176	65,400	June 10, 1950	668	14,750	10,680,000	-	-

547. Maries River at Westphalia, Mo.

Location.--Lat 38°25'55", long. 91°59'20", in NE $\frac{1}{4}$ sec. 35, T. 43 N., R. 10 W., at bridge on U. S. Highway 63, three-quarters of a mile southeast of Westphalia and $\frac{1}{2}$ miles downstream from Little Maries Creek.

Drainage area.--257 sq mi.

Gage.--Wire-weight gage. Datum of gage is 542.37 ft above mean sea level, datum of 1929.

Extremes.--1947-50: Maximum discharge, 15,600 cfs Jan. 4, 1950 (gage height, 16.0 ft, from graph based on gage readings); minimum observed, 2.3 cfs Sept. 27, 28, Oct. 4, 5, 1948 (gage height, 1.44 ft).

Flood of June 8, 1937, reached a stage of 22.8 ft, from information by local residents.

Monthly and yearly mean discharge, in cubic feet per second												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1948	-	-	-	224	102	555	139	122	805	536	29.8	4.40
1949	5.17	169	44	726	591	427	129	188	1,304	128	101	344
1950	515	34.5	259	987	344	485	378	840	315	52.2	165	50.7

Monthly and yearly runoff, in acre-feet												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1948	-	-	-	13,740	5,860	34,100	8,300	7,470	47,880	20,660	1,830	262
1949	318	10,040	2,710	44,640	32,850	26,250	7,690	11,560	77,610	7,900	6,210	249,000
1950	31,670	2,050	15,930	60,710	19,130	29,850	22,480	51,640	18,720	3,210	10,130	268,500

Yearly discharge, in cubic feet per second												
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year						
		Momentary maximum		Minimum day	Mean	Runoff		Mean	Runoff			
		Discharge	Date			Per square mile	Inches		Inches	Acres-foot	Acres-foot	
1948	1116	-	-	-	-	-	-	211	11.18	-	153,200	
1949	1146	14,200	June 3, 1949	2.3	344	1.34	18.16	249,000	394	20.83	25,600	
1950	1176	15,600	Jan. 4, 1950	13	371	1.44	19.6	268,500	-	-	-	

MISSOURI RIVER MAIN STEM

548. Missouri River near Bonnots Mill, Mo. 1/.

Location.--Lat 38°35'44", long. 91°56'31", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, T. 44 N., R. 9 W., about half a mile downstream from Osage River and $\frac{1}{2}$ miles east of Bonnots Mill.

Drainage area.--523,400 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 511.25 ft above mean sea level, datum of 1929. Prior to Nov. 11, 1931, staff gage at site 2 miles downstream at datum 2.49 ft lower.

Average discharge.--8 years (1928-36), 56,690 cfs.

Extremes.--1928-36: Maximum discharge, 417,000 cfs June 6, 1935 (gage height, 27.05 ft); minimum, 10,000 cfs Dec. 20, 1932 (gage height, -1.2 ft).

^{1/} Published as "at Isbell" prior to 1932.

Monthly and yearly mean discharge, in cubic feet per second of Missouri River near Bonnots Mill, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	39,000	126,000	63,900	41,400	35,100	49,000	219,000	210,000	251,000	111,000	41,300	27,300	110,000
1930	34,600	43,100	18,500	24,200	69,000	70,100	62,800	106,000	85,200	45,800	31,200	41,400	52,400
1931	32,800	32,600	26,100	18,200	30,600	34,900	44,900	41,300	54,000	39,000	24,400	36,200	34,600
1932	36,500	94,200	59,800	66,100	47,300	65,400	68,300	60,800	124,000	98,900	63,000	34,800	68,200
1933	24,100	24,000	28,600	39,700	29,600	51,000	69,200	96,500	80,500	62,700	32,300	40,000	48,300
1934	29,990	20,720	25,900	15,600	27,440	37,640	35,880	30,220	37,970	32,680	17,020	24,250	27,740
1935	26,210	37,300	41,550	33,010	40,070	53,750	45,650	25,900	290,500	16,600	36,000	31,960	73,170
1936	21,710	43,190	30,560	14,000	29,030	92,560	52,270	53,960	55,580	31,000	17,000	29,000	39,130

* Not previously published; estimated on basis of records for station at Hermann.

a Revised; supersedes figure (acre-feet) published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	2,400	7,500	3,950	2,550	1,950	9,160	13,000	12,900	14,900	6,820	2,540	1,620	79,300
1930	2,130	2,560	1,140	1,490	3,830	4,310	3,740	6,520	5,070	2,800	1,920	2,460	38,000
1931	2,020	1,940	1,600	1,120	1,700	2,150	2,670	2,540	3,210	2,400	1,500	2,150	25,000
1932	2,240	5,610	3,680	4,060	2,720	4,020	4,060	3,740	7,580	6,080	3,870	2,070	49,500
1933	1,480	1,430	1,760	2,440	1,640	3,140	4,120	5,930	4,790	3,860	1,990	2,580	35,000
1934	1,844	1,233	1,468	959.2	1,524	2,514	2,123	1,858	2,259	2,009	1,046	1,445	20,080
1935	1,612	2,220	2,552	2,030	2,225	3,305	2,716	7,742	17,290	7,167	2,213	1,302	52,980
1936	1,335	2,570	1,879	860.7	1,670	5,679	3,110	3,318	5,307	1,910	1,040	1,730	28,400

* Not previously published; estimated on basis of records for station at Hermann.

a Revised; supersedes figure published in H. Doc. 238, 73d Cong., 2d sess., Missouri River.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1929	686	399,000	June 8, 1929	24,100	110,000	79,300,000	98,500	71,300,000
1930	701	166,000	June 19, 1930	11,000	52,400	38,000,000	52,100	37,700,000
1931	716	92,600	May 20, 1931	15,500	34,600	25,000,000	42,800	31,000,000
1932	731	265,000	Nov. 29, 1931	19,700	68,200	49,500,000	58,800	42,700,000
1933	746	142,000	May 27, 1933	10,000	48,300	35,000,000	48,100	34,800,000
1934	761	80,700	Mar. 10, 1934	10,900	27,740	20,080,000	30,280	21,920,000
1935	786	417,000	June 6, 1935	12,900	73,170	52,980,000	72,340	52,370,000
1936	806	128,000	Mar. 15, 1936	9,050	39,130	28,400,000	-	-

* Not previously published.

GASCONADE RIVER BASIN

549. Gasconade River near Hazlegreen, Mo.

Location.--Lat 37°45'35", long. 92°27'05", in SE 1/4 sec. 15, T. 35 N., R. 14 W., at bridge on U. S. Highway 66, 1 mile downstream from Usage Fork and 1 1/2 miles west of Hazlegreen.

Drainage area.--1,250 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 844.75 ft above mean sea level, datum of 1929. Prior to Oct. 11, 1934, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 1,090 cfs.

Extremes.--1928-50: Maximum discharge, 76,400 cfs Apr. 14, 1945 (gage height, 29.6 ft, from floodmark); minimum, 18 cfs Aug. 1, 1936 (gage height, 0.85 ft).
Maximum stage known, 30.6 ft (revised) in January 1916, from floodmark (discharge, about 90,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second of Gasconade River near Hazlegreen, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a140	a170	a480	a840	a650	a1,660	2,820	4,600	1,060	327	502	132	#1,120
1930	397	973	444	2,260	1,980	1,080	364	579	226	85	64	246	717
1931	196	299	614	220	1,290	1,360	1,130	955	304	147	843	349	637
1932	117	204	457	2,020	585	594	439	202	1,080	776	184	63.2	562
1933	82.5	286	1,200	1,280	485	1,220	2,340	4,760	387	207	139	220	1,060
1934	447	259	172	305	159	766	1,125	365	129	41.8	262	624	388
1935	354	401	845	1,108	373	5,039	1,248	1,661	8,710	1,197	238	159	1,778
1936	187	997	536	194	238	263	266	240	83.2	59.6	30.8	274	279
1937	712	984	308	3,269	2,274	784	887	2,636	1,318	307	105	51.0	1,130
1938	95.9	108	443	1,194	3,209	1,436	2,087	3,641	804	213	103	186	1,113
1939	244	1,744	267	508	2,471	1,603	2,938	1,514	521	294	255	101	1,023
1940	80.6	132	123	145	203	1,600	2,034	1,043	508	150	702	210	578
1941	100	157	620	1,259	551	226	4,390	843	302	208	115	581	775
1942	2,559	2,414	1,390	600	2,449	819	2,057	1,453	5,771	243	280	262	1,517
1943	652	1,833	3,361	949	406	1,312	1,379	7,330	1,830	305	143	97.1	1,647
1944	155	180	149	297	584	2,191	1,111	744	218	116	725	338	569
1945	541	158	200	193	2,035	6,584	10,180	1,902	5,044	413	177	1,300	2,213
1946	1,531	457	247	1,609	2,675	850	1,236	2,374	1,148	390	1,467	180	1,173
1947	127	2,955	1,428	607	319	781	4,805	1,398	902	425	116	154	1,164
1948	201	462	194	915	746	2,552	919	773	3,300	799	206	102	929
1949	91.2	402	260	2,394	3,183	2,598	775	1,111	2,465	1,681	370	1,220	1,366
1950	4,943	520	1,577	4,805	1,898	2,081	2,056	5,494	2,368	513	497	351	2,236

* Not previously published.

† From Congressional documents: H. Doc. 192, 72d Cong., 1st sess., Gasconade River. Published figure is in acre-feet.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	a8,600	a10,100	a29,600	a51,900	a36,300	a102,000	168,000	283,000	63,100	20,100	30,900	7,960	#811,000
1930	24,400	57,900	27,500	139,000	110,000	66,400	21,700	35,600	13,400	5,230	3,940	14,600	519,000
1931	12,100	17,800	37,800	13,500	11,600	83,600	9,400	58,700	18,100	9,040	51,800	20,800	462,000
1932	7,190	12,100	28,100	24,000	33,600	36,500	26,100	12,400	64,300	47,700	11,300	3,760	407,000
1933	5,070	17,000	73,800	78,700	26,900	75,000	139,000	293,000	23,000	12,700	8,550	13,100	766,000
1934	27,490	15,420	10,590	18,760	8,790	47,130	66,980	22,460	7,660	2,570	16,110	37,150	281,100
1935	21,750	23,850	51,830	68,120	20,750	309,800	74,270	102,200	518,300	73,580	14,610	8,250	1,287,000
1936	11,480	59,330	32,940	11,930	13,670	16,170	15,800	14,770	4,950	3,660	1,890	16,280	202,900
1937	43,730	58,540	18,950	201,000	126,300	48,190	52,780	152,100	78,420	13,360	6,430	3,039	818,400
1938	5,900	6,450	27,220	73,420	178,200	89,300	24,200	223,900	47,840	13,070	6,340	11,060	805,900
1939	15,000	103,800	16,400	31,250	37,300	98,560	74,800	93,120	30,980	18,070	15,680	6,030	741,000
1940	4,960	7,860	7,590	8,940	11,680	98,380	21,000	64,110	30,210	9,250	43,160	12,500	419,600
1941	6,160	9,350	38,120	77,410	30,600	13,870	261,200	51,820	17,990	12,810	7,060	34,570	561,000
1942	157,300	143,700	84,870	36,910	36,000	50,330	22,400	89,980	224,400	21,070	15,980	15,580	1,099,000
1943	40,120	109,100	206,600	58,320	22,570	80,640	82,040	451,300	108,900	18,780	8,820	5,180	1,192,000
1944	9,520	10,700	9,190	18,270	35,610	134,700	66,120	45,720	15,000	7,160	44,600	20,140	412,700
1945	33,260	9,410	12,270	11,850	13,000	404,800	805,500	17,000	81,100	25,410	10,890	77,340	1,602,000
1946	94,110	27,200	15,190	99,940	148,600	52,260	73,540	145,900	68,310	23,950	90,210	10,690	848,900
1947	7,810	75,800	87,830	37,330	17,730	48,100	286,000	85,970	53,690	26,140	7,140	9,170	842,600
1948	12,340	27,480	11,950	56,230	42,940	156,900	54,690	47,560	96,400	49,150	12,640	6,100	674,400
1949	5,610	23,940	16,010	47,200	76,800	159,700	46,130	68,280	146,700	103,400	22,780	72,600	989,200
1950	503,900	30,910	84,670	295,500	105,400	128,000	22,400	337,800	401,900	19,260	30,550	19,710	1,619,000

† Corrected.

* See footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff		
		Discharge	Date						Inches	Acres-foot	
1929	686	#19,000	May 7, 1929	-	#1,120	0.896	#12.16	#811,000	#1,200	#13.09	#873,000
1930	701	15,200	Jan. 15, 1930	45	717	.574	7.79	519,000	659	7.16	478,000
1931	716	4,100	Aug. 18, 1931	72	637	.510	6.94	462,000	610	6.63	442,000
1932	731	12,700	June 28, 1932	47	562	.450	6.12	407,000	628	6.86	456,000
1933	746	53,800	May 15, 1933	42	1,060	.848	11.51	766,000	1,000	10.86	723,000
1934	761	3,100	Mar. 29, 1934	26	388	.310	4.21	281,100	449	4.88	325,000
1935	786	68,700	Mar. 12, 1935	98	1,778	1.42	19.31	1,287,000	1,787	19.39	1,294,000
1936	806	5,600	Nov. 11, 1936	21	279	.223	3.03	202,900	304	3.30	220,400
1937	826	20,600	May 3, 1937	42	1,130	.904	12.29	818,400	1,018	11.06	736,700
1938	856	23,300	Feb. 19, 1938	47	1,113	.890	12.11	805,900	1,245	13.54	901,500
1939	876	18,500	Apr. 18, 1939	59	1,023	.818	11.13	741,000	865	9.40	626,200
1940	896	10,300	Apr. 13, 1940	69	578	.462	6.29	419,600	624	6.79	452,900
1941	926	54,500	Apr. 20, 1941	71	775	.620	8.42	561,000	1,234	13.40	893,200
1942	956	31,500	June 18, 1942	75	1,517	1.21	16.48	1,099,000	1,476	16.04	1,088,000
1943	976	51,000	May 19, 1943	71	1,647	1.32	17.89	1,192,000	1,196	12.98	865,000
1944	1006	9,850	Mar. 1, 1944	61	569	.455	6.18	412,700	604	6.56	438,300
1945	1036	76,400	Apr. 14, 1945	85	2,213	1.77	24.03	1,602,000	2,325	25.28	1,683,000
1946	1056	22,800	Aug. 14, 1946	96	1,173	.938	12.73	848,900	1,359	14.76	983,800
1947	1086	58,000	Apr. 26, 1947	74	1,164	.931	12.66	842,600	860	9.36	623,000
1948	1116	16,200	June 28, 1948	68	929	.743	10.11	674,400	920	10.01	668,200
1949	1146	24,100	Feb. 16, 1949	73	1,366	1.09	14.83	989,200	1,885	20.44	1,565,000
1950	1176	44,600	Oct. 22, 1949	161	2,236	1.79	24.29	1,619,000	-	-	-

* Not previously published.

550. Gasconade River near Waynesville, Mo.

Location.--Lat 37°52'20", long. 92°13'40", in SE $\frac{1}{4}$ sec. 3, T. 36 N., R. 12 W., at county highway bridge, 2 $\frac{1}{2}$ miles downstream from Roubidoux Creek and 4 miles north of Waynesville.

Drainage area.--1,680 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 738.60 ft above mean sea level, datum of 1929. Prior to July 19, 1921, reference point, and July 19, 1921, to Nov. 9, 1934, chain gage at same site and datum.

Average discharge.--36 years (1914-50), 1,526 cfs (revised).

Extremes.--1914-50: Maximum discharge, 89,000 cfs Aug. 22, 1915 (gage height, about 24.3 ft, from floodmark); minimum, 50 cfs Aug. 30, 31, 1936 (gage height, 1.84 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	*1,500	*360	*770	*1,140	*4,220	*2,160	*1,760	*2,640	*2,010	*800	*8,670	*1,750	*2,310
1916	*433	*938	*1,280	*9,030	*4,540	*1,230	*4,090	*1,740	*3,680	*569	*250	*167	*2,320
1917	*149	*170	*189	*587	*188	*365	*841	*1,420	*1,360	*408	*470	*529	*557
1918	*102	*98.9	*394	*227	*1,010	*413	*3,590	*3,410	*440	*331	*198	*254	*889
1919	*153	*586	*1,890	*905	*1,070	*1,270	*558	*4,360	*3,270	*548	*308	*259	*1,270
1920	*3,000	*4,350	*1,170	*1,450	*1,420	*3,870	*1,110	*1,930	*1,900	*756	*394	*2,310	*1,970
1921	*838	*457	*547	*675	*764	*3,950	*4,060	*3,020	*2,090	*1,080	264	612	*1,530
1922	422	605	1,120	493	829	3,710	5,930	1,480	317	271	147	105	1,280
1923	121	168	211	451	1,320	2,340	964	1,480	2,050	572	255	158	837
1924	153	534	2,040	529	935	901	943	2,510	3,430	1,470	2,160	1,190	1,400
1925	541	366	3,810	1,410	1,440	893	1,390	1,270	322	255	177	1,900	1,150
1926	2,280	1,960	895	567	1,070	1,470	1,370	567	385	138	308	770	978
1927	2,260	2,850	1,680	2,970	1,920	3,270	10,800	3,760	5,530	755	8,110	494	3,520
1928	2,070	3,220	3,440	1,080	1,220	2,130	8,800	2,710	7,900	1,220	592	282	2,710
1929	193	236	667	1,170	1,893	2,300	3,640	6,460	1,350	449	572	200	1,530
1930	447	1,370	564	2,990	2,760	1,580	539	674	305	145	120	417	982
1931	288	405	873	330	1,640	1,770	1,620	1,710	503	239	847	472	886
1932	172	263	554	2,630	785	751	549	275	1,330	918	211	124	715
1933	113	380	1,470	1,470	582	1,600	3,000	6,430	570	271	209	230	1,370
1934	522	333	206	385	205	947	1,445	533	177	84.8	355	823	802
1935	453	519	1,035	1,399	517	6,435	1,721	2,358	11,300	1,673	339	189	2,331
1936	247	1,297	743	275	288	382	404	343	134	112	62.2	251	377
1937	764	1,298	335	4,205	3,281	1,097	1,376	3,586	1,722	589	162	99	1,516
1938	137	140	546	1,561	1,401	1,801	3,226	5,057	970	293	175	218	1,502
1939	265	2,073	419	622	3,402	2,422	4,116	1,910	768	488	348	146	1,395
1940	124	186	185	218	267	2,181	2,606	1,458	651	236	750	266	760
1941	134	184	735	1,456	730	298	5,686	1,099	373	281	172	705	982
1942	2,816	3,137	1,732	799	3,203	1,166	2,679	2,026	4,389	539	417	374	1,922
1943	428	2,497	4,234	1,403	585	1,574	1,732	9,424	2,591	500	248	152	2,130
1944	207	276	212	386	701	2,884	1,596	1,319	433	153	876	502	797
1945	671	231	284	274	2,549	8,730	13,260	2,683	4,060	630	260	2,022	2,953
1946	2,080	605	345	2,176	3,734	1,236	1,872	3,385	1,749	596	2,903	293	1,736
1947	194	4,198	1,992	844	452	1,131	6,470	1,901	1,203	779	191	214	1,625
1948	277	619	296	1,154	899	3,644	1,297	1,025	4,830	1,157	302	173	1,304
1949	157	634	337	3,329	3,910	3,157	1,073	1,404	4,053	2,562	579	1,827	1,801
1950	6,853	815	1,893	6,356	2,568	2,894	2,405	6,948	3,437	488	649	493	3,000

* Revised; supersedes figure published in reports of Missouri Geological Survey and Water Resources.

† Corrected.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	*92,500	*22,600	*47,300	*70,300	*234,000	*133,000	*105,000	*162,000	*120,000	*49,300	*533,000	*104,000	*1,670,000
1916	*26,600	*55,800	*78,700	*55,000	*261,000	*75,400	*243,000	*107,000	*219,000	*35,000	*15,300	*9,930	*1,680,000
1917	*9,180	*10,100	*11,600	*36,100	*10,500	*22,500	*50,100	*87,500	*80,800	*25,100	*28,900	*31,400	*404,000
1918	*6,270	*5,890	*24,200	*14,000	*56,200	*25,400	*213,000	*210,000	*26,200	*20,400	*12,200	*15,100	*629,000
1919	*9,400	*34,900	*116,000	*65,700	*59,300	*78,400	*33,200	*268,000	*194,000	*33,700	*19,000	*15,400	*917,000
1920	*185,000	*259,000	*71,700	*89,400	*81,900	*256,000	*66,200	*119,000	*113,000	*46,500	*24,200	*137,000	*1,430,000
1921	*51,500	*27,200	*33,600	*41,500	*42,400	*243,000	*242,000	*186,000	*124,000	66,400	18,200	36,400	*1,110,000
1922	25,900	36,000	68,900	30,300	46,000	28,000	353,000	91,000	18,900	16,700	9,040	6,250	930,000
1923	7,440	10,000	13,000	27,700	73,300	44,000	57,400	91,000	122,000	32,400	15,700	9,400	603,000
1924	9,410	31,800	25,000	32,500	53,800	55,400	56,100	154,000	204,000	90,400	133,000	70,800	1,020,000
1925	33,300	21,800	234,000	86,700	80,000	54,900	82,700	78,100	19,200	15,700	10,900	113,000	830,000
1926	140,000	117,000	55,000	34,900	59,400	90,400	81,500	34,900	22,900	8,480	18,900	45,800	709,000
1927	139,000	70,000	103,000	83,000	107,000	201,000	631,000	231,000	29,000	46,400	576,000	29,400	2,550,000
1928	127,000	92,000	212,000	66,400	70,200	31,000	405,000	167,000	70,000	75,000	36,400	16,800	1,970,000
1929	11,900	14,000	41,000	71,800	49,600	41,000	228,000	397,000	79,100	27,600	35,200	11,900	1,110,000
1930	27,500	81,500	34,700	184,000	53,000	97,200	32,100	41,400	18,100	6,920	7,580	24,800	711,000

* Revised; supersedes figure published in reports of Missouri Geological Survey and Water Resources.

Monthly and yearly runoff, in acre-feet of Gasconade River near Waynesville, Mo.--Continued												
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	The year
1931	17,700	24,100	53,700	20,300	91,100	9,000	96,400	105,000	29,900	14,700	52,100	642,000
1932	10,600	15,600	34,100	62,000	45,200	46,200	32,700	16,900	79,100	56,400	13,000	519,000
1933	6,950	22,600	90,400	90,400	32,300	98,400	179,000	395,000	39,900	16,700	12,900	992,000
1934	32,100	19,840	12,650	23,690	11,390	58,240	85,960	32,760	10,520	5,210	21,850	363,200
1935	27,860	30,860	63,620	86,000	28,710	595,600	102,400	145,000	372,300	102,900	20,820	1,687,000
1936	15,220	77,160	45,690	16,890	16,590	23,490	24,050	21,060	7,970	6,880	3,830	273,700
1937	46,950	77,220	20,600	58,500	82,200	67,420	61,900	220,500	102,400	23,890	9,990	1,097,000
1938	8,440	8,340	33,550	95,950	228,200	10,700	191,900	310,900	57,740	17,990	10,780	1,087,000
1939	16,300	23,400	25,780	38,250	188,900	48,900	244,900	117,500	45,680	29,990	21,400	1,010,000
1940	7,600	11,090	11,390	13,390	15,340	134,100	155,100	88,410	38,720	14,520	46,130	551,600
1941	8,240	10,970	46,200	89,500	40,570	18,340	338,300	67,580	22,200	17,310	10,600	710,800
1942	179,300	186,700	106,500	49,150	177,900	72,900	159,400	124,600	261,200	33,150	25,640	1,399,000
1943	26,300	148,600	280,300	86,250	32,490	96,770	103,000	579,300	154,200	30,720	15,240	1,542,000
1944	12,710	16,430	13,050	23,740	40,310	177,300	95,000	81,070	25,770	9,440	53,850	582,000
1945	41,270	13,720	17,490	16,870	41,500	36,800	768,700	164,900	241,600	36,720	16,010	1,203,000
1946	126,700	36,000	21,210	133,800	207,400	76,030	111,400	208,000	104,100	36,620	178,500	1,742,000
1947	11,910	249,800	22,500	51,910	25,110	69,530	385,000	116,900	71,570	47,930	11,720	1,177,000
1948	17,060	36,820	18,190	70,960	51,720	224,100	77,200	63,040	287,400	71,140	18,570	1,028,000
1949	9,620	37,700	20,730	204,700	17,100	194,100	63,870	86,310	240,000	57,500	35,600	1,087,000
1950	421,400	48,360	16,400	390,800	142,800	177,900	143,100	427,200	204,500	30,000	39,930	2,172,000

† Corrected.

Yearly discharge, in cubic feet per second											
Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1914	-	-	-	-	-	-	-	-	-	-	-
1915	-	89,000	Aug. 22, 1915	*275	*2,310	*1.38	*18.66	*1,670,000	*2,310	*18.65	*1,670,000
1916	-	*77,000	Feb. 1, 1916	*134	*2,320	*1.38	*18.78	*1,680,000	*2,140	*17.32	*1,550,000
1917	-	*8,600	May 2, 1917	*82	*557	*.332	*4.50	*404,000	*565	*4.57	*409,000
1918	-	*23,100	May 14, 1918	*60	*889	*.517	*7.03	*629,000	*1,040	*8.41	*753,000
1919	-	*16,700	May 17, 1919	*60	*1,270	*.756	*10.23	*917,000	*1,760	*14.19	*1,270,000
1920	-	*24,000	Oct. 28, 1919	*134	*1,970	*1.17	*15.96	*1,430,000	*1,420	*11.47	*1,030,000
1921	526	*23,100	Apr. 28, 1921	185	*1,530	*.911	*12.39	*1,110,000	*1,560	*12.59	*1,130,000
1922	546	19,200	Mar. 31, 1922	82	1,280	.762	10.39	930,000	1,140	9.27	830,000
1923	566	9,110	Mar. 13, 1923	83	837	.498	6.73	603,000	1,020	8.24	739,000
1924	586	16,900	May 29, 1924	107	1,400	.833	11.35	1,020,000	1,570	12.73	1,140,000
1925	606	*30,900	Dec. 21, 1924	98	1,150	.685	9.26	830,000	1,180	9.51	853,000
1926	626	10,500	Nov. 9, 1925	97	978	.582	7.91	709,000	1,120	9.04	809,000
1927	646	*30,800	Apr. 2, 1927	313	3,520	2.10	28.43	2,550,000	3,680	29.74	2,660,000
1928	666	*36,300	June 10, 1928	183	2,710	1.61	21.96	1,970,000	2,070	16.79	1,500,000
1929	686	21,400	May 7, 1929	141	1,530	.911	12.39	1,110,000	1,640	13.25	1,180,000
1930	701	16,800	Jan. 15, 1930	93	982	.585	7.93	711,000	915	7.39	662,000
1931	716	5,380	May 20, 1931	159	886	.527	7.17	642,000	837	6.78	607,000
1932	731	20,600	June 29, 1932	75	715	.426	5.80	519,000	797	6.46	579,000
1933	746	52,200	May 15, 1933	76	1,370	.615	11.09	992,000	1,934	10.47	937,000
1934	761	5,940	Apr. 18, 1934	61	502	.299	4.06	363,200	581	4.70	420,900
1935	786	69,000	Mar. 13, 1935	139	2,331	1.39	18.82	1,687,000	2,352	19.00	1,703,000
1936	806	6,400	Nov. 12, 1935	50	377	.224	3.06	273,700	386	3.13	280,400
1937	826	19,400	May 4, 1937	81	1,516	.902	12.23	1,097,000	1,368	11.17	1,003,000
1938	856	24,600	Feb. 20, 1938	105	1,502	.894	12.11	1,087,000	1,661	13.40	1,203,000
1939	876	18,500	Apr. 19, 1939	104	1,395	.830	11.25	1,010,000	1,208	9.75	874,300
1940	896	10,600	Mar. 12, 1940	110	760	.452	6.16	551,600	807	6.53	585,900
1941	926	57,700	Apr. 20, 1941	118	982	.585	7.91	710,800	1,545	12.49	1,119,000
1942	956	33,200	June 19, 1942	183	1,932	1.15	15.63	1,399,000	1,880	15.19	1,361,000
1943	976	64,700	May 20, 1943	126	2,130	1.27	17.20	1,542,000	1,587	12.82	1,149,000
1944	1006	8,470	Mar. 1, 1944	109	797	.474	6.45	578,500	839	6.78	608,800
1945	1036	81,600	Apr. 14, 1945	135	2,953	1.76	23.86	1,213,000	3,107	25.12	2,249,000
1946	1056	31,600	Aug. 15, 1946	154	1,736	1.03	14.03	1,257,000	2,013	16.26	1,458,000
1947	1086	55,700	Apr. 26, 1947	143	1,625	.967	13.13	1,177,000	1,194	9.84	864,500
1948	1116	21,200	June 19, 1948	139	1,504	.776	10.55	946,500	1,298	10.51	942,500
1949	1146	21,900	Feb. 17, 1949	136	1,901	1.13	15.35	1,376,000	2,616	21.13	1,894,000
1950	1176	40,600	Oct. 23, 1949	249	3,000	1.79	24.24	2,172,000	-	-	-

* Revised.

† Corrected.

* Not previously published.

551. Coyle Branch at Houston, Mo.

Location (revised).--Lat 37°19'25", long. 91°57'12", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 8, T. 30 N., R. 9 W., on right bank at upstream end of double culvert under U. S. Highway 63, at east edge of Houston, a quarter of a mile upstream from mouth.

Drainage area.--1.10 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 1,090 ft (from topographic map).

Extremes.--1949-50: Maximum discharge, 769 cfs July 7, 1949 (gage height, 4.18 ft, in gage well), from rating curve extended above 50 cfs on basis of slope-area determination at gage height 3.77 ft; no flow at times in 1950

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	3.29	0.423	0.489	-
1950	2.09	0.136	0.804	3.12	1.21	1.50	2.37	3.78	1.32	0.059	.481	.068	1.42

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	202	26	29	-
1950	129	8.1	49	192	67	93	141	232	78	3.6	30	4.0	1,030

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year					
		Momentary maximum		Minimum		Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date	day	day			Inches	Acre-feet		Inches	Acre-feet	
1949	1176	769	July 7, 1949	-	-	-	-	-	-	-	-	-	-
1950	1176	279	Apr. 2, 1950	0.01	1.42	1.29	17.48	1,030	-	-	-	-	-

a Maximum during period June to September.

552. Big Piney River near Big Piney, Mo. 1/

Location.--Lat 37°40'00", long. 92°03'05", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 8, T. 34 N., R. 10 W., at Ross Highway bridge, 3 miles east of Big Piney and 14 $\frac{1}{2}$ miles upstream from Spring Creek.

Drainage area.--560 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 800.99 ft above mean sea level, datum of 1929. Prior to Nov. 8, 1934, chain gage at same site and datum.

Average discharge.--29 years (1921-50), 577 cfs.

Extremes.--1921-50: Maximum discharge, 32,700 cfs Dec. 27, 1942 (gage height, 20.7 ft, from floodmark), from rating curve extended above 19,000 cfs on basis of velocity-area studies; minimum, 75 cfs Aug. 6, 7, 1934; minimum gage height, 1.60 ft July 30, 31, 1926.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	*293	450	563	280	452	1,140	*2,380	590	246	291	169	127	*581
1923	144	149	208	575	924	*1,220	551	*935	1,230	259	167	136	*538
1924	133	147	515	210	+235	306	279	520	722	335	435	455	358
1925	205	169	598	433	621	337	652	399	157	113	105	377	345
1926	913	655	513	223	467	627	522	220	177	99	102	157	387
1927	397	889	407	1,090	443	1,090	3,640	1,670	1,790	509	1,950	268	1,180
1928	458	1,390	1,240	529	452	680	2,140	714	2,890	527	296	214	955
1929	190	221	416	653	510	867	1,500	1,840	619	239	359	167	633
1930	296	647	314	1,210	1,160	755	260	368	174	127	124	315	475
1931	224	593	505	211	816	883	659	528	220	137	164	173	423
1932	132	171	343	1,010	403	422	251	142	180	146	144	110	287
1933	116	236	463	666	258	531	1,260	2,180	302	173	259	192	566
1934	151	159	139	181	127	360	418	226	111	89.3	143	261	197
1935	172	229	404	456	227	2,155	632	757	2,723	461	225	161	719
1936	209	661	373	188	201	273	275	144	152	116	97.4	364	254
1937	351	559	152	1,543	821	398	606	1,049	552	159	120	103	533
1938	111	117	339	653	1,781	704	1,090	1,913	420	215	156	180	633
1939	141	659	191	502	1,100	939	1,439	773	336	212	164	128	543
1940	130	147	134	152	149	695	1,249	505	219	137	367	127	334

* Revised.

† Corrected.

* Not previously published.

1/ Published as "Piney Creek" prior to 1942.

Monthly and yearly mean discharge, in cubic feet per second of Big Piney River near Big Piney, Mo.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	116	147	280	470	254	157	1,140	562	194	151	107	239	317
1942	943	919	548	358	1,149	452	822	586	760	216	161	279	594
1943	334	896	1,940	515	244	672	609	2,874	1,380	349	204	159	854
1944	166	180	160	169	315	754	581	564	238	128	180	173	300
1945	192	139	174	147	1,113	2,565	3,368	879	1,903	323	181	408	944
1946	555	269	191	856	1,619	868	538	2,363	589	209	1,136	216	781
1947	169	1,806	812	450	262	411	1,882	700	460	309	171	155	612
1948	219	538	166	1,012	464	1,152	803	608	1,301	465	199	155	569
1949	159	405	253	1,751	1,527	1,111	509	951	1,056	1,258	245	315	791
1950	1,261	294	668	2,554	951	1,161	1,105	2,525	1,012	266	296	258	1,034

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	18,000	26,800	34,600	17,200	25,100	70,100	142,000	36,300	14,600	17,900	10,400	7,560	421,000
1923	8,850	8,870	12,800	35,400	51,300	75,000	32,800	57,500	73,200	15,900	10,300	8,090	390,000
1924	8,180	8,750	31,700	12,900	13,500	18,800	16,800	32,000	43,000	20,600	28,700	27,100	280,000
1925	12,600	10,100	36,800	26,600	34,500	20,700	38,800	24,500	9,340	6,950	6,260	22,400	250,000
1926	56,100	39,000	31,500	13,700	25,900	36,800	31,100	13,500	8,750	6,090	6,470	9,540	280,000
1927	24,400	52,900	25,000	67,000	24,800	61,000	217,000	103,000	07,000	31,300	20,000	15,900	855,000
1928	28,200	82,100	76,200	32,500	26,000	41,800	127,000	43,300	72,000	32,400	18,200	12,700	693,000
1929	11,700	13,200	25,600	40,200	28,300	53,300	89,300	113,000	38,800	14,700	22,100	9,940	458,000
1930	18,200	38,500	19,300	74,400	64,400	46,400	15,500	22,600	10,400	7,810	7,620	18,700	344,000
1931	13,800	35,300	31,100	13,000	45,300	54,300	39,200	32,500	13,100	8,420	10,100	10,300	306,000
1932	8,120	10,200	21,100	62,100	23,200	25,900	14,900	8,730	9,520	8,980	8,850	6,550	208,000
1933	7,130	14,000	28,500	41,000	14,300	32,600	75,000	134,000	18,000	10,600	15,900	11,400	402,000
1934	9,260	8,270	8,570	11,130	7,042	22,150	24,890	13,890	6,600	5,480	8,790	16,710	142,800
1935	10,570	13,630	24,840	29,020	12,800	32,500	37,610	46,560	62,000	28,370	13,660	9,560	520,100
1936	12,840	39,330	22,940	11,570	11,560	16,780	16,370	8,880	9,030	7,140	5,990	21,660	184,100
1937	21,560	33,280	9,370	94,870	45,620	24,470	36,060	64,490	32,850	9,800	7,360	6,150	385,900
1938	6,840	6,950	20,840	40,170	98,900	43,290	64,890	117,600	25,000	13,220	9,600	10,740	458,000
1939	8,660	39,220	11,710	30,860	61,110	57,750	85,630	47,540	20,010	13,050	10,060	7,620	393,200
1940	8,010	8,730	8,220	9,340	8,570	42,730	74,300	31,070	13,050	8,410	22,580	7,540	242,600
1941	7,110	8,760	17,200	28,910	14,110	9,650	67,810	34,580	11,530	9,290	8,560	14,200	229,700
1942	57,960	54,700	33,710	21,980	63,820	27,760	48,910	36,050	45,240	13,250	9,950	16,620	429,900
1943	20,530	53,340	19,300	31,660	13,570	41,340	36,240	176,700	82,130	21,440	12,520	8,640	618,200
1944	10,220	10,710	9,850	10,420	18,100	46,380	34,580	34,680	14,040	7,730	11,050	10,270	218,000
1945	11,810	8,300	10,690	9,930	61,810	57,700	201,600	54,020	113,300	19,850	11,160	24,290	683,600
1946	34,140	16,000	11,730	52,630	89,920	53,380	32,000	145,300	35,060	12,840	69,830	12,630	565,700
1947	10,370	95,590	49,940	27,660	14,580	25,290	110,800	43,040	27,340	19,010	10,530	9,200	443,400
1948	13,460	20,110	11,470	52,230	26,660	70,850	37,390	77,390	28,570	12,260	9,210	8,050	505,500
1949	9,800	24,080	15,550	107,700	84,810	68,280	30,300	58,500	62,610	77,320	35,080	16,740	575,000
1950	77,510	17,490	41,090	157,000	52,800	73,410	65,730	155,300	60,250	16,350	18,200	15,370	746,500

* Revised.

† Not previously published.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff			
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet		
1922	546,1340	*7,630	Apr. 28, 1922	96	*581	*1.04	*14.07	*421,000	513	12.44	372,000		
1923	566,1340	*7,410	May 16, 1923	96	*538	*.961	*13.07	*390,000	*563	*13.66	*408,000		
1924	586	3,700	Sept. 20, 1924	108	358	.639	8.70	260,000	373	9.07	271,000		
1925	606	9,650	Dec. 20, 1924	91	345	.618	8.35	250,000	438	11.04	317,000		
1926	626	5,900	Oct. 17, 1925	76	387	.785	10.36	280,000	353	9.11	256,000		
1927	646	*15,600	Apr. 1, 1927	186	1,180	2.11	28.60	855,000	1,295	31.40	939,000		
1928	666	*20,200	June 9, 1928	192	955	1.71	23.21	693,000	768	18.67	557,000		
1929	686	8,100	May 6, 1929	138	633	1.13	15.36	458,000	668	16.22	484,000		
1930	701	9,840	Nov. 1, 1929	104	475	.848	11.53	344,000	480	11.66	348,000		
1931	716	5,100	Nov. 21, 1930	118	423	.755	10.26	306,000	387	8.90	266,000		
1932	731	4,770	Jan. 17, 1932	97	287	.512	6.98	208,000	301	7.32	218,000		
1933	746	*21,800	May 14, 1933	100	566	.993	13.46	402,000	524	12.68	379,000		
1934	761	1,240	(a)	75	197	.352	4.78	142,800	229	5.54	165,700		
1935	786, 826	*28,800	Mar. 11, 1935	122	719	1.28	17.41	520,100	755	18.29	546,200		
1936	806	5,780	Nov. 10, 1935	83	254	.454	6.18	184,100	239	5.80	173,200		
1937	826	10,600	Jan. 15, 1937	88	533	.952	12.92	385,900	492	11.94	356,300		
1938	856	13,000	Feb. 18, 1938	94	633	1.13	15.35	458,000	667	16.19	483,000		
1939	876	10,000	Apr. 17, 1939*	112	543	.970	13.18	393,200	495	12.02	358,600		
1940	896	7,220	Apr. 12, 1940	105	334	.596	8.13	242,600	345	8.40	250,700		
1941	926	11,300	Apr. 17, 1941	90	317	.568	7.70	229,700	474	11.49	343,000		
1942	956,1176	6,690	Apr. 9, 1942	133	594	1.06	14.41	429,900	658	15.98	476,700		
1943	976,1176	32,700	Dec. 27, 1942	142	854	1.52	20.89	618,200	630	15.25	455,800		
1944	1006	4,660	Feb. 29, 1944	101	300	.536	7.31	218,000	300	7.32	218,000		
1945	1036,1176	27,000	Apr. 15, 1945†	126	944	1.69	22.89	683,600	987	23.92	714,600		
1946	1056	27,500	May 25, 1946	158	781	1.39	18.93	565,700	911	22.08	659,700		
1947	1086	25,700	Nov. 10, 1946	139	612	1.09	14.86	443,400	459	11.14	322,500		
1948	1116	14,500	June 19, 1948	134	559	.998	13.56	405,500	565	13.72	409,900		
1949	1146	16,600	July 8, 1949	142	791	1.41	19.19	573,000	911	22.10	659,600		
1950	1176	24,300	May 11, 1950	199	1,034	1.85	25.08	746,500	-	-	-		

* Revised.

† Corrected.

* Not previously published.

a Mar. 28, Sept. 16, 1934.

553. Beaver Creek near Rolla, Mo.

Location (revised).--Lat 37°52'45", long. 91°47'43", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 37 N., R. 8 W., at bridge on U. S. Highway 63, $4\frac{1}{2}$ miles upstream from mouth and 5 miles south of Rolla.

Drainage area.--14.0 sq mi (revised).

Gage.--Water-stage recorder. Datum of gage is 805.17 ft above mean sea level, datum of 1929.

Extremes.--1948-50: Maximum discharge, 3,800 cfs June 9, 1950 (gage height, 5.61 ft), from rating curve extended above 2,100 cfs by logarithmic plotting; minimum, 0.50 cfs Aug. 21, 25, 1949 (gage height, 0.56 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	-	0.747	-
1949	1.23	2.48	2.48	32.1	36.5	32.6	8.44	3.38	18.9	12.6	1.08	16.7	13.9
1950	88.3	3.27	29.8	85.7	25.2	29.5	17.6	64.1	36.4	1.96	4.72	2.85	32.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	-	-	-	-	-	-	-	-	-	44	-
1949	76	148	152	1,980	2,030	2,010	502	208	1,120	774	66	991	10,060
1950	5,430	194	1,830	5,270	1,400	1,810	1,040	3,940	2,170	121	290	170	23,660

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet	
1948	1146	-	-	-	-	-	-	-	-	-	-	-
1949	1146, 1176	2,050	Sept. 12, 1949	0.50	13.9	0.993	13.46	10,060	23.7	22.95	17,140	-
1950	1176	3,800	June 9, 1950	1.08	32.7	2.34	31.70	23,660	-	-	-	-

554. Little Beaver Creek near Rolla, Mo.

Location (revised).--Lat 37°56'06", long. 91°50'11", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 17, T. 37 N., R. 8 W., 1,700 ft downstream from new U. S. Highway 66 and 3 miles west of Rolla.

Drainage area.--6.41 sq mi (revised).

Gage.--Water-stage recorder. Altitude of gage is 790 ft (from topographic map).

Extremes.--1947-50: Maximum discharge, 4,180 cfs June 9, 1950 (gage height, 6.66 ft), from rating curve extended above 1,400 cfs on basis of slope-area determination at gage heights 6.05 and 6.66 ft; minimum, 0.13 cfs part of each day Sept. 12-18, 1948 (gage height, 0.58 ft).

Maximum stage known since 1881 or 1882, about 7.5 ft June 8, 1945, from floodmarks, from information by local resident.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	2.95	6.5	4.56	17.6	3.46	2.86	9.31	4.74	0.569	0.258	-
1949	0.602	1.21	1.19	15.9	13.8	12.3	2.63	1.42	18.5	4.84	1.10	9.74	6.87
1950	47.9	1.78	5.88	27.7	10.8	14.9	13.6	27.8	15.4	1.03	4.86	1.40	14.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	181	399	262	1,080	206	176	554	292	35	15	-
1949	37	72	73	980	768	759	157	87	1,100	297	67	580	4,980
1950	2,950	106	362	1,710	599	914	808	1,710	918	64	299	83	10,520

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year				
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff		
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet	
1948	1116	-	-	-	-	-	-	-	4.41	9.35	3,200	-
1949	1146	1,230	June 2, 1949	0.28	6.87	1.07	14.56	4,980	11.3	24.02	8,210	-
1950	1176	4,180	June 9, 1950	.79	14.5	2.26	30.76	10,520	-	-	-	-

555. Little Piney Creek at Newburg, Mo.

Location.--Lat 37°54'40", long. 91°54'10", in SE $\frac{1}{4}$ sec. 22, T. 37 N., R. 9 W., at bridge on State Highways P and T at Newburg, 2 miles upstream from Mill Creek.

Drainage area.--200 sq mi, approximately.

Gage.--Wire-weight gage. Datum of gage is 696.40 ft above mean sea level, datum of 1929. Prior to Nov. 10, 1934, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 171 cfs.

Extremes.--1928-50: Maximum discharge, 32,500 cfs Aug. 14, 1946 (gage height, 13.2 ft, from floodmark), from rating curve extended above 21,000 cfs on basis of slope-area determinations at gage heights 12.0 and 13.2 ft; maximum gage height, 13.26 ft June 26, 1935, from floodmark; minimum discharge, 24 cfs Aug. 22-31, 1936.
Maximum stage known, 13.7 ft Aug. 20, 1915, from floodmark (discharge, 30,000 cfs, from rating curve based on discharge measurements made in 1935 and extended above 25,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	*70	74.2	73.1	90.2	89.4	237	327	668	291	97.0	79.1	62.8	*180
1930	162	112	126	356	377	254	105	77.5	59.9	52.9	56.4	81.5	151
1931	61.7	91.6	87.7	57.6	107	124	160	243	80.8	58.0	49.7	42.5	96.9
1932	51.2	66.4	131	189	92.2	77.7	61.7	42.7	62.5	60.9	58.3	31.5	77.3
1933	38.7	60.0	113	120	59.7	111	232	667	87.5	51.0	40.2	36.1	136
1934	38.7	39.5	37.0	39.5	35.6	87.5	109	64.6	32.2	27.6	188	364	88.5
1935	88.0	179	142	161	83.5	554	169	263	1,545	190	94.1	72.3	295
1936	82.3	184	91.7	64.4	80.5	70.3	95.3	52.9	129	39.8	27.6	76.5	82.5
1937	51.5	211	51.0	366	172	108	148	312	148	139	47.9	37.6	149
1938	33.8	59.2	58.5	99.4	350	237	284	461	118	67.6	45.4	50.3	151
1939	58.5	118	68.7	112	240	314	514	155	80.8	80.6	81.5	48.0	155
1940	49.2	60.3	49.5	55.5	74.3	206	266	129	123	48.2	62.3	36.7	96.3
1941	37.4	42.9	65.4	109	68.1	44.8	485	116	56.9	39.5	37.4	96.7	99.4
1942	242	203	142	84.7	273	124	213	318	651	105	91.0	78.9	209
1943	165	228	738	158	90.9	147	144	727	350	100	68.6	83.3	250
1944	66.5	51.8	44.6	54.5	119	220	165	193	84.2	44.4	43.0	45.0	94.2
1945	50.3	44.4	42.8	40.2	137	822	1,355	295	1,065	116	74.3	240	354
1946	221	109	82.8	161	266	180	162	251	155	77.6	493	76.6	188
1947	66.0	408	161	108	83.8	147	623	194	137	154	67.1	69.4	184
1948	107	136	75.3	172	110	305	155	115	189	137	81.3	60.6	137
1949	59.5	72.5	60.8	335	449	344	143	99.3	386	119	69.5	187	192
1950	913	113	278	770	305	344	228	614	684	118	140	98.2	386

* Not previously published.

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	*4,300	4,420	4,490	5,550	4,960	14,600	19,500	41,100	17,300	5,980	4,860	3,740	*131,000
1930	9,960	6,660	7,750	21,900	20,900	15,600	6,250	4,770	3,560	3,250	3,470	4,850	109,000
1931	3,790	5,450	5,390	3,540	5,940	7,620	9,520	14,900	4,810	3,570	3,060	2,530	70,100
1932	3,150	3,350	8,060	11,600	5,300	4,780	3,670	2,690	3,720	3,740	3,580	1,870	56,100
1933	2,380	3,570	6,950	7,980	3,320	6,820	13,800	41,000	5,210	3,140	2,470	2,150	98,200
1934	2,380	2,350	2,270	2,430	1,980	5,380	6,490	3,970	1,920	1,700	11,580	21,650	64,100
1935	5,410	10,650	8,730	9,890	4,640	34,090	10,050	16,190	91,930	11,710	5,780	4,300	213,400
1936	5,060	10,930	5,640	3,960	4,630	4,320	5,670	3,250	7,700	2,450	1,700	4,550	59,860
1937	3,160	12,550	3,140	22,530	9,550	6,660	8,800	19,160	8,800	8,520	2,950	2,240	108,100
1938	2,080	2,350	3,600	6,110	18,340	14,560	16,920	28,340	7,050	4,180	2,790	3,000	109,300
1939	3,580	7,040	4,290	6,910	13,340	19,310	30,570	9,550	4,810	4,960	5,010	2,860	112,200
1940	3,030	3,590	3,050	3,290	4,270	12,640	15,840	7,920	7,310	2,960	3,830	2,190	69,920
1941	2,300	2,550	4,020	6,710	3,780	2,760	28,860	7,110	3,390	2,430	2,300	5,750	71,960
1942	14,890	12,090	8,720	5,210	15,140	7,630	12,660	19,550	38,760	6,450	5,590	4,690	151,400
1943	10,150	13,570	45,360	9,710	5,050	9,030	8,570	44,720	20,840	6,160	4,220	3,770	181,200
1944	4,090	3,080	2,740	3,350	6,830	13,540	9,810	11,880	5,010	2,730	2,640	2,680	68,380
1945	3,990	2,640	2,630	2,470	7,590	50,540	79,430	18,150	63,390	7,150	4,570	14,270	255,900
1946	13,590	6,460	5,090	9,920	15,900	11,050	9,670	15,430	9,230	4,770	30,300	4,560	136,000
1947	4,060	24,300	9,870	6,640	4,660	9,070	37,050	11,910	8,140	9,450	4,130	4,130	133,400
1948	6,560	8,110	4,630	10,600	6,350	18,780	9,200	7,080	11,220	8,450	5,000	3,610	99,590
1949	3,660	4,310	3,740	20,610	24,940	21,170	8,500	6,100	22,980	7,350	4,270	11,130	136,800
1950	56,150	6,740	17,070	47,350	16,960	21,120	13,540	37,780	40,720	7,230	8,630	5,850	279,100

* Not previously published.

Yearly discharge, in cubic feet per second of Little Piney Creek at Newburg, Mo.

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1929	686	8,860	May 6, 1929	58	180	0.900	12.28	131,000	196	13.31	142,000
1930	701	6,700	Feb. 25, 1930	49	151	.755	10.21	109,000	137	9.30	99,200
1931	716	1,110	May 19, 1931	37	96.9	.484	6.58	70,100	97.6	6.84	70,600
1932	731	1,590	Dec. 31, 1931	28	77.3	.386	5.28	56,100	74.2	5.05	53,800
1933	746	7,840	May 13, 1933	27	136	.680	9.19	98,200	128	8.64	92,300
1934	761	6,700	Sept. 13, 1934	26	88.5	.442	6.00	64,100	113	7.68	81,890
1935	786	28,000	June 26, 1935	56	295	1.48	20.00	215,400	230	19.71	210,200
1936	806	4,660	June 7, 1936	24	82.5	.412	5.62	59,860	78.6	5.35	57,080
1937	826	20,500	July 19, 1937	33	149	.745	10.15	108,100	134	9.13	97,220
1938	856	6,050	May 23, 1938	31	151	.755	10.22	109,300	160	10.87	116,200
1939	876	15,200	Apr. 16, 1939	41	165	.775	10.52	112,200	148	10.03	107,000
1940	896	2,540	Apr. 17, 1940	34	96.3	.462	6.57	69,920	95.2	6.50	69,120
1941	926	15,000	Apr. 19, 1941	34	99.4	.497	6.76	71,960	136	9.28	98,790
1942	956	4,820	June 25, 1942	54	209	1.04	14.20	151,400	255	17.31	184,800
1943	976	10,800	Dec. 27, 1942	52	250	1.25	16.98	181,200	168	11.44	122,000
1944	1006	1,320	Feb. 28, 1944	29	94.2	.471	6.41	68,380	92.1	6.27	66,830
1945	1036	26,000	June 8, 1945	35	354	1.77	24.01	255,900	377	25.58	272,700
1946	1056	32,500	Aug. 14, 1946	66	188	.940	12.75	136,000	206	13.98	149,100
1947	1086	11,800	Apr. 24, 1947	58	184	.920	12.52	133,400	159	10.78	114,900
1948	1116	1,660	(a)	56	137	.685	9.33	99,590	127	8.61	92,000
1949	1146	7,030	Feb. 15, 1949	56	192	.960	12.99	138,800	286	19.39	207,000
1950	1176	20,300	June 10, 1950	82	386	1.93	26.17	279,100	-	-	-

* Not previously published.

a Oct. 31, 1947 and July 6, 1948.

556. Gasconade River at Jerome, Mo. 1/

Location.--Lat 37°55'35", long. 91°58'40", in SE 1/4 sec. 13, T. 37 N., R. 10 W., at Jerome, 0.5 mile downstream from Little Piney Creek.

Drainage area.--2,840 sq mi, approximately.

Supplemental records available.--Gage-height records collected intermittently in the vicinity 1885-1926 and at same site since 1938 are contained in reports of the U. S. Weather Bureau.

Gage.--Water-stage recorder at present site after Jan. 18, 1939. Datum of gage is 657.64 ft above mean sea level, datum of 1929.

Apr. 11, 1903, to July 26, 1904, vertical rod gage at site three-quarters of a mile downstream at different datum.

July 26, 1904, to July 21, 1906, chain gage at site 0.5 mile upstream from present site at datum about 0.85 ft higher than present datum.

Jan. 3, 1923, to Sept. 29, 1928, staff gage at site 400 ft upstream from present site at datum 0.14 ft lower than present datum.

Sept. 30, 1928, to Jan. 17, 1939, staff gage at present site and datum.

Average discharge.--30 years (1903-5, 1922-50), 2,764 cfs.

Extremes.--1903-6, 1923-50: Maximum discharge, 101,000 cfs Apr. 15, 1945 (gage height, 27.7 ft); minimum, 294 cfs Sept. 1, 1936; minimum gage height, 1.28 ft Aug. 7-11, 1934. Maximum stage known, about 29.0 ft Jan. 6, 1897 (discharge, 120,000 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	*4,628	*7,582	1,374	*2,272	*1,699	-
1904	*2,429	921	931	3,435	1,653	a7,481	a11,024	3,519	6,959	2,580	1,258	903	*3,587
1905	743	571	647	696	1,458	4,908	1,641	4,341	899	9,534	6,744	7,710	3,346
1906	4,195	3,350	1,104	5,360	4,380	7,170	4,840	1,440	2,800	-	-	-	-
1923	a530	a583	a672	1,200	2,520	4,120	1,980	2,870	3,400	1,060	809	580	a1,690
1924	559	951	3,180	1,130	1,560	1,640	1,780	4,330	5,420	2,360	3,350	1,970	2,580
1925	1,080	850	4,950	2,220	2,460	1,690	2,340	2,190	808	656	514	2,740	1,870
1926	3,410	3,180	1,850	1,110	2,130	2,590	2,610	1,180	834	481	644	1,130	1,760
1927	3,350	4,540	2,600	4,620	3,390	5,170	17,100	7,170	10,300	1,820	9,240	1,220	5,880
1928	3,360	5,120	5,590	2,090	2,220	3,370	11,100	4,050	12,100	2,520	1,340	854	4,480
1929	685	758	1,430	2,080	1,730	4,060	6,440	10,600	3,200	1,220	1,380	720	2,860
1930	1,290	2,390	1,370	5,340	4,700	3,330	1,290	1,400	616	516	488	989	1,980
1931	702	1,170	1,690	737	2,690	3,040	2,780	3,090	1,070	598	1,240	877	1,830
1932	546	695	1,280	4,120	1,610	1,500	1,140	658	1,400	4,000	638	449	1,290
1933	435	881	2,210	2,680	1,150	2,640	5,100	10,800	1,350	724	628	628	2,450
1934	919	687	572	794	554	1,594	2,268	1,065	518	339	823	2,109	1,020
1935	991	1,177	1,856	2,540	1,084	10,240	3,091	3,979	18,500	3,197	990	652	4,029

* Revised.

a From Congressional Documents: 72d Cong., 1st sess., H. Doc. 192, Gasconade River. Published figure is in acre-feet.

1/ Published as "near Arlington" prior to 1923.

Monthly and yearly mean discharge, in cubic feet per second of Gasconade River at Jerome, Mo.--Con.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	697	2,398	1,504	769	804	954	987	755	618	435	324	798	918
1937	1,344	2,054	712	6,186	4,801	1,924	2,285	5,803	2,801	1,200	527	407	2,491
1938	430	458	1,083	2,454	7,004	3,137	5,503	8,942	1,961	802	553	802	2,716
1939	601	3,036	914	1,387	5,290	4,546	7,524	3,890	1,572	1,091	949	550	2,567
1940	489	601	575	652	690	3,374	4,437	2,548	1,362	690	1,320	800	1,446
1941	453	534	1,278	2,233	1,300	672	8,149	2,102	912	688	510	1,474	1,684
1942	4,438	4,931	2,940	1,549	5,371	2,189	4,350	3,791	6,899	1,267	935	960	3,274
1943	1,101	4,358	7,984	2,719	1,190	2,762	3,007	15,360	5,619	1,283	767	610	3,924
1944	669	771	630	826	1,209	4,498	2,742	2,615	1,151	525	1,335	964	1,497
1945	1,182	590	670	630	3,807	13,110	20,450	4,565	8,256	1,462	783	3,173	4,862
1946	3,778	1,400	891	3,688	6,156	2,776	3,074	6,920	3,112	1,070	6,363	969	3,338
1947	694	7,305	3,428	1,710	1,069	2,061	10,280	3,467	2,313	1,830	695	705	2,954
1948	891	1,550	850	2,616	1,768	5,806	2,576	2,005	7,001	2,571	842	578	2,406
1949	556	1,423	791	5,837	6,676	5,421	2,220	2,587	7,206	4,258	1,210	3,208	3,422
1950	10,390	1,660	3,120	10,980	4,333	5,165	4,467	11,660	6,370	1,321	1,524	1,243	5,212

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	284,590	149,998	84,484	139,670	*101,098	-
1904	149,363	54,803	57,245	211,200	95,110	480,000	656,000	215,400	114,100	158,600	77,230	53,730	*2,603,781
1905	45,680	33,980	39,780	42,800	80,860	801,800	97,650	266,900	53,490	86,200	14,700	458,600	2,423,000
1906	257,900	199,300	67,880	330,000	243,000	441,000	288,000	88,500	167,000	-	-	-	-
1923	332,600	335,500	41,300	73,800	140,000	253,000	118,000	176,000	202,000	65,200	49,700	34,500	1,220,000
1924	34,400	58,400	196,000	69,500	89,700	101,000	108,000	286,000	323,000	45,000	205,000	117,000	1,710,000
1925	66,400	50,600	394,000	136,000	137,000	104,000	139,000	135,000	48,100	40,500	31,600	163,000	1,360,000
1926	210,000	189,000	114,000	68,200	118,000	159,000	155,000	72,800	49,600	29,600	39,600	67,200	1,270,000
1927	206,000	270,000	160,000	84,000	188,000	153,000	100,000	441,000	613,000	12,000	568,000	72,600	4,250,000
1928	207,000	505,000	344,000	29,000	28,000	207,000	660,000	49,000	70,000	55,000	82,400	50,800	3,240,000
1929	42,100	43,900	87,900	128,000	96,100	250,000	583,000	652,000	90,000	75,000	84,800	42,800	2,080,000
1930	79,300	142,000	84,200	328,000	261,000	205,000	76,800	86,100	48,600	31,700	30,000	58,800	1,430,000
1931	43,200	69,600	103,000	45,300	149,000	187,000	165,000	190,000	63,700	36,800	76,200	52,200	1,180,000
1932	33,600	41,400	77,500	253,000	92,600	92,200	87,800	41,100	783,300	86,100	39,200	26,700	934,000
1933	26,700	52,400	136,000	65,000	65,900	162,000	80,500	864,000	80,300	44,500	38,600	38,200	1,770,000
1934	56,510	40,890	35,160	48,830	30,740	97,990	35,000	65,490	50,800	20,850	50,000	125,500	758,300
1935	60,940	70,050	114,100	156,200	60,200	629,700	183,900	244,700	101,000	196,600	60,900	38,800	2,917,000
1936	42,830	142,600	92,480	47,310	45,240	58,640	58,740	46,410	36,750	26,730	19,920	47,490	666,100
1937	82,670	122,200	43,770	380,400	266,800	118,300	136,000	556,800	166,700	73,760	32,580	24,250	1,804,000
1938	26,460	27,130	66,610	50,900	89,000	192,900	327,500	49,800	116,700	49,310	33,990	35,840	1,966,000
1939	36,950	180,600	56,210	85,290	93,800	279,800	447,700	226,900	93,540	67,090	58,340	32,720	1,859,000
1940	30,060	55,780	35,280	40,070	59,710	102,070	500,264	400,156	700	61,040	42,420	81,160	1,050,000
1941	27,850	31,760	78,560	37,300	72,200	41,340	484,900	129,300	54,240	42,310	31,350	87,740	1,219,000
1942	272,900	293,400	180,800	95,250	298,300	134,600	258,800	233,100	410,500	77,920	57,480	57,140	2,370,000
1943	67,690	259,300	490,900	86,700	200	66,080	169,800	178,900	44,400	3,300	78,890	47,160	2,841,000
1944	41,120	45,680	38,720	50,780	69,530	276,800	163,200	160,800	68,520	32,260	82,110	57,370	1,087,000
1945	72,670	35,100	41,220	36,740	211,400	806,300	127,000	280,700	490,100	89,890	48,140	188,800	3,520,000
1946	232,300	83,810	54,760	25,000	354,900	70,700	182,900	425,500	185,200	65,820	591,300	57,670	2,417,000
1947	42,670	434,800	210,700	105,100	59,390	26,700	11,600	213,600	137,600	112,500	42,630	41,930	2,159,000
1948	54,810	92,210	52,260	60,800	101,600	557,000	153,300	126,000	416,600	45,800	51,750	34,410	1,747,000
1949	34,200	84,690	48,620	358,900	570,800	533,300	132,100	159,100	428,800	261,800	74,580	190,900	2,478,000
1950	539,200	98,760	191,800	75,100	40,760	705,170	600,265	800,716	739,100	81,240	93,690	73,940	3,774,000

* Revised.

† Corrected.

a See footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff	Mean	Runoff		
		Discharge	Date						Inches	Acres-foot	
1905	99, 1340	-	-	-	-	-	-	-	-	-	-
1904	(a)	-	-	630	*3,587	1.16	*17.19	*2,603,781	*3,391	*16.25	*2,461,810
1905	172	44,960	July 23, 1905	300	3,346	1.28	15.98	*2,423,000	*3,907	16.66	*2,828,000
1906	208	-	-	-	-	-	-	-	-	-	-
1923	566	15,500	Mar. 17, 1923	*450	b1,690	b.595	b.68	b1,220,000	1,940	9.25	1,140,000
1924	586	30,400	May 29, 1924	480	2,360	.831	11.28	1,710,000	2,540	12.16	1,840,000
1925	608	38,600	Dec. 20, 1924	400	1,870	.658	8.96	1,360,000	2,000	9.56	1,450,000
1926	626	13,900	Nov. 8, 1925	428	1,760	.620	8.39	1,270,000	1,930	9.20	1,390,000
1927	646	45,500	Apr. 2, 1927	656	5,880	2.07	28.05	4,250,000	9,180	29.50	4,470,000
1928	668	*61,100	June 10, 1928	680	4,460	1.57	21.38	3,240,000	3,520	16.87	2,560,000
1929	686	32,700	May 7, 1929	680	2,860	1.01	13.70	2,080,000	3,050	14.57	2,210,000
1930	701	29,300	Jan. 15, 1930	420	1,980	.697	9.46	1,430,000	1,850	8.86	1,340,000

* Revised.

† Corrected.

a Not previously published.

b WSP Nos. 99, 130, 172, 1340.

c See footnote (a) to preceding tables.

Yearly discharge, in cubic feet per second of Gasconade River at Jerome, Mo.--Continued

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff Inches	Mean	Runoff		
		Discharge	Date						Inches	Acres-foot	
1931	716	7,500	May 20, 1931	475	1,630	.574	7.79	1,180,000	1,550	7.37	1,120,000
1932	731	11,100	Jan. 24, 1932	358	1,290	.454	6.17	1,934,000	1,370	6.60	997,000
1933	746	62,600	May 16, 1933	350	2,450	.865	11.72	1,770,000	2,340	11.16	1,690,000
1934	761	8,530	Sept. 13, 1934	298	1,020	.359	4.86	738,300	1,175	5.60	850,900
1935	786	76,800	Mar. 13, 1935	550	4,029	1.42	19.25	2,917,000	4,074	19.47	2,950,000
1936	806	8,480	Nov. 11, 1935	303	918	.325	4.40	666,100	877	4.22	636,900
1937	826	27,000	May 3, 1937	385	2,491	.877	11.91	1,804,000	2,314	11.05	1,875,000
1938	856	37,900	Feb. 19, 1938	357	2,716	.966	12.98	1,966,000	2,928	13.99	2,120,000
1939	876	29,300	Apr. 18, 1939	425	2,567	.904	12.26	1,859,000	2,329	11.13	1,886,000
1940	896	14,500	Mar. 13, 1940	434	1,446	.509	6.94	1,050,000	1,497	7.18	1,086,000
1941	926	54,600	Apr. 21, 1941	390	1,684	.593	8.05	1,219,000	2,525	12.08	1,828,000
1942	956	31,600	June 20, 1942	574	3,274	1.15	15.65	2,370,000	3,372	16.11	2,441,000
1943	976	74,000	Dec. 28, 1942	552	3,924	1.38	18.76	2,641,000	2,968	14.19	2,149,000
1944	1006	12,500	Mar. 1, 1944	452	1,497	.527	7.17	1,087,000	1,529	7.32	1,110,000
1945	1036	101,000	Apr. 15, 1945	545	4,862	1.71	23.26	3,520,000	5,167	24.72	3,741,000
1946	1056	87,500	Aug. 14, 1946	571	3,338	1.18	15.95	2,417,000	3,777	18.05	2,734,000
1947	1086	60,000	Apr. 27, 1947	559	2,954	1.04	14.12	2,159,000	2,279	10.90	1,850,000
1948	1116	29,200	June 20, 1948	505	2,408	.847	11.55	1,747,000	2,562	11.52	1,715,000
1949	1146	51,700	Feb. 16, 1949	496	3,422	1.20	16.36	2,478,000	4,475	21.59	3,240,000
1950	1176	48,700	May 13, 1950	796	5,212	1.84	24.92	3,774,000	-	-	-

557. Gasconade River near Rich Fountain, Mo.

Location.--Lat 38°23'20", long. 91°49'15", in SE $\frac{1}{4}$ sec. 16, T. 42 N., R. 8 W., at bridge on State Highway 89, 800 ft upstream from Swan Creek and 4 miles east of Rich Fountain.

Drainage area.--3,180 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is 553.70 ft above mean sea level, datum of 1929. Prior to Sept. 14, 1932, chain gage, and Sept. 14, 1932, to Mar. 9, 1934, wire-weight gage at same site and datum.

Average discharge.--29 years (1921-50), 3,107 cfs.

Extremes.--1921-50: Maximum discharge, 96,400 cfs Apr. 16, 1945 (gage height, 29.13 ft); minimum, 276 cfs Aug. 12, 13, 1934; minimum gage height, 0.69 ft Aug. 27, 1936.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	al,200	2,120	2,960	1,520	1,960	7,080	12,400	3,460	1,050	1,000	602	506	a2,990
1923	593	631	752	1,380	2,920	4,920	2,550	3,330	3,960	1,190	1,120	658	2,000
1924	597	1,110	4,110	1,460	1,970	1,970	2,290	4,800	7,460	3,160	3,550	2,130	2,880
1925	1,170	892	5,370	2,530	2,810	2,280	2,750	2,670	864	717	593	2,650	2,110
1926	4,170	3,820	2,170	1,240	2,520	3,080	3,230	1,430	887	549	862	1,380	2,100
1927	4,220	5,290	3,010	4,890	3,770	6,550	19,000	8,150	11,000	2,140	9,370	1,370	6,560
1928	3,780	6,140	6,460	2,530	2,610	3,780	11,900	4,670	12,800	2,860	1,460	890	4,970
1929	714	777	1,450	2,280	1,790	5,190	7,170	12,000	3,810	2,510	1,410	786	3,350
1930	1,430	2,680	1,520	5,930	5,100	3,820	1,450	1,510	885	549	545	1,410	2,220
1931	730	1,260	1,960	783	2,960	3,230	3,080	4,170	1,390	676	1,340	1,010	1,870
1932	687	994	1,810	5,050	1,880	1,650	1,230	717	1,320	1,610	794	544	1,530
1933	555	973	2,440	3,130	1,270	3,030	5,700	12,200	1,610	776	667	787	2,780
1934	1,213	786	64	807	635	2,021	2,715	1,225	647	585	1,273	3,758	1,348
1935	1,494	1,571	2,429	3,092	1,174	11,700	3,803	5,042	19,910	3,675	1,047	671	4,634
1936	744	2,764	1,695	820	912	1,120	1,381	923	649	470	334	1,064	1,070
1937	1,539	2,711	1,027	6,978	5,445	2,352	2,665	6,764	4,108	1,325	602	415	2,972
1938	457	485	1,229	2,413	6,792	3,562	6,189	9,565	2,774	866	597	698	2,942
1939	635	3,086	1,177	1,584	5,192	4,849	8,206	3,956	1,744	1,242	976	563	2,787
1940	506	624	581	702	825	3,793	4,837	2,756	1,674	794	1,495	746	1,611
1941	511	534	1,382	2,555	1,520	747	9,122	2,458	939	708	557	1,716	1,884
1942	5,327	5,558	3,247	1,801	5,933	2,601	4,721	5,008	8,876	1,524	1,064	1,045	3,863
1943	938	5,032	8,702	4,011	1,559	3,301	3,418	17,520	7,694	1,636	874	646	4,640
1944	725	905	683	922	1,252	5,491	3,737	3,595	1,462	558	1,371	1,118	1,621
1945	1,331	686	780	739	3,960	14,640	22,720	5,828	10,680	1,750	885	3,850	5,627
1946	4,471	1,663	1,053	4,235	6,742	3,235	3,353	7,444	3,436	1,073	7,045	1,053	3,724
1947	735	8,690	4,020	2,084	1,223	2,483	11,950	4,079	2,743	2,232	730	759	3,466
1948	911	1,752	937	2,993	1,866	6,783	3,136	2,265	7,215	3,290	945	628	2,726
1949	578	1,524	866	6,495	7,837	6,062	2,567	2,627	8,180	4,451	1,343	3,582	3,793
1950	12,060	1,937	3,397	12,700	5,052	5,950	4,933	13,070	7,245	1,573	1,811	1,476	5,963

a From Congressional documents, H. Doc. 192, 72d Cong. 1st sess., Gasconade River. Published figure is in acre-feet.

Monthly and yearly runoff, in thousands of acre-feet of Gasconade River near Rich Fountain, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	a73.8	126	182	93.5	109	435	738	213	62.5	61.5	37	30.1	a2,160
1923	36.5	37.5	46.2	84.8	162	303	152	205	236	73.2	68.9	39.2	1,440
1924	36.7	66	253	89.8	113	121	136	295	444	194	218	127	2,090
1925	71.9	53.1	330	156	156	140	184	164	51.4	44.1	36.5	158	1,520
1926	256	227	133	76.2	140	189	192	87.9	52.8	33.8	53	80.9	1,520
1927	259	315	185	301	209	403	1,130	500	654	132	576	81.5	4,750
1928	231	365	397	156	150	232	708	287	762	176	89.8	53	3,610
1929	43.9	46.2	89.2	140	99.4	319	427	738	227	80.6	86.7	46.8	2,340
1930	87.9	159	93.5	365	283	235	86.3	92.8	52.7	33.8	33.5	83.9	1,610
1931	44.9	75	121	48.1	164	199	182	256	82.7	41.6	82.4	60.1	1,360
1932	42.2	59.1	111	311	108	101	373.2	44.1	78.6	99	48.8	32.4	1,110
1933	54.1	57.9	150	192	70.5	186	339	750	95.8	47.7	41	46.8	2,010
1934	74.57	46.75	39.42	55.8	35.29	124.3	161.6	75.29	38.5	23.69	78.25	222.4	975.9
1935	91.88	93.49	149.4	190.1	65.2	719.2	226.3	310	1,179	226	64.39	39.9	3,355
1936	45.78	164.4	104.2	50.44	52.46	68.84	82.18	56.75	38.61	28.91	20.54	63.32	776.4
1937	94.63	161.3	63.14	429.1	302.4	144.6	152.6	415.9	244.4	81.44	37.04	24.72	2,151
1938	28.1	28.85	75.57	148.4	377.2	219	368.3	588.1	165.1	53.24	36.68	41.53	2,130
1939	39.05	183.7	72.35	97.37	321.7	298.2	488.3	243.3	103.8	76.34	60.01	33.49	2,018
1940	51.1	37.15	35.75	43.14	47.46	233.2	287.8	169.5	99.61	48.92	91.9	44.38	1,170
1941	31.4	31.8	84.99	157.1	84.43	45.91	542.8	149.9	55.89	43.5	34.22	102.1	1,364
1942	327.5	330.7	199.7	110.7	329.8	159.9	280.9	307.8	528.2	93.7	65.41	62.18	2,796
1943	57.7	299.4	535	246.6	86.58	203	203.4	107.7	457.8	100.6	53.77	38.43	3,359
1944	44.56	53.87	41.99	56.67	72.01	337.6	222.4	221	86.97	34.33	84.3	66.53	1,322
1945	81.87	40.85	47.95	45.44	219.9	900.4	1,352	358.3	635.8	107.6	54.44	229.1	4,074
1946	274.9	98.94	64.76	260.4	374.5	198.9	199.5	457.7	204.5	65.95	433.2	62.63	2,698
1947	45.25	517.1	247.2	128.2	67.93	152.7	710.8	250.8	163.6	137.2	44.88	43.99	2,510
1948	56.01	104.3	57.64	184	107.3	417.1	186.6	159.3	429.3	202.3	58.1	37.24	1,979
1949	35.52	90.68	53.27	399.4	424.1	372.8	152.7	161.5	486.7	273.7	82.55	213.2	2,746
1950	741.6	115.2	208.9	780.8	280.6	365.9	293.5	803.6	431.1	96.73	111.3	87.86	4,317

a See footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1922	546	27,300	Apr. 2, 1922	410	a2,990	a0.940	12.75	a2,160,000	2,620	11.20	1,900,000
1923	566	15,200	Mar. 17, 1923	475	2,000	.629	8.52	1,440,000	2,320	9.90	1,680,000
1924	586	27,700	May 30, 1924	508	2,880	.906	12.36	2,090,000	3,020	12.94	2,190,000
1925	606	29,600	Dec. 21, 1924	415	2,110	.664	8.99	1,520,000	2,330	9.95	1,690,000
1926	626	13,500	Nov. 9, 1925	445	2,100	.660	8.99	1,520,000	2,300	9.82	1,660,000
1927	646	41,000	Apr. 3, 1927	908	6,560	2.06	28.00	4,750,000	6,880	29.38	4,980,000
1928	666	51,000	June 11, 1928	710	4,970	1.56	21.28	3,610,000	3,850	16.48	2,790,000
1929	686	27,900	May 9, 1929	710	3,230	1.02	13.83	2,340,000	3,460	14.78	2,510,000
1930	701	25,700	Jan. 16, 1930	435	2,220	.698	9.46	1,610,000	2,080	8.87	1,510,000
1931	716	11,900	May 20, 1931	500	1,870	.588	8.01	1,380,000	1,840	7.85	1,330,000
1932	731	11,800	Jan. 25, 1932	412	1,530	.481	6.54	1,110,000	1,570	6.70	1,140,000
1933	746	60,600	May 17, 1933	404	2,780	.874	11.86	2,010,000	2,670	11.39	1,930,000
1934	761	17,700	Sept. 12, 1934	276	1,348	.424	5.76	975,900	1,568	6.78	1,150,000
1935	786	86,000	Mar. 14, 1935	560	4,634	1.46	19.79	3,355,000	4,066	19.67	3,334,000
1936	806	7,890	Nov. 12, 1935	295	1,070	.336	4.57	776,400	1,076	4.60	781,100
1937	826	30,600	June 9, 1937	382	2,972	.935	12.69	2,151,000	2,714	11.59	1,965,000
1938	856	32,400	Feb. 20, 1938	405	2,942	.925	12.57	2,130,000	3,167	13.53	2,293,000
1939	876	27,300	Apr. 19, 1939	460	2,787	.876	11.88	2,018,000	2,523	10.75	1,827,000
1940	896	14,000	Mar. 13, 1940	485	1,811	.507	6.89	1,170,000	1,672	7.16	1,214,000
1941	926	51,000	Apr. 22, 1941	467	1,884	.592	8.05	1,364,000	2,865	12.24	2,074,000
1942	956	32,700	June 21, 1942	620	3,863	1.21	16.49	2,796,000	3,910	16.68	2,831,000
1943	976	74,500	Dec. 29, 1942	558	4,640	1.46	19.80	3,359,000	3,602	15.37	2,608,000
1944	1006	12,600	Mar. 2, 1944	457	1,821	.573	7.79	1,322,000	1,863	7.96	1,352,000
1945	1036	96,400	Apr. 16, 1945	578	5,827	1.77	24.00	4,074,000	5,997	25.59	4,342,000
1946	1056	67,400	Aug. 16, 1946	598	3,724	1.17	15.90	2,696,000	4,236	18.09	3,067,000
1947	1086	59,700	Apr. 28, 1947	591	3,466	1.09	14.80	2,510,000	2,649	11.30	1,918,000
1948	1116	25,400	June 23, 1948	530	2,726	.857	11.66	1,979,000	2,673	11.43	1,941,000
1949	1146	27,600	Feb. 18, 1949	530	3,793	1.19	16.18	2,746,000	5,017	21.41	3,632,000
1950	1176	46,400	May 14, 1950	935	5,963	1.88	25.45	4,317,000	-	-	-

† Corrected.

a See footnote to table 1.

Note.--Records for January 1915 to September 1921, published in Doc. 192, 72d Cong., 1st sess., Gasconade River, estimated primarily on basis of record for Gasconade River near Waynesville, subsequently revised (see page 595).

558. Missouri River at Hermann, Mo.

Location.--Lat 38°42'36", long. 91°26'21", in SW $\frac{1}{4}$ sec. 25, T. 46 N., R. 5 W., at bridge on State Highway 19 at Hermann and at mile 96.9.

Drainage area.--528,200 sq mi, approximately.

Supplemental records available.--Gage-height records collected at same site 1873-99 are contained in reports of Missouri River Commission; since 1900, in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 481.40 ft above mean sea level, datum of 1929. Prior to Sept. 26, 1930, staff gage at site 480 ft downstream at datum 0.07 ft lower. Sept. 26, 1930, to Mar. 27, 1932, wire-weight gage, Mar. 28, 1932, to June 12, 1945, water-stage recorder, and June 13, 1945, to Apr. 2, 1946, wire-weight gage at present site and datum.

Average discharge.--53 years (1897-1950), 81,700 cfs.

Extremes.--1897-1950: Maximum discharge, about 676,000 cfs, computed by Corps of Engineers, June 6, 7, 1903 (gage height, 29.5 ft); minimum, about 4,200 cfs Jan. 10-12, 1940; minimum gage height observed, -0.80 ft Jan. 5, 6, 1940.
Maximum stage known, 35.5 ft in June 1844.

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1390.

Monthly and yearly mean discharge, in cubic feet per second													The year
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1898	34,000	29,000	21,000	34,000	40,000	88,000	76,000	63,000	188,000	137,000	68,000	59,000	78,000
1899	52,000	44,000	42,000	37,000	34,000	80,000	38,000	61,000	188,000	177,000	98,000	52,000	92,000
1900	37,000	37,000	34,000	31,000	30,000	96,000	77,000	93,000	108,000	94,000	55,000	50,000	62,000
1901	59,000	59,000	39,000	36,000	34,000	80,000	119,000	57,000	118,000	78,000	47,000	37,000	64,000
1902	37,000	34,000	28,000	31,000	31,000	63,000	71,000	76,000	104,000	202,000	96,000	111,000	77,000
1903	111,000	80,000	85,000	42,000	58,000	150,000	99,000	124,000	303,000	204,000	117,000	136,000	116,000
1904	81,000	62,000	39,000	39,000	45,000	72,000	188,000	185,000	284,000	228,000	88,000	64,000	113,000
1905	91,000	59,000	31,000	18,000	32,000	107,000	69,000	101,000	106,000	171,000	25,000	173,000	89,000
1906	89,000	77,000	49,000	70,000	70,000	94,000	123,000	76,000	134,000	102,000	83,000	67,000	86,000
1907	80,000	59,000	49,000	102,000	70,000	98,000	94,000	117,000	176,000	203,000	115,000	59,000	101,000
1908	54,000	49,000	46,000	41,000	64,000	85,000	106,000	125,000	146,000	218,000	96,000	62,000	107,000
1909	55,000	64,000	62,000	37,000	70,000	111,000	108,000	102,000	135,000	202,000	88,000	64,000	104,000
1910	47,000	62,000	66,000	89,000	56,000	107,000	79,000	135,000	136,000	73,000	49,000	62,000	82,000
1911	65,000	30,000	24,000	26,000	54,000	63,000	67,000	50,000	57,000	68,000	54,000	57,000	51,000
1912	67,000	40,000	48,000	23,000	40,000	150,000	280,000	35,000	129,000	93,000	63,000	50,000	91,000
1913	52,000	52,000	33,000	35,000	31,000	63,000	150,000	98,000	106,000	95,000	50,000	44,000	69,000
1914	41,000	40,000	54,000	29,000	32,000	60,000	102,000	80,000	131,000	101,000	49,000	92,000	68,000
1915	80,000	42,000	31,000	39,000	104,000	112,000	123,000	132,000	355,000	512,000	42,000	165,000	146,000
1916	94,000	66,000	52,000	104,000	123,000	130,000	188,000	154,000	212,000	171,000	83,000	55,000	119,000
1917	39,000	40,000	28,000	26,000	38,000	54,000	41,000	133,000	260,000	151,000	76,000	50,000	86,000
1918	42,000	42,000	37,000	36,000	47,000	70,000	99,000	85,000	118,000	109,000	62,000	62,000	67,000
1919	37,000	57,000	46,000	39,000	54,000	101,000	123,000	145,000	163,000	78,000	39,000	37,000	77,000
1920	67,000	76,000	31,000	36,000	45,000	109,000	197,000	179,000	136,000	148,000	68,000	72,000	97,000
1921	44,000	42,000	37,000	31,000	50,000	72,000	104,000	117,000	151,000	143,000	80,000	109,000	82,000
1922	46,000	40,000	34,000	33,000	36,000	145,000	504,000	98,000	108,000	135,000	70,000	49,000	91,000
1923	39,000	55,000	34,000	34,000	38,000	75,000	86,000	70,000	192,000	169,000	91,000	55,000	78,000
1924	89,000	59,000	65,000	28,000	59,000	81,000	21,000	94,000	217,000	166,000	80,000	55,000	93,000
1925	46,000	44,000	31,000	34,000	65,000	80,000	108,000	70,000	150,000	102,000	62,000	52,000	70,000
1926	59,000	64,000	46,000	39,000	67,000	70,000	91,000	59,000	82,000	65,000	54,000	134,000	69,000
1927	156,000	66,000	50,000	41,000	67,000	112,000	556,000	208,000	222,000	81,000	35,000	66,000	140,000
1928	127,000	60,000	52,000	49,000	63,000	75,000	126,000	70,000	203,000	163,000	61,000	73,000	99,000
1929	41,100	134,000	66,700	44,000	56,800	155,000	227,000	200,227,000	255,000	113,000	43,200	28,100	114,000
1930	37,100	46,800	20,800	31,500	76,200	74,600	64,400	108,000	86,300	46,900	31,900	43,600	55,400
1931	33,700	34,200	30,100	19,200	33,900	38,400	49,000	47,600	56,100	40,700	25,900	36,700	37,100
1932	38,800	80,600	66,100	73,600	50,100	66,600	71,600	60,400	122,000	104,000	64,200	36,200	70,300
1933	29,200	25,500	31,500	44,400	30,800	52,900	77,400	110,000	92,900	65,300	35,500	41,000	51,900
1934	31,690	21,990	25,260	16,570	28,470	41,310	39,440	31,930	36,770	33,800	19,180	28,780	29,750
1935	27,980	39,350	45,450	37,630	41,570	66,180	50,610	33,300	50,620	60,240,000	37,780	33,110	60,010
1936	25,170	46,810	33,440	15,150	31,530	93,630	54,780	55,450	56,620	33,560	18,200	30,930	41,090
1937	33,450	34,220	20,360	47,050	92,250	78,620	63,460	78,640	109,000	85,720	46,320	21,830	59,000
1938	15,480	18,040	12,110	18,610	33,130	61,430	88,710	115,300	112,800	99,440	53,580	50,050	56,640
1939	34,840	31,330	23,530	21,340	33,690	77,160	26,400	59,130	95,950	69,550	42,780	22,540	53,170
1940	15,170	16,630	17,250	6,827	12,280	36,480	42,310	50,110	56,650	35,960	49,180	32,940	31,020
1941	18,580	18,650	16,770	41,390	40,460	28,290	93,660	42,630	114,300	55,340	32,510	68,310	47,360
1942	177,000	26,500	53,730	36,550	69,080	77,750	93,350	162,600	201,900	256,300	54,880	77,550	104,900
1943	49,850	52,840	67,680	61,940	54,000	52,420	119,600	231,400	429,449,000	700,118,000	55,960	42,810	96,540
1944	40,670	41,070	30,120	25,470	35,500	103,200	243,300	185,000	149,000	126,700	95,510	75,690	95,920
1945	55,910	45,710	55,840	33,280	62,410	178,600	236,600	176,700	221,000	132,200	61,550	57,600	109,700
1946	66,520	38,150	19,450	75,920	56,620	83,040	66,390	79,060	69,930	69,070	64,620	53,450	61,950
1947	61,760	95,150	42,910	27,420	30,480	76,800	246,900	109,300	306,000	195,100	56,250	44,980	107,700
1948	46,560	51,180	34,020	32,600	36,650	152,300	97,540	71,390	138,500	152,000	95,760	46,280	79,920
1949	45,210	53,310	29,760	69,800	16,700	157,600	49,200	87,020	169,900	112,700	52,860	75,600	92,740
1950	79,810	42,330	42,280	71,120	55,140	66,820	130,500	49,500	128,500	139,400	19,500	77,760	92,210

Monthly and yearly runoff, in thousands of acre-feet of Missouri River at Hermann, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1898	2,100	1,700	1,300	2,100	2,200	5,400	4,500	10,000	11,200	8,400	4,200	3,500	56,600
1899	2,200	2,600	2,600	2,300	1,900	4,900	8,200	9,900	11,200	10,900	6,000	3,100	66,800
1900	2,300	2,200	2,100	1,900	1,700	5,900	4,600	5,700	6,400	5,800	3,400	3,000	45,000
1901	5,600	5,500	2,400	2,200	1,900	4,900	7,100	3,500	7,000	4,800	2,900	2,200	46,000
1902	2,300	2,000	1,700	1,900	1,700	3,900	4,200	4,700	8,300	12,400	5,900	6,600	55,600
1903	5,800	5,600	4,000	2,600	5,200	9,200	5,900	7,600	18,100	7,600	7,200	8,100	85,900
1904	5,000	5,700	2,400	2,400	2,600	4,400	11,200	11,400	15,700	14,000	5,400	3,800	82,000
1905	5,600	2,300	1,900	1,100	1,800	6,600	4,100	6,200	6,300	10,500	7,700	10,300	64,400
1906	5,500	4,800	5,000	4,300	5,900	5,800	7,300	4,700	8,000	6,300	5,100	4,000	62,500
1907	5,700	5,500	5,000	5,300	5,900	6,000	5,600	7,200	10,500	12,500	7,100	3,500	72,800
1908	5,300	2,900	2,800	2,500	5,700	5,200	6,300	7,700	20,600	13,400	5,900	3,700	78,000
1909	5,400	5,800	5,800	2,300	5,900	6,800	6,400	6,300	11,600	17,900	5,400	3,800	75,400
1910	2,900	4,900	4,200	5,500	5,100	6,600	4,700	6,300	8,100	4,500	3,000	3,700	59,500
1911	4,000	1,800	1,500	1,600	5,000	3,900	4,000	3,100	3,400	4,200	3,300	3,400	37,200
1912	4,100	2,400	2,800	1,400	2,300	9,200	15,500	8,300	7,700	5,700	3,900	3,000	66,300
1913	5,200	5,100	2,000	2,000	1,700	5,100	9,200	6,000	6,300	5,700	3,100	2,600	50,000
1914	2,500	2,400	5,300	1,800	1,800	3,700	6,100	3,700	7,800	6,800	3,000	5,500	47,800
1915	4,900	2,500	1,900	2,400	5,800	6,900	7,300	8,100	21,700	19,200	14,900	9,800	105,400
1916	5,800	5,900	5,200	5,400	7,100	8,000	11,200	9,500	12,600	10,500	5,100	3,500	86,600
1917	2,400	2,400	1,700	1,800	2,100	3,300	8,400	8,200	15,500	9,300	4,700	3,000	62,600
1918	2,600	5,000	2,300	2,200	2,600	4,300	5,900	5,200	7,000	6,700	3,800	3,700	48,800
1919	2,300	5,400	2,800	2,400	5,000	6,200	7,300	8,900	9,700	4,800	2,400	2,200	55,400
1920	4,100	4,500	1,900	2,200	2,600	6,700	11,700	11,000	8,100	9,100	4,200	4,300	70,400
1921	2,700	2,500	2,300	1,900	2,800	4,400	6,200	7,200	9,000	8,800	4,900	6,500	59,200
1922	2,800	2,400	2,100	2,000	2,000	8,900	18,100	6,000	6,400	8,300	4,300	2,900	66,200
1923	2,400	5,300	2,100	2,100	2,100	4,600	5,100	4,300	11,400	10,400	5,600	3,300	56,700
1924	5,500	5,500	4,000	1,700	5,400	5,000	7,200	5,800	12,900	10,200	4,900	3,500	67,400
1925	2,800	2,800	1,900	2,100	5,800	4,900	6,400	4,300	8,900	6,300	3,800	3,100	50,700
1926	5,600	5,800	2,800	2,400	5,700	4,300	5,400	3,600	4,900	4,000	3,300	8,000	49,800
1927	9,600	5,900	5,100	2,500	5,700	6,900	21,200	12,800	15,600	9,900	8,300	3,900	101,400
1928	7,800	5,600	5,200	5,000	4,800	4,600	7,600	4,300	12,100	10,000	6,210	4,380	71,590
1929	2,530	7,970	4,100	2,710	2,040	9,530	13,500	14,000	15,200	6,950	2,660	1,670	82,860
1930	2,280	2,780	1,280	1,940	4,230	4,590	3,830	6,640	5,140	2,880	1,960	2,590	40,100
1931	2,070	2,040	1,850	1,180	1,880	2,360	2,920	2,930	3,340	2,500	1,580	2,180	26,840
1932	2,390	5,390	4,060	4,530	2,880	4,030	4,260	3,710	7,260	6,390	3,950	2,150	51,000
1933	1,550	1,520	1,940	2,730	1,710	3,250	4,610	6,760	4,930	4,020	2,060	2,440	37,500
1934	1,961	1,308	1,555	1,019	1,581	2,540	2,347	1,963	2,307	2,066	1,179	1,713	21,540
1935	1,721	2,341	2,801	2,314	2,309	4,192	3,024	8,196	19,080	7,659	2,323	1,970	57,930
1936	1,425	2,785	2,066	931.2	1,814	5,757	3,260	3,410	3,369	2,063	1,119	1,840	29,830
1937	2,057	2,036	1,252	2,895	5,124	4,634	3,776	4,856	6,487	5,271	2,649	1,299	42,710
1938	952.1	1,073	744.6	1,144	1,840	3,777	5,279	7,090	6,714	6,114	3,235	2,978	41,000
1939	2,142	1,864	1,447	1,312	1,871	4,744	7,513	3,636	5,710	4,276	2,630	1,341	39,490
1940	933	989.8	1,061	419.8	706.1	2,243	2,517	3,081	3,371	2,211	3,024	1,960	22,520
1941	1,142	1,110	1,031	2,545	2,247	1,739	5,573	2,633	6,801	3,403	1,999	4,065	34,290
1942	10,890	7,526	5,304	2,371	5,835	4,780	5,555	10,000	12,020	7,707	3,375	4,614	75,980
1943	5,065	5,144	4,162	5,809	2,999	3,223	7,116	14,230	14,860	7,295	3,441	2,547	69,890
1944	2,501	2,444	1,852	1,566	2,042	6,343	14,480	11,370	8,868	7,791	5,873	4,504	69,630
1945	5,458	2,720	5,433	2,047	5,466	10,860	14,080	10,860	15,150	8,130	3,784	3,427	79,400
1946	4,090	2,270	1,196	4,668	5,145	5,106	3,951	4,861	4,161	4,247	3,973	3,181	44,850
1947	5,798	5,662	2,638	1,686	1,692	4,710	14,690	6,722	16,210	12,000	3,459	2,677	77,940
1948	2,863	5,044	2,092	2,005	2,108	9,367	5,804	4,389	8,243	9,346	5,888	2,873	58,020
1949	2,780	5,172	1,830	4,292	5,479	9,693	8,876	5,351	10,110	6,807	3,251	4,499	67,140
1950	4,908	2,555	2,600	4,373	5,062	4,108	7,764	9,193	7,648	8,569	7,348	4,627	66,780

† Corrected.

Yearly discharge, in cubic feet per second of Missouri River at Hermann, Mo.

Yearly discharge, in cubic feet per second of Missouri River at Hermann, Mo.								
Year	W.S.P. no.	Water year ending Sept. 30				Calendar year		
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1898	-	-	-	-	78,000	56,600,000	83,000	59,900,000
1899	-	-	-	-	92,000	66,800,000	90,000	65,000,000
1900	-	-	-	-	62,000	45,000,000	66,000	47,900,000
1901	-	-	-	-	64,000	46,000,000	59,000	42,500,000
1902	-	-	-	-	77,000	55,600,000	88,000	64,000,000
1903	-	676,000	June 6,7,1903	-	116,000	83,900,000	111,000	80,600,000
1904	-	-	-	-	113,000	82,000,000	111,000	80,700,000
1905	-	-	-	-	89,000	64,400,000	94,000	67,700,000
1906	-	-	-	-	86,000	62,500,000	82,000	59,600,000
1907	-	-	-	-	101,000	72,800,000	99,000	71,600,000
1908	-	-	-	-	107,000	78,000,000	110,000	80,000,000
1909	-	-	-	-	104,000	75,400,000	106,000	76,400,000
1910	-	-	-	-	82,000	59,500,000	76,000	54,800,000
1911	-	-	-	-	51,000	37,200,000	54,000	39,200,000
1912	-	-	-	-	91,000	66,300,000	90,000	65,300,000
1913	-	-	-	-	69,000	50,000,000	69,000	49,900,000
1914	-	-	-	-	66,000	47,800,000	68,000	48,900,000
1915	-	-	-	-	146,000	105,400,000	151,000	109,000,000
1916	-	-	-	-	119,000	86,600,000	110,000	80,200,000
1917	-	-	-	-	86,000	62,600,000	88,000	63,500,000
1918	-	-	-	-	87,000	48,900,000	69,000	49,900,000
1919	-	-	-	-	77,000	55,400,000	79,000	57,400,000
1920	-	-	-	-	97,000	70,400,000	93,000	67,400,000
1921	-	-	-	-	82,000	59,200,000	81,000	59,000,000
1922	-	-	-	-	91,000	66,200,000	92,000	66,700,000
1923	-	-	-	-	78,000	56,700,000	85,000	61,900,000
1924	-	-	-	-	93,000	67,400,000	85,000	61,700,000
1925	-	-	-	-	70,000	50,700,000	74,000	53,600,000
1926	-	-	-	-	69,000	49,800,000	78,000	56,200,000
1927	-	-	-	-	140,000	101,400,000	137,000	99,400,000
1928	666	*393,000	June 21, 1928	26,000	99,000	71,590,000	98,600	71,600,000
1929	686	407,000	June 8, 1929	25,500	114,000	82,860,000	103,000	74,600,000
1930	701	164,000	June 19, 1930	15,000	55,400	40,100,000	54,900	39,800,000
1931	716	123,000	May 20, 1931	15,800	37,100	26,840,000	45,200	32,700,000
1932	731	269,000	Nov. 29, 1931	20,500	70,300	51,000,000	60,900	44,200,000
1933	746	183,000	May 14, 1933	10,700	51,900	37,500,000	51,600	37,300,000
1934	761	85,000	Mar. 10, 1934	12,400	29,750	21,540,000	32,570	23,580,000
1935	766	473,000	June 7, 1935	14,400	80,010	57,330,000	79,190	57,330,000
1936	806	145,000	Feb. 27, 1936	9,300	41,090	29,830,000	39,820	28,910,000
1937	826	194,000	June 10, 1937	12,600	59,000	42,710,000	55,440	40,140,000
1938	856	231,000	May 25, 1938	8,300	56,840	41,000,000	60,340	43,680,000
1939	876	247,000	Apr. 18, 1939	12,600	53,170	38,490,000	49,760	36,020,000
1940	896	111,000	June 12, 1940	4,200	31,020	22,520,000	31,430	22,820,000
1941	926	256,000	Apr. 20, 1941	12,200	47,360	34,290,000	72,820	52,720,000
1942	956	435,000	June 28, 1942	14,000	104,900	75,980,000	89,260	64,630,000
1943	976	550,000	May 21, 1943	23,200	96,540	69,690,000	91,600	66,320,000
1944	1006	577,000	Apr. 28, 1944	17,900	95,920	69,630,000	99,770	72,430,000
1945	1036	398,000	Apr. 20, 1945	22,900	109,700	79,400,000	106,900	77,360,000
1946	1056	209,000	Aug. 15, 1946	10,000	61,950	44,850,000	68,220	49,390,000
1947	1086	487,000	June 29, 1947	12,800	107,700	77,940,000	102,000	73,840,000
1948	1116	333,000	June 25, 1948	18,000	79,920	58,020,000	79,630	57,800,000
1949	1146	239,000	June 5, 1949	19,500	92,740	67,140,000	95,880	69,420,000
1950	1176	265,000	Aug. 17, 1950	24,900	92,210	66,760,000	-	-

* Not previously published.

Note.--Discharge for period 1898-1927 has been computed from gage heights and discharge measurements made during 1928-31 and from consideration of the computed discharge for upstream main-stem stations plus measured tributary inflow. Figures published (acre feet) in Geological Survey Circular 108.

LOUTRE RIVER BASIN

559. Loutre River at Mineola, Mo.

Location.--Lat 38°53'20", long. 91°34'30", in SE¼NW¼ sec. 34, T. 48 N., R. 6 W., at bridge on U. S. Highway 40 in Mineola, 0.2 mile upstream from Sallee Branch.

Drainage area.--202 sq mi.

Gage.--Wire-weight gage. Datum of gage is 539.86 ft above mean sea level, datum of 1929.

Extremes.--1947-50: Maximum discharge, 11,500 cfs Sept. 13, 1949 (gage height, 19.98 ft), from rating curve extended above 8,700 cfs; minimum observed, 0.3 cfs Sept. 25, 1950 (gage height, 2.54 ft).

Flood of June 20, 1928, reached a stage of about 28.9 ft, from information by local resident.

Monthly and yearly mean discharge, in cubic feet per second of Loutre River at Mineola, Mo.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	23.1	77.6	92.9	455	21.2	29.9	109	295	17.1	3.17	-
1949	5.58	100	40	590	377	320	94.4	110	402	49.4	13.7	188	189
1950	326	14.4	204	343	153	361	203	68.3	226	3.93	5.34	1.59	160

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	-	-	1,420	4,770	5,340	27,980	1,260	1,840	6,490	18,130	1,050	189	-
1949	343	5,970	2,460	36,260	20,960	19,700	5,620	6,790	23,900	3,030	844	11,090	137,000
1950	20,060	859	12,560	21,080	9,040	22,220	12,080	4,200	13,430	236	328	95	116,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30						Calendar year			
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1116	-	-	-	-	-	-	-	104	7.04	75,800
1949	1146	11,500	Sept. 13, 1949	0.8	189	0.936	12.72	137,000	223	15.02	161,700
1950	1176	9,330	Oct. 2, 1949	.3	160	.792	10.78	116,200	-	-	-

MISSOURI RIVER MAIN STEM

560. Missouri River at Ruegg, Mo.

Location.--Lat 38°50'31", long. 90°14'14", in T. 47 N., R. 7 E., at bridge on U. S. Highway 67, 50 ft downstream from Chicago, Burlington & Quincy Railroad bridge, a quarter of a mile northeast of Ruegg, and at mile 8.2.

Drainage area.--529,300 sq mi, approximately.

Supplemental records available.--Gage-height records collected in vicinity 1892-99 are contained in reports of Missouri River Commission.

Gage.--Wire-weight gage. Datum of gage is 399.23 ft above mean sea level, datum of 1929.

Extremes.--1933-35: Maximum discharge observed, 436,000 cfs June 8, 1935 (gage height, 29.7 ft); minimum, 12,800 cfs Jan. 16, 1934 (gage height, 2.27 ft).
Maximum stage known, 38.4 ft in June 1844.

Remarks.--Flow regulated by many reservoirs above station - records for some of which can be found elsewhere in this report and in WSP 1309.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	80,600	115,000	84,000	67,000	34,200	41,400	-
1934	33,090	22,370	25,920	16,360	29,580	40,150	39,870	31,970	38,500	34,450	20,330	27,460	29,980
1935	30,500	38,100	47,340	39,040	40,460	69,400	52,010	24,700	320,600	34,800	39,410	33,420	80,800
1936	23,500	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in thousands of acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	-	-	-	-	-	-	4,900	7,070	5,000	4,120	2,100	2,450	-
1934	2,034	1,331	1,594	1,006	1,843	2,469	2,372	1,966	2,291	2,118	1,250	1,634	21,710
1935	1,863	2,267	2,911	2,400	2,247	4,267	3,095	7,666	19,080	8,288	2,423	1,989	58,490
1936	1,445	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1933	746	167,000	May 14, 15, 1933	-	-	-	-	-
1934	761	77,200	Mar. 11, 1934	13,000	29,980	21,710,000	32,860	23,790,000
1935	786	436,000	June 8, 1935	14,600	80,800	58,490,000	-	-
1936	786	-	-	-	-	-	-	-

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