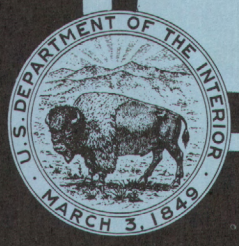
1974

Water Resources Data for South Dakota

Part 1. Surface Water Records



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of South Dakota
and with other agencies

CALENDAR FOR WATER YEAR 1974

1973

OCTOBER

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7	8	9	10	11	12	13
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NOVEMBER

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1974

JANUARY

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JUNE

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JULY

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AUGUST

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SEPTEMBER

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1974

Water Resources Data for South Dakota

Part 1. Surface Water Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared in cooperation with the State of South Dakota
and with other agencies

Prepared in cooperation with

South Dakota Department of Natural Resource Development
South Dakota Department of Transportation
East Dakota Conservancy Sub-district
Black Hills Conservancy Sub-district
Corps of Engineers, U.S. Army
Bureau of Reclamation, U.S. Department of the Interior
Fish and Wildlife Service, U.S. Department of the Interior
Bureau of Indian Affairs, U.S. Department of the Interior

Water resources records, 1974, for South Dakota are in the following reports of the U.S. Geological Survey:

1. Water Resources Data for South Dakota
   Part 1: Surface Water Records

2. Water Resources Data for South Dakota
   Part 2: Water Quality Records

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
P. O. Box 1412
Room 231, Federal Building
Huron, South Dakota 57350

1975

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GAGING STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED

WATER RESOURCES DATA FOR SOUTH DAKOTA, 1974

PART 1. SURFACE-WATER RECORDS

by O. J. Larimer and E. M. Decker

INTRODUCTION

Surface-water records for the 1974 water year for South Dakota, including records of streamflow or reservoir storage at gaging stations and partial-record stations, are given in this report and their locations shown in figures 1 and 2. Records for a few pertinent gaging stations in bordering States are also included. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of J. E. Powell, district chief. South Dakota district personnel who contributed significantly to the collection and preparation of data included in this report were: L. B. Yarger, L. D. Becker, D. W. Heyd, H. L. Dixson, J. H. Eade, E. B. Hoffman, T. K. Lockner, J. Hanneman, R. C. Ugland, R. C. Beard, F. E. Smith, L. B. Huber, V. J. Wipf, and J. E. Looman.

Through September 30, 1960, the records of discharge and stage of streams and canals and contents and stage of lakes or reservoirs were published in an annual series of the U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States."

Beginning with the 1961 water years, surface-water records have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these reports is limited; they are designed primarily for rapid release of data shortly after the end of the water year to meet local needs. Discharge and reservoir storage records are also published in a Geological Survey water-supply paper series entitled "Surface Water Supply of the United States 1961-65"; "1966-70." A similar series is planned for the years 1971-75.

COOPERATION

The U.S. Geological Survey and organizations of the State of South Dakota have had cooperative agreements for the systematic collection of surface-water records since 1914. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Department of Natural Resource Development, Vern W. Butler, Secretary.

Department of Transportation, Herb Teske, Secretary.

East Dakota Conservancy Sub-district, J. L. Siegel, Manager-Engineer.

Black Hills Conservancy Sub-district, Ed Glassgow, Manager-Treasurer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 24 gaging stations and 10 stage stations; the Bureau of Reclamation, U.S. Department of Interior, for 3 gaging stations; and the Fish and Wildlife Service, U.S. Department of the Interior, for one gaging station. The Missouri River Basin Program provided funds and services for 17 gaging stations.

DEFINITION OF TERMS

Definition of terms related to streamflow and other hydrologic data, as used in this report, are defined as follows: (See also table for converting English units to International System (SI) units on page 13.)

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1.233 cubic metres.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons or 2,445 cubic metres. It represents a runoff of approximately 0.0372 inch from 1 square mile.

Contents is the volume of water in a reservoir or lake. Contents herein is that of a reservoir or lake and unless otherwise indicated, is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artifical structure, or a uniform cross section over a long reach of the channel.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (CFS, cfs, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second, and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic metres per second.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a stations where a continuous record of discharge is obtained.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

WRD is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from man-made changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

DOWNSTREAM ORDER AND STATION NUMBERS

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of gaging stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 06476000, includes the part number "06" and

a 6-digit station number and appears just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF SURFACE-WATER DATA

Collection and Computation of Data

The base data collected at gaging stations consists of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that gives a continuous graph of the fluctuations (for digital recorders, a tape punched at 15-, 30-, or 60-minute intervals) or from direct meadings on a nonrecording gage. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks on the measurement of stream discharge. (See also SELECTED REFERENCES.) Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

For a stream-gaging station rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage heights to the rating table gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based

on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in determining discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. Discharge over spillways is computed from a stage-discharge relation curve defined by discharge measurements. The application of the stage to the capacity tables gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the

basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of basic data. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the 1974 water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging station gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey, unless otherwise qualified. The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. The maximum discharge (or contents) and the maximum gage height, the minimum discharge if there is little or no regulation (or the minimum contents), and the minimum gage height if it is significant are given if there is extensive regulation (also the minimum

discharge and gage height if they are abnormally low). In the first paragraph headed "Current year:" the data given are for the complete current water year unless otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record:" the data given are for the period of record given in the PERIOD OF RECORD paragraph. Reliable information concerning major floods that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge (or contents) corresponds to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge or contents, it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of Water Quality records, is given under "REMARKS"; for reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir, is also given under "REMARKS."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISIONS (WATER YEARS)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge were revised, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum discharge was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily tables for stream-gaging stations give the discharge corresponding to the daily mean gage height unless there are large or rapid changes in the discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharge for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

The daily tables for reservoir stations give the contents corresponding to the water-surface elevation at a given time, usually at 2400 each day. For some reservoirs the elevation at a given time is given in the daily table.

The monthly summary is given below the daily table. For stream-gaging stations the line headed "TOTAL" gives the sum of the daily figures; it is the total cubic feet per second per day for the month. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN") or in acre-feet (line headed "AC-FT"). Figures of cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average rainfall on the drainage basin is usually less than 20 inches.

For reservoir stations the monthly summary gives the elevation (or gage height) at the end of the month and the change in contents during the month. If elevation or gage height is given in the daily table, the monthly summary gives the contents at the end of the month, rather than the elevation or gage height. For some reservoirs a tabulation of monthly evaporation from the water surface also is included.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges for the calendar and water years; likewise, the minimums in this summary are the minimum daily discharges.

For reservoir stations the yearly summary gives the change in contents for the calendar year and for the water year. For some reservoirs the yearly evaporation also is included.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030 and 1:30 p.m. is 1330.

In a general footnote, introduced by the word "NOTE" certain periods are indicated for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs. Footnotes to reservoir tables may be used to explain the use of new capacity tables or for other special conditions.

Accuracy of Data

The accuracy of discharge data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges is within 5 percent; "good" within 10 percent and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumptive use, regulation, evaporation, or other factors. For such stations, discharge in cubic feet per second per square mile and runoff in inches are not published unless satisfactory adjustments can be made for such effects. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or unadjusted losses (consumptive use, evaporation, seepage, etc.) are large in comparison with the observed discharge.

Publications

Each volume of the 1960 series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States" contains a listing of the numbers of all water-supply papers in which records of surface-water data were published for the area covered by the individual volumes. Each volume also contains a list of water-supply papers that give detailed information on major floods for the area. The new series of water-supply papers containing surface-water records for the 5-year periods October 1, 1960, to September 30, 1965, October 1, 1966, to September 30, 1970, also include lists of annual and special reports published as water-supply papers.

Records through September 1950 for the area covered by this report have been compiled and published in Water-Supply Papers 1308(5) and 1309(6A); records for October 1950 to September 1960 have been compiled and published in Water-Supply Papers 1728(5) and 1729(6A). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where

warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

Other Data Available

Data collected at partial-record stations are given in a table at the end of the surface-water records in this report. The data presented are annual maximums of stage and discharge.

More detailed information than that published for most of the gaging stations, such as discharge measurements, gage-height records, and rating tables, is on file in the district office. Many gaging-station records in South Dakota through 1968 have been analyzed to give several statistical summaries: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

At or near some gaging stations, water-quality records also are collected. Data are obtained on the chemical quality of the stream water, on water temperature, on suspended-sediment concentration, and on the particle-size distribution of suspended sediment and bed material. These data are given in Part 2 of this report. Under the "REMARKS" paragraph of the gaging-station description, reference is made to water-quality records collected on a regular basis.

FACTORS FOR CONVERTING ENGLISH UNITS TO INTERNATIONAL SYSTEM (SI) UNITS

The following factors may be used to convert the English units published herein to the International System of Units (SI). Subsequent reports will contain both the English and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply English units	By	To obtain SI units
Length		
feet (ft)	.3048	metres (m)
miles (mi)	1.609	kilometres (km)
Area		
acres	4047	square metres (m^2)
	.4047	*hectares (ha)
	.4047	square hectometre (hm^2)
	.004047	square kilometres (km^2)
square miles (mi^2)	2.590	square kilometres (km^2)
Volume		
cubic feet (ft^3)	28.32	cubic decimetres (dm^3)
	.02832	cubic metres (m^3)
cfs-day (ft^3/s-day)	2447	cubic metres (m^3)
	.002447	cubic hectometres (hm^3)
acre-feet (acre-ft)	1233	cubic metres (m^3)
	.001233	cubic hectometres (hm^3)
	.000001233	cubic kilometres (km^3)
Flow		
cubic feet per second (ft^3/s)	28.32	litres per second (l/s)
	28.32	cubic decimetres per second (dm^3/s)
	.02832	cubic metres per second (m^3/s)

*The unit hectare is approved for use with the International System (SI) for a limited time. See NBS Special Bulletin 330, p. 15, 1972 edition.

HYDROLOGIC CONDITIONS

Annual rainfall ranged from near normal to a deficit as much as 7 inches in the central and northern portions of the State.

Streamflow, in the period October to February, generally was greater than the median for the base period 1931-60 while the remainder of the year was below.

Combined storage in the four Missouri River main-stem reservoirs (Lakes Oahe, Sharpe, Francis Case, and Lewis and Clark) was 23,554,000 acre-ft at the end of the water year, a decrease of 34,000 acre-ft from the corresponding date a year ago.

Combined storage in the other major reservoirs (Shadehill, Angostura, Deerfield, Pactola, Belle Fourche, and Keyhole) was 241,500 acre-ft on September 30, a decrease of 228,700 acre-ft from the same date a year ago.

A comparison of monthly and yearly mean discharges with the median discharge for the 30-year base period (1931-60) for two key gaging stations is shown in figure 3.

SELECTED REFERENCES

Carter, R. W., and Davidian, Jacob, 1968, General procedure for gaging streams: U.S. Geol. Survey Techniques Water-Resources Inv. book 3, chap. A6, 13 p.

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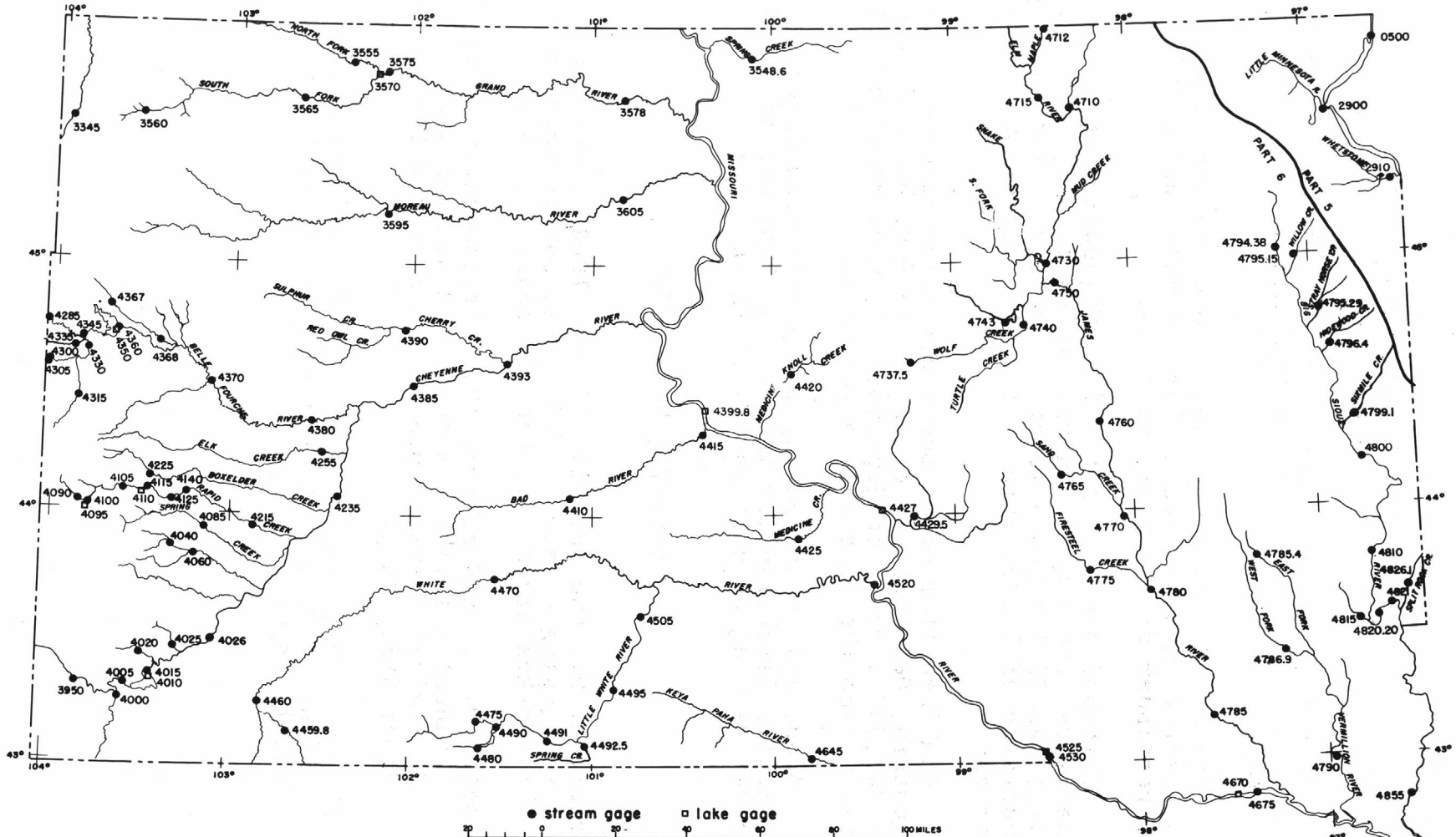

Figure 1. Map of South Dakota showing location of lake and stream gaging stations

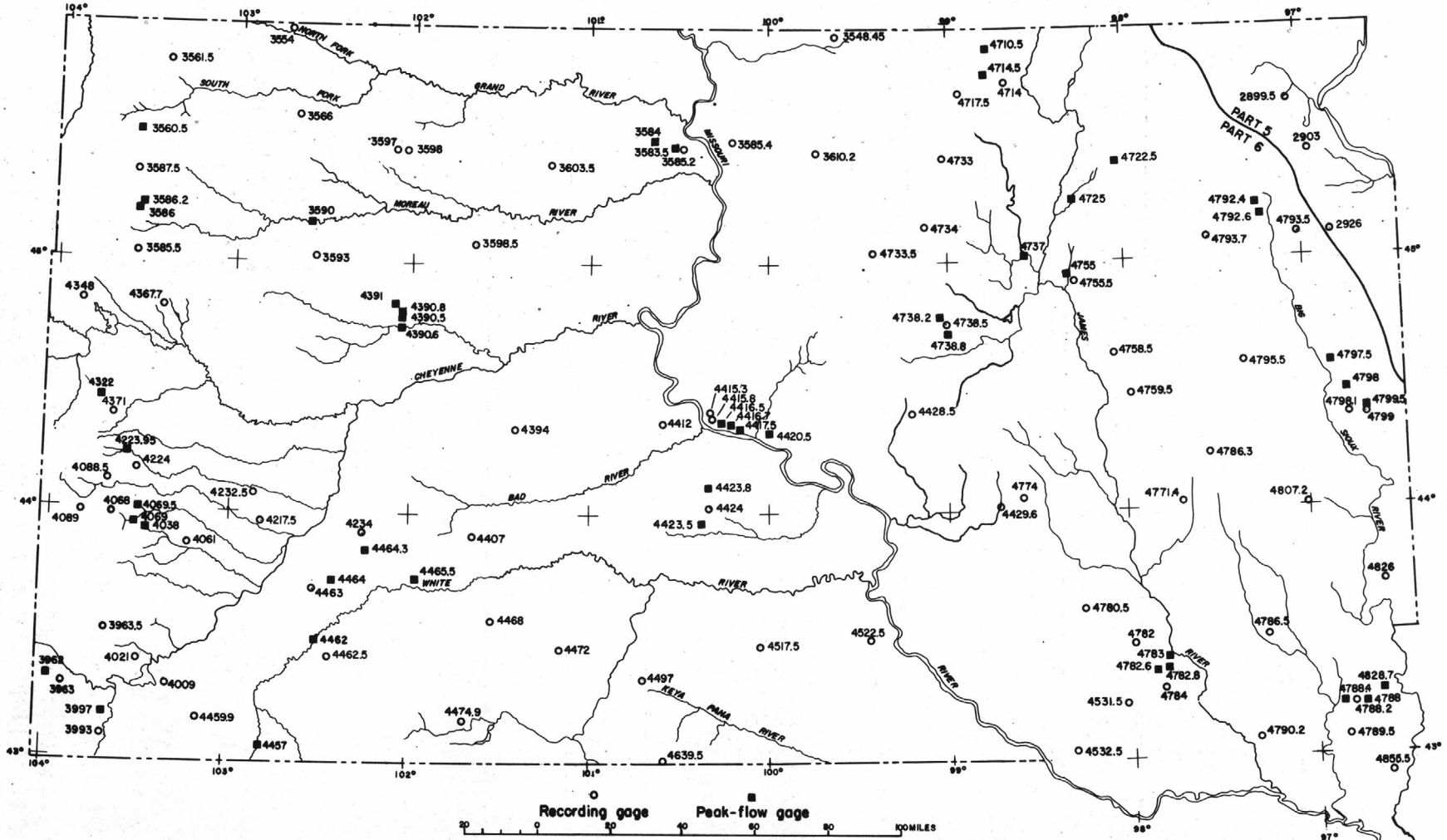

Figure 2.--Map of South Dakota showing location of crest-stage partial-record stations

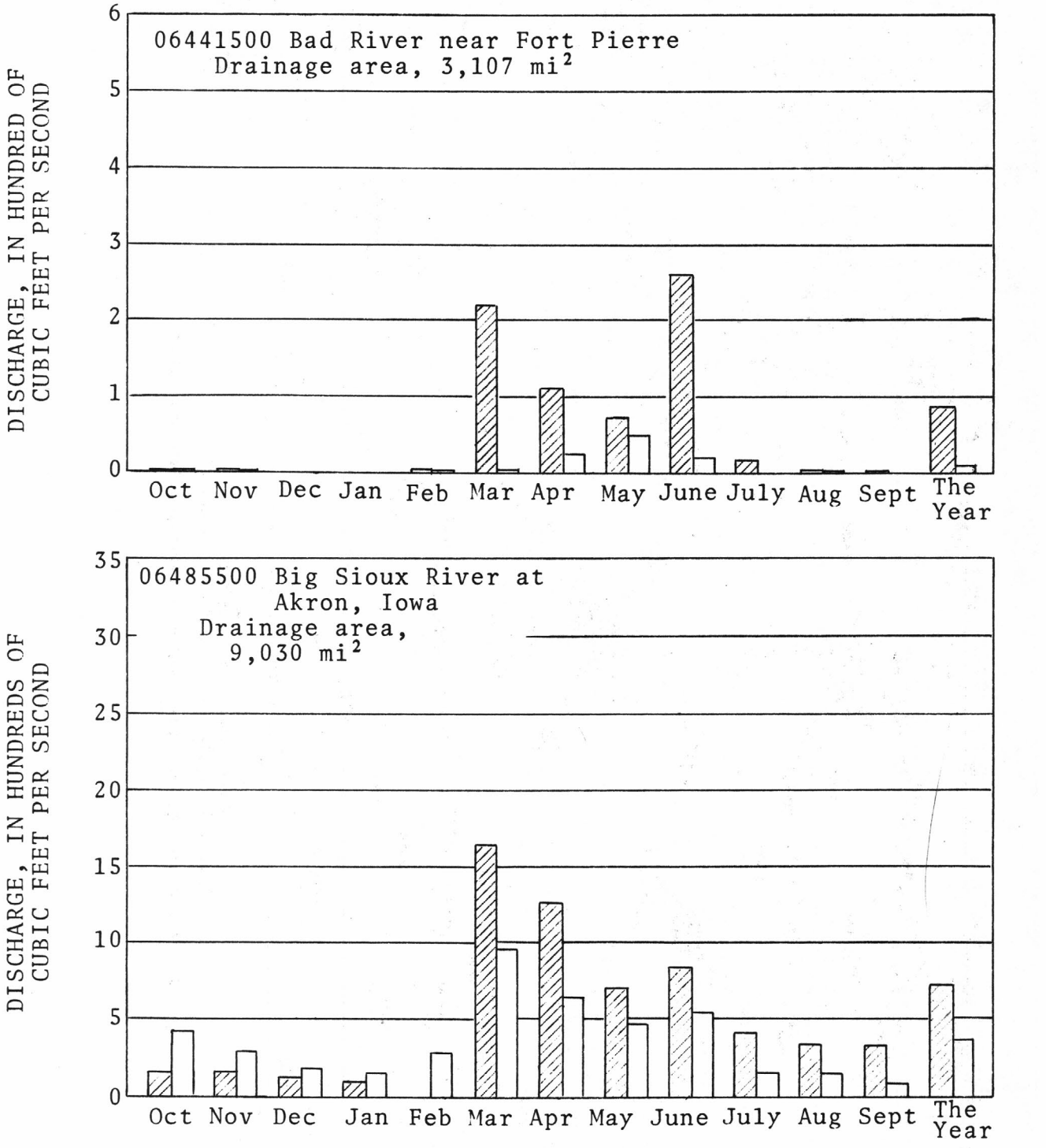

FIGURE 3.--RUNOFF DURING 1974 WATER YEAR COMPARED WITH MEDIAN RUNOFF FOR PERIOD 1931-60 FOR TWO REPRESENTATIVE GAGING STATIONS.

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, S. DAK.

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi^2 (5,100 km^2), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,110.98 ft (948.227 m) above mean sea level. Prior to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream at present datum.

AVERAGE DISCHARGE.--21 years, 134 ft^3/s (3.795 m^3/s), 97,080 acre-ft/yr (120 hm^3/yr); median of yearly mean discharges, 99 ft^3/s (2.804 m^3/s), 71,700 acre-ft/yr (88.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 904 ft^3/s (25.6 m^3/s) Apr. 24, gage height, 4.25 ft (1.295 m); minimum daily, 0.75 ft^3/s (0.021 m^3/s) Aug. 20.

Period of record: Maximum discharge, 7,600 ft^3/s (215 m^3/s) May 28, 1962, gage height, 13.07 ft (3.984 m); no flow at times.

Flood of 1952 reached a stage of about 16 ft (4.9 m), from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Small diversions above station for irrigation.

REVISIONS (WATER YEARS).--WSP 1309: 1904. WSP 1729: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	12	14	3.0	40	60	26	244	163	11	14	1.5
2	1.7	11	11	3.0	45	60	25	189	462	10	8.8	1.5
3	2.7	8.6	11	3.0	30	50	24	152	375	17	6.5	1.8
4	3.0	8.0	10	3.0	40	60	23	107	258	15	5.1	1.8
5	3.7	7.5	10	3.0	38	50	22	91	157	11	4.0	1.8
6	4.0	8.0	10	3.5	38	50	20	81	118	9.3	3.2	1.7
7	4.9	7.5	11	3.0	35	40	20	68	86	8.3	2.3	1.5
8	5.6	7.5	11	3.0	38	40	20	60	76	25	2.8	1.5
9	7.8	8.0	11	2.5	40	70	19	58	74	34	3.6	1.5
10	19	10	11	2.0	40	100	17	62	133	24	4.3	1.5
11	19	10	11	2.0	45	99	20	51	131	23	4.2	1.5
12	9.5	11	11	3.0	45	88	21	45	121	18	3.8	1.5
13	13	11	10	5.0	40	58	23	41	120	13	3.2	1.5
14	7.4	10	8.0	5.0	35	47	23	37	82	10	2.9	1.5
15	129	10	6.0	7.0	40	48	21	33	65	9.0	2.9	1.4
16	447	9.6	6.0	15	50	46	56	29	50	8.0	2.8	1.3
17	393	9.5	7.0	25	50	50	189	27	41	7.0	2.3	1.3
18	240	9.6	6.0	20	40	47	141	28	34	6.0	2.0	1.3
19	158	9.0	5.0	30	40	36	90	27	30	5.0	1.9	1.3
20	110	8.0	6.0	50	40	23	78	38	25	5.0	.75	1.4
21	79	9.0	6.5	100	35	37	67	36	33	4.0	.80	1.3
22	67	10	7.0	100	30	26	75	28	42	3.2	4.6	1.4
23	54	9.0	6.0	300	30	33	578	138	33	17	1.6	1.5
24	44	10	5.0	300	30	40	872	196	24	16	1.7	1.5
25	38	11	4.5	200	40	35	656	152	20	12	1.6	1.4
26	30	11	4.5	150	45	35	326	107	18	12	1.5	1.3
27	23	13	4.0	100	50	35	254	70	16	7.1	1.5	1.3
28	20	13	3.5	100	50	33	231	57	14	12	1.4	1.5
29	17	12	3.0	150	------	32	185	50	13	21	1.5	1.5
30	15	11	3.0	100	------	30	292	58	11	16	1.7	1.5
31	12	------	3.0	60	------	28	------	56	------	15	1.5	------
TOTAL	1,978.9	294.8	236.0	1,851.0	1,119	1,486	4,414	2,416	2,825	403.9	100.75	44.3
MEAN	63.8	9.83	7.61	59.7	40.0	47.9	147	77.9	94.2	13.0	3.25	1.48
MAX	447	13	14	300	50	100	872	244	462	34	14	1.8
MIN	1.6	7.5	3.0	2.0	30	23	17	27	11	3.2	.75	1.3
AC-FT	3,930	585	468	3,670	2,220	2,950	8,760	4,790	5,600	801	200	88

CAL YR 1973 TOTAL 27,865.67 MEAN 76.3 MAX 1,670 MIN .22 AC-FT 55,270
WTR YR 1974 TOTAL 17,169.65 MEAN 47.0 MAX 872 MIN .75 AC-FT 34,060

PEAK DISCHARGE (BASE, 1,000 FT^3/S).--No peaks above base.

06354860 SPRING CREEK NEAR HERREID, S. DAK.

LOCATION.--Lat 45°48'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi^2 (1,140 km^2), approximately, of which about 220 mi^2 (570 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) above mean sea level.

AVERAGE DISCHARGE.--12 years, 10.1 ft^3/s (0.286 m^3/s), 7,320 acre-ft/yr (9.03 hm^3/yr); median of yearly mean discharges, 5.2 ft^3/s (0.15 m^3/s), 3,800 acre-ft/yr (4.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 160 ft^3/s (4.53 m^3/s) Mar. 5; maximum gage height, 6.96 ft (2.121 m) Mar. 5 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 1,160 ft^3/s (32.9 m^3/s) Mar. 17, 1966, gage height, 11.60 ft (3.536 m); no flow for several months each year.

REMARKS.--Records fair.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 17 to Mar. 9)

3.0	0	3.4	.90	4.4	16
3.1	.03	3.5	1.6	4.8	28
3.2	.10	3.7	3.8	5.2	46
3.3	.40	3.9	6.8		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.16	.48	.16	0	75	4.7	5.1	.84	0		
2	0	.19	.44	.07	0	68	4.5	4.7	.66	0		
3	0	.19	.48	.05	0	90	3.8	3.6	.48	0		
4	0	.19	.52	.04	0	112	3.0	3.2	.37	0		
5	0	.22	.52	.01	0	150	2.5	3.0	.31	0		
6	0	.22	.44	0	0	110	2.8	2.7	.28	0		
7	0	.19	.31	0	0	75	2.8	2.2	.22	0		
8	0	.19	.25	0	0	63	2.5	2.2	.16	0		
9	0	.19	.31	0	0	62	2.8	1.6	.10	0		
10	0	.22	.37	0	0	43	3.1	1.7	.07	0		
11	0	.22	.37	0	0	37	3.4	1.5	.05	0		
12	0	.25	.44	0	0	27	4.5	1.5	.05	0		
13	0	.25	.48	0	0	24	4.0	1.3	.04	0		
14	14	.37	.40	0	0	22	4.9	1.3	.04	0		
15	25	.72	.37	0	0	14	6.0	1.5	.02	0		
16	17	.90	.40	0	0	15	5.2	1.0	.01	0		
17	11	.66	.44	0	.10	13	5.7	.90	0	0		
18	8.2	.56	.56	0	4.0	12	5.8	.96	0	0		
19	5.8	.44	.52	0	25	11	5.4	.90	0	0		
20	4.4	.48	.44	0	50	8.3	5.2	1.3	0	0		
21	3.4	.52	.34	0	65	9.0	5.2	1.5	0	0		
22	2.3	.34	.31	0	70	6.8	4.9	.96	0	.04		
23	1.6	.31	.37	0	55	6.4	11	.84	0	.02		
24	1.0	.44	.37	0	55	5.7	7.5	.78	0	0		
25	.96	.44	.40	0	38	5.5	6.4	.60	0	0		
26	.56	.48	.44	0	35	5.1	5.5	.60	0	0		
27	.37	.48	.44	0	30	4.7	5.1	.60	0	0		
28	.31	.48	.44	0	60	4.8	5.4	.56	0	0		
29	.28	.48	.44	0	------	6.1	5.8	.52	0	0		
30	.16	.44	.34	0	------	6.0	5.7	.72	0	0		
31	.13	------	.22	0	------	5.4	------	1.4	------	0		------
TOTAL	96.47	11.22	12.65	.33	487.10	1,096.8	145.1	51.24	3.70	.06	0	0
MEAN	3.11	.37	.41	.011	17.4	35.4	4.84	1.65	.12	.002	0	0
MAX	25	.90	.56	.16	70	150	11	5.1	.84	.04	0	0
MIN	0	.16	.22	0	0	4.7	2.5	.52	0	0	0	0
AC-FT	191	22	25	.7	966	2,180	288	102	7.3	.1	0	0

CAL YR 1973 TOTAL 263.93 MEAN .72 MAX 25 MIN 0 AC-FT 524
WTR YR 1974 TOTAL 1,904.67 MEAN 5.22 MAX 150 MIN 0 AC-FT 3,780

PEAK DISCHARGE (BASE, 40 FT^3/S).--Mar. 5 (time and stage unknown) 160 ft^3/s.

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, S. DAK.

LOCATION.--Lat 45°48'10", long 102°21'45", in NE¼NE¼ sec.10, T.21 N., R.14 E., Perkins County, on left bank 100 ft (30 m) upstream from highway bridge, 0.2 mi (0.3 km) upstream from nearest tributary and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi^2 (3,080 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. Prior to Aug. 29, 1947, and Apr. 17, 1950, to June 11, 1951, nonrecording gage, and Aug. 29, 1947, to Apr. 16, 1950, water-stage recorder all at site 100 ft (30 m) downstream at same datum.

AVERAGE DISCHARGE.--29 years, 57.0 ft^3/s (1.614 m^3/s), 41,300 acre-ft/yr (50.9 hm^3/yr); median of yearly mean discharges, 33 ft^3/s (0.93 m^3/s), 23,900 acre-ft/yr (29 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, about 185 ft^3/s (5.24 m^3/s) Jan. 18; maximum gage height, 5.10 ft (1.554 m) Jan. 18 (backwater from ice); no flow for many days July to September.

Period of record: Maximum discharge, 30,900 ft^3/s (875 m^3/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft^3/s (538 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Bowman-Haley reservoir, capacity, 93,000 acre-ft (115 cu hm), 71 mi (114 km) upstream, beginning August 1966.

REVISIONS (WATER YEARS).--WSP 1279: 1947, 1950.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	8.6	10	1.0	30	45	29	27	17	8.9	0	.63
2	7.7	8.4	11	1.5	25	50	31	29	18	9.8	0	.42
3	6.7	8.4	11	1.9	25	48	32	30	17	11	0	.35
4	6.3	8.2	11	2.0	30	48	36	29	18	10	0	.14
5	6.1	8.2	9.0	1.5	25	50	32	25	18	10	0	.07
6	6.3	8.6	7.0	1.2	22	48	32	20	20	10	0	0
7	5.9	8.6	8.0	1.5	21	45	30	20	20	9.1	0	0
8	5.7	8.4	8.0	1.3	22	40	27	19	19	8.2	0	0
9	6.3	8.6	7.5	1.2	30	40	26	18	22	6.3	0	0
10	8.9	8.9	8.0	1.0	30	40	24	17	22	4.6	0	0
11	11	8.9	8.0	.80	40	40	30	16	17	3.6	1.9	0
12	15	9.1	7.0	.80	50	42	32	15	17	2.8	5.1	0
13	15	9.3	5.0	1.0	50	45	31	15	15	2.0	5.1	0
14	21	11	4.0	2.0	40	40	32	15	13	1.8	6.7	0
15	16	12	3.5	2.5	40	35	36	14	12	1.7	3.5	0
16	14	12	3.5	15	45	35	35	14	12	1.8	3.2	0
17	13	12	4.0	50	50	36	38	17	12	1.8	4.8	0
18	14	12	3.5	70	45	38	37	16	11	1.7	6.3	0
19	13	11	3.0	100	45	30	35	20	11	1.3	6.3	0
20	12	10	3.0	90	45	25	37	21	10	1.0	3.2	0
21	11	9.0	3.5	80	40	25	39	19	11	.78	3.2	0
22	11	9.0	3.5	70	35	23	43	17	9.8	.49	1.6	0
23	9.8	9.0	2.5	80	30	20	39	16	9.8	.28	2.0	0
24	9.6	9.0	2.0	90	35	25	41	16	8.2	0	1.8	0
25	8.9	9.0	2.0	90	40	30	43	15	6.9	0	1.5	0
26	8.9	9.0	1.8	80	50	31	51	15	6.5	0	1.4	0
27	8.9	10	1.6	60	50	28	51	19	5.9	0	1.3	0
28	8.6	11	1.3	60	40	27	39	22	5.3	0	1.2	0
29	8.6	11	1.0	70	------	35	33	18	4.9	0	1.2	0
30	8.6	11	1.0	50	------	30	30	20	5.3	0	1.0	0
31	8.6	------	1.0	40	------	28	------	19	------	0	.78	------
TOTAL	313.5	289.2	156.2	1,116.20	1,030	1,122	1,051	593	394.6	108.95	63.08	1.61
MEAN	10.1	9.64	5.04	36.0	36.8	36.2	35.0	19.1	13.2	3.51	2.03	.054
MAX	21	12	11	100	50	50	51	30	22	11	6.7	.63
MIN	5.7	8.2	1.0	.80	21	20	24	14	4.9	0	0	0
AC-FT	622	574	310	2,210	2,040	2,230	2,080	1,180	783	216	125	3.2

CAL YR 1973 TOTAL 16,200.20 MEAN 44.4 MAX 286 MIN 1.0 AC-FT 32,130
WTR YR 1974 TOTAL 6,239.34 MEAN 17.1 MAX 100 MIN 0 AC-FT 12,380

06356000 SOUTH FORK GRAND RIVER AT BUFFALO, S. DAK.

LOCATION.--Lat 45°34'34", long 103°32'38", in SW¼ sec.29, T.19 N., R.5 E., Harding County, on right bank at downstream side of bridge on U.S. Highway 85, 0.3 mi (0.5 km) south of Buffalo.

DRAINAGE AREA.--148 mi^2 (383 km^2).

PERIOD OF RECORD.--August 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,839.60 ft (865.510 m) above mean sea level. Prior to May 5, 1970, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--19 years, 7.87 ft^3/s (0.223 m^3/s), 5,700 acre-ft/yr (7.03 hm^3/yr); median of yearly mean discharges, 6.5 ft^3/s (0.18 m^3/s), 4,700 acre-ft/yr (5.8 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 95 ft^3/s (2.69 m^3/s) Oct. 10, gage height, 4.24 ft (1.292 m); maximum gage height, 5.15 ft (1.570 m) Jan. 16 (backwater from ice); minimum daily, 0.10 ft^3/s (0.003 m^3/s) Jan. 16.

Period of record: Maximum discharge, 2,780 ft^3/s (78.7 m^3/s) June 14, 1963, gage height, 9.01 ft (2.746 m), from rating curve extended above 550 ft^3/s (15.6 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

Flood in 1908 reached a stage of 15.4 ft (4.69 m), from information by South Dakota Department of Highways.

REMARKS.--Records good except those for winter periods, which are poor.

REVISIONS (WATER YEARS).--WSP 1917: 1956-57.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 1-10, 8-29, Dec. 5 to Mar. 16, Mar. 19-26)

2.0	0	3.0	21
2.1	.8	3.5	39
2.5	9.0		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.0	6.4	.50	1.0	10	3.4	3.2	13	1.4	1.2	1.2
2	2.4	.15	4.6	.60	1.5	10	3.0	3.2	9.0	1.8	.98	1.5
3	2.4	.15	4.2	.70	2.0	9.5	3.0	2.9	3.5	3.8	1.2	1.4
4	2.2	.10	3.6	.90	2.5	9.5	3.0	2.8	2.4	3.6	1.2	1.3
5	2.2	.20	3.0	.70	2.5	9.5	2.8	2.6	2.4	3.0	1.2	1.5
6	2.2	.30	2.0	.70	2.3	8.0	2.6	2.6	3.5	2.3	.56	1.3
7	2.4	.20	2.5	1.0	2.0	5.0	4.4	2.8	5.3	2.3	.56	1.3
8	2.8	.20	2.5	.90	2.0	4.5	5.7	2.4	3.0	1.7	9.7	1.4
9	3.0	.40	2.0	.70	2.5	5.0	5.3	2.3	21	1.3	7.5	1.5
10	82	1.5	2.5	.50	3.0	5.0	3.8	3.0	22	1.3	4.0	1.7
11	52	2.2	2.5	.30	3.0	5.0	14	2.6	11	1.3	4.0	1.5
12	14	2.4	2.0	.40	3.0	6.0	34	2.4	4.4	.98	2.1	1.5
13	5.9	2.8	1.5	1.0	2.8	6.0	38	2.4	3.2	.98	1.2	1.6
14	2.8	2.8	1.0	3.0	2.5	5.0	17	2.0	2.5	.98	2.5	1.5
15	2.1	3.0	1.0	10	2.7	4.0	6.6	2.0	2.4	.98	6.2	1.5
16	2.6	2.6	1.0	25	3.0	4.5	4.2	2.1	1.7	.80	3.0	1.5
17	3.2	2.8	1.2	10	3.5	4.4	3.6	3.8	2.0	.98	1.9	1.5
18	2.6	2.5	1.0	8.0	3.0	4.4	3.2	3.0	1.8	.98	1.7	1.5
19	1.7	1.0	.70	9.0	3.0	4.0	3.0	3.8	2.9	1.1	1.7	1.8
20	1.3	.60	1.0	9.0	3.0	3.0	13	5.6	1.7	7.6	.64	2.0
21	1.3	.60	1.1	5.0	2.5	2.5	16	3.6	2.1	13	1.2	1.9
22	1.3	.80	1.2	5.0	2.0	2.3	6.1	3.2	2.1	13	1.3	1.9
23	1.3	.60	1.0	5.0	2.0	2.0	4.0	2.2	2.3	3.8	1.6	1.9
24	1.3	.60	.80	5.5	2.0	2.5	3.4	1.8	2.0	1.3	1.6	2.0
25	1.3	.70	.80	6.0	4.0	3.0	2.8	1.7	1.6	1.7	1.3	2.1
26	1.3	.70	.80	5.5	6.0	4.0	4.8	1.7	1.3	1.5	1.5	1.9
27	1.2	.80	.70	5.0	10	5.5	5.0	1.7	1.3	1.5	1.3	1.9
28	1.3	.90	.60	5.0	9.0	5.3	8.3	3.6	1.2	1.3	1.3	1.9
29	1.3	1.5	.50	5.0	------	5.7	6.5	6.0	1.2	1.2	1.3	2.0
30	1.3	3.4	.50	3.0	------	4.6	3.8	16	1.3	.98	1.3	1.9
31	1.3	------	.50	1.0	------	4.0	------	27	------	.98	1.1	------
TOTAL	206.2	37.50	54.70	133.90	88.3	163.7	234.3	126.0	135.1	79.44	67.84	49.4
MEAN	6.65	1.25	1.76	4.32	3.15	5.28	7.81	4.05	4.50	2.56	2.19	1.65
MAX	82	3.4	6.4	25	10	10	38	27	22	13	9.7	2.1
MIN	1.2	.10	.50	.30	1.0	2.0	2.6	1.7	1.2	.80	.56	1.2
AC-FT	409	74	108	266	175	325	465	250	268	158	135	98

CAL YR 1973 TOTAL 2,525.24 MEAN 6.92 MAX 306 MIN .10 AC-FT 5,010
WTR YR 1974 TOTAL 1,376.38 MEAN 3.77 MAX 82 MIN .10 AC-FT 2,730

PEAK DISCHARGE (BASE, 200 FT^3/S).--No peaks above base.

06356500 SOUTH FORK GRAND RIVER NEAR CASH, S. DAK.

LOCATION.--Lat 45°38'56", long 102°38'27", in SW¼SW¼ sec.34, T.20 N., R.12 E., Perkins County, on left bank at downstream side of highway bridge, 1.0 mi (1.6 km) upstream from Little Nasty Creek, 4.0 mi (6.4 km) north of Cash, 10 mi (16 km) south of Lodgepole, 12 mi (19 km) northwest of Bison, and 16 mi (26 km) downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi^2 (3,500 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,416 ft (736 m), by barometer. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft (152 m) upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

AVERAGE DISCHARGE.--29 years, 55.1 ft^3/s (1.560 m^3/s), 39,920 acre-ft/yr (49.2 hm^3/yr); median of yearly mean discharges, 35 ft^3/s (0.99 m^3/s), 25,400 acre-ft/yr (31 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, about 225 ft^3/s (6.37 m^3/s) Jan. 18, maximum gage height, 4.12 ft (1.256 m) Jan. 18 (backwater from ice); minimum daily discharge, 0.80 ft^3/s (0.023 m^3/s) Jan. 11.

Period of record: Maximum discharge, 27,000 ft^3/s (765 m^3/s) Apr. 15, 1950, gage height, 15.40 ft (4.694 m), from rating curve extended above 14,000 ft^3/s (396 m^3/s) on basis of slope-area measurement of peak flow; no flow at times.

REMARKS.--Records good except those for winter periods, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 3-9, 19-27, Dec. 3-6, 8-10, Dec. 13 to Mar. 23)

1.3	2.4	1.7	28
1.4	5.5	1.9	56
1.5	10	2.2	132

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	20	1.0	10	60	34	26	36	9.0	4.9	6.5
2	15	9.0	20	1.5	7.0	50	31	26	44	12	4.9	6.5
3	15	8.5	18	1.8	4.0	45	28	24	37	13	4.9	6.5
4	14	8.0	18	2.0	2.0	40	28	22	32	14	4.9	6.5
5	14	8.0	18	1.6	1.5	44	26	20	28	22	4.3	6.5
6	14	8.0	22	1.4	1.5	45	26	18	26	20	4.0	6.5
7	14	7.5	26	2.0	1.5	40	26	18	22	17	3.0	6.5
8	14	7.0	28	1.6	2.0	40	26	20	20	14	3.6	6.5
9	15	7.0	30	1.4	10	45	28	20	20	15	2.4	6.5
10	24	10	34	1.0	30	50	32	20	22	13	4.3	7.0
11	65	20	26	.80	50	50	31	20	43	10	7.5	7.5
12	116	30	22	1.0	60	55	41	22	46	8.0	10	7.0
13	101	25	20	5.0	50	60	93	20	34	7.5	9.0	7.0
14	53	20	18	20	40	60	98	20	26	5.2	7.5	7.0
15	37	15	16	50	50	55	90	20	22	4.6	6.0	7.0
16	28	15	20	80	60	55	56	20	18	3.6	5.2	7.0
17	24	15	22	150	70	60	37	20	15	3.6	4.6	7.0
18	22	10	16	130	60	60	31	20	14	4.3	4.3	7.0
19	18	10	10	150	50	50	26	20	15	4.0	4.3	7.0
20	17	9.0	12	100	50	50	33	22	14	4.0	5.2	7.0
21	18	9.0	15	70	40	50	35	24	14	4.0	4.6	7.0
22	15	9.0	16	50	30	45	31	24	14	4.9	4.6	7.0
23	15	9.0	10	70	25	45	36	22	14	95	5.5	7.0
24	15	9.0	9.0	80	30	41	33	20	13	44	5.5	7.0
25	14	10	8.0	80	40	46	36	20	13	31	4.3	6.5
26	14	12	7.0	70	50	44	37	20	14	22	3.3	6.5
27	14	14	6.0	70	60	46	46	20	13	14	4.0	7.0
28	14	20	5.0	75	55	63	43	20	9.5	8.0	6.5	7.0
29	14	25	4.0	75	------	49	38	20	9.5	6.5	6.5	7.0
30	12	20	2.0	50	------	40	33	20	9.5	5.2	6.5	7.0
31	14	------	1.0	20	------	36	------	26	------	4.9	6.0	------
TOTAL	793	392.0	499.0	1,412.10	939.5	1,519	1,189	654	657.5	443.3	162.1	205.0
MEAN	25.6	13.1	16.1	45.6	33.6	49.0	39.6	21.1	21.9	14.3	5.23	6.83
MAX	116	30	34	150	70	63	98	26	46	95	10	7.5
MIN	12	7.0	1.0	.80	1.5	36	26	18	9.5	3.6	2.4	6.5
AC-FT	1,570	778	990	2,800	1,860	3,010	2,360	1,300	1,300	879	322	407

CAL YR 1973 TOTAL 14,517.00 MEAN 39.8 MAX 481 MIN 1.0 AC-FT 28,790
WTR YR 1974 TOTAL 8,865.50 MEAN 24.3 MAX 150 MIN .80 AC-FT 17,580

PEAK DISCHARGE (BASE, 500 FT^3/S).--No peaks above base.

06357000 SHADEHILL RESERVOIR AT SHADEHILL, S. DAK.

LOCATION.--Lat 45°45'12", long 102°12'12", in NW¼ sec.30, T.21 N., R.16 E., Perkins County, at dam on Grand River, 0.8 mi (1.3 km) west of Shadehill.

DRAINAGE AREA.--3,120 m^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--June 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 65,797 acre-ft (81.1 hm^3) Oct. 1, elevation, 2,268.68 ft (691.494 m); minimum, 40,597 acre-ft (50.1 hm^3) Sept. 30, elevation, 2,262.77 ft (689.692 m).

Period of record: Maximum usable contents observed, 259,900 acre-ft (320 hm^3) Apr. 10, 1952, elevation, 2,297.86 ft (700.388 m); minimum usable observed since first filling to spillway level, 25,950 acre-ft (32.0 hm^3) Mar. 17, 1962, elevation, 2,258.90 ft (688.51 m).

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,443 acre-ft (100 hm^3) between elevations 2,250.8 ft (686.04 m), invert of canal and river outlet, and elevation 2,272.0 ft (692.51 m), crest of morning glory spillway. Dead storage, 58,231 acre-ft (71.8 hm^3) below elevation 2,250.8 ft (686.04 m). Flood control, 217,708 acre-ft (268 hm^3) between elevations 2,272.0 ft (692.51 m) and 2,302.0 ft (701.65 m), crest of emergency spillway. Surcharge, 111,203 acre-ft (137 hm^3) at elevation 2,312.0 ft (704.70 m), maximum pool elevation. Total reservoir capacity is 468,585 acre-ft (578 hm^3) at elevation 2,312.0 ft (704.70 m). The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft (686.04 m). Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage. Water-quality records for the water year 1974 are published in Part 2 of this report.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,268.68	65,797	-
Oct. 31	2,268.34	64,255	-1,542
Nov. 30	2,267.23	59,298	-4,957
Dec. 31	2,266.04	54,120	-5,178
CAL YR 1973	-	-	-1,637
Jan. 31	2,266.31	55,281	+1,161
Feb. 28	2,265.84	53,264	-2,017
Mar. 31	2,266.11	54,420	+1,156
Apr. 30	2,266.47	55,973	+1,553
May 31	2,266.20	54,807	-1,166
June 30	2,265.62	52,326	-2,481
July 31	2,264.46	47,456	-4,870
Aug. 31	2,263.55	43,727	-3,729
Sept.30	2,262.77	40,597	-3,130
WTR YR 1974	-	-	-25,200

06357500 GRAND RIVER AT SHADEHILL, S. DAK.

LOCATION.--Lat 45°45'25", long 102°11'41", in NW¼NW¼ sec.30, T.21 N., R.16 E., Perkins County, on left bank 0.2 mi (0.3 km) downstream from Shadehill Dam, 1.0 mi (1.6 km) southwest of Shadehill, and 12.0 mi (19.3 km) southwest of Lemmon.

DRAINAGE AREA.--3,120 mi^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--February 1943 to current year. Records for July 1904 to October 1906 collected at site 4 mi (6 km) upstream and published as "at Seim" in WSP 130, 172, and 208 have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 2,192.48 ft (668.268 m) above mean sea level. Prior to Aug. 31, 1947, nonrecording gage, and Aug. 31, 1947, to Oct. 24, 1958, water-stage recorder, at site 0.8 mi (1.3 km) downstream at datum 6.02 ft (1.835 m) lower.

AVERAGE DISCHARGE.--31 years, 121 ft^3/s (3.427 m^3/s), 87,660 acre-ft/yr (108 hm^3/yr); median of yearly mean discharges, 66 ft^3/s (1.87 m^3/s), 47,800 acre-ft/yr (59.0 hm^3/yr).

EXTREMES.--Current year: Maximum daily discharge, 108 ft^3/s (3.06 m^3/s) Oct. 26; maximum gage height, 3.72 ft (1.134 m) Dec. 19 (backwater from ice); minimum daily discharge, 0.06 ft^3/s (0.002 m^3/s) Oct. 16.

Period of record: Maximum discharge, 58,000 ft^3/s (1,640 m^3/s) Apr. 16, 1950, gage height, 21.0 ft (6.40 m), from floodmarks upstream from bridge; 19.06 ft (5.809 m), from floodmark in gage well, unreliable, site and datum then in use; no flow for many days in some years.

REMARKS.--Records good. Flow completely regulated by Shadehill Reservoir since July 1, 1950. (See station 06357000.)

REVISIONS (WATER YEARS).--WSP 1279: 1943(M). See also Period of Record.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	106	104	94	86	90	59	55	56	55	50	41
2	75	104	104	93	87	91	59	56	56	56	51	41
3	75	103	104	93	87	90	59	56	56	56	50	41
4	75	102	104	91	87	81	59	56	56	55	50	41
5	75	103	104	90	87	70	57	56	56	55	50	37
6	75	103	104	93	87	65	57	56	56	55	50	31
7	75	103	103	94	87	60	56	56	56	55	50	28
8	74	102	101	90	87	58	58	56	56	55	50	26
9	73	102	101	90	86	58	59	56	56	56	50	26
10	72	102	100	90	86	58	60	56	56	56	50	26
11	72	102	100	90	85	58	59	56	56	56	50	26
12	42	102	100	89	86	58	58	57	56	56	50	25
13	.56	102	101	87	87	58	58	56	56	56	50	24
14	.98	102	101	83	88	58	58	57	55	56	50	24
15	.28	102	100	82	87	59	58	56	55	56	50	24
16	.06	102	100	81	88	58	58	56	55	55	49	24
17	.14	102	98	81	88	58	58	57	55	56	49	24
18	1.3	106	98	81	88	59	60	57	55	56	50	24
19	4.6	106	98	81	89	59	56	55	55	54	50	24
20	4.4	106	98	83	88	59	56	55	54	51	51	24
21	4.2	105	95	85	89	59	55	54	55	51	50	24
22	50	104	94	85	89	60	55	55	55	51	50	24
23	71	105	92	85	89	62	55	56	55	51	50	24
24	93	104	92	84	89	59	54	56	55	51	50	24
25	105	104	92	85	88	59	53	56	55	51	50	20
26	108	104	92	85	89	58	54	56	55	51	51	18
27	106	104	92	85	88	59	53	56	55	51	51	23
28	105	104	92	85	90	58	55	56	55	51	51	24
29	106	104	92	84	------	58	55	57	55	50	47	23
30	105	105	92	85	------	59	55	58	55	51	41	23
31	106	------	92	85	------	59	------	56	------	51	41	------
TOTAL	1,829.52	3,105	3,040	2,689	2,452	1,955	1,706	1,737	1,662	1,666	1,532	808
MEAN	59.0	104	98.1	86.7	87.6	63.1	56.9	56.0	55.4	53.7	49.4	26.9
MAX	108	106	104	94	90	91	60	58	56	56	51	41
MIN	.06	102	92	81	85	58	53	54	54	50	41	18
AC-FT	3,630	6,160	6,030	5,330	4,860	3,880	3,380	3,450	3,300	3,300	3,040	1,600

CAL YR 1973 TOTAL 39,238.52 MEAN 108 MAX 296 MIN .06 AC-FT 77,830
WTR YR 1974 TOTAL 24,181.52 MEAN 66.3 MAX 108 MIN .06 AC-FT 47,960

06357800 GRAND RIVER AT LITTLE EAGLE, S. DAK.

LOCATION.--Lat 45°39'28", long 100°49'04", in NE¼NE¼ sec.32, T.20 N., R.27 E., Corson County, on left bank at downstream side of bridge on State Highway 63, 1.3 mi (2.1 km) southwest of Little Eagle and 4.7 mi (7.6 km) downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi^2 (13,910 km^2), approximately.

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.63 ft (496.406 m) above mean sea level. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi (1.0 km) downstream at datum 2.00 ft (0.610 m) lower.

AVERAGE DISCHARGE.--16 years, 236 ft^3/s (6.684 m^3/s), 171,000 acre-ft/yr (211 hm^3/yr); median of yearly mean discharges, 210 ft^3/s (5.95 m^3/s), 152,000 acre-ft/yr (187 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 5,990 ft^3/s (170 m^3/s) Apr. 21, gage height, 10.65 ft (3.246 m); minimum daily, 4.4 ft^3/s (0.12 m^3/s) Sept. 28.

Period of record: Maximum discharge, 15,000 ft^3/s (425 m^3/s) Mar. 12, 1972; maximum gage height, 21.76 ft (6.632 m) Mar. 18, 1966, from floodmarks, ice jam, site and datum then in use; no flow at times in 1958-62, 1969.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Shadehill Reservoir 144 mi (232 km) upstream. (See station 06357000.) Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 7, Nov. 11-16, Mar. 16 to Apr. 19, Apr. 28 to May 19; stage-discharge relation affected by backwater from ice Nov. 8-10, Nov. 17 to Mar. 15)

2.9	2.0	3.5	87	5.0	575	8.0	2,860
3.0	10	4.0	202	6.0	1,140	9.0	3,990
3.2	36	4.5	360	7.0	1,910	10.0	5,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	112	100	55	70	150	200	224	186	54	29	36
2	82	114	95	65	70	160	179	194	233	52	35	35
3	77	114	90	70	75	170	160	179	210	57	35	33
4	73	121	85	70	75	180	150	156	135	57	35	30
5	71	68	80	65	75	185	160	146	115	54	32	30
6	68	65	80	60	75	180	173	135	117	64	29	29
7	70	80	85	55	80	160	150	122	164	61	28	28
8	70	80	90	55	80	190	103	113	254	49	29	26
9	79	70	85	55	85	220	107	109	194	44	32	28
10	110	130	85	50	85	250	107	109	146	41	35	26
11	212	147	85	50	90	270	194	122	128	38	47	23
12	452	147	80	60	90	300	600	128	118	33	63	20
13	796	179	70	80	85	300	710	135	115	32	144	18
14	862	194	60	150	90	290	580	118	111	30	126	16
15	529	154	55	250	95	280	480	113	105	29	87	15
16	278	144	60	350	100	274	390	107	95	26	71	14
17	168	140	60	340	100	267	274	101	93	26	59	11
18	121	130	65	300	100	246	229	101	85	28	57	10
19	95	110	65	400	95	260	188	105	78	30	54	9.2
20	77	60	65	450	95	289	2,860	185	76	29	49	9.2
21	68	50	70	400	90	250	4,620	299	78	29	42	9.2
22	62	65	75	350	90	188	1,900	233	74	33	42	8.4
23	58	85	75	300	85	150	1,020	202	76	36	39	7.6
24	53	90	70	300	85	114	561	174	73	36	44	7.6
25	51	90	70	310	90	150	399	159	67	33	42	6.8
26	49	95	70	320	100	216	318	149	64	29	41	6.0
27	55	100	70	320	120	250	299	140	61	28	46	5.2
28	105	110	65	300	140	274	357	133	57	28	50	4.4
29	116	110	65	250	------	290	360	130	55	29	46	6.0
30	116	100	55	150	------	278	282	142	55	28	38	14
31	114	------	50	100	------	250	------	149	------	26	36	------
TOTAL	5,238	3,254	2,275	6,130	2,510	7,031	18,110	4,612	3,418	1,169	1,542	521.6
MEAN	169	108	73.4	198	89.6	227	604	149	114	37.7	49.7	17.4
MAX	862	194	100	450	140	300	4,620	299	254	64	144	36
MIN	49	50	50	50	70	114	103	101	55	26	28	4.4
AC-FT	10,390	6,450	4,510	12,160	4,980	13,950	35,920	9,150	6,780	2,320	3,060	1,030

CAL YR 1973 TOTAL 134,104.0 MEAN 367 MAX 4,500 MIN 49 AC-FT 266,000
WTR YR 1974 TOTAL 55,810.6 MEAN 153 MAX 4,620 MIN 4.4 AC-FT 110,700

06359500 MOREAU RIVER NEAR FAITH, S. DAK.

LOCATION.--Lat 45°11'52", long 102°09'22", in NW¼NW¼ sec.10, T.14 N., R.16 E., Perkins County, on left bank 10 ft (3 m) downstream from bridge on State Highway 73, 3.1 mi (5.0 km) downstream from Rabbit Creek and 13.5 mi (21.7 km) northwest of Faith.

DRAINAGE AREA.--2,660 mi^2 (6,890 km^2), approximately.

PERIOD OF RECORD.--March 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft (682.350 m) above mean sea level. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi (0.5 km) upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft (0.30 m) higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft (152 m) downstream at present datum.

AVERAGE DISCHARGE.--31 years, 134 ft^3/s (3.795 m^3/s), 97,080 acre-ft/yr (120 hm^3/yr); median of yearly mean discharges, 90 ft^3/s (2.55 m^3/s), 65,200 acre-ft/yr (80 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 206 ft^3/s (5.83 m^3/s) Apr. 16, gage height, 3.53 ft (1.076 m); maximum gage height, 4.06 ft (1.237 m) Feb. 13 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 26,000 ft^3/s (736 m^3/s) Apr. 9, 1944, gage height, 20.9 ft (6.37 m), from floodmarks, site and datum then in use, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1944, 1946, 1948-51, 1955-66, 1968-71, 1974.

REMARKS.--Records good except those for winter periods, which are poor.

REVISIONS (WATER YEARS).--WSP 1176: 1944. WSP 1279: 1946(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	6.6	14	1.0	0	50	26	17	25	13	1.1	.48
2	7.5	6.5	14	1.0	0	50	22	15	21	12	.54	.38
3	9.1	6.5	15	1.0	0	50	21	15	46	56	.22	.34
4	9.4	6.0	17	.50	0	44	19	15	33	34	.20	.26
5	7.8	6.0	16	.50	0	44	17	14	27	19	.20	.34
6	6.3	6.5	10	0	0	44	17	13	39	15	.19	.38
7	6.0	7.0	12	0	0	45	16	13	30	9.8	.16	.30
8	5.7	7.5	10	0	0	60	15	11	27	7.5	.13	.22
9	6.3	7.5	9.0	0	.50	75	15	11	24	10	.16	.19
10	43	9.0	8.0	0	1.0	75	15	14	31	8.5	3.6	.19
11	32	10	7.0	0	2.0	60	21	19	38	6.0	1.8	.19
12	73	10	6.0	0	3.0	60	48	15	28	4.5	1.2	.19
13	75	10	5.0	0	3.0	60	49	14	22	3.8	.68	.16
14	64	9.8	4.5	0	2.0	60	52	16	17	3.2	7.4	.13
15	42	10	4.5	0	3.0	50	59	19	13	1.8	12	.05
16	31	11	4.5	.50	4.0	50	168	17	11	.82	5.1	.03
17	24	11	4.5	1.0	6.0	60	152	16	13	.06	4.2	.01
18	18	11	4.0	1.0	6.0	55	102	15	11	.30	3.8	0
19	13	11	4.0	2.0	6.0	52	75	16	9.4	.61	2.1	0
20	12	10	4.0	1.5	5.0	47	65	16	8.8	.54	1.7	0
21	11	10	5.0	1.0	5.0	44	62	22	9.8	.38	1.4	0
22	9.4	13	6.0	.50	5.0	40	55	17	10	.26	.90	0
23	9.4	13	5.5	1.0	5.5	38	44	13	9.8	.06	1.6	0
24	9.1	13	5.0	1.0	6.0	36	35	11	39	.04	6.6	0
25	8.5	13	4.0	1.0	9.0	34	30	11	87	.05	2.0	0
26	7.5	12	3.0	2.0	10	34	27	11	58	0	.98	0
27	7.5	13	2.0	2.0	20	34	32	11	33	.29	.68	0
28	7.2	14	1.5	3.0	30	34	32	11	23	2.7	.68	0
29	6.9	13	1.0	3.0	------	34	25	12	15	2.0	.75	0
30	6.6	12	1.0	1.0	------	26	19	27	12	1.4	.68	0
31	6.6	------	1.0	0	------	25	------	26	------	1.2	.48	------
TOTAL	582.0	298.9	208.0	25.50	132.00	1,470	1,335	473	770.8	214.81	63.23	3.84
MEAN	18.8	9.96	6.71	.82	4.71	47.4	44.5	15.3	25.7	6.93	2.04	.13
MAX	75	14	17	3.0	30	75	168	27	87	56	12	.48
MIN	5.7	6.0	1.0	0	0	25	15	11	8.8	0	.13	0
AC-FT	1,150	593	413	51	262	2,920	2,650	938	1,530	426	125	7.6

CAL YR 1973 TOTAL 25,694.20 MEAN 70.4 MAX 811 MIN 1.0 AC-FT 50,960
WTR YR 1974 TOTAL 5,577.08 MEAN 15.3 MAX 168 MIN 0 AC-FT 11,060

PEAK DISCHARGE (BASE, 1,500 FT^3/S).--No peaks above base.

06360500 MOREAU RIVER NEAR WHITEHORSE, S. DAK.

LOCATION.--Lat 45°15'21", long 100°50'33", in SW¼SE¼ sec.17, T.15 N., R.27 E., Dewey County, on left bank 30 ft (9 m) downstream from bridge, 2.4 mi (3.9 km) southeast of Whitehorse, 8.8 mi (14.2 km) downstream from Little Moreau River, and 16.3 mi (26.2 km) southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi^2 (12,640 km^2), approximately.

PERIOD OF RECORD.--June 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft (506.419 m) above mean sea level. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--20 years, 183 ft^3/s (5.183 m^3/s), 132,600 acre-ft/yr (163 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 770 ft^3/s (21.8 m^3/s) Apr. 21, gage height, 4.43 ft (1.350 m); no flow for many days.

Period of record: Maximum discharge, 21,000 ft^3/s (595 m^3/s) Mar. 14, 1972; maximum gage height, 26.20 ft (7.986 m) Mar. 14, 1972 (backwater from ice); no flow at times each year.

Flood in June 1953 reached a stage of about 26.2 ft (7.99 m). Flood in March 1947 was probably higher.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 14, Apr. 30 to May 13, July 17, Aug. 13, 18-27; stage-discharge relation affected by ice Nov. 15 to Mar. 24)

0.80	0	1.1	3.5	1.7	39	3.0	257
.90	.20	1.2	7.2	2.0	70	4.0	618
1.0	.99	1.4	16	2.5	143		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	15	17	2.5	0	30	51	46	19	.20	0	
2	19	15	17	2.0	0	40	46	40	18	.10	0	
3	15	15	18	1.0	0	100	45	39	17	3.0	0	
4	14	17	18	.50	0	105	39	37	24	100	0	
5	13	17	17	0	0	80	38	33	48	90	0	
6	10	14	15	0	0	50	30	26	46	70	0	
7	9.0	12	13	0	0	50	28	21	38	50	0	
8	6.8	18	14	0	0	45	27	18	36	35	0	
9	7.2	15	12	0	.50	35	26	18	42	25	0	
10	7.7	14	10	0	2.0	50	22	18	45	20	0	
11	11	14	8.0	0	5.0	70	21	20	39	15	0	
12	52	12	7.0	0	5.0	80	26	18	41	11	0	
13	155	11	6.0	0	4.0	80	27	18	35	7.2	111	
14	272	11	4.5	0	4.0	80	28	18	29	3.9	136	
15	254	14	3.5	0	6.0	65	27	19	25	1.8	70	
16	182	15	4.0	0	8.0	55	96	18	22	.60	44	
17	116	14	4.0	0	10	55	80	16	25	.02	29	
18	100	14	4.5	0	11	50	62	15	30	0	21	
19	83	14	5.0	0	10	45	54	19	29	0	24	
20	70	13	5.0	0	10	40	136	47	23	0	14	
21	49	13	5.5	0	9.0	35	464	31	29	0	11	
22	41	13	5.5	0	9.0	35	451	21	31	0	10	
23	36	13	6.0	0	8.0	40	252	25	15	0	3.5	
24	29	14	6.0	0	8.0	50	169	32	16	0	.71	
25	26	14	6.5	0	10	62	113	17	11	0	.24	
26	22	15	6.5	0	15	56	84	15	4.2	0	.05	
27	21	16	6.5	0	20	51	103	12	2.0	0	0	
28	21	16	6.0	0	25	48	123	11	1.3	0	0	
29	18	16	5.0	0	------	97	76	15	.60	0	0	
30	16	17	4.0	0	------	112	55	20	.30	0	0	
31	15	------	3.0	0	------	61	------	20	------	0	0	------
TOTAL	1,714.7	431	263.0	6.00	179.50	1,852	2,799	723	741.40	432.82	474.50	0
MEAN	55.3	14.4	8.48	.19	6.41	59.7	93.3	23.3	24.7	14.0	15.3	0
MAX	272	18	18	2.5	25	112	464	47	48	100	136	0
MIN	6.8	11	3.0	0	0	30	21	11	.30	0	0	0
AC-FT	3,400	855	522	12	356	3,670	5,550	1,430	1,470	858	941	0

CAL YR 1973 TOTAL 66,034.54 MEAN 181 MAX 2,040 MIN 0 AC-FT 131,000
WTR YR 1974 TOTAL 9,616.92 MEAN 26.3 MAX 464 MIN 0 AC-FT 19,080

PEAK DISCHARGE (BASE, 1,800 FT^3/S).--No peaks above base.

06395000 CHEYENNE RIVER AT EDGEMONT, S. DAK.

LOCATION.--Lat 43°18'20", long 103°49'14", in SW¼SE¼SE¼ sec.36, T.8 S., R.2 E., Fall River County, on right bank at downstream side of bridge on U.S. Highway 18 at Edgemont, 300 ft (91 m) downstream from Burlington Northern Railroad bridge and 600 ft (183 m) upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi² (18,500 km²).

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft (1,040.758 m) above mean sea level. Prior to Dec. 1, 1906, nonrecording gage 20 ft (6 m) upstream at datum 0.7 ft (0.21 m) lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage at present site at datum 2.00 ft (0.610 m) higher.

AVERAGE DISCHARGE.--32 years (1928-32, 1946-74), 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (91.6 hm³/yr); median of yearly mean discharges, 88 ft³/s (2.5 m³/s), 64,000 acre-ft/yr (78.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 394 ft³/s (11.2 m³/s) Mar. 6, gage height, 3.50 ft (1.067 m); maximum gage height observed, 4.86 ft (1.481 m) Jan. 23 (backwater from ice); no flow for many days during June to September.

Period of record: Maximum discharge, 13,800 ft³/s (391 m³/s) May 25, 1971, gage height, 10.57 ft (3.222 m); no flow at times most years.

Flood of May 12, 1920, reached a stage of 13.0 ft (3.96 m) and May 1, 1922, 14.0 ft (4.27 m), present datum, from floodmarks at railroad bridge.

REMARKS.--Records good except those for winter periods, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft (55.5 hm³). Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1086: Drainage area. WSP 1116: 1947.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	44	25	1.0	40	186	32	26	5.8	.06	0	.66
2	35	41	25	1.0	40	189	29	24	5.1	1.5	0	.22
3	31	40	23	1.0	40	301	32	22	4.4	1.1	0	.12
4	30	38	20	1.0	42	218	33	20	3.3	.22	0	.12
5	27	35	15	1.0	40	258	32	19	4.0	.08	.06	.07
6	27	40	14	1.0	35	311	31	19	5.8	0	.03	.03
7	27	40	15	1.2	30	193	32	17	3.6	.06	.14	.11
8	24	38	14	1.0	30	140	27	16	4.7	.05	.13	.07
9	27	45	12	.80	35	111	26	16	3.3	.02	.18	.11
10	33	47	12	.60	40	92	22	16	2.6	.15	5.5	.09
11	27	51	14	.50	50	90	30	15	2.0	.13	12	.66
12	26	56	15	1.0	60	85	34	13	2.0	0	36	1.1
13	27	58	14	2.0	63	75	34	13	2.0	0	66	.22
14	27	58	14	2.3	70	70	37	12	1.5	0	66	0
15	27	50	12	2.5	75	70	36	12	1.3	0	2.9	0
16	26	44	14	2.5	80	68	34	12	.66	0	3.6	.04
17	26	47	15	30	80	68	35	12	.66	0	4.0	0
18	26	45	12	100	75	66	39	12	.66	.14	2.9	0
19	26	44	8.0	100	75	56	43	12	.44	.24	2.0	0
20	26	27	10	150	75	43	51	9.9	.88	.76	1.5	.44
21	27	29	12	150	70	45	43	8.1	.44	5.0	1.3	0
22	26	30	12	100	60	47	43	8.7	.22	6.4	5.1	.02
23	25	28	10	100	55	40	43	7.5	.80	9.0	14	.22
24	27	25	11	60	50	50	43	7.0	1.1	5.1	1.8	.12
25	33	22	11	35	60	64	41	7.0	.44	.88	1.1	.05
26	33	20	12	35	100	66	41	7.0	.22	0	.44	.04
27	117	19	11	32	160	56	44	6.4	.22	0	.44	0
28	113	19	8.0	32	200	51	37	7.5	.06	.04	.44	.05
29	75	22	5.0	35	------	48	32	10	.06	.09	1.1	.07
30	54	25	3.0	40	------	40	27	8.1	0	.11	.22	0
31	48	------	1.0	35	------	32	------	7.0	------	.05	.13	------
TOTAL	1,143	1,127	399.0	1,054.40	1,830	3,229	1,063	402.2	58.26	31.18	229.01	4.63
MEAN	36.9	37.6	12.9	34.0	65.4	104	35.4	13.0	1.94	1.01	7.39	.15
MAX	117	58	25	150	200	311	51	26	5.8	9.0	66	1.1
MIN	24	19	1.0	.50	30	32	22	6.4	0	0	0	0
AC-FT	2,270	2,240	791	2,090	3,630	6,400	2,110	798	116	62	454	9.2

CAL YR 1973 TOTAL 30,926.60 MEAN 84.7 MAX 3,270 MIN .50 AC-FT 61,340
WTR YR 1974 TOTAL 10,570.68 MEAN 29.0 MAX 311 MIN 0 AC-FT 20,970

PEAK DISCHARGE (BASE, 1,500 FT³/S).--No peaks above base.

06400000 HAT CREEK NEAR EDGEMONT, S. DAK.

LOCATION.--Lat 43°14'46", long 103°35'16", in SW¼SE¼SE¼ sec.24, T.9 S., R.4 E., Fall River County, on left bank at downstream side of bridge on State Highway 71, 2.0 mi (3.2 km) upstream from mouth, 2.0 mi (3.2 km) west of Heppner, and 12.5 mi (20.1 km) southeast of Edgemont.

DRAINAGE AREA.--1,044 mi² (2,704 km²).

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,295.71 ft (1,004.532 m) above mean sea level. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 1,000 ft (305 m) downstream and May 3 to July 7, 1906, at site 0.8 mi (1.3 km) upstream at different datum. Nov. 6, 1950, to May 1, 1951, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--25 years, 22.7 ft³/s (0.643 m³/s), 16,450 acre-ft/yr (20.3 hm³/yr); median of yearly mean discharges, 14 ft³/s (0.40 m³/s), 10,100 acre-ft/yr (12 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 898 ft³/s (25.4 m³/s) Apr. 14; maximum gage height, 11.78 ft (3.591 m) Jan. 18 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 13,300 ft³/s (377 m³/s) June 16, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s) on basis of slope-area measurement at 11.98 ft (3.652 m). No flow for many days each year.

REMARKS.--Records fair except those for winter periods, which are poor. A few small diversions above station for irrigation. Lander ditch diverts water from Hat Creek 0.8 mi (1.3 km) upstream from gaging station for irrigating hay meadows downstream from station. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 1973-74 are given herewith:

Oct. 23	0	Mar. 13	2.35	July 10	0
Nov. 20	.51	Apr. 8	.72	July 29	0
Dec. 17	.50	May 7	3.98	Aug. 28	0
Jan. 16	0	June 11	.90	Sept.25	0
Feb. 11	0				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.52	1.2	.40	8.0	10	8.3	5.3	0			
2	.30	.60	1.5	.50	8.0	11	7.6	4.2	0			
3	.30	.67	1.2	.40	8.0	15	8.1	3.3	0			
4	.30	.74	1.0	.40	8.0	11	8.1	1.9	0			
5	.18	.67	.80	.40	7.0	7.2	10	1.9	0			
6	0	.60	.90	.40	6.0	6.2	10	2.1	.06			
7	0	.60	1.0	.50	6.0	7.6	11	1.4	.31			
8	0	.52	1.1	.40	7.0	5.9	12	.97	0			
9	0	.45	1.0	.40	10	5.0	14	.82	0			
10	.30	.52	1.0	.30	20	4.5	9.8	1.7	.81			
11	.24	.60	1.1	.30	40	5.0	34	.74	.91			
12	.24	.45	1.2	.40	45	5.0	268	.67	0			
13	.37	1.4	1.0	.50	45	5.3	601	1.0	0			
14	.37	1.4	1.1	.70	45	5.1	711	.97	0			
15	.45	1.4	1.0	.90	60	5.0	363	.82	0			
16	.45	1.3	1.3	1.0	86	3.1	190	.74	0			
17	.37	1.2	1.6	20	66	3.1	106	.60	0			
18	.24	1.1	1.3	250	42	7.2	64	.82	0			
19	.24	1.0	.70	300	29	8.6	39	.89	0			
20	.18	1.0	.80	100	22	9.4	25	.60	.39			
21	.18	1.0	.90	25	21	9.4	19	.60	0			
22	.12	1.0	1.0	15	17	10	20	.37	0			
23	.06	1.0	.90	8.0	14	9.4	13	.06	0			
24	.24	1.0	.90	8.0	11	8.9	10	0	0			
25	.52	1.0	.90	9.0	12	9.4	8.3	0	0			
26	.52	1.0	.90	9.0	13	7.2	8.3	0	0			
27	.45	1.0	.90	8.0	11	7.6	8.0	0	0			
28	.45	1.2	.80	8.0	10	9.4	8.0	.06	0			
29	.45	1.2	.60	8.0	------	10	7.0	.60	0			
30	.45	1.1	.50	9.0	------	11	6.2	.12	0			
31	.45	------	.40	7.0	------	9.4	------	.06	------			------
TOTAL	8.72	27.24	30.50	791.90	677.0	241.9	2,607.7	33.31	2.48	0	0	0
MEAN	.28	.91	.98	25.5	24.2	7.80	86.9	1.07	.083	0	0	0
MAX	.52	1.4	1.6	300	86	15	711	5.3	.91	0	0	0
MIN	0	.45	.40	.30	6.0	3.1	6.2	0	0	0	0	0
AC-FT	17	54	60	1,570	1,340	480	5,170	66	4.9	0	0	0

CAL YR 1973 TOTAL 5,065.05 MEAN 13.9 MAX 579 MIN 0 AC-FT 10,050
WTR YR 1974 TOTAL 4,420.75 MEAN 12.1 MAX 711 MIN 0 AC-FT 8,770

PEAK DISCHARGE (BASE, 1,000 FT³/S).--No peaks above base.

06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, S. DAK.

LOCATION.--Lat 43°20'35", long 103°26'16", in SW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, at dam on Cheyenne River, 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (2,360 km^2), approximately.

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 128,084 acre-ft (158 hm^3) Apr. 16, elevation, 3,187.31 ft (971.492 m); minimum, 76,961 acre-ft (94.9 hm^3) Sept. 20, elevation, 3,174.84 ft (967.691 m).

Period of record: Maximum contents observed, 145,200 acre-ft (179 hm^3) June 18, 1962, elevation, 3,189.00 ft (972.007 m); minimum observed since normal operating level reached, 45,350 acre-ft (55.9 hm^3) Sept. 28, 1960, elevation, 3,162.90 ft (964.052 m).

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began October 3, 1949; dam completed December 1949. Conservation capacity, 127,558 acre-ft (157 hm^3) between elevations 3,139.75 ft (956.996 m), invert of lowest outlet, and 3,187.2 ft (971.46 m), top of spillway gates. Dead storage below elevation 3,139.75 (956.996 m), 11,203 acre-ft (13.8 hm^3). Surcharge capacity, 196,221 acre-ft (242 hm^3), maximum pool elevation. Figures given herein represent contents above elevation 3,139.75 ft (956.996 m). Water is stored for irrigation.

COOPERATION.--Records of elevations, contents, and diversion to Angostura project furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	†Diversions (acre-feet)
Sept.30	3,182.96	108,480	-	-
Oct. 31	3,183.45	110,583	+2,103	220
Nov. 30	3,184.10	113,390	+2,807	-
Dec. 31	3,184.65	115,816	+2,426	-
CAL YR 1973	-	-	+29,187	45,210
Jan. 31	3,185.84	121,193	+5,377	-
Feb. 28	3,186.06	122,204	+1,011	-
Mar. 31	3,186.88	126,039	+3,835	-
Apr. 30	3,187.12	127,175	+1,136	780
May 31	3,185.43	119,322	-7,853	6,840
June 30	3,183.20	109,508	-9,814	8,220
July 31	3,178.84	91,782	-17,726	16,920
Aug. 31	3,175.78	80,308	-11,474	12,200
Sept.30	3,174.86	77,030	-3,278	3,060
WTR YR 1974	-	-	-31,450	48,240

(†) Diversions from Angostura irrigation project.

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, S. DAK.

LOCATION.--Lat 43°20'42", long 103°26'12", in NE¼NW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, on right bank 800 ft (244 m) downstream from Angostura Dam, 4.8 mi (7.7 km) upstream from Fall River and 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (23,600 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft (932.084 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi (7.7 km) downstream at different datum.

AVERAGE DISCHARGE.--29 years, 81.6 ft^3/s (2.311 m^3/s), 59,120 acre-ft/yr (72.9 hm^3/yr); median of yearly mean discharges, 66 ft^3/s (1.869 m^3/s), 47,800 acre-ft/yr (58.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 758 ft^3/s (21.5 m^3/s) Feb. 20, gage height, 4.99 ft (1.521 m); minimum daily, 1.1 ft^3/s (0.031 m^3/s) Sept. 16-18.

Period of record: Maximum discharge, 24,300 ft^3/s (688 m^3/s) June 18, 1962, gage height, 13.81 ft (4.209 m), from rating curve extended above 6,000 ft^3/s (170 m^3/s); no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

REMARKS.--Records good except those below 5 ft^3/s (0.14 m^3/s), which are fair. Flow completely regulated by Angostura Reservoir 800 ft (244 m) upstream since October 1949. (See station 06401000.) Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1309: 1946(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21-28, Feb. 11 to Mar. 11; stage-discharge relation affected by ice Dec. 18)

2.7	0.58	3.1	11	4.0	205
2.8	1.4	3.2	18	4.5	415
2.9	3.1	3.4	47	5.0	700
3.0	6.2	3.7	112		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.6	1.6	1.8	93	137	1.8	4.2	1.5	1.5	1.7	1.7
2	1.5	1.6	1.6	1.8	90	140	1.9	2.7	1.5	1.7	1.7	1.6
3	1.6	1.8	1.6	1.8	90	185	1.9	3.1	1.4	1.7	1.7	1.5
4	1.5	1.8	1.6	1.9	90	249	1.9	2.7	1.4	1.6	1.7	1.4
5	1.9	1.6	1.8	1.8	93	249	1.9	2.7	1.5	1.7	1.6	1.4
6	1.6	1.6	1.6	1.8	93	253	1.9	2.3	1.5	1.7	1.6	1.3
7	1.6	1.8	1.6	1.8	55	257	1.9	2.2	1.6	1.7	1.6	1.3
8	1.8	1.8	1.6	1.8	2.1	253	3.9	2.3	1.7	1.7	1.6	1.3
9	1.8	1.8	1.6	1.9	1.9	253	5.2	2.1	1.8	1.6	1.7	1.3
10	1.8	1.6	1.6	1.9	1.9	253	2.7	2.1	1.6	1.6	2.0	1.3
11	1.8	1.6	1.6	1.9	100	98	18	2.1	1.6	1.5	1.7	1.5
12	1.8	1.6	1.6	1.9	134	1.6	95	3.0	1.5	1.6	1.7	1.6
13	1.5	1.5	1.8	1.9	73	1.9	284	2.3	1.5	1.6	1.6	1.4
14	1.5	1.5	1.8	1.9	132	1.6	420	2.0	1.5	1.7	1.6	1.3
15	1.5	1.5	1.8	1.9	253	1.6	349	2.1	1.5	1.6	1.5	1.2
16	1.5	1.5	1.8	1.8	322	1.6	440	1.9	1.5	1.3	1.4	1.1
17	1.5	1.5	1.6	1.8	322	1.6	391	1.9	1.4	1.3	1.4	1.1
18	1.4	1.6	1.6	1.8	405	1.6	134	1.9	1.6	1.5	1.4	1.1
19	1.4	1.6	1.9	1.9	554	1.8	168	1.7	1.6	1.5	1.4	1.2
20	1.5	1.8	1.8	2.1	694	1.8	202	1.7	1.5	1.4	1.4	1.8
21	1.4	1.6	1.8	212	543	1.8	195	1.7	1.6	1.5	1.5	1.6
22	1.4	1.6	1.8	401	326	1.8	112	1.7	1.7	1.5	1.6	1.6
23	1.4	1.6	1.6	396	331	1.8	75	1.7	1.6	1.5	1.5	1.5
24	1.6	1.6	1.6	309	326	1.8	70	1.7	1.6	1.5	1.4	1.5
25	1.5	1.6	1.6	230	322	1.8	66	1.7	1.6	1.5	1.4	1.4
26	1.4	1.6	1.6	230	181	1.8	62	1.6	1.7	1.5	1.4	1.4
27	1.5	1.6	1.6	230	140	1.8	68	1.6	1.6	1.5	1.5	1.5
28	1.5	1.6	1.6	156	140	2.3	34	1.7	1.6	1.6	1.5	1.5
29	1.4	1.6	1.6	90	------	1.6	3.1	1.7	1.6	1.6	1.5	1.4
30	1.5	1.6	1.6	90	------	1.6	3.4	1.6	1.6	1.6	1.4	1.5
31	1.5	------	1.6	95	------	1.6	------	1.6	------	1.7	1.5	------
TOTAL	48.1	48.7	51.5	2,476.2	5,907.9	2,361.8	3,214.5	65.3	46.9	48.5	48.2	42.3
MEAN	1.55	1.62	1.66	79.9	211	76.2	107	2.11	1.56	1.56	1.55	1.41
MAX	1.9	1.8	1.9	401	694	257	440	4.2	1.8	1.7	2.0	1.8
MIN	1.4	1.5	1.6	1.8	1.9	1.6	1.8	1.6	1.4	1.3	1.4	1.1
AC-FT	95	97	102	4,910	11,720	4,680	6,380	130	93	96	96	84

CAL YR 1973 TOTAL 3,668.69 MEAN 10.1 MAX 696 MIN .88 AC-FT 7,280
WTR YR 1974 TOTAL 14,359.90 MEAN 39.3 MAX 694 MIN 1.1 AC-FT 28,480

06402000 FALL RIVER AT HOT SPRINGS, S. DAK.

LOCATION.--Lat 43°25'50", long 103°28'33", in NW¼NW¼ sec.24, T.7 S., R.5 E., Fall River County, on left bank at intersection of River Street and University Avenue in Hot Springs and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--137 mi^2 (355 km^2).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,413.20 ft (1,040.343 m) above mean sea level. Prior to June 2, 1939, nonrecording gage at site 300 ft (91 m) upstream at datum 3.00 ft (0.914 m) higher.

AVERAGE DISCHARGE.--37 years, 25.8 ft^3/s (0.731 m^3/s), 18,690 acre-ft/yr (23.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 326 ft^3/s (9.23 m^3/s) July 31, gage height, 3.04 ft (0.927 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Oct. 30, 31, Nov. 2-4.

Period of record: Maximum discharge, 13,100 ft^3/s (371 m^3/s) Sept. 4, 1938, gage height, 18.4 ft (5.61 m), site and datum then in use, from rating curve extended above 51 ft^3/s (1.44 m^3/s) on basis of weir formula and slope-area measurement of peak flow; minimum, 4 ft^3/s (0.11 m^3/s) Sept. 23, 1940.

REMARKS.--Records good. Flow regulated by Coldbrook Reservoir, capacity, 7,200 acre-ft (8.88 hm^3), beginning September 1952, and Cottonwood Springs Lake, capacity, 8,385 acre-ft (10.3 hm^3), since June 1969. Some diversion above station for municipal supply of Hot Springs.

REVISIONS (WATER YEARS).--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	17	23	22	21	22	22	20	24	22	21	20
2	22	16	23	22	21	22	22	20	24	22	20	19
3	22	16	22	22	21	23	22	19	25	22	19	20
4	22	16	23	21	21	22	22	18	25	22	21	20
5	22	18	23	22	21	22	20	18	26	21	19	20
6	23	17	23	22	21	22	19	19	25	22	19	20
7	22	17	23	22	21	21	21	18	25	21	19	20
8	23	17	23	23	21	22	21	19	24	21	20	19
9	23	17	23	23	21	22	20	19	24	21	20	20
10	22	17	23	23	22	22	21	20	22	21	22	19
11	23	18	22	23	21	22	23	21	22	20	21	20
12	22	17	23	23	21	21	21	21	22	21	20	21
13	22	17	23	23	20	21	20	20	22	22	20	21
14	21	18	23	23	20	21	20	20	22	22	19	19
15	21	18	23	23	20	21	20	21	22	22	19	20
16	20	19	25	21	20	20	19	21	22	21	19	21
17	20	19	24	22	20	20	17	21	22	21	19	20
18	20	21	23	22	21	20	17	21	22	23	19	20
19	19	21	22	22	21	21	17	22	22	19	19	21
20	22	22	22	22	21	21	21	21	22	17	19	22
21	22	22	22	22	21	20	17	21	22	19	19	21
22	22	22	22	22	21	21	17	21	22	18	19	21
23	22	22	22	22	21	21	17	22	23	17	19	21
24	27	22	22	22	22	21	20	22	22	18	19	21
25	21	22	22	22	22	21	22	22	23	17	19	20
26	17	22	22	22	22	21	22	22	23	17	19	19
27	17	22	22	21	22	21	21	24	22	18	19	19
28	17	23	22	21	22	21	20	24	22	18	19	19
29	17	22	22	21	------	22	19	23	22	19	19	19
30	16	22	22	21	------	22	20	24	22	19	19	19
31	16	------	22	21	------	22	------	25	------	37	19	------
TOTAL	647	579	701	683	589	661	600	649	687	640	603	601
MEAN	20.9	19.3	22.6	22.0	21.0	21.3	20.0	20.9	22.9	20.6	19.5	20.0
MAX	27	23	25	23	22	23	23	25	26	37	22	22
MIN	16	16	22	21	20	20	17	18	22	17	19	19
AC-FT	1,280	1,150	1,390	1,350	1,170	1,310	1,190	1,290	1,360	1,270	1,200	1,190

CAL YR 1973 TOTAL 7,906 MEAN 21.7 MAX 29 MIN 16 AC-FT 15,680
WTR YR 1974 TOTAL 7,640 MEAN 20.9 MAX 37 MIN 16 AC-FT 15,150

06402500 BEAVER CREEK NEAR BUFFALO GAP, S. DAK.

LOCATION.--Lat 43°27'56", long 103°18'22", in SE¼SE¼ sec.5, T.7 S., R.7 E., Fall River County, on left bank 1.5 mi (2.4 km) south of Buffalo Gap and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi^2 (340 km^2), approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum.

AVERAGE DISCHARGE.--37 years, 7.06 ft^3/s (0.200 m^3/s), 5,110 acre-ft/yr (6.30 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 16 ft^3/s (0.45 m^3/s) Apr. 11, gage height, 4.16 ft (1.268 m); maximum gage height, 4.98 ft (1.518 m) Jan. 13 (backwater from ice); minimum daily discharge, 0.18 ft^3/s July 16.

Period of record: Maximum discharge, 11,700 ft^3/s (331 m^3/s) Sept. 4, 1938, gage height, 16.46 ft (5.017 m), site and datum then in use, from rating curve extended above 11 ft^3/s (0.31 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

Flood in 1927 reached a stage of 18.0 ft (5.49 m).

REMARKS.--Records good except those above 50 ft^3/s (1.42 m^3/s) and those for winter periods, which are poor. Nearly all flow is diverted above station during irrigation season.

REVISIONS (WATER YEARS).--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.9	5.6	9.0	12	11	6.2	8.1	.47	.22	.30	.52
2	8.3	8.3	5.4	8.0	12	11	3.9	6.0	.42	.24	.30	.48
3	8.2	8.5	5.6	8.0	12	11	4.5	6.5	.41	.33	.28	.44
4	8.0	8.0	5.7	8.0	12	11	6.1	5.5	.39	.29	.27	.45
5	8.0	8.0	5.7	8.0	12	11	6.1	8.1	.42	.24	.25	.51
6	7.6	7.0	5.7	8.0	12	11	6.6	8.2	.45	.22	.24	.52
7	7.5	6.6	5.8	9.0	12	11	7.9	8.3	.43	.24	.20	.52
8	7.5	6.0	5.8	8.0	12	8.6	7.8	8.5	.44	.25	.24	.52
9	7.6	5.8	6.0	8.0	12	8.5	8.0	8.5	.58	.26	.25	.52
10	8.0	6.3	6.0	7.0	12	8.5	8.0	9.0	.52	.24	.43	.50
11	8.5	6.1	6.1	7.0	12	8.8	12	4.9	.48	.26	.37	.58
12	8.5	5.8	6.1	8.0	12	7.8	12	.78	.46	.24	.31	.76
13	7.6	5.6	7.0	8.5	12	4.4	11	.72	.45	.24	.30	1.0
14	7.1	5.6	9.8	9.0	12	4.3	10	.64	.43	.22	.27	.65
15	7.3	5.6	10	10	12	4.4	9.3	.63	.42	.22	.28	.82
16	8.5	5.4	10	11	12	3.9	9.3	.59	.41	.18	.28	.63
17	8.5	5.4	11	12	12	4.1	11	.58	.40	.22	.26	.61
18	8.2	5.4	11	11	12	4.0	11	.60	.40	.26	.24	.61
19	6.3	5.4	10	11	12	4.0	9.9	.59	.40	.41	.24	.57
20	6.3	5.6	10	11	12	5.7	10	.56	.37	.28	.24	.66
21	6.6	6.3	11	12	12	6.2	10	.52	.35	.31	.24	.66
22	8.5	9.1	11	12	12	7.1	10	.50	.36	.30	.28	.63
23	8.5	9.2	11	12	12	7.2	10	.51	.34	.25	.30	.62
24	11	9.2	11	12	12	7.8	7.9	.50	.35	.23	.26	.61
25	9.1	9.4	11	12	12	7.5	4.2	.51	.33	.26	.24	.60
26	8.7	9.4	11	12	12	7.7	3.6	.49	.31	.24	.22	.59
27	8.7	9.4	11	12	11	6.9	5.7	.45	.28	.22	.24	.59
28	8.5	9.4	11	12	11	6.8	5.3	.45	.25	.24	.26	.62
29	8.7	9.4	11	12	------	7.3	4.6	.46	.22	.29	.32	.62
30	8.7	6.4	11	12	------	7.3	8.3	.47	.22	.29	.34	.63
31	8.5	------	10	12	------	7.1	------	.44	------	.29	.36	------
TOTAL	251.3	216.5	268.3	311.5	334	232.9	240.2	92.59	11.76	7.98	8.61	18.04
MEAN	8.11	7.22	8.65	10.0	11.9	7.51	8.01	2.99	.39	.26	.28	.60
MAX	11	9.4	11	12	12	11	12	9.0	.58	.41	.43	1.0
MIN	6.3	5.4	5.4	7.0	11	3.9	3.6	.44	.22	.18	.20	.44
AC-FT	498	429	532	618	662	462	476	184	23	16	17	36

CAL YR 1973 TOTAL 2,362.56 MEAN 6.47 MAX 12 MIN .40 AC-FT 4,690
WTR YR 1974 TOTAL 1,993.68 MEAN 5.46 MAX 12 MIN .18 AC-FT 3,950

PEAK DISCHARGE (BASE, 24 FT^3/S).--No peaks above base.

06402600 CHEYENNE RIVER NEAR BUFFALO GAP, S. DAK.

LOCATION.--Lat 43°30'05", long 103°04'23", in SW¼NE¼ sec.29, T.6 S., R.9 E., Custer County, on right bank at right end of highway bridge, 5.8 mi (9.3 km) upstream from Cottonwood Creek and 12 mi (19 km) east of Buffalo Gap.

DRAINAGE AREA.--9,810 mi^2 (25,410 km^2), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE (revised).--Water-stage recorder. Datum of gage is 2,811.45 ft (856.930 m) above mean sea level.

AVERAGE DISCHARGE.--6 years, 116 ft^3/s (3.285 m^3/s), 84,040 acre-ft/yr (104 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 789 ft^3/s (22.3 m^3/s) Feb. 21, gage height, 4.80 ft (1.463 m); maximum gage height, 6.14 ft (1.871 m) Jan. 23 (backwater from ice); minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Dec. 19.

Period of record: Maximum discharge, 17,600 ft^3/s (498 m^3/s) May 25, 1971, gage height, 11.44 ft (3.487 m); minimum daily, 15 ft^3/s (0.42 m^3/s) Dec. 19, 1973.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 34 mi (55 km) upstream, see station 06401000. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6 to Nov. 3, Nov. 7-19, Dec. 8, 12, 13, Feb. 10 to Mar. 3, June 14 to Aug. 3; stage-discharge relation affected by ice Nov. 4-6, 20-22, Dec. 5-7, 9-11, Dec. 14 to Feb. 9, Mar. 20-24)

2.2	27	3.5	209
2.5	39	4.0	368
2.8	64	4.5	576
3.1	109	5.0	831

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	88	69	20	70	206	57	61	50	35	68	78
2	70	90	69	22	75	203	56	61	50	33	54	82
3	70	91	66	20	75	203	58	66	50	34	52	68
4	70	90	66	20	75	262	58	65	49	34	53	63
5	71	90	65	20	70	297	56	63	48	34	52	63
6	72	90	63	20	65	303	55	66	49	32	50	65
7	71	90	65	22	65	303	57	65	48	30	48	64
8	69	85	66	22	70	306	58	62	48	30	48	60
9	68	86	60	20	80	300	56	70	56	29	44	58
10	75	86	60	18	74	300	55	66	55	29	58	58
11	85	93	70	18	72	306	77	64	51	30	64	60
12	93	91	63	25	164	128	90	56	48	30	60	70
13	86	86	62	40	180	74	147	55	48	32	59	71
14	80	84	60	60	130	68	423	55	45	32	58	71
15	78	86	55	85	206	65	355	59	44	34	57	69
16	76	85	40	90	342	64	407	60	43	34	55	64
17	78	86	30	85	368	63	506	61	43	34	49	60
18	79	86	17	80	372	63	295	59	42	35	52	57
19	78	90	15	80	483	63	197	58	42	40	52	54
20	76	85	20	80	625	62	252	59	40	41	55	55
21	78	85	30	75	747	61	271	56	40	41	57	58
22	79	85	40	200	433	60	259	55	42	40	63	57
23	80	86	35	400	382	60	180	56	41	42	64	61
24	86	75	35	400	382	60	167	53	41	43	63	60
25	93	65	35	250	375	60	157	56	40	41	61	54
26	84	68	35	250	365	59	147	55	38	40	61	54
27	78	74	35	250	197	59	132	55	36	42	55	57
28	76	71	30	170	206	58	137	55	38	44	55	59
29	80	72	25	70	------	57	97	52	35	44	60	59
30	84	72	20	70	------	57	64	54	34	45	68	59
31	84	------	20	65	------	59	------	49	------	46	70	------
TOTAL	2,417	2,511	1,421	3,047	6,748	4,289	4,926	1,827	1,334	1,130	1,765	1,868
MEAN	78.0	83.7	45.8	98.3	241	138	164	58.9	44.5	36.5	56.9	62.3
MAX	93	93	70	400	747	306	506	70	56	46	70	82
MIN	68	65	15	18	65	57	55	49	34	29	44	54
AC-FT	4,790	4,980	2,820	6,040	13,380	8,510	9,770	3,620	2,650	2,240	3,500	3,710

CAL YR 1973 TOTAL 27,097 MEAN 74.2 MAX 904 MIN 15 AC-FT 53,750
WTR YR 1974 TOTAL 33,283 MEAN 91.2 MAX 747 MIN 15 AC-FT 66,020

06404000 BATTLE CREEK NEAR KEYSTONE, S. DAK.

LOCATION (revised).--Lat 43°52'21", long 103°20'10", in SW¼SW¼ sec.18, T.2 S., R.7 E., Pennington County, on right bank 70 ft (21 m) upstream from highway culverts, 0.6 mi (1.0 km) downstream from Iron Creek and 4.5 mi (7.2 km) southeast of Keystone.

DRAINAGE AREA.--66 mi^2 (171 km^2).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE (revised).--Nonrecording gage. Altitude of gage is 3,800 ft (1,158 m), from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 70 ft (21 km) downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 30 ft (9 m) downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage at present site and datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at site 180 ft (55 m) upstream at present datum.

AVERAGE DISCHARGE.--14 years (1945-46, 1961-74), 11.0 ft^3/s (0.312 m^3/s), 7,970 acre-ft/yr (9.83 hm^3/yr); median of yearly mean discharges, 11 ft^3/s (0.31 m^3/s), 8,000 acre-ft/yr (9.8 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 35 ft^3/s (0.99 m^3/s) July 19; maximum gage height, 3.97 ft (1.210 m) Aug. 13 (backwater from construction dam); no flow for many days.

Period of record: Maximum discharge, 26,200 ft^3/s (742 m^3/s) June 9, 1972, gage height, 14.5 ft (4.42 m), from floodmarks, site then in use, from rating curve extended above 550 ft^3/s (15.6 m^3/s) on basis of slope-area measurement of peak flow; no flow for many days in 1961, 1962, 1970, 1974.

REMARKS.--Records good prior to Nov. 28, and poor thereafter.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.5	3.0	0	1.0	3.0	2.5	2.7	2.3	.20	.20	1.0
2	1.4	2.7	3.0	0	1.2	3.0	2.5	2.9	2.1	.50	.50	1.0
3	1.3	2.5	2.5	0	1.2	3.0	4.0	2.9	2.1	1.5	.20	.60
4	1.4	1.5	1.0	0	1.5	3.0	3.5	2.9	2.1	1.0	0	.50
5	1.3	1.0	.50	0	1.2	3.4	3.0	2.9	2.1	.50	0	.10
6	1.3	1.0	.60	0	.80	3.7	3.0	2.6	2.3	.30	0	0
7	1.2	1.5	.70	0	.80	2.7	3.0	2.9	2.3	0	0	0
8	1.1	2.0	.80	0	1.5	2.4	3.0	3.2	2.3	0	.20	0
9	2.1	2.7	.60	0	2.0	3.0	3.4	3.2	6.5	0	.30	0
10	2.5	2.7	.60	0	2.4	2.7	4.0	3.2	6.2	0	.20	0
11	2.3	3.4	1.0	0	2.5	3.0	4.9	3.2	5.8	0	.32	0
12	3.0	4.0	1.2	0	2.2	3.0	4.9	3.2	4.2	0	.20	0
13	3.2	4.3	1.2	.50	2.0	2.7	4.5	3.2	5.3	0	0	0
14	3.0	3.6	1.6	1.0	2.0	2.1	4.0	3.2	1.8	0	0	0
15	2.5	3.2	1.6	2.0	2.0	3.4	3.7	3.2	.70	0	0	0
16	2.3	3.0	1.8	2.0	2.2	3.0	3.5	3.2	.60	.20	0	0
17	2.1	3.0	2.0	2.0	2.2	3.4	3.5	3.2	.50	.60	0	0
18	2.1	2.7	1.5	1.6	1.0	3.0	3.5	3.2	.38	3.0	0	0
19	1.8	2.3	1.5	2.0	0	2.7	3.5	3.2	.32	5.0	0	0
20	1.9	2.7	1.5	1.5	0	2.7	4.0	3.2	.32	2.5	0	0
21	1.7	1.7	1.5	1.2	0	2.0	5.1	3.2	.32	1.5	0	0
22	1.7	1.5	.80	1.0	0	2.0	4.9	3.2	.26	1.0	0	0
23	1.7	1.5	.60	1.2	0	1.5	4.4	3.0	.26	5.0	0	0
24	1.7	1.3	.40	1.4	0	2.0	3.4	3.0	.26	3.0	0	0
25	1.8	2.5	.40	1.5	0	2.5	3.4	3.0	.26	2.0	0	0
26	1.7	2.5	.20	1.4	.50	2.2	3.4	3.0	.26	1.5	0	0
27	1.8	2.5	0	1.4	1.5	2.2	3.4	3.0	.16	1.5	0	0
28	1.7	2.5	0	1.5	2.0	2.0	3.0	2.9	.04	1.0	0	0
29	1.8	2.8	0	1.5	------	2.0	2.7	2.9	.02	1.0	0	0
30	1.8	3.0	0	1.2	------	2.0	2.7	2.9	0	.60	.50	0
31	1.8	------	0	1.0	------	2.0	------	2.9	------	.20	.50	------
TOTAL	58.5	74.1	32.10	26.90	33.70	81.3	108.3	94.4	52.06	33.60	3.12	3.20
MEAN	1.89	2.47	1.04	.87	1.20	2.62	3.61	3.05	1.74	1.08	.10	.11
MAX	3.2	4.3	3.0	2.0	2.5	3.7	5.1	3.2	6.5	5.0	.50	1.0
MIN	1.1	1.0	0	0	0	1.5	2.5	2.6	0	0	0	0
AC-FT	116	147	64	53	67	161	215	187	103	67	6.2	6.3

CAL YR 1973 TOTAL 3,083.96 MEAN 8.45 MAX 284 MIN 0 AC-FT 6,120
WTR YR 1974 TOTAL 601.28 MEAN 1.65 MAX 6.5 MIN 0 AC-FT 1,190

PEAK DISCHARGE (BASE, 100 FT^3/S).--No peaks above base.

06405000 GRACE COOLIDGE CREEK NEAR CUSTER, S. DAK.

LOCATION.--Lat 43°45'40", long 103°21'42", in SE¼NE¼ sec.26, T.3 S., R.6 E., Custer County, on right bank at U.S. Highway Alternate 16, 1.7 mi (2.7 km) southwest of junction U.S. Highways 36 and Alternate 16 and 11.5 mi (18.5 km) east of Custer.

DRAINAGE AREA.--25.3 mi^2 (65.5 km^2).

PERIOD OF RECORD.--July 1945 to July 1947 (published as Squaw Creek near Custer), June 1967 to current year.

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 4,100 ft (1,250 m), from topographic map. Prior to July 31, 1947, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. June 1967 to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher.

AVERAGE DISCHARGE.--8 years (1945-46, 1967-74), 3.30 ft^3/s (0.093 m^3/s), 2,390 acre-ft/yr (2.95 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 5.6 ft^3/s (0.159 m^3/s) Oct. 13, gage height, 1.43 ft (0.436 m); no flow for many days.

Period of record: Maximum discharge, 709 ft^3/s (20.1 m^3/s) June 10, 1972, gage height, 4.64 ft (1.414 m), present datum, from rating curve extended above 80 ft^3/s (2.27 m^3/s) on basis of slope-area measurement of peak flow; no flow for many days most years.

Flood of June 12, 1967, reached a stage of 2.45 ft (0.747 m), present datum, from floodmarks, discharge, 151 ft^3/s (4.28 m^3/s).

REMARKS.--Records fair except those for winter periods, which are poor. Considerable losses in sinkholes in vicinity of gage.

REVISIONS (WATER YEAR).--WRD S.Dak. 1971: 1970(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	.45	2.5				0					0
2	1.6	.57	2.5				0					0
3	.17	.88	2.0				0					0
4	1.6	.80	1.8				0					0
5	1.6	.70	1.4				0					.16
6	2.0	.90	1.4				0					.51
7	2.0	.90	1.5				0					.63
8	1.8	.90	1.8				0					.69
9	2.0	.80	1.6				0					1.1
10	2.4	1.1	1.6				0					1.3
11	3.4	1.1	1.7				.14					1.3
12	4.1	1.1	1.7				.22					1.3
13	5.6	1.0	1.4				.16					1.3
14	4.1	.19	1.2				.22					1.3
15	2.0	.63	1.0				.16					1.3
16	1.6	.63	.50				.10					1.3
17	1.6	.88	.05				.10					1.1
18	1.8	1.0	0				.04					.63
19	1.1	1.5	0				0					.51
20	.45	2.0	0				0					.45
21	.22	2.0	0				0					.03
22	.16	2.0	0				0					0
23	.06	2.0	0				0					0
24	.06	2.0	0				0					0
25	.16	2.0	0				0					0
26	.28	2.0	0				0					0
27	.16	1.8	0				0					0
28	.16	2.0	0				0					0
29	.22	2.2	0		------		0					0
30	.28	2.5	0		------		0					0
31	.22	------	0		------		------		------			------
TOTAL	44.70	38.53	25.65	0	0	0	1.14	0	0	0	0	14.91
MEAN	1.44	1.28	.83	0	0	0	.038	0	0	0	0	.50
MAX	5.6	2.5	2.5	0	0	0	.22	0	0	0	0	1.3
MIN	.06	.19	0	0	0	0	0	0	0	0	0	0
AC-FT	89	76	51	0	0	0	2.3	0	0	0	0	30

CAL YR 1973 TOTAL 1,286.29 MEAN 3.52 MAX 38 MIN 0 AC-FT 2,550
WTR YR 1974 TOTAL 124.93 MEAN .34 MAX 5.6 MIN 0 AC-FT 248

PEAK DISCHARGE (BASE, 25 FT^3/S).--No peaks above base.

06406000 BATTLE CREEK AT HERMOSA, S. DAK.

LOCATION.--Lat 43°49'41", long 103°11'44", in NE¼SW¼SW¼ sec.32, T.2 S., R.8 E., Custer County, on right bank 50 ft (15 m) downstream from Chicago and North Western Transportation Co. bridge, 0.8 mi (1.3 km) south of Hermosa and 2.9 mi (4.7 km) downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi^2 (461 km^2).

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,290 ft (1,000 m), from topographic map. Nonrecording gage, August to December 1903, at site 50 ft (15 m) upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi (0.8 km) upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft (52 m) downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft (24 m) downstream at present datum.

AVERAGE DISCHARGE.--25 years, 9.41 ft^3/s (0.266 m^3/s), 6,820 acre-ft/yr (8.41 hm^3/yr); median of yearly mean discharges, 6.1 ft^3/s (0.17 m^3/s), 4,400 acre-ft/yr (5.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 44 ft^3/s (1.25 m^3/s) Aug. 23, gage height, 3.09 ft (0.942 m); minimum daily, 0.42 ft^3/s (0.012 m^3/s) Sept. 28.

Period of record: Maximum discharge, 21,400 ft^3/s (606 m^3/s) June 10, 1972, gage height, 17.72 ft (5.401 m), from floodmarks, from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow; no flow at times in 1954-57, 1959.

REMARKS.--Records good except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	9.1	7.0	2.5	5.9	5.4	4.9	5.9	4.6	1.5	2.0	3.3
2	5.8	8.7	7.0	3.0	6.7	6.1	4.8	7.0	4.0	2.2	2.7	3.5
3	5.8	8.2	7.0	3.0	6.7	6.5	7.4	6.5	2.5	3.6	2.2	3.0
4	5.6	8.3	7.0	3.0	6.4	6.1	6.4	6.7	2.3	3.2	2.2	2.8
5	5.8	7.6	7.0	3.0	5.9	6.1	5.1	6.5	2.3	2.7	1.1	2.0
6	6.1	8.5	6.3	3.0	4.6	6.3	5.4	6.1	4.0	2.2	1.2	1.8
7	6.2	8.7	7.3	3.5	5.7	6.7	5.7	4.4	3.8	1.8	1.2	1.8
8	5.9	8.4	7.3	3.0	5.0	6.3	5.6	4.1	6.1	1.6	1.8	1.6
9	8.4	8.4	6.4	2.8	5.4	6.1	4.9	4.4	6.2	1.1	2.2	1.1
10	10	8.4	6.4	2.5	5.7	5.9	4.8	4.4	5.6	1.3	1.6	1.6
11	9.0	8.7	7.8	2.0	5.7	6.1	7.8	4.8	5.0	1.2	2.2	1.5
12	9.5	8.7	7.4	3.0	5.7	5.4	9.5	4.0	4.0	1.2	2.0	1.5
13	9.2	8.2	6.5	4.0	5.4	5.4	8.1	4.4	2.2	1.1	1.3	2.0
14	8.4	8.0	6.0	5.5	5.4	5.3	7.4	5.6	2.3	1.1	1.1	1.6
15	8.0	8.2	6.0	6.0	5.9	5.2	6.7	6.1	2.3	.64	.75	1.6
16	7.7	8.4	6.0	6.5	5.4	5.1	5.4	6.3	2.5	.86	.97	1.6
17	7.4	8.0	6.5	6.0	5.2	5.4	5.2	6.1	2.3	1.1	1.1	2.0
18	7.4	6.7	6.0	5.8	5.0	5.9	5.2	5.9	2.7	5.7	.97	1.8
19	7.2	6.7	5.8	5.8	5.0	5.7	5.0	6.3	3.0	6.3	1.2	2.0
20	7.2	7.0	5.8	6.1	5.2	5.7	5.0	6.1	3.3	3.3	1.1	1.7
21	7.2	7.4	6.0	6.7	5.9	4.3	4.8	5.6	3.0	2.3	1.6	1.5
22	7.2	7.3	6.2	6.5	5.9	4.6	5.0	5.2	3.6	2.0	.42	.82
23	7.4	7.2	6.0	6.5	6.3	3.8	4.8	5.4	3.6	6.8	3.2	2.1
24	7.7	7.4	5.5	6.3	5.0	4.3	4.6	5.0	3.8	3.6	1.2	1.3
25	7.6	7.5	5.5	6.5	6.1	5.2	4.3	4.0	3.3	2.8	1.2	1.4
26	7.5	7.4	5.5	6.5	7.0	4.7	4.8	3.8	2.5	2.5	.75	1.5
27	7.4	7.1	5.0	6.4	6.3	4.8	5.0	3.3	2.3	2.3	2.0	.72
28	7.6	7.0	4.5	6.1	5.6	4.4	4.6	4.0	2.3	2.3	.97	.42
29	8.4	7.4	4.0	6.1	------	4.4	5.0	5.2	1.8	2.2	.86	1.1
30	8.4	7.0	3.5	6.2	------	4.3	5.5	6.5	1.2	1.6	2.5	2.5
31	8.2	------	3.0	6.4	------	4.4	------	5.2	------	1.8	2.2	------
TOTAL	231.2	235.6	187.2	150.2	160.0	165.9	168.7	164.8	98.4	73.90	47.79	53.16
MEAN	7.46	7.85	6.04	4.85	5.71	5.35	5.62	5.32	3.28	2.38	1.54	1.77
MAX	10	9.1	7.8	6.7	7.0	6.7	9.5	7.0	6.2	6.8	3.2	3.5
MIN	5.6	6.7	3.0	2.0	4.6	3.8	4.3	3.3	1.2	.64	.42	.42
AC-FT	459	467	371	298	317	329	335	327	195	147	95	105

CAL YR 1973 TOTAL 4,268.50 MEAN 11.7 MAX 181 MIN 3.0 AC-FT 8,470
WTR YR 1974 TOTAL 1,736.85 MEAN 4.76 MAX 10 MIN .42 AC-FT 3,450

PEAK DISCHARGE (BASE, 150 FT^3/S).--No peaks above base.

06408500 SPRING CREEK NEAR HERMOSA, S. DAK.

LOCATION.--Lat 43°56'31", long 103°09'32", in SE¼SE¼SE¼ sec.21, T.1 S., R.8 E., Pennington County, at left upstream end of county highway bridge, 0.3 mi (0.5 km) upstream from Chicago and North Western Railway Company bridge and 7.5 mi (12.1 km) north of Hermosa.

DRAINAGE AREA.--199 mi^2 (515 km^2).

PERIOD OF RECORD.--July 1949 to current year.

GAGE (revised).--Water-stage recorder. Datum of gage is 3,265.30 ft (995.263 m) above mean sea level. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft (64.0 m) upstream at datum 2.00 ft (0.610 m) higher. Mar. 31, 1973, to Sept. 30, 1973, water-stage recorder at present site at datum 2.00 ft (0.610 m) higher.

AVERAGE DISCHARGE.--25 years, 5.98 ft^3/s (0.169 m^3/s), 4,330 acre-ft/yr (5.34 hm^3/yr); median of yearly mean discharges, 1.6 ft^3/s (0.045 m^3/s), 1,200 acre-ft/yr (1.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 4.3 ft^3/s (0.122 m^3/s) Aug. 14; maximum gage height, 3.73 ft (1.137 m) Jan. 13 (backwater from ice); no flow for many days July to September.

Period of record: Maximum discharge, 13,400 ft^3/s (379 m^3/s) June 10, 1972, gage height, 13.12 ft (3.999 m), site and datum then in use (corrected) from floodmarks, from rating curve extended above 350 ft^3/s (9.91 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

REMARKS.--Records good except those for winter periods, which are poor. Considerable loss in sinkholes in reach 10 to 15 mi (16 to 24 km) above station. Flow slightly regulated by Lake Sheridan, capacity, 12,657 acre-ft (15.6 hm^3), 24 mi (39 km) above station.

REVISIONS (WATER YEARS).--WSP 1729: 1950.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.2	2.4	1.0	1.1	1.1	1.2	1.0	.88	.22	.06	.14
2	2.0	2.0	2.6	1.0	1.2	1.0	1.2	1.3	.86	.49	.07	.18
3	2.0	2.0	2.4	1.0	1.3	1.0	1.3	1.2	.82	.93	0	0
4	1.7	2.0	2.4	1.0	1.4	1.0	1.5	1.2	.70	.69	0	0
5	1.8	2.0	2.4	1.0	1.4	.80	1.5	1.1	.60	.68	.05	0
6	1.8	2.0	2.2	1.0	1.2	.80	1.5	1.2	.76	.16	0	.01
7	1.9	2.3	2.3	1.0	1.1	.80	1.4	1.2	.68	.23	0	.07
8	1.6	2.3	2.3	1.0	1.1	1.1	1.4	1.1	.99	.20	1.2	.20
9	1.8	2.1	2.4	1.0	1.2	1.1	1.3	1.2	1.6	.39	1.1	.40
10	1.7	2.1	2.5	1.0	1.4	.96	1.4	1.2	1.2	.09	1.7	.05
11	1.7	2.3	2.5	.50	1.5	1.1	2.6	1.0	1.1	0	1.8	.05
12	1.8	2.3	2.4	.80	1.4	1.2	1.8	.80	.74	0	1.6	.40
13	1.8	2.3	2.2	.90	1.3	1.2	1.6	.96	.54	0	1.7	1.2
14	1.8	2.3	2.2	1.0	1.2	.99	1.6	.73	.72	0	3.2	.80
15	1.8	2.3	2.2	1.5	1.5	.92	1.4	.79	.71	0	2.2	.40
16	1.6	2.3	2.2	2.0	1.8	.87	1.4	.77	.62	0	2.0	.03
17	1.7	2.3	2.2	1.7	2.0	1.1	1.4	.74	.49	.11	1.7	0
18	1.8	2.3	2.0	1.6	1.8	1.2	1.2	1.0	.67	1.4	1.3	0
19	1.6	2.2	1.5	1.6	1.9	.94	1.2	1.1	.65	1.1	.74	0
20	1.7	2.0	1.6	1.6	2.0	.87	1.4	.93	.57	.53	.06	0
21	1.8	2.2	1.7	1.4	1.9	1.1	1.0	.81	.79	.34	0	0
22	1.7	2.3	1.8	1.4	1.7	1.0	1.2	.73	1.1	.15	0	0
23	1.6	2.4	2.0	1.4	1.7	1.0	1.2	.70	.89	.03	.08	0
24	1.7	2.4	1.9	1.5	1.5	1.0	1.2	.76	.79	0	1.1	0
25	1.9	2.3	1.8	1.6	1.5	1.1	1.4	.84	.91	0	1.0	0
26	1.8	2.3	1.6	1.6	1.5	1.0	1.2	.74	.87	0	.01	0
27	1.8	2.4	1.4	1.6	1.3	1.3	1.2	.71	.39	0	0	0
28	1.8	2.5	1.3	1.6	.90	1.3	1.0	1.0	.48	0	0	0
29	2.0	2.6	1.2	1.6	------	1.2	1.0	.96	.25	0	0	0
30	1.9	2.5	1.1	1.2	------	1.1	1.0	1.2	.22	0	0	0
31	2.0	------	1.0	1.0	------	1.2	------	.68	------	.03	0	------
TOTAL	55.5	67.5	61.7	39.10	40.80	32.35	40.7	29.65	22.59	7.77	22.67	3.93
MEAN	1.79	2.25	1.99	1.26	1.46	1.04	1.36	.96	.75	.25	.73	.13
MAX	2.0	2.6	2.6	2.0	2.0	1.3	2.6	1.3	1.6	1.4	3.2	1.2
MIN	1.6	2.0	1.0	.50	.90	.80	1.0	.68	.22	0	0	0
AC-FT	110	134	122	78	81	64	81	59	45	15	45	7.8

CAL YR 1973 TOTAL 1,402.50 MEAN 3.84 MAX 56 MIN 1.0 AC-FT 2,780
WTR YR 1974 TOTAL 424.26 MEAN 1.16 MAX 3.2 MIN 0 AC-FT 842

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, S. DAK.
(Hydrologic bench-mark station)

LOCATION.--Lat 44°00'49", long 103°49'48", in SW¼ sec.25, T.1 N., R.2 E., Pennington County, on right bank 50 ft (15 m) downstream from highway bridge, 250 ft (76 m) downstream from South Fork Castle Creek, 600 ft (183 m) upstream from high-water line of Deerfield Reservoir, 2.5 mi (4.0 km) southwest of Deerfield Dam, and 14 mi (23 km) northwest of Hill City.

DRAINAGE AREA.--83 mi^2 (215 km^2), approximately.

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield".

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 5,910 ft (1,800 m), from reservoir elevation. Prior to Aug. 31, 1948, nonrecording gage at site 50 ft (15 m) upstream at datum 2.05 ft (0.625 m) higher.

AVERAGE DISCHARGE.--26 years, 10.0 ft^3/s (0.283 m^3/s), 7,240 acre-ft/yr (8.93 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, about 37 ft^3/s (1.05 m^3/s) Mar. 28; maximum gage height, 3.93 ft (1.198 m) Jan. 15 (backwater from ice); minimum daily discharge, 5.6 ft^3/s (0.159 m^3/s) Sept. 11.

Period of record: Maximum discharge, 1,120 ft^3/s (31.7 m^3/s) May 22, 1952, gage height, 5.81 ft (1.771 m), from rating curve extended above slope-area measurement at gage height, 5.67 ft (1.728 m); minimum, 1.2 ft^3/s (0.034 m^3/s) Apr. 25, 1969; minimum gage height, 1.35 ft (0.411 m) Nov. 12, 1949, Feb. 19, 1954, Mar. 7, 1957, Mar. 29, 1961.

REMARKS.--Records good except those for winter periods, which are poor. Recording rain gage located at Deerfield Dam 2.5 mi (4.0 km) northeast of station. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1917: 1952(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 3-9, Nov. 19 to Mar. 3, Mar. 15-29)

1.5	4.6
1.8	11
2.1	21

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	9.0	7.8	8.0	8.5	16	13	10	6.8	9.3	10
2	11	11	9.2	7.8	8.0	11	14	14	9.8	7.2	9.3	10
3	10	11	9.0	7.5	8.0	12	13	14	9.8	9.6	9.0	9.3
4	10	11	8.8	7.8	8.2	10	13	14	9.6	7.9	9.0	8.8
5	11	10	8.4	7.8	8.0	11	13	12	9.8	7.7	9.0	8.8
6	11	11	8.4	7.8	8.0	11	13	12	9.8	7.9	9.0	8.8
7	11	11	8.6	8.0	8.0	12	13	12	10	8.1	9.0	8.8
8	11	11	8.8	7.8	8.0	13	12	12	11	7.9	10	8.8
9	11	12	9.2	7.6	8.5	13	12	12	11	7.9	9.0	9.0
10	11	13	9.4	7.6	8.5	12	13	12	10	7.9	15	7.7
11	11	13	10	7.8	9.0	14	12	12	10	7.9	11	5.6
12	11	14	9.8	8.0	9.0	14	13	11	9.8	8.1	9.8	7.0
13	11	13	8.6	9.0	9.0	15	12	12	9.6	8.4	9.8	7.7
14	11	13	8.6	9.5	9.0	14	12	11	9.6	8.4	9.6	7.7
15	11	12	8.4	10	9.0	10	12	11	9.6	8.4	9.3	7.9
16	12	13	8.4	10	9.5	9.5	13	11	9.3	8.6	9.0	8.1
17	12	12	8.6	11	10	13	14	11	9.3	9.3	9.0	8.1
18	12	9.5	8.0	10	10	16	13	11	9.0	13	8.8	8.1
19	12	8.5	8.0	10	10	12	15	11	9.0	11	8.8	8.4
20	12	7.5	8.0	10	9.5	9.5	19	11	8.1	9.6	9.0	8.6
21	12	7.7	8.4	9.5	9.5	10	16	11	6.2	10	8.8	8.4
22	12	8.0	8.6	9.0	9.5	12	15	10	6.2	9.8	8.8	7.9
23	12	8.0	8.8	9.0	8.5	11	14	10	6.2	9.3	8.8	8.1
24	13	7.8	8.6	9.2	7.4	10	15	10	6.4	9.0	8.8	8.4
25	12	7.8	8.6	9.5	8.0	12	14	11	6.4	9.8	8.4	8.6
26	12	7.8	8.6	9.2	8.4	13	16	11	6.6	9.6	8.4	8.6
27	13	7.8	8.6	9.0	8.4	14	15	10	6.2	9.3	8.4	8.6
28	13	8.5	8.4	9.0	8.0	18	14	11	6.2	9.3	8.4	8.6
29	13	9.0	8.0	9.0	------	20	13	11	6.6	9.3	9.0	8.4
30	13	8.8	7.5	8.5	------	19	13	11	6.8	9.3	8.8	8.4
31	13	------	7.5	8.0	------	20	------	11	------	9.6	8.8	------
TOTAL	361	309.7	266.8	271.7	242.9	399.5	412	356	257.9	275.9	287.1	251.2
MEAN	11.6	10.3	8.61	8.76	8.68	12.9	13.7	11.5	8.60	8.90	9.26	8.37
MAX	13	14	10	11	10	20	19	14	11	13	15	10
MIN	10	7.5	7.5	7.5	7.4	8.5	12	10	6.2	6.8	8.4	5.6
AC-FT	716	614	529	539	482	792	817	706	512	547	569	498

CAL YR 1973 TOTAL 4,419.5 MEAN 12.1 MAX 26 MIN 3.5 AC-FT 8,770
WTR YR 1974 TOTAL 3,691.7 MEAN 10.1 MAX 20 MIN 5.6 AC-FT 7,320

PEAK DISCHARGE (BASE, 100 FT^3/S).--No peaks above base.

06409500 DEERFIELD RESERVOIR NEAR HILL CITY, S. DAK.

LOCATION.--Lat 44°01'46", long 103°47'09", in NE¼SW¼ sec.20, T.1 N., R.3 E., at dam on Castle Creek, 0.4 mi (0.6 km) upstream from Dutchman Creek and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--95 mi^2 (246 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year. Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 15,169 acre-ft (18.7 hm^3) Apr. 5, elevation, 5,908.04 ft (1,800.801 m); minimum, 12,373 acre-ft (15.3 hm^3) Oct. 25, elevation, 5,900.91 ft (1,798.597 m).

Period of record: Maximum contents observed, 15,340 acre-ft (18.9 hm^3) May 22, 1952, elevation, 5,908.50 ft (1,800.911 m), from capacity table extended above elevation 5,908.00 ft (1,800.758 m), crest of spillway; minimum observed, 5 acre-ft (6,160 m^3) Oct. 2, 1959, elevation, 5,839.10 ft (1,779.758 m).

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 4, 1945; dam completed in 1947. Usable capacity, 15,153 acre-ft (18.7 hm^3) between elevations 5,839 ft (1,779.7 m), lowest outlet, and 5,908 ft (1,800.8 m), crest of spillway. Dead storage below elevation 5,839 ft (1,779.7 m), 565 acre-ft (0.697 hm^3). Figures given herein represent usable contents. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	5,902.52	12,977	-
Oct. 31	5,901.17	12,469	-508
Nov. 30	5,902.31	12,897	+428
Dec. 31	5,903.50	13,352	+455
CAL YR 1973	-	-	+188
Jan. 31	5,904.78	13,851	+499
Feb. 28	5,905.84	14,272	+421
Mar. 31	5,907.89	15,107	+835
Apr. 30	5,907.87	15,099	-8
May 31	5,906.99	14,737	-362
June 30	5,906.22	14,425	-312
July 31	5,906.10	14,376	-49
Aug. 31	5,905.25	14,037	-339
Sept.30	5,904.34	13,679	-358
WTR YR 1974	-	-	+702

06410000 CASTLE CREEK BELOW DEERFIELD DAM, S. DAK.

LOCATION.--Lat 44°01'45", long 103°46'53", in NW¼SE¼ sec.20, T.1 N., R.3 E., Pennington County, on left bank 200 ft (61 m) upstream from Dutchman Creek, 1,100 ft (335 m) downstream from Deerfield Dam, and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft (1,763.122 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft (122 m) downstream at datum 0.23 ft (0.070 m) higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft (168 m) downstream at datum 1.77 ft (0.540 m) lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft (91 m) upstream at datum 4.0 ft (1.22 m) higher.

AVERAGE DISCHARGE.--28 years, 10.3 ft^3/s (0.292 m^3/s), 7,460 acre-ft/yr (9.20 hm^3/yr).

EXTREMES.--Current year: Maximum daily discharge, 26 ft^3/s (0.74 m^3/s) Oct. 2, 3; minimum daily, 2.0 ft^3/s (0.057 m^3/s) Nov. 20-23, 26-28, 30, Dec. 7.

Period of record: Maximum daily discharge, 200 ft^3/s (5.66 m^3/s) May 22, 1952; maximum gage height, 3.87 ft (1.180 m) May 23, 1952 (backwater from spillway overflow), site and datum then in use; no flow at times in 1948, 1950-60.

REMARKS.--Records good. Flow completely regulated by Deerfield Reservoir 1,100 ft (335 m) upstream. (See station 06409500.)

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	2.7	2.2	2.4	2.5	2.3	3.1	14	14	10	11	16
2	26	2.8	2.2	2.4	2.5	2.4	3.3	18	14	7.4	11	16
3	26	2.8	2.2	2.4	2.5	2.3	5.3	21	14	7.5	11	16
4	25	2.8	2.2	2.3	2.6	2.3	6.6	20	14	7.5	11	15
5	23	2.8	2.2	2.3	2.5	2.3	14	20	14	7.5	11	15
6	21	2.9	2.2	2.2	2.7	2.2	18	20	14	7.4	11	15
7	21	2.9	2.0	2.3	2.7	2.3	16	20	12	7.5	12	15
8	21	2.9	2.2	2.3	2.8	2.4	15	20	12	7.3	11	15
9	21	2.9	2.2	2.2	2.7	2.3	15	20	12	7.3	11	15
10	21	2.7	2.3	2.2	2.8	2.4	15	20	12	7.3	12	14
11	21	2.5	2.5	2.2	2.8	2.3	15	20	12	7.4	12	15
12	21	2.3	2.5	2.3	2.8	2.3	15	21	12	7.5	12	14
13	20	2.4	2.5	2.3	2.6	2.4	15	20	12	7.3	11	10
14	20	2.3	2.4	2.4	2.6	2.4	14	20	12	7.2	11	5.2
15	19	2.2	2.5	2.4	2.6	2.3	14	20	11	7.3	12	5.4
16	19	2.2	2.5	2.2	2.7	2.4	14	17	12	7.3	12	5.2
17	18	2.1	2.4	2.2	2.6	2.4	14	14	12	7.4	12	5.4
18	18	2.1	2.4	2.2	2.5	2.6	14	14	12	7.5	11	5.2
19	17	2.1	2.4	2.3	2.4	2.5	15	14	12	7.3	12	5.4
20	17	2.0	2.3	2.2	2.2	2.5	16	14	12	7.3	12	5.2
21	17	2.0	2.2	2.3	2.2	2.5	16	14	12	7.4	12	5.2
22	16	2.0	2.2	2.3	2.3	2.5	16	15	12	7.3	14	5.2
23	16	2.0	2.2	2.4	2.2	2.5	16	15	12	7.4	15	5.0
24	16	2.1	2.2	2.4	2.2	2.5	16	15	12	7.4	15	5.0
25	11	2.1	2.2	2.4	2.2	2.6	16	15	12	9.2	15	5.0
26	2.8	2.0	2.3	2.4	2.2	2.6	16	15	12	11	15	7.9
27	2.6	2.0	2.3	2.4	2.2	2.7	18	14	11	11	15	11
28	2.5	2.0	2.3	2.3	2.3	2.7	15	14	12	11	15	10
29	2.5	2.1	2.4	2.4	------	2.9	15	15	12	11	15	11
30	2.6	2.0	2.4	2.4	------	3.0	15	14	11	11	16	10
31	2.7	------	2.4	2.4	------	3.1	------	14	------	11	16	------
TOTAL	511.7	70.7	71.4	71.8	69.9	76.9	416.3	527	369	254.9	392	303.3
MEAN	16.5	2.36	2.30	2.32	2.50	2.48	13.9	17.0	12.3	8.22	12.6	10.1
MAX	26	2.9	2.5	2.4	2.8	3.1	18	21	14	11	16	16
MIN	2.5	2.0	2.0	2.2	2.2	2.2	3.1	14	11	7.2	11	5.0
AC-FT	1,010	140	142	142	139	153	826	1,050	732	506	778	602

CAL YR 1973 TOTAL 4,305.7 MEAN 11.8 MAX 35 MIN 2.0 AC-FT 8,540
WTR YR 1974 TOTAL 3,134.9 MEAN 8.59 MAX 26 MIN 2.0 AC-FT 6,220

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, S. DAK.

LOCATION.--Lat 44°05'05", long 103°34'48", in SW¼SE¼ sec.36, T.2 N., R.4 E., Pennington County, on right bank 0.8 mi (1.3 km) west of Silver City and 3.0 mi (4.8 km) downstream from Slate Creek.

DRAINAGE AREA.--292 mi^2 (756 km^2).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft (1,408.176 m) above mean sea level (Bureau of Reclamation bench mark).

AVERAGE DISCHARGE.--21 years, 40.5 ft^3/s (1.147 m^3/s), 29,340 acre-ft/yr (36.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 54 ft^3/s (1.53 m^3/s) Apr. 30; maximum gage height, 6.33 ft (1.929 m) Jan. 14 (backwater from ice); minimum daily discharge, 7.0 ft^3/s (0.198 m^3/s) Jan. 11.

Period of record: Maximum discharge, 2,060 ft^3/s (583 m^3/s) May 15, 1965, gage height, 10.44 ft (3.182 m); from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft^3/s (0.11 m^3/s) Jan. 20, 1962.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Deerfield Reservoir on Castle Creek (see station 06409500).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 4-8, 20-28, Dec. 4 to Mar. 26)

4.3	14
4.5	28
4.8	60

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	22	25	9.0	10	16	27	39	33	20	20	31
2	38	19	25	11	10	15	26	40	31	23	20	33
3	38	19	22	10	10	14	25	43	30	34	21	29
4	38	18	22	11	11	13	25	43	29	26	20	27
5	40	16	20	10	10	14	29	42	30	21	20	26
6	36	18	25	12	9.0	14	38	42	31	19	18	26
7	35	20	25	15	9.0	13	42	42	30	19	18	26
8	34	23	25	12	10	15	38	41	32	19	25	25
9	37	23	24	10	12	13	38	43	32	19	24	25
10	38	23	30	8.0	12	11	39	42	31	19	35	24
11	37	25	40	7.0	14	10	41	42	30	18	34	25
12	37	26	28	8.0	14	11	39	40	28	16	27	26
13	37	26	25	15	13	10	40	40	27	16	26	26
14	37	24	23	16	12	10	38	40	26	16	25	21
15	36	23	23	17	13	9.0	40	40	26	16	23	16
16	36	21	22	17	14	10	40	39	25	16	22	15
17	36	22	22	18	14	11	43	37	24	28	21	15
18	35	22	20	17	13	9.0	43	36	23	25	20	14
19	35	22	18	18	13	8.0	45	34	22	32	20	14
20	35	20	15	16	13	8.0	51	33	21	24	19	14
21	35	20	16	14	13	12	48	33	21	26	19	14
22	35	20	17	12	14	10	46	32	23	26	20	14
23	35	20	15	13	12	10	44	32	23	23	23	14
24	35	20	15	14	12	12	43	32	23	22	27	14
25	37	20	15	15	14	15	42	32	22	22	25	14
26	31	25	15	14	16	20	44	34	21	22	25	14
27	23	28	14	15	15	32	48	33	20	22	24	16
28	21	30	14	15	15	31	44	35	20	20	25	20
29	22	26	13	15	------	31	41	39	19	20	25	20
30	20	27	11	14	------	29	40	40	19	21	26	21
31	21	------	10	12	------	29	------	36	------	21	26	------
TOTAL	1,048	668	634	410.0	347.0	465.0	1,187	1,176	772	671	723	619
MEAN	33.8	22.3	20.5	13.2	12.4	15.0	39.6	37.9	25.7	21.6	23.3	20.6
MAX	40	30	40	18	16	32	51	43	33	34	35	33
MIN	20	16	10	7.0	9.0	8.0	25	32	19	16	18	14
AC-FT	2,080	1,320	1,260	813	688	922	2,350	2,330	1,530	1,330	1,430	1,230

CAL YR 1973 TOTAL 15,811.0 MEAN 43.3 MAX 160 MIN 10 AC-FT 31,360
WTR YR 1974 TOTAL 8,720.0 MEAN 23.9 MAX 51 MIN 7.0 AC-FT 17,300

06411000 PACTOLA RESERVOIR NEAR SILVER CITY, S. DAK.

LOCATION.--Lat 44°04'20", long 103°29'17", in NE¼SW¼ sec.2, T.1 N., R.5 E., Pennington County, in outlet works of dam on Rapid Creek, 3.8 mi (6.1 km) east of Silver City.

DRAINAGE AREA.--319 mi^2 (82.6 km^2).

PERIOD OF RECORD.--August 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

EXTREMES.--Current year: Maximum contents, 53,234 acre-ft (65.6 hm^3) May 1, elevation, 4,578.17 ft (1,395.426 m); minimum, 42,122 acre-ft (51.9 hm^3) Sept. 30, elevation, 4,563.72 ft (1,391.022 m).

Period of record: Maximum contents observed, 60,970 acre-ft (75.2 hm^3) May 19, 1964, elevation, 4,585.87 ft (1,397.773 m); minimum observed since initial filling, 42,122 acre-ft (51.9 hm^3) Sept. 30, 1974, elevation, 4,563.72 ft (1,391.022 m).

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began August 22, 1956. Conservation capacity, 54,960 acre-ft (67.8 hm^3) between elevations 4,456.1 ft (1,358.22 m) and 4,580.2 ft (1,396.04 m). Combined dead and inactive storage below elevation 4,456.1 ft (1,358.22 m) is 1,003 acre-ft (1.24 hm^3). Flood storage capacity, 43,050 acre-ft (53.1 hm^3) between elevations 4,580.2 ft (1,396.04 m) and 4,621.5 ft (1,408.63 m), crest of spillway. Surcharge capacity, 15,780 acre-ft (19.5 hm^3) between elevations 4,621.5 ft (1,408.63 m) and 4,633.7 ft (1,412.35 m), maximum pool elevation. Figures given herein represent contents above elevation 4,456.1 ft (1,358.22 m). Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

CORRECTIONS.--The minimum contents in the Period of record published with the 1973 water year records was incorrect. The correct figures are: Minimum observed since initial filling, 49,434 acre-ft (61.0 hm^3) Sept. 16, 1973, elevation, 4,573.51 ft (1,394.006 m).

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,573.54	49,458	-
Oct. 31	4,574.70	50,383	+925
Nov. 30	4,574.72	50,399	+16
Dec. 31	4,574.85	50,503	+104
CAL YR 1973	-	-	-851
Jan. 31	4,575.05	50,664	+161
Feb. 28	4,575.32	50,883	+219
Mar. 31	4,576.24	51,633	+750
Apr. 30	4,578.10	53,175	+1,542
May 31	4,576.59	51,920	-1,255
June 30	4,574.61	50,311	-1,609
July 31	4,568.73	45,767	-4,544
Aug. 31	4,565.04	43,064	-2,703
Sept.30	4,563.72	42,122	-942
WTR YR 1974	-	-	-7,336

06411500 RAPID CREEK BELOW PACTOLA DAM, S. DAK.

LOCATION.--Lat 44°04'36", long 103°28'54", in SW¼NE¼ sec.2, T.1 N., R.5 E., Pennington County, on right bank 2,000 ft (610 m) downstream from Pactola Dam, 3.9 mi (6.3 km) upstream from Deer Creek and 13 mi (21 km) west of Rapid City.

DRAINAGE AREA.--320 mi^2 (829 km^2), approximately.

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder; concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft (1,342.949 m) above mean sea level, Bureau of Reclamation bench mark. Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft (1,070 km) upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2 mi (3 km) upstream at different datum.

AVERAGE DISCHARGE.--32 years, 45.0 ft^3/s (1.274 m^3/s), 32,600 acre-ft/yr (40.2 hm^3/yr).

EXTREMES.--Current year: Maximum daily discharge, 113 ft^3/s (3.20 m^3/s) July 4-8; maximum gage height, 8.00 ft (2.438 m) July 17; minimum daily discharge, 15 ft^3/s (0.47 m^3/s) for many days.

Period of record: Maximum discharge, 2,170 ft^3/s (61.5 m^3/s) May 22, 1952, gage height, 6.74 ft (2.054 m), site and datum then in use; no flow Oct. 11-17, 1962.

REMARKS.--Records good. Flow completely regulated by Pactola Reservoir 2,000 ft (610 m) upstream since Aug. 22, 1956. (See station 06411000.) Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1309: 1931(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

7.1	12	7.7	62
7.3	22	7.9	96
7.5	38	8.0	120

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	20	16	15	16	16	15	16	47	110	71	38
2	20	20	16	15	16	16	15	50	46	110	71	38
3	19	20	16	15	16	16	15	50	46	110	71	38
4	19	20	16	15	16	16	15	50	46	113	71	37
5	19	20	16	15	16	16	15	50	46	113	81	37
6	19	20	15	15	16	15	15	58	44	113	87	37
7	19	19	15	15	16	15	15	64	44	113	87	37
8	19	19	15	15	16	15	15	65	44	113	87	37
9	20	19	15	15	16	15	15	79	44	110	87	34
10	19	19	15	15	16	15	15	87	44	98	87	31
11	19	19	15	15	16	15	15	87	35	98	87	33
12	19	19	15	15	16	15	15	87	28	103	77	32
13	19	19	15	15	16	15	15	71	28	106	70	32
14	19	19	15	15	16	15	15	64	28	106	67	32
15	19	19	15	16	16	15	15	64	28	98	61	32
16	19	19	15	16	16	15	15	62	28	101	54	31
17	20	19	15	16	16	15	15	61	28	103	47	28
18	20	19	15	16	16	15	15	59	28	83	41	29
19	20	18	15	16	16	15	15	59	33	71	54	31
20	20	16	15	16	16	15	16	53	38	67	64	32
21	20	16	15	16	16	15	16	48	45	67	64	32
22	20	16	15	16	16	15	16	48	48	67	61	33
23	20	16	15	16	16	15	16	48	48	65	57	33
24	20	16	15	16	16	15	16	48	56	65	57	33
25	20	16	15	16	16	15	16	48	65	67	57	32
26	20	16	15	16	16	15	16	48	67	67	45	32
27	20	16	15	16	16	15	16	48	83	67	35	32
28	20	16	15	16	16	15	16	48	96	67	37	33
29	20	16	15	16	------	15	16	48	106	71	38	33
30	20	16	15	16	------	15	16	48	110	73	38	33
31	20	------	15	16	------	15	------	47	------	70	38	------
TOTAL	617	542	470	482	448	470	461	1,763	1,477	2,785	1,949	1,002
MEAN	19.9	18.1	15.2	15.5	16.0	15.2	15.4	56.9	49.2	89.8	62.9	33.4
MAX	30	20	16	16	16	16	16	87	110	113	87	38
MIN	19	16	15	15	16	15	15	16	28	65	35	28
AC-FT	1,220	1,080	932	956	889	932	914	3,500	2,930	5,520	3,870	1,990

CAL YR 1973 TOTAL 17,204 MEAN 47.1 MAX 168 MIN 14 AC-FT 34,120
WTR YR 1974 TOTAL 12,466 MEAN 34.2 MAX 113 MIN 15 AC-FT 24,730

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, S. DAK.

LOCATION.--Lat 44°03'04", long 103°18'47", in NE¼NE¼ sec.18, T.1 N., R.7 E., Pennington County, on right bank at bridge on State Highway 40, 1.0 mi (1.6 km) southwest of city limits of Rapid City and 2.8 mi (4.5 km) downstream from Victoria Creek.

DRAINAGE AREA.--371 mi^2 (961 km^2).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Concrete control Oct. 17, 1962, to Nov. 2, 1967 (destroyed). Datum of gage is 3,407.39 ft (1,038.572 m) above mean sea level, levels by Corps of Engineers. Prior to Oct. 6, 1947, nonrecording gage, and Oct. 6, 1947, to Nov. 2, 1968, water-stage recorder at present site and datum. Nov. 3, 1968, to Sept. 28, 1968, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 3.12 ft (0.951 m) lower.

AVERAGE DISCHARGE.--28 years, 39.9 ft^3/s (1.130 m^3/s), 28,910 acre-ft/yr (35.6 hm^3/yr); median of yearly mean discharges, 32 ft^3/s (0.91 m^3/s), 23,200 acre-ft/yr (29 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 516 ft^3/s (14.6 m^3/s) Aug. 22, gage height, 3.95 ft (1.204 m); minimum daily, 2.4 ft^3/s (0.068 m^3/s) Jan. 11.

Period of record: Maximum discharge, 31,200 ft^3/s (884 m^3/s) June 9, 1972, gage height, 15.77 ft (4.807 m), from floodmarks, from rating curve extended above 1,300 ft^3/s (36.8 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1950-51, 1957-60, 1962-63.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by dam on Castle Creek (see station 06409500), since December 1945. Flow regulated by Pactola Reservoir 21 mi (34 km) upstream since August 1956 (see station 06411000).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	16	12	2.5	9.5	8.8	8.3	9.2	41	100	64	29
2	20	17	12	2.5	10	11	8.8	9.2	41	102	65	28
3	15	17	11	2.6	10	8.3	8.8	40	41	101	65	28
4	14	16	11	2.6	11	6.9	8.8	47	40	101	65	26
5	13	13	8.5	2.6	10	9.2	9.2	48	41	100	65	26
6	13	13	6.0	3.0	9.0	11	9.2	48	39	100	72	26
7	12	13	15	3.5	9.0	11	9.2	63	38	100	73	26
8	12	13	14	3.0	9.5	10	9.2	64	38	100	73	26
9	14	15	6.6	3.0	10	9.7	9.7	69	42	98	70	26
10	15	15	8.1	2.5	11	9.7	11	89	39	95	71	23
11	14	16	17	2.4	12	9.7	13	90	38	86	71	24
12	15	16	16	2.6	12	10	13	90	24	92	68	24
13	15	16	11	3.0	11	10	11	86	20	94	61	24
14	14	17	7.0	6.8	11	9.7	11	64	21	95	59	24
15	14	17	5.5	12	12	9.2	11	63	20	92	57	23
16	13	16	11	18	12	8.8	11	62	20	91	51	23
17	13	16	16	18	12	9.7	11	58	19	113	49	21
18	13	16	7.5	14	11	9.7	11	57	19	96	42	20
19	14	16	3.0	14	11	8.8	11	57	19	76	42	20
20	14	14	3.2	12	11	6.0	11	55	26	69	56	21
21	14	12	13	11	11	7.0	10	44	32	68	55	21
22	14	10	16	8.0	11	9.0	10	42	48	67	75	21
23	14	11	14	8.5	9.0	6.0	9.7	42	49	65	38	21
24	14	10	10	9.7	10	10	9.2	42	52	66	36	21
25	14	14	7.0	9.7	11	11	9.7	42	67	66	36	20
26	14	11	7.0	9.7	10	9.7	9.7	42	68	64	33	20
27	14	8.2	5.0	9.4	7.4	8.8	9.7	42	70	64	25	19
28	14	9.5	4.5	9.1	6.9	8.3	9.2	44	85	63	24	19
29	15	14	4.0	9.4	------	8.3	9.2	44	92	63	24	20
30	15	12	3.0	9.7	------	8.3	9.2	45	98	66	26	20
31	14	------	3.0	9.0	------	8.3	------	42	------	66	26	------
TOTAL	463	419.7	287.9	233.8	290.3	281.9	301.8	1,639.4	1,287	2,619	1,637	690
MEAN	14.9	14.0	9.29	7.54	10.4	9.09	10.1	52.9	42.9	84.5	52.8	23.0
MAX	40	17	17	18	12	11	13	90	98	113	75	29
MIN	12	8.2	3.0	2.4	6.9	6.0	8.3	9.2	19	63	24	19
AC-FT	918	832	571	464	576	559	599	3,250	2,550	5,190	3,250	1,370

CAL YR 1973 TOTAL 16,513.3 MEAN 45.2 MAX 173 MIN 3.0 AC-FT 32,750
WTR YR 1974 TOTAL 10,150.8 MEAN 27.8 MAX 113 MIN 2.4 AC-FT 20,130

06414000 RAPID CREEK AT RAPID CITY, S. DAK.

LOCATION.--Lat 44°05'09", long 103°14'31", in SW¼SE¼ sec.35, T.2 N., R.7 E., Pennington County, on left bank 300 ft (91 m) upstream from Oskosh Street in Rapid City and 3.6 mi (5.8 m) downstream from Canyon Lake Dam (destroyed).

DRAINAGE AREA.--410 mi^2 (1,560 km^2), approximately.

PERIOD OF RECORD.--June 1903 to November 1906, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE (corrected).--Water-stage recorder. Datum of gage is 3,230.00 ft (984.504 m) above mean sea level. Prior to Nov. 30, 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum, and June 10, 1972, to Nov. 1, 1972, nonrecording gage at site 800 ft (244 m) downstream at datum 0.80 ft (0.244 m) higher. July 1942 to June 9, 1972, water-stage recorder at site 300 ft (91 m) downstream at datum 0.80 ft (0.244 m) higher (destroyed by flood).

AVERAGE DISCHARGE.--35 years, 63.2 ft^3/s (1.790 m^3/s), 45,790 acre-ft/yr (56.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,040 ft^3/s (29.5 m^3/s) Aug. 22, gage height, 10.55 ft (3.216 m); minimum daily, 9.2 ft^3/s (0.261 m^3/s) June 18.

Period of record (corrected): Maximum discharge, 50,000 ft^3/s (1,420 m^3/s) June 9, 1972, gage height, 19.66 ft (5.992 m), from floodmarks, on basis of slope-area measurement of peak flow; minimum, 1.6 ft^3/s (0.045 m^3/s) Apr. 20, 1962.

Flood of May 12, 13, 1920, reached a stage of 13.6 ft (4.15 m), from floodmarks.

REMARKS.--Records good except those for winter periods, which are poor. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm^2). Flow regulated by Pactola Reservoir 25.4 mi (40.9 km) upstream, see station 06411000.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	40	36	20	29	28	22	25	56	96	62	53
2	46	37	35	22	25	32	24	24	50	116	73	43
3	39	36	35	24	26	33	26	55	45	131	70	40
4	33	37	37	24	29	26	27	70	43	124	59	39
5	33	30	32	22	30	25	22	65	48	108	59	36
6	30	35	30	22	30	29	21	46	52	111	66	39
7	28	37	41	24	30	30	24	54	51	112	69	37
8	27	36	45	25	29	29	26	62	57	108	81	37
9	35	36	30	24	36	29	24	64	66	104	87	38
10	37	36	28	22	32	29	27	83	60	95	95	36
11	38	38	41	22	38	29	46	86	59	90	92	36
12	38	38	50	25	33	28	34	89	43	85	87	40
13	36	36	45	26	30	26	32	86	35	100	74	40
14	34	37	33	29	33	28	29	68	30	115	72	37
15	32	36	31	30	28	28	30	63	28	115	68	37
16	34	37	30	36	31	25	31	65	29	125	57	37
17	34	39	40	34	30	30	30	65	26	145	48	33
18	34	39	35	31	27	30	29	70	19	95	34	32
19	34	40	32	32	24	27	30	71	9.2	81	27	31
20	33	38	33	34	26	26	34	68	27	77	46	34
21	33	33	35	34	26	26	35	56	36	75	53	36
22	33	31	35	33	22	30	32	53	51	63	163	35
23	34	30	32	32	22	24	30	46	46	67	75	33
24	36	29	30	32	23	25	30	35	38	68	67	33
25	36	32	30	29	26	33	25	50	48	60	62	34
26	35	32	30	29	33	30	26	52	49	55	57	33
27	36	31	28	30	29	26	28	40	53	58	43	31
28	36	32	26	30	28	26	30	54	75	55	39	34
29	36	39	24	33	------	25	31	66	88	53	39	34
30	36	38	22	34	------	23	26	65	102	59	40	35
31	35	------	20	30	------	24	------	60	------	73	43	------
TOTAL	1,100	1,065	1,031	874	805	859	861	1,856	1,419.2	2,819	2,007	1,093
MEAN	35.5	35.5	33.3	28.2	28.8	27.7	28.7	59.9	47.3	90.9	64.7	36.4
MAX	59	40	50	36	38	33	46	89	102	145	163	53
MIN	27	29	20	20	22	23	21	24	9.2	53	27	31
AC-FT	2,180	2,110	2,040	1,730	1,600	1,700	1,710	3,680	2,810	5,590	3,980	2,170

CAL YR 1973 TOTAL 23,054.0 MEAN 63.2 MAX 195 MIN 20 AC-FT 45,730
WTR YR 1974 TOTAL 15,789.2 MEAN 43.3 MAX 163 MIN 9.2 AC-FT 31,320

06421500 RAPID CREEK NEAR FARMINGDALE, S. DAK.

LOCATION.--Lat 43°56'31", long 102°51'12", in SW¼SW¼SW¼ sec.19, T.1 S., R.11 E., Pennington County, on right bank at downstream side of bridge, 2 mi (3.2 km) southeast of Farmingdale and 4.8 mi (7.7 km) downstream from Antelope Creek.

DRAINAGE AREA.--602 mi^2 (1,559 km^2).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (823 m), from topographic map. Prior to Sept. 19, 1947, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--28 years, 55.3 ft^3/s (1.566 m^3/s), 40,060 acre-ft/yr (49.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 151 ft^3/s (4.276 m^3/s) Apr. 12, gage height, 6.93 ft (2.112 m); maximum gage height, 8.48 ft (2.585 m) Aug. 23 (backwater from beaver dam); minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s) July 28.

Period of record: Maximum discharge, 7,320 ft^3/s (207 m^3/s) June 10, 1972, gage height, 11.85 ft (3.612 m), from floodmarks, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of contracted-opening and flow-over-road embankment of peak flow; no flow at times in 1949, 1952-56, 1958-63, 1969-71.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Pactola Reservoir 67 mi (108 km) upstream (see station 06441000) since August 1956, and by Deerfield Reservoir on Castle Creek since November 1945 (see station 06409500). Diversions for irrigation of about 10,000 acres (4,050 hm^2) above station. Water-quality records for the 1974 water year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	48	43	9.5	25	61	40	10	14	26	19	27
2	44	46	43	9.0	30	63	42	9.4	11	22	37	49
3	37	45	39	10	35	56	38	6.9	12	61	37	44
4	26	44	39	10	40	57	39	6.4	9.8	51	43	39
5	22	42	28	10	35	46	41	6.7	4.6	36	36	33
6	22	46	27	9.5	30	42	40	15	6.6	19	19	30
7	24	48	47	9.5	25	43	28	9.1	5.6	18	7.9	36
8	24	48	39	10	25	46	29	5.7	8.6	26	11	42
9	25	50	32	9.5	30	45	32	4.2	14	34	39	43
10	45	53	47	9.0	50	41	30	6.7	41	28	45	45
11	28	57	39	8.0	60	42	49	16	29	18	53	34
12	27	58	39	10	62	44	118	28	29	20	48	32
13	30	58	40	30	61	43	78	33	18	40	45	34
14	27	53	30	50	60	42	57	29	11	30	41	36
15	26	51	30	75	55	37	50	16	7.3	55	43	31
16	30	51	32	100	60	34	43	8.0	5.7	74	33	29
17	34	54	40	90	50	35	33	5.9	6.8	76	27	31
18	40	55	20	80	46	39	29	21	10	66	20	31
19	40	54	15	70	42	46	26	29	20	68	19	30
20	41	45	25	50	40	32	34	40	33	36	18	24
21	33	53	30	40	40	40	33	38	36	19	20	26
22	34	55	35	30	48	38	28	37	34	12	27	27
23	37	53	30	35	40	30	32	43	42	9.8	54	27
24	42	48	30	40	42	43	29	55	36	5.6	39	23
25	38	48	30	40	49	47	26	66	39	9.5	29	25
26	43	49	25	40	49	48	20	78	62	6.4	23	23
27	38	47	25	40	58	45	17	93	75	6.4	19	15
28	42	41	20	35	61	44	16	57	61	3.0	16	24
29	44	41	20	40	------	44	11	13	36	9.6	12	26
30	46	41	15	45	------	44	8.7	14	8.3	10	13	25
31	44	------	10	35	------	42	------	30	------	12	21	------
TOTAL	1,074	1,482	964	1,079.0	1,248	1,359	1,096.7	830.0	726.3	907.3	913.9	941
MEAN	34.6	49.4	31.1	34.8	44.6	43.8	36.6	26.8	24.2	29.3	29.5	31.4
MAX	46	58	47	100	62	63	118	93	75	76	54	49
MIN	22	41	10	8.0	25	30	8.7	4.2	4.6	3.0	7.9	15
AC-FT	2,130	2,940	1,910	2,140	2,480	2,700	2,180	1,650	1,440	1,800	1,810	1,870

CAL YR 1973 TOTAL 21,745.1 MEAN 59.6 MAX 226 MIN 2.2 AC-FT 43,130
WTR YR 1974 TOTAL 12,621.2 MEAN 34.6 MAX 118 MIN 3.0 AC-FT 25,030

06422500 BOXELDER CREEK NEAR NEMO, S. DAK.

LOCATION.--Lat 44°08'38", long 103°27'16", in SE¼SE¼ sec.12, T.2 N., R.5 E., Lawrence County, on right bank at ranch 0.2 mi (0.3 km) upstream from county line, 0.9 mi (1.4 km) downstream from Jim Creek and 4.5 mi (7.2 km) southeast of Nemo.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

PERIOD OF RECORD.--July 1945 to July 1947, May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,320.27 ft (1,316.818 m) above mean sea level. July 1945 to July 1947 nonrecording gage at site 100 ft (30 m) upstream at different datum. May 17, 1966, to June 9, 1972, water-stage recorder (destroyed by flood) and June 10, 1972, to Aug. 8, 1972, nonrecording gage, both at site 100 ft (30 m) upstream at datum 2.00 ft (0.610 m) higher.

AVERAGE DISCHARGE.--9 years (1946, 1967-74), 23.1 ft^3/s (0.654 m^3/s), 16,740 acre-ft/yr (20.6 hm^3/yr).

EXTREMES.--Maximum discharge, 23 ft^3/s (0.651 m^3/s) Apr. 19, gage height, 1.86 ft (0.567 m); maximum gage height, 2.48 ft (0.756 m) Jan. 12 (backwater from ice); minimum daily discharge, 2.1 ft^3/s (0.59 m^3/s) June 29, 30, July 1, 16.

Period of record: Maximum discharge, 30,100 ft^3/s (852 m^3/s) June 9, 1972, gage height, 20.4 ft (6.22 m), from floodmarks, from rating curve extended above 600 ft^3/s (17.0 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft^3/s (0.020 m^3/s) Dec. 30, 1968.

Flood of 1911 reached a stage of about 14 ft (4.3 m).

REMARKS.--Records good except those for winter periods, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 18 to Feb. 25, Feb. 27, 28, Mar. 2-4, 15, 18)

1.0	2.0	1.5	9.2
1.1	2.8	1.7	16
1.3	5.3	2.0	35

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	7.9	6.2	5.0	6.0	7.5	7.7	7.9	5.7	2.1	3.6	3.7
2	6.7	7.3	6.7	5.5	6.0	8.0	7.5	7.7	5.0	2.6	3.6	4.9
3	6.6	7.7	6.6	5.5	5.8	8.5	7.1	8.6	4.6	6.9	3.5	4.9
4	6.6	6.9	6.2	5.5	5.5	9.0	6.0	8.2	4.2	6.0	3.3	4.2
5	6.6	7.5	6.0	6.0	5.5	9.5	6.2	7.3	3.9	4.3	3.1	3.7
6	6.6	9.0	5.2	6.0	5.0	9.2	6.4	6.9	5.8	3.4	2.9	3.4
7	6.9	8.8	6.2	5.5	5.0	6.9	6.7	6.6	6.2	3.1	2.8	3.1
8	6.6	8.4	6.7	5.0	5.5	9.0	7.1	6.4	6.0	3.0	3.9	2.9
9	9.5	8.4	6.2	5.0	6.0	7.5	6.9	7.1	7.1	2.8	5.1	2.9
10	10	8.8	6.0	5.0	6.5	7.5	6.7	7.3	7.1	2.7	5.4	2.8
11	10	10	5.7	4.5	6.5	8.8	9.0	6.7	6.4	2.6	7.7	2.7
12	9.5	11	5.8	5.0	6.0	8.2	7.3	6.2	5.5	2.4	6.2	2.8
13	9.5	11	5.3	5.5	6.0	9.0	7.3	6.0	4.7	2.2	4.8	2.9
14	9.2	9.8	5.8	6.0	6.5	8.4	6.4	5.8	4.2	2.2	4.7	2.9
15	8.2	8.8	6.6	6.5	5.5	7.5	7.1	5.7	3.8	2.2	4.2	2.9
16	7.9	8.8	6.2	7.0	6.0	6.6	7.1	5.7	3.6	2.1	3.7	2.9
17	7.9	8.8	6.4	8.0	6.0	9.0	10	5.7	3.5	2.8	3.4	2.8
18	7.7	8.8	7.5	8.0	6.5	9.0	15	6.4	3.4	3.1	3.1	2.7
19	7.3	8.4	7.0	7.5	6.5	9.0	18	6.6	3.1	3.1	2.9	2.6
20	7.3	6.2	6.4	7.0	6.0	6.7	18	6.0	2.9	4.2	2.8	2.6
21	6.9	6.2	7.5	6.0	6.0	7.5	16	5.2	2.9	10	2.7	2.5
22	6.9	6.2	7.0	6.0	6.0	7.5	13	4.7	3.0	6.8	2.6	2.6
23	7.1	6.2	7.0	6.0	6.0	7.1	11	4.6	3.0	5.3	2.6	2.6
24	6.9	6.4	6.5	6.0	6.0	7.9	10	4.5	2.9	5.1	2.5	2.5
25	8.4	6.0	6.5	6.0	6.0	8.6	9.5	4.6	2.8	5.2	2.5	2.5
26	8.4	6.2	6.5	5.5	5.8	7.7	9.5	4.6	2.6	4.5	2.3	2.5
27	7.5	6.2	6.0	5.5	6.5	9.2	11	4.7	2.5	3.9	2.3	2.3
28	7.3	6.0	6.0	5.5	7.0	11	9.2	6.2	2.2	3.5	2.4	2.2
29	7.3	5.5	6.0	5.5	------	9.8	8.6	5.8	2.1	3.2	2.3	2.3
30	7.3	5.8	6.0	5.5	------	8.4	7.9	6.4	2.1	3.8	2.4	2.5
31	7.5	------	5.5	5.5	------	7.9	------	6.2	------	3.8	2.5	------
TOTAL	239.0	233.0	195.2	182.0	167.6	257.4	279.2	192.3	122.8	118.9	107.8	88.8
MEAN	7.71	7.77	6.30	5.87	5.99	8.30	9.31	6.20	4.09	3.84	3.48	2.96
MAX	10	11	7.5	8.0	7.0	11	18	8.6	7.1	10	7.7	4.9
MIN	6.6	5.5	5.2	4.5	5.0	6.6	6.0	4.5	2.1	2.1	2.3	2.2
AC-FT	474	462	387	361	332	511	554	381	244	236	214	176

CAL YR 1973 TOTAL 6,299.6 MEAN 17.3 MAX 98 MIN 5.2 AC-FT 12,500
WTR YR 1974 TOTAL 2,184.0 MEAN 5.98 MAX 18 MIN 2.1 AC-FT 4,330

PEAK DISCHARGE (BASE, 100 FT^3/S).--No peaks above base.

06423500 CHEYENNE RIVER NEAR WASTA, S. DAK.

LOCATION.--Lat 44°04'52", long 102°24'03", in NE¼NE¼NW¼ sec.2, T.1 N., R.14 E., Pennington County, on left bank at downstream side of highway bridge, 200 ft (61 m) downstream from Chicago and North Western Transportation Co. bridge, 3.0 mi (4.8 m) east of Wasta, and 8.6 mi (13.8 m) downstream from Boxelder Creek.

DRAINAGE AREA.--12,800 mi² (33,200 km²), approximately.

PERIOD OF RECORD.--July 1914 to June 1915, August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Records for Feb. 19-28, 1930, published in WSP 701, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Prior to Aug. 1, 1940, nonrecording gage at site 50 ft (15 m) upstream; Aug. 1, 1940, to Dec. 3, 1940, nonrecording gage and Dec. 4, 1940, to Sept. 30, 1968, water-stage recorder at present site all at same datum 2.0 ft (0.610 m) higher. Oct. 1, 1968, to Sept. 30, 1972, at datum 1.0 ft (0.305 m) higher.

AVERAGE DISCHARGE.--43 years (1928-31, 1934-74), 367 ft³/s (10.39 m³/s), 265,900 acre-ft/yr (328 hm³/yr); median of yearly mean discharges, 310 ft³/s (8.8 m³/s), 225,000 acre-ft/yr (280 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,950 ft³/s (83.5 m³/s) Apr. 12; maximum gage height, 4.81 ft (1.466 m) Jan. 14 (backwater from ice); minimum daily discharge, 25 ft³/s (0.708 m³/s) Jan. 9-11.

Period of record: Maximum discharge observed, 46,300 ft³/s (1,310 m³/s) May 6, 1932, gage height, 13.28 ft (4.048 m), present datum, from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of an incomplete discharge measurement at gage height 10.65 ft (3.246 m), present datum; maximum gage height observed, 14.5 ft (4.42 m), present datum, June 13, 1915; minimum discharge, 0.6 ft³/s (0.017 m³/s) July 27, 1961.

Flood in May 1920 reached a stage of 18 ft (5.5 m), present datum, from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 108 mi (174 km) upstream (see station 06401000) since October 1949 and by upstream reservoirs on Rapid Creek since 1957.

REVISIONS (WATER YEARS).--WSP 786: Drainage area. WSP 1279: 1930(M), 1931, 1937. See also Period of Record.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	105	229	60	500	1,300	99	123	150	33	31	147
2	126	107	244	60	400	1,000	97	93	100	33	32	621
3	128	136	217	55	300	1,000	99	88	80	115	49	264
4	123	92	190	50	200	800	97	82	70	188	52	200
5	112	67	130	45	150	500	92	79	70	96	51	150
6	105	83	100	40	150	400	92	75	70	72	50	100
7	103	90	150	35	150	400	96	73	70	53	47	90
8	99	100	200	30	170	400	94	76	70	40	49	80
9	101	150	200	25	200	400	124	78	70	33	52	80
10	101	200	201	25	250	400	103	74	90	32	74	77
11	131	411	206	25	250	400	265	80	130	38	158	77
12	223	589	150	30	250	400	2,290	76	150	37	146	77
13	1,100	394	100	50	250	400	1,020	86	130	32	125	83
14	294	249	90	100	250	350	358	82	100	32	119	96
15	179	176	90	150	350	250	440	76	80	32	116	100
16	144	155	125	250	600	200	552	70	70	32	116	97
17	133	144	130	500	800	150	465	61	60	45	104	92
18	128	139	100	1,000	1,100	127	552	63	57	64	90	87
19	126	133	100	900	1,800	123	478	67	56	684	69	77
20	126	125	110	800	1,700	107	269	70	53	421	60	69
21	119	100	120	750	1,500	94	320	70	55	132	61	62
22	114	90	110	700	1,200	126	330	70	52	95	61	61
23	107	90	100	700	1,000	62	296	65	42	120	65	63
24	107	90	95	700	900	73	265	65	40	120	227	63
25	110	100	90	700	900	154	219	70	39	74	199	60
26	128	150	90	800	1,000	177	212	60	41	61	178	58
27	123	200	80	900	1,200	137	205	50	40	50	153	52
28	110	254	75	1,500	1,200	113	181	125	38	43	136	47
29	103	234	70	1,200	------	107	166	150	34	37	114	48
30	98	253	65	1,000	------	99	164	200	33	37	104	53
31	101	------	60	700	------	98	------	300	------	32	107	------
TOTAL	4,930	5,206	4,017	13,880	18,720	10,347	10,040	2,797	2,140	2,913	2,995	3,231
MEAN	159	174	130	448	669	334	335	90.2	71.3	94.0	96.6	108
MAX	1,100	589	244	1,500	1,800	1,300	2,290	300	150	684	227	621
MIN	98	67	60	25	150	62	92	50	33	32	31	47
AC-FT	9,780	10,330	7,970	27,530	37,130	20,520	19,910	5,550	4,240	5,780	5,940	6,410

CAL YR 1973 TOTAL 90,340 MEAN 248 MAX 3,990 MIN 36 AC-FT 179,200
WTR YR 1974 TOTAL 81,216 MEAN 223 MAX 2,290 MIN 25 AC-FT 161,100

06425500 ELK CREEK NEAR ELM SPRINGS, S. DAK.

LOCATION.--Lat 44°14'54", long 102°30'10", in SW¼NW¼ sec.1, T.3 N., R.13 E., Meade County, near center of span on downstream side of county highway bridge, 1.4 mi (2.3 km) downstream from Hay Draw, 5.0 mi (8.0 km) southeast of Elm Springs, and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--540 mi^2 (1,400 km^2), approximately.

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Nonrecording gage and crest-stage gage; crest-stage gage since Sept. 29, 1954. Datum of gage is 2,304.49 ft (702.409 m) above mean sea level. Prior to Sept. 16, 1954, on upstream side of bridge, Sept. 16, 1954, to Jan. 31, 1967, on downstream side of bridge, at site 350 ft (107 m) downstream at same datum.

AVERAGE DISCHARGE.--25 years, 24.4 ft^3/s (0.691 m^3/s), 17,680 acre-ft/yr (21.8 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 54 ft^3/s (1.53 m^3/s) Apr. 9; maximum gage height, 5.91 ft (1.801 m) Jan. 27, 28 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 8,540 ft^3/s (242 m^3/s) Mar. 29, 1952, gage height, 10.61 ft (3.234 m), from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft^3/s (144 m^3/s); maximum gage height, 11.0 ft (3.35 m) May 29, 1962, from floodmarks, site and datum then in use; no flow for long periods in each year.

Maximum stage known, about 17 ft (5.2 m), at former site, in May 1920, from information by local residents.

REMARKS.--Records poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 23 to Mar. 2)

4.32	0	4.7	4.4
4.4	.45	4.9	11
4.5	1.3	5.2	29
4.6	2.6	5.5	62

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.45	3.8	6.0	2.0	4.5	10	5.5	4.7	3.4			
2	.32	4.3	6.5	2.0	4.5	10	5.5	4.0	3.2			
3	.20	4.3	6.0	2.0	4.5	9.4	5.8	3.4	2.9			
4	.20	7.1	5.5	2.0	5.0	7.4	6.1	3.0	1.3			
5	.32	7.4	4.5	2.0	5.0	7.4	10	2.7	.52			
6	.32	7.4	4.5	2.0	4.5	6.1	46	2.6	.52			
7	.20	8.2	5.0	2.5	4.5	5.8	46	3.4	.73			
8	.10	9.8	5.0	2.5	5.0	5.5	45	3.4	.81			
9	.15	11	5.0	2.0	6.0	5.5	54	3.4	1.3			
10	.26	13	5.0	2.0	7.0	5.2	52	4.4	.97			
11	.32	15	5.0	2.0	8.0	4.4	50	5.5	.81			
12	2.4	11	4.5	2.5	8.0	4.3	47	3.8	.45			
13	2.2	11	4.0	4.0	7.0	3.4	45	3.2	.45			
14	2.1	12	4.0	5.0	5.0	3.0	41	2.9	.32			
15	2.1	12	4.5	6.0	6.0	2.7	28	3.0	.15			
16	2.2	11	6.0	7.0	7.0	2.7	20	3.2	0			
17	2.4	11	7.0	5.5	7.0	3.2	17	3.2	0			
18	2.4	10	6.0	5.5	6.7	7.4	15	3.2	0			
19	2.4	8.6	5.0	6.0	6.7	8.2	12	3.2	0			
20	2.6	7.4	4.5	5.5	6.0	7.8	11	3.0	0			
21	2.6	5.8	5.5	5.0	5.5	7.4	9.8	2.9	0			
22	2.7	5.8	5.5	4.5	5.5	7.4	8.6	2.7	0			
23	2.7	5.5	5.0	5.0	5.0	7.8	7.8	2.4	0			
24	2.7	5.5	4.5	5.0	5.0	7.8	6.8	2.4	0			
25	2.6	5.5	4.5	5.5	6.0	7.8	6.8	1.7	0			
26	2.9	5.5	4.5	5.0	8.0	8.2	7.4	1.7	0			
27	2.9	5.5	4.0	5.0	8.0	8.2	7.4	1.7	0			
28	3.2	5.5	3.5	5.5	7.0	8.2	5.8	1.7	0			
29	3.2	6.0	3.0	6.0	------	8.2	5.8	2.0	0			
30	3.6	6.0	2.5	5.0	------	7.8	4.7	3.2	0			
31	3.8	------	2.0	4.0	------	7.8	------	3.4	------			------
TOTAL	56.54	241.9	148.0	125.5	167.9	206.0	632.8	95.0	17.83	0	0	0
MEAN	1.82	8.06	4.77	4.05	6.00	6.65	21.1	3.06	.59	0	0	0
MAX	3.8	15	7.0	7.0	8.0	10	54	5.5	3.4	0	0	0
MIN	.10	3.8	2.0	2.0	4.5	2.7	4.7	1.7	0	0	0	0
AC-FT	112	480	294	249	333	409	1,260	188	35	0	0	0

CAL YR 1973 TOTAL 7,160.15 MEAN 19.6 MAX 896 MIN 0 AC-FT 14,200
WTR YR 1974 TOTAL 1,691.47 MEAN 4.63 MAX 54 MIN 0 AC-FT 3,360

PEAK DISCHARGE (BASE, 400 FT^3/S).--No peaks above base.

06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WYO.

LOCATION.--Lat 44°22'55", long 104°46'45", in NW¼NW¼ sec.27, T.51 N., R.66 W., Crook County, at reservoir dam on Belle Fourche River 12 mi (19 km) northeast of Moorcroft, Wyo.

DRAINAGE AREA.--2,000 mi^2 (5,180 km^2), approximately.

PERIOD OF RECORD.--March 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968 to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

EXTREMES.--Current year: Maximum daily contents, 159,200 acre-ft (196 hm^3) Mar. 17-22, elevation, 4,095.74 ft (1,248.382 m); minimum daily, 129,900 acre-ft (160 hm^3) Sept. 30, elevation, 4,091.89 ft (1,247.208 m).

Period of record: Maximum contents, 195,800 acre-ft (241 hm^3) Mar. 8, 1972, elevation, 4,098.87 ft (1,249.336 m); minimum daily contents (since appreciable storage was attained), 6,030 acre-ft (7.43 hm^3) Mar. 8, 9, 1955, elevation, 4,046.35 ft (1,233.327 m).

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Dead storage, below elevation 4,036.0 ft (1,230.17 m), 1,170 acre-ft (1.44 hm^3). Inactive storage, between elevations 4,036.0 ft (1,230.17 m) and 4,051.0 ft (1,234.74 m), 8,310 acre-ft (10.2 hm^3). Total capacity below elevation 4,099.3 ft (1,249.47 m), crest of spillway, 199,900 acre-ft (246 hm^3). Figures given herein represent total contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, S. Dak.

COOPERATION.--Records furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,094.32	147,800	-
Oct. 31	4,094.32	147,800	0
Nov. 30	4,094.19	146,800	-1,000
Dec. 31	4,094.23	147,100	+300
CAL YR 1973	-	-	-20,200
Jan. 31	4,094.94	152,600	+5,500
Feb. 28	4,095.58	157,800	+5,200
Mar. 31	4,095.70	158,800	+1,000
Apr. 30	4,095.66	158,500	-300
May 31	4,095.46	156,800	-1,700
June 30	4,094.92	152,500	-4,300
July 31	4,093.54	141,900	-10,600
Aug. 31	4,092.31	132,900	-9,000
Sept.30	4,091.89	129,900	-3,000
WTR YR 1974	-	-	-17,900

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE¼NW¼NW¼ sec.18, T.9 N., R.1 E., Butte County, on left bank 0.3 mi (0.5 km) downstream from State line, 3.7 mi (6.0 km) downstream from Oak Creek and 11 mi (18 km) northwest of Belle Fourche, S. Dak.

DRAINAGE AREA.--3,280 mi² (8,500 km²), approximately.

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft (943.57 m) above mean sea level.

AVERAGE DISCHARGE.--28 years, 87.7 ft³/s (2.484 m³/s), 63,540 acre-ft/yr (78.3 hm³/yr); median of yearly mean discharges, 88 ft³/s (2.492 m³/s), 63,800 acre-ft/yr (78.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 873 ft³/s (24.7 m³/s) Mar. 5; maximum gage height, 8.06 ft (2.457 m) Jan. 20 (backwater from ice); minimum daily, 8.0 ft³/s (0.23 m³/s) Jan. 10, 11.

Period of record: Maximum discharge, 4,400 ft³/s (125 m³/s) June 18, 1962, gage height, 15.59 ft (4.752 m); no flow at times most years.

REMARKS.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 5,400 acres (2,200 hm²). Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 143 mi (230 km) upstream, since Oct. 25, 1952. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 3-9, Dec. 6 to Feb. 24)

2.4	12	4.0	175
2.5	18	5.0	335
3.0	61	7.0	765

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	50	138	10	50	90	78	164	102	94	109	59
2	32	50	52	10	65	83	80	147	91	104	112	65
3	30	50	54	9.5	75	112	79	143	82	127	112	64
4	31	35	46	9.0	85	194	77	138	73	133	110	63
5	31	26	34	9.0	80	688	74	132	70	133	109	60
6	31	30	35	9.0	70	593	71	124	66	130	110	56
7	30	40	50	9.0	60	308	70	115	66	125	108	54
8	31	40	50	9.0	50	206	73	108	69	127	109	46
9	34	50	45	9.0	55	179	77	102	68	122	134	40
10	52	53	50	8.0	55	148	79	97	70	116	145	36
11	61	54	60	8.0	60	133	93	91	65	115	130	34
12	56	59	50	8.5	70	124	110	87	60	113	129	32
13	50	67	40	9.0	75	129	157	82	56	119	131	31
14	47	59	35	15	80	122	224	78	53	116	135	29
15	45	52	35	20	85	111	224	78	50	112	131	27
16	44	50	40	50	90	106	181	77	48	106	128	27
17	43	49	45	80	95	102	168	79	45	98	120	26
18	44	48	35	100	100	99	148	82	43	119	95	25
19	43	49	30	120	100	97	162	82	42	113	92	23
20	41	34	30	150	100	88	196	82	40	149	86	21
21	39	26	35	200	100	70	334	82	40	257	87	21
22	38	33	40	150	150	87	459	77	40	202	86	20
23	37	35	35	120	150	65	376	75	37	151	90	20
24	36	56	35	100	100	83	291	70	36	131	88	20
25	35	56	35	110	95	79	237	68	36	122	81	19
26	37	68	35	100	101	114	227	66	38	105	67	19
27	43	65	30	90	116	99	333	63	33	128	58	18
28	75	59	25	90	104	86	252	70	29	116	57	18
29	65	55	20	90	------	76	216	76	29	113	55	17
30	56	48	15	80	------	77	188	148	47	110	56	17
31	50	------	12	60	------	77	------	127	------	109	56	------
TOTAL	1,322	1,446	1,271	1,842.0	2,416	4,625	5,334	3,010	1,624	3,915	3,116	1,007
MEAN	42.6	48.2	41.0	59.4	86.3	149	178	97.1	54.1	126	101	33.6
MAX	75	68	138	200	150	688	459	164	102	257	145	65
MIN	30	26	12	8.0	50	65	70	63	29	94	55	17
AC-FT	2,620	2,870	2,520	3,650	4,790	9,170	10,580	5,970	3,220	7,770	6,180	2,000

CAL YR 1973 TOTAL 40,541.0 MEAN 111 MAX 1,040 MIN 12 AC-FT 80,410
WTR YR 1974 TOTAL 30,928.0 MEAN 84.7 MAX 688 MIN 8.0 AC-FT 61,350

06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW¼SW¼ sec.7, T.7 N., R.1 E., Butte County, on right bank 15 ft (5 m) downstream from State line and 12 mi (19 km) southwest of Belle Fourche.

PERIOD OF RECORD.--June 1954 to current year (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,050 m), from topographic map.

EXTREMES.--Period of record: Maximum daily discharge, 37 ft^3/s (1.05 m^3/s) July 17, 1973; no flow for long periods in each year.

REMARKS.--Records fair. Ditch diverts water from left bank of Redwater Creek, 2.0 mi (3.2 km) upstream, for irrigation of about 700 acres (283 hm^2). Flow maintained during irrigation season only.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	5.6								2.4	14	17
2	4.5	3.7								10	17	17
3	2.4	1.4								7.9	15	17
4	1.4	1.1								10	16	17
5	.70	.60								11	11	15
6	.70	.30								15	16	10
7	.60	.35								10	17	11
8	.30	.22								10	18	10
9	.45	0								11	16	8.8
10	3.6	0								14	16	8.0
11	7.6	.06								18	14	11
12	6.6	.02								16	12	12
13	6.0	0								17	14	6.7
14	5.7	0								17	14	6.2
15	5.8	0								17	15	7.4
16	5.8	0								15	14	7.4
17	5.7	0								14	15	8.0
18	5.8	0								12	15	7.4
19	6.3	0								15	16	7.0
20	5.2	0								19	14	6.4
21	3.6	0								15	21	4.8
22	3.3	0								15	15	2.5
23	2.6	0								14	15	1.7
24	2.1	0								13	15	1.5
25	1.5	0								12	15	4.9
26	1.3	0								11	16	10
27	1.1	0								11	15	13
28	1.2	0								13	16	13
29	4.1	0			------					14	16	13
30	5.0	0			------					13	16	13
31	3.1	------			------		------		------	13	16	------
TOTAL	108.15	13.35	0	0	0	0	0	0	0	405.3	475	287.7
MEAN	3.49	.45	0	0	0	0	0	0	0	13.1	15.3	9.59
MAX	7.6	5.6	0	0	0	0	0	0	0	19	21	17
MIN	.30	0	0	0	0	0	0	0	0	2.4	11	1.5
AC-FT	215	26	0	0	0	0	0	0	0	804	942	571

CAL YR 1973 TOTAL 1,169.27 MEAN 3.20 MAX 37 MIN 0 AC-FT 2,320
WTR YR 1974 TOTAL 1,289.50 MEAN 3.53 MAX 21 MIN 0 AC-FT 2,560

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'26", long 104°02'54", in NW¼NW¼ sec.18, T.7 N., R.1 E., Butte County, on left bank 800 ft (244 m) downstream from State line, 5.7 mi (9.2 km) upstream from Crow Creek, and 12 mi (19 km) southwest of Belle Fourche, S. Dak.

DRAINAGE AREA.--471 mi^2 (1,219 km^2).

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, Wyo."), June 1954 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,040 m), from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi (3 km) upstream at different datum.

AVERAGE DISCHARGE.--22 years (1929-31, 1954-74), 36.2 ft^3/s (1.025 m^3/s), 26,230 acre-ft/yr (32.3 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 226 ft^3/s (6.40 m^3/s) July 2, gage height, 3.96 ft (1.207 m); minimum daily, 13 ft^3/s (0.37 m^3/s) July 17, 18.

Period of record: Maximum discharge, 2,440 ft^3/s (69.1 m^3/s) Aug. 22, 1973, gage height, 12.19 ft (3.716 m); no flow Aug. 13-15, 1929.

REMARKS.--Records good except those for winter periods, which are fair. Large diversions for irrigation above station. Total flow passing State line may be obtained by adding flow of Murray ditch. (See station 06430000.)

REVISIONS.--WSP 1309: 1931(M), 1936-37(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	44	48	45	45	42	45	59	54	41	23	26
2	44	44	48	45	44	43	45	59	52	65	22	24
3	46	47	48	44	44	47	44	61	52	44	24	23
4	47	46	48	45	44	45	43	59	52	39	32	24
5	48	48	48	44	46	43	42	57	56	40	30	26
6	48	48	46	45	43	43	43	57	61	34	25	29
7	47	48	46	47	44	42	47	54	57	37	27	29
8	48	48	47	45	44	42	46	54	55	37	27	29
9	51	48	46	45	44	41	46	57	54	33	25	31
10	48	49	48	43	44	42	49	58	52	27	27	34
11	42	49	49	43	44	42	56	57	51	20	27	34
12	43	49	50	45	45	43	54	57	52	19	28	35
13	42	49	47	47	45	43	52	56	52	18	29	40
14	42	49	48	47	44	42	50	55	51	18	32	39
15	42	48	47	48	44	41	51	53	50	19	31	39
16	42	49	46	58	43	41	51	54	50	18	30	39
17	41	49	48	55	44	42	55	56	51	13	30	39
18	42	49	48	48	43	43	64	55	53	13	30	39
19	41	49	45	48	43	46	65	54	53	14	30	39
20	42	48	46	47	43	42	67	53	52	15	31	40
21	43	49	47	46	41	41	81	52	53	14	25	40
22	44	48	48	45	42	41	73	50	50	15	22	41
23	45	47	49	45	43	41	64	51	50	16	22	41
24	49	48	47	45	41	41	59	52	49	16	22	41
25	47	49	48	45	42	42	67	54	51	17	22	36
26	47	48	47	46	43	43	77	53	51	20	22	33
27	47	47	45	45	43	43	93	54	49	23	22	33
28	46	47	46	45	42	43	77	58	48	21	23	34
29	44	49	45	45	------	44	66	57	48	22	23	34
30	42	48	45	45	------	44	61	57	48	24	23	34
31	44	------	46	44	------	45	------	56	------	24	23	------
TOTAL	1,390	1,438	1,460	1,430	1,217	1,323	1,733	1,719	1,557	776	809	1,025
MEAN	44.8	47.9	47.1	46.1	43.5	42.7	57.8	55.5	51.9	25.0	26.1	34.2
MAX	51	49	50	58	46	47	93	61	61	65	32	41
MIN	41	44	45	43	41	41	42	50	48	13	22	23
AC-FT	2,760	2,850	2,900	2,840	2,410	2,620	3,440	3,410	3,090	1,540	1,600	2,030

CAL YR 1973 TOTAL 20,656 MEAN 56.6 MAX 490 MIN 18 AC-FT 40,970
WTR YR 1974 TOTAL 15,877 MEAN 43.5 MAX 93 MIN 13 AC-FT 31,490

PEAK DISCHARGE (BASE, 150 FT^3/S).--July 2 (2045) 226 ft^3/s (3.96 ft).

06431500 SPEARFISH CREEK AT SPEARFISH, S. DAK.

LOCATION.--Lat 44°28'57", long 103°51'40", in SE¼NW¼ sec.15, T.6 N., R.2 E., Lawrence County, on right bank in city park in Spearfish, 500 ft (152 m) downstream from fish hatchery and nearest tributary, and 9.8 mi (15.8 km) upstream from mouth.

DRAINAGE AREA.--168 mi^2 (435 km^2).

PERIOD OF RECORD.--October 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,640 ft (1,109 m), from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--28 years, 50.5 ft^3/s (1.430 m^3/s), 36,590 acre-ft/yr (45.1 hm^3/yr), unadjusted.

EXTREMES.--Current year: Maximum discharge, about 175 ft^3/s (4.96 m^3/s) Jan. 1; maximum gage height, 7.29 ft (2.222 m) Jan. 1 (backwater from ice); minimum daily discharge, 38 ft^3/s (1.076 m^3/s) Dec. 19, Feb. 6.

Period of record: Maximum discharge, 4,240 ft^3/s (120 m^3/s) May 15, 1965, gage height, 10.53 ft (3.210 m), from rating curve extended above 520 ft^3/s (14.7 m^3/s) on basis of slope-area measurement of peak flow; no flow for part of Oct. 18, 1970.

Flood of June 5, 1904, reached a stage of 7.00 ft (2.134 m), site and datum of former gage near Spearfish, 1 mi (2 km) upstream, drainage area, 157 mi^2 (407 km^2); discharge about 5,000 ft^3/s (142 m^3/s).

REMARKS.--Records good except those for winter periods, which are fair. Regulation by fish hatchery and by hydroelectric plant 0.5 mi (0.8 km) upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Prior to water year 1962 average monthly diversion by Homestake Mining Co., about 7 ft^3/s (0.20 m^3/s). Figures of daily discharge do not include diversion by Homestake Mining Co.

REVISIONS.--WSP 1116: Drainage area.

COOPERATION.--Figures of monthly diversion are furnished by Homestake Mining Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	62	60	48	50	52	57	94	59	52	57	58
2	54	59	61	50	50	62	52	95	59	52	57	53
3	54	60	62	60	50	66	53	93	62	65	58	51
4	55	62	60	62	50	60	50	89	58	64	58	50
5	52	57	60	66	50	56	49	84	63	55	55	49
6	54	57	49	64	38	60	51	82	67	56	53	48
7	55	57	60	70	50	58	59	82	66	57	50	48
8	55	59	60	66	47	58	54	82	72	59	54	52
9	59	59	60	57	50	58	56	83	71	57	51	51
10	60	61	60	54	52	60	61	79	71	53	74	47
11	57	62	61	65	52	60	63	77	70	54	65	48
12	59	63	68	60	50	58	60	75	68	52	61	49
13	60	63	64	68	50	58	58	72	66	54	65	49
14	62	62	64	66	49	62	56	70	62	56	62	48
15	60	62	64	60	50	58	55	70	62	56	56	51
16	60	61	64	58	50	58	57	67	65	54	52	48
17	58	61	66	56	52	60	66	69	61	53	58	43
18	59	63	66	56	52	62	77	67	60	61	60	44
19	59	62	38	58	49	58	84	65	59	57	58	44
20	60	60	48	58	52	49	74	66	58	60	58	45
21	60	61	72	58	49	47	76	63	58	62	54	45
22	59	60	67	47	45	49	82	64	60	60	54	45
23	57	57	68	56	52	43	100	61	67	55	53	46
24	64	58	68	52	52	43	100	59	63	57	54	46
25	63	62	65	50	50	52	100	59	58	60	56	46
26	61	62	65	54	50	50	102	61	54	57	56	47
27	61	58	61	54	50	55	102	61	53	59	52	47
28	62	58	63	54	50	56	102	62	54	57	51	47
29	60	58	61	50	------	57	102	63	56	59	47	48
30	61	58	52	50	------	58	100	65	55	56	47	48
31	60	------	50	52	------	59	------	61	------	55	48	------
TOTAL	1,813	1,804	1,887	1,779	1,391	1,742	2,158	2,240	1,857	1,764	1,734	1,441
MEAN	58.5	60.1	60.9	57.4	49.7	56.2	71.9	72.3	61.9	56.9	55.9	48.0
MAX	64	63	72	70	52	66	102	95	72	65	74	58
MIN	52	57	38	47	38	43	49	59	53	52	47	43
AC-FT	3,600	3,580	3,740	3,530	2,760	3,460	4,280	4,440	3,680	3,500	3,440	2,860
MEAN‡	67.2	67.7	68.8	66.8	59.0	65.1	81.2	81.4	71.9	65.6	64.7	56.9
(†)	538	454	484	579	519	545	555	560	595	538	540	530
AC-FT‡	4,140	4,030	4,220	4,110	3,280	4,000	4,840	5,000	4,280	4,040	3,980	3,390

CAL YR 1973 TOTAL 27,405 MEAN 75.1 MAX 273 MIN 16 AC-FT 54,360
WTR YR 1974 TOTAL 21,610 MEAN 59.2 MAX 102 MIN 38 AC-FT 42,860

† Diversion, in acre-ft, by Homestake Mining Company
‡ Adjusted for diversion

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, S. DAK.

LOCATION.--Lat 44°40'02", long 103°50'20", in NW¼SE¼ sec.11, T.8 N., R.2 E., Butte County, on right bank at upstream side of bridge on U.S. Highway 212 in Belle Fourche, 0.5 mi (0.8 km) upstream from Hay Creek and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--920 mi^2 (2,383 km^2).

PERIOD OF RECORD.--November 1945 to current year. Records for water year 1946 incomplete, yearly discharge published in WSP 1309. Prior to October 1960, published as Redwater Creek above Belle Fourche.

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (910 m), from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years (1945-74), 133 ft^3/s (3.767 m^3/s), 96,360 acre-ft/yr (119 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, about 375 ft^3/s (10.6 m^3/s) Dec. 31; maximum gage height, 7.03 ft (2.143 m) Jan. 8 (backwater from ice); minimum daily discharge, 7.4 ft^3/s (0.210 m^3/s) July 17.

Period of record: Maximum discharge, 16,400 ft^3/s (464 m^3/s) June 16, 1962, gage height, 11.69 ft (3.563 m), from rating curve extended above 6,000 ft^3/s (170 m^3/s) on basis of slope-area measurement of peak flow; no flow for part of Aug. 5, 1960, Aug. 8-10, 1968, and Aug. 13, 1969.

REMARKS.--Records good except those for winter periods, which are poor. Diversions for irrigation of about 13,000 acres (5,260 hm^2) above station.

REVISIONS (WATER YEARS).--WSP 1389: 1954 (maximum gage height only).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	197	188	150	160	167	187	247	129	15	22	101
2	166	200	187	160	170	168	178	242	120	20	23	127
3	164	193	187	160	180	175	175	248	122	72	25	120
4	167	193	187	160	180	177	178	234	117	50	20	125
5	170	193	187	150	180	173	170	218	118	38	18	127
6	167	193	180	140	166	172	170	208	140	36	15	124
7	172	190	189	150	170	174	184	202	137	29	12	124
8	172	190	182	160	181	172	184	189	148	25	18	123
9	184	187	184	150	173	168	181	198	140	20	22	130
10	226	187	184	140	179	172	181	196	145	16	40	134
11	197	190	187	130	184	175	223	194	144	18	57	134
12	190	195	193	140	185	175	237	187	148	15	57	144
13	187	189	199	160	177	175	230	187	150	12	66	150
14	184	187	194	170	174	178	248	180	136	10	73	148
15	181	190	193	210	173	172	274	178	125	9.0	84	145
16	184	190	189	220	170	170	251	175	121	8.1	75	141
17	178	190	192	180	170	172	237	178	121	7.4	72	133
18	178	187	190	160	173	184	230	178	105	7.7	68	131
19	181	187	190	160	170	178	248	168	89	7.7	68	130
20	184	187	190	160	177	172	248	170	73	11	81	131
21	181	187	200	140	173	170	290	166	72	14	93	126
22	187	187	196	120	164	175	286	164	79	13	94	128
23	190	187	197	140	170	170	284	152	100	13	88	126
24	219	193	200	150	169	184	273	149	114	13	83	116
25	223	193	194	150	165	184	278	149	60	12	79	106
26	203	193	192	150	169	187	286	149	50	13	75	97
27	200	191	180	150	168	184	316	133	38	19	77	93
28	203	190	170	160	167	184	316	140	28	20	70	103
29	200	187	160	160	------	187	287	136	22	20	64	108
30	197	189	160	150	------	184	270	141	15	20	70	102
31	193	------	150	150	------	190	------	142	------	21	79	------
TOTAL	5,793	5,712	5,771	4,830	4,837	5,468	7,100	5,598	3,106	605.9	1,788	3,727
MEAN	187	190	186	156	173	176	237	181	104	19.5	57.7	124
MAX	226	200	200	220	185	190	316	248	150	72	94	150
MIN	164	187	150	120	160	167	170	133	15	7.4	12	93
AC-FT	11,490	11,330	11,450	9,580	9,590	10,850	14,080	11,100	6,160	1,200	3,550	7,390

CAL YR 1973 TOTAL 76,705.0 MEAN 210 MAX 820 MIN 68 AC-FT 152,100
WTR YR 1974 TOTAL 54,335.9 MEAN 149 MAX 316 MIN 7.4 AC-FT 107,800

PEAK DISCHARGE (BASE, 500 FT^3/S).--No peaks above base.

06433500 HAY CREEK AT BELLE FOURCHE, S. DAK.

LOCATION.--Lat 44°40'01", long 103°50'46", in NW¼SW¼ sec.11, T.8 N., R.2 E., Butte County, on right bank at intersection of Tenth Avenue and Jackson Street in Belle Fourche, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi^2 (313 km^2).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,005.18 ft (915.979 m) above mean sea level (City of Belle Fourche bench mark). Prior to Dec. 8, 1953, nonrecording gage at site 300 ft (91 m) downstream at same datum.

AVERAGE DISCHARGE.--21 years, 1.33 ft^3/s (0.0377 m^3/s), 964 acre-ft/yr (1.19 hm^3/yr); median of yearly mean discharges, 0.60 ft^3/s (0.017 m^3/s), 430 acre-ft/yr (0.53 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 80 ft^3/s (2.27 m^3/s) Apr. 15, gage height, 5.43 ft (1.655 m); no flow for many days.

Period of record: Maximum discharge, 930 ft^3/s (26.3 m^3/s) June 19, 1972, gage height, 9.15 ft (2.789 m); no flow for many days each year.

REMARKS.--Records fair except those for winter periods, which are poor. Minor diversion to the stream at times from city reservoir overflow, which enters stream above gage.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 8 to Feb. 25, Feb. 28, Mar. 9, 20-25)

3.2	0	3.5	1.5	4.5	25
3.3	.35	3.7	3.6	5.0	48
3.4	.85	4.0	9.6	5.5	82

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.70	.55	0	.50	1.5	1.5	5.0	3.1	0	0	
2	.10	.55	.60	0	1.0	2.0	2.0	5.0	2.8	.03	0	
3	0	.50	.50	0	1.5	1.8	1.5	5.0	2.3	.10	0	
4	0	.45	.70	0	1.8	1.5	1.3	3.9	1.7	1.6	0	
5	0	.45	.55	0	1.7	1.9	1.3	3.4	2.0	2.3	0	
6	0	.50	.45	0	1.3	2.6	1.3	3.2	1.6	.65	0	
7	0	.45	.50	0	1.3	2.6	2.1	3.0	1.5	.32	0	
8	.06	.45	.50	0	1.5	2.2	1.9	2.9	1.9	.10	0	
9	1.5	.45	.50	0	1.7	2.0	1.7	2.9	2.4	0	0	
10	2.9	.60	.50	0	1.7	1.7	1.8	2.9	2.1	0	.40	
11	2.2	.70	.40	0	2.0	1.9	10	2.9	1.6	0	0	
12	.80	.80	.30	0	2.0	2.0	12	2.8	1.4	0	.01	
13	.98	.60	.30	0	2.0	2.1	26	2.8	1.1	0	.03	
14	.65	.40	.35	2.0	2.0	2.3	50	2.6	.85	0	0	
15	.32	.31	.40	5.0	2.0	1.7	65	2.5	.70	0	0	
16	.24	.45	.40	5.0	2.0	1.5	36	2.6	.55	0	0	
17	.55	.45	.50	5.0	2.0	1.8	19	3.2	.45	0	0	
18	.24	.40	.50	4.0	1.8	2.4	9.6	3.0	.35	0	0	
19	.21	.35	.40	4.0	1.8	1.8	6.7	3.5	.31	0	0	
20	.17	.31	.40	4.0	1.8	1.4	6.0	4.6	.24	.05	0	
21	.21	.40	.30	2.0	1.8	1.5	7.0	3.8	.24	0	0	
22	.14	.35	.40	1.5	1.5	1.3	23	3.4	.45	0	0	
23	.14	.35	.40	1.8	1.4	1.0	19	3.2	.35	0	0	
24	.07	.35	.20	2.0	1.4	1.1	13	3.1	.10	0	0	
25	.28	.45	.10	2.0	1.5	1.3	8.6	3.1	.03	0	0	
26	.17	.45	0	1.8	1.7	1.3	7.3	2.6	0	0	0	
27	.17	.40	0	1.8	1.9	1.8	10	2.3	0	0	0	
28	.17	.40	0	1.8	1.4	2.0	10	3.4	0	0	0	
29	.24	.55	0	2.0	------	1.6	6.5	2.4	0	0	0	
30	.31	.50	0	1.0	------	1.6	5.3	3.0	0	0	0	
31	.35	------	0	.40	------	1.6	------	3.8	------	0	0	------
TOTAL	13.17	14.07	10.70	47.10	46.00	54.8	366.4	101.8	30.12	5.15	.44	0
MEAN	.42	.47	.35	1.52	1.64	1.77	12.2	3.28	1.00	.17	.014	0
MAX	2.9	.80	.70	5.0	2.0	2.6	65	5.0	3.1	2.3	.40	0
MIN	0	.31	0	0	.50	1.0	1.3	2.3	0	0	0	0
AC-FT	26	28	21	93	91	109	727	202	60	10	.9	0

CAL YR 1973 TOTAL 1,215.47 MEAN 3.33 MAX 82 MIN 0 AC-FT 2,410
WTR YR 1974 TOTAL 689.75 MEAN 1.89 MAX 65 MIN 0 AC-FT 1,370

PEAK DISCHARGE (BASE, 50 FT^3/S).--Apr. 15 (0900) 80 ft^3/s (5.43 ft).

06434500 INLET CANAL NEAR BELLE FOURCHE, S. DAK.

LOCATION.--Lat 44°42'14", long 103°49'23", in NE¼NW¼ sec.36, T.9 N., R.2 E., Butte County, on right bank 0.5 mi (0.8 km) downstream from Crow Creek, 0.9 mi (1.4 km) downstream from diversion dam on Belle Fourche River, and 2.5 mi (4.0 km) northeast of Belle Fourche.

PERIOD OF RECORD.--October 1945 to current year. Monthly diversions from Inlet Canal between station and reservoir for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,985.22 ft (909.895 m) above mean sea level. Prior to Dec. 10, 1946, nonrecording gage, and Dec. 10, 1946, to Nov. 26, 1949, water-stage recorder at site 0.8 mi (1.3 km) upstream at same datum.

AVERAGE DISCHARGE.--29 years, 156 ft^3/s (4.418 m^3/s), 113,000 acre-ft/yr (139 hm^3/yr).

EXTREMES.--Period of record: Maximum daily discharge, 1,340 ft^3/s (37.9 m^3/s) May 30, 1962; no flow for many days in 1946-49, 1963, 1966, 1971-74.

REMARKS.--Records good except those for winter periods, which are poor. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek, except for 3,610 acre-ft (4.45 hm^3) which was diverted for irrigation from the canal between the station and reservoir. Water-quality records for the water year 1974 are published in Part 2 of this report.

COOPERATION.--Records of diversion from the canal furnished by Bureau of Reclamation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203	243	213	160	235	310	0	0	265	57	119	152
2	201	238	234	170	250	292	0	0	233	130	125	188
3	199	239	217	180	221	314	0	0	223	186	133	174
4	198	232	230	180	232	342	0	0	205	183	132	181
5	199	218	199	170	257	617	0	0	199	184	126	177
6	197	220	210	160	253	859	0	0	226	172	113	167
7	196	214	202	180	250	643	0	0	205	163	102	169
8	194	222	206	180	265	488	0	0	222	167	112	171
9	212	220	205	170	261	414	0	0	213	150	128	174
10	303	236	219	160	258	395	0	0	212	137	189	168
11	286	233	219	150	272	371	0	0	206	131	188	161
12	294	254	226	160	284	358	0	0	203	126	190	173
13	262	252	229	180	284	355	0	0	205	124	205	178
14	246	244	216	200	279	356	12	0	191	128	211	176
15	236	233	215	250	278	338	0	0	169	124	224	172
16	234	231	219	250	279	330	0	0	163	110	206	167
17	228	226	226	250	288	326	0	0	161	104	200	155
18	226	228	223	250	286	144	0	0	150	104	180	143
19	223	223	223	270	302	0	0	0	133	137	165	143
20	221	214	219	280	371	0	0	0	116	131	163	142
21	219	199	242	300	347	0	0	0	119	176	159	137
22	80	197	233	280	342	0	0	127	127	244	146	140
23	0	201	208	270	333	0	0	221	132	188	146	138
24	0	205	215	250	280	0	0	216	161	155	165	125
25	127	218	216	254	288	0	0	214	100	137	146	118
26	222	217	216	270	316	0	0	214	92	130	134	106
27	221	219	200	250	324	0	0	199	83	111	125	103
28	238	217	190	251	318	0	0	205	66	138	120	111
29	262	223	180	256	------	0	0	209	42	133	112	114
30	243	226	170	258	------	0	0	237	31	130	121	111
31	234	------	160	250	------	0	------	314	------	124	134	------
TOTAL	6,404	6,742	6,580	6,839	7,953	7,252	12	2,156	4,853	4,414	4,719	4,534
MEAN	207	225	212	221	284	234	.40	69.5	162	142	152	151
MAX	303	254	242	300	371	859	12	314	265	244	224	188
MIN	0	197	160	150	221	0	0	0	31	57	102	103
AC-FT	12,700	13,370	13,050	13,570	15,770	14,380	24	4,280	9,630	8,760	9,360	8,990

CAL YR 1973 TOTAL 56,800.00 MEAN 156 MAX 751 MIN 0 AC-FT 112,700
WTR YR 1974 TOTAL 62,458.00 MEAN 171 MAX 859 MIN 0 AC-FT 123,900

06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, S. DAK.

LOCATION.--Lat 44°44'12", long 103°40'27", in SW¼SE¼ sec.18, T.9 N., R.4 E., Butte County, at dam on Owl Creek, 9.8 mi (15.8 km) northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

EXTREMES.--Current year: Maximum contents, 166,360 acre-ft (205 hm^3) Apr. 15 to May 9, elevation, 2,972.6 ft (906.05 m); minimum, 34,320 acre-ft (42.3 hm^3) Sept. 17, elevation, 2,947.8 ft (898.49 m).

Period of record: Maximum contents observed, 197,400 acre-ft (243 hm^3) Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft (906.75 m); minimum observed, -3,000 acre-ft (-3.70 hm^3) Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft (892.15 m) by opening holes in crib walls.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,170 acre-ft (228 hm^3) 1949 survey, between elevations 2,927.0 ft (892.15 m), lowest outlet, and 2,975.0 ft (906.78 m), crest of spillway weir. Dead storage below elevation 2,927.0 ft (892.15 m), 6,800 acre-ft (8.38 hm^3). Figures given herein represent contents above elevation 2,927.0 ft (892.15 m). Water diverted from Belle Fourche River through Inlet Canal (see station 06434500) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Elevations and contents furnished by Bureau of Reclamation.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,958.6	76,120	-
Oct. 31	2,961.1	90,780	+14,660
Nov. 30	2,963.9	106,740	+15,960
Dec. 31	2,965.9	119,062	+12,322
CAL YR 1973	-	-	-26,490
Jan. 31	2,968.5	136,400	+17,338
Feb. 28	2,970.7	152,108	+15,708
Mar. 31	2,972.4	164,840	+12,732
Apr. 30	2,972.6	166,360	+1,520
May 31	2,971.8	160,300	-6,060
June 30	2,968.9	139,120	-21,180
July 31	2,960.4	86,826	-52,294
Aug. 31	2,951.8	47,200	-39,626
Sept.30	2,949.1	38,245	-8,955
WTR YR 1974	-	-	-37,875

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, S. DAK.

LOCATION.--Lat 44°41'27", long 103°44'14", in NW¼NE¼ sec.3, T.8 N., R.3 E., Butte County, on right bank 5 ft (2 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) northwest of Fruitdale and 8.8 mi (14.2 km) downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi² (11,760 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,925 ft (892 m), from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--29 years, 91.5 ft³/s (2.591 m³/s), 66,290 acre-ft/yr (81.7 hm³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,210 ft³/s (34.3 m³/s) Apr. 14, gage height, 5.11 ft (1.558 m); minimum daily, 2.8 ft³/s (0.079 m³/s) Mar. 10, 16, 17.

Period of record: Maximum discharge, 8,100 ft³/s (229 m³/s) May 15, 1965, gage height, 10.53 ft (3.210 m); maximum gage height, 11.25 ft (3.429 m) June 16, 1962; no flow at times in 1945, 1948, 1959-62.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 180 mi (290 km) upstream. At a point 8.8 mi (14.2 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres (243 km²) above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	11	11	5.0	7.0	5.0	255	495	13	11	16	16
2	8.7	11	9.1	5.5	7.5	5.0	255	460	13	12	18	15
3	8.4	11	10	5.5	8.0	5.0	252	455	13	20	19	14
4	8.1	11	9.9	5.5	8.0	4.7	255	432	13	16	18	13
5	8.1	9.9	10	5.0	8.0	4.5	244	410	13	14	21	12
6	8.1	9.5	9.5	5.0	7.0	9.0	240	389	15	12	20	12
7	8.1	9.5	10	7.0	7.0	4.3	248	372	13	13	17	12
8	7.8	9.9	11	6.0	7.5	3.3	263	342	13	13	20	12
9	8.7	9.9	12	5.0	8.0	3.0	252	342	14	13	20	12
10	12	10	11	4.0	12	2.8	255	329	15	13	25	12
11	9.5	10	10	3.5	17	3.0	329	321	13	14	27	12
12	8.7	10	11	4.0	18	3.1	415	309	12	14	23	12
13	8.4	10	12	6.0	16	3.1	591	305	12	15	23	12
14	7.8	10	11	10	14	3.3	1,110	282	12	14	22	11
15	7.8	9.5	11	20	12	3.1	1,020	274	11	15	20	11
16	7.8	9.5	11	25	12	2.8	719	271	11	14	20	11
17	8.1	9.9	12	20	10	2.8	567	274	10	12	20	10
18	8.1	9.9	15	15	9.1	90	522	274	9.9	12	22	9.9
19	8.1	10	12	15	8.7	294	485	263	9.1	13	20	9.9
20	8.1	10	12	15	8.1	271	500	271	9.5	17	19	9.9
21	8.1	9.9	15	12	7.8	240	712	259	11	17	17	9.5
22	36	9.5	15	9.0	6.6	240	875	169	14	17	77	9.5
23	233	9.5	16	9.0	6.0	214	972	17	13	18	15	9.5
24	263	9.5	15	10	3.8	206	784	14	12	16	15	9.1
25	258	9.9	13	10	5.5	225	674	15	12	14	14	9.1
26	19	9.5	14	10	5.2	255	667	14	11	13	13	9.5
27	12	9.5	12	9.5	5.0	302	784	14	10	14	15	9.9
28	11	9.5	10	10	5.0	286	836	14	11	14	13	11
29	11	9.9	9.0	10	------	267	667	13	12	15	13	10
30	10	9.4	7.0	9.0	------	252	561	14	12	15	14	11
31	11	------	5.0	7.0	------	252	------	14	------	17	14	------
TOTAL	1,041.2	297.6	351.5	292.5	249.8	3,461.8	16,309	7,427	362.5	447	630	336.8
MEAN	33.6	9.92	11.3	9.44	8.92	112	544	240	12.1	14.4	20.3	11.2
MAX	263	11	16	25	18	302	1,110	495	15	20	77	16
MIN	7.8	9.4	5.0	3.5	3.8	2.8	240	13	9.1	11	13	9.1
AC-FT	2,070	590	697	580	495	6,870	32,350	14,730	719	887	1,250	668

CAL YR 1973 TOTAL 65,662.1 MEAN 180 MAX 2,810 MIN 1.5 AC-FT 130,200
WTR YR 1974 TOTAL 31,206.7 MEAN 85.5 MAX 1,110 MIN 2.8 AC-FT 61,900

06436700 INDIAN CREEK NEAR ARPAN, S. DAK.

LOCATION.--Lat 44°48'51", long 103°41'22", in SE¼NE¼ sec.24, T.10 N., R.3 E., Butte County, on left bank 3,200 ft (975 m) upstream from North Canal flume, 3.5 mi (5.6 km) northwest of Arpan and 6.9 mi (11.1 km) downstream from Bitter Creek.

DRAINAGE AREA.--315 mi^2 (815 km^2), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--13 years, 18.4 ft^3/s (0.521 m^3/s), 13,330 acre-ft/yr (16.4 hm^3/yr); median of yearly mean discharges, 12 ft^3/s (0.34 m^3/s), 8,700 acre-ft/yr (11 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 180 ft^3/s (5.10 m^3/s) July 29; maximum gage height, 12.26 ft (3.737 m) Jan. 21 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 2,690 ft^3/s (76.2 m^3/s) May 8, 1967, gage height, 14.58 ft (4.444 m), from floodmarks; maximum gage height, 15.11 ft (4.606 m) May 26, 1962, from floodmarks; no flow for many days in most years.

REMARKS.--Records fair except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0		0	1.0	1.4	0	0	0	0		
2	0	0		0	.50	1.4	0	0	0	0		
3	0	0		0	.20	1.4	0	.29	0	0		
4	0	0		0	.20	.58	0	.29	0	0		
5	0	0		0	.60	0	0	0	0	0		
6	0	0		0	0	0	0	0	0	0		
7	0	0		0	0	0	0	0	0	0		
8	0	0		0	0	0	0	0	0	0		
9	0	0		0	0	0	0	0	0	0		
10	11	0		0	1.0	0	0	0	0	0		
11	18	0		0	5.0	0	.07	0	0	0		
12	13	0		0	8.0	0	.58	0	0	0		
13	8.1	.58		1.0	9.0	0	3.2	0	0	0		
14	4.7	.58		4.0	7.0	1.4	23	0	0	0		
15	2.3	.58		8.0	7.5	0	74	0	0	0		
16	1.2	.58		20	9.0	0	40	0	0	0		
17	.29	.29		15	9.0	0	30	0	0	0		
18	0	.29		10	8.0	.29	9.9	0	0	0		
19	0	0		7.0	7.0	0	2.6	0	0	0		
20	0	0		5.0	9.0	0	0	0	0	0		
21	0	0		5.0	7.0	0	0	0	14	0		
22	0	0		4.0	4.0	0	0	0	35	0		
23	0	0		5.0	2.0	0	0	0	25	0		
24	0	0		7.0	1.7	0	0	0	21	0		
25	0	0		7.0	1.8	0	0	0	17	0		
26	0	0		6.0	1.9	0	0	0	15	0		
27	0	0		6.0	2.6	0	0	.58	12	0		
28	0	0		6.0	.29	0	0	.70	9.0	.80		
29	0	0		6.0	------	0	0	1.0	6.8	68		
30	0	0		4.0	------	0	0	2.0	4.4	4.7		
31	0	------		2.0	------	0	------	1.0	------	.87		------
TOTAL	58.59	2.90	0	128.0	103.29	6.47	183.35	5.86	159.2	74.37	0	0
MEAN	1.89	.097	0	4.13	3.69	.21	6.11	.19	5.31	2.40	0	0
MAX	18	.58	0	20	9.0	1.4	74	2.0	35	68	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	116	5.8	0	254	205	13	364	12	316	148	0	0

CAL YR 1973 TOTAL 960.69 MEAN 2.63 MAX 49 MIN 0 AC-FT 1,910
WTR YR 1974 TOTAL 722.03 MEAN 1.98 MAX 74 MIN 0 AC-FT 1,430

PEAK DISCHARGE (BASE, 350 FT^3/S).--No peaks above base.

06436800 HORSE CREEK NEAR VALE, S. DAK.

LOCATION.--Lat 44°39'30", long 103°20'17", in SE¼NW¼ sec.13, T.8 N., R.6 E., Butte County, on right bank 600 ft (183 m) downstream from Dry Creek, 2.9 mi (4.7 km) upstream from mouth and 4.0 mi (6.4 km) northeast of Vale.

DRAINAGE AREA.--530 mi^2 (1,370 km^2), approximately.

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,688.96 ft (819.595 m) above mean sea level.

AVERAGE DISCHARGE.--12 years, 55.0 ft^3/s (1.558 m^3/s), 39,850 acre-ft/yr (49.1 hm^3/yr); median of yearly mean discharges, 47 ft^3/s (1.33 m^3/s), 34,100 acre-ft/yr (42 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 250 ft^3/s (7.08 m^3/s) July 30, gage height, 5.33 ft (1.625 m); maximum gage height, 6.24 ft (1.902 m) Jan. 18 (backwater from ice); minimum daily discharge, 0.30 ft^3/s (0.008 m^3/s) Jan. 1.

Period of record: Maximum discharge, 2,380 ft^3/s (67.4 m^3/s) May 26, 1965, gage height, 10.84 ft (3.304 m); minimum daily, 0.20 ft^3/s (0.006 m^3/s) May 7-9, 1962, Jan. 17, 18, 1970.

REMARKS.--Records good except those for winter periods, which are poor. Natural flow of stream affected by diversions for irrigation above station and by return flow from Belle Fourche Irrigation Project. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 31 to June 11, Aug. 28 to Sept. 5; stage-discharge relation affected by ice Nov. 3-8, 20-23, Dec. 3 to Mar. 3, Mar. 19-25)

3.0	1.0	3.5	16
3.1	2.6	3.7	30
3.2	4.9	4.0	57
3.3	7.7	5.0	185

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	6.0	4.9	.30	4.6	7.0	3.8	1.3	62	74	86	118
2	50	6.0	5.5	.50	4.8	8.0	3.3	2.5	61	86	83	138
3	42	6.0	5.0	.50	5.2	8.0	3.3	3.6	68	125	84	133
4	30	6.0	4.0	.50	5.0	7.7	3.3	3.3	55	135	86	118
5	20	5.5	3.2	.50	5.2	8.1	2.9	2.9	56	118	87	100
6	14	5.5	3.0	.40	5.0	7.1	2.9	2.6	89	108	94	83
7	9.6	5.5	3.2	.70	6.0	4.9	2.9	2.5	79	114	109	74
8	7.7	5.5	3.4	.80	5.5	4.9	3.3	2.6	66	114	110	67
9	9.6	6.0	3.4	.90	7.0	4.7	3.6	3.1	84	101	116	68
10	44	6.0	3.2	.70	7.0	4.7	3.3	3.1	99	101	125	67
11	33	7.4	3.2	.50	8.0	5.2	6.6	2.6	94	103	143	66
12	30	7.7	3.2	1.0	8.0	5.2	24	2.5	62	107	139	67
13	20	8.8	3.0	3.0	7.0	5.7	42	1.8	47	109	144	77
14	15	7.7	2.6	5.0	6.5	6.3	38	1.3	48	112	126	84
15	11	7.1	2.6	10	7.0	5.7	24	1.2	47	120	113	79
16	8.8	6.3	2.6	30	7.0	4.7	50	1.0	52	127	113	96
17	7.7	6.3	2.8	20	7.5	4.2	40	1.0	47	127	117	100
18	7.7	6.0	2.4	10	6.0	4.9	24	1.2	50	153	113	99
19	7.1	6.0	1.8	9.0	6.0	5.0	18	1.0	49	156	118	75
20	6.9	5.5	1.0	8.0	8.0	4.5	15	1.3	49	162	111	44
21	6.9	5.5	1.5	7.0	7.0	4.0	13	1.0	62	176	114	33
22	6.3	5.5	1.5	5.5	6.0	3.0	9.6	32	83	151	108	25
23	6.3	5.0	1.8	7.0	6.5	2.5	6.9	23	84	148	111	20
24	6.3	5.2	1.8	8.0	5.5	2.0	4.7	27	79	139	111	14
25	6.3	5.5	1.5	8.0	6.5	2.5	3.6	33	79	126	109	12
26	6.0	5.5	1.5	7.5	8.5	3.1	3.6	24	79	117	105	9.9
27	6.0	4.9	1.2	6.5	9.0	3.3	4.0	30	70	109	103	9.2
28	6.0	4.9	1.0	8.0	8.0	4.0	4.0	26	66	101	99	8.8
29	6.0	4.9	1.0	8.0	------	4.0	3.6	38	69	104	103	7.1
30	6.0	4.9	1.0	7.0	------	3.8	3.1	62	66	169	111	5.7
31	6.0	------	.50	5.0	------	4.0	------	78	------	114	109	------
TOTAL	488.2	178.6	78.30	179.80	183.3	152.7	370.3	416.4	2,001	3,806	3,400	1,897.7
MEAN	15.7	5.95	2.53	5.80	6.55	4.93	12.3	13.4	66.7	123	110	63.3
MAX	50	8.8	5.5	30	9.0	8.1	50	78	99	176	144	138
MIN	6.0	4.9	.50	.30	4.6	2.0	2.9	1.0	47	74	83	5.7
AC-FT	968	354	155	357	364	303	734	826	3,970	7,550	6,740	3,760

CAL YR 1973 TOTAL 13,291.7 MEAN 36.4 MAX 250 MIN .50 AC-FT 26,360
WTR YR 1974 TOTAL 13,152.3 MEAN 36.0 MAX 176 MIN .30 AC-FT 26,090

PEAK DISCHARGE (BASE, 400 FT^3/S).--No peaks above base.

06437000 BELLE FOURCHE RIVER NEAR STURGIS, S. DAK.

LOCATION.--Lat 44°30'47", long 103°08'11", in SE¼NW¼ sec.3, T.6 N., R.8 E., Meade County, near right bank on downstream side of bridge on State Highway 34, 0.5 mi (0.8 km) upstream from Bear Butte Creek and 20 mi (32 km) northeast of Sturgis.

DRAINAGE AREA.--5,870 mi^2 (15,200 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,526.13 ft (769.964 m) above mean sea level. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years, 267 ft^3/s (7.561 m^3/s), 193,400 acre-ft/yr (238 hm^3/yr); median of yearly mean discharges, 230 ft^3/s (6.51 m^3/s), 167,000 acre-ft/yr (210 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1,100 ft^3/s (31.2 m^3/s) Apr. 14, gage height, 5.53 ft (1.686 m); minimum daily, 3.0 ft^3/s (0.085 m^3/s) Dec. 31, Jan. 1.

Period of record: Maximum discharge, 17,900 ft^3/s (507 m^3/s) May 24, 1946, gage height, 13.86 ft (4.225 m), from rating curve extended above 11,000 ft^3/s (312 m^3/s); maximum gage height, 14.32 ft (4.365 m) June 16, 1962; no flow for many days in 1945, 1950, and Aug. 9, 1961.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm^3), 246 mi (396 km) upstream, since February 1952. At a point 75 mi (121 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434500), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km^2) above station. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 30 to Sept. 5; stage-discharge relation affected by ice Nov. 4-10, Nov. 20 to Mar. 3)

3.1	40	4.8	635
3.4	100	6.0	1,390
4.0	285		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217	75	70	3.0	18	170	296	565	296	214	328	402
2	200	77	70	5.0	23	170	289	530	282	207	314	512
3	181	77	40	6.0	28	130	292	507	282	296	310	530
4	136	75	25	7.0	33	98	292	489	278	374	332	489
5	110	80	10	7.0	32	79	289	462	264	362	354	394
6	98	90	7.0	8.0	32	73	282	436	296	332	340	332
7	88	95	15	9.0	30	71	282	419	303	328	343	271
8	82	94	30	9.0	30	63	303	402	243	347	332	247
9	84	95	35	8.0	35	67	296	394	343	310	343	254
10	133	90	35	7.0	40	61	292	394	382	264	370	264
11	187	88	40	7.0	60	61	340	378	362	247	453	257
12	150	84	35	10	100	59	449	362	328	257	466	264
13	133	84	35	20	150	61	545	358	307	264	453	275
14	105	69	30	30	120	61	864	343	271	296	440	351
15	93	69	30	40	140	69	1,030	332	254	314	390	314
16	88	67	35	50	110	61	847	325	224	299	366	321
17	84	67	40	80	90	54	706	317	220	314	351	343
18	84	65	35	50	80	58	613	374	237	370	347	314
19	82	54	30	40	80	61	602	382	204	415	347	250
20	79	50	30	35	85	325	591	370	175	427	340	153
21	77	55	35	30	80	299	646	328	204	512	336	118
22	75	60	35	30	70	237	775	325	257	493	325	102
23	75	60	30	32	60	268	823	386	257	449	347	93
24	186	60	25	32	60	215	835	240	240	419	332	86
25	257	60	25	35	70	240	734	181	234	386	325	82
26	271	55	25	33	100	289	679	168	220	347	354	75
27	136	50	20	35	130	299	706	172	220	317	347	71
28	88	55	15	40	150	325	769	207	210	332	325	67
29	82	60	10	40	------	317	696	230	204	340	314	67
30	79	65	6.0	30	------	299	613	264	217	347	314	63
31	75	------	3.0	18	------	292	------	296	------	354	343	------
TOTAL	3,815	2,125	906.0	786.0	2,036	4,932	16,776	10,936	7,814	10,533	10,981	7,361
MEAN	123	70.8	29.2	25.4	72.7	159	559	353	260	340	354	245
MAX	271	95	70	80	150	325	1,030	565	382	512	466	530
MIN	75	50	3.0	3.0	18	54	282	168	175	207	310	63
AC-FT	7,570	4,210	1,800	1,560	4,040	9,780	33,280	21,690	15,500	20,890	21,780	14,600

CAL YR 1973 TOTAL 139,347.0 MEAN 382 MAX 3,580 MIN 3.0 AC-FT 276,400
WTR YR 1974 TOTAL 79,001.0 MEAN 216 MAX 1,030 MIN 3.0 AC-FT 156,700

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, S. DAK.

LOCATION.--Lat 44°22'11", long 102°33'56", in NE¼NE¼ sec.29, T.5 N., R.13 E., Meade County, on right bank 10 ft (3 m) downstream from highway bridge, 4.3 mi (6.9 km) northwest of Elm Springs and 4.7 mi (7.6 km) downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi² (18,670 km²), approximately.

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,171.60 ft (661.904 m) above mean sea level. Prior to July 27, 1939, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--43 years (1928-31, 1934-74), 363 ft³/s (10.28 m³/s), 263,000 acre-ft/yr (324 hm³/yr); median of yearly mean discharges, 360 ft³/s (10.2 m³/s), 261,000 acre-ft (266 hm³).

EXTREMES.--Current year: Maximum discharge, 1,420 ft³/s (40.2 m³/s) Apr. 15; maximum gage height, 3.84 ft (1.170 m) Mar. 23 (backwater from ice); minimum daily discharge, 3.0 ft³/s (0.085 m³/s) June 10, 11.

Period of record: Maximum discharge, 45,100 ft³/s (1,280 m³/s) June 8, 1964, gage height, 15.90 ft (4.846 m), from rating curve extended above 23,000 ft³/s (651 m³/s); no flow for many days in 1936-37, 1939-40, 1961-62.

Flood in May 1927 reached a stage of 21.8 ft (6.64 m). Flood in spring of 1933 reached a stage of about 20 ft (6.1 m), from floodmarks.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 304 mi (489 km) upstream, since February 1952. At a point 133 mi (214 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km²) above station. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3 to Nov. 3, Nov. 10-18, Mar. 1-19, Apr. 12-22; stage-discharge relation affected by ice Nov. 4, 9, Nov. 19 to Feb. 28, Mar. 20-25)

1.0	49	2.4	670
1.3	111	3.0	1,190
1.7	252	4.0	2,240

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	83	58	5.0	20	266	347	607	266	208	381	380
2	204	81	65	5.5	20	220	352	565	266	216	352	450
3	189	81	55	5.0	25	189	364	530	257	216	330	550
4	174	87	50	4.5	30	147	364	512	257	266	325	580
5	140	85	35	4.5	30	120	375	488	244	330	341	500
6	117	73	30	5.0	25	106	381	464	240	325	358	400
7	101	73	35	5.5	25	92	393	434	252	303	336	300
8	89	70	42	5.5	30	74	393	415	266	303	341	250
9	85	48	40	4.0	40	83	416	404	236	320	336	220
10	94	117	40	3.0	50	89	410	387	298	293	369	220
11	169	117	45	3.0	100	72	506	381	320	257	381	228
12	330	101	42	3.5	200	76	579	364	309	244	446	220
13	303	99	40	4.0	200	70	854	347	270	244	470	228
14	201	87	40	4.5	150	70	937	341	261	261	452	232
15	137	87	43	4.5	160	66	1,240	320	240	280	420	298
16	111	87	50	4.0	130	58	1,180	309	224	293	380	266
17	97	85	52	6.0	100	70	964	303	208	298	360	270
18	85	81	45	80	100	68	822	298	208	336	350	280
19	81	81	35	120	100	64	750	336	216	375	350	252
20	79	45	35	80	100	50	742	341	201	416	350	224
21	74	33	40	40	90	130	702	320	182	458	340	164
22	72	45	40	20	90	300	774	289	201	506	330	126
23	72	55	35	30	80	250	846	293	240	488	330	106
24	72	55	30	35	70	170	870	330	252	464	350	94
25	125	55	30	40	80	250	790	244	232	446	340	85
26	220	52	30	50	100	404	726	204	216	416	330	76
27	240	50	25	50	150	330	694	189	204	381	370	68
28	150	50	20	50	200	341	734	189	204	364	350	64
29	101	55	15	50	------	364	798	201	197	381	330	63
30	85	55	10	40	------	352	694	224	201	375	320	59
31	83	------	5.0	20	------	347	------	244	------	393	330	------
TOTAL	4,269	2,173	1,157.0	782.0	2,495	5,288	19,997	10,874	7,168	10,456	11,148	7,253
MEAN	138	72.4	37.3	25.2	89.1	171	667	351	239	337	360	242
MAX	330	117	65	120	200	404	1,240	607	320	506	470	580
MIN	72	33	5.0	3.0	20	50	347	189	182	208	320	59
AC-FT	8,470	4,310	2,290	1,550	4,950	10,490	39,660	21,570	14,220	20,740	22,110	14,390

CAL YR 1973 TOTAL 154,577.0 MEAN 423 MAX 4,720 MIN 5.0 AC-FT 306,600
WTR YR 1974 TOTAL 83,060.0 MEAN 228 MAX 1,240 MIN 3.0 AC-FT 164,700

06438500 CHEYENNE RIVER NEAR PLAINVIEW, S. DAK.

LOCATION.--Lat 44°31'16", long 101°59'34", in NE¼SW¼ sec.31, T.7 N., R.18 E., Ziebach County, near left bank on downstream side of highway bridge, 1.0 mi (1.6 km) downstream from Ash Creek and 10 mi (16 km) southeast of Plainview.

DRAINAGE AREA.--21,600 mi² (55,900 km²), approximately.

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,877.65 ft (572.308 m) above mean sea level. Prior to Mar. 22, 1951, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 627 ft³/s (17.76 m³/s), 454,300 acre-ft/yr (560 hm³/yr); median of yearly mean discharges, 610 ft³/s (17.3 m³/s), 442,000 acre-ft/yr (540 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,440 ft³/s (69.1 m³/s) Apr. 12, gage height, 5.73 ft (1.746 m); maximum gage height, 7.90 ft (2.408 m) Feb. 20 (backwater from ice); minimum daily discharge, 30 ft³/s (0.85 m³/s) Jan. 9-12.

Period of record: Maximum discharge, 41,700 ft³/s (1,180 m³/s) May 26, 1957, from rating curve extended above 18,000 ft³/s (510 m³/s); maximum gage height, 11.68 ft (3.560 m) May 26, 1965; no flow Dec. 14, 19-21, 1961.

Flood late in May 1920, reached a stage of about 17.5 ft (5.33 m), from information by local residents. Flood in May 1927 reached a stage of about 14 ft (4.3 m), from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Flow slightly regulated by Angostura Reservoir 164 mi (264 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km²) and return flow from irrigated areas.

Rating table (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Sept. 23-30; stage-discharge relation affected by ice Dec. 1 to Mar. 3)

3.3	29	4.5	640
3.5	74	5.0	1,180
3.7	140	5.5	1,970
4.0	286	6.0	2,970

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	345	198	250	80	600	1,400	475	879	558	140	378	286
2	339	212	300	85	500	1,000	482	794	468	140	327	468
3	345	222	350	70	400	1,100	480	743	424	174	304	802
4	327	217	250	60	300	1,090	470	696	371	140	286	764
5	316	179	170	50	250	512	550	659	352	524	298	677
6	270	162	120	45	220	475	475	615	352	410	281	558
7	237	162	130	40	200	497	424	599	339	345	333	453
8	212	198	170	35	200	497	446	558	352	358	304	365
9	208	222	200	30	220	460	460	543	371	321	321	304
10	232	259	210	30	250	468	475	550	352	310	404	292
11	232	316	200	30	300	475	528	535	535	264	424	275
12	396	345	180	30	400	475	1,340	505	583	203	512	270
13	644	521	150	40	450	468	1,990	490	528	193	615	401
14	1,120	333	110	60	400	432	1,490	475	453	188	607	310
15	512	281	110	100	500	304	1,400	468	397	198	558	310
16	365	270	140	200	600	227	1,600	453	358	212	520	327
17	292	264	150	300	800	217	1,490	424	333	227	468	384
18	259	237	140	600	900	193	1,320	404	304	333	432	391
19	237	212	120	1,000	1,400	162	1,270	404	286	327	397	391
20	227	170	130	950	1,700	140	1,170	482	232	871	365	384
21	217	67	140	850	1,600	67	1,010	468	200	784	327	384
22	212	39	140	800	1,400	266	1,040	424	174	632	304	222
23	203	39	120	750	1,100	286	1,160	391	232	624	320	170
24	198	41	120	750	1,000	140	1,170	410	243	574	837	144
25	217	69	110	700	950	237	1,200	453	222	591	434	133
26	281	149	110	700	1,100	584	1,050	310	198	512	453	122
27	424	118	100	850	1,400	583	990	237	174	439	378	118
28	468	153	100	1,000	1,600	497	956	232	166	384	333	108
29	298	179	90	1,400	------	482	979	267	157	333	352	104
30	243	227	80	1,100	------	468	967	453	153	327	310	108
31	208	------	70	800	------	460	------	614	------	310	292	------
TOTAL	10,084	6,061	4,760	13,535	20,740	14,662	28,857	15,535	9,867	11,388	12,474	10,025
MEAN	325	202	154	437	741	473	962	501	329	367	402	334
MAX	1,120	521	350	1,400	1,700	1,400	1,990	879	583	871	837	802
MIN	198	39	70	30	200	67	424	232	153	140	281	104
AC-FT	20,000	12,020	9,440	26,850	41,140	29,080	57,240	30,810	19,570	22,590	24,740	19,880

CAL YR 1973 TOTAL 248,833 MEAN 682 MAX 4,590 MIN 39 AC-FT 493,600
WTR YR 1974 TOTAL 157,988 MEAN 433 MAX 1,990 MIN 30 AC-FT 313,400

06439000 CHERRY CREEK NEAR PLAINVIEW, S. DAK.

LOCATION.--Lat 44°44'38", long 102°03'11", in SW¼NE¼ sec.16, T.9 N., R.17 E., Meade County, on left bank 5 ft (2 m) downstream from bridge on State Highway 73, 0.2 mi (0.3 km) downstream from small right-bank tributary, 6.2 mi (10.0 km) downstream from Red Owl Creek, and 11 mi (18 km) northeast of Plainview.

DRAINAGE AREA.--1,190 mi^2 (3,080 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,158.06 ft (657.777 m) above mean sea level. Prior to June 8, 1948, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years, 45.7 ft^3/s (1.294 m^3/s), 33,110 acre-ft/yr (40.8 hm^3/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,400 acre-ft/yr (25 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 11 ft^3/s (0.31 m^3/s) Apr. 14, gage height, 4.12 ft (1.256 m); no flow for most of year.

Period of record: Maximum discharge, 17,500 ft^3/s (496 m^3/s) Apr. 1, 1952, gage height, 22.63 ft (6.898 m); no flow for long periods in each year.

REMARKS.--Records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	.80				
2							0	.56				
3							0	.32				
4							0	.16				
5							0	0				
6							0	0				
7							0	0				
8							0	0				
9							0	0				
10							0	0				
11							0	0				
12							0	0				
13							0	0				
14							3.3	0				
15							5.0	0				
16							4.0	0				
17							1.5	0				
18							1.1	0				
19							.96	0				
20							.88	0				
21							.88	0				
22							.97	0				
23							5.9	0				
24							3.6	0				
25							2.6	0				
26							1.8	0				
27							1.5	0				
28							1.4	0				
29					------		1.1	0				
30					------		.96	0				
31		------			------		------	0	------			------
TOTAL	0	0	0	0	0	0	37.45	1.84	0	0	0	0
MEAN	0	0	0	0	0	0	1.25	.059	0	0	0	0
MAX	0	0	0	0	0	0	5.9	.80	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	74	3.6	0	0	0	0

CAL YR 1973 TOTAL 4,106.54 MEAN 11.3 MAX 170 MIN 0 AC-FT 8,150
WTR YR 1974 TOTAL 39.29 MEAN .11 MAX 5.9 MIN 0 AC-FT 78

PEAK DISCHARGE (BASE, 1,000 FT^3/S).--No peaks above base.

06439300 CHEYENNE RIVER AT CHERRY CREEK, S. DAK.

LOCATION.--Lat 44°36'10", long 101°29'24", in NE¼NW¼ sec.5, T.7 N., R.22 E., Ziebach County, on left bank 0.5 mi (0.8 km) east of village of Cherry Creek, 0.5 mi (0.8 km) downstream from Cherry Creek and 1.7 mi (2.7 km) upstream from Plum Creek.

DRAINAGE AREA.--23,900 mi^2 (61,900 km^2), approximately.

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,699.29 ft (517.944 m) above mean sea level. Prior to Oct. 17, 1960, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--14 years, 864 ft^3/s (24.47 m^3/s), 626,000 acre-ft/yr (772 hm^3/yr); median of yearly mean discharges, 740 ft^3/s (21.0 m^3/s), 536,000 acre-ft/yr (661 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,420 ft^3/s (96.9 m^3/s) Apr. 13; maximum gage height, 6.86 ft (2.091 m) Mar. 1 (backwater from ice); minimum daily discharge, 30 ft^3/s (0.85 m^3/s) Jan. 11, 12.

Period of record: Maximum discharge, 43,800 ft^3/s (1,240 m^3/s) June 16, 1967, gage height, 14.75 ft (4.496 m); no flow Jan. 6 to Feb. 2, 1962.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 197 mi (317 km) upstream, see station 06401000, since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km^2) and return flow from irrigated areas. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	362	208	202	80	700	1,700	436	861	565	224	322	334
2	350	202	244	75	600	1,100	418	792	445	228	358	383
3	354	211	303	85	500	1,200	414	719	418	244	326	441
4	400	214	269	70	400	922	409	639	405	234	307	799
5	366	234	237	60	300	613	414	607	379	249	299	639
6	322	196	131	50	260	554	432	583	358	414	303	560
7	284	196	186	45	250	526	436	543	350	400	322	460
8	251	180	177	40	250	543	436	521	350	375	322	392
9	237	254	208	35	250	521	436	532	354	362	314	342
10	241	326	199	35	270	479	432	595	346	342	379	342
11	266	273	214	30	300	484	499	543	366	326	396	303
12	303	295	200	30	350	494	589	560	489	280	400	276
13	471	483	180	35	400	470	2,390	526	499	273	494	280
14	1,260	572	140	40	450	474	1,680	460	460	244	526	284
15	767	405	120	60	400	414	1,430	445	423	241	510	299
16	445	338	120	100	500	338	1,690	423	379	248	479	322
17	346	280	140	200	650	310	1,910	414	342	262	441	375
18	291	255	155	350	800	295	1,390	405	310	299	405	338
19	255	240	130	800	1,000	280	1,330	409	284	342	379	346
20	241	220	140	1,100	1,500	266	1,330	432	273	342	366	338
21	234	180	150	1,000	1,700	205	1,080	436	280	996	350	314
22	228	100	150	900	1,500	211	969	409	266	620	326	262
23	221	60	140	800	1,300	400	1,080	379	244	578	314	214
24	208	60	130	800	1,100	576	1,170	392	248	554	480	180
25	196	60	130	750	1,000	881	1,200	470	276	543	610	175
26	189	120	120	750	1,000	451	1,080	418	266	499	427	161
27	267	177	120	800	1,200	709	1,010	342	251	441	387	148
28	383	167	110	900	1,400	578	927	280	241	400	358	141
29	346	164	110	1,000	------	474	910	269	237	354	379	131
30	266	196	95	1,500	------	470	952	326	234	314	354	125
31	224	------	85	950	------	465	------	409	------	318	334	------
TOTAL	10,574	6,866	5,035	13,470	20,330	17,403	28,879	15,139	10,338	11,546	11,967	9,704
MEAN	341	229	162	435	726	561	963	488	345	372	386	323
MAX	1,260	572	303	1,500	1,700	1,700	2,390	861	565	996	610	799
MIN	189	60	85	30	250	205	409	269	234	224	299	125
AC-FT	20,970	13,620	9,990	26,720	40,320	34,520	57,280	30,030	20,510	22,900	23,740	19,250

CAL YR 1973 TOTAL 274,130 MEAN 751 MAX 8,250 MIN 60 AC-FT 543,700
WTR YR 1974 TOTAL 161,251 MEAN 442 MAX 2,390 MIN 30 AC-FT 319,800

06439980 LAKE OAHE NEAR PIERRE, S. DAK.

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--August 1958 to current year. Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

EXTREMES.--Current year: Maximum contents, 19,819,000 acre-ft (24,400 hm^3) Apr. 14; maximum elevation. 1,609.5 ft (490.58 m) Apr. 14; minimum contents, 17,552,000 acre-ft (21,600 hm^3) Oct. 6; minimum elevation, 1,601.6 ft (488.17 m) Oct. 5, affected by wind.

Period of record: Maximum contents, 22,397,000 acre-ft (27,600 hm^3) May 31, 1970, elevation, 1,616.7 ft (492.77 m), affected by wind; minimum since initial filling, 16,500,000 acre-ft (20,300 hm^3) Dec. 21, 1972, elevation, 1,599.2 ft (487.31 m).

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft (29,100 hm^3) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,530,000 acre-ft (27,800 hm^3) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm^3) is designated for flood control. Inactive storage, 5,538,000 acre-ft (6,830 hm^3) below elevation 1,540.0 ft (469.39 m). Dead storage, 2,000 acre-ft (2.47 hm^3) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 X 7.2 m) each; design capacity, 300,000 ft^3/s (8,500 m^3/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,602.4	17,742,000	-
Oct. 31	1,602.2	17,603,000	-139,000
Nov. 30	1,603.8	18,149,000	+546,000
Dec. 31	1,504.4	18,306,000	+157,000
CAL YR 1973	-	-	+1,362,000
Jan. 31	1,605.7	18,667,000	+361,000
Feb. 28	1,607.2	19,135,000	+468,000
Mar. 31	1,609.2	19,782,000	+647,000
Apr. 30	1,608.9	19,689,000	-93,000
May 31	1,608.6	19,560,000	-129,000
June 30	1,608.0	19,420,000	-140,000
July 31	1,606.1	18,801,000	-619,000
Aug. 31	1,604.5	18,338,000	-463,000
Sept.30	1,602.6	17,740,000	-598,000
WTR YR 1974	-	-	-2,000

06441000 BAD RIVER NEAR MIDLAND, S. DAK.

LOCATION.--Lat 44°04'01", long 101°09'36", in NE¼NW¼ sec.7, T.1 N., R.25 E., Haakon County, on right bank at downstream side of bridge on State Highway 63, 0.4 mi (0.6 km) southwest of Midland, 2.0 mi (3.2 km) upstream from Mitchell Creek, and 3.7 mi (6.0 km) upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi² (3,780 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,849.14 ft (563.618 m) above mean sea level. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi (6.8 km) downstream at datum 15.72 ft (4.791 m) lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft (9 m) upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft (18 m) upstream, both at present datum.

AVERAGE DISCHARGE.--29 years, 65.9 ft³/s (1.866 m³/s), 47,740 acre-ft/yr (58.9 hm³/yr); median of yearly mean discharges, 37 ft³/s (1.05 m³/s), 26,800 acre-ft/yr (33 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 598 ft³/s (16.9 m³/s) Apr. 14, gage height, 6.89 ft (2.100 m); no flow for many days.

Period of record: Maximum discharge, 29,400 ft³/s (833 m³/s) June 15, 1967, gage height, 24.44 ft (7.449 m), from floodmarks, 20.10 ft (6.126 m), from floodmarks, at former site and datum, from rating curve extended above 16,000 ft³/s (453 m³/s); no flow for many days in each year.

REMARKS.--Records poor.

REVISIONS.--WSP 2117: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.05	0	3.4	3.2	3.8	19	4.5	83
3.1	.03	3.5	5.6	4.0	34	5.0	181
3.2	.40	3.6	9.0	4.2	55	6.0	381
3.3	1.5						

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	.27				0		49	0	0	
2	0	0	.57				0		19	0	0	
3	0	0	.48				0		7.6	9.9	0	
4	0	0	.11				0		3.8	14	0	
5	0	0	0				0		2.0	3.4	0	
6	0	0	0				0		1.1	.77	0	
7	0	0	0				0		.99	.08	0	
8	0	0	0				0		.88	0	0	
9	0	0	0				0		.77	0	0	
10	0	0	0				0		.60	0	0	
11	0	0	0				0		.60	0	0	
12	0	0	0				0		.40	0	0	
13	0	0	0				.14		.40	0	0	
14	0	0	0				256		.20	0	0	
15	0	0	0				80		.20	0	0	
16	37	1.7	0				33		1.0	0	0	
17	14	13	0				16		1.4	0	1.0	
18	4.8	9.4	0				9.0		.99	0	.99	
19	1.8	5.9	0				6.6		.40	0	.14	
20	.99	1.4	0				6.6		.11	0	0	
21	.33	.88	0				8.7		.03	0	0	
22	.11	.99	0				30		.01	0	0	
23	.04	.67	0				24		0	0	0	
24	0	.48	0				13		0	0	0	
25	0	.48	0				6.3		0	0	0	
26	0	.40	0				3.0		0	0	0	
27	0	.27	0				1.6		0	0	0	
28	0	.27	0				.48		0	0	0	
29	0	.40	0		------		.08		0	0	0	
30	0	.40	0		------		0		0	0	0	
31	0	------	0		------		------		------	0	0	------
TOTAL	59.07	36.64	1.43	0	0	0	494.50	0	91.48	28.15	2.13	0
MEAN	1.91	1.22	.046	0	0	0	16.5	0	3.05	.91	.069	0
MAX	37	13	.57	0	0	0	256	0	49	14	1.0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	117	73	2.8	0	0	0	981	0	181	56	4.2	0

CAL YR 1973 TOTAL 7,173.52 MEAN 19.7 MAX 1,490 MIN 0 AC-FT 14,230
WTR YR 1974 TOTAL 713.40 MEAN 1.95 MAX 256 MIN 0 AC-FT 1,420

PEAK DISCHARGE (BASE, 500 FT³/S).--Apr. 14 (0400) 598 ft³/s (6.89 ft).

06441500 BAD RIVER NEAR FORT PIERRE, S. DAK.

LOCATION.--Lat 44°19'36", long 100°23'02", in NW¼NW¼ sec.10, T.4 N., R.31 E., Stanley County, on right bank at downstream side of highway bridge, 2.1 mi (3.4 km) south of Fort Pierre, 4.3 mi (6.9 km) downstream from Willow Creek, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--3,107 mi² (8,047 km²).

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for July 1932 to February 1934, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 1,427.83 ft (435.203 m) above mean sea level. Prior to July 10, 1951, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--46 years, 152 ft³/s (4.305 m³/s), 110,100 acre-ft/yr (136 hm³/yr); median of yearly mean discharges, 98 ft³/s (2.78 m³/s), 71,000 acre-ft/yr (88 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 2,560 ft³/s (72.5 m³/s) Apr. 20, gage height, 10.18 ft (3.103 m); no flow for many days.

Period of record: Maximum discharge, 43,800 ft³/s (1,240 m³/s) June 18, 1967, gage height, 29.55 ft (9.007 m); no flow for long periods in each year.

Flood in April 1927 reached a stage of 30.89 ft (9.415 m), from floodmarks, discharge, about 55,000 ft³/s (1,560 m³/s). Flood in July 1905 reached a stage about 2 ft (0.610 m) higher than that in April 1927.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: Drainage area. WSP 856: 1929(M), 1937.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 19-24, Mar. 15-27; shifting-control method used Oct. 11-20, Nov. 16-25)

1.9	0	2.3	2.2	2.8	32	5.0	414
2.0	.05	2.4	4.9	3.0	54	6.0	700
2.1	.15	2.5	9.2	3.5	120	7.0	1,040
2.2	.66	2.6	15	4.0	200	8.0	1,440

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0			0	4.6	0	7.1	79			
2	0	0			0	1.4	0	5.8	51			
3	0	0			0	1.1	0	3.8	38			
4	0	0			0	.87	0	3.6	51			
5	0	0			0	.49	0	2.5	39			
6	0	0			0	.10	0	1.6	41			
7	0	0			0	.13	0	.87	31			
8	0	0			0	.09	0	.42	22			
9	0	0			0	.06	0	.23	17			
10	0	0			0	.04	0	.42	12			
11	16	0			0	.06	0	33	7.1			
12	96	0			0	.10	0	17	4.6			
13	54	0			0	.09	0	6.6	3.3			
14	14	0			0	.06	10	3.6	2.5			
15	4.6	0			0	.05	15	1.8	1.1			
16	1.3	1.9			0	.05	69	.87	1.1			
17	.27	2.0			0	.04	139	.49	1.8			
18	.04	.15			0	.04	68	.42	.31			
19	.04	.10			.50	.03	38	.49	.09			
20	.03	.08			5.0	.02	467	.66	.06			
21	0	.08			2.5	.01	1,360	499	.04			
22	0	.06			1.8	.01	191	395	.03			
23	0	.04			1.5	.01	51	170	0			
24	0	.04			1.3	.01	46	87	0			
25	0	.04			3.3	.01	86	56	0			
26	0	0			7.5	.02	58	37	0			
27	0	0			6.2	.02	33	24	0			
28	0	0			3.6	.04	21	72	0			
29	0	0			------	.05	13	52	0			
30	0	0			------	.02	10	459	0			
31	0	------			------	.01	------	247	------			------
TOTAL	186.28	4.49	0	0	33.20	9.63	2,675	2,189.27	403.03	0	0	0
MEAN	6.01	.15	0	0	1.19	.31	89.2	70.6	13.4	0	0	0
MAX	96	2.0	0	0	7.5	4.6	1,360	499	79	0	0	0
MIN	0	0	0	0	0	.01	0	.23	0	0	0	0
AC-FT	369	8.9	0	0	66	19	5,310	4,340	799	0	0	0

CAL YR 1973 TOTAL 14,967.68 MEAN 41.0 MAX 1,580 MIN 0 AC-FT 29,690
WTR YR 1974 TOTAL 5,500.90 MEAN 15.1 MAX 1,360 MIN 0 AC-FT 10,910

PEAK DISCHARGE (BASE, 2,000 FT³/S).--Apr. 20 (time unknown) 2,560 ft³/s (10.18 ft).

06442000 MEDICINE KNOLL CREEK NEAR BLUNT, S. DAK.

LOCATION.--Lat 44°33'46", long 99°54'50", in NW¼ sec.31, T.113 N., R.75 W., Sully County, on left bank at downstream side of highway bridge, 4.8 mi (7.7 km) northeast of Blunt and 5.5 mi (8.8 km) upstream from South Fork Medicine Knoll Creek.

DRAINAGE AREA.--455 mi^2 (1,180 km^2), approximately.

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1959, published as Medicine Creek near Blunt.

GAGE.--Water-stage recorder. Datum of gage is 1,611.08 ft (491.057 m) above mean sea level. Prior to Oct. 31, 1950, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 5.09 ft^3/s (0.144 m^3/s), 3,690 acre-ft/yr (4.55 hm^3/yr); median of yearly mean discharges, 1.2 ft^3/s (0.03 m^3/s), 850 acre-ft/yr (1.0 hm^3/yr).

EXTREMES.--Current year: No flow during year.

Period of record: Maximum discharge, 1,830 ft^3/s (51.8 m^3/s) Apr. 5, 1952, gage height, 12.34 ft (3.761 m), from floodmarks; maximum gage height, 13.2 ft (4.02 m) between Mar. 26-29, 1950, from floodmarks (backwater from ice); no flow for long periods in each year.

REMARKS.--No flow since June 16, 1973.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29					------							
30					------							
31		------			------		------		------			------
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	0	0	0	0	0	0

CAL YR 1973 TOTAL 715.62 MEAN 1.96 MAX 42 MIN 0 AC-FT 1,420
WTR YR 1974 TOTAL 0.00 MEAN .00 MAX .0 MIN 0 AC-FT 0

PEAK DISCHARGE (BASE, 50 FT^3/S).--No peaks above base.

06442500 MEDICINE CREEK AT KENNEBEC, S. DAK.

LOCATION.--Lat 43°54'17", long 99°52'35", in NW¼NE¼ sec.18, T.105 N., R.75 W., Lyman County, on right bank 4 ft (1 m) downstream from highway bridge, 0.5 mi (0.8 km) west of Kennebec and 0.5 mi (0.8 km) downstream from small right-bank tributary.

DRAINAGE AREA.--465 mi^2 (1,204 km^2), approximately.

PERIOD OF RECORD.--July 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,659.64 ft (505.858 m) above mean sea level. Prior to Dec. 28, 1954, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--20 years, 14.7 ft^3/s (0.416 m^3/s), 10,650 acre-ft/yr (13.1 hm^3/yr); median of yearly mean discharges, 7.2 ft^3/s (0.20 m^3/s), 5,200 acre-ft/yr (6.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 26 ft^3/s (0.74 m^3/s) Apr. 22, gage height, 1.89 ft (0.576 m); no flow for many days.

Period of record: Maximum discharge, 8,970 ft^3/s (254 m^3/s) Mar. 28, 1960, gage height, 16.71 ft (5.093 m); no flow for many days each year.

Flood in April 1952 reached a stage of 17.0 ft (5.18 m), from floodmarks.

REMARKS.--Records fair.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							0	0	.56	0		
2							0	0	.38	0		
3							0	0	.33	.52		
4							0	0	.24	.46		
5							0	0	.09	.02		
6							0	0	0	0		
7							0	0	0	0		
8							0	0	0	0		
9							0	0	.22	0		
10							0	0	.60	0		
11							0	0	.20	0		
12							0	0	.06	0		
13							0	0	0	0		
14							0	0	0	0		
15							0	0	0	0		
16							0	0	0	0		
17							0	0	0	0		
18							0	0	0	0		
19							0	0	0	0		
20							.15	8.4	0	0		
21							0	5.3	0	0		
22							16	3.3	0	0		
23							11	3.0	0	0		
24							2.8	1.4	0	0		
25							.90	.56	0	0		
26							.42	.42	0	0		
27							.38	.15	0	0		
28							.08	.10	0	0		
29					------		0	.04	0	0		
30					------		0	.95	0	0		
31		------			------		------	.80	------	0		------
TOTAL	0	0	0	0	0	0	31.73	24.42	2.68	1.00	0	0
MEAN	0	0	0	0	0	0	1.06	.79	.089	.032	0	0
MAX	0	0	0	0	0	0	16	8.4	.60	.52	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	63	48	5.3	2.0	0	0

CAL YR 1973 TOTAL 2,362.99 MEAN 6.47 MAX 219 MIN 0 AC-FT 4,690
WTR YR 1974 TOTAL 59.83 MEAN .16 MAX 16 MIN 0 AC-FT 119

PEAK DISCHARGE (BASE, 100 FT^3/S).--No peaks above base.

06442700 LAKE SHARPE NEAR FORT THOMPSON, S. DAK.

LOCATION.--Lat 44°02'18", long 99°26'45", in SE¼ sec.27, T.107 N., R.72 W., Lyman County, at left approach wall of powerhouse at Big Bend Dam on Missouri River, 2.5 mi (4.0 km) south of Fort Thompson, and at mile 987.4 (1,588.7 km).

DRAINAGE AREA.--249,300 mi^2 (645,700 km^2), approximately.

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 1,806,000 acre-ft (2,230 hm^3) July 21, elevation, 1,421.2 ft (433.18 m), affected by wind; minimum, 1,694,000 acre-ft (2,090 hm^3) June 20, elevation, 1,419.1 ft (432.54 m).

Period of record: Maximum contents, 1,829,000 acre-ft (2,260 hm^3) Apr. 22, 1971, elevation, 1,421.9 ft (433.40 m), affected by wind; minimum since initial filling, 1,448,000 acre-ft (1,790 hm^3) Sept. 17, 1967, elevation, 1,414.7 ft (431.20 m), affected by wind.

REMARKS.--Reservoir is formed by earth-fill dam; closure made July 1963; intentional storage began November 1963. Maximum capacity, 1,900,000 acre-ft (2,340 hm^3) below elevation, 1,423.0 ft (433.73 m), top of spillway gates. Normal maximum, 1,725,000 acre-ft (2,130 hm^3) below elevation 1,420.0 ft (432.82 m). Inactive storage, 1,465,000 acre-ft (1,810 hm^3) below elevation 1,415.0 ft (431.29 m). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of a concrete chute with flat crest at elevation 1,385.0 ft (422.15 m) surmounted by 8 Taintor gates, each 40 by 38 ft (12.2 X 11.6 m); design capacity, 390,000 ft^3/s (11,000 m^3/s). Normal releases are through 8 power units (completed in July 1966), with a generating capacity of 58,500 kilowatts each. Maximum release through powerplant about 100,000 ft^3/s (2,830 m^3/s). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,420.2	1,754,000	-
Oct. 31	1,420.5	1,765,000	+11,000
Nov. 30	1,420.3	1,752,000	-13,000
Dec. 31	1,420.4	1,755,000	+3,000
CAL YR 1973	-	-	-3,000
Jan. 31	1,419.7	1,727,000	-28,000
Feb. 28	1,420.2	1,750,000	+23,000
Mar. 31	1,420.2	1,748,000	-2,000
Apr. 30	1,420.2	1,751,000	+3,000
May 31	1,420.4	1,755,000	+4,000
June 30	1,420.6	1,774,000	+19,000
July 31	1,420.2	1,755,000	-19,000
Aug. 31	1,420.2	1,751,000	-4,000
Sept.30	1,420.6	1,771,000	+20,000
WTR YR 1974	-	-	+17,000

06442950 CROW CREEK NEAR GANN VALLEY, S. DAK.

LOCATION.--Lat 43°59'29", long 99°13'07", in NE¼NW¼ sec.15, T.106 N., R.70 W., Buffalo County, near center of span at downstream side of highway bridge, 6.4 mi (10.3 km) upstream from Smith Creek, 6.9 mi (11.1 km) downstream from Elm Creek, and 12.0 mi (19.3 km) southwest of Gann Valley.

DRAINAGE AREA.--670 mi^2 (1,740 km^2), approximately.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,434.73 ft (437.306 m), above mean sea level.

EXTREMES.--Current year: Maximum discharge, 700 ft^3/s (16.8 m^3/s) Feb. 20; maximum gage height, 8.96 ft (2.731 m) Feb. 20 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 2,080 ft^3/s (58.9 m^3/s) Mar. 13, 1972, gage height, 13.17 ft (4.014 m); no flow for many days each year.

REMARKS.--Records fair except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0				0	180	7.4	1.5	9.9	0		
2	0				0	150	7.4	1.5	7.6	0		
3	0				0	104	6.8	.99	9.6	0		
4	0				0	86	5.8	.82	16	0		
5	0				0	81	5.1	.67	11	0		
6	0				0	60	5.1	.60	8.7	0		
7	0				0	40	3.4	.60	5.8	0		
8	0				0	20	2.9	.47	4.3	0		
9	0				0	10	2.4	.35	31	0		
10	0				5.0	7.0	2.2	.82	48	0		
11	4.9				10	5.0	4.7	1.9	17	0		
12	11				20	5.0	68	1.5	7.1	0		
13	6.6				15	6.0	24	1.9	5.4	.05		
14	1.8				12	7.6	18	1.9	20	.01		
15	.67				30	8.0	14	1.4	21	0		
16	.29				50	8.0	9.3	1.2	9.9	0		
17	.10				100	7.0	7.1	.82	5.4	0		
18	0				200	8.0	5.4	.67	4.1	0		
19	0				320	7.0	4.5	.74	2.8	0		
20	0				600	7.0	4.9	24	1.4	0		
21	0				500	6.0	5.4	105	1.1	0		
22	0				400	6.0	4.7	30	1.2	0		
23	0				350	5.0	3.2	27	.99	0		
24	0				250	5.0	2.8	24	.67	0		
25	0				200	6.0	3.1	27	.41	0		
26	0				230	8.0	3.4	17	.14	0		
27	0				250	8.0	2.9	13	0	0		
28	0				210	9.0	2.3	10	0	0		
29	0				------	9.3	1.9	8.2	0	0		
30	0				------	8.4	1.6	12	0	0		
31	0	------			------	7.6	------	14	------	0		------
TOTAL	25.36	0	0	0	3,752.0	884.9	239.7	331.55	250.51	.06	0	0
MEAN	.82	0	0	0	134	28.5	7.99	10.7	8.35	.002	0	0
MAX	11	0	0	0	600	180	68	105	48	.05	0	0
MIN	0	0	0	0	0	5.0	1.6	.35	0	0	0	0
AC-FT	50	0	0	0	7,440	1,760	475	658	497	.1	0	0

CAL YR 1973 TOTAL 11,353.41 MEAN 31.1 MAX 1,300 MIN 0 AC-FT 22,520
WTR YR 1974 TOTAL 5,484.08 MEAN 15.0 MAX 600 MIN 0 AC-FT 10,880

PEAK DISCHARGE (BASE, 150 FT^3/S)

DATE	TIME	G.H.	DISCHARGE
2-20	-	-	700
5-21	1300	5.01	198

06445980 WHITE CLAY CREEK NEAR OGLALA, S. DAK.

LOCATION.--Lat 43°08'46", long 102°40'58", in SE¼SE¼ sec.30, T.37 N., R.45 W., Shannon County, on left bank at downstream side of bridge on U.S. Highway 18, 4.3 mi (6.9 km) southeast of Oglala, 5.5 mi (8.8 km) upstream from Oglala Dam, and 11 mi (18 km) northwest of Pine Ridge.

DRAINAGE AREA.--340 mi^2 (880 km^2), approximately.

PERIOD OF RECORD.--August 1965 to current year.

GAGE (revised).--Water-stage recorder. Datum of gage is 3,001.54 ft (914.869 m) above mean sea level.

AVERAGE DISCHARGE.--9 years, 12.0 ft^3/s (0.340 m^3/s), 8,690 acre-ft/yr (10.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 30 ft^3/s (0.850 m^3/s) July 19; maximum gage height, 7.60 ft (2.316 m) Feb. 11 (backwater from ice); no flow Aug. 21 to Sept. 30.

Period of record: Maximum discharge, 659 ft^3/s (18.7 m^3/s) June 16, 1967, gage height, 14.74 ft (4.493 m); maximum gage height, 15.02 ft (4.578 m) Mar. 11, 1966 (backwater from ice); no flow at times in 1965, 1970, 1973, 1974.

REMARKS.--Records good except those for winter periods, which are poor. Some storage and possible regulation above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.7	6.0	4.0	5.5	12	11	11	7.0	.72	.89	
2	2.1	2.7	7.0	4.0	7.0	13	11	11	6.5	.72	1.1	
3	1.2	2.5	8.0	4.0	6.0	15	12	10	6.2	.72	1.9	
4	1.3	2.4	7.5	4.5	6.0	14	11	10	5.6	.55	1.9	
5	.80	2.2	7.0	4.5	6.0	13	12	10	5.3	1.1	1.6	
6	.50	4.0	7.5	4.5	5.0	14	12	10	4.9	1.6	1.5	
7	.98	3.2	8.0	4.0	5.0	15	12	9.9	4.3	1.3	1.5	
8	1.1	3.5	8.0	4.0	7.0	14	12	9.5	4.9	1.1	1.9	
9	1.6	4.0	8.0	3.5	9.0	14	12	9.2	6.0	1.1	1.6	
10	2.7	6.8	8.0	3.0	9.0	13	12	9.2	5.3	1.2	2.2	
11	4.0	7.0	8.0	2.0	9.0	13	13	9.6	5.4	1.2	2.4	
12	4.9	8.3	8.0	3.0	9.0	14	14	10	5.4	.98	2.4	
13	5.0	8.8	8.0	4.0	9.5	14	16	9.6	5.0	.89	2.0	
14	3.6	9.1	8.0	4.0	9.5	14	15	9.2	4.5	.98	1.5	
15	1.9	7.9	8.5	5.0	9.5	14	15	8.8	3.9	.80	1.6	
16	1.9	8.1	9.0	7.0	10	14	14	8.5	3.4	1.1	1.2	
17	1.9	8.2	9.0	10	10	13	13	8.5	2.9	.98	1.5	
18	1.8	7.5	9.0	10	10	13	13	8.3	3.0	.98	1.6	
19	2.0	6.4	8.0	10	10	13	13	8.5	2.7	12	.64	
20	2.1	6.8	7.0	9.0	10	13	13	8.5	2.4	4.7	.07	
21	2.4	6.0	6.5	8.0	9.5	15	13	8.5	1.8	2.4	0	
22	2.2	6.0	6.0	6.0	9.0	13	14	7.9	1.8	1.6	0	
23	2.2	5.5	6.0	6.0	8.5	12	14	7.8	1.5	1.8	0	
24	2.5	5.5	6.0	6.0	7.5	14	14	7.2	2.0	1.6	0	
25	2.9	6.0	6.0	6.5	7.5	16	13	7.2	1.6	1.3	0	
26	2.5	6.0	6.0	7.0	8.0	13	12	6.9	1.4	1.1	0	
27	2.1	6.0	6.0	7.0	9.0	12	12	6.9	1.2	.98	0	
28	1.9	6.0	5.5	7.0	10	12	12	6.5	.98	1.1	0	
29	2.4	6.5	5.0	7.5	------	12	12	7.2	.80	1.1	0	
30	2.5	6.0	5.0	8.0	------	11	11	6.9	.89	1.4	0	
31	2.7	------	4.5	5.0	------	11	------	7.3	------	1.2	0	------
TOTAL	71.08	171.6	220.0	178.0	231.0	413	383	269.6	108.57	50.30	31.00	0
MEAN	2.29	5.72	7.10	5.74	8.25	13.3	12.8	8.70	3.62	1.62	1.00	0
MAX	5.0	9.1	9.0	10	10	16	16	11	7.0	12	2.4	0
MIN	.50	2.2	4.5	2.0	5.0	11	11	6.5	.80	.55	0	0
AC-FT	141	340	436	353	458	819	760	535	215	100	61	0

CAL YR 1973 TOTAL 2,819.11 MEAN 7.72 MAX 45 MIN 0 AC-FT 5,590
WTR YR 1974 TOTAL 2,127.15 MEAN 5.83 MAX 16 MIN 0 AC-FT 4,220

PEAK DISCHARGE (BASE, 150 FT^3/S).--No peaks above base.

06446000 WHITE RIVER NEAR OGLALA, S. DAK.

LOCATION.--Lat 43°15'17", long 102°49'29", in SW¼NE¼ sec.24, T.38 N., R.47 W., Shannon County, on right bank at downstream side of bridge, 3.0 mi (4.8 km) downstream from Blacktail Creek and 7.0 mi (11.3 km) northwest of Oglala.

DRAINAGE AREA.--2,200 mi^2 (5,700 km^2), approximately.

PERIOD OF RECORD.--May 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,853.54 ft (869.759 m) above mean sea level. Prior to May 6, 1947, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--31 years, 56.7 ft^3/s (1.606 m^3/s), 41,080 acre-ft/yr (50.7 hm^3/yr); median of yearly mean discharges, 50 ft^3/s (1.42 m^3/s), 36,200 acre-ft/yr (45 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 481 ft^3/s (13.6 m^3/s) Apr. 14, 15, gage height, 11.02 ft (3.359 m); no flow for many days July to September.

Period of record: Maximum discharge, 5,200 ft^3/s (147 m^3/s) June 21, 1947, gage height, 23.50 ft (7.163 m), from rating curve extended above 2,800 ft^3/s (79.3 m^3/s) on basis of velocity-area studies; maximum gage height, 23.61 ft (7.196 m) June 16, 1967; no flow at times in 1952, 1954, 1957, 1961, 1964, 1965, 1970-74.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	13	31	6.0	32	68	43	49	27	4.8	0	11
2	12	13	30	6.0	35	89	41	48	26	2.6	0	8.1
3	14	13	30	6.0	32	107	42	48	26	.40	0	4.6
4	15	12	30	5.5	30	92	47	50	27	.20	0	1.4
5	11	11	30	5.0	28	86	46	51	26	.40	0	1.2
6	10	12	31	5.0	25	86	45	51	25	.05	0	13
7	6.2	13	31	5.5	22	79	47	51	23	.11	0	8.9
8	4.6	13	31	5.0	23	59	51	49	21	1.8	0	4.4
9	2.6	14	30	4.5	25	50	60	47	20	3.0	0	1.4
10	3.4	16	24	4.0	27	44	63	46	22	2.4	0	.17
11	4.6	20	22	4.0	28	44	77	46	27	1.8	0	0
12	6.4	21	27	6.0	30	43	78	46	27	9.1	0	1.8
13	13	19	26	7.0	50	45	131	45	37	5.8	0	1.8
14	10	20	21	7.4	150	45	344	45	39	1.3	0	1.8
15	12	22	20	7.5	200	43	460	45	27	0	0	2.0
16	10	32	24	40	200	45	403	44	20	0	0	2.2
17	12	27	31	100	190	44	172	40	19	0	0	2.4
18	11	21	25	60	150	43	130	41	18	.95	0	2.8
19	8.9	19	16	130	125	42	110	40	17	20	0	15
20	7.1	15	12	200	110	41	94	38	16	27	0	13
21	6.0	16	13	120	100	43	82	37	14	11	0	9.5
22	5.6	15	14	80	80	40	177	32	13	6.6	0	6.6
23	5.8	16	14	50	75	35	215	30	13	14	0	3.6
24	5.4	18	14	30	70	37	135	27	12	16	0	.94
25	8.9	18	14	35	80	38	90	24	12	12	0	0
26	10	18	15	35	66	41	74	27	7.8	8.9	0	0
27	10	19	15	30	76	40	66	28	3.8	5.8	0	0
28	8.4	25	12	32	66	46	57	29	2.2	3.2	.99	0
29	7.3	33	10	32	------	49	53	28	2.2	2.4	22	0
30	9.2	34	8.0	35	------	44	50	29	4.6	2.0	16	0
31	14	------	6.0	30	------	42	------	29	------	.25	13	------
TOTAL	281.4	558	657.0	1,123.4	2,125	1,650	3,483	1,240	574.6	163.86	51.99	117.61
MEAN	9.08	18.6	21.2	36.2	75.9	53.2	116	40.0	19.2	5.29	1.68	3.92
MAX	17	34	31	200	200	107	460	51	39	27	22	15
MIN	2.6	11	6.0	4.0	22	35	41	24	2.2	0	0	0
AC-FT	558	1,110	1,300	2,230	4,210	3,270	6,910	2,460	1,140	325	103	233

CAL YR 1973 TOTAL 12,815.15 MEAN 35.1 MAX 353 MIN 0 AC-FT 25,420
WTR YR 1974 TOTAL 12,025.86 MEAN 32.9 MAX 460 MIN 0 AC-FT 23,850

PEAK DISCHARGE (BASE, 800 FT^3/S).--No peaks above base.

06447000 WHITE RIVER NEAR KADOKA, S. DAK.

LOCATION.--Lat 43°45'09", long 101°31'28", in SE¼SE¼ sec.30, T.3 S., R.22 E., Black Hills meridian, Jackson County, near center of span on downstream side of bridge on State Highway 73, 5.0 mi (8.0 km) upstream from Pass Creek, 5.5 mi (8.8 km) downstream from Cottonwood Creek, and 5.8 mi (9.3 km) south of Kadoka.

DRAINAGE AREA.--5,000 mi^2 (12,500 km^2), approximately.

PERIOD OF RECORD.--July 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,122.18 ft (646.840 m) above mean sea level. Prior to June 14, 1949, nonrecording gage, and June 14, 1949, to Mar. 8, 1955, water-stage recorder at site 0.3 mi (0.5 km) downstream at same datum. Mar. 9, 1955, to May 17, 1957, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--32 years, 284 ft^3/s (8.043 m^3/s), 205,800 acre-ft/yr (254 hm^3/yr); median of yearly mean discharges, 270 ft^3/s (7.65 m^3/s), 196,000 acre-ft/yr (242 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 8,050 ft^3/s (228 m^3/s) Apr. 20, gage height, 10.62 ft (3.237 m); no flow June 29 to July 2, July 10-16, Sept. 23-30.

Period of record: Maximum discharge, 21,700 ft^3/s (615 m^3/s) June 7, 1951, gage height, 13.83 ft (4.215 m), site then in use, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow at times in many years.

Flood of June 4, 1942, reached a stage of 16.24 ft (4.950 m) from floodmarks, discharge, about 32,000 ft^3/s (906 m^3/s), from rating curve extended above 16,000 ft^3/s (453 m^3/s). Floods of Mar. 8, 1905, and in spring of 1927 were 1 or 2 ft (0.3 or 0.4 m) higher than flood of June 4, 1942, from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions above station for irrigation.

REVISIONS (WATER YEARS).--WSP 1279: 1944(M), 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	14	70	1.0	48	222	74	152	528	0	2.0	175
2	30	15	65	.20	48	250	74	137	290	0	1.0	140
3	25	18	55	.40	46	200	76	123	240	6.8	.80	62
4	25	25	50	.40	46	170	72	113	149	90	.40	90
5	21	30	48	.40	46	125	70	105	100	96	.40	38
6	21	60	44	.60	45	123	74	100	74	40	.30	13
7	22	88	40	.80	45	155	74	103	68	15	.30	10
8	22	93	36	.80	45	140	81	95	76	7.4	.20	8.0
9	22	103	34	.40	46	120	88	93	234	4.6	.20	5.9
10	22	115	32	.20	47	131	93	95	322	0	247	18
11	22	300	30	.20	48	134	93	98	247	0	155	3.7
12	649	493	30	.40	60	134	4,000	90	182	0	247	3.0
13	1,460	317	30	.40	75	137	3,370	83	115	0	125	2.4
14	987	236	28	.70	100	149	1,430	76	70	0	66	3.2
15	308	194	28	50	150	123	535	70	51	0	38	2.0
16	185	113	30	100	200	118	299	66	51	0	18	1.2
17	125	98	30	300	250	98	452	60	49	3.3	14	1.0
18	90	70	30	270	230	95	535	58	48	39	8.0	.60
19	68	46	32	100	200	88	451	62	51	331	3.2	.60
20	49	32	30	50	160	72	2,050	66	51	437	2.8	.40
21	29	30	25	45	130	78	2,390	82	35	320	1.6	.40
22	20	30	20	50	110	72	768	110	24	200	5.0	.20
23	17	32	17	50	100	72	493	70	25	100	27	0
24	12	32	17	55	95	80	282	60	26	56	116	0
25	12	35	17	55	100	86	247	39	18	81	45	0
26	11	35	18	50	300	83	396	30	11	38	13	0
27	11	37	19	50	445	93	450	29	7.9	16	9.5	0
28	11	45	15	50	499	110	340	26	3.2	10	7.9	0
29	11	50	12	48	------	90	203	21	0	7.0	4.6	0
30	11	70	10	48	------	81	176	169	0	5.0	3.7	0
31	11	------	5.0	48	------	78	------	903	------	3.0	2.8	------
TOTAL	4,358	2,856	947.0	1,425.90	3,714	3,707	19,736	3,384	3,146.1	1,906.1	1,165.70	578.60
MEAN	141	95.2	30.5	46.0	133	120	658	109	105	61.5	37.6	19.3
MAX	1,460	493	70	300	499	250	4,000	903	528	437	247	175
MIN	11	14	5.0	.20	45	72	70	21	0	0	.20	0
AC-FT	8,640	5,660	1,880	2,830	7,370	7,350	39,150	6,710	6,240	3,780	2,310	1,150

CAL YR 1973 TOTAL 87,708.70 MEAN 240 MAX 6,430 MIN 0 AC-FT 174,000
WTR YR 1974 TOTAL 46,924.40 MEAN 129 MAX 4,000 MIN 0 AC-FT 93,070

PEAK DISCHARGE (BASE, 3,600 FT^3/S)

DATE	TIME	G.H.	DISCHARGE
4-12	-	10.12	7,090
4-20	2100	10.62	8,050

06447500 LITTLE WHITE RIVER NEAR MARTIN, S. DAK.

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, on right bank 70 ft (21 m) downstream from highway culvert and 5.4 mi (8.7 km) east of Martin.

DRAINAGE AREA.--310 mi^2 (803 km^2), approximately, of which about 230 mi^2 (596 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Altitude of gage is 3,045 ft (928 m), by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--14 years, 19.8 ft^3/s (0.561 m^3/s), 14,350 acre-ft/yr (17.7 hm^3/s); median of yearly mean discharges, 19 ft^3/s (0.54 m^3/s), 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 109 ft^3/s (3.09 m^3/s) Apr. 15, gage height, 3.59 ft (1.094 m); minimum daily, 3.9 ft^3/s (0.110 m^3/s).

Period of record: Maximum discharge, 1,190 ft^3/s (33.7 m^3/s) July 19, 1965, gage height, 12.90 ft (3.932 m), from rating curve extended above 340 ft^3/s (9.63 m^3/s) on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft (4.026 m) Mar. 11, 1966 (backwater from ice); minimum daily discharge, 0.6 ft^3/s (0.017 m^3/s) Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962, regulation caused by construction work above station.

Flood of May 5, 1932, reached a stage of 13.3 ft (4.05 m), from floodmarks.

REMARKS.--Records good except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	15	17	6.5	20	30	21	19	17	6.3	4.5	5.1
2	18	15	17	6.5	20	32	20	15	16	6.1	5.1	5.5
3	16	16	16	7.0	19	31	20	16	15	5.9	4.9	6.1
4	14	14	16	7.0	17	29	19	18	13	5.7	4.9	6.5
5	13	16	15	7.0	15	28	19	17	12	5.7	5.1	6.5
6	12	20	14	7.5	14	26	19	18	11	5.5	4.7	6.5
7	12	20	13	7.5	14	23	20	16	11	5.1	4.5	6.3
8	11	21	14	7.0	15	22	20	16	11	4.7	4.1	5.7
9	11	20	14	7.0	15	22	21	16	13	4.5	5.7	5.7
10	11	20	13	6.5	15	21	21	16	14	4.9	7.1	5.5
11	13	20	14	6.0	16	21	25	16	15	4.9	9.5	5.5
12	14	22	16	6.0	17	21	52	17	14	4.7	9.2	5.9
13	17	23	18	6.5	18	22	100	16	13	4.5	8.4	6.1
14	20	22	18	6.5	18	24	100	16	13	4.3	7.6	6.5
15	21	22	18	10	19	26	101	15	11	3.9	7.1	7.1
16	21	20	17	20	20	26	68	15	10	4.1	6.5	7.1
17	20	19	17	30	20	26	43	14	9.7	4.1	7.1	7.1
18	17	18	15	28	19	24	33	14	9.5	4.1	6.9	6.9
19	15	17	13	22	19	23	27	14	9.0	4.3	6.3	6.5
20	14	16	11	21	18	22	25	15	9.0	5.9	5.7	6.5
21	14	14	12	20	18	21	27	15	8.8	10	5.5	6.3
22	14	14	13	18	18	23	41	14	8.2	8.0	5.1	6.3
23	13	17	13	19	17	21	40	13	8.0	6.7	5.1	7.1
24	13	18	12	19	16	23	35	12	8.0	6.1	4.7	8.8
25	13	17	12	20	18	25	34	12	7.4	5.3	4.5	8.2
26	13	17	11	20	23	24	28	12	7.1	4.7	4.1	7.4
27	13	16	10	20	26	22	24	12	6.9	4.3	4.1	6.7
28	13	17	10	20	30	21	22	12	6.7	3.9	4.1	7.4
29	13	15	9.0	21	------	26	21	47	6.5	4.1	4.3	7.8
30	14	16	8.0	20	------	22	20	28	6.3	4.3	4.5	7.8
31	14	------	7.0	20	------	22	------	21	------	4.3	4.7	------
TOTAL	454	537	423.0	442.5	514	749	1,066	517	320.1	160.9	175.6	198.4
MEAN	14.6	17.9	13.6	14.3	18.4	24.2	35.5	16.7	10.7	5.19	5.66	6.61
MAX	21	23	18	30	30	32	101	47	17	10	9.5	8.8
MIN	11	14	7.0	6.0	14	21	19	12	6.3	3.9	4.1	5.1
AC-FT	901	1,070	839	878	1,020	1,490	2,110	1,030	635	319	348	394

CAL YR 1973 TOTAL 6,913.5 MEAN 18.9 MAX 86 MIN 3.4 AC-FT 13,710
WTR YR 1974 TOTAL 5,557.5 MEAN 15.2 MAX 101 MIN 3.9 AC-FT 11,020

PEAK DISCHARGE (BASE, 100 FT^3/S).--Apr. 15 (0300) 109 ft^3/s (3.59 ft).

06448000 LAKE CREEK ABOVE REFUGE, NEAR TUTHILL, S. DAK.

LOCATION.--Lat 43°05'07", long 101°36'04", in NE¼ sec.19, T.36 N., R.36 W., Bennett County, on left wingwall at upstream side of culvert, 80 ft (24 m) downstream from west boundary of LaCreek game refuge and 7.5 mi (12.1 km) southwest of Tuthill.

DRAINAGE AREA.--58 mi^2 (150 km^2), approximately, of which about 23 mi^2 (60 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,090 ft (942 m), by barometer. Prior to Aug. 10, 1938, nonrecording gage and Aug. 10, 1938, to Sept. 30, 1940, water-stage recorder at site 110 ft (34 m) upstream at same datum.

AVERAGE DISCHARGE.--14 years, 19.7 ft^3/s (0.558 m^3/s), 14,270 acre-ft/yr (17.6 hm^3/yr); median of yearly mean discharges, 20 ft^3/s (0.57 m^3/s), 14,500 acre-ft/yr (18 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 107 ft^3/s (3.03 m^3/s) Apr. 11, gage height, 3.09 ft (0.942 m); maximum gage height, 3.18 ft (0.969 m) Jan. 17 (backwater from ice); minimum daily discharge, 7.9 ft^3/s (0.22 m^3/s) July 8.

Period of record: Maximum discharge, 154 ft^3/s (4.36 m^3/s) Mar. 9, 1966, gage height, 2.83 ft (0.863 m); maximum gage height, 3.75 ft (1.143 m) Feb. 12, 1971 (backwater from ice); no flow for part of June 5, 1939.

REMARKS.--Records good except those for winter periods, which are poor. A few small diversions for irrigation of hay meadows above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	21	20	15	30	26	21	16	18	10	12	15
2	19	22	20	16	30	26	23	15	17	9.8	13	17
3	19	22	20	16	30	26	24	16	15	11	13	17
4	17	22	20	16	30	26	25	16	14	11	13	16
5	17	22	20	17	28	24	24	16	14	9.8	12	15
6	16	22	25	18	26	24	24	17	15	9.0	12	14
7	16	23	28	18	25	23	24	17	15	8.1	12	14
8	16	22	28	17	25	22	26	19	15	7.9	13	14
9	17	21	23	17	26	22	25	24	19	8.6	14	14
10	18	21	25	16	28	22	23	24	17	9.2	23	14
11	22	22	25	14	30	22	51	24	16	9.0	18	12
12	27	21	22	14	35	22	66	21	14	9.2	16	15
13	28	18	21	16	36	24	34	20	13	9.2	14	15
14	23	17	22	19	35	24	26	19	13	9.0	13	13
15	19	17	25	30	34	24	25	19	13	9.2	13	12
16	18	16	25	40	34	24	24	18	13	9.0	13	12
17	18	16	24	38	34	24	22	17	13	9.8	13	12
18	18	16	24	34	34	23	21	17	14	11	13	13
19	17	16	22	32	32	23	20	17	14	12	13	12
20	16	19	22	30	31	23	24	17	15	11	12	14
21	14	22	25	30	28	23	41	18	14	11	12	15
22	14	23	30	28	28	21	28	17	13	11	13	15
23	14	21	28	28	28	20	22	17	13	11	13	15
24	18	22	26	30	26	23	20	16	12	11	12	15
25	20	22	25	30	26	22	20	17	12	12	12	17
26	19	22	25	30	27	22	20	17	11	12	12	18
27	20	23	23	30	28	22	19	16	11	11	12	13
28	20	27	23	30	27	22	18	20	11	12	13	15
29	20	23	20	30	------	22	18	70	11	12	13	13
30	20	22	18	30	------	21	18	39	11	12	13	13
31	20	------	15	28	------	21	------	24	------	12	14	------
TOTAL	581	623	719	757	831	713	776	640	416	319.8	414	429
MEAN	18.7	20.8	23.2	24.4	29.7	23.0	25.9	20.6	13.9	10.3	13.4	14.3
MAX	28	27	30	40	36	26	66	70	19	12	23	18
MIN	14	16	15	14	25	20	18	15	11	7.9	12	12
AC-FT	1,150	1,240	1,430	1,500	1,650	1,410	1,540	1,270	825	634	821	851

CAL YR 1973 TOTAL 7,460.7 MEAN 20.4 MAX 69 MIN 9.7 AC-FT 14,800
WTR YR 1974 TOTAL 7,218.8 MEAN 19.8 MAX 70 MIN 7.9 AC-FT 14,320

PEAK DISCHARGE (BASE, 50 FT^3/S)

DATE	TIME	G.H.	DISCHARGE
4-11	2330	3.09	107
5-29	0830	2.87	94

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, S. DAK.

LOCATION.--Lat 43°08'46", long 101°30'38", in SW¼ sec.30, T.37 N., R.35 W., Bennett County, on left bank 400 ft (122 m) downstream from east boundary of LaCreek game refuge, 1.2 mi (1.9 km) southwest of Tuthill and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--120 mi^2 (311 km^2), approximately, of which about 60 mi^2 (155 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,055 ft (931 m), by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--14 years, 15.2 ft^3/s (0.430 m^3/s), 11,010 acre-ft/yr (13.6 hm^3/yr); median of yearly mean discharges, 16 ft^3/s (0.45 m^3/s), 11,600 acre-ft/yr (14 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 57 ft^3/s (1.61 m^3/s) Apr. 27, gage height, 3.90 ft (1.189 m); minimum daily, 0.12 ft^3/s (0.003 m^3/s) Oct. 4.

Period of record: Maximum discharge, 178 ft^3/s (5.04 m^3/s) June 18, 1967, gage height, 5.17 ft (1.576 m); no flow for many days in most years.

REMARKS.--Records fair. Flow regulated by series of lakes above gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2.6	6.6	38	22	22	10	44	8.5	5.5	1.8	.45
2	.23	3.2	6.2	38	21	21	11	41	7.6	4.4	2.7	.37
3	.15	3.1	5.6	37	21	20	11	41	7.6	3.5	3.9	.42
4	.12	3.6	6.0	36	21	20	11	40	7.3	3.7	3.9	.42
5	.23	3.8	6.0	35	21	18	11	39	6.3	3.8	3.7	.54
6	.20	4.1	6.0	34	20	16	12	38	6.8	3.2	3.6	.51
7	.15	4.6	5.8	34	20	15	12	38	5.5	2.6	3.4	.85
8	.34	4.4	5.5	34	20	16	14	37	5.1	2.7	2.7	1.8
9	2.5	4.8	8.1	33	19	15	16	39	6.0	1.5	2.1	1.7
10	1.6	4.6	5.8	33	19	15	15	38	5.5	1.6	1.9	1.4
11	.69	4.5	5.6	32	19	15	22	40	4.6	2.2	1.1	1.1
12	.45	4.6	5.5	31	19	15	36	34	3.6	1.9	.88	1.1
13	1.0	4.8	5.4	30	19	10	31	38	3.4	1.6	.75	1.1
14	.95	4.8	4.8	28	18	5.4	31	29	3.5	2.1	.51	.99
15	1.5	4.6	3.3	28	18	5.8	31	22	2.8	2.1	.15	.84
16	.32	4.9	2.2	28	18	6.6	31	18	2.9	2.1	.21	.63
17	.40	5.1	1.6	27	18	6.8	30	15	2.7	2.0	.46	1.0
18	1.6	5.2	1.6	26	17	6.6	30	14	2.5	1.8	.73	.74
19	1.8	5.8	1.5	26	18	7.6	31	12	2.9	1.7	.68	.47
20	1.4	5.6	1.2	25	17	8.4	36	13	2.8	1.3	.43	.37
21	.88	6.4	1.1	24	17	6.6	48	13	2.9	1.2	.36	.33
22	1.0	7.0	1.0	24	17	8.9	37	11	2.7	1.2	.52	.32
23	1.5	9.0	1.1	24	17	8.2	36	7.8	2.9	1.4	.39	.60
24	1.2	9.8	1.0	23	17	8.2	40	7.5	2.7	1.3	.19	.68
25	.83	10	.95	23	17	8.2	41	9.4	2.9	1.1	.20	.76
26	1.3	10	.95	22	16	7.2	44	9.5	3.3	1.2	.22	1.0
27	2.1	8.5	15	22	19	8.0	49	9.1	3.2	1.4	.23	.98
28	2.2	7.7	42	22	22	8.4	43	9.8	3.4	1.8	.33	.94
29	2.1	6.7	41	22	------	8.2	41	10	4.0	1.8	.60	.68
30	2.1	6.7	40	22	------	9.1	41	12	4.7	1.8	.46	.66
31	2.3	------	39	22	------	9.3	------	9.9	------	1.7	.38	------
TOTAL	34.34	170.5	277.40	883	527	355.5	852	739.0	130.6	67.2	39.48	23.75
MEAN	1.11	5.68	8.95	28.5	18.8	11.5	28.4	23.8	4.35	2.17	1.27	.79
MAX	2.5	10	42	38	22	22	49	44	8.5	5.5	3.9	1.8
MIN	.12	2.6	.95	22	16	5.4	10	7.5	2.5	1.1	.15	.32
AC-FT	68	338	550	1,750	1,050	705	1,690	1,470	259	133	78	47

CAL YR 1973 TOTAL 6,501.09 MEAN 17.8 MAX 79 MIN .11 AC-FT 12,890
WTR YR 1974 TOTAL 4,099.77 MEAN 11.2 MAX 49 MIN .12 AC-FT 8,130

06449100 LITTLE WHITE RIVER NEAR VETAL, S. DAK.

LOCATION.--Lat 43°06'03", long 101°13'49", in NE¼NW¼ sec.17, T.36 N., R.33 W., Bennett County, on left bank 120 ft (37 m) downstream from highway bridge, 0.3 mi (0.5 km) downstream from small right-bank tributary, 10.8 mi (17.4 km) southeast of Vetal, and 15.3 mi (24.6 km) upstream from Spring Creek.

DRAINAGE AREA.--590 mi^2 (1,530 km^2), approximately, of which about 415 mi^2 (1,075 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft (847.554 m) above mean sea level. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--15 years, 53.9 ft^3/s (1.526 m^3/s), 39,050 acre-ft/yr (48.1 hm^3/yr); median of yearly mean discharges, 52 ft^3/s (1.47 m^3/s), 37,700 acre-ft/yr (46.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 144 ft^3/s (4.08 m^3/s) Apr. 22, gage height, 3.85 ft (1.174 m); maximum gage height, 4.39 ft (1.338 m) Jan. 16 (backwater from ice); minimum daily discharge, 13 ft^3/s (0.37 m^3/s) Aug. 7, 8, 20, 21.

Period of record: Maximum discharge, 1,330 ft^3/s (37.7 m^3/s) Mar. 13, 1966, gage height, 7.75 ft (2.362 m); minimum daily, 10 ft^3/s (0.28 m^3/s) Sept. 1-3, 10, 1961, Dec. 18, 1964.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 20-30, Dec. 7 to Feb. 13, Mar. 22; shifting-control method used Oct. 26 to Nov. 3)

2.6	13	3.4	88
2.8	30	3.7	124
3.1	57	4.0	169

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	35	42	15	60	71	33	98	33	18	14	20
2	35	33	41	15	60	71	33	98	31	18	14	20
3	37	33	41	15	55	74	33	94	33	20	15	18
4	38	33	41	16	50	74	34	94	31	18	15	17
5	39	34	36	16	48	73	34	93	33	17	14	17
6	38	35	33	16	46	74	33	91	35	16	14	17
7	38	34	30	16	46	70	34	90	36	16	13	18
8	37	33	25	17	48	68	34	89	36	17	13	19
9	36	33	22	16	50	65	34	90	42	16	16	18
10	36	33	24	15	55	59	36	79	35	16	20	18
11	45	33	24	14	60	62	49	76	33	16	19	17
12	46	33	24	16	60	62	72	86	33	16	16	20
13	41	30	22	25	65	62	85	83	30	16	15	19
14	40	30	22	35	62	57	98	72	28	16	16	18
15	40	29	22	50	61	40	102	73	27	15	15	18
16	39	29	22	90	64	38	116	59	27	15	15	18
17	40	28	20	80	64	38	119	51	27	15	16	17
18	41	28	17	70	63	37	126	47	27	17	15	17
19	40	30	17	65	58	39	130	45	27	24	14	17
20	39	30	18	65	58	35	119	44	27	18	13	19
21	39	30	20	60	52	33	115	41	25	16	13	18
22	40	31	20	55	52	34	129	41	25	16	17	18
23	40	32	20	55	59	33	132	39	26	15	22	18
24	40	32	19	55	48	32	119	36	25	15	22	17
25	41	34	19	60	60	47	112	35	25	14	21	17
26	40	34	19	60	65	42	101	38	21	14	21	17
27	40	34	18	60	63	38	99	38	19	14	21	17
28	40	40	18	60	63	36	101	38	19	14	23	18
29	40	42	18	60	------	35	105	36	18	15	23	18
30	40	42	17	65	------	33	101	37	18	14	20	18
31	39	------	16	60	------	33	------	33	------	14	20	------
TOTAL	1,218	987	747	1,317	1,595	1,565	2,468	1,964	852	501	525	538
MEAN	39.3	32.9	24.1	42.5	57.0	50.5	82.3	63.4	28.4	16.2	16.9	17.9
MAX	46	42	42	90	65	74	132	98	42	24	23	20
MIN	34	28	16	14	46	32	33	33	18	14	13	17
AC-FT	2,420	1,960	1,480	2,610	3,160	3,100	4,900	3,900	1,690	994	1,040	1,070

CAL YR 1973 TOTAL 17,863 MEAN 48.9 MAX 169 MIN 13 AC-FT 35,430
WTR YR 1974 TOTAL 14,277 MEAN 39.1 MAX 132 MIN 13 AC-FT 28,320

PEAK DISCHARGE (BASE, 150 FT^3/S).--No peaks above base.

06449250 SPRING CREEK NEAR ST. FRANCIS, S. DAK.

LOCATION.--Lat 43°04'21", long 101°01'49", in NW¼NE¼ sec.25, T.36 N., R.32 W., Todd County, on left bank 40 ft (12 m) downstream from highway culvert, 4.1 mi (6.6 km) upstream from mouth and 8.0 mi (12.9 km) southwest of St. Francis.

DRAINAGE AREA.--57 mi^2 (148 km^2), approximately, of which about 10 mi^2 (26 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to September 1974 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2,815.50 ft (858.164 m) above mean sea level.

AVERAGE DISCHARGE.--15 years, 3.68 ft^3/s (0.104 m^3/s), 2,670 acre-ft/yr (3.29 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 16 ft^3/s (0.45 m^3/s) Mar. 2, gage height, 5.14 ft (1.567 m); no flow for many days.
Period of record: Maximum discharge, 65 ft^3/s (1.84 m^3/s) June 21, 1962, gage height, 7.41 ft (2.259 m); maximum gage height, 7.43 ft (2.265 m) Mar. 19, 1969; no flow for many days in each year.

REMARKS.--Records good. Small diversions above station for irrigation of hay meadows. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 1-27; shifting-control method used Dec. 1 to Jan. 4, Jan. 15-31)

3.94	0	4.5	5.0
4.0	.26	5.0	13
4.1	.93	5.5	22
4.3	2.5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			.03	0	2.7	14	6.2	5.0	3.3	0	0	
2			.07	0	2.7	15	5.8	4.6	2.6	.05	0	
3			.11	0	3.0	15	5.2	4.4	2.2	0	0	
4			.07	0	3.5	14	5.2	4.4	1.8	0	0	
5			.03	0	4.0	12	4.7	4.0	1.5	0	0	
6			0	0	4.0	12	5.2	3.9	1.2	0	0	
7			0	0	3.5	10	4.3	3.9	1.3	0	0	
8			.21	0	3.5	9.1	4.6	3.8	1.5	0	0	
9			.16	0	4.0	8.3	4.3	3.8	2.7	0	0	
10			.21	0	4.5	7.6	4.2	3.7	2.5	0	0	
11			.21	0	5.0	8.1	5.6	3.7	2.0	0	0	
12			.33	0	6.0	8.3	9.6	3.6	1.5	0	0	
13			.33	0	8.0	7.8	9.3	3.6	1.3	0	0	
14			.33	0	9.0	7.6	13	3.6	1.0	0	.09	
15			.21	0	9.0	7.3	14	3.5	.86	0	.01	
16			.16	0	9.5	7.8	12	3.5	.60	0	0	
17			.21	0	11	7.5	9.5	3.4	.53	0	0	
18			.16	0	13	7.0	7.9	3.4	.39	0	0	
19			.26	.11	13	6.7	7.3	4.0	.33	0	0	
20			.16	.11	12	7.5	7.5	9.0	.26	0	0	
21			.16	.07	12	8.6	7.3	8.8	.07	0	0	
22			.16	.07	11	8.1	6.5	7.6	0	0	0	
23			.16	.11	11	8.1	6.2	6.7	0	0	0	
24			.11	.11	10	8.6	6.7	6.7	0	0	0	
25			.11	.21	10	8.4	6.5	6.8	0	0	0	
26			.03	1.2	11	6.5	6.7	6.5	0	0	0	
27			0	2.2	11	6.0	6.5	5.8	0	0	0	
28			0	1.9	12	6.5	5.8	5.0	0	0	0	
29			0	2.2	------	6.0	5.3	5.0	0	0	0	
30			0	2.6	------	6.0	5.2	4.9	0	0	0	
31		------	0	2.7	------	6.2	------	4.0	------	0	0	------
TOTAL	0	0	3.98	13.59	218.9	271.6	208.1	150.6	29.44	.05	.10	0
MEAN	0	0	.13	.44	7.82	8.76	6.94	4.86	.98	.002	.003	0
MAX	0	0	.33	2.7	13	15	14	9.0	3.3	.05	.09	0
MIN	0	0	0	0	2.7	6.0	4.2	3.4	0	0	0	0
AC-FT	0	0	7.9	27	434	539	413	299	58	.10	.2	0

CAL YR 1973 TOTAL 1,734.15 MEAN 4.75 MAX 28 MIN 0 AC-FT 3,440
WTR YR 1974 TOTAL 896.36 MEAN 2.46 MAX 15 MIN 0 AC-FT 1,780

PEAK DISCHARGE (BASE, 25 ft^3/s).--No peaks above base.

06449500 LITTLE WHITE RIVER NEAR ROSEBUD, S. DAK.

LOCATION.--Lat 43°19'32", long 100°53'00", in SW¼NW¼ sec.28, T.39 N., R.30 W., Todd County, on left bank at downstream side of bridge on U.S. Highway 18, 0.3 mi (0.5 km) downstream from Scabby Creek, 0.7 mi (1.1 km) downstream from Soldier Creek, and 6.4 mi (10.3 km) north of Rosebud.

DRAINAGE AREA.--1,020 mi^2 (2,640 km^2), approximately, of which about 760 mi^2 (1,970 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--May 1943 to current year. Prior to October 1965, published as South Fork White River near Rosebud.

GAGE.--Water-stage recorder. Datum of gage is 2,294.99 ft (699.513 m) above mean sea level. Prior to May 11, 1948, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--31 years, 112 ft^3/s (3.172 m^3/s), 81,140 acre-ft/yr (100 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 237 ft^3/s (6.71 m^3/s) Aug. 15, gage height, 4.25 ft (1.295 m); maximum gage height, 5.74 ft (1.750 m) Feb. 17 (backwater from ice); minimum daily discharge, 37 ft^3/s (1.05 m^3/s) July 14, 15.

Period of record: Maximum discharge, 4,640 ft^3/s (131 m^3/s) June 11, 1967, gage height, 14.09 ft (4.295 m), from rating curve extended above 1,300 ft^3/s (36.8 m^3/s); minimum daily, 10 ft^3/s (0.28 m^3/s) Jan. 4, 1949, Feb. 20, 1955.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station.

REVISIONS (WATER YEARS).--WSP 1056: 1943, drainage area. WSP 1309: 1946(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	85	105	65	130	133	112	150	91	52	43	54
2	82	80	104	65	120	153	106	148	91	47	44	58
3	77	81	101	65	120	146	102	142	93	50	43	59
4	75	82	94	65	120	145	98	148	88	50	43	56
5	75	83	80	70	130	143	104	146	82	48	43	52
6	80	82	70	75	120	145	109	143	81	44	43	49
7	79	91	80	75	110	142	103	141	82	43	41	49
8	79	78	90	70	110	139	104	136	86	46	41	48
9	81	79	75	70	110	135	112	142	110	48	46	48
10	79	82	65	70	110	134	115	141	104	44	57	48
11	98	85	95	70	140	136	130	130	91	38	68	44
12	114	90	98	65	170	139	170	127	86	40	61	52
13	94	90	115	70	160	138	160	135	82	42	54	54
14	93	90	108	80	140	143	169	121	76	37	60	51
15	90	87	95	95	130	131	176	113	70	37	110	48
16	84	80	95	150	140	116	173	121	67	42	70	48
17	82	87	75	200	150	117	176	109	67	39	57	47
18	84	87	63	180	160	119	177	100	67	44	61	48
19	82	85	65	160	160	109	174	106	67	62	54	48
20	84	74	70	150	155	106	191	139	65	55	49	53
21	86	83	75	150	142	102	186	113	65	47	49	50
22	84	102	80	140	116	109	189	103	62	44	48	51
23	82	92	80	130	112	107	179	98	61	43	47	52
24	87	93	75	130	107	96	178	95	60	39	53	52
25	78	97	75	140	104	96	172	97	57	39	55	50
26	80	103	75	140	137	113	174	93	54	40	54	50
27	78	98	75	140	139	108	166	97	50	40	53	49
28	78	104	70	150	134	118	153	97	49	40	54	48
29	79	110	70	150	------	116	151	97	47	42	56	49
30	82	106	70	150	------	107	155	106	44	42	59	47
31	83	------	70	140	------	109	------	95	------	43	54	------
TOTAL	2,597	2,666	2,558	3,470	3,676	3,850	4,464	3,729	2,195	1,367	1,670	1,512
MEAN	83.8	88.9	82.5	112	131	124	149	120	73.2	44.1	53.9	50.4
MAX	114	110	115	200	170	153	191	150	110	62	110	59
MIN	75	74	63	65	104	96	98	93	44	37	41	44
AC-FT	5,150	5,290	5,070	6,880	7,290	7,640	8,850	7,400	4,350	2,710	3,310	3,000

CAL YR 1973 TOTAL 39,233 MEAN 107 MAX 325 MIN 37 AC-FT 77,820
WTR YR 1974 TOTAL 33,754 MEAN 92.5 MAX 200 MIN 37 AC-FT 66,950

PEAK DISCHARGE (BASE, 330 FT^3/S).--No peaks above base.

06450500 LITTLE WHITE RIVER BELOW WHITE RIVER, S. DAK.

LOCATION.--Lat 43°36'04", long 100°44'52", in SW¼NW¼ sec.23, T.42 N., R.29 W., Mellette County, on left bank at downstream side of bridge on U.S. Highway 83, 1.3 mi (2.1 km) downstream from Pine Creek and 2.0 mi (3.2 km) north of town of White River.

DRAINAGE AREA.--1,570 mi^2 (4,070 km^2), approximately, of which about 1,310 mi^2 (3,390 km^2) probably contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1965, published as South Fork White River below White River.

GAGE.--Water-stage recorder. Datum of gage is 1,912.78 (583.015 m) above mean sea level. Prior to June 8, 1968, at site 0.8 mi (1.3 km) downstream at datum 4.50 ft (1.372 m) lower.

AVERAGE DISCHARGE.--25 years, 130 ft^3/s (3.682 m^3/s), 94,180 acre-ft/yr (116 hm^3/yr); median of yearly mean discharges, 130 ft^3/s (3.68 m^3/s), 94,200 acre-ft/yr (116 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 846 ft^3/s (24.0 m^3/s) Oct. 11, gage height, 4.38 ft (1.335 m); maximum gage height, 5.26 ft (1.603 m) Jan. 19 (backwater from ice); minimum daily discharge, 20 ft^3/s (0.57 m^3/s) July 16.

Period of record: Maximum discharge, 13,700 ft^3/s (338 m^3/s) June 12, 1967, gage height, 10.02 ft (3.054 m), site and datum then in use; maximum gage height, 11.21 ft (3.417 m) June 7, 1968, site and datum then in use; maximum gage height at present site and datum, 15.46 ft (4.712 m) June 7, 1968, from floodmarks; no flow for parts of several days in 1952, 1954, 1956; minimum daily discharge, 7 ft^3/s (0.20 m^3/s) July 31, Aug. 31, Sept. 1, 1952.

REMARKS.--Records fair except those for winter periods, which are poor. Diurnal fluctuations caused by small powerplant 2.2 mi (3.5 km) upstream. Several small diversions for irrigation and some storage in several small lakes above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	86	101	70	140	134	110	136	78	32	33	48
2	104	86	103	70	130	99	110	137	80	38	33	55
3	86	85	98	70	130	106	110	146	82	43	30	49
4	76	82	93	70	130	111	102	131	74	38	30	48
5	76	81	84	70	130	118	91	127	73	37	34	44
6	76	79	59	70	140	117	99	126	74	36	26	42
7	74	81	74	80	130	129	99	119	75	28	28	42
8	74	84	98	80	120	127	104	117	83	30	21	42
9	81	82	78	75	120	122	116	129	108	30	25	39
10	86	88	77	75	120	126	107	131	106	37	45	42
11	150	81	85	75	120	134	113	132	83	27	46	35
12	194	81	101	70	135	139	170	122	80	26	46	44
13	153	84	111	65	170	144	163	112	78	26	40	55
14	94	83	105	70	160	138	163	112	75	27	32	57
15	97	89	100	85	140	138	179	119	71	28	74	46
16	86	79	100	120	130	126	163	94	67	20	66	41
17	81	76	105	170	140	118	170	94	63	28	42	44
18	79	74	105	200	150	117	165	97	61	28	38	46
19	76	74	80	180	170	118	170	78	59	35	39	46
20	76	74	65	160	170	113	168	119	63	45	28	49
21	71	86	70	150	160	110	172	113	60	39	23	48
22	76	113	75	150	140	104	155	97	60	36	39	49
23	67	107	80	140	120	106	150	78	56	29	32	49
24	76	81	85	130	110	85	158	72	55	34	30	62
25	81	53	80	130	110	121	154	71	53	30	26	43
26	76	94	80	150	120	109	156	68	50	30	37	39
27	86	81	80	150	150	126	145	66	42	27	36	39
28	74	71	80	150	155	107	132	72	38	22	36	39
29	76	107	75	160	------	118	138	74	33	22	44	39
30	68	102	75	160	------	104	143	94	32	31	41	40
31	78	------	75	150	------	102	------	86	------	32	51	------
TOTAL	2,775	2,524	2,677	3,545	3,840	3,666	4,175	3,269	2,012	971	1,151	1,361
MEAN	89.5	84.1	86.4	114	137	118	139	105	67.1	31.3	37.1	45.4
MAX	194	113	111	200	170	144	179	146	108	45	74	62
MIN	67	53	59	65	110	85	91	66	32	20	21	35
AC-FT	5,500	5,010	5,310	7,030	7,620	7,270	8,280	6,480	3,990	1,930	2,280	2,700

CAL YR 1973 TOTAL 39,645 MEAN 109 MAX 699 MIN 23 AC-FT 78,640
WTR YR 1974 TOTAL 31,966 MEAN 87.6 MAX 200 MIN 20 AC-FT 63,400

06452000 WHITE RIVER NEAR OACOMA, S. DAK.

LOCATION.--Lat 43°44'54", long 99°33'22", in SE¼SW¼ sec.3, T.103 N., R.73 W., Lyman County, on left bank at downstream side of bridge on State Highway 47, 1.5 mi (2.4 km) downstream from Wagner Draw, 1.8 mi (2.9 km) upstream from high-water line of Lake Francis Case, and 8.8 mi (14.2 km) southwest of Oacoma.

DRAINAGE AREA.--10,200 mi^2 (26,400 km^2), approximately.

PERIOD OF RECORD.--August 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,377.29 ft (419.798 m) above mean sea level. See WSP 1709 or 1729 for history of changes prior to Feb. 27, 1960.

AVERAGE DISCHARGE.--46 years, 531 ft^3/s (15.038 m^3/s), 384,700 acre-ft/yr (474 hm^3/yr); median of yearly mean discharges, 450 ft^3/s (12.74 m^3/s), 326,000 acre-ft/yr (402 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,770 ft^3/s (107 m^3/s) Apr. 23, gage height, 6.55 ft (1.996 m); no flow July 16-23.

Period of record: Maximum discharge, 51,900 ft^3/s (1,470 m^3/s) Mar. 30, 1952, gage height, 15.40 ft (4.694 m), site and datum then in use; maximum gage height, 17.6 ft (5.36 m) Mar. 31, 1950, site and datum then in use, from floodmarks, ice jam; no flow Aug. 14-28, 1971, July 16-23, 1974.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: Drainage area. WSP 1309: 1929-30(M).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 20 to Mar. 2; shifting-control method used Sept. 10-28)

Oct. 1 to June 4				June 5 to Sept. 30			
2.5	70	4.0	606	2.0	0	2.7	71
2.7	112	4.5	960	2.1	1.9	3.0	143
3.0	187	5.0	1,420	2.2	7.6	3.5	331
3.3	280	6.0	2,760	2.3	16	4.0	603
3.6	402			2.5	38	4.5	960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	389	92	150	10	80	500	195	450	153	44	41	67
2	306	92	140	10	80	1,000	187	384	150	6.2	30	66
3	306	88	120	12	80	1,360	190	354	150	6.2	22	50
4	273	94	110	14	80	761	182	321	277	5.5	16	57
5	240	101	90	13	75	568	179	295	665	5.5	7.6	47
6	201	114	80	12	75	455	174	273	385	5.5	6.2	43
7	182	101	70	12	80	346	176	256	309	3.2	4.9	37
8	155	92	60	12	80	306	174	240	266	2.7	3.2	93
9	148	121	55	12	90	287	168	240	295	3.2	2.7	155
10	135	103	50	11	100	270	158	240	257	1.9	1.9	135
11	218	112	45	10	150	263	187	243	198	1.3	.60	88
12	249	171	40	10	200	266	207	237	177	1.0	.40	75
13	218	171	39	11	220	270	198	243	174	.80	.40	73
14	246	165	37	12	220	256	2,460	227	226	.80	72	90
15	458	224	35	20	250	249	1,660	218	318	2.3	443	79
16	1,090	317	35	29	280	243	1,370	209	253	.10	331	73
17	1,090	398	37	32	300	237	1,050	207	191	0	241	41
18	757	350	38	32	300	237	790	201	165	0	194	40
19	526	291	39	30	280	243	612	184	138	0	143	25
20	393	230	40	50	250	246	500	209	114	0	84	18
21	313	150	42	250	200	218	621	269	94	0	58	19
22	249	100	45	200	180	204	1,110	332	88	0	49	18
23	212	90	40	100	160	201	2,680	277	75	0	40	15
24	182	90	30	90	150	195	1,710	212	69	223	40	15
25	158	95	25	95	160	179	1,300	179	66	304	30	13
26	143	100	25	95	170	179	976	168	66	245	20	14
27	126	110	27	95	200	218	732	163	55	162	27	9.8
28	121	120	25	90	300	218	579	179	53	99	16	9.8
29	114	130	20	90	------	198	480	160	49	60	13	11
30	105	140	15	85	------	195	398	158	46	49	17	7.6
31	97	------	12	80	------	190	------	155	------	44	67	------
TOTAL	9,400	4,552	1,616	1,624	4,790	10,558	21,403	7,483	5,522	1,276.20	2,021.90	1,484.2
MEAN	303	152	52.1	52.4	171	341	713	241	184	41.2	65.2	49.5
MAX	1,090	398	150	250	300	1,360	2,680	450	665	304	443	155
MIN	97	88	12	10	75	179	158	155	46	0	.40	7.6
AC-FT	18,640	9,030	3,210	3,220	9,500	20,940	42,450	14,840	10,950	2,530	4,010	2,940

CAL YR 1973 TOTAL 133,636.90 MEAN 366 MAX 6,490 MIN 2.8 AC-FT 265,100
WTR YR 1974 TOTAL 71,730.30 MEAN 197 MAX 2,680 MIN 0 AC-FT 142,300

PEAK DISCHARGE (BASE, 5,500 FT^3/S).--No peaks above base.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, S. DAK.

LOCATION.--Lat 43°04'05", long 98°33'15", in SE¼ sec.5, T.95 N., R.65 W., Charles Mix County, in tower 6 of outlet works at Fort Randall Dam, on Missouri River at Pickstown, 1.0 mi (1.6 km) upstream from Randall Creek, and at mile 880.0 (1,415.9 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

PERIOD OF RECORD.--December 1952 to current year. Prior to October 1964, published as Fort Randall Reservoir at Pickstown.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Mar. 25, 1953, elevations determined from temporary nonrecording gages.

EXTREMES.--Current year: Maximum contents, 3,934,000 acre-ft (4,840 hm^3) Apr. 7; maximum elevation, 1,356.3 ft (413.40 m) May 10, affected by wind; minimum contents, 2,530,000 acre-ft (3,110 hm^3) Nov. 26, elevation, 1,337.2 ft (407.58 m).

Period of record: Maximum contents, 5,087,000 acre-ft (6,270 hm^3) June 20, 1962, elevation, 1,364.2 ft (415.80 m), affected by wind; minimum since initial filling, 1,450,000 acre-ft (1,790 hm^3) Oct. 23, 1956, elevation, 1,311.5 ft (399.75 m).

REMARKS.--Reservoir is formed by earthfill dam; storage began in December 1952; initial closure made July 1952. Maximum capacity, 5,816,000 acre-ft (7,170 hm^3) below elevation 1,375.0 ft (419.10 m), top of spillway gates. Normal maximum, 4,834,000 acre-ft (5,960 hm^3) below elevation 1,365.0 ft (416.05 m). Inactive storage, 1,336,000 acre-ft (1,650 hm^3) below elevation 1,310.0 ft (399.29 m). No dead storage; elevation of invert of lowest outlet is 1,227.0 ft (373.99 m). Figures given herein represent elevations at outlet works and total contents adjusted for wind effect.

The spillway consists of 21 Taintor gates, each 40 ft (12.2 m) wide by 29 ft (8.8 m) high; spillway capacity, 490,000 ft^3/s (13,900 m^3/s) at pool elevation 1,375 ft (419.10 m). Crest of spillway is at elevation 1,346 ft (410.26 m). Normal releases are through 12 tunnels 22 ft (6.7 m) in diameter. Installation of power units in 8 of these tunnels was completed in January 1956; maximum release through power tunnels is 46,000 ft^3/s (1,300 m^3/s); maximum release through 4 other tunnels is 130,000 ft^3/s (3,680 m^3/s) at pool elevation 1,375 ft (419.10 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,351.9	3,629,000	-
Oct. 31	1,350.2	3,459,000	-170,000
Nov. 30	1,337.7	2,556,000	-903,000
Dec. 31	1,342.3	2,863,000	+307,000
CAL YR 1973	-	-	-292,000
Jan. 31	1,349.0	3,366,000	+503,000
Feb. 28	1,354.8	3,832,000	+466,000
Mar. 31	1,354.6	3,824,000	-8,000
Apr. 30	1,354.3	3,788,000	-36,000
May 31	1,354.1	3,778,000	-10,000
June 30	1,352.9	3,673,000	-105,000
July 31	1,353.8	3,734,000	+61,000
Aug. 31	1,353.2	3,713,000	-21,000
Sept.30	1,351.6	3,581,000	-132,000
WTR YR 1974	-	-	-48,000

06453000 MISSOURI RIVER AT FORT RANDALL DAM, S. DAK.

LOCATION.--Lat 43°03'54", long 98°33'11", in NW¼NE¼ sec.8, T.95 N., R.65 W., Charles Mix County, in powerhouse of Fort Randall Dam on Missouri River at Pickstown, 0.8 mi (1.3 km) upstream from Randall Creek, and at mile 879.8 (1,415.6 km).

DRAINAGE AREA.--263,500 mi^2 (682,500 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1969 published as "below Fort Randall Dam".

GAGE.--Totalizing flowmeters on each turbine in Fort Randall powerhouse. Prior to Nov. 10, 1965, water-stage recorder at site 7.0 mi (11.3 km) downstream at datum 1,230.00 ft (374.904 m) above mean sea level and Nov. 10, 1965, to June 30, 1969, at datum 5.00 ft (1.524 m) lower (Corps of Engineers bench mark).

AVERAGE DISCHARGE.--27 years, 24,420 ft^3/s (691.6 m^3/s), 17,694,000 acre-ft/yr (21.8 m^3/yr).

EXTREMES.--Current year: Maximum daily discharge during year, 42,100 ft^3/s (1,190 m^3/s) July 20; minimum daily, 900 ft^3/s (25.5 m^3/s) Dec. 25.

Period of record: Maximum discharge, 447,000 ft^3/s (12,700 m^3/s) Apr. 12, 1952; maximum gage height, 20.82 ft (6.346 m) Apr. 12, 1952 (site and datum then in use); minimum daily discharge, 100 ft^3/s (2.83 m^3/s) Mar. 29, 1962.

Flood in April 1943 reached a stage of about 16.5 ft (5.03 m). Maximum stage known, in April 1881, was about 5 ft (1.5 m) higher than that of April 1943, both at site 7.0 mi (11.3 km) downstream.

REMARKS.--Records good. Flow completely regulated by Lake Francis Case. (See station 06452500.) Many diversions for irrigation above station.

COOPERATION.--Daily discharge determined from flow through turbines furnished by Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21,300	28,200	18,900	13,800	19,000	15,100	25,800	31,000	25,600	34,500	36,600	31,300
2	24,900	28,400	13,100	20,100	19,100	15,900	28,000	31,000	24,100	36,200	36,500	34,000
3	30,200	27,700	16,100	20,200	9,000	9,900	29,000	30,800	29,000	31,300	36,300	35,600
4	25,800	27,600	14,500	20,500	19,200	15,800	28,800	30,700	28,300	27,900	31,000	29,500
5	28,200	27,800	14,400	20,300	17,000	15,400	27,300	25,500	27,500	32,300	36,000	30,900
6	29,600	27,300	14,800	16,300	16,800	15,800	30,000	29,500	28,100	31,300	37,000	31,200
7	26,700	27,300	14,300	16,800	17,400	15,900	23,400	28,400	29,100	29,100	37,400	34,900
8	27,500	27,400	15,400	14,400	17,000	17,400	27,600	28,500	32,600	32,700	37,300	29,100
9	28,700	27,300	14,700	12,700	16,700	17,700	27,900	29,600	26,700	35,600	33,900	34,600
10	20,100	26,900	15,600	12,400	9,200	14,200	28,400	30,600	27,700	38,700	33,200	34,500
11	17,700	26,500	14,700	13,700	16,600	17,800	29,600	27,300	24,900	37,200	30,300	30,300
12	20,100	27,000	15,100	16,400	15,600	16,700	29,900	24,900	24,800	37,700	36,300	30,800
13	16,600	27,000	15,700	9,400	14,600	15,400	28,600	27,900	25,000	32,800	37,600	30,400
14	11,800	28,400	15,100	20,400	14,300	15,300	23,700	27,900	25,900	29,600	37,300	32,600
15	23,900	28,600	15,000	14,600	12,500	14,700	25,800	27,800	27,600	35,200	35,600	33,200
16	22,300	29,000	10,100	14,200	13,000	15,200	26,700	27,800	23,000	34,700	33,300	35,700
17	21,200	27,300	14,700	14,800	8,500	15,100	26,200	27,800	29,600	36,600	29,300	35,500
18	22,000	27,100	17,700	15,000	12,000	22,200	27,500	27,800	30,200	36,500	29,800	35,600
19	24,200	28,800	17,800	13,700	12,600	25,300	27,600	18,400	31,000	39,200	27,500	33,400
20	27,600	25,500	20,200	5,100	11,900	25,100	27,900	22,400	31,200	42,100	28,900	29,800
21	14,300	24,600	20,600	12,200	12,200	28,000	27,700	23,400	29,700	36,200	29,100	30,800
22	26,800	22,800	12,800	11,600	12,200	29,500	28,100	23,700	29,200	37,500	32,600	26,400
23	23,000	23,200	8,300	10,500	12,100	29,000	26,300	25,700	20,500	35,100	33,900	33,400
24	21,500	21,200	18,000	14,400	10,000	29,300	25,200	29,600	24,800	34,900	33,800	36,400
25	22,100	17,200	900	14,700	12,600	29,700	25,700	30,700	30,900	35,300	30,300	35,500
26	23,100	15,600	21,600	14,700	11,900	28,500	25,500	22,500	31,200	35,700	34,400	36,100
27	26,400	16,100	21,800	4,500	12,200	27,600	24,300	29,100	30,700	40,800	32,800	36,300
28	15,400	18,900	21,400	14,500	12,700	27,100	24,200	32,600	32,700	32,200	32,200	36,200
29	28,500	15,200	18,700	14,700	------	25,500	26,400	27,900	35,600	36,900	29,900	33,100
30	29,200	16,100	8,200	15,000	------	26,100	28,600	31,200	29,600	38,200	30,400	34,000
31	28,600	------	17,700	17,900	------	22,300	------	27,900	------	37,100	34,500	------
TOTAL	729,300	742,000	477,900	449,500	387,900	638,500	811,700	859,900	846,800	1,091.1M	1,035.0M	991,100
MEAN	23,530	24,730	15,420	14,500	13,850	20,600	27,060	27,740	28,230	35,200	33,390	33,040
MAX	30,200	29,000	21,800	20,500	19,200	29,700	30,000	32,600	35,600	42,100	37,600	36,400
MIN	11,800	15,200	900	4,500	8,500	9,900	23,400	18,400	20,500	27,900	27,500	26,400
AC-FT	1,447M	1,472M	947,900	891,600	769,400	1,266M	1,610M	1,706M	1,680M	2,164M	2,053M	1,966M

CAL YR 1973 TOTAL 8,219,100 MEAN 22,520 MAX 36,300 MIN 900 AC-FT 16,300,000
WTR YR 1974 TOTAL 9,060,700 MEAN 24,820 MAX 42,100 MIN 900 AC-FT 17,970,000

06464500 KEYA PAHA RIVER AT WEWELA, S. DAK.

LOCATION.--Lat 43°01'42", long 99°46'45", in SE¼ sec.24, T.95 N., R.76 W., Tripp County, on left bank 13 ft (4 m) downstream from bridge on U.S. Highway 183, 1.0 mi (1.6 km) north of Wewela, 4.5 mi (7.2 km) upstream from Holt Creek, and 11.5 mi (18.5 km) downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi² (2,770 km²), approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft (624.773 m) above mean sea level. Prior to June 21, 1957, nonrecording gage at site 13 ft (4 m) upstream at same datum.

AVERAGE DISCHARGE.--29 years (1938-40, 1947-74), 69.8 ft³/s (1.977 m³/s), 50,570 acre-ft/yr (62.4 hm³/yr); median of yearly mean discharges, 58 ft³/s (1.64 m³/s), 42,000 acre-ft/yr (52 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 212 ft³/s (6.00 m³/s) June 10, gage height, 2.47 ft (0.753 m); maximum gage height, 2.86 ft (0.872 m) Jan. 22 (backwater from ice); minimum daily discharge, 4.9 ft³/s (0.14 m³/s) July 29.

Period of record: Maximum discharge, 5,430 ft³/s (154 m³/s) Mar. 31, 1952, gage height, 13.08 ft (3.987 m); maximum gage height, 13.5 ft (4.11 m) Mar. 25, 1950, from floodmark (backwater from ice); no flow Jan. 10 to Feb. 15, 1949.

REMARKS.--Records good except those for winter periods, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 20 to Mar. 1; shifting-control method used Aug. 29 to Sept. 21)

1.0	4.0	1.7	68
1.2	13	2.0	118
1.4	29	2.5	210

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	45	45	10	34	95	67	45	38	16	8.9	8.3
2	65	45	45	10	30	85	70	40	35	16	8.5	11
3	56	46	44	11	30	82	65	37	34	16	8.3	12
4	48	50	35	11	31	76	58	37	31	16	8.6	13
5	43	50	30	12	32	70	61	37	32	17	8.7	12
6	40	51	28	12	31	68	58	35	29	17	8.7	12
7	39	54	30	12	30	62	54	35	28	16	8.1	11
8	37	55	35	12	29	61	50	35	28	16	7.6	11
9	37	56	36	11	29	61	49	39	87	16	7.9	10
10	36	57	36	10	30	57	49	38	160	15	9.7	9.9
11	47	57	35	9.0	40	58	55	42	127	14	11	9.5
12	63	55	34	8.0	50	60	76	38	86	13	11	12
13	77	55	34	8.0	47	65	100	40	68	12	11	14
14	79	54	33	9.0	47	69	100	38	57	11	10	17
15	71	54	33	10	47	65	97	36	46	11	9.7	18
16	64	54	32	12	48	62	92	36	42	11	9.5	17
17	58	55	31	30	50	62	85	33	36	9.5	9.7	16
18	57	56	30	50	50	65	75	32	35	9.0	9.6	15
19	55	58	30	48	55	60	67	31	33	8.0	9.8	14
20	52	50	30	40	55	57	67	39	30	7.6	9.9	13
21	49	45	32	35	50	54	68	66	28	6.8	9.2	14
22	47	40	34	32	50	58	72	91	26	6.0	8.5	14
23	45	41	32	30	50	57	77	74	24	6.0	7.9	14
24	45	42	32	30	48	61	73	63	22	6.0	7.5	15
25	46	42	31	31	50	61	73	60	20	6.5	7.1	14
26	45	43	30	31	60	67	70	52	19	6.2	6.6	14
27	46	43	28	32	90	60	77	45	18	5.2	5.9	14
28	47	44	26	32	100	59	62	41	18	5.3	5.9	13
29	47	44	24	33	------	61	56	41	17	4.9	6.4	14
30	46	44	20	33	------	62	50	40	16	5.5	6.7	14
31	46	------	15	35	------	63	------	38	------	7.4	6.9	------
TOTAL	1,603	1,485	990	689.0	1,293	2,003	2,073	1,354	1,270	332.9	264.8	395.7
MEAN	51.7	49.5	31.9	22.2	46.2	64.6	69.1	43.7	42.3	10.7	8.54	13.2
MAX	79	58	45	50	100	95	100	91	160	17	11	18
MIN	36	40	15	8.0	29	54	49	31	16	4.9	5.9	8.3
AC-FT	3,180	2,950	1,960	1,370	2,560	3,970	4,110	2,690	2,520	660	525	785

CAL YR 1973 TOTAL 24,477.0 MEAN 67.1 MAX 515 MIN 13 AC-FT 48,550
WTR YR 1974 TOTAL 13,753.4 MEAN 37.7 MAX 160 MIN 4.9 AC-FT 27,280

PEAK DISCHARGE (BASE, 250 FT³/S).--No peaks above base.

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, S. DAK.

LOCATION.--Lat 42°50'56", long 97°28'54", in SW¼ sec.7, T.33 N., R.1 W., Cedar County, Nebraska, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi (6.0 km) southwest of Yankton, 13.6 mi (21.9 km) upstream from James River, 32.5 mi (52.3 km) downstream from Niobrara River, and at mile 811.0 (1,304.9 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

EXTREMES.--Current year: Maximum contents, 484,000 acre-ft (597 hm^3) Jan. 20; maximum elevation, 1,208.8 ft (368.44 m) Sept. 14; minimum contents, 354,000 acre-ft (436 hm^3) Mar. 21, elevation, 1,204.2 ft (479.34 m).

Period of record: Maximum contents, 565,000 acre-ft (697 hm^3) Apr. 1, 1960, elevation, 1,210.7 ft (369.02 m), affected by wind; minimum since initial filling, 61,950 acre-ft (75.9 hm^3) Apr. 23, 1956, elevation, 1,188.1 ft (362.13 m).

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 541,000 acre-ft (667 hm^3) below elevation 1,210.0 ft (368.81 m), top of spillway gates. Normal maximum, 477,000 acre-ft (588 hm^3) below elevation 1,208.0 ft (368.20 m). Inactive storage, 156,000 acre-ft (192 hm^3) below elevation 1,195.0 ft (364.24 m). Dead storage, 18,000 acre-ft (22.2 hm^3) below elevation 1,180.0 ft (359.66 m), crest of spillway. Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of 14 Taintor gates, each 40 ft (12.2 m) wide by 30 ft (9.1 m) high; spillway capacity, 280,000 ft^3/s (7,930 m^3/s) at pool elevation 1,210.0 ft (368.81 m). Crest of spillway is at elevation 1,180 ft (359.66 m). Normal releases are through 3 power units, installation completed in January 1957; maximum release through power units is 35,000 ft^3/s (991 m^3/s) at pool elevation, 1,210.0 ft (368.81 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,208.2	463,000	-
Oct. 31	1,208.2	463,000	0
Nov. 30	1,207.9	458,000	-5,000
Dec. 31	1,208.0	459,000	+1,000
CAL YR 1973	-	-	+18,000
Jan. 31	1,207.6	449,000	-10,000
Feb. 28	1,205.2	383,000	-66,000
Mar. 31	1,205.3	384,000	+1,000
Apr. 30	1,204.3	355,000	-29,000
May 31	1,205.5	388,000	+33,000
June 30	1,205.9	400,000	+12,000
July 31	1,207.7	451,000	+51,000
Aug. 31	1,208.1	462,000	+11,000
Sept.30	1,208.1	462,000	0
WTR YR 1974	-	-	-1,000

06467500 MISSOURI RIVER AT YANKTON, S. DAK.

LOCATION.--Lat 42°51'58", long 97°23'37", in SW¼SW¼ sec.18, T.93 N., R.55 W., Yankton County, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi (8.4 km) downstream from Gavins Point Dam, 6.0 mi (9.7 km) upstream from James River, and at mile 805.8 (1,296.5 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to date (except winter months prior to 1932), are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft (347.374 m) above mean sea level. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.00 ft (6.096 m) higher.

AVERAGE DISCHARGE.--44 years, 25,560 ft^3/s (723.9 m^3/s), 18,520,000 acre-ft/yr (22.8 km^3/yr).

EXTREMES.--Current year: Maximum discharge, 38,000 ft^3/s (1,080 m^3/s) July 24, gage height, 20.30 ft (6.187 m); minimum daily, 16,800 ft^3/s (476 m^3/s) many days December to January.

Period of record: Maximum discharge, 480,000 ft^3/s (13,600 m^3/s) Apr. 13, 1952; maximum gage height, 35.5 ft (10.82 m) Apr. 13, 14, 1952; minimum daily discharge, 2,700 ft^3/s (76.5 m^3/s) Nov. 15, 16, 1940.

Maximum stage known, 50.5 ft Apr. 5, 1881 (ice jam), present datum.

REMARKS.--Records good. Flow completely regulated by Lewis and Clark Lake 5.2 mi (8.4 km) upstream since July 1955. (See station 06467000.) Many diversions for irrigation and water supply above station. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31,100	31,000	17,600	17,100	18,100	18,100	29,400	30,200	31,400	32,400	37,200	34,600
2	31,000	31,000	17,600	17,200	18,000	18,100	29,600	30,000	30,900	32,300	37,000	34,600
3	30,800	30,900	17,600	17,200	17,800	18,000	30,200	30,000	30,300	32,700	37,000	34,500
4	30,700	30,900	17,600	17,200	18,000	18,000	29,700	30,200	30,900	33,800	37,000	34,600
5	30,900	31,000	17,400	17,000	18,000	18,100	29,500	30,100	30,100	34,000	37,000	34,500
6	30,900	31,000	17,500	16,800	17,900	18,100	29,800	30,200	30,400	34,100	37,000	34,500
7	30,900	31,000	17,500	16,800	17,900	18,200	29,500	30,000	30,800	34,100	37,000	35,000
8	30,900	30,900	17,500	16,800	17,800	18,200	29,700	28,500	30,800	34,000	37,100	35,200
9	30,800	30,900	17,400	16,900	17,800	18,200	29,800	29,300	30,500	35,000	37,000	35,200
10	28,200	31,000	17,700	16,900	17,800	18,200	29,800	29,300	29,600	35,200	37,000	35,700
11	24,800	30,900	17,600	17,000	17,800	18,100	30,000	28,900	29,200	35,200	37,100	35,800
12	23,900	30,900	17,600	17,200	17,800	18,200	29,600	29,600	29,600	35,000	36,800	35,200
13	22,800	30,800	17,500	17,100	17,800	17,900	29,700	30,300	29,000	35,100	36,500	34,600
14	22,700	30,900	17,000	17,200	17,900	17,900	29,600	30,100	30,000	35,000	36,200	34,600
15	23,300	30,800	17,000	17,200	17,900	17,900	29,800	30,800	30,000	36,000	35,000	34,700
16	23,300	30,900	17,000	17,100	17,900	18,000	30,100	30,000	30,000	37,200	33,800	34,800
17	24,100	30,800	17,100	17,000	17,900	18,100	30,200	30,000	30,000	37,000	33,700	34,600
18	24,300	30,800	17,200	16,900	17,900	21,000	30,300	29,900	30,000	37,400	33,800	35,000
19	24,300	30,800	17,200	16,800	18,100	24,000	30,500	27,000	30,000	37,100	34,000	34,600
20	24,400	30,400	17,000	16,800	18,100	26,800	30,400	25,300	30,400	37,300	33,800	34,600
21	24,500	30,400	16,900	16,800	18,200	28,000	30,800	28,600	30,300	36,500	33,800	35,300
22	24,600	30,400	16,800	16,800	18,200	28,900	30,800	31,700	30,800	36,800	33,800	36,100
23	24,600	29,600	16,800	16,900	18,200	29,200	31,000	32,000	28,900	37,000	33,800	35,500
24	24,800	26,600	16,800	17,000	18,200	29,200	30,500	31,900	28,600	37,000	33,700	35,600
25	24,800	23,900	16,800	17,000	18,200	29,100	30,700	31,900	29,600	37,200	33,800	35,600
26	24,800	21,200	16,900	17,000	18,200	29,800	30,900	31,400	30,600	37,200	34,000	35,700
27	25,000	18,200	17,200	16,900	18,200	29,400	30,600	31,500	29,800	37,300	33,900	35,800
28	25,000	17,800	17,000	17,000	18,100	29,600	29,800	31,300	31,000	37,000	33,700	35,400
29	27,600	17,800	16,800	18,200	------	29,000	29,800	30,800	32,100	37,000	34,700	35,500
30	30,500	17,700	16,800	18,100	------	29,400	29,500	31,200	32,200	37,200	34,600	35,300
31	31,000	------	16,900	18,200	------	29,600	------	31,000	------	37,400	34,600	------
TOTAL	831,300	851,200	533,300	530,100	503,700	700,300	901,600	933,000	907,800	1,107.5M	1,095.4M	1,052.7M
MEAN	26,820	28,370	17,200	17,100	17,990	22,590	30,050	30,100	30,260	35,730	35,340	35,090
MAX	31,100	31,000	17,700	18,200	18,200	29,800	31,000	32,000	32,200	37,400	37,200	36,100
MIN	22,700	17,700	16,800	16,800	17,800	17,900	29,400	25,300	28,600	32,300	33,700	34,500
AC-FT	1,649M	1,688M	1,058M	1,051M	999,100	1,389M	1,788M	1,851M	1,801M	2,197M	2,173M	2,088M

CAL YR 1973 TOTAL 9,369,400 MEAN 25,670 MAX 33,800 MIN 16,800 AC-FT 18,580,000
WTR YR 1974 TOTAL 9,947,900 MEAN 27,250 MAX 37,400 MIN 16,800 AC-FT 19,730,000

06471000 JAMES RIVER AT COLUMBIA, S. DAK.

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, on left bank 10 ft (3 m) downstream from highway bridge, 0.8 mi (1.3 km) northwest of Columbia, 2.4 mi (3.9 km) upstream from Chicago and North Western Transportation Co. bridge, 3.6 mi (5.8 km) upstream from Elm River, and 9.4 mi (15.1 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi^2 (18,300 km^2), approximately, of which about 3,000 mi^2 (7,770 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft (388.623 m) above mean sea level. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--29 years, 101 ft^3/s (2.860 m^3/s), 73,170 acre-ft/yr (90.2 hm^3/yr); median of yearly mean discharges, 55 ft^3/s (1.56 m^3/s), 39,800 acre-ft/yr (49 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 128 ft^3/s (3.62 m^3/s) July 4; maximum gage height, 8.54 ft (2.603 m) July 15; no flow for many days.

Period of record: Maximum discharge, 5,420 ft^3/s (153 m^3/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft^3/s (52.7 m^3/s) Apr. 8, 1952, backwater from Elm River.

REMARKS.--Records fair. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3). Regulation by Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 168 mi (270 km) upstream, since May 1953. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	7.3	1.0			.50	45	70	107	118	93	69
2	0	7.6	1.0			3.0	47	71	106	119	92	68
3	0	7.8	.80			15	52	73	104	124	91	68
4	0	7.6	.70			14	57	77	102	127	90	68
5	0	8.3	.60			13	61	81	101	127	88	68
6	0	8.3	.50			12	59	84	98	125	85	64
7	0	8.7	.30			11	58	87	95	125	82	56
8	0	8.0	.20			11	56	89	94	123	80	43
9	0	7.8	.10			11	31	90	94	123	79	30
10	0	8.0	0			12	8.7	92	97	122	79	17
11	.01	8.3	0			13	4.6	96	102	121	81	7.6
12	0	8.5	0			14	9.2	93	104	123	81	2.3
13	.38	8.3	0			13	25	94	105	123	80	.14
14	1.4	7.3	0			11	45	96	106	123	78	0
15	2.1	7.3	0			10	47	96	107	123	76	0
16	3.2	7.3	0			9.5	48	96	107	121	75	0
17	4.5	7.1	0			9.0	48	95	109	120	75	0
18	5.0	6.9	0			8.5	48	93	112	120	74	0
19	5.8	6.3	0			8.5	48	92	114	118	73	0
20	6.1	5.2	0			8.0	49	97	114	117	73	0
21	6.5	5.0	0			8.0	54	104	114	116	74	0
22	6.5	4.5	0			8.0	54	102	115	114	74	0
23	6.7	4.0	0			8.5	53	100	118	112	74	0
24	6.7	3.5	0			8.5	53	99	120	109	73	0
25	6.5	3.0	0			9.0	54	97	120	107	72	0
26	6.5	3.0	0			10	58	96	119	105	71	0
27	6.3	2.5	0			22	64	99	118	104	71	0
28	6.7	2.0	0			30	68	104	118	101	71	0
29	6.9	2.0	0		------	49	70	105	117	98	71	0
30	6.9	1.5	0		------	58	71	106	117	97	71	0
31	6.9	------	0		------	53	------	107	------	94	70	------
TOTAL	101.59	182.9	5.20	0	0	471.00	1,445.5	2,881	3,254	3,599	2,417	561.04
MEAN	3.28	6.10	.17	0	0	15.2	48.2	92.9	108	116	78.0	18.7
MAX	6.9	8.7	1.0	0	0	58	71	107	120	127	93	69
MIN	0	1.5	0	0	0	.50	4.6	70	94	94	70	0
AC-FT	202	363	10	0	0	934	2,870	5,710	6,450	7,140	4,790	1,110

CAL YR 1973 TOTAL 739.18 MEAN 2.03 MAX 21 MIN 0 AC-FT 1,470
WTR YR 1974 TOTAL 14,918.23 MEAN 40.9 MAX 127 MIN 0 AC-FT 29,590

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, N. Dak., on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, S. Dak. and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi^2 (1,940 km^2), approximately, of which about 270 mi^2 (699 km^2) is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.286 m) lower.

AVERAGE DISCHARGE.--18 years, 18.3 ft^3/s (0.518 m^3/s), 13,260 acre-ft/yr (16.3 hm^3/yr); median of yearly mean discharges, 10 ft^3/s (0.28 m^3/s), 7,240 acre-ft/yr (8.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 194 ft^3/s (5.49 m^3/s) Mar. 7, gage height, 5.47 ft (1.667 m); no flow for many days.

Period of record: Maximum discharge, 5,930 ft^3/s (168 m^3/s) Apr. 11, 1969, gage height, 15.22 ft (4.639 m); maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

REMARKS.--Records good except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	1.6	.03		0	8.8	13	19	32	1.2		
2	36	1.5	.05		0	9.9	13	19	28	1.2		
3	29	1.3	.07		0	12	12	17	26	1.4		
4	24	1.2	.07		0	15	8.8	15	26	.70		
5	20	1.1	.07		0	17	9.6	15	30	.22		
6	16	.87	.03		0	49	9.4	13	41	.18		
7	14	.87	.02		0	169	9.1	13	56	.09		
8	11	.78	.03		0	144	8.0	12	55	.18		
9	11	.63	.07		0	142	7.7	12	46	.11		
10	9.6	.49	.02		0	117	7.0	11	37	.05		
11	9.4	.49	.01		0	109	7.5	12	30	0		
12	8.6	.49	.01		0	84	9.1	11	25	0		
13	7.7	.43	.02		0	70	11	10	22	0		
14	7.2	.37	.02		0	64	10	11	20	0		
15	6.7	.37	.02		0	50	9.1	11	17	0		
16	6.7	.27	.02		0	37	8.3	11	14	0		
17	7.5	.27	.01		0	35	9.4	11	11	0		
18	6.7	.27	.01		0	32	11	11	9.9	0		
19	6.3	.27	.02		0	28	17	11	8.6	0		
20	4.7	.22	.01		0	25	25	16	7.5	0		
21	4.7	.32	0		.18	22	31	23	6.3	0		
22	4.5	.32	0		.37	20	29	24	5.4	0		
23	3.9	.22	0		.43	17	25	31	4.5	0		
24	4.1	.18	0		.37	13	21	138	3.9	0		
25	3.3	.18	0		.43	12	20	124	3.6	0		
26	3.3	.11	0		.63	11	18	92	2.6	0		
27	3.1	.14	0		9.6	12	21	73	2.6	0		
28	2.8	.11	0		15	14	21	58	2.3	0		
29	2.1	.11	0		------	15	22	48	2.1	0		
30	1.9	.11	0		------	15	22	42	1.6	0		
31	1.8	------	0		------	14	------	38	------	0		------
TOTAL	324.6	15.59	.61	0	27.01	1,382.7	445.0	952	576.9	5.33	0	0
MEAN	10.5	.52	.020	0	.96	44.6	14.8	30.7	19.2	.17	0	0
MAX	47	1.6	.07	0	15	169	31	138	56	1.4	0	0
MIN	1.8	.11	0	0	0	8.8	7.0	10	1.6	0	0	0
AC-FT	644	31	1.2	0	54	2,740	883	1,890	1,140	11	0	0

CAL YR 1973 TOTAL 780.98 MEAN 2.14 MAX 109 MIN 0 AC-FT 1,550
WTR YR 1974 TOTAL 3,729.74 MEAN 10.2 MAX 169 MIN 0 AC-FT 7,400

PEAK DISCHARGE (BASE, 50 FT^3/S)

DATE	TIME	G.H.	DISCHARGE
3- 7	1130	5.47	194
5-24	1400	5.29	158
6- 7	1600	4.53	59

06471500 ELM RIVER AT WESTPORT, S. DAK.

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi^2 (4,350 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) above mean sea level. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

AVERAGE DISCHARGE.--29 years, 45.9 ft^3/s (1.300 m^3/s), 33,250 acre-ft/yr (41.0 hm^3/yr); median of yearly mean discharges, 23 ft^3/s (0.65 m^3/s), 16,700 acre-ft/yr (21 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 138 ft^3/s (3.91 m^3/s) Mar. 11, gage height, 5.79 ft (1.765 m); minimum daily, 0.78 ft^3/s (0.022 m^3/s) Nov. 20.

Period of record: Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm^3).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	4.0	5.5	1.5	8.0	41	15	22	53	8.0	7.2	5.5
2	51	2.6	5.5	1.5	7.5	98	14	22	44	14	6.8	7.2
3	41	2.8	4.3	2.0	6.5	121	12	20	38	14	6.8	12
4	33	2.4	4.3	2.0	6.5	83	10	20	34	13	6.8	12
5	28	2.4	4.3	1.8	7.0	54	9.2	18	31	12	6.8	12
6	25	2.6	4.3	1.6	7.0	52	10	17	29	9.6	6.8	12
7	22	3.5	4.6	1.4	7.0	37	9.2	17	29	9.6	6.8	12
8	22	3.3	4.9	1.2	7.5	27	8.8	15	37	9.6	6.8	10
9	20	1.6	3.8	1.2	7.5	68	8.8	14	50	9.6	8.8	8.0
10	19	1.3	5.2	1.2	8.0	113	8.4	15	49	9.6	10	6.5
11	19	1.3	4.9	1.2	7.5	123	12	18	42	9.6	9.2	6.5
12	19	1.2	5.2	1.5	6.5	89	17	15	37	10	8.8	5.8
13	16	1.3	5.2	2.0	5.0	84	19	17	32	9.6	8.8	5.8
14	12	1.2	5.2	3.0	4.7	74	17	17	30	9.6	8.8	5.8
15	10	1.4	5.2	4.0	4.5	53	14	17	25	9.6	6.5	5.8
16	8.4	1.3	5.2	4.5	4.5	39	12	18	23	10	3.0	5.8
17	8.4	1.2	5.2	4.5	4.5	39	11	15	20	10	2.6	5.8
18	7.2	1.1	5.5	4.5	5.0	42	9.2	13	19	9.6	2.4	5.8
19	6.5	.95	5.2	4.0	7.5	30	10	13	16	8.0	2.4	5.5
20	5.8	.78	5.2	4.0	9.5	27	11	23	14	8.0	2.2	5.5
21	5.8	1.3	5.5	4.0	10	24	18	29	11	8.0	1.9	5.2
22	5.8	1.2	5.5	4.2	9.5	23	30	30	8.8	8.0	1.7	5.2
23	6.1	1.4	5.5	4.5	9.0	20	29	30	8.4	6.8	1.7	5.2
24	6.5	13	5.5	6.0	8.0	17	26	30	7.2	8.0	1.7	5.2
25	5.2	13	5.5	8.0	7.0	17	23	55	5.8	7.2	1.6	4.9
26	5.8	12	5.5	9.0	8.0	16	23	115	4.0	7.2	1.3	4.9
27	6.1	7.6	5.5	9.0	10	16	23	97	7.6	7.2	1.2	4.3
28	5.8	6.8	5.2	9.5	20	15	30	79	8.0	7.2	1.6	4.3
29	5.5	6.5	2.8	10	------	16	28	62	7.6	6.8	2.2	4.3
30	5.8	5.8	2.4	9.5	------	17	23	62	6.8	7.2	4.3	3.5
31	5.5	------	2.0	8.0	------	17	------	64	------	7.2	4.9	------
TOTAL	466.2	106.83	149.6	130.3	213.2	1,492	490.6	999	728.1	283.8	152.4	202.3
MEAN	15.0	3.56	4.83	4.20	7.61	48.1	16.4	32.2	24.3	9.15	4.92	6.74
MAX	51	13	5.5	10	20	123	30	115	53	14	10	12
MIN	5.2	.78	2.0	1.2	4.5	15	8.4	13	4.9	6.8	1.2	3.5
AC-FT	925	212	297	258	423	2,960	973	1,980	1,440	563	302	401

CAL YR 1973 TOTAL 2,603.73 MEAN 7.13 MAX 51 MIN .78 AC-FT 5,160
WTR YR 1974 TOTAL 5,414.33 MEAN 14.8 MAX 123 MIN .78 AC-FT 10,740

PEAK DISCHARGE (BASE, 100 FT^3/S)

DATE	TIME	G.H.	DISCHARGE
3- 3	0600	5.73	128
3-11	0300	5.79	138
5-26	0600	5.65	120

06473000 JAMES RIVER AT ASHTON, S. DAK.

LOCATION.--Lat 45°00'02", long 98°28'57", in SE¼SW¼ sec.25, T.118 N., R.64 W., Spink County, on right bank 900 ft (274 m) upstream from highway bridge, 0.9 mi (1.4 km) east of Ashton, 6.3 mi (10.0 km) upstream from Snake Creek, and 14.4 mi (23.2 km) upstream from Turtle Creek.

DRAINAGE AREA.--11,000 mi^2 (28,500 km^2), approximately, of which about 4,190 mi^2 (10,900 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,244.4 ft (379.29 m) above mean sea level. Prior to Nov. 26, 1957, nonrecording gage at site 900 ft (274 m) downstream at same datum.

AVERAGE DISCHARGE.--29 years, 150 ft^3/s (4.248 m^3/s), 108,700 acre-ft/yr (134 hm^3/yr); median of yearly mean discharges, 92 ft^3/s (2.61 m^3/s), 66,700 acre-ft/yr (82 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 132 ft^3/s (3.74 m^3/s) June 10, gage height, 5.12 ft (1.561 m); no flow for many days.

Period of record: Maximum discharge, 5,680 ft^3/s (161 m^3/s) Apr. 24, 1969, gage height, 20.63 ft (6.288 m); maximum gage height, 21.17 ft (6.453 m) Apr. 13, 1969 (backwater from Snake Creek); maximum daily reverse flow, 2,100 ft^3/s (59.5 m^3/s) Apr. 9, 1969 (backwater from Snake Creek).

REMARKS.--Records fair. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 285 mi (459 km) upstream. Occasional backwater and reverse flow caused by Snake Creek during most years. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1209: 1947.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	15	62	64	112	85	82	53
2					0	15	60	65	113	86	81	49
3					0	14	56	66	114	87	81	46
4					0	12	54	66	117	88	79	44
5					0	11	52	70	119	89	77	42
6					0	10	51	75	122	90	76	40
7					0	10	50	80	124	88	75	38
8					0	11	48	85	126	89	74	36
9					0	12	49	90	129	89	73	34
10					0	13	55	95	130	88	74	33
11					0	13	59	100	129	88	76	31
12					0	12	62	100	128	87	78	29
13					.50	12	64	100	125	87	79	28
14					.50	12	65	105	122	89	78	26
15					1.0	11	66	105	116	88	79	25
16					2.0	10	67	100	112	87	79	24
17					3.5	10	67	100	110	87	79	22
18					4.0	10	66	100	108	88	78	21
19					4.0	15	65	100	105	89	77	20
20					3.6	39	64	110	104	90	76	19
21					3.5	55	60	110	104	90	75	16
22					3.2	62	58	105	101	92	75	15
23					3.0	67	56	105	100	94	74	13
24					3.0	69	54	105	96	94	74	12
25					3.5	69	55	100	94	94	73	9.6
26					5.0	68	55	100	92	92	73	8.0
27					6.0	67	57	105	90	90	71	6.1
28					8.0	67	59	106	89	89	67	4.3
29					------	66	60	108	87	87	64	2.4
30					------	65	61	110	86	86	60	.90
31		------			------	64	------	110	------	84	56	------
TOTAL	0	0	0	0	54.30	986	1,757	2,940	3,304	2,751	2,313	747.30
MEAN	0	0	0	0	1.94	31.8	58.6	94.8	110	88.7	74.6	24.9
MAX	0	0	0	0	8.0	69	67	110	130	94	82	53
MIN	0	0	0	0	0	10	48	64	86	84	56	.90
AC-FT	0	0	0	0	108	1,960	3,490	5,830	6,550	5,460	4,590	1,480

CAL YR 1973 TOTAL 4,064.05 MEAN 11.1 MAX 95 MIN 0 AC-FT 8,060
WTR YR 1974 TOTAL 14,852.60 MEAN 40.7 MAX 130 MIN 0 AC-FT 29,460

06473750 WOLF CREEK NEAR REE HEIGHTS, S. DAK.

LOCATION.--Lat 44°36'25", long 99°13'54", in SW¼SW¼ sec.11, T.113 N., R.70 W., Hand County, near right bank on downstream side of highway bridge, 0.3 mi (0.5 km) downstream from small left-bank tributary, 6.5 mi (10.5 km) north of Ree Heights, and 13.8 mi (22.2 km) upstream from Lake Louise dam.

DRAINAGE AREA.--265 mi^2 (686 km^2), approximately.

PERIOD OF RECORD.--September 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,614.16 ft (491.996 m) above mean sea level.

AVERAGE DISCHARGE.--15 years, 4.67 ft^3/s (0.132 m^3/s), 3,380 acre-ft/yr (4.17 hm^3/yr); median of yearly mean discharges, 0.30 ft^3/s (0.01 m^3/s), 220 acre-ft/yr (0.27 hm^3/yr).

EXTREMES.--Current year: No flow during year.

Period of record: Maximum discharge, 990 ft^3/s (28.0 m^3/s) Apr. 5, 1969, gage height, 9.33 ft (2.844 m); maximum gage height, 9.57 ft (2.917 m) Mar. 14, 1966 (backwater from ice); no flow for many days each year.

REMARKS.--Records good. Flow regulated by small reservoir 0.5 mi (0.8 km) upstream, capacity, about 1,100 acre-ft (1.36 hm^3).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
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20												
21												
22												
23												
24												
25												
26												
27												
28												
29					------							
30					------							
31		------			------		------		------			------
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	0	0	0	0	0	0	0	0	0	0	0	0
MAX	0	0	0	0	0	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	0	0	0	0	0	0	0	0

CAL YR 1973 TOTAL 349.08 MEAN .96 MAX 22 MIN 0 AC-FT 692
WTR YR 1974 TOTAL 0.00 MEAN .000 MAX .0 MIN 0 AC-FT 0

PEAK DISCHARGE (BASE, 40 FT^3/S).--No peaks above base.

06474000 TURTLE CREEK NEAR TULARE, S. DAK.

LOCATION.--Lat 44°44'06", long 98°35'09", in SE¼SE¼ sec.25, T.115 N., R.65 W., Spink County, on left bank at downstream side of highway bridge, 3.9 mi (6.3 km) west of Tulare and 8.9 mi (14.3 km) downstream from Wolf Creek.

DRAINAGE AREA.--1,120 mi² (2,900 km²), approximately.

PERIOD OF RECORD.--August 1953 to September 1956, September 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), by barometer. Prior to Oct. 6, 1965, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--12 years, 15.9 ft³/s (0.450 m³/s), 11,520 acre-ft/yr (14.2 hm³/yr); median of yearly mean discharges, 5.3 ft³/s (0.15 m³/s), 3,800 acre-ft/yr (4.7 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1.2 ft³/s (0.03 m³/s) May 29, gage height, 4.29 ft (1.308 m); no flow for many days.

Period of record: Maximum discharge, about 6,000 ft³/s (170 m³/s) Apr. 5, 1969; maximum gage height, 18.51 ft (5.642 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

REMARKS.--Records fair. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.25	0	.01	.60	.26	.22	1.0	.04		
2		0	.25	0	.01	.60	.26	.24	1.0	.04		
3		0	.19	0	.01	.60	.27	.23	1.0	.04		
4		0	.24	0	.01	.60	.27	.22	.92	.03		
5		0	.22	0	.01	.50	.24	.22	.85	.02		
6		0	.20	0	.02	.46	.24	.20	.76	.01		
7		0	.20	0	.02	.44	.24	.20	.63	.01		
8		0	.22	0	.03	.44	.23	.20	.55	0		
9		0	.21	0	.03	.40	.22	.22	.55	0		
10		0	.19	0	.04	.40	.20	.23	.53	0		
11		0	.15	0	.04	.40	.22	.28	.44	0		
12		0	.10	0	.03	.38	.26	.26	.37	0		
13		0	.05	0	.03	.36	.27	.28	.34	0		
14		0	.02	0	.05	.32	.29	.31	.33	0		
15		0	.01	.03	.15	.30	.28	.31	.31	0		
16		0	.01	.05	.20	.30	.27	.33	.28	0		
17		0	.02	.04	.25	.30	.28	.33	.25	0		
18		0	.02	.04	.30	.30	.26	.34	.24	0		
19		0	.01	.03	.96	.28	.23	.33	.22	0		
20		0	.01	.03	.60	.28	.26	.40	.20	0		
21		0	.01	.03	.45	.27	.30	.76	.19	0		
22		0	.02	.02	.45	.26	.30	.88	.18	0		
23		0	.03	.02	.46	.26	.28	.92	.15	0		
24		0	.03	.02	.48	.27	.26	.85	.13	0		
25		.26	.02	.02	.50	.27	.27	.85	.11	0		
26		.28	.02	.03	.50	.26	.26	.82	.09	0		
27		.26	.01	.03	.55	.26	.27	.82	.08	0		
28		.26	.01	.03	.55	.25	.27	.88	.07	0		
29		.26	.01	.04	------	.26	.26	.85	.07	0		
30		.25	0	.03	------	.24	.25	1.0	.05	0		
31		------	0	.02	------	.24	------	.92	------	0		------
TOTAL	0	1.57	2.73	.51	6.74	11.10	7.77	14.90	11.89	.19	0	0
MEAN	0	.052	.088	.017	.24	.36	.26	.48	.40	.006	0	0
MAX	0	.28	.25	.05	.96	.60	.30	1.0	1.0	.04	0	0
MIN	0	0	0	0	.01	.24	.20	.20	.05	0	0	0
AC-FT	0	3.1	5.4	1.0	13	22	15	30	24	.4	0	0

CAL YR 1973 TOTAL 4,817.45 MEAN 13.2 MAX 550 MIN 0 AC-FT 9,560
WTR YR 1974 TOTAL 57.40 MEAN .16 MAX 1.0 MIN 0 AC-FT 114

PEAK DISCHARGE (BASE, 50 FT³/S).--No peaks above base.

06474300 MEDICINE CREEK NEAR ZELL, S. DAK.

LOCATION.--Lat 44°45'52", long 98°42'13", in NW¼NW¼ sec.19, T.115 N., R.65 W., Spink County, on downstream side at center of bridge on State Highway 26, 3.8 mi (6.1 km) upstream from Cottonwood Lake and 9.2 mi (14.8 km) south of Zell.

DRAINAGE AREA.--210 mi^2 (540 km^2), approximately.

PERIOD OF RECORD.--September 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (402 m), from topographic map.

AVERAGE DISCHARGE.--15 years, 6.64 ft^3/s (0.188 m^3/s), 4,810 acre-ft/yr (5.93 hm^3/yr); median of yearly mean discharges, 2.0 ft^3/s (0.06 m^3/s), 1,500 acre-ft/yr (1.8 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 5.3 ft^3/s (0.15 m^3/s) May 25, gage height, 3.03 ft (0.924 m); maximum gage height observed, 3.31 ft (1.009 m) Feb. 15 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 2,210 ft^3/s (62.6 m^3/s) Apr. 5, 1969, gage height, 12.41 ft (3.783 m); no flow for many days in most years.

REMARKS.--Records fair. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 19 to June 29; stage-discharge relation affected by ice Dec. 27-29, Feb. 14-16, Feb. 27 to Mar. 3)

2.32	0	2.7	0.70
2.4	.04	2.8	1.2
2.5	.10	3.0	3.0
2.6	.30	3.2	5.3

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.03	.02		0	.04	.03	.02	.95	.04	.01	
2	.03	.03	.02		0	.05	.03	.03	.80	.06	.01	
3	.03	.03	.02		0	.05	.03	.03	.70	.05	.01	
4	.04	.03	.02		0	.05	.03	.02	.66	.05	.01	
5	.03	.03	.01		0	.04	.02	.01	.62	.05	.01	
6	.03	.04	.01		0	.04	.03	.01	.54	.04	.01	
7	.04	.04	.02		0	.04	.02	.01	.46	.04	0	
8	.04	.04	.02		0	.03	.02	.01	.38	.04	.01	
9	.05	.04	.02		0	.03	.02	.01	.38	.04	.01	
10	.05	.04	.03		0	.03	.02	.03	.38	.04	.03	
11	.06	.03	.03		0	.03	.04	.05	.28	.04	.04	
12	.05	.03	.03		0	.04	.05	.01	.18	.04	.03	
13	.05	.03	.03		0	.04	.03	.02	.16	.04	.03	
14	.04	.03	.03		.02	.04	.02	.01	.14	.04	.01	
15	.04	.04	.03		.05	.04	.01	0	.09	.04	.01	
16	.04	.03	.02		.01	.03	.01	0	.08	.04	.01	
17	.04	.04	.03		0	.03	.01	0	.08	.04	.01	
18	.04	.03	.03		0	.03	.01	0	.08	.05	.01	
19	.04	.03	.03		0	.03	0	0	.08	.05	0	
20	.04	.02	.03		0	.03	.02	.38	.08	.04	0	
21	.04	.03	.03		0	.03	.06	2.3	.08	.04	0	
22	.04	.03	.03		0	.03	.04	1.2	.08	.04	0	
23	.04	.03	.02		0	.03	.03	.75	.07	.03	0	
24	.04	.03	.03		0	.02	.02	1.5	.07	.01	0	
25	.04	.03	.02		0	.03	.02	4.7	.06	.01	0	
26	.03	.03	.03		0	.03	.01	4.6	.06	.01	0	
27	.03	.02	.01		.01	.03	.02	3.4	.05	0	0	
28	.03	.02	.01		.02	.04	.02	2.5	.05	0	0	
29	.03	.01	.01		------	.04	.02	1.5	.05	0	0	
30	.03	.01	0		------	.03	.02	1.3	.04	0	0	
31	.03	------	0		------	.04	------	1.1	------	0	0	------
TOTAL	1.19	.90	.67	0	.11	1.09	.71	25.50	7.73	1.01	.26	0
MEAN	.038	.030	.022	0	.004	.035	.024	.82	.26	.033	.008	0
MAX	.06	.04	.03	0	.05	.05	.06	4.7	.95	.06	.04	0
MIN	.03	.01	0	0	0	.02	0	0	.04	0	0	0
AC-FT	2.4	1.8	1.3	0	.2	2.2	1.4	51	15	2.0	.5	0

CAL YR 1973 TOTAL 1,837.33 MEAN 5.03 MAX 222 MIN 0 AC-FT 3,640
WTR YR 1974 TOTAL 39.17 MEAN .11 MAX 4.7 MIN 0 AC-FT 78

PEAK DISCHARGE (BASE, 40 FT^3/S).--No peaks above base.

06475000 JAMES RIVER NEAR REDFIELD, S. DAK.

LOCATION.--Lat 44°55'13", long 98°25'52" in SW¼NW¼ sec.28, T.117 N., R.63 W., Spink County, on right bank at downstream side of highway bridge, 5.2 mi (8.4 km) northeast of Redfield and 5.2 mi (8.4 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi^2 (38,300 km^2), approximately, of which about 4,600 mi^2 (11,900 km^2) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.3 ft (376.82 m) above mean sea level. Prior to July 26, 1951, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 181 ft^3/s (5.126 m^3/s), 131,100 acre-ft/yr (162 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 213 ft^3/s (6.03 m^3/s) May 21, gage height, 6.05 ft (1.844 m); no flow for many days.

Period of record: Maximum discharge, 7,310 ft^3/s (207 m^3/s) Apr. 13, 1969, gage height, 24.93 ft (7.599 m); no flow for many days in most years.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 303 mi (488 km) upstream. Low flow affected by wind at times. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	6.0	73	99	107	81	63	40
2					0	8.0	56	80	111	80	52	40
3					0	12	43	59	117	73	52	42
4					0	15	33	68	121	82	54	45
5					0	15	45	58	118	98	56	58
6					0	14	56	72	108	113	66	38
7					0	12	60	75	115	105	71	31
8					0	11	56	78	116	99	70	28
9					0	10	51	80	113	90	58	24
10					0	11	92	100	114	92	59	23
11					0	12	82	70	113	99	60	18
12					0	12	58	69	123	93	59	15
13					0	12	63	106	123	86	61	16
14					0	13	65	81	116	85	73	15
15					0	12	64	85	101	87	58	14
16					0	12	73	82	96	102	53	15
17					0	11	84	74	98	90	55	11
18					0	11	79	77	99	82	60	11
19					0	11	128	100	95	82	68	7.6
20					0	11	115	137	101	90	67	6.8
21					.50	10	90	200	92	85	50	5.7
22					1.0	10	67	156	87	83	48	6.7
23					4.0	30	64	120	91	82	57	4.9
24					3.5	50	128	106	95	84	67	2.8
25					3.0	71	68	105	101	82	60	3.2
26					3.0	77	79	107	109	71	52	2.8
27					5.0	79	74	108	110	77	47	.48
28					5.5	82	63	106	102	70	50	.76
29					------	84	56	97	82	67	42	.47
30					------	72	57	102	75	64	43	.15
31		------			------	70	------	100	------	68	40	------
TOTAL	0	0	0	0	25.50	866.0	2,122	2,957	3,149	2,642	1,771	526.36
MEAN	0	0	0	0	.91	27.9	70.7	95.4	105	85.2	57.1	17.5
MAX	0	0	0	0	5.5	84	128	200	123	113	73	58
MIN	0	0	0	0	0	6.0	33	58	75	64	40	.15
AC-FT	0	0	0	0	51	1,720	4,210	5,870	6,250	5,240	3,510	1,040

CAL YR 1973 TOTAL 12,640.86 MEAN 34.6 MAX 500 MIN 0 AC-FT 25,070
WTR YR 1974 TOTAL 14,058.86 MEAN 38.5 MAX 200 MIN 0 AC-FT 27,890

06476000 JAMES RIVER AT HURON, S. DAK.

LOCATION.--Lat 44°21'49", long 98°11'56", in SW¼SE¼NE¼ sec.6, T.110 N., R.61 W., Beadle County, on right bank 15 ft (5 m) upstream from city dam at Huron, 135 ft (41 m) downstream from Chicago and North Western Transportation Co. bridge and 165 ft (50 m) upstream from bridge on business loop U.S. Highway 14.

DRAINAGE AREA.--16,800 mi² (43,500 km²), approximately, of which about 12,010 mi² (31,100 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1928 to September 1932, August 1943 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at site about 100 ft (30 m) downstream for period of open water each year July 1902 to June 1914 and for period March to June 1915-23 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 1,223.44 ft (372.905 m) above mean sea level. Aug. 29, 1928, to Mar. 15, 1929, nonrecording gage at site 100 ft (30 m) downstream at about same datum. Mar. 16, 1929, to June 30, 1932, nonrecording gage 165 ft (50 m) downstream at present datum. Aug. 3, 1943, to Oct. 17, 1951, nonrecording gage at site 15 ft (5 m) downstream at present site and datum.

AVERAGE DISCHARGE.--35 years, 231 ft³/s (6.542 m³/s), 167,400 acre-ft/yr (206 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 193 ft³/s (5.47 m³/s) June 9, gage height, 9.06 ft (2.761 m); no flow for many days.

Period of record: Maximum discharge, 9,000 ft³/s (255 m³/s) Apr. 13, 1969, gage height, 16.70 ft (5.090 m); no flow for long periods in most years.

A flood between Apr. 11 and 13, 1881 reached a stage of 19.8 ft (6.04 m), from U.S. Weather Bureau publication. Flood of Mar. 22, 1922, reached a stage of 16.5 ft (5.03 m).

REMARKS.--Records good above 100 ft³/s (2.83 m³/s) and fair below. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³). Regulation by Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 365 mi (587 km) upstream, since May 1953. Stage and discharge affected by wind at times. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.10		0	37	58	27	87	58	38	35
2		0	.15		0	43	74	66	90	62	43	39
3		0	.15		0	53	93	74	83	64	39	32
4		0	.15		0	55	66	62	88	60	34	24
5		0	.10		0	55	62	87	83	46	32	11
6		0	0		0	57	62	58	90	37	24	16
7		2.4	0		0	53	58	66	89	42	24	27
8		.30	0		0	52	47	66	90	44	27	32
9		.20	.01		0	50	51	66	124	52	32	30
10		.15	0		0	48	35	66	110	52	47	22
11		.15	0		0	49	51	80	107	39	47	32
12		.15	0		0	46	62	93	97	44	51	35
13		.10	0		0	43	74	70	96	39	47	27
14		.30	0		0	18	74	66	96	46	24	27
15		.40	0		0	0	74	62	101	44	35	30
16		.11	.10		0	0	58	62	96	26	39	19
17		.02	.02		0	0	66	66	86	44	47	27
18		.25	0		.40	3.6	62	62	82	50	43	22
19		.30	0		40	11	35	54	82	48	27	27
20		14	0		49	11	51	51	76	40	27	27
21		0	0		62	11	70	70	91	49	39	27
22		.10	0		49	13	87	87	86	48	39	16
23		0	0		46	13	74	112	79	39	30	16
24		.10	0		36	16	39	106	72	44	27	22
25		.10	0		30	19	74	99	66	44	32	11
26		.15	0		27	24	62	93	55	46	43	8.0
27		.15	0		29	27	66	87	50	42	35	27
28		.15	0		35	35	80	93	54	46	32	3.0
29		.15	0		------	47	80	93	63	43	39	11
30		.15	0		------	51	87	93	61	40	35	4.0
31		------	0		------	54	------	93	------	35	35	------
TOTAL	0	19.88	.78	0	403.40	994.6	1,932	2,330	2,530	1,413	1,113	686.0
MEAN	0	.66	.025	0	14.4	32.1	64.4	75.2	84.3	45.6	35.9	22.9
MAX	0	14	.15	0	62	57	93	112	124	64	51	39
MIN	0	0	0	0	0	0	35	27	50	26	24	3.0
AC-FT	0	39	1.5	0	800	1,970	3,830	4,620	5,020	2,800	2,210	1,360

CAL YR 1973 TOTAL 23,229.18 MEAN 63.6 MAX 1,040 MIN 0 AC-FT 46,080
WTR YR 1974 TOTAL 11,422.66 MEAN 31.3 MAX 124 MIN 0 AC-FT 22,660

06476500 SAND CREEK NEAR ALPENA, S. DAK.

LOCATION.--Lat 44°09'15", long 98°26'06", in NE¼NE¼ sec.19, T.108 N., R.63 W., Jerauld County, on left bank 5 ft (2 m) downstream from highway bridge, 4.0 mi (6.4 km) southwest of Alpena, 7.0 mi (11.3 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 10.5 mi (16.9 km) upstream from interlink with Cain Creek.

DRAINAGE AREA.--240 mi^2 (622 km^2), approximately.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,315 ft (401 m), by barometer. Prior to Sept. 17, 1951, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 10.4 ft^3/s (0.295 m^3/s), 7,530 acre-ft/yr (9.28 hm^3/yr); median of yearly mean discharges, 6.8 ft^3/s (0.19 m^3/s), 4,900 acre-ft/yr (6.0 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 45 ft^3/s (1.27 m^3/s) Feb. 20; maximum gage height, 9.31 ft (2.838 m) Feb. 20 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 2,240 ft^3/s (63.4 m^3/s) Mar. 28, 1960, gage height, 13.35 ft (4.069 m); maximum gage height, 14.1 ft (4.30 m) Mar. 28, 1950 (backwater from ice); no flow for many days in each year.

REMARKS.--Records good except those for winter periods, which are poor.

REVISIONS (WATER YEARS).--WSP 1309: 1950(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 1 to Feb. 26)

7.4	0	7.8	1.7
7.5	.12	7.9	3.1
7.6	.40	8.3	15
7.7	.88		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	.22	1.8	14	2.9	1.6	5.5	.16		
2			0	.21	1.6	14	2.5	1.6	5.2	.10		
3			.01	.20	1.3	15	2.4	1.3	4.9	.18		
4			.05	.19	.80	14	2.2	1.2	4.6	.14		
5			.14	.17	.70	14	2.7	1.0	4.3	.10		
6			.27	.15	.60	12	3.1	.88	4.0	.03		
7			.40	.13	.45	11	2.9	.82	3.4	.01		
8			.52	.12	.35	11	2.7	.82	3.1	0		
9			.66	.10	.40	9.4	2.7	.76	5.8	0		
10			.56	.09	.50	9.1	2.7	1.2	4.9	0		
11			.48	.07	.70	9.4	2.7	1.2	4.6	0		
12			.44	.06	.90	8.8	3.4	.76	4.9	0		
13			.40	.30	1.3	7.9	2.5	1.0	4.9	0		
14			.40	.70	1.1	7.6	2.7	1.0	3.7	0		
15			.36	1.5	1.0	5.8	3.4	.95	2.9	0		
16			.36	3.0	1.5	5.2	5.2	1.0	2.9	0		
17			.30	6.4	2.9	5.8	5.8	.82	2.9	0		
18			.30	6.7	7.0	5.8	5.2	.82	2.5	0		
19			.30	6.0	32	4.9	4.6	.95	2.2	0		
20			.27	11	42	4.3	4.3	1.3	1.7	0		
21			.24	20	37	4.6	3.4	1.7	1.6	0		
22			.27	16	30	4.3	2.5	1.5	1.4	0		
23			.36	14	25	3.7	2.5	1.9	1.0	0		
24			.44	9.0	25	3.4	2.7	11	.88	0		
25			.44	7.5	18	3.1	2.4	12	.76	0		
26			.40	6.5	15	3.1	2.3	4.7	.66	0		
27			.33	6.0	15	2.9	2.2	8.5	.56	0		
28			.33	4.5	14	2.5	1.8	7.3	.44	0		
29			.30	5.0	------	2.4	1.7	5.8	.36	0		
30			.24	5.0	------	2.3	1.7	6.7	.24	0		
31		------	.23	2.7	------	2.5	------	5.8	------	0		------
TOTAL	0	0	9.80	133.51	277.90	223.8	89.8	92.88	86.80	.72	0	0
MEAN	0	0	.32	4.31	9.93	7.22	2.99	3.00	2.89	.023	0	0
MAX	0	0	.66	20	42	15	5.8	12	5.8	.18	0	0
MIN	0	0	0	.06	.35	2.3	1.7	.76	.24	0	0	0
AC-FT	0	0	19	265	551	444	178	184	172	1.4	0	0

CAL YR 1973 TOTAL 4,396.50 MEAN 12.0 MAX 290 MIN 0 AC-FT 8,720
WTR YR 1974 TOTAL 915.21 MEAN 2.51 MAX 42 MIN 0 AC-FT 1,820

PEAK DISCHARGE (BASE, 50 FT^3/S).--No peaks above base.

06477000 JAMES RIVER NEAR FORESTBURG, S. DAK.

LOCATION.--Lat 43°58'26", long 98°04'14", in SW¼SW¼NW¼ sec.20, T.106 N., R.60 W., Sanborn County, on right bank 5.0 ft (2 m) downstream from highway bridge, 3.8 mi (6.1 km) southeast of Forestburg, 5.4 mi (8.7 km) downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 6.1 mi (9.8 km) downstream from Sand Creek.

DRAINAGE AREA.--18,600 mi^2 (48,200 km^2), approximately, of which about 13,810 m^2 (35,800 km^2) contributes directly to surface runoff.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208.34 ft (368.302 m) above mean sea level (Bureau of Reclamation bench mark). Prior to Sept. 5, 1951, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--24 years, 284 ft^3/s (8.043 m^3/s), 205,800 acre-ft/yr (254 hm^3/yr); median of yearly mean discharges, 130 ft^3/s (3.68 m^3/s), 94,200 acre-ft/yr (116 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 280 ft^3/s (7.93 m^3/s) Mar. 7; maximum gage height, 4.90 ft (1.494 m) Mar. 7 (backwater from ice); minimum daily discharge, 0.63 ft^3/s (0.018 m^3/s) Oct. 7.

Period of record: Maximum discharge, 12,500 ft^3/s (354 m^3/s) Apr. 9, 1969, gage height, 17.16 ft (5.230 m); no flow at times in 1950, 1955, 1959, 1961, 1970.

Floods in March 1920 and March 1922 reached a stage of about 18 ft (5.49 m), from information by local residents.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 408 mi (656 km) upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	16	11	6.4	3.6	150	83	65	132	63	37	33
2	6.7	17	12	5.4	3.5	170	102	61	122	63	34	34
3	4.7	17	12	4.8	3.3	190	110	55	116	68	34	33
4	2.7	17	11	4.7	3.1	210	121	49	112	71	35	32
5	1.3	15	9.5	4.4	2.9	230	122	54	109	70	37	29
6	.68	15	9.0	4.2	2.8	260	100	51	108	60	35	25
7	.63	14	8.5	3.8	2.8	250	90	53	108	52	31	22
8	.71	13	8.0	3.2	2.7	225	88	54	110	44	27	21
9	5.2	13	7.5	2.9	2.6	200	85	57	136	41	23	18
10	17	13	7.0	2.9	2.5	150	76	66	169	41	22	16
11	16	13	7.0	2.9	2.6	135	69	75	185	46	24	17
12	13	13	6.5	2.6	4.8	126	75	80	162	45	27	22
13	11	13	6.5	2.5	7.2	114	83	95	145	48	39	23
14	10	13	6.0	3.0	8.4	100	92	90	134	49	44	23
15	9.8	14	6.0	3.7	7.2	95	98	92	129	50	41	25
16	9.9	14	6.0	3.7	7.2	89	98	83	127	52	37	25
17	10	13	6.0	4.0	7.6	64	93	85	126	47	35	23
18	12	13	6.1	4.6	20	51	86	91	120	45	32	22
19	14	13	6.1	4.3	50	46	85	94	115	42	34	22
20	15	15	5.9	2.5	80	43	76	85	108	48	35	22
21	15	18	5.6	2.0	98	36	71	86	104	52	32	23
22	15	16	5.2	2.0	100	33	68	100	109	49	29	28
23	17	19	5.1	1.8	97	30	76	106	107	48	27	30
24	18	21	5.6	1.7	93	33	83	111	103	48	26	29
25	17	22	6.4	1.7	90	37	80	127	93	47	26	26
26	16	16	6.4	1.6	100	40	74	132	84	43	26	24
27	15	14	6.4	1.8	115	40	66	124	75	45	26	25
28	15	13	6.6	1.9	135	41	66	122	67	42	28	24
29	14	12	6.8	2.0	------	46	66	121	60	39	31	22
30	15	12	6.8	3.0	------	58	67	128	60	38	30	24
31	16	------	6.8	3.6	------	73	------	132	------	39	31	------
TOTAL	342.22	447	225.3	99.6	1,052.8	3,365	2,549	2,724	3,435	1,535	975	742
MEAN	11.0	14.9	7.27	3.21	37.6	109	85.0	87.9	115	49.5	31.5	24.7
MAX	18	22	12	6.4	135	260	122	132	185	71	44	34
MIN	.63	12	5.1	1.6	2.5	30	66	49	60	38	22	16
AC-FT	679	887	447	198	2,090	6,670	5,060	5,400	6,810	3,040	1,930	1,470

CAL YR 1973 TOTAL 50,648.77 MEAN 139 MAX 2,620 MIN .63 AC-FT 100,500
WTR YR 1974 TOTAL 17,491.92 MEAN 47.9 MAX 260 MIN .63 AC-FT 34,700

06477500 FIRESTEEL CREEK NEAR MOUNT VERNON, S. DAK.

LOCATION.--Lat 43°46'30", long 98°14'33", in SW¼SW¼ sec.26, T.104 N., R.62 W., Davison County, near center of span on downstream side of highway bridge, 4.5 mi (7.2 km) north of Mount Vernon, 5.2 mi (8.4 km) downstream from West Firesteel Creek, and 12 mi (19 km) northwest of Mitchell.

DRAINAGE AREA.--540 mi^2 (1,400 km^2), approximately.

PERIOD OF RECORD.--September 1955 to current year.

GAGE (revised).--Water-stage recorder. Altitude of gage is 1,310 ft (399 m) from topographic map. Prior to Nov. 28, 1972, nonrecording gage and crest-stage gage.

AVERAGE DISCHARGE.--19 years, 25.5 ft^3/s (0.722 m^3/s), 18,470 acre-ft/yr (22.8 hm^3/yr); median of yearly mean discharges, 9.7 ft^3/s (0.27 m^3/s), 7,000 acre-ft/yr (8.6 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 204 ft^3/s (5.78 m^3/s) June 12, gage height, 5.32 ft (1.622 m); no flow for many days.

Period of record: Maximum discharge, 6,610 ft^3/s (187 m^3/s) Apr. 4, 1969, gage height, 15.34 ft (4.676 m); maximum gage height, 17.12 ft (5.218 m) Apr. 3, 1969 (backwater from ice); no flow for many days in each year.

REMARKS.--Records good except those for winter periods, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 11-30; stage-discharge relation affected by ice Dec. 7-17, Dec. 28 to Feb. 10, Feb. 23-27)

2.43	0	2.7	0.89	3.0	5.5	4.0	72
2.5	.04	2.8	1.6	3.2	15	5.0	174
2.6	.35	2.9	3.0	3.5	34	6.0	342

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.06	.25	.16	6.0	23	6.4	1.5	6.4	.65	0	0
2	.20	.04	.35	.16	5.5	22	4.0	1.1	5.9	.50	.02	0
3	.16	.03	.40	.14	5.0	45	5.2	.95	4.8	.45	.01	0
4	.04	.05	.45	.14	4.5	47	5.9	.89	4.2	.35	.01	0
5	.06	.06	.40	.14	4.0	33	5.5	.89	4.5	.30	0	0
6	.04	.08	.40	.14	3.5	28	5.0	.89	5.0	.20	.01	0
7	.02	.05	.30	.13	3.2	21	4.5	.45	3.0	.05	.02	0
8	.04	.05	.45	.13	3.0	17	4.0	.60	2.6	.10	.02	0
9	1.6	.03	.70	.13	3.5	19	2.8	.77	5.2	.10	.02	0
10	.65	.04	.60	.12	4.0	14	2.1	.95	17	.04	.01	.02
11	.60	.03	.55	.12	4.8	13	2.6	1.2	60	.03	0	.02
12	.55	.06	.50	.12	11	9.8	4.0	2.2	184	.02	0	.02
13	.35	.10	.40	.18	5.5	9.4	5.0	3.0	184	.04	0	.02
14	.35	.13	.35	.25	6.4	4.5	5.5	3.2	126	.08	0	.02
15	.25	.16	.30	.40	5.5	4.2	6.4	2.0	114	.20	0	.02
16	.10	.25	.27	1.7	4.8	4.0	5.9	2.5	88	.08	0	.02
17	.10	.35	.26	4.0	4.5	4.8	5.2	3.5	63	.13	0	.01
18	.02	.25	.25	15	6.4	4.5	6.4	3.2	51	.08	0	.03
19	.02	.16	.30	11	8.5	4.5	5.9	2.8	34	.04	0	.02
20	.01	.25	.35	35	16	7.2	5.2	2.5	23	.04	0	.01
21	.02	.30	.30	30	35	5.2	5.0	1.8	22	.02	0	.01
22	.01	.25	.20	22	30	3.5	5.2	1.4	22	.02	0	.02
23	.01	.35	.25	16	27	2.8	3.0	1.3	18	.02	0	.02
24	.02	.25	.30	12	24	2.8	3.5	1.1	13	.02	0	.05
25	.02	.40	.35	9.0	21	2.6	2.8	2.2	6.8	0	0	.06
26	.02	.35	.35	7.0	18	2.4	2.6	5.5	4.0	0	0	.03
27	.04	.25	.30	7.5	16	2.8	2.4	16	2.8	0	0	.02
28	.08	.35	.25	8.0	14	4.0	2.5	14	2.6	0	0	.02
29	.04	.25	.20	8.5	------	4.0	2.6	13	1.6	0	0	.01
30	.06	.16	.18	8.5	------	5.2	2.4	8.9	1.2	0	0	.01
31	.08	------	.18	6.0	------	6.4	------	7.6	------	0	0	------
TOTAL	5.72	5.14	10.69	203.66	300.6	376.6	129.5	107.89	1,079.6	3.56	.12	.46
MEAN	.18	.17	.34	6.57	10.7	12.1	4.32	3.48	36.0	.11	.004	.015
MAX	1.6	.40	.70	35	35	47	6.4	16	184	.65	.02	.06
MIN	.01	.03	.18	.12	3.0	2.4	2.1	.45	1.2	0	0	0
AC-FT	11	10	21	404	596	747	257	214	2,140	7.1	.2	.9

CAL YR 1973 TOTAL 8,501.12 MEAN 23.3 MAX 760 MIN 0 AC-FT 16,860
WTR YR 1974 TOTAL 2,223.54 MEAN 6.09 MAX 184 MIN 0 AC-FT 4,410

PEAK DISCHARGE (BASE, 100 FT^3/S).--June 12 (1400) 204 ft^3/s (5.32 ft).

06478500 JAMES RIVER NEAR SCOTLAND, S. DAK.

LOCATION.--Lat 43°11'09", long 97°38'07", in SW¼SW¼ sec.30, T.97 N., R.57 W., Hutchinson County, on right bank 5.0 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Dawson Creek and 5.2 mi (8.4 km) northeast of Scotland.

DRAINAGE AREA.--21,550 mi^2 (55,810 km^2), approximately, of which about 16,760 mi^2 (43,400 km^2) contributes directly to surface runoff.

PERIOD OF RECORD.--September 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder and rock and earth control. Datum of gage is 1,168.51 ft (356.162 m) above mean sea level. Prior to Nov. 28, 1972, at site 0.25 mi (0.8 km) downstream at present datum.

AVERAGE DISCHARGE.--46 years, 379 ft^3/s (10.73 m^3/s), 274,600 acre-ft/yr (339 hm^3/yr); median of yearly mean discharges, 190 ft^3/s (5.38 m^3/s), 138,000 acre-ft/yr (170 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 815 ft^3/s (23.08 m^3/s) June 9, gage height, 7.01 ft (2.137 m); minimum daily, 16 ft^3/s (0.453 m^3/s) Sept. 25, 26.

Period of record: Maximum discharge, 15,200 ft^3/s (430 m^3/s) Apr. 3, 1962, gage height, 18.74 ft (5.712 m); no flow for many days in some years.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 527 mi (848 km) upstream. Occasional backwater caused by Dawson Creek; reverse flow occurred for part of May 15, 1961, from information by local residents. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 786: Drainage area. WSP 956: 1937-38. WSP 1279: 1932, 1948.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	27	45	33	60	155	95	112	148	98	35	22
2	45	28	45	32	55	170	105	99	148	83	35	23
3	43	28	47	31	48	200	116	94	147	81	34	23
4	39	27	44	29	43	225	144	106	142	81	34	22
5	37	26	42	30	40	260	143	101	138	72	32	21
6	36	26	39	30	38	300	132	97	142	68	30	21
7	35	26	38	28	36	330	139	93	148	60	28	20
8	34	27	39	28	36	370	157	91	150	56	26	19
9	38	27	40	28	36	410	158	93	305	55	32	21
10	115	29	37	29	35	443	141	95	601	56	33	21
11	120	30	36	28	34	429	134	107	254	55	36	23
12	67	30	36	28	36	422	145	108	178	53	35	24
13	49	32	34	28	41	380	158	121	172	49	32	26
14	40	32	34	26	43	334	154	125	184	48	31	27
15	37	40	34	27	44	308	155	125	188	43	30	24
16	34	42	34	27	48	289	134	113	198	40	29	21
17	33	44	32	26	51	238	123	114	233	39	27	20
18	31	43	32	32	61	202	117	118	250	31	27	19
19	31	42	32	36	73	190	116	122	233	35	28	19
20	31	50	31	39	82	182	111	113	208	37	26	18
21	29	59	30	40	110	171	112	125	196	37	26	18
22	29	63	31	47	118	157	130	141	232	35	26	18
23	28	53	30	54	114	142	125	149	232	35	27	17
24	30	50	32	57	112	119	113	139	226	34	28	17
25	33	49	34	60	110	113	103	132	208	34	26	16
26	33	48	34	65	120	111	103	125	170	33	24	16
27	33	48	34	66	130	105	109	125	150	33	25	17
28	33	49	34	63	140	99	109	126	126	39	25	17
29	31	48	34	62	------	97	114	134	118	35	26	17
30	31	46	33	69	------	101	119	144	101	34	24	19
31	31	------	33	67	------	95	------	155	------	33	24	------
TOTAL	1,288	1,169	1,110	1,245	1,894	7,147	3,814	3,642	5,926	1,522	901	606
MEAN	41.5	39.0	35.8	40.2	67.6	231	127	117	198	49.1	29.1	20.2
MAX	120	63	47	69	140	443	158	155	601	98	36	27
MIN	28	26	30	26	34	95	95	91	101	31	24	16
AC-FT	2,550	2,320	2,200	2,470	3,760	14,180	7,570	7,220	11,750	3,020	1,790	1,200

CAL YR 1973 TOTAL 114,480.8 MEAN 314 MAX 3,500 MIN 5.7 AC-FT 227,100
WTR YR 1974 TOTAL 30,264.0 MEAN 82.9 MAX 601 MIN 16 AC-FT 60,030

06478540 LITTLE VERMILLION RIVER NEAR SALEM, S. DAK.
(Hydrologic bench-mark station)

LOCATION.--Lat 43°47'39", long 97°22'02", in SW¼ sec.19, T.104 N., R.54 W., McCook County, on right wingwall at downstream end of culvert on county highway, 2.0 mi (3.2 km) upstream from small left-bank tributary and 5.2 mi (8.4 km) northeast of Salem.

DRAINAGE AREA.--51.0 mi^2 (132 km^2), approximately.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and concrete dam.

AVERAGE DISCHARGE.--8 years, 2.05 ft^3/s (0.058 m^3/s), 1,490 acre-ft/yr (1.84 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 1.3 ft^3/s (0.037 m^3/s) Feb. 21, gage height, 3.95 ft (1.204 m); no flow for many days.

Period of record: Maximum discharge, 596 ft^3/s (16.9 m^3/s) Apr. 7, 1969; maximum gage height, 8.53 ft (2.600 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

REMARKS.--Records good.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0							
2					0							
3					0							
4					0							
5					0							
6					0							
7					0							
8					0							
9					0							
10					0							
11					0							
12					0							
13					0							
14					0							
15					0							
16					0							
17					0							
18					0							
19					.01							
20					.02							
21					.96							
22					.50							
23					.20							
24					.05							
25					.01							
26					0							
27					0							
28					0							
29					------							
30					------							
31		------			------		------		------			------
TOTAL	0	0	0	0	1.75	0	0	0	0	0	0	0
MEAN	0	0	0	0	.063	0	0	0	0	0	0	0
MAX	0	0	0	0	.96	0	0	0	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	0	0	0	3.5	0	0	0	0	0	0	0

CAL YR 1973 TOTAL 827.63 MEAN 2.27 MAX 93 MIN 0 AC-FT 1,640
WTR YR 1974 TOTAL 1.75 MEAN .005 MAX .96 MIN 0 AC-FT 3.5

PEAK DISCHARGE (BASE, 10 FT^3/S).--No peaks above base.

06478690 WEST FORK VERMILLION RIVER NEAR PARKER, S. DAK.

LOCATION (revised).--Lat 43°24'55", long 97°12'18", in NE¼NE¼ sec.10, T.99 N., R.54 W., Turner County, on left downstream wingwall of bridge, 3.7 mi (6.0 km) northwest of Parker and 13.9 mi (22.4 km) upstream from confluence with East Fork Vermillion River.

DRAINAGE AREA.--370 mi^2 (958 km^2), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,340 ft (408 m), from topographic map. Prior to Oct. 11, 1973, nonrecording gage and crest-stage gage at same site and datum.

AVERAGE DISCHARGE.--13 years, 21.5 ft^3/s (0.609 m^3/s), 15,580 acre-ft/yr (19.2 hm^3/yr); median of yearly mean discharges, 9.5 ft^3/s (0.027 m^3/s), 6,900 acre-ft/yr (8.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 75 ft^3/s (2.12 m^3/s) Feb. 21; maximum gage height, 3.93 ft (1.198 m) Feb. 21 (backwater from ice); no flow for many days July to September.

Period of record: Maximum discharge, 4,340 ft^3/s (123 m^3/s) Mar. 28, 1962, gage height, 12.33 ft (3.758 m); no flow for many days in most years.

REMARKS.--Records good except those for winter periods, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.08	.15	.13	.43	11	2.5	.26	.26	.04	0	0
2	.05	.07	.13	.12	.42	11	2.9	.26	.23	.02	0	0
3	.06	.06	.11	.13	.41	10	3.1	.26	.20	.02	0	0
4	.06	.06	.10	.14	.40	7.1	3.1	.26	.15	.02	.01	0
5	.06	.05	.09	.14	.40	7.1	3.1	.26	.13	.02	.01	0
6	.06	.04	.09	.13	.39	7.1	3.1	.20	.10	.02	.02	0
7	.06	.04	.10	.12	.38	7.1	3.1	.23	.10	.02	.04	0
8	.05	.03	.13	.11	.38	6.8	3.1	.23	.10	.02	.06	0
9	.17	.02	.16	.10	.37	6.8	3.1	.23	.10	.01	.05	0
10	.65	.02	.19	.08	.36	6.1	3.3	.33	.10	.01	.05	0
11	2.0	.02	.20	.07	.40	5.6	3.3	.45	.10	.01	.05	0
12	7.0	.03	.21	.06	.53	5.2	3.6	.58	.08	.01	.06	.03
13	1.0	.04	.20	.07	.63	4.9	3.6	.86	.08	0	.10	.01
14	.55	.05	.20	.08	.68	4.7	3.8	1.3	.08	0	.10	.01
15	.40	.05	.19	.10	.68	4.2	3.8	1.8	.08	0	.10	0
16	.35	.06	.17	.12	.95	4.0	3.8	1.4	.08	0	.10	0
17	.27	.07	.16	.21	1.1	3.8	3.8	1.2	.08	0	.10	0
18	.23	.08	.15	.26	1.5	3.3	3.8	1.0	.06	0	.10	0
19	.15	.08	.14	.29	21	2.7	3.8	.80	.08	0	.02	0
20	.13	.10	.12	.30	15	3.6	3.8	.58	.08	0	.15	0
21	.13	.14	.13	.30	50	2.3	3.3	.49	.08	0	.05	0
22	.10	.16	.14	.29	55	2.3	3.1	.37	.06	.01	.02	0
23	.10	.18	.16	.28	40	2.3	2.5	.37	.06	.01	.01	0
24	.08	.19	.17	.28	25	2.3	1.9	.33	.06	.01	.01	0
25	.12	.20	.18	.30	16	2.3	1.4	.29	.05	.02	0	0
26	.18	.20	.18	.33	14	2.3	1.0	.29	.05	.01	0	0
27	.14	.19	.17	.37	13	2.5	.80	.29	.05	.01	.03	0
28	.13	.18	.17	.40	12	2.5	.53	.29	.05	.01	.02	0
29	.12	.17	.16	.43	------	2.5	.41	.26	.04	0	.01	0
30	.11	.16	.15	.45	------	2.5	.33	.26	.04	0	.01	0
31	.10	------	.14	.44	------	2.5	------	.26	------	0	0	------
TOTAL	14.66	2.82	4.74	6.63	271.41	148.4	82.77	15.99	2.81	.30	1.28	.05
MEAN	.47	.094	.15	.21	9.69	4.79	2.76	.52	.094	.010	.041	.002
MAX	7.0	.20	.21	.45	55	11	3.8	1.8	.26	.04	.15	.03
MIN	.05	.02	.09	.06	.36	2.3	.33	.20	.04	0	0	0
AC-FT	29	5.6	9.4	13	538	294	164	32	5.6	.6	2.5	.10

CAL YR 1973 TOTAL 7,899.36 MEAN 21.6 MAX 583 MIN .02 AC-FT 15,670
WTR YR 1974 TOTAL 551.86 MEAN 1.51 MAX 55 MIN 0 AC-FT 1,090

PEAK DISCHARGE (BASE, 150 FT^3/S).--No peaks above base.

06479000 VERMILLION RIVER NEAR WAKONDA, S. DAK.

LOCATION.--Lat 42°59'27", long 96°57'49", in SW¼NW¼ sec.2, T.94 N., R.52 W., Clay County, on left bank 40 ft (12 m) downstream from bridge on State Highway 19, 4.3 mi (6.9 km) downstream from Frog Creek, 7.4 mi (11.9 km) southeast of Wakonda, and 29.6 mi (47.6 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi^2 (4,351 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,150.9 ft (350.79 m) above mean sea level, levels by Corps of Engineers. Prior to Sept. 2, 1954, nonrecording gage and crest-stage gage at site 40 ft (12 m) upstream at same datum. Since Dec. 27, 1951, supplementary nonrecording gage on relief bridge.

AVERAGE DISCHARGE.--29 years, 116 ft^3/s (3.285 m^3/s), 84,040 acre-ft/yr (104 hm^3/yr); median of yearly mean discharges, 81 ft^3/s (2.29 m^3/s), 58,700 acre-ft/yr (72 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 462 ft^3/s (13.1 m^3/s) June 23, gage height, 8.63 ft (2.630 m); minimum daily, 1.1 ft^3/s (0.031 m^3/s) Sept. 22.

Period of record: Maximum discharge, 9,880 ft^3/s (280 m^3/s) Apr. 8, 1969; maximum gage height, 17.17 ft (5.233 m) Apr. 6, 1969; no flow at times in 1951, 1956-59.

REMARKS.--Records good except those for winter periods, which are poor. At times during periods of high stage, part of flow leaves main channel through levee breaks and bypasses gage through overflow channel on left bank. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	26	8.0	18	48	42	23	22	29	7.1	3.6
2	15	18	20	8.3	17	51	42	22	21	26	7.2	3.4
3	12	17	21	8.6	17	55	43	21	20	23	4.7	4.1
4	10	17	20	8.8	17	58	41	22	20	21	4.8	3.9
5	8.4	17	19	8.6	16	63	42	22	19	19	4.4	3.2
6	7.2	16	18	8.2	16	70	46	22	20	17	3.4	2.8
7	6.5	16	17	7.5	15	88	53	21	21	15	3.1	2.8
8	6.8	16	17	7.0	15	81	52	21	19	13	3.5	2.8
9	9.0	17	17	6.5	14	54	52	22	22	13	4.9	2.8
10	16	15	18	6.0	14	53	42	24	27	13	9.9	2.5
11	29	14	19	5.8	17	53	29	29	30	13	9.3	3.9
12	58	15	18	5.5	21	51	27	31	42	12	7.4	4.1
13	65	17	17	5.3	22	52	33	43	51	11	6.3	3.9
14	38	17	16	5.5	24	51	39	63	42	10	6.1	3.4
15	28	19	15	5.8	23	52	38	60	36	9.4	6.4	2.8
16	24	20	14	6.3	22	50	36	66	31	8.5	5.9	2.0
17	20	20	13	6.7	23	49	34	56	26	8.0	6.2	2.1
18	18	19	12	7.5	28	47	32	49	24	7.7	8.1	1.7
19	17	18	12	8.3	32	45	31	42	21	7.1	5.1	1.7
20	16	22	13	8.6	40	46	29	41	19	6.7	6.2	1.3
21	15	28	13	8.5	50	45	30	43	17	6.2	6.8	1.2
22	17	31	14	8.4	53	44	30	43	167	5.7	7.4	1.1
23	17	30	14	8.0	52	40	30	37	444	5.1	7.1	1.8
24	17	32	14	8.8	50	36	28	34	300	4.8	7.1	2.0
25	19	31	13	10	48	39	27	32	139	4.7	8.1	2.5
26	20	30	13	11	46	41	26	29	85	4.5	9.0	2.8
27	19	29	12	13	44	41	26	26	60	4.3	9.7	3.0
28	20	27	11	14	45	44	26	24	48	4.3	8.7	2.5
29	20	26	10	16	------	44	25	23	40	3.7	8.7	2.0
30	20	25	9.5	17	------	42	24	24	34	3.6	8.1	1.6
31	19	------	8.5	18	------	41	------	23	------	3.9	7.4	------
TOTAL	623.9	638	474.0	275.5	799	1,574	1,055	1,038	1,867	333.2	208.1	79.3
MEAN	20.1	21.3	15.3	8.89	28.5	50.8	35.2	33.5	62.2	10.7	6.71	2.64
MAX	65	32	26	18	53	88	53	66	444	29	9.9	4.1
MIN	6.5	14	8.5	5.3	14	36	24	21	17	3.6	3.1	1.1
AC-FT	1,240	1,270	940	546	1,580	3,120	2,090	2,060	3,700	661	413	157

CAL YR 1973 TOTAL 48,084.9 MEAN 132 MAX 1,960 MIN 3.7 AC-FT 95,380
WTR YR 1974 TOTAL 8,965.0 MEAN 24.6 MAX 444 MIN 1.1 AC-FT 17,780

PEAK DISCHARGE (BASE, 1,000 FT^3/S).--No peaks above base.

06479438 BIG SIOUX RIVER NEAR WATERTOWN, S. DAK.

LOCATION.--Lat 45°00'22", long 97°09'53", in NE¼NE¼NE¼ sec.16, T.118 N., R.52 W., Codington County, on left bank at downstream side of county highway bridge, 4.9 mi (7.9 km) downstream from Mahoney Creek, 6.5 mi (10.5 km) upstream from inlet-outlet to Lake Kampeska, and 7.5 mi (12.1 km) northwest of Watertown.

DRAINAGE AREA.--241 mi^2 (624 km^2), approximately.

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,725.81 ft (526.027 m) above mean sea level (South Dakota Department of Highways bench mark).

EXTREMES.--Current year: Maximum discharge, 218 ft^3/s (6.17 m^3/s) Apr. 4, gage height, 6.75 ft (2.057 m); maximum gage height, 7.88 ft (2.402 m) Mar. 4 (backwater from ice); no flow Feb. 1-13.

Period of record: Maximum discharge, 414 ft^3/s (11.7 m^3/s) Mar. 15, 1973, gage height, 8.11 ft (2.472 m); no flow Feb. 1-13, 1974.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 3-7; stage-discharge relation affected by ice Dec. 8 to Mar. 30)

3.38	0	3.7	4.0	5.0	61
3.4	.03	4.0	11	6.0	137
3.5	.39	4.5	31	7.0	246
3.6	1.8				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	.58	2.4	.46	0	.80	8.8	13	11	.27	.03	.14
2	.50	.58	2.4	.42	0	1.5	16	13	10	1.3	.06	.21
3	.44	.50	1.8	.38	0	10	41	13	8.1	2.4	.06	.16
4	.39	.58	2.0	.35	0	180	116	12	7.1	1.6	.06	.17
5	.39	.58	1.8	.32	0	140	45	11	6.8	1.8	.09	.19
6	.44	.58	1.3	.30	0	100	36	10	6.1	.80	.12	.25
7	.44	.69	1.1	.27	0	65	29	9.6	5.6	.27	.12	.15
8	.50	.50	1.0	.24	0	43	22	9.6	4.9	.27	.14	.15
9	.69	.50	.98	.22	0	40	19	10	5.6	.23	.94	.14
10	1.6	.50	.92	.20	0	38	17	10	6.1	.15	.64	.17
11	1.1	.69	.86	.18	0	35	15	11	6.5	.15	1.5	.19
12	1.1	.80	.82	.16	0	32	17	13	6.8	.12	1.6	.14
13	1.1	.35	.78	.14	0	30	20	14	5.8	.12	.83	.10
14	1.3	.35	.72	.12	.01	26	21	15	5.2	.09	.71	.11
15	1.3	.95	.69	.10	.02	23	21	16	4.0	.06	.52	.12
16	1.1	1.6	.64	.10	.02	20	20	17	3.5	.06	.29	.12
17	.95	3.8	.60	.11	.03	18	19	18	2.9	.09	.12	.12
18	.80	3.1	.57	.12	.08	16	18	17	4.2	.09	.07	.08
19	.80	2.7	.54	.13	.14	15	16	15	2.0	.09	.13	.07
20	.95	3.1	.50	.13	.40	14	15	15	1.8	.09	.18	.08
21	1.1	3.5	.55	.11	.80	14	14	15	1.8	.09	.18	.08
22	.80	3.5	.59	.09	.76	13	14	16	3.1	.06	.15	.10
23	.95	3.3	.61	.07	.73	13	14	18	2.0	.06	.19	.16
24	.95	4.2	.63	.04	.69	12	14	15	2.0	.06	.22	.11
25	.58	3.8	.64	.03	.65	10	14	14	1.6	.06	.25	.02
26	.58	3.1	.65	.03	.62	9.5	14	13	.95	.09	.27	.03
27	.50	2.7	.64	.02	.60	9.0	14	12	.69	.03	.27	.09
28	.69	2.7	.63	.02	.68	8.5	14	11	.50	.03	.33	.02
29	.58	2.7	.59	.02	------	8.2	14	11	.35	.01	.34	.08
30	.58	2.7	.55	.01	------	13	13	11	.27	.01	.30	.01
31	.58	------	.50	.01	------	11	------	9.9	------	.03	.13	------
TOTAL	24.17	55.23	29.00	4.90	6.23	968.50	670.8	408.1	127.26	10.58	10.84	3.56
MEAN	.78	1.84	.94	.16	.22	31.2	22.4	13.2	4.24	.34	.35	.12
MAX	1.6	4.2	2.4	.46	.80	180	116	18	11	2.4	1.6	.25
MIN	.39	.35	.50	.01	0	.80	8.8	9.6	.27	.01	.03	.01
AC-FT	48	110	58	9.7	12	1,920	1,330	809	252	21	22	7.1

CAL YR 1973 TOTAL 7,099.90 MEAN 19.5 MAX 306 MIN .06 AC-FT 14,080
WTR YR 1974 TOTAL 2,319.17 MEAN 6.35 MAX 180 MIN 0 AC-FT 4,600

PEAK DISCHARGE (BASE, 300 FT^3/S).--No peaks above base.

06479515 WILLOW CREEK NEAR WATERTOWN, S. DAK.

LOCATION.--Lat 44°54'17", long 97°03'31", in NE¼NW¼ sec.34, T.117 N., R.52 W., Codington County, on right bank 5 ft (2 m) downstream from bridge, 4.7 mi (7.6 km) upstream from mouth, and 2.8 mi (4.5 km) east of Watertown.

DRAINAGE AREA.--125 mi^2 (324 km^2), approximately.

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,721.24 ft (524.634 m) above mean sea level (South Dakota Department of Highways bench mark).

EXTREMES.--Current year: Maximum discharge, 125 ft^3/s (3.54 m^3/s) Mar. 3; maximum gage height, 6.12 ft (1.865 m) Mar. 2 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 1,220 ft^3/s (34.6 m^3/s) May 29, 1972, gage height, 6.23 ft (1.899 m); maximum gage height, 9.86 ft (3.001 m) Mar. 15, 1972 (backwater from ice); no flow for many days each year.

REMARKS.--Records fair except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 25, Nov. 28 to Dec. 6; stage-discharge relation affected by ice Nov. 26, 27, Dec. 7 to Mar. 10)

3.4	0	3.8	15
3.5	.12	4.0	50
3.6	1.0	4.2	95
3.7	6.5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	.25		0	2.0	1.2	.59	5.3		0	
2		0	.26		0	10	1.3	.45	3.1		0	
3		0	.28		0	75	1.5	.27	1.8		0	
4		0	.24		0	35	3.5	.41	1.0		0	
5		0	.18		0	20	16	.30	.50		0	
6		0	.10		0	12	12	.22	.32		0	
7		0	.09		0	8.0	8.0	.46	.28		0	
8		0	.08		0	9.5	6.0	.77	.14		0	
9		0	.07		0	10	4.5	.89	.77		0	
10		0	.07		0	12	3.0	1.3	3.3		0	
11		0	.06		0	16	4.0	1.4	4.1		.22	
12		0	.06		0	12	5.0	1.4	7.1		.02	
13		0	.06		0	12	6.0	4.5	7.0		0	
14		0	.05		0	14	7.0	3.8	6.0		0	
15		.04	.05		.01	10	6.7	5.0	2.8		0	
16		.13	.05		.01	11	6.2	5.3	1.6		0	
17		.24	.04		.02	9.5	5.9	6.2	.69		0	
18		.25	.04		.02	8.0	5.7	7.9	.31		0	
19		.28	.04		.03	6.5	5.1	7.6	.12		0	
20		.68	.04		.06	5.0	3.4	6.4	.05		0	
21		1.4	.03		.06	4.3	2.0	7.1	.02		0	
22		.40	.03		.05	3.5	1.3	6.2	0		0	
23		.33	.03		.05	3.2	1.2	5.6	0		0	
24		.30	.04		.05	2.7	1.5	5.5	0		0	
25		.35	.04		.04	2.5	.92	5.4	0		0	
26		.25	.04		.04	2.2	.90	3.8	0		0	
27		.15	.04		.04	1.8	.69	4.7	0		0	
28		.12	.03		.30	1.6	.48	3.8	0		0	
29		.08	.02		------	1.4	.32	2.2	0		0	
30		.15	.01		------	1.2	.30	2.4	0		0	
31		------	0		------	1.1	------	2.3	------		0	------
TOTAL	0	5.15	2.42	0	.78	323.0	121.61	104.15	46.30	0	.24	0
MEAN	0	.17	.078	0	.028	10.4	4.05	3.36	1.54	0	.008	0
MAX	0	1.4	.28	0	.30	75	16	7.9	7.1	0	.22	0
MIN	0	0	0	0	0	1.1	.30	.22	0	0	0	0
AC-FT	0	10	4.8	0	1.5	641	241	207	92	0	.5	0

CAL YR 1973 TOTAL 3,924.06 MEAN 10.8 MAX 250 MIN 0 AC-FT 7,780
WTR YR 1974 TOTAL 603.66 MEAN 1.65 MAX 75 MIN 0 AC-FT 1,200

PEAK DISCHARGE (BASE, 200 FT^3/S).--No peaks above base.

06479529 STRAY HORSE CREEK NEAR CASTLEWOOD, S. DAK.

LOCATION.--Lat 44°43'52", long 96°57'23", in NE¼NE¼NW¼ sec.33, T.115 N., R.51 W., Hamlin County, on right bank at downstream side of bridge on State Highway 22, 3.5 mi (5.6 km) east of Castlewood, 6.4 mi (10.3 km) upstream from mouth, and 7.0 mi (11.3 km) north of Dempster.

DRAINAGE AREA.--73.7 mi^2 (191 km^2), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,705 ft (520 m), from topographic map.

AVERAGE DISCHARGE.--6 years, 11.6 ft^3/s (0.329 m^3/s), 8,400 acre-ft/yr (10.4 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 75 ft^3/s (2.12 m^3/s) Mar. 3; maximum gage height, 8.83 ft (2.691 m) Mar. 3 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 14,000 ft^3/s (396 m^3/s) Apr. 7, 1969, gage height, 14.65 ft (4.465 m), from rating curve extended above 3,500 ft^3/s (99.1 m^3/s) on basis of contracted-opening measurement of peak flow; no flow for many days each year.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 6 to Mar. 10)

4.3	0	4.6	1.6	5.2	15
4.4	.35	4.7	2.8	5.5	27
4.5	.85	4.9	6.4	6.0	61

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.03	.14	.01	0	2.5	2.4	.65	3.4			
2	.10	.07	.11	.01	0	15	2.6	.65	2.9			
3	.07	.07	.10	.01	0	40	2.8	.56	2.1			
4	.03	.07	.10	.01	0	30	8.5	.59	1.6			
5	0	.07	.10	.01	0	20	6.0	.60	1.4			
6	0	.07	.09	.02	0	16	4.0	.51	.95			
7	0	.07	.09	.02	0	13	3.2	.56	.78			
8	.03	.07	.08	.02	0	11	2.6	.61	.66			
9	.19	.04	.08	.02	0	9.0	2.1	.60	.90			
10	.39	.03	.07	.01	0	8.0	1.6	.60	2.1			
11	.26	.07	.07	.01	0	7.0	1.8	.83	3.9			
12	.17	.12	.06	.01	.01	9.0	2.2	.80	2.7			
13	.15	.14	.06	.01	.01	7.0	2.7	1.1	1.9			
14	.10	.12	.05	.01	.02	6.0	3.7	1.9	1.4			
15	.08	.14	.05	.02	.02	5.0	6.5	2.2	.95			
16	0	.14	.04	.03	.03	4.5	3.5	2.1	.73			
17	.03	.13	.04	.03	.04	3.8	3.1	2.2	.65			
18	.05	.07	.03	.02	.05	3.3	2.5	2.1	.55			
19	.06	.07	.03	.02	.07	3.0	2.2	2.0	.55			
20	.04	.16	.02	.02	.08	2.7	1.6	2.0	.50			
21	.04	.31	.02	.02	.07	2.4	1.6	2.1	.31			
22	.10	.26	.03	.02	.07	2.2	1.3	1.8	.19			
23	.10	.18	.03	.02	.06	2.0	1.1	1.6	.15			
24	.14	.17	.03	.02	.06	1.8	1.0	1.4	.06			
25	.14	.17	.03	.02	.05	1.7	.85	1.3	0			
26	.10	.17	.03	.02	.06	1.5	.93	1.1	0			
27	.04	.17	.03	.02	.15	1.6	1.0	1.1	0			
28	.03	.14	.02	.02	.50	1.8	.75	3.6	0			
29	.03	.14	.02	.02	------	1.9	.75	7.5	0			
30	.03	.14	.01	.01	------	2.0	.70	4.5	0			
31	.03	------	.01	.01	------	2.2	------	4.0	------			------
TOTAL	2.64	3.60	1.67	.52	1.35	236.9	75.58	53.16	31.33	0	0	0
MEAN	.085	.12	.054	.017	.048	7.64	2.52	1.71	1.04	0	0	0
MAX	.39	.31	.14	.03	.50	40	8.5	7.5	3.9	0	0	0
MIN	0	.03	.01	.01	0	1.5	.70	.51	0	0	0	0
AC-FT	5.2	7.1	3.3	1.0	2.7	470	150	105	62	0	0	0

CAL YR 1973 TOTAL 2,524.52 MEAN 6.92 MAX 240 MIN 0 AC-FT 5,010
WTR YR 1974 TOTAL 406.75 MEAN 1.11 MAX 40 MIN 0 AC-FT 807

PEAK DISCHARGE (BASE, 175 FT^3/S).--No peaks above base.

06479640 HIDEWOOD CREEK NEAR ESTELLINE, S. DAK.

LOCATION.--Lat 44°36'42", long 96°54'17", in SW¼NW¼ sec.12, T.113 N., R.51 W., Hamlin County, on left bank at upstream side of highway bridge, 2.7 mi (4.3 km) north of Estelline, 2.8 mi (4.5 km) southeast of Dempster, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--164 mi^2 (425 km^2), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,665 ft (508 m), from topographic map.

AVERAGE DISCHARGE.--6 years, 27.4 ft^3/s (0.776 m^3/s), 19,900 acre-ft/yr (24.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 225 ft^3/s (6.37 m^3/s) Mar. 3; maximum gage height, 7.13 ft (2.173 m) Mar. 3 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 3,630 ft^3/s (103 m^3/s) Apr. 7, 1969, gage height, 11.36 ft (3.463 m); maximum gage height, 11.55 ft (3.520 m) Apr. 8, 1969 (backwater from collapsed bridge); no flow at times in 1969, 1971, 1974.

REMARKS.--Records fair except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.62	1.3	.10	0	15	13	3.0	5.0	.58	0	
2	.20	.65	1.2	.07	0	40	20	2.7	4.3	.65	0	
3	.31	.53	1.2	.06	0	100	18	2.8	3.9	1.0	0	
4	.35	.50	1.1	.05	0	75	17	2.5	3.6	.94	0	
5	.28	.50	.95	.06	0	45	10	2.6	2.9	.65	0	
6	.22	.58	.88	.07	0	33	6.0	2.4	2.3	.65	0	
7	.27	.60	.80	.08	0	30	4.2	2.3	2.0	.35	0	
8	.43	.61	.72	.09	0	20	3.4	2.8	1.6	.18	0	
9	.60	.60	.66	.09	0	12	3.0	2.6	2.1	.20	0	
10	1.2	.64	.60	.08	0	13	2.3	2.9	3.1	.14	0	
11	1.0	.57	.55	.08	0	19	2.5	3.5	6.2	.12	.26	
12	.87	.57	.50	.07	.01	18	4.3	3.4	7.1	.10	1.4	
13	.78	.67	.46	.06	.03	17	7.7	7.6	9.0	.14	1.4	
14	.71	.61	.42	.05	.07	14	18	9.3	8.3	.10	.91	
15	.63	.54	.38	.05	.10	12	14	7.8	5.3	.16	.63	
16	.54	.50	.33	.06	.13	12	11	6.9	4.1	.05	1.2	
17	.57	.85	.30	.07	.17	10	9.1	11	3.8	.01	.38	
18	.53	1.1	.26	.08	.20	7.2	6.6	11	3.2	.12	.39	
19	.54	1.3	.23	.07	.25	6.8	5.4	9.0	3.0	.28	.38	
20	.53	1.4	.20	.06	.30	6.4	5.4	7.3	2.2	.65	.58	
21	.50	1.6	.16	.06	.29	5.5	5.3	6.0	1.8	.58	.53	
22	.53	1.8	.17	.05	.28	5.0	5.3	5.3	1.4	.63	.43	
23	.57	1.7	.18	.05	.27	4.6	5.5	4.8	1.0	.20	.32	
24	.64	1.7	.19	.04	.26	3.9	4.9	14	1.7	.20	.28	
25	.59	1.6	.20	.04	.25	4.4	4.7	6.9	4.3	.16	0	
26	.57	1.6	.20	.03	.24	4.8	3.9	5.9	3.0	.03	0	
27	.50	1.5	.21	.03	1.5	5.5	3.3	6.4	1.8	.04	0	
28	.47	1.5	.20	.02	4.0	6.0	3.2	5.8	.90	.01	0	
29	.44	1.4	.18	.01	------	6.6	3.3	4.1	1.0	0	0	
30	.50	1.4	.16	0	------	7.5	3.0	4.0	.93	0	0	
31	.54	------	.13	0	------	9.0	------	4.5	------	0	0	------
TOTAL	16.61	29.74	15.02	1.73	8.35	568.2	223.3	171.1	100.83	8.92	9.09	0
MEAN	.54	.99	.48	.056	.30	18.3	7.44	5.52	3.36	.29	.29	0
MAX	1.2	1.8	1.3	.10	4.0	100	20	14	9.0	1.0	1.4	0
MIN	.20	.50	.13	0	0	3.9	2.3	2.3	.90	0	0	0
AC-FT	33	59	30	3.4	17	1,130	443	339	200	18	18	0

CAL YR 1973 TOTAL 6,773.00 MEAN 18.6 MAX 350 MIN .06 AC-FT 13,430
WTR YR 1974 TOTAL 1,152.89 MEAN 3.16 MAX 100 MIN 0 AC-FT 2,290

PEAK DISCHARGE (BASE, 300 FT^3/S).--No peaks above base.

06479910 SIXMILE CREEK NEAR BROOKINGS, S. DAK.

LOCATION.--Lat 44°20'46", long 96°44'51", in NE¼SE¼ sec.7, T.110 N., R.49 W., Brookings County, on left bank 8 ft (2 m) downstream from bridge, 0.7 mi (1.1 km) upstream from Interstate Highway 29 and 2.7 mi (4.3 km) northeast of Brookings.

DRAINAGE AREA.--54.0 mi^2 (140 km^2), approximately.

PERIOD OF RECORD.--September 1970 to current year. February 1951 to August 1970 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,620.57 ft (493.950 m) above mean sea level (levels by Corps of Engineers). Prior to Sept. 1, 1970, at datum 1.00 ft (0.305 m) higher.

EXTREMES.--Current year: Maximum discharge, 95 ft^3/s (2.69 m^3/s) Mar. 6; maximum gage height, 6.50 ft (1.981 m) Mar. 7 (backwater from ice); no flow for many days.

Period of record: Maximum discharge, 405 ft^3/s (11.5 m^3/s) May 29, 1972, gage height, 6.71 ft (2.045 m); maximum gage height, 7.26 ft (2.213 m) Mar. 12, 1972 (backwater from ice); no flow for many days in each year.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 7 to Mar. 8)

0.68	0	1.0	2.2
.70	.04	1.1	5.0
.80	.30	1.4	16
.90	.98	2.0	38

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.57	1.4	.30	.15	1.5	2.7	2.1	3.1		0	
2	.12	.57	1.4	.25	.15	2.0	2.4	2.0	2.6		0	
3	.12	.50	1.4	.25	.14	2.5	2.9	1.9	2.0		0	
4	.12	.57	1.4	.26	.14	3.0	2.7	1.8	1.5		0	
5	.07	.57	1.2	.27	.13	4.0	2.7	1.8	1.3		0	
6	.02	.61	1.3	.28	.13	5.0	2.4	1.7	1.3		0	
7	.02	.60	1.4	.29	.12	30	2.7	1.6	1.1		0	
8	.14	.57	1.5	.30	.12	22	2.7	1.5	1.2		0	
9	.34	.53	1.6	.30	.13	16	2.7	1.7	1.7		0	
10	3.7	.50	1.4	.29	.13	14	2.9	2.0	2.5		.09	
11	1.6	.57	1.3	.27	.14	14	3.7	4.0	2.7		.71	
12	1.1	.63	1.2	.25	.14	13	4.6	3.7	2.6		.30	
13	.71	.65	1.1	.23	.15	12	6.4	3.7	2.4		.17	
14	.64	.63	1.0	.22	.16	12	9.2	5.4	2.3		.12	
15	.50	.60	.94	.20	.17	11	8.5	5.0	2.1		.06	
16	.39	.55	.86	.21	.19	9.9	7.1	4.6	2.1		0	
17	.34	.50	.78	.23	.20	8.8	7.4	4.5	1.9		0	
18	.34	.48	.67	.24	.22	8.2	6.9	4.6	1.7		0	
19	.34	.50	.60	.23	.23	8.0	6.1	5.4	1.2		0	
20	.34	.75	.52	.22	.25	7.8	5.6	5.6	1.1		0	
21	.39	1.3	.55	.22	.24	7.1	5.8	6.2	.99		0	
22	.34	2.0	.58	.22	.23	6.8	5.6	6.9	.80		0	
23	.34	1.5	.62	.21	.22	5.7	4.5	5.8	.64		0	
24	.44	1.4	.64	.21	.21	5.0	3.9	4.6	.63		0	
25	.57	1.4	.66	.20	.20	4.6	3.3	3.4	.51		0	
26	.50	1.4	.66	.20	.25	4.0	2.8	3.1	.39		0	
27	.50	1.3	.65	.19	.50	3.4	3.2	3.1	.37		0	
28	.57	1.3	.60	.18	1.0	2.7	3.3	2.4	.28		0	
29	.50	1.3	.55	.17	------	2.4	2.7	2.1	.18		0	
30	.50	1.3	.48	.17	------	2.1	2.5	2.5	.06		0	
31	.57	------	.40	.16	------	2.7	------	3.3	------		0	------
TOTAL	16.37	25.65	29.36	7.22	6.04	251.2	129.9	108.0	43.25	0	1.45	0
MEAN	.53	.86	.95	.23	.22	8.10	4.33	3.48	1.44	0	.047	0
MAX	3.7	2.0	1.6	.30	1.0	30	9.2	6.9	3.1	0	.71	0
MIN	.02	.48	.40	.16	.12	1.5	2.4	1.5	.06	0	0	0
AC-FT	32	51	58	14	12	498	258	214	86	0	2.9	0

CAL YR 1973 TOTAL 2,158.58 MEAN 5.91 MAX 290 MIN 0 AC-FT 4,280
WTR YR 1974 TOTAL 618.44 MEAN 1.69 MAX 30 MIN 0 AC-FT 1,230

PEAK DISCHARGE (BASE, 100 FT^3/S).--No peaks above base.

06480000 BIG SIOUX RIVER NEAR BROOKINGS, S. DAK.

LOCATION.--Lat 44°10'48", long 96°44'55", in NW¼NW¼ sec.8, T.108 N., R.49 W., Moody County, on right bank 3 ft (1 m) downstream from highway bridge, 2.2 mi (3.5 km) downstream from Medary Creek and 9.5 mi (15.3 km) southeast of Brookings.

DRAINAGE AREA.--4,420 mi^2 (11,450 km^2), approximately, of which about 1,970 mi^2 (5,100 km^2) is probably noncontributing.

PERIOD OF RECORD.--August 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,551.91 ft (473.022 m) above mean sea level. Prior to May 30, 1959, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--21 years, 163 ft^3/s (4.616 m^3/s), 118,100 acre-ft/yr (146 hm^3/yr); median of yearly mean discharges, 120 ft^3/s (3.40 m^3/s), 86,900 acre-ft/yr (110 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 950 ft^3/s (26.9 m^3/s) Mar. 6; maximum gage height, 7.57 ft (2.307 m) Mar. 6 (backwater from ice); minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Sept. 15.

Period of record: Maximum discharge, 33,900 ft^3/s (960 m^3/s) Apr. 9, 1969, gage height, 14.77 ft (4.502 m); no flow at times in 1956, 1959.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 1 to Mar. 6)

Oct. 1 to Mar. 6		Mar. 7 to Sept. 30			
1.7	7.0	1.4	0.15	2.5	97
1.8	16	1.5	1.4	3.0	167
2.0	35	1.6	5.8	4.0	327
2.5	86	1.8	19	5.0	512
		2.0	38	7.0	960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	22	22	7.9	9.6	70	84	56	88	19	3.8	2.4
2	21	21	20	7.6	9.2	90	89	52	84	18	4.3	2.4
3	20	22	19	7.5	8.7	120	91	52	82	19	4.7	2.0
4	19	21	17	7.3	8.3	200	80	49	82	21	4.3	1.7
5	18	21	16	7.2	8.0	450	82	49	75	19	3.8	1.1
6	18	19	15	7.0	7.6	900	84	47	72	17	2.8	1.4
7	16	22	14	6.8	7.3	752	92	46	64	15	2.8	1.1
8	17	20	14	6.6	6.9	558	91	47	58	14	2.4	.90
9	23	29	15	6.5	6.6	294	89	46	61	15	15	.60
10	53	26	15	6.3	6.3	242	87	50	82	16	25	.90
11	52	23	14	6.2	6.5	210	85	59	79	15	23	.27
12	41	25	14	6.1	6.8	191	100	59	75	14	18	.41
13	34	25	13	6.0	7.1	170	121	65	71	13	16	.50
14	30	25	13	6.4	7.4	152	134	78	67	12	13	1.4
15	29	23	13	6.9	7.8	148	135	82	60	14	11	.20
16	25	23	12	7.5	8.5	127	128	87	53	13	8.7	.34
17	24	23	12	8.0	11	106	123	90	48	11	9.3	.41
18	24	22	12	8.5	15	116	114	105	45	11	9.3	.41
19	24	22	11	8.8	25	109	103	117	41	12	9.3	.34
20	23	26	11	8.6	40	94	96	118	38	14	7.5	.27
21	22	29	11	8.3	60	85	91	160	36	15	6.4	.20
22	22	25	10	8.2	56	93	85	190	35	14	5.8	.20
23	22	23	10	8.0	52	89	80	180	32	11	6.9	.20
24	21	28	9.8	7.8	48	114	74	160	30	9.3	8.1	.50
25	21	29	9.5	7.5	45	102	72	150	28	8.7	5.8	1.7
26	23	29	9.3	8.0	48	87	69	140	26	8.1	4.3	2.0
27	22	27	9.0	8.5	53	80	69	125	24	7.5	3.8	2.4
28	22	22	8.7	9.0	60	91	67	115	23	6.4	3.3	4.3
29	22	28	8.5	9.4	------	85	62	105	22	5.8	2.8	4.3
30	21	24	8.2	9.7	------	83	59	98	20	4.7	2.4	.90
31	21	------	8.0	10	------	82	------	93	------	4.3	2.8	------
TOTAL	773	724	394.0	238.1	635.6	6,090	2,736	2,870	1,601	396.8	246.4	35.75
MEAN	24.9	24.1	12.7	7.68	22.7	196	91.2	92.6	53.4	12.8	7.95	1.19
MAX	53	29	22	10	60	900	135	190	88	21	25	4.3
MIN	16	19	8.0	6.0	6.3	70	59	46	20	4.3	2.4	.20
AC-FT	1,530	1,440	781	472	1,260	12,080	5,430	5,690	3,180	787	489	71

CAL YR 1973 TOTAL 70,973.00 MEAN 194 MAX 2,940 MIN 8.0 AC-FT 140,800
WTR YR 1974 TOTAL 16,740.65 MEAN 45.9 MAX 900 MIN .20 AC-FT 33,210

PEAK DISCHARGE (BASE, 1,000 FT^3/S).--No peaks above base.

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, S. DAK.

LOCATION.--Lat 43°47'25", long 96°44'42", in NW¼NW¼ sec.29, T.104 N., R.49 W., Minnehaha County, on left bank at downstream side of highway bridge, 0.2 mi (0.3 km) downstream from confluence of divided channels and 3.0 mi (4.8 km) southwest of Dell Rapids.

DRAINAGE AREA.--5,060 mi² (13,100 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,455.99 ft (443.786 m) above mean sea level. Prior to Nov. 11, 1949, nonrecording gage and Nov. 11, 1949, to Sept. 30, 1951, water-stage recorder, at present site at datum 0.04 ft (0.012 m) lower.

AVERAGE DISCHARGE.--26 years, 267 ft³/s (7.561 m³/s), 193,400 acre-ft/yr (238 hm³/yr); median of yearly mean discharges, 210 ft³/s (5.95 m³/s), 152,000 acre-ft/yr (190 hm³/yr).

EXTREMES.--Current year: Maximum discharge, 1,530 ft³/s (43.3 m³/s) Mar. 9, gage height, 7.58 ft (2.310 m); minimum daily, 2.2 ft³/s (0.062 m³/s) Aug. 8.

Period of record: Maximum discharge, 41,300 ft³/s (1,170 m³/s) Apr. 9, 1969, gage height, 16.47 ft (5.020 m); minimum daily, 0.20 ft³/s (0.006 m³/s) Jan. 31, Feb. 1, 1965.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 9 to Apr. 16, July 1-3, Aug. 23 to Sept. 30; stage-discharge relation affected by ice Nov. 30 to Mar. 8, Mar. 24, 25)

Oct. 1 to June 6				June 7 to Sept. 30			
2.8	11	4.0	230	2.1	1.0	3.0	32
2.9	18	5.0	525	2.3	5.3	3.3	66
3.1	36	6.0	875	2.7	18	3.7	155
3.3	66	8.0	1,650				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	39	30	11	15	100	125	94	123	32	7.0	11
2	39	37	25	12	15	100	141	89	134	29	6.0	11
3	33	39	20	13	15	150	146	79	137	29	5.6	11
4	31	35	17	13	15	300	137	69	139	30	5.9	11
5	31	35	15	14	14	550	144	77	125	30	5.7	10
6	32	37	16	14	14	500	137	77	125	31	4.1	9.5
7	31	36	17	14	14	550	137	75	134	29	2.9	9.1
8	31	32	18	14	14	900	137	77	120	28	2.2	9.1
9	55	34	19	14	13	1,370	137	69	118	27	5.5	9.8
10	98	36	18	14	13	875	155	77	116	27	13	9.9
11	71	36	16	14	13	498	158	88	116	28	21	9.9
12	64	37	16	13	13	359	160	98	116	25	24	9.7
13	58	36	15	13	13	305	162	109	100	26	25	9.8
14	61	36	15	14	13	281	168	96	98	24	26	9.9
15	57	34	15	15	13	284	190	109	98	24	26	9.3
16	53	37	15	17	15	248	218	109	90	23	25	9.2
17	51	37	15	17	25	255	198	116	83	22	27	9.0
18	47	36	15	17	50	260	175	120	75	21	28	8.5
19	44	38	15	16	50	182	190	200	73	21	27	7.9
20	41	38	15	15	75	228	172	235	62	20	26	7.0
21	39	40	15	15	150	215	156	220	59	18	24	6.1
22	41	41	14	15	125	185	139	230	59	17	24	6.0
23	41	39	14	15	120	144	127	240	54	15	23	6.8
24	41	40	14	15	110	120	132	218	49	13	22	6.6
25	41	40	13	16	100	95	120	212	44	11	21	7.6
26	37	39	13	17	90	102	118	185	42	12	20	7.7
27	37	38	13	18	75	118	111	168	44	14	19	7.1
28	37	36	12	19	75	125	107	155	36	13	17	6.7
29	39	36	12	20	------	123	91	162	35	11	15	6.2
30	37	35	12	20	------	146	98	132	33	9.3	13	6.3
31	37	------	12	17	------	150	------	123	------	8.2	12	------
TOTAL	1,400	1,109	491	471	1,267	9,818	4,386	4,108	2,637	667.5	522.9	258.7
MEAN	45.2	37.0	15.8	15.2	45.3	317	146	133	87.9	21.5	16.9	8.62
MAX	98	41	30	20	150	1,370	218	240	139	32	28	11
MIN	31	32	12	11	13	95	91	69	33	8.2	2.2	6.0
AC-FT	2,780	2,200	974	934	2,510	19,470	8,700	8,150	5,230	1,320	1,040	513

CAL YR 1973 TOTAL 100,571.0 MEAN 276 MAX 3,600 MIN 12 AC-FT 199,500
WTR YR 1974 TOTAL 27,136.1 MEAN 74.3 MAX 1,370 MIN 2.2 AC-FT 53,820

PEAK DISCHARGE (BASE, 1,000 FT³/S).--Mar. 9 (0200) 1,530 ft³/s (7.58 ft).

06481500 SKUNK CREEK AT SIOUX FALLS, S. DAK.

LOCATION.--Lat 43°32'01", long 96°47'26", in NW¼SW¼ sec.24, T.101 N., R.50 W., Minnehaha County, on right bank 5 ft (2 m) downstream from bridge on Marion Road, 1.3 mi (2.1 km) upstream from mouth, 1.8 mi (2.9 km) downstream from small right-bank tributary, and 4.0 mi (6.4 km) southwest of Sioux Falls.

DRAINAGE AREA.--570 mi^2 (1,480 km^2), approximately.

PERIOD OF RECORD.--May 1948 to September 1971 (published as "near Sioux Falls"). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,405.10 ft (428.274 m) above mean sea level (Corps of Engineers bench mark). Prior to Oct. 24, 1949, nonrecording gage, and Oct. 24, 1949, to Apr. 28, 1972, water-stage recorder, both at site 1.9 mi (3.1 km) upstream at datum 10.19 ft (3.106 m) higher.

AVERAGE DISCHARGE.--26 years, 50.0 ft^3/s (1.416 m^3/s), 36,220 acre-ft/yr (45.0 hm^3/yr); median of yearly mean discharges, 29 ft^3/s (0.821 m^3/s), 21,000 acre-ft/yr (26 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 225 ft^3/s (6.37 m^3/s) Oct. 10; maximum gage height, 4.27 ft (1.302 m) Feb. 23 (backwater from ice); minimum daily discharge, 0.26 ft^3/s (0.007 m^3/s) July 22.

Period of record: Maximum discharge, 29,400 ft^3/s (833 m^3/s) June 17, 1957, gage height, 17.78 ft (5.419 m), site and datum then in use, from rating curve extended above 8,100 ft^3/s (229 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	8.6	7.2	2.8	7.5	43	30	15	14	2.5	.43	1.5
2	2.7	8.2	7.1	2.5	7.0	46	32	12	12	2.5	.45	1.6
3	2.8	7.8	7.1	2.5	7.0	41	35	11	12	2.8	.40	1.6
4	5.3	7.2	6.4	2.3	6.5	33	26	10	9.3	2.8	.45	1.6
5	4.5	6.8	5.8	2.2	7.0	39	28	9.2	7.1	2.4	.42	1.3
6	3.8	6.2	4.7	2.2	7.0	28	43	8.2	32	2.0	.45	1.1
7	3.5	5.6	5.0	2.3	7.5	32	46	7.6	61	1.8	.50	1.1
8	3.2	4.5	5.1	2.2	7.0	27	37	6.6	33	1.6	.51	.96
9	23	4.8	4.7	2.2	7.5	23	33	7.1	26	1.5	8.0	.80
10	168	5.3	4.6	2.2	7.5	21	29	9.8	37	1.6	21	.89
11	55	5.2	4.6	2.2	8.8	23	27	14	40	1.2	15	.98
12	35	6.0	4.6	2.2	11	25	32	14	31	1.4	20	1.1
13	27	6.5	4.1	2.2	28	28	42	18	27	1.4	19	1.1
14	23	6.6	3.5	2.5	38	31	43	21	24	1.0	13	1.2
15	21	6.5	3.6	2.8	28	32	39	21	19	1.0	8.2	.94
16	19	6.6	3.6	3.9	27	28	36	21	14	1.0	6.5	.80
17	18	7.9	3.6	4.6	34	23	34	19	10	.68	5.7	.78
18	16	7.1	3.6	5.6	100	27	33	20	8.8	.57	4.7	.80
19	15	7.1	3.6	6.0	110	29	30	20	6.0	.46	3.1	.77
20	14	8.6	3.4	6.5	85	28	28	23	5.0	.35	2.4	.71
21	13	10	3.2	6.5	65	28	28	26	5.3	.28	2.9	.76
22	12	10	2.9	7.0	85	27	27	27	6.0	.26	1.7	.80
23	11	11	3.2	7.0	70	22	25	26	5.6	.40	1.9	.75
24	10	11	4.1	7.5	60	19	22	23	7.1	.52	1.5	.78
25	15	12	4.6	7.5	55	23	20	22	5.3	.36	1.4	.80
26	13	11	4.3	8.1	51	26	19	23	3.9	.40	1.4	.78
27	12	9.7	3.9	8.7	47	25	19	21	3.2	.48	1.4	.74
28	11	9.7	3.6	9.3	45	26	19	19	3.2	.39	1.5	.60
29	10	8.7	3.8	9.3	------	30	17	18	2.8	.33	1.5	.56
30	9.6	8.1	3.9	9.3	------	30	16	16	2.3	.30	1.5	.52
31	9.2	------	3.2	8.2	------	29	------	16	------	.36	1.4	------
TOTAL	589.5	234.3	136.6	150.3	1,019.3	892	895	524.5	472.9	34.64	148.31	28.72
MEAN	19.0	7.81	4.41	4.85	36.4	28.8	29.8	16.9	15.8	1.12	4.78	.96
MAX	168	12	7.2	9.3	110	46	46	27	61	2.8	21	1.6
MIN	2.7	4.5	2.9	2.2	6.5	19	16	6.6	2.3	.26	.40	.52
AC-FT	1,170	465	271	298	2,020	1,770	1,780	1,040	938	69	294	57

CAL YR 1973 TOTAL 21,221.54 MEAN 58.1 MAX 1,180 MIN .18 AC-FT 42,090
WTR YR 1974 TOTAL 5,126.07 MEAN 14.0 MAX 168 MIN .26 AC-FT 10,170

PEAK DISCHARGE (BASE, 500 FT^3/S).--No peaks above base.

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, S. DAK.

LOCATION.--Lat 43°34'01", long 96°42'39", in SW¼NW¼ sec.10, T.101 N., R.49 W., Minnehaha County, on right bank 20 ft (6 m) downstream from bridge on North Cliff Avenue and 4.1 mi (6.6 km) upstream from Slip Up Creek.

DRAINAGE AREA.--5,770 mi² (14,940 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1962 to September 1971 (gage heights and discharge measurements only in files of Corps of Engineers). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.18 ft (394.466 m) above mean sea level (levels by Corps of Engineers). Prior to Dec. 15, 1971, nonrecording gage 20 ft (6 m) upstream at same datum.

EXTREMES.--Current year: Maximum discharge, 1,670 ft³/s (47.3 m³/s) Oct. 9, gage height, 10.32 ft (3.146 m); minimum daily, 18 ft³/s (0.51 m³/s) Sept. 22.

Period of record: Maximum discharge, 5,880 ft³/s (167 m³/s) Mar. 13, 1973, gage height, 16.38 ft (4.993 m); minimum daily, 2.1 ft³/s (0.059 m³/s) Jan. 14, 1972.

Flood of Apr. 10, 1969, reached a stage of 27.45 ft (8.367 m), discharge, 40,700 ft³/s (1,150 m³/s).

REMARKS.--Records good. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 6-11, Mar. 4 to June 25)

4.7	14	6.0	215
4.9	28	7.0	480
5.2	56	9.0	1,140
5.5	110		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	62	43	32	38	129	191	111	162	51	23	20
2	62	62	49	34	37	158	192	111	156	55	24	20
3	64	62	54	34	36	229	212	105	164	52	22	23
4	61	61	42	33	38	393	196	102	162	48	19	25
5	52	60	40	31	39	656	185	98	158	52	22	24
6	42	60	48	29	38	665	191	98	182	49	23	24
7	42	59	48	31	39	546	198	99	210	47	23	24
8	48	58	50	31	40	708	191	99	184	49	27	22
9	282	55	44	29	39	961	184	98	213	48	45	24
10	489	57	43	30	37	846	181	131	189	45	51	24
11	245	57	48	29	42	601	193	125	179	45	33	25
12	154	61	47	29	48	449	201	109	167	45	30	26
13	140	60	46	28	48	358	201	138	160	39	33	24
14	122	59	44	30	51	324	210	134	155	32	32	22
15	116	55	42	31	62	301	215	132	144	32	30	20
16	114	39	40	34	57	273	224	141	126	30	30	22
17	102	56	44	35	62	254	226	143	123	31	59	22
18	100	56	44	36	111	255	222	156	102	30	30	23
19	96	63	42	35	193	239	208	173	91	30	32	23
20	90	92	40	34	194	226	198	221	107	27	32	22
21	85	74	40	36	212	214	185	252	105	28	40	20
22	81	58	39	38	217	209	178	236	129	33	33	18
23	76	60	38	38	236	158	171	246	92	32	30	22
24	70	61	41	37	183	134	162	241	92	33	27	22
25	70	58	37	38	178	186	157	230	91	30	24	22
26	72	64	40	39	154	183	145	211	66	27	28	22
27	66	60	41	37	137	177	140	199	72	26	30	23
28	66	60	39	38	129	185	133	193	64	23	26	21
29	65	60	37	40	------	186	128	184	40	24	26	19
30	64	64	34	43	------	186	111	181	43	25	25	21
31	63	------	35	41	------	185	------	170	------	24	22	------
TOTAL	3,263	1,813	1,319	1,060	2,695	10,574	5,529	4,867	3,928	1,142	931	669
MEAN	105	60.4	42.5	34.2	96.3	341	184	157	131	36.8	30.0	22.3
MAX	489	92	54	43	236	961	226	252	213	55	59	26
MIN	42	39	34	28	36	129	111	98	40	23	19	18
AC-FT	6,470	3,600	2,620	2,100	5,350	20,970	10,970	9,650	7,790	2,270	1,850	1,330

CAL YR 1973 TOTAL 128,798 MEAN 353 MAX 3,950 MIN 30 AC-FT 255,500
WTR YR 1974 TOTAL 37,790 MEAN 104 MAX 961 MIN 18 AC-FT 74,960

PEAK DISCHARGE (BASE, 1,000 FT³/S).--Oct. 9 (2045) 1,670 ft³/s (10.32 ft).

06482610 SPLIT ROCK CREEK AT CORSON, S. DAK.

LOCATION.--Lat 43°36'59", long 96°33'54", in NE¼NW¼ sec.26, T.102 N., R.48 W., Minnehaha County, on left bank 6 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) east of Corson and 3.4 mi (5.5 km) upstream from mouth.

DRAINAGE AREA.--475 mi^2 (1,230 km^2), approximately.

PERIOD OF RECORD.--October 1965 to current year. February 1951 to September 1965 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,304.22 ft (397.526 m) above mean sea level (levels by Corps of Engineers). Prior to Aug. 15, 1964, nonrecording gage at datum 0.15 ft (0.046 m) higher and Aug. 15, 1964, to Sept. 3, 1970, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--9 years, 60.8 ft^3/s (1.722 m^3/s), 44,050 acre-ft/yr (54.3 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 5,240 ft^3/s (148 m^3/s) Oct. 10, gage height, 9.75 ft (2.972 m); minimum daily, 3.0 ft^3/s (0.085 m^3/s) Aug. 7.

Period of record: Maximum discharge, 17,800 ft^3/s (503 m^3/s) Apr. 8, 1969, gage height, 15.00 ft (4.572 m); no flow at times most years.

Maximum stage since 1951, 15.41 ft (4.697 m) June 17, 1957, discharge not determined.

REMARKS.--Records good except those for winter periods, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 14 to Mar. 7; shifting-control method used Mar. 8 to June 8, Sept. 1-9)

1.62	1.8	2.1	22	4.0	395
1.7	3.4	2.3	41	5.0	750
1.8	7.2	2.6	84	6.0	1,270
2.0	17	3.0	155	7.0	1,990

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	23	25	12	17	85	73	32	27	6.7	4.7	4.4
2	18	22	22	11	16	100	69	31	28	6.4	5.0	4.8
3	15	22	25	10	15	115	52	29	27	6.4	5.4	4.8
4	13	21	25	9.7	14	150	37	27	26	6.5	4.7	4.8
5	12	21	22	9.5	13	250	54	26	27	6.2	4.0	4.4
6	11	21	24	9.0	12	230	52	22	31	5.7	3.5	4.8
7	11	21	24	8.5	12	210	48	21	32	4.9	3.0	4.4
8	9.3	21	23	8.0	11	173	46	22	30	4.0	3.2	4.4
9	80	18	22	7.6	11	133	46	22	29	4.6	7.6	4.4
10	1,640	19	21	7.5	12	128	46	24	31	4.8	15	4.8
11	386	20	22	7.6	13	133	45	28	32	5.3	13	5.2
12	210	20	22	7.8	13	140	56	28	30	6.3	13	5.6
13	142	20	21	8.2	14	152	82	31	23	6.4	11	5.6
14	121	20	20	8.6	16	149	105	30	21	5.5	7.6	5.2
15	102	21	20	9.2	20	143	110	35	19	4.8	6.0	5.2
16	79	20	20	10	30	132	98	34	17	4.3	6.0	5.2
17	63	19	19	11	55	118	89	30	16	3.8	10	5.2
18	53	19	18	12	150	116	74	32	16	3.6	21	5.2
19	45	20	17	12	130	116	63	33	15	3.5	17	5.6
20	39	23	17	13	120	115	60	43	14	3.7	15	5.2
21	35	25	16	13	100	110	54	92	13	4.2	16	5.2
22	32	29	16	14	110	103	53	110	14	4.7	13	4.8
23	30	28	18	14	120	103	50	92	14	5.5	10	4.8
24	30	28	19	14	100	82	48	80	13	6.3	8.9	4.0
25	40	28	20	14	80	87	44	70	12	7.2	8.0	4.0
26	36	28	19	15	65	64	44	57	12	6.8	6.4	3.7
27	31	28	18	15	60	76	40	48	10	6.0	6.4	3.7
28	26	27	16	15	70	83	37	39	9.3	6.2	6.4	3.8
29	25	26	15	16	------	89	36	34	8.8	6.5	4.8	4.2
30	24	24	14	16	------	78	34	30	7.8	5.8	4.4	3.7
31	24	------	13	17	------	69	------	28	------	5.0	4.4	------
TOTAL	3,407.3	682	613	355.2	1,399	3,832	1,745	1,260	604.9	167.6	264.4	141.1
MEAN	110	22.7	19.8	11.5	50.0	124	58.2	40.6	20.2	5.41	8.53	4.70
MAX	1,640	29	25	17	150	250	110	110	32	7.2	21	5.6
MIN	9.3	18	13	7.5	11	64	34	21	7.8	3.5	3.0	3.7
AC-FT	6,760	1,350	1,220	705	2,770	7,600	3,460	2,500	1,200	332	524	280

CAL YR 1973 TOTAL 21,977.6 MEAN 60.2 MAX 1,640 MIN 1.8 AC-FT 43,590
WTR YR 1974 TOTAL 14,471.5 MEAN 39.6 MAX 1,640 MIN 3.0 AC-FT 28,700

PEAK DISCHARGE (BASE, 500 FT^3/S).--Oct. 9 (0145) 5,240 ft^3/s (9.75 ft).

06485500 BIG SIOUX RIVER AT AKRON, IOWA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW¼SW¼ sec.31, T.93 N., R.48 W., Plymouth County, Iowa, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Union Creek.

DRAINAGE AREA.--9,030 mi^2 (23,390 km^2), approximately, of which about 1,970 mi^2 (5,100 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft (341.041 m) above mean sea level. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft (91 m) upstream at same datum.

AVERAGE DISCHARGE.--46 years, 851 ft^3/s (24.10 m^3/s), 616,500 acre-ft/yr (760 hm^3/yr); median of yearly mean discharges, 730 ft^3/s (20.7 m^3/s), 529,000 acre-ft/yr (652 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 3,000 ft^3/s (85.0 m^3/s) June 22, gage height, 9.76 ft (2.975 m); minimum daily discharge, 73 ft^3/s (2.07 m^3/s) Aug. 8.

Period of record: Maximum discharge, 80,800 ft^3/s (2,290 m^3/s) Apr. 9, 1969, gage height, 22.99 ft (7.007 m); minimum daily, 7 ft^3/s (90.20 m^3/s) Feb. 26-28, 1936.

REMARKS.--Records good except those for the winter months, which are poor. Water-quality records for the water year 1974 are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-18, Mar. 4-23, Mar. 28 to Apr. 15, May 16 to June 2, June 18 to July 5, Aug. 23, 24; stage-discharge relation affected by ice Dec. 7 to Mar. 3, Mar. 24-27)

2.2	63	4.5	615
2.6	116	6.0	1,140
3.3	260	8.0	2,040

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1973 TO SEPTEMBER 1974

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	383	268	301	125	145	400	601	406	462	258	102	128
2	440	266	295	120	150	600	596	394	440	235	92	123
3	385	263	296	115	140	750	623	370	412	216	85	119
4	346	261	282	110	135	996	646	357	392	209	81	112
5	315	250	260	105	125	1,100	646	347	375	202	78	106
6	291	246	219	100	120	1,520	659	336	384	190	75	102
7	278	246	200	98	125	1,790	667	328	395	182	75	102
8	262	243	190	95	135	1,580	659	323	380	168	73	102
9	247	239	195	93	140	1,370	667	325	416	168	84	100
10	262	229	200	90	160	1,350	672	337	457	160	110	94
11	347	242	195	85	180	1,490	680	364	470	159	151	94
12	1,560	249	190	80	210	1,460	670	384	494	156	176	106
13	1,080	247	185	85	240	1,260	676	438	491	154	185	108
14	904	246	180	90	260	1,120	718	453	486	149	171	106
15	729	255	180	93	275	1,040	758	448	464	143	156	103
16	607	251	175	97	290	981	813	460	426	135	149	99
17	536	247	170	100	310	924	817	448	394	128	144	96
18	486	248	165	103	325	878	781	455	372	120	158	92
19	445	234	160	107	340	836	734	460	352	114	166	87
20	406	244	160	110	350	826	686	457	335	109	170	85
21	370	276	165	110	360	791	651	497	315	104	191	84
22	343	298	170	113	370	760	611	582	1,830	100	194	82
23	322	333	180	115	350	719	577	681	1,430	97	226	81
24	305	333	175	118	320	400	537	709	661	94	234	81
25	300	328	170	120	290	425	521	694	496	93	246	81
26	296	323	160	123	270	580	503	673	419	93	210	80
27	302	326	155	125	250	630	488	641	365	95	187	79
28	317	322	145	128	300	629	474	601	329	105	165	78
29	298	315	140	132	------	604	453	559	299	92	153	79
30	288	311	135	135	------	594	433	528	275	86	142	77
31	279	------	130	140	------	602	------	495	------	85	137	------
TOTAL	13,729	8,139	5,923	3,360	6,665	29,005	19,017	14,550	14,816	4,399	4,566	2,866
MEAN	443	271	191	108	238	936	634	469	494	142	147	95.5
MAX	1,560	333	301	140	370	1,790	817	709	1,830	258	246	128
MIN	247	229	130	80	120	400	433	323	275	85	73	77
AC-FT	27,230	16,140	11,750	6,660	13,220	57,530	37,720	28,860	29,390	8,730	9,060	5,680

CAL YR 1973 TOTAL 374,797 MEAN 1,027 MAX 12,100 MIN 130 AC-FT 743,400
WTR YR 1974 TOTAL 127,035 MEAN 348 MAX 1,830 MIN 73 AC-FT 252,000

PEAK DISCHARGE (BASE, 3,500 FT^3/S).--No peaks above base.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in floodflow analyses.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1974

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
Minnesota River basin							
05289950	Little Minnesota River tributary at Sisseton, S. Dak.	Lat 45°39'38", long 97°04'21", in NW¼ sec.32, T.126 N., R.51 W., Roberts County, at culvert on State Highway 10, 0.6 mile (1.0 km) west of Sisseton.	[a]4.0	1970-74	5-24-73 3- 3-74	[b]6.06 [c]8.24	[b]83 [d]20
05290300	North Fork Whetstone River tributary near Wilmot, S. Dak.	Lat 45°26'02", long 96°57'33", in SE¼ sec.18, T.123 N., R.50 W., Roberts County, at culvert on county highway, 6.0 miles (9.7 km) northwest of Wilmot.	[a]2.0	1970-74	3- 3-74	[c]4.92	[d]8
05292600	North Fork Yellow Bank River tributary near Stockholm, S. Dak.	Lat 45°06'24", long 96°49'06", in NW¼ sec.22, T.119 N., R.50 W., Grant County, at culvert on State Highway 20, 1.0 mile (1.6 km) northwest of Stockholm.	[a]7.0	1970-74	3- 3-74	[c]4.44	[d]15
Spring Creek basin							
06354845	Spring Creek tributary near Greenway, S. Dak.	Lat 45°54'45", long 99°36'48", in SW¼ sec.12, T.128 N., R.73 W., McPherson County, at culvert on State Highway 47, 4.8 miles (7.7 km) east of Greenway.	[a]3.0	1970-74	10-12-73	6.10	100
Grand River basin							
06355400	North Fork Grand River tributary near Lodgepole, S. Dak.	Lat 45°55'45", long 102°39'04", in NW¼ sec.28, T.23 N., R.12 E., Perkins County, at culvert on county highway, 9.0 miles (14.5 km) north of Lodgepole.	[a]3.0	1970-74	[b]6- 2-73 6- 1-74	[b]4.49 3.95	(†) (†)
06356150	North Jack Creek near Ludlow, S. Dak.	Lat 45°47'15", long 103°23'43", in SW¼NW¼NW¼ sec.16, T.21 N., R.6 E., Harding County, at culvert on U.S. Highway 85, 3.4 miles (5.5 km) southwest of Ludlow.	[a]1.71	1970-74	3-13-74	[c]4.04	[d]10
06356600	South Fork Grand River tributary near Bison, S. Dak.	Lat 45°35'54", long 102°39'28", in NE¼ sec.21, T.19 N., R.12 E., Perkins County, at culvert on county highway, 10 miles (16 km) northwest of Bison.	[a]1.0	1970-74	8-23-74	3.55	(†)
Deadman Creek basin							
06358520	Deadman Creek tributary near Mobridge, S. Dak.	Lat 45°28'12", long 100°29'46", in NW¼ sec.1, T.17 N., R.29 E., Dewey County, at culvert on county highway, 5.5 miles (8.8 km) southwest of Mobridge.	.28	1956-74	[b]5-26-73 10-11-73	5.96 5.35	32 19

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Blue Blanket Creek basin					
06358540	Blue Blanket Creek tributary near Glenham, S. Dak.	Lat 45°32'12", long 100°12'01", in NW¼NW¼NW¼ sec.30, T.124 N., R.77 W., Walworth County, at culvert on U.S. Highway 12, 3.5 miles (5.6 km) east of Glenham.	[a]0.58	1970-74	1974	(e)	[f]4.5
		Moreau River basin					
06358550	Battle Creek tributary near Castle Rock, S. Dak.	Lat 45°02'57", long 103°32'56", in NE¼ sec.31, T.13 N., R.5 E., Butte County, at culvert on U.S. Highway 85, 8.7 miles (14.0 km) northwest of Castle Rock.	[a]1.0	1969-74	7-20-74	4.71	61
06358600	South Fork Moreau River tributary near Redig, S. Dak.	Lat 45°11'45", long 103°34'09", in SE¼ sec.1, T.14 N., R.4 E., Butte County, at culvert on former U.S. Highway 85, 5 miles (8 km) south of Redig, 26.2 miles (42.2 km) south of Buffalo.	11.3	1956, 1958-74	4-11-74	[c]2.40	[d]30
06359300	Deep Creek tributary near Maurine, S. Dak.	Lat 45°01'34", long 102°32'29", in SW¼SE¼ sec.4, T.12 N., R.13 E., Meade County, at culvert on U.S. Highway 212, 2.6 miles (4.2 km) east of Maurine.	[a]1.32	1970-74	1974	(e)	(†)
06359700	Thunder Butte Creek tributary near Meadow, S. Dak.	Lat 45°26'39", long 102°05'21", in SE¼ sec.12, T.17 N., R.16 E., Perkins County, at culvert on State Highway 20, 8.5 miles (13.7 km) southeast of Meadow, 15.7 miles (25.3 km) west of Glad Valley.	[a]3.0	1970-74	1974	(e)	[f]5.0
06359800	Thunder Butte Creek tributary near Glad Valley, S. Dak.	Lat 45°26'39", long 102°01'01", in SW¼ sec.10, T.17 N., R.17 E., Perkins County, at culvert on State Highway 20, 12.2 miles (19.6 km) west of Glad Valley.	[a]8.0	1970-74	4-23-74	2.88	[f]3.0
06359850	Elm Creek tributary near Dupree, S. Dak.	Lat 45°03'12", long 101°38'39", in SW¼ sec.26, T.13 N., R.20 E., Ziebach County, at culvert on U.S. Highway 212, 1.8 miles (2.9 km) west of Dupree.	[a]5.0	1970-74	[b]5-27-73 4-19-74	[b]3.22 3.78	[g]61 120
06360350	Little Moreau River tributary near Firesteel, S. Dak.	Lat 45°24'16", long 101°13'30", in NE¼SE¼ sec.25, T.17 N., R.23 E., Dewey County, at culvert on State Highway 63, 3.5 miles (5.6 km) southeast of Firesteel.	[a]2.75	1970-74	1974	(e)	[f]4.0
		Swan Creek basin					
06361020	Swan Lake Creek tributary near Bowdle, S. Dak.	Lat 45°26'57", long 99°44'34", in SW¼ sec.23, T.123 N., R.74 W., Walworth County, at culvert on U.S. Highway 12, 3.7 miles (6.0 km) west of Bowdle.	[a]10.0	1970-74	10-12-73	4.07	40
		Cheyenne River basin					
06396200	Fiddle Creek near Edgemont, S. Dak.	Lat 43°18'16", long 103°59'46", in SE¼ sec.33, T.8 S., R.1 E., Fall River County, at culvert on U.S. Highway 18 and 85A, 9 miles (14 km) west of Edgemont.	1.97	1956-74	7-19-74	2.12	19
06396300	Cottonwood Creek tributary near Edgemont, S. Dak.	Lat 43°17'35", long 103°52'20", in SW¼ sec.3, T.9 S., R.2 E., Fall River County, at culvert on U.S. Highway 18 and 85A, 2.5 miles (4.0 km) west of Edgemont.	.20	1956-74	8-10-74	4.10	(†)

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Cheyenne River basin - Continued					
06396350	Red Canyon Creek tributary near Pringle, S. Dak.	Lat 43°32'22", long 103°39'20", in SW¼ sec.9, T.6 S., R.4 E., Custer County, at culvert on State Highway 89, 0.5 mile (0.8 km) northwest of Argyle, and 5.5 miles (8.8 km) southwest of Pringle.	[a]0.2	1970-74	4- -74	[c]4.02	[d]5.0
06399300	Hat Creek tributary near Ardmore, S. Dak.	Lat 43°05'42", long 103°40'25", in NW¼ sec.16, T.11 S., R.4 E., Fall River County, at culvert on State Highway 71, 5.0 miles (8.0 km) north of Ardmore.	3.74	1956-74	4-11-74	4.65	94
06399700	Pine Creek near Ardmore, S. Dak.	Lat 43°11'14", long 103°38'24", in NW¼ sec.15, T.10 S., R.4 E., Fall River County, at bridge on State Highway 71, 11.5 miles (18.5 km) north of Ardmore.	5.47	1956-74	4-11-74	4.24	98
06400900	Horsehead Creek tributary near Smithwick, S. Dak.	Lat 43°17'16", long 103°19'08", in NW¼ sec.8, T.9 S., R.7 E., Fall River County, at culvert on U.S. Highway 18 and 385, 12 miles (19 km) southeast of Hot Springs, and 5.3 miles (8.5 km) west of Smithwick.	[a]1.5	1969-74	1974	(e)	[f]6.7
06402100	Fall River tributary at Hot Springs, S. Dak.	Lat 43°24'58", long 103°29'18", in NW¼NE¼ sec.26, T.7 S., R.5 E., Fall River County, at culvert on State Highway 71, 0.5 mile (0.8 km) south of Hot Springs.	[a]3.8	1970-74	1974	(e)	[f]13
06403800	Battle Creek tributary near Keystone, S. Dak.	Lat 43°55'28", long 103°27'44", in NW¼ NE¼NE¼ sec.36, T.1 S., R.5 E., Pennington County, at culvert on U.S. Highway 16, 2.8 miles (4.5 km) northwest of Keystone.	.88	1956-74	1974	(e)	[f]1.0
06406100	Battle Creek tributary near Hermosa, S. Dak.	Lat 43°50'10", long 103°09'43", in SE¼NE¼ sec.33, T.2 S., R.8 E., Custer County, at culvert on county highway, 1.3 miles (2.1 km) east of Hermosa.	[a]3.50	1970-74	1974	(e)	[d]15
06406800	Newton Fork near Hill City, S. Dak.	Lat 43°58'03", long 103°38'24", in NE¼NE¼ sec.16, T.1 S., R.4 E., Pennington County, at culvert on Forest Service Road 17, 3.9 miles (6.3 km) northwest of Hill City.	[a]8.25	1969-74	7-18-74	4.13	50
06406900	Palmer Creek near Hill City, S. Dak.	Lat 43°56'12", long 103°30'36", in NE¼SE¼NW¼ sec.27, T.1 S., R.5 E., Pennington County, at culvert on U.S. Highway 16, 3.0 miles (4.8 km) east of Hill City.	8.24	1956-74	7-18-74	3.73	(†)
06408850	Silver Creek near Rochford, S. Dak.	Lat 44°07'24", long 103°41'53", in NE¼NE¼ sec.24, T.2 N., R.3 E., Pennington County, at culvert on Forest Service Road 291, 0.3 mile (0.5 km) upstream from mouth, and 1.1 miles (1.8 km) east of Rochford.	[a]6.20	1969-74	[b]5-10-73 7-20-74	3.44 3.21	4.3 2.3
06408900	Heeley Creek near Hill City, S. Dak.	Lat 43°58'57", long 103°50'02", in NW¼NW¼ sec.12, T.1 S., R.2 E., Pennington County, at culvert on Forest Service Road 291, 2.8 miles (4.5 km) south of Deerfield, and 13.5 miles (21.7 km) northwest of Hill City.	[a]4.86	1969-74	5- -74	[c]5.01	[d]3.0
06421750	Rapid Creek tributary near Farmingdale, S. Dak.	Lat 43°56'30", long 102°48'43", in SE¼SW¼ sec.21, T.1 S., R.11 E., Pennington County, at culvert on State Highway 40, 3.8 miles (6.1 km) southeast of Farmingdale.	[a]1.51	1970-74	2- -74	[c]3.81	[d]2.0

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Cheyenne River basin - Continued					
06423400	Bull Creek tributary near Wall, S. Dak.	Lat 43°53'55", long 102°14'18", in NW¼SW¼ sec.5, T.2 S., R.16 E., Pennington County, at culvert on U.S. Highway 16A, 6.2 miles (10.0 km) south of Wall.	[a]0.41	1970-74	4-11-74	(e)	[f]7.5
06434800	Owl Creek tributary near Belle Fourche, S. Dak.	Lat 44°49'32", long 103°51'06", in NW¼SE¼ sec.15, T.10 N., R.2 E., Butte County, at culvert on U.S. Highway 85, 10.2 miles (16.4 km) north of Belle Fourche.	[a]3.06	1970-74	1974	(e)	[df]20
06436770	Dry Creek tributary near Newell, S. Dak.	Lat 44°48'13", long 103°25'03", in NW¼ sec.29, T.10 N., R.6 E., Butte County, at culvert on State Highway 79, 5.8 miles (9.3 km) north of Newell.	[a].5	1970-74[h]	7-24-74	3.40	2.2
06437100	Boulder Creek near Deadwood, S. Dak.	Lat 44°23'28", long 103°39'38", in NE¼SW¼ sec.17, T.5 N., R.4 E., Lawrence County, at culvert on U.S. Highway 14A, 3.5 miles (5.6 km) east of Deadwood.	1.69	1956-74	4-20-74	[c]5.86	[d]30
06439050	Cherry Creek tributary near Avance, S. Dak.	Lat 44°48'33", long 102°03'18", in SW¼ sec.21, T.10 N., R.17 E., Meade County, at culvert on State Highway 73, 12.5 miles (20.1 km) southeast of Avance.	.60	1956-74	4-12-74	2.78	5.0
06439080	Cherry Creek tributary No. 3 near Avance, S. Dak.	Lat 44°51'03", long 102°03'36", in SW¼ sec.3, T.10 N., R.17 E., Meade County, at bridge on State Highway 73, 11 miles (17.7 km) southeast of Avance.	4.58	1956-74	4-12-74	3.58	(†)
06439100	Beaver Creek near Faith, S. Dak.	Lat 44°56'21", long 102°02'37", in SW¼ sec.3, T.11 N., R.17 E., Meade County, at bridge on State Highway 73, 6 miles (10 km) south of Faith.	37.1	1956-74	4-12-74	(i)	[d]50
06439400	Plum Creek tributary near Milesville, S. Dak.	Lat 44°21'34", long 101°25'42", in S½ sec.26, T.5 N., R.22 E., Haakon County, at culvert on State Highway 34, 14.5 miles (23.3 km) southeast of Milesville.	[a].5	1970-74	[b]6- 2-73 5-19-74	3.35 12.13	4.6 265
		Bad River basin					
06440700	Brady Creek tributary near Philip, S. Dak.	Lat 43°55'14", long 101°39'40", in NE¼NE¼ sec.36, T.1 S., R.20 E., Jackson County, at culvert on State Highway 73, 8.1 miles (13.0 km) south of Philip.	[a]4.85	1970-74	1974	(e)	[f]50
06441200	Powell Creek tributary near Fort Pierre, S. Dak.	Lat 44°22'39", long 100°35'16", in NW¼SW¼ sec.23, T.5 N., R.29 E., Stanley County, at culvert on U.S. Highway 14, 10.2 miles (16.4 km) west of Fort Pierre.	[a].4	1970-74	4-20-74	5.39	76
		Hilgers Gulch basin					
06441530	Hilgers Gulch tributary near Pierre, S. Dak.	Lat 44°23'52", long 100°18'57", in SE¼SW¼SE¼ sec.22, T.111 N., R.79 W., Hughes County, at culvert on U.S. Highway 14 and 83, 1 mile (2 km) upstream from mouth, and 3 miles (5 km) northeast of Pierre.	[a]1.25	1968-74	1973 5-31-74	(e) 3.35	[dj]10 1.0
06441580	Hilgers Gulch at Pierre, S. Dak.	Lat 44°22'10", long 100°20'30", in SE¼SW¼ sec.33, T.111 N., R.79 W., Hughes County, on right bank at culvert on Church Street, 0.7 mile (1.1 km) upstream from mouth, in city of Pierre.	[a]7.0	1967-74	1974	(e)	[df]5.0

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Mush Creek basin					
06441650	Mush Creek near Pierre, S. Dak.	Lat 44°20'13", long 100°12'42", in NE¼ sec.16, T.110 N., R.78 W., Hughes County, at bridge on State Highway 34, 7.5 miles (12.1 km) east of Pierre.	14.6	1956-74	1974	(e)	[f]32
		Unnamed Missouri River tributaries					
06441670	Missouri River tributary near Pierre, S. Dak.	Lat 44°20'09", long 100°11'39", in NE¼ sec.15, T.110 N., R.78 W., Hughes County, at culvert on State Highway 34, 7.8 miles (12.6 km) east of Pierre.	.42	1956-74[h]	5-28-74	2.32	33
06441750	Missouri River tributary near Canning, S. Dak.	Lat 44°19'57", long 100°09'54", in NW¼ sec.13, T.110 N., R.78 W., Hughes County, at culvert on State Highway 34, 8 miles (13 km) southwest of Canning.	.20	1956-74[h]	5-28-74	2.48	21
06442050	Missouri River tributary near DeGrey, S. Dak.	Lat 44°17'45", long 99°58'58", in SW¼ sec.28, T.110 N., R.76 W., Hughes County, at culvert on State Highway 34, 3.2 miles (5.1 km) northwest of DeGrey.	1.64	1956-74	5-28-74	1.50	38
		Medicine Creek basin					
06442350	North Fork Medicine Creek near Vivian, S. Dak.	Lat 43°57'06", long 100°19'25", in SW¼ sec.28, T.106 N., R.79 W., Lyman County, at bridge on U.S. Highway 83, 2.5 miles (4.0 km) northwest of Vivian.	45.9	1956-74	1974	(e)	[f]5.0
06442400	Medicine Creek tributary No. 2 near Vivian, S. Dak.	Lat 44°02'03", long 100°19'28", in NE¼ sec.32, T.107 N., R.79 W., Lyman County, at culvert on U.S. Highway 83, 8 miles (13 km) northwest of Vivian.	8.62	1956-74	5-28-74	3.74	65
		Crow Creek basin					
06442850	Elm Creek tributary near Ree Heights, S. Dak.	Lat 44°25'05", long 99°12'17", in NW¼SW¼ sec.13, T.111 N., R.70 W., Hand County, at culvert on county highway, 6.5 miles (10.5 km) south of Ree Heights.	[a]1.0	1969-74	1974	(e)	[f]5.0
06442960	Smith Creek tributary near Gann Valley, S. Dak.	Lat 44°01'34", long 98°43'41", in NE¼SE¼ sec.34, T.107 N., R.66 W., Jerauld County, at culvert on county highway, 8.7 miles (14.0 km) southwest of Wessington Springs and 13.0 miles (20.9 km) east of Gann Valley.	[a]7.0	1972-74	4-12-74	3.91	21
		White River basin					
06445990	South Fork Blacktail Creek tributary near Oelrichs, S. Dak.	Lat 43°11'18", long 103°08'20", in NW¼ sec.14, T.10 S., R.8 E., Fall River County, at culvert on U.S. Highway 18, 4.2 miles (6.8 km) east of Oelrichs.	[a]3.60	1969-74	8-22-74	2.81	(†)
06446250	Porcupine Creek tributary near Rockyford, S. Dak.	Lat 43°26'05", long 102°25'45", in SE¼SE¼ sec.17, T.40 N., R.43 W., Shannon County, at culvert on county road, 5 miles (8 km) southeast of village of Rockyford.	[a]1.66	1968, 1970-74	7-18-74	10.40	484
06446300	Big Hollow Creek tributary near Scenic, S. Dak.	Lat 43°42'25", long 102°31'15", in SE¼SE¼ sec.11, T.4 S., R.13 E. (corrected), Pennington County, at culvert on county road, 4.9 miles (7.9 km) south of Scenic.	[a]2.67	1968, 1970-74	[b]7-23-73 7- 2-74	9.21 7.85	425 306

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		White River basin - Continued					
06446400	Cain Creek tributary at Imlay, S. Dak.	Lat 43°42'59", long 102°23'23", in SE¼NW¼ sec.12, T.4 S., R.14 E., Pennington County, at bridge on State Highway 40, 0.5 mile (0.8 km) east of Imlay.	14.0	1956-74	7-22-74	4.89	335
06446550	White River tributary near Interior, S. Dak.	Lat 43°44'51", long 101°56'50", in SE¼ sec.27, T.3 S., R.18 E., Jackson County, in Badlands National Monument, at culvert on U.S. Highway 16A, 2.3 miles (3.7 km) northeast of Interior.	.14	1956-74	8-10-74	5.15	150
06446800	Cottonwood Creek near Wanblee, S. Dak.	Lat 43°34'35", long 101°32'15", in NW¼NW¼ sec.31, T.42 N., R.35 W., Washabaugh County, at culvert on State Highway 40, 6.2 miles (10.0 km) east of Wanblee.	[a]1.7	1971-74	[b]8-29-73 4-20-74	5.09 11.24	68 [d]330
06447200	Black Pipe Creek tributary near Norris, S. Dak.	Lat 43°27'42", long 101°08'05", in NW¼NW¼ sec.8, T.40 N., R.32 W., Mellette County, at culvert on State Highway 63, 3.2 miles (5.1 km) east of Norris.	[a]4.25	1971-74	1974	(e)	[f]17
06447490	Little White River tributary near Martin, S. Dak.	Lat 43°10'20", long 101°41'02", in SE¼SW¼ sec.15, T.37 N., R.37 W., Bennett County, at culvert on U.S. Highway 18, 2.3 miles (3.7 km) east of Martin.	[a]8.9	1971-74	1974	(e)	[f]20
06449700	Little Oak Creek near Mission, S. Dak.	Lat 43°19'45", long 100°42'33", in NW¼ sec.25, T.39 N., R.29 W., Todd County, at culvert on U.S. Highway 83, 3.2 miles (5.1 km) northwest of Mission.	2.62	1956-74	5-27-73 5-29-74	[g]3.20 1.85	(†) (†)
06451750	Cottonwood Creek tributary near Winner, S. Dak.	Lat 43°23'11" (corrected), long 100°01'13", in NW¼ sec.24, T.99 N., R.78 W., Tripp County, at culvert on U.S. Highway 18, 7.5 miles (12.1 km) west of Winner.	[a]4.0	1971-74	4-12-74	3.70	86
		Fivemile Creek basin					
06452250	Fivemile Creek tributary near Iona, S. Dak.	Lat 43°29'23", long 99°26'08", in SE¼ sec.11, T.99 N., R.73 W., Gregory County, at culvert on State Highway 47, 3.8 miles (6.1 km) south of Iona.	[a]2.0	1970-74	1974	(e)	[f]35
		Choteau Creek basin					
06453150	Choteau Creek tributary near Tripp, S. Dak.	Lat 43°14'20", long 98°02'35", in NE¼NW¼ sec.10, T.97 N., R.61 W., Hutchinson County, at culvert on U.S. Highway 18, 3.7 miles (6.0 km) west of Tripp.	[a].3	1970-74	6-21-74	4.78	79
06453250	Choteau Creek tributary near Wagner, S. Dak.	Lat 43°04'54", long 98°19'04", in NE¼NW¼ sec.5, T.95 N., R.63 W., Charles Mix County, at culvert on State Highway 46, 1.1 miles (1.8 km) west of Wagner.	[a]16.4	1970-74	2- -74	[c]3.01	[d]10
		Niobrara River basin					
06463950	Rock Creek tributary near Olsonville, S. Dak.	Lat 43°01'22", long 100°35'21", in NE¼SE¼ sec.3, T.35 N., R.28 W., Todd County, at culvert on U.S. Highway 83, 7.5 miles (12.1 km) south of Olsonville.	[a]8.1	1970-74	4-21-74	2.48	(†)

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		James River basin					
06471050	Elm River tributary near Leola, S. Dak.	Lat 45°50'40", long 98°46'03", in NE¼SE¼ sec.3, T.127 N., R.66 W., McPherson County, at culvert on county highway, 12.2 miles (19.6 km) northeast of Leola.	14.7	1956-74	5-21-74	3.87	46
06471400	Willow Creek tributary near Leola, S. Dak.	Lat 45°44'10", long 98°45'45", in SW¼ sec.11, T.126 N., R.66 W., McPherson County, at culvert on former State Highway 10, 8.5 miles (13.7 km) northeast of Leola.	3.74	1956-74	5-21-74	1.70	12
06471450	Willow Creek tributary near Barnard, S. Dak.	Lat 45°44'12", long 98°37'42", in SW¼ sec.11, T.126 N., R.65 W., Brown County, at culvert on former State Highway 10, 6.5 miles (10.5 km) west of Barnard.	.18	1956-74	3-29-74	[c]4.15	[d]5.0
06471750	Foot Creek tributary near Leola, S. Dak.	Lat 45°41'01", long 98°55'55", in SE¼ sec.32, T.126 N., R.67 W., McPherson County, at culvert on State Highway 45, 2.5 miles (4.0 km) south of Leola.	[a]4.5	1971-74	5-20-74	3.06	23
06472200	Mud Creek tributary near Groton, S. Dak.	Lat 45°26'37", long 98°02'22", in SW¼ sec.22, T.123 N., R.60 W., Brown County, at culvert on U.S. Highway 12, 3.2 miles (5.1 km) east of Groton.	41.0	1960-69, 1974	1974	(i)	[f]10
06472250	Mud Creek tributary No. 2 near Groton, S. Dak.	Lat 45°26'36", long 98°02'52", in SE¼ sec.21, T.123 N., R.60 W., Brown County, at culvert on U.S. Highway 12, 2.7 miles (4.3 km) east of Groton.	60.0	1960-74	7- 2-74	2.63	14
06473300	Preachers Run tributary at Ipswich, S. Dak.	Lat 45°27'08", long 99°01'45", in SE¼ sec.21, T.123 N., R.68 W., Edmunds County, at culvert on county highway, 0.3 mile (0.5 km) north of U.S. Highway 12, at Ipswich.	[a]5.0	1971-74	5-21-74	3.71	33
06473350	South Fork Snake Creek tributary near Seneca, S. Dak.	Lat 45°03'00", long 99°23'36", in SE¼NE¼ sec.9, T.118 N., R.71 W., Faulk County, at culvert on U.S. Highway 212, 5.3 miles (8.5 km) east of Seneca.	[a]7.0	1971-74	5-20-74	3.20	22
06473400	North Fork Snake Creek tributary near Wecota, S. Dak.	Lat 45°09'26", long 99°07'26", in NE¼NE¼ sec.3, T.119 N., R.69 W., Faulk County, at culvert on county highway, 1.1 miles (1.8 km) south of Wecota.	[a]3.0	1971-74	5-21-74	4.31	20
06473820	Shaefer Creek near Orient, S. Dak.	Lat 44°46'46", long 99°02'39", in NW¼NW¼ sec.17, T.115 N., R.68 W., Hand County, on downstream side of bridge on county highway, 8.5 miles (13.7 km) southeast of Orient.	45.1	1956-74	4- -74	(e)	[d]3.0
06473850	Shaefer Creek tributary near Orient, S. Dak.	Lat 44°43'49", long 98°59'17", in SE¼NE¼ sec.34, T.115 N., R.68 W., Hand County, at culvert on State Highway 45, 13 miles (21 km) southeast of Orient.	6.08	1956-74	1974	(e)	[f]8.0
06473880	Shaefer Creek tributary near Miller, S. Dak.	Lat 44°42'20", long 98°59'17", in NE¼ sec.10, T.114 N., R.68 W., Hand County, at culvert on State Highway 45, 13 miles (21 km) north of Miller.	5.75	1956-74	5-21-74	2.91	1.7
06475500	Dry Run near Frankfort, S. Dak.	Lat 44°56'17", long 98°19'43", in NW¼NW¼ sec.20, T.117 N., R.62 W., Spink County, at highway bridge, 400 ft (120 m) downstream from small right-bank tributary, 4.4 miles (7.1 km) north of Frankfort, and 8.1 miles (13.0 km) upstream from mouth.	225	1955-69[‡], 1970-74	1974	--	0

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		James River basin - Continued					
06475550	Dry Run tributary near Frankfort, S. Dak.	Lat 44°55'45", long 98°18'31", in W½NW¼SW¼ sec.21, T.117 N., R.62 W., Spink County, on left bank at culvert on county highway, 0.6 mile (1.0 km) upstream from mouth, and 3.5 miles (5.6 km) north of Frankfort.	[a]4.5	1967-74	5-28-74	2.75	5.0
06475850	Foster Creek tributary near Carpenter, S. Dak.	Lat 44°37'59", long 98°03'42", in SE¼SE¼ sec.32, T.114 N., R.60 W., Spink County, at culvert on State Highway 28, 7.3 miles (11.7 km) west of Carpenter.	[a]3.7	1972-74	2-27-74	[c]3.79	[d]8.0
06475950	Shue Creek tributary near Yale, S. Dak.	Lat 44°27'48", long 97°59'18", in NW¼SW¼ sec.36, T.112 N., R.60 W., Beadle County, at culvert on county highway, 2 miles (3 km) north of Yale.	[a]8.0	1968-74	2- -74	[c]3.71	[d]8.0
06477140	Rock Creek tributary near Roswell, S. Dak.	Lat 44°02'24", long 97°42'34", in SW¼SW¼ sec.29, T.107 N., R.57 W., Miner County, at culvert on county highway, 2.2 miles (3.5 km) north of Roswell.	[a]6.0	1970-74	2- -74	[c]4.17	(†)
06477150	Rock Creek near Fulton, S. Dak.	Lat 43°45'39", long 97°54'25", in NW¼NW¼ sec.3, T.103 N., R.59 W., Hanson County, near right bank on downstream wingwall of highway bridge, 4.9 miles (7.9 km) northwest of Fulton and 9.5 miles (15.3 km) upstream from mouth.	270	1966-72‡, 1973-74	1974	(e)	[f]3.0
06477400	Firesteel Creek tributary near Wessington Springs, S. Dak.	Lat 44°04'26", long 98°34'52", in NW¼ sec.13, T.107 N., R.65 W., Jerauld County, at culvert on State Highway 34, 0.8 mile (1.3 km) west of Wessington Springs.	[a]1.0	1968-74	5-20-74	2.73	6.8
06478050	Enemy Creek tributary near Mount Vernon, S. Dak.	Lat 43°36'19", long 98°15'55", in NE¼SE¼ sec.28, T.102 N., R.62 W., Davison County, at culvert on county highway, 7.3 miles (11.7 km) south of Mount Vernon.	[a]2.5	1969-74	6- 9-74	4.44	14
06478200	Coffee Creek tributary near Parkston, S. Dak.	Lat 43°27'26", long 97°59'42", in SE¼SE¼ sec.24, T.100 N., R.61 W., Hutchinson County, at culvert on State Highway 37, 4.2 miles (6.8 km) north of Parkston.	[a].5	1968-74	2-28-74	[c]2.82	[d]8.0
06478260	North Branch Dry Creek near Parkston, S. Dak.	Lat 43°22'13", long 97°50'42", in NE¼ sec.29, T.99 N., R.59 W., Hutchinson County, at bridge on county highway, 7.5 miles (12.1 km) southeast of Parkston.	37.0	1956-74	3- 3-74	[c]3.00	[d]15
06478280	South Branch Dry Creek near Parkston, S. Dak.	Lat 43°21'22", long 97°49'35", in NW¼ sec.33, T.99 N., R.59 W., Hutchinson County, at bridge on county highway, 8.3 miles (13.4 km) southeast of Parkston.	17.1	1956-74	3- 3-74	[c]2.95	[d]10
06478300	Dry Creek near Parkston, S. Dak.	Lat 43°22'18", long 97°49'23", in SE¼ sec.21, T.99 N., R.59 W., Hutchinson County, at bridge on county highway, 8.5 miles (13.7 km) southeast of Parkston.	76.8	1956-74	3- 3-74	[c]3.74	[d]15
06478400	Lonetree Creek tributary near Kaylor, S. Dak.	Lat 43°17'18", long 97°50'10", in NE¼SE¼ sec.20, T.98 N., R.59 W., Hutchinson County, at culvert on county highway, 7.2 miles (11.6 km) north of Kaylor.	[a]1.5	1970-74	10- 9-73	3.11	26

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Vermillion River basin					
06478630	West Fork Vermillion River near DeSmet, S. Dak.	Lat 44°12'54", long 97°33'04", in NW¼SW¼ sec.27, T.109 N., R.56 W., Kingsbury County, at culvert on State Highway 25, 11.5 miles (18.5 km) south of DeSmet.	[a]8.0	1970-74	3- -73 2- -74	[c]3.84 [c]3.92	[dg]2.0 [d]3.0
06478650	West Fork Vermillion River tributary near Monroe, S. Dak.	Lat 43°28'35", long 97°15'39", in SW¼SW¼ sec.17, T.100 N., R.54 W., Turner County, at culvert on county highway, 3.2 miles (5.1 km) north of Marion, and 2.2 miles (3.5 km) west of Monroe.	[a]1.0	1969-74	6-21-74	4.25	26
06478800	Saddlerock Creek near Canton, S. Dak.	Lat 43°12'20", long 96°43'37", in NW¼SW¼ sec.23, T.97 N., R.50 W., Lincoln County, at bridge on county highway, 9.6 miles (15.4 km) southwest of Canton.	14.8	1956-74	6-22-74	3.69	28
06478820	Saddlerock Creek tributary near Beresford, S. Dak.	Lat 43°12'21", long 96°45'51", in NE¼ NW¼NW¼ sec.21, T.97 N., R.50 W., Lincoln County, at culvert on county highway, 9 miles (14 km) north of Beresford.	[a]2.32	1956-74[k]	1974	(e)	[d]5.0
06478840	Saddlerock Creek near Beresford, S. Dak.	Lat 43°12'55", long 96°49'33", in SE¼SE¼ sec.14, T.97 N., R.51 W., Lincoln County, at bridge on county highway 9.5 miles (15.3 km) northwest of Beresford.	26.3	1956-70, 1972-74	6-22-74	6.60	390
06478950	Ash Creek near Beresford, S. Dak.	Lat 43°05'01", long 96°50'08", in NE¼NW¼ sec.2, T.95 N., R.51 W., Clay County, at culvert on State Highway 46, 2.1 miles (3.4 km) west of Beresford.	[a]5.1	1969-74	6-22-74	5.19	321
06479020	Smoky Run near Irene, S. Dak.	Lat 43°04'56", long 97°19'12", in SE¼SE¼SE¼ sec.34, T.96 N., R.55 W., Yankton County, at culvert on State Highway 46, 0.1 mile (0.2 km) west of Mayfield, and 8.0 miles (12.9 km) west of Irene.	[a]7.0	1969-74	6- 9-74	3.93	22
		Big Sioux River basin					
06479260	Big Sioux River tributary No. 3 near Summit, S. Dak.	Lat 45°13'30", long 97°06'27", in SE¼ sec.25, T.121 N., R.52 W., Grant County, at culvert on county highway, 6.5 miles (10.5 km) southwest of Summit, 11.5 miles (18.5 km) southeast of Waubay.	6.60	1956-74	3- 3-74	[c]4.75	[d]25
06479350	Soo Creek tributary near South Shore, S. Dak.	Lat 45°06'22", long 97°01'12", in NW¼NE¼ sec.24, T.119 N., R.52 W., Codington County, at culvert on State Highway 20, 3.8 miles (6.1 km) west of South Shore.	[a]1.2	1970-74	3- 3-74	[c]6.65	[d]20
06479370	Big Sioux River tributary near Wallace, S. Dak.	Lat 45°05'40", long 97°31'15", in NW¼NE¼ sec.26, T.119 N., R.56 W., Clark County, at culvert on State Highway 20, 3 miles (5 km) northwest of Wallace.	[a].5	1969-74[h]	3- 3-74	[c]3.92	[d]3.0
06479550	Dolph Creek tributary near Lake Norden, S. Dak.	Lat 44°35'15", long 97°19'37", in SW¼SW¼ sec.16, T.113 N., R.54 W., Hamlin County, at culvert on State Highway 28, 5.4 miles (8.7 km) west of Lake Norden.	[a]7.0	1970-74	3- -74	[c]3.68	(†)
06479750	Peg Munky Run near Estelline, S. Dak.	Lat 44°34'22", long 96°51'15", in N½ sec.29, T.113 N., R.50 W., Deuel County, at bridge on State Highway 28, 2.5 miles (4.0 km) east of Estelline.	25.4	1956-74	3- -73 3- -74	[c]6.00 [c]4.36	[dj]125 [d]40

Annual maximum discharge at crest-stage partial-record stations during water year 1974.--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Big Sioux River basin - Continued					
06479800	North Deer Creek near Estelline, S. Dak.	Lat 44°27'44", long 96°47'13", in SE¼ sec.35, T.112 N., R.50 W., Brookings County, at bridge on U.S. Highway 77, 9.8 miles (15.8 km) southeast of Estelline.	48.3	1956-74	3- -74	[c]6.49	[d]50
06479810	North Deer Creek tributary near Brookings, S. Dak.	Lat 44°22'44", long 96°47'14", in NW¼SW¼NW¼ sec.36, T.111 N., R.50 W., Brookings County, at culvert on U.S. Highway 77, 4.5 miles (7.2 km) north of Brookings.	[a].5	1969-74	2- -74	[c]4.62	[d]7.0
06479900	Sixmile Creek tributary near Brookings, S. Dak.	Lat 44°22'57", long 96°40'48", in NE¼NW¼ sec.35, T.111 N., R.49 W., Brookings County, at bridge on county highway, 7.3 miles (11.7 km) northeast of Brookings.	9.42	1956-74	3- -74	[c]4.49	[d]15
06479950	Deer Creek near Brookings, S. Dak.	Lat 44°23'03", long 96°37'19", in SW¼ sec.29, T.111 N., R.48 W., Brookings County, at bridge on county highway, 9.8 miles (15.8 km) northeast of Brookings.	4.21	1956-74	1974	(i)	[d]5.0
06480720	Bachelor Creek tributary near Wentworth, S. Dak.	Lat 44°00'28", long 97°00'02", in NE¼NE¼NW¼ sec.7, T.106 N., R.51 W., Lake County, at culvert on State Highway 34, 1.8 miles (2.9 km) northwest of Wentworth.	[a]1.0	1969-74	8- 9-74	4.13	16
06482600	West Pipestone Creek tributary near Garretson, S. Dak.	Lat 43°42'12", long 96°36'43", in SE¼SE¼ sec.20, T.103 N., R.48 W., Minnehaha County, at culvert on county highway, 5.3 miles (8.5 km) west of Garretson.	[a]2.20	1969-74	[b]3-13-73 10- 9-73	[b]5.16 10.71	[b]59 566
06485550	West Union Creek near Alcester, S. Dak.	Lat 42°56'18", long 96°38'00", in SW¼SE¼ sec.21, T.94 N., R.49 W., Union County, at culvert on county highway, 5.7 miles (9.2 km) south of Alcester.	[a]3.62	1969-74	6-22-74	5.28	566

Crest-stage partial-record stations discontinued October 1973

06359000 Moreau River at Bixby, S. Dak.
06406950 Horse Creek at Highway 385, near Hill City, S. Dak.
06422395 Boxelder Creek at Benchmark near Nemo, S. Dak.
06439060 Cherry Creek tributary No. 2 near Avance, S. Dak.
06445700 White River at Slim Butte, S. Dak.
06446430 White River tributary near Conata, S. Dak.
06472500 Mud Creek near Stratford, S. Dak.
06473500 South Fork Snake Creek near Athol, S. Dak.
06479240 Big Sioux River tributary No. 2 near Summit, S. Dak.
06482870 Little Beaver Creek tributary near Canton, S. Dak.

(†) Discharge not determined
(‡) Operated as a continuous-record gaging station
a Approximate
b Corrected
c Backwater from ice
d Estimated
e Peak stage did not reach bottom of gage
f Less than
g Not previously published
h Discontinued October 1974
i Peak stage not determined
j Revised
k Prior to Aug. 7, 1968, at different site and datum

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