# Surface Water Supply of the United States 1957

## Part 3-B. Cumberland and Tennessee River Basins

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

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1506

*Prepared in cooperation with the States of Alabama, Kentucky, North Carolina, Tennessee, and Virginia, and with other agencies*

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## PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Kentucky, North Carolina, Tennessee, and Virginia, and with other agencies, by personnel of the Water Resources Division, L. B. Leopold, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and F. J. Flynn, chief, Basic Records Section.

The data were collected and computed under supervision of district engineers, Surface Water Branch, as follows:

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| F. F. Schrader | Louisville, Ky. |
| D. S. Wallace | Charlottesville, Va. |
| M. R. Williams | Montgomery, Ala. |

# CALENDAR FOR WATER YEAR 1957

**OCTOBER 1956**

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**NOVEMBER 1956**

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**DECEMBER 1956**

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**JANUARY 1957**

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**FEBRUARY 1957**

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**MARCH 1957**

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**APRIL 1957**

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**MAY 1957**

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**JUNE 1957**

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**JULY 1957**

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**AUGUST 1957**

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**SEPTEMBER 1957**

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# SURFACE WATER SUPPLY OF CUMBERLAND AND TENNESSEE RIVER BASINS, 1957

## SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1957. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 13,750 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1957, the Geological Survey and cooperating organizations were maintaining 7,030 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1957 water year. The name of each stream measured at points other than gaging stations is not listed in the index to this report. Only the major river basins in which measurements were made are listed under the item "Discharge measurements" in the index.

## COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Alabama: State Geological Survey, W. B. Jones, State geologist.

Kentucky: Department of Economic Development, G. W. Hubley, Jr., commissioner.

North Carolina: State Department of Conservation and Development, W. P. Saunders, director; city of Asheville, Weldon Weir, city manager; city of Waynesville, W. H. Way, mayor.

Tennessee: State Department of Conservation, J. N. McCord, commissioner, through Division of Geology, W. D. Hardeman, State geologist; State Department of Public Health, R. H. Hutcheson, commissioner, through Stream Pollution Control, S. L. Jones, director; city of Knoxville, Department of Public Service, R. I. Gentry, director; city of Murfreesboro, Water Department, J. W. Lovell, superintendent.

Virginia: State Department of Conservation and Development, R. V. Long, director; State Department of Highways, J. A. Anderson, commissioner.

Under a cooperative agreement covering the Tennessee River basin and the Caney Fork basin above Great Falls Dam, the Tennessee Valley Authority furnished financial assistance for the operation of 93 gaging stations, of which 6 were in Alabama, 6 in Georgia, 1 in Kentucky, 19 in North Carolina, 45 in Tennessee, and 16 in Virginia.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 15 gaging stations in Kentucky and 19 in Tennessee.

Assistance was also furnished by the Arnold Engineering Development Center, Department of the Air Force, Atomic Energy Commission, and the Weather Bureau, United States Department of Commerce.

The following organizations aided in collecting records:

North Carolina: Town of Highlands, American Enka Corp., Carolina Power & Light Co., Champion Paper & Fibre Co., Ecusta Paper Corp., and the Mead Corp., Sylva Division.

Tennessee: Aluminum Co. of America; Tennessee Copper Co; Bowaters Southern Paper Corp.; Victor Chemical Co.; International Chemical Co.

Virginia: American Cyanamid Co.

## DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey, under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

| State | District office | Address |
|---|---|---|
| Alabama | Montgomery | 513 New Post Office Building. |
| Kentucky a/ | Louisville | 830 West Broadway. |
| North Carolina b/ | Raleigh | Federal Building. |
| Tennessee c/ | Chattanooga | 823 Edney Building. |
| Virginia | Charlottesville | Natural Resources Building, University of Virginia. |

a/ Except for Tennessee River near Paducah.
b/ Including stations in the Tennessee River basin in Georgia except those in the Toccoa River basin.
c/ Including stations in the Toccoa River basin in Georgia and Tennessee River near Paducah, Ky., Tennessee River at Florence and at Whitesburg, Ala., Bear Creek at Bishop, Ala., and Paint Rock River near Woodville, Ala.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

## DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

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.

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

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, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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.

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, a long reach of the channel, or an artificial structure.

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

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

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

## DOWNSTREAM ORDER OF LISTING GAGING STATIONS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

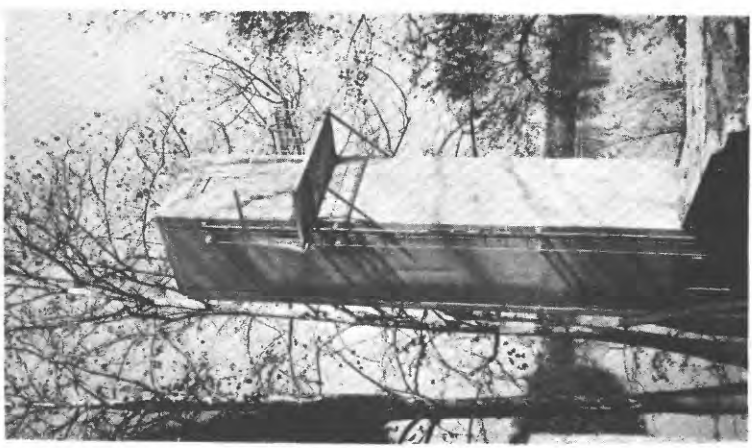
The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

## EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

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 determinations of peak discharge (such as slope-area or contracted-opening determinations, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables 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

*B.* NANTAHALA RIVER NEAR RAINBOW SPRINGS, N. C.



*A.* TENNESSEE RIVER AT KNOXVILLE, TENN.

FIGURE 1.—GAGING STATION STRUCTURES

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 essentially the shifting-control method.

At some 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 requisite 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. If so, the rate of change in stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during 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 engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1957 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. 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 unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those at the present site. Under "Gage" are given the type of gage currently in use and 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 records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily

those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, 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, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is 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 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 are concerned in the revision, 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 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 generally published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month 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 for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. 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 will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published each year for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Discharge measurements and determinations of peak flows made at sites other than gaging stations are listed at the end of each report.

At many gaging stations water samples are collected from the streams for the purpose of making chemical analyses, computing dissolved solids, suspended sediment loads, and particle-size distribution, or measuring water temperatures. For most of these samples the results are published in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States" which is issued in four volumes. In this report under "Remarks" a reference is made to quality-of-water records collected at gaging stations on a regular basis and published in the quality-of-water reports. At many other gaging stations quality-of-water data are obtained at irregular intervals and published as "miscellaneous analyses" in quality-of-water reports; such records are not referred to in "Remarks" paragraph in this report. At many gaging stations water temperature is obtained also at the time a discharge measurement is made; such temperature readings are not reported in the quality-of-water annual reports.

## ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow 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 states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and runoff in inches are not published unless storage or diversion records are included to indicate the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. 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 when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

## PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
- B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
- A, South Atlantic slope basins, James River to Savannah River.
- B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:
- A, Ohio River basin except Cumberland and Tennessee River basins.
- B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
- A, Missouri River basin above Sioux City, Iowa.
- B, Missouri River basin below Sioux City, Iowa.

7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices.

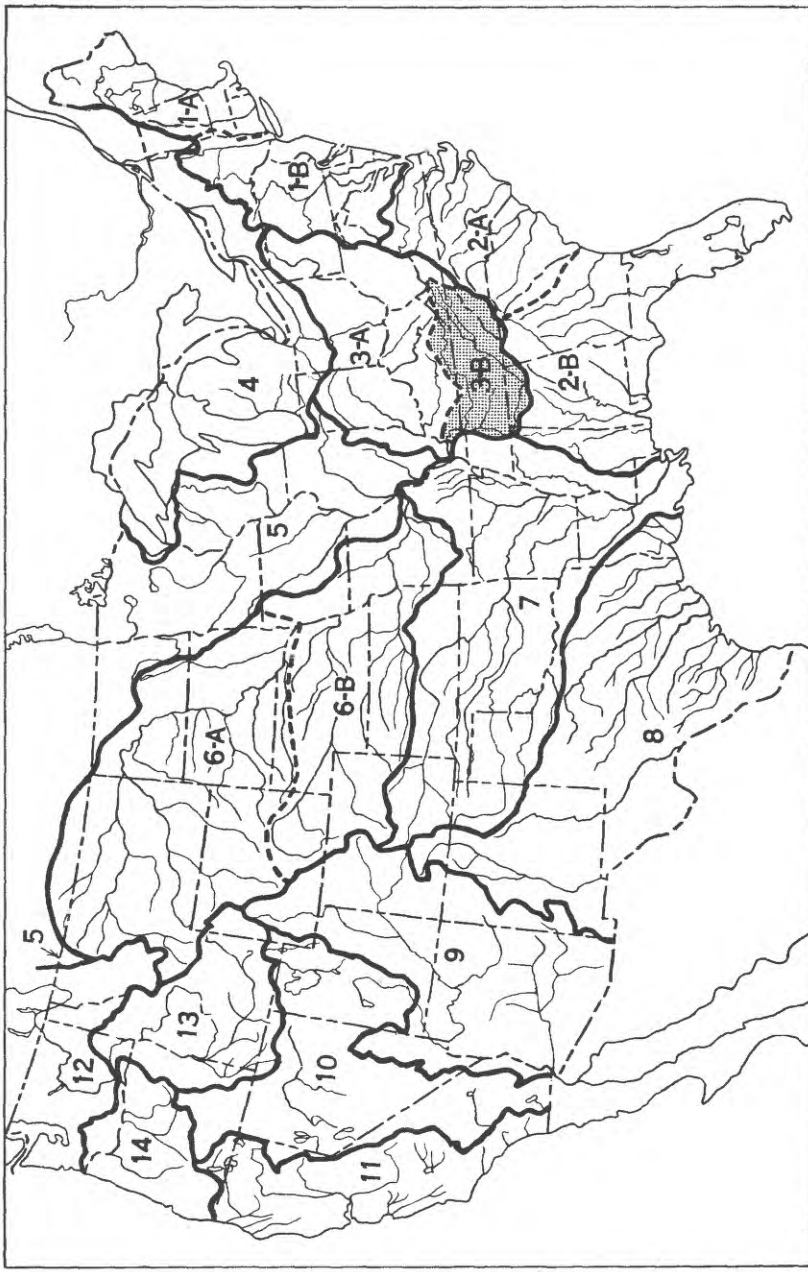



Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

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

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

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

Streamflow data for the years 1884-1901, in reports of the Geological Survey
(A = Annual Report; B = Bulletin)

| Report | Character of data | Year |
|---|---|---|
| 10th A, pt. 2 | Descriptive information only. | |
| 11th A, pt. 2 | Monthly discharge and descriptive information..... | 1884 to September 1890. |
| 12th A, pt. 2 | ....do..... | 1884 to June 30, 1891. |
| 13th A, pt. 3 | ....do..... | 1884-92. |
| 14th A, pt. 2 | Monthly discharge..... | 1888-93. |
| B 131..... | Descriptions, measurements, gage heights, and ratings..... | 1893-94. |
| 16th A, pt. 2 | Descriptive information only. | |
| B 140..... | Descriptions, measurements, gage heights, ratings, and monthly discharge. | 1895. |
| WSP 11..... | Gage heights..... | 1896. |
| 18th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge... | 1895-96. |
| WSP 15..... | Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River. | 1897. |
| WSP 16..... | Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River. | 1897. |
| 19th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge... | 1897. |
| WSP 27..... | Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries. | 1898. |
| WSP 28..... | Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries. | 1898. |
| 20th A, pt. 4 | Monthly discharge..... | 1898. |
| WSP 35 to 39. | Descriptions, measurements, gage heights, and ratings..... | 1899. |
| 21st A, pt. 4 | Monthly discharge..... | 1899. |
| WSP 47 to 52. | Descriptions, measurements, gage heights, and ratings..... | 1900. |
| 22d A, pt. 4 | Monthly discharge..... | 1900. |
| WSP 65, 66... | Descriptions, measurements, gage heights, and ratings..... | 1901. |
| WSP 75..... | Monthly discharge..... | 1901. |

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. Before 1951, records for the Cumberland and Tennessee River basins were included with those of the other streams of the Ohio River basin.

Numbers of water-supply papers containing results of stream measurements in Cumberland and Tennessee River basins, 1899-1957

| Year | WSP | Year | WSP | Year | WSP | Year | WSP | Year | WSP |
|---|---|---|---|---|---|---|---|---|---|
| 1899 | 36 | 1912 | 323 | 1925 | 603 | 1937 | 823 | 1949 | 1143 |
| 1900 | 48 | 1913 | 353 | 1926 | 623 | 1938 | 853 | 1950 | 1173 |
| 1901 | 65, 75 | 1914 | 383 | 1927 | 643 | 1939 | 873 | 1951 | 1206 |
| 1902 | 83 | 1915 | 403 | 1928 | 663 | 1940 | 893 | 1952 | 1236 |
| 1903 | 98 | 1916 | 433 | 1929 | 683 | 1941 | 923 | 1953 | 1276 |
| 1904 | 128 | 1917 | 453 | 1930 | 698 | 1942 | 953 | 1954 | 1336 |
| 1905 | 169 | 1918 | 473 | 1931 | 713 | 1943 | 973 | 1955 | 1386 |
| 1906 | 205 | 1919-20 | 503 | 1932 | 728 | 1944 | 1003 | 1956 | 1436 |
| 1907-8 | 243 | 1921 | 523 | 1933 | 743 | 1945 | 1033 | 1957 | 1506 |
| 1909 | 263 | 1922 | 543 | 1934 | 758 | 1946 | 1053 | | |
| 1910 | 283 | 1923 | 563 | 1935 | 783 | 1947 | 1083 | | |
| 1911 | 303 | 1924 | 583 | 1936 | 803 | 1948 | 1113 | | |

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Paper 1306. That report contains a summary of monthly and annual discharges 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.

Records of discharge have been published also in State reports. Most of these records are also compiled in Water-Supply Paper 1306; however, some of them are not contained in the publications of the Geological Survey. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

| State | Period | Report | Issued by |
|---|---|---|---|
| Alabama..... | 1895-1915 | Bull. 17, Water powers of Alabama..... | Geological Survey of Alabama. |
| Georgia..... | 1895-1906 | Bull. 16, Water powers of Georgia..... | Geological Survey of Georgia. |
| Do..... | 1907-19 | Bull. 38, Water powers of Georgia..... | Do. |
| Kentucky..... | 1910-20 | Surface waters of Kentucky..... | Kentucky Geological Survey. |
| North Carolina | 1889-1923 | Bull. 34, Discharge records of North Carolina streams. | Department of Conservation and Development. |
| Do..... | 1899-1936 | Bull. 39, Discharge records of North Carolina streams.[1] | Do. |
| Do..... | 1857-1945 | Hydraulic Data on the French Broad River basin. | Do. |
| Tennessee..... | 1874-1924 | Bull. 34, Water resources of Tennessee[2]... | Department of Education. |
| Do..... | 1920-30 | Bull. 40, Surface waters of Tennessee..... | Do. |
| Virginia..... | 1895-1927 | Bull. 31, Water resources of Virginia..... | Virginia Geological Survey. |
| Do..... | 1927-42 | Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River basins). | Do. |
| Do..... | 1942-50 | Bull. 15, Surface water supply of Virginia (New, Big Sandy, and Tennessee River basins). | Do. |
| Do..... | 1951-55 | Bull. 19, Surface water supply of Virginia (New, Big Sandy, and Tennessee River basins). | Department of Conservation and Development. |

[1] Contains maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.
[2] Includes records of discharge for all stations in North Carolina in the Tennessee River basin.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following is a list of these reports:

Report

WSP 334: The Ohio Valley flood of March-April 1913.
WSP 771: Floods in the United States, magnitude and frequency.
WSP 800: The floods of March 1936, Part 3, Potomac, James, and upper Ohio Rivers.
WSP 838: Floods of Ohio and Mississippi Rivers, January-February 1937.
WSP 847: Maximum discharges at stream-measurement stations through September 1938.
WSP 1066: Floods of August 1940 in the southeastern States.
WSP 1137-I: Summary of floods in the United States during 1950.
WSP 1227-A: Floods of March-April 1951 in Alabama and adjacent States.
WSP 1227-D: Summary of floods in the United States during 1951.
Cir. 100: Floods in Georgia, frequency and magnitude.
Cir. 342: Floods in Alabama, frequency and magnitude.

## RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table on following page contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1956 to September 1957 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere, except as noted in footnotes to the table.

Records of discharge collected by agencies other than the Geological Survey

| Stream | Location | Period | Collected by |
|---|---|---|---|
| Beech River | Near Darden, Tenn. | 1954-57 | Tennessee Valley Authority. |
| Do. | Near Lexington, Tenn. | 1953-57 | Do. |
| Birdsong Creek | Near Holladay, Tenn. | 1940-57 | Do. |
| Browns Creek | Near Chesterfield, Tenn. | 1953-57 | Do. |
| Cane Creek | Near Shady Hill, Tenn. | 1953-57 | Do. |
| Chambers Creek | Opposite Kendrick, Miss. | 1939-57a/ | Do. |
| Chestuee Creek | Above Englewood, Tenn. | 1944-57 | Do. |
| Do. | Zion Hill, Tenn. | 1944-57 | Do. |
| Do. | Dentville, Tenn. | 1944-57 | Do. |
| Coweeta Creek basin b/. | Coweeta Hydrologic Laboratory near Franklin, N. C. | 1934-57 | U. S. Forest Service. |
| Cypress Creek (drainage ditch). | Near Gilbertsville, Ky. | 1943-57c/ | Tennessee Valley Authority. |
| Harmon Creek | Near Lexington, Tenn. | 1953-57 | Do. |
| Horse Creek | Near Savannah, Tenn. | 1939-57 | Do. |
| Indian Creek | Near Cerro Gordo, Tenn. | 1939-57 | Do. |
| Limestone Creek | U. S. Highway 72, near Athens, Ala. | 1939-57 | Do. |
| Little Chestuee Creek | Below Wilson Station, Tenn. | 1947-57 | Do. |
| Middle Creek | Below Highway 39 near Englewood, Tenn. | 1944-57 | Do. |
| Middleton Creek | Near Milledgeville, Tenn. | 1939-57 | Do. |
| Millican Creek | Near Douglas Dam, Tenn. | 1942-57 | Do. |
| Muddy Creek | Near Fort Loudon Dam, Tenn. | 1941-57d/ | Do. |
| Parker Branch | Near Leicester, N. C. | 1952-57 | Do. |
| Persimmon Creek | At Persimmon Creek Dam, near Letitia, N. C. | 1942-57 | Do. |
| Pigeon River basin e/ | Near Waynesville, N. C. | 1949-57 | Do. |
| Pine Tree Branch | Near Lexington, Tenn. | 1941-57 | Do. |
| Piney Creek | At Highway 104 near Lexington, Tenn. | 1953-57 | Do. |
| Pond Creek No. 1 | Near Wilson Dam, Ala. | 1948-57 | Do. |
| Pond Creek No. 2 | ....do. | 1948-57 | Do. |
| Snake Creek | Near Adamsville, Tenn. | 1939-57 | Do. |
| Turkey Creek (Beech River tributary). | Near Decaturville, Tenn. | 1953-57 | Do. |
| Turkey Creek (Tennessee River tributary). | Near Savannah, Tenn. | 1939-57 | Do. |
| West Flint Creek f/ | Near Hartselle, Ala. | 1941-57 | Do. |
| White Creek | Near Sharps Chapel, Tenn. | 1934-57 | Do. |
| White Oak Creek | Near Milledgeville, Tenn. | 1939-57 | Do. |
| Yellow Creek | At Moser Bridge near Doskie, Miss. | 1937-57 | Do. |

a/ Records observed near Kendrick from November 1939 to May 1942 and opposite Kendrick from May 1942 to 1957.
b/ The Southeastern Forest Experiment Station of the U. S. Forest Service operates 31 stations in Coweeta Creek basin in order to obtain records of runoff from small areas.
c/ Records for 1943-54 published in compilation report No. 1 by Tennessee Valley Authority; those for 1954-57 published in compilation report No. 2.
d/ Low-flow record only. Station not rated above 40 cfs, which is capacity of weir below gage.
e/ The Tennessee Valley Authority operates stations on 6 small watersheds ranging in area from 3.5 to 5.6 acres in the Pigeon River basin.
f/ Gage heights only when affected by backwater from Wheeler Reservoir.

## HYDROLOGIC CONDITIONS

In the area covered by this report, the outstanding hydrologic event was the floods at the end of January, which extended from West Virginia to Alabama. On the smaller streams that drain westward from the Appalachian Mountains, many peak discharges were the maximum in 30 to 40 years of record. At the gaging station on Clinch River at Speers Ferry, Va., the peak on January 30 was slightly higher than that of February 1902, the greatest previous flood in a record beginning in 1895. Monthly mean discharge of North Fork Holston River near Saltville, Va., was record-high for the month in January and February. Streamflow was excessive throughout the area in February, due to carryover from the January floods; peaks on the larger streams occurred early in the month. Floods occurred in the eastern part of the Tennessee River basin April 4-5; at some stations these were the highest in about 15 years. By contrast, the November mean for Red River rear Adams, Tenn., was record-low for the month. In most parts of the area, streamflow was deficient in August but excessive in September. For three long-term gaging stations in the area covered by this report, a comparison of the monthly and yearly mean discharge during the 1957 water year with the median discharges for the 25-year period 1921-45 is shown in figure 3 on the following page.

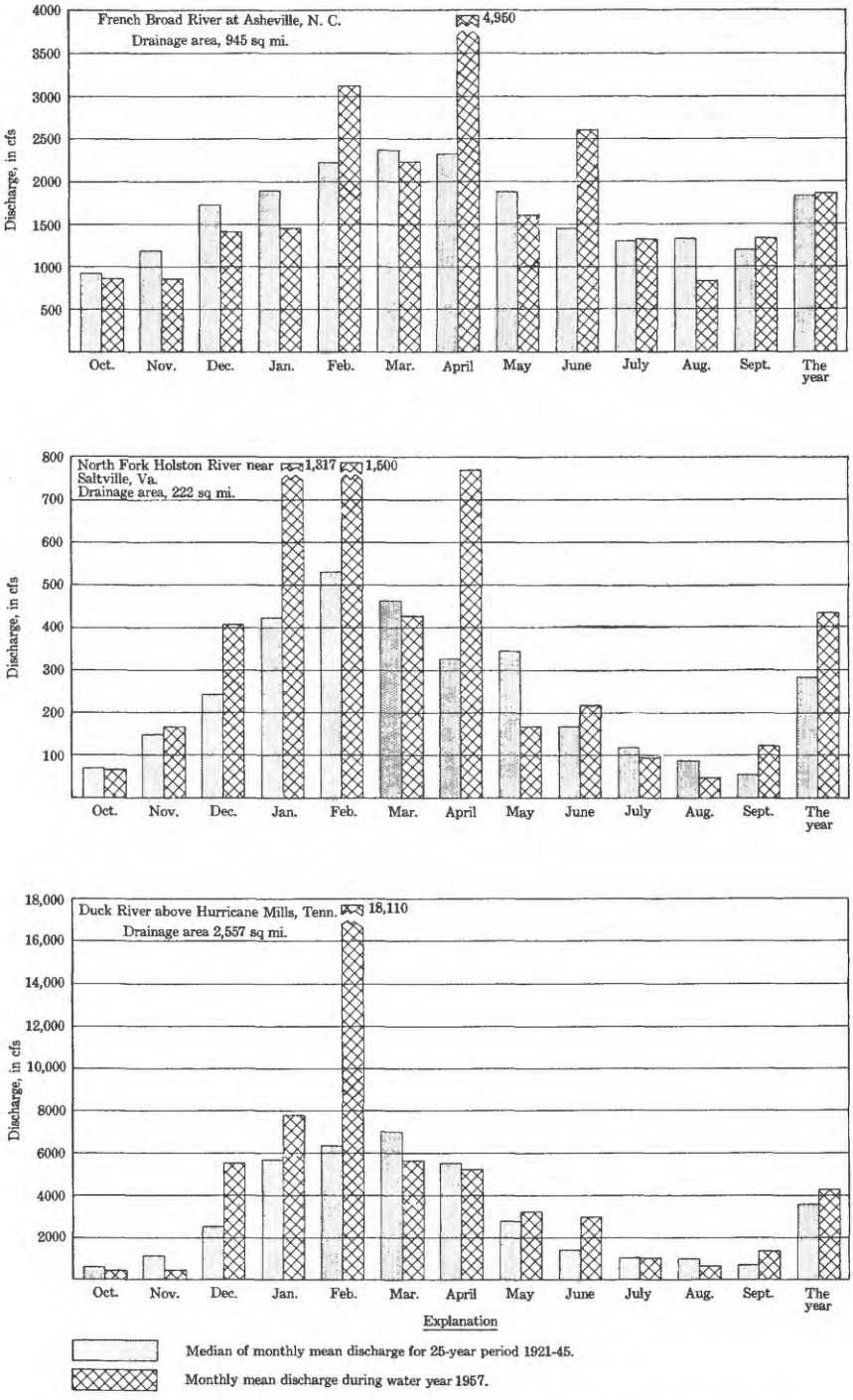


Figure 3. Comparison of discharge at three key gaging stations during 1957 water year with median discharge for 25-year period.

## CUMBERLAND RIVER BASIN

### Poor Fork at Cumberland, Ky.

Location.--Lat 36°58'25", long 82°59'35", at left end downstream side of Second Street Bridge at Cumberland, Harlan County, 0.1 mile upstream from Cloverlick Creek and 0.5 mile downstream from Looney Creek.

Drainage area.--82.3 sq mi (revised).

Records available.--March 1940 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,415.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--17 years, 139 cfs.

Extremes.--Maximum discharge during year, 11,800 cfs Jan. 29 (gage height, 11.50 ft), from rating curve extended above 3,500 cfs on basis of slope-area determination of peak flow; minimum, 13 cfs Aug. 24, 25.

1940-57: Maximum discharge, that of Jan. 29, 1957; no flow for part of Oct. 28, 1952.

Flood in January 1927 reached a stage of about 10.2 ft (discharge, 12,000 cfs, estimated by Corps of Engineers).

Remarks.--Records poor.

Revisions (water years).--WSP 923: 1940(M). WSP 1336: 1949-51, 1953(P).

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 135 | 38 | 93 | 1,860 | 168 | 77 | 75 | 21 | 40 | 18 | 14 |
| 2 | 18 | 109 | 34 | 86 | 1,640 | 185 | 90 | 69 | 33 | 28 | 17 | 14 |
| 3 | 18 | 63 | 33 | 75 | 608 | 180 | 139 | 60 | 46 | 26 | 17 | 15 |
| 4 | 18 | 41 | 33 | 103 | 374 | 160 | 299 | 54 | 92 | 25 | 21 | 15 |
| 5 | *18 | 33 | 32 | 131 | 285 | 141 | 930 | 52 | 79 | 24 | 26 | 14 |
| 6 | 18 | 27 | 28 | 175 | 246 | 125 | 670 | 46 | 97 | 22 | 20 | 14 |
| 7 | 18 | 26 | 30 | 178 | 284 | 125 | 434 | 44 | 72 | 22 | 17 | 14 |
| 8 | 17 | 26 | 29 | 151 | 446 | 190 | 526 | 39 | 46 | 20 | 17 | 14 |
| 9 | 16 | 26 | 30 | 254 | 815 | 210 | 825 | 36 | 35 | 20 | 17 | 14 |
| 10 | 16 | 26 | 33 | 880 | 1,540 | 205 | 526 | 35 | 28 | 20 | 17 | 17 |
| 11 | 15 | 25 | 31 | 582 | 685 | 210 | 366 | 33 | 28 | 18 | 17 | 15 |
| 12 | 15 | 24 | 56 | 347 | 386 | *202 | 266 | 32 | 26 | 18 | 17 | 15 |
| 13 | 16 | 23 | 438 | 251 | 281 | 180 | 218 | 30 | 28 | 17 | 17 | 24 |
| 14 | 16 | 22 | 655 | 192 | 215 | 162 | 178 | 32 | 44 | 17 | 17 | 26 |
| 15 | 16 | 22 | 562 | 160 | 172 | 145 | 158 | 29 | 30 | 18 | *26 | 19 |
| 16 | 15 | 29 | 370 | 135 | 153 | 125 | 139 | 26 | 26 | 18 | 19 | 185 |
| 17 | 15 | 36 | 269 | 103 | 131 | 111 | 133 | 26 | 39 | 34 | 17 | 138 |
| 18 | 15 | 38 | 212 | 93 | 113 | 101 | 123 | 24 | 46 | 27 | 17 | 52 |
| 19 | 15 | *33 | *178 | 82 | 302 | 95 | 113 | 29 | 30 | 25 | 15 | 28 |
| 20 | 15 | 31 | 160 | 82 | 466 | 84 | 107 | 27 | 30 | 20 | 14 | 24 |
| 21 | 15 | 30 | 153 | 82 | 335 | 75 | 103 | 26 | 26 | 18 | 14 | 21 |
| 22 | 17 | 40 | 802 | *93 | 272 | 95 | 101 | 31 | 36 | 18 | 14 | 20 |
| 23 | 19 | 55 | 655 | 398 | 228 | 93 | 111 | 30 | 40 | 39 | 14 | 26 |
| 24 | 18 | 53 | 462 | 293 | 190 | 95 | *113 | 28 | 38 | 48 | 13 | *38 |
| 25 | 16 | 50 | 335 | 230 | 170 | 105 | 178 | 26 | 74 | 25 | 13 | 26 |
| 26 | 16 | 48 | 260 | 182 | 160 | 103 | 137 | 23 | *61 | 22 | 14 | 22 |
| 27 | 17 | 46 | 200 | 202 | 153 | 93 | 115 | *23 | 42 | 20 | 15 | 20 |
| 28 | 16 | 44 | 155 | 906 | 145 | 90 | 105 | 22 | 55 | 18 | 14 | 18 |
| 29 | 16 | 40 | 137 | *6,750 | - | 82 | 105 | 22 | 93 | 18 | 14 | 41 |
| 30 | 16 | 39 | 115 | 2,280 | ------- | 81 | 90 | 22 | 67 | 18 | 14 | 72 |
| 31 | 17 | ------- | 101 | 852 | ------- | 75 | ------- | 21 | ------- | 18 | 14 | ------- |
| Total | 511 | 1,240 | 6,626 | 16,421 | 12,655 | 4,091 | 7,475 | 1,072 | 1,408 | 721 | 516 | 975 |
| Mean | 16.5 | 41.3 | 214 | 530 | 452 | 132 | 249 | 34.6 | 46.9 | 23.3 | 16.6 | 32.5 |
| Cfsm | 0.200 | 0.502 | 2.60 | 6.44 | 5.49 | 1.60 | 3.03 | 0.420 | 0.570 | 0.283 | 0.202 | 0.395 |
| In. | 0.23 | 0.56 | 2.99 | 7.42 | 5.72 | 1.85 | 3.38 | 0.48 | 0.64 | 0.33 | 0.23 | 0.44 |

Calendar year 1956: Max 2,890 Min 15 Mean 195 Cfsm 2.37 In. 32.28
Water year 1956-57: Max 6,750 Min 13 Mean 147 Cfsm 1.79 In. 24.27

Peak discharge (base, 1,200 cfs).--Jan. 29 (3 p.m.) 11,800 cfs (11.50 ft); Feb. 1 (11:30 p.m.) 3,570 cfs (5.94 ft); Feb. 10 (10:30 a.m.) 2,650 cfs (5.10 ft).

* Discharge measurement made on this day.

## Cumberland River near Harlan, Ky.

Location.--Lat 36°50'55", long 83°21'20", on left bank 10 ft downstream from bridge on U. S. Highway 119 at Loyall, 1.6 miles upstream from Fourmile Branch, 2.0 miles downstream from confluence of Poor and Clover Forks, and 2 miles west of Harlan, Harlan County.

Drainage area.--374 sq mi.

Records available.--March 1940 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,140.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Mar. 4, 1941, staff gage at same site and datum.

Average discharge.--17 years, 648 cfs.

Extremes.--Maximum discharge during year, 31,000 cfs Jan. 29 (gage height, 19.89 ft); minimum, 18 cfs Sept. 2 (gage height, 0.17 ft).

1940-57: Maximum discharge, 37,900 cfs Jan. 8, 1946 (gage height, 22.81 ft); minimum, 3.0 cfs Oct. 9, 1953.

Floods in 1918 and 1929 reached stages of about 22 and 20.0 ft, respectively, from information by local residents.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 953: 1940(M). WSP 1173: 1947(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.1 | 14 | 2.5 | 920 |
| .2 | 20 | 3.0 | 1,350 |
| .5 | 53 | 5.0 | 3,550 |
| .7 | 90 | 8.0 | 7,750 |
| 1.0 | 165 | 12.0 | 14,500 |
| 1.5 | 330 | 17.0 | 24,600 |
| 2.0 | 590 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62 | 192 | 104 | 348 | 7,200 | 1,120 | 344 | 362 | 108 | 283 | 39 | 22 |
| 2 | 60 | 375 | 98 | 310 | 6,910 | 1,110 | 475 | 339 | 100 | 195 | 37 | 20 |
| 3 | 60 | 222 | 96 | 266 | 3,030 | 968 | 502 | 306 | a200 | 144 | 34 | 21 |
| 4 | 67 | 159 | 92 | 298 | 1,890 | 824 | 958 | 286 | a450 | 115 | 38 | 31 |
| 5 | *63 | 120 | 90 | 410 | 1,440 | 704 | 6,260 | 266 | a400 | 102 | 40 | 31 |
| 6 | 63 | 104 | 90 | 554 | 1,260 | 626 | 2,910 | 252 | a450 | 90 | 45 | 26 |
| 7 | 63 | 98 | 86 | 626 | 1,390 | 614 | 1,660 | 237 | a300 | 88 | 39 | 22 |
| 8 | 58 | 98 | 88 | 548 | 2,360 | 1,550 | 2,460 | 225 | a200 | 70 | 31 | 19 |
| 9 | 53 | 98 | 90 | 1,710 | 3,340 | 1,460 | 4,410 | 219 | a160 | 63 | 28 | 19 |
| 10 | 52 | 94 | 92 | 5,240 | 6,580 | 1,160 | 2,260 | 207 | a130 | 60 | 27 | 24 |
| 11 | 47 | 88 | 96 | 2,980 | 3,560 | 1,030 | 1,480 | 198 | a125 | 58 | 26 | 34 |
| 12 | 46 | 82 | 177 | 1,640 | 2,000 | 952 | 1,080 | 195 | a120 | 53 | 24 | 36 |
| 13 | 46 | 80 | 2,220 | 1,110 | 1,440 | *845 | 898 | 180 | a130 | 49 | 22 | 80 |
| 14 | 46 | 80 | 3,640 | 831 | 1,090 | 742 | 736 | 174 | a180 | 47 | 24 | 302 |
| 15 | 46 | 76 | 2,810 | 668 | 875 | 674 | 632 | 183 | 122 | 47 | *338 | 186 |
| 16 | 45 | 102 | 1,560 | 566 | 749 | 566 | 584 | 174 | 98 | 55 | 201 | 1,220 |
| 17 | 45 | 159 | 1,030 | a480 | 638 | 502 | 536 | 159 | 102 | 56 | 94 | 1,750 |
| 18 | 45 | 177 | 749 | a410 | 554 | 465 | 480 | 150 | 162 | 80 | 62 | 514 |
| 19 | 46 | *156 | *596 | a360 | 1,250 | 450 | 450 | 213 | 147 | 94 | 55 | 280 |
| 20 | 43 | 144 | 514 | 344 | 2,340 | 400 | 415 | 225 | 108 | 84 | 46 | 189 |
| 21 | 43 | 125 | 492 | 357 | 1,650 | 357 | 400 | 204 | 90 | 60 | 38 | 147 |
| 22 | 52 | 162 | 4,490 | *370 | 1,250 | 415 | 465 | 204 | 80 | 52 | 34 | 120 |
| 23 | 56 | 168 | 3,600 | 2,440 | 1,010 | 425 | 817 | 258 | 258 | 63 | 30 | 130 |
| 24 | 67 | 162 | 2,540 | 1,850 | 860 | 400 | *756 | 219 | 283 | 108 | 28 | *130 |
| 25 | 58 | 147 | 1,530 | 1,200 | 775 | 425 | 650 | 231 | 352 | 102 | 28 | 115 |
| 26 | 56 | 147 | 1,060 | 882 | 730 | 435 | 578 | 213 | *339 | 76 | 28 | 98 |
| 27 | 58 | 141 | 803 | 953 | 680 | 410 | 497 | 294 | 225 | 62 | 28 | 84 |
| 28 | 56 | 122 | 650 | 6,790 | 698 | 385 | 440 | *201 | 192 | 52 | 28 | 80 |
| 29 | 53 | 115 | 548 | 22,700 | - | 366 | 435 | 150 | 602 | 45 | 26 | 229 |
| 30 | 50 | 108 | 445 | 11,500 | -------- | 352 | 405 | 125 | 480 | 43 | 24 | 395 |
| 31 | 55 | -------- | 390 | 4,210 | -------- | 339 | -------- | 110 | -------- | 43 | 22 | -------- |
| Total | 1,660 | 4,101 | 30,866 | 72,951 | 57,549 | 21,071 | 34,973 | 6,759 | 6,693 | 2,539 | 1,564 | 6,354 |
| Mean | 53.5 | 137 | 996 | 2,353 | 2,055 | 680 | 1,166 | 218 | 223 | 81.9 | 50.5 | 212 |
| Cfsm | 0.143 | 0.366 | 2.66 | 6.29 | 5.49 | 1.82 | 3.12 | 0.583 | 0.596 | 0.219 | 0.135 | 0.567 |
| In. | 0.17 | 0.41 | 3.07 | 7.25 | 5.72 | 2.10 | 3.48 | 0.67 | 0.67 | 0.25 | 0.16 | 0.63 |

Calendar year 1956: Max 14,100 Min 43 Mean 911 Cfsm 2.44 In. 33.15
Water year 1956-57: Max 22,700 Min 19 Mean 677 Cfsm 1.81 In. 24.58

Peak discharge (base, 8,200 cfs).--Jan. 29 (6 p.m.) 31,000 cfs (19.89 ft); Feb. 2 (2 a.m.) 9,190 cfs (8.90 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for nearby stations.

## Yellow Creek near Middlesboro, Ky.

Location.--Lat 36°39'05", long 83°42'05", on right bank on U. S. Highway 25E, 0.4 mile upstream from Low Ash Hollow, 3 miles north of Middlesboro, Bell County, and 6.0 miles upstream from Clear Fork.

Drainage area.--58.2 sq mi.

Records available.--August 1940 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,104.20 ft above mean sea level, Sandy Hook datum. Prior to Jan. 7, 1941, staff gage at same site and datum.

Average discharge.--17 years, 103 cfs.

Extremes.--Maximum discharge during year, 3,980 cfs Jan. 28 (gage height, 15.31 ft); minimum, 2.7 cfs Aug. 13, 14 (gage height, 0.99 ft).

1940-57: Maximum discharge, 6,160 cfs Jan. 7, 1946 (gage height, 20.92 ft); no flow for part of Sept. 26, 1952 (caused by construction work above gage).

Flood in March 1929 reached a stage of about 19.6 ft; flood of Feb. 3, 1939, reached a stage of 18.5 ft, from floodmarks.

Remarks.--Records good.

Revisions (water years).--WSP 953: 1941(M). WSP 973: 1942(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.0 | 3.0 | 3.0 | 281 |
| 1.1 | 6.3 | 6.0 | 750 |
| 1.2 | 13 | 9.0 | 1,450 |
| 1.5 | 44 | 11.0 | 2,020 |
| 2.0 | 119 | 14.0 | 3,320 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.1 | 52 | 9.7 | 49 | 1,360 | 97 | 62 | 50 | 18 | 72 | 5.1 | 4.5 |
| 2 | 5.1 | 24 | 9.0 | 42 | 1,010 | 90 | *252 | 47 | 62 | 49 | 4.8 | 4.2 |
| 3 | 7.3 | 16 | 9.0 | 36 | 452 | 87 | 196 | 43 | 75 | 38 | 4.5 | 4.8 |
| 4 | 16 | 13 | 9.0 | 64 | 298 | 84 | 565 | 38 | 64 | 30 | 4.8 | 4.5 |
| 5 | 9.0 | 10 | 9.0 | 204 | 232 | 81 | 1,700 | 36 | 64 | 26 | 4.5 | 4.2 |
| 6 | 7.3 | 9.0 | 9.0 | 190 | 191 | 78 | 558 | 35 | 81 | 22 | 3.9 | 4.2 |
| 7 | 6.3 | 12 | 9.0 | 141 | 320 | 105 | 298 | 32 | 62 | 18 | 4.2 | 3.9 |
| 8 | *5.9 | 14 | 9.0 | 109 | 482 | 388 | 767 | 30 | 44 | 16 | 3.6 | 3.9 |
| 9 | 5.5 | 13 | 9.7 | 414 | 420 | 296 | 784 | 30 | 60 | 14 | 3.6 | 3.9 |
| 10 | 5.1 | 11 | 9.7 | 696 | 932 | 217 | 359 | 28 | 43 | 14 | 3.3 | 8.4 |
| 11 | 4.8 | 10 | 9.0 | 416 | 497 | 178 | 242 | 28 | 39 | 11 | 3.3 | 6.3 |
| 12 | 4.8 | 9.7 | 53 | 246 | 302 | 151 | 173 | 28 | 38 | 10 | 3.6 | 5.5 |
| 13 | 4.8 | 9.0 | 984 | 167 | 214 | 127 | 139 | 26 | 30 | 9.7 | 3.0 | 31 |
| 14 | 4.8 | 8.4 | 1,490 | 122 | 156 | 113 | 114 | 22 | 32 | 9.0 | *3.0 | 66 |
| 15 | 5.1 | 8.4 | 582 | 100 | 125 | 103 | 101 | 22 | 24 | 10 | 329 | 32 |
| 16 | 4.5 | 18 | 236 | 84 | 111 | 87 | 101 | 20 | 18 | 10 | 36 | 389 |
| 17 | 4.5 | 18 | 122 | 64 | 95 | 80 | 92 | 20 | 30 | 9.0 | 20 | 237 |
| 18 | 5.5 | 13 | *93 | 55 | 84 | 76 | 84 | 24 | 38 | 8.4 | 13 | 80 |
| 19 | 6.3 | 13 | 75 | 50 | 211 | 76 | 76 | 41 | 26 | 8.4 | 11 | 42 |
| 20 | 5.9 | *11 | 64 | 45 | 298 | 69 | 70 | 32 | 22 | 7.3 | 9.0 | 30 |
| 21 | 5.5 | 14 | 60 | *68 | 228 | 63 | 72 | 24 | 18 | 6.8 | 7.8 | 24 |
| 22 | 18 | 24 | 726 | 84 | 165 | 74 | 84 | 73 | 14 | 7.8 | 7.3 | 24 |
| 23 | 20 | 18 | 585 | 362 | 129 | 70 | *114 | 49 | 26 | 7.3 | 6.3 | *32 |
| 24 | 9.0 | 16 | 464 | 260 | 111 | 68 | 109 | 194 | 100 | 9.0 | 5.9 | 24 |
| 25 | 7.8 | 16 | 257 | 182 | 101 | 72 | 95 | 144 | *127 | 6.3 | 5.9 | 16 |
| 26 | 8.4 | 14 | 155 | 130 | 101 | 69 | 84 | 80 | 54 | 5.9 | 5.9 | 14 |
| 27 | 12 | 14 | 116 | 210 | 93 | 66 | 75 | 54 | 37 | 5.5 | 5.5 | 11 |
| 28 | 8.4 | 12 | 95 | *2,070 | 90 | 63 | 68 | *38 | 119 | 5.5 | 5.1 | 10 |
| 29 | 7.8 | 11 | 81 | 3,010 | - | 60 | 62 | 28 | 251 | 5.1 | 5.1 | 24 |
| 30 | 7.3 | 11 | 64 | 1,150 | -------- | 58 | 54 | 24 | 117 | 5.9 | 4.8 | 26 |
| 31 | 10 | -------- | 57 | 799 | -------- | 56 | -------- | 20 | -------- | 5.9 | 4.5 | -------- |
| Total | 237.8 | 442.5 | 6,460.1 | 11,619 | 8,808 | 3,302 | 7,550 | 1,360 | 1,733 | 462.8 | 537.3 | 1,170.3 |
| Mean | 7.67 | 14.8 | 208 | 375 | 315 | 107 | 252 | 43.9 | 57.8 | 14.9 | 17.3 | 39.0 |
| Cfsm | 0.132 | 0.254 | 3.57 | 6.44 | 5.41 | 1.84 | 4.33 | 0.754 | 0.993 | 0.256 | 0.297 | 0.670 |
| In. | 0.15 | 0.28 | 4.13 | 7.42 | 5.63 | 2.11 | 4.82 | 0.87 | 1.11 | 0.30 | 0.34 | 0.75 |

Calendar year 1956: Max 2,090 Min 4.5 Mean 129 Cfsm 2.22 In. 30.11
Water year 1956-57: Max 3,010 Min 3.0 Mean 120 Cfsm 2.06 In. 27.91

Peak discharge (base, 1,800 cfs).--Dec. 14 (2:30 p.m.) 1,920 cfs (10.68 ft); Jan. 28 (8 p.m.) 3,980 cfs (15.31 ft); Apr. 5 (4:30 a.m.) 2,420 cfs (12.00 ft).

* Discharge measurement made on this day.

## Cumberland River near Pineville, Ky.

Location.--Lat 36°48'48", long 83°45'58", on downstream side of bridge on U. S. Highway 25E, 0.5 mile south of Flat Lick, 2.4 miles downstream from Greasy Creek, 4.7 miles upstream from Stinking Creek, and 5.0 miles northwest of Pineville, Bell County.

Drainage area.--809 sq mi.

Records available.--August 1938 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 955.45 ft above mean sea level, Sandy Hook datum. Prior to June 23, 1939, wire-weight gage at bridge 200 ft upstream at same datum. June 23, 1939, to Mar. 19, 1956, water-stage recorder at bridge 200 ft upstream at same datum. Since May 26, 1943, auxiliary staff gage read twice daily, 1.9 miles upstream from base gage.

Average discharge.--19 years, 1,305 cfs.

Extremes.--Maximum discharge during year, 54,900 cfs Jan. 29 (gage height, 47.35 ft); minimum, 5.6 cfs Aug. 14 (gage height, 4.63 ft).
1938-57: Maximum discharge, 57,900 cfs Jan. 8, 1946 (gage height, 49.31 ft), from rating curve extended above 36,000 cfs on basis of slope-area determinations at gage heights 44.34, 47.3, 47.35 and 49.31 ft; minimum, that of Aug. 14, 1957.
Flood in March 1929 reached a stage of 47.3 ft (discharge, 51,000 cfs).

Remarks.--Records good except those above 40,000 cfs, which are fair. Low flow regulated by powerplant 1.9 miles upstream from station.

Revisions (water years).--WSP 1053: 1939. WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Dec. 13-16, 22-25, Jan. 10-12, 24, 25, Jan. 29 to Feb. 12, Feb. 20-22, Mar. 9, Apr. 5-11)

| | | | |
|---|---|---|---|
| 4.7 | 7.0 | 7.0 | 450 |
| 4.9 | 16 | 9.0 | 1,380 |
| 5.2 | 39 | 14.0 | 4,500 |
| 5.5 | 78 | 20.0 | 9,800 |
| 6.0 | 176 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 110 | 380 | 207 | 790 | 14,600 | 1,580 | 691 | 740 | 225 | 848 | 47 | 10 |
| 2 | 108 | 462 | 198 | 682 | 16,200 | 1,940 | 1,150 | 655 | 202 | 542 | 46 | 19 |
| 3 | *99 | 542 | 187 | 570 | 9,250 | 1,800 | 1,480 | 578 | 260 | 374 | 42 | 17 |
| 4 | *211 | 359 | 180 | 554 | 4,870 | 1,580 | 2,450 | 506 | 292 | 290 | 39 | 16 |
| 5 | 213 | 278 | 178 | 970 | 2,920 | 1,380 | 12,400 | 458 | 975 | 238 | 39 | 20 |
| 6 | 167 | 228 | 169 | 1,280 | 2,650 | 1,230 | 8,590 | 422 | 1,120 | 205 | 38 | 11 |
| 7 | 141 | 211 | 172 | 1,420 | 2,740 | 1,220 | 3,690 | 390 | 990 | 174 | 36 | 15 |
| 8 | 128 | 222 | 176 | 1,320 | 4,610 | 3,340 | 4,820 | 362 | 660 | 145 | 34 | 26 |
| 9 | 116 | 209 | 172 | 2,370 | 5,950 | 3,770 | 10,500 | 335 | 466 | 122 | 34 | 24 |
| 10 | 105 | 194 | 172 | 9,700 | 12,500 | 3,090 | 5,960 | 318 | 365 | 114 | 33 | 36 |
| 11 | 92 | 191 | 176 | 8,220 | 10,200 | 2,580 | 3,290 | 310 | 312 | 107 | 27 | 37 |
| 12 | 91 | 178 | 320 | 3,810 | 4,760 | 2,310 | 2,560 | 300 | 292 | 91 | 24 | 44 |
| 13 | 78 | 165 | 7,120 | 2,750 | 3,220 | *1,990 | 2,030 | 280 | 258 | 83 | 18 | 62 |
| 14 | 75 | 150 | 12,900 | 1,970 | 2,430 | 1,720 | 1,640 | 258 | 220 | 86 | 7.0 | 489 |
| 15 | 80 | 145 | 10,200 | 1,520 | 1,920 | 1,520 | *1,350 | 242 | 196 | 75 | 714 | 606 |
| 16 | 72 | 169 | 4,550 | 1,270 | 1,610 | 1,300 | 1,240 | 230 | 194 | 74 | *582 | 1,400 |
| 17 | 68 | 220 | *2,550 | 1,020 | 1,380 | 1,120 | 1,160 | 216 | 185 | 86 | 326 | 4,460 |
| 18 | 70 | 265 | 1,830 | 808 | 1,180 | 1,020 | 1,020 | 200 | 178 | 76 | 189 | 1,800 |
| 19 | 72 | *285 | 1,440 | 727 | 2,320 | 975 | 930 | 308 | 202 | 75 | 128 | 768 |
| 20 | 66 | 270 | 1,220 | 704 | 5,480 | 890 | 862 | 436 | 225 | 89 | 94 | 478 |
| 21 | 69 | 245 | 1,380 | 740 | 3,750 | 786 | 817 | 341 | 180 | 99 | 78 | 335 |
| 22 | 83 | 285 | 8,600 | *790 | 2,650 | 821 | 1,380 | 436 | 141 | 96 | 63 | 302 |
| 23 | 132 | 310 | 8,340 | 2,990 | 2,230 | 876 | 3,080 | 794 | 154 | 91 | 51 | 454 |
| 24 | 145 | 320 | 6,490 | 3,980 | 1,820 | 830 | 2,690 | 490 | *596 | 120 | 43 | 323 |
| 25 | 124 | 300 | 4,060 | 2,650 | 1,580 | 835 | 2,050 | 683 | 1,740 | 120 | 38 | *280 |
| 26 | 120 | 295 | 2,700 | 2,730 | 1,470 | 876 | 1,570 | 514 | 858 | 134 | 37 | 235 |
| 27 | 110 | 288 | 1,990 | 2,010 | 1,400 | 862 | 1,280 | 594 | 594 | 91 | 33 | 198 |
| 28 | 124 | 265 | 1,560 | 9,690 | 1,270 | 808 | 1,080 | *570 | 436 | 88 | 34 | 174 |
| 29 | 124 | 235 | 1,320 | 40,100 | - | 768 | 920 | 422 | 1,100 | 69 | 29 | 174 |
| 30 | 124 | 222 | 1,070 | *39,400 | ------- | 750 | 840 | 332 | 1,340 | 59 | 40 | 248 |
| 31 | 122 | ------- | 900 | *10,800 | ------- | 722 | ------- | 278 | ------- | 54 | 12 | ------- |
| Total | 3,439 | 7,888 | 82,527 | 158,135 | 126,960 | 45,289 | 83,520 | 12,998 | 14,956 | 4,915 | 2,955.0 | 12,861 |
| Mean | 111 | 263 | 2,662 | 5,101 | 4,534 | 1,461 | 2,784 | 419 | 499 | 159 | 95.3 | 429 |
| Cfsm | 0.137 | 0.325 | 3.29 | 6.31 | 5.60 | 1.81 | 3.44 | 0.518 | 0.617 | 0.197 | 0.118 | 0.530 |
| In. | 0.16 | 0.36 | 3.79 | 7.27 | 5.84 | 2.08 | 3.84 | 0.60 | 0.69 | 0.23 | 0.14 | 0.59 |

Calendar year 1956: Max 21,400 Min 66 Mean 1,818 Cfsm 2.25 In. 30.59
Water year 1956-57: Max 40,100 Min 7.0 Mean 1,525 Cfsm 1.89 In. 25.59

Peak discharge (base, 16,000 cfs).--Jan. 29 (11 p.m.) 54,900 cfs (47.35 ft).
* Discharge measurement made on this day.

## Cumberland River at Barbourville, Ky.

Location.--Lat 36°51'45", long 83°53'13", near center of span on upstream side of bridge on State Highway 11, at Barbourville, Knox County, 0.4 mile upstream from Richland Creek.

Drainage area.--960 sq mi.

Records available.--October 1922 to September 1931, July 1948 to September 1957.

Gage.--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 942.97 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1931, staff or chain gage at same site and at datum 1.0 ft higher.

Average discharge.--18 years, 1,722 cfs.

Extremes.--Maximum discharge during year, 43,000 cfs Jan. 30; maximum gage height, 42.28 ft Jan. 30; minimum discharge observed, 14 cfs Sept. 2.

1922-31, 1948-57: Maximum discharge, 47,900 cfs May 31, 1927, from rating curve extended above 20,000 cfs on basis of runoff comparisons with nearby stations; maximum gage height, that of Jan. 30, 1957; minimum discharge observed, 0.2 cfs Oct. 5, 1930 (gage height, -0.25 ft, datum then in use).

Flood in January 1946 reached a stage of 42.8 ft, present datum.

Remarks.--Records fair.

Revisions (water years).--WSP 603: 1923-24. WSP 1336: 1923(M), 1925(M), 1927, 1929, 1950-51. WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor for most days above 3,000 cfs)

| | | | |
|---|---|---|---|
| 1.3 | 16 | 4.0 | 1,620 |
| 1.4 | 29 | 6.0 | 3,290 |
| 1.6 | 65 | 10.0 | 5,350 |
| 1.8 | 125 | 20.0 | 10,800 |
| 2.0 | 215 | 30.0 | 19,800 |
| 3.0 | 840 | 42.0 | 41,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 112 | 342 | 210 | 882 | 23,400 | 1,800 | 812 | 868 | 237 | 959 | 57 | 24 |
| 2 | 92 | 522 | 157 | 770 | 23,500 | 2,160 | 1,220 | 770 | 205 | 618 | 53 | 16 |
| 3 | *92 | 630 | 129 | 651 | 15,600 | 1,940 | 1,570 | 658 | 270 | 444 | 53 | 29 |
| 4 | 190 | 438 | 175 | 606 | 8,530 | 1,760 | 2,700 | 594 | 330 | 348 | 49 | 31 |
| 5 | 288 | 330 | 161 | 938 | 5,060 | 1,560 | 10,600 | 546 | 847 | 270 | 49 | 29 |
| 6 | 195 | 215 | 157 | 1,310 | 3,060 | 1,400 | 10,300 | 486 | *1,240 | 232 | 49 | 35 |
| 7 | 149 | 232 | 141 | 1,520 | 2,840 | 1,350 | 5,330 | 462 | 1,100 | 185 | 35 | 24 |
| 8 | 141 | 226 | 153 | 1,520 | 4,750 | 3,400 | 4,800 | 414 | 749 | 175 | 35 | 31 |
| 9 | 125 | 215 | 226 | 2,580 | 6,020 | 4,460 | 12,500 | 390 | 534 | 137 | 35 | 37 |
| 10 | 108 | 185 | 185 | 9,060 | 10,400 | 3,760 | 7,710 | 360 | 438 | 118 | 37 | 42 |
| 11 | 99 | 185 | 157 | 9,830 | 12,000 | 3,120 | 4,540 | 336 | 372 | 108 | 35 | 43 |
| 12 | 81 | 170 | 185 | 5,280 | 6,290 | 2,600 | 2,820 | 312 | 354 | 92 | 29 | 55 |
| 13 | 87 | 161 | 4,930 | 3,070 | 3,950 | 2,250 | 2,210 | 294 | 318 | 87 | 28 | 105 |
| 14 | 73 | 141 | 13,800 | 2,160 | 2,620 | 1,960 | 1,840 | 294 | 259 | 87 | 24 | 432 |
| 15 | 87 | 133 | 13,400 | 1,690 | 2,120 | 1,730 | *1,560 | 259 | 226 | *95 | 384 | 700 |
| 16 | 65 | 153 | *6,380 | 1,200 | 1,810 | 1,510 | 1,410 | 237 | 200 | 76 | *707 | 805 |
| 17 | 70 | 200 | *3,240 | 1,210 | 1,570 | 1,300 | 1,320 | 226 | 205 | 70 | 432 | 4,260 |
| 18 | 70 | 226 | 1,980 | 1,310 | 1,350 | 1,160 | 1,190 | 205 | 195 | 92 | 232 | 1,920 |
| 19 | 70 | 300 | 1,600 | 910 | 2,440 | 1,160 | 1,100 | 294 | 215 | 81 | 137 | 889 |
| 20 | 68 | *306 | 1,310 | 812 | 6,520 | 1,080 | 996 | 534 | 259 | 81 | 115 | 564 |
| 21 | 76 | 318 | 1,220 | 847 | 4,950 | 938 | 938 | 390 | 215 | 115 | 81 | 396 |
| 22 | 81 | 300 | 7,110 | *917 | 3,330 | 952 | 1,080 | 498 | 165 | 105 | 84 | 312 |
| 23 | 125 | 342 | 11,000 | 3,740 | 2,440 | 1,030 | 2,920 | 742 | 153 | 87 | 63 | 606 |
| 24 | 149 | 330 | 8,240 | 5,850 | 2,090 | 966 | 2,860 | 642 | 360 | 141 | 63 | 492 |
| 25 | 133 | 312 | 5,030 | 3,500 | 1,840 | 945 | 2,280 | 714 | 1,890 | 118 | 59 | *360 |
| 26 | 125 | 324 | 3,020 | 2,340 | 1,660 | 996 | 1,650 | 582 | 996 | 122 | 53 | 288 |
| 27 | 141 | 294 | 2,110 | 2,060 | 1,540 | 1,010 | 1,510 | 672 | 714 | 118 | 47 | 242 |
| 28 | 145 | 282 | 1,670 | 7,040 | 1,440 | 938 | 1,250 | 658 | 498 | 92 | 40 | 205 |
| 29 | 133 | 254 | 1,430 | 30,600 | - | 910 | 1,090 | 462 | 966 | 87 | 37 | 190 |
| 30 | 125 | 237 | 1,200 | 39,200 | ------ | 896 | 980 | 366 | 1,380 | 76 | 34 | 210 |
| 31 | 118 | ------ | 966 | 25,800 | ------ | 854 | ------ | 282 | ------ | 61 | 47 | ---- |
| Total | 3,613 | 8,303 | 91,702 | 169,203 | 163,120 | 51,895 | 93,086 | 14,547 | 15,890 | 5,477 | 3,183 | 13,372 |
| Mean | 117 | 277 | 2,958 | 5,458 | 5,826 | 1,674 | 3,103 | 469 | 530 | 177 | 103 | 446 |
| Cfsm | 0.122 | 0.289 | 3.08 | 5.69 | 6.07 | 1.74 | 3.23 | 0.489 | 0.552 | 0.184 | 0.107 | 0.465 |
| In. | 0.14 | 0.32 | 3.55 | 6.55 | 6.32 | 2.01 | 3.61 | 0.56 | 0.62 | 0.21 | 0.12 | 0.52 |

Calendar year 1956: Max 26,500 Min 65 Mean 2,108 Cfsm 2.20 In. 29.90
Water year 1956-57: Max 39,200 Min 16 Mean 1,735 Cfsm 1.81 In. 24.53

Peak discharge (base, 18,000 cfs).--Jan. 30 (9 a.m.) 43,000 cfs (42.28 ft at 12 m.).
* Discharge measurement made on this day.

## Cumberland River at Williamsburg, Ky.

Location.--Lat 36°44'38", long 84°09'30", on left bank 10 ft downstream from bridge on U. S. Highway 25W and State Highway 92 at Williamsburg, Whitley County, and 2.1 miles downstream from Clear Fork.

Drainage area.--1,607 sq mi.

Records available.--October 1950 to September 1957. Gage-height records collected in this vicinity since 1908 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 891.52 ft above mean sea level, unadjusted. Prior to July 2, 1951, wire-weight gage at same site and datum.

Average discharge.--7 years, 2,673 cfs.

Extremes.--Maximum discharge during year, 49,700 cfs Jan. 31 (gage height, 33.78 ft); minimum, 21 cfs Sept. 7 (gage height, 1.80 ft).

1950-57: Maximum discharge, that of Jan. 31, 1957; minimum, 6.1 cfs Oct. 23, 25, 26, 27, 1953 (gage height, 1.64 ft).

Maximum stage since at least 1918, 34.2 ft Jan. 10, 1946 (present datum), from graph based on U. S. Weather Bureau gage readings. Flood of Mar. 25, 1929, reached a stage of 32.7 ft, from graph based on U. S. Weather Bureau gage readings.

Remarks.--Records good. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1957 are given in WSP 1520.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.8 | 21 | 6.0 | 2,410 |
| 1.9 | 32 | 10.0 | 6,500 |
| 2.1 | 60 | 15.0 | 12,600 |
| 2.5 | 160 | 20.0 | 19,900 |
| 3.0 | 345 | 25.0 | 28,300 |
| 4.0 | 900 | 33.2 | 47,700 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 130 | 258 | 301 | 1,430 | *47,600 | 2,820 | 1,280 | 1,510 | 435 | 1,700 | 102 | 44 |
| 2 | 128 | 552 | 285 | 1,240 | 40,800 | 3,150 | 1,400 | 1,340 | 363 | 1,170 | 90 | 45 |
| 3 | 133 | 720 | 265 | 1,060 | 32,800 | 3,340 | 2,040 | 1,310 | 341 | 816 | 78 | 45 |
| 4 | 142 | 732 | 254 | 954 | 25,400 | 3,110 | 3,180 | 1,140 | 430 | 594 | 70 | 36 |
| 5 | 148 | 520 | 244 | 1,640 | 18,800 | 2,800 | 11,300 | *972 | 612 | 460 | 68 | 29 |
| 6 | 273 | 395 | 234 | 2,790 | 9,880 | 2,520 | 16,400 | 864 | 1,750 | 358 | 66 | 23 |
| 7 | 230 | 325 | 230 | 2,760 | 5,500 | 2,380 | 14,700 | 780 | 1,970 | 305 | 60 | 22 |
| 8 | *188 | 293 | 223 | 2,600 | 7,420 | 4,430 | 10,400 | 708 | 1,440 | 262 | 57 | 24 |
| 9 | 160 | 285 | 220 | 2,990 | 9,780 | *7,880 | 15,300 | 642 | 1,050 | 230 | 56 | 26 |
| 10 | 145 | 297 | 216 | 7,530 | 13,100 | 7,370 | 16,800 | 582 | 828 | 202 | 52 | 35 |
| 11 | 128 | 273 | 220 | 12,500 | 16,700 | 5,970 | 12,800 | 535 | 660 | 178 | 51 | 36 |
| 12 | 118 | 258 | 254 | 13,100 | 15,700 | 5,020 | 7,100 | 510 | 546 | 160 | 50 | 44 |
| 13 | 108 | 240 | 3,690 | 8,010 | 10,800 | 4,200 | 4,330 | 480 | 525 | 145 | 48 | 106 |
| 14 | 100 | 220 | 16,400 | 4,370 | 5,810 | 3,540 | 3,370 | 450 | 530 | 133 | 45 | 297 |
| 15 | 92 | 206 | 21,500 | 3,140 | 4,060 | 3,080 | 2,740 | 430 | 520 | 130 | 196 | 648 |
| 16 | 88 | 206 | 18,000 | 2,500 | 3,300 | 2,670 | 2,310 | 400 | 400 | 178 | 666 | 978 |
| 17 | 85 | 202 | 11,400 | 2,060 | 2,830 | 2,290 | 2,160 | 368 | 333 | 181 | 804 | 3,160 |
| 18 | 82 | 230 | 4,460 | 1,650 | 2,460 | 2,030 | 1,980 | 341 | 470 | 139 | 500 | 4,660 |
| 19 | 80 | 293 | 2,830 | 1,380 | 3,480 | 1,900 | 1,780 | 350 | 505 | 145 | 285 | 2,140 |
| 20 | 78 | 333 | 2,240 | 1,240 | 8,630 | 1,780 | 1,620 | 430 | 948 | 139 | 209 | 1,090 |
| 21 | 88 | *345 | 2,020 | 1,260 | 10,300 | 1,600 | 1,490 | 654 | 726 | 122 | *160 | 750 |
| 22 | 90 | 337 | 5,840 | 1,480 | 7,470 | 1,490 | 1,930 | 912 | 415 | 133 | 133 | 588 |
| 23 | 98 | 368 | 13,800 | 4,020 | 5,150 | 1,560 | 4,110 | 2,110 | 329 | 157 | 112 | 684 |
| 24 | 139 | 420 | 15,300 | 7,300 | 3,910 | 1,550 | 6,620 | 1,860 | 876 | 170 | 100 | 900 |
| 25 | 170 | 430 | 12,400 | 7,720 | 3,270 | 1,470 | 6,600 | 1,220 | 1,940 | 157 | 90 | 768 |
| 26 | 174 | 415 | 7,100 | 5,180 | 3,010 | 1,500 | 4,180 | 1,170 | 3,240 | 157 | 74 | 546 |
| 27 | 154 | 390 | *4,040 | 3,940 | 2,920 | 1,520 | 3,130 | 936 | 1,920 | 151 | 66 | *381 |
| 28 | 145 | 376 | 3,000 | 8,500 | 2,780 | 1,470 | 2,440 | 936 | 1,140 | 157 | 60 | 329 |
| 29 | 145 | 354 | 2,410 | 28,800 | - | 1,380 | 2,040 | 846 | 942 | 139 | 56 | 293 |
| 30 | 151 | 325 | 2,020 | *37,600 | ------- | 1,340 | 1,750 | 648 | 1,590 | 122 | 52 | 297 |
| 31 | 167 | ------- | 1,700 | 46,700 | ------- | 1,310 | ------- | *500 | ------- | 115 | 47 | ------- |
| Total | 4,157 | 10,598 | 153,096 | 227,444 | 323,660 | 88,470 | 167,280 | 25,934 | 27,774 | 9,205 | 4,503 | 19,024 |
| Mean | 134 | 353 | 4,939 | 7,337 | 11,560 | 2,854 | 5,576 | 837 | 926 | 297 | 145 | 634 |
| Cfsm | 0.083 | 0.220 | 3.07 | 4.57 | 7.19 | 1.78 | 3.47 | 0.521 | 0.576 | 0.185 | 0.090 | 0.395 |
| In. | 0.10 | 0.25 | 3.54 | 5.26 | 7.49 | 2.05 | 3.87 | 0.60 | 0.64 | 0.21 | 0.10 | 0.44 |

Calendar year 1956: Max 29,300 Min 78 Mean 3,368 Cfsm 2.10 In. 28.54
Water year 1956-57: Max 47,600 Min 22 Mean 2,907 Cfsm 1.81 In. 24.55

Peak discharge (base, 20,000 cfs).--Dec. 15 (1 p.m.) 21,900 cfs (21.25 ft); Jan. 31 (11 p.m.) 49,700 cfs (33.78 ft).

* Discharge measurement made on this day.

## Cumberland River at Cumberland Falls, Ky.

Location.--Lat 36°50'14", long 84°20'36", on left bank 700 ft downstream from bridge on State Highway 90 and 1,200 ft upstream from Cumberland Falls, Whitley County.

Drainage area.--1,977 sq mi.

Records available.--August 1907 to December 1911, April 1915 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 825.49 ft above mean sea level, Sandy Hook datum. Aug. 15, 1907, to Dec. 10, 1911, staff gage at site 300 ft downstream at different datum. Apr. 3, 1915, to Sept. 1, 1933, staff gage at site 500 ft downstream at same datum.

Average discharge.- 45 years (1907-11, 1915-31, 1932-57), 3,131 cfs.

Extremes.--Maximum discharge during year, 57,400 cfs Jan. 29 (gage height, 14.55 ft); minimum, 21 cfs Sept. 8, 9 (gage height, 1.05 ft).
1907-11, 1915-57: Maximum discharge, 59,600 cfs Jan. 28, 1918 (gage height, 15.5 ft, present site and datum); minimum, 4 cfs Sept. 19, 1954.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions (water years).--WSP 1386: 1919. WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.0 | 11 | 3.0 | 2,430 |
| 1.1 | 32 | 4.5 | 6,120 |
| 1.2 | 70 | 6.0 | 11,000 |
| 1.4 | 200 | 8.0 | 18,800 |
| 1.8 | 580 | 11.0 | 34,100 |
| 2.5 | 1,520 | 14.0 | 53,500 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 158 | 280 | 352 | a1,650 | 49,500 | 3,270 | 1,570 | 1,890 | 590 | 1,850 | 130 | 47 |
| 2 | 137 | 450 | 325 | a1,450 | *45,600 | 3,520 | 1,740 | 1,640 | 550 | 1,470 | 112 | 44 |
| 3 | 137 | 712 | 298 | a1,250 | 35,700 | 3,760 | 2,200 | 1,500 | 880 | 1,070 | 100 | 41 |
| 4 | 158 | 796 | 280 | a1,150 | 27,400 | 3,570 | 4,140 | 1,390 | 830 | 808 | 100 | 38 |
| 5 | 158 | 712 | 272 | a1,800 | 20,700 | 3,180 | 12,700 | 1,180 | 880 | 628 | 82 | 38 |
| 6 | 165 | 536 | 256 | a3,200 | 12,400 | 2,860 | 17,800 | 1,040 | 2,140 | 492 | 70 | 32 |
| 7 | 280 | 430 | 240 | a3,200 | 6,590 | 2,860 | 16,000 | 953 | 2,630 | 400 | 65 | 29 |
| 8 | 232 | 361 | 240 | 3,040 | 8,020 | 5,100 | 14,400 | 868 | 2,010 | 343 | 55 | 23 |
| 9 | 193 | 325 | 240 | 3,470 | 11,000 | 8,760 | 17,800 | 796 | 1,600 | 289 | *55 | 23 |
| 10 | 172 | 325 | 240 | 8,990 | 15,600 | 8,720 | 18,200 | 736 | 1,260 | 256 | 47 | 27 |
| 11 | 165 | 325 | 232 | 13,800 | 18,400 | 7,360 | 14,900 | 688 | 1,030 | 232 | 47 | 29 |
| 12 | 151 | 307 | 280 | 13,700 | 17,000 | 6,180 | 8,890 | 640 | 880 | 200 | 47 | 38 |
| 13 | 130 | *280 | 5,080 | 9,590 | 13,000 | 5,240 | 5,420 | 604 | 772 | 179 | 44 | 70 |
| 14 | 124 | 264 | 17,700 | 5,400 | 7,210 | *4,450 | 4,150 | 569 | 1,110 | 165 | 44 | 308 |
| 15 | 118 | 248 | 22,600 | 3,740 | 4,860 | 3,830 | 3,360 | 569 | 1,110 | 158 | 60 | 592 |
| 16 | 106 | 240 | 18,800 | 2,930 | 3,900 | 3,290 | 2,860 | 525 | 844 | 158 | 200 | 880 |
| 17 | 100 | 232 | 13,400 | 2,410 | 3,340 | 2,820 | 2,630 | 481 | 616 | 200 | 820 | 2,030 |
| 18 | 100 | 224 | 6,510 | 2,010 | 2,820 | 2,490 | 2,410 | 450 | 580 | 208 | 748 | 4,660 |
| 19 | 100 | 256 | 3,570 | 1,660 | 4,570 | 2,300 | 2,180 | 503 | 868 | 165 | 470 | 2,800 |
| 20 | 94 | 316 | 2,780 | 1,420 | 11,100 | 2,160 | 1,980 | 580 | 820 | 158 | 307 | 1,380 |
| 21 | 88 | 380 | 2,350 | 1,460 | 11,800 | 1,960 | 1,830 | 676 | 1,060 | 158 | 216 | 966 |
| 22 | 100 | 370 | 9,700 | 1,670 | 9,090 | 1,870 | 1,870 | 1,570 | 676 | 130 | 172 | 736 |
| 23 | 100 | 370 | 14,900 | 6,290 | 6,260 | 1,870 | 3,900 | 3,340 | 492 | 172 | 172 | 966 |
| 24 | 100 | 410 | 15,900 | *8,630 | 4,730 | 1,890 | 7,240 | *2,690 | 867 | 256 | 112 | 966 |
| 25 | 130 | 470 | 13,200 | 8,960 | 3,900 | 1,820 | 8,180 | 1,760 | 3,110 | 208 | 100 | 940 |
| 26 | 179 | 470 | 8,890 | 6,150 | 3,500 | 1,820 | 5,420 | 1,460 | 4,320 | 179 | 94 | *772 |
| 27 | 193 | 460 | 4,990 | 4,750 | 3,360 | 1,830 | 3,810 | 1,330 | 2,780 | 186 | 82 | 547 |
| 28 | 172 | 430 | 3,570 | 11,800 | 3,180 | 1,800 | 3,020 | 1,130 | 1,710 | 165 | 70 | 430 |
| 29 | 165 | 410 | a2,800 | 48,500 | - | 1,690 | 2,690 | 1,060 | 1,240 | 172 | 55 | 380 |
| 30 | 158 | 390 | a2,400 | 43,800 | -------- | 1,620 | 2,200 | 920 | 1,410 | 165 | 51 | 352 |
| 31 | 186 | -------- | a2,000 | 43,400 | -------- | 1,570 | -------- | 712 | -------- | 151 | 51 | -------- |
| Total | 4,549 | 11,779 | 174,395 | 271,270 | 364,530 | 105,460 | 195,490 | 34,250 | 39,665 | 11,371 | 4,778 | 20,184 |
| Mean | 147 | 393 | 5,626 | 8,751 | 13,020 | 3,402 | 6,516 | 1,105 | 1,322 | 367 | 154 | 673 |
| Cfsm | 0.074 | 0.199 | 2.85 | 4.43 | 6.59 | 1.72 | 3.30 | 0.559 | 0.669 | 0.186 | 0.078 | 0.340 |
| In. | 0.09 | 0.22 | 3.28 | 5.10 | 6.86 | 1.98 | 3.68 | 0.64 | 0.75 | 0.21 | 0.09 | 0.38 |

Calendar year 1956: Max 32,900 Min 88 Mean 3,813 Cfsm 1.93 In. 26.26
Water year 1956-57: Max 49,500 Min 23 Mean 3,391 Cfsm 1.72 In. 23.28

Peak discharge (base, 24,000 cfs).--Dec. 15 (3 a.m.) 24,000 cfs (9.11 ft); Jan. 29 (3 p.m.) 57,400 cfs (14.55 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for nearby stations.

## Laurel River at Corbin, Ky.

Location.--Lat 36°58'09", long 84°07'38", on left bank 200 ft downstream from bridge on State Highway 312, three-quarters of a mile northwest of Corbin, Whitley County, and 1.0 mile downstream from Lynn Camp Creek.

Drainage area.--201 sq mi.

Records available.--October 1922 to September 1924, July 1942 to September 1957. Prior to October 1953, published as Laurel River near Otas.

Gage.--Water-stage recorder. Datum of gage is 956.05 ft above mean sea level, Sandy Hook datum. Oct. 2, 1922, to Sept. 30, 1924, staff gage at site 200 ft upstream at datum 2.08 ft higher.

Average discharge.--17 years, 345 cfs.

Extremes.--Maximum discharge during year, 16,200 cfs Jan. 29 (gage height, 19.30 ft), from rating curve extended above 9,000 cfs on basis of contracted-opening determination of peak flow; minimum, 0.6 cfs Oct. 1, 2; minimum gage height, 1.00 ft Sept. 12, from graph based on gage readings.

1922-24, 1942-57: Maximum discharge, that of Jan. 29, 1957, from rating curve extended above 9,000 cfs on basis of contracted-opening determination of peak flow; no flow Oct. 5, 6, 1922, Nov. 3, 1923, part of Sept. 19, 1956.

Floods in 1911, 1913, and 1922, reached a stage of 19 ft, present datum, from information by Corps of Engineers.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 1053,1306 | 1946 | Jan. 8, 1946 | 14,400 | 17.94 |
| 1113,1306 | 1948 | Feb. 14, 1948 | 11,500 | 15.70 |
| 1206 | 1951 | Feb. 1, 1951 | 9,800 | 14.38 |
| 1236 | 1952 | Mar. 23, 1952 | 9,830 | 14.40 |

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some regulation at low flow by city water-supply reservoir.

Revisions.--WSP 1436: Drainage area. Revised figures of discharge, in cubic feet per second, for a high-water period in the water year 1946, superseding those published in WSP 1053 and 1306, are given herewith:

Jan. 7, 1946..... 8,510
Jan. 8, 1946..... 11,900

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| January 1946..... | 36,664 | 11,900 | 156 | 1,183 | 5.97 | 6.89 |
| Water year 1945-46..... | 113,327.2 | 11,900 | 1.3 | 310 | 1.57 | 21.29 |
| Calendar year 1946..... | 101,779.3 | 11,900 | 2.4 | 279 | 1.41 | 19.12 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.1 | 32 | 5.0 | 153 | 2,160 | 439 | 140 | 64 | a17 | 59 | 7.0 | 2.7 |
| 2 | 1.2 | 13 | 4.8 | 120 | 2,590 | 433 | 376 | 56 | a16 | 42 | 5.0 | 2.7 |
| 3 | 2.0 | 7.3 | 4.2 | 93 | 1,740 | 388 | 361 | 46 | a25 | 32 | 4.6 | 2.7 |
| 4 | 5.2 | 5.2 | 4.2 | 106 | 1,010 | 331 | 835 | 39 | a40 | 26 | 20 | 2.7 |
| 5 | 4.4 | 3.6 | 4.2 | 381 | 658 | 288 | 1,740 | a34 | 48 | 19 | 16 | 2.7 |
| 6 | 2.4 | 3.2 | 3.8 | 406 | a700 | 262 | 1,430 | a29 | 54 | 13 | 5.8 | 2.7 |
| 7 | 1.7 | 2.8 | 4.0 | 345 | a850 | 421 | 765 | a25 | 41 | 11 | 4.2 | 2.7 |
| 8 | 1.4 | 2.6 | 5.2 | 294 | 940 | 1,240 | 1,840 | a23 | 30 | 8.8 | 3.5 | 2.7 |
| 9 | *1.7 | 2.8 | 6.1 | 930 | 1,640 | 1,120 | 3,130 | a21 | 25 | 7.5 | 3.4 | 2.8 |
| 10 | 1.7 | 2.2 | 5.4 | 2,270 | 3,000 | 1,030 | 1,680 | a19 | 26 | 7.0 | 3.4 | 3.3 |
| 11 | 1.7 | 2.0 | 5.2 | 1,900 | 2,290 | *830 | 765 | a18 | 27 | 5.6 | 3.4 | 3.5 |
| 12 | 2.0 | 1.8 | 30 | 1,020 | 1,140 | 654 | 502 | a17 | 35 | 4.4 | 3.4 | 2.7 |
| 13 | 2.0 | *1.7 | 2,950 | 580 | 606 | 494 | 388 | a16 | 27 | 4.0 | 3.3 | 24 |
| 14 | 2.2 | 1.6 | 5,710 | 412 | 439 | 400 | 302 | a20 | 20 | 5.4 | 3.4 | 104 |
| 15 | 1.8 | 1.8 | 4,070 | 312 | 340 | 343 | 248 | a22 | 16 | 11 | *7.0 | 28 |
| 16 | 2.0 | 4.0 | 1,560 | 267 | 302 | *288 | 225 | 15 | 20 | 7.2 | 4.2 | 62 |
| 17 | 1.8 | 3.4 | 544 | 188 | 252 | 245 | 228 | 11 | 35 | 4.6 | a3.2 | 24 |
| 18 | 1.8 | 2.4 | 412 | 164 | 212 | 220 | 195 | 55 | 36 | 4.4 | a3.1 | 28 |
| 19 | 1.7 | 2.2 | 360 | 126 | 586 | 220 | 168 | 51 | 44 | 4.6 | a3.1 | 18 |
| 20 | 1.8 | 2.2 | 297 | 128 | 1,320 | 202 | 152 | *104 | 43 | 4.2 | a3.0 | 16 |
| 21 | 1.8 | 3.2 | 312 | 204 | 840 | 178 | 130 | 79 | 27 | 3.6 | a3.0 | 18 |
| 22 | 2.2 | 5.9 | 2,560 | 463 | 642 | 190 | 124 | 282 | 17 | 3.5 | a2.9 | 15 |
| 23 | 3.6 | 4.8 | 2,500 | 3,460 | 502 | 222 | 187 | 522 | 77 | 21 | a2.9 | 36 |
| 24 | 2.0 | 5.9 | 1,840 | *2,420 | 418 | 182 | 295 | 217 | 582 | 27 | a2.8 | 26 |
| 25 | 1.8 | 4.8 | 1,200 | 1,090 | 370 | 175 | 295 | 111 | 1,230 | 13 | a2.8 | 27 |
| 26 | 2.2 | 5.0 | *560 | 610 | 382 | 200 | 195 | 79 | 526 | 8.0 | a2.7 | *18 |
| 27 | 5.4 | 6.3 | 437 | 716 | 412 | 178 | 154 | 61 | *185 | 6.4 | 2.7 | 14 |
| 28 | 2.2 | 5.9 | 333 | 2,330 | 361 | 154 | 118 | a40 | 109 | 6.2 | 2.7 | 9.8 |
| 29 | 2.2 | 6.1 | 279 | *13,000 | - | 138 | *99 | a25 | 118 | 8.0 | 2.7 | 12 |
| 30 | 1.6 | 5.4 | 223 | 9,120 | ------- | 132 | 80 | a20 | 79 | 6.6 | 2.7 | 11 |
| 31 | 2.7 | ------- | 186 | 2,590 | ------- | 126 | ------- | a18 | ------- | 8.8 | 2.7 | ------- |
| Total | 69.3 | 151.1 | 26,415.1 | 46,198 | 26,702 | 11,723 | 17,147 | 2,139 | 3,575 | 392.8 | 140.6 | 524.7 |
| Mean | 2.24 | 5.04 | 852 | 1,490 | 954 | 378 | 572 | 69.0 | 119 | 12.7 | 4.54 | 17.5 |
| Cfsm | 0.011 | 0.025 | 4.24 | 7.41 | 4.75 | 1.88 | 2.85 | 0.343 | 0.592 | 0.063 | 0.023 | 0.087 |
| In. | 0.01 | 0.03 | 4.89 | 8.55 | 4.94 | 2.17 | 3.17 | 0.40 | 0.66 | 0.07 | 0.03 | 0.10 |

Calendar year 1956: Max 8,920 Min 0.2 Mean 411 Cfsm 2.04 In. 27.79
Water year 1956-57: Max 13,000 Min 1.1 Mean 370 Cfsm 1.84 In. 25.02

Peak discharge (base, 4,800 cfs).--Dec. 14 (1 p.m.) 6,880 cfs (12.13 ft); Jan. 29 (3:30 p.m.) 16,200 cfs (19.30 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Wood Creek near London, Ky.

Location.--Lat 37°09'40", long 84°06'45", on left bank 50 ft downstream from bridge on U. S. Highway 25, 0.2 mile upstream from Peacock Branch, 2.8 miles northwest of London, Laurel County, and about 12 miles upstream from mouth.

Drainage area.--3.89 sq mi.

Records available.--September 1953 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,123.50 ft above mean sea level, unadjusted.

Extremes.--Maximum discharge during year, 306 cfs Jan. 29 (gage height, 4.97 ft), from rating curve extended above 160 cfs by logarithmic plotting; minimum, 0.4 cfs on many days.

1953-57: Maximum discharge, 506 cfs Feb. 17, 1956 (gage height, 6.23 ft), from rating curve extended above 160 cfs by logarithmic plotting; minimum, 0.2 cfs for several days during most years; minimum gage height, 1.09 ft Aug. 22, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 10, 11, Apr. 5, 8)

| | | | |
|---|---|---|---|
| 1.18 | 0.4 | 1.7 | 12 |
| 1.2 | .5 | 1.9 | 22 |
| 1.25 | .9 | 3.0 | 100 |
| 1.3 | 1.4 | 4.0 | 185 |
| 1.4 | 3.1 | 5.0 | 310 |
| 1.5 | 5.1 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.4 | 2.7 | 0.5 | 4.7 | 63 | 7.5 | 3.3 | 1.6 | 0.8 | 1.0 | 0.5 | 0.4 |
| 2 | .4 | 1.2 | .5 | 4.1 | 49 | 6.6 | 3.5 | 1.5 | .8 | .9 | .5 | .4 |
| 3 | 1.6 | .9 | .5 | 3.9 | 29 | 6.0 | 2.9 | 1.3 | .8 | .9 | .5 | .4 |
| 4 | 1.2 | .9 | .5 | 4.7 | 18 | 5.4 | *15 | 1.3 | .8 | .8 | .5 | .4 |
| 5 | .6 | .7 | .5 | 5.4 | 18 | 5.1 | 27 | 1.3 | 4.1 | .7 | .5 | .4 |
| 6 | .5 | .7 | .5 | 4.5 | 16 | 5.4 | 18 | 1.3 | 1.5 | .7 | .5 | .4 |
| 7 | .4 | .6 | .5 | 4.3 | 16 | 10 | 12 | 1.3 | 1.0 | .7 | .5 | .4 |
| 8 | .4 | .5 | .5 | 8.0 | 24 | 14 | *38 | 1.3 | .8 | .7 | .5 | .4 |
| 9 | .4 | .5 | .6 | 23 | 60 | 13 | 28 | 1.2 | .8 | .7 | .4 | .4 |
| 10 | *.4 | .5 | .5 | 41 | 99 | 13 | 18 | 1.2 | .9 | .7 | .4 | .5 |
| 11 | .4 | .5 | .8 | 19 | 33 | *12 | 13 | 1.2 | .8 | *.7 | .4 | .4 |
| 12 | .4 | .4 | 16 | 14 | 20 | 13 | 11 | 1.2 | .8 | .7 | .4 | 1.2 |
| 13 | .4 | .4 | *70 | 11 | 14 | 10 | 8.6 | 1.1 | .7 | .6 | .4 | 6.5 |
| 14 | .4 | *.4 | 70 | 9.1 | 11 | 9.1 | 6.9 | 1.1 | .8 | .8 | 1.0 | a12 |
| 15 | .4 | .4 | 22 | 7.8 | 8.6 | 7.8 | 6.0 | 1.0 | .7 | .7 | .9 | a6.0 |
| 16 | .4 | 1.4 | 12 | 6.9 | 7.2 | 6.6 | 5.7 | 1.0 | .6 | .6 | .5 | a3.0 |
| 17 | .4 | .6 | 9.1 | 5.7 | 6.3 | 6.0 | 4.9 | .9 | .6 | .7 | .5 | a1.5 |
| 18 | .4 | .5 | 9.1 | 4.9 | 5.4 | 5.7 | 4.3 | .9 | 2.1 | 1.5 | .5 | a1.0 |
| 19 | .4 | .5 | 6.9 | 4.5 | 15 | 5.4 | 3.9 | 3.8 | 1.3 | .7 | *.4 | a.8 |
| 20 | .4 | .5 | 7.2 | 4.7 | 11 | 4.7 | 3.5 | *1.8 | .8 | .6 | .4 | a2.0 |
| 21 | .4 | 2.4 | 15 | 5.7 | 11 | 4.5 | 3.3 | 1.3 | .7 | .6 | .4 | a1.7 |
| 22 | .6 | 1.3 | 48 | 57 | 11 | 4.7 | 4.3 | 4.5 | .6 | .5 | .4 | a1.3 |
| 23 | .4 | 1.0 | 28 | *58 | 9.1 | 4.1 | 3.3 | 1.8 | 12 | 2.0 | .4 | a1.1 |
| 24 | .4 | .8 | 21 | 23 | 8.2 | 3.7 | 4.0 | 1.4 | 5.1 | .8 | 3.6 | 1.0 |
| 25 | .4 | .8 | 16 | 17 | 7.5 | 3.9 | 3.1 | 1.2 | 3.5 | .6 | .4 | .8 |
| 26 | 1.1 | .7 | *13 | 12 | 8.6 | 3.5 | 2.5 | 1.2 | 1.6 | .6 | .4 | .7 |
| 27 | .5 | .7 | 10 | 18 | 6.9 | 3.1 | 2.1 | 1.1 | 1.3 | .5 | .4 | .7 |
| 28 | .5 | .6 | 8.6 | 60 | 7.2 | 2.9 | a2.0 | .9 | 1.6 | .5 | .4 | .6 |
| 29 | .4 | .6 | 7.5 | 187 | - | 2.7 | *2.0 | .9 | 2.0 | .5 | 1.1 | .9 |
| 30 | .4 | .5 | 6.0 | 74 | ------- | 2.5 | 1.8 | .9 | 1.2 | .5 | .8 | .7 |
| 31 | 3.8 | ------- | 5.4 | 44 | ------- | 2.3 | ------- | .9 | ------- | .5 | .5 | ------- |
| Total | 19.2 | 24.2 | 406.7 | 746.9 | 593.0 | 204.2 | 261.9 | 43.4 | 51.1 | 23.0 | 19.0 | 48.0 |
| Mean | 0.62 | 0.81 | 13.1 | 24.1 | 21.2 | 6.59 | 8.73 | 1.40 | 1.70 | 0.74 | 0.61 | 1.60 |
| Cfsm | 0.159 | 0.208 | 3.37 | 6.20 | 5.45 | 1.69 | 2.24 | 0.360 | 0.437 | 0.190 | 0.157 | 0.411 |
| In. | 0.18 | 0.23 | 3.89 | 7.14 | 5.67 | 1.95 | 2.50 | 0.41 | 0.49 | 0.22 | 0.18 | 0.46 |

Calendar year 1956: Max 143 Min 0.3 Mean 7.37 Cfsm 1.89 In. 25.79
Water year 1956-57: Max 187 Min 0.4 Mean 6.69 Cfsm 1.72 In. 23.32

Peak discharge (base, 100 cfs).--Dec. 14 (9:15 a.m.) 138 cfs (3.47 ft); Dec. 21 (12 p.m.) 114 cfs (3.18 ft); Jan. 22 (9 p.m.) 277 cfs (4.78 ft); Jan. 29 (8:30 a.m.) 306 cfs (4.97 ft); Feb. 10 (1 a.m.) 204 cfs (4.19 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for stations on nearby streams.

## Rockcastle River at Billows, Ky.

Location.--Lat 37°10'05", long 84°17'25", on left bank 200 ft upstream from bridge on State Highway 80 at Billows, Rockcastle County, 1.0 mile downstream from Hawk Creek, 1.0 mile upstream from Pine Creek, and 13 miles west of London.

Drainage area.--604 sq mi.

Records available.--July 1936 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 802.90 ft above mean sea level, datum of 1929. Prior to Nov. 19, 1940, staff gage at same site and datum.

Average discharge.--21 years, 892 cfs.

Extremes.--Maximum discharge during year, 25,000 cfs Jan. 30 (gage height, 31.90 ft); minimum, 0.8 cfs Sept. 9 (gage height, 0.56 ft).

1936-57: Maximum discharge, 46,800 cfs June 29, 1947 (gage height, 45.48 ft); minimum, that of Sept. 9, 1957.

Flood in January 1913 reached a stage of about 40 ft, from information by Corps of Engineers.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | | | |
|---|---|---|---|---|---|
| 0.57 | 0.9 | 1.4 | 55 | 6.0 | 1,560 |
| .6 | 1.2 | 2.0 | 128 | 10.0 | 3,580 |
| .7 | 3.7 | 2.5 | 220 | 15.0 | 6,950 |
| .8 | 7.5 | 3.0 | 340 | 20.0 | 11,300 |
| 1.0 | 20 | 4.0 | 680 | 29.0 | 21,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.1 | 53 | 54 | 400 | 4,020 | 1,220 | 478 | 352 | 110 | 115 | 21 | 3.7 |
| 2 | 6.7 | 169 | 50 | 331 | 7,850 | 1,100 | 1,290 | 305 | 104 | 97 | 17 | 2.8 |
| 3 | 7.1 | 128 | 47 | 265 | 3,840 | 984 | 1,550 | 268 | 109 | 82 | 15 | 2.5 |
| 4 | 12 | 89 | 45 | 252 | 2,370 | 856 | 3,400 | 230 | 100 | 66 | 15 | 2.2 |
| 5 | 24 | 68 | 41 | 337 | 1,720 | 748 | 6,920 | 208 | 95 | 55 | 14 | 1.9 |
| 6 | 59 | 53 | 40 | 451 | 2,390 | 672 | 4,480 | 190 | 114 | 47 | 12 | 1.7 |
| 7 | 49 | 45 | 39 | 433 | 2,340 | 748 | 2,650 | 172 | 136 | 40 | 12 | 1.5 |
| 8 | 34 | 39 | 40 | 439 | 2,340 | 1,640 | 3,010 | 155 | 154 | 35 | a11 | 1.3 |
| 9 | 27 | 35 | 43 | 1,310 | 4,640 | 2,060 | 8,580 | 143 | 367 | 35 | a10 | .9 |
| 10 | *22 | 32 | 49 | 7,090 | 11,200 | 2,360 | 3,520 | 132 | 771 | 32 | a9.0 | 3.4 |
| 11 | 19 | 29 | 61 | 4,570 | 7,560 | 2,520 | 2,180 | 131 | 472 | 30 | a8.5 | 4.0 |
| 12 | 16 | 26 | 91 | 2,280 | 2,840 | 2,340 | 1,560 | 130 | 280 | 30 | a8.0 | 28 |
| 13 | 14 | 24 | 3,110 | 1,570 | 1,930 | 1,910 | 1,140 | 121 | 236 | 26 | a7.5 | 163 |
| 14 | 12 | *22 | 10,100 | 1,110 | 1,380 | 1,500 | 892 | 113 | 256 | 26 | a10 | 602 |
| 15 | 11 | 20 | 11,500 | 832 | 1,040 | 1,220 | 732 | 115 | 506 | 44 | a17 | 1,560 |
| 16 | 10 | 30 | 2,500 | 688 | 860 | *1,010 | 628 | 114 | 280 | 354 | a18 | 733 |
| 17 | 9.5 | 39 | 1,190 | 522 | 708 | 836 | 584 | 100 | 202 | 176 | a16 | 580 |
| 18 | 9.0 | 41 | 816 | 439 | 586 | 748 | 528 | 91 | 157 | 111 | a14 | 484 |
| 19 | 8.0 | 36 | 620 | 373 | 784 | 708 | 466 | 97 | 145 | 73 | *13 | 302 |
| 20 | 9.0 | 38 | 508 | 355 | 1,760 | 636 | 415 | 170 | 232 | 57 | 10 | 230 |
| 21 | 10 | 47 | 900 | 376 | 1,560 | 525 | 379 | *218 | 148 | 46 | 8.0 | 236 |
| 22 | 11 | 65 | 3,940 | 1,660 | 1,580 | 511 | 361 | 365 | 109 | 38 | 6.7 | 322 |
| 23 | 11 | 94 | 4,660 | *15,300 | 1,520 | 542 | 884 | 2,460 | 90 | 34 | 5.9 | 397 |
| 24 | 10 | 115 | 3,690 | 7,630 | 1,360 | 478 | 980 | 928 | 399 | 50 | 5.1 | 382 |
| 25 | 11 | 95 | 3,040 | 2,460 | 1,210 | 463 | 1,030 | 511 | 391 | 62 | 4.3 | 250 |
| 26 | 14 | 84 | 1,770 | 1,660 | 1,190 | 504 | 792 | 364 | 285 | 44 | 4.3 | 178 |
| 27 | 15 | 77 | *1,180 | 1,320 | 1,430 | 525 | 632 | 280 | 182 | 36 | 4.3 | 138 |
| 28 | 16 | 72 | 888 | 4,270 | 1,300 | 550 | 525 | 220 | *132 | 31 | 4.3 | 112 |
| 29 | 20 | 67 | 708 | 17,800 | - | 532 | *472 | 174 | 125 | 29 | 4.3 | 100 |
| 30 | 18 | 61 | 553 | 21,100 | ------- | 525 | 412 | 145 | 131 | 29 | 4.3 | 91 |
| 31 | 19 | ------ | 457 | 5,420 | ------- | 497 | ------- | 124 | ------- | 26 | 4.0 | ------ |
| Total | 520.4 | 1,793 | 52,730 | 103,043 | 73,310 | 31,468 | 51,470 | 9,126 | 6,818 | 1,956 | 313.5 | 6,913.9 |
| Mean | 16.8 | 59.8 | 1,701 | 3,324 | 2,618 | 1,015 | 1,716 | 294 | 227 | 63.1 | 10.1 | 230 |
| Cfsm | 0.028 | 0.099 | 2.82 | 5.50 | 4.33 | 1.68 | 2.84 | 0.487 | 0.376 | 0.104 | 0.017 | 0.381 |
| In. | 0.03 | 0.11 | 3.25 | 6.34 | 4.51 | 1.94 | 3.17 | 0.56 | 0.42 | 0.12 | 0.02 | 0.43 |

Calendar year 1956: Max 24,000 Min 6.7 Mean 1,130 Cfsm 1.87 In. 25.47
Water year 1956-57: Max 21,100 Min 0.9 Mean 930 Cfsm 1.54 In. 20.90

Peak discharge (base, 14,000 cfs).--Dec. 15 (5:30 a.m.) 14,500 cfs (23.15 ft); Jan. 23 (4 p.m.) 17,300 cfs (25.75 ft); Jan. 30 (3:30 a.m.) 25,000 cfs (31.90 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for stations on nearby streams.

## Cane Branch near Parkers Lake, Ky.

Location.--Lat 36°52'04", long 84°26'57", on left bank 2,100 ft upstream from confluence with West Fork, 2.5 miles northeast of Parkers Lake, and 2.6 miles east of Greenwood, McCreary County.

Drainage area.--0.67 sq mi.

Records available.--February 1956 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 979.4 ft above mean sea level, datum of 1929 (levels by U. S. Forest Service).

Extremes.--1956: Maximum discharge during period February to September, 98 cfs Apr. 6 (gage height, 1.57 ft); minimum, 0.031 cfs on several days in September (gage height, 0.465 ft).
1956-57: Maximum discharge during water year, 198 cfs Jan. 29 (gage height, 2.43 ft, backwater from ice); minimum, 0.005 cfs Sept. 7, 8 (gage height, 0.43 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Record of chemical analyses, water temperatures, and suspended sediment loads for the water year 1957 are given in WSP 1520.

Rating table, Feb. 1, 1956, to Sept. 30, 1957, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.44 | 0.01 | 0.9 | 7.0 |
| .50 | .09 | 1.0 | 11.8 |
| .55 | .26 | 1.1 | 18.9 |
| .60 | .56 | 1.2 | 29 |
| .65 | 1.06 | 1.4 | 61 |
| .7 | 1.74 | 1.6 | 106 |
| .8 | 3.8 | | |

Discharge, in cubic feet per second, February to September 1956

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | - | 5.0 | 1.32 | 0.49 | 0.56 | 0.41 | 0.21 | 0.12 | 0.065 |
| 2 | | | | - | 3.0 | 1.96 | .94 | .67 | .09 | .30 | .30 | .065 |
| 3 | | | | - | *11.4 | 2.8 | *.90 | .73 | .077 | .09 | .19 | .050 |
| 4 | | | | - | *15.1 | 2.7 | 3.5 | .60 | .065 | .057 | .12 | .050 |
| 5 | | | | - | 3.8 | 1.89 | 2.04 | .52 | .057 | .13 | .09 | .071 |
| 6 | | | | - | 6.6 | 1.46 | 21.3 | .45 | .050 | .077 | .077 | .12 |
| 7 | | | | - | 3.7 | 5.4 | 5.3 | .45 | .050 | .050 | .077 | .077 |
| 8 | | | | - | 2.13 | 5.4 | 2.6 | .36 | .050 | .13 | .065 | .057 |
| 9 | | | | - | 1.25 | *2.8 | 1.74 | *.31 | .057 | .065 | .057 | .050 |
| 10 | | | | - | .88 | 1.89 | 1.32 | .26 | .057 | .050 | .065 | .043 |
| 11 | | | | - | 1.66 | 1.46 | 1.62 | .22 | .050 | .043 | .083 | .043 |
| 12 | | | | - | 1.39 | 1.74 | .88 | .18 | .043 | .078 | .057 | .037 |
| 13 | | | | - | 1.19 | 3.2 | .68 | .16 | .053 | .69 | .057 | .037 |
| 14 | | | | - | 2.6 | 23.8 | .64 | .15 | .14 | .48 | .53 | *.031 |
| 15 | | | | - | 6.0 | 4.8 | 2.8 | .15 | .065 | .13 | .09 | .031 |
| 16 | | | | - | 3.5 | 5.9 | *5.5 | .15 | .057 | .74 | .077 | .031 |
| 17 | | | | - | *25.3 | 4.0 | 2.7 | .12 | .050 | .56 | .065 | *.031 |
| 18 | | | | - | 25.3 | 2.8 | 1.96 | .10 | 1.07 | .15 | .065 | .031 |
| 19 | | | | - | 7.4 | 2.8 | 1.46 | .10 | .31 | .10 | .69 | .037 |
| 20 | | | | - | 6.4 | 2.5 | 1.06 | .09 | .16 | *.077 | .46 | .037 |
| 21 | | | | - | 2.6 | 1.53 | .83 | .077 | *.12 | .065 | .21 | .031 |
| 22 | | | | - | 1.74 | 1.43 | .78 | .077 | .09 | .057 | .12 | .037 |
| 23 | | | | - | 1.12 | .88 | 1.00 | .065 | .077 | .82 | .09 | .037 |
| 24 | | | | †0.06 | 2.7 | 1.28 | .68 | .065 | .077 | .82 | *.065 | .050 |
| 25 | | | | - | 5.0 | .88 | .60 | .057 | .32 | .39 | .065 | .050 |
| 26 | | | | - | 3.1 | .88 | .56 | .18 | .09 | .20 | .065 | .043 |
| 27 | | | | - | 2.4 | .78 | .56 | .13 | .057 | .13 | .057 | .043 |
| 28 | | | | - | 2.12 | .73 | .49 | .10 | .050 | .33 | .19 | .043 |
| 29 | | | | - | 1.67 | .78 | .45 | .09 | .050 | .64 | .09 | .043 |
| 30 | | | | †6.7 | ------- | .60 | .45 | .065 | .056 | .32 | .077 | .037 |
| 31 | | ------- | | - | ------- | .52 | ------- | .082 | ------- | .16 | .065 | ------- |
| Total | | | | - | 156.05 | 90.91 | 65.83 | 7.318 | 3.948 | 6.139 | 4.429 | 1.408 |
| Mean | | | | - | 5.38 | 2.93 | 2.19 | 0.236 | 0.132 | 0.263 | 0.143 | 0.0469 |
| Cfsm | | | | - | 8.03 | 4.37 | 3.27 | 0.352 | 0.197 | 0.393 | 0.213 | 0.070 |
| In. | | | | - | 8.66 | 5.05 | 3.65 | 0.41 | 0.22 | 0.45 | 0.25 | 0.08 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 40 cfs).--Feb. 4 (9:10 a.m.) 42 cfs (1.29 ft); Feb. 18 (1:35 a.m.) 84 cfs (1.51 ft); Mar. 14 (6:30 a.m.) 75 cfs (1.47 ft); Apr. 6 (10:30 a.m.) 98 cfs (1.57 ft).

* Discharge measurement made on this day.
† Result of discharge measurement.

Cane Branch near Parkers Lake, Ky.--Continued

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.037 | 0.15 | 0.037 | 0.26 | 8.3 | 1.81 | 0.75 | 0.24 | 0.065 | *0.12 | 0.031 | 0.010 |
| 2 | .037 | .050 | .037 | .20 | 4.9 | 1.60 | 1.13 | .20 | .12 | .10 | .031 | .010 |
| 3 | .09 | .050 | .037 | .18 | 2.8 | 1.32 | 1.12 | .16 | .13 | .077 | .031 | .010 |
| 4 | .11 | .043 | .037 | .82 | 1.89 | 1.06 | 3.4 | .15 | .10 | .065 | .080 | .010 |
| 5 | .043 | .037 | .037 | 1.68 | 2.8 | .94 | 3.5 | .13 | .44 | .065 | .037 | .010 |
| 6 | .043 | .043 | .037 | 1.19 | 2.7 | 1.03 | 2.7 | .12 | .24 | .050 | .026 | .010 |
| 7 | .037 | .050 | .037 | .94 | 2.5 | 3.1 | 1.81 | .10 | .12 | .050 | .026 | .010 |
| 8 | .031 | .050 | .060 | .78 | 2.5 | 4.0 | *10.3 | .09 | .29 | .050 | .026 | .010 |
| 9 | *.026 | .050 | .050 | 5.5 | 2.7 | 2.7 | 4.5 | .09 | .85 | .083 | .026 | .019 |
| 10 | .031 | .050 | .043 | *6.5 | 3.7 | 2.6 | 2.5 | .09 | .55 | .065 | .026 | .38 |
| 11 | .037 | .043 | .050 | 2.6 | 2.4 | 2.5 | 1.74 | .16 | .33 | .050 | .026 | .026 |
| 12 | .037 | .043 | 1.33 | 1.74 | 1.89 | 2.04 | 1.25 | .09 | .26 | .050 | .026 | .050 |
| 13 | .037 | .037 | 7.3 | 1.25 | 1.46 | 1.60 | .94 | .065 | .23 | .050 | .026 | 1.15 |
| 14 | .037 | .031 | 6.6 | .88 | 1.12 | 1.32 | .78 | .37 | .18 | .065 | .032 | *1.89 |
| 15 | .037 | .039 | 1.59 | .78 | .88 | 1.19 | .64 | .16 | .15 | .13 | .072 | .42 |
| 16 | .037 | .19 | .68 | .60 | .83 | .94 | .88 | .09 | .13 | .057 | .031 | *.34 |
| 17 | .037 | .043 | .42 | .49 | .68 | .83 | .64 | .077 | .13 | .050 | .026 | .22 |
| 18 | .057 | .037 | .43 | .42 | .64 | .78 | .52 | .36 | .10 | .16 | .026 | .16 |
| 19 | .050 | .031 | .31 | .39 | a3 | .68 | .45 | .82 | .10 | .065 | .026 | .13 |
| 20 | .050 | .031 | .38 | .48 | 3.5 | .60 | .42 | .30 | .09 | .043 | .021 | .15 |
| 21 | .050 | .21 | 4.9 | .94 | *2.4 | *.56 | .55 | .16 | .077 | .043 | .017 | .12 |
| 22 | .19 | .057 | 11.9 | 10.6 | 2.04 | .72 | .81 | 1.84 | .065 | .037 | .010 | .17 |
| 23 | .09 | .043 | 5.1 | 8.5 | 1.74 | .56 | .68 | .83 | .66 | .37 | .010 | .10 |
| 24 | .077 | .037 | 2.5 | 2.9 | 1.46 | .49 | .68 | a.4 | .75 | .077 | .010 | .09 |
| 25 | .09 | .037 | 1.4 | 1.89 | 1.25 | .66 | .56 | .24 | .79 | .043 | .018 | .077 |
| 26 | .19 | .043 | *.94 | *1.32 | 1.43 | .56 | .49 | a.15 | .28 | .043 | .021 | .077 |
| 27 | .065 | .043 | .68 | 2.2 | 1.12 | .56 | .42 | a.1 | .31 | .043 | .013 | .077 |
| 28 | .057 | .037 | .56 | *12.2 | 1.73 | .49 | .48 | a.1 | .48 | .043 | .013 | .09 |
| 29 | .057 | .037 | .49 | *b84 | - | .49 | .36 | a.1 | .32 | .037 | .013 | .29 |
| 30 | .050 | .037 | .36 | 6.1 | ------- | .49 | .28 | *.09 | .18 | .037 | .013 | .12 |
| 31 | .44 | -------- | .31 | 3.7 | ------- | .45 | ------- | .09 | -------- | .037 | .010 | -------- |
| Total | 2.257 | 1.679 | 48.662 | 162.03 | 64.36 | 38.67 | 45.28 | 7.962 | 8.517 | 2.255 | 0.800 | 6.226 |
| Mean | 0.0728 | 0.0560 | 1.57 | 5.23 | 2.30 | 1.25 | 1.51 | 0.257 | 0.284 | 0.0727 | 0.0258 | 0.208 |
| Cfsm | 0.109 | 0.084 | 2.34 | 7.81 | 3.43 | 1.87 | 2.25 | 0.384 | 0.424 | 0.109 | 0.039 | 0.310 |
| In. | 0.13 | 0.09 | 2.70 | 8.99 | 3.57 | 2.15 | 2.51 | 0.44 | 0.47 | 0.13 | 0.04 | 0.35 |

Calendar year 1956 : Max - Min - Mean - Cfsm - In. -
Water year 1956-57 : Max 84 Min 0.010 Mean 1.06 Cfsm 1.58 In. 21.57

Peak discharge (base, 40 cfs).--Dec. 21 (11:30 p.m.) 61 cfs (1.40 ft); Jan. 22 (9 p.m.) 73 cfs (1.46 ft); Jan. 29 (3:30 a.m.) 198 cfs (2.43 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Helton Branch near Greenwood.

b Stage discharge relation affected by ice.

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## Helton Branch at Greenwood, Ky.

Location.--Lat 36°53'08", long 84°28'56", on left bank 250 ft upstream from mouth and 1 mile northeast of Greenwood, McCreary County.

Drainage area.--0.85 sq mi.

Records available.--January 1956 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 993.8 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--1956: Maximum discharge during period January to September, 76 cfs Feb. 18 (gage height, 1.21 ft); maximum gage height, 1.46 ft Jan. 30 (backwater from debris); minimum discharge, 0.08 cfs Sept. 30.
1956-57: Maximum discharge during water year, 136 cfs Jan. 29 (gage height, 1.35 ft); minimum, 0.05 cfs Oct. 2.

Remarks.--Records good between 0.2 and 10 cfs, fair below and above. Records of chemical analyses, water temperatures and suspended sediment loads for the water year 1957 are given in WSP 1520.

Rating table, Jan. 1, 1956, to Sept. 30, 1957, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 29, 30, 1956)

| | | | |
|---|---|---|---|
| 0.45 | 0.06 | 0.75 | 3.7 |
| .50 | .21 | .80 | 5.8 |
| .55 | .44 | .90 | 11.2 |
| .60 | .81 | 1.00 | 17.6 |
| .65 | 1.30 | 1.10 | 35 |
| .70 | 2.20 | 1.20 | 72 |

Discharge, in cubic feet per second, January to September 1956

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | a0.15 | a6 | 2.1 | 0.53 | 0.57 | 0.36 | a0.15 | 0.23 | 0.11 |
| 2 | | | | a.15 | a5 | 2.5 | .78 | .90 | *.21 | a.2 | .27 | .12 |
| 3 | | | | a.15 | *a15 | 2.9 | *.85 | 1.03 | .19 | a.25 | .27 | .12 |
| 4 | | | | a.15 | 16.6 | 3.2 | 2.6 | .89 | .17 | a.15 | .23 | .11 |
| 5 | | | | .12 | 5.9 | 2.35 | 1.6 | .81 | .15 | a.2 | .21 | .11 |
| 6 | | | | .12 | 9.4 | 1.8 | 17.2 | .69 | .15 | a.15 | .21 | .12 |
| 7 | | | | .11 | 5.4 | *6.3 | 7.3 | .61 | .15 | a.15 | .19 | .11 |
| 8 | | | | b.10 | 2.2 | 9.7 | 3.2 | .50 | .14 | .25 | .19 | .11 |
| 9 | | | | b.10 | 1.35 | 4.5 | 1.9 | *.44 | .14 | a.15 | .17 | .11 |
| 10 | | | | b.10 | 1.08 | 2.5 | 1.45 | .44 | .14 | .14 | .15 | .11 |
| 11 | | | | b.10 | 1.4 | 1.8 | 1.18 | .39 | .14 | a.12 | .15 | .11 |
| 12 | | | | b.10 | 1.18 | 1.85 | .89 | .36 | .14 | a.15 | .15 | .11 |
| 13 | | | | b.10 | 1.08 | 3.8 | .81 | .34 | .14 | a.7 | .15 | .09 |
| 14 | | | | b.10 | 1.5 | 25 | .81 | .31 | .21 | a.5 | .29 | .09 |
| 15 | | | | b.10 | 4.5 | 6.8 | 2.4 | .29 | .15 | a.25 | .19 | .11 |
| 16 | | | | b.10 | 3.6 | 6.1 | *5.8 | .27 | .15 | a.7 | .17 | .11 |
| 17 | | | | *b.10 | 37 | 4.9 | 3.4 | .25 | .14 | a.4 | .17 | *.11 |
| 18 | | | | b.10 | 25 | 3.2 | 2.0 | .23 | .14 | a.25 | .17 | .09 |
| 19 | | | | b.20 | 10.9 | 2.1 | 1.3 | .21 | .17 | *.21 | .33 | .09 |
| 20 | | | | b.20 | 8.8 | 1.5 | 1.08 | .21 | .17 | .21 | .40 | .09 |
| 21 | | | | b.15 | 4.5 | 1.24 | .94 | .21 | *.15 | .21 | .25 | .09 |
| 22 | | | | b.15 | 2.8 | 1.08 | .89 | .19 | .14 | .19 | .21 | .09 |
| 23 | | | | b.15 | 1.9 | .94 | .89 | .17 | .14 | .61 | .17 | .09 |
| 24 | | | | b.15 | 3.5 | 1.08 | .81 | .17 | .14 | .90 | .15 | .09 |
| 25 | | | | b.15 | 5.3 | .98 | .81 | .15 | a.25 | .69 | .14 | .09 |
| 26 | | | | b.15 | 3.9 | .89 | .73 | .25 | a.2 | .41 | .15 | .09 |
| 27 | | | | .17 | 3.3 | .81 | .65 | .23 | a.15 | .31 | .14 | .09 |
| 28 | | | | .21 | 4.9 | .77 | .57 | .21 | a.15 | .25 | *.15 | .09 |
| 29 | | | | 7.3 | 3.1 | .73 | .57 | .17 | a.15 | .31 | .12 | .09 |
| 30 | | | | *18.2 | ------- | .65 | .50 | .15 | a.15 | .29 | .11 | .09 |
| 31 | | ------- | | a15 | ------- | .57 | -------- | .19 | -------- | .23 | .11 | -------- |
| Total | | | | 44.23 | 196.09 | 104.60 | 64.44 | 11.83 | 4.97 | 9.68 | 5.99 | 2.03 |
| Mean | | | | 1.43 | 6.76 | 3.37 | 2.15 | 0.382 | 0.166 | 0.312 | 0.193 | 0.101 |
| Cfsm | | | | 1.68 | 7.95 | 3.96 | 2.53 | 0.449 | 0.195 | 0.367 | 0.227 | 0.119 |
| In. | | | | 1.94 | 8.58 | 4.58 | 2.82 | 0.52 | 0.22 | 0.42 | 0.26 | 0.13 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 50 cfs).--Jan. 30 (6:45 a.m.) 64 cfs (1.46 ft); Feb. 18 (1:40 a.m.) 76 cfs (1.21 ft); Mar. 14 (5 a.m.) 60 cfs (1.17 ft); Apr. 6 (10:45 a.m.) 60 cfs (1.17 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

Helton Branch at Greenwood, Ky.--Continued

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.09 | 0.21 | 0.14 | 0.39 | 11.8 | 2.35 | 0.78 | 0.41 | 0.25 | 0.31 | 0.15 | 0.11 |
| 2 | .07 | .14 | .14 | .31 | 9.4 | 1.9 | 1.18 | .41 | .26 | .25 | .15 | .11 |
| 3 | .08 | .14 | .14 | .29 | 5.0 | 1.45 | 1.08 | .39 | .29 | .21 | .14 | .11 |
| 4 | .11 | .14 | .14 | .59 | 2.9 | 1.18 | 2.3 | .36 | .25 | .21 | .21 | .11 |
| 5 | .07 | .14 | .15 | 1.18 | 3.3 | 1.03 | 3.1 | .36 | .36 | .19 | .15 | .11 |
| 6 | .08 | .14 | .15 | .99 | 3.4 | 1.08 | 2.0 | .36 | .36 | .17 | .14 | .11 |
| 7 | .08 | .15 | .15 | .81 | 3.1 | 2.9 | 1.45 | .34 | .29 | .17 | .14 | .11 |
| 8 | .08 | .15 | .17 | *.69 | 2.9 | 5.6 | *9.0 | .34 | .27 | .17 | .14 | .11 |
| 9 | *.07 | .14 | .17 | 5.9 | 3.7 | 3.4 | 6.7 | .31 | .29 | .22 | .14 | .11 |
| 10 | .08 | .14 | .17 | 8.2 | 5.9 | 2.9 | 3.1 | .31 | .29 | .25 | .15 | .25 |
| 11 | .08 | .14 | .17 | 3.6 | 4.0 | 3.4 | 2.0 | .34 | .29 | .21 | .14 | .12 |
| 12 | .08 | .14 | .65 | 1.9 | 2.5 | 2.6 | 1.45 | .31 | .29 | .21 | .15 | .12 |
| 13 | .08 | .14 | 9.1 | 1.3 | 1.8 | 1.9 | 1.18 | .29 | .46 | .21 | .15 | .40 |
| 14 | .08 | .14 | 7.9 | .99 | 1.3 | 1.5 | 1.03 | .36 | .44 | .21 | .17 | *2.0 |
| 15 | .08 | .14 | 2.35 | .89 | 1.18 | 1.24 | .94 | .36 | .34 | .47 | .17 | .83 |
| 16 | .08 | .22 | .99 | .73 | 1.08 | 1.13 | .99 | .31 | .29 | .23 | .14 | .50 |
| 17 | .09 | .14 | .65 | a.7 | .94 | .99 | .94 | .29 | .27 | .19 | .14 | .41 |
| 18 | .11 | .14 | .53 | a.6 | .89 | .85 | .89 | .29 | .25 | .39 | .12 | .31 |
| 19 | .11 | .14 | .44 | a.5 | a3.5 | .73 | .81 | .36 | .25 | .34 | .12 | .25 |
| 20 | .11 | .14 | .44 | a.6 | a4 | .69 | .77 | .39 | .25 | .21 | .12 | .23 |
| 21 | .12 | .21 | 1.12 | .85 | *2.5 | .65 | .73 | .34 | .25 | .17 | .12 | .21 |
| 22 | a.2 | .14 | 9.9 | 9.0 | 2.35 | .89 | .73 | .57 | .23 | .17 | .12 | .25 |
| 23 | a.15 | .14 | 6.8 | 14.9 | 2.1 | .85 | .81 | .43 | .41 | .28 | .11 | .27 |
| 24 | a.1 | .14 | 3.4 | 4.3 | 1.6 | .81 | .85 | .36 | .58 | .24 | .11 | .21 |
| 25 | a.1 | .14 | 1.5 | 2.3 | 1.45 | .89 | .81 | .31 | .70 | .17 | .14 | .19 |
| 26 | a.2 | .14 | *1.08 | *1.45 | 1.8 | .85 | .69 | a.3 | .39 | .17 | *.12 | .19 |
| 27 | a.2 | .14 | .85 | 2.1 | 1.8 | .81 | .65 | a.25 | a.3 | .17 | .11 | .17 |
| 28 | a.2 | .14 | .77 | 10.8 | 2.1 | .77 | .65 | a.25 | a.6 | .17 | .09 | .17 |
| 29 | .17 | .14 | .65 | *36 | - | .73 | .50 | a.25 | a.5 | .17 | .09 | .29 |
| 30 | .14 | .14 | .53 | 12.7 | ------ | .69 | .44 | *.23 | .41 | .17 | .11 | .21 |
| 31 | .30 | ------ | .47 | 6.5 | ------ | .69 | ------ | .25 | ------ | .15 | .11 | ------ |
| Total | 3.59 | 4.44 | 51.81 | 132.06 | 88.29 | 47.45 | 48.55 | 10.43 | 10.41 | 6.85 | 4.16 | 8.57 |
| Mean | 0.116 | 0.148 | 1.67 | 4.26 | 3.15 | 1.53 | 1.62 | 0.336 | 0.347 | 0.221 | 0.134 | 0.286 |
| Cfsm | 0.136 | 0.174 | 1.96 | 5.01 | 3.71 | 1.80 | 1.91 | 0.395 | 0.408 | 0.260 | 0.158 | 0.336 |
| In. | 0.16 | 0.19 | 2.27 | 5.78 | 3.86 | 2.08 | 2.12 | 0.46 | 0.46 | 0.30 | 0.18 | 0.37 |

Calendar year 1956: Max 37 Min 0.07 Mean 1.38 Cfsm 1.62 In. 22.09
Water year 1956-57: Max 36 Min 0.07 Mean 1.14 Cfsm 1.34 In. 18.23

Peak discharge (base, 50 cfs).--Jan. 22 (10:30 p.m.) 76 cfs (1.21 ft); Jan. 29 (2:40 a.m.) 136 cfs (1.35 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for stations on nearby streams.

## Buck Creek near Shopville, Ky.

Location.--Lat 37°12'38", long 84°27'52", on right bank on downstream side of bridge on State Highway 461, 0.2 mile downstream from Brushy Creek, 3.7 miles north of Shopville, and 11.5 miles northeast of Somerset, Pulaski County.

Drainage area.--165 sq mi.

Records available.--December 1952 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 835.35 ft above mean sea level, unadjusted. Prior to Dec. 1, 1953, wire-weight gage and crest-stage indicator at same site and datum.

Extremes.--Maximum discharge during year, 9,710 cfs Jan. 29 (gage height, 15.19 ft); no flow for many days.
1952-57: Maximum discharge, 10,800 cfs Feb. 18, 1956 (gage height, 15.72 ft); no flow at times each year.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.5 | 0 | 2.3 | 17 |
| 1.6 | .2 | 2.5 | 37 |
| 1.7 | .6 | 2.7 | 75 |
| 1.8 | 1.3 | 3.0 | 155 |
| 1.9 | 2.7 | 4.0 | 560 |
| 2.0 | 4.5 | 5.0 | 1,090 |
| 2.1 | 7.2 | 8.0 | 3,200 |
| 2.2 | 11 | 13.0 | 7,500 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.8 | 2.0 | 115 | 1,830 | 484 | 166 | 82 | 22 | 16 | 8.7 | 0 |
| 2 | 0 | .8 | 1.7 | 92 | 1,910 | 398 | 755 | 71 | 73 | 12 | 6.6 | 0 |
| 3 | 0 | .7 | 1.7 | 78 | 872 | 323 | 479 | 59 | 42 | 9.1 | 4.8 | 0 |
| 4 | .3 | .6 | 1.4 | 88 | 578 | 274 | 3,920 | 51 | 30 | 6.9 | 3.7 | 0 |
| 5 | .2 | .5 | 1.3 | 149 | 660 | 236 | 2,800 | 46 | 55 | 5.2 | 2.8 | 0 |
| 6 | .2 | .5 | 1.3 | 131 | 1,040 | 236 | 1,250 | 44 | 72 | 3.7 | 2.1 | 0 |
| 7 | .3 | .5 | 1.3 | 115 | 775 | 452 | 725 | 39 | 50 | 3.0 | 1.8 | 0 |
| 8 | .1 | .4 | 2.0 | 105 | 828 | a850 | 1,880 | 35 | 31 | 2.2 | 1.2 | 0 |
| 9 | .1 | .4 | 2.6 | 1,360 | a2,000 | a800 | 1,820 | 31 | 88 | 5.7 | .9 | 0 |
| 10 | *.1 | .5 | 3.0 | 2,100 | a3,500 | a700 | 715 | 29 | 405 | 86 | .6 | 0 |
| 11 | 0 | .5 | 4.3 | 780 | a1,000 | a600 | 492 | 29 | 100 | 20 | .5 | 0 |
| 12 | 0 | .4 | 18 | 492 | 660 | a500 | 358 | 27 | 67 | 13 | .4 | 0 |
| 13 | 0 | .4 | 810 | 362 | 474 | a450 | 281 | 24 | 50 | 9.1 | .3 | 576 |
| 14 | 0 | .4 | 3,780 | 270 | 362 | *a400 | 228 | 26 | 122 | 8.3 | 1.3 | 681 |
| 15 | 0 | *.4 | 1,630 | 218 | 284 | 344 | 190 | 32 | 110 | 15 | 6.7 | 1,160 |
| 16 | 0 | 1.0 | 497 | 172 | 256 | 284 | 172 | 26 | 61 | 67 | 2.7 | 623 |
| 17 | 0 | 1.3 | 292 | b115 | 211 | 239 | 176 | 22 | 39 | 36 | 1.1 | 416 |
| 18 | 0 | 1.3 | 218 | b105 | 183 | 218 | 176 | 19 | 29 | 23 | .7 | 222 |
| 19 | 0 | 1.1 | 162 | b90 | 444 | 218 | 146 | 22 | 23 | 17 | .5 | 143 |
| 20 | 0 | .9 | 272 | 98 | 456 | 186 | 125 | 55 | 19 | 13 | *.3 | 120 |
| 21 | 0 | 1.8 | 592 | 134 | 380 | 158 | 131 | *55 | 16 | 9.1 | .3 | 98 |
| 22 | .1 | 2.7 | 1,550 | 1,430 | 448 | 180 | 146 | 428 | 13 | 6.6 | .2 | 80 |
| 23 | .1 | 2.9 | 1,020 | 3,860 | 438 | 176 | 236 | 461 | 25 | 6.3 | 0 | 169 |
| 24 | .1 | 3.3 | 1,250 | *877 | 384 | 149 | 450 | 186 | 26 | 63 | 0 | 115 |
| 25 | .1 | 2.9 | 564 | 564 | 331 | 180 | 569 | 110 | 37 | 26 | 0 | 78 |
| 26 | .2 | 2.7 | 371 | 407 | 380 | 200 | 242 | 80 | 27 | 15 | 0 | 61 |
| 27 | .2 | 2.7 | 278 | 484 | 412 | 218 | 172 | 63 | 19 | 11 | 0 | 50 |
| 28 | .2 | 2.6 | *225 | 2,300 | 394 | 197 | 134 | 46 | *16 | 16 | 0 | 39 |
| 29 | .1 | 2.3 | 186 | 7,060 | - | 172 | 122 | 36 | 19 | 58 | 0 | 35 |
| 30 | .1 | 2.1 | 152 | 2,950 | ------- | 162 | 102 | 31 | 20 | 19 | 0 | 32 |
| 31 | .3 | ------- | 134 | 1,080 | ------- | 146 | ------- | 24 | ------- | 12 | 0 | ------- |
| Total | 2.8 | 39.4 | 14,023.6 | 28,181 | 21,490 | 10,130 | 19,158 | 2,289 | 1,706 | 613.2 | 48.2 | 4,698 |
| Mean | 0.09 | 1.31 | 452 | 909 | 768 | 327 | 639 | 73.8 | 56.9 | 19.8 | 1.55 | 157 |
| Cfsm | 0.00055 | 0.0079 | 2.74 | 5.51 | 4.65 | 1.98 | 3.87 | 0.447 | 0.345 | 0.120 | 0.0094 | 0.952 |
| In. | 0.0006 | 0.009 | 3.16 | 6.35 | 4.84 | 2.28 | 4.32 | 0.52 | 0.38 | 0.14 | 0.01 | 1.06 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 7,440 | Min | 0 | Mean | 315 | Cfsm | 1.91 | In. | 25.96 |
| Water year 1956-57: | Max | 7,060 | Min | 0 | Mean | 280 | Cfsm | 1.70 | In. | 23.07 |

Peak discharge (base, 3,500 cfs, revised).--Dec. 14 (5:30 p.m.) 7,300 cfs (12.80 ft); Jan. 23 (2:30 a.m.) 6,380 cfs (11.87 ft); Jan. 29 (3:45 p.m.) 9,710 cfs (15.19 ft); Feb. 10 (time unknown) 4,570 cfs (9.71 ft); Apr. 4 (5:30 p.m.) 6,760 cfs (12.26 ft); Apr. 9 (1 a.m.) 3,690 cfs (8.61 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

## New River at New River, Tenn.

Location.--Lat 36°23'08", long 84°33'17", on left bank at town of New River, Scott County, 700 ft downstream from Phillips Creek, 1,000 ft downstream from bridge on U. S. Highway 27, 1.7 miles downstream from Brimstone Creek, and at mile 8.6.

Drainage area.--382 sq mi.

Records available.--August 1934 to September 1957. Gage-height records collected in this vicinity 1908-52 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,092.67 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 706 cfs.

Extremes.--Maximum discharge during year, 29,200 cfs Jan. 29 (gage height, 26.00 ft); minimum, 3.0 cfs Sept. 6, 7 (gage height, 1.30 ft).

1934-57: Maximum discharge, 44,300 cfs Feb. 3, 1939 (gage height, 33.58 ft); no flow for part of each day Aug. 12-15, 1944.

Maximum stage known, 41.2 ft Mar. 23, 1929, on old U. S. Weather Bureau gage 1,200 ft upstream and at datum 3.41 ft higher.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions.--WSP 1436: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 14

| | | | |
|---|---|---|---|
| 1.3 | 2.9 | 2.5 | 123 |
| 1.4 | 5.3 | 3.0 | 260 |
| 1.6 | 12 | 4.0 | 695 |
| 1.8 | 24 | 5.0 | 1,180 |
| 2.0 | 43 | | |

Note.--Same as following table above 5.0 ft.

Dec. 15 to Sept. 30

| | | | |
|---|---|---|---|
| 1.3 | 3.0 | 3.0 | 247 |
| 1.4 | 5.1 | 4.0 | 630 |
| 1.5 | 8.0 | 5.0 | 1,180 |
| 1.6 | 12 | 7.0 | 2,630 |
| 1.8 | 24 | 10.0 | 5,200 |
| 2.0 | 43 | 14.0 | 9,500 |
| 2.3 | 82 | 24.0 | 25,300 |
| 2.6 | 142 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.4 | a150 | 55 | 260 | a12,000 | 1,580 | a250 | 166 | a110 | a300 | 19 | 6.4 |
| 2 | 6.5 | a260 | 53 | 218 | a10,000 | 1,350 | a650 | a160 | a110 | a250 | 17 | 5.6 |
| 3 | 8.9 | a200 | 48 | 178 | a5,000 | 1,040 | a700 | a250 | a160 | a200 | 12 | 4.8 |
| 4 | 38 | a130 | 45 | 376 | a2,500 | 805 | a4,000 | a200 | a300 | a150 | 10 | 4.4 |
| 5 | 32 | a90 | 43 | 3,130 | a1,700 | 605 | a9,000 | a170 | a900 | a120 | 9.4 | 4.0 |
| 6 | 26 | a70 | 42 | 2,010 | a1,200 | 520 | a4,500 | a150 | a1,000 | a100 | *10 | 3.8 |
| 7 | 21 | *66 | 41 | 1,200 | a1,800 | 590 | a2,500 | a130 | a500 | a85 | 9.4 | 5.1 |
| 8 | 19 | 77 | 40 | 825 | 2,780 | 1,850 | a5,000 | a110 | a350 | a70 | 9.0 | 12 |
| 9 | 17 | 75 | 41 | 720 | 3,480 | 1,730 | a7,000 | a100 | a400 | *55 | 8.7 | *11 |
| 10 | 13 | 72 | 42 | 955 | 5,160 | 1,310 | a3,500 | a90 | a300 | 50 | 7.4 | 14 |
| 11 | 11 | 72 | 41 | 865 | 3,340 | 1,250 | a2,000 | a80 | a250 | 42 | 6.4 | 12 |
| 12 | 10 | 62 | 391 | 700 | 1,710 | 1,200 | a1,300 | a75 | a300 | 38 | 5.3 | 15 |
| 13 | 9.3 | 54 | 10,600 | 605 | 1,130 | 1,090 | a900 | a80 | a230 | 30 | 4.6 | 66 |
| 14 | 8.1 | 49 | 14,500 | *510 | 845 | a900 | a700 | a150 | a190 | 26 | 5.0 | 761 |
| 15 | 7.1 | 44 | 5,420 | 442 | 670 | a800 | a550 | a100 | a170 | 27 | 72 | 446 |
| 16 | 5.9 | 55 | 1,610 | 386 | 605 | a700 | *418 | a80 | a160 | 45 | 122 | 2,940 |
| 17 | *4.2 | 79 | 865 | 312 | 506 | a600 | 390 | a70 | *155 | 43 | 76 | 3,640 |
| 18 | 5.3 | 96 | 670 | 264 | 430 | a500 | 343 | a60 | 162 | 42 | 45 | 755 |
| 19 | 5.3 | 98 | 528 | 228 | 1,150 | a470 | 315 | a60 | 183 | 34 | 39 | 394 |
| 20 | 6.2 | 87 | *430 | 212 | 2,210 | a410 | 284 | a100 | a135 | 28 | 102 | 270 |
| 21 | a10 | 92 | 386 | 241 | 1,380 | a350 | 277 | a90 | a110 | 27 | 57 | 237 |
| 22 | a25 | 132 | 3,670 | 315 | 1,010 | a390 | 298 | 800 | a100 | 22 | 36 | 301 |
| 23 | a70 | 123 | 3,520 | 3,230 | 795 | a420 | 336 | 1,090 | a120 | 17 | 26 | 660 |
| 24 | a150 | 119 | 2,950 | 2,040 | 655 | a400 | 294 | 533 | a350 | 19 | 20 | 556 |
| 25 | a70 | 103 | 1,460 | 1,190 | *570 | *370 | 267 | 1,040 | a800 | 40 | 17 | 346 |
| 26 | a50 | 92 | 945 | 875 | 690 | a400 | a230 | 528 | a550 | 27 | 14 | 241 |
| 27 | a40 | 85 | 700 | 1,300 | 1,030 | a350 | a210 | 358 | a350 | 26 | 12 | 178 |
| 28 | a45 | 75 | 556 | 14,600 | 1,160 | a310 | 193 | 241 | a250 | 26 | 10 | 157 |
| 29 | a40 | 68 | 454 | 25,100 | - | a290 | 183 | 176 | a400 | 39 | 9.0 | 181 |
| 30 | a35 | 61 | 358 | a10,000 | -------- | a270 | 169 | a140 | a350 | 23 | 8.0 | 212 |
| 31 | a30 | -------- | 304 | a4,000 | -------- | a250 | -------- | a120 | -------- | 19 | 7.4 | -------- |
| Total | 826.2 | 2,836 | 50,808 | 77,287 | 65,506 | 23,100 | 46,757 | 7,497 | 9,445 | 2,020 | 805.6 | 12,439.1 |
| Mean | 26.7 | 94.5 | 1,639 | 2,493 | 2,340 | 745 | 1,559 | 242 | 315 | 65.2 | 26.0 | 415 |
| Cfsm | 0.070 | 0.247 | 4.29 | 6.53 | 6.13 | 1.95 | 4.08 | 0.634 | 0.825 | 0.171 | 0.068 | 1.09 |
| In. | 0.08 | 0.28 | 4.95 | 7.52 | 6.38 | 2.25 | 4.55 | 0.73 | 0.92 | 0.20 | 0.08 | 1.21 |

Calendar year 1956: Max 16,000 Min 3.8 Mean 880 Cfsm 2.30 In. 31.38
Water year 1956-57: Max 25,100 Min 3.8 Mean 820 Cfsm 2.15 In. 23.15

Peak discharge (base, 16,000 cfs).--Dec. 14 (5 p.m.) 18,500 cfs (20.15 ft); Jan. 23 (5:30 a.m.) 29,200 cfs (26.00 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Clear Fork near Robbins.

## Clear Fork near Robbins, Tenn.

Location.--Lat 36°23'18", long 84°37'49", on right bank 300 ft downstream from Burnt Mill Bridge, 3.3 miles northwest of Robbins, Scott County, and at mile 3.7.

Drainage area.--272 sq mi.

Records available.--October 1930 to September 1957. Published as Clear Fork River near Robbins October 1951 to September 1954.

Gage.--Water-stage recorder. Datum of gage is 1,081.46 ft above mean sea level, Sandy Hook datum. Prior to Aug. 10, 1940, staff gage at site 300 ft upstream at datum 1.00 ft higher.

Average discharge.--27 years, 457 cfs.

Extremes.--Maximum discharge during year, 15,000 cfs Jan. 28 (gage height, 12.90 ft); minimum, 3.4 cfs Sept. 8, 9 (gage height, 0.92 ft).
1930-57: Maximum discharge, 34,000 cfs Feb. 3, 1939 (gage height, 18.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 14,000 cfs on basis of slope-area determination of peak flow; minimum observed, 0.2 cfs Sept. 19-21, 1932; minimum gage height observed, 0.28 ft Oct. 1-3, 1936, site and datum then in use.

Remarks.--Records good except those below 10 cfs and those for period of no gage-height record, which are fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions.--WSP 1436: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.0 | 5.4 | 0.9 | 3.0 | 2.5 | 265 |
| 1.1 | 9.6 | 1.0 | 5.3 | 3.0 | 460 |
| 1.3 | 23 | 1.1 | 9.0 | 4.0 | 1,060 |
| 1.6 | 54 | 1.3 | 24 | 6.0 | 2,700 |
| 1.8 | 87 | 1.5 | 44 | 8.0 | 5,360 |
| 2.0 | 131 | 1.8 | 88 | 12.0 | 12,700 |
| 3.0 | 470 | 2.0 | 131 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.8 | 195 | 53 | 232 | 6,560 | 730 | 232 | 407 | 117 | 202 | 12 | 6.1 |
| 2 | 6.4 | 229 | 50 | 198 | 5,240 | 694 | 442 | 391 | 117 | 155 | 9.7 | 5.8 |
| 3 | 6.8 | 148 | 46 | 165 | 2,250 | 604 | 460 | 470 | 180 | 120 | 8.0 | 5.3 |
| 4 | 12 | 105 | 45 | 234 | 1,470 | 510 | 2,930 | 355 | 262 | 96 | 7.2 | 4.8 |
| 5 | 77 | 84 | 42 | 1,400 | 1,160 | 438 | 3,810 | 282 | 1,180 | 79 | 7.2 | 4.2 |
| 6 | 75 | 70 | 41 | 1,110 | 976 | 403 | 2,100 | 241 | 1,220 | 63 | *6.4 | 4.0 |
| 7 | 46 | *65 | 40 | 790 | 1,130 | 579 | 1,200 | 205 | 588 | 51 | 5.8 | 3.8 |
| 8 | 34 | 68 | 42 | 571 | *1,520 | 1,890 | 2,600 | 180 | 363 | 44 | 5.3 | 3.4 |
| 9 | 26 | 75 | 42 | 560 | 1,880 | 1,480 | 3,160 | 160 | 500 | *38 | 5.0 | 3.4 |
| 10 | 22 | 64 | 44 | 842 | 2,310 | 1,150 | 1,660 | 143 | 1,760 | 34 | 5.0 | *4.2 |
| 11 | 19 | 56 | 44 | 742 | 1,950 | 1,100 | 1,120 | 133 | 868 | 29 | 4.8 | 5.3 |
| 12 | 16 | 51 | 117 | 576 | 1,280 | 1,000 | 790 | 126 | 566 | 34 | 4.5 | 6.6 |
| 13 | 14 | 46 | 8,100 | 485 | 907 | 836 | 598 | 113 | 387 | 28 | 4.2 | 27 |
| 14 | 13 | 42 | 8,870 | *407 | 676 | 682 | 470 | 108 | 407 | 22 | 4.0 | 56 |
| 15 | 11 | 38 | 4,320 | 343 | 530 | 604 | 387 | 113 | 328 | 20 | 22 | 113 |
| 16 | 10 | 42 | 1,560 | 318 | 604 | 505 | *343 | 117 | 232 | 21 | 90 | 81 |
| 17 | 9.6 | 54 | 874 | 259 | 525 | 424 | 318 | 98 | *195 | 19 | 52 | 106 |
| 18 | *10 | 65 | 637 | 223 | 446 | 383 | 282 | 92 | 265 | 18 | 40 | 79 |
| 19 | 10 | 57 | 500 | 205 | 1,140 | 367 | 253 | 92 | 226 | 18 | 29 | 55 |
| 20 | 10 | 51 | *407 | 205 | 2,200 | 321 | 229 | 131 | 175 | 15 | 21 | 45 |
| 21 | 12 | 53 | 379 | 256 | 1,400 | 282 | 241 | *136 | 138 | 14 | 18 | 40 |
| 22 | 15 | 75 | 1,040 | 432 | 969 | 321 | 367 | 1,820 | 104 | 13 | 15 | 43 |
| 23 | 40 | 97 | 1,580 | 1,860 | 718 | 343 | 879 | 1,450 | 121 | 13 | 12 | 91 |
| 24 | 72 | 91 | 1,600 | 1,320 | 571 | 328 | 1,360 | 975 | 292 | 18 | 9.7 | 138 |
| 25 | 51 | 80 | 1,020 | 934 | 490 | *296 | 1,480 | 1,340 | 620 | 15 | 9.0 | 88 |
| 26 | 42 | 77 | 682 | 718 | 571 | 335 | 842 | 632 | 383 | 18 | 10 | 59 |
| 27 | 39 | 73 | 515 | 1,000 | 637 | 307 | 576 | 407 | 235 | 17 | 9.0 | 45 |
| 28 | 41 | 67 | 415 | 8,850 | 598 | 282 | 456 | 282 | 190 | 17 | 7.6 | 36 |
| 29 | 38 | 60 | 355 | a11,400 | - | 265 | 598 | 208 | 307 | 31 | 7.2 | 34 |
| 30 | 35 | 57 | 290 | a4,900 | -------- | 250 | 515 | 162 | 282 | 15 | 7.6 | 35 |
| 31 | 35 | -------- | 256 | 3,830 | -------- | 229 | -------- | 136 | -------- | 12 | 7.2 | -------- |
| Total | 854.6 | 2,335 | 34,006 | 45,365 | 40,708 | 17,938 | 30,698 | 11,305 | 12,608 | 1,279 | 455.4 | 1,227.9 |
| Mean | 27.6 | 77.8 | 1,097 | 1,463 | 1,454 | 579 | 1,023 | 365 | 420 | 41.3 | 14.7 | 40.9 |
| Cfsm | 0.101 | 0.286 | 4.03 | 5.38 | 5.35 | 2.13 | 3.76 | 1.34 | 1.54 | 0.152 | 0.054 | 0.150 |
| In. | 0.12 | 0.32 | 4.65 | 6.20 | 5.57 | 2.45 | 4.20 | 1.55 | 1.72 | 0.17 | 0.06 | 0.17 |

Calendar year 1956: Max 11,000 Min 5.1 Mean 624 Cfsm 2.29 In. 31.25
Water year 1956-57: Max 11,400 Min 3.4 Mean 545 Cfsm 2.00 In. 27.18

Peak discharge (base, 6,500 cfs).--Dec. 13 (1 p.m.) 10,900 cfs (11.16 ft); Jan. 28 (8 p.m.) 15,000 cfs (12.90 ft); Feb. 1 (11 p.m.) 8,100 cfs (9.67 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, normal recession, and records for New River at New River.

## South Fork Cumberland River near Stearns, Ky.

Location.--Lat 36°37'37", long 84°32'00", on right bank at mouth of Bear Creek, 1,600 ft upstream from Salt Branch and 5.5 miles southwest of Stearns, McCreary County. Records include flow of Bear Creek.

Drainage area.--954 sq mi, includes that of Bear Creek.

Records available.--September 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 764.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 1,744 cfs.

Extremes.--Maximum discharge during year, 61,500 cfs Jan. 29 (gage height, 36.25 ft, from floodmark); minimum, 19 cfs Sept. 8, 9 (gage height, 1.67 ft).

1942-57: Maximum discharge, 69,600 cfs Feb. 13, 1948 (gage height, 38.50 ft); minimum, 11 cfs Oct. 4, 1948, Sept. 17, 18, 19, 20, 1954; minimum gage height, 1.53 ft Sept. 17, 18, 19, 20, 1954.

Maximum stage known, 52.9 ft in March 1929, from information by local residents.

Remarks.--Records good except those below 50 cfs and those for periods of ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 1113: 1946(M). WSP 1436: Drainage area.

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | | | |
|---|---|---|---|---|---|
| 1.68 | 20 | 2.5 | 165 | 19.0 | 18,500 |
| 1.7 | 22 | 4.0 | 800 | 24.0 | 28,500 |
| 1.8 | 35 | 6.0 | 2,000 | 29.0 | 40,600 |
| 2.0 | 62 | 10.0 | 5,500 | 35.0 | 57,600 |
| 2.2 | 93 | 15.0 | 12,000 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 232 | 159 | 770 | 21,700 | 2,940 | 845 | 950 | 404 | 1,160 | 85 | 36 |
| 2 | 45 | 576 | 147 | 660 | 20,300 | 3,020 | 1,140 | 840 | 380 | 800 | 74 | 35 |
| 3 | 48 | 484 | 138 | 556 | 8,280 | 2,540 | 1,690 | 905 | 544 | 572 | 65 | 32 |
| 4 | 66 | 356 | 133 | 568 | 5,000 | 2,070 | 5,150 | 835 | 900 | 464 | 62 | 30 |
| 5 | 91 | 276 | 128 | 3,600 | 3,870 | 1,720 | 16,400 | 655 | 3,380 | 384 | 58 | 27 |
| 6 | 141 | 220 | 123 | 4,680 | 3,380 | 1,490 | 8,200 | 564 | 5,270 | 312 | 51 | 25 |
| 7 | 162 | 196 | 121 | 3,160 | 3,590 | 1,540 | 4,360 | 504 | 2,700 | 260 | 45 | 22 |
| 8 | *121 | 182 | 123 | 2,260 | 5,620 | 3,940 | 5,430 | 452 | 1,600 | 212 | 42 | 20 |
| 9 | a100 | 186 | 130 | 2,790 | 6,770 | 4,590 | 11,200 | 416 | 1,460 | 176 | 39 | a21 |
| 10 | a80 | 193 | 130 | 4,330 | 9,630 | 3,690 | 5,480 | 384 | 3,140 | 162 | 35 | a52 |
| 11 | a70 | 176 | 128 | 3,550 | 8,280 | 3,470 | 3,710 | 376 | 2,160 | 186 | 35 | a66 |
| 12 | a66 | 165 | 214 | 2,530 | 4,760 | 3,350 | 2,760 | 352 | 1,480 | 130 | 32 | *a74 |
| 13 | a63 | 153 | 16,800 | 1,990 | 3,340 | 3,020 | 2,130 | 324 | 1,150 | 118 | 32 | 111 |
| 14 | a60 | 138 | 27,200 | 1,610 | 2,520 | 2,560 | 1,680 | 540 | 1,160 | 107 | 34 | 324 |
| 15 | 58 | 130 | 17,200 | 1,340 | 1,960 | 2,190 | 1,390 | 584 | 1,300 | 106 | 202 | 1,040 |
| 16 | 55 | 135 | 5,130 | 1,160 | 1,810 | 1,840 | 1,220 | 424 | 775 | 159 | 165 | 600 |
| 17 | 52 | 144 | 2,830 | 955 | 1,660 | 1,520 | 1,110 | 356 | 592 | 125 | 260 | 5,710 |
| 18 | 61 | 165 | 1,960 | b770 | 1,390 | 1,360 | 990 | 312 | 773 | *116 | 193 | 1,440 |
| 19 | 74 | 196 | 1,610 | b655 | 3,160 | 1,270 | 890 | 332 | 1,520 | 116 | 135 | 725 |
| 20 | 72 | *208 | 1,300 | b630 | 7,100 | 1,150 | 805 | 412 | 840 | 109 | 106 | 484 |
| 21 | 70 | 200 | 1,370 | 730 | 4,640 | 1,270 | 760 | 436 | 572 | 93 | 104 | 388 |
| 22 | 70 | 220 | 4,880 | 1,270 | 3,330 | 1,060 | 945 | 2,400 | 448 | 85 | 116 | 388 |
| 23 | 80 | 276 | 6,900 | 7,000 | 2,580 | 1,210 | 1,480 | 5,160 | 428 | 87 | 93 | 592 |
| 24 | 82 | 292 | 6,410 | 5,970 | 2,020 | 1,070 | 2,070 | 2,220 | 1,970 | 107 | 79 | 980 |
| 25 | 153 | 272 | 4,050 | 3,630 | 1,710 | 1,040 | 2,940 | 3,790 | 5,720 | 100 | 70 | 650 |
| 26 | 159 | 244 | 2,710 | 2,780 | 1,720 | 1,130 | 1,870 | 2,230 | 3,340 | 93 | 64 | 464 |
| 27 | 159 | 228 | 1,960 | 2,780 | 2,220 | 1,090 | 1,390 | 1,380 | 1,590 | 90 | 56 | 356 |
| 28 | 141 | 212 | 1,550 | 20,800 | 2,490 | 1,020 | 1,120 | 955 | 1,070 | 87 | 51 | 280 |
| 29 | 133 | 193 | 1,290 | 55,500 | - | 970 | 1,150 | 690 | 1,420 | 159 | 48 | 264 |
| 30 | 121 | 176 | 1,050 | 32,300 | ------- | 925 | 1,070 | 536 | 1,900 | 141 | 44 | 288 |
| 31 | 121 | ---- | 885 | 11,500 | ------- | 875 | ------- | 464 | ------- | 109 | 40 | - |
| Total | 2,818 | 6,824 | 108,759 | 182,824 | 144,830 | 60,930 | 91,375 | 30,778 | 49,986 | 6,925 | 2,515 | 15,524 |
| Mean | 90.9 | 227 | 3,508 | 5,898 | 5,172 | 1,965 | 3,046 | 993 | 1,666 | 223 | 81.1 | 517 |
| Cfsm | 0.095 | 0.238 | 3.68 | 6.18 | 5.42 | 2.06 | 3.19 | 1.04 | 1.75 | 0.234 | 0.085 | 0.542 |
| In. | 0.11 | 0.27 | 4.24 | 7.13 | 5.65 | 2.38 | 3.56 | 1.20 | 1.95 | 0.27 | 0.10 | 0.61 |

Calendar year 1956: Max 38,700 Min 35 Mean 2,051 Cfsm 2.15 In. 29.28
Water year 1956-57: Max 55,500 Min 20 Mean 1,929 Cfsm 2.02 In. 27.47

Peak discharge (base, 29,000 cfs).--Dec. 14 (9 p.m.) 31,500 cfs (25.28 ft); Jan. 29 (12:30 p.m.) 61,500 cfs (36.25 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 2 discharge measurements, weather records, and summation of stations on Clear Fork near Robbins, Tenn., and New River at New River, Tenn.

b Stage-discharge relation affected by ice.

## Pitman Creek at Somerset, Ky.

Location.--Lat 37°07'05", long 84°35'30", on right bank 0.1 mile downstream from Dry Branch, 0.5 mile upstream from Caney Fork, and 1.9 miles northeast of Somerset, Pulaski County.

Drainage area.--31.3 sq mi.

Records available.--October 1953 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 867.34 ft above mean sea level, datum of 1929. Prior to Oct. 28, 1953, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 2,260 cfs Jan. 22 (gage height, 7.43 ft); minimum, 0.1 cfs Sept. 3, 4-9 (gage height, 0.65 ft).
1953-57: Maximum discharge, 2,430 cfs Mar. 21, 1955 (gage height, 7.58 ft); minimum, 0.1 cfs Sept. 2-7, 11-19, 20, 1954, Sept. 19, 1955, Sept. 3, 4-9, 1957; minimum gage height, 0.60 ft Sept. 12-19, 20, 1954.

Remarks.--Records good except those below 5 cfs, which are fair.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.65 | 0.1 | 1.5 | 22 |
| .7 | .3 | 1.7 | 41 |
| .8 | .8 | 2.0 | 82 |
| .9 | 1.7 | 2.5 | 230 |
| 1.0 | 3.2 | 3.0 | 420 |
| 1.1 | 5.2 | 4.0 | 820 |
| 1.2 | 7.7 | 5.0 | 1,220 |
| 1.3 | 11 | 6.0 | 1,620 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.3 | 1.2 | 0.8 | 22 | 436 | 77 | 57 | 14 | 4.6 | 3.6 | 2.6 | 0.2 |
| 2 | .3 | .6 | .8 | 18 | 290 | 65 | 129 | 13 | 4.4 | *2.7 | 1.8 | .2 |
| 3 | .3 | .5 | .8 | 16 | 188 | 56 | 74 | 11 | 4.2 | 2.1 | 1.3 | .2 |
| 4 | .8 | .5 | .8 | 21 | 114 | 49 | 640 | 10 | 4.0 | 1.8 | 1.1 | .1 |
| 5 | .6 | .4 | .8 | 37 | 181 | 43 | 332 | 9.7 | 5.0 | 1.4 | 1.0 | .1 |
| 6 | .5 | .4 | .7 | 26 | 188 | 52 | 167 | 9.0 | 5.2 | 1.2 | .7 | .1 |
| 7 | .3 | .5 | .8 | 24 | 160 | 130 | 102 | 8.4 | 4.0 | .9 | .4 | .1 |
| 8 | .3 | .5 | 1.1 | 21 | 188 | 216 | 355 | 7.7 | 8.7 | .8 | .4 | .1 |
| 9 | .3 | .5 | 1.6 | 412 | 360 | 181 | 206 | 7.0 | 54 | 5.0 | .2 | .1 |
| 10 | *.3 | .4 | 1.7 | 412 | 684 | 164 | 122 | 6.5 | 28 | 7.2 | .2 | 1.3 |
| 11 | .3 | .4 | 2.0 | 167 | 230 | 142 | 84 | 7.2 | 13 | 1.8 | .2 | .5 |
| 12 | .3 | .4 | 25 | 109 | 133 | 125 | 64 | 6.4 | 15 | 1.5 | 2.3 | 54 |
| 13 | .3 | .4 | 272 | 75 | 93 | 86 | 52 | 5.7 | 12 | 1.1 | 1.2 | 207 |
| 14 | .2 | .4 | 708 | 57 | 68 | 70 | 44 | 8.4 | 44 | 1.2 | 54 | 244 |
| 15 | .3 | *.5 | 188 | 46 | 56 | *64 | 38 | 9.0 | 18 | 1.9 | 22 | 192 |
| 16 | .3 | 1.3 | 84 | 39 | 49 | 50 | 37 | 6.0 | 10 | 5.7 | 5.7 | 174 |
| 17 | .3 | .8 | 56 | 26 | 41 | 44 | 38 | 4.8 | 7.4 | 2.2 | 3.0 | 97 |
| 18 | .3 | .9 | 49 | 24 | 36 | 42 | 35 | 5.7 | 6.0 | 3.4 | 2.0 | 53 |
| 19 | .3 | .8 | 36 | 17 | 146 | 41 | 29 | 9.7 | 5.4 | 4.2 | 1.3 | 38 |
| 20 | .4 | .8 | 62 | 21 | 102 | 34 | 25 | 15 | 4.2 | 2.1 | *1.0 | 36 |
| 21 | .5 | 1.5 | 139 | 29 | 93 | 30 | 27 | 9.0 | 3.2 | 1.4 | .8 | 26 |
| 22 | .6 | 3.2 | 328 | 654 | 100 | 35 | 28 | *83 | 3.2 | 1.1 | .7 | 25 |
| 23 | .6 | 2.4 | 226 | 600 | 86 | 31 | 62 | 36 | 8.4 | 18 | .6 | 27 |
| 24 | .5 | 1.7 | 324 | *195 | 72 | 26 | 78 | 16 | 16 | 11 | .5 | 18 |
| 25 | .4 | 1.3 | 127 | 125 | 65 | 38 | 57 | 14 | 13 | 4.0 | .5 | 15 |
| 26 | .5 | 1.2 | 80 | 82 | 72 | 34 | 35 | 12 | 6.7 | 2.4 | .5 | 13 |
| 27 | .6 | 1.2 | *60 | 112 | 65 | 34 | 26 | 9.7 | 4.6 | 13 | .5 | 11 |
| 28 | .5 | 1.2 | 49 | 576 | 70 | 28 | 22 | 7.4 | 5.0 | 21 | .3 | 9.0 |
| 29 | .5 | 1.1 | 39 | 1,300 | - | 26 | 26 | 6.7 | 7.7 | 18 | .3 | 8.7 |
| 30 | .3 | .9 | 32 | 392 | ------- | 25 | *18 | 6.0 | 4.6 | 6.7 | .2 | 9.0 |
| 31 | .5 | ------- | 28 | 262 | ------- | 22 | ------- | 6.4 | ------- | 3.8 | .2 | ------- |
| Total | 12.5 | 27.9 | 2,923.9 | 5,917 | 4,366 | 2,060 | 3,009 | 380.4 | 329.5 | 152.2 | 107.5 | 1,259.7 |
| Mean | 0.40 | 0.93 | 94.3 | 191 | 156 | 66.5 | 100 | 12.3 | 11.0 | 4.91 | 3.47 | 42.0 |
| Cfsm | 0.013 | 0.030 | 3.01 | 6.10 | 4.98 | 2.12 | 3.19 | 0.393 | 0.351 | 0.157 | 0.111 | 1.34 |
| In. | 0.10 | 0.03 | 3.47 | 7.03 | 5.19 | 2.45 | 3.58 | 0.45 | 0.39 | 0.18 | 0.13 | 1.50 |

Calendar year 1956: Max 1,000 Min 0.2 Mean 61.4 Cfsm 1.96 In. 26.68
Water year 1956-57: Max 1,300 Min 0.1 Mean 56.3 Cfsm 1.80 In. 24.41

Peak discharge (base, 850 cfs).--Dec. 14 (11:30 a.m.) 1,660 cfs (6.08 ft); Jan. 22 (9:15 p.m.) 2,260 cfs (7.43 ft); Jan. 29 (10:45 a.m.) 1,970 cfs (6.78 ft); Feb. 10 (1:30 a.m.) 1,610 cfs (5.97 ft); Apr. 4 (9:45 a.m.) 1,420 cfs (5.51 ft); Sept. 14 (8:15 p.m.) 984 cfs (4.41 ft).
* Discharge measurement made on this day.

## Cumberland River near Rowena, Ky.

Location.--Lat 36°53'02", long 85°08'22", on right bank 1.5 miles downstream from Wolf Creek Dam, 1.9 miles upstream from Blackfish Creek, 1.9 miles west of Rowena, Russell County, and at mile 459.4.

Drainage area.--5,790 sq mi.

Records available.--November 1939 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 540.81 ft above mean sea level, Sandy Hook datum. Prior to Oct. 24, 1940, staff gage at same site and datum.

Average discharge.--17 years (1940-57), 8,797 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 27,500 cfs Feb. 22 (gage height, 21.43 ft); minimum daily, 82 cfs Oct. 22.
1939-57: Maximum discharge, 162,000 cfs Jan. 9, 1946; maximum gage height, 64.82 ft Jan. 9, 1946; no flow at times.
Maximum stage known, 69.5 ft in March 1826, from profile of Cumberland River.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Lake Cumberland (see p. 66).

Revisions (water years).--WSP 953: Drainage area. WSP 1336: 1940.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11,700 | 2,280 | 6,690 | 11,700 | 24,000 | 27,200 | 12,100 | *10,400 | 1,580 | 10,000 | 10,600 | 2,020 |
| 2 | *8,420 | 2,210 | 3,430 | *18,900 | 26,000 | *27,400 | 14,700 | 2,940 | 136 | 10,500 | 8,980 | 190 |
| 3 | 9,520 | 507 | 1,820 | 16,500 | 25,800 | 27,400 | 9,920 | 3,240 | 5,570 | *10,300 | 9,460 | 1,820 |
| 4 | 9,020 | 123 | 5,480 | 12,400 | 25,600 | 27,400 | 10,200 | 4,070 | 4,170 | 3,950 | 5,390 | 5,960 |
| 5 | 8,180 | 133 | 7,860 | 13,400 | 25,400 | 27,400 | 11,800 | 3,360 | 4,920 | 11,600 | 8,440 | 7,240 |
| 6 | 330 | 625 | 7,530 | 8,910 | 25,400 | 27,300 | 9,660 | 3,400 | 580 | 5,600 | 8,230 | 2,320 |
| 7 | *116 | 1,120 | 9,020 | 12,300 | 25,400 | 26,300 | 2,890 | 2,660 | 4,990 | 8,960 | *12,000 | *540 |
| 8 | 7,230 | 12,600 | 2,160 | 15,400 | 25,400 | 26,000 | 16,200 | 3,420 | 4,300 | 11,700 | 10,100 | 119 |
| 9 | 7,970 | 12,800 | 2,200 | 11,900 | 25,600 | 25,700 | 23,100 | 3,120 | 164 | 12,200 | 10,200 | 2,840 |
| 10 | 10,600 | 1,280 | 6,520 | 14,600 | 25,700 | 25,900 | 22,900 | 3,560 | 4,460 | 13,000 | 9,280 | 3,060 |
| 11 | 7,600 | *138 | 8,310 | 21,000 | 25,800 | 25,800 | 23,300 | 1,580 | 2,450 | 14,000 | 8,070 | 1,990 |
| 12 | 5,510 | 5,050 | 2,630 | 17,400 | 27,300 | 25,600 | 23,600 | 214 | 2,010 | 15,200 | 9,220 | 1,550 |
| 13 | 309 | 8,050 | 8,740 | 7,780 | 27,300 | 24,600 | 23,600 | 3,060 | 144 | 12,600 | 5,740 | 3,290 |
| 14 | *133 | 4,370 | 11,800 | 17,200 | 27,300 | 23,800 | 23,600 | 3,110 | 267 | 8,770 | 4,300 | 212 |
| 15 | 9,180 | 6,220 | 2,370 | 19,200 | 27,200 | *23,800 | 21,300 | 3,930 | 115 | 11,600 | 4,200 | 121 |
| 16 | 9,490 | 6,750 | 254 | 20,200 | 27,300 | 23,900 | 22,900 | 3,660 | 104 | 6,350 | 5,120 | 2,380 |
| 17 | 8,600 | 5,900 | 8,040 | 22,400 | 27,300 | 23,900 | 23,000 | 3,790 | 2,850 | 6,990 | 1,300 | 151 |
| 18 | 4,580 | 1,090 | 8,300 | 21,300 | 27,200 | 24,100 | 23,100 | 1,820 | 3,100 | 10,800 | 760 | 5,620 |
| 19 | 945 | 8,750 | 12,700 | 19,800 | 26,400 | 24,100 | 23,100 | 265 | 3,140 | 11,500 | 3,630 | 5,730 |
| 20 | 315 | 5,840 | 11,700 | 13,300 | 26,700 | 24,300 | 8,200 | 4,920 | 3,180 | 10,800 | 3,520 | 8,140 |
| 21 | 153 | 5,150 | 15,700 | 18,300 | 27,400 | 21,600 | 534 | 5,740 | 3,440 | 7,280 | 3,080 | 10,600 |
| 22 | 82 | 700 | 15,800 | 16,600 | 27,400 | 20,500 | 10,600 | 5,480 | 3,000 | 14,800 | 2,360 | 4,650 |
| 23 | 2,060 | 7,980 | 19,100 | 17,100 | 27,300 | 10,500 | 4,740 | 6,810 | 516 | 14,900 | 1,340 | 7,460 |
| 24 | 4,860 | 8,600 | 21,100 | 20,800 | 27,300 | 12,900 | 5,780 | 9,050 | 5,200 | 14,700 | 1,480 | 6,700 |
| 25 | 3,360 | 9,530 | 20,600 | 16,200 | 27,200 | 13,400 | 5,800 | 6,640 | 4,560 | 15,000 | 1,290 | 7,280 |
| 26 | 3,980 | 9,900 | 19,700 | 15,400 | 27,100 | 17,700 | 11,400 | 1,960 | 4,340 | 12,600 | 1,860 | 6,790 |
| 27 | 3,880 | 10,800 | 18,600 | 17,600 | 27,100 | 17,800 | 12,200 | 8,340 | 4,270 | 8,210 | 1,820 | 8,040 |
| 28 | 165 | 6,940 | 19,200 | 14,900 | 27,100 | 16,000 | 8,480 | 2,220 | 4,630 | 7,390 | 2,830 | 4,960 |
| 29 | 4,350 | 8,940 | 20,700 | 9,870 | - | 11,700 | 16,600 | 2,320 | 4,430 | 11,700 | 2,070 | 2,130 |
| 30 | 3,390 | 9,840 | 5,860 | 21,200 | ------- | 5,380 | 16,700 | 1,770 | 1,440 | 8,870 | 3,870 | 7,420 |
| 31 | 3,970 | ------- | 10,500 | 23,800 | ------- | 2,740 | ------- | 1,650 | ------- | 10,300 | 915 | ------- |
| Total | 149,998 | 164,216 | 314,414 | 507,360 | 742,000 | 662,120 | 442,004 | 118,499 | 84,056 | 332,170 | 161,455 | 121,323 |
| Mean | 4,839 | 5,474 | 10,140 | 16,370 | 26,500 | 21,360 | 14,730 | 3,823 | 2,802 | 10,720 | 5,208 | 4,044 |

| | Observed | | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 30,900 | Min 68 | Mean 10,150 | Mean 11,460 | Cfsm 1.98 | In. 26.95 |
| Water year 1956-57: | Max 27,400 | Min 82 | Mean 10,410 | Mean 10,410 | Cfsm 1.80 | In. 24.41 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland; records furnished by Corps of Engineers.
Note.--No gage-height record Mar. 2 to Apr. 8, July 3 to Aug. 9; discharge estimated on basis of turbine capacity tables.

## East Fork Obey River near Jamestown, Tenn.

Location (revised).--Lat 36°24'58", long 85°01'35", on right bank 200 ft upstream from bridge on State Highway 52, 0.5 mile upstream from Poplar Cove Creek, 5.3 miles west of Jamestown, Fentress County, and 12.8 miles upstream from confluence with West Fork.

Drainage area.--202 sq mi, revised (includes 6 sq mi without surface drainage).

Records available.--February 1943 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 680.30 ft above mean sea level, Sandy Hook datum.

Average discharge.--14 years, 386 cfs.

Extremes.--Maximum discharge during year, 16,900 cfs Jan. 29 (gage height, 19.41 ft); minimum, 7.5 cfs Oct. 1-3 (gage height, 0.70 ft).
1943-57: Maximum discharge, 28,300 cfs Feb. 13, 1948 (gage height, 27.20 ft); minimum, 3.6 cfs Sept. 26-28, 1948; minimum gage height, 0.55 ft Sept. 12-17, 1954.

Remarks.--Records good except those for period based on radio-gage readings, which are fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 1003: 1943. WSP 1276: 1944, 1946(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.7 | 7.5 | 0.7 | 7.5 | 2.5 | 320 |
| .8 | 9.7 | .8 | 9.6 | 3.0 | 478 |
| .9 | 13 | .9 | 13 | 4.0 | 910 |
| 1.0 | 20 | 1.0 | 20 | 6.0 | 2,180 |
| 1.1 | 29 | 1.2 | 38 | 11.0 | 6,300 |
| 1.2 | 40 | 1.4 | 68 | 17.0 | 13,400 |
| 1.4 | 70 | 2.0 | 196 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.5 | 25 | 14 | 174 | 5,190 | 529 | 227 | 464 | 130 | 143 | 19 | 9.6 |
| 2 | 7.5 | 22 | 14 | 145 | 3,370 | 496 | 302 | 539 | 112 | 115 | 17 | 9.6 |
| 3 | 7.9 | 18 | 13 | 123 | 1,460 | 444 | 302 | 950 | 174 | 93 | 16 | 9.6 |
| 4 | 10 | 16 | 13 | 163 | 940 | 394 | 658 | 618 | 400 | *78 | 16 | 9.3 |
| 5 | 14 | 16 | 13 | 927 | 779 | 357 | 1,080 | 461 | 797 | 65 | 16 | 9.0 |
| 6 | 14 | 16 | 13 | 752 | 671 | 326 | 788 | 372 | 1,130 | 54 | *15 | 8.5 |
| 7 | 13 | *16 | 13 | 541 | 797 | 553 | 592 | 312 | 572 | 47 | 15 | 8.3 |
| 8 | 13 | 16 | 13 | 413 | 1,040 | 1,230 | 2,020 | 258 | 471 | 41 | 14 | 8.3 |
| 9 | 12 | 14 | 13 | 437 | 1,320 | 900 | *2,210 | 222 | 2,350 | 63 | 13 | 8.3 |
| 10 | 12 | 13 | 13 | 666 | 2,100 | 766 | 1,040 | 187 | 3,190 | 66 | 12 | 14 |
| 11 | 11 | 12 | 14 | 601 | 1,370 | 925 | 748 | 176 | 960 | 42 | 12 | *15 |
| 12 | 10 | 11 | 65 | 492 | 856 | 970 | 576 | 170 | 607 | 35 | 11 | 15 |
| 13 | 9.1 | 11 | *4,070 | 410 | 640 | 828 | 464 | 141 | 413 | 32 | 11 | 25 |
| 14 | 8.7 | 10 | 3,530 | 345 | 514 | 671 | 391 | 121 | 464 | 29 | 13 | 60 |
| 15 | 8.3 | 10 | 1,640 | 291 | 420 | 572 | 337 | 119 | 345 | 27 | 26 | 78 |
| 16 | 8.1 | 11 | 680 | 256 | 489 | 482 | 299 | *108 | 266 | 26 | 24 | 108 |
| 17 | *7.9 | 12 | 437 | 210 | 454 | 420 | 278 | 98 | *206 | 25 | 26 | 72 |
| 18 | 8.3 | 12 | 337 | 183 | 410 | 378 | 249 | 91 | 170 | 24 | 20 | 47 |
| 19 | 8.5 | 11 | *271 | 156 | 1,210 | 351 | 227 | 95 | 167 | 23 | 16 | 36 |
| 20 | 8.5 | 11 | 220 | 150 | 1,590 | 312 | 208 | 137 | 137 | 22 | 16 | 31 |
| 21 | 8.5 | 11 | 228 | *185 | 935 | 276 | 278 | 134 | 112 | 21 | 15 | 28 |
| 22 | 9.7 | 14 | 662 | 513 | 684 | 299 | 427 | 214 | 93 | 19 | 14 | 26 |
| 23 | 11 | 16 | 694 | 1,930 | 541 | 299 | 1,180 | 317 | 122 | 37 | 12 | 55 |
| 24 | 11 | 15 | 716 | 990 | 458 | 273 | 950 | 222 | 271 | 36 | 12 | 66 |
| 25 | 11 | 14 | 572 | 680 | *407 | *286 | 870 | 156 | 414 | 61 | 13 | 46 |
| 26 | 11 | 14 | 444 | 522 | 424 | 320 | 584 | 110 | 310 | 42 | 12 | 34 |
| 27 | 12 | 14 | 360 | 688 | 451 | 307 | 458 | 102 | 213 | 33 | 12 | 30 |
| 28 | 11 | 14 | 299 | 7,110 | 471 | 291 | 413 | 87 | 165 | 28 | 11 | 26 |
| 29 | 11 | 14 | 254 | 12,800 | - | 273 | 454 | 87 | 201 | 23 | 10 | 25 |
| 30 | 11 | 14 | 213 | 4,370 | ------- | 256 | 614 | 87 | 189 | 22 | 9.8 | 31 |
| 31 | 11 | ------- | 192 | 2,590 | ------- | 234 | ------- | 141 | ------- | 22 | 9.6 | ------- |
| Total | 317.5 | 423 | 16,030 | 39,813 | 29,991 | 15,018 | 19,224 | 7,296 | 15,151 | 1,334 | 458.4 | 948.5 |
| Mean | 10.2 | 14.1 | 517 | 1,284 | 1,071 | 484 | 641 | 235 | 505 | 45.0 | 14.8 | 31.6 |
| Cfsm | 0.050 | 0.070 | 2.56 | 6.36 | 5.30 | 2.40 | 3.17 | 1.16 | 2.50 | 0.223 | 0.073 | 0.156 |
| In. | 0.06 | 0.08 | 2.95 | 7.33 | 5.52 | 2.76 | 3.54 | 1.34 | 2.79 | 0.26 | 0.08 | 0.17 |

Calendar year 1956: Max 9,050 Min 7.5 Mean 427 Cfsm 2.11 In. 28.78
Water year 1956-57: Max 12,800 Min 7.5 Mean 400 Cfsm 1.98 In. 26.88

Peak discharge (base, 8,000 cfs).--Jan. 29 (4:30 p.m.) 16,900 cfs (19.41 ft).
* Discharge measurement made on this day.
Note.--Discharge Feb. 11-16, May 28 to June 16 computed from reconstructed gage-height graph based on bihourly radio-gage readings.

## West Fork Obey River near Alpine, Tenn.

Location (revised).--Lat 36°23'49", long 85°10'28", on upstream end of left pier of bridge on State Highway 52, 0.3 mile upstream from Nettlecarrier Creek, 2.4 miles east of Alpine, Overton County, and 7.8 miles above confluence with East Fork.

Drainage area (revised).--115 sq mi (includes 34 sq mi without surface drainage).

Records available.--December 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 684.28 ft above mean sea level, unadjusted datum of 1929.

Average discharge.--14 years (1943-57), 167 cfs.

Extremes.--Maximum discharge during year, 9,510 cfs Jan. 29 (gage height, 12.65 ft); minimum, 3.5 cfs Oct. 1-3; minimum gage height, 0.43 ft Sept. 2-7.
1942-57: Maximum discharge, 15,100 cfs Mar. 21, 1955 (gage height, 16.30 ft); minimum, 2.6 cfs Sept. 13-19, 1954; minimum gage height, 0.41 ft Sept. 9, 10, 19-22, 1951, Sept. 13-19, 1954.

Remarks.--Records good except those below 10 cfs, which are fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 1386: 1943-45(P), 1946, 1948, 1952(P).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 12

| | | | |
|---|---|---|---|
| 0.5 | 3.5 | 1.0 | 26 |
| .6 | 6.5 | 1.3 | 56 |
| .8 | 15 | 1.7 | 124 |

Dec. 13 to Sept. 30

| | | | |
|---|---|---|---|
| 0.5 | 5.1 | 2.0 | 275 |
| .7 | 11 | 3.0 | 615 |
| 1.0 | 33 | 5.0 | 1,580 |
| 1.3 | 69 | 7.0 | 2,910 |
| 1.5 | 111 | 10.0 | 6,100 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.5 | 10 | 6.1 | 55 | 2,210 | 173 | 101 | 114 | 62 | 36 | 8.0 | 5.5 |
| 2 | 3.5 | 10 | 5.8 | 48 | 1,370 | 173 | 133 | 169 | 54 | 31 | 7.4 | 5.3 |
| 3 | 4.6 | 9.6 | 5.8 | 44 | 658 | 160 | 121 | 306 | 216 | 26 | 7.1 | 5.3 |
| 4 | 16 | 7.3 | 5.5 | 94 | 435 | 150 | 249 | 176 | 425 | *23 | 7.4 | 5.3 |
| 5 | 21 | 5.8 | 4.9 | 476 | 329 | 137 | 367 | 121 | 328 | 19 | *7.7 | 5.3 |
| 6 | 13 | 5.2 | 4.9 | 302 | 275 | 124 | 282 | 89 | 363 | 16 | 7.4 | 5.3 |
| 7 | 8.0 | *5.2 | 4.9 | 229 | 394 | 232 | 242 | 73 | 206 | 15 | 7.1 | 5.5 |
| 8 | 6.5 | 4.6 | 6.5 | 173 | 547 | 605 | 840 | 63 | 159 | 13 | 6.8 | 5.5 |
| 9 | 5.8 | 4.6 | 6.5 | 186 | 615 | 435 | *808 | 58 | 370 | 16 | 6.8 | 5.8 |
| 10 | 5.2 | 4.3 | 6.5 | 295 | 1,040 | 384 | 452 | 53 | 365 | 15 | 6.8 | 13 |
| 11 | 4.9 | 4.3 | 7.3 | 262 | 636 | 455 | 323 | 49 | 199 | 13 | 6.5 | *8.0 |
| 12 | 4.6 | 4.3 | 116 | 222 | 418 | 533 | 245 | 44 | 133 | 12 | 6.8 | 7.9 |
| 13 | 4.6 | 4.3 | *1,820 | 189 | 299 | 448 | 192 | 38 | 97 | 11 | 6.5 | 49 |
| 14 | 4.3 | 4.3 | 1,360 | 143 | 232 | 350 | 156 | 36 | 85 | 11 | 7.2 | 50 |
| 15 | 4.3 | 4.3 | 520 | 114 | 183 | 285 | 133 | 40 | 63 | 11 | 10 | 40 |
| 16 | 4.3 | 7.3 | 226 | 94 | 196 | 232 | 117 | *36 | 50 | 10 | 8.4 | 41 |
| 17 | *4.3 | 6.9 | 130 | 71 | 173 | 202 | 104 | 31 | *42 | 9.4 | 8.4 | 24 |
| 18 | 4.6 | 6.9 | 101 | 61 | 153 | 186 | 92 | 27 | 37 | 9.4 | 8.0 | 15 |
| 19 | 4.9 | 6.9 | *85 | 51 | 832 | 163 | 82 | 32 | 36 | 9.4 | 7.4 | 11 |
| 20 | 4.9 | 6.5 | 73 | 47 | 770 | 137 | 76 | 44 | 33 | 9.1 | 6.8 | 9.4 |
| 21 | 4.9 | 8.4 | 121 | *50 | 469 | 114 | 78 | 34 | 30 | 8.7 | 6.8 | 8.4 |
| 22 | 5.5 | 16 | 579 | 526 | 326 | 121 | 97 | 168 | 29 | 8.4 | 6.5 | 8.7 |
| 23 | 6.1 | 18 | 438 | 1,240 | 249 | 121 | 89 | 175 | 35 | 11 | 6.8 | 20 |
| 24 | 5.8 | 13 | 370 | 499 | 206 | 111 | 83 | 82 | 44 | 34 | 7.1 | 24 |
| 25 | 5.5 | 9.6 | 275 | 329 | *183 | *121 | 94 | 101 | 104 | 20 | 6.8 | 13 |
| 26 | 6.9 | 9.2 | 206 | 242 | 179 | 140 | 82 | 63 | 60 | 12 | 6.8 | 9.8 |
| 27 | 7.3 | 8.0 | 156 | 415 | 176 | 130 | 71 | 69 | 42 | 10 | 6.5 | 8.4 |
| 28 | 6.9 | 6.9 | 117 | 2,760 | 163 | 124 | 151 | 59 | 40 | 9.4 | 6.0 | 7.1 |
| 29 | 6.5 | 6.5 | 89 | 5,440 | - | 117 | 336 | 48 | 45 | 9.1 | 5.8 | 9.2 |
| 30 | 5.8 | 6.5 | 71 | 1,740 | -------- | 111 | 169 | 82 | 49 | 9.4 | 5.5 | 11 |
| 31 | 7.3 | -------- | 63 | 1,120 | -------- | 101 | -------- | 128 | -------- | 8.4 | 5.5 | -------- |
| Total | 201.3 | 224.7 | 6,980.7 | 17,517 | 13,716 | 6,875 | 6,365 | 2,608 | 3,801 | 455.7 | 218.6 | 436.7 |
| Mean | 6.49 | 7.49 | 225 | 565 | 490 | 222 | 212 | 84.1 | 127 | 14.7 | 7.05 | 14.6 |
| Cfsm | 0.056 | 0.065 | 1.96 | 4.91 | 4.26 | 1.93 | 1.84 | 0.731 | 1.10 | 0.128 | 0.061 | 0.127 |
| In. | 0.07 | 0.07 | 2.26 | 5.66 | 4.44 | 2.22 | 2.06 | 0.84 | 1.23 | 0.15 | 0.07 | 0.14 |

Calendar year 1956: Max 4,080 Min 3.5 Mean 181 Cfsm 1.57 In. 21.40
Water year 1956-57: Max 5,440 Min 3.5 Mean 163 Cfsm 1.42 In. 19.21

Peak discharge (base, 3,400 cfs).--Jan. 29 (2 p.m.) 9,510 cfs (12.65 ft).
* Discharge measurement made on this day.

## Wolf River near Byrdstown, Tenn.

Location.--Lat 36°33'40", long 85°04'20", on right bank a quarter of a mile upstream from new bridge on county road, half a mile upstream from Widow Creek, 3 miles east of Byrdstown, Pickett County, and 5 miles upstream from Lick Creek.

Drainage area.--105 sq mi.

Records available.--June 1943 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 707.54 ft above mean sea level, Sandy Hook datum.

Average discharge.--14 years, 176 cfs.

Extremes.--Maximum discharge during year, 22,600 cfs Jan. 29 (gage height, 10.84 ft), from rating curve extended above 7,300 cfs on basis of velocity-area study; minimum, 6.1 cfs Oct. 10-17; minimum gage height, 0.77 ft Oct. 1, 2.
1943-57: Maximum discharge, that of Jan. 29, 1957; minimum, 2.0 cfs Sept. 17, 1954 (gage height, 0.50 ft).

Remarks.--Records good except those below 10 and above 10,000 cfs, and those for periods of shifting control, which are fair. Some regulation at low flow caused by small mills above station.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 1276: 1943.

Rating table, water year 1956-57, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 5.3 | 3.0 | 400 |
| 1.0 | 12 | 4.0 | 1,040 |
| 1.2 | 21 | 5.0 | 2,040 |
| 1.5 | 43 | 6.0 | 3,490 |
| 1.8 | 78 | 7.0 | 5,770 |
| 2.6 | 240 | 9.0 | 12,800 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.7 | 18 | 12 | 86 | 2,130 | 182 | 146 | 114 | 38 | 68 | 26 | 12 |
| 2 | 6.7 | 26 | 12 | 74 | 1,530 | 172 | 249 | 110 | 80 | 57 | 23 | 12 |
| 3 | 7.6 | 16 | 11 | 66 | 754 | 160 | 215 | 101 | 162 | 49 | 22 | 11 |
| 4 | 12 | 14 | 11 | 83 | 494 | 152 | 450 | 88 | 217 | 43 | 22 | 11 |
| 5 | 11 | 12 | 11 | 225 | 390 | 138 | 584 | 78 | 376 | 38 | 21 | 10 |
| 6 | 10 | 11 | 11 | 200 | 365 | 132 | 420 | 72 | 341 | 34 | *20 | 9.7 |
| 7 | 8.2 | 11 | 11 | 172 | 469 | 382 | 302 | 65 | 190 | 30 | 18 | 9.7 |
| 8 | 7.2 | *11 | 12 | 144 | 754 | 668 | 887 | 60 | 132 | 28 | 18 | 9.7 |
| 9 | 7.0 | 10 | 13 | 927 | 782 | 500 | 846 | 55 | 264 | *378 | 17 | 10 |
| 10 | 6.4 | 9.7 | 14 | 1,380 | 1,290 | 445 | 505 | 52 | 264 | 231 | 16 | 21 |
| 11 | 6.1 | 9.7 | 14 | 644 | 768 | 554 | 350 | 52 | 158 | 92 | 16 | 15 |
| 12 | 6.1 | 9.0 | 113 | 385 | 488 | 578 | 261 | 50 | 136 | 59 | 22 | *16 |
| 13 | 6.1 | 8.6 | 2,520 | 270 | 346 | 494 | 215 | 45 | 110 | 46 | 20 | 87 |
| 14 | 6.1 | 8.6 | 1,480 | 205 | 264 | 365 | 182 | 45 | 94 | 40 | 21 | 338 |
| 15 | 6.1 | 8.6 | 602 | 172 | 215 | 298 | 160 | 57 | 80 | 38 | 115 | 384 |
| 16 | 6.1 | 14 | 266 | 144 | 195 | 243 | 148 | 47 | 68 | 37 | 52 | 170 |
| 17 | 6.1 | 14 | 172 | 119 | 172 | 215 | *134 | 39 | 71 | 33 | 32 | 119 |
| 18 | *7.6 | 14 | 154 | 105 | 156 | 192 | 123 | 35 | *91 | 33 | 26 | 80 |
| 19 | 8.2 | 14 | 142 | 89 | 1,110 | 178 | 112 | 37 | 78 | 36 | 24 | 59 |
| 20 | 7.9 | 12 | *123 | 84 | 960 | 156 | 103 | 49 | 70 | 30 | 22 | 51 |
| 21 | 8.2 | 16 | 372 | *110 | 554 | 142 | 103 | *42 | 55 | 26 | 20 | 42 |
| 22 | 10 | 20 | 2,180 | 590 | 385 | 156 | 107 | 236 | 49 | 23 | 20 | 38 |
| 23 | 10 | 21 | 1,200 | 1,950 | 284 | 162 | 108 | 221 | 61 | 106 | 19 | 37 |
| 24 | 10 | 18 | 632 | 632 | 238 | 154 | 295 | 132 | 351 | 134 | 18 | 33 |
| 25 | 10 | 16 | 370 | 395 | 210 | 158 | 456 | 105 | 246 | 59 | 18 | 29 |
| 26 | 12 | 15 | 252 | 270 | *202 | *172 | 280 | 83 | 166 | 41 | 17 | 26 |
| 27 | 12 | 14 | 195 | 426 | 200 | 170 | 210 | 75 | 121 | 34 | 16 | 25 |
| 28 | 12 | 14 | 164 | 3,410 | 188 | 160 | 172 | 63 | 99 | 31 | 15 | 23 |
| 29 | 12 | 13 | 136 | 11,000 | - | 154 | 154 | 53 | 94 | 28 | 15 | 24 |
| 30 | 11 | 12 | 114 | 2,040 | ------ | 142 | 132 | 46 | 78 | 27 | 14 | 23 |
| 31 | 12 | -------- | 99 | 1,220 | -------- | 130 | -------- | 41 | -------- | 28 | 13 | -------- |
| Total | 268.4 | 410.2 | 11,418 | 27,617 | 15,893 | 7,904 | 8,409 | 2,348 | 4,340 | 1,935 | 738 | 1,735.1 |
| Mean | 8.66 | 13.7 | 368 | 891 | 568 | 255 | 280 | 75.7 | 145 | 62.4 | 23.8 | 57.8 |
| Cfsm | 0.082 | 0.130 | 3.50 | 8.49 | 5.41 | 2.43 | 2.67 | 0.721 | 1.38 | 0.594 | 0.227 | 0.550 |
| In. | 0.10 | 0.15 | 4.04 | 9.78 | 5.63 | 2.80 | 2.98 | 0.83 | 1.54 | 0.69 | 0.26 | 0.61 |

Calendar year 1956: Max 4,070 Min 6.1 Mean 207 Cfsm 1.97 In. 26.77
Water year 1956-57: Max 11,000 Min 6.1 Mean 227 Cfsm 2.16 In. 29.41

Peak discharge (base, 3,600 cfs).--Jan. 29 (1 p.m.) 22,600 cfs (10.84 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 1-4, July 25 to Aug. 14, Aug. 16 to Sept. 12.

## Obey River below Dale Hollow Dam, Tenn.

Location.--Lat 36°32'12", long 85°27'22", on right bank 1,200 ft downstream from Dale Hollow Dam, 3 miles east of Celina, Clay County, 7.1 miles upstream from mouth, and 24 miles downstream from Wolf River.

Drainage area.--935 sq mi.

Records available.--January 1939 to September 1942 (published as "near Celina"), September 1943 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 500.00 ft above mean sea level, Sandy Hook datum. Jan. 25, 1939, to Sept. 30, 1942, wire-weight gage at site 5.2 miles upstream at datum 12.46 ft higher. Water-stage recorder for station on Cumberland River at Celina is used as an auxiliary gage for this station.

Average discharge.--17 years, 1,338 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,280 cfs Apr. 8; maximum gage height, 25.20 ft Jan. 29 (backwater from Cumberland River); minimum discharge not determined; minimum gage height, 4.61 ft Nov. 18.

1939-42, 1943-57: Maximum discharge, 41,400 cfs Feb. 4, 1939, site and datum then in use, from rating curve extended above 20,000 cfs; maximum gage height, 43.40 ft Jan. 12, 1946 (backwater from Cumberland River); minimum discharge not determined.

Remarks.--Records good except those for periods of backwater from Cumberland River and those for which computed releases from Dale Hollow Reservoir were used, which are fair. Flow completely regulated by Dale Hollow Reservoir, beginning Aug. 30, 1943 (see p. 66). Figures of daily discharge shown only when there is flow from Dale Hollow Reservoir; when not shown, discharge is negligible.

Cooperation.--Records of release from Dale Hollow Reservoir and 1 discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1956-57, except periods of backwater from Cumberland River (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 4.9 | 61 | 5.2 | 100 | 9.0 | 1,420 |
| 5.1 | 93 | 5.5 | 170 | 11.0 | 2,520 |
| 5.5 | 170 | 6.0 | 295 | 14.0 | 4,700 |
| Note.--Same as following table above 5.5 ft. | | 7.0 | 600 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,390 | 114 | 490 | 2,490 | c5,900 | c3,470 | 2,180 | 2,750 | - | e17 | 4,130 | - |
| 2 | 1,000 | 340 | 287 | 2,980 | c5,910 | e60 | c4,810 | 2,160 | 293 | 164 | 4,140 | 1,540 |
| 3 | 1,430 | - | *154 | c3,290 | c5,850 | - | c3,410 | 196 | 2,430 | - | 3,520 | 1,600 |
| 4 | 1,660 | - | - | c2,700 | c5,820 | c1,710 | c3,980 | - | 2,340 | 110 | 2,700 | 1,820 |
| 5 | 1,260 | 1,070 | - | 1,450 | c5,720 | c1,440 | c3,870 | - | 2,360 | - | 4,200 | 1,570 |
| 6 | 281 | 1,070 | - | 2,440 | c4,790 | *c2,350 | c3,350 | 573 | 2,270 | 122 | 4,310 | 1,520 |
| 7 | 100 | 1,060 | - | 2,560 | *c5,750 | c3,450 | 336 | 1,380 | 498 | 110 | *4,320 | 1,280 |
| 8 | 1,480 | 1,860 | - | 2,390 | c5,450 | c1,690 | 4,120 | 1,490 | 559 | 820 | 4,210 | - |
| 9 | 1,220 | 1,860 | 610 | - | c5,140 | - | c5,910 | 1,480 | - | 947 | 4,320 | 460 |
| 10 | 2,400 | 396 | 1,960 | 1,140 | c4,310 | - | c5,890 | 1,640 | 2,360 | 1,860 | 4,400 | 598 |
| 11 | 944 | - | 2,500 | c3,290 | c5,830 | c995 | c5,330 | 1,280 | 158 | 1,640 | 4,140 | 561 |
| 12 | 962 | 1,700 | - | c744 | c5,810 | c1,030 | c5,940 | - | 1,280 | 2,270 | 4,470 | *- |
| 13 | 471 | 2,180 | 1,200 | c470 | c5,830 | c2,450 | c4,740 | 739 | 857 | 1,530 | 4,280 | 450 |
| 14 | - | 2,050 | e56 | 3,620 | c5,800 | c3,820 | c1,610 | 716 | 896 | 854 | 2,540 | - |
| 15 | 1,780 | 1,440 | - | c3,700 | c5,860 | c3,840 | c1,210 | 676 | 832 | 2,820 | 2,410 | 164 |
| 16 | 1,800 | 1,640 | - | c3,870 | c5,870 | c3,860 | c3,950 | 658 | - | 2,730 | 2,350 | 589 |
| 17 | 1,260 | 1,140 | 2,280 | c4,690 | c5,840 | e23 | *c5,550 | 676 | 860 | 2,840 | 1,380 | e13 |
| 18 | 1,720 | 134 | 3,450 | c3,400 | c5,120 | c1,660 | c2,630 | 635 | 868 | 3,240 | 782 | 1,380 |
| 19 | 752 | 1,340 | 1,950 | c833 | c4,160 | c1,610 | c1,540 | - | 858 | 3,340 | 2,060 | 1,330 |
| 20 | - | 1,480 | 2,640 | - | c5,940 | c4,380 | c214 | 984 | 836 | 2,930 | 1,810 | 1,300 |
| 21 | 103 | 929 | c3,950 | 1,400 | c5,830 | c1,790 | - | *1,090 | 1,630 | 2,820 | 2,440 | 1,920 |
| 22 | - | 138 | c2,410 | - | c3,360 | c1,680 | 3,360 | 1,440 | 2,990 | 2,700 | 2,020 | 1,280 |
| 23 | 132 | 1,400 | c3,420 | c3,000 | c3,220 | c1,730 | 1,660 | 1,580 | 1,440 | 2,860 | 2,000 | 2,550 |
| 24 | 133 | 929 | c3,650 | c1,610 | - | - | 1,040 | 2,100 | 1,760 | 2,880 | 909 | 2,690 |
| 25 | 167 | - | - | c1,530 | c2,990 | 820 | 979 | 2,140 | 826 | 3,000 | 119 | 2,020 |
| 26 | 68 | 2,070 | c1,790 | - | c3,520 | 1,800 | 1,020 | 879 | 866 | 2,980 | - | 2,330 |
| 27 | 108 | 1,920 | c1,560 | - | c3,500 | - | 1,380 | 1,160 | 928 | 2,650 | 263 | 2,540 |
| 28 | - | 197 | c3,880 | c1,060 | c3,330 | e38 | 1,050 | - | 926 | 2,520 | - | 1,450 |
| 29 | 118 | 1,820 | c3,860 | c2,320 | - | - | 2,340 | e40 | 938 | 4,180 | 214 | 680 |
| 30 | e21 | 2,280 | c1,600 | c536 | ------- | - | 2,860 | - | - | 3,940 | - | 994 |
| 31 | 126 | ------- | 2,340 | c4,070 | ------- | 116 | ------- | - | ------- | 4,100 | 210 | ------- |
| Total | 23,886 | 32,557 | 46,037 | 61,583 | 136,510 | 45,812 | 86,259 | 28,462 | 32,859 | 62,974 | 74,647 | 34,629 |
| Mean | 771 | 1,085 | 1,485 | 1,987 | 4,875 | 1,478 | 2,875 | 918 | 1,095 | 2,031 | 2,408 | 1,154 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 6,160 | Min - | Mean 1,622 | Mean 1,841 | Cfsm 1.97 | In. 26.80 |
| Water year 1956-57: | Max 5,940 | Min - | Mean 1,825 | Mean 1,796 | Cfsm 1.92 | In. 26.08 |

* Discharge measurement made on this day.

† Adjusted for change in contents in Dale Hollow Reservoir.

c Backwater from Cumberland River; discharge computed by using fall as determined from auxiliary gage as a factor (figures of discharge on some days reflect changes in storage and inflow between dam and mouth of river).

e Discharge is computed release from Dale Hollow Reservoir.

Note.--Discharge negligible on days for which no discharge is shown.

## Cumberland River at Celina, Tenn.

Location.--Lat 36°33'20", long 85°30'47", on right pier of bridge on State Highway 52 at Celina, Clay County, 600 ft downstream from Obey River and at mile 380.8.

Drainage area.--7,320 sq mi, approximately.

Records available.--October 1922 to September 1957. Gage-height records collected at same site 1903-54 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 488.97 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 20, 1930, staff gage at site 400 ft downstream at same datum.

Average discharge.--35 years, 11,240 cfs (unadjusted).

Extremes.--Maximum discharge during year, 66,500 cfs Jan. 29; maximum gage height, 34.1 ft Jan. 29; minimum discharge, 230 cfs Nov. 8 (gage height, 1.53 ft).
1922-57: Maximum discharge, 145,000 cfs Dec. 29, 1926; maximum gage height, 57.25 ft Dec. 29, 1926, from graph based on gage readings; minimum discharge observed, 69 cfs Sept. 2, 11-14, 26, 1925 (gage height, 0.20 ft).
Maximum stage known, 59.2 ft in March 1826, from Cumberland River profile.

Remarks.--Records good except those below 700 cfs, which are fair. Flow regulated by Lake Cumberland and Dale Hollow Reservoir (see p. 66).

Cooperation.--Radio-gage readings furnished by Corps of Engineers.

Revisions (water years).--WSP 893: 1923-38. WSP 1276: 1924.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 16, 19, Nov. 9, 10, 15, 24, 30, Dec. 11, 14-16, 18, 21, Dec. 30 to Jan. 2, Jan. 9, 11, 13-15, 20, 22, 24-30, Feb. 1, 19, Mar. 17, 24, 30, 31, Apr. 2, 4, 5, 7-9, 16, 20, 21, 23, 24, 27, 30, May 2, 22, 28, July 6, 23, Aug. 14, Sept. 23; stage-discharge relation indefinite Oct. 21, 23, June 17)

| | | | |
|---|---|---|---|
| 1.8 | 500 | 10.0 | 11,700 |
| 2.0 | 720 | 20.0 | 31,600 |
| 5.0 | 4,300 | 24.0 | 40,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,740 | 3,630 | 10,700 | 12,500 | 36,800 | 32,200 | 5,300 | 18,800 | 2,010 | 3,250 | 13,900 | 2,230 |
| 2 | 8,710 | 3,100 | 7,750 | 16,400 | 39,100 | 29,600 | 16,800 | 13,100 | 1,990 | 6,830 | 14,700 | 2,670 |
| 3 | 10,100 | 2,920 | *4,790 | 20,700 | 36,600 | 28,700 | 20,200 | 5,180 | 3,400 | 10,400 | 12,900 | 3,160 |
| 4 | 10,900 | 1,300 | 2,440 | 19,700 | 34,300 | 29,900 | 30,100 | 3,210 | 5,180 | 10,100 | 11,700 | 2,500 |
| 5 | 10,900 | 1,610 | 4,390 | 17,000 | 33,500 | 29,700 | 25,700 | 4,100 | 7,080 | 5,550 | 10,400 | 5,160 |
| 6 | 8,760 | 1,430 | 7,360 | 17,000 | 32,700 | *30,400 | 20,000 | 3,820 | 7,810 | 9,930 | 12,000 | 8,220 |
| 7 | 3,340 | 1,250 | 7,320 | 13,400 | 33,400 | 31,700 | 12,700 | 4,590 | 3,070 | 7,260 | 13,300 | 4,920 |
| 8 | 2,130 | 1,890 | 8,800 | 14,500 | 33,400 | 33,000 | 13,100 | 4,290 | 3,680 | *9,000 | 15,400 | 1,940 |
| 9 | 4,460 | 10,900 | 4,910 | 18,900 | 34,300 | 30,800 | 28,100 | 4,700 | 5,120 | 11,800 | 14,700 | 1,320 |
| 10 | 10,200 | 13,300 | 3,780 | 18,900 | 35,600 | 29,200 | 31,200 | 4,550 | 4,040 | 13,900 | 14,400 | 1,710 |
| 11 | 11,100 | 4,600 | 7,910 | 23,400 | 36,000 | 29,700 | 30,400 | 5,090 | 2,850 | 14,500 | 13,800 | 3,990 |
| 12 | 9,350 | 2,530 | 9,080 | 23,300 | 34,600 | 29,800 | 30,800 | 2,580 | 4,990 | 15,900 | 12,700 | 2,420 |
| 13 | 6,760 | 4,250 | 12,500 | 17,100 | 34,800 | 30,200 | 30,100 | 2,160 | 2,790 | 16,900 | 12,900 | 2,640 |
| 14 | 2,280 | 9,520 | 22,900 | 14,000 | 34,600 | 29,800 | 27,300 | 2,370 | 2,820 | 14,000 | 10,000 | 3,770 |
| 15 | 2,230 | 6,790 | 18,200 | 21,800 | 34,400 | 29,500 | 25,500 | 3,510 | 2,130 | 11,900 | 7,080 | 3,860 |
| 16 | 7,530 | 7,040 | 6,160 | 24,100 | 34,300 | 29,300 | 26,800 | 4,110 | 792 | 13,700 | 6,440 | 5,130 |
| 17 | 10,800 | 7,400 | 3,460 | 26,800 | 34,200 | 25,800 | 29,500 | 4,100 | 1,330 | 10,400 | 5,920 | 3,410 |
| 18 | 10,400 | 6,500 | 9,200 | 26,300 | 33,900 | 26,600 | 28,000 | 4,130 | 2,040 | 9,750 | 3,390 | 3,110 |
| 19 | 6,360 | 4,020 | 11,200 | 24,200 | 37,600 | 26,800 | 26,300 | 2,530 | 4,110 | 13,200 | 3,060 | 4,440 |
| 20 | 2,400 | 7,400 | 15,500 | 18,000 | 39,300 | 28,800 | 22,300 | 2,820 | 4,070 | 14,200 | 3,940 | 6,660 |
| 21 | 1,230 | 7,860 | 19,200 | 16,200 | 36,500 | 27,300 | 9,630 | *3,710 | 4,160 | 13,700 | 5,670 | 9,970 |
| 22 | 544 | 5,330 | 26,100 | 24,300 | 34,100 | 24,700 | 6,160 | 9,560 | 5,990 | 10,700 | 5,130 | 11,600 |
| 23 | 513 | 4,340 | 24,400 | 39,700 | 32,500 | 22,500 | 12,200 | 12,700 | 5,640 | 16,600 | 4,850 | 8,700 |
| 24 | 552 | 6,700 | 26,200 | 28,400 | 29,800 | 13,400 | 8,630 | 10,800 | 4,950 | 18,200 | 2,660 | 9,160 |
| 25 | 3,720 | 7,990 | 24,600 | 23,300 | 31,300 | 14,600 | 7,460 | 11,100 | 4,660 | 18,100 | 1,840 | 5,090 |
| 26 | 3,840 | 11,300 | 23,100 | 18,000 | 32,200 | 16,300 | 7,270 | 9,170 | 5,540 | 18,100 | 1,400 | *9,570 |
| 27 | 3,600 | 11,600 | 22,100 | 18,800 | 32,600 | 18,500 | 12,000 | 5,470 | 5,370 | 16,400 | 2,080 | 9,570 |
| 28 | 4,520 | 11,400 | 22,900 | 28,700 | 32,200 | 19,200 | 13,500 | 6,580 | 5,280 | 11,700 | 1,970 | 9,360 |
| 29 | 2,080 | 9,670 | 24,700 | 58,600 | - | 17,200 | 12,200 | 4,850 | 4,790 | 11,100 | 2,430 | 6,590 |
| 30 | 1,910 | 10,600 | 21,100 | 41,000 | ------- | 12,300 | 19,000 | 2,300 | 4,950 | 14,800 | 2,560 | 3,950 |
| 31 | 3,800 | ------- | 10,400 | 33,300 | ------- | 7,180 | ------- | 2,350 | ------- | 13,700 | 3,080 | ------- |
| Total | 168,759 | 188,170 | 423,150 | 718,300 | 964,600 | 784,680 | 588,250 | 178,330 | 122,632 | 385,610 | 246,300 | 160,820 |
| Mean | 5,444 | 6,272 | 13,650 | 23,170 | 34,450 | 25,310 | 19,610 | 5,753 | 4,088 | 12,440 | 7,945 | 5,361 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 45,900 | Min 240 | Mean 13,070 | Mean 14,610 | Cfsm 2.00 | In. 27.16 |
| Water year 1956-57: | Max 58,600 | Min 513 | Mean 13,510 | Mean 13,470 | Cfsm 1.84 | In. 24.98 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland and Dale Hollow Reservoir.
Note.--No gage-height record Jan. 30 to Feb. 25; discharge computed on basis of recorded range in stage, bihourly radio-gage readings and records for Obey River below Dale Hollow Dam.

## Roaring River near Hilham, Tenn.

Location.--Lat 36°20'27", long 85°25'35", on left bank 700 ft upstream from Cleek Branch, 800 ft downstream from old Crawford Mill site, 0.2 mile downstream from bridge on State Highway 136, 1.4 miles upstream from Flat Creek, 5.0 miles south of Hilham, Overton County, and 13 miles north of Cookeville.

Drainage area.--78.7 sq mi (includes 27.1 sq mi without surface drainage).

Records available.--June 1932 to September 1957.

Gage.--Water-stage recorder. Concrete control since Sept. 21, 1940. Altitude of gage is 770 ft (by barometer). June 23, 1932, to July 24, 1933, staff gage at site 800 ft upstream at different datum. July 25 to Nov. 7, 1933, staff gage 150 ft downstream at different datum. Nov. 8, 1933, to Sept. 23, 1940, staff gage at present site and datum.

Average discharge.--25 years, 108 cfs.

Extremes.--Maximum discharge during year, 4,830 cfs Jan. 29 (gage height, 8.67 ft); minimum, 5.0 cfs Sept. 5-8; minimum gage height, 0.74 ft Oct. 1-3, 17, 18, 21, Sept. 5-8.
1932-57: Maximum discharge, 5,550 cfs Mar. 22, 1955 (gage height, 9.39 ft); minimum, 1.9 cfs Oct. 19, 24, 26, 28, Nov. 9, 1940; minimum daily, 2.4 cfs Sept. 12, 13, 15-19, 1954; minimum gage height, 0.16 ft Oct. 5, 1936.

Remarks.--Records fair. Prior to 1951, some diurnal fluctuation at low flow caused by mills above station.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 1033: 1939(M). WSP 1143: 1948. WSP 1276: 1942. WSP 1438: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 4.5 | 3.0 | 510 |
| .8 | 7.7 | 4.0 | 890 |
| .9 | 12 | 5.0 | 1,500 |
| 1.0 | 17 | 6.0 | 2,270 |
| 1.3 | 37 | 7.0 | 3,170 |
| 1.6 | 73 | 8.0 | 4,160 |
| 2.0 | 140 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.5 | 6.1 | 7.7 | 73 | 1,550 | 122 | 106 | 66 | 35 | 32 | 13 | 5.5 |
| 2 | 5.5 | 6.9 | 7.7 | 63 | 1,180 | 115 | 153 | 176 | 33 | 28 | 12 | 5.5 |
| 3 | 6.1 | 6.5 | 7.7 | 58 | 618 | 110 | 126 | 262 | 32 | 25 | 12 | 5.2 |
| 4 | 16 | 6.5 | 7.7 | 93 | 430 | 105 | 341 | 126 | 152 | 24 | 11 | 5.2 |
| 5 | 13 | 6.5 | 7.7 | 230 | 353 | 97 | 295 | 95 | 75 | 21 | *10 | 5.0 |
| 6 | 8.6 | 6.5 | 7.3 | 168 | 310 | 97 | 197 | 79 | 92 | 19 | 9.8 | 5.0 |
| 7 | 6.9 | *6.5 | 7.3 | 138 | 325 | 188 | 158 | 67 | 59 | 18 | 9.0 | 5.0 |
| 8 | 6.5 | 6.5 | 9.0 | 119 | 381 | 353 | 537 | 60 | 46 | *18 | 8.6 | 5.0 |
| 9 | 6.5 | 6.1 | 12 | 126 | 426 | 329 | *492 | 57 | 176 | 18 | 8.6 | 6.9 |
| 10 | 6.5 | 5.8 | 12 | 176 | 590 | 280 | 349 | 52 | 144 | 20 | 8.6 | 18 |
| 11 | 6.1 | 5.8 | 11 | 158 | 436 | 265 | 270 | 52 | 84 | 16 | 8.6 | 8.6 |
| 12 | 6.1 | 5.8 | 153 | 144 | 349 | 349 | 200 | 47 | 67 | 16 | 8.6 | 15 |
| 13 | 6.1 | 5.8 | 1,200 | 131 | 275 | 310 | 160 | 43 | 57 | 15 | 8.1 | 168 |
| 14 | 6.1 | 5.8 | 996 | 115 | 204 | 250 | a130 | 42 | 58 | 15 | 8.6 | 51 |
| 15 | 6.1 | 6.1 | 472 | 102 | 170 | 200 | a110 | 43 | 53 | 14 | 23 | 86 |
| 16 | 6.1 | 10 | 255 | 89 | 162 | 158 | a100 | 38 | 44 | 18 | 11 | 66 |
| 17 | *5.5 | 11 | 155 | 75 | 135 | 140 | a90 | 35 | 39 | 16 | 9.4 | 46 |
| 18 | 5.8 | 7.7 | 160 | a68 | 122 | 131 | a85 | 34 | *37 | 14 | 9.4 | 33 |
| 19 | 5.8 | 6.9 | *127 | a64 | 475 | 122 | a80 | 38 | 35 | 15 | 9.0 | 27 |
| 20 | 5.8 | 6.5 | 110 | a62 | 486 | 108 | a75 | 46 | 34 | 14 | 8.6 | 25 |
| 21 | 5.5 | 7.7 | 176 | *60 | 353 | 99 | a70 | 36 | 32 | 12 | 8.1 | 24 |
| 22 | 6.1 | 16 | 704 | 576 | 275 | 105 | 216 | *128 | 30 | 12 | 7.7 | 21 |
| 23 | 6.9 | 12 | 496 | 1,270 | 200 | 99 | 154 | 108 | 38 | 12 | 7.3 | 31 |
| 24 | 6.5 | 9.4 | 353 | 486 | 168 | 91 | 127 | 66 | 85 | 34 | 7.3 | 26 |
| 25 | 5.8 | 9.4 | 235 | 357 | 151 | 99 | 142 | 58 | 145 | 22 | 6.9 | 21 |
| 26 | 6.9 | 9.4 | 170 | 260 | *151 | 99 | 107 | 51 | 58 | 15 | 6.9 | 19 |
| 27 | 9.8 | 9.4 | 136 | 345 | 133 | 97 | 91 | 57 | 42 | 12 | 6.5 | 17 |
| 28 | 6.5 | 8.1 | 119 | 1,360 | 122 | 91 | 81 | 47 | 38 | 12 | 6.5 | 16 |
| 29 | 5.8 | 7.7 | 103 | 3,690 | - | 87 | 79 | 42 | 37 | 12 | 6.1 | 19 |
| 30 | 5.8 | 7.7 | 92 | 1,760 | ------ | 84 | 73 | 39 | 36 | 30 | 5.8 | 21 |
| 31 | 5.8 | ------ | 83 | 858 | ------ | 81 | ------ | 37 | ------ | 18 | 5.8 | ------ |
| Total | 212.0 | 232.1 | 6,392.1 | 13,274 | 10,530 | 4,861 | 5,194 | 2,127 | 1,893 | 567 | 281.8 | 806.9 |
| Mean | 6.84 | 7.74 | 206 | 428 | 376 | 157 | 173 | 68.6 | 63.1 | 18.3 | 9.09 | 26.9 |
| Cfsm | 0.087 | 0.098 | 2.62 | 5.44 | 4.78 | 1.99 | 2.20 | 0.872 | 0.802 | 0.233 | 0.116 | 0.342 |
| In. | 0.10 | 0.11 | 3.02 | 6.27 | 4.98 | 2.30 | 2.45 | 1.01 | 0.89 | 0.27 | 0.13 | 0.38 |

Calendar year 1956: Max 3,120 Min 5.5 Mean 139 Cfsm 1.77 In. 23.98
Water year 1956-57: Max 3,690 Min 5.0 Mean 127 Cfsm 1.61 In. 21.91

Peak discharge (base, 1,200 cfs).--Dec. 13 (9 a.m.) 1,410 cfs (4.87 ft); Jan. 23 (12:30 a.m.) 2,310 cfs (6.04 ft); Jan. 29 (6:30 p.m.) 4,830 cfs (8.67 ft); Feb. 1 (8 p.m.) 2,100 cfs (5.79 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, normal recession, and records for West Fork Obey River near Alpine.

## Calfkiller River below Sparta, Tenn.

Location.--Lat 35°54'31", long 85°28'46", on right bank three-quarters of a mile downstream from abandoned hydroelectric powerplant of Tennessee Valley Authority, 1½ miles downstream from Town Creek, 1½ miles southwest of Sparta, White County, and 9 miles upstream from mouth.

Drainage area.--178 sq mi.

Records available.--August 1940 to September 1957.

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

Average discharge.--17 years, 363 cfs.

Extremes.--Maximum discharge during year, 8,170 cfs Jan. 29 (gage height, 16.95 ft); minimum, 18 cfs Dec. 5, 6, 10, 11; minimum gage height recorded, 1.13 ft Oct. 14-18.
1940-57: Maximum discharge, 14,600 cfs Jan. 5, 1949 (gage height, 2[illegible].80 ft); minimum, 11 cfs Oct. 18, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 18 | 7.0 | 2,620 |
| 1.3 | 53 | 10.0 | 4,140 |
| 1.5 | 101 | 14.0 | 6,370 |
| 2.0 | 280 | 16.7 | 8,000 |
| 4.0 | 1,160 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 28 | 21 | 146 | 5,400 | 558 | 250 | 320 | 80 | 139 | 64 | 28 |
| 2 | 21 | 28 | 21 | 132 | 4,500 | 558 | 350 | 272 | 75 | 126 | 60 | 27 |
| 3 | 30 | 28 | 20 | 116 | 2,140 | 494 | 400 | 356 | 73 | 107 | 55 | 27 |
| 4 | 50 | 27 | 20 | 132 | 1,430 | 436 | 1,000 | 316 | 75 | 93 | 53 | 27 |
| 5 | 40 | 27 | 18 | 985 | 1,200 | 388 | 1,500 | 252 | 127 | 83 | 49 | 27 |
| 6 | 35 | 28 | 21 | 823 | 1,040 | 352 | 1,000 | 210 | 494 | 75 | 49 | 27 |
| 7 | 30 | 28 | 22 | 526 | 1,210 | 376 | 800 | 184 | 292 | 71 | 47 | 27 |
| 8 | 28 | 26 | 21 | 372 | 1,610 | 890 | 800 | 167 | 195 | 68 | 43 | 28 |
| 9 | 26 | 26 | 20 | 312 | 1,900 | 805 | 2,000 | 156 | 321 | 64 | 41 | 33 |
| 10 | 25 | 24 | 18 | 304 | 1,900 | 661 | 1,000 | 150 | 1,680 | 62 | 39 | 43 |
| 11 | *24 | 22 | 20 | 312 | 1,680 | 620 | 750 | 139 | 800 | 57 | 37 | 43 |
| 12 | 24 | 22 | 125 | 284 | 1,160 | 661 | *526 | 132 | 422 | 55 | 37 | 47 |
| 13 | 22 | 22 | 3,470 | 260 | 877 | *724 | 414 | 123 | 296 | 53 | 39 | 254 |
| 14 | 22 | 21 | 2,900 | 229 | 692 | 625 | 348 | 113 | 225 | 51 | 41 | 400 |
| 15 | 21 | 21 | 1,970 | *202 | 571 | 522 | 304 | 104 | 188 | 47 | 41 | 404 |
| 16 | 21 | 21 | 828 | 184 | 602 | 427 | 280 | 101 | 203 | 47 | 41 | *284 |
| 17 | 21 | 21 | 454 | 167 | 580 | 380 | 256 | *93 | 392 | 45 | 41 | 188 |
| 18 | 22 | 21 | 308 | 150 | 494 | 352 | 236 | 93 | 210 | 43 | 41 | 136 |
| 19 | 24 | 21 | *240 | 139 | 980 | 340 | 217 | 93 | 184 | 47 | 41 | 104 |
| 20 | 24 | 21 | 202 | 129 | 1,290 | 316 | 229 | 93 | 146 | 45 | 39 | 88 |
| 21 | 24 | 26 | 181 | 129 | 972 | 276 | 248 | 96 | 123 | 41 | 37 | 80 |
| 22 | 26 | 26 | 236 | 174 | 751 | 272 | 248 | 104 | 110 | 37 | 35 | 83 |
| 23 | 27 | 26 | 400 | 877 | 598 | 272 | 900 | 113 | 192 | *188 | 32 | 150 |
| 24 | 28 | 26 | 598 | 832 | 494 | 260 | 670 | 160 | 232 | 782 | 32 | 164 |
| 25 | 28 | 26 | 472 | 548 | 440 | 256 | 544 | 170 | *332 | 260 | 32 | 123 |
| 26 | 28 | 26 | 360 | 400 | 490 | 288 | 396 | 153 | 272 | 167 | 32 | 98 |
| 27 | 28 | *26 | 288 | 409 | 566 | 284 | 328 | 139 | 192 | 139 | *30 | 83 |
| 28 | 28 | 24 | 240 | 4,340 | 508 | 276 | 284 | 123 | 160 | 116 | 30 | 75 |
| 29 | 28 | 24 | 202 | *7,970 | - | 272 | 272 | 113 | 153 | 88 | 30 | 80 |
| 30 | 27 | 22 | 178 | 6,240 | ------ | 260 | 364 | 101 | 142 | 80 | 28 | 104 |
| 31 | 27 | ------ | 156 | 3,540 | ------ | 255 | ------ | 88 | -------- | 75 | 28 | -------- |
| Total | 830 | 735 | 14,030 | 31,363 | 36,075 | 13,456 | 16,914 | 4,827 | 8,386 | 3,331 | 1,244 | 3,282 |
| Mean | 26.8 | 24.5 | 453 | 1,012 | 1,288 | 434 | 564 | 156 | 280 | 107 | 40.1 | 109 |
| Cfsm | 0.151 | 0.138 | 2.54 | 5.69 | 7.24 | 2.44 | 3.17 | 0.876 | 1.57 | 0.601 | 0.225 | 0.612 |
| In. | 0.17 | 0.15 | 2.93 | 6.55 | 7.54 | 2.81 | 3.53 | 1.01 | 1.75 | 0.70 | 0.26 | 0.69 |

Calendar year 1956: Max 7,330 Min 18 Mean 369 Cfsm 2.07 In. 28.24
Water year 1956-57: Max 7,970 Min 18 Mean 368 Cfsm 2.07 In. 28.09

Peak discharge (base, 4,400 cfs).--Dec. 13 (6 to 7 p.m.) 4,660 cfs (10.95 ft); Jan. 29 (7 to 8 a.m.) 8,170 cfs (16.95 ft); Feb. 2 (1:30 a.m.) 5,910 cfs (13.18 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-10, Feb. 19, 20, Mar. 17, Mar. 30 to Apr. 11; discharge estimated on basis of weather records and records for stations on nearby streams.

## Barren Fork near Trousdale, Tenn.

Location.--Lat 35°39'55", long 85°53'00", on left bank 15 ft downstream from highway bridge on Trousdale-McMinnville pike, 3¼ miles east of Trousdale, Warren County, 4.5 miles downstream from Bullpen Creek, 6 miles west of McMinnville, and 6.2 miles upstream from Hickory Creek.

Drainage area.--132 sq mi.

Records available.--June 1932 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 925.61 ft above mean sea level, datum of 1929. Prior to May 27, 1940, staff gage at site 200 ft downstream at same datum.

Average discharge.--25 years, 218 cfs.

Extremes.--Maximum discharge during year, 8,600 cfs Jan. 28 (gage height, 11.00 ft); minimum, 47 cfs Oct. 1, 2 (gage height, 1.09 ft).
1932-57: Maximum discharge, 32,000 cfs Feb. 13, 1948 (gage height, 16.99 ft), from rating curve extended above 9,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, 32 cfs Oct. 13, 1941; minimum gage height, 0.98 ft Sept. 22, 23, 1941.

Remarks.--Records good.

Revisions (water years).--WSP 1083: 1937(M), 1944(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 5-30)

| Oct. 1 to Dec. 12 | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.09 | 47 | 1.12 | 48 | 5.0 | 1,340 |
| 1.5 | 110 | 1.4 | 84 | 7.0 | 2,620 |
| 2.0 | 220 | 2.1 | 230 | 8.0 | 3,550 |
| 2.4 | 325 | 2.6 | 370 | 9.8 | 6,110 |
| | | 3.0 | 510 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47 | 56 | 52 | 107 | 5,890 | 556 | 191 | 140 | 98 | 87 | 69 | 50 |
| 2 | 48 | 54 | 50 | 98 | 2,380 | 392 | 277 | 124 | 94 | 82 | 68 | 50 |
| 3 | 54 | 54 | 50 | 92 | 799 | 322 | 218 | 120 | 103 | 81 | 66 | 50 |
| 4 | 68 | 55 | 50 | 125 | 739 | 282 | 547 | 114 | 94 | 78 | 66 | 50 |
| 5 | 59 | 53 | 50 | 313 | 655 | 261 | 464 | 112 | 126 | 75 | 66 | 50 |
| 6 | 55 | 53 | 53 | 214 | 1,060 | 274 | 296 | 109 | 122 | 75 | 64 | 49 |
| 7 | 53 | 54 | 50 | 180 | 1,620 | 783 | 243 | 107 | 107 | 74 | 62 | 48 |
| 8 | 50 | 53 | 50 | 155 | 980 | 835 | 508 | 105 | 99 | 74 | 61 | 48 |
| 9 | 49 | 53 | 52 | 142 | *627 | 492 | 520 | 103 | 116 | 74 | 62 | 51 |
| 10 | *49 | 53 | 50 | 149 | 631 | 375 | 290 | 103 | 103 | 72 | 60 | 62 |
| 11 | 49 | 53 | 54 | 140 | 475 | 322 | 243 | 105 | 96 | 72 | 59 | 53 |
| 12 | 48 | 53 | 325 | 128 | 372 | 506 | *216 | 105 | 91 | 72 | 57 | 55 |
| 13 | 49 | 53 | 2,710 | 120 | 316 | *408 | 198 | 103 | 82 | 75 | 59 | 169 |
| 14 | 48 | 53 | 1,600 | *116 | 282 | 319 | 182 | 126 | 89 | 75 | 60 | 191 |
| 15 | 48 | 53 | 626 | 110 | 293 | 285 | 171 | 142 | 82 | 76 | 62 | 98 |
| 16 | 48 | 55 | 288 | 107 | 489 | 256 | 164 | *110 | 78 | 76 | 61 | 147 |
| 17 | 48 | 55 | 207 | 98 | 319 | 233 | 158 | 103 | 75 | 75 | 62 | 109 |
| 18 | 48 | 54 | 166 | 92 | 269 | 230 | 155 | 99 | 81 | 82 | 68 | 89 |
| 19 | 49 | 52 | *140 | 89 | 1,140 | 256 | 149 | 109 | 81 | 80 | 65 | 80 |
| 20 | 50 | 52 | 130 | 87 | 821 | 223 | 144 | 114 | 74 | 76 | 60 | 76 |
| 21 | 53 | 56 | 126 | 105 | 447 | 207 | 144 | 105 | 70 | 76 | 57 | 75 |
| 22 | 55 | 58 | 243 | 165 | 354 | 246 | 149 | 242 | 70 | 75 | 56 | 87 |
| 23 | 55 | 56 | 302 | 967 | 299 | 235 | 144 | 214 | 74 | 75 | 54 | 112 |
| 24 | 52 | 55 | 266 | 392 | 272 | 212 | 140 | 140 | 149 | *76 | 54 | 86 |
| 25 | 52 | 54 | 202 | 282 | 264 | 279 | 134 | 120 | 124 | 76 | 54 | 76 |
| 26 | 53 | 54 | 169 | 243 | 871 | 243 | 126 | 126 | *96 | 74 | 54 | 70 |
| 27 | 53 | 54 | 151 | 556 | 510 | 240 | 122 | 144 | 86 | 72 | 53 | 68 |
| 28 | 52 | *53 | 138 | 6,020 | 528 | 216 | 126 | 120 | 84 | 72 | *52 | 68 |
| 29 | 52 | 52 | 130 | 3,200 | - | 200 | 149 | 110 | 89 | 72 | 51 | 84 |
| 30 | 53 | 52 | 122 | 1,820 | -------- | 191 | 134 | 109 | 86 | 72 | 50 | *103 |
| 31 | 54 | -------- | 114 | 4,930 | -------- | 182 | -------- | 101 | -------- | 74 | 50 | -------- |
| Total | 1,601 | 1,615 | 8,716 | 21,342 | 23,702 | 10,061 | 6,702 | 3,784 | 2,819 | 2,345 | 1,842 | 2,404 |
| Mean | 51.6 | 53.8 | 281 | 688 | 846 | 325 | 223 | 122 | 94.0 | 75.6 | 59.4 | 80.1 |
| Cfsm | 0.391 | 0.408 | 2.13 | 5.21 | 6.41 | 2.46 | 1.69 | 0.924 | 0.712 | 0.573 | 0.450 | 0.607 |
| In. | 0.45 | 0.46 | 2.46 | 6.01 | 6.68 | 2.83 | 1.89 | 1.07 | 0.79 | 0.66 | 0.52 | 0.68 |

Calendar year 1956: Max 5,100 Min 47 Mean 224 Cfsm 1.70 In. 23.08
Water year 1956-57: Max 6,020 Min 47 Mean 238 Cfsm 1.80 In. 24.50

Peak discharge (base, 3,200 cfs).--Dec. 13 (5:30 a.m.) 3,700 cfs (8.15 ft); Jan. 28 (10 a.m.) 8,600 cfs (11.00 ft); Jan. 31 (11 p.m.) 7,480 cfs (10.52 ft).
* Discharge measurement made on this day.

493799 O -59 -4

## Collins River near McMinnville, Tenn.

Location.--Lat 35°42'32", long 85°43'46", on left bank 10 ft downstream from bridge on U. S. Highway 70S, 1¾ miles downstream from Barren Fork, and 2½ miles northeast of McMinnville, Warren County.

Drainage area.--624 sq mi.

Records available.--October 1924 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 825.78 ft above mean sea level, Sandy Hook datum. Prior to Oct. 16, 1926, chain gage on upstream side of bridge at same datum.

Average discharge.--33 years, 1,122 cfs.

Extremes.--Maximum discharge during year, 32,200 cfs Feb. 1 (gage height, 26.93 ft); minimum, 74 cfs Sept. 8; minimum gage height, 1.15 ft Oct. 19.
1924-57: Maximum discharge, 75,300 cfs Mar. 23, 1929 (gage height, 39.1 ft), from rating curve extended above 32,000 cfs on basis of slope-area determination of peak flow; minimum, 35 cfs Sept. 21, 1930; minimum gage height, 0.70 ft Oct. 16, 1931.
Maximum stage known, that of Mar. 23, 1929.

Remarks.--Records excellent.

Revisions (water years).--WSP 873: 1929, 1932(M), 1934-35, 1936(M), 1937. WSP 1276: 1925-26, 1928(M), 1933, 1936, 1940.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1

| | | | |
|---|---|---|---|
| 1.16 | 78 | 8.0 | 4,060 |
| 1.5 | 149 | 12.0 | 8,510 |
| 2.0 | 274 | 15.0 | 12,300 |
| 3.0 | 650 | 20.0 | 19,400 |
| 5.0 | 1,750 | 26.2 | 30,500 |

Feb. 2 to Sept. 30

| | | | |
|---|---|---|---|
| 1.18 | 77 | 3.0 | 640 |
| 1.5 | 140 | 5.0 | 1,750 |
| 2.0 | 265 | | |

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 86 | 90 | 86 | 570 | 30,500 | 2,800 | 712 | 964 | 616 | 348 | 108 | 84 |
| 2 | 86 | 92 | 86 | 506 | 26,600 | 2,240 | 1,130 | 775 | 500 | 289 | 106 | 82 |
| 3 | 92 | 92 | 86 | 454 | 12,300 | 1,860 | 1,540 | 744 | 420 | 259 | 104 | 80 |
| 4 | 104 | 90 | 84 | 474 | 5,680 | 1,550 | 2,510 | 850 | 365 | 235 | 104 | 80 |
| 5 | 102 | 90 | 84 | 1,270 | 5,070 | 1,350 | 5,510 | 680 | 440 | 225 | 102 | 78 |
| 6 | 106 | 90 | 84 | 2,110 | 4,480 | 1,240 | 4,230 | 576 | 440 | 210 | 96 | 77 |
| 7 | 102 | 90 | 82 | 1,580 | 6,790 | 1,950 | 2,710 | 508 | 492 | 195 | 96 | 77 |
| 8 | 94 | 90 | 82 | 1,190 | 5,920 | 3,610 | 2,510 | 456 | 396 | 180 | 96 | 77 |
| 9 | 90 | 88 | 84 | 964 | 4,350 | 2,870 | 7,910 | 404 | 540 | 170 | 94 | 82 |
| 10 | *88 | 88 | 82 | 840 | 4,030 | 2,310 | 4,410 | 379 | 1,200 | 160 | 92 | 92 |
| 11 | 86 | 86 | 82 | 752 | 3,490 | 1,960 | *2,570 | 365 | 1,110 | 150 | 92 | 90 |
| 12 | 86 | 86 | 239 | 658 | 2,720 | 2,000 | 1,860 | 372 | 775 | 142 | 132 | 100 |
| 13 | 86 | 82 | 10,100 | 614 | 2,210 | 2,060 | 1,430 | 365 | 600 | 136 | 118 | 239 |
| 14 | 86 | 80 | 13,100 | 578 | 1,800 | *1,720 | 1,170 | 492 | 508 | 136 | 112 | 580 |
| 15 | 84 | 82 | 8,020 | *538 | 1,530 | 1,500 | 980 | 552 | 416 | 132 | 110 | 472 |
| 16 | 82 | 86 | 3,240 | 506 | 1,840 | 1,330 | 860 | *488 | 351 | 128 | 102 | 556 |
| 17 | 80 | 84 | 1,820 | 478 | 1,630 | 1,160 | 775 | 488 | 295 | 126 | 112 | *520 |
| 18 | 80 | 84 | 1,220 | 430 | 1,400 | 1,080 | 716 | 432 | 274 | 132 | 116 | 468 |
| 19 | 78 | 84 | *920 | 386 | 2,500 | 1,070 | 662 | 408 | 259 | 126 | 118 | 379 |
| 20 | 78 | 84 | 762 | 359 | 3,700 | 1,000 | 620 | 460 | 244 | 126 | 110 | 295 |
| 21 | 84 | 92 | 686 | 378 | 2,680 | 880 | 592 | 504 | 226 | 122 | 110 | 244 |
| 22 | 94 | 90 | 1,350 | 502 | 2,140 | 895 | 588 | 646 | 222 | 118 | 106 | 235 |
| 23 | 96 | 90 | 2,160 | 1,990 | 1,710 | 948 | 649 | 1,450 | 256 | *126 | 108 | 320 |
| 24 | 96 | 90 | 2,620 | 2,200 | 1,440 | 875 | 775 | 964 | 286 | 140 | 104 | 286 |
| 25 | 94 | 88 | 1,930 | 1,680 | 1,290 | 958 | 1,010 | 721 | 379 | 140 | 102 | 225 |
| 26 | 90 | 90 | 1,390 | 1,450 | 2,530 | 1,080 | 816 | 636 | *358 | 130 | 98 | 202 |
| 27 | 88 | *90 | 1,090 | 2,450 | 3,450 | 1,010 | 690 | 708 | 316 | 120 | 92 | 182 |
| 28 | 88 | 88 | 900 | 17,800 | 2,920 | 936 | 612 | 604 | 268 | 116 | *92 | 172 |
| 29 | 88 | 88 | 780 | 18,300 | - | 855 | 708 | 508 | 244 | 112 | 90 | 195 |
| 30 | 88 | 86 | 686 | *11,900 | ---- | 798 | 739 | 580 | 306 | 110 | 88 | 250 |
| 31 | 92 | ------- | 614 | 16,000 | -------- | 744 | ------ | 895 | -------- | 110 | 86 | -------- |
| Total | 2,774 | 2,630 | 54,549 | 89,907 | 146,700 | 46,639 | 51,994 | 18,974 | 13,104 | 4,949 | 3,198 | 6,819 |
| Mean | 89.5 | 87.7 | 1,760 | 2,900 | 5,239 | 1,504 | 1,733 | 612 | 437 | 160 | 103 | 227 |
| Cfsm | 0.143 | 0.141 | 2.82 | 4.65 | 8.40 | 2.41 | 2.78 | 0.981 | 0.700 | 0.256 | 0.165 | 0.364 |
| In. | 0.17 | 0.16 | 3.25 | 5.36 | 8.74 | 2.78 | 3.10 | 1.13 | 0.78 | 0.29 | 0.19 | 0.41 |

Calendar year 1956: Max 20,300 Min 78 Mean 1,190 Cfsm 1.91 In. 25.98
Water year 1956-57: Max 30,500 Min 77 Mean 1,212 Cfsm 1.94 In. 26.36

Peak discharge (base, 11,000 cfs).--Dec. 13 (10 p.m.) 14,600 cfs (16.64 ft); Jan. 28 (9:30 p.m.) 23,500 cfs (22.60 ft); Feb. 1 (5 p.m.) 32,200 cfs (26.93 ft).
* Discharge measurement made on this day.

## Caney Fork near Rock Island, Tenn.

Location.--Lat 35°48'26", long 85°37'44", on right bank 180 ft downstream from powerhouse of Tennessee Valley Authority, half a mile downstream from dam at mouth of Collins River, 1 mile northwest of Rock Island, Warren County, 64 miles upstream from Center Hill Dam, and at mile 90.3.

Drainage area.--1,640 sq mi, approximately.

Records available.--November 1911 to March 1924, April 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 650.09 ft above mean sea level, datum of 1929. Nov. 14, 1911, to Mar. 30, 1924, at sites from half a mile upstream to 100 ft downstream from powerplant at different datums. Apr. 12, 1925, to Sept. 9, 1930, at present site at datum 2.00 ft higher.

Average discharge.--38 years (1914-20, 1925-57), 3,198 cfs (unadjusted).

Extremes.--Maximum discharge during year, 68,600 cfs Feb. 1 (gage height, 22.82 ft); minimum, 30 cfs Sept. 18 (gage height, -1.03 ft); minimum daily, 38 cfs Oct. 27, 28, Nov. 24, 25.

1911-57: Maximum discharge, 210,000 cfs Mar. 23, 1929 (gage height, 40.6 ft, present datum, from floodmark), from rating curve extended above 110,000 cfs; minimum daily, 25 cfs several days August to October 1951.

Maximum stage known, that of Mar. 23, 1929.

Remarks.--Records good. Flow regulated by Great Falls Lake beginning Dec. 8, 1916 (see p. 66).

Revisions (water years).--WSP 1276: 1934, 1937.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| -0.88 | 38 | 5.0 | 2,610 |
| -.5 | 62 | 7.0 | 4,500 |
| 0.0 | 133 | 10.0 | 9,180 |
| .5 | 225 | 13.0 | 17,200 |
| 1.0 | 338 | 18.0 | 37,000 |
| 2.0 | 654 | 22.6 | 66,800 |
| 3.0 | 1,170 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 192 | 287 | 39 | 3,430 | 66,300 | 7,260 | 3,290 | 3,320 | 1,850 | 690 | 345 | 39 |
| 2 | 188 | 406 | 39 | 3,400 | 49,500 | 5,930 | 3,280 | 3,310 | 1,440 | 920 | 402 | 188 |
| 3 | 194 | 39 | 251 | 3,360 | 23,000 | 4,830 | 3,290 | 3,310 | 1,130 | 1,390 | 48 | 194 |
| 4 | 194 | 39 | 288 | 3,330 | 12,000 | 4,180 | 3,330 | 3,300 | 605 | 59 | 48 | 202 |
| 5 | 637 | 190 | 306 | 3,320 | 11,500 | 4,000 | 10,200 | 3,290 | 600 | 1,510 | 344 | 240 |
| 6 | 41 | 358 | 360 | 3,350 | 12,600 | 3,720 | 11,000 | 3,260 | 490 | 48 | 412 | 250 |
| 7 | 41 | 422 | 340 | 3,390 | 18,300 | 4,270 | 6,720 | 2,500 | 2,130 | 48 | 404 | 39 |
| 8 | 558 | 398 | 39 | 3,400 | 19,400 | 8,780 | 5,930 | 2,150 | 1,380 | 781 | 211 | 41 |
| 9 | 189 | 394 | 40 | 3,390 | 14,100 | 6,690 | 14,400 | 1,320 | 1,590 | 614 | 161 | 223 |
| 10 | 41 | 39 | 246 | 3,360 | 13,500 | 6,080 | 8,930 | 1,360 | 3,300 | 392 | 50 | 235 |
| 11 | 41 | 39 | 269 | 3,360 | 11,600 | 5,040 | 5,370 | 1,140 | 3,360 | 377 | 50 | 231 |
| 12 | 41 | 285 | 596 | 3,350 | 7,380 | 5,280 | 4,500 | 49 | 3,360 | 511 | 281 | 318 |
| 13 | 41 | 310 | 28,000 | 3,330 | 6,450 | *5,280 | 4,020 | 1,080 | 3,350 | 48 | 306 | 1,580 |
| 14 | 41 | 202 | 35,000 | 3,300 | 5,070 | 4,750 | 3,640 | 1,530 | 3,330 | 48 | 292 | 3,080 |
| 15 | 248 | 260 | 20,500 | *3,260 | 4,480 | 4,130 | 3,500 | 1,280 | 3,300 | 433 | 407 | 1,400 |
| 16 | 256 | 246 | 8,340 | 2,200 | 4,810 | 3,890 | 3,490 | 1,660 | 3,260 | 472 | 366 | *293 |
| 17 | 252 | 39 | 4,660 | 2,170 | 4,350 | 3,630 | 3,450 | *1,610 | 2,600 | 481 | 50 | 1,010 |
| 18 | 244 | 39 | 3,910 | 2,010 | 3,970 | 3,500 | 3,440 | 870 | 1,370 | 449 | 50 | 945 |
| 19 | 258 | 304 | 3,420 | 40 | 6,270 | 3,500 | 3,410 | 881 | 1,650 | 355 | 252 | 643 |
| 20 | 40 | 348 | 3,500 | 40 | 10,100 | 3,480 | 3,390 | 764 | 1,580 | 47 | 401 | 467 |
| 21 | 194 | 406 | 3,460 | 1,460 | 7,350 | 3,480 | 3,360 | 910 | 610 | 47 | 347 | 45 |
| 22 | 204 | 39 | 3,440 | 1,900 | 5,610 | 3,450 | 3,340 | 2,130 | 47 | 362 | 306 | 46 |
| 23 | 245 | 392 | 4,520 | 3,150 | 4,960 | 3,430 | 3,330 | 2,780 | 1,270 | *455 | 253 | 360 |
| 24 | 252 | 38 | 7,340 | 3,210 | 4,060 | 3,410 | 3,350 | 3,000 | 2,290 | 409 | 51 | 724 |
| 25 | 250 | 38 | 4,910 | 3,220 | 3,780 | 3,400 | 3,360 | 2,580 | 2,050 | 2,150 | 51 | 862 |
| 26 | 237 | 302 | 4,100 | 3,230 | 6,260 | 3,400 | 3,360 | 2,690 | 760 | 212 | 252 | 872 |
| 27 | 38 | 415 | 3,700 | 3,260 | 8,780 | 3,390 | 3,360 | 1,510 | 1,320 | 46 | 304 | 1,320 |
| 28 | 38 | *432 | 3,530 | 38,400 | 7,540 | 3,380 | 3,350 | 1,040 | 966 | 46 | 253 | 73 |
| 29 | 238 | 360 | 3,500 | 44,500 | - | 3,360 | 3,340 | 1,430 | 686 | 412 | 252 | 40 |
| 30 | 294 | 248 | 3,490 | 29,200 | ------- | 3,350 | 3,320 | 1,300 | 692 | 522 | 246 | 609 |
| 31 | 41 | ------- | 3,450 | 42,500 | ------- | 3,330 | ------- | 1,310 | ------- | 498 | 39 | ------- |
| Total | 5,768 | 7,314 | 155,583 | 230,820 | 353,020 | 135,600 | 142,050 | 58,964 | 52,366 | 14,832 | 7,234 | 16,569 |
| Mean | 186 | 244 | 5,019 | 7,446 | 12,610 | 4,374 | 4,735 | 1,902 | 1,746 | 478 | 233 | 552 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 44,300 | Min 36 | Mean 3,223 | Mean 3,256 | Cfsm 1.99 | In. 27.02 |
| Water year 1956-57: | Max 66,300 | Min 38 | Mean 3,233 | Mean 3,236 | Cfsm 1.97 | In. 26.78 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake.

## Caney Fork below Center Hill Dam, near Lancaster, Tenn.

Location.--Lat 36°06'10", long 85°50'40", on left bank 1.1 miles downstream from Center Hill Dam, 2 miles south of Lancaster, Smith County, 4.7 miles upstream from Indian Creek, 10 miles north of Smithville, and at mile 25.5.

Drainage area.--2,200 sq mi, approximately.

Records available.--May 1944 to September 1957. Prior to October 1950, published as "near Lancaster."

Gage.--Water-stage recorder. Datum of gage is 469.00 ft above mean sea level, Sandy Hook datum (levels by Corps of Engineers). Prior to Oct. 1, 1950, at site 7.7 miles downstream at datum 6.62 ft lower.

Average discharge.--13 years, 4,094 cfs (unadjusted).

Extremes.--Maximum discharge during year, 30,400 cfs Feb. 4 (gage height, 31.27 ft); minimum, 40 cfs Sept. 8 (gage height, 5.00 ft).

1944-57: Maximum discharge, 119,000 cfs Feb. 14, 1948; maximum gage height, 53.44 ft Feb. 14, 1948, site and datum then in use; minimum daily discharge, 12 cfs Oct. 1-18, 20-22, 1950.

Remarks.--Records good except those for periods of backwater or no gage-height record, which are fair. Flow regulated by Great Falls Lake and Center Hill Reservoir (see p. 66).

Cooperation.--One discharge measurement, level notes, and record of releases from Center Hill Reservoir furnished by Corps of Engineers.

Revisions (water years).--WSP 1276: 1951.

Rating tables, water year 1956-57, except periods of backwater (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Feb. 3, 12, 13)

Oct. 1 to Feb. 3

| | | | |
|---|---|---|---|
| 7.0 | 590 | 15.0 | 8,000 |
| 8.0 | 1,230 | 20.0 | 14,400 |
| 10.0 | 2,820 | | |

Note.--Same as following table below 7.0 ft and above 20.0 ft.

Feb. 4 to Sept. 30

| | | | |
|---|---|---|---|
| 5.0 | 40 | 8.0 | 1,330 |
| 5.4 | 58 | 10.0 | 3,100 |
| 5.6 | 78 | 15.0 | 8,350 |
| 6.0 | 155 | 20.0 | 14,400 |
| 6.5 | 325 | 25.0 | 21,300 |
| 7.0 | 590 | 31.0 | 30,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 766 | 53 | 562 | 6,900 | c13,200 | 9,140 | 3,560 | 5,430 | 970 | 3,790 | 270 | 49 |
| 2 | 50 | 125 | 331 | 8,570 | c12,800 | 6,830 | 7,620 | 5,990 | 52 | a3,500 | 54 | 606 |
| 3 | 120 | 51 | 126 | 8,200 | 25,900 | 2,420 | 3,390 | 2,140 | 3,480 | a1,750 | 163 | 669 |
| 4 | 989 | 132 | 248 | 5,740 | 30,000 | 7,680 | 5,140 | 2,580 | 1,740 | a3,300 | 49 | 2,250 |
| 5 | 190 | 54 | 48 | 4,570 | 30,000 | 7,300 | 4,580 | 80 | 1,900 | a4,800 | 319 | 1,720 |
| 6 | 136 | 1,040 | 1,500 | 4,480 | 29,700 | 7,790 | 1,350 | 2,050 | 646 | 3,600 | 328 | 569 |
| 7 | 143 | 1,100 | 826 | 5,840 | 29,400 | 7,820 | 58 | 3,380 | *7,000 | 2,040 | 382 | 219 |
| 8 | 1,380 | 3,650 | 48 | 7,070 | 29,300 | 7,900 | 6,600 | 3,380 | 1,550 | 3,640 | 276 | 42 |
| 9 | 130 | 3,100 | 1,170 | 2,950 | 29,400 | 2,610 | 6,220 | 3,580 | 52 | 3,640 | 293 | 1,060 |
| 10 | 276 | 54 | 4,220 | 5,300 | 27,000 | 2,230 | 2,720 | 7,500 | 532 | 5,450 | 164 | 916 |
| 11 | 186 | 132 | 3,240 | 7,580 | 28,700 | 5,880 | 6,510 | 1,840 | 51 | 5,190 | 48 | 750 |
| 12 | 49 | 2,590 | 1,230 | 3,860 | 23,500 | 9,060 | 8,150 | 2,260 | 1,660 | 4,420 | 188 | *60 |
| 13 | 508 | 3,510 | 3,090 | 2,060 | 18,800 | 9,800 | 4,130 | 3,940 | 2,700 | 1,920 | 53 | 721 |
| 14 | 53 | 2,520 | 1,140 | 6,710 | 16,000 | 12,100 | 118 | 3,780 | 2,780 | 500 | 173 | 60 |
| 15 | 505 | 3,940 | 4,270 | 7,840 | *14,000 | 9,990 | 3,570 | 3,800 | 2,760 | 1,020 | 47 | 149 |
| 16 | *298 | 3,860 | 4,900 | 8,170 | 13,200 | 6,720 | *7,590 | 1,890 | 60 | 628 | 376 | 212 |
| 17 | 151 | 1,580 | 7,420 | 10,100 | 12,900 | 910 | 8,770 | 1,720 | 3,400 | 639 | 100 | 1,450 |
| 18 | 322 | 92 | 9,500 | 7,260 | 12,800 | 4,240 | 11,500 | 1,460 | 2,440 | 990 | 178 | 2,600 |
| 19 | 232 | 1,720 | 9,860 | 3,490 | 13,300 | 4,120 | 9,300 | 1,680 | 3,120 | 890 | *652 | 2,400 |
| 20 | 50 | 2,420 | 11,700 | 87 | 13,200 | 10,300 | 2,510 | 628 | 3,240 | 1,240 | 797 | 2,580 |
| 21 | 120 | 2,180 | 12,300 | 5,220 | 13,100 | 7,660 | 56 | 53 | 3,820 | 108 | 676 | 4,060 |
| 22 | 52 | 253 | 11,000 | 2,010 | 12,800 | 7,840 | 5,310 | 2,400 | 3,550 | 150 | 775 | 1,820 |
| 23 | 108 | 7,310 | 10,700 | c5,800 | 12,800 | 4,560 | 5,320 | 2,330 | 154 | 54 | 692 | 4,640 |
| 24 | 145 | 3,340 | 10,700 | 2,720 | 12,800 | 391 | 3,760 | 2,660 | 3,420 | 150 | 681 | 2,930 |
| 25 | *170 | 3,680 | 9,560 | 1,360 | 12,600 | 5,360 | 2,950 | 1,880 | 3,480 | 54 | 760 | 2,310 |
| 26 | 52 | 5,100 | 9,460 | 808 | 11,600 | 7,120 | 3,150 | 658 | 3,620 | 336 | 1,880 | 2,700 |
| 27 | 126 | 2,860 | 9,970 | 60 | 11,500 | 7,440 | 1,300 | 1,340 | 3,600 | 50 | 1,740 | 2,030 |
| 28 | 51 | 130 | 9,540 | c5,700 | 9,660 | 7,440 | 1,580 | 1,130 | 1,910 | 197 | 1,420 | 57 |
| 29 | 1,540 | 1,740 | 9,560 | c1,000 | - | 4,350 | 4,700 | 1,020 | 2,020 | 53 | 1,200 | 156 |
| 30 | 978 | 3,120 | 2,730 | c1,200 | ------- | 874 | 4,640 | 944 | 83 | 156 | 1,320 | 1,640 |
| 31 | 1,420 | ------- | 4,120 | 8,780 | ------- | 177 | ------- | 1,140 | ------- | 50 | 1,270 | ------- |
| Total | 11,296 | 61,436 | 165,069 | 151,435 | 519,960 | 188,052 | 136,152 | 74,663 | 65,790 | 54,305 | 17,324 | 41,425 |
| Mean | 364 | 2,048 | 5,325 | 4,885 | 18,570 | 6,066 | 4,538 | 2,408 | 2,193 | 1,752 | 559 | 1,381 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 29,900 | Min 43 | Mean 4,003 | Mean 4,187 | Cfsm 1.90 | In. 25.90 |
| Water year 1956-57: | Max 30,000 | Min 42 | Mean 4,074 | Mean 4,131 | Cfsm 1.88 | In. 25.49 |

* Discharge measurement made on this day.
† Adjusted for change in content in Great Falls Lake and Center Hill Reservoir.
a No gage-height record; discharge estimated on basis of weather records and record of releases from Center Hill Reservoir.
c Backwater from local inflow.

## Cumberland River at Carthage, Tenn.

Location.--Lat 36°14'42", long 85°57'15", on left pier of Cordell Hull Bridge on State Highway 25, half a mile south of Carthage, Smith County, 1 mile downstream from Caney Fork, 8½ miles upstream from lock and dam 7, and at mile 308.2.
Drainage area.--10,700 sq mi, approximately.
Records available.--October 1922 to September 1957. Gage-height records collected in this vicinity since 1885 are contained in reports of U. S. Weather Bureau.
Gage.--Water-stage recorder. Datum of gage is 437.67 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 12, 1936, staff and wire-weight gages at site 1,000 ft downstream at same datum. May 12 to July 17, 1936, wire-weight gage at present site and datum.
Average discharge.--35 years, 17,060 cfs (unadjusted).
Extremes.--Maximum discharge during year, 95,000 cfs Jan. 29; maximum gage height, 34.80 ft Jan. 30; minimum discharge, 596 cfs Oct. 25; minimum gage height, 6.41 ft Sept. 11.
1922-57: Maximum discharge, 210,000 cfs Dec. 30, 1926; maximum gage height, 59.8 ft Dec. 30, 1926; minimum discharge, 304 cfs Oct. 29, 1940.
Remarks.--Records good except those for period of no gage-height record, those for period of indefinite stage-discharge relation, and those below 3,000 cfs, which are fair. Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir (see p. 66).
Cooperation.--Wire-weight-gage readings furnished by U. S. Weather Bureau.
Revisions (water years).--WSP 893: 1923-39. WSP 1276: 1927, 1929(M), 1937(M).

Rating table, water year 1956-57, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Dec. 22, 23, Jan. 23, 24, Jan. 29 to Feb. 2, Feb. 12-14, 19, 21, 22, Mar. 7, 9)

| | | | |
|---|---|---|---|
| 8.3 | 682 | 17.0 | 27,100 |
| 8.5 | 1,080 | 27.0 | 66,700 |
| 9.0 | 2,000 | 35.0 | 89,300 |
| 11.0 | 6,830 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4,790 | a3,800 | 13,000 | 15,800 | 71,900 | 43,700 | 9,240 | 23,600 | 4,290 | 7,310 | 13,900 | 4,200 |
| 2 | 4,590 | a4,000 | 10,900 | 21,700 | 70,100 | 42,000 | 15,700 | 24,300 | 3,190 | 6,800 | 14,500 | 3,200 |
| 3 | 8,840 | a3,600 | 7,390 | 25,500 | 67,400 | 34,700 | 25,100 | 16,800 | 4,500 | 10,200 | 14,600 | 3,600 |
| 4 | 10,200 | a3,500 | 5,000 | 27,700 | 68,100 | 34,300 | 34,000 | 8,840 | 7,250 | 12,900 | 13,300 | 3,700 |
| 5 | 11,900 | a2,000 | 3,110 | 27,600 | 67,200 | 37,700 | 42,400 | 5,860 | 9,270 | 14,000 | 11,800 | 4,100 |
| 6 | 10,500 | a2,400 | 5,080 | 24,500 | 65,700 | 38,100 | 30,700 | 5,830 | 11,000 | 9,880 | 11,200 | 6,100 |
| 7 | 8,300 | a2,800 | 8,630 | 22,600 | 65,300 | 43,200 | 21,500 | 7,870 | *11,400 | 12,800 | 13,000 | 8,000 |
| 8 | 4,590 | a5,000 | 7,870 | 21,100 | 66,900 | 48,400 | 21,700 | 8,040 | 9,720 | 10,200 | 14,300 | 6,400 |
| 9 | 3,170 | a8,000 | 8,540 | 21,700 | 68,500 | 42,200 | 35,300 | 7,530 | 7,450 | 13,200 | 15,400 | 4,000 |
| 10 | 5,290 | 13,300 | 7,610 | 24,300 | 70,100 | 35,500 | 37,700 | 11,500 | 8,270 | 16,800 | 14,800 | 4,000 |
| 11 | 10,400 | 11,700 | 8,300 | 27,100 | 70,200 | 35,400 | 37,100 | 9,560 | 6,050 | 19,300 | 14,500 | 3,800 |
| 12 | 10,900 | 5,550 | 11,700 | 29,900 | 64,900 | 40,000 | 39,400 | 8,180 | 5,000 | 19,600 | 14,100 | *5,200 |
| 13 | 8,810 | 6,160 | 28,600 | 24,500 | 58,300 | 42,000 | 37,200 | 5,110 | 7,640 | 18,800 | 13,100 | 4,800 |
| 14 | 6,830 | 7,890 | 39,500 | 21,400 | 53,800 | 43,700 | 31,300 | 6,940 | 6,050 | 16,900 | 13,000 | 5,500 |
| 15 | 3,190 | 11,900 | 37,200 | 23,100 | 51,400 | 42,300 | 29,800 | 5,700 | 5,780 | 14,500 | 10,000 | 7,400 |
| 16 | 2,440 | 9,940 | 24,400 | 29,200 | 50,300 | 37,800 | 29,100 | 7,140 | 4,510 | 13,400 | 7,670 | 12,900 |
| 17 | 7,700 | 10,000 | 15,000 | 34,500 | 48,700 | 33,600 | 35,600 | 6,020 | 2,850 | 14,000 | 7,110 | 7,800 |
| 18 | 10,500 | 9,050 | 13,500 | 33,800 | 47,800 | 28,400 | 40,500 | 6,490 | 4,560 | 11,500 | 6,580 | 6,800 |
| 19 | 10,100 | 7,000 | 19,900 | 30,900 | 57,500 | 30,900 | 36,500 | 6,270 | 4,660 | 11,900 | 4,510 | 5,200 |
| 20 | 6,350 | 6,330 | 23,800 | 23,400 | 61,800 | 35,000 | 31,700 | 4,920 | 7,420 | 13,800 | 4,170 | 7,000 |
| 21 | 3,060 | 10,200 | 28,900 | 20,400 | 56,900 | 37,300 | 21,000 | 3,600 | 7,140 | 15,500 | 4,640 | 9,000 |
| 22 | 1,800 | 9,110 | 46,000 | 27,800 | 52,000 | 34,300 | 12,600 | 6,140 | 8,040 | 13,500 | 6,520 | 13,200 |
| 23 | 1,160 | 9,780 | 40,200 | *60,500 | 48,600 | 29,600 | 17,400 | 16,600 | 9,050 | 12,200 | 6,400 | 13,800 |
| 24 | 790 | 8,070 | 38,700 | 47,300 | 45,900 | 23,300 | 20,200 | 15,600 | 8,480 | 17,400 | 5,000 | 12,900 |
| 25 | 682 | 11,300 | 37,500 | 33,200 | 42,900 | 18,000 | 13,700 | 13,300 | 8,750 | 17,900 | 3,600 | 12,100 |
| 26 | 3,070 | 12,100 | 33,800 | 25,000 | 44,600 | 21,700 | 11,200 | 13,200 | 10,300 | 17,800 | 3,500 | 11,900 |
| 27 | 4,000 | 15,100 | 32,800 | 20,900 | 45,600 | 24,900 | 11,800 | 11,500 | 9,720 | 17,800 | *3,400 | 13,500 |
| 28 | 4,000 | 14,100 | 31,100 | 38,500 | 45,100 | 26,600 | 14,600 | 7,450 | 8,810 | 15,100 | 2,900 | 12,800 |
| 29 | 4,850 | *11,600 | 32,000 | 89,400 | - | 24,500 | 17,600 | 8,150 | 6,830 | 11,800 | 2,700 | 9,800 |
| 30 | 3,740 | 12,000 | 30,700 | *81,600 | ------- | 19,900 | *18,500 | 6,270 | 7,420 | 12,500 | 2,700 | 7,500 |
| 31 | a3,700 | ------- | 21,900 | 65,500 | ------- | 13,000 | ------- | 3,900 | ------- | 14,900 | 3,000 | ------- |
| Total | 180,242 | 247,280 | 672,630 | ‡1,020.4 | ‡1,627.5 | ‡1,042 | 780,140 | 292,210 | 215,400 | 434,190 | 275,900 | 230,200 |
| Mean | 5,814 | 8,243 | 21,700 | 32,920 | 58,120 | 33,610 | 26,000 | 9,426 | 7,180 | 14,010 | 8,900 | 7,673 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 86,600 | Min 552 | Mean 18,810 | Mean 20,530 | Cfsm 1.92 | In. 26.12 |
| Water year 1956-57: | Max 89,400 | Min 682 | Mean 19,230 | Mean 19,250 | Cfsm 1.80 | In. 24.42 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of daily gage readings and records for station at Celina and Caney Fork below Center Hill Dam near Lancaster.
Note.--Stage-discharge relation indefinite Aug. 23 to Sept. 30; discharge estimated on basis of appearance of recorder chart, 2 discharge measurements, and records for station at Celina and Caney Fork below Center Hill Dam near Lancaster.

## Spring Creek near Lebanon, Tenn.

Location.--Lat 36°10'50", long 86°14'35", on downstream end of middle pier of bridge on Eastover Road, half a mile downstream from Black Branch and 3½ miles southeast of Lebanon, Wilson County.

Drainage area.--34 sq mi, approximately.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 556.32 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,720 cfs Dec. 14 (gage height, 8.25 ft); no flow for many days in October, November, July, August, and September.
1954-57: Maximum discharge, 7,980 cfs Mar. 21, 1955 (gage height, 10.13 ft), from rating curve extended above 4,200 cfs on basis of slope-area determination of peak flow; no flow for several days in July, August, September, October, and November 1956, July, August, and September 1957.

Remarks.--Records fair.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | | | |
|---|---|---|---|---|---|
| 0.1 | 0 | 0.6 | 10 | 1.2 | 86 |
| .2 | .04 | .7 | 16 | 1.5 | 172 |
| .3 | .4 | .8 | 24 | 2.0 | 380 |
| .4 | 1.8 | .9 | 33 | 4.0 | 1,340 |
| .5 | 4.8 | 1.0 | 46 | 5.0 | 1,920 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.05 | 0.4 | 15 | 884 | 124 | 100 | 14 | 24 | 1.4 | | 0 |
| 2 | 0 | .04 | .3 | 12 | 258 | 77 | 74 | 129 | 48 | 1.3 | | 0 |
| 3 | .03 | .03 | .2 | 11 | 135 | 57 | 246 | 65 | 20 | 1.0 | | 0 |
| 4 | .08 | .03 | .2 | 217 | 86 | 42 | 570 | 28 | 15 | .7 | | 0 |
| 5 | .2 | .03 | .2 | 158 | 71 | 35 | 144 | 19 | 732 | .5 | (*) | 0 |
| 6 | .06 | .03 | .1 | 71 | 66 | 98 | 74 | 15 | 145 | .3 | | 0 |
| 7 | .04 | .03 | .1 | 46 | 168 | 468 | 50 | 12 | 62 | .2 | | 0 |
| 8 | .02 | .02 | .2 | 35 | 226 | 292 | 274 | 11 | 70 | *.1 | | 0 |
| 9 | .02 | .02 | .4 | 30 | 190 | 160 | 94 | 8.7 | 43 | .08 | | 0 |
| 10 | **.01 | .01 | 1.4 | 42 | 407 | 102 | 59 | 8.1 | 31 | .06 | | 0 |
| 11 | .01 | .01 | 2.2 | *33 | 129 | 79 | 42 | 8.1 | 22 | .03 | | 0 |
| 12 | 0 | .01 | 479 | 30 | 79 | 183 | 33 | 7.1 | 17 | .01 | | .3 |
| 13 | 0 | 0 | 752 | 27 | 53 | 82 | 28 | 6.2 | 13 | 0 | | 87 |
| 14 | 0 | 0 | 1,300 | 24 | 40 | 60 | 25 | 5.2 | 10 | 0 | | 25 |
| 15 | 0 | .1 | 172 | 22 | 128 | 46 | 22 | 4.4 | 7.1 | .01 | | 378 |
| 16 | 0 | 2.3 | 77 | 19 | 92 | a36 | 20 | 3.6 | 5.2 | .01 | | 152 |
| 17 | *0 | 2.2 | *44 | 16 | 55 | a34 | 19 | 3.0 | 4.0 | 0 | | 42 |
| 18 | 0 | 1.4 | 43 | 15 | 42 | a32 | 17 | 2.4 | *3.0 | 0 | | 23 |
| 19 | 0 | .8 | 35 | 13 | 608 | a30 | 15 | 7.9 | [illegible].7 | 0 | | 15 |
| 20 | 0 | .6 | 36 | 13 | 163 | a27 | 14 | 7.6 | 2.2 | 0 | | 10 |
| 21 | .02 | 1.8 | 750 | 29 | 91 | a23 | a12 | 6.2 | 1.8 | 0 | | 9.3 |
| 22 | .04 | 11 | 476 | *1,710 | 60 | a27 | *53 | 150 | 1.6 | 0 | | 19 |
| 23 | .04 | 5.2 | 190 | 381 | 46 | a26 | 138 | 46 | 1.4 | 0 | | 18 |
| 24 | .04 | 2.4 | 138 | 130 | 38 | a24 | 31 | 22 | 2.0 | 0 | | 11 |
| 25 | .04 | 1.6 | 74 | 79 | 37 | a38 | 22 | 14 | 3.6 | 0 | | 7.6 |
| 26 | .1 | 1.3 | 48 | 55 | *175 | *30 | 18 | 107 | 2.4 | 0 | | *5.2 |
| 27 | .3 | *1.0 | 36 | 314 | 118 | 35 | 14 | 58 | 1.8 | 0 | | 4.4 |
| 28 | .1 | .7 | 28 | 839 | 164 | 29 | 13 | 27 | 1.6 | 0 | | 3.0 |
| 29 | .06 | .6 | 24 | 1,690 | - | 27 | 13 | 18 | 1.6 | 0 | | 3.6 |
| 30 | .05 | .5 | 21 | 283 | -------- | 23 | 11 | 14 | 1.6 | 0 | | 5.7 |
| 31 | .05 | -------- | 18 | 527 | -------- | 21 | -------- | 11 | -------- | 0 | | -------- |
| Total | 1.31 | 33.81 | 4,746.7 | 6,886 | 4,609 | 2,367 | 2,245 | 838.5 | 1,295.6 | 5.70 | 0 | 819.1 |
| Mean | 0.042 | 1.13 | 153 | 222 | 165 | 76.4 | 74.8 | 27.0 | 43.2 | 0.184 | 0 | 27.3 |
| Cfsm | 0.0012 | 0.033 | 4.50 | 6.53 | 4.85 | 2.25 | 2.20 | 0.794 | 1.27 | 0.0054 | 0 | 0.803 |
| In. | 0.001 | 0.04 | 5.19 | 7.53 | 5.04 | 2.59 | 2.46 | 0.92 | 1.42 | 0.006 | 0 | 0.90 |

Calendar year 1956: Max 2,510 Min 0 Mean 62.6 Cfsm 1.84 In. 25.04
Water year 1956-57: Max 1,710 Min 0 Mean 65.3 Cfsm 1.92 In. 26.10

Peak discharge (base, 2,700 cfs).--Dec. 12 (9 p.m.) 2,840 cfs (6.30 ft); Dec. 14 (8 a.m.) 4,720 cfs (8.25 ft); Dec. 21 (9 p.m.) 3,830 cfs (7.47 ft); Jan. 22 (3 p.m.) 4,390 cfs (7.98 ft); Jan. 29 (11 a.m.) 3,860 cfs (7.50 ft); June 5 (11 a.m.) 3,180 cfs (6.74 ft).
* Discharge measurement or observation of no flow made on this day.
** Field estimate made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for Drake Creek above Hendersonville and Bradley Creek at Lascassas.

## Drakes Creek above Hendersonville, Tenn.

Location.--Lat 36°22'14", long 86°37'00", on left downstream wing wall of abutment on Long Hollow Pike Bridge, at Shackle Island, 2 miles downstream from Hogan Branch and 4.5 miles north of Hendersonville, Sumner County.

Drainage area.--19.2 sq mi.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 503.06 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 2,900 cfs Jan. 22 (gage height, 9.69 ft); minimum, 0.04 cfs Oct. 1, 2; minimum gage height, 0.95 ft Sept. 7, 8.
1954-57: Maximum discharge, 3,240 cfs Jan. 29, 1956 (gage height, 10.32 ft); minimum, 0.02 cfs many days in September 1955 and Sept. 8, 1956; minimum gage height, 0.90 ft Sept. 12, 14, 1955.

Remarks.--Records fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23 to Nov. 15, Mar. 25 to Apr. 3)

| Oct. 1 to Jan. 22 | | | | Jan. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 0.02 | 2.0 | 104 | 0.95 | 0.1 | 1.8 | 65 |
| 1.0 | .2 | 2.5 | 231 | 1.0 | .3 | 2.0 | 104 |
| 1.1 | 1.4 | 3.0 | 391 | 1.1 | 1.8 | 2.5 | 231 |
| 1.2 | 4.8 | 4.0 | 719 | 1.2 | 5.2 | 3.0 | 391 |
| 1.3 | 9.8 | 4.5 | 784 | 1.3 | 10 | 4.0 | 607 |
| 1.5 | 26 | 5.5 | 1,120 | 1.4 | 17 | 6.0 | 1,300 |
| 1.7 | 51 | | | 1.5 | 26 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.04 | 0.2 | 0.5 | 5.2 | 243 | 59 | 28 | 8.6 | 8.6 | 3.6 | 0.8 | 0.3 |
| 2 | .04 | .2 | .5 | 3.9 | 109 | 44 | 32 | 8.1 | 20 | 2.7 | .6 | .3 |
| 3 | 3.5 | .1 | .5 | 3.5 | 65 | 35 | 57 | 8.1 | 14 | 2.4 | .5 | .2 |
| 4 | 3.3 | .1 | .5 | 16 | 46 | 30 | 450 | 6.6 | 10 | 1.8 | 4.3 | .2 |
| 5 | .8 | .2 | .5 | 28 | 41 | 25 | 150 | 6.2 | 14 | 1.4 | 1.4 | *.2 |
| 6 | .5 | .2 | .5 | 20 | 38 | 33 | 90 | 5.7 | 16 | 1.2 | .7 | .1 |
| 7 | .3 | .2 | .5 | 16 | 41 | 117 | 65 | 5.2 | 11 | 1.0 | .5 | .1 |
| 8 | .3 | .1 | 3.0 | 13 | 48 | 127 | 630 | 4.8 | 9.2 | .8 | .4 | .1 |
| 9 | .2 | .1 | 2.5 | 12 | 58 | 96 | 162 | 4.4 | 61 | 1.9 | .3 | .2 |
| 10 | *.2 | .1 | 1.9 | 21 | 111 | 67 | 83 | 4.4 | 57 | *2.4 | .3 | .2 |
| 11 | .1 | .1 | 1.4 | *18 | 64 | 61 | 58 | 4.8 | 26 | 1.2 | .3 | .2 |
| 12 | .1 | .2 | 17 | 16 | 46 | 58 | 44 | 4.0 | 17 | 1.0 | *.7 | 1.0 |
| 13 | .1 | .2 | 36 | 14 | 34 | 50 | 30 | 3.6 | 12 | .7 | 23 | 8.2 |
| 14 | .1 | .2 | 46 | 12 | 26 | 44 | 26 | 6.2 | 9.7 | .7 | 6.3 | 12 |
| 15 | .09 | .2 | 20 | 10 | 38 | 38 | 24 | 4.4 | 8.1 | 2.0 | 4.8 | 7.7 |
| 16 | .09 | 5.6 | 12 | 8.1 | 44 | 31 | 24 | 3.6 | 6.6 | 3.4 | 3.2 | 4.8 |
| 17 | .09 | 1.9 | 8.1 | 6.6 | 35 | 28 | 21 | 3.0 | 5.7 | 1.2 | 2.5 | 3.6 |
| 18 | .09 | 1.2 | 9.2 | 5.7 | 30 | 28 | 20 | 3.6 | 4.8 | .8 | 2.0 | 2.7 |
| 19 | .1 | 1.0 | 8.1 | 5.2 | *346 | 25 | 17 | 126 | 4.0 | 1.0 | 1.6 | 2.1 |
| 20 | .1 | 1.0 | 15 | 6.1 | 144 | 21 | 16 | 44 | 3.6 | .7 | 1.4 | 2.1 |
| 21 | .2 | 3.3 | 30 | 12 | 72 | 20 | 19 | 22 | 3.0 | .6 | 1.2 | 2.7 |
| 22 | .2 | 3.1 | 60 | 1,000 | 50 | 21 | 25 | 267 | 3.0 | .5 | 1.0 | 26 |
| 23 | .2 | 1.9 | 38 | 275 | 38 | 20 | 47 | 106 | 3.3 | 14 | .8 | 9.2 |
| 24 | .2 | 1.4 | 24 | 78 | 32 | 20 | 31 | 47 | 6.2 | 6.0 | .9 | 5.7 |
| 25 | .1 | 1.2 | 17 | 51 | 37 | 32 | 23 | 31 | 4.0 | 2.4 | .7 | 4.0 |
| 26 | .2 | 1.2 | 13 | 35 | 139 | *33 | 18 | 32 | 3.0 | 1.4 | .5 | 3.3 |
| 27 | .2 | 1.2 | 10 | 44 | 122 | 26 | 15 | 22 | 2.4 | 1.0 | .5 | 3.0 |
| 28 | .3 | 1.0 | 9.2 | 377 | 85 | 23 | 14 | 16 | 8.1 | 1.0 | .4 | 2.1 |
| 29 | .2 | *.6 | 7.6 | *1,220 | - | 20 | 12 | 13 | 5.7 | 1.4 | .4 | 2.1 |
| 30 | .2 | .5 | 6.6 | 149 | -------- | 17 | *9.7 | 11 | 3.6 | 1.2 | .4 | 2.1 |
| 31 | .2 | -------- | *5.7 | 98 | -------- | 15 | -------- | *9.7 | -------- | 1.0 | .3 | -------- |
| Total | 12.34 | 28.5 | 404.8 | 3,579.3 | 2,182 | 1,264 | 2,240.7 | 842.0 | 360.6 | 62.4 | 62.7 | 106.5 |
| Mean | 0.398 | 0.95 | 13.1 | 115 | 77.9 | 40.8 | 74.7 | 27.2 | 12.0 | 2.01 | 2.02 | 3.55 |
| Cfsm | 0.021 | 0.049 | 0.682 | 5.99 | 4.06 | 2.12 | 3.89 | 1.42 | 0.625 | 0.105 | 0.105 | 0.185 |
| In. | 0.02 | 0.06 | 0.78 | 6.93 | 4.23 | 2.45 | 4.34 | 1.63 | 0.70 | 0.12 | 0.12 | 0.21 |

Calendar year 1956: Max 1,050 Min 0.03 Mean 25.4 Cfsm 1.32 In. 18.03
Water year 1956-57: Max 1,220 Min 0.04 Mean 30.5 Cfsm 1.59 In. 21.59

Peak discharge (base, 1,000 cfs).--Jan. 22 (7 p.m.) 2,900 cfs (9.69 ft); Jan. 29 (7 a.m.) 2,480 cfs (8.83 ft); Apr. 8 (9 a.m.) 2,150 cfs (8.10 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 16 to Sept. 4; discharge estimated on basis of recorded range in stage, weather records, and records for Stewart Creek near Smyrna.

## Bradley Creek at Lascassas, Tenn.

Location (revised).--Lat 35°55'39", long 86°17'25", on downstream end of county road bridge pier near midstream, 900 ft south of Lascassas, Rutherford County, 0.4 mile downstream from Jarman Branch, 2.0 miles upstream from mouth, and 8.0 miles northeast of Murfreesboro.

Drainage area.--38 sq mi, approximately.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 548.24 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 5,420 cfs Jan. 29 (gage height, 7.85 ft); minimum, 0.01 cfs Aug. 22 to Sept. 9; minimum gage height, 0.51 ft Aug. 30 to Sept. 3.
1954-57: Maximum discharge, 12,800 cfs Mar. 21, 1955 (gage height, 10.66 ft), from rating curve extended above 4,700 cfs on basis of slope-area determination of peak flow; minimum, that of Aug. 22 to Sept. 9, 1957; minimum gage height, 0.50 ft Sept. 7-10, 1955.

Remarks.--Records fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.5 | 0.01 | 1.2 | 51 |
| .6 | .09 | 1.4 | 90 |
| .7 | .6 | 1.7 | 170 |
| .8 | 4.1 | 2.0 | 290 |
| .9 | 11 | 3.0 | 820 |
| 1.0 | 21 | 5.0 | 2,260 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.03 | 0.1 | 0.2 | 9.2 | 1,270 | 100 | 76 | 4.6 | 5.8 | 2.7 | 0.02 | 0.01 |
| 2 | .03 | .1 | .2 | 7.8 | 288 | 71 | 65 | 45 | 4.6 | 1.8 | .02 | .01 |
| 3 | .2 | .09 | .2 | 6.4 | 140 | 53 | 43 | 26 | 5.8 | 1.5 | .02 | .01 |
| 4 | .2 | .09 | .2 | 279 | a115 | 40 | 516 | 10 | 89 | 1.2 | .02 | *.01 |
| 5 | .2 | .09 | .2 | 173 | a95 | 32 | 124 | 7.1 | 518 | *.8 | .02 | .01 |
| 6 | .1 | .09 | .2 | 77 | a80 | 85 | 67 | 5.8 | 120 | .4 | *.02 | .01 |
| 7 | .09 | .1 | .2 | 49 | a180 | 363 | 45 | 4.6 | 46 | .4 | .02 | .01 |
| 8 | .07 | .1 | .3 | 37 | a225 | 236 | 903 | 4.1 | 27 | .3 | .02 | .01 |
| 9 | .06 | .1 | .2 | 29 | 96 | 125 | 166 | 3.6 | 304 | .2 | .02 | .03 |
| 10 | .05 | .09 | .4 | 50 | 271 | 82 | 86 | 3.6 | 96 | .2 | .02 | .2 |
| 11 | .05 | .09 | 1.3 | 35 | 118 | 58 | 56 | 3.6 | 45 | .2 | .02 | .5 |
| 12 | .05 | .06 | 719 | 29 | 75 | 186 | 41 | 3.1 | *25 | .1 | .02 | 16 |
| 13 | .05 | .06 | *1,090 | 24 | *55 | 84 | 31 | 3.1 | 16 | .1 | .02 | 247 |
| 14 | .05 | .05 | 1,370 | 17 | 40 | 58 | 22 | 3.1 | 12 | .1 | .02 | 76 |
| 15 | .04 | .07 | 232 | 15 | 158 | 53 | 18 | 2.3 | 9.2 | .1 | .03 | 463 |
| 16 | .04 | .3 | 100 | 13 | 107 | 40 | 15 | 1.5 | 7.8 | .09 | .02 | 210 |
| 17 | .03 | .2 | 60 | 9.2 | 64 | 34 | 14 | 1.8 | 6.4 | .07 | .1 | *67 |
| 18 | *.03 | .1 | 40 | 8.5 | 46 | 31 | 13 | 1.5 | 6.9 | .1 | .05 | 34 |
| 19 | .04 | .1 | 29 | 7.1 | 596 | 29 | 11 | 1.8 | 11 | .1 | .06 | 19 |
| 20 | .03 | .1 | 38 | 7.8 | 162 | 24 | 10 | 3.6 | 5.8 | .07 | .03 | 13 |
| 21 | .06 | .2 | 96 | 23 | 88 | *21 | 9.2 | 4.1 | 3.6 | .06 | .02 | 11 |
| 22 | .2 | 1.2 | 307 | 1,020 | 60 | 25 | 10 | 127 | 2.7 | .04 | .01 | 22 |
| 23 | .1 | 1.2 | 168 | 335 | 46 | 24 | 11 | 40 | 28 | .03 | .01 | 37 |
| 24 | .1 | .8 | 95 | 118 | 38 | 22 | *7.8 | 14 | 36 | .04 | .01 | 17 |
| 25 | .09 | .8 | 60 | 71 | 35 | 40 | 6.4 | 9.2 | 10 | .04 | .01 | 11 |
| 26 | .1 | .8 | 41 | 49 | 193 | 37 | 5.8 | 152 | 5.8 | .03 | .01 | 7.8 |
| 27 | .1 | *.4 | 29 | 404 | 122 | 43 | 5.2 | *53 | 3.6 | .02 | .01 | 5.8 |
| 28 | .1 | .3 | 22 | 1,060 | 120 | 37 | 5.2 | 22 | 4.1 | .02 | .01 | 4.6 |
| 29 | .09 | .3 | 17 | *1,730 | - | 29 | 4.6 | 13 | 4.1 | .02 | .01 | 19 |
| 30 | .09 | .3 | 13 | 337 | ------- | 25 | 4.1 | 9.2 | 3.6 | .02 | .01 | 24 |
| 31 | .1 | ------- | 12 | 776 | ------- | 19 | ------- | 7.1 | ------- | .02 | .01 | ------- |
| Total | 2.57 | 8.38 | 4,541.6 | 6,806.0 | 4,883 | 2,106 | 2,391.3 | 590.4 | 1,462.8 | 10.87 | 0.69 | 1,305.01 |
| Mean | 0.083 | 0.279 | 147 | 220 | 174 | 67.9 | 79.7 | 19.0 | 48.8 | 0.351 | 0.022 | 43.5 |
| Cfsm | 0.0022 | 0.0073 | 3.87 | 5.79 | 4.58 | 1.79 | 2.10 | 0.500 | 1.28 | 0.0092 | 0.00058 | 1.14 |
| In. | 0.003 | 0.008 | 4.44 | 6.66 | 4.78 | 2.06 | 2.34 | 0.58 | 1.43 | 0.01 | 0.0007 | 1.28 |

Calendar year 1956: Max 3,410 Min 0.03 Mean 72.0 Cfsm 1.89 In. 25.78
Water year 1956-57: Max 1,730 Min 0.01 Mean 66.1 Cfsm 1.74 In. 23.59

Peak discharge (base, 3,000 cfs).--Dec. 12 (11 p.m.) 5,380 cfs (7.83 ft); Dec. 14 (9 a.m.) 5,220 cfs (7.75 ft); Jan. 22 (4 p.m.) 4,950 cfs (7.61 ft); Jan. 29 (1:30 p.m.) 5,420 cfs (7.85 ft); Apr. 8 (7:30 p.m.) 3,260 cfs (6.31 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Spring Creek near Lebanon.

## East Fork Stones River near Lascassas, Tenn.

Location.--Lat 35°55'10", long 86°20'00", at downstream end of right pier of highway bridge, 2½ miles southwest of Lascassas, Rutherford County, 3¼ miles downstream from Bradley Creek, 6 miles northeast of Murfreesboro, and 15 miles upstream from confluence with West Fork.

Drainage area.--264 sq mi.

Records available.--February 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 507.88 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--6 years, 426 cfs.

Extremes.--Maximum discharge during year, 15,300 cfs Dec. 13 (gage height, 27.12 ft); minimum, 2.2 cfs Sept. 9 (gage height, 2.53 ft); minimum daily, 2.6 cfs Sept. 9.
1951-57: Maximum discharge, 21,300 cfs Mar. 22, 1955 (gage height, 34.07 ft); minimum, 0.2 cfs Oct. 23, 1953 (gage height, 2.22 ft); minimum daily, 0.4 cfs Aug. 31, 1953.

Remarks.--Records good except those below 20 cfs, which are fair. Frequent diurnal fluctuations at low flow caused by small mill above station.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-3, 12-19, 22)

| | | | |
|---|---|---|---|
| 2.5 | 1.0 | 4.0 | 178 |
| 2.6 | 3.0 | 4.5 | 284 |
| 2.7 | 6.5 | 5.0 | 420 |
| 2.8 | 12 | 7.0 | 1,070 |
| 3.0 | 30 | 11.0 | 2,920 |
| 3.4 | 76 | 24.0 | 12,700 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 14 | 9.2 | 102 | 10,500 | 865 | 326 | 75 | 72 | 42 | 10 | 10 |
| 2 | 12 | 14 | 11 | 86 | 4,450 | 679 | 837 | 86 | 64 | 36 | 15 | 5.4 |
| 3 | 17 | 17 | 14 | 76 | 1,510 | 519 | 439 | 111 | 322 | 35 | 13 | 9.8 |
| 4 | 36 | 18 | 12 | 642 | 1,050 | 402 | 2,880 | 76 | 463 | 24 | 7.0 | *10 |
| 5 | 48 | 14 | 7.6 | 1,490 | 939 | 334 | 1,250 | 59 | 1,040 | *24 | 6.5 | 5.4 |
| 6 | 37 | 17 | 8.7 | 682 | 982 | 329 | 724 | 56 | 532 | 23 | *6.5 | 8.2 |
| 7 | 29 | 19 | 8.7 | 446 | 1,780 | 1,440 | 487 | 52 | 270 | 22 | 8.2 | 5.4 |
| 8 | 20 | 14 | 13 | 311 | 1,580 | 1,560 | 2,620 | *49 | 160 | 22 | 7.0 | 4.8 |
| 9 | 15 | 14 | 14 | 251 | 1,320 | 990 | 1,180 | 47 | 1,080 | 23 | 6.5 | 2.6 |
| 10 | 14 | 18 | 14 | 274 | 1,790 | 721 | 705 | 44 | 621 | 13 | 8.7 | 5.1 |
| 11 | 14 | 18 | 14 | 236 | 1,100 | 554 | *503 | 50 | 251 | 9.8 | 7.6 | 17 |
| 12 | 10 | 12 | 1,670 | 202 | 750 | 1,260 | 379 | 41 | *162 | 10 | 8.2 | 28 |
| 13 | 11 | 11 | *12,500 | 176 | *548 | 849 | 301 | 44 | 113 | 15 | 9.8 | 856 |
| 14 | 9.2 | 8.2 | 7,450 | 152 | 417 | 628 | 245 | 41 | 87 | 10 | 10 | 729 |
| 15 | 10 | 12 | 2,070 | 131 | 607 | 564 | 212 | 46 | 71 | 13 | 7.6 | 1,340 |
| 16 | 9.8 | 19 | 888 | 116 | 1,040 | 423 | 190 | 52 | 63 | 12 | 10 | 2,420 |
| 17 | 9.2 | 27 | 535 | 98 | 580 | 348 | 172 | 50 | 52 | 10 | 24 | 542 |
| 18 | *11 | 28 | 356 | 87 | 433 | 308 | 160 | 51 | 46 | 21 | 15 | 256 |
| 19 | 10 | 24 | 256 | 79 | 3,550 | 291 | 140 | 40 | 61 | 24 | 62 | 160 |
| 20 | 14 | 19 | 224 | 73 | 1,710 | 247 | 128 | 64 | 48 | 16 | 41 | 115 |
| 21 | 11 | 26 | 234 | 105 | 933 | *212 | 116 | 59 | 38 | 14 | 23 | 90 |
| 22 | 10 | 30 | 1,070 | 1,410 | 657 | 220 | 123 | 458 | 37 | 21 | 17 | 107 |
| 23 | 25 | 44 | 936 | 1,450 | 474 | 226 | 136 | 455 | 37 | 17 | 14 | 334 |
| 24 | 18 | 36 | 714 | 740 | 373 | 206 | 104 | 172 | 135 | 10 | 14 | 186 |
| 25 | 18 | 24 | 465 | 497 | 331 | 284 | 92 | 107 | 98 | 16 | 9.2 | 111 |
| 26 | 17 | 23 | 313 | 368 | 1,380 | 306 | 83 | 413 | 70 | 23 | 9.2 | 80 |
| 27 | 14 | *18 | 240 | 1,160 | 922 | 311 | 79 | 439 | 53 | 16 | 18 | 62 |
| 28 | 16 | 16 | 198 | 8,750 | 871 | 282 | 72 | 188 | 47 | 15 | 7.6 | 55 |
| 29 | 15 | 18 | 166 | 10,500 | - | 247 | 68 | 119 | 41 | 18 | 5.1 | 61 |
| 30 | 13 | 14 | 138 | 4,730 | -------- | 222 | 66 | 92 | 47 | 15 | 5.1 | 222 |
| 31 | 18 | -------- | 116 | 5,660 | -------- | 196 | -------- | 115 | -------- | 9.2 | 6.2 | -------- |
| Total | 522.2 | 586.2 | 30,665.2 | 41,080 | 42,577 | 16,023 | 14,817 | 3,751 | 6,181 | 579.0 | 412.0 | 7,837.7 |
| Mean | 16.8 | 19.5 | 989 | 1,325 | 1,521 | 517 | 494 | 121 | 206 | 18.7 | 13.3 | 261 |
| Cfsm | 0.064 | 0.074 | 3.75 | 5.02 | 5.76 | 1.96 | 1.87 | 0.458 | 0.780 | 0.071 | 0.050 | 0.989 |
| In. | 0.07 | 0.08 | 4.32 | 5.79 | 6.00 | 2.26 | 2.09 | 0.53 | 0.87 | 0.08 | 0.06 | 1.10 |

Calendar year 1956: Max 12,500 Min 7.6 Mean 452 Cfsm 1.71 In. 23.31
Water year 1956-57: Max 12,500 Min 2.6 Mean 452 Cfsm 1.71 In. 23.25

Peak discharge (base, 7,000 cfs).--Dec. 13 (12 m.) 15,300 cfs (27.12 ft); Jan. 29 (7 p.m.) 12,800 cfs (24.13 ft); Feb. 1 (6 p.m.) 11,400 cfs (22.42 ft); Feb. 19 (2 p.m.) 7,170 cfs (17.09 ft).
* Discharge measurement made on this day.

## West Fork Stones River near Murfreesboro, Tenn.

Location.--Lat 35°49'20", long 86°25'03", on downstream end of second pier from right abutment of bridge on State Highway 99, 0.8 mile downstream from Middle Fork and 2.2 miles southwest of Murfreesboro, Rutherford County.

Drainage area.--119 sq mi.

Records available.--June 1932 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 567.02 ft above mean sea level, datum of 1929. Prior to July 1, 1934, staff gage at same site and datum.

Average discharge.--25 years, 213 cfs.

Extremes.--Maximum discharge during year, 10,300 cfs Dec. 13 (gage height, 14.80 ft); no flow Aug. 7-10, Sept. 4-10, caused by diversion for irrigation; minimum gage height, 0.56 ft Sept. 8.

1932-57: Maximum discharge, 38,000 cfs Feb. 13, 1948 (gage height, 22.73 ft, from floodmarks), from rating curve extended above 13,000 cfs on basis of contracted-opening determinations at gage heights 21.23 and 22.73 ft; no flow Sept. 18-20, 1954, Aug. 7-10, Sept. 4-10, 1957; minimum gage height, 0.56 ft Oct. 9, 1935, Oct. 6, 7, 1940, Sept. 8, 1957.

Maximum stage known, 25.0 ft in March 1902.

Remarks.--Records fair except those below 5 cfs, which are poor. Some diversion for irrigation.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 783: 1932-34.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 9 to Nov. 24, Nov. 28 to Dec. 11)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to May 21 | | | | May 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 1.3 | 1.8 | 33 | 1.4 | 8.5 | 3.0 | 286 | 0.7 | 0 | 1.4 | 8.5 |
| 1.1 | 2.4 | 2.7 | 135 | 1.5 | 13 | 4.0 | 674 | .8 | .2 | 1.5 | 13 |
| 1.2 | 3.6 | 3.0 | 195 | 1.7 | 29 | 8.0 | 2,800 | .9 | .6 | 2.0 | 52 |
| 1.3 | 5.5 | 4.0 | 600 | 2.0 | 64 | 12.0 | 5,800 | 1.0 | 1.2 | 2.8 | 150 |
| 1.4 | 8.3 | 5.0 | 1,110 | 2.5 | 154 | | | 1.2 | 3.4 | 3.0 | 195 |
| 1.6 | 18 | | | | | | | 1.3 | 5.1 | 4.0 | 600 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.2 | 1.9 | 3.1 | 84 | 5,760 | 280 | 325 | 33 | 37 | 6.9 | 0.4 | 0.1 |
| 2 | 2.2 | 1.7 | 3.0 | 72 | 1,480 | 226 | 329 | 29 | 31 | 6.9 | .4 | .1 |
| 3 | 3.1 | 1.6 | 2.9 | 64 | 742 | 188 | 183 | 44 | 26 | 6.6 | .4 | .1 |
| 4 | 3.4 | 1.5 | 2.8 | 320 | 687 | 163 | 1,340 | 33 | 27 | 5.9 | .4 | *0 |
| 5 | 3.1 | 1.4 | 2.6 | 488 | 558 | 144 | 477 | 26 | 40 | *5.2 | .4 | 0 |
| 6 | 4.1 | 1.6 | 2.6 | 267 | 944 | 158 | 270 | 23 | 55 | 4.9 | *.3 | 0 |
| 7 | 4.3 | 1.6 | 2.6 | 200 | 925 | 630 | 195 | 20 | 33 | 4.7 | 0 | 0 |
| 8 | 4.1 | 1.5 | 2.6 | 161 | 733 | 521 | 609 | *18 | 26 | 4.3 | 0 | 0 |
| 9 | 3.6 | 1.5 | 2.5 | 139 | 716 | 341 | 310 | 14 | 35 | 4.1 | 0 | 0 |
| 10 | 3.5 | 1.5 | 2.4 | 154 | 768 | 252 | 218 | 13 | 60 | 4.0 | 0 | 0 |
| 11 | 3.2 | 1.4 | 2.6 | 127 | 469 | 208 | 176 | 13 | 40 | 3.7 | .1 | .1 |
| 12 | 2.9 | 1.4 | 1,100 | 112 | 341 | 664 | 148 | 12 | 29 | 3.2 | .1 | .3 |
| 13 | 2.5 | 1.4 | 5,700 | 103 | *264 | 324 | 122 | 12 | 22 | 3.0 | .3 | 16 |
| 14 | 2.2 | 1.5 | 3,580 | 91 | 218 | 243 | 105 | 13 | 18 | 2.6 | .5 | 74 |
| 15 | 1.9 | 1.6 | 841 | 84 | 358 | 203 | 91 | 11 | 14 | 2.3 | .4 | 428 |
| 16 | 1.6 | 2.2 | 461 | 76 | 472 | 165 | 84 | 11 | 13 | 1.9 | .4 | 376 |
| 17 | 1.5 | 1.7 | *313 | 64 | 261 | 144 | 76 | 11 | 11 | 1.7 | 1.6 | *97 |
| 18 | *1.6 | 1.8 | 238 | 57 | 213 | 137 | 70 | 9.7 | 10 | 1.8 | 1.3 | 63 |
| 19 | 1.5 | 1.8 | 190 | 51 | 1,980 | 137 | 63 | 11 | 9.2 | 1.5 | 1.0 | 45 |
| 20 | 1.6 | 1.9 | 176 | 50 | 716 | 112 | 56 | 11 | 8.1 | 1.5 | 1.0 | 33 |
| 21 | 2.2 | 2.4 | 174 | 64 | 414 | *103 | 52 | 8.8 | 7.3 | 1.5 | .9 | 26 |
| 22 | 2.2 | 2.4 | 400 | 98 | 303 | 118 | 48 | 81 | 6.3 | 1.4 | .9 | 28 |
| 23 | 1.8 | 2.4 | 620 | 525 | 235 | 108 | 48 | 115 | 5.9 | 1.2 | .8 | 80 |
| 24 | 1.8 | 2.5 | 377 | 235 | 200 | 99 | *44 | 63 | 7.7 | 1.8 | .7 | 66 |
| 25 | 1.8 | 4.1 | 261 | 183 | 188 | 139 | 40 | 43 | 14 | 1.2 | .7 | 47 |
| 26 | 2.0 | 4.1 | 200 | 156 | 951 | 129 | 36 | 265 | 11 | .6 | .6 | 36 |
| 27 | 2.0 | *4.1 | 167 | 715 | 501 | 139 | 32 | *199 | 9.2 | .5 | .3 | 29 |
| 28 | 1.9 | 3.6 | 141 | 4,770 | 377 | 122 | 30 | 108 | 11.0 | .6 | .2 | 24 |
| 29 | 1.9 | 3.5 | 122 | *4,560 | - | 108 | 54 | 80 | 9.2 | .5 | .1 | 26 |
| 30 | 1.8 | 3.2 | 107 | 1,490 | -------- | 98 | 40 | 60 | 8.1 | .5 | .1 | 68 |
| 31 | 2.2 | -------- | 94 | 4,500 | -------- | 90 | -------- | 46 | -------- | .4 | .1 | -------- |
| Total | 75.7 | 64.8 | 15,291.7 | 20,060 | 21,774 | 6,493 | 5,671 | 1,436.5 | 634.0 | 83.9 | 14.4 | 1,562.7 |
| Mean | 2.44 | 2.16 | 493 | 647 | 778 | 209 | 189 | 46.3 | 21.1 | 2.80 | 0.46 | 52.1 |
| Cfsm | 0.021 | 0.018 | 4.14 | 5.44 | 6.54 | 1.76 | 1.59 | 0.389 | 0.177 | 0.024 | 0.0039 | 0.438 |
| In. | 0.02 | 0.02 | 4.78 | 6.27 | 6.80 | 2.03 | 1.77 | 0.45 | 0.20 | 0.03 | 0.005 | 0.49 |

Calendar year 1956: Max 7,000 Min 1.4 Mean 224 Cfsm 1.88 In. 25.64
Water year 1956-57: Max 5,760 Min 0 Mean 200 Cfsm 1.68 In. 22.86

Peak discharge (base, 7,000 cfs).--Dec. 13 (5 a.m.) 10,300 cfs (14.80 ft); Jan. 29 (6:30 p.m.) 8,700 cfs (14.05 ft); Feb. 1 (6 p.m.) 8,040 cfs (13.72 ft).

* Discharge measurement or observation of no flow made on this day.

## Stones River near Smyrna, Tenn.

Location.--Lat 35°59'59", long 86°27'35", on right bank 30 ft downstream from highway bridge at Jefferson Springs, 1¼ miles downstream from confluence of East and West Forks, 3½ miles northeast of Smyrna, Rutherford County, 4.1 miles (revised) upstream from Falls Creek, and at mile 37.2.

Drainage area.--552 sq mi.

Records available.--July 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 459.76 ft above mean sea level, Sandy Hook datum. Prior to Sept. 22, 1926, tape gage at same site and datum.

Average discharge.--32 years, 950 cfs.

Extremes.--Maximum discharge during year, 24,500 cfs Dec. 13 (gage height, 27.19 ft); minimum, 11 cfs Sept. 7 (gage height, 0.93 ft).

1925-57: Maximum discharge, 54,100 cfs Feb. 13, 1948 (gage height, 41.03 ft, from floodmark), from rating curve extended above 26,000 cfs on basis of slope-area determination at gage height 36.5 ft, from profile and map prepared by Corps of Engineers; minimum observed, 0.8 cfs Aug. 17, 22, 1925 (gage height, 0.50 ft).

Maximum stage known, 43.4 ft in March 1902.

Remarks.--Records fair except those for period of no gage-height record, which are poor.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 853: 1929(M). WSP 953: 1928(M), 1929, 1934-37. WSP 1276: 1942. WSP 1436: 1948-49(P), 1950-52, 1953(P), 1954-55.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 11-20, 23, 24, May 1 to July 10, Sept. 13-19, 23-25; rate of change in stage used as a factor Dec. 13-15, Jan. 31 to Feb. 2, Feb. 19, Apr. 4)

| | | | |
|---|---|---|---|
| 0.9 | 9.0 | 3.0 | 680 |
| 1.0 | 17 | 4.0 | 1,410 |
| 1.2 | 44 | 10.0 | 7,050 |
| 1.5 | 102 | 20.0 | 16,600 |
| 2.0 | 244 | 24.0 | 20,600 |
| 2.5 | 410 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 22 | 25 | 364 | 19,900 | 2,190 | 500 | 186 | 241 | 89 | 23 | 17 |
| 2 | 23 | 21 | 22 | 324 | 13,200 | 1,680 | 1,920 | 215 | 202 | 79 | 23 | 17 |
| 3 | *29 | 19 | 19 | 292 | 5,090 | 1,340 | 1,060 | 225 | 392 | 72 | 23 | 16 |
| 4 | 41 | 19 | *22 | 652 | 3,540 | 1,090 | 4,850 | 199 | 475 | 68 | 22 | *16 |
| 5 | 44 | 19 | 23 | 3,580 | 3,170 | 922 | 3,490 | 165 | 1,580 | *57 | 21 | 15 |
| 6 | 66 | *19 | 18 | 1,660 | 2,690 | 965 | 1,800 | 145 | 1,120 | 49 | 18 | 14 |
| 7 | 47 | 19 | 17 | 1,140 | 4,360 | 3,160 | 1,220 | 134 | 620 | 46 | 18 | 12 |
| 8 | 44 | 21 | 22 | 824 | 4,370 | 4,370 | 5,360 | *122 | 400 | 44 | 18 | 12 |
| 9 | 38 | 21 | 24 | 674 | 3,870 | 2,760 | 3,670 | 120 | 965 | 44 | 18 | 14 |
| 10 | 30 | 18 | 25 | 662 | 4,270 | 1,960 | 2,060 | 117 | 1,330 | 41 | 18 | 16 |
| 11 | 29 | 18 | 29 | 620 | 3,220 | 1,510 | *1,360 | 115 | 512 | 40 | 18 | 15 |
| 12 | 29 | 19 | 967 | 495 | 2,230 | 2,740 | 1,050 | 115 | 358 | 35 | *23 | 17 |
| 13 | 29 | 19 | 19,900 | 442 | 1,700 | 2,190 | 845 | 104 | 279 | 34 | 23 | 350 |
| 14 | 28 | 19 | 16,800 | 389 | *1,360 | 1,550 | 680 | 111 | 222 | 34 | 19 | 912 |
| 15 | 27 | 19 | 7,580 | 350 | 1,250 | 1,390 | 572 | 106 | 183 | 34 | 18 | 492 |
| 16 | 25 | 34 | 3,060 | 324 | 3,050 | 1,140 | 490 | 109 | 159 | 32 | 18 | 4,520 |
| 17 | 24 | 25 | 1,840 | a300 | 1,740 | 922 | 446 | 106 | 134 | 30 | 23 | *936 |
| 18 | 23 | 29 | 1,300 | a275 | 1,350 | 831 | 406 | 106 | 122 | 30 | 25 | 438 |
| 19 | 23 | 40 | 972 | a250 | 6,350 | 796 | 375 | 132 | 127 | 30 | 27 | 279 |
| 20 | 22 | 35 | 817 | a230 | 5,530 | 680 | 340 | 129 | 124 | 28 | 24 | 196 |
| 21 | 22 | 36 | 936 | a450 | 2,820 | 596 | 324 | 132 | 106 | 28 | 24 | 150 |
| 22 | 28 | 49 | 2,980 | a3,500 | 1,960 | 602 | 311 | 275 | 92 | 27 | 23 | 122 |
| 23 | 24 | 51 | 2,840 | a10,000 | 1,470 | 620 | 438 | 1,110 | 100 | 34 | 23 | 361 |
| 24 | 23 | 68 | 2,190 | a3,300 | 1,220 | 554 | 340 | 418 | 206 | 29 | 23 | 340 |
| 25 | 23 | 55 | 1,470 | a1,900 | 1,060 | 620 | 286 | 295 | 193 | 27 | 22 | 231 |
| 26 | 27 | 42 | 1,090 | a1,400 | 3,710 | 734 | 257 | 560 | 147 | 24 | 21 | 156 |
| 27 | 29 | 38 | 838 | a2,500 | 2,890 | *734 | 241 | *1,400 | 122 | 24 | 19 | 113 |
| 28 | 24 | 32 | 680 | a10,000 | 2,470 | 680 | 222 | 572 | 106 | 24 | 18 | 92 |
| 29 | 23 | 29 | 566 | a20,000 | - | 602 | 218 | 389 | 100 | 24 | 18 | 87 |
| 30 | 23 | 27 | 465 | *a12,000 | -------- | 536 | 215 | 308 | 94 | 24 | 17 | 185 |
| 31 | 22 | -------- | 406 | 10,400 | -------- | 465 | -------- | 282 | -------- | 24 | 17 | -------- |
| Total | 921 | 882 | 67,943 | 89,297 | 109,840 | 40,929 | 35,346 | 8,502 | 10,811 | 1,205 | 645 | 10,141 |
| Mean | 29.7 | 29.4 | 2,192 | 2,881 | 3,923 | 1,320 | 1,178 | 274 | 360 | 38.9 | 20.8 | 338 |
| Cfsm | 0.054 | 0.053 | 3.97 | 5.22 | 7.11 | 2.39 | 2.13 | 0.496 | 0.652 | 0.070 | 0.038 | 0.612 |
| In. | 0.06 | 0.06 | 4.58 | 6.02 | 7.40 | 2.76 | 2.38 | 0.57 | 0.73 | 0.08 | 0.04 | 0.68 |

Calendar year 1956: Max 30,500 Min 17 Mean 1,037 Cfsm 1.88 In. 25.58
Water year 1956-57: Max 20,000 Min 12 Mean 1,031 Cfsm 1.87 In. 25.36

Peak discharge (base, 17,000 cfs).--Dec. 13 (6:30 p.m.) 24,500 cfs (27.19 ft); Jan. 22 (time unknown) 17,300 cfs (20.7 ft); Jan. 29 (about 6 p.m.) 23,100 cfs (26.2 ft); Feb. 2 (1 a.m.) 22,000 cfs (25.22 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, 1 discharge measurement, recorded range in stage, and records for stations above Donelson and on tributary streams.

## Stewart Creek near Smyrna, Tenn.

Location.--Lat 35°59'54", long 86°30'18", on upstream end of right abutment of bridge on Fifteenth Avenue, 0.4 mile downstream from Rock Springs Creek, 0.6 mile south of headquarters at Sewart Air Force Base, 1.3 miles northeast of Smyrna, Rutherford County, and 5¼ miles upstream from mouth.

Drainage area.--71 sq mi, approximately.

Records available.--June 1952 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 490.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--5 years, 106 cfs.

Extremes.--Maximum discharge during year, 3,690 cfs Jan. 22 (gage height, 11.28 ft); no flow for several days in October, November, and September.
1952-57: Maximum discharge, 8,700 cfs Mar. 21, 1955 (gage height, 17.61 ft), from rating curve extended above 4,300 cfs on basis of contracted-opening determination of peak flow; no flow several days each year 1953-57.

Remarks.--Records fair except those below 10 cfs, which are poor. Occasional regulation at low flow caused by small dams above station.

Cooperation.--Two discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1386: 1953-54.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 22-24, 26-29, June 5-7, 9, 10)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.27 | 0 | 1.8 | 10 | 1.27 | 0 | 2.5 | 81 |
| 1.3 | .02 | 2.0 | 24 | 1.3 | .02 | 3.0 | 170 |
| 1.4 | .8 | 2.5 | 88 | 1.4 | .7 | 4.0 | 440 |
| 1.5 | 2.3 | 3.0 | 175 | 1.5 | 2.1 | 6.0 | 1,270 |
| 1.7 | 7.0 | 3.5 | 295 | 1.7 | 7.0 | 8.0 | 1,880 |
| | | | | 1.8 | 10 | 9.0 | 2,320 |
| | | | | 2.0 | 22 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.01 | 0 | 0.7 | 49 | 1,710 | 208 | 56 | 18 | 23 | 4.9 | 1.3 | 0.4 |
| 2 | 0 | 0 | .7 | 42 | 870 | 176 | 88 | 20 | 21 | 4.9 | 1.2 | .4 |
| 3 | 0 | 0 | .7 | 39 | 480 | 152 | 72 | 26 | 27 | 4.7 | 1.2 | .3 |
| 4 | .08 | 0 | *.5 | 130 | 368 | 135 | 467 | 18 | 27 | 4.2 | 1.2 | *.3 |
| 5 | .3 | 0 | .3 | 232 | 311 | 118 | 255 | 16 | 106 | *3.7 | 1.2 | .2 |
| 6 | .3 | *0 | .3 | 135 | 281 | 247 | 174 | 14 | 83 | 3.7 | *1.2 | .02 |
| 7 | .3 | 0 | .3 | 103 | 305 | 634 | 131 | 13 | 44 | 3.4 | 1.1 | 0 |
| 8 | .3 | 0 | .5 | 82 | 374 | 518 | 879 | *12 | 33 | 3.2 | 1.1 | 0 |
| 9 | .2 | 0 | .3 | *72 | 428 | 338 | 422 | 11 | 32 | 3.0 | 1.1 | 0 |
| 10 | .1 | 0 | .3 | 68 | 425 | 247 | 252 | 11 | 43 | 2.5 | 1.1 | 0 |
| 11 | .1 | 0 | .3 | 58 | 320 | 201 | 197 | 10 | 29 | 2.5 | 1.0 | .01 |
| 12 | .1 | 0 | 290 | 53 | 252 | 237 | 160 | 9.4 | *24 | 2.3 | .9 | 1.0 |
| 13 | .1 | 0 | 1,400 | 47 | *210 | 184 | 137 | 9.1 | 20 | 2.3 | .8 | 7.8 |
| 14 | .08 | 0 | 1,500 | 42 | 184 | 152 | 113 | 8.5 | 16 | 2.3 | .6 | 3.2 |
| 15 | .06 | 0 | 473 | 38 | 295 | 139 | 92 | 8.5 | 14 | 2.3 | .5 | 118 |
| 16 | .06 | .04 | 257 | 32 | 314 | 120 | 78 | 8.2 | 12 | 2.1 | .4 | 175 |
| 17 | .04 | .7 | 188 | 28 | 212 | 106 | 69 | 7.9 | 10 | 1.9 | .4 | 45 |
| 18 | **.02 | .8 | 152 | 25 | 180 | 98 | 60 | 7.3 | 9.4 | 1.9 | .4 | 16 |
| 19 | .02 | .7 | 126 | 21 | 950 | 90 | 51 | 20 | 8.5 | 1.9 | .4 | 9.4 |
| 20 | .02 | .7 | 110 | 21 | 456 | 78 | 47 | 16 | 7.6 | 1.9 | .4 | 7.3 |
| 21 | .03 | .8 | 339 | 29 | 299 | *72 | 42 | 13 | 7.0 | 1.9 | .2 | 6.2 |
| 22 | .04 | .9 | 908 | 1,430 | 227 | 74 | 39 | 195 | 6.5 | 1.9 | .1 | 6.5 |
| 23 | .02 | 1.7 | 431 | 1,540 | 190 | 71 | 44 | 100 | 6.8 | 1.9 | .07 | 8.2 |
| 24 | *0 | 1.4 | 272 | 440 | 166 | 67 | *38 | 38 | 16 | 1.9 | .1 | 6.5 |
| 25 | 0 | 1.1 | 199 | 296 | 157 | 69 | 33 | 28 | 8.2 | 1.7 | .1 | 5.5 |
| 26 | .03 | 1.1 | 158 | 227 | 622 | 72 | 29 | 134 | 7.0 | 1.7 | .1 | 4.2 |
| 27 | .02 | 1.0 | 124 | 467 | 356 | 72 | 26 | *116 | 6.2 | 1.7 | .1 | 3.4 |
| 28 | 0 | .8 | 99 | 1,330 | 257 | 65 | 23 | 55 | 6.2 | 1.5 | .1 | 3.0 |
| 29 | 0 | .8 | 80 | 1,960 | - | 59 | 21 | 39 | 5.7 | 1.3 | .2 | 3.0 |
| 30 | 0 | .7 | 69 | 1,030 | -------- | 54 | 19 | 32 | 5.5 | 1.3 | .2 | 2.7 |
| 31 | 0 | -------- | 58 | 911 | -------- | 49 | -------- | 26 | -------- | 1.3 | .3 | -------- |
| Total | 2.33 | 13.24 | 7,237.9 | 10,977 | 11,199 | 4,902 | 4,114 | 1,039.9 | 664.6 | 77.7 | 19.07 | 433.53 |
| Mean | 0.075 | 0.441 | 233 | 354 | 400 | 158 | 137 | 33.5 | 22.2 | 2.51 | 0.615 | 14.5 |
| Cfsm | 0.0011 | 0.0062 | 3.28 | 4.99 | 5.63 | 2.23 | 1.93 | 0.472 | 0.313 | 0.035 | 0.0087 | 0.204 |
| In. | 0.001 | 0.007 | 3.79 | 5.75 | 5.87 | 2.57 | 2.15 | 0.54 | 0.35 | 0.04 | 0.01 | 0.23 |

Calendar year 1956: Max 3,760 Min 0 Mean 118 Cfsm 1.66 In. 22.67
Water year 1956-57: Max 1,960 Min 0 Mean 111 Cfsm 1.56 In. 21.31

Peak discharge (base, 1,800 cfs).--Dec. 14 (8 a.m.) 2,140 cfs (8.65 ft); Jan. 22 (10 p.m.) 3,690 cfs (11.28 ft); Jan. 29 (2 p.m.) 2,730 cfs (9.69 ft); Feb. 1 (3:30 p.m.) 2,020 cfs (8.37 ft).
* Discharge measurement or observation of no flow made on this day.
** Field estimate made on this day.

## Stones River above Donelson, Tenn.

Location.--Lat 36°04'23", long 86°33'30", on left bank half a mile downstream from Hurricane Creek, 3.3 miles upstream from county highway bridge at Couchville, 8¾ miles southeast of Donelson, Davidson County, and at mile 17.7.

Drainage area.--834 sq mi.

Records available.--January 1939 to September 1957. Published as "near Donelson" 1939-40. Records published for both sites April to September 1940.

Gage.--Water-stage recorder at present site and datum since Apr. 16, 1940. Datum of gage is 400.00 ft above mean sea level, Sandy Hook datum. January 1939 to September 1940 wire-weight gage at site 10.5 miles downstream at datum 18 ft lower.

Average discharge.--18 years, 1,370 cfs.

Extremes.--Maximum discharge during year, 28,800 cfs Jan. 30 (gage height, 44.18 ft); minimum, 14 cfs Aug. 25, Sept. 8, 9 (gage height, 10.82 ft).

1939-57: Maximum discharge, 68,700 cfs Feb. 14, 1948; maximum gage height, 58.46 ft Feb. 14, 1948; minimum discharge, 10 cfs Sept. 21, 22, 24, 1940; minimum gage height, 10.60 ft Sept. 19, 20, 1954, present site and datum.

Maximum stage known, about 59.6 ft in March 1902 (discharge, 73,000 cfs), from high-water profile by Corps of Engineers, present site and datum.

Remarks.--Records good. Some regulation at low flow.

Cooperation.--Three discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1143: 1948.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Dec. 13-15, 22, Jan. 5, 22, 23, Jan. 28 to Feb. 3, Feb. 10, 11, 19, 20, 26, Mar. 7, 8, Apr. 4, 5, 8, 9, June 6)

Oct. 1 to Jan. 29

| | | | |
|---|---|---|---|
| 10.8 | 15 | 14.0 | 930 |
| 11.0 | 33 | 16.0 | 2,040 |
| 11.5 | 97 | 22.0 | 6,300 |
| 12.0 | 188 | 30.0 | 13,300 |
| 12.5 | 300 | 42.0 | 25,600 |
| 13.0 | 490 | | |

Jan. 30 to Sept. 30

| | | | |
|---|---|---|---|
| 10.8 | 12 | 12.0 | 185 |
| 11.0 | 30 | 12.5 | 300 |
| 11.4 | 77 | | |

Note.--Same as preceding table above 12.5 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 33 | 38 | 586 | 23,800 | 3,150 | 696 | 260 | 470 | 154 | 36 | 21 |
| 2 | 21 | 31 | 36 | 502 | 22,000 | 2,430 | 2,160 | 515 | 831 | 136 | 29 | 21 |
| 3 | *23 | 29 | 33 | 438 | 8,070 | 1,900 | 1,520 | 1,100 | 714 | 120 | 27 | 19 |
| 4 | 55 | 27 | *29 | 668 | *4,720 | 1,560 | 4,560 | 490 | 975 | 106 | 26 | 18 |
| 5 | 69 | 25 | 29 | 4,800 | 4,010 | 1,330 | 5,790 | 328 | 3,220 | 95 | 23 | *16 |
| 6 | 64 | *23 | 31 | 2,730 | 3,220 | 1,760 | 2,610 | 258 | 3,960 | 83 | 21 | 15 |
| 7 | 73 | 24 | 32 | 1,770 | 4,580 | 4,490 | 1,720 | 221 | 1,470 | 76 | 20 | 15 |
| 8 | 84 | 24 | 32 | 1,320 | 5,600 | 7,080 | 5,390 | 201 | 940 | 70 | 20 | 14 |
| 9 | 52 | 24 | 33 | *1,080 | 5,740 | 4,220 | 6,230 | 183 | 900 | 66 | 18 | 14 |
| 10 | 43 | 24 | 40 | 985 | 5,630 | 2,920 | 2,920 | 173 | 2,720 | *63 | 18 | 18 |
| 11 | 35 | 24 | 55 | 1,040 | 4,740 | 2,240 | *2,070 | 163 | 1,180 | 59 | 17 | 20 |
| 12 | 31 | 23 | 231 | 885 | 3,160 | 3,040 | 1,600 | 156 | 776 | 55 | *17 | 24 |
| 13 | 31 | 23 | 18,400 | 786 | 2,420 | 3,170 | 1,300 | 146 | 566 | 52 | 42 | 88 |
| 14 | 29 | 22 | *24,300 | 696 | *1,920 | 2,170 | 1,090 | 142 | 418 | 50 | 39 | 1,300 |
| 15 | 27 | 23 | 15,100 | 610 | 1,840 | 1,820 | 925 | *144 | 321 | 50 | 29 | 1,120 |
| 16 | 26 | 59 | 4,500 | 542 | 4,110 | 1,570 | 817 | 129 | 260 | 49 | 23 | 5,390 |
| 17 | 24 | 99 | 2,680 | 482 | 2,610 | 1,310 | 732 | 136 | 225 | 44 | 45 | 1,990 |
| 18 | 23 | 59 | 1,880 | 418 | 1,940 | 1,170 | 650 | 125 | 201 | 42 | 94 | 910 |
| 19 | 23 | 48 | 1,470 | 366 | 6,450 | 1,120 | 582 | 574 | 201 | 44 | 48 | 558 |
| 20 | 23 | 55 | 1,210 | 335 | 9,320 | 1,000 | 526 | 426 | 213 | 40 | 39 | 363 |
| 21 | 24 | 57 | 1,250 | 378 | 4,000 | 871 | 470 | 235 | 185 | 38 | 35 | 268 |
| 22 | 30 | 131 | 6,840 | 5,170 | 2,700 | 848 | 462 | 972 | 159 | 36 | 31 | 255 |
| 23 | 33 | 109 | 4,520 | 14,100 | 2,090 | 890 | 678 | 2,370 | 140 | 36 | 29 | 393 |
| 24 | 31 | 90 | 3,480 | 4,700 | 1,710 | 840 | 628 | 1,080 | 284 | 50 | 26 | 614 |
| 25 | 25 | 86 | 2,370 | 2,700 | 1,480 | 835 | 458 | 646 | 374 | 44 | 19 | 418 |
| 26 | 27 | 76 | 1,690 | 2,000 | 4,660 | 1,020 | 382 | 839 | 260 | 38 | 26 | 270 |
| 27 | 33 | 59 | 1,330 | 2,420 | 4,320 | *1,020 | 332 | 2,790 | 211 | 34 | 26 | 209 |
| 28 | 36 | 52 | 1,100 | 14,000 | 3,500 | 1,010 | 297 | 1,310 | 189 | 33 | 24 | 167 |
| 29 | 36 | 47 | 920 | 25,300 | - | 890 | 285 | 776 | 183 | 33 | 23 | 148 |
| 30 | 33 | 42 | 840 | *23,900 | ------- | 794 | 268 | 624 | 167 | 32 | 23 | 140 |
| 31 | 33 | ------- | 682 | 12,700 | ------- | 709 | ------- | 632 | ------- | 35 | 22 | ------- |
| Total | 1,098 | 1,448 | 95,181 | 128,407 | 150,340 | 59,177 | 48,148 | 18,144 | 22,713 | 1,863 | 915 | 14,816 |
| Mean | 35.4 | 48.3 | 3,070 | 4,142 | 5,369 | 1,909 | 1,605 | 585 | 757 | 60.1 | 29.5 | 494 |
| Cfsm | 0.042 | 0.058 | 3.68 | 4.97 | 6.44 | 2.29 | 1.92 | 0.701 | 0.908 | 0.072 | 0.035 | 0.592 |
| In. | 0.05 | 0.06 | 4.24 | 5.73 | 6.70 | 2.64 | 2.15 | 0.81 | 1.01 | 0.08 | 0.04 | 0.66 |

Calendar year 1956: Max 40,100 Min 21 Mean 1,475 Cfsm 1.77 In. 24.07
Water year 1956-57: Max 25,300 Min 14 Mean 1,486 Cfsm 1.78 In. 24.17

Peak discharge (base, 16,000 cfs).--Dec. 14 (1:30 a.m.) 26,900 cfs (42.90 ft); Jan. 23 (4:30 a.m.) 19,700 cfs (36.70 ft); Jan. 30 (7 a.m.) 28,800 cfs (44.18 ft); Feb. 2 (2:30 a.m.) 27,600 cfs (43.43 ft).

* Discharge measurement made on this day.

## Mill Creek near Antioch, Tenn.

Location.--Lat 36°04'54", long 86°40'50", at downstream end of center bridge pier on Franklin-Limestone Road, 900 ft upstream from Louisville and Nashville Railroad (formerly Nashville, Chattanooga, & St. Louis Railway) spur track bridge, 1.6 miles north of Antioch, Davidson County, 2.1 miles downstream from Whittemore Branch, and 4.0 miles southeast of Radnor.

Drainage area.--64 sq mi, approximately.

Records available.--October 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 472.93 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 5,570 cfs Jan. 29 (gage height, 13.42 ft); no flow Oct. 1 to Nov. 6.

1953-57: Maximum discharge, 17,000 cfs Mar. 21, 1955 (gage height, 19.73 ft); no flow for many days each year.

Maximum stage known since at least 1920, that of Mar. 21, 1955.

Remarks.--Records good above 10 cfs and fair below. Minor diversion from gage pool for industrial use.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.4 | 0 | 3.2 | 36 |
| 2.5 | .01 | 3.5 | 89 |
| 2.6 | .03 | 4.0 | 185 |
| 2.7 | .1 | 5.0 | 455 |
| 2.8 | 1.2 | 6.0 | 830 |
| 2.9 | 4.2 | 8.0 | 1,850 |
| 3.0 | 9.3 | 10.0 | 2,980 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 0 | 1.2 | 25 | 1,500 | 165 | 112 | 13 | 28 | 29 | 1.4 | 0.1 |
| 2 | | 0 | 1.2 | 18 | 518 | 136 | 111 | 14 | 358 | 23 | 1.0 | .1 |
| 3 | | 0 | .8 | 16 | 300 | 111 | 76 | 25 | 144 | 18 | 1.0 | .06 |
| 4 | | 0 | *.7 | 200 | 212 | 96 | 200 | 16 | 220 | 14 | 1.0 | *.05 |
| 5 | | 0 | .5 | 185 | 177 | 82 | 126 | 11 | 1,710 | *9.3 | .7 | .03 |
| 6 | | *0 | .5 | 107 | 155 | 414 | 93 | 11 | 359 | 8.0 | *.2 | .02 |
| 7 | | .01 | .7 | 84 | 206 | 681 | 75 | 11 | 189 | 7.4 | .1 | .02 |
| 8 | | .02 | 1.0 | 66 | 460 | 511 | 304 | 10 | 134 | 6.9 | .1 | .02 |
| 9 | | .02 | 1.2 | 57 | 354 | 329 | 145 | 10 | 247 | 6.4 | .08 | .02 |
| 10 | | .04 | 1.2 | 60 | 329 | 225 | 103 | 9.3 | 211 | 5.4 | .06 | .03 |
| 11 | | .05 | 1.2 | 48 | 205 | 179 | 80 | 9.3 | 115 | 5.0 | .05 | .03 |
| 12 | | .06 | 482 | 43 | 159 | 247 | 67 | 9.3 | *75 | 4.2 | .04 | .2 |
| 13 | | .07 | 1,070 | 39 | *128 | 161 | 57 | 7.4 | 53 | 4.2 | .04 | 183 |
| 14 | | .06 | 1,050 | 35 | 107 | 134 | 48 | 23 | 43 | 4.2 | .03 | 17 |
| 15 | | .07 | 218 | 30 | 376 | 136 | 43 | 10 | 35 | 4.2 | .03 | 345 |
| 16 | | 9.8 | 113 | 28 | 219 | 100 | 41 | 6.9 | 30 | 3.8 | .1 | 476 |
| 17 | | 11 | *75 | 26 | 145 | 89 | 38 | 5.4 | 26 | 3.5 | 299 | 62 |
| 18 | | 4.2 | 60 | 26 | 120 | 78 | 36 | 5.4 | 22 | 3.8 | 45 | 32 |
| 19 | | 2.0 | 46 | 20 | 1,090 | 73 | 33 | *615 | 20 | 3.8 | 9.3 | 18 |
| 20 | | 1.4 | 41 | 17 | 332 | 62 | 30 | 75 | 16 | 3.2 | 4.6 | 13 |
| 21 | | 1.7 | 123 | *32 | 209 | *57 | 49 | 36 | 13 | 2.2 | 3.2 | 10 |
| 22 | | 5.4 | 378 | 2,510 | 159 | 64 | 36 | 859 | 12 | 2.0 | 1.7 | 16 |
| 23 | | 7.4 | 266 | 670 | 130 | 57 | 33 | 196 | 17 | 2.2 | 1.7 | 16 |
| 24 | (*) | 5.0 | 141 | 252 | 111 | 51 | *29 | 98 | 241 | 2.0 | 2.5 | 9.3 |
| 25 | | 3.5 | 96 | 175 | 144 | 91 | 23 | 62 | 53 | 1.7 | 1.7 | 6.9 |
| 26 | | 2.5 | 73 | 128 | 701 | 82 | 20 | 173 | 38 | 1.4 | 1.0 | 5.9 |
| 27 | | 2.2 | 58 | 426 | 300 | 75 | 17 | 103 | 32 | 1.2 | 1.0 | 5.4 |
| 28 | | 1.7 | 48 | 1,090 | 212 | 66 | 17 | 57 | 47 | 1.2 | .7 | 4.6 |
| 29 | | 1.4 | 38 | 2,680 | - | 57 | 24 | 43 | 47 | 1.0 | .7 | 4.2 |
| 30 | | 1.2 | 33 | 590 | -------- | 53 | 17 | 38 | 35 | 1.4 | .3 | 4.2 |
| 31 | | -------- | 29 | 868 | -------- | 48 | -------- | 32 | -------- | 1.7 | .2 | -------- |
| Total | 0 | 60.80 | 4,448.2 | 10,551 | 9,058 | 4,710 | 2,083 | 2,594.0 | 4,570 | 185.3 | 378.53 | 1,229.18 |
| Mean | 0 | 2.03 | 143 | 340 | 324 | 152 | 69.4 | 83.7 | 152 | 5.98 | 12.2 | 41.0 |
| Cfsm | 0 | 0.032 | 2.23 | 5.31 | 5.06 | 2.38 | 1.08 | 1.31 | 2.38 | 0.093 | 0.191 | 0.641 |
| In. | 0 | 0.04 | 2.58 | 6.13 | 5.26 | 2.74 | 1.21 | 1.51 | 2.66 | 0.11 | 0.22 | 0.71 |

Calendar year 1956: Max 3,410 Min 0 Mean 94.7 Cfsm 1.48 In. 20.14
Water year 1956-57: Max 2,680 Min 0 Mean 109 Cfsm 1.70 In. 23.17

Peak discharge (base, 2,000 cfs).--Dec. 12 (10:30 p.m.) 3,330 cfs (10.59 ft); Jan. 22 (9 p.m.) 5,360 cfs (13.21 ft); Jan. 29 (12 m.) 5,570 cfs (13.42 ft); Feb. 1 (12:30 p.m.) 2,690 cfs (9.52 ft); Feb. 19 (9 a.m.) 3,020 cfs (10.06 ft); May 19 (1 p.m.) 2,790 cfs (9.69 ft); May 22 (1 p.m.) 3,100 cfs (10.20 ft); June 2 (3 p.m.) 2,930 cfs (9.91 ft); June 5 (1 p.m.) 4,860 cfs (12.68 ft); Sept. 16 (10 a.m.) 2,420 cfs (9.03 ft).

* Discharge measurement or observation of no flow made on this day.

## West Harpeth River near Leipers Fork, Tenn.

Location.--Lat 35°53'56", long 86°58'01", on downstream end of center pier of bridge on State Highway 96, 0.6 mile downstream from Murfrees Fork, 1.2 miles upstream from Leipers Fork, 1.8 miles east of town of Leipers Fork, Williamson County, and 5.7 miles west of Franklin.

Drainage area.--66.0 sq mi.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 634.10 ft above mean sea level, unadjusted (Tennessee Valley Authority benchmark).

Extremes.--Maximum discharge during year, 13,400 cfs Jan. 22 (gage height, 14.3 ft, from floodmark), from rating curve extended as explained below; minimum, 0.02 cfs Sept. 6, 7; minimum gage height, 0.28 ft Oct. 1-3.

1954-57: Maximum discharge, 18,900 cfs Mar. 21, 1955 (gage height, 14.8 ft, from floodmarks), from rating curve extended above 3,000 cfs on basis of contracted-opening and flow-over-road determination of peak flow; no flow Sept. 20-23, 26, 27, 1955.

Remarks.--Records good except those below 10 cfs or above 3,000 cfs and those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1436: 1955(P).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.2 | 0 | 1.0 | 11 | 0.5 | 0 | 5.0 | 604 |
| .3 | .05 | 1.2 | 20 | .6 | .3 | 8.0 | 1,150 |
| .4 | .2 | 1.4 | 38 | .7 | 1.3 | 10.0 | 1,570 |
| .5 | .6 | 1.6 | 60 | .8 | 3.1 | 11.0 | 1,910 |
| .6 | 1.2 | 2.0 | 114 | 1.0 | 13 | 12.0 | 2,500 |
| .7 | 2.7 | 3.5 | 337 | 1.2 | 23 | 12.5 | 3,130 |
| .8 | 4.8 | | | 1.5 | 44 | 13.0 | 4,600 |
| | | | | 2.0 | 102 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.04 | 0.1 | 0.8 | 35 | 1,400 | 199 | 104 | a17 | 38 | 18 | 4.4 | 0.2 |
| 2 | .04 | .09 | .7 | 29 | 663 | 164 | 101 | *50 | 60 | 18 | *3.1 | .08 |
| 3 | *.3 | .1 | *.7 | *27 | 414 | 141 | *84 | 46 | 52 | 16 | 2.8 | .06 |
| 4 | .2 | .4 | .6 | 82 | 299 | 122 | 177 | 18 | *80 | 14 | 2.6 | .06 |
| 5 | .1 | .4 | .6 | 111 | 238 | *108 | 128 | 16 | 103 | 11 | 2.2 | .04 |
| 6 | .1 | .3 | .7 | 88 | 235 | 189 | 106 | 14 | 88 | 9.8 | 1.8 | .02 |
| 7 | .09 | .3 | .8 | 75 | 259 | 376 | 90 | 12 | 63 | 8.8 | 1.8 | .02 |
| 8 | .09 | .3 | 1.5 | 64 | 294 | 340 | 373 | 11 | 110 | 7.8 | 1.5 | .06 |
| 9 | .09 | .3 | 1.6 | 60 | 299 | 265 | 177 | 9.8 | 105 | 7.3 | 1.4 | .3 |
| 10 | .08 | .3 | 1.5 | 58 | 290 | 210 | 142 | 9.3 | 98 | 6.3 | 1.3 | .8 |
| 11 | .08 | .3 | 1.5 | 47 | 216 | 178 | 120 | 10 | 75 | 5.8 | 1.2 | .6 |
| 12 | .08 | .3 | 269 | 45 | 182 | 199 | 103 | 8.3 | 56 | 5.3 | 1.2 | *.6 |
| 13 | .08 | .3 | *589 | 42 | *153 | 153 | 89 | 7.3 | 42 | 5.3 | 1.0 | 86 |
| 14 | .08 | .3 | 576 | 38 | 132 | 138 | 76 | 18 | 35 | 5.3 | .8 | 105 |
| 15 | .08 | .6 | 204 | 35 | 277 | 155 | 66 | 8.3 | 29 | *5.3 | .8 | 41 |
| 16 | .08 | 7.2 | 131 | 31 | 199 | 119 | 62 | 6.3 | 25 | 4.8 | .8 | 84 |
| 17 | .08 | 1.8 | 96 | a28 | 156 | 108 | 58 | 7.9 | 22 | 22 | 83 | 35 |
| 18 | .08 | 1.0 | 77 | a25 | 136 | 105 | a51 | 23 | 20 | 92 | 19 | 24 |
| 19 | .07 | .7 | *61 | 23 | 613 | 94 | a47 | 1,000 | 19 | 11 | 5.8 | 20 |
| 20 | .07 | .6 | 57 | 25 | 313 | 81 | a43 | 162 | 17 | 7.3 | 3.5 | 18 |
| 21 | .09 | 1.3 | 65 | 40 | 228 | 75 | a43 | 96 | 16 | 5.8 | 2.6 | 16 |
| 22 | .09 | 2.7 | 212 | 3,450 | 180 | 78 | a38 | 1,040 | 14 | 4.8 | 2.4 | 27 |
| 23 | .08 | 1.8 | 183 | 994 | 149 | 66 | a32 | 315 | 15 | 8.6 | 1.8 | 20 |
| 24 | .08 | 1.2 | 136 | 354 | 132 | 62 | a29 | 171 | 23 | 7.8 | 1.7 | 16 |
| 25 | .08 | 1.0 | 107 | 250 | 203 | 89 | a25 | 123 | 17 | 5.3 | 1.4 | 13 |
| 26 | .1 | 1.0 | 88 | 191 | 511 | 81 | a22 | 178 | 14 | 4.8 | 1.3 | 11 |
| 27 | .09 | .9 | 73 | 407 | 338 | 73 | a20 | 123 | 12 | 4.0 | 1.2 | 10 |
| 28 | .08 | *.8 | 63 | 940 | 252 | 67 | a19 | 92 | 19 | 4.0 | 1.1 | 9.3 |
| 29 | .08 | .8 | 53 | *1,810 | - | 63 | a21 | 73 | 54 | 4.8 | .8 | 9.8 |
| 30 | .08 | .8 | 45 | 716 | -------- | 57 | a18 | 58 | 28 | 7.3 | .6 | 9.3 |
| 31 | .09 | -------- | 40 | 834 | -------- | 52 | -------- | 46 | -------- | 6.3 | .3 | -------- |
| Total | 2.85 | 27.99 | 3,136.0 | 10,954 | 8,761 | 4,207 | 2,464 | 3,769.2 | 1,349 | 344.6 | 155.2 | 557.24 |
| Mean | 0.092 | 0.933 | 101 | 353 | 313 | 136 | 82.1 | 122 | 45.0 | 11.1 | 5.01 | 18.6 |
| Cfsm | 0.0014 | 0.014 | 1.53 | 5.35 | 4.74 | 2.06 | 1.24 | 1.85 | 0.682 | 0.168 | 0.076 | 0.282 |
| In. | 0.002 | 0.02 | 1.77 | 6.17 | 4.94 | 2.37 | 1.39 | 2.12 | 0.76 | 0.19 | 0.09 | 0.31 |

Calendar year 1956: Max 6,000 Min 0.04 Mean 97.6 Cfsm 1.48 In. 20.14
Water year 1956-57: Max 3,450 Min 0.02 Mean 97.9 Cfsm 1.48 In. 20.13

Peak discharge (base, 1,900 cfs).--Jan. 22 (about 6 p.m.) 13,400 cfs (14.3 ft); Jan. 29 (3 p.m.) 2,990 cfs (12.42 ft); May 19 (1 p.m.) 2,880 cfs (12.35 ft); May 22 (12 m.) 2,500 cfs (12.00 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Rutherford Creek near Carters Creek.

## Harpeth River at Belleview, Tenn.

Location.--Lat 36°03'16", long 86°55'42", on right bank 45 ft upstream from bridge on State Highway 100, 0.1 mile downstream from Little Harpeth River, and 0.9 mile southeast of Belleview, Davidson County.

Drainage area.--404 sq mi.

Records available.--April 1920 to October 1929, January 1932 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 541.04 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1933, staff or chain gage at site 2½ miles downstream at datum 7.85 ft lower.

Average discharge.--34 years, 564 cfs.

Extremes.--Maximum discharge during year, 11,700 cfs Jan. 29 (gage height, 17.04 ft); minimum, 0.3 cfs Oct. 1-3 (gage height, 0.79 ft).
1920-29, 1932-57: Maximum discharge, 40,000 cfs Feb. 13, 1948 (gage height, 24.34 ft, from floodmarks); no flow Oct. 5-10, 1922.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diversion above station for irrigation.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1920-30, 1932-35. WSP 1386: 1948.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 23-25)

| Oct. 1 to Dec. 13 | | | | Dec. 14 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.79 | 0.3 | 1.4 | 73 | 0.9 | 4.1 | 2.0 | 248 |
| .8 | .4 | 2.0 | 253 | 1.0 | 14 | 2.5 | 470 |
| .9 | 5.0 | 2.5 | 480 | 1.2 | 40 | 3.0 | 800 |
| 1.0 | 14 | 3.0 | 810 | 1.4 | 73 | 12.0 | 6,500 |
| 1.2 | 36 | 9.0 | 4,450 | 1.7 | 142 | 16.2 | 10,100 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.3 | 6.4 | 8.9 | 218 | 7,540 | 1,370 | 379 | 126 | 225 | 203 | 51 | a10 |
| 2 | .3 | *5.0 | 8.0 | 188 | 7,040 | 1,140 | 800 | 115 | 399 | 142 | 39 | a9 |
| 3 | .6 | 5.7 | 14 | 164 | 2,960 | 986 | 543 | 233 | 309 | 137 | 33 | a8 |
| 4 | 23 | 15 | *9.8 | 210 | 2,090 | 840 | 1,050 | 145 | 1,040 | 113 | 30 | a7 |
| 5 | 25 | 13 | 8.0 | 950 | 1,710 | 711 | 1,210 | 104 | 4,330 | 94 | 27 | a6 |
| 6 | 22 | 11 | 8.0 | 655 | 1,470 | 1,100 | 816 | 92 | 1,760 | 82 | 25 | *a5.5 |
| 7 | 15 | 9.8 | 7.2 | *498 | 1,710 | 2,110 | 627 | 86 | 1,060 | 71 | 23 | a5 |
| 8 | *9.8 | 8.0 | 8.9 | 397 | 1,960 | 2,770 | 1,400 | 81 | 762 | 62 | 22 | a5 |
| 9 | 8.0 | 7.2 | 11 | 334 | 2,110 | 1,970 | 2,820 | 75 | 840 | 56 | 21 | a10 |
| 10 | 5.7 | 7.2 | 23 | 313 | 1,920 | 1,530 | 1,130 | 73 | 1,330 | 53 | 20 | *11 |
| 11 | 4.3 | 7.2 | 20 | 292 | 1,600 | 1,270 | 887 | 73 | 711 | 48 | 19 | 15 |
| 12 | 3.7 | 9.8 | 84 | 252 | 1,260 | 1,410 | 697 | 73 | 508 | *45 | 19 | 16 |
| 13 | 3.1 | 14 | 4,080 | 237 | 1,090 | 1,200 | 573 | 75 | *392 | 42 | 19 | 98 |
| 14 | 2.5 | 14 | 3,920 | 214 | 936 | 1,020 | 465 | *152 | 317 | 39 | 19 | 226 |
| 15 | 2.5 | 15 | 3,040 | 192 | 1,100 | 1,040 | *383 | 94 | 260 | 37 | 17 | 110 |
| 16 | 3.1 | 20 | 1,080 | 174 | 1,950 | 848 | 339 | 69 | 214 | 36 | 17 | 743 |
| 17 | 3.1 | 52 | 655 | 148 | 1,160 | 704 | 313 | 64 | 181 | 36 | 94 | 380 |
| 18 | 3.1 | 29 | *470 | 131 | 986 | 648 | 288 | 64 | 155 | 151 | 795 | 139 |
| 19 | 3.1 | 18 | 370 | 123 | 3,130 | 620 | 260 | 3,010 | 155 | 93 | 122 | 94 |
| 20 | 3.1 | 15 | 330 | 118 | 3,060 | 531 | 237 | 1,770 | 203 | 53 | 61 | 73 |
| 21 | 4.3 | 14 | 326 | 142 | 1,740 | 460 | 221 | 465 | 128 | 40 | *40 | 64 |
| 22 | 7.2 | 13 | 1,740 | 2,960 | 1,330 | 470 | 218 | 2,760 | 110 | 34 | 33 | 86 |
| 23 | 7.2 | 23 | 1,460 | *9,670 | 1,030 | 440 | 288 | 2,640 | 101 | 34 | 26 | 94 |
| 24 | 17 | 21 | 1,120 | 2,600 | 872 | 392 | 288 | 1,030 | 244 | 124 | 25 | 73 |
| 25 | 12 | 16 | 755 | 1,580 | *908 | 470 | 196 | 641 | 244 | 56 | 22 | 61 |
| 26 | 9.8 | 13 | 555 | 1,200 | 2,690 | *498 | 168 | 634 | 155 | 39 | 17 | 54 |
| 27 | 7.2 | 11 | 445 | 1,500 | 2,370 | 470 | 145 | 1,380 | 115 | 34 | 16 | 48 |
| 28 | 5.7 | 11 | 379 | 4,640 | 1,740 | 425 | 134 | 620 | 137 | 34 | 15 | 43 |
| 29 | 5.0 | 11 | 330 | 10,100 | - | 397 | 192 | 425 | 192 | 34 | 13 | 40 |
| 30 | 5.0 | 9.8 | 280 | 8,930 | -------- | 365 | 178 | 330 | 348 | 43 | 12 | 39 |
| 31 | 6.4 | -------- | 248 | 4,220 | -------- | 334 | -------- | 264 | -------- | 62 | 11 | -------- |
| Total | 228.1 | 425.1 | 21,793.8 | 53,350 | 59,462 | 28,539 | 17,245 | 17,763 | 16,925 | 2,127 | 1,703 | 2,572.5 |
| Mean | 7.36 | 14.2 | 703 | 1,721 | 2,124 | 921 | 575 | 573 | 564 | 68.6 | 54.9 | 85.8 |
| Cfsm | 0.018 | 0.035 | 1.74 | 4.26 | 5.26 | 2.28 | 1.42 | 1.42 | 1.40 | 0.170 | 0.136 | 0.212 |
| In. | 0.02 | 0.04 | 2.01 | 4.91 | 5.47 | 2.63 | 1.59 | 1.64 | 1.56 | 0.20 | 0.16 | 0.24 |

Calendar year 1956: Max 17,900 Min 0.3 Mean 515 Cfsm 1.27 In. 17.36
Water year 1956-57: Max 10,100 Min 0.3 Mean 609 Cfsm 1.51 In. 20.47

Peak discharge (base, 7,500 cfs).--Jan. 23 (4 p.m.) 11,000 cfs (16.70 ft); Jan. 29 (12 m.) 11,700 cfs (17.04 ft); Feb. 2 (2 a.m.) 8,680 cfs (14.98 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, 1 discharge measurement, and records for station near Kingston Springs.

## Harpeth River near Kingston Springs, Tenn.

Location.--Lat 36°07'18", long 87°05'56", on right bank 400 ft upstream from bridge on U. S. Highway 70, 2 miles northeast of Kingston Springs, Cheatham County, 3 miles downstream from Turnbull Creek, and at mile 32.4.

Drainage area.--687 sq mi.

Records available.--July 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 448.04 ft above mean sea level, datum of 1929. Prior to Jan. 23, 1939, staff gage at site 150 ft downstream at same datum.

Average discharge.--32 years, 949 cfs.

Extremes.--Maximum discharge during year, 33,000 cfs Jan. 29 (gage height, 25.69 ft); minimum, 26 cfs Oct. 1, 2; minimum gage height, 0.65 ft Oct. 2.
1925-57: Maximum discharge, 60,000 cfs Jan. 7, 1946 (gage height, 32.20 ft); minimum, 12 cfs Sept. 18, 1939; minimum gage height observed, 0.26 ft Sept. 24, 1931.

Remarks.--Records good.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1927, 1933, 1935-36. WSP 1033: 1927(M), 1932-33(M), 1935(M), 1937(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 29 | | | | Jan. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 23 | 3.0 | 700 | 1.0 | 54 | 5.0 | 2,000 |
| .8 | 35 | 6.0 | 2,980 | 1.4 | 101 | 10.0 | 6,250 |
| 1.2 | 75 | 12.0 | 8,250 | 1.9 | 194 | 15.0 | 11,400 |
| 1.6 | 143 | 16.0 | 12,600 | 2.4 | 338 | 18.0 | 15,000 |
| 2.0 | 238 | 20.0 | 18,000 | 3.0 | 630 | | |
| 2.5 | 420 | 23.0 | 24,900 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26 | 50 | 58 | 340 | 8,530 | 2,250 | 592 | 302 | 457 | 663 | 190 | 61 |
| 2 | 26 | *52 | 57 | 303 | 10,400 | 1,770 | 1,040 | 272 | 433 | 462 | 152 | 60 |
| 3 | 53 | 51 | 57 | 272 | 5,090 | 1,460 | 1,120 | 272 | 763 | 405 | 129 | 57 |
| 4 | 108 | 49 | *56 | 328 | 3,100 | 1,250 | 4,400 | 351 | 896 | 334 | 114 | 57 |
| 5 | 69 | 46 | 55 | 1,080 | 2,460 | 1,090 | 2,850 | 250 | 6,000 | 284 | 103 | 55 |
| 6 | 65 | 43 | 55 | 1,180 | 2,130 | 1,120 | 1,740 | 216 | 5,680 | 241 | 94 | 54 |
| 7 | 63 | 43 | 57 | 840 | 2,370 | 2,540 | 1,250 | 199 | 2,070 | 213 | 86 | 53 |
| 8 | *55 | 47 | 75 | 658 | 2,900 | 4,310 | 1,270 | 190 | 1,380 | 190 | 84 | 54 |
| 9 | 48 | 46 | 91 | 544 | 3,500 | 3,450 | 3,960 | 176 | 2,190 | 170 | 79 | 73 |
| 10 | 43 | 43 | 79 | 495 | 2,980 | 2,580 | 1,790 | 170 | 2,610 | 158 | 74 | *78 |
| 11 | 38 | 42 | 73 | 450 | 2,550 | 2,040 | 1,300 | 179 | 1,600 | 147 | 72 | 70 |
| 12 | 36 | 42 | 108 | 400 | 1,930 | 2,260 | 1,070 | 170 | 1,110 | *136 | 71 | 79 |
| 13 | 35 | 41 | 3,210 | 372 | 1,600 | 2,090 | 910 | 164 | 847 | 131 | 74 | 103 |
| 14 | 35 | 40 | 5,090 | *344 | 1,340 | 1,640 | 793 | *228 | 680 | 131 | 87 | 246 |
| 15 | 34 | 46 | 4,750 | 318 | 1,380 | 1,510 | 680 | 261 | 556 | 136 | 88 | 373 |
| 16 | 34 | 106 | 1,860 | 292 | 2,870 | 1,330 | 619 | 194 | 466 | 126 | 77 | 342 |
| 17 | 34 | 99 | 1,070 | 256 | 1,900 | 1,120 | 581 | 190 | *410 | 119 | 253 | 709 |
| 18 | 33 | 86 | 784 | 235 | 1,460 | 1,030 | 541 | 223 | 356 | 154 | 758 | 309 |
| 19 | 32 | 85 | 592 | 220 | 4,570 | 976 | 491 | 5,260 | 316 | 230 | *431 | 213 |
| 20 | 32 | 75 | 515 | 220 | 5,740 | 872 | 462 | 5,220 | 324 | 174 | 201 | 172 |
| 21 | 35 | 92 | 510 | 256 | 2,950 | 763 | 428 | 1,270 | 306 | 132 | *143 | 154 |
| 22 | 59 | 123 | 1,590 | 4,670 | 2,140 | 727 | *410 | 3,420 | 258 | 114 | 117 | 205 |
| 23 | 59 | 89 | 2,440 | 14,100 | 1,710 | 715 | 501 | 5,780 | 289 | 109 | 101 | 261 |
| 24 | 48 | 74 | 1,780 | 7,100 | 1,420 | 641 | 551 | 2,060 | 1,110 | 563 | 90 | 199 |
| 25 | 43 | 71 | 1,200 | 2,680 | *1,270 | 799 | 423 | 1,300 | 674 | 264 | 87 | 158 |
| 26 | 40 | 71 | 889 | 1,970 | 3,220 | *884 | 351 | 1,040 | 466 | 166 | 80 | 138 |
| 27 | 49 | 67 | 694 | 1,820 | 4,200 | 793 | 320 | 1,650 | 338 | 131 | 74 | 124 |
| 28 | 52 | 65 | 580 | 5,890 | 2,950 | 721 | 296 | 1,110 | 452 | 122 | 73 | 117 |
| 29 | 48 | 61 | 505 | 24,600 | - | 663 | 324 | 811 | 571 | 139 | 68 | 112 |
| 30 | 43 | 60 | 425 | 15,100 | -------- | 608 | 378 | 658 | 663 | 352 | 64 | 109 |
| 31 | 43 | -------- | 380 | 7,330 | -------- | 561 | -------- | 541 | -------- | 247 | 63 | -------- |
| Total | 1,418 | 1,905 | 29,685 | 94,663 | 88,660 | 44,563 | 31,441 | 34,127 | 34,271 | 6,943 | 4,177 | 4,795 |
| Mean | 45.7 | 63.5 | 958 | 3,054 | 3,166 | 1,438 | 1,048 | 1,101 | 1,142 | 224 | 135 | 160 |
| Cfsm | 0.067 | 0.092 | 1.39 | 4.45 | 4.61 | 2.09 | 1.53 | 1.60 | 1.66 | 0.326 | 0.197 | 0.233 |
| In. | 0.08 | 0.10 | 1.61 | 5.12 | 4.80 | 2.41 | 1.70 | 1.85 | 1.86 | 0.38 | 0.23 | 0.26 |

Calendar year 1956: Max 22,800 Min 22 Mean 875 Cfsm 1.27 In. 17.34
Water year 1956-57: Max 24,600 Min 26 Mean 1,032 Cfsm 1.50 In. 20.40

Peak discharge (base, 10,000 cfs).--Jan. 23 (5 a.m.) 17,700 cfs (19.83 ft); Jan. 29 (5:30 p.m.) 33,000 cfs (25.69 ft); Feb. 1 (12 p.m.) 11,600 cfs (15.13 ft); May 19 (8:30 p.m.) 10,900 cfs (14.59 ft); June 6 (12:30 a.m.) 11,800 cfs (15.30 ft).
* Discharge measurement made on this day.

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## Cumberland River below Cheatham Dam, Tenn.

Location.--Lat 36°19'27", long 87°13'33", on downstream end of lock wall in lower pool at Cheatham Dam, 2 miles southwest of Neptune, 3 miles upstream from Halfbone Creek, 9 miles northwest of Ashland City, Cheatham County, and at mile 148.4.

Drainage area.--14,200 sq mi, approximately.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 350.00 ft above mean sea level, datum of 1929. Auxiliary water-stage recorder and staff gage on upstream lock wall in upper pool at lock B, 8.1 miles downstream. Datum of both auxiliary gages is 348.24 ft above mean sea level, datum of 1929.

Extremes.--1954-55: Maximum discharge during water year, 176,000 cfs Mar. 23; maximum gage height, 45.93 ft Mar. 24; minimum daily discharge, 1,240 cfs Oct. 6; minimum gage height, 7.63 ft Dec. 27.

1955-56: Maximum discharge during water year, 149,000 cfs Feb. 20; maximum gage height, 42.36 ft Feb. 20; minimum daily discharge, 783 cfs July 22; minimum gage height, 8.10 ft Oct. 6.

1956-57: Maximum discharge during water year, 144,000 cfs Jan. 30; maximum gage height, 41.92 ft Jan. 31; minimum daily discharge, 1,670 cfs Sept. 8; minimum gage height, 7.00 ft Aug. 16.

Maximum stage known, 53.7 ft Jan. 25, 1937, from Cumberland River profile by Corps of Engineers (discharge, about 230,000 cfs).

Remarks.--Records good except those below 15,000 cfs, which are fair. Some regulation by Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and old Hickory Reservoirs (see p. 66 ) and by Cheatham Dam.

Cooperation.--Gage-height records for base gage, staff-gage readings at upper Lock B, and 11 discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | e13,500 | e11,700 | 15,900 | 27,800 | 37,500 | 38,900 | 69,700 | 38,700 | 22,200 | e8,370 | e2,370 | e3,150 |
| 2 | e17,600 | e9,420 | *14,500 | 24,300 | 37,700 | 39,100 | 70,700 | 26,000 | 23,000 | e6,330 | e1,740 | e4,720 |
| 3 | e15,400 | e9,560 | 15,200 | 17,400 | 41,300 | 35,400 | 70,000 | 18,600 | 21,000 | e6,390 | e2,150 | e6,500 |
| 4 | e7,160 | e12,900 | 17,000 | e8,700 | 39,300 | 28,000 | 64,400 | e13,000 | 22,800 | e6,460 | e3,340 | e4,380 |
| 5 | e5,150 | e14,000 | 23,200 | e6,570 | 38,000 | 20,000 | 58,800 | 15,400 | 24,600 | e8,330 | e4,640 | e3,810 |
| 6 | e1,240 | e13,700 | 35,800 | e8,780 | 62,600 | 39,700 | 69,900 | e11,500 | 20,300 | e9,400 | e4,940 | e5,280 |
| 7 | e2,130 | e13,500 | 38,200 | e11,300 | 91,800 | 57,300 | 84,700 | e10,300 | e9,800 | e8,460 | e4,750 | e6,650 |
| 8 | e1,450 | e10,800 | 29,300 | e11,300 | 90,200 | 48,800 | 77,200 | e10,300 | e10,600 | e8,480 | e7,390 | e6,470 |
| 9 | e2,700 | e11,400 | 22,100 | e11,000 | 58,400 | 43,000 | 68,500 | e9,900 | e9,190 | e7,240 | e7,980 | e5,500 |
| 10 | e2,770 | e9,360 | 18,700 | e14,900 | 34,200 | 41,900 | 64,100 | e7,760 | e10,200 | e6,300 | e3,900 | e4,430 |
| 11 | e2,330 | e4,790 | 20,000 | a15,000 | 26,100 | 39,900 | 69,800 | e8,260 | 23,000 | e5,520 | e3,460 | e5,530 |
| 12 | e1,340 | e5,600 | 24,000 | a17,000 | 29,300 | 33,100 | 66,800 | e12,400 | 39,800 | e4,590 | e6,150 | e7,050 |
| 13 | e1,260 | e3,420 | 20,000 | a21,000 | 31,900 | 32,700 | 65,800 | e14,400 | 29,100 | e3,440 | e6,120 | e6,500 |
| 14 | e1,630 | e3,030 | 17,200 | a30,000 | 27,800 | 32,000 | 63,100 | 17,200 | 16,200 | e3,130 | e6,980 | e5,670 |
| 15 | e4,760 | e2,740 | 14,200 | a34,000 | 25,700 | 21,400 | 63,800 | e12,200 | 13,800 | e3,630 | e3,160 | e5,050 |
| 16 | e2,700 | e2,150 | 17,900 | a37,000 | 28,500 | 27,300 | 60,800 | 18,000 | 18,500 | e5,170 | e3,780 | e6,900 |
| 17 | e2,570 | e1,540 | 24,400 | 35,400 | 26,400 | 45,500 | 59,400 | 18,100 | 17,300 | e6,850 | e4,840 | e8,360 |
| 18 | e3,690 | e1,640 | 24,600 | 32,500 | 22,800 | 67,900 | 56,700 | *16,600 | e11,200 | e6,750 | e3,960 | e8,980 |
| 19 | e3,940 | e3,270 | 25,700 | 33,000 | 22,200 | 99,100 | 55,700 | 14,900 | e12,200 | e4,330 | e4,350 | e10,300 |
| 20 | e5,500 | e3,270 | 19,200 | 34,500 | 22,100 | 92,300 | 50,200 | 17,800 | 18,000 | e3,540 | e8,550 | e7,580 |
| 21 | e5,300 | e2,710 | e11,300 | 33,600 | 31,800 | 118,000 | 47,300 | 19,200 | 18,900 | e5,880 | e8,300 | e8,790 |
| 22 | e9,270 | e2,560 | e8,670 | 34,900 | 79,400 | 151,000 | 46,800 | 34,600 | 16,600 | e4,930 | e7,510 | e11,400 |
| 23 | e11,200 | e4,010 | e11,000 | 46,600 | 98,100 | 168,000 | 49,700 | 24,000 | 15,900 | e4,600 | e6,400 | e14,400 |
| 24 | e9,890 | e4,740 | e9,930 | 43,800 | 88,700 | 164,000 | 61,300 | 17,300 | 15,700 | e4,070 | e5,430 | 15,900 |
| 25 | e8,500 | e10,900 | e10,500 | 35,300 | 58,400 | 139,000 | 60,700 | 17,200 | 17,100 | e3,120 | e5,800 | 19,100 |
| 26 | e6,790 | e11,200 | e9,180 | 35,900 | 42,800 | 123,000 | 53,600 | 21,500 | e13,800 | e2,620 | e10,100 | 18,400 |
| 27 | e5,280 | 16,100 | e4,600 | 35,300 | 41,900 | a100,000 | 47,400 | 30,100 | e11,700 | e1,790 | e9,950 | *e14,000 |
| 28 | e3,940 | 17,800 | e4,570 | 32,100 | 39,500 | a90,000 | 39,300 | 36,800 | e8,640 | e1,880 | e9,950 | e9,470 |
| 29 | e5,500 | 16,500 | 36,700 | 30,200 | - | a80,000 | 39,400 | 38,000 | *e6,160 | e6,100 | e6,790 | e6,650 |
| 30 | e6,080 | *14,900 | 66,700 | 34,600 | ------- | 75,100 | 44,400 | 42,100 | e10,600 | e3,150 | e4,280 | e15,300 |
| 31 | e9,800 | ------- | 52,200 | *37,400 | ------- | 71,700 | ------- | 30,200 | ------- | e3,050 | e3,910 | ------- |
| Total | 180,370 | 249,210 | 662,450 | 831,150 | ‡1,274.4 | ‡2,163.1 | ‡1,800 | 622,320 | 507,890 | 163,900 | 172,970 | 256,220 |
| Mean | 5,818 | 8,307 | 21,370 | 26,810 | 45,510 | 69,780 | 60,000 | 20,070 | 16,930 | 5,287 | 5,580 | 8,541 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954 : | Max - | Min - | Mean - | Mean - | Cfsm - | In. - | |
| Water year 1954-55: | Max 168,000 | Min 1,240 | Mean 24,340 | Mean 24,160 | Cfsm 1.70 | In. 23.10 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and Old Hickory Reservoirs.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for station at Dover.
e Backwater from movable crest wickets at dam B; discharge computed from table based on weir formula plus leakage.

Cumberland River below Cheatham Dam, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1955 to September 1956

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | e12,000 | e14,600 | 22,000 | 16,000 | *105,000 | 52,700 | 39,300 | 31,100 | e3,480 | e13,800 | e3,160 | e13,400 |
| 2 | e8,700 | e11,600 | 22,000 | 19,500 | *80,600 | 51,900 | 38,900 | 32,200 | e3,500 | e6,830 | e2,810 | e10,900 |
| 3 | e11,600 | e13,300 | 18,300 | e12,600 | *86,300 | 51,500 | 41,300 | 37,300 | e3,500 | e5,120 | e3,490 | e3,940 |
| 4 | e11,300 | e14,500 | 15,100 | e9,190 | *92,600 | 54,900 | 56,200 | 34,500 | e3,390 | e6,230 | e2,730 | e1,210 |
| 5 | e3,460 | e14,500 | 29,000 | e12,200 | 97,000 | 59,100 | 54,200 | 36,400 | e3,580 | e10,600 | e2,630 | e1,140 |
| 6 | e1,270 | e12,800 | 23,300 | e9,140 | *88,500 | 55,200 | 71,200 | 33,700 | e5,690 | e15,100 | e2,580 | e5,960 |
| 7 | e1,990 | e13,500 | 21,600 | e5,120 | *63,300 | 53,400 | 92,300 | 28,600 | e9,620 | e11,000 | e2,220 | e12,600 |
| 8 | e2,350 | e14,300 | 21,800 | e5,720 | *52,100 | 61,100 | 88,900 | 32,000 | e12,400 | e6,770 | e2,100 | e13,100 |
| 9 | e7,660 | e14,300 | 16,400 | e5,200 | *48,100 | *68,500 | 77,500 | 33,200 | e12,200 | e5,170 | e3,910 | e10,000 |
| 10 | e5,050 | 16,100 | 14,500 | e4,010 | 46,700 | 67,400 | 62,200 | 34,000 | e12,000 | 16,100 | e7,540 | e9,080 |
| 11 | e5,020 | 16,500 | 21,200 | e8,120 | 47,100 | 62,900 | 51,600 | 31,700 | e11,700 | e8,470 | e9,220 | e6,830 |
| 12 | e4,940 | 15,100 | e13,000 | e9,260 | 52,000 | 57,400 | *49,200 | 32,400 | e9,790 | e11,500 | e8,930 | e7,860 |
| 13 | e6,470 | e10,000 | e10,100 | e8,190 | 51,700 | 53,800 | 46,300 | 31,900 | e8,180 | e12,600 | e9,560 | e12,500 |
| 14 | e9,800 | e6,400 | 16,200 | e5,090 | 47,100 | 71,100 | 43,800 | 24,900 | e9,240 | e9,470 | e9,320 | e14,800 |
| 15 | e11,200 | e6,650 | 27,900 | e3,110 | 58,200 | *83,800 | 42,000 | 15,700 | e12,400 | e6,300 | e8,840 | e12,600 |
| 16 | e12,100 | e9,270 | 29,400 | e2,060 | 62,800 | *82,100 | 40,600 | 16,600 | e11,300 | e2,330 | e7,740 | e3,290 |
| 17 | e12,900 | e6,830 | 27,400 | e873 | 75,800 | *77,800 | 47,100 | e13,200 | e9,440 | e957 | e9,520 | e3,340 |
| 18 | e10,600 | e11,900 | 21,100 | e945 | *112,000 | 76,300 | 49,400 | e13,500 | e6,070 | e1,760 | e9,890 | e6,900 |
| 19 | e10,600 | 18,800 | *e10,600 | e1,270 | *136,000 | 66,600 | 47,900 | e14,700 | e3,590 | e2,470 | e9,610 | e2,320 |
| 20 | e12,300 | 26,900 | e6,490 | e1,000 | *144,000 | 61,100 | 47,000 | e10,500 | e6,550 | e2,580 | e9,850 | e1,610 |
| 21 | e13,000 | 25,700 | e8,330 | e883 | *122,000 | 58,000 | 46,600 | e6,570 | e12,400 | e2,290 | e4,120 | *e1,570 |
| 22 | e12,700 | *20,600 | e7,180 | e891 | *99,300 | 54,900 | 45,400 | e5,630 | e13,500 | e783 | e3,060 | e6,030 |
| 23 | e11,000 | 15,700 | e7,720 | e1,330 | *87,300 | 50,200 | 40,900 | e7,970 | e13,500 | e1,430 | e2,710 | e14,600 |
| 24 | e7,780 | e14,900 | e6,700 | e1,690 | *79,500 | 46,100 | 39,300 | e10,400 | e11,300 | e1,910 | e3,550 | e7,700 |
| 25 | e5,700 | e12,800 | e3,400 | e1,640 | 77,500 | 42,400 | 38,500 | e12,200 | e10,300 | e807 | e6,080 | e2,260 |
| 26 | e4,720 | e9,900 | e3,370 | e1,590 | 75,900 | 41,200 | 37,700 | e13,900 | e11,900 | *e1,640 | e10,300 | e1,240 |
| 27 | e5,600 | e9,320 | e4,660 | e2,270 | 76,900 | 44,200 | 35,000 | e10,500 | *e12,400 | e3,300 | e14,800 | e1,170 |
| 28 | e8,980 | e4,080 | e6,320 | e3,140 | 65,000 | 45,800 | 34,200 | *e6,440 | e12,300 | e4,740 | e11,900 | e6,180 |
| 29 | e10,700 | e10,900 | e6,280 | 50,300 | *59,800 | 38,500 | 31,500 | e6,410 | e12,900 | e1,220 | e8,840 | e11,900 |
| 30 | e13,100 | 15,900 | e6,100 | *125,000 | ------- | 34,800 | 26,600 | e4,530 | e14,700 | e3,060 | e11,800 | e12,400 |
| 31 | e15,700 | ------- | e9,290 | *124,000 | ------- | 37,800 | ------- | e3,470 | ------- | e1,480 | e14,000 | ------- |
| Total | 270,290 | 407,650 | 456,740 | 451,332 | ‡2,290.1 | ‡1,762.5 | ‡1,462.6 | 626.120 | 282,820 | 177,817 | 216,810 | 218,430 |
| Mean | 8,719 | 13,590 | 14,730 | 14,560 | 78,970 | 56,850 | 48,750 | 20,200 | 9,427 | 5,736 | 6,994 | 7,281 |

| | Observed | | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1955: | Max | 168,000 | Min | 1,270 | Mean | 24,460 | Mean | 22,960 | Cfsm | 1.62 | In. | 21.95 |
| Water year 1955-56: | Max | 144,000 | Min | 783 | Mean | 23,560 | Mean | 24,170 | Cfsm | 1.70 | In. | 23.17 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill and Old Hickory Reservoirs. ‡ Expressed in thousands.
e Backwater from movable crest wickets at dam B; discharge computed by weir formula plus leakage.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | e9,420 | e4,790 | e8,550 | 22,400 | *133,000 | 51,800 | 19,600 | 20,300 | e8,800 | e8,560 | e13,700 | e3,300 |
| 2 | e4,640 | e2,740 | e9,980 | 14,900 | 135,000 | 47,000 | 19,900 | 19,400 | e10,600 | e8,550 | *e12,700 | e3,980 |
| 3 | e6,220 | e2,790 | e10,700 | 14,900 | 127,000 | 43,900 | 23,100 | *22,100 | e11,700 | e8,240 | 15,500 | e3,300 |
| 4 | e11,800 | e3,830 | e7,000 | 18,100 | *108,000 | 43,600 | 53,700 | e15,700 | e9,710 | 14,800 | 14,600 | e4,470 |
| 5 | e11,700 | e2,880 | e4,280 | 31,700 | *93,500 | 41,700 | 62,600 | e10,300 | e13,200 | 14,700 | 15,500 | e6,110 |
| 6 | e11,500 | e3,360 | *e2,630 | 37,300 | *83,500 | 44,000 | 69,200 | e9,730 | 31,800 | 14,600 | 14,500 | e8,010 |
| 7 | e11,200 | e2,750 | e8,080 | 29,000 | 79,600 | 48,500 | 53,500 | e7,270 | 17,300 | 15,200 | 12,800 | e4,120 |
| 8 | e9,900 | e2,230 | e9,310 | 28,700 | *82,600 | 69,100 | 43,000 | e7,130 | 18,400 | 14,700 | 12,600 | e1,670 |
| 9 | e3,130 | e3,980 | e8,840 | 27,200 | 85,400 | 66,800 | 61,300 | e8,320 | e10,200 | 14,400 | 12,200 | e2,750 |
| 10 | e1,860 | e9,120 | e9,400 | 27,600 | 86,100 | 59,700 | 52,800 | e7,860 | 18,800 | 14,800 | 12,100 | e3,220 |
| 11 | e2,120 | e13,500 | e7,210 | 25,000 | 87,000 | 47,900 | 48,200 | e8,280 | 18,800 | 14,900 | 12,800 | e2,890 |
| 12 | e11,300 | e12,500 | e11,800 | 29,900 | 83,300 | 46,100 | 45,500 | e8,290 | e10,700 | 13,800 | 15,300 | e3,830 |
| 13 | e11,600 | e5,370 | 40,200 | 30,700 | 75,200 | 47,700 | 42,900 | e7,740 | e8,450 | 13,700 | 15,100 | e7,220 |
| 14 | e11,600 | e5,810 | *75,300 | 31,000 | 65,100 | 49,900 | 42,300 | e10,100 | e9,630 | 14,100 | e12,400 | 15,100 |
| 15 | e7,010 | e7,920 | *84,000 | 30,500 | 62,700 | 50,200 | 37,900 | e9,710 | e9,090 | e13,400 | e9,290 | e13,600 |
| 16 | e1,950 | e15,000 | 50,500 | 29,000 | 65,800 | 49,300 | *33,900 | e7,440 | e8,560 | e12,100 | e5,760 | 15,600 |
| 17 | e2,380 | e12,800 | 32,500 | 30,100 | 62,000 | 46,500 | 33,900 | e5,980 | e8,550 | 11,800 | e8,810 | 18,700 |
| 18 | e9,220 | e9,980 | 28,100 | 32,000 | 56,200 | 41,800 | 33,900 | e8,030 | e8,060 | 14,000 | e8,790 | e12,000 |
| 19 | e4,430 | e8,210 | e6,940 | 33,900 | 68,700 | *37,500 | 36,500 | 24,000 | e8,060 | 14,200 | e7,600 | e11,000 |
| 20 | e2,300 | e7,220 | 22,900 | 30,100 | 87,500 | 33,000 | 41,000 | 23,300 | e8,940 | 14,100 | e7,070 | e8,530 |
| 21 | e3,010 | e8,350 | 29,600 | 29,600 | 78,700 | 34,000 | 37,000 | e11,700 | e9,160 | 14,100 | e6,950 | e8,520 |
| 22 | e2,690 | e10,100 | 49,800 | 37,700 | 74,000 | 39,100 | 21,100 | 23,700 | e9,440 | 16,500 | e5,800 | e10,800 |
| 23 | e2,160 | e10,300 | 63,900 | 101,000 | 70,300 | 39,400 | 16,200 | 36,500 | e9,150 | 14,000 | e6,320 | e12,100 |
| 24 | e2,090 | e10,900 | 52,100 | 94,800 | 62,600 | 36,200 | 21,800 | 25,500 | e10,900 | 13,900 | e5,180 | e12,800 |
| 25 | *e1,710 | e10,400 | 44,400 | *71,900 | 57,300 | 31,900 | *25,300 | 21,500 | *e9,960 | 13,100 | e4,550 | e13,400 |
| 26 | e2,380 | e11,300 | 40,200 | 47,000 | 58,900 | 27,900 | 20,700 | 18,500 | e9,330 | 12,000 | e3,120 | e15,400 |
| 27 | e2,220 | e13,900 | 36,700 | 33,000 | 64,600 | 26,300 | 17,900 | 19,600 | e7,730 | 13,600 | e3,350 | *e13,100 |
| 28 | e3,790 | e16,300 | 34,000 | 51,400 | 60,600 | 28,400 | 14,600 | 15,200 | e8,800 | 13,700 | e3,780 | e11,200 |
| 29 | e5,120 | e14,900 | 23,200 | 129,000 | - | 26,500 | 13,300 | e9,550 | e8,850 | 16,100 | *e3,920 | e6,440 |
| 30 | e6,150 | e12,000 | 15,400 | *143,000 | ------- | 26,400 | 23,400 | e9,870 | e8,620 | 16,400 | e4,690 | e8,810 |
| 31 | e6,290 | ------- | 22,700 | *136,000 | ------- | 25,500 | ------- | e9,200 | ------- | 14,400 | e4,790 | ------- |
| Total | 182,890 | 255,230 | 850,220 | ‡1,428.4 | ‡2,254.2 | ‡1,307.6 | ‡1,066 | 441,800 | 341,290 | 422,450 | 291,570 | 261,970 |
| Mean | 5,900 | 8,508 | 27,430 | 46,080 | 80,510 | 42,180 | 35,530 | 14,250 | 11,380 | 13,630 | 9,405 | 8,732 |

| | Observed | | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 144,000 | Min | 783 | Mean | 23,980 | Mean | 26,040 | Cfsm | 1.83 | In. | 24.96 |
| Water year 1956-57: | Max | 143,000 | Min | 1,670 | Mean | 24,940 | Mean | 25,170 | Cfsm | 1.77 | In. | 24.06 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Great Falls Lake, and Dale Follow, Center Hill, and Old Hickory Reservoirs. ‡ Expressed in thousands.
e Backwater from movable crest wickets at dam B; discharge computed from table based on weir formula plus leakage.

## Red River near Adams, Tenn.

Location.--Lat 36°35'25", long 87°05'25", on downstream end of right bank pier of bridge on U. S. Highway 41, 0.5 mile downstream from Elk Fork (corrected), 1.5 miles northwest of Adams, Robertson County, and at mile 33.0.

Drainage area.--678 sq mi.

Records available.--June 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 398.34 ft above mean sea level, Sandy Hook datum (Corps of Engineers benchmark). Prior to Oct. 8, 1926, chain gage and Oct. 8, 1926, to Nov. 13, 1939, water-stage recorder, at site half a mile downstream at same datum.

Average discharge.--37 years, 981 cfs.

Extremes.--Maximum discharge during year, 20,200 cfs Jan. 30 (gage height, 30.37 ft); minimum, 40 cfs Oct. 1, 2 (gage height, 1.64 ft).
1920-57: Maximum discharge, 42,000 cfs Jan. 23, 1937 (gage height, 37.5 ft, from floodmarks, converted to present site by curve of relation), from rating curve extended above 25,000 cfs; minimum, 30 cfs Sept. 10, 1925 (gage height, 1.30 ft, site then in use).

Remarks.--Records good.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1920-27. WSP 1276: 1928, 1932(M), 1935(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 21 to Dec. 21, Dec. 26 to Jan. 22, June 18 to July 10; rate of change in stage used as a factor Jan. 23, 24, Jan. 29 to Feb. 2, Apr. 4, 5)

| | | | |
|---|---|---|---|
| 1.6 | 37 | 4.0 | 745 |
| 1.8 | 59 | 6.0 | 1,890 |
| 2.0 | 91 | 10.0 | 4,410 |
| 2.5 | 202 | 20.0 | 11,400 |
| 3.0 | 330 | 30.0 | 19,800 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *41 | *52 | 45 | 128 | 6,630 | 2,440 | *915 | 678 | 978 | *231 | 146 | 70 |
| 2 | 41 | 49 | 43 | 115 | 8,270 | 2,080 | 1,000 | 650 | 972 | 232 | 133 | 69 |
| 3 | 46 | 48 | 42 | 102 | 5,170 | 1,830 | 1,030 | 646 | 1,120 | 225 | 126 | 67 |
| 4 | 358 | 49 | 42 | 109 | 3,870 | 1,640 | 8,090 | 574 | 885 | 204 | 220 | 66 |
| 5 | 291 | 47 | 43 | 120 | 3,300 | 1,480 | 11,600 | 520 | 775 | 190 | 254 | 65 |
| 6 | 148 | 51 | 43 | 153 | 3,380 | 1,370 | 5,350 | 480 | 1,160 | 181 | 218 | 62 |
| 7 | 102 | 52 | 44 | 184 | 2,940 | 1,400 | 3,490 | 447 | 1,010 | 170 | 188 | 60 |
| 8 | 77 | 48 | 45 | 175 | 2,760 | 1,810 | 3,230 | 423 | 785 | 157 | 161 | 59 |
| 9 | 67 | 47 | 45 | 166 | 3,140 | 1,870 | 3,820 | 399 | 750 | 155 | 148 | 62 |
| 10 | 58 | 45 | 45 | 181 | 4,530 | 1,640 | 2,610 | 388 | 845 | 231 | 133 | 62 |
| 11 | 54 | 46 | 47 | 254 | 4,340 | 1,510 | 2,260 | 370 | 810 | 338 | 122 | 62 |
| 12 | 52 | 45 | 58 | 313 | 3,240 | 1,730 | 1,980 | 357 | 624 | 398 | 106 | 106 |
| 13 | 48 | 45 | 75 | 270 | 2,740 | 1,730 | 1,760 | 345 | 547 | 237 | 159 | 95 |
| 14 | 45 | 46 | 192 | 244 | 2,380 | 1,540 | 1,580 | 395 | 506 | 223 | 214 | 109 |
| 15 | 44 | 48 | 220 | 216 | *2,130 | 1,440 | 1,420 | 498 | 447 | 204 | 209 | 184 |
| 16 | 43 | 54 | 225 | 193 | 2,180 | 1,290 | 1,370 | 388 | 395 | 188 | 188 | 773 |
| 17 | 43 | 62 | *161 | 166 | 1,960 | 1,170 | 1,360 | 333 | 357 | 172 | 153 | 315 |
| 18 | 42 | 54 | 137 | 144 | 1,740 | 1,110 | 1,250 | 319 | 324 | 193 | 135 | *204 |
| 19 | 41 | 55 | 115 | 135 | 2,680 | 1,080 | 1,170 | 1,290 | 345 | 209 | 120 | 159 |
| 20 | 41 | 54 | 131 | 133 | 4,780 | 1,000 | 1,280 | 3,240 | 322 | 193 | 111 | 137 |
| 21 | 45 | 62 | 209 | 128 | 3,150 | 900 | 1,100 | 1,650 | 286 | 179 | 102 | 124 |
| 22 | 46 | 73 | 395 | 901 | 2,580 | 880 | 1,080 | 2,500 | 257 | 164 | 100 | 153 |
| 23 | 45 | 70 | 588 | 9,210 | 2,190 | 885 | 1,430 | 10,000 | 265 | 146 | 95 | 240 |
| 24 | 44 | 67 | 447 | 4,280 | 1,930 | 855 | 1,470 | 5,200 | 265 | 142 | 91 | 230 |
| 25 | 43 | 63 | 354 | 2,430 | 1,780 | 1,310 | 1,170 | 2,990 | 257 | 144 | 87 | 157 |
| 26 | 47 | 58 | 267 | 1,860 | 2,520 | 1,940 | 1,010 | 2,350 | 244 | 155 | 86 | 131 |
| 27 | 48 | 55 | 223 | 1,520 | 3,410 | 1,440 | 895 | 2,010 | 227 | 139 | *84 | 118 |
| 28 | 47 | 51 | 195 | 3,680 | *2,870 | 1,220 | 870 | 1,640 | 227 | 137 | 82 | 100 |
| 29 | 46 | 47 | 177 | 15,400 | - | 1,100 | 865 | 1,390 | 270 | 137 | 77 | 93 |
| 30 | 46 | *45 | 159 | *18,900 | -------- | 1,040 | *760 | 1,220 | 308 | 148 | *75 | 89 |
| 31 | 51 | -------- | 142 | 8,760 | -------- | 956 | -------- | *1,090 | -------- | *157 | 72 | -------- |
| Total | 2,190 | 1,588 | 4,954 | 70,570 | 92,590 | 43,686 | 67,215 | 44,780 | 16,563 | 6,039 | 4,195 | 4,221 |
| Mean | 70.6 | 52.9 | 160 | 2,276 | 3,307 | 1,409 | 2,240 | 1,445 | 552 | 195 | 135 | 141 |
| Cfsm | 0.104 | 0.078 | 0.236 | 3.36 | 4.88 | 2.08 | 3.30 | 2.13 | 0.814 | 0.288 | 0.199 | 0.208 |
| In. | 0.12 | 0.09 | 0.27 | 3.87 | 5.08 | 2.40 | 3.69 | 2.46 | 0.91 | 0.33 | 0.23 | 0.23 |

Calendar year 1956: Max 16,600 Min 41 Mean 889 Cfsm 1.31 In. 17.86
Water year 1956-57: Max 18,900 Min 41 Mean 982 Cfsm 1.45 In. 19.68

Peak discharge (base, 8,000 cfs).--Jan. 23 (6 p.m.) 10,600 cfs (18.89 ft); Jan. 30 (12 m.) 20,200 cfs (30.37 ft); Feb. 2 (8:30 a.m.) 9,380 cfs (17.12 ft); Apr. 5 (5 a.m.) 14,300 cfs (24.10 ft); May 23 (10:30 a.m.) 11,200 cfs (19.70 ft).
* Discharge measurement made on this day.

## Sulphur Fork Red River near Adams, Tenn.

Location.--Lat 36°31'00", long 87°03'40", on left bank 1,000 ft downstream from highway bridge, 2¾ miles downstream from Millers Creek, 4½ miles south of Adams, Robertson County, and 8¾ miles upstream from mouth.

Drainage area.--185 sq mi.

Records available.--January 1939 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 424.36 ft above mean sea level, Sandy Hook datum. Prior to Nov. 26, 1940, wire-weight gage at site 1,000 ft upstream at same datum.

Average discharge.--18 years, 232 cfs.

Extremes.--Maximum discharge during year, 13,100 cfs Jan. 29 (gage height, 22.62 ft, from floodmark); minimum, 4.3 cfs Oct. 2, 3; minimum gage height, 3.27 ft Sept. 8-10.
1939-57: Maximum discharge, 13,200 cfs Mar. 22, 1952 (gage height, 22.75 ft); minimum, 1.8 cfs Sept. 27, 1948; minimum gage height, 3.15 ft Sept. 21-23, 1955.
Maximum stage known, 25.1 ft in June 1934, from floodmarks.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 20 to Mar. 22)

| Oct. 1 to May 22 | | | | May 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 3.3 | 4.0 | 5.0 | 325 | 3.2 | 4.0 | 3.9 | 54 |
| 3.5 | 10 | 6.0 | 700 | 3.3 | 6.5 | 4.0 | 73 |
| 3.6 | 16 | 8.0 | 1,760 | 3.4 | 11 | 4.5 | 215 |
| 3.8 | 37 | 12.0 | 4,340 | 3.6 | 24 | 6.0 | 730 |
| 4.0 | 63 | 16.0 | 7,200 | 3.8 | 42 | 8.0 | 1,760 |
| 4.5 | 185 | 20.0 | 10,600 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *4.6 | *12 | 14 | 51 | 3,000 | 632 | *207 | 160 | 146 | *49 | 34 | 9.2 |
| 2 | 4.6 | 12 | 14 | 45 | 1,500 | 522 | 263 | 154 | 140 | 42 | 28 | 8.3 |
| 3 | 7.8 | 12 | 14 | 41 | 1,000 | 458 | 233 | 146 | 191 | 39 | 24 | 7.0 |
| 4 | 244 | 12 | 14 | 45 | 800 | 416 | 5,580 | 128 | 140 | 36 | 171 | 6.5 |
| 5 | 49 | 12 | 14 | 55 | 700 | 379 | 1,960 | 115 | 128 | 33 | 65 | 6.5 |
| 6 | 29 | 12 | 14 | 65 | 600 | 376 | 950 | 108 | 149 | 30 | 36 | 6.2 |
| 7 | 18 | 12 | 15 | 90 | 500 | 438 | 624 | 102 | 122 | 28 | 28 | 6.0 |
| 8 | 14 | 12 | 17 | 75 | 450 | 682 | 1,760 | 98 | 119 | 26 | 23 | 5.8 |
| 9 | 12 | 12 | 29 | 68 | 558 | 606 | 902 | 92 | 108 | 45 | 21 | 5.8 |
| 10 | 10 | 12 | 30 | 85 | 1,360 | 502 | 550 | 90 | 194 | 67 | 19 | 5.8 |
| 11 | 9.8 | 12 | 26 | 133 | 830 | 452 | 434 | 90 | 143 | 37 | 18 | 6.0 |
| 12 | 9.4 | 12 | 34 | 120 | 590 | 602 | 352 | 85 | 114 | 29 | 52 | 27 |
| 13 | 9.1 | 11 | 147 | 95 | 472 | 490 | 294 | 80 | 92 | 26 | 32 | 93 |
| 14 | 8.4 | 11 | 128 | 82 | 399 | 434 | 258 | 118 | 85 | 26 | 44 | 50 |
| 15 | 8.4 | 12 | 115 | 75 | *385 | 396 | 233 | 95 | 71 | 26 | 44 | 1,370 |
| 16 | 8.4 | 40 | 73 | 68 | 458 | 343 | 227 | 80 | 64 | 25 | 32 | 304 |
| 17 | 8.0 | 42 | *60 | 62 | 361 | 317 | 224 | 73 | 58 | 24 | 27 | 167 |
| 18 | 8.4 | 25 | 55 | 56 | 328 | 305 | 202 | 73 | 52 | 26 | 32 | *119 |
| 19 | 8.4 | 18 | 51 | 53 | 1,780 | 291 | 266 | 516 | 49 | 24 | 24 | 85 |
| 20 | 8.4 | 16 | 55 | 50 | 1,330 | 261 | 286 | 331 | 46 | 22 | 22 | 56 |
| 21 | 9.4 | 24 | 92 | 48 | 884 | 241 | 238 | 196 | 43 | 22 | 18 | 48 |
| 22 | 15 | 30 | 261 | 1,000 | 673 | 238 | 230 | 2,810 | 43 | 20 | 18 | 65 |
| 23 | 14 | 26 | 182 | 2,500 | 538 | 227 | 1,090 | 1,380 | 47 | 24 | 16 | 113 |
| 24 | 13 | 22 | 152 | 1,000 | 476 | 216 | 448 | 622 | 53 | 73 | 15 | 58 |
| 25 | 12 | 19 | 115 | 600 | 455 | 346 | 322 | 422 | 54 | 30 | 15 | 44 |
| 26 | 10 | 19 | 90 | 450 | 975 | 322 | 261 | 426 | 46 | 24 | 15 | 38 |
| 27 | 10 | 17 | 77 | 350 | 950 | 277 | 227 | 317 | 40 | 21 | *14 | 34 |
| 28 | 11 | 16 | 66 | 2,000 | *799 | 247 | 258 | 251 | 48 | 24 | 14 | 31 |
| 29 | 11 | 15 | 62 | 10,000 | - | 227 | 210 | 218 | 90 | 32 | 12 | 29 |
| 30 | 12 | *15 | 60 | 4,000 | -------- | 213 | *179 | 185 | 54 | 63 | 11 | 28 |
| 31 | 12 | -------- | 59 | 2,000 | -------- | 196 | -------- | *164 | -------- | *50 | 10 | -------- |
| Total | 609.1 | 522 | 2,135 | 25,362 | 23,151 | 11,652 | 19,268 | 9,725 | 2,729 | 1,043 | 934 | 2,832.1 |
| Mean | 19.6 | 17.4 | 68.9 | 818 | 827 | 376 | 642 | 314 | 91.0 | 33.6 | 30.1 | 94.4 |
| Cfsm | 0.106 | 0.094 | 0.372 | 4.42 | 4.47 | 2.03 | 3.47 | 1.70 | 0.492 | 0.182 | 0.163 | 0.510 |
| In. | 0.12 | 0.10 | 0.43 | 5.10 | 4.65 | 2.34 | 3.87 | 1.96 | 0.55 | 0.21 | 0.19 | 0.57 |

Calendar year 1956: Max 9,030 Min 3.8 Mean 224 Cfsm 1.21 In. 16.44
Water year 1956-57: Max 10,000 Min 4.6 Mean 274 Cfsm 1.48 In. 20.09

Peak discharge (base, 3,400 cfs).--Jan. 22 (time and discharge unknown); Jan. 29 (time unknown) 13,100 cfs (22.62 ft); Feb. 1 (time and discharge unknown); Apr. 4 (3 p.m.) 8,090 cfs (17.11 ft); Apr. 8 (9 p.m.) 3,460 cfs (10.64 ft); May 22 (5 p.m.) 4,820 cfs (12.69 ft); Sept. 15 (6 p.m.) 4,420 cfs (12.11 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 5-8, 10, Jan. 15 to Feb. 8; discharge estimated on basis of weather records, high-water mark, normal recession, and records for Red River near Adams.

## Cumberland River at Dover, Tenn.

Location.--Lat 36°29'26", long 87°50'20", on center pier of bridge on U. S. Highway 79 at Dover, Stewart County, 0.1 mile upstream from Dyers Creek, 0.8 mile upstream from lock and dam D, and at mile 88.8.

Drainage area.--16,530 sq mi, approximately, includes that of Dyers Creek.

Records available.--October 1937 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 324.25 ft above mean sea level, Sandy Hook datum (levels by Corps of Engineers). Prior to Feb. 8, 1939, and during periods of crest-wicket manipulation at dam D (Feb. 8, 1939, to Sept. 30, 1951) staff gage at upper lock D, 0.8 mile downstream at same datum. Auxiliary staff gage, 19.7 miles upstream, below spillway at lock and dam C, read four times daily.

Average discharge.--20 years, 24,420 cfs (unadjusted).

Extremes.--Maximum discharge during year, 150,000 cfs Feb. 2; maximum gage height, 42.90 ft Feb. 3; minimum daily discharge, 1,910 cfs Oct. 25; minimum gage height, 10.11 ft Aug. 16.

1937-57: Maximum discharge, 188,000 cfs Feb. 15, 1950; maximum gage height, 48.13 ft Feb. 16, 1950; minimum daily discharge, 414 cfs Oct. 4, 1947; minimum gage height observed, 7.10 ft (upper lock D gage) Sept. 16, 1947.

1916-37: Maximum gage height observed, 56.8 ft Jan. 25, 1937, at lock D; minimum observed, 6.8 ft in September 1925, at lock D. Both extremes from unpublished records of Corps of Engineers.

Remarks.--Records good except those for periods computed using fall as a factor and those for periods of wicket manipulation, which are fair. Some regulation by Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and Old Hickory Reservoirs (see p. 66), and by Cheatham and other navigation dams on Cumberland River.

Cooperation.--Lock gage readings, record of wicket manipulation, and six discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1276: 1942.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | e11,700 | e5,450 | e9,500 | 24,200 | c147,000 | c60,400 | 25,800 | 24,800 | e11,300 | e9,990 | 16,600 | e4,750 |
| 2 | e6,480 | e4,010 | e8,790 | 18,000 | c149,000 | c54,700 | 22,400 | 21,700 | e12,800 | e9,760 | 14,100 | e4,040 |
| 3 | e5,440 | e2,900 | e10,400 | 15,300 | c149,000 | 48,800 | 24,700 | 23,000 | e14,800 | e8,860 | 15,300 | e4,250 |
| 4 | e8,520 | e3,620 | e8,790 | 16,900 | c142,000 | 46,700 | 56,600 | 22,500 | e14,300 | e14,000 | 16,600 | e3,870 |
| 5 | e11,200 | e3,430 | e6,750 | 26,400 | c129,000 | 45,400 | 82,000 | e12,900 | e13,300 | 16,800 | 15,500 | e5,590 |
| 6 | e12,100 | e2,960 | e3,670 | 39,200 | c115,000 | 44,700 | c80,600 | e11,900 | 30,800 | 16,000 | 17,100 | e6,290 |
| 7 | e10,800 | e3,400 | e6,030 | 33,700 | c103,000 | 45,800 | c64,000 | e9,680 | 28,200 | 16,100 | 14,600 | e7,570 |
| 8 | e10,900 | e2,330 | e8,420 | 30,100 | c98,600 | 55,400 | c52,400 | e8,230 | 22,200 | 16,600 | 13,600 | e3,660 |
| 9 | e6,370 | e2,450 | e9,110 | 28,600 | c99,100 | 65,500 | c59,200 | e10,100 | e17,100 | 16,300 | 13,200 | e2,840 |
| 10 | e2,970 | e6,140 | e7,990 | 28,700 | c98,800 | c64,600 | c62,500 | e9,160 | 19,200 | 16,300 | 12,900 | e3,440 |
| 11 | e2,090 | e11,400 | e8,530 | 26,600 | c100,000 | c56,600 | c56,100 | e9,460 | 23,500 | 17,000 | 12,900 | e3,580 |
| 12 | e6,220 | e13,100 | e9,390 | 28,600 | c98,600 | 49,800 | c52,500 | e9,540 | e16,200 | 16,300 | 14,200 | e3,880 |
| 13 | e10,900 | e8,450 | 24,600 | 31,800 | c93,300 | 48,300 | c49,300 | e9,320 | e10,300 | 15,700 | 17,700 | e4,930 |
| 14 | e11,200 | e5,710 | 52,600 | 31,800 | *c84,100 | 50,100 | c47,300 | e11,300 | e11,500 | 16,100 | e15,300 | e14,900 |
| 15 | e10,200 | e5,970 | 68,300 | 31,600 | c74,700 | 50,500 | c44,600 | e12,000 | e11,400 | 16,100 | e11,500 | e16,400 |
| 16 | e5,100 | e12,000 | c64,600 | *30,400 | c72,300 | 50,200 | c39,900 | e9,420 | e10,200 | 13,600 | e5,540 | e18,200 |
| 17 | e2,500 | e14,200 | c42,400 | 30,500 | c71,100 | 48,500 | c39,100 | e7,220 | e10,100 | 13,100 | e7,130 | e26,300 |
| 18 | e8,160 | e11,400 | c30,700 | 32,200 | c64,700 | 45,500 | c39,100 | e9,030 | e9,810 | 16,100 | e10,200 | e15,000 |
| 19 | e7,110 | e8,680 | e18,600 | 36,500 | c66,800 | 41,800 | c39,200 | e22,700 | e9,440 | 16,500 | e8,450 | e12,700 |
| 20 | e3,880 | e7,280 | 17,500 | 32,100 | c86,400 | 39,200 | c44,600 | c37,000 | *e10,200 | 16,100 | e7,230 | e10,300 |
| 21 | e3,000 | e7,880 | 27,500 | 31,200 | c90,800 | 36,100 | c42,900 | c20,700 | e10,500 | 16,000 | e7,120 | e8,220 |
| 22 | e3,480 | e8,480 | 38,800 | 35,600 | c83,500 | 39,600 | c34,900 | c24,600 | e11,600 | 16,800 | e6,390 | e11,800 |
| 23 | e2,580 | e10,800 | 54,400 | 74,900 | c77,700 | 41,800 | c22,100 | c56,600 | e12,900 | 18,200 | e5,920 | e12,200 |
| 24 | e1,970 | e9,330 | 56,700 | 97,200 | c71,600 | 40,200 | *22,600 | c51,400 | e12,100 | 16,800 | e5,750 | e12,600 |
| 25 | e1,910 | e12,200 | 50,100 | c92,100 | c69,400 | 39,800 | 28,600 | c38,000 | e11,900 | 16,200 | e5,250 | e15,000 |
| 26 | e2,140 | e9,920 | 45,400 | c70,600 | c63,200 | 36,500 | 26,100 | c27,500 | e10,900 | 13,500 | e4,560 | e15,400 |
| 27 | e2,380 | e12,700 | 41,600 | c47,500 | c69,200 | 33,200 | 21,600 | c25,300 | e9,510 | 15,200 | e3,840 | e15,400 |
| 28 | e3,480 | e16,300 | 39,200 | 49,400 | c67,900 | 30,400 | 18,900 | c22,200 | e9,830 | 15,600 | e4,020 | e13,000 |
| 29 | e4,050 | e16,100 | 34,700 | 93,200 | - | *30,700 | 16,600 | e15,600 | e10,500 | 17,400 | e4,150 | e8,120 |
| 30 | e4,820 | e14,100 | 20,500 | 123,000 | ------- | 29,200 | 21,200 | e13,700 | e10,100 | *22,100 | e4,200 | e7,240 |
| 31 | e5,760 | ------- | 20,600 | 139,000 | ------- | 28,700 | ------- | e12,800 | ------- | 19,600 | e5,840 | ------- |
| Total | 189,410 | 252,690 | 846,170 | ‡1,426.9 | ‡2,635.8 | ‡1,398.7 | ‡1,237.4 | 599,360 | 416,490 | 484,710 | 316,690 | 291,470 |
| Mean | 6,110 | 8,423 | 27,300 | 46,030 | 94,140 | 45,120 | 41,250 | 19,330 | 13,880 | 15,640 | 10,220 | 9,716 |

| | Observed | | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 143,000 | Min | 855 | Mean | 26,400 | Mean | 28,450 | Cfsm | 1.72 | In. | 23.43 |
| Water year 1956-57: | Max | 149,000 | Min | 1,910 | Mean | 27,660 | Mean | 27,880 | Cfsm | 1.69 | In. | 22.90 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and Old Hickory Reservoirs.
‡ Expressed in thousands.
c Computed using fall from auxiliary gage as a factor.
e Crest-wicket manipulation at dam D; discharge computed from table based on weir formula, plus leakage.

## South Fork Little River at Hopkinsville, Ky.

Location.--Lat 36°50'22", long 87°28'52", on right bank at downstream side of bridge on U. S. Highway 41A, 1 mile south of city limits of Hopkinsville, Christian County, and 6 miles upstream from North Fork.

Drainage area.--46.2 sq mi.

Records available.--October 1949 to September 1957.

Gage.--Water-stage recorder and concrete control since Dec. 6, 1949. Datum of gage is 499.71 ft above mean sea level, datum of 1929. Prior to Dec. 22, 1949, wire-weight gage; Dec. 22, 1949, to Dec. 30, 1955, water-stage recorder; Dec. 31, 1955, to July 30, 1956, staff gage; and July 31 to Oct. 17, 1956, wire-weight gage, all at present site and datum.

Average discharge.--8 years, 77.3 cfs.

Extremes.--Maximum discharge during year, 2,710 cfs May 22 (gage height, 14.44 ft); minimum daily, 0.4 cfs Oct. 1, 2.
1949-57: Maximum discharge recorded, 5,670 cfs Jan. 14, 1951 (gage height, 19.17 ft); minimum observed, 0.1 cfs Oct. 22, 1949.
Maximum stage known, 20.4 ft in January 1937, from floodmark.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some regulation at low flow by Western State Hospital, 2 miles above station.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 0.2 | 1.8 | 32 |
| 1.2 | .9 | 1.9 | 47 |
| 1.3 | 2.3 | 2.5 | 163 |
| 1.4 | 5.6 | 5.0 | 548 |
| 1.6 | 15 | 13.0 | 2,360 |
| 1.7 | 22 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.4 | 0.9 | 1.4 | 4.8 | 510 | 131 | 77 | 47 | 75 | 15 | 11 | 1.4 |
| 2 | .4 | .8 | 1.2 | 4.3 | 242 | 109 | 87 | 42 | 59 | 14 | 9.3 | 1.4 |
| 3 | .8 | .7 | 1.1 | 3.9 | 169 | 94 | 82 | 38 | *53 | 13 | 7.9 | 1.1 |
| 4 | .9 | .7 | 1.0 | 6.6 | 134 | 83 | 1,740 | 32 | 47 | 12 | 6.9 | 1.1 |
| 5 | .8 | .7 | *1.0 | 9.8 | 161 | 75 | 353 | 29 | 250 | 11 | 6.0 | 1.1 |
| 6 | .8 | 1.2 | 1.0 | 13 | 149 | 71 | 188 | 27 | 118 | 10 | 5.2 | 1.0 |
| 7 | .6 | 1.2 | 2.9 | 11 | 121 | 73 | 152 | 24 | 65 | 9.3 | 4.3 | 1.0 |
| 8 | .5 | 1.1 | 2.5 | 9.3 | 156 | 75 | 288 | 22 | 53 | 8.8 | 3.9 | 1.0 |
| 9 | .5 | .9 | 2.1 | 10 | 150 | 65 | 160 | 21 | 47 | 12 | 3.6 | 1.1 |
| 10 | .5 | .9 | 1.9 | 24 | 281 | 57 | 134 | 19 | 42 | 9.3 | 3.3 | a1.2 |
| 11 | .5 | .9 | 2.3 | *20 | 149 | 55 | 113 | 19 | 40 | *7.9 | 3.0 | a1.2 |
| 12 | .5 | .9 | 3.3 | 18 | 123 | 81 | 96 | 17 | 34 | 6.9 | 5.0 | a1.5 |
| 13 | .5 | .8 | 2.5 | 16 | 107 | 51 | 85 | 20 | 31 | 6.9 | 3.3 | a2 |
| 14 | .5 | .8 | 3.0 | 14 | 91 | 51 | 77 | 199 | 30 | 10 | 4.3 | a3 |
| 15 | .5 | 1.6 | 3.0 | 13 | 87 | 49 | 69 | 47 | 26 | 8.3 | 6.4 | a1.5 |
| 16 | .5 | 2.1 | 3.0 | 11 | 105 | 42 | 71 | 30 | 22 | 7.4 | *5.6 | *a1.2 |
| 17 | .5 | 1.4 | 3.0 | 10 | 81 | 41 | 71 | 25 | 21 | 7.5 | 5.6 | 1.1 |
| 18 | .5 | 1.1 | 3.0 | 9.3 | 73 | 40 | 65 | 238 | 19 | 11 | 4.8 | 1.0 |
| 19 | .6 | .9 | 3.0 | 8.3 | 256 | 38 | 55 | 728 | 18 | 9.8 | 3.6 | 1.0 |
| 20 | .5 | 3.9 | 65 | 8.3 | 152 | 34 | 49 | 325 | 17 | 7.4 | 3.0 | 1.0 |
| 21 | .8 | 10 | 32 | 8.3 | *117 | *33 | 68 | 134 | 15 | 6.0 | 2.5 | 1.5 |
| 22 | 1.1 | 3.6 | 16 | 385 | 107 | 40 | 69 | 1,610 | 15 | 5.6 | 2.3 | 2.7 |
| 23 | .8 | 2.1 | 13 | 494 | 89 | 46 | 49 | 2,200 | 23 | 5.2 | 2.3 | 1.9 |
| 24 | .6 | 1.8 | 11 | 111 | 79 | 41 | *46 | 345 | 17 | 4.8 | 2.3 | 1.5 |
| 25 | .6 | 1.5 | 9.8 | 83 | 82 | 376 | 42 | 205 | 15 | 4.3 | 2.1 | 1.2 |
| 26 | .8 | 3.0 | 8.3 | 69 | 331 | 149 | 38 | 153 | 14 | 3.6 | 1.6 | 1.1 |
| 27 | .7 | 2.5 | 7.9 | 74 | 243 | 123 | 35 | 125 | 13 | 3.6 | 1.6 | 1.0 |
| 28 | .6 | 1.8 | 7.4 | 751 | 158 | 102 | 185 | 98 | 34 | 4.8 | 1.6 | 1.0 |
| 29 | .6 | 1.6 | 6.4 | 1,240 | - | 89 | 144 | 83 | 30 | 38 | 1.5 | 1.1 |
| 30 | .6 | 1.5 | 5.6 | 277 | ------- | 81 | 63 | 134 | 17 | 26 | 1.5 | 1.0 |
| 31 | *.8 | ------- | 5.2 | 191 | ------- | 71 | ------- | 91 | ------- | 14 | 1.5 | ------- |
| Total | 19.3 | 52.9 | 229.8 | 3,907.9 | 4,503 | 2,466 | 4,751 | 7,127 | 1,260 | 313.4 | 126.8 | 39.9 |
| Mean | 0.62 | 1.76 | 7.41 | 126 | 161 | 79.5 | 158 | 230 | 42.0 | 10.1 | 4.09 | 1.33 |
| Cfsm | 0.013 | 0.038 | 0.160 | 2.73 | 3.48 | 1.72 | 3.42 | 4.98 | 0.909 | 0.219 | 0.089 | 0.029 |
| In. | 0.02 | 0.04 | 0.18 | 3.15 | 3.62 | 1.99 | 3.82 | 5.74 | 1.01 | 0.25 | 0.10 | 0.03 |

Calendar year 1956 : Max 3,000 Min 0.4 Mean 64.8 Cfsm 1.40 In. 19.08
Water year 1956-57 : Max 2,200 Min 0.4 Mean 67.9 Cfsm 1.47 In. 19.95

Peak discharge (base, 1,600 cfs).--Jan. 29 (6 p.m.) 1,680 cfs (10.11 ft); Apr. 4 (7 p.m.) 2,460 cfs (13.43 ft); May 22 (12 p.m.) 2,710 cfs (14.44 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for Little River near Cadiz.

## Little River near Cadiz, Ky.

Location.--Lat 36°46'40", long 87°43'18", on right bank at upstream side of highway bridge, 50 ft downstream from Casey Creek and 8½ miles southeast of Cadiz, Trigg County.

Drainage area.--249 sq mi.

Records available.--February 1940 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 391.45 ft above mean sea level, unadjusted. Prior to July 31, 1945, wire-weight gage at same site and datum.

Average discharge.--17 years, 343 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs July 29 (gage height, 20.38 ft); minimum, 13 cfs Nov. 9, 10, 11.
1940-57: Maximum discharge, 14,200 cfs Jan. 14, 1951 (gage height, 21.00 ft); minimum observed, 1.0 cfs Oct. 3, 1941.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some regulation at low flow by small mill at Pee Dee, 5 miles above station.

Revisions (water years).--WSP 1173: 1942-43, 1946(M), 1949.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Nov. 20)

| Oct. 1 to July 29 | | | | July 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.4 | 10 | 4.5 | 630 | 2.8 | 31 | 6.0 | 1,190 |
| 2.7 | 38 | 6.0 | 1,190 | 3.1 | 74 | 11.0 | 2,970 |
| 3.0 | 79 | 11.0 | 2,970 | 3.4 | 135 | 12.0 | 3,470 |
| 3.5 | 185 | 15.0 | 5,500 | 3.9 | 306 | | |
| 3.8 | 295 | 17.0 | 7,500 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | *17 | 22 | 27 | 1,650 | 945 | 367 | 236 | 646 | 172 | 710 | 68 |
| 2 | 15 | 15 | 21 | 26 | 2,140 | 790 | 400 | 226 | 563 | 153 | 558 | 64 |
| 3 | 16 | 14 | 21 | 25 | 1,250 | 690 | 400 | 197 | 509 | 140 | 445 | 63 |
| 4 | 17 | 14 | 21 | 27 | 998 | 614 | 3,180 | 182 | 450 | 164 | 375 | 60 |
| 5 | 15 | 14 | 21 | 28 | 910 | 554 | 3,620 | 170 | 661 | 268 | 319 | 58 |
| 6 | 15 | 15 | *21 | 30 | 1,130 | 522 | 1,400 | 160 | 1,380 | 156 | 278 | 56 |
| 7 | 18 | 16 | 23 | 36 | 902 | 527 | 1,050 | 153 | 690 | 136 | 234 | 55 |
| 8 | 19 | 25 | 24 | 36 | 874 | 522 | 1,180 | 147 | 522 | 125 | 208 | 55 |
| 9 | 17 | 15 | 24 | 37 | 1,110 | 495 | 1,350 | 142 | 470 | 125 | 188 | 55 |
| 10 | 16 | 13 | 26 | 45 | 1,440 | 435 | 917 | 140 | 410 | 130 | 168 | 54 |
| 11 | 16 | 14 | 28 | *49 | 1,160 | 384 | 790 | 136 | 345 | *125 | 157 | 49 |
| 12 | 16 | 14 | 27 | 59 | 890 | 384 | 698 | 132 | 305 | 109 | 161 | 48 |
| 13 | 15 | 14 | 26 | 50 | 762 | 445 | 618 | 152 | 272 | 101 | 723 | 49 |
| 14 | 15 | 14 | 27 | 46 | 674 | 356 | 554 | 453 | 246 | 220 | 278 | 54 |
| 15 | 15 | 15 | 30 | 42 | 622 | 335 | 495 | 430 | 236 | 145 | 212 | 61 |
| 16 | 16 | 18 | 29 | 39 | 634 | 320 | 470 | 218 | 215 | 117 | *237 | 58 |
| 17 | 18 | 17 | 28 | 36 | 602 | 286 | 470 | 172 | 197 | 113 | 223 | 50 |
| 18 | 18 | 24 | 26 | 34 | 522 | 272 | 480 | 201 | 188 | 186 | 184 | 42 |
| 19 | 19 | 26 | 25 | 33 | 852 | 254 | 430 | 2,300 | 182 | 138 | 162 | *39 |
| 20 | 20 | 26 | 43 | 32 | 1,360 | 236 | 378 | 1,740 | 172 | 121 | 143 | 38 |
| 21 | 20 | 45 | 106 | 31 | 846 | *222 | 345 | 886 | 162 | 111 | 130 | 38 |
| 22 | 19 | 49 | 113 | 956 | a700 | 218 | 400 | 2,710 | 182 | 103 | 118 | 41 |
| 23 | 15 | 60 | 66 | 2,420 | a600 | 226 | 345 | 7,480 | 229 | 95 | 113 | 44 |
| 24 | 15 | 42 | 49 | 886 | a500 | 236 | 300 | 4,790 | 191 | 93 | 107 | 46 |
| 25 | 21 | 31 | 42 | 536 | a500 | 1,170 | *272 | 1,620 | 178 | 88 | 103 | 46 |
| 26 | 23 | 27 | 38 | 400 | *a1,200 | 1,300 | 243 | 1,270 | 170 | 84 | 103 | 41 |
| 27 | 18 | 24 | 35 | 310 | 1,770 | 730 | 226 | 1,070 | 153 | 81 | 93 | 37 |
| 28 | 14 | 23 | 32 | 1,860 | 1,250 | 594 | 209 | 906 | 222 | 77 | 82 | 33 |
| 29 | 14 | 22 | 31 | 4,580 | - | 514 | 510 | 778 | 362 | 2,530 | 79 | 32 |
| 30 | 15 | 22 | 30 | 2,960 | ------- | 450 | 330 | 698 | 235 | 3,320 | 74 | 31 |
| 31 | 19 | ------- | 28 | 1,350 | ------- | 400 | ------- | *801 | ------- | 978 | 71 | ------- |
| Total | 524 | 685 | 1,083 | 17,026 | 27,848 | 15,426 | 22,427 | 30,696 | 10,743 | 10,524 | 7,036 | 1,465 |
| Mean | 16.9 | 22.8 | 34.9 | 549 | 995 | 498 | 748 | 990 | 358 | 339 | 227 | 48.8 |
| Cfsm | 0.068 | 0.092 | 0.140 | 2.20 | 4.00 | 2.00 | 3.00 | 3.98 | 1.44 | 1.36 | 0.912 | 0.196 |
| In. | 0.08 | 0.10 | 0.16 | 2.54 | 4.16 | 2.30 | 3.35 | 4.58 | 1.60 | 1.57 | 1.05 | 0.22 |

Calendar year 1956: Max 6,360 Min 13 Mean 303 Cfsm 1.22 In. 16.56
Water year 1956-57: Max 7,480 Min 13 Mean 399 Cfsm 1.60 In. 21.71

Peak discharge (base, 3,500 cfs).--Jan. 29 (8:30 a.m.) 6,550 cfs (16.05 ft); Apr. 5 (8:30 a.m.) 4,750 cfs (14.11 ft); May 23 (3 a.m.) 10,200 cfs (18.97 ft); July 29 (10 p.m.) 13,000 cfs (20.38 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for nearby stations.

## Cumberland River at Smithland, Ky.

Location.--Lat 37°08'45", long 88°24'25", on downstream side of left center pier of bridge on U. S. Highway 60 at Smithland, Livingston County, 1 mile downstream from McCormick Creek and 2.8 miles upstream from mouth.

Drainage area.--18,080 sq mi, approximately.

Records available.--February 1939 to September 1957 (fragmentary prior to March 1940).

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level, Sandy Hook datum. Prior to Aug. 4, 1945, wire-weight gage at same site and datum. Auxiliary water-stage recorder at Dycusburg, 16.8 miles upstream, since Nov. 20, 1944. Prior to Oct. 1, 1944, auxiliary wire-weight gage at Eureka, 28.7 miles upstream and Oct. 1 to Nov. 19, 1944, auxiliary staff gage at present site. During periods of crest-wicket operation, staff gage above spillway at lock and dam F, 40.8 miles upstream, read four times daily.

Average discharge.--17 years (1940-57), 27,350 cfs (unadjusted).

Extremes.--Maximum discharge during year, 144,000 cfs Feb. 5, 6; maximum gage height, 34.08 ft Feb. 10; minimum daily discharge, 2,010 cfs Oct. 26.
1939-57: Maximum discharge, 201,000 cfs Feb. 18, 1950; maximum gage height, 43.10 ft Feb. 13, 1950; minimum daily discharge, 1941-57, 453 cfs June 23, 1944.
Maximum stage known, 51.1 ft January to February 1937.

Remarks.--Record good above 15,000 cfs and fair below except those for periods of doubtful or no base or auxiliary gage-height record, which are poor. Discharge above 15,000 cfs computed using fall as determined by auxiliary gage as a factor; discharge below 15,000 cfs computed using upper gage at lock and dam F with wicket operation at dam as a factor. Some regulation by navigation dams on Cumberland River, and by Great Falls Lake, Lake Cumberland, Dale Hollow, Center Hill, and Old Hickory Reservoirs (see following page). Records of chemical analyses and water temperatures for the water year 1957 are given in WSP 1520.

Cooperation.--Gage-height record for lock and dam F and record of wicket maripulations furnished by Corps of Engineers.

Revisions (water years).--WSP 1173: 1947(M), WSP 1336: 1940-43.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13,100 | 6,410 | 12,300 | 26,600 | 119,000 | 74,800 | 29,900 | 30,800 | 30,500 | 11,800 | 21,200 | 6,710 |
| 2 | 10,200 | 5,630 | 9,870 | 24,400 | 128,000 | 65,300 | 26,400 | 29,800 | 29,400 | 11,400 | 19,500 | 5,220 |
| 3 | 6,710 | 3,290 | 11,000 | 19,400 | 135,000 | 57,600 | 25,400 | 28,100 | 27,800 | 10,600 | 16,100 | 4,730 |
| 4 | 7,370 | 3,280 | 11,000 | 19,200 | *140,000 | 52,100 | 33,400 | 29,100 | 26,500 | 13,400 | 17,700 | 4,730 |
| 5 | 11,800 | 3,560 | 9,120 | 23,000 | 143,000 | 50,100 | a80,000 | 24,100 | 24,200 | a17,000 | 17,400 | 4,900 |
| 6 | 13,100 | 2,980 | 6,680 | 33,200 | 143,000 | 47,700 | a85,000 | 18,700 | 26,200 | a18,000 | 18,300 | 6,710 |
| 7 | 12,300 | 3,220 | 5,240 | 37,200 | 138,000 | 47,700 | a85,000 | 17,200 | 34,500 | a18,000 | 18,100 | 9,120 |
| 8 | 12,300 | 2,700 | 8,730 | 32,100 | 131,000 | 51,200 | a65,000 | 15,700 | 28,200 | a18,000 | *16,500 | 7,050 |
| 9 | *10,200 | 2,060 | 9,690 | 31,500 | 124,000 | 60,200 | a60,000 | 16,200 | 25,200 | a18,000 | 14,800 | 3,800 |
| 10 | 5,280 | 3,930 | 11,100 | 29,300 | 117,000 | 67,800 | a65,000 | 16,000 | 20,400 | 18,600 | 13,900 | 3,710 |
| 11 | 2,450 | 9,120 | 9,760 | 28,800 | 113,000 | 67,700 | a64,000 | 9,880 | 22,700 | 25,200 | 13,900 | 3,880 |
| 12 | 3,270 | 13,500 | 8,260 | 27,600 | 111,000 | 59,200 | 62,700 | 10,300 | 25,300 | 23,800 | 14,800 | 3,880 |
| 13 | 9,870 | 12,300 | 15,400 | 30,600 | 110,000 | 53,800 | 59,100 | 10,200 | 17,900 | 20,300 | 18,900 | 4,390 |
| 14 | 12,300 | 7,730 | 36,000 | 31,300 | 109,000 | 53,300 | 54,200 | 12,200 | 12,500 | 19,900 | 19,300 | 10,200 |
| 15 | 12,300 | 6,410 | 56,200 | 30,600 | 103,000 | 53,800 | 52,000 | 14,000 | 12,500 | 21,500 | 17,900 | 15,800 |
| 16 | 8,400 | *9,120 | 69,200 | 31,000 | 93,600 | 54,000 | 48,600 | 10,800 | 11,500 | 18,600 | 9,570 | 16,000 |
| 17 | 3,850 | 14,800 | 59,300 | 31,600 | 87,100 | 52,900 | 44,600 | 8,120 | 11,100 | 17,000 | a6,000 | 20,100 |
| 18 | 4,560 | 13,500 | *38,400 | 33,500 | 82,700 | 50,500 | 45,500 | 8,660 | 11,100 | 18,300 | 10,600 | 19,800 |
| 19 | 8,050 | 10,600 | 28,300 | 35,800 | 78,100 | 46,500 | *45,900 | 16,300 | 10,300 | 19,700 | 10,600 | 14,400 |
| 20 | 6,580 | 9,120 | 16,800 | 35,500 | 80,500 | *42,600 | 50,000 | 29,900 | 10,300 | 17,600 | 9,120 | 12,300 |
| 21 | 3,510 | 8,730 | 26,300 | 33,100 | 89,100 | 38,200 | 54,000 | 33,700 | 11,100 | 19,600 | 8,390 | 10,200 |
| 22 | 3,870 | 9,480 | 34,100 | 38,300 | 98,000 | 38,200 | 52,100 | 21,500 | 11,600 | 16,200 | 8,390 | 11,400 |
| 23 | 3,060 | 11,000 | 49,300 | 63,100 | 99,900 | 41,600 | 44,200 | 36,200 | 14,700 | 17,700 | 7,400 | 13,100 |
| 24 | 2,140 | 10,600 | 59,400 | 80,600 | 98,600 | 42,700 | 36,900 | 74,100 | 12,400 | 19,700 | 7,400 | 13,500 |
| 25 | 2,030 | 12,300 | 56,700 | 89,000 | 92,600 | 42,600 | 40,200 | 66,200 | 13,400 | 16,100 | 6,400 | 14,400 |
| 26 | 2,010 | 11,400 | 51,100 | 88,400 | a79,000 | 43,500 | 40,900 | 49,800 | *12,900 | 19,300 | 6,110 | 15,100 |
| 27 | 2,510 | 12,300 | 44,900 | 76,100 | a78,000 | 38,200 | 36,400 | 37,500 | 10,000 | a15,000 | 4,940 | *16,100 |
| 28 | 3,420 | 14,800 | 41,200 | 54,000 | a77,000 | 33,800 | 32,700 | 35,000 | 10,600 | 16,200 | 4,450 | 14,400 |
| 29 | 4,220 | 16,500 | 38,200 | 72,900 | - | 32,900 | 27,800 | *29,900 | 13,900 | 17,600 | 4,570 | 11,400 |
| 30 | 4,390 | 15,600 | 29,300 | 96,600 | ------- | 32,100 | 24,600 | 27,600 | 12,600 | 20,300 | 4,730 | 8,400 |
| 31 | 5,520 | ------- | 23,000 | 109,000 | ------- | 31,100 | ------- | 29,600 | ------- | 25,800 | 5,520 | ------- |
| Total | 210,670 | 265,970 | 885,850 | ‡1,393.3 | ‡2,998.2 | ‡1,523.7 | ‡1,471.5 | 797,160 | 541,300 | 560,200 | 372,490 | 305,430 |
| Mean | 6,796 | 8,866 | 28,580 | 44,950 | 107,100 | 49,150 | 49,050 | 25,710 | 18,040 | 18,070 | 12,020 | 10,180 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1956 : | Max 136,000 | Min 937 | Mean 29,190 | | Mean 31,240 | Cfsm 1.73 | In. 23.52 | |
| Water year 1956-57 : | Max 143,000 | Min 2,010 | Mean 31,030 | | Mean 31,250 | Cfsm 1.73 | In. 23.47 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake, Lake Cumberland, Dale Hollow, Center Hill, and Old Hickory Reservoirs; records furnished by Corps of Engineers and Tennessee Valley Authority.
‡ Expressed in thousands.
a Doubtful or no base or auxiliary gage-height record; discharge estimated on basis of base gage-height record and records for station at Dover, Tenn.

Reservoirs in Cumberland River basin

Lake Cumberland.--Lat 36°52'09", long 85°08'45", in pylon of Wolf Creek Dam on Cumberland River, 10 miles southwest of Jamestown, Russell County, Ky. Drainage area, 5,790 sq mi, approximately. Records available, July 1950 to September 1957 in reports of Geological Survey; April to July 1950 in files of Corps of Engineers. Prior to October 1954, published as Wolf Creek Reservoir. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to Dec. 6, 1950, staff gage at same site at datum 545.0 ft higher. Maximum contents during year, 2,313,200 cfs-days Feb. 13 (elevation, 734.40 ft); minimum contents, 1,133,400 cfs-days Dec. 12 (elevation, 683.61 ft). Maximum contents during period 1950-57, 2,505,800 cfs-days Dec. 23, 1951 (elevation, 741.32 ft); minimum (after first filling), 934,400 cfs-days Jan. 1, 1956 (elevation, 673.01 ft).

Reservoir is formed by earth embankment and concrete gravity dam surmounted by 10 taintor gates, 37 ft high by 50 ft wide. Final closure of dam made Aug. 7, 1950. Total capacity at elevation 760.00 ft (top of gates) is 3,070,000 cfs-days, of which 1,056,000 cfs-days above elevation 723.00 ft (crest of spillway) are reserved for flood control and 1,080,000 cfs-days between elevations 673.00 ft (minimum power pool) and 723.00 ft will be used for power production. Figures given herein represent total contents, of which 934,000 cfs-days below elevation 673.00 ft are dead storage. Reservoir is used for flood control, power, and navigation. Records furnished by Corps of Engineers.

Dale Hollow Reservoir.--Lat 36°32'19", long 85°27'05", at Dale Hollow Dam on Obey River, 3 miles east of Celina, Clay County, Tenn., and 7.3 miles upstream from mouth. Drainage area, 935 sq mi. Records available, August 1943 to September 1957. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to June 25, 1946, staff gage at same site and datum. Maximum contents during year, 686,100 cfs-days Apr. 9 (elevation, 651.27 ft); minimum, 473,100 cfs-days Dec. 11 (elevation, 634.62 ft). Maximum contents observed during period 1943-57, 780,000 cfs-days Feb. 10, 1950 (elevation, 657.8 ft); minimum observed (after first filling), 428,000 cfs-days Sept. 11, 1944 (elevation, 630.63 ft).

Reservoir is formed by concrete gravity dam. Spillway is equipped with six taintor gates each 12 ft high by 60 ft wide. Storage began Aug. 30, 1943, and water in reservoir first reached minimum pool elevation May 7, 1944. Total capacity at elevation 663.0 ft (top of gates) is 860,000 cfs-days of which 178,000 cfs-days between elevations 663.0 ft (top of gates) and 651.0 ft (crest of spillway) is reserved for flood control, and 250,000 cfs-days between elevations 651.0 and 631.0 ft (ordinary minumum pool) is used for power production. Reservoir is used for flood control, navigation, and power. Records furnished by Corps of Engineers.

Great Falls Lake.--Lat 35°48'10", long 85°38'00", at penstock inlet on Collins River, 800 ft southwest of powerhouse of Tennessee Valley Authority, 1.9 miles northwest of Rock Island, Warren County, Tenn., 2.3 miles upstream from mouth, and 2.4 miles upstream from Great Falls Dam on Caney Fork. Drainage area, 1,640 sq mi, approximately. Records available, January 1917 to September 1957. Remote indicator gage. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 28,600 cfs-days Feb. 20 (elevation, 805.92 ft); minimum, 8,500 cfs-days Sept. 15 (elevation, 780.76 ft). Maximum 12 p.m. elevation during period 1916-57, 817.48 ft Mar. 23, 1929 (contents not determined); minimum 12 p.m. contents, 1,700 cfs-days Aug. 19, 1918 (elevation, 756.3 ft).

Reservoir is formed by concrete gravity dam. Spillway is equipped with 18 taintor gates each 14 ft high by 25 ft wide. Dam completed and storage began in 1916; dam redesigned and crest raised 35 ft in 1925. Total capacity at elevation 804.9 ft (top of gates) is 27,400 cfs-days, of which 24,900 cfs-days is controlled storage above elevation 762.0 ft (minimum pool). Reservoir is used primarily for power. Records furnished by Tennessee Valley Authority.

Center Hill Reservoir.--Lat 36°05'48", long 85°49'38", at Center Hill Dam on Caney Fork, 10 miles north of Smithville, DeKalb County, 14 miles southeast of Carthage, Smith County, Tenn., and at mile 26.6. Drainage area, 2,195 sq mi. Records available, November 1948 to September 1957. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to Mar. 14, 1949, staff gage a quarter of a mile upstream at same datum. Maximum contents during year, 815,800 cfs-days Feb. 3 (elevation, 663.03 ft); minimum, 470,000 cfs-days Jan. 21 (elevation, 624.31 ft). Maximum contents during period 1948-57, 1,005,000 cfs-days Feb. 10, 1950 (elevation, 680.6 ft); minimum observed (after first filling), 171,000 cfs-days Dec. 1, 2, 1949 (elevation, 576.1 ft).

Reservoir is formed by concrete dam with earth embankment. Spillway equipped with eight taintor gates, 37 ft high and 50 ft wide. Closure of dam was made Nov. 27, 1948; water in reservoir first reached minimum pool elevation Jan. 11, 1949. Total capacity at elevation 685.0 ft (top of gates) is 1,055,000 cfs-days, of which 385,000 cfs-days between elevations 685.0 ft (top of gates) and 648.0 ft (crest of spillway) is reserved for flood control, and 248,000 cfs-days between elevations 648.0 ft (crest of spillway) and 618.0 ft (ordinary minimum pool) will be used for power production. Reservoir is used for navigation, flood control, and power. Records furnished by Corps of Engineers.

Old Hickory Reservoir (revised).--Lat 36°17'50", long 86°39'20", at Old Hickory Dam on Cumberland River, 2.0 miles west of Hendersonville, Sumner County, 10 miles northeast of Nashville, Davidson County, Tenn., and at mile 216.2. Drainage area, 11,700 sq mi, approximately. Records available, June 1954 to September 1957. Water-stage recorder. Datum of gage is 408.5 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Apr. 4, 1957, staff gage at same site and datum. Maximum contents during year, 241,600 cfs-days Jan. 30 (elevation, 447.5 ft); minimum, 122,400 cfs-days Oct. 8 (elevation, 435.0 ft); minimum (after first filling to ordinary minimum pool), 179,800 cfs-days Dec. 30 (elevation, 442.0 ft). Maximum contents during period 1954-57, that of Jan. 30, 1957; minimum (after filling began), 42,000 cfs-days July 21, 1956 (elevation, 407.9 ft); minimum (after filling to ordinary minimum pool), that of Dec. 30, 1956.

Reservoirs in Cumberland River basin--Continued

Old Hickory Reservoir (revised).--Continued

Reservoir is formed by concrete gravity dam with earth embankment. Spillway is equipped with six taintor gates, 41 ft high and 45 ft wide. Closure of dam was made in June 1954 and water in reservoir was raised sufficiently to maintain navigation through the lock. Water in reservoir first reached ordinary minimum pool elevation Dec. 30, 1956. Total capacity at elevation 450.0 ft (maximum allowable pool) is 274,700 cfs-days of which 63,100 cfs-days between elevation 450.0 ft and 445.0 ft (normal pool) is induced surcharge storage provided to compensate for loss of natural valley storage incurred by construction of the project, and 31,800 cfs-days between elevation 445.0 ft and 442.0 ft (ordinary minimum pool) will be used for power drawdown. Reservoir is used for navigation and power. Records furnished by Corps of Engineers.

Cheatham Reservoir on Cumberland River, 20 miles southeast of Clarksville, Montgomery County, Tenn., with total capacity of 52,000 cfs-days of which 10,000 cfs-days is controlled storage. Records of contents not published herein.

Month-end elevation and contents, water year October 1956 to September 1957

| Date | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) |
|---|---|---|---|---|---|---|
| | Lake Cumberland | | | Dale Hollow Reservoir | | |
| Sept. 30 | 700.40 | 1,480,600 | - | 639.74 | 534,300 | - |
| Oct. 31 | 693.73 | 1,337,800 | -142,800 | 637.81 | 510,800 | -23,500 |
| Nov. 30 | 686.56 | 1,191,500 | -146,300 | 635.10 | 478,700 | -32,100 |
| Dec. 31 | 697.49 | 1,417,500 | +226,000 | 638.62 | 520,600 | +41,900 |
| Calendar year 1956 | - | - | +481,300 | - | - | +80,200 |
| Jan. 31 | 721.70 | 1,981,200 | +563,700 | 649.02 | 655,000 | +134,400 |
| Feb. 28 | 727.78 | 2,136,800 | +155,600 | 648.97 | 654,300 | -700 |
| Mar. 31 | 715.25 | 1,822,300 | -314,500 | 650.40 | 674,000 | +19,700 |
| Apr. 30 | 719.90 | 1,936,200 | +113,900 | 650.02 | 668,700 | -5,300 |
| May 31 | 719.47 | 1,925,500 | -10,700 | 649.62 | 663,200 | -5,500 |
| June 30 | 721.50 | 1,976,100 | +50,600 | 650.02 | 668,700 | +5,500 |
| July 31 | 708.98 | 1,674,000 | -302,100 | 646.00 | 614,300 | -54,400 |
| Aug. 31 | 701.87 | 1,513,000 | -161,000 | 640.18 | 539,700 | -74,600 |
| Sept. 30 | 700.34 | 1,479,300 | -33,700 | 638.88 | 523,700 | -16,000 |
| Water year 1956-57 | - | - | -1,300 | - | - | -10,600 |
| | Great Falls Lake | | | Center Hill Reservoir | | |
| Sept. 30 | 785.25 | 11,000 | - | 635.05 | 556,500 | - |
| Oct. 31 | 785.54 | 11,200 | +200 | 634.56 | 552,400 | -4,100 |
| Nov. 30 | 785.00 | 10,800 | -400 | 627.89 | 498,100 | -54,300 |
| Dec. 31 | 800.40 | 22,700 | +11,900 | 631.25 | 525,100 | +27,000 |
| Calendar year 1956 | - | - | +12,100 | - | - | +55,100 |
| Jan. 31 | 805.24 | 27,800 | +5,100 | 649.53 | 684,500 | +159,400 |
| Feb. 28 | 805.62 | 28,300 | +500 | 642.20 | 618,100 | -66,400 |
| Mar. 31 | 793.02 | 16,200 | -12,100 | 640.19 | 600,500 | -17,600 |
| Apr. 30 | 794.28 | 17,200 | +1,000 | 644.74 | 640,700 | +40,200 |
| May 31 | 785.10 | 10,900 | -6,300 | 644.19 | 635,800 | -4,900 |
| June 30 | 785.64 | 11,200 | +300 | 644.31 | 636,800 | +1,000 |
| July 31 | 785.30 | 11,000 | -200 | 640.18 | 600,400 | -36,400 |
| Aug. 31 | 785.22 | 11,000 | 0 | 639.01 | 590,200 | -10,200 |
| Sept. 30 | 786.90 | 12,000 | +1,000 | 637.40 | 576,400 | -13,800 |
| Water year 1956-57 | - | - | +1,000 | - | - | +19,900 |
| | Old Hickory Reservoir | | | | | |
| Sept. 30 | 435.3 | 124,400 | - | | | |
| Oct. 31 | 437.6 | 141,000 | +16,600 | | | |
| Nov. 30 | 438.1 | 144,900 | +3,900 | | | |
| Dec. 31 | 442.5 | 184,800 | +39,900 | | | |
| Calendar year 1956 | - | - | +123,400 | | | |
| Jan. 31 | 446.4 | 228,000 | +43,200 | | | |
| Feb. 28 | 443.5 | 195,200 | -32,800 | | | |
| Mar. 31 | 444.1 | 201,600 | +6,400 | | | |
| Apr. 30 | 443.59 | 196,200 | -5,400 | | | |
| May 31 | 444.76 | 208,900 | +12,700 | | | |
| June 30 | 444.23 | 203,100 | -5,800 | | | |
| July 31 | 444.02 | 200,700 | -2,400 | | | |
| Aug. 31 | 443.79 | 198,300 | -2,400 | | | |
| Sept. 30 | 443.73 | 197,600 | -700 | | | |
| Water year 1956-57 | - | - | +73,200 | | | |

† Elevation at 12 p.m.

## French Broad River at Rosman, N. C.

Location.--Lat 35°08'32", long 82°49'28", on left bank at upstream side of bridge on U. S. Highway 178 at Rosman, Transylvania County, 1.0 mile upstream from East Fork and at mile 216.4.

Drainage area.--67.9 sq mi.

Records available.--May 1907 to June 1909, January 1936 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,173.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 30, 1909, staff gage at site 500 ft downstream at different datum. Jan. 1, 1936, to July 6, 1937, wire-weight gage at present site and datum.

Average discharge.--22 years (1907-8, 1936-57), 228 cfs.

Extremes.--Maximum discharge during year, 5,180 cfs Apr. 4 (gage height, 10.80 ft); minimum, 60 cfs Oct. 16, 17 (gage height, 1.70 ft).

1907-9, 1936-57: Maximum discharge, 9,410 cfs Aug. 30, 1940 (gage height, 11.86 ft), from rating curve extended above 4,300 cfs on basis of slope-area determination of peak flow; minimum, 23 cfs Jan. 3, 1940 (gage height, 1.51 ft), result of freezeup; minimum daily, 37 cfs Sept. 25-28, Oct. 5, 6, 25, 26, 1954.

Maximum stage known, 13.9 ft in July 1916, from floodmarks.

Remarks.--Records excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1936(M), 1938(M), 1939.

Rating tables water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.7 | 60 | 5.0 | 1,200 |
| 2.0 | 124 | 7.0 | 2,250 |
| 3.0 | 415 | 7.6 | 2,580 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 79 | 271 | 79 | 158 | 882 | 555 | 587 | *311 | 161 | 335 | *142 | 81 |
| 2 | *75 | 155 | 77 | *b145 | 614 | 426 | *952 | 278 | 161 | 293 | 137 | 81 |
| 3 | 71 | 132 | *77 | b140 | 499 | 371 | 478 | 284 | *169 | *264 | 117 | *81 |
| 4 | 75 | 122 | 75 | 153 | 492 | *326 | 1,740 | 278 | 249 | 246 | 112 | 79 |
| 5 | 79 | *112 | 75 | 185 | 426 | 320 | *2,540 | 261 | 836 | 232 | 110 | 77 |
| 6 | 77 | 105 | 75 | 155 | 398 | 305 | 1,090 | 246 | 347 | 215 | 102 | 81 |
| 7 | 73 | 102 | 75 | 155 | 426 | 311 | 798 | 238 | 270 | 204 | 100 | 79 |
| 8 | 68 | 110 | 73 | 145 | *368 | 320 | 770 | 232 | 261 | 193 | 98 | 98 |
| 9 | 68 | 98 | 73 | 142 | 374 | 290 | 670 | 226 | 246 | 185 | 96 | 232 |
| 10 | 64 | 94 | 71 | 142 | 341 | 276 | 580 | 218 | 232 | 177 | 94 | 245 |
| 11 | 64 | 94 | 71 | 132 | 314 | 267 | 530 | 264 | 218 | 172 | 92 | 164 |
| 12 | 64 | 90 | 150 | 129 | 293 | 258 | 496 | 249 | 210 | 164 | 110 | 137 |
| 13 | 64 | 87 | 169 | 127 | 278 | 249 | 460 | 235 | 196 | 164 | 100 | 114 |
| 14 | 62 | 87 | *561 | 122 | 264 | 258 | 429 | 218 | 320 | 169 | 102 | 112 |
| 15 | 62 | 85 | 412 | 122 | 252 | 246 | 404 | 210 | 273 | 166 | 112 | 115 |
| 16 | 60 | 87 | 326 | 119 | 261 | 235 | 380 | 201 | 215 | 155 | 94 | 572 |
| 17 | 62 | 129 | 238 | 117 | 241 | 226 | 368 | 196 | 277 | 150 | 90 | 353 |
| 18 | 75 | 114 | 199 | b110 | 232 | 252 | 377 | 190 | 244 | 174 | 162 | 258 |
| 19 | 100 | 98 | 172 | b115 | 299 | 302 | 356 | 204 | 249 | 172 | 346 | 252 |
| 20 | 75 | 94 | 161 | b125 | 273 | 252 | 350 | 193 | 207 | 150 | 155 | 267 |
| 21 | 81 | 94 | 150 | 119 | 249 | 238 | 341 | 180 | 193 | 140 | 122 | 229 |
| 22 | 533 | 94 | 185 | 396 | 235 | 252 | 347 | 177 | 335 | 137 | 112 | 196 |
| 23 | 232 | 90 | 333 | 544 | 226 | 235 | 332 | 177 | 296 | 129 | 102 | 177 |
| 24 | 150 | 87 | 558 | 284 | 218 | 235 | 335 | 194 | 335 | 140 | 100 | 155 |
| 25 | 127 | 85 | 326 | 255 | 270 | 305 | 308 | 180 | 290 | 169 | 98 | 142 |
| 26 | 117 | 85 | 264 | 229 | 663 | 270 | 293 | 169 | 270 | 134 | 96 | 134 |
| 27 | 110 | 83 | 229 | 226 | 404 | 249 | 284 | 185 | 246 | 127 | 92 | 127 |
| 28 | 100 | 81 | 207 | 218 | 571 | 238 | 276 | 161 | 708 | 124 | 90 | 161 |
| 29 | 96 | 79 | 190 | 281 | - | 229 | 276 | 158 | 590 | 119 | 87 | 311 |
| 30 | 94 | 79 | 174 | 287 | ------- | 221 | 290 | 229 | 401 | 119 | 85 | 244 |
| 31 | 96 | ------- | 169 | *780 | ------- | 215 | ------- | 174 | ------- | 119 | 83 | ------- |
| Total | 3,153 | 3,123 | 5,994 | 6,357 | 10,363 | 8,732 | 17,437 | 6,716 | 9,005 | 5,437 | 3,538 | 5,354 |
| Mean | 102 | 104 | 193 | 205 | 370 | 282 | 581 | 217 | 300 | 175 | 114 | 178 |
| Cfsm | 1.50 | 1.53 | 2.84 | 3.02 | 5.45 | 4.15 | 8.56 | 3.20 | 4.42 | 2.58 | 1.68 | 2.62 |
| In. | 1.73 | 1.71 | 3.28 | 3.48 | 5.68 | 4.78 | 9.55 | 3.68 | 4.93 | 2.98 | 1.94 | 2.93 |

Calendar year 1956: Max 956 Min 47 Mean 163 Cfsm 2.40 In. 32.75
Water year 1956-57: Max 2,540 Min 60 Mean 233 Cfsm 3.43 In. 46.67

Peak discharge (base, 2,000 cfs).--Apr. 4 (9 p.m.) 5,180 cfs (10.80 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Davidson River near Brevard, N. C.

Location.--Lat 35°16'23", long 82°42'21", on right bank 150 ft upstream from State Highway 280, 2.0 miles upstream from mouth, 2.1 miles downstream from Avery Creek, and 3.3 miles northeast of Brevard, Transylvania County.

Drainage area.--40.4 sq mi.

Records available.--December 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,115.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 4, 1929, staff gage and Apr. 4, 1929, to May 17, 1934, chain gage, at site 50 ft downstream at same datum.

Average discharge.--36 years (1921-57), 125 cfs.

Extremes.--Maximum discharge during year, 4,770 cfs Apr. 4 (gage height, 7.24 ft); minimum, 25 cfs Oct. 16-18 (gage height, 0.45 ft).
1920-57: Maximum discharge, 8,400 cfs Aug. 15, 1928 (gage height, 11.8 ft), from rating curve extended above 1,300 cfs; minimum, 13 cfs Oct. 11, 1954 (gage height, 0.31 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 823: Drainage area. WSP 1336: 1921, 1922(M), 1923, 1924-25(M), 1926, 1927(M), 1929-32(M).

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 5 to Mar. 5)

| Oct. 1 to Apr. 4 | | | | Apr. 5 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 18 | 2.0 | 405 | 0.5 | 30 | 2.5 | 580 |
| .6 | 42 | 2.5 | 595 | .6 | 43 | 3.0 | 815 |
| .8 | 74 | 3.0 | 825 | .8 | 73 | 3.5 | 1,080 |
| 1.0 | 116 | 3.5 | 1,100 | 1.0 | 111 | 4.0 | 1,360 |
| 1.5 | 247 | 4.3 | 1,650 | 1.5 | 236 | 4.6 | 1,740 |
| | | | | 2.0 | 385 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34 | 159 | 41 | 74 | 620 | 398 | 329 | *143 | 77 | 170 | *62 | 34 |
| 2 | *32 | 92 | 41 | 71 | 395 | 277 | *542 | 133 | 78 | 147 | 60 | 34 |
| 3 | 32 | 76 | *41 | *b67 | 336 | 221 | 271 | 147 | *77 | *133 | 53 | *34 |
| 4 | 34 | 67 | 39 | 74 | 374 | *186 | 1,580 | 140 | 116 | 122 | 50 | 31 |
| 5 | 34 | *62 | 39 | 92 | 291 | 172 | *1,730 | 129 | 393 | 113 | 50 | 31 |
| 6 | 39 | 59 | 38 | 72 | 274 | 162 | 704 | 122 | 157 | 105 | 43 | 30 |
| 7 | 34 | 56 | 38 | 74 | 305 | 168 | 459 | 115 | 147 | 97 | 42 | 30 |
| 8 | 30 | 57 | 38 | 67 | *241 | 175 | 424 | 113 | 252 | 93 | 40 | 38 |
| 9 | 29 | 51 | 38 | 66 | 241 | 152 | 364 | 109 | 138 | 87 | 39 | 126 |
| 10 | 28 | 50 | 38 | 67 | 210 | 142 | 316 | 105 | 133 | 86 | 38 | 95 |
| 11 | 28 | 48 | 37 | 62 | *188 | 140 | 286 | 129 | 122 | 82 | 36 | 75 |
| 12 | 27 | 46 | 88 | 60 | 165 | 138 | *265 | 118 | 133 | 78 | 35 | 59 |
| 13 | 27 | 44 | 88 | 59 | 155 | 128 | 242 | 107 | 138 | 77 | 36 | 49 |
| 14 | 27 | 44 | 300 | 57 | 150 | 133 | 225 | 103 | 248 | 91 | 40 | 46 |
| 15 | 26 | 44 | 240 | 57 | 142 | 126 | 211 | 99 | 214 | 86 | 46 | 47 |
| 16 | 25 | 44 | 186 | 57 | 160 | 116 | 198 | 95 | 166 | 78 | 35 | 296 |
| 17 | 25 | 80 | 128 | 54 | 135 | 114 | 190 | 91 | 182 | 88 | 33 | 278 |
| 18 | 32 | 64 | 103 | b50 | *121 | 126 | 198 | 89 | 150 | 122 | 65 | 185 |
| 19 | 51 | 54 | 88 | b55 | 194 | 155 | 185 | 93 | 151 | 89 | 180 | 143 |
| 20 | 36 | 52 | 82 | b50 | 155 | 126 | 174 | 91 | 133 | 78 | 59 | 147 |
| 21 | 44 | 52 | 74 | 59 | 133 | 118 | 172 | 84 | 126 | 71 | 49 | 120 |
| 22 | 417 | 51 | 98 | 204 | 116 | 128 | 172 | 86 | 124 | 71 | 46 | 99 |
| 23 | 135 | 48 | 178 | 283 | 109 | 118 | 174 | 84 | 150 | 67 | 42 | 87 |
| 24 | 88 | 48 | 292 | 158 | 103 | 116 | 185 | 87 | 200 | 65 | 40 | 75 |
| 25 | 71 | 46 | 175 | 135 | 171 | 160 | *162 | 84 | 177 | 80 | 40 | 68 |
| 26 | 62 | 46 | 135 | 121 | 655 | 138 | 152 | 87 | 162 | 67 | 40 | 63 |
| 27 | 59 | 45 | 116 | 123 | 274 | 126 | 145 | 89 | 152 | 62 | 38 | 60 |
| 28 | 54 | 44 | 103 | 118 | 434 | 121 | 140 | 78 | 377 | 60 | 38 | 82 |
| 29 | 54 | 44 | 92 | 148 | - | 114 | 147 | 75 | 313 | 59 | 36 | 192 |
| 30 | 52 | 42 | 84 | 150 | ------ | 109 | 138 | 91 | 208 | 59 | 36 | 155 |
| 31 | 52 | ------ | 80 | *714 | ------ | 105 | ------ | 78 | ------ | 57 | 34 | ------ |
| Total | 1,718 | 1,715 | 3,158 | 3,498 | 6,847 | 4,708 | 10,480 | 3,194 | 5,194 | 2,740 | 1,481 | 2,809 |
| Mean | 55.4 | 57.2 | 102 | 113 | 245 | 152 | 349 | 103 | 173 | 88.4 | 47.8 | 93.6 |
| Cfsm | 1.37 | 1.42 | 2.52 | 2.80 | 6.06 | 3.76 | 8.64 | 2.55 | 4.28 | 2.19 | 1.18 | 2.32 |
| In. | 1.58 | 1.58 | 2.91 | 3.22 | 6.30 | 4.33 | 9.65 | 2.94 | 4.78 | 2.52 | 1.36 | 2.59 |

Calendar year 1956: Max 675 Min 21 Mean 89.7 Cfsm 2.22 In. 30.21
Water year 1956-57: Max 1,730 Min 25 Mean 130 Cfsm 3.22 In. 43.76

Peak discharge (base, 1,000 cfs).--Oct. 22 (8 a.m.) 1,160 cfs (3.60 ft); Jan. 31 (8:30 p.m.) 1,350 cfs (3.89 ft); Feb. 26 (6:30 a.m.) 1,330 cfs (3.86 ft); Apr. 2 (12:30 a.m.) 1,510 cfs (4.11 ft); Apr. 4 (8:30 p.m.) 4,770 cfs (7.24 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## French Broad River at Blantyre, N. C.

Location.--Lat 35°17'56", long 82°37'27", on left bank at upstream side of highway bridge, 700 ft east of Blantyre railroad station, Transylvania County, 3.4 miles downstream from Little River, and at mile 183.7.

Drainage area.--296 sq mi.

Records available.--December 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,060.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--36 years (1921-57), 921 cfs.

Extremes.--Maximum discharge during year, 12,800 cfs Apr. 5; maximum gage height, 19.73 ft; Apr. 5; minimum discharge, 207 cfs Oct. 14, 15 (gage height, 3.12 ft).
1920-57: Maximum discharge, 26,500 cfs Aug. 16, 1928 (gage height, 22.9 ft), from rating curve extended above 11,500 cfs; minimum, 119 cfs Oct. 11, 1954 (gage height, 2.36 ft).
Maximum stage known, 27.1 ft in July 1916, from floodmarks.

Remarks.--Records excellent. Considerable diurnal fluctuation at low flow caused by power-plant above station.

Revisions (water years).--WSP 923: 1921-23, 1929, 1933, 1935-36(M), 1938, 1940.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 22, 23, Dec. 14, 15, 23-25, Jan. 22-24, 31, Feb. 1-5, 7, 19, 26-28, Mar. 1, 2, Apr. 1-11, June 5-8, 14, 15, 22-26, 28-30, Aug. 19, Sept. 16-18, 29, 30)

| | | | | | |
|---|---|---|---|---|---|
| 3.1 | 204 | 8.0 | 1,360 | 16.0 | 4,200 |
| 4.0 | 352 | 10.0 | 2,000 | 18.0 | 6,800 |
| 5.0 | 560 | 12.0 | 2,630 | 18.7 | 9,010 |
| 6.0 | 796 | 14.0 | 3,280 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 308 | 879 | 336 | 624 | *3,650 | 2,490 | 1,290 | 1,220 | 622 | 1,440 | 456 | 266 |
| 2 | 308 | 784 | 297 | 631 | *3,460 | 1,880 | 3,190 | *1,080 | 606 | 1,220 | *558 | 279 |
| 3 | *292 | 638 | 296 | *601 | *2,340 | 1,570 | 2,270 | 1,060 | 620 | 1,110 | 454 | *304 |
| 4 | 299 | 523 | *334 | 604 | 2,130 | *1,390 | 2,530 | 1,090 | *669 | 1,030 | 388 | 294 |
| 5 | 304 | *482 | 329 | 659 | 1,830 | 1,280 | 8,950 | 1,000 | 2,700 | *914 | 400 | 294 |
| 6 | 294 | 479 | 325 | 526 | 1,650 | 1,190 | *9,000 | 955 | 2,150 | 878 | 414 | 296 |
| 7 | 258 | 496 | 320 | 526 | 1,700 | 1,170 | 4,780 | 912 | 1,400 | 731 | 386 | 309 |
| 8 | 252 | 494 | 284 | 519 | 1,500 | 1,310 | *3,270 | 888 | 1,370 | 737 | 367 | 284 |
| 9 | 268 | 426 | 248 | 494 | 1,460 | 1,180 | 2,760 | 870 | 1,100 | 772 | 358 | 825 |
| 10 | 282 | 384 | 253 | 492 | 1,350 | 1,080 | 2,270 | 852 | 1,010 | 633 | 347 | 753 |
| 11 | 280 | 321 | 272 | 477 | 1,220 | 1,020 | 2,030 | 908 | 952 | 662 | 306 | 693 |
| 12 | 277 | 339 | 362 | 460 | *1,120 | 1,000 | 1,890 | 934 | 898 | 638 | 302 | 510 |
| 13 | 264 | 369 | 624 | 479 | 1,070 | 966 | 1,770 | 832 | 960 | 622 | 379 | 428 |
| 14 | 212 | 362 | 1,130 | 473 | 1,000 | 974 | 1,640 | 838 | 1,090 | 662 | 369 | 402 |
| 15 | 214 | 356 | 1,960 | 460 | 955 | 955 | 1,540 | 832 | 1,580 | 634 | 382 | 341 |
| 16 | 231 | 356 | 1,330 | 458 | 971 | 910 | 1,460 | 806 | 985 | 622 | 365 | 1,420 |
| 17 | 230 | 446 | 979 | 440 | 920 | 875 | 1,400 | 719 | 944 | 615 | 323 | 2,290 |
| 18 | 244 | 488 | 822 | 386 | 882 | 885 | 1,430 | 729 | 1,030 | 738 | 375 | 1,720 |
| 19 | 400 | 394 | 729 | 379 | 1,010 | 1,180 | 1,430 | 719 | 908 | 676 | 1,330 | 1,080 |
| 20 | 320 | 404 | 615 | 394 | 1,120 | 1,000 | 1,360 | 770 | 1,010 | 629 | 878 | 1,020 |
| 21 | 279 | 394 | 578 | 432 | 955 | 928 | 1,290 | 722 | 860 | 516 | 521 | 988 |
| 22 | 1,600 | 398 | 629 | 787 | 902 | 958 | 1,330 | 650 | 1,410 | 539 | 463 | 895 |
| 23 | 1,440 | 375 | 972 | *2,660 | 870 | 928 | 1,390 | 657 | 1,230 | 548 | 414 | 890 |
| 24 | 786 | 365 | 2,170 | 1,650 | 845 | 895 | 1,320 | 748 | 2,090 | 526 | 373 | 772 |
| 25 | 634 | 358 | 1,560 | 1,150 | 902 | 1,160 | 1,220 | 753 | 1,810 | 574 | 332 | 671 |
| 26 | 576 | 356 | 1,110 | 1,000 | 2,210 | 1,140 | 1,150 | 690 | 1,650 | 537 | 339 | 572 |
| 27 | 507 | 352 | 934 | 934 | 1,960 | 1,010 | 1,100 | 815 | 1,260 | 490 | 352 | 544 |
| 28 | 375 | 341 | 852 | 888 | 1,960 | 939 | 1,060 | 695 | 1,520 | 436 | 341 | 601 |
| 29 | 379 | 339 | 784 | 979 | - | 900 | 1,030 | 624 | 2,660 | 430 | 329 | 1,700 |
| 30 | 412 | 339 | 666 | 1,010 | ------- | 870 | 1,060 | 741 | 1,860 | 450 | 316 | 1,920 |
| 31 | 408 | -------- | 631 | 2,100 | -------- | 845 | -------- | 726 | -------- | 465 | 304 | -------- |
| Total | 12,933 | 13,037 | 22,731 | 23,672 | 41,942 | 34,878 | 68,210 | 25,835 | 38,954 | 21,634 | 13,221 | 23,361 |
| Mean | 417 | 435 | 733 | 764 | 1,498 | 1,125 | 2,274 | 833 | 1,298 | 639 | 426 | 779 |
| Cfsm | 1.41 | 1.47 | 2.48 | 2.58 | 5.06 | 3.80 | 7.68 | 2.81 | 4.39 | 2.36 | 1.44 | 2.63 |
| In. | 1.62 | 1.64 | 2.86 | 2.97 | 5.27 | 4.38 | 8.57 | 3.25 | 4.89 | 2.72 | 1.66 | 2.94 |

Calendar year 1956: Max 3,790 Min 160 Mean 634 Cfsm 2.14 In. 29.16
Water year 1956-57: Max 9,000 Min 212 Mean 933 Cfsm 3.15 In. 42.77

Peak discharge (base, 4,300 cfs).--Apr. 5 (9:30 p.m.) 12,800 cfs (19.73 ft at 11 p.m.).
* Discharge measurement made on this day.

## Mills River near Mills River, N. C.

Location.--Lat 35°23'45", long 82°35'25", on right bank 1.4 miles downstream from confluence of North and South Forks, 2.2 miles upstream from village of Mills River, Henderson County, and 4.2 miles northwest of Horseshoe.

Drainage area.--66.7 sq mi.

Records available.--September 1924 to September 1926, May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,088.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Sept. 9, 1924, to Sept. 30, 1926, staff gage at site 500 ft upstream at datum 2.97 ft higher.

Average discharge.--25 years, 155 cfs.

Extremes.--Maximum discharge during year, 4,340 cfs Apr. 4 (gage height, 9.94 ft); minimum, 42 cfs Sept. 6, 7 (gage height, 1.65 ft); minimum daily, 45 cfs Oct. 17.
1924-26, 1934-57: Maximum discharge, 13,400 cfs Aug. 30, 1940 (gage height, 13.62 ft), from rating curve extended above 5,500 cfs on basis of slope-area determination of peak flow; minimum, 16 cfs Dec. 24, 1943 (gage height, 1.33 ft), result of freezeup; minimum daily, 18 cfs Sept. 30, 1954.

Remarks.--Records excellent except those for periods of ice effect, which are good. City of Hendersonville diverted from North Fork and Bradley Creek about 4 cfs for water supply.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1935, 1937, 1939. WSP 1003: 1938, 1940-42. WSP 1143: 1940(P). WSP 1276: 1926.

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to June 5 | | | | June 6 to Sept. 30 | |
|---|---|---|---|---|---|
| 1.6 | 38 | 4.0 | 1,030 | 1.6 | 36 |
| 1.8 | 65 | 4.5 | 1,360 | 1.8 | 63 |
| 2.0 | 102 | 5.0 | 1,660 | 2.0 | 100 |
| 2.5 | 243 | 6.0 | 2,260 | 2.5 | 234 |
| 3.0 | 447 | 7.0 | 2,810 | 3.0 | 444 |
| 3.5 | 705 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 65 | 200 | 62 | 114 | 651 | 355 | 256 | 223 | 114 | 224 | 84 | 50 |
| 2 | *60 | 151 | 60 | 107 | 456 | 298 | *563 | *204 | 111 | 195 | *88 | 50 |
| 3 | 58 | 128 | *62 | *b100 | 372 | 268 | *347 | 204 | *118 | *184 | 80 | 56 |
| 4 | 68 | 114 | 60 | 109 | 368 | 243 | 1,260 | 207 | 169 | 167 | 88 | *51 |
| 5 | 70 | 104 | 60 | 116 | 326 | 233 | *2,780 | 194 | 656 | 159 | 86 | 48 |
| 6 | 86 | *98 | 60 | 102 | 302 | *220 | 1,040 | 185 | 310 | 146 | 75 | 46 |
| 7 | 75 | 94 | 59 | 102 | 314 | 223 | 681 | 176 | 234 | 139 | 70 | 46 |
| 8 | 64 | 96 | 59 | 96 | *275 | 236 | 601 | 173 | 201 | 132 | 68 | 54 |
| 9 | 59 | 88 | 58 | 92 | 261 | 213 | 521 | 168 | 195 | 132 | 68 | 194 |
| 10 | 54 | 84 | 58 | 94 | 243 | 198 | 461 | 165 | 186 | 124 | 66 | 111 |
| 11 | 53 | 80 | 56 | 90 | 226 | 194 | 416 | 188 | 175 | 118 | 63 | 86 |
| 12 | 50 | 79 | 86 | 86 | 210 | 191 | 380 | 176 | 162 | 113 | 62 | 72 |
| 13 | 50 | 75 | 120 | 84 | 201 | 182 | 351 | 159 | 151 | 109 | 58 | 65 |
| 14 | 49 | 74 | 272 | 82 | 188 | 185 | 326 | 157 | 164 | 109 | 70 | 60 |
| 15 | 46 | 74 | 295 | 82 | 179 | 179 | 306 | 190 | 164 | 113 | 73 | 60 |
| 16 | 46 | 72 | 233 | 82 | 179 | 168 | 295 | 159 | 154 | 109 | 62 | 262 |
| 17 | 45 | 98 | 173 | 79 | 165 | 162 | 283 | 148 | 159 | 139 | 60 | 262 |
| 18 | 56 | 100 | 146 | b65 | 159 | 168 | 283 | 146 | 149 | 141 | 86 | 256 |
| 19 | 80 | 82 | 128 | b65 | 194 | 217 | 272 | 141 | 212 | 124 | 195 | 181 |
| 20 | 62 | 79 | 116 | b75 | 185 | 179 | 257 | 141 | 184 | 109 | 104 | 189 |
| 21 | 75 | 77 | 109 | 90 | 165 | 171 | 265 | 130 | 159 | 102 | 77 | 167 |
| 22 | 324 | 77 | 141 | 174 | 157 | 179 | 265 | 130 | 149 | 98 | 75 | 139 |
| 23 | 217 | 72 | 204 | 359 | 151 | 171 | 254 | 130 | 164 | 94 | 68 | 122 |
| 24 | 146 | 70 | 334 | 210 | 146 | 165 | 254 | 138 | 248 | 110 | 65 | 109 |
| 25 | 118 | 70 | 243 | 171 | 168 | 210 | 233 | 130 | 289 | 159 | 63 | 96 |
| 26 | 104 | 70 | 198 | 151 | 435 | 201 | 223 | 143 | 274 | 107 | 62 | 92 |
| 27 | 98 | 67 | 171 | 154 | 310 | 185 | 217 | 146 | 218 | 98 | 60 | 88 |
| 28 | 90 | 62 | 154 | 148 | 330 | 173 | 207 | 128 | 286 | 92 | 62 | 111 |
| 29 | 86 | 68 | 138 | 154 | - | 168 | 220 | 120 | 376 | 88 | 56 | 263 |
| 30 | 88 | 65 | 128 | 176 | ------- | 159 | 220 | 125 | 263 | 88 | 54 | 234 |
| 31 | 88 | ------- | 120 | 473 | ------- | 157 | ------- | 120 | ------- | 94 | 51 | ------- |
| Total | 2,630 | 2,668 | 4,163 | 4,082 | 7,316 | 6,251 | 14,037 | 4,944 | 6,394 | 3,916 | 2,299 | 3,620 |
| Mean | 84.8 | 88.9 | 134 | 132 | 261 | 202 | 468 | 159 | 213 | 126 | 74.2 | 121 |
| Cfsm | 1.27 | 1.33 | 2.01 | 1.98 | 3.91 | 3.03 | 7.02 | 2.38 | 3.19 | 1.89 | 1.11 | 1.81 |
| In. | 1.47 | 1.49 | 2.32 | 2.28 | 4.08 | 3.49 | 7.83 | 2.76 | 3.57 | 2.18 | 1.28 | 2.02 |

Calendar year 1956: Max 1,020 Min 28 Mean 118 Cfsm 1.77 In. 24.04
Water year 1956-57: Max 2,780 Min 45 Mean 171 Cfsm 2.56 In. 34.77

Peak discharge (base, 1,000 cfs).--Apr. 4 (12 p.m.) 4,340 cfs (9.94 ft); June 25 (8:30 p.m.) 1,040 cfs (4.01 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Cane Creek at Fletcher, N. C.

Location.--Lat 35°26'08", long 82°29'23", on right bank at downstream side of highway bridge, 0.5 mile upstream from Hooper Creek, 0.5 mile northeast of Fletcher, Henderson County, and 0.8 mile downstream from county line.

Drainage area.--63.1 sq mi.

Records available.--October 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,072.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 72.7 cfs.

Extremes.--Maximum discharge during year, 3,340 cfs Apr. 4 (gage height, 8.73 ft); minimum, 18 cfs Sept. 4, 6.
1942-57: Maximum discharge, that of Apr. 4, 1957; minimum, 9.4 cfs Sept. 21, 1956. Floods of July 1916 and Aug. 30, 1940, reached stages of 14.8 and 9.4 ft, respectively, from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Records good except those for periods of ice effect, which are fair.

Revisions (water years).--WSP 1276: 1943(M), 1946(M), 1949(P), 1951-52(M).

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 6-23)

| Oct. 1 to Apr. 5 | | | | Apr. 6 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 18 | 4.0 | 870 | 0.1 | 15 | 2.0 | 259 |
| .5 | 28 | 5.0 | 1,130 | .2 | 20 | 3.0 | 498 |
| .7 | 60 | 6.0 | 1,400 | .4 | 33 | 4.0 | 745 |
| 1.3 | 186 | 7.0 | 1,680 | 1.0 | 94 | 4.5 | 870 |
| 2.0 | 360 | 7.5 | 1,890 | 1.5 | 160 | | |
| 3.0 | 610 | | | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 71 | 25 | 42 | 525 | 230 | 89 | 98 | 48 | 59 | *32 | 20 |
| 2 | 23 | 47 | 25 | b36 | 245 | 141 | 280 | *83 | 57 | 55 | 37 | 20 |
| 3 | *22 | 39 | 25 | *b35 | 157 | 114 | *122 | 81 | 57 | 52 | 29 | 20 |
| 4 | 43 | 35 | *25 | b37 | 126 | *100 | 704 | 76 | 198 | 49 | 36 | *20 |
| 5 | *51 | *34 | 24 | 42 | 112 | 94 | 1,850 | 72 | 850 | *47 | 33 | 20 |
| 6 | 29 | 32 | 24 | 38 | 108 | 87 | 453 | 70 | 170 | 43 | 28 | 19 |
| 7 | 26 | 31 | 24 | 38 | 108 | 90 | 257 | 67 | 113 | 42 | 27 | 30 |
| 8 | 24 | 35 | 24 | 35 | 100 | 96 | 218 | 65 | 93 | 40 | 25 | 24 |
| 9 | 23 | 29 | 24 | 35 | 98 | 83 | *168 | 64 | 85 | 38 | 25 | 40 |
| 10 | 22 | 28 | 23 | 36 | 100 | 77 | 141 | 62 | *80 | 38 | 24 | 37 |
| 11 | 21 | 28 | 24 | 35 | 88 | 73 | 126 | 76 | 74 | 35 | 24 | 28 |
| 12 | 21 | 27 | 51 | 35 | *81 | 73 | *114 | 65 | 69 | 35 | 23 | 25 |
| 13 | 21 | 26 | 51 | 34 | 77 | 70 | 110 | 62 | 72 | 33 | 22 | 24 |
| 14 | 21 | 26 | 140 | 34 | 71 | 70 | 100 | 71 | 84 | 57 | 31 | 23 |
| 15 | 20 | 26 | 96 | 35 | 68 | 68 | 92 | 72 | 68 | 62 | 33 | 25 |
| 16 | 20 | 27 | 73 | 34 | 68 | 62 | *88 | 62 | 62 | 44 | 25 | 90 |
| 17 | 20 | 42 | 58 | b29 | 60 | 60 | 87 | 58 | 79 | 51 | 23 | 120 |
| 18 | 28 | 35 | 49 | b26 | 58 | 64 | 86 | 57 | 83 | 48 | 26 | 63 |
| 19 | 32 | 29 | 42 | b35 | 70 | 70 | 85 | 79 | 66 | 39 | 52 | 46 |
| 20 | 20 | 28 | 41 | b30 | 62 | 62 | 80 | 63 | 63 | 37 | 38 | 42 |
| 21 | 27 | 28 | 39 | 32 | 58 | 60 | 76 | 55 | 60 | 34 | *34 | 47 |
| 22 | 106 | 28 | 62 | 58 | 55 | 66 | 75 | 56 | 59 | 35 | 34 | 42 |
| 23 | 49 | 27 | 121 | 122 | 53 | 60 | 105 | 74 | 73 | 34 | 28 | 39 |
| 24 | 36 | 27 | 296 | 73 | 51 | 62 | 252 | 63 | 82 | 36 | 27 | 34 |
| 25 | 32 | 26 | 106 | 66 | 60 | 79 | 113 | 55 | 79 | 35 | 27 | 31 |
| 26 | 31 | 26 | 79 | 58 | 154 | 68 | 99 | 62 | 82 | 32 | 25 | 30 |
| 27 | 29 | 26 | 68 | 64 | 100 | 62 | 93 | 72 | 77 | 30 | 25 | 30 |
| 28 | 28 | 26 | 60 | 60 | 272 | 60 | 91 | 56 | 123 | 32 | 24 | 34 |
| 29 | 27 | 26 | 53 | 76 | - | 58 | 88 | 52 | 83 | 29 | 23 | 64 |
| 30 | 28 | 25 | 47 | 88 | ------ | 56 | 96 | 53 | 70 | 30 | 22 | 57 |
| 31 | 29 | -------- | 46 | 563 | -------- | 55 | -------- | 51 | -------- | 30 | 21 | -------- |
| Total | 933 | 940 | 1,845 | 1,961 | 3,185 | 2,470 | 6,338 | 2,052 | 3,259 | 1,261 | 883 | 1,144 |
| Mean | 30.1 | 31.3 | 59.5 | 63.3 | 114 | 79.7 | 211 | 66.2 | 109 | 40.7 | 28.5 | 38.1 |
| Cfsm | 0.477 | 0.496 | 0.943 | 1.00 | 1.81 | 1.26 | 3.34 | 1.05 | 1.73 | 0.645 | 0.452 | 0.604 |
| In. | 0.55 | 0.55 | 1.09 | 1.16 | 1.88 | 1.46 | 3.74 | 1.21 | 1.92 | 0.74 | 0.52 | 0.67 |

Calendar year 1956: Max 795 Min 10 Mean 49.7 Cfsm 0.788 In. 10.71
Water year 1956-57: Max 1,850 Min 19 Mean 72.0 Cfsm 1.14 In. 15.49

Peak discharge (base, 800 cfs).--Jan. 31 (10 p.m.) 1,480 cfs (6.27 ft); Apr. 4 (11:30 p.m.) 3,340 cfs (8.73 ft); June 5 (1:30 a.m.) 1,720 cfs (7.26 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## French Broad River at Bent Creek, N. C.

Location.--Lat 35°30'07", long 82°35'35", on left bank 50 ft downstream from Bent Creek, 6.2 miles upstream from Hominy Creek, 6.7 miles south of Asheville, Buncombe County, and at mile 157.7.

Drainage area.--676 sq mi.

Records available.--May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,995.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 1,581 cfs.

Extremes.--Maximum discharge during year, 18,600 cfs Apr. 5 (gage height, 11.47 ft); minimum, 386 cfs Oct. 15, 16 (gage height, 2.32 ft).
1934-57: Maximum discharge, 23,600 cfs Aug. 14, 1940 (gage height, 12.6 ft); minimum, 230 cfs Oct. 4, 5, 10, 11, 12, 1954 (gage height, 2.05 ft).
Maximum stage known, about 27.3 ft July 15, 1916, from floodmarks. Flood in August 1928 reached a stage of about 16.1 ft, from floodmarks.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Some diurnal fluctuation caused by powerplant above station.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 24-31)

Oct. 1 to Apr. 5

| | | | |
|---|---|---|---|
| 2.3 | 370 | 6.0 | 5,730 |
| 2.5 | 540 | 7.0 | 7,680 |
| 2.7 | 730 | 8.0 | 9,800 |
| 3.0 | 1,060 | 9.0 | 12,100 |
| 3.5 | 1,680 | 10.0 | 14,500 |
| 4.0 | 2,370 | 11.0 | 17,200 |
| 5.0 | 3,950 | | |

Apr. 6 to Sept. 30

| | | | |
|---|---|---|---|
| 2.4 | 425 | 4.0 | 2,300 |
| 2.6 | 580 | 5.0 | 3,880 |
| 3.0 | 980 | 6.0 | 5,690 |
| 3.5 | 1,600 | 7.0 | 7,680 |

Note.--Same as preceding table above 7.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 594 | 1,110 | 558 | 994 | *6,530 | 4,440 | 1,620 | 1,890 | 1,060 | 2,240 | 770 | 516 |
| 2 | 567 | 1,430 | 540 | 983 | 6,240 | 3,400 | 4,590 | 1,750 | 1,020 | 1,890 | 820 | 485 |
| 3 | 540 | 1,100 | 513 | 950 | 4,910 | 2,670 | 4,360 | 1,660 | 1,070 | 1,710 | 800 | 532 |
| 4 | 576 | 950 | 531 | a970 | 3,590 | 2,310 | 4,760 | 1,710 | 1,520 | 1,570 | 770 | 532 |
| 5 | 650 | 840 | 540 | a1,010 | 3,070 | 2,090 | 15,600 | 1,610 | 5,900 | 1,470 | 750 | 524 |
| 6 | 585 | 785 | 540 | a980 | 2,700 | 1,940 | 17,000 | 1,510 | 5,050 | 1,380 | 700 | 548 |
| 7 | 558 | 785 | 540 | a910 | 2,700 | 1,870 | 11,400 | 1,440 | 2,800 | 1,290 | 670 | 524 |
| 8 | 486 | 796 | 531 | a880 | 2,460 | 2,130 | 7,430 | 1,400 | 2,220 | 1,170 | 634 | 524 |
| 9 | 468 | 763 | 459 | a870 | 2,300 | 1,950 | 5,440 | 1,370 | 1,990 | 1,190 | 607 | 947 |
| 10 | 468 | 690 | 442 | a840 | 2,200 | 1,770 | 4,070 | 1,330 | 1,810 | 1,170 | 598 | 1,260 |
| 11 | 486 | 630 | 442 | a820 | 1,990 | 1,670 | 3,410 | 1,430 | 1,670 | 1,060 | 572 | 1,080 |
| 12 | 495 | 585 | 540 | a790 | 1,820 | 1,630 | 3,060 | 1,500 | 1,520 | 1,020 | *540 | 850 |
| 13 | 495 | 594 | 939 | a790 | 1,690 | *1,580 | 2,820 | 1,340 | 1,570 | 991 | 548 | *720 |
| 14 | 459 | 603 | 1,350 | a790 | 1,590 | 1,540 | 2,600 | 1,330 | 1,710 | 1,040 | 690 | 643 |
| 15 | 402 | 612 | 3,000 | a780 | 1,520 | 1,560 | 2,420 | *1,400 | 2,600 | 1,010 | 720 | 598 |
| 16 | 394 | *603 | 2,220 | a760 | 1,480 | 1,480 | 2,270 | 1,430 | 1,880 | 1,040 | 652 | 1,400 |
| 17 | *394 | 680 | *1,680 | a760 | 1,460 | 1,410 | 2,190 | 1,220 | 1,590 | *980 | 589 | 3,250 |
| 18 | 426 | 895 | 1,350 | a710 | *1,370 | 1,400 | 2,130 | 1,150 | 1,810 | 1,260 | 598 | 3,170 |
| 19 | 660 | 730 | 1,170 | a650 | 1,460 | 1,740 | 2,190 | 1,190 | 1,700 | 1,150 | 1,520 | 1,880 |
| 20 | 670 | 680 | 1,040 | a680 | 1,740 | 1,670 | 2,080 | 1,170 | 1,670 | 1,050 | 1,570 | 1,670 |
| 21 | 576 | 670 | 961 | a740 | 1,510 | 1,510 | 1,990 | 1,170 | *1,430 | 958 | 1,000 | 1,570 |
| 22 | 1,640 | 670 | 1,020 | a860 | 1,400 | 1,510 | *1,990 | 1,070 | 1,630 | 860 | 810 | 1,480 |
| 23 | 2,620 | 650 | 1,410 | a3,200 | 1,340 | 1,510 | 2,080 | 1,110 | 2,130 | 892 | 720 | 1,310 |
| 24 | 1,450 | 612 | 3,320 | *2,840 | 1,300 | 1,450 | 2,200 | 1,150 | 2,580 | 936 | 652 | 1,210 |
| 25 | 1,070 | 603 | 2,900 | 1,720 | 1,310 | 1,720 | 1,920 | 1,290 | 2,950 | 1,020 | 616 | 1,050 |
| 26 | 939 | 594 | 1,940 | 1,450 | 2,750 | 1,850 | 1,800 | 1,160 | 3,080 | 925 | 580 | 925 |
| 27 | 895 | 585 | 1,620 | 1,300 | 3,310 | 1,650 | 1,710 | 1,300 | 2,150 | 840 | 589 | 870 |
| 28 | 752 | 576 | 1,410 | 1,250 | 3,360 | 1,550 | 1,670 | 1,220 | 2,130 | 810 | 580 | 870 |
| 29 | 650 | 567 | 1,260 | 1,230 | - | 1,460 | 1,660 | 1,060 | 3,560 | 750 | 572 | 2,060 |
| 30 | 680 | 567 | 1,120 | 1,580 | -------- | 1,410 | 1,710 | 1,060 | 3,120 | 740 | 548 | 3,140 |
| 31 | 690 | -------- | 1,030 | 3,110 | -------- | 1,370 | -------- | 1,220 | -------- | 780 | 532 | -------- |
| Total | 22,335 | 21,955 | 36,916 | 36,197 | 69,100 | 57,240 | 120,170 | 41,640 | 66,920 | 35,192 | 22,317 | 36,138 |
| Mean | 720 | 732 | 1,191 | 1,168 | 2,468 | 1,846 | 4,006 | 1,343 | 2,231 | 1,135 | 720 | 1,205 |
| Cfsm | 1.07 | 1.08 | 1.76 | 1.73 | 3.65 | 2.73 | 5.93 | 1.99 | 3.30 | 1.68 | 1.07 | 1.78 |
| In. | 1.23 | 1.21 | 2.03 | 1.99 | 3.80 | 3.15 | 6.61 | 2.29 | 3.68 | 1.94 | 1.23 | 1.99 |

Calendar year 1956: Max 7,470 Min 300 Mean 1,057 Cfsm 1.56 In. 21.26
Water year 1956-57: Max 17,000 Min 394 Mean 1,551 Cfsm 2.29 In. 31.15

Peak discharge (base, 6,000 cfs).--Feb. 1 (5 a.m.) 6,860 cfs (6.59 ft); Apr. 5 (6 p.m.) 18,600 cfs (11.47 ft); June 5 (11 a.m.) 6,890 cfs (6.61 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station at Asheville.

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## Hominy Creek at Candler, N. C.

Location.--Lat 35°32'28", long 82°40'35", on left bank 0.1 mile downstream from Pole Creek and 1.0 mile east of Candler, Buncombe County.

Drainage area.--79.8 sq mi.

Records available.--October 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,065.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 85.1 cfs.

Extremes.--Maximum discharge during year, 4,410 cfs Apr. 4 (gage height, 9.45 ft); minimum, 24 cfs Sept. 8 (gage height, 0.95 ft).
1942-57: Maximum discharge, 6,800 cfs June 16, 1949 (gage height, 13.25 ft); minimum, 13 cfs Sept. 2, 1953 (gage height, 0.80 ft).
Flood of Aug. 30, 1940, reached a stage of 18.0 ft, from floodmarks (discharge, 13,100 cfs by conveyance method).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Numerous small diversions for irrigation above station.

Revisions.--WSP 1113: Drainage area.

Rating table, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 20 | 2.5 | 422 |
| 1.0 | 28 | 3.0 | 660 |
| 1.2 | 53 | 4.0 | 1,210 |
| 1.5 | 112 | 5.0 | 1,790 |
| 2.0 | 246 | 5.3 | 1,960 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31 | 62 | 36 | 49 | 641 | 262 | 141 | 108 | 67 | 68 | 39 | 29 |
| 2 | 29 | 53 | 35 | b42 | 345 | 204 | 244 | 103 | 70 | 63 | 38 | 33 |
| 3 | 31 | 50 | 36 | b40 | 237 | 171 | 160 | *103 | 78 | 63 | 37 | 28 |
| 4 | 42 | 47 | 36 | 46 | 199 | 152 | 1,410 | 105 | 145 | 58 | 50 | 30 |
| 5 | 43 | 45 | 36 | 52 | 202 | 140 | 1,960 | 99 | 458 | 56 | 50 | 29 |
| 6 | 113 | 43 | 35 | 47 | 225 | 130 | 692 | 94 | 187 | 55 | 40 | *28 |
| 7 | 53 | 43 | 35 | 46 | 204 | 130 | 422 | 88 | 142 | 52 | *37 | 26 |
| 8 | 42 | 49 | 35 | *45 | 179 | 138 | 394 | 86 | 126 | 50 | 35 | 29 |
| 9 | 37 | 43 | 35 | 45 | 160 | 119 | 342 | 86 | 112 | 49 | 34 | 87 |
| 10 | 34 | 40 | 35 | 45 | 155 | 112 | 265 | 84 | 110 | 49 | 31 | 66 |
| 11 | *32 | 40 | 34 | 42 | 135 | *108 | *234 | 103 | 103 | 46 | 30 | 49 |
| 12 | 31 | 39 | *63 | 42 | 124 | 105 | 216 | 88 | 92 | 45 | 30 | 49 |
| 13 | 30 | 39 | 47 | 40 | a112 | 99 | 199 | 84 | 116 | 43 | 29 | 39 |
| 14 | 29 | 38 | 56 | 39 | a108 | 97 | 182 | 103 | 92 | 48 | 45 | 34 |
| 15 | 28 | 38 | 74 | 39 | a101 | 94 | 168 | 110 | 86 | 62 | 52 | 36 |
| 16 | 28 | *38 | 82 | 39 | a97 | 90 | 160 | 90 | 86 | 53 | 39 | 133 |
| 17 | 28 | 58 | 82 | b36 | a94 | 86 | 155 | 124 | 90 | 53 | 36 | 113 |
| 18 | 39 | 47 | 53 | b35 | a92 | 90 | 150 | 101 | 86 | 56 | 46 | 160 |
| 19 | 52 | 43 | 47 | b37 | *90 | 101 | 145 | 88 | 100 | *53 | 104 | a108 |
| 20 | 36 | 42 | 45 | b42 | 86 | 88 | 138 | 84 | *78 | 49 | 50 | a78 |
| 21 | 45 | 40 | 43 | 39 | 80 | 84 | 135 | 76 | 72 | 45 | 40 | 65 |
| 22 | 218 | 40 | 74 | 46 | 76 | 90 | 128 | 76 | 70 | 46 | 39 | 58 |
| 23 | 112 | 39 | 70 | 119 | 74 | 84 | 148 | 76 | 96 | 49 | 37 | 53 |
| 24 | 78 | 38 | 155 | 70 | 74 | 84 | 138 | 84 | 84 | 62 | 36 | 49 |
| 25 | 67 | 38 | 101 | 65 | 88 | 108 | 124 | 78 | 74 | 67 | 35 | 45 |
| 26 | 58 | 38 | 80 | 60 | 329 | 94 | 117 | 76 | 68 | 46 | 37 | 43 |
| 27 | 53 | 37 | 70 | 80 | 193 | 88 | 114 | 107 | 67 | 45 | 35 | 43 |
| 28 | 49 | 36 | 62 | 74 | 251 | 86 | 119 | 76 | 101 | 43 | 32 | a50 |
| 29 | 47 | 37 | 58 | 82 | - | 82 | 114 | 72 | 92 | 42 | 31 | a140 |
| 30 | 47 | 37 | 53 | 90 | ------- | 80 | 110 | 72 | 74 | 40 | 31 | a125 |
| 31 | 46 | ------- | 50 | 740 | ------- | 78 | ------- | 68 | ------- | 40 | 29 | ------- |
| Total | 1,608 | 1,277 | 1,733 | 2,313 | 4,751 | 3,474 | 9,024 | 2,792 | 3,222 | 1,596 | 1,234 | 1,855 |
| Mean | 51.9 | 42.6 | 55.9 | 74.6 | 170 | 112 | 301 | 90.1 | 107 | 51.5 | 39.8 | 61.8 |
| Cfsm | 0.650 | 0.534 | 0.701 | 0.935 | 2.13 | 1.40 | 3.77 | 1.13 | 1.34 | 0.645 | 0.499 | 0.774 |
| In. | *0.75 | 0.60 | 0.81 | 1.08 | 2.21 | 1.62 | 4.21 | 1.30 | 1.50 | 0.74 | 0.58 | 0.86 |

Calendar year 1956: Max 445 Min 16 Mean 56.3 Cfsm 0.706 In. 9.61
Water year 1956-57: Max 1,960 Min 26 Mean 95.6 Cfsm 1.20 In. 16.26

Peak discharge (base, 900 cfs).--Jan. 31 (7 p.m.) 1,580 cfs (4.64 ft); Apr. 4 (9:30 p.m.) 4,410 cfs (9.45 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Mills River near Mills River.

b Stage-discharge relation affected by ice.

## North Fork Swannanoa River near Black Mountain, N. C.

Location.--Lat 35°39'11", long 82°21'04", on left bank 0.1 mile downstream from Walker Branch, 0.8 mile downstream from Burnett Dam, 1.9 miles downstream from Sugar Fork, 3.0 miles northwest of town of Black Mountain, Buncombe County, and 3.4 miles downstream from Right Fork.

Drainage area.--23.8 sq mi.

Records available.--January 1926 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,428.03 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--31 years, 47.5 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,110 cfs Apr. 5 (gage height, 4.12 ft); minimum, 2.2 cfs Sept. 5, 6 (gage height, 0.99 ft).
1926-57: Maximum discharge, 16,500 cfs June 16, 1949 (gage height, 9.10 ft), from rating curve extended above 2,600 cfs on basis of slope-area determinations at gage heights 8.55 and 9.10 ft; minimum, 0.6 cfs Sept. 17, 1953 (gage height, 0.83 ft).

Remarks.--Records good. City of Asheville diverted part of its water supply by gravity from four main tributaries with a combined drainage area of 16.4 sq mi at points 1.9 to 4.0 miles upstream, and by pumping from Burnett Lake from Oct. 1 to Nov. 17 and from Aug. 5 to Sept. 30 (see p. 228).

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1926. WSP 1143: 1927-28, 1929(M), 1930, 1931-32(M), 1933-34, 1935(M), 1940(P), 1941-45(M), 1946-47(P). WSP 1336: 1927.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.0 | 2.4 | 2.0 | 50 |
| 1.1 | 3.8 | 2.2 | 90 |
| 1.3 | 7.5 | 2.5 | 192 |
| 1.5 | 14 | 3.0 | 419 |
| 1.8 | 30 | 4.0 | 1,010 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 78 | 9.0 | 34 | 538 | 254 | 44 | 64 | 19 | 90 | 6.9 | 2.5 |
| 2 | 3.0 | *83 | 8.1 | 30 | 340 | 184 | 177 | 62 | 18 | 74 | 7.5 | 2.6 |
| 3 | 3.0 | 59 | 7.3 | 27 | 225 | 144 | 136 | *57 | 17 | 60 | 6.5 | 2.5 |
| 4 | *4.1 | 44 | 6.9 | *26 | 181 | 116 | 236 | 54 | 24 | 52 | 6.9 | 2.6 |
| 5 | 3.8 | 35 | *6.7 | 32 | 169 | 99 | 927 | 49 | 210 | 46 | *7.1 | 2.5 |
| 6 | 3.3 | 27 | 6.5 | 32 | 184 | *88 | 450 | 46 | 173 | 38 | 5.3 | 4.2 |
| 7 | 3.2 | 23 | 6.3 | 30 | 169 | 81 | 254 | 42 | 99 | 34 | 4.6 | 3.2 |
| 8 | 3.0 | 22 | 6.3 | 27 | 150 | 78 | 192 | 40 | 72 | *28 | 3.9 | 3.0 |
| 9 | 3.0 | 18 | 6.7 | 25 | 188 | 69 | 188 | 38 | 99 | 24 | 3.6 | 3.6 |
| 10 | 3.0 | 13 | 5.5 | 28 | 192 | 62 | *150 | 36 | 99 | 22 | 3.5 | 3.6 |
| 11 | 3.0 | 12 | 5.5 | 29 | 169 | 59 | 126 | 41 | *88 | 18 | 3.3 | 3.0 |
| 12 | 3.0 | 11 | 11 | 27 | 136 | 62 | 107 | 40 | 74 | 18 | 3.2 | 2.9 |
| 13 | 3.2 | 8.4 | 27 | 25 | *110 | 62 | 93 | 37 | 62 | 18 | 3.0 | 2.8 |
| 14 | 3.0 | 7.1 | 80 | 23 | 96 | 59 | 81 | 38 | 60 | 17 | 3.2 | 2.8 |
| 15 | 3.0 | 6.7 | 177 | 23 | 83 | 57 | 74 | 41 | 50 | 22 | 3.3 | 4.4 |
| 16 | 3.0 | 6.1 | 196 | 22 | 78 | 50 | 67 | 36 | 50 | 26 | 3.0 | 9.0 |
| 17 | 3.0 | 22 | 116 | 19 | 67 | 48 | 64 | 32 | 49 | 21 | 3.0 | 6.5 |
| 18 | 3.3 | 43 | 74 | 17 | 62 | 46 | 60 | 29 | 42 | 17 | 3.3 | 33 |
| 19 | 3.3 | 38 | 59 | 15 | 62 | 48 | 59 | 27 | 43 | 18 | 3.6 | 46 |
| 20 | 3.2 | 32 | 48 | 14 | 65 | 44 | 55 | 25 | 41 | 16 | 3.2 | 40 |
| 21 | 3.6 | 28 | 42 | 15 | 60 | 42 | 52 | 23 | 35 | 14 | 3.4 | 37 |
| 22 | 35 | 23 | 47 | 34 | 55 | 46 | 49 | 23 | 34 | 13 | 3.2 | 33 |
| 23 | 78 | 20 | 57 | 345 | 50 | 46 | 56 | 23 | 59 | 14 | 3.0 | 24 |
| 24 | 50 | 18 | 177 | 208 | 48 | 44 | 85 | 25 | 107 | 14 | 2.9 | 17 |
| 25 | 36 | 16 | 140 | 122 | 50 | 50 | 76 | 31 | 99 | 13 | 2.9 | 13 |
| 26 | 27 | 15 | 90 | 90 | 317 | 50 | 67 | 29 | 81 | 11 | 2.8 | 9.9 |
| 27 | 25 | 13 | 69 | 81 | 225 | 48 | 60 | 29 | 65 | 9.9 | 2.8 | 7.5 |
| 28 | 22 | 12 | 59 | 83 | 208 | 44 | 55 | 30 | 67 | 9.0 | 2.8 | 6.9 |
| 29 | 18 | 11 | 50 | 78 | - | 42 | 52 | 26 | 140 | 8.1 | 2.8 | 24 |
| 30 | 18 | 9.9 | 42 | 104 | ------- | 40 | 57 | 23 | 110 | 7.5 | 2.6 | 59 |
| 31 | 21 | ------- | 38 | *323 | ------- | 38 | ------- | 21 | ------- | 7.1 | 2.5 | ------- |
| Total | 397.0 | 754.2 | 1,673.8 | 1,988 | 4,277 | 2,200 | 4,149 | 1,117 | 2,186 | 779.6 | 119.6 | 412.0 |
| Mean | 12.8 | 25.1 | 54.0 | 64.1 | 153 | 71.0 | 138 | 36.0 | 72.9 | 25.1 | 3.9 | 13.7 |
| (†) | +574.9 | +387.8 | +360.7 | +639.7 | +114.3 | +184.4 | +354.9 | +323.4 | +423.0 | +294.5 | +296.5 | +646.1 |

Adjusted for diversion, evaporation, and change in reservoir contents

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 31.4 | 38.1 | 65.6 | 84.8 | 157 | 76.9 | 150 | 46.5 | 87.0 | 34.6 | 13.4 | 35.3 |
| Cfsm | 1.32 | 1.60 | 2.76 | 3.56 | 6.60 | 3.23 | 6.30 | 1.95 | 3.66 | 1.45 | 0.563 | 1.48 |
| In. | 1.52 | 1.78 | 3.18 | 4.11 | 6.86 | 3.73 | 7.04 | 2.25 | 4.08 | 1.68 | 0.65 | 1.65 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 443 | Min 1.8 | Mean 34.9 | Mean 46.8 | Cfsm 1.97 | In. 26.79 |
| Water year 1956-57: | Max 927 | Min 2.5 | Mean 54.9 | Mean 67.5 | Cfsm 2.84 | In. 38.53 |

* Discharge measurement made on this day.
† Diversion by city of Asheville, and evaporation and change in contents in Burnett Lake, equivalent in cfs-days. Records of diversion and change in contents in Burnett Lake furnished by City of Asheville, Division of Watersheds. Records of evaporation furnished by Tennessee Valley Authority.

## Beetree Creek near Swannanoa, N. C.

Location.--Lat 35°39'11", long 82°24'20", on left bank 1,000 ft upstream from Beetree Reservoir and 3.8 miles north of Swannanoa, Buncombe County.

Drainage area.--5.46 sq mi.

Records available.--February 1926 to September 1957.

Gage.--Water-stage recorder and modified Parshall flume set in masonry control. Datum of gage is 2,728.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--31 years, 10.3 cfs.

Extremes.--Maximum discharge during year, 284 cfs Apr. 4 (gage height, 3.96 ft); minimum, 0.8 cfs Sept. 3, 4, 6, 7 (gage height, 0.34 ft).
1926-57: Maximum discharge, 1,370 cfs Aug. 13, 1940 (gage height, 6.20 ft), from rating curve extended above 240 cfs on basis of computation of peak flow over weir; minimum, 0.3 cfs Sept. 29, 30, Oct. 1, 1954 (gage height, 0.26 ft).

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928, 1936-37(M). WSP 953: 1929(M). WSP 1276: 1932.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 23

| | | | |
|---|---|---|---|
| 0.4 | 1.0 | 1.3 | 11 |
| .5 | 1.6 | 1.6 | 17 |
| .6 | 2.4 | 2.0 | 26 |
| .8 | 4.4 | 2.3 | 35 |
| 1.0 | 7.0 | | |

Dec. 24 to Sept. 30

| | | | |
|---|---|---|---|
| 0.3 | 0.6 | 1.6 | 17 |
| .4 | 1.1 | 2.0 | 26 |
| .5 | 1.8 | 2.5 | 40 |
| .6 | 2.4 | 3.0 | 82 |
| .8 | 4.5 | 3.5 | 172 |
| 1.0 | 7.1 | 3.7 | 217 |
| 1.3 | 11 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.6 | 11 | 2.6 | 9.0 | 76 | *43 | 12 | 14 | 4.6 | 14 | 2.0 | 0.9 |
| 2 | 1.4 | *8.8 | 2.6 | 7.9 | 49 | 33 | 33 | 13 | 4.5 | 12 | 2.2 | .9 |
| 3 | 1.2 | 7.6 | 2.5 | 7.5 | 39 | 26 | 23 | *12 | 4.5 | 11 | 2.0 | .8 |
| 4 | *2.5 | 6.5 | 2.4 | *7.8 | 34 | 22 | 77 | 12 | 5.6 | 9.8 | 2.9 | .9 |
| 5 | 2.8 | 5.7 | *2.4 | 8.4 | 32 | 20 | 208 | 11 | 26 | 9.0 | *2.4 | *.9 |
| 6 | 2.0 | 5.2 | 2.4 | 7.6 | 38 | 18 | 85 | 10 | 16 | 7.9 | 1.9 | .8 |
| 7 | 1.7 | 5.0 | 2.4 | 7.4 | 35 | 17 | 49 | 9.8 | 12 | 7.0 | 1.8 | 1.0 |
| 8 | 1.5 | 5.5 | 2.3 | 7.0 | 33 | 17 | 42 | 9.4 | 13 | *6.2 | 1.7 | 1.0 |
| 9 | 1.4 | 4.6 | 2.2 | 6.8 | 38 | 15 | 39 | 9.0 | 19 | 5.6 | 1.6 | 2.2 |
| 10 | 1.3 | 4.3 | 2.1 | 7.0 | 37 | 14 | *32 | 8.6 | 15 | 5.1 | 1.5 | 1.9 |
| 11 | 1.3 | 4.0 | *2.1 | 6.4 | 32 | 14 | 26 | 11 | *13 | 4.6 | 1.4 | 1.5 |
| 12 | 1.2 | 3.8 | 6.7 | 6.3 | 26 | 15 | 23 | 9.3 | 11 | 4.3 | 1.4 | 1.4 |
| 13 | 1.2 | 3.5 | 7.8 | 6.2 | *23 | 14 | 20 | 8.6 | 9.8 | 4.0 | 1.3 | 1.2 |
| 14 | 1.2 | 3.4 | 21 | 5.8 | 20 | 13 | 18 | 8.4 | 9.0 | 3.6 | 1.4 | 1.1 |
| 15 | 1.1 | 3.3 | 30 | 5.8 | 18 | 12 | 17 | 8.2 | 8.3 | 5.5 | 2.2 | 1.1 |
| 16 | 1.0 | 3.3 | 33 | 5.5 | 17 | 12 | 15 | 7.5 | 8.7 | 4.2 | 1.8 | 7.2 |
| 17 | 1.0 | 7.9 | 19 | 4.8 | 15 | 11 | 14 | 7.4 | 8.3 | 4.4 | 1.4 | 5.9 |
| 18 | 1.5 | 6.5 | 14 | 4.5 | 14 | 11 | 14 | 7.1 | 7.5 | 4.0 | 1.5 | 3.5 |
| 19 | 1.5 | 5.6 | 11 | 4.5 | 15 | 11 | 13 | 7.0 | 8.4 | 4.2 | 2.1 | 3.3 |
| 20 | 1.3 | 5.2 | 10 | 4.8 | 14 | 10 | 12 | 6.8 | 8.4 | 3.4 | 1.7 | 2.8 |
| 21 | 1.6 | 5.0 | 9.1 | 5.5 | 13 | 10 | 11 | 6.2 | 7.2 | 3.1 | 2.0 | 2.5 |
| 22 | 15 | 4.6 | 11 | 11 | 12 | 11 | 11 | 7.0 | 8.4 | 3.0 | 2.2 | 2.2 |
| 23 | 8.8 | 4.1 | 15 | 50 | 12 | 11 | 13 | 6.8 | 18 | 3.1 | 1.5 | 2.0 |
| 24 | 6.0 | 4.1 | 40 | 26 | 11 | 11 | 13 | 6.0 | 19 | 3.3 | 1.4 | 1.8 |
| 25 | 4.9 | 3.8 | 24 | 20 | 12 | 12 | 12 | 5.9 | 17 | 3.0 | 1.4 | 1.5 |
| 26 | 4.4 | 3.6 | 18 | 16 | 30 | 12 | 11 | 5.6 | 14 | 2.7 | 1.3 | 1.4 |
| 27 | 4.6 | 3.3 | 15 | 16 | 23 | 11 | 11 | 7.0 | 13 | 2.5 | 1.2 | 1.4 |
| 28 | 4.1 | 3.1 | 13 | 15 | 40 | 11 | 12 | 5.9 | 14 | 2.4 | 1.2 | 2.0 |
| 29 | 3.8 | 3.2 | 11 | 16 | - | 10 | 13 | 5.2 | 17 | 2.3 | 1.1 | 3.5 |
| 30 | 3.7 | 2.9 | 10 | 17 | ------- | 9.8 | 14 | 5.1 | 16 | 2.3 | 1.0 | 3.1 |
| 31 | 3.7 | ------- | 9.7 | 85 | ------- | 9.4 | ------- | 4.9 | ------- | 2.2 | 1.0 | ------- |
| Total | 90.3 | 148.4 | 354.3 | 408.5 | 758 | 466.2 | 893 | 255.7 | 356.2 | 159.7 | 51.5 | 61.7 |
| Mean | 2.91 | 4.95 | 11.4 | 13.2 | 27.1 | 15.0 | 29.8 | 8.25 | 11.9 | 5.15 | 1.66 | 2.06 |
| Cfsm | 0.533 | 0.907 | 2.09 | 2.42 | 4.96 | 2.75 | 5.46 | 1.51 | 2.18 | 0.943 | 0.304 | 0.377 |
| In. | 0.62 | 1.01 | 2.41 | 2.78 | 5.16 | 3.18 | 6.08 | 1.74 | 2.43 | 1.09 | 0.35 | 0.42 |

Calendar year 1956: Max 76 Min 0.5 Mean 7.77 Cfsm 1.42 In. 19.37
Water year 1956-57: Max 208 Min 0.8 Mean 11.0 Cfsm 2.01 In. 27.27

Peak discharge (base, 150 cfs).--Jan. 31 (6:30 p.m.) 194 cfs (3.60 ft); Apr. 4 (10 p.m.) 284 cfs (3.96 ft).

* Discharge measurement made on this day.

## Swannanoa River at Biltmore, N. C.

Location.--Lat 35°34'06", long 82°32'42", on left bank at Biltmore, Buncombe County, 100 ft downstream from Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 miles upstream from mouth.

Drainage area.--130 sq mi.

Records available.--December 1920 to September 1926, May 1934 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Dec. 1, 1920, to Sept. 30, 1926, staff gage at site 100 ft upstream at same datum.

Average discharge.--28 years (1921-26, 1934-57), 151 cfs (unadjusted).

Extremes.--Maximum discharge during year, 5,340 cfs Apr. 5 (gage height, 10.80 ft); minimum, 14 cfs Sept. 3 (gage height, 1.22 ft); minimum daily, 16 cfs Aug. 31, Sept. 1, 3, 4.
1920-26, 1934-57: Maximum discharge, 18,400 cfs Aug. 13, 1940 (gage height, 19.00 ft), from rating curve extended above 8,400 cfs on basis of computation of peak flow over dam 3.6 miles above station; minimum, 1.1 cfs Oct. 9, 14, 15, 1941; minimum daily, 1.2 cfs Oct. 14, 1941; minimum gage height, 0.65 ft July 17, 1936.
Maximum stage known, 21.5 ft in July 1916, from floodmarks. Flood of Aug. 16, 1928, reached a stage of 18.74 ft, from floodmarks. Extremely high stages subject to backwater from French Broad River.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation from Lake Craig 3.6 miles above station after 1950 (reservoir silted). City of Asheville diverts its water supply above station from Beetree Reservoir (capacity, 843 cfs-days), North Fork Swannanoa River, and from Burnett Lake on North Fork (see p. 228). Textile mills 2.0 miles above gage divert for industrial use about 5.0 mgd, of which about 3 mgd, equivalent to a mean discharge of 4½ cfs, is discharged into French Broad River.

Revisions (water years).--WSP 803: 1921(M), 1923-26(M). WSP 823: Drainage area.

Rating table, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 12 | 2.5 | 332 |
| 1.4 | 35 | 3.0 | 550 |
| 1.6 | 67 | 9.4 | 4,410 |
| 2.0 | 158 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 144 | 46 | 103 | 1,580 | 682 | 152 | 238 | 78 | 211 | 44 | a16 |
| 2 | 36 | 164 | 44 | b82 | 897 | 492 | 505 | 201 | 78 | 170 | *62 | a17 |
| 3 | *32 | 129 | 41 | b75 | 575 | 390 | *361 | *185 | 81 | 150 | 48 | a16 |
| 4 | 51 | 105 | *40 | *82 | 451 | 320 | 1,240 | 179 | 335 | 129 | 52 | *16 |
| 5 | 92 | 88 | 38 | 101 | 412 | 282 | *4,370 | 164 | 1,130 | *117 | 50 | 23 |
| 6 | 46 | *78 | 36 | 94 | 456 | *246 | 1,730 | 150 | 460 | 105 | 46 | 19 |
| 7 | 42 | 69 | 36 | 90 | 451 | 238 | 836 | 136 | 293 | 96 | 41 | 38 |
| 8 | 34 | 73 | 40 | 82 | 394 | 256 | 672 | 129 | 228 | 86 | 34 | 31 |
| 9 | 31 | 64 | 42 | 84 | 425 | 211 | 585 | 126 | 221 | 80 | a25 | 58 |
| 10 | 28 | 55 | 36 | 80 | 447 | 195 | 474 | 119 | *235 | 73 | a23 | 55 |
| 11 | 27 | 55 | 35 | 76 | 386 | 182 | 407 | 150 | 211 | 67 | a22 | 38 |
| 12 | 28 | 48 | 61 | 78 | 328 | 182 | 357 | 139 | 185 | 64 | a21 | 27 |
| 13 | 26 | 46 | 86 | 80 | *282 | 173 | 316 | 119 | 155 | 64 | a20 | 22 |
| 14 | 27 | 41 | 156 | 75 | 249 | 167 | 286 | 119 | 164 | 62 | a21 | 26 |
| 15 | 26 | 40 | 324 | 71 | 218 | 161 | 260 | 136 | 150 | 115 | a22 | 28 |
| 16 | 22 | 40 | 336 | 69 | 208 | 147 | 242 | 114 | 149 | 101 | a20 | 126 |
| 17 | 22 | 78 | 232 | b60 | 188 | 144 | 224 | 101 | 173 | 105 | a20 | 186 |
| 18 | 35 | 96 | 170 | b45 | 170 | 142 | 218 | 112 | 139 | 76 | a22 | 92 |
| 19 | 47 | 86 | 134 | b45 | 173 | 158 | 208 | 107 | 139 | 71 | a25 | 96 |
| 20 | 32 | 78 | 117 | b65 | 176 | 139 | 198 | 103 | 117 | 69 | a21 | 94 |
| 21 | 40 | 73 | 105 | 64 | 161 | 126 | 188 | 90 | 103 | 64 | a23 | 80 |
| 22 | 186 | 67 | 181 | 76 | 147 | 142 | 176 | 96 | 99 | 60 | a21 | 86 |
| 23 | 164 | 65 | 174 | 461 | 139 | 142 | 222 | 96 | 166 | 82 | a20 | 71 |
| 24 | 119 | 58 | 487 | 438 | 136 | 136 | 293 | 92 | 274 | 130 | a20 | 58 |
| 25 | 90 | 58 | 332 | 278 | 134 | 170 | 232 | 107 | 260 | 75 | a20 | 47 |
| 26 | 76 | 53 | 238 | 221 | 608 | 153 | 201 | 96 | 214 | 62 | a19 | 42 |
| 27 | 69 | 50 | 188 | 204 | 492 | 144 | 185 | 119 | 173 | 60 | a19 | 40 |
| 28 | 65 | 47 | 158 | 198 | 562 | 134 | 226 | 96 | 195 | 62 | a19 | 47 |
| 29 | 58 | 46 | 142 | 188 | - | 126 | 249 | 84 | 289 | 50 | a19 | 106 |
| 30 | 55 | 46 | 121 | 218 | -------- | 124 | 235 | 82 | 242 | 48 | a17 | 147 |
| 31 | 60 | -------- | 109 | *816 | -------- | 121 | -------- | 78 | -------- | 47 | a16 | -------- |
| Total | 1,706 | 2,140 | 4,285 | 4,699 | 10,845 | 6,425 | 15,848 | 3,863 | 6,736 | 2,751 | 852 | 1,748 |
| Mean | 55.0 | 71.3 | 138 | 152 | 387 | 207 | 528 | 125 | 225 | 88.7 | 27.5 | 58.3 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 1,140 Min 8.2 Mean 106 Cfsm - In. -
Water year 1956-57: Max 4,370 Min 16 Mean 170 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Cane Creek at Fletcher and North Fork Swannanoa River near Black Mountain.
b Stage-discharge relation affected by ice.

## French Broad River at Asheville, N. C.

Location.--Lat 35°36'32", long 82°34'41", on right bank at downstream side of Pearson Bridge at Asheville, Buncombe County, 2.3 miles downstream from Southern Railway station, 3.1 miles downstream from Swannanoa River, and at mile 145.8.

Drainage area.--945 sq mi.

Records available.--September 1895 to December 1901 and January 1905 to September 1957 in reports of Geological Survey. September 1895 to December 1901 and March 1903 to December 1923 in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34. Records prior to January 1909 have been revised in these two bulletins.

Gage.--Water-stage recorder. Datum of gage is 1,950.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Sept. 17, 1895, to Dec. 31, 1901, wire-weight gage at present site at different datum. Mar. 19, 1903, to July 15, 1916, and Jan. 1, 1917, to Sept. 30, 1922, staff gage at Smith Bridge 1.5 miles upstream at datum 11.52 ft higher. Oct. 1, 1922, to Aug. 9, 1930, chain gage at present site and datum.

Average discharge.--60 years (1895-1901, 1903-57), 2,069 cfs.

Extremes.--Maximum discharge during year, 24,200 cfs Apr. 5 (gage height, 10.30 ft); minimum, 473 cfs Oct. 15, 16 (gage height, 0.66 ft).
1895-1901, 1903-57: Maximum discharge, 110,000 cfs July 16, 1916 (gage height, 23.1 ft, present site and datum, from floodmarks), from rating curve extended above 43,000 cfs; minimum, 239 cfs at times in August and September 1925 (gage height, 0.16 ft).

Remarks.--Records excellent. Small diversions from tributaries for water supply. Slight diurnal fluctuation and occasional slight regulation at low flow caused by powerplants and small reservoirs above station. Records of chemical analyses for the water year 1957 are given in WSP 1520.

Revisions.--WSP 823: Drainage area. See also Records available.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 700 | 1,170 | 653 | 1,190 | 9,540 | 5,520 | 1,700 | 2,250 | 1,240 | 2,670 | 870 | 607 |
| 2 | 653 | 1,700 | 635 | 1,170 | 7,890 | 4,310 | *4,940 | 2,160 | 1,150 | 2,250 | 903 | 589 |
| 3 | 635 | 1,310 | 599 | 1,110 | 5,990 | 3,330 | 5,050 | 2,000 | 1,220 | 2,010 | 936 | 598 |
| 4 | 700 | 1,130 | 608 | 1,120 | 4,320 | 2,880 | 6,480 | 2,010 | 1,800 | 1,840 | 870 | 616 |
| 5 | 879 | 989 | 635 | 1,190 | 3,760 | 2,610 | *22,300 | 1,940 | 7,390 | 1,700 | 936 | 607 |
| 6 | 770 | 923 | 626 | 1,160 | 3,470 | 2,420 | *19,700 | 1,810 | 5,980 | 1,590 | 820 | 616 |
| 7 | 710 | 901 | 626 | 1,060 | 3,360 | 2,310 | 13,800 | 1,720 | 3,560 | 1,480 | 780 | 625 |
| 8 | 617 | 934 | 626 | 1,040 | 3,150 | 2,600 | 8,910 | 1,650 | 2,680 | 1,370 | 740 | 616 |
| 9 | 564 | 901 | 590 | 1,000 | 2,950 | 2,440 | 6,560 | 1,630 | 2,400 | 1,340 | 720 | 961 |
| 10 | 564 | 802 | 539 | 981 | 2,880 | 2,180 | 4,960 | 1,590 | 2,260 | 1,340 | 700 | 1,400 |
| 11 | 564 | 750 | 530 | 970 | 2,610 | 2,020 | 4,170 | 1,700 | 2,080 | 1,210 | 670 | 1,190 |
| 12 | 582 | 680 | 653 | 913 | 2,360 | 1,950 | 3,750 | 1,760 | 1,900 | 1,150 | 625 | 956 |
| 13 | 573 | 680 | 1,040 | 913 | 2,200 | *1,890 | 3,460 | 1,630 | 1,870 | 1,110 | *616 | *802 |
| 14 | 556 | 690 | 1,370 | 913 | 2,070 | 1,840 | 3,200 | 1,560 | 1,870 | 1,110 | 740 | 700 |
| 15 | 489 | 710 | 3,380 | 891 | 1,950 | 1,850 | 2,990 | *1,680 | 2,860 | 1,310 | 860 | 653 |
| 16 | 481 | 700 | 2,810 | 891 | 1,880 | 1,780 | 2,810 | 1,700 | 2,240 | 1,250 | 770 | 1,370 |
| 17 | *489 | 813 | *2,070 | 891 | 1,820 | 1,680 | 2,700 | 1,470 | 2,060 | *1,160 | 710 | 3,430 |
| 18 | 564 | 1,030 | 1,610 | 804 | 1,700 | 1,640 | 2,650 | 1,440 | 2,120 | 1,400 | 690 | 3,600 |
| 19 | 750 | *868 | *1,400 | 752 | 1,740 | 1,950 | *2,670 | 1,430 | 2,180 | 1,280 | 1,470 | 2,240 |
| 20 | 791 | 791 | 1,230 | 794 | *2,080 | 1,980 | 2,520 | 1,430 | 1,980 | 1,190 | 1,840 | 1,870 |
| 21 | 690 | 791 | 1,110 | 825 | 1,840 | 1,770 | 2,430 | 1,380 | *1,690 | 1,080 | 1,160 | 1,780 |
| 22 | 1,720 | 770 | 1,290 | 958 | 1,680 | 1,750 | 2,400 | 1,300 | 1,730 | 980 | 980 | 1,660 |
| 23 | 3,070 | 760 | 1,590 | 3,360 | 1,620 | 1,770 | 2,510 | 1,300 | 2,360 | 1,010 | 840 | 1,480 |
| 24 | 1,820 | 720 | 3,790 | *3,880 | 1,570 | 1,700 | 2,760 | 1,340 | 2,830 | 1,140 | 780 | 1,410 |
| 25 | 1,310 | 710 | 3,580 | 2,420 | 1,550 | 1,960 | 2,400 | 1,510 | 3,260 | 1,380 | 740 | 1,230 |
| 26 | 1,130 | 700 | 2,420 | 1,960 | 3,370 | 2,160 | 2,220 | 1,370 | 3,450 | 1,090 | 690 | 1,090 |
| 27 | 1,070 | 690 | 1,950 | 1,820 | 4,130 | 1,960 | 2,120 | 1,550 | 2,490 | 980 | 680 | 1,000 |
| 28 | 945 | 671 | 1,680 | 1,800 | 3,950 | 1,800 | 2,080 | 1,480 | 2,320 | 947 | 690 | 989 |
| 29 | 813 | 662 | 1,540 | 1,710 | - | 1,700 | 2,140 | 1,260 | 3,800 | 860 | 670 | 1,960 |
| 30 | 813 | 671 | 1,400 | 2,130 | ------- | 1,640 | 2,130 | 1,220 | 3,580 | 840 | 652 | 3,550 |
| 31 | 846 | ------- | 1,270 | 4,580 | ------- | 1,590 | ------- | 1,350 | ------- | 870 | 625 | ------- |
| Total | 26,858 | 25,617 | 43,850 | 45,196 | 87,430 | 68,980 | 148,510 | 49,620 | 78,350 | 40,937 | 25,773 | 40,195 |
| Mean | 866 | 854 | 1,415 | 1,458 | 3,122 | 2,225 | 4,950 | 1,601 | 2,612 | 1,321 | 831 | 1,340 |
| Cfsm | 0.916 | 0.904 | 1.50 | 1.54 | 3.30 | 2.35 | 5.24 | 1.69 | 2.76 | 1.40 | 0.879 | 1.42 |
| In. | 1.06 | 1.01 | 1.73 | 1.78 | 3.44 | 2.71 | 5.84 | 1.95 | 3.08 | 1.61 | 1.01 | 1.58 |

Calendar year 1956: Max 9,250 Min 350 Mean 1,264 Cfsm 1.34 In. 18.20
Water year 1956-57: Max 22,300 Min 481 Mean 1,867 Cfsm 1.98 In. 26.80

Peak discharge (base, 9,000 cfs).--Feb. 1 (3 a.m.) 10,700 cfs (6.18 ft); Apr. 5 (3 p.m.) 24,200 cfs (10.30 ft).
* Discharge measurement made on this day.

## Ivy River near Marshall, N. C.

Location.--Lat 35°46'10", long 82°37'16", on right bank 0.2 mile downstream from highway bridge, 1.9 miles upstream from mouth, and 4.0 miles southeast of Marshall, Madison County.

Drainage area.--158 sq mi.

Records available.--May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,700.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 147 cfs.

Extremes.--Maximum discharge during year, 8,680 cfs Apr. 5 (gage height, 12.55 ft); minimum, 19 cfs Sept. 2, 3 (gage height, 1.73 ft).

1934-57: Maximum discharge, 8,880 cfs Aug. 30, 1940 (gage height, 12.67 ft), from rating curve extended above 5,400 cfs on basis of slope-area determination of peak flow; minimum, 3 cfs Jan. 20, 1940, result of freezeup; minimum gage height, 1.51 ft Aug. 30, Sept. 2, 1953; minimum daily discharge, 8.5 cfs Sept. 2, 18, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 803: 1934(M), 1935.

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to June 5 | | | | June 6 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.8 | 25 | 5.0 | 875 | 1.7 | 17 | 3.0 | 186 |
| 2.2 | 64 | 6.0 | 1,420 | 1.9 | 31 | 3.5 | 296 |
| 2.6 | 123 | 7.0 | 2,190 | 2.2 | 63 | 4.0 | 450 |
| 3.0 | 191 | 8.0 | 3,170 | 2.5 | 104 | 4.6 | 685 |
| 3.5 | 302 | 9.0 | 4,250 | | | | |
| 4.0 | 450 | 9.8 | 5,200 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a60 | 95 | a40 | 86 | 2,850 | 450 | 113 | 187 | 101 | 177 | 31 | 20 |
| 2 | a50 | 84 | a40 | 72 | *1,400 | 366 | 330 | 219 | 100 | 135 | 36 | 19 |
| 3 | a45 | 63 | a39 | 65 | 708 | 308 | 232 | 230 | 123 | 118 | 29 | 19 |
| 4 | a47 | 56 | a38 | 79 | 737 | 254 | 2,110 | 224 | 354 | 104 | 48 | 32 |
| 5 | a50 | 50 | a37 | 123 | 762 | 226 | 5,140 | 186 | 1,540 | 94 | 86 | 29 |
| 6 | a60 | 48 | a37 | 106 | 888 | 202 | 1,340 | 161 | 680 | 86 | 42 | 23 |
| 7 | a55 | 46 | a37 | 102 | 654 | 199 | 690 | 146 | 412 | 76 | 33 | 127 |
| 8 | a40 | 60 | a36 | 95 | 543 | 224 | 612 | 134 | 280 | 70 | 30 | 36 |
| 9 | a35 | 54 | a35 | 92 | 1,690 | 200 | 552 | 125 | 416 | 66 | *28 | 33 |
| 10 | a32 | 49 | a37 | 95 | 991 | 191 | 444 | 117 | 251 | 63 | 27 | 38 |
| 11 | a31 | 45 | a36 | 89 | *644 | 191 | 372 | 139 | 224 | 56 | 26 | *38 |
| 12 | a30 | 44 | a90 | 85 | 496 | *195 | 313 | 126 | 200 | 52 | 25 | 43 |
| 13 | a29 | 41 | a200 | 82 | *342 | 184 | 266 | 110 | 201 | 50 | 22 | 31 |
| 14 | a28 | 40 | a185 | 78 | 297 | 175 | 234 | *104 | 363 | 48 | 23 | 27 |
| 15 | *27 | 39 | a300 | 74 | 250 | 166 | 218 | 107 | a200 | 79 | 126 | 26 |
| 16 | 27 | 39 | a250 | 72 | 243 | 151 | 200 | 96 | a190 | *75 | 63 | 98 |
| 17 | 27 | 86 | *159 | b55 | 210 | 142 | 187 | 94 | a220 | 58 | 40 | 125 |
| 18 | 30 | 92 | 128 | b45 | 189 | 137 | *173 | 95 | 235 | 63 | 38 | 110 |
| 19 | 41 | *67 | 106 | b50 | 189 | 149 | 164 | 146 | *181 | 59 | 42 | 82 |
| 20 | 33 | 60 | 92 | 70 | 193 | 133 | 154 | 166 | 161 | 48 | 36 | 68 |
| 21 | 31 | 57 | 85 | 74 | 173 | 125 | 146 | 109 | 132 | 46 | 32 | 57 |
| 22 | 96 | 62 | 118 | 72 | 163 | 137 | 148 | 100 | 114 | 49 | 31 | 50 |
| 23 | 88 | 52 | 134 | 588 | 153 | 134 | 206 | 110 | 129 | 42 | 28 | 43 |
| 24 | 57 | 51 | 658 | 319 | 146 | 126 | 212 | 94 | 174 | 52 | 27 | 42 |
| 25 | 49 | 48 | 319 | 232 | 142 | 158 | 170 | 109 | 146 | 48 | 26 | 37 |
| 26 | 44 | 48 | 210 | 186 | 206 | 136 | 153 | 133 | 124 | 41 | 27 | 34 |
| 27 | 46 | 46 | 161 | 240 | 184 | 131 | 142 | 352 | 129 | 37 | 25 | 34 |
| 28 | 45 | 43 | 134 | *324 | 308 | 123 | 148 | 193 | 112 | 38 | 23 | 37 |
| 29 | 42 | a40 | 118 | 305 | - | 118 | 163 | 144 | 186 | 36 | 22 | 57 |
| 30 | 41 | a43 | 102 | 360 | ------- | 113 | 186 | 123 | 209 | 35 | 21 | 57 |
| 31 | 42 | ------- | 94 | 3,320 | ------- | 110 | ------- | 112 | ------- | 35 | 21 | ------- |
| Total | 1,358 | 1,648 | 4,055 | 7,635 | 15,751 | 5,654 | 15,518 | 4,491 | 7,887 | 2,036 | 1,114 | 1,472 |
| Mean | 43.8 | 54.9 | 131 | 246 | 563 | 182 | 517 | 145 | 263 | 65.7 | 35.9 | 49.1 |
| Cfsm | 0.277 | 0.347 | 0.829 | 1.56 | 3.56 | 1.15 | 3.27 | 0.918 | 1.66 | 0.416 | 0.227 | 0.311 |
| In. | 0.32 | 0.39 | 0.95 | 1.80 | 3.71 | 1.33 | 3.65 | 1.06 | 1.86 | 0.48 | 0.26 | 0.35 |

Calendar year 1956: Max 1,890 Min 16 Mean 126 Cfsm 0.797 In. 10.86
Water year 1956-57: Max 5,140 Min 19 Mean 188 Cfsm 1.19 In. 16.16

Peak discharge (base, 2,700 cfs).--Jan. 31 (9 p.m.) 6,480 cfs (10.85 ft); Apr. 5 (12:30 a.m.) 8,680 cfs (12.55 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Big Laurel Creek near Stackhouse.

b Stage-discharge relation affected by ice.

## French Broad River at Marshall, N. C.

Location.--Lat 35°47'16", long 82°39'47", on right bank 0.4 mile upstream from Hayes Creek, 1.0 mile downstream from Ivy River, 1.5 miles southeast of Marshall, Madison County, and at mile 126.5.

Drainage area.--1,332 sq mi.

Records available.--October 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,646.79 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 2,205 cfs.

Extremes.--Maximum discharge during year, 33,100 cfs Apr. 5 (gage height, 10.48 ft); minimum, 354 cfs Sept. 5 (gage height, 0.64 ft); minimum daily, 566 cfs Oct. 16.
1942-57: Maximum discharge, that of Apr. 5, 1957; minimum, 193 cfs Sept. 13, 14, 1954 (gage height, 0.36 ft); minimum daily, 292 cfs Sept. 27, 28, 1954.
Floods of July 1916 and Aug. 30, 1940, reached stages of 18½ and 13½ ft, respectively, from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent. Diurnal fluctuation at low flow caused by powerplants above station. Records of chemical analyses for the water year 1957 are given in WSP 1520.

Revisions (water years).--WSP 1436: 1954(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Apr. 5 | | | | Apr. 6 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 530 | 5.0 | 8,750 | 0.9 | 545 | 4.0 | 6,000 |
| 1.0 | 620 | 6.0 | 12,400 | 1.0 | 635 | 5.0 | 9,030 |
| 1.5 | 1,150 | 7.0 | 16,500 | 1.5 | 1,190 | 6.0 | 12,700 |
| 2.0 | 1,810 | 8.0 | 20,900 | 2.0 | 1,880 | 7.0 | 16,700 |
| 3.0 | 3,540 | 9.0 | 25,600 | 3.0 | 3,600 | 8.2 | 21,900 |
| 4.0 | 5,790 | 9.9 | 30,100 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 903 | 1,260 | 821 | 1,460 | 14,900 | 6,490 | 1,930 | 2,760 | 1,630 | 3,100 | 1,000 | 675 |
| 2 | 810 | 1,960 | 800 | 1,400 | 10,600 | 5,230 | *5,050 | 2,740 | 1,510 | 2,570 | 1,000 | 626 |
| 3 | 790 | 1,570 | 780 | 1,350 | 7,610 | 4,080 | 5,540 | 2,550 | 1,590 | 2,310 | 1,070 | 655 |
| 4 | 790 | 1,360 | 770 | 1,370 | 5,740 | 3,460 | 10,200 | 2,530 | 2,520 | 2,140 | 1,010 | 716 |
| 5 | 1,070 | 1,200 | 790 | 1,460 | 5,250 | 3,060 | *30,000 | 2,440 | 10,600 | 1,980 | 1,150 | 675 |
| 6 | 953 | 1,110 | 790 | 1,480 | 5,560 | 2,780 | *21,900 | 2,280 | 7,680 | 1,860 | 933 | 665 |
| 7 | 876 | 1,090 | 780 | 1,340 | 4,850 | 2,670 | 16,100 | 2,150 | 4,760 | 1,730 | 889 | 834 |
| 8 | 760 | 1,160 | 790 | 1,280 | 4,360 | 2,980 | 10,800 | 2,060 | 3,300 | 1,600 | 834 | 705 |
| 9 | 674 | 1,110 | 760 | 1,250 | 5,480 | 2,820 | 8,270 | 2,000 | 3,130 | 1,550 | *790 | 834 |
| 10 | 674 | 986 | 692 | 1,230 | 4,620 | 2,530 | 6,270 | 1,960 | 2,790 | 1,560 | 768 | 1,600 |
| 11 | 683 | 942 | 674 | 1,210 | 3,840 | 2,380 | 5,210 | 2,100 | 2,550 | 1,440 | 746 | *1,560 |
| 12 | 674 | 865 | 810 | 1,160 | 3,280 | *2,350 | 4,610 | 2,160 | 2,340 | 1,360 | 685 | 1,290 |
| 13 | 683 | 843 | 1,260 | 1,140 | *2,910 | 2,240 | 4,200 | 2,040 | 2,210 | 1,320 | 655 | 1,050 |
| 14 | 665 | 854 | 1,500 | 1,140 | 2,650 | 2,140 | 3,810 | *1,900 | 2,450 | 1,280 | 779 | 900 |
| 15 | 620 | 876 | 3,500 | 1,110 | 2,450 | 2,130 | 3,540 | 2,000 | 2,970 | 1,540 | 1,130 | 845 |
| 16 | *566 | 876 | 3,540 | 1,100 | 2,370 | 2,060 | 3,320 | 2,060 | 2,760 | *1,580 | 966 | 1,320 |
| 17 | 593 | 1,040 | *2,600 | 1,090 | 2,250 | 1,960 | 3,150 | 1,980 | 2,530 | 1,370 | 834 | 3,580 |
| 18 | 638 | 1,270 | 2,060 | 1,030 | 2,110 | 1,940 | 3,080 | 1,840 | 2,550 | 1,580 | 779 | 4,020 |
| 19 | 887 | *1,170 | 1,780 | 1,010 | 2,110 | 2,160 | *3,100 | 1,800 | 2,650 | 1,520 | 1,190 | 2,720 |
| 20 | 953 | 997 | 1,600 | 964 | 2,430 | 2,300 | 2,980 | 1,910 | *2,470 | 1,410 | 2,150 | 2,150 |
| 21 | 843 | 1,010 | 1,450 | 1,040 | 2,250 | 2,060 | 2,880 | 1,730 | 2,100 | 1,290 | 1,490 | 2,080 |
| 22 | 1,580 | 975 | 1,600 | 1,110 | 2,060 | 2,050 | 2,840 | 1,650 | 1,920 | 1,180 | 1,170 | 1,960 |
| 23 | 3,440 | 953 | 1,860 | 3,620 | 1,980 | 2,080 | 2,930 | 1,650 | 2,480 | 1,150 | 966 | 1,730 |
| 24 | 2,220 | 898 | 4,530 | 4,670 | 1,920 | 2,000 | 3,290 | 1,740 | 3,000 | 1,370 | 911 | 1,630 |
| 25 | 1,560 | 887 | 4,490 | 3,150 | 1,880 | 2,250 | 2,890 | 1,880 | 3,600 | 1,580 | 867 | 1,420 |
| 26 | 1,340 | 876 | 3,060 | 2,450 | 3,320 | 2,430 | 2,670 | 1,730 | 3,750 | 1,290 | 823 | 1,290 |
| 27 | 1,250 | 854 | 2,430 | 2,350 | 4,600 | 2,300 | 2,550 | 2,310 | 3,020 | 1,150 | 790 | 1,180 |
| 28 | 1,160 | 843 | 2,080 | 2,400 | 4,290 | 2,110 | 2,500 | 1,980 | 2,570 | 1,080 | 790 | 1,190 |
| 29 | 964 | 832 | 1,880 | 2,240 | - | 2,000 | 2,690 | 1,670 | 3,870 | 1,010 | 779 | 1,830 |
| 30 | 953 | 843 | 1,730 | *2,650 | ------- | 1,960 | 2,670 | 1,560 | 4,090 | 955 | 735 | 3,640 |
| 31 | 1,010 | ------- | 1,560 | 9,940 | ------- | 1,880 | -------- | 1,670 | -------- | 1,010 | 685 | ---- --- |
| Total | 31,582 | 31,510 | 53,767 | 60,194 | 117,670 | 80,880 | 180,970 | 62,830 | 95,390 | 47,865 | 29,364 | 45,370 |
| Mean | 1,019 | 1,050 | 1,734 | 1,942 | 4,202 | 2,609 | 6,032 | 2,027 | 3,180 | 1,544 | 947 | 1,512 |
| Cfsm | 0.765 | 0.788 | 1.30 | 1.46 | 3.15 | 1.96 | 4.53 | 1.52 | 2.39 | 1.16 | 0.711 | 1.14 |
| In. | 0.88 | 0.88 | 1.50 | 1.68 | 3.29 | 2.26 | 5.05 | 1.75 | 2.66 | 1.34 | 0.82 | 1.27 |

Calendar year 1956: Max 12,200 Min 367 Mean 1,572 Cfsm 1.18 In. 16.08
Water year 1956-57: Max 30,000 Min 566 Mean 2,294 Cfsm 1.72 In. 23.38

Peak discharge (base, 10,000 cfs).--Jan. 31 (11 p.m.) 20,800 cfs (7.98 ft); Apr. 5 (1:30 a.m.) 33,100 cfs (10.48 ft); June 5 (10 a.m.) 12,400 cfs (5.92 ft).
* Discharge measurement made on this day.

## Big Laurel Creek near Stackhouse, N. C.

Location.--Lat 35°55'11", long 82°45'42", on left bank 50 ft west of State Highway 208, 0.2 mile downstream from Big Hurricane Creek, 0.6 mile upstream from Little Hurricane Creek, 2.8 miles north of Stackhouse, Madison County, and 4.2 miles upstream from mouth.

Drainage area.--126 sq mi.

Records available.--May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,595.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 179 cfs.

Extremes.--Maximum discharge during year, 7,700 cfs Jan. 31 (gage height, 8.15 ft); minimum, 24 cfs Nov. 28 (gage height, 1.20 ft), result of freezeup; minimum daily, 34 cfs Oct. 14-17.

1934-57: Maximum discharge, that of Jan. 31, 1957; minimum, 11 cfs Jan. 6, 1942 (gage height, 0.92 ft), result of freezeup; minimum daily, 19 cfs Sept. 2, 16-18, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to June 17 | | | | June 18 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.2 | 29 | 3.0 | 580 | 1.2 | 29 | 2.0 | 157 |
| 1.4 | 49 | 3.5 | 900 | 1.4 | 46 | 2.5 | 325 |
| 1.6 | 77 | 4.0 | 1,310 | 1.6 | 71 | 3.1 | 640 |
| 1.8 | 113 | 5.0 | 2,390 | 1.8 | 108 | | |
| 2.0 | 162 | 6.0 | 3,800 | | | | |
| 2.5 | 332 | 6.3 | 4,280 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47 | 53 | 41 | 94 | 3,580 | 574 | a145 | 245 | 144 | 165 | 54 | 38 |
| 2 | 42 | 47 | 41 | b70 | 1,820 | 416 | 190 | 299 | 136 | 136 | 63 | 36 |
| 3 | 40 | 40 | 41 | b70 | 858 | 328 | 157 | 393 | 146 | 124 | 52 | 52 |
| 4 | 44 | 38 | 41 | 96 | 1,360 | 274 | 1,330 | 304 | 149 | 113 | 93 | 65 |
| 5 | 45 | 37 | 41 | 176 | 1,260 | 238 | 3,720 | 238 | 262 | 104 | 156 | 46 |
| 6 | 53 | 37 | 41 | 170 | 1,110 | 215 | 1,020 | 202 | 248 | 98 | 67 | 40 |
| 7 | 47 | 38 | 41 | 168 | 837 | 212 | 604 | 179 | 238 | 92 | 55 | 37 |
| 8 | 38 | 76 | 40 | 149 | 922 | 245 | 688 | 165 | 190 | 85 | 50 | 37 |
| 9 | 37 | 68 | 40 | 154 | 2,060 | 218 | 900 | 152 | 176 | 81 | *47 | 42 |
| 10 | 35 | 53 | 45 | 179 | 1,570 | 212 | 592 | 146 | 154 | 80 | 46 | 158 |
| 11 | 35 | 47 | 42 | 179 | 952 | 238 | 440 | 165 | 149 | 74 | 44 | 103 |
| 12 | 35 | 46 | 76 | 165 | 598 | *266 | 354 | 146 | 146 | 71 | 42 | *146 |
| 13 | 35 | 45 | 196 | 144 | *450 | 259 | 308 | 129 | 218 | 68 | 42 | 81 |
| 14 | 34 | 44 | 176 | 129 | 366 | 241 | 259 | *127 | 328 | 74 | 46 | 71 |
| 15 | *34 | 41 | 212 | 115 | 308 | 215 | 241 | 134 | 328 | 96 | 248 | 90 |
| 16 | 34 | 44 | 296 | 107 | 300 | 196 | 221 | 129 | 228 | *113 | 117 | 333 |
| 17 | 34 | 82 | *193 | b85 | 255 | 182 | 206 | 113 | 383 | 94 | 106 | 638 |
| 18 | 38 | 84 | 144 | b70 | 224 | 176 | *190 | 115 | 374 | 100 | 81 | 215 |
| 19 | 53 | *58 | 113 | b75 | 228 | 182 | 184 | 154 | 313 | 96 | 88 | 165 |
| 20 | 41 | 53 | 100 | 105 | 215 | 162 | 182 | 157 | *222 | 74 | 76 | 124 |
| 21 | 40 | 50 | 96 | 98 | 193 | 149 | 179 | 120 | 171 | 68 | 64 | 110 |
| 22 | 71 | 59 | 139 | 94 | 182 | 162 | 187 | 129 | 144 | 65 | 58 | 106 |
| 23 | 70 | 47 | 165 | 419 | 173 | 159 | 218 | 139 | 149 | 65 | 52 | 110 |
| 24 | 49 | 47 | 536 | 328 | 165 | 149 | 209 | 120 | 177 | 115 | 50 | 117 |
| 25 | 44 | 45 | 345 | 241 | 162 | a215 | 182 | 122 | 218 | 78 | 49 | 96 |
| 26 | 41 | 47 | 218 | 196 | 176 | 170 | 165 | 209 | 160 | 67 | 50 | 81 |
| 27 | 40 | 47 | 165 | 285 | 165 | 179 | 157 | 516 | 139 | 63 | 46 | a80 |
| 28 | 38 | b40 | 136 | *1,650 | 294 | 165 | 162 | 354 | 144 | 60 | 43 | a85 |
| 29 | 37 | b40 | 120 | 1,100 | - | 157 | 173 | 235 | 185 | 56 | 42 | a120 |
| 30 | 36 | 45 | 105 | 1,040 | ------- | 152 | 236 | 184 | 179 | 56 | 41 | a150 |
| 31 | 37 | ------- | 98 | 4,150 | ------- | 146 | ------- | 157 | ------- | 55 | 40 | ------- |
| Total | 1,304 | 1,498 | 4,083 | 12,101 | 20,763 | 6,852 | 13,799 | 5,977 | 6,198 | 2,686 | 2,108 | 3,572 |
| Mean | 42.1 | 49.9 | 132 | 390 | 742 | 221 | 460 | 193 | 207 | 86.6 | 68.0 | 119 |
| Cfsm | 0.334 | 0.396 | 1.05 | 3.10 | 5.89 | 1.75 | 3.65 | 1.53 | 1.64 | 0.687 | 0.540 | 0.944 |
| In. | 0.38 | 0.44 | 1.21 | 3.57 | 6.13 | 2.02 | 4.07 | 1.76 | 1.83 | 0.79 | 0.62 | 1.05 |

Calendar year 1956: Max 2,640 Min 29 Mean 178 Cfsm 1.41 In. 19.21
Water year 1956-57: Max 4,150 Min 34 Mean 222 Cfsm 1.76 In. 23.87

Peak discharge (base, 1,500 cfs).--Jan. 28 (2:30 p.m.) 2,320 cfs (4.94 ft); Jan. 31 (9 p.m.) 7,700 cfs (8.15 ft); Feb. 4 (6 p.m.) 2,020 cfs (4.69 ft); Feb. 9 (8:30 a.m.) 2,650 cfs (5.20 ft); Apr. 4 (11:30 p.m.) 6,120 cfs (7.35 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Ivy River near Marshall.

b Stage-discharge relation affected by ice.

## French Broad River near Newport, Tenn.

Location.--Lat 35°58'54", long 83°09'40", on left bank 15 ft downstream from bridge on State Highway 35 at Oldtown, 1 mile northeast of Newport city limits, Cocke County, 3.7 miles upstream from Pigeon River, and at mile 77.5.

Drainage area.--1,858 sq mi.

Records available.--September 1900 to November 1901, November 1902 to December 1905, August to December 1907, and November 1920 to September 1957 in reports of Geological Survey. Records prior to October 1924 (prior to 1908, revised) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,011.61 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. September 1900 to November 1901 wire-weight gage at bridge at datum 1.3 ft higher. November 1902 to December 1905 wire-weight gage and August to December 1907 chain gage, at datum approximately 0.9 ft higher. November 1920 to Sept. 13, 1926, chain gage and Sept. 14, 1926, to Mar. 30, 1934, water-stage recorder, at left pier at present datum.

Average discharge.--38 years (1903-5, 1921-57), 2,766 cfs.

Extremes.--Maximum discharge during year, 54,900 cfs Apr. 5 (gage height, 15.75 ft); minimum, 570 cfs Oct. 18 (gage height, 1.25 ft); minimum daily, 655 cfs Oct. 17.

1900-1901, 1902-5, 1907, 1920-57: Maximum discharge, 76,300 cfs Aug. 30, 1940 (gage height, 19.25 ft); minimum, 208 cfs Oct. 23, 1952 (gage height, 0.97 ft); minimum daily, 240 cfs Sept. 9, 1925.

Floods of Feb. 28, 1902, and July 17, 1916, reached stages of about 23 ft (discharge, 101,000 cfs) and 22.5 ft (discharge, 97,000 cfs), respectively, present datum, from floodmarks.

Remarks.--Records good. Diurnal fluctuation during low flow caused by powerplants above station.

Revisions (water years).--WSP 783: 1933-34. WSP 823: Drainage area. WSP 893: 1928(M). WSP 1336: 1903(M), 1921-22(M), 1923, 1925(M), 1927(M), 1928, 1932. See also Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 2-10)

| | | | |
|---|---|---|---|
| 1.3 | 610 | 3.0 | 3,180 |
| 1.5 | 800 | 7.0 | 14,100 |
| 2.0 | 1,340 | 11.0 | 29,000 |
| 2.5 | 2,100 | 14.3 | 46,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,110 | 1,080 | 940 | 1,620 | 33,900 | 9,090 | 2,160 | 3,470 | 1,810 | 4,170 | 1,010 | 720 |
| 2 | 930 | 1,440 | 920 | 1,510 | 21,900 | 7,880 | 3,860 | 3,520 | 1,680 | 3,040 | 1,010 | 706 |
| 3 | 890 | 1,640 | 900 | 1,390 | 12,800 | 5,990 | *6,610 | *3,650 | 1,730 | 2,590 | 1,020 | 700 |
| 4 | *880 | 1,440 | 880 | 1,470 | 11,500 | 4,950 | 6,310 | 3,280 | 1,870 | 2,300 | 1,200 | 820 |
| 5 | 930 | 1,300 | 870 | 1,620 | 11,100 | *4,350 | *45,800 | 3,040 | 9,280 | 2,080 | 1,340 | *840 |
| 6 | 1,190 | *1,190 | *900 | 1,720 | 10,500 | 3,880 | 30,400 | 2,720 | 10,400 | 1,940 | 1,180 | 691 |
| 7 | 1,020 | 1,130 | 880 | 1,660 | *8,920 | 3,570 | 20,700 | 2,500 | *7,040 | 1,790 | 970 | 720 |
| 8 | 910 | 1,230 | 880 | *1,510 | 8,670 | 3,830 | 14,400 | 2,360 | 4,580 | 1,670 | 920 | 800 |
| 9 | 820 | 1,270 | 880 | 1,510 | 12,900 | 3,910 | 12,600 | 2,280 | 4,040 | *1,530 | *880 | *760 |
| 10 | 750 | 1,200 | 880 | 1,510 | 12,400 | 3,470 | 9,090 | 2,140 | 3,490 | 1,510 | 830 | 1,340 |
| 11 | 750 | 1,070 | 810 | 1,510 | 8,720 | 3,260 | 7,300 | 2,220 | 3,110 | 1,480 | 830 | 1,890 |
| 12 | 760 | 1,030 | 890 | 1,460 | 6,120 | 3,230 | 6,300 | 2,420 | 2,870 | 1,350 | 800 | 1,840 |
| 13 | 770 | 950 | 1,350 | 1,380 | 4,920 | 3,160 | 5,650 | 2,280 | 2,680 | 1,300 | 770 | 1,430 |
| 14 | 750 | 950 | 1,840 | 1,350 | 4,250 | 2,990 | 5,080 | 2,160 | 3,180 | 1,270 | 730 | 1,230 |
| 15 | 750 | 950 | 3,110 | 1,330 | 3,730 | 2,900 | 4,610 | 2,240 | 4,140 | 1,300 | 1,120 | 1,100 |
| 16 | 682 | 990 | 5,130 | 1,320 | 3,470 | 2,760 | 4,300 | 2,200 | 3,960 | 1,740 | 1,440 | 1,260 |
| 17 | 655 | 1,010 | 3,730 | 1,260 | 3,210 | 2,570 | 4,040 | 2,140 | 3,010 | 1,530 | 1,030 | 3,370 |
| 18 | 700 | 1,260 | 2,680 | 1,110 | 2,940 | 2,460 | 3,830 | 2,320 | 3,260 | 1,440 | 1,000 | *5,260 |
| 19 | 810 | 1,350 | 2,140 | 1,070 | 2,790 | 2,540 | 3,750 | 1,970 | 3,360 | 1,620 | 980 | 4,090 |
| 20 | 970 | 1,190 | 1,860 | 1,110 | 2,990 | 2,830 | 3,780 | 2,240 | 3,410 | 1,430 | 1,740 | 2,720 |
| 21 | 980 | 1,110 | 1,680 | 1,180 | 3,060 | 2,590 | 3,570 | 1,870 | 2,630 | 1,330 | 1,810 | 2,380 |
| 22 | 1,110 | 1,140 | 1,720 | 1,220 | 2,720 | 2,460 | 3,490 | 1,810 | 2,240 | 1,240 | 1,290 | 2,300 |
| 23 | 2,940 | 1,090 | 2,100 | 2,800 | 2,540 | 2,520 | 3,620 | 1,820 | 2,460 | 1,150 | 1,100 | 2,160 |
| 24 | 3,080 | 1,070 | 4,610 | 6,220 | 2,400 | 2,420 | 4,060 | 1,920 | 3,520 | 1,300 | 960 | *1,920 |
| 25 | 1,870 | 1,020 | 6,350 | 4,530 | 2,340 | 2,590 | 3,750 | 2,200 | 4,450 | 1,380 | 900 | 1,760 |
| 26 | 1,460 | 1,010 | 4,380 | 3,180 | 2,680 | 2,870 | 3,260 | 2,060 | 4,380 | 1,460 | 890 | 1,570 |
| 27 | 1,330 | 1,010 | 3,110 | 3,180 | 5,550 | 2,850 | 3,010 | 4,060 | 4,140 | 1,230 | 850 | 1,500 |
| 28 | 1,240 | 970 | 2,540 | 7,940 | 5,310 | 2,570 | 2,900 | 3,390 | 3,010 | 1,120 | 810 | 1,340 |
| 29 | 1,140 | 950 | 2,240 | *6,250 | - | 2,400 | 3,180 | 2,320 | 3,670 | 1,090 | 820 | 1,340 |
| 30 | 1,000 | 950 | 1,970 | 6,790 | -------- | 2,300 | 3,230 | 1,900 | 5,000 | 1,010 | 790 | 2,830 |
| 31 | 1,010 | -------- | 1,760 | 20,900 | -------- | 2,220 | -------- | 1,780 | -------- | 1,010 | 750 | -------- |
| Total | 34,187 | 34,190 | 64,930 | 92,610 | 214,330 | 107,410 | 234,640 | 76,280 | 114,400 | 50,400 | 31,770 | 51,387 |
| Mean | 1,103 | 1,140 | 2,095 | 2,987 | 7,655 | 3,465 | 7,821 | 2,461 | 3,813 | 1,626 | 1,025 | 1,713 |
| Cfsm | 0.594 | 0.614 | 1.13 | 1.61 | 4.12 | 1.86 | 4.21 | 1.32 | 2.05 | 0.875 | 0.552 | 0.922 |
| In. | 0.68 | 0.68 | 1.30 | 1.85 | 4.29 | 2.15 | 4.70 | 1.53 | 2.29 | 1.01 | 0.64 | 1.03 |

Calendar year 1956 : Max 17,100 Min 479 Mean 2,156 Cfsm 1.16 In. 15.79
Water year 1956-57 : Max 45,800 Min 655 Mean 3,032 Cfsm 1.63 In. 22.15

Peak discharge (base, 16,000 cfs).--Feb. 1 (2:30 a.m.) 46,500 cfs (14.35 ft); Apr. 5 (9:30 a.m.) 54,900 cfs (15.75 ft).

* Discharge measurement made on this day.

## West Fork Pigeon River above Lake Logan, near Hazelwood, N. C.

Location.--Lat 35°23'46", long 82°56'17", on right bank at upstream side of county bridge, 600 ft upstream from Big Creek, 1.1 miles upstream from Lake Logan, and 6.7 miles southeast of Hazelwood, Haywood County.

Drainage area.--27.6 sq mi.

Records available.--February 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,976.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 3,540 cfs Apr. 4 (gage height, 5.92 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 18 cfs Oct. 15-17, Sept. 7, 8; minimum gage height, 0.97 ft Oct. 15-17.
1954-57: Maximum discharge, 4,550 cfs Apr. 15, 1956 (gage height, 6.62 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 9.4 cfs Sept. 29, 30, 1954.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good.

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Apr. 4 | | | | Apr. 5 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.9 | 13 | 1.6 | 117 | 1.4 | 51 | 3.0 | 690 | 1.2 | 12 | 2.0 | 186 |
| 1.0 | 20 | 2.0 | 244 | 1.6 | 97 | 3.5 | 1,030 | 1.3 | 22 | 2.5 | 390 |
| 1.1 | 29 | 2.5 | 435 | 2.0 | 217 | 3.9 | 1,340 | 1.4 | 35 | 3.0 | 680 |
| 1.2 | 40 | 3.0 | 690 | 2.5 | 424 | | | 1.6 | 72 | 3.6 | 1,100 |
| 1.3 | 53 | 3.5 | 1,030 | | | | | 1.8 | 122 | | |
| 1.4 | 70 | 4.3 | 1,680 | | | | | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 128 | b29 | 83 | 861 | 257 | 624 | 173 | 54 | 125 | 49 | 21 |
| 2 | 23 | 55 | b28 | b67 | 502 | 191 | 408 | *134 | 54 | 108 | *49 | 20 |
| 3 | 22 | 48 | 30 | b65 | 443 | 168 | *194 | 128 | 54 | 98 | 35 | *19 |
| 4 | 24 | 45 | 29 | 92 | 507 | 156 | 1,270 | 128 | 221 | 90 | 42 | 21 |
| 5 | 24 | 41 | 28 | 110 | *406 | 147 | *1,050 | 108 | *697 | *84 | 40 | 20 |
| 6 | 30 | 40 | 29 | 83 | 401 | *141 | 440 | 100 | 183 | 77 | 31 | 19 |
| 7 | 24 | 40 | 29 | *85 | 410 | 141 | 322 | 93 | 150 | 72 | 30 | 19 |
| 8 | 21 | 52 | 28 | 74 | 326 | 130 | 434 | 88 | 153 | 68 | 28 | 23 |
| 9 | *20 | 40 | 28 | 72 | 309 | 113 | 314 | 84 | 122 | 64 | 27 | 122 |
| 10 | 19 | 37 | 26 | 102 | 280 | 110 | 259 | 81 | 119 | 58 | 26 | 196 |
| 11 | 19 | 36 | *25 | 74 | 235 | 116 | *225 | 117 | 103 | 54 | 26 | 40 |
| 12 | 19 | 34 | 194 | 70 | 210 | 116 | 200 | 95 | 117 | 50 | 25 | 30 |
| 13 | 19 | 32 | 120 | 67 | 187 | 102 | 183 | 84 | *125 | 50 | 27 | 27 |
| 14 | 19 | 32 | 346 | 65 | 172 | 105 | 166 | 111 | 108 | 100 | 43 | 25 |
| 15 | 18 | *31 | 298 | 67 | 159 | 97 | 153 | 93 | 103 | 70 | 37 | 27 |
| 16 | 18 | 37 | 214 | 63 | 172 | 87 | 141 | 81 | 160 | 62 | 28 | 407 |
| 17 | 19 | 106 | 134 | b55 | 141 | 82 | 134 | 79 | 159 | 98 | 26 | 144 |
| 18 | 35 | 55 | 107 | b53 | 130 | 102 | 141 | 74 | 131 | 90 | 57 | 103 |
| 19 | 58 | 45 | 92 | b60 | 162 | 110 | 125 | 77 | 125 | 70 | 188 | 98 |
| 20 | 29 | 41 | 83 | b52 | 136 | 84 | 114 | 72 | 108 | 58 | 50 | 95 |
| 21 | 40 | 44 | 83 | 63 | 119 | 80 | 138 | 64 | 93 | 52 | 38 | 72 |
| 22 | 591 | 43 | 154 | 261 | 116 | 108 | *147 | 64 | 93 | 52 | 35 | 60 |
| 23 | 112 | a38 | 357 | 331 | 102 | 84 | 227 | 62 | 125 | *49 | 32 | 58 |
| 24 | 67 | a36 | 396 | 137 | 100 | 82 | 163 | 62 | 117 | 49 | 30 | 49 |
| 25 | 56 | 34 | 199 | 151 | 225 | 124 | 125 | 58 | 103 | 60 | 28 | 40 |
| 26 | 53 | a34 | 160 | 128 | 606 | 92 | 111 | 58 | 86 | 45 | 30 | 37 |
| 27 | 50 | a32 | 137 | 250 | 200 | 82 | 117 | 79 | 84 | 40 | 27 | 35 |
| 28 | 44 | a32 | 123 | 199 | 328 | 74 | 144 | 58 | 536 | 38 | 25 | 102 |
| 29 | 43 | a30 | 107 | 383 | - | 70 | 128 | 52 | 213 | 38 | 25 | 280 |
| 30 | 48 | 30 | 94 | 280 | ------- | 66 | 168 | 64 | 153 | 37 | 23 | 128 |
| 31 | 43 | ------- | 90 | *1,600 | ------- | 62 | ------- | 52 | ------- | 35 | 22 | ------- |
| Total | 1,631 | 1,328 | 3,797 | 5,242 | 7,945 | 3,479 | 8,365 | 2,673 | 4,649 | 2,041 | 1,179 | 2,337 |
| Mean | 52.6 | 44.3 | 122 | 169 | 284 | 112 | 279 | 86.2 | 155 | 65.8 | 38.0 | 77.9 |
| Cfsm | 1.91 | 1.61 | 4.42 | 6.12 | 10.29 | 4.06 | 10.11 | 3.12 | 5.62 | 2.38 | 1.38 | 2.82 |
| In. | 2.20 | 1.79 | 5.12 | 7.06 | 10.71 | 4.69 | 11.27 | 3.60 | 6.26 | 2.75 | 1.59 | 3.15 |

Calendar year 1956: Max 852 Min 14 Mean 87.2 Cfsm 3.16 In. 43.01
Water year 1956-57: Max 1,600 Min 18 Mean 122 Cfsm 4.42 In. 60.19

Peak discharge (base, 1,500 cfs).--Oct. 22 (6:30 a.m.) 1,690 cfs (4.31 ft); Jan. 31 (7 p.m.) 3,060 cfs (5.56 ft); Feb. 26 (4 a.m.) 1,580 cfs (4.19 ft); Apr. 1 (11 p.m.) 2,170 cfs (4.81 ft); Apr. 4 (5 p.m.) 3,540 cfs (5.92 ft); June 5 (5 a.m.) 2,440 cfs (5.05 ft); June 28 (3:30 p.m.) 2,300 cfs (4.93 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for East Fork Pigeon River near Canton.

b Stage-discharge relation affected by ice.

## West Fork Pigeon River below Lake Logan, near Waynesville, N. C.

Location.--Lat 35°26'38", long 82°54'46", on right bank at downstream side of county bridge at Riverside Church, 2.6 miles downstream from Little East Fork Pigeon River, 3.4 miles downstream from Lake Logan, 3.8 miles upstream from confluence with East Fork Pigeon River, and 5.3 miles southeast of Waynesville, Haywood County.

Drainage area.--55.3 sq mi.

Records available.--March 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,725.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 4,120 cfs Jan. 31 (gage height, 7.07 ft), from rating curve extended as explained below; minimum, 20 cfs Jan. 18 (gage height, 0.47 ft), result of freezeup.

1954-57: Maximum discharge, 5,180 cfs Apr. 15, 1956 (gage height, 7.80 ft), from rating curve extended above 3,300 cfs on basis of logarithmic plotting; minimum, 7.6 cfs Sept. 7, 1954 (gage height, 0.16 ft).

Remarks.--Records excellent. Considerable regulation and diurnal fluctuation at low flow caused by Lake Logan (capacity, 1,050 cfs-days).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.5 | 21 | 3.0 | 487 |
| .7 | 34 | 3.5 | 700 |
| 1.0 | 58 | 4.0 | 970 |
| 1.5 | 120 | 4.5 | 1,300 |
| 2.0 | 204 | 5.0 | 1,700 |
| 2.5 | 317 | 5.7 | 2,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 173 | 47 | 139 | 1,650 | 534 | 702 | 265 | 102 | 186 | 61 | 34 |
| 2 | 34 | 91 | 47 | 122 | 982 | 537 | 713 | *229 | 106 | 164 | *72 | 33 |
| 3 | 34 | 80 | 47 | 119 | 800 | 237 | *323 | 214 | 102 | 152 | 54 | *32 |
| 4 | 34 | 73 | 47 | 142 | 835 | 235 | 1,530 | 214 | 249 | 139 | 59 | 36 |
| 5 | 36 | 68 | 47 | 176 | *664 | 290 | *1,950 | 188 | *1,070 | *128 | 63 | 32 |
| 6 | 43 | 65 | 47 | 136 | 646 | 417 | 825 | 178 | 332 | 119 | 54 | 30 |
| 7 | 34 | 65 | 47 | *146 | 664 | *169 | 593 | 167 | 252 | 112 | 48 | 30 |
| 8 | 30 | 82 | 46 | 120 | 535 | 88 | 698 | 160 | 254 | 106 | 38 | 32 |
| 9 | 30 | 63 | 45 | 122 | 507 | 84 | 547 | 152 | 212 | 100 | *43 | 143 |
| 10 | 29 | 59 | 43 | 143 | 453 | 200 | 453 | 147 | 200 | 96 | 46 | 236 |
| 11 | *30 | 58 | 46 | 120 | 393 | 206 | 399 | 195 | 186 | 91 | 33 | 67 |
| 12 | 28 | 56 | *247 | 114 | 353 | 208 | 360 | 171 | 178 | 85 | 37 | 50 |
| 13 | 28 | 53 | 191 | 109 | 320 | 190 | 329 | 150 | 204 | 84 | 40 | 44 |
| 14 | 27 | 53 | 459 | 106 | 295 | 193 | 304 | 176 | 169 | 123 | 49 | 43 |
| 15 | 26 | *51 | 441 | 218 | 275 | 181 | 282 | 167 | 162 | 112 | 54 | 42 |
| 16 | 26 | 55 | 382 | 191 | 288 | 166 | 263 | 147 | 190 | 91 | 39 | 443 |
| 17 | 27 | 148 | 229 | 28 | 245 | 159 | 250 | 139 | 267 | 120 | 52 | 219 |
| 18 | 44 | 91 | 184 | 42 | 233 | 172 | 250 | 136 | 195 | 126 | 76 | 178 |
| 19 | 94 | 70 | 159 | 67 | 263 | 200 | 231 | 136 | 183 | 102 | 259 | 144 |
| 20 | 44 | 67 | 144 | 50 | 237 | 162 | 217 | 131 | *166 | 84 | 73 | 138 |
| 21 | 56 | 67 | 141 | 56 | 215 | 152 | 227 | 117 | 139 | 78 | 55 | 109 |
| 22 | 858 | 68 | 230 | 321 | 202 | 183 | 245 | 131 | 139 | 80 | 51 | 90 |
| 23 | 208 | 58 | 442 | 513 | 191 | 157 | 335 | 117 | 171 | 73 | 47 | 90 |
| 24 | 123 | 59 | 612 | 235 | 186 | 155 | 270 | 123 | 172 | 73 | 45 | 75 |
| 25 | 103 | 56 | 312 | 237 | 270 | 208 | 219 | 113 | 155 | 85 | 43 | 66 |
| 26 | 91 | 56 | 252 | 210 | 915 | 166 | 204 | 113 | 136 | 66 | 45 | 61 |
| 27 | 87 | 53 | 217 | 361 | 357 | 152 | 197 | 141 | 128 | 62 | 41 | 59 |
| 28 | 74 | 52 | 193 | 298 | 484 | 146 | 239 | 109 | 593 | 60 | 38 | 115 |
| 29 | 70 | 52 | 178 | 534 | - | 139 | 233 | 100 | 331 | 57 | 37 | 230 |
| 30 | 78 | 50 | 157 | 449 | ------ | 134 | 241 | 117 | 215 | 57 | 36 | 214 |
| 31 | 73 | ----- | 149 | *2,370 | ----- | 130 | ----- | 99 | ------ | 56 | 35 | ------ |
| Total | 2,537 | 2,092 | 5,828 | 7,994 | 13,458 | 6,350 | 13,629 | 4,742 | 6,958 | 3,069 | 1,723 | 3,115 |
| Mean | 81.8 | 69.7 | 188 | 258 | 481 | 205 | 454 | 153 | 232 | 99.0 | 55.6 | 104 |
| Cfsm | 1.48 | 1.26 | 3.40 | 4.67 | 8.70 | 3.71 | 8.21 | 2.77 | 4.20 | 1.79 | 1.01 | 1.88 |
| In. | 1.71 | 1.41 | 3.92 | 5.38 | 9.05 | 4.27 | 9.17 | 3.19 | 4.68 | 2.06 | 1.16 | 2.09 |

Calendar year 1956: Max 1,200 Min 24 Mean 140 Cfsm 2.53 In. 34.48
Water year 1956-57: Max 2,370 Min 26 Mean 196 Cfsm 3.54 In. 48.09

* Discharge measurement made on this day.

## East Fork Pigeon River near Canton, N. C.

Location.--Lat 35°27'42", long 82°52'12", on right bank 800 ft upstream from U. S. Highway 276, 0.4 mile downstream from Dix Creek, 1.7 miles upstream from confluence with West Fork Pigeon River, and 5.2 miles southwest of Canton, Haywood County.

Drainage area.--51.5 sq mi.

Records available.--March 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,674.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 6,640 cfs Apr. 4 (gage height, 7.78 ft), from rating curve extended above 3,600 cfs by logarithmic plotting; minimum, 26 cfs Sept. 3, 4, 6-8; minimum gage height, 0.95 ft Sept. 3, 4, 7, 8.
1954-57: Maximum discharge, that of Apr. 4, 1957; minimum, 12 cfs Jan. 9, 1956 (gage height, 0.84 ft), result of freezeup.

Remarks.--Records excellent except those for period of ice effect, which are good.

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Apr. 4 | | Apr. 5 to Sept. 30 | |
|---|---|---|---|
| 1.0 | 24 | 0.9 | 21 |
| 1.1 | 34 | 1.1 | 42 |
| 1.3 | 58 | 1.3 | 75 |
| 1.5 | 92 | 1.5 | 119 |
| 2.0 | 211 | 2.0 | 249 |
| 3.0 | 600 | 3.0 | 675 |
| 4.0 | 1,200 | 4.0 | 1,290 |
| 5.1 | 2,270 | 5.3 | 2,530 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 205 | 50 | 106 | 989 | 457 | 401 | 167 | 71 | 148 | 42 | 28 |
| 2 | 34 | 130 | 49 | 96 | 640 | 365 | 753 | *157 | 70 | 126 | *42 | 27 |
| 3 | 32 | 114 | 49 | 96 | 501 | 305 | 377 | 155 | 70 | 117 | 37 | *27 |
| 4 | 34 | 106 | 48 | 98 | 470 | 270 | 2,240 | 155 | 124 | 105 | 42 | 27 |
| 5 | 34 | 98 | 48 | 110 | *397 | 243 | *2,530 | 143 | 535 | *98 | 41 | 27 |
| 6 | 67 | 92 | 48 | 92 | 369 | *228 | 1,030 | 138 | 225 | 92 | 35 | 26 |
| 7 | 45 | 87 | 46 | *90 | 377 | 220 | 719 | 129 | 172 | 86 | 34 | 26 |
| 8 | 37 | 88 | 45 | 85 | 317 | 211 | 675 | 126 | 165 | 81 | 32 | 30 |
| 9 | *35 | 79 | 45 | 83 | 291 | 187 | 542 | 119 | 143 | 77 | 31 | 140 |
| 10 | 33 | 74 | 45 | 87 | 270 | 176 | *447 | 117 | 138 | 73 | 31 | 168 |
| 11 | 32 | 72 | 44 | 81 | 240 | 174 | 388 | 138 | 129 | 68 | 30 | 71 |
| 12 | 31 | 69 | *93 | 78 | 217 | 171 | 341 | 133 | *114 | 66 | 30 | 51 |
| 13 | 30 | 66 | 94 | 76 | 200 | 158 | 307 | 114 | 117 | 62 | 29 | 45 |
| 14 | 29 | 64 | 223 | 74 | 187 | 161 | 275 | 126 | 105 | 71 | 52 | 42 |
| 15 | 28 | *61 | 223 | 72 | 174 | 151 | 249 | 129 | 103 | 71 | 41 | 42 |
| 16 | 28 | 63 | 226 | 72 | 174 | 141 | 231 | 112 | 96 | 62 | 34 | 308 |
| 17 | 28 | 92 | 156 | 68 | 153 | 134 | 216 | 103 | 105 | 64 | 40 | 203 |
| 18 | 41 | 78 | 130 | b55 | 144 | 141 | 214 | 98 | 94 | 68 | 61 | 208 |
| 19 | 64 | 69 | 116 | b70 | 166 | 168 | 203 | 98 | 90 | 66 | 175 | 172 |
| 20 | 44 | 66 | 108 | b65 | 151 | 141 | 187 | 96 | 86 | 59 | 57 | 167 |
| 21 | 57 | 66 | 102 | 69 | 136 | 134 | 184 | 88 | 77 | 52 | 44 | 138 |
| 22 | *834 | 66 | 138 | 188 | 130 | 141 | *197 | 88 | 79 | 51 | 40 | 114 |
| 23 | *261 | 61 | 200 | 326 | 123 | 130 | 308 | 88 | 94 | *50 | 36 | 105 |
| 24 | 166 | 60 | 328 | 174 | 119 | 130 | 252 | 90 | 103 | 48 | 35 | 92 |
| 25 | *130 | 58 | 217 | 156 | 178 | 171 | 208 | 90 | 90 | 80 | 35 | 81 |
| 26 | 116 | 58 | 184 | 136 | *910 | 153 | 190 | 83 | 81 | 51 | 35 | 75 |
| 27 | 104 | 55 | 161 | 163 | 417 | 144 | 180 | 96 | 77 | 46 | 32 | 70 |
| 28 | 92 | 54 | 144 | 151 | 465 | 134 | 187 | 81 | 425 | 45 | 31 | 103 |
| 29 | *85 | 54 | 132 | 198 | - | 127 | 184 | 75 | 300 | 44 | 30 | 304 |
| 30 | 92 | 53 | 119 | 217 | ------- | 123 | 172 | 81 | 174 | 44 | 29 | 243 |
| 31 | 87 | ------- | 114 | 1,120 | ------- | 119 | ------- | 75 | ------- | 45 | 28 | ------- |
| Total | 2,767 | 2,358 | 3,725 | 4,552 | 8,905 | 5,708 | 14,387 | 3,488 | 4,252 | 2,216 | 1,291 | 3,160 |
| Mean | 89.3 | 78.6 | 120 | 147 | 318 | 184 | 480 | 113 | 142 | 71.5 | 41.6 | 105 |
| Cfsm | 1.73 | 1.53 | 2.33 | 2.85 | 6.17 | 3.57 | 9.32 | 2.19 | 2.76 | 1.39 | 0.808 | 2.04 |
| In. | 2.00 | 1.70 | 2.69 | 3.29 | 6.43 | 4.12 | 10.39 | 2.52 | 3.07 | 1.60 | 0.93 | 2.28 |

Calendar year 1956: Max 1,110 Min 18 Mean 101 Cfsm 1.96 In. 26.74
Water year 1956-57: Max 2,530 Min 26 Mean 156 Cfsm 3.03 In. 41.02

Peak discharge (base, 1,200 cfs).--Oct. 22 (8 a.m.) 2,060 cfs (4.92 ft); Jan. 31 (9 p.m.) 2,400 cfs (5.21 ft); Feb. 26 (6:30 a.m.) 1,730 cfs (4.60 ft); Apr. 2 (1 a.m.) 2,100 cfs (4.95 ft); Apr. 4 (7 p.m.) 6,640 cfs (7.78 ft); June 28 (6:30 p.m.) 1,640 cfs (4.45 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Pigeon River at Canton, N. C.

Location.--Lat 35°31'30", long 82°50'28", on left bank 100 ft upstream from small tributary, 0.5 mile upstream from U. S. Highways 19 and 23 at Canton, Haywood County, and at mile 63.9. Records include flow of small tributary.

Drainage area.--133 sq mi, includes that of small tributary below gage.

Records available.--May 1907 to June 1909 (fragmentary) and December 1928 to September 1957 in reports of Geological Survey. May 1907 to June 1909 (complete) in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 2,572.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 1909, staff gage at bridge 0.4 mile downstream at different datum.

Average discharge.--29 years (1907-8, 1929-57), 305 cfs.

Extremes.--Maximum discharge during year, 9,940 cfs Apr. 4 (gage height, 10.65 ft); minimum, 58 cfs Oct. 17; minimum gage height, 0.59 ft Sept. 8; minimum daily discharge, 59 cfs Oct. 15-17.

1907-9, 1928-57: Maximum discharge, 31,600 cfs Aug. 30, 1940 (gage height, 20.75 ft, from floodmark in gage well); minimum, 15 cfs Jan. 8, 1956 (gage height, 0.04 ft), result of freezeup; minimum daily, 27 cfs Sept. 7, 1954.

Remarks.--Records excellent except those for period of ice effect, which are good. Occasional diurnal fluctuation and considerable regulation at low flow caused by gristmill and Lake Logan on West Fork (capacity, 1,050 cfs-days). City of Canton diverted a total of about 99,000,000 gal just above station for supplementary water supply, equivalent to a mean discharge of 0.4 cfs at station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1929-37(M).

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 55 | 2.0 | 470 |
| .8 | 84 | 3.0 | 1,020 |
| 1.0 | 125 | 5.0 | 2,580 |
| 1.5 | 277 | 7.6 | 5,290 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 79 | 369 | 99 | 266 | 3,230 | 1,040 | 852 | 484 | 178 | 358 | 107 | 70 |
| 2 | 71 | 249 | 101 | 235 | 1,920 | 991 | 1,730 | 429 | 187 | 317 | 132 | 70 |
| 3 | 68 | 212 | 101 | 229 | 1,420 | 590 | 747 | *389 | 184 | 288 | 103 | 70 |
| 4 | 70 | 197 | 97 | 235 | 1,400 | 540 | 3,210 | 401 | 318 | 266 | 110 | 71 |
| 5 | 73 | 178 | 97 | 324 | *1,180 | 565 | 5,180 | 358 | *1,750 | *242 | 128 | 68 |
| 6 | 105 | 167 | 95 | 242 | 1,130 | 681 | 2,200 | 339 | 654 | 226 | *101 | *64 |
| 7 | 88 | 164 | 95 | 242 | 1,170 | 479 | 1,470 | 320 | 470 | 212 | 105 | 63 |
| 8 | 73 | 187 | 94 | *219 | 936 | 358 | 1,530 | 309 | 454 | 203 | 88 | 63 |
| 9 | 68 | 156 | 94 | 219 | 882 | 317 | 1,260 | 295 | 385 | 190 | *86 | 265 |
| 10 | 65 | 145 | 90 | 235 | 816 | 389 | 1,020 | 284 | 366 | 184 | 97 | 399 |
| 11 | *64 | 142 | 86 | 219 | 708 | *409 | *888 | 350 | 343 | 172 | 78 | 172 |
| 12 | 64 | 132 | *295 | 206 | 632 | 417 | 786 | 339 | 306 | 161 | 78 | 112 |
| 13 | 62 | 125 | 341 | 197 | 575 | 381 | 714 | 288 | *343 | 153 | 79 | 99 |
| 14 | 60 | 123 | 619 | 187 | 535 | 381 | 648 | 309 | 306 | 180 | 101 | 94 |
| 15 | 59 | *118 | 671 | 257 | 492 | 362 | 595 | 339 | 291 | 224 | 121 | 92 |
| 16 | 59 | 118 | 718 | 317 | 506 | 339 | 550 | 284 | 266 | 170 | 88 | 692 |
| 17 | 59 | 232 | 421 | 105 | 445 | 328 | 515 | 266 | 433 | 170 | 91 | 460 |
| 18 | 76 | 203 | 343 | b90 | 417 | 324 | 506 | 256 | 306 | 232 | 135 | 459 |
| 19 | 172 | 150 | 302 | b145 | 458 | 409 | 479 | 252 | 295 | 184 | 492 | 339 |
| 20 | 99 | 140 | 274 | b135 | 441 | 332 | 445 | 249 | 281 | 164 | 161 | 328 |
| 21 | 105 | 145 | 260 | 125 | 389 | 313 | 437 | 222 | 235 | 148 | 116 | 270 |
| 22 | 1,690 | 142 | 386 | 359 | 370 | 346 | 488 | 232 | 232 | 148 | 103 | 222 |
| 23 | 568 | 125 | 623 | 989 | 350 | 320 | 655 | 232 | 277 | 140 | 95 | 206 |
| 24 | 332 | 123 | 1,010 | 441 | 339 | 306 | 595 | 222 | 306 | 142 | 92 | 181 |
| 25 | 263 | 123 | 575 | 409 | 396 | 401 | 462 | 226 | 270 | 178 | 90 | 156 |
| 26 | 232 | 114 | 470 | 370 | *1,930 | 350 | 425 | 209 | 239 | 138 | 92 | 142 |
| 27 | 216 | 112 | 409 | 520 | 828 | 324 | 405 | 263 | 222 | 125 | 84 | 138 |
| 28 | 187 | 105 | 370 | 466 | 1,010 | 306 | 459 | 209 | 901 | 121 | 79 | 192 |
| 29 | 167 | 114 | 332 | 670 | - | 295 | 462 | 190 | 776 | 112 | 76 | 720 |
| 30 | 184 | 101 | 295 | 747 | ------- | 284 | 441 | 209 | 421 | 118 | 74 | 506 |
| 31 | 172 | ------- | 284 | *3,550 | ------- | 274 | ------- | 190 | ------- | 116 | 71 | ------- |
| Total | 5,650 | 4,711 | 10,047 | 12,950 | 24,905 | 13,151 | 30,154 | 8,944 | 11,995 | 5,782 | 3,453 | 6,783 |
| Mean | 182 | 157 | 324 | 418 | 889 | 424 | 1,005 | 289 | 400 | 187 | 111 | 226 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 3,180 Min 44 Mean 262 Cfsm 1.97 In. 26.77
Water year 1956-57: Max 5,180 Min 59 Mean 380 Cfsm 2.86 In. 38.73

Peak discharge (base, 4,000 cfs).--Jan. 31 (10:30 p.m.) 6,600 cfs (8.62 ft); Apr. 4 (9:30 p.m.) 9,940 cfs (10.65 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Allen Creek near Hazelwood, N. C.

Location.--Lat 35°25'49", long 83°00'33", on left bank 180 ft downstream from Rocky Branch, 3.0 miles upstream from mouth, and 3.3 miles south of Hazelwood, Haywood County.

Drainage area.--14.4 sq mi.

Records available.--August 1949 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,047.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--8 years, 34.8 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,320 cfs Jan. 31 (gage height, 3.90 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum, 5.7 cfs Sept. 2; minimum gage height, 0.92 ft Oct. 9; minimum daily discharge, 7.5 cfs Sept. 3.
1949-57: Maximum discharge, that of Jan. 31, 1957; minimum, 1.0 cfs Sept. 9, 1954 (gage height, 0.75 ft); minimum daily, 5.0 cfs Oct. 11-14, 18, 22, 23, 25-27, 1954.
Maximum stage known, 7.0 ft Aug. 30, 1940, from information by local residents.

Remarks.--Records excellent except those for period of ice effect, which are good. Considerable diurnal fluctuation at low flow caused by intermittent operation of filter plant 0.3 mile upstream since Aug. 29, 1954. Town of Waynesville diverts about 3 cfs for water supply at diversion dam 0.4 mile upstream.

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 7.0 | 1.8 | 131 | 0.9 | 6.0 | 1.8 | 130 |
| 1.0 | 13 | 2.0 | 180 | 1.0 | 11 | 2.0 | 180 |
| 1.2 | 32 | 2.4 | 330 | 1.2 | 28 | 2.4 | 320 |
| 1.4 | 58 | 2.9 | 600 | 1.4 | 52 | 2.8 | 540 |
| 1.6 | 91 | | | 1.6 | 88 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 28 | 15 | 40 | 501 | 110 | 79 | 54 | 37 | 40 | 17 | 8.0 |
| 2 | 11 | *20 | 15 | 37 | 280 | 78 | *77 | 50 | 32 | 37 | 16 | 8.0 |
| 3 | 11 | 19 | 15 | 36 | 242 | 69 | 57 | *56 | 34 | *36 | 14 | 7.5 |
| 4 | 11 | 18 | 15 | *44 | 224 | *64 | 255 | 57 | 65 | 33 | 17 | 9.0 |
| 5 | 11 | 17 | 15 | 44 | *204 | 57 | *363 | 50 | 197 | 31 | *15 | *8.0 |
| 6 | 10 | 17 | 15 | 40 | 207 | 57 | 167 | 48 | 84 | 30 | 14 | 8.0 |
| 7 | 9.5 | 21 | *15 | 40 | 198 | *59 | 130 | 46 | 69 | 29 | 13 | 8.0 |
| 8 | 9.5 | 25 | 15 | 36 | 164 | 56 | 158 | 44 | 62 | 27 | 12 | 9.0 |
| 9 | 9.0 | 19 | 16 | 37 | 157 | 50 | 126 | 43 | 54 | 26 | 12 | 12 |
| 10 | *9.0 | 18 | 15 | 44 | 144 | 48 | 108 | 42 | 50 | 25 | 12 | 12 |
| 11 | 9.5 | 17 | 14 | 36 | 130 | 48 | 96 | 51 | 47 | 24 | 12 | 10 |
| 12 | 9.5 | 16 | 83 | 34 | 121 | 48 | 88 | 47 | *48 | 23 | 11 | 9.5 |
| 13 | 9.5 | 16 | 53 | 34 | 108 | 47 | 82 | 43 | 52 | 23 | 11 | 9.0 |
| 14 | 9.5 | 16 | 95 | 32 | 96 | 46 | 77 | 40 | 48 | 40 | 12 | 9.5 |
| 15 | 9.0 | 16 | 129 | 34 | 90 | 43 | 71 | 38 | 48 | 25 | 12 | 12 |
| 16 | 9.0 | 18 | 100 | 32 | 92 | 40 | 67 | 37 | 77 | 21 | 11 | 34 |
| 17 | 9.5 | 44 | 66 | 29 | 80 | 40 | 64 | 36 | 73 | 30 | 20 | 58 |
| 18 | 32 | 21 | 53 | b23 | 73 | 46 | 62 | 37 | 61 | 24 | 21 | 31 |
| 19 | 28 | 23 | 47 | b24 | 78 | 46 | 57 | 38 | 56 | 21 | 44 | 22 |
| 20 | 16 | 21 | 44 | 28 | 71 | 40 | 54 | 36 | 50 | 19 | 13 | 23 |
| 21 | 21 | 23 | 44 | 30 | 62 | 39 | 52 | 32 | 44 | 18 | 11 | 19 |
| 22 | 108 | 21 | 71 | 61 | 59 | 44 | 57 | 40 | 40 | 18 | 10 | 17 |
| 23 | 38 | 19 | 99 | 161 | 56 | 40 | 54 | 34 | 38 | 18 | 10 | 17 |
| 24 | 28 | 19 | 137 | 71 | 54 | 40 | 71 | 36 | 38 | 19 | 9.5 | 14 |
| 25 | 24 | 18 | 61 | 66 | 57 | 46 | 54 | 33 | 37 | 17 | 9.5 | 14 |
| 26 | 22 | 17 | 66 | 58 | 96 | 40 | 50 | 33 | 33 | 17 | 10 | 13 |
| 27 | 21 | 17 | 57 | 98 | 64 | 38 | 50 | 38 | 32 | 17 | 9.0 | 12 |
| 28 | 19 | 16 | 53 | 88 | 104 | 37 | 56 | 32 | 72 | 17 | 8.5 | 24 |
| 29 | 18 | 16 | 49 | 127 | - | 36 | 56 | 31 | 51 | 15 | 8.5 | 39 |
| 30 | 18 | 16 | 46 | 108 | ------- | 34 | 56 | 33 | 47 | 15 | 8.5 | 24 |
| 31 | 18 | ------- | 42 | 596 | ------- | 34 | ------- | 30 | ------- | 14 | 8.0 | ------- |
| Total | 579.5 | 597 | 1,580 | 2,168 | 3,812 | 1,520 | 2,794 | 1,265 | 1,676 | 749 | 411.5 | 500.5 |
| Mean | 18.7 | 19.9 | 51.0 | 69.9 | 136 | 49.0 | 93.1 | 40.8 | 55.9 | 24.2 | 13.3 | 16.7 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 209 Min 5.7 Mean 36.0 Cfsm 2.50 In. 34.06
Water year 1956-57: Max 596 Min 7.5 Mean 48.4 Cfsm 3.36 In. 45.59

Peak discharge (base, 400 cfs).--Jan. 23 (5 a.m.) 405 cfs (2.55 ft); Jan. 31 (6:30 p.m.) 1,320 cfs (3.90 ft); Apr. 4 (8:30 p.m.) 630 cfs (2.95 ft); June 5 (2:30 a.m.) 516 cfs (2.76 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Jonathan Creek near Cove Creek, N. C.

Location.--Lat 35°37'22", long 83°00'26", on left bank 1,500 ft downstream from ford, 0.7 mile upstream from mouth, and 2 miles downstream from Cove Creek and village of Cove Creek, Haywood County.

Drainage area.--65.3 sq mi.

Records available.--May 1930 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,383.89 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--27 years, 125 cfs.

Extremes.--Maximum discharge during year, 3,070 cfs Jan. 31 (gage height, 7.33 ft); minimum, 32 cfs Sept. 7, 8.
1930-57: Maximum discharge, 3,200 cfs Aug. 30, 1940 (gage height, 7.51 ft); minimum, 18 cfs Jan. 2, 1940 (gage height, 0.54 ft), result of freezeup; minimum daily, 23 cfs Sept. 17, 18, 23, 1953.

Remarks.--Records good. Slight diurnal fluctuation at low flow caused by small gristmill above station.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 19 to Dec. 11, Aug. 21 to Sept. 15)

Oct. 1 to Jan. 31

| | | | |
|---|---|---|---|
| 0.8 | 31 | 3.0 | 452 |
| 1.1 | 51 | 4.0 | 880 |
| 1.5 | 96 | 5.6 | 1,840 |
| 2.0 | 182 | | |

Feb. 1 to Sept. 30

| | |
|---|---|
| 3.0 | 450 |
| 4.0 | 843 |
| 5.6 | 1,840 |

Note.--Same as preceding table below 2.5 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 51 | 114 | 62 | 122 | 1,820 | 279 | 130 | 274 | 140 | 119 | 54 | 36 |
| 2 | 48 | *83 | 62 | 110 | 1,180 | 229 | *200 | *215 | 137 | 109 | 53 | 36 |
| 3 | 48 | 73 | 62 | 109 | *873 | 212 | 146 | *212 | 130 | *106 | 36 | 36 |
| 4 | 48 | 70 | 62 | *127 | 853 | *198 | 700 | 194 | 169 | 102 | 82 | 43 |
| 5 | 48 | 66 | 62 | 155 | *864 | 189 | 1,350 | 174 | 475 | 96 | 69 | *38 |
| 6 | 47 | 63 | 61 | 125 | 874 | 184 | 623 | 161 | 274 | 92 | *54 | 35 |
| 7 | 43 | 63 | *61 | 125 | 740 | 203 | 420 | 152 | 229 | 88 | 50 | 34 |
| 8 | *41 | 87 | 60 | 114 | 631 | 207 | 618 | 144 | 198 | 86 | 49 | 35 |
| 9 | 40 | 73 | 61 | 106 | 585 | 178 | 512 | 139 | 184 | 83 | 48 | 42 |
| 10 | 40 | 66 | 61 | 125 | 539 | 169 | 408 | 135 | 176 | 81 | 48 | 131 |
| 11 | 40 | 63 | 58 | 113 | 447 | 165 | 352 | 174 | 163 | 76 | 46 | 49 |
| 12 | 40 | 61 | 172 | 109 | 396 | 174 | 310 | 144 | *152 | 73 | 45 | 43 |
| 13 | 39 | 59 | 132 | 106 | 360 | 161 | 282 | 134 | 144 | 72 | 52 | 40 |
| 14 | 38 | 58 | 194 | 103 | 324 | 157 | 254 | 132 | 142 | 90 | 50 | 42 |
| 15 | 38 | 57 | 324 | 103 | *295 | 153 | 234 | 166 | 128 | 87 | 57 | 40 |
| 16 | 38 | 69 | 285 | 100 | 292 | 144 | 217 | 125 | 150 | 78 | 48 | 150 |
| 17 | 39 | 131 | 191 | 92 | 256 | 139 | 205 | 156 | 146 | 88 | 80 | 103 |
| 18 | 57 | 97 | 155 | 88 | 239 | 153 | 198 | 159 | 185 | 79 | 146 | 86 |
| 19 | 71 | 84 | 135 | 91 | 254 | 174 | 187 | 198 | 168 | 72 | 114 | 75 |
| 20 | 48 | 79 | 125 | 95 | 229 | 146 | 178 | 191 | 137 | 68 | 61 | 66 |
| 21 | 51 | 84 | 124 | 96 | 210 | 139 | 180 | 148 | 124 | 64 | 50 | 61 |
| 22 | 342 | 88 | 165 | 137 | 198 | 146 | 187 | 142 | 118 | 69 | 47 | 57 |
| 23 | 130 | 75 | 236 | 561 | 187 | 137 | 176 | 135 | 124 | 66 | 45 | 58 |
| 24 | 96 | 75 | 460 | 239 | 180 | 137 | 203 | 233 | 144 | 81 | 43 | 54 |
| 25 | 83 | 71 | 272 | 217 | 178 | 157 | 165 | 159 | 130 | 64 | 43 | 50 |
| 26 | 77 | 71 | 217 | 187 | 227 | 135 | 152 | 142 | 113 | 60 | 48 | 48 |
| 27 | 75 | 70 | 184 | 328 | 191 | 130 | 171 | 256 | 106 | 58 | 43 | 48 |
| 28 | 68 | 68 | 167 | 321 | 292 | 124 | 184 | 169 | 229 | 58 | 40 | 80 |
| 29 | 66 | 68 | 153 | 431 | - | 120 | 223 | 153 | 189 | 56 | 39 | 106 |
| 30 | 64 | 66 | 139 | 433 | ------- | 118 | 414 | 152 | 135 | 60 | 38 | 77 |
| 31 | 63 | ------- | 132 | 1,830 | ------- | 116 | -------- | 146 | -------- | 57 | 37 | -------- |
| Total | 2,017 | 2,252 | 4,634 | 6,998 | 13,714 | 5,073 | 9,579 | 5,214 | 5,039 | 2,438 | 1,731 | 1,799 |
| Mean | 65.1 | 75.1 | 149 | 226 | 490 | 164 | 319 | 168 | 168 | 78.6 | 55.8 | 60.0 |
| Cfsm | 0.997 | 1.15 | 2.28 | 3.46 | 7.50 | 2.51 | 4.89 | 2.57 | 2.57 | 1.20 | 0.855 | 0.919 |
| In. | 1.15 | 1.28 | 2.64 | 3.99 | 7.81 | 2.89 | 5.46 | 2.97 | 2.87 | 1.39 | 0.99 | 1.02 |

Calendar year 1956: Max 932 Min 31 Mean 122 Cfsm 1.87 In. 25.36
Water year 1956-57: Max 1,830 Min 34 Mean 166 Cfsm 2.54 In. 34.46

Peak discharge (base, 1,100 cfs).--Jan. 23 (6:30 a.m.) 1,230 cfs (4.62 ft); Jan. 31 (10 p.m.) 3,070 cfs (7.33 ft); Feb. 5 (9 p.m.) 1,100 cfs (4.47 ft); Apr. 5 (7:30 a.m.) 1,780 cfs (5.52 ft); Apr. 8 (7 p.m.) 1,220 cfs (4.66 ft); Apr. 30 (5:30 p.m.) 2,390 cfs (6.38 ft); May 24 (3 p.m.) 1,110 cfs (4.49 ft).

* Discharge measurement made on this day.

## Pigeon River near Hepco, N. C.

Location.--Lat 35°38'07", long 82°59'22", on left bank 0.8 mile downstream from Jonathan Creek, 2.4 miles upstream from Fines Creek and from Hepco, Haywood County, and at mile 45.0.

Drainage area.--350 sq mi.

Records available.--July 1927 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,335.95 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--30 years, 647 cfs.

Extremes.--Maximum discharge during year, 16,600 cfs Apr. 5 (gage height, 11.10 ft); minimum, 154 cfs Sept. 8 (gage height, 1.12 ft).

1927-57: Maximum discharge, 32,700 cfs Aug. 30, 1940 (gage height, 15.82 ft, from floodmark in gage house), from rating curve extended above 12,000 cfs on basis of slope-area determinations at gage heights 14.94 and 15.82 ft; minimum, 81 cfs Sept. 30, 1941; minimum gage height, 0.81 ft Sept. 8, 1954.

Maximum stage known, about 18 ft June 1876 and February 1902, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Considerable regulation by Lake Junaluska on Richland Creek and Lake Logan on West Fork Pigeon River for periods of low flow (combined capacity of reservoirs, about 2,200 cfs-days).

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928-31, 1932(M), 1933-36, 1937-39(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 149 | 5.0 | 3,000 |
| 1.5 | 263 | 6.0 | 4,440 |
| 2.0 | 465 | 7.0 | 6,190 |
| 3.0 | 1,020 | 8.0 | 8,200 |
| 4.0 | 1,890 | 9.2 | 11,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a250 | 568 | 250 | 560 | 8,450 | 1,970 | 758 | 1,160 | 525 | 670 | 250 | 184 |
| 2 | a220 | *465 | 246 | 510 | 4,720 | 1,780 | *2,420 | *1,010 | 530 | 590 | 274 | 181 |
| 3 | a210 | 398 | 246 | 470 | *3,360 | 1,180 | 1,240 | 764 | 520 | *560 | 253 | 178 |
| 4 | a200 | 369 | 243 | *515 | 3,250 | *1,070 | 3,640 | 913 | 678 | 530 | 294 | 195 |
| 5 | a200 | 348 | 243 | 681 | 3,130 | 1,060 | 11,000 | 818 | 3,280 | 495 | 332 | *181 |
| 6 | a230 | 328 | 240 | 540 | 3,220 | 1,130 | a3,800 | 769 | 1,480 | 460 | *250 | 168 |
| 7 | a210 | 321 | *237 | 535 | 2,920 | 1,080 | a2,700 | 730 | 1,080 | 438 | 233 | 166 |
| 8 | *184 | 394 | 233 | 490 | 2,420 | 925 | a3,000 | 703 | 949 | 416 | 218 | 163 |
| 9 | 176 | 348 | 233 | 475 | 2,270 | 808 | a2,500 | 681 | 847 | 403 | 206 | 323 |
| 10 | 171 | 306 | 230 | 505 | 2,080 | 813 | 1,940 | 659 | 796 | 390 | 215 | 605 |
| 11 | 171 | 294 | 227 | 500 | 1,780 | 847 | 1,710 | 796 | 764 | 369 | 203 | 382 |
| 12 | 168 | 288 | 497 | 456 | 1,540 | 859 | 1,590 | 774 | *698 | 348 | 192 | 246 |
| 13 | 166 | 274 | 806 | 447 | 1,370 | 808 | 1,460 | 664 | 692 | 336 | 200 | 221 |
| 14 | 163 | 266 | 867 | 434 | 1,240 | 791 | 1,300 | 648 | 670 | 361 | 212 | 212 |
| 15 | 161 | 263 | 1,600 | 438 | 1,160 | 769 | 1,200 | 774 | 620 | 525 | 291 | 203 |
| 16 | 159 | 277 | 1,650 | 610 | 1,180 | 774 | 1,120 | 654 | 615 | 394 | 224 | 847 |
| 17 | 159 | 432 | 937 | 356 | 1,030 | 791 | 1,080 | 719 | 786 | 373 | 237 | 744 |
| 18 | 203 | 490 | 747 | 298 | 955 | 791 | 1,040 | 736 | 727 | 442 | 431 | 777 |
| 19 | 416 | 352 | 637 | 321 | 988 | 907 | 931 | 681 | 703 | 377 | 836 | 535 |
| 20 | 274 | 325 | 580 | 356 | 988 | 791 | 889 | 681 | 642 | 356 | 394 | 500 |
| 21 | 250 | 325 | 555 | 361 | 877 | 769 | 901 | 595 | 565 | 317 | 280 | 456 |
| 22 | 2,510 | 344 | 780 | 467 | 824 | 835 | 955 | 580 | 535 | 317 | 260 | 381 |
| 23 | 1,130 | 306 | 1,070 | 2,430 | 791 | 808 | 1,040 | 610 | 565 | 309 | 233 | 369 |
| 24 | 642 | 294 | 2,270 | 1,060 | 769 | 730 | 1,260 | 756 | 664 | 348 | 224 | 332 |
| 25 | 500 | 291 | 1,310 | 907 | 774 | 780 | 919 | 670 | 580 | 332 | 218 | 298 |
| 26 | 442 | 284 | 1,010 | 818 | 2,410 | 648 | 847 | 575 | 530 | 313 | 240 | 294 |
| 27 | 420 | 277 | 871 | 1,190 | 1,410 | 605 | 847 | 858 | 500 | 277 | 224 | 288 |
| 28 | 373 | 263 | 786 | 1,190 | 1,750 | 585 | 919 | 637 | 891 | 274 | 203 | 342 |
| 29 | 340 | 266 | 720 | 1,390 | - | 565 | 1,160 | 565 | 1,650 | 260 | 200 | 882 |
| 30 | 340 | 260 | 637 | 1,840 | -------- | 550 | 1,300 | 570 | 769 | 270 | 192 | 764 |
| 31 | 344 | -------- | 600 | 7,820 | -------- | 540 | -------- | 550 | -------- | 280 | 189 | -------- |
| Total | 11,382 | 10,016 | 21,558 | 28,970 | 57,656 | 27,359 | 55,466 | 22,300 | 24,851 | 12,130 | 8,208 | 11,417 |
| Mean | 367 | 334 | 695 | 935 | 2,059 | 883 | 1,849 | 719 | 828 | 391 | 265 | 381 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 6,460 Min 123 Mean 565 Cfsm 1.61 In. 21.96
Water year 1956-57: Max 11,000 Min 159 Mean 798 Cfsm 2.28 In. 30.95

Peak discharge (base, 6,000 cfs).--Jan. 31 (7:30 p.m.) 14,700 cfs (10.48 ft); Apr. 5 (3 a.m.) 16,600 cfs (11.10 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station at Canton and Jonathan Creek near Cove Creek.

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## Pigeon River at Newport, Tenn.

Location.--Lat 35°57'36", long 83°10'26", on left bank 100 ft upstream from bridge on U. S. Highway 70 at Newport, Cocke County, 0.6 mile downstream from Morell Branch, and at mile 6.8.

Drainage area.--666 sq mi.

Records available.--January 1903 to December 1905, December 1906 to December 1909, November 1918 to September 1929, May 1945 to July 1946, and August 1948 to September 1957 in reports of Geological Survey. Published as "near Newport" 1945-46. September 1900 to October 1901, December 1902 to December 1905, and December 1906 to September 1924 (prior to October 1910 and October 1920 to September 1921, revised), in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,040.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to September 1929, staff or chain gage at same site and datum. May 1945 to July 1946 water-stage recorder at site 4.8 miles downstream at datum 37.85 ft lower.

Average discharge.--30 years (1903-5, 1908-12, 1914-29, 1948-57), 1,198 cfs.

Extremes.--Maximum discharge during year, 34,500 cfs Feb. 1 (gage height, 15.07 ft); minimum, 64 cfs Aug. 12 (gage height, -0.11 ft); minimum daily, 83 cfs Sept. 2.
1900-1901, 1902-5, 1906-29, 1945-46, 1948-57: Maximum discharge, 84,900 cfs Apr. 2, 1920 (gage height, 17.0 ft); minimum, 38 cfs Oct. 5, 1952, Sept. 13, 1954; minimum daily, 48 cfs Sept. 21, 28, 1953; minimum gage height, -0.32 ft Sept. 13, 1954.
Flood of Feb. 28, 1902, reached a stage of 21.4 ft. Flood of Aug. 30, 1940, reached a stage of 17.3 ft (discharge, 36,000 cfs), determined by Tennessee Valley Authority.

Remarks.--Records good. Considerable regulation by Lakes Junaluska, Logan, and Walters for periods of low flow (combined usable capacity of reservoirs, about 12,500 cfs-days). The largest of these, Lake Walters (usable capacity, 10,300 cfs-days), was completed in 1929.

Revisions (water years).--WSP 1143: Drainage area; average discharge. WSP 1336: 1903, 1917(M), 1919-20(M), 1921, 1924(M), 1927-29(M). See also Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.0 | 82 | 2.0 | 1,330 |
| .2 | 125 | 3.0 | 2,580 |
| .4 | 180 | 5.0 | 5,940 |
| .7 | 304 | 9.0 | 15,300 |
| 1.0 | 480 | 11.7 | 23,200 |
| 1.5 | 860 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 491 | 556 | 478 | 969 | 23,000 | 2,720 | 751 | 2,270 | 626 | 1,510 | 522 | 89 |
| 2 | 376 | 878 | 362 | 1,300 | 13,700 | 2,690 | 1,860 | 2,290 | 434 | 978 | 524 | 83 |
| 3 | 418 | 619 | 511 | 1,040 | 6,840 | 2,480 | *2,180 | *1,930 | 915 | 867 | 368 | 460 |
| 4 | *482 | 473 | 590 | 894 | 6,840 | 2,360 | 2,510 | 1,270 | 1,250 | 602 | 236 | 434 |
| 5 | 419 | 634 | 577 | 794 | 6,510 | *2,400 | *14,500 | 730 | 3,890 | 667 | 439 | *294 |
| 6 | 316 | *680 | *583 | 714 | 6,820 | 1,990 | 7,220 | 1,140 | 3,190 | 582 | 484 | 272 |
| 7 | 174 | 594 | 524 | 970 | *6,090 | 1,720 | 4,490 | 1,280 | *2,570 | 598 | 422 | 258 |
| 8 | 248 | 667 | 432 | 940 | 5,600 | 2,030 | 3,810 | 1,250 | 2,010 | 764 | 430 | 224 |
| 9 | 321 | 668 | 354 | *932 | 6,380 | 1,540 | 5,300 | 1,230 | 1,330 | *730 | *452 | *697 |
| 10 | 304 | 518 | 452 | 1,060 | 6,700 | 749 | 3,520 | 1,210 | 1,510 | 713 | 354 | 381 |
| 11 | 306 | 456 | 610 | 1,080 | 4,900 | 1,340 | 3,060 | 1,010 | 1,600 | 626 | 226 | 549 |
| 12 | 336 | 518 | 760 | 840 | 3,710 | 1,530 | 2,800 | 870 | 1,160 | 572 | 239 | 582 |
| 13 | 328 | 621 | 1,130 | 616 | 3,240 | 1,550 | 2,680 | 1,030 | 1,440 | 400 | 410 | 546 |
| 14 | 220 | 608 | 1,370 | 904 | 3,010 | 1,500 | 2,380 | 876 | 1,300 | 276 | 365 | 482 |
| 15 | 194 | 614 | 2,410 | 983 | 2,880 | 1,430 | 2,270 | 824 | 933 | 841 | 328 | 250 |
| 16 | 316 | 618 | 3,070 | 942 | 2,790 | 1,220 | 2,290 | 962 | 613 | 796 | 484 | 646 |
| 17 | 334 | 545 | 2,640 | 912 | 2,270 | 965 | 2,260 | 1,000 | 1,170 | 644 | 310 | 1,680 |
| 18 | 371 | 466 | 2,300 | 873 | 2,360 | 1,500 | 2,250 | 1,200 | 1,300 | 642 | 368 | 1,680 |
| 19 | 369 | 543 | 2,010 | 698 | 2,470 | 1,630 | 2,210 | 758 | 1,140 | 574 | 1,560 | 1,510 |
| 20 | 342 | 657 | 1,800 | 496 | 2,450 | 1,670 | 1,440 | 996 | 952 | 383 | 978 | 1,010 |
| 21 | 435 | 648 | 1,780 | 727 | 2,000 | 1,500 | 976 | 937 | 938 | 284 | 668 | 439 |
| 22 | 2,750 | 536 | 1,700 | 840 | 1,830 | 1,480 | 1,010 | 824 | 764 | 538 | 532 | 261 |
| 23 | 2,450 | 538 | 1,560 | 1,920 | 1,510 | 1,120 | 1,350 | 799 | 938 | 568 | 391 | 320 |
| 24 | 1,620 | 533 | 2,360 | 2,360 | 1,190 | 634 | 1,580 | 842 | 1,700 | 628 | 288 | 438 |
| 25 | 964 | 483 | 2,660 | 2,240 | 1,340 | 1,410 | 1,630 | 1,260 | 1,280 | 558 | 131 | 451 |
| 26 | 856 | 785 | 2,270 | 1,980 | 1,860 | 1,630 | 1,570 | 844 | 1,100 | 508 | 296 | 404 |
| 27 | 658 | 893 | 2,390 | 1,930 | 2,500 | 1,520 | 1,360 | 1,850 | 1,150 | 348 | 472 | 403 |
| 28 | 470 | 850 | 2,080 | 3,710 | 2,550 | 1,330 | 961 | 1,530 | 1,520 | 282 | 462 | 336 |
| 29 | 586 | 652 | 1,450 | *3,200 | - | 1,230 | 1,430 | 1,020 | 2,420 | 474 | 434 | 700 |
| 30 | 562 | 604 | 730 | 3,710 | ------- | 716 | 2,120 | 862 | 1,690 | 542 | 465 | 1,000 |
| 31 | 688 | ------- | 1,060 | 13,000 | ------- | 546 | ------- | 834 | ------- | 512 | 256 | ------- |
| Total | 18,704 | 18,455 | 43,003 | 53,574 | 133,340 | 48,130 | 83,768 | 35,728 | 42,833 | 19,007 | 13,894 | 16,879 |
| Mean | 603 | 615 | 1,387 | 1,728 | 4,762 | 1,553 | 2,792 | 1,153 | 1,428 | 613 | 448 | 563 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 12,300 Min 94 Mean 1,144 Cfsm 1.72 In. 23.38
Water year 1956-57: Max 23,000 Min 83 Mean 1,445 Cfsm 2.17 In. 29.45

Peak discharge (base, 7,500 cfs).--Feb. 1 (1 a.m.) 34,500 cfs (15.07 ft); Feb. 4 (7 p.m.) 8,140 cfs (6.11 ft); Feb. 10 (12 m.) 8,300 cfs (6.18 ft); Apr. 5 (8 a.m.) 24,100 cfs (11.97 ft); June 5 (4 p.m.) 8,670 cfs (6.35 ft).

* Discharge measurement made on this day.

## North Toe River at Altapass, N. C.

Location.--Lat 35°53'59", long 82°01'50", on left bank 0.1 mile upstream from Rose Creek, 1.0 mile northwest of Altapass, Mitchell County, and at mile 36.0.
Drainage area.--104 sq mi.
Records available.--May 1934 to December 1957 (discontinued). Prior to October 1938, published as "above Spruce Pine" (flow of Rose Creek included).
Gage.--Water-stage recorder. Datum of gage is 2,542.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1938, at site 1.2 miles downstream at datum 13.90 ft lower.
Average discharge.--23 years, 198 cfs.
Extremes.--1956-57: Maximum discharge during water year, 5,340 cfs Apr. 5 (gage height, 11.45 ft); minimum, 49 cfs Sept. 2, 7; minimum gage height, 1.32 ft Oct. 16-18; minimum daily discharge, 52 cfs Sept. 1, 3, 6.
1957: Maximum discharge during period October to December, 2,790 cfs Dec. 20 (gage height, 8.90 ft); minimum, 93 cfs Nov. 7, 8 (gage height, 1.83 ft).
1934-57: Maximum discharge, 22,200 cfs Aug. 13, 1940 (gage height, 19.5 ft, from floodmark in gage well), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 23 cfs Sept. 9, 1954 (gage height, 0.99 ft); minimum daily, 28 cfs Sept. 16, 1956.
Maximum stage known, about 24 ft in July 1916.
Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by gristmills and primary mineral processing mills.
Revisions.--WSP 973: Drainage area.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 80 | 312 | b80 | 135 | 1,820 | 660 | 245 | 251 | 169 | 243 | 107 | 52 |
| 2 | 73 | 232 | b80 | b125 | 829 | 480 | 676 | 239 | 170 | 205 | 104 | 55 |
| 3 | 69 | 165 | 83 | b130 | 597 | 405 | 370 | 275 | 188 | 191 | 97 | 52 |
| 4 | 90 | 140 | 83 | b140 | 606 | 355 | 835 | 283 | 193 | 177 | 100 | 73 |
| 5 | 110 | 124 | 81 | b150 | 546 | 323 | 3,720 | 237 | *845 | 166 | 166 | 62 |
| 6 | 102 | 114 | 79 | 144 | 594 | 301 | 1,120 | 221 | 474 | 154 | 102 | 52 |
| 7 | 82 | 108 | 78 | 138 | 510 | 293 | 696 | *206 | 338 | 144 | 92 | 69 |
| 8 | 73 | 118 | 74 | *124 | 513 | 295 | 718 | 198 | 281 | 139 | 87 | 58 |
| 9 | 67 | 112 | 72 | 131 | 838 | 261 | 732 | 193 | 452 | 133 | 82 | 84 |
| 10 | 64 | 100 | 74 | 144 | 791 | 243 | 582 | 186 | 330 | *129 | 79 | 182 |
| 11 | 64 | 96 | 72 | 131 | 627 | 247 | 510 | 215 | 291 | 120 | 76 | *146 |
| 12 | 62 | 92 | *92 | 120 | 507 | 249 | 459 | 200 | *340 | 115 | 78 | 104 |
| 13 | 58 | 89 | 178 | 114 | 438 | *232 | 415 | 178 | 285 | 108 | *76 | 84 |
| 14 | 58 | *87 | 198 | 112 | 382 | 226 | 380 | 188 | 293 | 105 | 73 | 72 |
| 15 | 58 | 87 | 345 | 110 | 332 | 222 | 352 | 247 | 305 | 113 | 170 | 66 |
| 16 | 57 | 87 | 288 | 108 | 328 | 206 | *332 | 183 | 277 | 232 | 142 | 296 |
| 17 | 57 | 304 | 195 | b105 | 289 | 200 | 321 | 169 | 251 | 255 | 97 | *652 |
| 18 | 58 | 230 | 160 | b100 | 265 | 200 | 315 | 170 | 305 | 205 | 89 | 362 |
| 19 | 62 | 151 | 142 | b100 | *283 | 215 | 307 | 175 | 263 | 209 | 106 | 210 |
| 20 | 80 | 131 | 129 | b110 | 281 | 194 | 285 | 215 | 224 | 162 | 111 | 169 |
| 21 | 80 | 120 | 122 | b105 | 239 | 181 | 273 | 172 | 205 | 146 | 84 | 150 |
| 22 | 512 | 120 | 135 | b120 | 224 | 203 | 285 | 163 | 191 | 144 | 78 | 151 |
| 23 | *238 | 108 | 156 | 639 | 215 | 196 | 285 | 175 | 251 | 140 | 72 | 136 |
| 24 | *156 | 108 | 528 | 321 | 210 | 198 | 323 | 162 | 222 | 246 | 70 | 123 |
| 25 | 122 | 100 | 309 | 235 | *213 | 221 | 289 | 181 | 215 | 164 | 68 | 109 |
| 26 | 114 | 102 | 220 | 205 | 667 | 210 | 257 | 311 | 226 | 138 | 68 | 101 |
| 27 | 138 | 100 | 190 | 208 | 453 | 198 | 241 | 412 | 319 | 125 | 65 | 97 |
| 28 | 110 | b94 | 170 | 420 | 659 | 183 | 236 | 265 | 269 | 122 | 61 | 98 |
| 29 | 102 | b90 | 149 | 500 | - | 177 | 247 | 208 | 360 | 118 | 58 | 200 |
| 30 | 104 | b85 | 140 | 535 | -------- | 170 | 273 | 188 | 253 | 127 | 60 | 388 |
| 31 | 120 | -------- | 140 | 1,330 | -------- | 163 | -------- | 180 | -------- | 120 | 55 | -------- |
| Total | 3,220 | 3,906 | 4,842 | 7,089 | 14,256 | 7,907 | 16,079 | 6,646 | 8,785 | 4,895 | 2,773 | 4,453 |
| Mean | 104 | 130 | 156 | 229 | 509 | 255 | 536 | 214 | 293 | 158 | 89.5 | 148 |
| Cfsm | 1.00 | 1.25 | 1.50 | 2.20 | 4.89 | 2.45 | 5.15 | 2.06 | 2.82 | 1.52 | 0.861 | 1.42 |
| In. | 1.15 | 1.40 | 1.73 | 2.53 | 5.10 | 2.83 | 5.75 | 2.38 | 3.14 | 1.75 | 0.99 | 1.59 |

Calendar year 1956: Max 1,730 Min 28 Mean 165 Cfsm 1.59 In. 21.62
Water year 1956-57: Max 3,720 Min 52 Mean 232 Cfsm 2.23 In. 30.34

Peak discharge (base, 1,500 cfs).--Feb. 1 (2 a.m.) 2,480 cfs (7.12 ft); Apr. 5 (7 a.m.) 5,340 cfs (11.45 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Discharge, in cubic feet per second, 1957

| Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 251 | 113 | 267 | 9 | 120 | 160 | 485 | 17 | 160 | 221 | 261 | 25 | 166 | *808 | 355 |
| 2 | 196 | 108 | 247 | 10 | *113 | 112 | 385 | 18 | 201 | 427 | 247 | 26 | 146 | 661 | 542 |
| 3 | 198 | 103 | 231 | 11 | 110 | 105 | 335 | 19 | 142 | 872 | 253 | 27 | 142 | 475 | 415 |
| 4 | 200 | 102 | 273 | 12 | 145 | 105 | b315 | 20 | 126 | 510 | 1,320 | 28 | 129 | 395 | 375 |
| 5 | 164 | 99 | 222 | 13 | 124 | 102 | b300 | 21 | 119 | *360 | 895 | 29 | 124 | 342 | 340 |
| 6 | 146 | 97 | 212 | 14 | 110 | 296 | b280 | 22 | 115 | 309 | 522 | 30 | 123 | 305 | 311 |
| 7 | 136 | 94 | 267 | 15 | 106 | 269 | b270 | 23 | 113 | 706 | 432 | 31 | 119 | - | 291 |
| 8 | 127 | 141 | 792 | 16 | 103 | 224 | *253 | 24 | 205 | 440 | 385 | | | | |
| Total | | | | | | | | | | | | | 4,479 | 9,061 | 12,078 |
| Mean | | | | | | | | | | | | | 144 | 302 | 390 |
| Cubic feet per second per square mile | | | | | | | | | | | | | 1.38 | 2.90 | 3.75 |
| Runoff in inches | | | | | | | | | | | | | 1.60 | 3.24 | 4.32 |

Calendar year 1957: Max 3,720 Min 52 Mean 270 Cfsm 2.60 In. 35.22

Peak discharge (base, 1,500 cfs).--Dec. 20 (6 p.m.) 2,790 cfs (8.90 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Cane River near Sioux, N. C.

Location.--Lat 36°00'52", long 82°19'40", on right bank on State Highway 26, 1.3 miles upstream from confluence with North Toe River, 1.5 miles east of Sioux, Yancey County, and at mile 1.3.

Drainage area.--157 sq mi.

Records available.--May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,045.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 241 cfs.

Extremes.--Maximum discharge during year, 9,030 cfs Apr. 5 (gage height, 10.90 ft); minimum, 63 cfs Sept. 1, 2, 3 (gage height, 2.07 ft); minimum daily, 64 cfs Sept. 2.
1934-57: Maximum discharge, 31,800 cfs Aug. 13, 1940 (gage height, 17.8 ft), from rating curve extended above 8,000 cfs on basis of slope-area determination at gage height 15.65 ft; minimum, 18 cfs Jan. 6, 1940 (gage height, 1.14 ft), result of freezeup; minimum daily, 27 cfs Sept. 14, 1953.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation at Burnsville powerplant since October 1955. Slight diurnal fluctuation at low flow caused by small mills above station.

Revisions (water years).--WSP 893: 1934(M). WSP 1143: 1940(M).

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 24, Feb. 27 to June 23

| | | | |
|---|---|---|---|
| 2.0 | 58 | 5.0 | 1,320 |
| 2.2 | 91 | 6.0 | 2,080 |
| 2.5 | 157 | 7.0 | 3,020 |
| 3.0 | 310 | 8.0 | 4,150 |
| 3.5 | 495 | 9.2 | 5,780 |
| 4.0 | 725 | | |

Dec. 25 to Feb. 26, June 24 to Sept. 30

| | | | |
|---|---|---|---|
| 2.0 | 53 | 3.0 | 296 |
| 2.2 | 83 | 3.5 | 485 |
| 2.5 | 146 | 4.0 | 720 |

Note.--Same as preceding table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 143 | 305 | 89 | 162 | 3,550 | a1,100 | 203 | 381 | 214 | 318 | 81 | 66 |
| 2 | 122 | 245 | 87 | b139 | 1,990 | a600 | 589 | 356 | 205 | 249 | 92 | 64 |
| 3 | 109 | 180 | 86 | b135 | 1,130 | a500 | 384 | 328 | 211 | 218 | 80 | 69 |
| 4 | 109 | 167 | 86 | b140 | 1,190 | a450 | 1,200 | 314 | 375 | 197 | 89 | 89 |
| 5 | 145 | 147 | 84 | 240 | 1,500 | a400 | 5,780 | 275 | 1,730 | 183 | 215 | 75 |
| 6 | 143 | 135 | 82 | 200 | 1,180 | a370 | 1,730 | 252 | 890 | 167 | 106 | 67 |
| 7 | 111 | 129 | 82 | 186 | 929 | a360 | 952 | 236 | 598 | 156 | 85 | 70 |
| 8 | 99 | 155 | 80 | *169 | 802 | a360 | 902 | *223 | 467 | 149 | 78 | 67 |
| 9 | 91 | 143 | 80 | 172 | 1,850 | a320 | 952 | 214 | 443 | 141 | 77 | *73 |
| 10 | 86 | 122 | 78 | 183 | 1,420 | a290 | 710 | 205 | 423 | 134 | 73 | 73 |
| 11 | 82 | 115 | 78 | 186 | 1,000 | a300 | 594 | 245 | 366 | *128 | 72 | 94 |
| 12 | 82 | 109 | *111 | 169 | 753 | a300 | 515 | 223 | 328 | 121 | 70 | 133 |
| 13 | 78 | 103 | 230 | 162 | 610 | a280 | 459 | 197 | *292 | 115 | *69 | 98 |
| 14 | 77 | 99 | 215 | 151 | 517 | *268 | 412 | 191 | 356 | 110 | 92 | 73 |
| 15 | 73 | *97 | 458 | 144 | 454 | 258 | 380 | 211 | 275 | 181 | 265 | 69 |
| 16 | 72 | 95 | 415 | 139 | 446 | 242 | *352 | 191 | 265 | 175 | 151 | 151 |
| 17 | 70 | 215 | 292 | b125 | 384 | 233 | 334 | 178 | 249 | 132 | 96 | 342 |
| 18 | 75 | 214 | 236 | b110 | 347 | 230 | 320 | 178 | 258 | 144 | 102 | 494 |
| 19 | 95 | 152 | 200 | b120 | *339 | 258 | 303 | 189 | 242 | 130 | 125 | 218 |
| 20 | 82 | 135 | 183 | b140 | a380 | 233 | 282 | 239 | 220 | 123 | 102 | 172 |
| 21 | 87 | 129 | 170 | 132 | a330 | 220 | 268 | 175 | 200 | 108 | 83 | 139 |
| 22 | 533 | 140 | 211 | 139 | a310 | 239 | 286 | 180 | 197 | 102 | 78 | 119 |
| 23 | 296 | 120 | 245 | 902 | a300 | 236 | 324 | 189 | 248 | 102 | 75 | 110 |
| 24 | *180 | 113 | 757 | 466 | a280 | 236 | 362 | 290 | 347 | 154 | 73 | 108 |
| 25 | 150 | 109 | 469 | 339 | a290 | 265 | 303 | 262 | 262 | 121 | 73 | 94 |
| 26 | 138 | 107 | 336 | 289 | a1,400 | 245 | 272 | 474 | 233 | 104 | 73 | 87 |
| 27 | 145 | 103 | 276 | 354 | a700 | 233 | 258 | 737 | 233 | 96 | 72 | 83 |
| 28 | 138 | 99 | 236 | 736 | a1,000 | 220 | 314 | 455 | 218 | 94 | 69 | 87 |
| 29 | 122 | 97 | 212 | 620 | - | 208 | 387 | 317 | 350 | 89 | 69 | 241 |
| 30 | 150 | 95 | 186 | 758 | -------- | 203 | 331 | 265 | 321 | 94 | 67 | 477 |
| 31 | 226 | -------- | 172 | 3,190 | -------- | 194 | -------- | 236 | -------- | 89 | 66 | -------- |
| Total | 4,109 | 4,174 | 6,522 | 11,097 | 25,381 | 9,851 | 20,458 | 8,406 | 11,016 | 4,424 | 2,918 | 4,102 |
| Mean | 133 | 139 | 210 | 358 | 906 | 318 | 682 | 271 | 367 | 143 | 94.1 | 137 |
| Cfsm | 0.847 | 0.885 | 1.34 | 2.28 | 5.77 | 2.03 | 4.34 | 1.73 | 2.34 | 0.911 | 0.599 | 0.873 |
| In. | 0.97 | 0.99 | 1.54 | 2.63 | 6.01 | 2.33 | 4.85 | 1.99 | 2.61 | 1.05 | 0.69 | 0.97 |

Calendar year 1956: Max 3,000 Min 43 Mean 220 Cfsm 1.40 In. 19.04
Water year 1956-57: Max 5,780 Min 64 Mean 308 Cfsm 1.96 In. 26.63

Peak discharge (base, 2,600 cfs).--Feb. 1 (2 a.m.) 5,930 cfs (9.30 ft); Apr. 5 (4 a.m.) 9,030 cfs (10.90 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Toe River at Altapass and Watauga River near Sugar Grove.

b Stage-discharge relation affected by ice.

## North Indian Creek near Unicoi, Tenn.

Location.--Lat 36°10'35", long 82°17'36", on right bank 100 ft upstream from unnamed tributary, 900 ft upstream from Rocky Branch, and 3.4 miles southeast of Unicoi, Unicoi County.

Drainage area.--15.9 sq mi.

Records available.--May 1944 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,209.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 21.2 cfs.

Extremes.--Maximum discharge during year, 495 cfs Jan. 31 (gage height, 4.13 ft), from rating curve extended above 280 cfs; minimum, 4.2 cfs Sept. 7 (gage height, 0.94 ft).
1944-57: Maximum discharge, that of Jan. 31, 1957; minimum, 1.9 cfs Nov. 29, 1953; minimum gage height, 0.79 ft Sept. 22-28, 1944.

Remarks.--Records good. Some diversion from Davis Spring 1 mile upstream for part of water supply of Johnson City.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 28-31)

| Oct. 1 to Jan. 31 | | | | Jan. 31 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 3.5 | 1.7 | 36 | 0.9 | 3.4 | 1.5 | 26 |
| 1.1 | 6.0 | 2.0 | 67 | 1.0 | 5.3 | 2.0 | 78 |
| 1.3 | 13 | 2.5 | 143 | 1.1 | 8.1 | 2.5 | 154 |
| 1.5 | 23 | 3.3 | 303 | 1.3 | 15 | 3.3 | 308 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *8.6 | 12 | 6.0 | 12 | 306 | 37 | *17 | *18 | 19 | 25 | 6.7 | 4.7 |
| 2 | 8.2 | 6.6 | 5.8 | *10 | 210 | 34 | 24 | 22 | 18 | 21 | 6.4 | 4.5 |
| 3 | 7.6 | 5.8 | *6.0 | 10 | 117 | 32 | 19 | 21 | *16 | 19 | 6.1 | *7.0 |
| 4 | 7.6 | 5.5 | 6.3 | 15 | 141 | 29 | 118 | 19 | 17 | 17 | 11 | 7.5 |
| 5 | 7.9 | *5.2 | 5.8 | 27 | *132 | *26 | 262 | 18 | 34 | 16 | *12 | 5.6 |
| 6 | 9.4 | 5.0 | 5.8 | 23 | 133 | 25 | 109 | 17 | 49 | 14 | 7.8 | 4.9 |
| 7 | 7.3 | 5.5 | 5.5 | 23 | 125 | 25 | 66 | 16 | 37 | 14 | 7.0 | 4.5 |
| 8 | 7.0 | 12 | 5.5 | 19 | 125 | 27 | 122 | 15 | 28 | 12 | 6.4 | 4.5 |
| 9 | 6.6 | 12 | 6.0 | 22 | 171 | 25 | 114 | 15 | 23 | 12 | 6.1 | 4.9 |
| 10 | 6.3 | 8.6 | 6.0 | 24 | 208 | 24 | 76 | 14 | 20 | 11 | 5.6 | 6.7 |
| 11 | 6.0 | 7.9 | 5.8 | 21 | 130 | 26 | 58 | 15 | 18 | 11 | 5.6 | 9.5 |
| 12 | 6.0 | 7.9 | 11 | 19 | 88 | 29 | 47 | 14 | 19 | 10 | 7.3 | 8.1 |
| 13 | 5.8 | 7.6 | 21 | 18 | 66 | 28 | 40 | 13 | 34 | 10 | 5.9 | 6.1 |
| 14 | 5.5 | 7.3 | 17 | 16 | 56 | 26 | 34 | 13 | 55 | 9.3 | 6.4 | 7.7 |
| 15 | 5.5 | 6.6 | 17 | 15 | 47 | 24 | 31 | 13 | 29 | *10 | 36 | 6.7 |
| 16 | 5.5 | 6.3 | 15 | 14 | 43 | 23 | 29 | 13 | 23 | 10 | 14 | 11 |
| 17 | 5.5 | 16 | 14 | 12 | 36 | 22 | 26 | 12 | 48 | 17 | 10 | 15 |
| 18 | 5.8 | 11 | 14 | 9.2 | 32 | 22 | 24 | 16 | 50 | 16 | 18 | 10 |
| 19 | 5.8 | 10 | 13 | 10 | 35 | 22 | 23 | 21 | 39 | 11 | 14 | 8.7 |
| 20 | 5.8 | 8.6 | 12 | 11 | 32 | 20 | 21 | 20 | 28 | 9.3 | 9.6 | 8.1 |
| 21 | 6.3 | 8.6 | 13 | 13 | 29 | 19 | 21 | 16 | 23 | 9.0 | 8.4 | 7.3 |
| 22 | 7.6 | 8.9 | 19 | 13 | 26 | 20 | 20 | 20 | 19 | 8.4 | 7.5 | 8.4 |
| 23 | 6.6 | 7.3 | 19 | 23 | 25 | 19 | 23 | 17 | 32 | 15 | 7.3 | 11 |
| 24 | 6.0 | 7.3 | 40 | 17 | 24 | 18 | 27 | 33 | 29 | 16 | 7.0 | 9.3 |
| 25 | 6.0 | 7.0 | 28 | 17 | 23 | 20 | 23 | 26 | 37 | 10 | 6.7 | 7.5 |
| 26 | 6.0 | 7.0 | 23 | 16 | 25 | 19 | 20 | 31 | 37 | 9.0 | 7.0 | 6.7 |
| 27 | 6.6 | 6.6 | 19 | 39 | 23 | 19 | 20 | 143 | 29 | 8.7 | 6.1 | 6.4 |
| 28 | 6.0 | 6.6 | 16 | *221 | 32 | 18 | 19 | 62 | 28 | 8.1 | 5.9 | 6.7 |
| 29 | 6.0 | 6.6 | 15 | *286 | - | 18 | 19 | 37 | 28 | 7.5 | 5.6 | 9.0 |
| 30 | 6.0 | 6.3 | 14 | 195 | -------- | 17 | 18 | 28 | 31 | 7.5 | 5.3 | 12 |
| 31 | 5.8 | -------- | 13 | 294 | -------- | 17 | -------- | 22 | -------- | 7.5 | 4.9 | -------- |
| Total | 202.6 | 239.6 | 417.5 | 1,464.2 | 2,440 | 730 | 1,470 | 760 | 897 | 381.3 | 273.6 | 230.0 |
| Mean | 6.54 | 7.99 | 13.5 | 47.2 | 87.1 | 23.5 | 49.0 | 24.5 | 29.9 | 12.3 | 8.83 | 7.67 |
| Cfsm | 0.411 | 0.503 | 0.849 | 2.97 | 5.48 | 1.48 | 3.08 | 1.54 | 1.88 | 0.774 | 0.555 | 0.482 |
| In. | 0.47 | 0.56 | 0.98 | 3.42 | 5.71 | 1.71 | 3.44 | 1.78 | 2.10 | 0.89 | 0.64 | 0.54 |

Calendar year 1956: Max 196 Min 4.0 Mean 20.3 Cfsm 1.28 In. 17.35
Water year 1956-57: Max 306 Min 4.5 Mean 26.0 Cfsm 1.64 In. 22.24

Peak discharge (base, 220 cfs).--Jan. 29 (6:30 p.m.) 468 cfs (3.78 ft); Jan. 31 (8:30 p.m.) 495 cfs (4.13 ft); Feb. 10 (5:30 a.m.) 334 cfs (3.42 ft); Apr. 5 (1 a.m.) 394 cfs (3.69 ft); May 27 (7:30 a.m.) 323 cfs (3.37 ft).

* Discharge measurement made on this day.

## Nolichucky River at Embreeville, Tenn.

Location.--Lat 36°10'35", long 82°27'27", on left bank 2,000 ft upstream from bridge on State Highway 81 at Embreeville, Washington County, 3 miles northwest of Erwin, 5.2 miles downstream from North Indian Creek, and at mile 89.0.

Drainage area.--805 sq mi.

Records available.--September 1900 to May 1901 (published as "near Chucky Valley"), July 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,519.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. September 1900 to May 1901 chain gage at site 3 miles downstream at different datum. July 1920 to October 1931 chain gage at bridge 2,000 ft downstream at datum 6.33 ft lower.

Average discharge.--38 years (1919-57), 1,301 cfs.

Extremes.--Maximum discharge during year, 38,000 cfs Apr. 5 (gage height, 11.00 ft); minimum, 306 cfs Sept. 3 (gage height, 1.03 ft).

1900-1901, 1919-57: Maximum discharge, 82,500 cfs Aug. 13, 1940 (gage height, 18.57 ft), from rating curve extended above 48,000 cfs on basis of slope-area determination of peak flow; minimum, 85 cfs Sept. 8, 9, 1925 (gage height, 1.60 ft, site and datum then in use).

Remarks.--Records good. Slight diurnal fluctuation at low flow caused by small mill above station.

Revisions (water years).--WSP 803: 1935(M). WSP 823: Drainage area. WSP 1336: 1921-24, 1931(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 23 | | | | Jan. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 300 | 2.0 | 1,260 | 1.0 | 290 | 3.0 | 3,390 |
| 1.3 | 495 | 3.0 | 3,200 | 1.3 | 480 | 5.0 | 9,240 |
| 1.6 | 765 | | | 1.6 | 750 | 9.4 | 29,200 |
| | | | | 2.0 | 1,260 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *593 | 1,060 | 495 | 831 | *17,700 | 5,010 | *1,030 | *1,510 | 1,130 | 2,010 | 480 | 334 |
| 2 | 519 | 1,540 | 472 | *745 | 9,270 | 3,560 | 3,030 | 1,600 | 1,090 | 1,550 | 473 | 323 |
| 3 | 465 | 995 | *458 | 620 | 6,120 | 2,930 | 2,520 | 1,560 | *1,070 | 1,260 | 452 | *318 |
| 4 | 442 | 853 | 458 | 665 | 6,090 | 2,470 | 4,230 | 1,620 | 1,230 | 1,120 | 452 | 424 |
| 5 | 543 | *765 | 450 | 1,030 | *6,390 | *2,160 | *29,100 | 1,440 | 6,210 | 1,020 | *750 | 397 |
| 6 | 735 | 685 | 450 | 1,140 | 6,540 | 1,930 | 10,100 | 1,290 | 5,230 | 938 | 632 | 358 |
| 7 | 638 | 638 | 442 | 1,010 | 5,400 | 1,820 | 5,430 | 1,260 | 3,440 | 849 | 480 | 323 |
| 8 | 511 | 685 | 442 | 935 | 4,900 | 1,930 | 5,710 | 1,120 | 2,430 | 783 | 431 | 358 |
| 9 | 450 | 725 | 442 | 911 | 8,550 | 1,760 | 6,630 | 1,150 | 2,430 | 750 | 417 | 384 |
| 10 | 414 | 629 | 442 | 995 | 8,910 | 1,580 | 4,460 | 1,060 | 2,380 | 720 | 397 | 730 |
| 11 | 388 | 575 | 435 | 1,060 | 6,000 | 1,550 | 3,560 | 1,150 | 2,080 | 670 | 390 | 860 |
| 12 | 368 | 535 | 480 | 963 | 4,180 | 1,580 | 3,030 | 1,230 | 1,800 | 650 | 397 | 761 |
| 13 | 362 | 519 | 935 | 899 | 3,290 | 1,560 | 2,610 | 1,040 | 1,560 | 623 | 384 | 605 |
| 14 | 355 | 495 | 1,100 | 831 | 2,750 | 1,470 | 2,300 | 990 | 2,140 | 596 | 390 | 459 |
| 15 | 338 | 480 | 1,940 | 776 | 2,340 | 1,400 | 2,080 | 1,200 | 1,720 | *341 | 1,250 | 410 |
| 16 | 333 | 465 | 1,810 | 745 | 2,160 | 1,320 | 1,950 | 1,160 | 1,470 | 886 | 1,130 | 632 |
| 17 | 328 | 688 | 1,520 | 685 | 1,970 | 1,230 | 1,840 | 964 | 1,920 | 805 | 670 | 3,040 |
| 18 | 333 | 1,280 | 1,180 | 593 | 1,720 | 1,190 | 1,740 | 951 | 2,470 | 1,020 | 614 | 3,270 |
| 19 | 368 | 911 | 1,010 | 535 | 1,640 | 1,260 | 1,680 | 1,080 | 1,990 | 925 | 794 | 1,550 |
| 20 | 374 | 745 | 899 | 602 | 1,820 | 1,260 | 1,620 | 1,230 | 1,470 | 783 | 700 | 1,160 |
| 21 | 472 | 685 | 842 | 695 | 1,580 | 1,150 | 1,530 | 1,130 | 1,230 | 660 | 578 | 925 |
| 22 | 1,530 | 685 | 899 | 715 | 1,440 | 1,150 | 1,460 | 938 | 1,090 | 596 | 488 | 838 |
| 23 | 2,000 | 629 | 1,120 | 3,010 | 1,340 | 1,220 | 1,640 | 1,090 | 1,230 | 587 | 438 | 805 |
| 24 | 1,060 | 575 | 2,630 | 2,860 | 1,290 | 1,130 | 2,120 | 990 | 1,740 | 849 | 417 | 750 |
| 25 | 776 | 559 | 2,690 | 1,840 | 1,260 | 1,250 | 2,230 | 1,470 | 1,760 | 794 | 410 | 641 |
| 26 | 656 | 551 | 1,790 | 1,510 | 4,470 | 1,360 | 1,740 | 1,360 | 1,490 | 632 | 404 | 569 |
| 27 | 656 | 551 | 1,390 | 1,530 | 3,460 | 1,310 | 1,550 | 4,100 | 2,030 | 569 | 390 | 544 |
| 28 | 685 | 527 | 1,170 | *6,150 | 3,250 | 1,190 | 1,490 | 3,150 | 1,640 | 544 | 378 | 520 |
| 29 | 593 | 511 | 1,060 | 6,570 | - | 1,120 | 1,740 | 1,970 | 2,080 | 520 | 364 | 709 |
| 30 | 551 | 519 | 947 | 6,330 | ------- | 1,080 | 1,660 | 1,440 | 1,970 | 504 | 345 | 3,320 |
| 31 | 755 | -------- | 853 | 12,300 | -------- | 1,060 | -------- | 1,260 | -------- | 512 | 340 | -------- |
| Total | 18,591 | 21,060 | 31,251 | 60,101 | 125,830 | 51,990 | 111,810 | 43,503 | 61,520 | 25,366 | 16,235 | 26,317 |
| Mean | 600 | 702 | 1,008 | 1,939 | 4,494 | 1,677 | 3,727 | 1,403 | 2,051 | 818 | 524 | 877 |
| Cfsm | 0.745 | 0.872 | 1.25 | 2.41 | 5.58 | 2.08 | 4.63 | 1.74 | 2.55 | 1.02 | 0.651 | 1.09 |
| In. | 0.86 | 0.97 | 1.44 | 2.78 | 5.81 | 2.40 | 5.17 | 2.01 | 2.84 | 1.17 | 0.75 | 1.22 |

Calendar year 1956: Max 14,500 Min 210 Mean 1,125 Cfsm 1.40 In. 19.01
Water year 1956-57: Max 29,100 Min 318 Mean 1,626 Cfsm 2.02 In. 27.42

Peak discharge (base, 9,500 cfs).--Feb. 1 (1 a.m.) 25,600 cfs (8.72 ft); Feb. 9 (11:30 a.m.) 10,700 cfs (5.41 ft); Apr. 5 (7 a.m.) 38,000 cfs (11.00 ft).

* Discharge measurement made on this day.

## Nolichucky River below Nolichucky Dam, Tenn.

Location.--Lat 36°03'59", long 82°52'18", on right bank 0.30 mile downstream from Nolichucky Dam, Greene County, 2.2 miles upstream from Cove Creek, 7.0 miles south of Greeneville, and at mile 45.7.

Drainage area.--1,184 sq mi.

Records available.--May 1903 to December 1908, April 1919 to October 1925, and October 1945 to September 1957 in reports of Geological Survey. Published as "near Greeneville" 1903-8, 1919-25. May 1903 to December 1908 (revised records) and April 1919 to September 1924 in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,173.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 1903 to December 1908 and April 1919 to October 1925, at bridge 8.4 miles upstream at different datums.

Average discharge.--23 years (1903-8, 1919-25, 1945-57), 1,763 cfs.

Extremes.--Maximum discharge during year, 36,500 cfs Apr. 5 (gage height, 17.35 ft); minimum, 23 cfs Nov. 14 (gage height, 0.90 ft); minimum daily, 27 cfs Nov. 14.
1903-8, 1919-25, 1945-57: Maximum discharge observed, 73,500 cfs Jan. 23, 1906 (gage height, 19.3 ft), site and datum then in use, from rating curve extended above 9,200 cfs; minimum, 20 cfs Sept. 20, 1956 (gage height, 0.84 ft); minimum daily, 22 cfs Oct. 20, 1954.
Flood of Aug. 14, 1940, reached a discharge of 73,500 cfs, by computation of flow over dam.

Remarks.--Records good except those for period of no gage-height record, which are fair. Low flow regulated by Lake Davy Crockett since 1913 (controlled storage, 4,060 cfs-days).

Revisions.--See Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 23 | 3.1 | 460 |
| 1.0 | 28 | 3.5 | 840 |
| 1.5 | 62 | 4.0 | 1,540 |
| 2.0 | 108 | 6.0 | 5,150 |
| 2.5 | 188 | 10.0 | 14,400 |
| 2.8 | 280 | 14.7 | 27,700 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *641 | 1,050 | 622 | 1,240 | *27,700 | 5,670 | *1,830 | *2,000 | 1,080 | 2,150 | 730 | 410 |
| 2 | 688 | 1,090 | 494 | *1,300 | 18,600 | 5,060 | 1,780 | 2,170 | 1,080 | 2,570 | 830 | 420 |
| 3 | 582 | 1,560 | *523 | 1,230 | 10,000 | 4,070 | 2,660 | 2,120 | *1,280 | 2,100 | 467 | *432 |
| 4 | 692 | 1,280 | 600 | 976 | 8,080 | 3,540 | 2,710 | 2,060 | 2,340 | 1,230 | 523 | 615 |
| 5 | 790 | *826 | 608 | 880 | *10,100 | *3,110 | 24,600 | 1,630 | 2,590 | 1,210 | *604 | 599 |
| 6 | 504 | 710 | 512 | 1,400 | 9,360 | 2,880 | 17,600 | 1,500 | 6,560 | 1,530 | 857 | 612 |
| 7 | 490 | 806 | 606 | 1,660 | 8,720 | 2,790 | 7,880 | 1,950 | 4,810 | 1,630 | 906 | 416 |
| 8 | 496 | 1,180 | 496 | 982 | 7,970 | 2,750 | 6,840 | 1,930 | 3,380 | 949 | 888 | 414 |
| 9 | 770 | 904 | 505 | 1,110 | 10,800 | 2,730 | 10,600 | 1,820 | 2,870 | 857 | 707 | 421 |
| 10 | 726 | 740 | 404 | 1,300 | 14,900 | 2,680 | 6,880 | 1,510 | 2,810 | 858 | 415 | 926 |
| 11 | 698 | 734 | 494 | 1,850 | 10,600 | 2,610 | 5,170 | 960 | 2,360 | 1,300 | 413 | 804 |
| 12 | 938 | 968 | 590 | 1,410 | 6,970 | 2,550 | 4,330 | 1,090 | 2,660 | 1,350 | 512 | 996 |
| 13 | 429 | 756 | 685 | 1,410 | 5,390 | 2,070 | 3,810 | 1,310 | 2,570 | 887 | 606 | 1,290 |
| 14 | 424 | 27 | 1,370 | 1,200 | 4,500 | 2,030 | 3,470 | 2,460 | 2,160 | 898 | 614 | 1,060 |
| 15 | 396 | 509 | 1,800 | 988 | 3,900 | 2,510 | 3,110 | 1,420 | 2,570 | *858 | 1,120 | 575 |
| 16 | 404 | 630 | 2,370 | 1,140 | 3,600 | 2,120 | 2,950 | 1,410 | 2,570 | 925 | 1,900 | 806 |
| 17 | 400 | 619 | 1,780 | 1,250 | 3,330 | 1,820 | 2,880 | 1,850 | 1,320 | 1,300 | 984 | 1,740 |
| 18 | 602 | 915 | 2,500 | 1,220 | 2,980 | 1,650 | 2,800 | 1,180 | 1,850 | 1,290 | 686 | 2,610 |
| 19 | 514 | 1,530 | 1,140 | 630 | 2,860 | 1,740 | 2,710 | 1,170 | 2,660 | 1,460 | 609 | 2,680 |
| 20 | 510 | 1,190 | 859 | 626 | 2,820 | 1,880 | 2,620 | 1,070 | 2,650 | 1,210 | 787 | 2,590 |
| 21 | 407 | 778 | 1,220 | 614 | 2,800 | 1,840 | 2,530 | 1,640 | 2,570 | 1,180 | 1,010 | 1,080 |
| 22 | 405 | 727 | 1,240 | 788 | 2,730 | 1,830 | 2,190 | 1,810 | 1,200 | 630 | 1,060 | 870 |
| 23 | 2,040 | 777 | 2,100 | 1,010 | 2,610 | 1,630 | 2,000 | 1,710 | 1,220 | 729 | 846 | 606 |
| 24 | 2,500 | 1,120 | 1,940 | 3,290 | 2,530 | 1,740 | 2,500 | 1,580 | 1,830 | 724 | 503 | 1,070 |
| 25 | 1,320 | 681 | 2,590 | 2,710 | 2,480 | 1,400 | 2,590 | 1,160 | 2,570 | 961 | 500 | 1,050 |
| 26 | 1,190 | 622 | 2,680 | 2,570 | 2,090 | 1,920 | 2,590 | 1,190 | 2,570 | 1,910 | 526 | 1,370 |
| 27 | 684 | 671 | 2,610 | 2,020 | 3,970 | 2,040 | 2,550 | 2,850 | 2,220 | 562 | 518 | 1,370 |
| 28 | 716 | 648 | 1,730 | 5,440 | 3,670 | 2,000 | 2,020 | 4,830 | 2,570 | 536 | 516 | 671 |
| 29 | 385 | 655 | 987 | 10,800 | - | 1,560 | 1,800 | 2,960 | 1,960 | 718 | 520 | 652 |
| 30 | 410 | 642 | 964 | *11,300 | -------- | 1,290 | 1,660 | 2,660 | 1,960 | 634 | 415 | 1,340 |
| 31 | 868 | -------- | 1,350 | 12,000 | -------- | 1,440 | -------- | 2,290 | -------- | 727 | 416 | -------- |
| Total | 22,619 | 25,325 | 38,369 | 76,344 | 196,060 | 74,950 | 139,660 | 57,310 | 72,840 | 35,873 | 21,988 | 30,495 |
| Mean | 730 | 844 | 1,238 | 2,463 | 7,002 | 2,418 | 4,655 | 1,849 | 2,428 | 1,157 | 709 | 1,016 |
| Cfsm | 0.617 | 0.713 | 1.05 | 2.08 | 5.91 | 2.04 | 3.93 | 1.56 | 2.05 | 0.977 | 0.599 | 0.858 |
| In. | 0.71 | 0.80 | 1.21 | 2.40 | 6.16 | 2.35 | 4.39 | 1.80 | 2.29 | 1.13 | 0.69 | 0.96 |

Calendar year 1956: Max 18,300 Min 27 Mean 1,571 Cfsm 1.33 In. 18.08
Water year 1956-57: Max 27,700 Min 27 Mean 2,169 Cfsm 1.83 In. 24.89

Peak discharge (base, 11,500 cfs).--Jan. 30 (7 a.m.) 13,200 cfs (9.55 ft); Feb. 1 (9 a.m.) 32,600 cfs (16.23 ft); Feb. 10 (5:30 p.m.) 16,300 cfs (10.73 ft); Apr. 5 (5 p.m.) 36,500 cfs (17.35 ft).
* Discharge measurement made on this day.
Note.--No gage-height record June 4 to July 15; discharge estimated on basis of records for station near Morristown and Nolichucky Dam powerplant records.

## Lick Creek at Mohawk, Tenn.

Location.--Lat 36°12'09", long 83°02'53", on right bank 0.25 mile east of Mohawk, Greene County, 0.6 mile upstream from Riley Creek, and 17.5 miles upstream from mouth.

Drainage area.--220 sq mi.

Records available.--July 1946 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,060.59 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--11 years, 237 cfs.

Extremes.--Maximum discharge during year, 8,030 cfs Jan. 29 (gage height, 15.83 ft); minimum, 16 cfs Dec. 9; minimum gage height, 1.76 ft Sept. 9.
1946-57: Maximum discharge, 10,700 cfs Jan. 31, 1950 (gage height, 16.24 ft), from rating curve extended above 5,000 cfs; minimum, 8.4 cfs Sept. 12, 1954 (gage height, 1.66 ft).

Remarks.--Records good.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 12, Mar. 3-7, Aug. 1-15)

| | | | |
|---|---|---|---|
| 1.7 | 17 | 11.0 | 1,000 |
| 2.0 | 34 | 12.0 | 1,420 |
| 2.5 | 66 | 12.5 | 1,820 |
| 3.0 | 106 | 13.0 | 2,480 |
| 7.0 | 505 | 15.3 | 6,860 |
| 10.0 | 815 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 21 | 19 | 74 | 6,820 | 1,060 | 120 | 104 | 54 | 62 | 42 | 20 |
| 2 | 18 | 20 | 19 | 67 | *4,700 | 1,300 | 173 | 101 | 52 | 49 | 46 | 20 |
| 3 | 19 | 22 | 18 | 61 | 2,050 | 527 | 148 | 99 | 51 | 44 | 39 | 20 |
| 4 | 20 | 22 | 18 | *90 | 1,390 | 360 | *380 | 94 | 52 | 42 | 44 | *21 |
| 5 | 20 | 20 | *18 | 482 | 1,310 | 317 | 1,600 | 90 | 259 | 40 | *84 | 21 |
| 6 | 22 | 20 | 18 | 365 | 1,410 | *297 | 1,900 | *87 | 227 | 38 | 45 | 20 |
| 7 | 22 | *22 | 18 | 188 | 1,670 | 315 | 768 | 83 | 180 | 37 | 38 | 19 |
| 8 | *21 | 22 | 18 | 158 | 2,040 | 786 | 870 | 81 | 77 | 35 | 35 | 18 |
| 9 | 20 | 23 | 18 | 407 | *2,700 | 742 | 2,460 | 79 | 61 | *35 | 33 | 18 |
| 10 | 20 | 24 | 18 | 779 | 3,510 | 378 | 1,730 | 76 | *55 | 33 | 33 | 30 |
| 11 | 20 | 24 | 18 | 655 | 2,640 | 292 | 609 | 75 | 53 | 33 | 31 | 105 |
| 12 | 20 | 22 | 105 | 246 | 1,440 | 369 | 360 | 75 | 52 | 30 | 31 | 39 |
| 13 | 20 | 20 | 418 | 177 | 776 | 425 | 305 | 71 | 51 | 29 | 35 | 26 |
| 14 | 20 | 20 | 589 | 142 | 522 | 325 | 273 | 69 | 72 | 28 | 36 | 63 |
| 15 | 20 | 20 | 697 | 118 | 437 | 266 | 243 | 94 | 48 | 29 | 211 | 56 |
| 16 | 20 | 24 | 601 | 112 | 410 | 238 | 224 | 92 | 56 | 48 | 264 | 56 |
| 17 | 20 | 30 | 276 | 102 | 368 | 212 | 216 | 76 | 228 | 43 | 61 | 47 |
| 18 | 21 | 30 | 144 | 83 | 324 | 202 | 199 | 74 | 192 | 202 | 57 | 35 |
| 19 | 20 | 24 | 137 | 78 | 352 | 212 | 187 | 67 | 61 | 59 | 74 | 29 |
| 20 | 23 | 22 | 87 | 79 | 474 | 201 | 175 | 108 | 566 | 44 | 813 | 28 |
| 21 | 19 | 21 | 210 | 81 | 348 | 176 | 190 | 90 | 146 | 34 | 474 | 88 |
| 22 | 23 | 21 | 655 | 97 | 292 | 209 | 178 | 68 | 63 | 31 | 52 | 90 |
| 23 | 24 | 24 | 684 | 460 | 265 | 238 | 161 | 67 | 86 | 29 | 33 | 44 |
| 24 | 24 | 26 | 795 | 467 | 248 | 190 | 161 | 76 | 237 | 178 | 27 | 35 |
| 25 | 23 | 24 | 615 | 190 | 237 | 177 | 146 | 391 | 542 | 58 | 25 | 30 |
| 26 | 22 | 21 | 221 | 163 | 261 | 162 | 133 | 94 | 116 | 35 | 24 | 27 |
| 27 | 21 | 20 | 146 | 630 | 373 | 148 | 125 | 102 | 67 | 31 | 24 | 25 |
| 28 | 21 | 20 | 117 | 2,420 | 543 | 140 | 119 | 82 | 58 | 29 | 23 | 44 |
| 29 | 20 | 20 | 100 | 6,350 | - | 133 | 114 | 64 | 75 | 29 | 22 | 56 |
| 30 | 20 | 20 | 87 | *4,720 | -------- | 132 | 110 | 58 | 67 | 28 | 22 | 53 |
| 31 | 20 | -------- | 79 | 3,440 | -------- | 122 | -------- | 56 | -------- | 48 | 21 | -------- |
| Total | 642 | 669 | 6,963 | 23,481 | 37,910 | 10,651 | 14,377 | 2,843 | 3,904 | 1,490 | 2,799 | 1,183 |
| Mean | 20.7 | 22.3 | 225 | 757 | 1,354 | 344 | 479 | 91.7 | 130 | 48.1 | 90.3 | 39.4 |
| Cfsm | 0.094 | 0.101 | 1.02 | 3.44 | 6.15 | 1.56 | 2.18 | 0.417 | 0.591 | 0.219 | 0.410 | 0.179 |
| In. | 0.11 | 0.11 | 1.18 | 3.97 | 6.41 | 1.80 | 2.43 | 0.48 | 0.66 | 0.25 | 0.47 | 0.20 |

Calendar year 1956: Max 6,090 Min 18 Mean 265 Cfsm 1.20 In. 16.40
Water year 1956-57: Max 6,820 Min 18 Mean 293 Cfsm 1.33 In. 18.07

Peak discharge (base, 3,000 cfs).--Jan. 29 (7 p.m.) 8,030 cfs (15.83 ft); Feb. 1 (6 p.m.) 7,430 cfs (15.56 ft); Feb. 10 (9 p.m.) 3,980 cfs (13.89 ft).
* Discharge measurement made on this day.

## Nolichucky River near Morristown, Tenn.

Location.--Lat 36°10'49", long 83°10'32", on right bank 0.25 mile downstream from Bent Creek, 0.6 mile upstream from Susong Bridge, 1.1 miles upstream from Forgey Island, 7 miles southeast of Morristown, Hamblen County, and at mile 14.5.

Drainage area.--1,679 sq mi.

Records available.--November 1920 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,015.78 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 6, 1925, chain gage at bridge 3¾ miles downstream at datum 10.34 ft lower. Nov. 6, 1925, to Sept. 30, 1942, water-stage recorder at site 150 ft upstream from chain gage at same datum as chain gage.

Average discharge.--36 years (1921-57), 2,185 cfs.

Extremes.--Maximum discharge during year, 43,800 cfs Feb. 1 (gage height, 20.54 ft); minimum, 115 cfs Nov. 16 (gage height, 1.66 ft); minimum daily, 156 cfs Nov. 15.
1920-57: Maximum discharge, 61,900 cfs Aug. 14, 1940 (gage height, 22.68 ft, site and datum then in use), from rating curve extended above 39,000 cfs on basis of records for station at Embreeville and peak flow over Nolichucky Dam; minimum observed, 22 cfs Sept. 7, 28, 1925 (gage height, 1.00 ft, site and datum then in use); minimum daily, 60 cfs Sept. 7, 28, 1925.

Remarks.--Records good. Low flow partly regulated by Lake Davy Crockett (controlled storage, 4,060 cfs-days), 18 miles upstream.

Revisions (water years).--WSP 563: 1921(M). WSP 823: Drainage area. WSP 873: 1935(M). WSP 893: 1927(M), 1928, 1935, 1936-37(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.7 | 130 | 5.0 | 3,470 |
| 2.0 | 270 | 9.0 | 9,880 |
| 2.5 | 615 | 15.0 | 23,400 |
| 3.0 | 1,070 | 19.2 | 37,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 930 | 1,340 | 702 | 1,930 | 36,900 | 6,580 | 1,860 | 2,020 | 1,760 | 2,220 | 824 | 454 |
| 2 | 704 | 1,130 | 680 | 1,570 | *30,000 | 7,000 | 2,060 | 2,350 | 1,000 | 2,890 | 890 | 436 |
| 3 | 794 | 1,450 | 736 | 1,440 | 16,500 | 5,700 | 2,930 | 2,370 | 1,430 | 2,390 | 836 | 454 |
| 4 | 688 | 1,700 | 420 | *1,260 | 11,200 | 4,320 | *3,970 | 2,240 | 1,980 | 2,010 | 566 | *451 |
| 5 | 864 | 958 | *662 | 1,830 | 12,800 | 3,830 | 17,400 | 1,940 | 2,890 | 1,220 | *684 | 652 |
| 6 | 846 | 809 | 716 | 2,150 | 12,200 | *3,510 | 25,600 | *1,860 | 6,130 | 1,560 | 800 | 656 |
| 7 | 632 | *924 | 572 | 2,010 | 11,900 | 3,430 | 10,500 | 1,900 | 5,830 | 1,560 | 948 | 650 |
| 8 | *572 | 1,160 | 662 | 1,520 | 11,300 | 4,440 | 9,720 | 2,130 | 3,990 | 1,440 | 978 | 496 |
| 9 | 659 | 1,180 | 542 | 1,920 | 15,300 | 4,200 | 13,100 | 2,100 | 3,260 | *978 | 834 | 456 |
| 10 | 864 | 998 | 634 | 2,660 | 19,600 | 3,620 | 10,400 | 1,780 | *3,030 | 938 | 759 | 637 |
| 11 | 774 | 828 | 468 | 2,900 | 16,600 | 3,260 | 7,370 | 1,530 | 2,860 | 1,460 | 488 | 1,090 |
| 12 | 890 | 917 | 910 | 2,290 | 10,400 | 3,330 | 5,260 | 1,210 | 2,880 | 1,160 | 453 | 1,220 |
| 13 | 1,000 | 906 | 1,760 | 1,860 | 7,610 | 2,900 | 4,470 | 1,550 | 2,960 | 1,250 | 567 | 857 |
| 14 | 380 | 729 | 2,010 | 1,680 | 5,970 | 2,670 | 3,990 | 1,950 | 3,020 | 1,270 | 656 | 2,170 |
| 15 | 438 | 156 | 3,580 | 1,320 | 5,080 | 3,080 | 3,610 | 2,290 | 3,060 | 588 | 887 | 624 |
| 16 | 535 | 610 | 3,670 | 1,350 | 4,580 | 2,660 | 3,360 | 1,520 | 2,900 | 1,130 | 2,150 | 1,290 |
| 17 | 455 | 740 | 2,300 | 1,510 | 4,220 | 2,300 | 3,250 | 1,720 | 2,760 | 1,420 | 1,810 | 942 |
| 18 | 387 | 764 | 3,060 | 1,530 | 3,830 | 2,300 | 3,160 | 1,720 | 1,240 | 1,840 | 789 | 2,810 |
| 19 | 678 | 1,330 | 1,950 | 1,140 | 3,720 | 2,200 | 3,060 | 1,560 | 3,060 | 1,620 | 868 | 2,940 |
| 20 | 582 | 1,690 | 1,200 | 793 | 3,810 | 2,190 | 2,960 | 1,370 | 3,300 | 1,540 | 1,330 | 2,920 |
| 21 | 574 | 976 | 1,740 | 816 | 3,620 | 2,280 | 2,860 | 1,430 | 3,230 | 1,160 | 2,270 | 2,070 |
| 22 | 577 | 866 | 2,640 | 864 | 3,430 | 2,280 | 2,840 | 1,830 | 1,860 | 1,000 | 1,160 | 1,200 |
| 23 | 1,160 | 1,000 | 3,390 | 1,660 | 3,260 | 2,200 | 2,060 | 2,260 | 1,510 | 724 | 1,050 | 714 |
| 24 | 2,660 | 870 | 3,460 | 3,480 | 3,140 | 2,040 | 2,680 | 1,790 | 1,680 | 924 | 632 | 1,250 |
| 25 | 1,990 | 1,160 | 3,790 | 3,480 | 3,070 | 2,150 | 2,840 | 1,920 | 3,690 | 1,020 | 560 | 953 |
| 26 | 1,450 | 676 | 3,330 | 3,020 | 2,670 | 2,100 | 2,850 | 1,560 | 3,100 | 1,680 | 594 | 1,400 |
| 27 | 896 | 674 | 3,070 | 3,840 | 4,090 | 2,160 | 2,800 | 2,280 | 2,490 | 1,340 | 580 | 1,270 |
| 28 | 922 | 744 | 2,630 | 8,850 | 4,720 | 2,260 | 2,240 | 5,280 | 2,840 | 592 | 566 | 1,470 |
| 29 | 612 | 734 | 1,340 | 15,300 | - | 2,100 | 2,030 | 3,560 | 2,280 | 620 | 567 | 802 |
| 30 | 418 | 723 | 1,260 | 19,600 | -------- | 1,780 | 2,030 | 2,920 | 2,440 | 756 | 542 | 665 |
| 31 | 469 | -------- | 1,180 | 17,600 | -------- | 1,610 | -------- | 2,840 | -------- | 699 | 458 | -------- |
| Total | 25,400 | 28,742 | 55,064 | 113,173 | 271,520 | 96,480 | 163,260 | 64,800 | 84,460 | 40,999 | 27,096 | 33,999 |
| Mean | 819 | 958 | 1,776 | 3,651 | 9,697 | 3,112 | 5,442 | 2,090 | 2,815 | 1,323 | 874 | 1,133 |
| Cfsm | 0.488 | 0.571 | 1.06 | 2.17 | 5.78 | 1.85 | 3.24 | 1.24 | 1.68 | 0.788 | 0.521 | 0.675 |
| In. | 0.56 | 0.64 | 1.22 | 2.51 | 6.01 | 2.14 | 3.62 | 1.44 | 1.87 | 0.91 | 0.60 | 0.75 |

Calendar year 1956: Max 21,100 Min 156 Mean 2,155 Cfsm 1.28 In. 17.47
Water year 1956-57: Max 36,900 Min 156 Mean 2,753 Cfsm 1.64 In. 22.27

Peak discharge (base, 13,000 cfs).--Feb. 1 (7:30 p.m.) 43,800 cfs (20.54 ft); Feb. 11 (2 a.m.) 20,600 cfs (13.95 ft); Apr. 6 (2 a.m.) 35,400 cfs (18.74 ft); Apr. 8 (8 p.m.) 14,600 cfs (11.36 ft).
* Discharge measurement made on this day.

## French Broad River below Douglas Dam, Tenn.

Location.--Lat 35°57'06", long 83°33'05", on right bank 1.0 mile downstream from Douglas Dam, 1.7 miles upstream from Millican Creek, 5.8 miles north of Sevierville, Sevier County, and at mile 31.3.

Drainage area.--4,543 sq mi.

Records available.--October 1918 to September 1957. Published as "at Dandridge" 1918-42. Gage-height records collected at Dandridge 1904-42 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 865.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1918, to Oct. 7, 1923, staff gage at Dandridge 13 miles upstream at datum 37.67 ft higher. Oct. 8, 1923, to June 18, 1931, staff gage and June 19, 1931, to Sept. 30, 1942, water-stage recorder, at Dandridge at datum 37.63 ft higher.

Average discharge.--39 years, 6,482 cfs (unadjusted).

Extremes.--Maximum discharge during year, 33,100 cfs Feb. 12 (gage height, 12.30 ft); minimum, 19 cfs Dec. 17 (gage height, 1.47 ft); minimum daily, 20 cfs Dec. 15, 16.

1918-57: Maximum discharge, 95,600 cfs Aug. 31, 1940 (gage height, 20.93 ft), site and datum then in use; minimum, 4.7 cfs Mar. 10, 1943 (gage height, 1.16 ft); minimum daily, 5.5 cfs Mar. 9, 10, 1943.

Flood of May 21, 1901, reached a stage of 28.0 ft at Dandridge. Stages of 40 ft in March 1867 and 32 ft in May 1875 or 1876 are said to have occurred.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow completely regulated by Douglas Lake (see p. 223).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 20

| | | | |
|---|---|---|---|
| 1.4 | 13 | 2.5 | 440 |
| 1.5 | 21 | 3.0 | 900 |
| 1.6 | 31 | 4.0 | 2,160 |
| 1.7 | 46 | 5.0 | 4,170 |
| 1.8 | 68 | 7.0 | 9,980 |
| 2.0 | 132 | 10.0 | 22,400 |
| 2.2 | 230 | 12.3 | 33,100 |

Feb. 20 to Sept. 30

| | | | |
|---|---|---|---|
| 3.0 | 900 | 7.0 | 9,720 |
| 4.0 | 2,150 | 10.2 | 23,300 |
| 5.0 | 3,940 | | |

Note.--Same as preceding table below 3.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *7,350 | *3,850 | 4,920 | 11,500 | 17,000 | 12,000 | *10,700 | 7,310 | 7,460 | *5,960 | 7,460 | 4,990 |
| 2 | 7,470 | 3,890 | 2,240 | *11,200 | 19,000 | 12,000 | 7,580 | *7,280 | 7,460 | 2,300 | *7,250 | 5,970 |
| 3 | 7,720 | 3,850 | *1,760 | 9,810 | 23,000 | 12,500 | 5,330 | 7,340 | 7,460 | 2,460 | 6,740 | 15,500 |
| 4 | 7,720 | 4,580 | 2,320 | 5,010 | 28,000 | 15,000 | 612 | 6,450 | 8,880 | 1,950 | 3,620 | 11,200 |
| 5 | 5,170 | 5,600 | 2,550 | 4,000 | *27,700 | *11,900 | 43 | 5,830 | 7,920 | 1,380 | 6,020 | 11,400 |
| 6 | 3,600 | 5,890 | 2,400 | 4,020 | 27,300 | 3,940 | 36 | 7,400 | 8,420 | 5,270 | 5,040 | 6,860 |
| 7 | 3,820 | 5,570 | 2,440 | 4,180 | 27,700 | 7,240 | 29 | 7,770 | 6,230 | 5,890 | 7,360 | 5,840 |
| 8 | 5,260 | 5,670 | 2,550 | 4,270 | 28,900 | 10,900 | 100 | 7,920 | 5,460 | 6,000 | 5,780 | 3,410 |
| 9 | 5,820 | 8,180 | 2,450 | 5,330 | 30,800 | 5,160 | 48 | 8,920 | 6,260 | 6,100 | 5,140 | 7,920 |
| 10 | 5,530 | 7,690 | 3,450 | 6,450 | 30,700 | 2,000 | 1,460 | 8,460 | 3,080 | 5,520 | 6,050 | *7,370 |
| 11 | 4,840 | 5,540 | 3,450 | 6,750 | 30,900 | 8,700 | 7,890 | 8,400 | 3,460 | 6,000 | 4,680 | 9,800 |
| 12 | 5,950 | 6,160 | 4,300 | 5,970 | *32,800 | 8,900 | 7,460 | 1,550 | 4,920 | 6,980 | 7,460 | 9,130 |
| 13 | 4,070 | 7,690 | 85 | 398 | 32,700 | 3,580 | 3,720 | 9,790 | 1,220 | 6,340 | 3,940 | 6,970 |
| 14 | 3,840 | 5,980 | 23 | 4,920 | 32,400 | 4,700 | 7,130 | 7,550 | 1,080 | 5,970 | 7,880 | 178 |
| 15 | 5,480 | 5,670 | 20 | 6,160 | 32,200 | 5,180 | 8,180 | 9,550 | 2,700 | 9,920 | 7,960 | 1,580 |
| 16 | 5,580 | 1,870 | 20 | 7,940 | 31,600 | 11,400 | 8,920 | 11,300 | 2,650 | 6,400 | 8,080 | 1,110 |
| 17 | 5,750 | 1,260 | 2,600 | 8,280 | 29,700 | 12,100 | 7,190 | 6,420 | 6,360 | 9,890 | 8,080 | 846 |
| 18 | 5,860 | 1,200 | 4,920 | 7,200 | 27,800 | 12,600 | 7,310 | 4,560 | 6,290 | 5,720 | 7,120 | 1,320 |
| 19 | 5,590 | 1,200 | 8,530 | 3,200 | 27,500 | 12,800 | 7,340 | 3,510 | *3,360 | 5,810 | 7,140 | 1,600 |
| 20 | 5,700 | 4,230 | 8,660 | 3,100 | 25,900 | 10,900 | 7,280 | 7,480 | 5,360 | 6,210 | 8,270 | 1,940 |
| 21 | 2,870 | 4,380 | 8,530 | 4,100 | 23,000 | 9,720 | 7,250 | 9,990 | 3,200 | 3,740 | 8,370 | 2,110 |
| 22 | 4,980 | 4,330 | 8,110 | 600 | 20,500 | 9,690 | 7,250 | 7,600 | 4,990 | 11,100 | 8,830 | 1,900 |
| 23 | 4,940 | 3,830 | 150 | 1,700 | 18,900 | 9,580 | 7,280 | 2,900 | 2,960 | 12,200 | 6,680 | 6,230 |
| 24 | 5,780 | 4,010 | 5,170 | 1,900 | 17,000 | 9,550 | 7,310 | 3,260 | 5,350 | 9,840 | 6,440 | 7,800 |
| 25 | 6,520 | 4,340 | 8,220 | 1,900 | 16,900 | 12,100 | 7,220 | 3,970 | 1,150 | 8,390 | 5,680 | 7,560 |
| 26 | 6,450 | 7,370 | 11,100 | 7,200 | 16,500 | 9,790 | 7,220 | 4,850 | 982 | 7,780 | 9,090 | 5,020 |
| 27 | 6,450 | 4,830 | 13,200 | 3,000 | 15,800 | 7,770 | 7,220 | 5,840 | 980 | 5,820 | 11,800 | 5,160 |
| 28 | 6,490 | 4,540 | 13,300 | 200 | 12,500 | 7,460 | 7,310 | 6,180 | 1,020 | 6,520 | 9,190 | 5,020 |
| 29 | 5,800 | 4,610 | 12,900 | 50 | - | 7,460 | 7,250 | 7,890 | 8,160 | 9,570 | 8,190 | 760 |
| 30 | 4,480 | 4,730 | 12,400 | 4,200 | ------- | 7,400 | 7,280 | 7,680 | 8,160 | 8,580 | 10,200 | 4,510 |
| 31 | 4,620 | ------- | 12,100 | 15,000 | ------- | 6,880 | ------- | 10,800 | ------- | 6,360 | 8,370 | ------- |
| Total | 171,500 | 142,540 | 164,868 | 159,538 | 704,700 | 280,900 | 170,948 | 215,750 | 142,982 | 201,970 | 223,910 | 161,004 |
| Mean | 5,532 | 4,751 | 5,318 | 5,146 | 25,170 | 9,061 | 5,698 | 6,960 | 4,766 | 6,515 | 7,223 | 5,367 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 16,000 | Min 16 | Mean 5,816 | Mean 5,906 | Cfsm 1.30 | In. 17.70 |
| Water year 1956-57: | Max 32,800 | Min 20 | Mean 7,509 | Mean 7,724 | Cfsm 1.70 | In. 23.08 |

* Discharge measurement made on this day.

† Adjusted for change in contents in Douglas Lake.

Note.--No gage-height record Jan. 19 to Feb. 4, Feb. 28 to Mar. 3; discharge estimated on basis of records for station near Knoxville, Little Pigeon River at Seiverville, and Douglas Dam powerplant records.

## Little Pigeon River at Sevierville, Tenn.

Location.--Lat 35°52'34", long 83°34'36", on left bank at Eckel farmhouse, 0.5 mile downstream from city limits of Sevierville, Sevier County, and 0.5 mile downstream from West Fork Little Pigeon River.

Drainage area.--353 sq mi.

Records available.--November 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 881.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 14, 1928, staff gage at same site and datum.

Average discharge.--36 years (1921-57), 543 cfs.

Extremes.--Maximum discharge during year, 28,300 cfs Feb. 1 (gage height, 14.71 ft); minimum, 58 cfs Sept. 7 (gage height, 0.67 ft); minimum daily, 68 cfs Sept. 7, 8.
1920-57: Maximum discharge, 32,000 cfs June 29, 1928 (gage height, 15.4 ft), from rating curve extended above 20,000 cfs; minimum, 2.8 cfs Sept. 21, 1925 (gage height, 0.33 ft); minimum daily, 8.4 cfs Sept. 9, 1925.

Remarks.--Records good. Discharge measurements generally made twice a month. Some regulation at low flow caused by powerplants on forks.

Revisions (water years).--WSP 783: 1921-34. WSP 1336: 1921(M), 1922, 1923(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 27-31, June 9 to July 17, July 24 to Aug. 5)

| Oct. 1-5, Jan. 31 to Apr. 30 | | | | Oct. 5 to Jan. 31, Apr. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 68 | 3.0 | 1,430 | 0.7 | 63 | 3.0 | 1,300 |
| 1.0 | 141 | 6.0 | 4,380 | 1.0 | 130 | 6.0 | 4,380 |
| 1.3 | 260 | 10.0 | 9,640 | 1.3 | 235 | 10.0 | 9,640 |
| 1.6 | 415 | 12.6 | 18,800 | 1.6 | 385 | 12.6 | 18,800 |
| 2.0 | 660 | | | 2.0 | 615 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 148 | 414 | 136 | 280 | 18,700 | 1,070 | 315 | 800 | 385 | 761 | 113 | 89 |
| 2 | 132 | 330 | 130 | 248 | 8,000 | 786 | 524 | 1,080 | 380 | 585 | 105 | 78 |
| 3 | 124 | 235 | 127 | 215 | 3,060 | 660 | 454 | 1,280 | 526 | 490 | 98 | 77 |
| 4 | 121 | 192 | 127 | 240 | 3,590 | 576 | 1,600 | 787 | 1,380 | 407 | 116 | 91 |
| 5 | 230 | 167 | 127 | 396 | 4,220 | 518 | 5,560 | 615 | 1,440 | 352 | 370 | 91 |
| 6 | 353 | 157 | 130 | 402 | 2,900 | 470 | 2,240 | 507 | 1,270 | 305 | 240 | 77 |
| 7 | 160 | 145 | 133 | 385 | 2,670 | 598 | 1,270 | 446 | 1,070 | 266 | 167 | 68 |
| 8 | 124 | 235 | 133 | 336 | 4,130 | 1,510 | 3,200 | 402 | 748 | 235 | 142 | 68 |
| 9 | 108 | 271 | 130 | 320 | 4,600 | 1,070 | 2,710 | 374 | 2,000 | 215 | 136 | 72 |
| 10 | 98 | 227 | 151 | 402 | 4,370 | 845 | 1,370 | 352 | 1,040 | 195 | 130 | 89 |
| 11 | 93 | 195 | 142 | 440 | 2,940 | 758 | 974 | 358 | 748 | 181 | 116 | 148 |
| 12 | 89 | 178 | 663 | 358 | 1,790 | 998 | 860 | 352 | 621 | 164 | 108 | 172 |
| 13 | 87 | 174 | 1,600 | 325 | 1,320 | 1,060 | 660 | 310 | 519 | 151 | 200 | 145 |
| 14 | 82 | 164 | 1,280 | 290 | 1,040 | 912 | 569 | 300 | 555 | 151 | 124 | 276 |
| 15 | 80 | 157 | 2,610 | 266 | 860 | 800 | 500 | 325 | 462 | 151 | 160 | 244 |
| 16 | 78 | 224 | 2,100 | 258 | 793 | 660 | 459 | 280 | 412 | 151 | 167 | 474 |
| 17 | 77 | 346 | 986 | 223 | 660 | 576 | 432 | 280 | 535 | 188 | 312 | 609 |
| 18 | 87 | 305 | 705 | 181 | 595 | 530 | 404 | 346 | 627 | 244 | 555 | 429 |
| 19 | 145 | 244 | 537 | 178 | 628 | 582 | 388 | 315 | 543 | 384 | 687 | 280 |
| 20 | 116 | 215 | 440 | 188 | 702 | 512 | 404 | 285 | 633 | 199 | 363 | 223 |
| 21 | 105 | 215 | 573 | 188 | 588 | 454 | 459 | 248 | 418 | 157 | 227 | 227 |
| 22 | 239 | 330 | 800 | 195 | 543 | 470 | 512 | 304 | 591 | 157 | 178 | 240 |
| 23 | 368 | 244 | 993 | 1,240 | 500 | 442 | 716 | 418 | 456 | 145 | 151 | 276 |
| 24 | 271 | 211 | 1,800 | 663 | 470 | 415 | 830 | 580 | 663 | 340 | 136 | 244 |
| 25 | 207 | 188 | 1,090 | 495 | 454 | 476 | 621 | 597 | 2,550 | 262 | 130 | 181 |
| 26 | 174 | 184 | 729 | 451 | 470 | 432 | 518 | 429 | 1,030 | 174 | 277 | 148 |
| 27 | 167 | 174 | 561 | 2,040 | 488 | 410 | 454 | 894 | 687 | 142 | 164 | 130 |
| 28 | 154 | 157 | 462 | 5,670 | 765 | 371 | 437 | 711 | 676 | 124 | 127 | 157 |
| 29 | 130 | 154 | 407 | 2,760 | - | 355 | 420 | 525 | 1,420 | 113 | 113 | 451 |
| 30 | 127 | 142 | 341 | 3,860 | ------- | 330 | 740 | 456 | 820 | 110 | 102 | 320 |
| 31 | 124 | ------- | 305 | 14,600 | ------- | 315 | ------- | 440 | ------- | 116 | 93 | ------- |
| Total | 4,598 | 6,574 | 20,448 | 38,093 | 71,846 | 19,961 | 30,600 | 15,396 | 25,205 | 7,615 | 6,107 | 6,174 |
| Mean | 148 | 219 | 660 | 1,229 | 2,566 | 644 | 1,020 | 497 | 840 | 246 | 197 | 206 |
| Cfsm | 0.419 | 0.620 | 1.87 | 3.48 | 7.27 | 1.82 | 2.89 | 1.41 | 2.38 | 0.697 | 0.558 | 0.584 |
| In. | 0.48 | 0.69 | 2.15 | 4.01 | 7.57 | 2.10 | 3.22 | 1.62 | 2.66 | 0.80 | 0.64 | 0.65 |

Calendar year 1956: Max 11,000 Min 72 Mean 577 Cfsm 1.63 In. 22.26
Water year 1956-57: Max 18,700 Min 68 Mean 692 Cfsm 1.96 In. 26.59

Peak discharge (base, 7,000 cfs).--Jan. 28 (10 a.m.) 7,740 cfs (9.20 ft); Feb. 1 (12:30 a.m.) 28,300 cfs (14.71 ft); Apr. 5 (9:30 a.m.) 7,230 cfs (8.42 ft).

## French Broad River near Knoxville, Tenn.

Location.--Lat 35°57'33", long 83°46'28", on right bank 245 ft upstream from Riverdale Ferry, 0.65 mile downstream from Johnson Hollow, 7.6 miles upstream from confluence with Holston River, and 8 miles east of Knoxville, Knox County.

Drainage area.--5,101 sq mi.

Records available.--December 1945 to September 1957.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--11 years (1946-57), 7,174 cfs (unadjusted).

Extremes.--Maximum discharge during year, 47,500 cfs Feb. 1 (elevation, 828.82 ft), from rating curve extended above 33,000 cfs; minimum, 488 cfs Sept. 15 (elevation, 814.66 ft); minimum daily, 903 cfs Sept. 15.
1945-57: Maximum discharge, that of Feb. 1, 1957; minimum, 67 cfs Oct. 25, 1953 (elevation, 813.38 ft); minimum daily, 68 cfs Oct. 23-26, 1953.

Remarks.--Records good. Flow regulated by Douglas Lake (see p. 223), 24.6 miles upstream.

Rating table, water year 1956-57 (elevation, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 815.2 | 830 | 817.0 | 3,240 |
| 815.5 | 1,070 | 819.0 | 8,300 |
| 816.0 | 1,600 | 823.0 | 22,200 |
| 816.5 | 2,280 | 828.2 | 44,600 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7,520 | 4,290 | 5,010 | 12,200 | 44,500 | 13,900 | 11,300 | *8,570 | 9,170 | 7,710 | *8,130 | 5,630 |
| 2 | 7,880 | 4,310 | 3,100 | 11,800 | 35,500 | 13,300 | *9,470 | 8,840 | 8,300 | *4,960 | 7,770 | 5,810 |
| 3 | 7,990 | 4,140 | 2,080 | 10,800 | 26,200 | 13,300 | 6,220 | 9,260 | 8,300 | 2,070 | 7,520 | 13,600 |
| 4 | 8,050 | 4,330 | 1,940 | 6,010 | 33,700 | 15,100 | 3,600 | 7,910 | 10,400 | 2,900 | 4,890 | 14,200 |
| 5 | *6,520 | 5,030 | 2,580 | 4,700 | 36,600 | 14,300 | 8,080 | 6,980 | 10,400 | 1,940 | 6,020 | *10,300 |
| 6 | 4,390 | *6,240 | 2,540 | 4,640 | *34,300 | 5,810 | 3,810 | 8,270 | *9,920 | 4,090 | 5,250 | 8,300 |
| 7 | 3,450 | 5,640 | 2,560 | 4,560 | 33,500 | *6,460 | 1,920 | 8,600 | 8,100 | 6,590 | 7,000 | 6,230 |
| 8 | 4,840 | 6,360 | 2,550 | 5,180 | 36,000 | 15,000 | 5,500 | 8,750 | 6,240 | 6,260 | 6,390 | 4,250 |
| 9 | 6,590 | 7,850 | 2,520 | *5,110 | 42,200 | 8,460 | 6,760 | 9,770 | 9,110 | 6,650 | 5,210 | 7,050 |
| 10 | 5,240 | 8,300 | 3,530 | 7,070 | 39,800 | 4,710 | 2,640 | 9,200 | 4,730 | 5,990 | 6,840 | 7,910 |
| 11 | 4,740 | 6,730 | 3,590 | 7,400 | 37,600 | 7,850 | 8,690 | 9,380 | 3,680 | 6,570 | 5,710 | 9,950 |
| 12 | 6,260 | 6,020 | 5,580 | 6,900 | 38,200 | 10,400 | 9,200 | 3,830 | 5,940 | 7,430 | 6,000 | 9,710 |
| 13 | 4,570 | 7,770 | 5,200 | 2,890 | 37,500 | 7,250 | 6,100 | 8,570 | 2,970 | 7,010 | 6,240 | 8,280 |
| 14 | 4,190 | 6,180 | 2,050 | 3,790 | 36,400 | 5,110 | 7,320 | 8,780 | 1,440 | 6,310 | 7,200 | 2,420 |
| 15 | 4,740 | 5,740 | 2,620 | 6,440 | 35,700 | 7,410 | 9,050 | 9,530 | 2,650 | 9,710 | 8,690 | 903 |
| 16 | 5,690 | 4,200 | 2,900 | 7,290 | 34,900 | 10,400 | 10,000 | 12,100 | 2,700 | 7,550 | 8,600 | 2,100 |
| 17 | 5,790 | 1,680 | 2,880 | 9,500 | 32,900 | 13,200 | 8,600 | 8,600 | 6,170 | 9,920 | 8,630 | 1,620 |
| 18 | 5,870 | 1,470 | 4,970 | 7,540 | 29,900 | 13,500 | 8,300 | 5,610 | 7,110 | 7,160 | 9,320 | 1,600 |
| 19 | 5,890 | 1,530 | 9,320 | 4,960 | 29,700 | 13,800 | 8,300 | 4,840 | 5,000 | 6,230 | 7,150 | 1,610 |
| 20 | 5,570 | 3,360 | *9,470 | 2,830 | 28,700 | 12,600 | 8,270 | 6,870 | 6,090 | 6,390 | 9,140 | 2,510 |
| 21 | 4,020 | 4,480 | 9,920 | 3,370 | 24,500 | 10,700 | 8,300 | 9,980 | 3,990 | 5,100 | 9,020 | 2,150 |
| 22 | 4,790 | 4,770 | 10,500 | 3,190 | 21,500 | 10,600 | 8,480 | 9,620 | 5,430 | 8,540 | 9,500 | 1,870 |
| 23 | 5,480 | 3,960 | 3,990 | 2,520 | 20,500 | 10,600 | 8,690 | 4,330 | 3,860 | 12,800 | 7,350 | 5,870 |
| 24 | 5,380 | 4,340 | 5,440 | 2,440 | 17,900 | 10,400 | 8,750 | 4,100 | 6,780 | 8,240 | 6,360 | 8,030 |
| 25 | 7,010 | 4,720 | 10,200 | 2,610 | 17,700 | 12,500 | 8,540 | 4,620 | 5,730 | 9,560 | 5,950 | 7,530 |
| 26 | 6,590 | 6,120 | 11,300 | 5,940 | 17,400 | 11,400 | 8,300 | 5,000 | 2,280 | 8,480 | 9,200 | 6,420 |
| 27 | 6,790 | 6,670 | 14,400 | 7,910 | 16,900 | 9,020 | 8,270 | 7,780 | 1,940 | 6,410 | 12,000 | 5,970 |
| 28 | 6,410 | 4,840 | 14,100 | 12,900 | 14,300 | 8,330 | 8,220 | 6,570 | 1,480 | 6,790 | 10,900 | 5,090 |
| 29 | 6,150 | 4,530 | 13,800 | 5,940 | - | 8,300 | 8,130 | 8,570 | 7,230 | 9,500 | 7,540 | 3,050 |
| 30 | 5,400 | 4,940 | 13,200 | 8,570 | ------- | 8,190 | 8,450 | 8,740 | 9,890 | 9,110 | 9,470 | 4,710 |
| 31 | 4,740 | ------- | 12,700 | 28,300 | ------- | 7,120 | ------- | 11,100 | ------- | 7,250 | 9,560 | ------- |
| Total | 178,540 | 150,540 | 196,540 | 215,300 | 854,500 | 317,020 | 227,260 | 244,670 | 177,030 | 215,220 | 238,550 | 174,673 |
| Mean | 5,759 | 5,018 | 6,340 | 6,945 | 30,520 | 10,230 | 7,575 | 7,893 | 5,901 | 6,943 | 7,695 | 5,822 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 17,600 | Min 1,000 | Mean 6,562 | Mean 6,652 | Cfsm 1.30 | In. 17.75 |
| Water year 1956-57: | Max 44,500 | Min 903 | Mean 8,739 | Mean 8,955 | Cfsm 1.76 | In. 23.83 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Douglas Lake.

## South Fork Holston River at Riverside, near Chilhowie, Va.

Location.--Lat 36°45'37", long 81°37'53", on right bank 400 ft upstream from highway bridge at Riverside, Smyth County, 900 ft upstream from Spring Branch, 3.2 miles downstream from Redstone Branch, and 4 miles southeast of Chilhowie.

Drainage area.--76.1 sq mi.

Records available.--November 1920 to November 1931, July 1942 to September 1957. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909 at site 4½ miles downstream also published as "near Chilhowie," records not equivalent.

Gage.--Water-stage recorder. Datum of gage is 2,106.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Nov. 1, 1920, to Nov. 14, 1931, chain gage at site 400 ft downstream at same datum.

Average discharge.--25 years (1921-31, 1942-57), 107 cfs.

Extremes.--Maximum discharge during year, 3,800 cfs Jan. 29 (gage height, 8.32 ft); minimum, 20 cfs Sept. 8 (gage height, 1.23 ft).
1920-31, 1942-57: Maximum discharge, 6,000 cfs June 12, 1923 (gage height, 9.0 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum recorded, 2 cfs Aug. 26, Oct. 15, 1943, Aug. 9, 11, 1944, Oct. 19, 1945; minimum daily, 8 cfs July 19, 1926.

Remarks.--Records good. Diurnal fluctuation at low flow caused by mill 500 ft above station prior to August 1951.

Revisions (water years).--WSP 1033: 1943-44(m). WSP 1276: 1923(M). WSP 1386: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 28 | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.1 | 16 | 1.2 | 17 | 3.0 | 445 |
| 1.2 | 26 | 1.4 | 37 | 4.0 | 850 |
| 1.4 | 50 | 1.7 | 76 | 5.0 | 1,360 |
| 1.7 | 102 | 2.0 | 134 | 7.0 | 2,670 |
| 2.0 | 176 | 2.5 | 273 | | |
| 4.0 | 810 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 72 | 46 | 79 | 1,770 | 354 | *81 | 76 | 60 | 93 | 31 | 22 |
| 2 | 36 | 111 | 44 | 68 | 1,070 | 333 | 121 | 73 | 49 | 76 | 34 | 21 |
| 3 | 34 | 92 | 42 | 63 | 657 | 261 | 142 | *72 | 52 | 67 | 32 | *21 |
| 4 | *32 | 76 | 40 | 64 | 511 | 215 | 190 | 68 | 80 | 61 | 30 | 23 |
| 5 | 31 | 66 | *39 | 77 | 450 | 184 | 1,540 | 67 | *170 | 73 | *30 | 23 |
| 6 | 30 | *60 | 37 | 80 | 434 | 162 | 705 | 66 | 181 | 74 | 29 | 22 |
| 7 | 28 | 55 | 36 | 88 | 777 | *149 | 382 | 62 | 152 | 58 | 27 | 21 |
| 8 | 28 | 66 | 36 | 86 | 1,200 | 146 | 883 | 60 | 114 | 53 | 27 | 20 |
| 9 | 28 | 71 | 37 | *238 | 1,450 | 130 | 1,280 | 60 | 91 | *51 | 25 | 24 |
| 10 | 27 | 71 | 40 | 601 | 1,420 | 121 | 585 | 57 | 81 | 57 | 24 | 29 |
| 11 | 27 | 68 | 39 | 476 | 875 | 114 | 378 | 57 | 72 | 48 | 26 | 30 |
| 12 | 26 | 63 | 47 | 317 | 525 | 119 | 283 | 57 | 66 | 45 | 26 | 32 |
| 13 | 25 | 56 | 63 | 230 | 382 | 116 | 235 | 54 | 67 | 42 | 25 | 29 |
| 14 | 25 | 52 | 86 | 176 | 295 | 112 | 198 | 64 | 123 | 41 | 24 | 37 |
| 15 | 26 | 49 | 137 | 145 | 243 | 108 | 170 | 60 | 95 | 41 | 30 | 42 |
| 16 | 25 | 47 | 150 | 122 | 215 | 102 | 154 | 54 | 78 | 40 | 32 | 34 |
| 17 | 24 | 55 | 124 | 106 | 187 | 99 | 139 | 52 | 79 | 39 | 27 | 58 |
| 18 | 25 | 74 | 111 | 88 | 162 | 97 | 127 | 51 | 79 | 49 | 28 | 70 |
| 19 | 24 | 74 | 100 | 84 | 173 | 93 | 119 | 70 | 79 | 41 | 29 | 57 |
| 20 | 24 | 69 | 94 | 79 | 187 | 90 | 110 | 84 | 74 | 39 | 28 | 48 |
| 21 | 27 | 68 | 113 | 79 | 176 | 88 | 102 | 68 | 66 | 37 | 26 | 42 |
| 22 | 50 | 69 | 134 | 77 | 162 | 90 | 106 | 58 | 61 | 36 | 26 | 38 |
| 23 | 52 | 64 | 142 | 134 | 146 | 91 | 108 | 53 | 64 | 37 | 25 | 37 |
| 24 | 43 | 63 | 191 | 179 | 134 | 90 | 102 | 51 | 61 | 45 | 25 | 35 |
| 25 | 39 | 60 | 227 | 163 | 127 | 88 | 99 | 49 | 66 | 39 | 25 | 33 |
| 26 | 37 | 56 | 185 | 142 | 149 | 90 | 91 | 51 | 64 | 35 | 27 | 30 |
| 27 | 52 | 55 | 147 | 182 | 170 | 90 | 88 | 72 | 62 | 34 | 26 | 29 |
| 28 | 56 | 52 | 122 | 794 | 187 | 86 | 84 | 62 | 60 | 35 | 25 | 29 |
| 29 | 50 | 49 | 109 | *2,530 | - | 86 | 81 | 67 | 139 | 34 | 24 | 35 |
| 30 | 47 | 47 | 94 | 1,970 | ------ | 86 | 79 | 64 | 123 | 32 | 23 | 57 |
| 31 | 47 | ------ | 84 | 1,340 | ------ | 83 | ------ | 62 | ------ | 31 | 22 | ------ |
| Total | 1,065 | 1,930 | 2,896 | 10,857 | 14,234 | 4,073 | 8,762 | 1,921 | 2,608 | 1,483 | 838 | 1,028 |
| Mean | 34.4 | 64.3 | 93.4 | 350 | 508 | 131 | 292 | 62.0 | 86.9 | 47.8 | 27.0 | 34.3 |
| Cfsm | 0.452 | 0.845 | 1.23 | 4.60 | 6.68 | 1.72 | 3.84 | 0.815 | 1.14 | 0.628 | 0.355 | 0.451 |
| In. | 0.52 | 0.94 | 1.42 | 5.30 | 6.96 | 1.98 | 4.28 | 0.94 | 1.27 | 0.72 | 0.41 | 0.50 |

Calendar year 1956: Max 1,450 Min 21 Mean 95.7 Cfsm 1.26 In. 17.16
Water year 1956-57: Max 2,530 Min 20 Mean 142 Cfsm 1.87 In. 25.24

Peak discharge (base, 500 cfs).--Jan. 10 (12 m.) 671 cfs (3.63 ft); Jan. 29 (10 p.m.) 3,800 cfs (8.32 ft); Feb. 10 (9 a.m.) 1,630 cfs (5.45 ft); Apr. 5 (7 a.m.) 1,940 cfs (5.96 ft); Apr. 8 (9 to 10 p.m.) 2,460 cfs (6.71 ft).
* Discharge measurement made on this day.

## Beaverdam Creek at Damascus, Va.

Location.--Lat 36°37'40", long 81°47'28", on right bank in pumphouse of American Cyanamid Co., at Damascus, Washington County, 0.65 mile upstream from mouth.

Drainage area.--56.0 sq mi.

Records available.--August 1947 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,946.66 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years, 101 cfs.

Extremes.--Maximum discharge during year, 4,200 cfs Jan. 29 (gage height, 5.75 ft); minimum, 6.5 cfs Aug. 14; minimum gage height, 0.29 ft Sept. 8.
1947-57: Maximum discharge, 5,280 cfs Mar. 18, 1955 (gage height, 5.75 ft); minimum, 2.0 cfs Sept. 8, 1954 (gage height, 0.15 ft).

Remarks.--Records good. Plant diverts about 0.5 cfs 800 ft above station.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 2-14)

Oct. 1 to Jan. 27

| | |
|---|---|
| 0.4 | 18 |
| .6 | 42 |

Note.--Same as following table above 0.6 ft.

Jan. 28 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 0.2 | 5.0 | 1.0 | 112 | 3.5 | 1,280 |
| .3 | 10 | 1.5 | 240 | 4.0 | 1,850 |
| .6 | 42 | 2.0 | 415 | 5.2 | 3,420 |
| .8 | 72 | 3.0 | 895 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 53 | 40 | 76 | 2,060 | 336 | *62 | 56 | 39 | 72 | 20 | 12 |
| 2 | 32 | 49 | 37 | 64 | 1,270 | 288 | 82 | 53 | 39 | 53 | 19 | 12 |
| 3 | 31 | 43 | 37 | 55 | 610 | 213 | 67 | *52 | 39 | 45 | 18 | *11 |
| 4 | *31 | 40 | 37 | 59 | 661 | 170 | 221 | 50 | 43 | 40 | 18 | 17 |
| 5 | 62 | 37 | *35 | 126 | 654 | 142 | *1,720 | 48 | *121 | 40 | *20 | 17 |
| 6 | 83 | *35 | 35 | 142 | 555 | 126 | 690 | 45 | 249 | 43 | 14 | 12 |
| 7 | 50 | 32 | 35 | 145 | 654 | *114 | 350 | 42 | 284 | 36 | 11 | 10 |
| 8 | 37 | 74 | 35 | 130 | 1,070 | 124 | 688 | 40 | 138 | 33 | 9.5 | 10 |
| 9 | 34 | 93 | 40 | *269 | 1,150 | 108 | 1,030 | 38 | 91 | *29 | 8.5 | 12 |
| 10 | 32 | 82 | 45 | 555 | 1,520 | 99 | 495 | 39 | 69 | 29 | 8.5 | 24 |
| 11 | 30 | 67 | 40 | 427 | 818 | 106 | 298 | 41 | 59 | 26 | 9.5 | 23 |
| 12 | 26 | 59 | 62 | 267 | 435 | 135 | 213 | 42 | 59 | 24 | 10 | 19 |
| 13 | 26 | 50 | 148 | 185 | 294 | 140 | 172 | 40 | 70 | 22 | 8.0 | 19 |
| 14 | 26 | 46 | 192 | 145 | 219 | 135 | 140 | 67 | 415 | 23 | 28 | 22 |
| 15 | 24 | 43 | 198 | 117 | 178 | 124 | 117 | 64 | 200 | 26 | 96 | 31 |
| 16 | 23 | 41 | 185 | 108 | 158 | 106 | 104 | 43 | 90 | 29 | 52 | 28 |
| 17 | 22 | 55 | 148 | 89 | 133 | 95 | 95 | 38 | 70 | 42 | 35 | 59 |
| 18 | 23 | 59 | 145 | 75 | 114 | 89 | 85 | 35 | 72 | 66 | 25 | 52 |
| 19 | 28 | 53 | 140 | 70 | 121 | 89 | 80 | 45 | 76 | 36 | 26 | 53 |
| 20 | 26 | 52 | 128 | 61 | 121 | 80 | 74 | 70 | 80 | 29 | 22 | 36 |
| 21 | 28 | 55 | 200 | 67 | 104 | 74 | 70 | 48 | 55 | 29 | 20 | 30 |
| 22 | 36 | 72 | 267 | 69 | 97 | 85 | 64 | 41 | 52 | 26 | 18 | 23 |
| 23 | 34 | 59 | 261 | 204 | 93 | 89 | 130 | 49 | 52 | 48 | 15 | 22 |
| 24 | 31 | 59 | 368 | 225 | 89 | 83 | 160 | 39 | 52 | 138 | 15 | 22 |
| 25 | 26 | 56 | 333 | 180 | 85 | 83 | 133 | 39 | 59 | 55 | 15 | 19 |
| 26 | 25 | 56 | 219 | 158 | 91 | 83 | 99 | 35 | 49 | 39 | 23 | 18 |
| 27 | 41 | 50 | 162 | 198 | 87 | 80 | 82 | 109 | 45 | 33 | 18 | 16 |
| 28 | 35 | 43 | 130 | 1,260 | 130 | 72 | 74 | 76 | 49 | 31 | 15 | 16 |
| 29 | 30 | 43 | 112 | *3,400 | - | 69 | 67 | 58 | 145 | 28 | 13 | 26 |
| 30 | 29 | 41 | 95 | 2,060 | ------- | 67 | 59 | 48 | 102 | 24 | 12 | 38 |
| 31 | 29 | ------- | 85 | 1,390 | ------ | 64 | -------- | 42 | -------- | 22 | 12 | -------- |
| Total | 1,028 | 1,597 | 3,994 | 12,376 | 13,581 | 3,668 | 7,721 | 1,532 | 2,963 | 1,216 | 634.0 | 709 |
| Mean | 33.2 | 53.2 | 129 | 399 | 485 | 118 | 257 | 49.4 | 98.8 | 39.2 | 20.5 | 23.6 |
| Cfsm | 0.593 | 0.950 | 2.30 | 7.12 | 8.66 | 2.11 | 4.59 | 0.882 | 1.76 | 0.700 | 0.366 | 0.421 |
| In. | 0.68 | 1.06 | 2.65 | 8.21 | 9.02 | 2.43 | 5.12 | 1.02 | 1.96 | 0.81 | 0.42 | 0.47 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 2,600 | Min | 9.0 | Mean | 116 | Cfsm | 2.07 | In. | 28.20 | |
| Water year 1956-57: | Max | 3,400 | Min | 8.0 | Mean | 140 | Cfsm | 2.50 | In. | 33.85 | |

Peak discharge (base, 600 cfs).--Jan. 29 (8 p.m.) 4,200 cfs (5.75 ft); Feb. 10 (11 a.m.) 2,060 cfs (4.16 ft); Apr. 5 (8 a.m.) 2,020 cfs (4.13 ft); Apr. 8 (9 p.m.) 1,730 cfs (3.91 ft).
* Discharge measurement made on this day.

## South Fork Holston River at Vestal, Va.

Location.--Lat 36°39'06", long 81°50'39", on right bank 500 ft upstream from bridge on U. S. Highway 58 at Vestal, Washington County, 0.7 mile downstream from Laurel Creek, 3.2 miles northwest of Damascus, and 4.9 miles upstream from Middle Fork Holston River.

Drainage area.--301 sq mi.

Records available.--November 1931 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,792.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--25 years (1932-57), 455 cfs.

Extremes.--Maximum discharge during year, 15,100 cfs Jan. 29 (gage height, 15.35 ft), from rating curve extended above 10,000 cfs on basis of contracted-opening determination of peak flow; minimum, 84 cfs Sept. 8 (gage height, 2.43 ft); minimum daily, 89 cfs Sept. 8.
1931-57: Maximum discharge, that of Jan. 29, 1957; minimum, 30 cfs Oct. 14, 1941, Dec. 24, 1943 (gage height, 2.16 ft); minimum daily, 60 cfs Sept. 18, 1954.

Remarks.--Records good. Some diurnal fluctuation caused by powerplant above station.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 1, 2, 19-22)

| Oct. 1 to Jan. 28 | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 2.7 | 115 | 2.4 | 80 | 6.0 | 1,770 |
| 3.0 | 185 | 2.7 | 130 | 8.0 | 3,630 |
| 4.0 | 510 | 3.0 | 200 | 11.0 | 7,600 |
| 5.0 | 1,030 | 4.0 | 540 | 14.0 | 12,600 |
| 7.0 | 2,670 | 5.0 | 1,030 | | |
| 9.0 | 4,750 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 204 | 312 | 198 | 305 | 6,810 | 1,320 | *355 | 338 | 225 | 372 | 124 | 92 |
| 2 | 180 | 339 | 190 | 275 | 4,290 | 1,280 | 453 | 327 | 261 | 313 | 130 | 92 |
| 3 | 170 | 306 | 190 | 276 | 2,800 | 1,000 | 453 | *316 | 422 | 270 | 124 | *95 |
| 4 | *165 | 270 | 185 | 291 | 2,720 | 825 | 1,180 | 299 | 411 | 243 | 120 | 108 |
| 5 | 196 | 240 | *180 | 462 | 2,600 | 705 | *5,640 | 292 | *800 | 237 | *130 | 112 |
| 6 | 234 | *220 | 178 | 466 | 2,310 | 620 | 2,760 | 279 | 1,210 | 276 | 116 | 98 |
| 7 | 180 | 218 | 172 | 490 | 3,210 | *580 | 1,500 | 267 | 1,060 | 218 | 107 | 90 |
| 8 | 153 | 348 | 170 | 454 | 4,560 | 600 | 3,170 | 255 | 660 | 195 | 106 | 89 |
| 9 | 144 | 369 | 172 | *965 | 4,560 | 560 | 4,560 | 249 | 496 | *180 | 102 | 94 |
| 10 | 137 | 336 | 209 | 2,400 | 5,360 | 500 | 2,260 | 243 | 404 | 185 | 98 | 134 |
| 11 | 130 | 309 | 188 | 1,900 | 3,430 | 496 | 1,420 | 243 | 352 | 168 | 98 | 142 |
| 12 | 128 | 285 | 252 | 1,180 | 2,180 | 540 | 1,090 | 240 | 313 | 158 | 108 | 136 |
| 13 | 126 | 255 | 434 | 680 | 1,500 | 540 | 880 | 225 | 670 | 152 | 110 | 126 |
| 14 | 122 | 234 | 550 | 700 | 1,180 | 520 | 728 | 316 | 1,150 | 146 | 124 | 178 |
| 15 | 119 | 220 | 775 | 565 | 940 | 500 | 640 | 299 | 560 | 155 | 299 | 212 |
| 16 | 119 | 212 | 775 | 498 | 825 | 476 | 580 | 234 | 439 | 185 | 218 | 180 |
| 17 | 117 | 282 | 595 | 422 | 728 | 450 | 540 | 215 | 425 | 218 | 180 | 380 |
| 18 | 119 | 327 | 560 | 363 | 660 | 432 | 500 | 208 | 360 | 279 | 138 | 334 |
| 19 | 124 | 315 | 522 | 335 | 682 | 439 | 472 | 252 | 390 | 182 | 150 | 292 |
| 20 | 122 | 297 | 482 | 325 | 682 | 414 | 450 | 397 | 352 | 155 | 126 | 222 |
| 21 | 126 | 291 | 700 | 320 | 620 | 386 | 418 | 292 | 292 | 155 | 118 | 185 |
| 22 | 201 | 333 | 880 | 320 | 600 | 425 | 453 | 246 | 299 | 150 | 110 | 162 |
| 23 | 229 | 291 | 880 | 690 | 560 | 439 | 540 | 264 | 296 | 238 | 106 | 165 |
| 24 | 196 | 279 | 1,240 | 775 | 540 | 422 | 600 | 249 | 279 | 362 | 106 | 150 |
| 25 | 172 | 267 | 1,150 | 700 | 520 | 422 | 560 | 225 | 310 | 218 | 107 | 138 |
| 26 | 162 | 264 | 850 | 600 | 540 | 418 | 456 | 220 | 279 | 170 | 134 | 124 |
| 27 | 207 | 240 | 650 | 848 | 560 | 418 | 418 | 467 | 267 | 152 | 112 | 120 |
| 28 | 204 | 226 | 538 | 4,740 | 655 | 390 | 422 | 397 | 310 | 144 | 104 | 116 |
| 29 | 188 | 218 | 474 | *11,200 | - | 380 | 390 | 306 | 580 | 148 | 96 | 160 |
| 30 | 180 | 209 | 410 | 7,390 | ------ | 369 | 362 | 264 | 288 | 136 | 96 | 231 |
| 31 | 178 | ------ | 372 | 5,060 | ------ | 348 | ------ | 237 | ------ | 144 | 96 | ------ |
| Total | 5,032 | 8,312 | 15,121 | 46,195 | 56,622 | 17,214 | 34,250 | 8,661 | 14,180 | 6,294 | 3,895 | 4,757 |
| Mean | 162 | 277 | 488 | 1,490 | 2,022 | 555 | 1,142 | 279 | 473 | 203 | 126 | 159 |
| Cfsm | 0.538 | 0.920 | 1.62 | 4.95 | 6.72 | 1.84 | 3.79 | 0.927 | 1.57 | 0.674 | 0.419 | 0.528 |
| In. | 0.62 | 1.03 | 1.87 | 5.71 | 7.00 | 2.12 | 4.23 | 1.07 | 1.75 | 0.78 | 0.48 | 0.59 |

Calendar year 1956: Max 6,900 Min 74 Mean 473 Cfsm 1.57 In. 21.41
Water year 1956-57: Max 11,200 Min 89 Mean 604 Cfsm 2.01 In. 27.25

Peak discharge (base, 3,000 cfs).--Jan. 29 (8 p.m.) 15,100 cfs (15.35 ft); Feb. 10 (11 a.m.) 6,340 cfs (10.10 ft); Apr. 5 (8 a.m.) 6,560 cfs (10.26 ft); Apr. 8 (11 p.m.) 7,530 cfs (10.95 ft).
* Discharge measurement made on this day.

## Middle Fork Holston River at Groseclose, Va.

Location.--Lat 36°53'19", long 81°20'51", on left bank at downstream side of highway bridge in village of Groseclose, Smyth County, 0.2 mile upstream from Rocky Spring Branch and 10 miles northeast of Marion.

Drainage area.--7.39 sq mi.

Records available.--October 1947 to September 1957 (discontinued). Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,442.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years, 9.04 cfs.

Extremes.--Maximum discharge during year, 309 cfs Jan. 29 (gage height, 5.00 ft); minimum, 3.4 cfs Sept. 2; minimum gage height, 1.65 ft Oct. 13-19.
1947-57: Maximum discharge, 813 cfs July 6, 1953 (gage height, 7.42 ft); minimum, 1.8 cfs Jan. 24, 1948, result of freezeup; minimum gage height, 1.48 ft Nov. 25, 1950, result of freezeup; minimum daily discharge, 2.7 cfs Nov. 13-15, 1954.

Remarks.--Records good.

Revisions (water years).--WSP 1236: 1948(M), 1949(P), 1950, 1951(P).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 29

| | | | |
|---|---|---|---|
| 1.6 | 3.0 | 2.5 | 33 |
| 1.7 | 4.0 | 3.0 | 67 |
| 1.8 | 5.6 | 4.0 | 167 |
| 2.0 | 11 | 5.0 | 309 |

Jan. 30 to Sept. 30

| | |
|---|---|
| 1.6 | 2.8 |
| 1.7 | 3.8 |
| 1.8 | 5.8 |
| 2.0 | 11 |

Note.--Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.8 | 14 | 4.0 | 6.6 | 118 | 44 | 9.2 | *9.0 | 5.4 | 4.6 | 4.0 | 3.5 |
| 2 | 3.8 | 11 | 4.0 | 6.0 | 60 | 31 | 12 | 8.4 | 5.2 | 4.6 | 4.0 | 3.5 |
| 3 | *3.8 | 7.7 | 4.0 | 5.6 | 45 | 24 | *9.8 | 8.4 | *5.8 | 4.6 | 4.0 | 3.5 |
| 4 | 4.0 | 6.4 | 3.8 | 6.0 | 40 | 21 | 35 | 8.1 | 5.8 | 4.4 | 4.0 | 3.5 |
| 5 | 4.0 | 5.8 | *3.9 | 6.8 | 43 | 18 | 95 | 7.6 | 7.6 | 4.6 | *4.0 | *3.5 |
| 6 | 4.0 | 5.6 | 3.8 | 6.2 | 44 | *18 | 43 | 7.4 | 7.6 | 4.4 | 3.7 | 3.6 |
| 7 | 3.9 | 5.6 | 3.8 | *6.6 | 72 | 17 | 30 | 7.4 | 5.8 | 4.4 | 3.8 | 3.7 |
| 8 | 3.8 | *6.8 | 3.8 | 6.2 | 105 | 19 | 92 | 7.1 | 5.6 | 4.4 | 3.8 | 3.7 |
| 9 | 3.7 | 6.2 | 3.9 | 34 | 162 | 16 | 69 | 6.8 | 5.8 | 5.2 | 3.8 | 3.8 |
| 10 | 3.7 | 5.8 | 3.8 | 42 | 106 | 14 | 40 | 6.8 | 5.8 | 5.2 | 3.8 | 4.6 |
| 11 | 3.6 | 5.6 | 3.8 | 24 | 62 | 13 | 32 | 7.1 | 5.6 | *4.4 | 3.7 | 4.6 |
| 12 | 3.6 | 5.4 | 4.4 | 17 | 42 | 12 | 26 | 6.6 | 5.4 | 4.8 | 3.8 | 4.6 |
| 13 | 3.5 | 5.0 | 5.0 | 12 | 34 | 12 | 22 | 6.6 | 5.4 | 4.8 | 3.8 | 5.0 |
| 14 | 3.5 | 5.0 | 5.6 | 11 | 30 | 12 | 19 | 6.6 | 6.6 | 4.8 | 3.8 | 5.2 |
| 15 | 3.5 | 5.0 | 7.7 | 9.8 | 25 | 11 | 15 | 6.6 | 5.2 | 4.8 | 5.2 | 4.2 |
| 16 | 3.5 | 5.0 | 7.1 | 9.2 | 23 | 10 | 16 | 6.3 | 4.8 | 4.8 | 4.0 | 5.2 |
| 17 | 3.5 | 6.5 | 6.4 | 8.3 | 20 | 9.5 | 15 | 5.8 | 4.8 | 5.0 | 3.8 | 7.1 |
| 18 | 3.5 | 5.2 | 7.7 | 7.7 | 18 | 9.5 | 14 | 6.8 | 5.2 | 5.4 | 3.8 | 9.0 |
| 19 | 3.5 | 4.6 | 6.4 | 7.1 | 26 | 10 | 14 | 11 | 5.2 | 5.0 | 4.0 | 6.1 |
| 20 | 3.5 | 4.6 | 6.2 | 7.4 | 21 | 9.0 | 13 | 9.0 | 4.8 | 4.6 | 3.7 | 5.4 |
| 21 | 4.0 | 5.2 | 9.2 | 9.5 | 19 | 8.1 | 12 | 6.6 | 4.8 | 4.6 | 3.7 | 4.8 |
| 22 | 12 | 4.6 | 8.0 | 9.8 | 17 | 15 | 12 | 6.3 | 4.8 | 4.6 | 3.6 | 4.4 |
| 23 | 5.6 | 4.3 | 9.8 | 15 | 16 | 13 | 12 | 6.1 | 4.8 | 12 | 3.6 | 4.2 |
| 24 | 4.6 | 4.3 | 21 | 10 | 15 | 12 | 27 | 5.8 | 5.0 | 6.6 | 3.7 | 4.0 |
| 25 | 4.4 | 4.3 | 14 | 10 | 15 | 11 | 16 | 5.8 | 5.4 | 4.8 | 3.7 | 3.8 |
| 26 | 5.6 | 4.3 | 11 | 10 | 20 | 12 | 13 | 6.3 | 5.0 | 4.6 | 3.7 | 3.8 |
| 27 | 8.0 | 4.3 | 9.5 | 16 | 19 | 11 | 11 | 11 | 5.2 | 4.6 | 3.5 | 3.8 |
| 28 | 5.6 | 4.2 | 8.6 | 53 | 31 | 10 | 11 | 6.3 | 5.4 | 5.0 | 3.6 | 3.8 |
| 29 | 5.2 | 4.2 | 7.7 | 181 | - | 9.5 | 10 | 5.8 | 5.4 | 4.4 | 3.6 | 8.4 |
| 30 | 5.2 | 4.1 | 7.4 | 90 | ------ | 9.0 | 9.8 | 5.6 | 4.8 | 4.2 | 3.5 | 14 |
| 31 | 6.4 | ------- | 7.4 | 132 | ------ | 8.1 | ------- | 5.4 | ------- | 4.0 | 3.5 | ------- |
| Total | 140.3 | 170.6 | 212.7 | 775.8 | 1,248 | 448.7 | 754.8 | 220.4 | 164.0 | 154.2 | 118.2 | 148.3 |
| Mean | 4.53 | 5.69 | 6.86 | 25.0 | 44.6 | 14.5 | 25.2 | 7.11 | 5.47 | 4.97 | 3.81 | 4.94 |
| Cfsm | 0.613 | 0.770 | 0.928 | 3.38 | 6.04 | 1.96 | 3.41 | 0.962 | 0.740 | 0.673 | 0.516 | 0.668 |
| In. | 0.71 | 0.86 | 1.07 | 3.90 | 6.29 | 2.26 | 3.80 | 1.11 | 0.83 | 0.78 | 0.59 | 0.75 |

Calendar year 1956: Max 93 Min 2.8 Mean 7.84 Cfsm 1.06 In. 14.44
Water year 1956-57: Max 181 Min 3.5 Mean 12.5 Cfsm 1.69 In. 22.95

Peak discharge (base, 90 cfs).--Jan. 29 (6 p.m.) 309 cfs (5.00 ft); Feb. 9 (5:30 a.m.) 272 cfs (4.75 ft); Apr. 4 (12 p.m.) 145 cfs (3.80 ft); Apr. 8 (6 p.m.) 209 cfs (4.32 ft); Apr. 24 (4 p.m.) 131 cfs (3.67 ft).

* Discharge measurement made on this day.

## Middle Fork Holston River at Sevenmile Ford, Va.

Location.--Lat 36°48'26", long 81°37'20", on right bank at downstream side of bridge on U. S. Highway 11 at Sevenmile Ford, Smyth County, 0.3 mile upstream from Meade Creek and 3.3 miles downstream from Walker Creek.

Drainage area.--132 sq mi.

Records available.--July 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,960.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 160 cfs.

Extremes.--Maximum discharge during year, 7,680 cfs Jan. 29 (gage height, 10.75 ft); minimum, 17 cfs Aug. 13 (gage height, 2.08 ft); minimum daily, 29 cfs Aug. 11, Sept. 6. 1942-57: Maximum discharge, that of Jan. 29, 1957; minimum, 9 cfs Sept. 26, 1944 (gage height, 1.32 ft); minimum daily, 20 cfs Sept. 26, 1944.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by mill 9 miles above station.

Revisions (water years).--WSP 973: 1942(m).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 28

| | | | |
|---|---|---|---|
| 2.1 | 19 | 2.8 | 180 |
| 2.2 | 31 | 3.2 | 370 |
| 2.5 | 90 | | |

Note.--Same as following table above 3.2 ft.

Jan. 29 to Sept. 30

| | | | |
|---|---|---|---|
| 2.1 | 19 | 4.0 | 790 |
| 2.3 | 50 | 6.0 | 2,050 |
| 2.5 | 102 | 7.0 | 2,900 |
| 2.7 | 162 | 9.0 | 5,460 |
| 3.0 | 275 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 78 | 162 | 58 | 98 | 2,970 | 845 | *114 | 102 | 62 | 50 | 36 | 30 |
| 2 | 70 | 170 | 54 | 86 | 1,480 | 560 | 141 | 99 | 57 | 45 | 55 | 33 |
| 3 | 72 | 98 | 54 | 78 | 912 | 405 | 126 | *96 | 73 | 47 | 40 | *30 |
| 4 | *70 | 74 | 54 | 84 | 828 | 316 | 243 | 90 | 90 | 40 | 38 | 30 |
| 5 | 68 | 66 | *50 | 121 | 845 | 262 | 2,370 | 88 | *150 | 77 | *40 | 36 |
| 6 | 68 | *62 | 50 | 133 | 1,010 | 230 | 955 | 82 | 183 | 57 | 35 | 29 |
| 7 | 60 | 58 | 50 | 145 | 1,540 | *219 | 530 | 79 | 153 | 47 | 36 | 33 |
| 8 | 66 | 115 | 54 | 142 | 2,130 | 226 | 1,590 | 76 | 117 | 43 | 32 | 32 |
| 9 | 37 | 121 | 44 | *1,710 | 3,370 | 207 | 1,840 | 73 | 96 | *45 | 33 | 35 |
| 10 | 35 | 95 | 52 | 1,460 | 2,360 | 192 | 762 | 73 | 85 | 55 | 35 | 43 |
| 11 | 37 | 80 | 50 | 735 | 1,190 | 186 | 505 | 73 | 73 | 45 | 29 | 45 |
| 12 | 31 | 70 | 76 | 455 | 735 | 189 | 380 | 73 | 68 | 43 | 38 | 47 |
| 13 | 37 | 66 | 124 | 325 | 545 | 183 | 306 | 68 | 68 | 40 | 32 | 38 |
| 14 | 30 | 60 | 133 | 243 | 435 | 174 | 252 | 95 | 147 | 38 | 32 | 48 |
| 15 | 40 | 56 | 300 | 189 | 350 | 171 | 219 | 96 | 90 | 45 | 62 | 47 |
| 16 | 31 | 56 | 440 | 162 | 311 | 159 | 200 | 71 | 68 | 40 | 55 | 47 |
| 17 | 35 | 60 | 238 | 136 | 262 | 150 | 183 | 66 | 68 | 42 | 40 | 76 |
| 18 | 33 | 68 | 202 | 118 | 230 | 147 | 156 | 85 | 64 | 48 | 38 | 73 |
| 19 | 35 | 62 | 189 | 108 | 306 | 150 | 159 | 156 | 68 | 45 | 40 | 82 |
| 20 | 37 | 62 | 159 | 102 | 450 | 141 | 153 | 147 | 62 | 40 | 38 | 66 |
| 21 | 39 | 62 | 238 | 112 | 350 | 132 | 141 | 105 | 55 | 38 | 36 | 117 |
| 22 | 60 | 70 | 266 | 115 | 293 | 162 | 138 | 85 | 55 | 38 | 33 | 108 |
| 23 | 76 | 76 | 256 | 350 | 252 | 192 | 150 | 73 | 48 | 45 | 33 | 105 |
| 24 | 60 | 74 | 658 | 325 | 222 | 192 | 175 | 66 | 55 | 68 | 35 | 99 |
| 25 | 50 | 70 | 480 | 238 | 207 | 186 | 138 | 66 | 57 | 47 | 36 | 96 |
| 26 | 56 | 70 | 305 | 194 | 226 | 200 | 111 | 66 | 55 | 38 | 36 | 93 |
| 27 | 80 | 66 | 212 | 391 | 222 | 270 | 108 | 126 | 66 | 36 | 33 | 93 |
| 28 | 74 | 62 | 166 | 1,860 | 316 | 207 | 105 | 93 | 50 | 55 | 32 | 68 |
| 29 | 62 | 62 | 139 | *5,020 | - | 138 | 117 | 71 | 66 | 45 | 30 | 114 |
| 30 | 58 | 60 | 121 | 2,600 | ------- | 129 | 108 | 64 | 64 | 43 | 30 | 203 |
| 31 | 54 | ------- | 108 | 4,100 | ------- | 123 | ------- | 62 | ------- | 36 | 35 | ------- |
| Total | 1,639 | 2,331 | 5.380 | 21,935 | 24,347 | 7,043 | 12,475 | 2,665 | 2,413 | 1,423 | 1,153 | 2,016 |
| Mean | 52.9 | 77.7 | 174 | 708 | 870 | 227 | 416 | 86.0 | 80.4 | 45.9 | 37.2 | 67.2 |
| Cfsm | 0.401 | 0.589 | 1.32 | 5.36 | 6.59 | 1.72 | 3.15 | 0.652 | 0.609 | 0.348 | 0.282 | 0.509 |
| In. | 0.46 | 0.66 | 1.52 | 6.18 | 6.86 | 1.98 | 3.51 | 0.75 | 0.68 | 0.40 | 0.33 | 0.57 |

Calendar year 1956: Max 3,050 Min 24 Mean 146 Cfsm 1.11 In. 15.05
Water year 1956-57: Max 5,020 Min 29 Mean 232 Cfsm 1.76 In. 23.90

Peak discharge (base, 2,000 cfs).--Jan. 9 (7 p.m.) 2,580 cfs (6.64 ft); Jan. 29 (8 p.m.) 7,680 cfs (10.75 ft); Feb. 9 (11 a.m.) 4,680 cfs (8.37 ft); Apr. 5 (7:30 a.m.) 3,040 cfs (7.14 ft); Apr. 8 (10 p.m.) 4,560 cfs (8.28 ft).

* Discharge measurement made on this day.

493799 O - 59 - 8

## South Fork Holston River below South Holston Dam, Tenn.

Location.--Lat 36°31'25", long 82°05'50", on right bank 1,900 ft downstream from South Holston Dam powerhouse, 1.0 mile upstream from bridge at Bristol waterworks, 1.0 mile upstream from Thomas Creek, 6.7 miles southeast of Bristol, Sullivan County, and at mile 49.4.

Drainage area.--703 sq mi.

Records available.--July 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,450.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 886 cfs (unadjusted).

Extremes.--Maximum discharge during year, 8,270 cfs Feb. 12 (gage height, 40.45 ft); minimum, 3.6 cfs June 18 (gage height, 32.33 ft); minimum daily, 4.5 cfs June 18.
1951-57: Maximum discharge, that of Feb. 12, 1957; no flow for part of Oct. 27, 1954; minimum daily, 0.5 cfs Oct. 26, 1954.

Remarks.--Records good except those below 50 cfs, which are fair. Flow completely regulated by South Holston Lake (see p. 223).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 11 | | | | Feb. 11 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 32.5 | 3.8 | 33.9 | 213 | 32.3 | 3.0 | 34.0 | 295 |
| 32.6 | 6.6 | 34.5 | 425 | 32.4 | 5.1 | 34.5 | 500 |
| 32.7 | 10 | 35.0 | 660 | 32.5 | 7.9 | 35.0 | 770 |
| 32.8 | 16 | 36.0 | 1,370 | 32.7 | 16 | 36.0 | 1,540 |
| 32.9 | 23 | 37.5 | 3,080 | 32.9 | 30 | 38.0 | 4,090 |
| 33.1 | 45 | 38.1 | 3,930 | 33.1 | 53 | 40.4 | 8,170 |
| 33.4 | 93 | | | 33.4 | 113 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,580 | 7.4 | 2,710 | 136 | 2,690 | 1,690 | 1,670 | 2,410 | 8.3 | 208 | 1,630 | 6.8 |
| 2 | *2,780 | 7.9 | 2,380 | 927 | 2,530 | 1,550 | *1,640 | *2,390 | 145 | 114 | 2,540 | 1,540 |
| 3 | 2,770 | 6.6 | 1,790 | 870 | 3,160 | 1,640 | 1,640 | 2,390 | 1,420 | 9.3 | 2,570 | 1,820 |
| 4 | 2,770 | 6.3 | *7.7 | 8.9 | 3,510 | 1,660 | 878 | 2,440 | *1,900 | 7.6 | 223 | *1,970 |
| 5 | 2,770 | 6.3 | 6.6 | 8.9 | 3,490 | 1,520 | 1,720 | 2,450 | 2,110 | 9.3 | 1,620 | 2,050 |
| 6 | 18 | *6.3 | 111 | 8.5 | 3,490 | 638 | 325 | 2,450 | 2,400 | 197 | 950 | 2,220 |
| 7 | 8.9 | 7.0 | 596 | 8.9 | *3,390 | *1,340 | 8.3 | 2,350 | 2,460 | 8.0 | 1,520 | 118 |
| 8 | 2,670 | 928 | 1,650 | 621 | 3,300 | 1,750 | 518 | 2,390 | 2,490 | 1,780 | 1,530 | 17 |
| 9 | 2,880 | 1,070 | 1,540 | 13 | 3,290 | 693 | 190 | 1,920 | 2,490 | 416 | 1,560 | 1,140 |
| 10 | 2,800 | 226 | 2,310 | 43 | 3,150 | 8.6 | 15 | 2,410 | 2,520 | 329 | 1,030 | 990 |
| 11 | 2,820 | 6.6 | 2,070 | 446 | 3,800 | 1,450 | 1,490 | 2,400 | 2,540 | 58 | 7.9 | 1,100 |
| 12 | 2,860 | 6.6 | 1,290 | 9.3 | 7,990 | 17 | 1,420 | 1,680 | 2,570 | 1,440 | 1,580 | 1,370 |
| 13 | 18 | 1,820 | 112 | 8.9 | *7,780 | 609 | 1,420 | 1,310 | 2,530 | 330 | 1,530 | 1,740 |
| 14 | 7.0 | 209 | 8.1 | 1,320 | 7,880 | 7.9 | 9.4 | 464 | 2,550 | 354 | 1,880 | 9.2 |
| 15 | 2,110 | 6.3 | 8.5 | 1,060 | 7,800 | 1,060 | 1,500 | 508 | 2,580 | 1,450 | 1,860 | 8.3 |
| 16 | 2,500 | 677 | 8.9 | 1,650 | 7,530 | 9.6 | 1,460 | 142 | 1,920 | *1,730 | 1,800 | 1,350 |
| 17 | 1,490 | 651 | 146 | 1,830 | 7,120 | 7.9 | 1,580 | 9.3 | 13 | 1,780 | 1,740 | 1,850 |
| 18 | 2,260 | 6.6 | 606 | 1,910 | 7,070 | 988 | 1,470 | 7.9 | 4.5 | 1,680 | 9.8 | 2,110 |
| 19 | 2,280 | 845 | 194 | 1,070 | 6,690 | 836 | 1,460 | 80 | 7.3 | 1,340 | 1,050 | 1,720 |
| 20 | 66 | 722 | 1,450 | 10 | 4,920 | 1,890 | 1,460 | 1,130 | 7.1 | 67 | 1,650 | 1,690 |
| 21 | 6.6 | 862 | 15 | 1,380 | 3,450 | 1,180 | 8.6 | 726 | 32 | 8.9 | 1,780 | 2,080 |
| 22 | 7.4 | 1,020 | 8.9 | 357 | 3,490 | *1,860 | 2,240 | 1,640 | 11 | 554 | 1,800 | 1,800 |
| 23 | 1,010 | 1,630 | 8.5 | 1,290 | 2,890 | 9.1 | 2,400 | 1,680 | 12 | 1,000 | 15 | 1,830 |
| 24 | 2,230 | 1,580 | 10 | 1,440 | 1,500 | 8.6 | 2,400 | 1,990 | 473 | 502 | 7.9 | 1,230 |
| 25 | 2,570 | 1,780 | 8.5 | 1,230 | 1,770 | 1,630 | 2,390 | 977 | 1,100 | 1,040 | 7.1 | 1,850 |
| 26 | 1,620 | 2,030 | 7.7 | 762 | 1,830 | 1,620 | 2,390 | 715 | 11 | 481 | 1,810 | 2,100 |
| 27 | 1,590 | 2,100 | 7.7 | 59 | 771 | 1,630 | 2,390 | 1,900 | 11 | 7.3 | 1,840 | 2,000 |
| 28 | 16 | 2,660 | 474 | 50 | 681 | 1,650 | 2,400 | 1,330 | 18 | 7.3 | 1,840 | 1,250 |
| 29 | 72 | 2,720 | 684 | 51 | - | 1,690 | 2,380 | 1,490 | 1,510 | 1,130 | 1,850 | 8.3 |
| 30 | 7.4 | 2,740 | 7.7 | 31 | ------- | 10 | 2,440 | 90 | 140 | 292 | 1,910 | 1,570 |
| 31 | 6.6 | ------- | 98 | 958 | ------- | 7.9 | ------- | 969 | ------- | 1,740 | 9.0 | ------- |
| Total | 47,593.9 | 26,343.9 | 20,324.8 | 19,567.4 | 116,962 | 30,660.6 | 43,312.3 | 44,838.2 | 35,983.2 | 20,069.7 | 41,149.7 | 40,537.6 |
| Mean | 1,535 | 878 | 656 | 631 | 4,177 | 989 | 1,444 | 1,446 | 1,199 | 647 | 1,327 | 1,351 |

| | Observed | | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 2,880 | Min | 1.3 | Mean | 659 | Mean | 905 | Cfsm | 1.29 | In. | 17.51 |
| Water year 1956-57: | Max | 7,990 | Min | 4.5 | Mean | 1,335 | Mean | 1,300 | Cfsm | 1.85 | In. | 25.10 |

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston Lake.

## Beaver Creek near Wallace, Va.

Location.--Lat 36°38'25", long 82°06'42", on left bank 0.4 mile upstream from Clear Creek, 1.3 miles southeast of Wallace, Washington County, and 3.8 miles northeast of Bristol.

Drainage area.--13.7 sq mi.

Records available.--October 1945 to September 1957 (discontinued). October 1945 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder and contrete control. Datum of gage is 1,808.93 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years, 14.6 cfs.

Extremes.--Maximum discharge during year, 286 cfs Apr. 8 (gage height, 4.55 ft); minimum, 3.0 cfs Oct. 15; minimum gage height, 1.22 ft Sept. 6.
1945-57: Maximum discharge, 383 cfs July 15, 1948 (gage height, 5.94 ft), from rating curve extended above 230 cfs on basis of velocity-area studies; mirimum, 2.8 cfs Jan. 6, 1956; minimum gage height, 1.05 ft Dec. 1-12, 1946.

Remarks.--Records good.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 2-4, 20, 21)

Oct. 1 to Jan. 29

| | | | |
|---|---|---|---|
| 1.3 | 3.4 | 2.0 | 34 |
| 1.4 | 5.8 | 3.0 | 94 |
| 1.5 | 8.6 | 4.0 | 166 |
| 1.6 | 12 | 5.0 | 284 |
| 1.7 | 16 | | |

Jan. 30 to Sept. 30

| | | | |
|---|---|---|---|
| 1.3 | 5.0 | 1.8 | 25 |
| 1.4 | 6.6 | 2.0 | 39 |
| 1.5 | 9.6 | 3.0 | 118 |
| 1.6 | 14 | 4.1 | 232 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.1 | 4.6 | 3.9 | 11 | 232 | 46 | 17 | 16 | 10 | 9.3 | 6.0 | 5.2 |
| 2 | 4.1 | 3.9 | 3.9 | 10 | 175 | 38 | 18 | 16 | 10 | 9.0 | 6.1 | 5.0 |
| 3 | *4.1 | 3.9 | 3.9 | 10 | 120 | 35 | *17 | *16 | 10 | 8.4 | 5.8 | 5.2 |
| 4 | 4.1 | 3.6 | 3.9 | 10 | 119 | 33 | 20 | 16 | 11 | 8.1 | 6.0 | 5.3 |
| 5 | 4.4 | 3.4 | 3.6 | 12 | 102 | 31 | *54 | 16 | *11 | 8.1 | *6.0 | *5.2 |
| 6 | 4.8 | 3.4 | *3.4 | 11 | 92 | *29 | 41 | 15 | 14 | 7.8 | 6.0 | 5.0 |
| 7 | 4.4 | *3.9 | 3.4 | 11 | *163 | 31 | 32 | 14 | 11 | 7.8 | 5.8 | 5.0 |
| 8 | 4.4 | 5.1 | 3.4 | 11 | 178 | 34 | 129 | 14 | 10 | 7.5 | 5.8 | 5.0 |
| 9 | 4.4 | 4.6 | 3.4 | *23 | 168 | 30 | 92 | 14 | 10 | 7.5 | 5.6 | 5.0 |
| 10 | 4.1 | 4.4 | 3.4 | 32 | 173 | 28 | 56 | 14 | 9.6 | 7.2 | 5.8 | 5.6 |
| 11 | 3.9 | 4.1 | 3.6 | 24 | 112 | 27 | 45 | 14 | 9.6 | *6.9 | 6.3 | 5.3 |
| 12 | 3.9 | 3.9 | 7.5 | 22 | 84 | 27 | 40 | 14 | 9.6 | 7.2 | 6.3 | 5.2 |
| 13 | 3.9 | 3.9 | 10 | 20 | 72 | 25 | 38 | 13 | 9.3 | 7.2 | 6.1 | 7.2 |
| 14 | 3.9 | 3.9 | 11 | 18 | 62 | 24 | 34 | 15 | 10 | 7.2 | 5.8 | 28 |
| 15 | 3.6 | 3.9 | 14 | 17 | 56 | 24 | 32 | 13 | 9.0 | 7.5 | 18 | 14 |
| 16 | 3.6 | 4.1 | 14 | 17 | 52 | 23 | 31 | 12 | 9.0 | 6.4 | 7.8 | 9.3 |
| 17 | 3.9 | 4.1 | 11 | 15 | 46 | 22 | 28 | 12 | 8.7 | 6.4 | 6.4 | 9.3 |
| 18 | 4.1 | 3.9 | 11 | 14 | 44 | 22 | 26 | 11 | 8.7 | 6.4 | 6.3 | 8.4 |
| 19 | 4.4 | 3.9 | 11 | 14 | 49 | 22 | 24 | 11 | 8.4 | 6.3 | 6.1 | 8.1 |
| 20 | 4.1 | 3.6 | 10 | 13 | 40 | 21 | 23 | 11 | 8.4 | 6.1 | 6.0 | 7.5 |
| 21 | 4.4 | 4.1 | 14 | 13 | 37 | 21 | 23 | 10 | 8.1 | 6.1 | 5.8 | 7.5 |
| 22 | 5.1 | 4.1 | 14 | 13 | 34 | 21 | 22 | 10 | 8.1 | 6.0 | 5.6 | 6.9 |
| 23 | 4.8 | 4.1 | 16 | 20 | 31 | 20 | 21 | 10 | 22 | 6.1 | 5.5 | 7.2 |
| 24 | 4.6 | 4.1 | 29 | 15 | 30 | 20 | 21 | 11 | 11 | 6.3 | 5.5 | 6.6 |
| 25 | 4.1 | 4.1 | 20 | 15 | 28 | 20 | 20 | 10 | 16 | 6.0 | 5.8 | 6.4 |
| 26 | 4.1 | 4.1 | 17 | 14 | 28 | 19 | 18 | 12 | 12 | 5.6 | 6.4 | 6.3 |
| 27 | 4.4 | 4.1 | 15 | 25 | 26 | 18 | 18 | 12 | 10 | 6.0 | 5.8 | 6.1 |
| 28 | 3.9 | 3.9 | 14 | 97 | 39 | 18 | 18 | 11 | 11 | 6.3 | 5.5 | 6.1 |
| 29 | 3.9 | 3.9 | 13 | 226 | - | 18 | 18 | 11 | 12 | 6.3 | 5.3 | 8.4 |
| 30 | 3.9 | 3.9 | 13 | 161 | ------- | 18 | 17 | 10 | 10 | 6.3 | 5.3 | 9.0 |
| 31 | 3.6 | ------- | 12 | 214 | ------- | 17 | ------- | 10 | ------- | 6.3 | 5.2 | ------- |
| Total | 129.0 | 120.5 | 316.3 | 1,128 | 2,392 | 782 | 993 | 394 | 317.5 | 215.6 | 195.7 | 224.3 |
| Mean | 4.16 | 4.02 | 10.2 | 36.4 | 85.4 | 25.2 | 33.1 | 12.7 | 10.6 | 6.95 | 6.31 | 7.48 |
| Cfsm | 0.304 | 0.293 | 0.745 | 2.66 | 6.23 | 1.84 | 2.42 | 0.927 | 0.774 | 0.507 | 0.461 | 0.546 |
| In. | 0.35 | 0.33 | 0.86 | 3.07 | 6.49 | 2.12 | 2.70 | 1.07 | 0.86 | 0.58 | 0.53 | 0.61 |

Calendar year 1956: Max 102 Min 3.0 Mean 13.5 Cfsm 0.985 In. 13.43
Water year 1956-57: Max 232 Min 3.4 Mean 13.7 Cfsm 1.44 In. 19.57

Peak discharge (base, 100 cfs).--Jan. 29 (3 to 4 p.m.) 275 cfs (4.48 ft); Feb. 7 (3:30 p.m.) 264 cfs (4.37 ft); Apr. 8 (6 p.m.) 286 cfs (4.55 ft); June 23 (7 p.m.) 127 cfs (3.09 ft).
* Discharge measurement made on this day.

## Watauga River near Sugar Grove, N. C.

Location.--Lat 36°14'18", long 81°49'22", on right bank 300 ft downstream from Cove Creek and 2.3 miles southwest of Sugar Grove, Watauga County.

Drainage area.--90.8 sq mi.

Records available.--May 1940 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,607.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--17 years, 155 cfs.

Extremes.--Maximum discharge during year, 9,490 cfs Apr. 4 (gage height, 12.90 ft), from rating curve extended above 2,100 cfs as explained below; minimum, 24 cfs Sept. 2, 3; minimum gage height, 1.43 ft Oct. 17, 18, Nov. 23, Sept. 2, 3; minimum daily discharge, 24 cfs Sept. 2.

1940-57: Maximum discharge, 50,800 cfs Aug. 13, 1940 (gage height, 29.6 ft, from profile based on floodmarks), from rating curve extended above 2,100 cfs on basis of slope-area determination of peak flow; minimum, 6.5 cfs Jan. 1, 1954 (gage height, 1.13 ft), result of freezeup; minimum daily, 13 cfs Sept. 19, 30, 1954.

Flood in July 1916 reached a stage of 22.1 ft, from floodmarks on barn a quarter of a mile above station as witnessed by local resident (discharge, 28,000 cfs, from rating curve extended above 2,100 cfs as explained above).

Remarks.--Records excellent except those for periods of ice effect, which are good. Slight diurnal fluctuation at low flow caused by small mills above station.

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1-22 | | Oct. 23 to June 5 | | | | June 6 to Sept. 30 | |
|---|---|---|---|---|---|---|---|
| 1.4 | 24 | 1.6 | 47 | 4.5 | 990 | 1.4 | 21 |
| 1.6 | 44 | 1.9 | 97 | 5.0 | 1,260 | 1.5 | 30 |
| 1.9 | 89 | 2.2 | 166 | 6.0 | 1,880 | 1.7 | 53 |
| 2.2 | 154 | 2.5 | 245 | 7.0 | 2,650 | 2.0 | 103 |
| 2.5 | 240 | 3.0 | 400 | 8.0 | 3,590 | 2.5 | 226 |
| 3.0 | 390 | 3.5 | 575 | 9.0 | 4,620 | 3.0 | 380 |
| 3.5 | 550 | 4.0 | 765 | 9.5 | 5,170 | 3.5 | 560 |
| 4.0 | 755 | | | | | 4.0 | 760 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 41 | 440 | 57 | 99 | 1,480 | 697 | 218 | 126 | 82 | 289 | 45 | 25 |
| 2 | 34 | 260 | 54 | b80 | 926 | 474 | 1,440 | 121 | 89 | 218 | 43 | 24 |
| 3 | 31 | 178 | 55 | b85 | 568 | 362 | 446 | 119 | 112 | 183 | 41 | 25 |
| 4 | 35 | 142 | 54 | b95 | 505 | 299 | 2,000 | 124 | 368 | 156 | 45 | 29 |
| 5 | 66 | 121 | 53 | 128 | 463 | 257 | 5,100 | 110 | *960 | 138 | 48 | 28 |
| 6 | 196 | 108 | 51 | 108 | 502 | 228 | 1,160 | 104 | 429 | 120 | 40 | 25 |
| 7 | 66 | 97 | 51 | *106 | 474 | 214 | 610 | *99 | 292 | 107 | 37 | 28 |
| 8 | 44 | 106 | 51 | 95 | 470 | 214 | 693 | 97 | 215 | 99 | 36 | 28 |
| 9 | 37 | 91 | 51 | 104 | 877 | 191 | 649 | 95 | 186 | *92 | 33 | 67 |
| 10 | 33 | 82 | 50 | 126 | 805 | 176 | 484 | 93 | 183 | 86 | 32 | *77 |
| 11 | 32 | 76 | *48 | 119 | 568 | 168 | 382 | 121 | 156 | 79 | 30 | 66 |
| 12 | 31 | 71 | 64 | 112 | 407 | 166 | 326 | 106 | *136 | 74 | 30 | 97 |
| 13 | 30 | 66 | 101 | 106 | 329 | *154 | 287 | 93 | 118 | 69 | *29 | 48 |
| 14 | 30 | *63 | 153 | 95 | 275 | 147 | 251 | 93 | 166 | 66 | 34 | 47 |
| 15 | 29 | *60 | 217 | 88 | 234 | 142 | *225 | 119 | 143 | 67 | 107 | 38 |
| 16 | 28 | 58 | 184 | 82 | 214 | 133 | 207 | 93 | 120 | 84 | 67 | 86 |
| 17 | 27 | 178 | 149 | b75 | 186 | 126 | 194 | 84 | 133 | 70 | 46 | 399 |
| 18 | 30 | 149 | 130 | b70 | *171 | 126 | 186 | 88 | 240 | 103 | 41 | 243 |
| 19 | 30 | 112 | 112 | b75 | 188 | 137 | 176 | 106 | 194 | 77 | 46 | 129 |
| 20 | 44 | 97 | 104 | b90 | 188 | 121 | 164 | 135 | 148 | 64 | 41 | 99 |
| 21 | 72 | 91 | 104 | 80 | 156 | 112 | 156 | 97 | 120 | 60 | 36 | 84 |
| 22 | 718 | 91 | 104 | 107 | 144 | 133 | 154 | 89 | 116 | 64 | 33 | 122 |
| 23 | 239 | 75 | 119 | 338 | 137 | 126 | 159 | 93 | 153 | 64 | 31 | 109 |
| 24 | *142 | 75 | 248 | 196 | 130 | 117 | 176 | 84 | 226 | 116 | 31 | 84 |
| 25 | 106 | 73 | 199 | 161 | 135 | 149 | 161 | 110 | 156 | 72 | 30 | 69 |
| 26 | 97 | 70 | 159 | 142 | 959 | 154 | 140 | 86 | 136 | 60 | 40 | 63 |
| 27 | 147 | 68 | 140 | 168 | 516 | 140 | 130 | 208 | 450 | 54 | 32 | 57 |
| 28 | 108 | 66 | 126 | 510 | 666 | 126 | 126 | 135 | 353 | 53 | 29 | 57 |
| 29 | 91 | 64 | 117 | 1,030 | - | 121 | 161 | 104 | 425 | 48 | 28 | 221 |
| 30 | 97 | 61 | b100 | 713 | ------- | 117 | 137 | 91 | 313 | 48 | 27 | 588 |
| 31 | 147 | ------- | b95 | 1,250 | ------- | 110 | ------- | 88 | ------- | 49 | 26 | ------- |
| Total | 2,858 | 3,289 | 3,300 | 6,633 | 12,873 | 5,937 | 16,698 | 3,311 | 6,918 | 2,929 | 1,214 | 3,062 |
| Mean | 92.2 | 110 | 106 | 214 | 453 | 192 | 557 | 107 | 231 | 94.5 | 39.2 | 102 |
| Cfsm | 1.02 | 1.21 | 1.17 | 2.36 | 4.99 | 2.11 | 6.13 | 1.18 | 2.54 | 1.04 | 0.432 | 1.12 |
| In. | 1.17 | 1.35 | 1.35 | 2.72 | 5.19 | 2.43 | 6.84 | 1.36 | 2.83 | 1.20 | 0.50 | 1.25 |

Calendar year 1956 : Max 1,970 Min 16 Mean 117 Cfsm 1.29 In. 17.57
Water year 1956-57 : Max 5,100 Min 24 Mean 189 Cfsm 2.08 In. 28.19

Peak discharge (base, 2,000 cfs).--Jan. 31 (10:30 p.m.) 2,200 cfs (6.45 ft); Apr. 2 (3 a.m.) 3,790 cfs (8.20 ft); Apr. 4 (12 p.m.) 9,490 cfs (12.90 ft); June 5 (10 a.m.) 2,140 cfs (6.37 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Watauga River below Wilbur Dam, Tenn.

Location.--Lat 36°20'39", long 82°07'46", 1,800 ft downstream from Wilbur Dam, 0.7 mile downstream from Big Laurel Branch, 2.7 miles downstream from Watauga Dam, and 5 miles east of Elizabethton, Carter County.

Drainage area.--471 sq mi.

Records available.--May 1903 to December 1908 and January 1948 to September 1957 in reports of Geological Survey. Published as "near Elizabethton" 1903-8. May 1903 to December 1908 (revised records) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,550.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 11, 1903, to Dec. 31, 1908, chain gage at railroad bridge 2 miles downstream at different datum.

Average discharge.--14 years, 689 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,020 cfs Mar. 6 (gage height, 35.48 ft); minimum, 22 cfs July 31 (gage height, 31.25 ft); minimum daily, 23 cfs July 31.
1903-8, 1948-57: Maximum discharge observed, 21,500 cfs Jan. 22, 1906 (gage height, 13.6 ft, site and datum then in use), from rating curve extended above 2,500 cfs; minimum, 2.3 cfs July 11, 1953; minimum daily, 2.4 cfs Aug. 14, 1949; minimum gage height at present site, 30.73 ft July 11, 1953.

Remarks.--Records good. Flow completely regulated by Watauga Lake (see p. 223).

Revisions (water years).--WSP 1276: 1906(M). WSP 1386: 1950. See also Records available.

Correction.--The maximum daily discharges for the calendar year 1949 and the water year 1950 have been corrected to 1,310 cfs and 1,510 cfs respectively, supersedirg the figures published in WSP 1386.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 31.2 | 19 | 32.7 | 340 |
| 31.3 | 26 | 33.0 | 475 |
| 31.6 | 58 | 33.5 | 820 |
| 31.9 | 110 | 34.0 | 1,280 |
| 32.2 | 180 | 35.4 | 2,920 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 951 | 856 | 1,480 | 89 | 162 | 54 | 958 | 2,760 | 51 | 51 | 48 | 62 |
| 2 | *938 | 502 | 1,210 | 970 | 140 | 54 | *954 | *2,790 | 51 | 146 | 138 | 908 |
| 3 | 990 | 30 | 1,560 | *706 | 46 | 54 | 984 | 2,610 | 1,030 | 54 | 1,660 | 2,040 |
| 4 | 954 | 30 | *1,560 | 79 | 46 | 767 | 518 | 2,680 | *1,230 | 54 | 61 | *2,080 |
| 5 | 980 | 993 | 1,320 | 58 | 44 | 378 | 1,160 | 2,040 | 1,360 | 54 | 1,240 | 1,840 |
| 6 | 30 | *398 | 1,290 | 57 | *150 | *905 | 1,240 | 2,670 | 1,480 | 53 | *888 | 1,880 |
| 7 | 30 | 374 | 1,250 | 56 | 47 | 888 | 1,000 | 2,840 | 1,330 | 53 | 2,380 | 62 |
| 8 | 30 | 898 | 1,290 | 384 | 69 | 582 | 1,790 | 2,840 | 2,420 | 865 | 1,060 | 61 |
| 9 | 989 | 1,110 | 1,410 | 54 | 125 | 61 | 2,070 | 2,520 | 1,780 | 311 | 1,200 | 938 |
| 10 | 960 | 778 | 2,500 | 52 | 133 | 60 | 2,660 | 2,240 | 1,520 | 226 | 60 | 1,220 |
| 11 | 942 | 29 | 2,510 | 292 | 513 | 456 | 2,870 | 2,230 | 1,360 | 53 | 58 | 891 |
| 12 | 954 | 236 | 1,360 | 51 | 87 | 56 | 2,860 | 91 | 1,460 | 1,140 | 42 | 924 |
| 13 | 30 | 1,230 | 392 | 51 | 60 | 343 | 2,870 | 718 | 1,340 | 274 | 29 | 1,480 |
| 14 | 30 | 24 | 142 | 320 | 58 | 54 | 2,000 | 328 | 1,440 | 56 | 76 | 75 |
| 15 | 30 | 24 | 53 | 594 | 57 | 725 | 1,950 | 61 | 1,500 | 972 | 604 | 68 |
| 16 | 30 | 445 | 53 | 1,720 | 57 | 64 | 1,890 | 60 | 1,350 | *500 | 458 | 1,250 |
| 17 | 30 | 32 | 202 | 2,150 | 56 | 61 | 2,040 | 58 | 1,450 | 962 | 100 | 1,700 |
| 18 | 30 | 32 | 1,070 | 2,260 | 58 | 314 | 1,870 | 57 | 354 | 60 | 31 | 1,890 |
| 19 | 30 | 508 | 963 | 1,390 | 163 | 62 | 1,920 | 57 | 61 | 58 | 74 | 1,950 |
| 20 | 30 | 32 | 1,930 | 60 | 306 | 1,460 | 2,010 | 752 | 58 | 57 | 30 | 1,820 |
| 21 | 28 | 262 | 339 | 1,190 | 248 | 397 | 1,290 | 728 | 57 | 57 | 30 | 2,280 |
| 22 | 28 | 450 | 60 | 60 | 229 | 1,190 | 2,540 | 508 | 57 | 57 | 46 | 2,090 |
| 23 | 1,050 | 974 | 57 | 562 | 58 | 64 | 2,700 | 823 | 56 | 60 | 60 | 1,860 |
| 24 | 1,470 | 684 | 56 | 1,010 | 58 | 61 | 2,570 | 540 | 57 | 57 | 58 | 1,730 |
| 25 | 1,540 | 947 | 54 | 848 | 57 | 916 | 2,750 | 51 | 57 | 53 | 60 | 1,900 |
| 26 | 1,540 | 1,140 | 54 | 416 | 57 | 900 | 2,750 | 51 | 57 | 52 | 932 | 2,080 |
| 27 | 1,050 | 1,410 | 54 | 53 | 56 | 958 | 1,400 | 987 | 56 | 52 | 1,210 | 2,070 |
| 28 | 26 | 1,600 | 192 | 150 | 54 | 941 | 1,430 | 1,020 | 54 | 52 | 452 | 1,320 |
| 29 | 980 | 1,500 | 392 | 146 | - | 910 | 2,700 | 796 | 550 | 52 | 1,660 | 60 |
| 30 | 908 | 1,540 | 57 | 166 | ------- | 56 | 2,760 | 51 | 51 | 100 | 1,830 | 1,890 |
| 31 | 908 | ------- | 146 | 118 | ------- | 53 | ------- | 519 | ------- | 23 | 139 | ------- |
| Total | 18,516 | 19,068 | 25,006 | 16,112 | 3,194 | 13,844 | 58,504 | 36,476 | 23,677 | 6,614 | 16,714 | 40,419 |
| Mean | 597 | 636 | 807 | 520 | 114 | 447 | 1,950 | 1,177 | 789 | 213 | 539 | 1,347 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 2,510 | Min 24 | Mean 312 | | Mean 640 | Cfsm 1.36 | In. 18.49 | |
| Water year 1956-57: | Max 2,870 | Min 23 | Mean 762 | | Mean 839 | Cfsm 1.78 | In. 24.18 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.

## Doe River at Elizabethton, Tenn.

Location.--Lat 36°20'40", long 82°12'37", on left bank 1,500 ft upstream from bridge on State Highway 91 at Elizabethton, Carter County, and 1 mile upstream from mouth.

Drainage area.--137 sq mi.

Records available.--June 1907 to June 1908 and September to December 1912 (gage heights only), December 1911 to September 1916 and November 1920 to September 1931 (published as "at Valley Forge"), June 1932 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,524.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 1907 to June 1908 and September to December 1912, staff gage a quarter of a mile upstream at different datum. December 1911 to September 1916 and November 1920 to September 1931, chain gage 3 miles upstream at altitude 1,610 ft (from topographic map). June to September 1932 staff gage at present site at datum 0.50 ft higher. September 1932 to January 1934 staff gage at present site and datum.

Average discharge.--38 years (1912-16, 1921-31, 1933-57), 214 cfs.

Extremes.--Maximum discharge during year, 6,190 cfs Apr. 5 (gage height, 6.25 ft), from rating curve extended as explained below; minimum, 54 cfs Sept. 2 (gage height, 0.60 ft).
1911-16, 1920-31, 1932-57: Maximum discharge, 7,300 cfs July 30, 1940 (gage height, 6.75 ft), from rating curve extended above 4,000 cfs on basis of slope-area determination at gage height 6.25 ft; minimum, 17 cfs Aug. 31, Sept. 7, 1925 (gage height, 0.60 ft, site and datum then in use).

Remarks.--Records good. Records of water temperatures for the water year 1957 are given in WSP 1520.

Revisions (water years).--WSP 823: Drainage area. WSP 1336: 1933(M), 1938.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 28, 30, 31, Feb. 3-14, Apr. 4)

| | | | |
|---|---|---|---|
| 0.6 | 54 | 3.0 | 1,050 |
| 1.0 | 136 | 4.0 | 2,050 |
| 1.5 | 280 | 5.2 | 4,090 |
| 2.0 | 485 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *127 | 144 | 91 | 159 | *3,300 | 472 | *173 | 219 | 173 | 379 | 87 | 57 |
| 2 | 111 | 129 | 89 | 134 | 2,220 | 404 | 277 | *213 | 168 | 280 | 98 | 56 |
| 3 | 100 | 104 | *91 | *109 | 1,210 | 363 | 237 | 246 | *184 | 240 | 81 | 57 |
| 4 | 100 | 95 | 93 | 149 | 1,190 | 327 | 715 | 213 | 204 | 213 | 116 | *93 |
| 5 | 106 | 89 | 91 | 284 | 1,280 | 298 | *4,090 | 196 | 516 | 193 | 146 | 71 |
| 6 | 106 | *85 | 89 | 271 | *1,200 | *277 | 1,110 | 182 | 985 | 176 | *93 | 62 |
| 7 | 91 | 85 | 87 | 255 | 1,110 | 271 | 645 | 170 | 742 | 159 | 77 | 59 |
| 8 | 83 | 118 | 87 | 225 | 1,160 | 290 | 923 | 165 | 431 | 149 | 71 | 57 |
| 9 | 79 | 131 | 89 | 243 | 1,690 | 264 | 1,070 | 159 | 413 | 141 | 66 | 62 |
| 10 | 75 | 106 | 98 | 284 | 2,060 | 249 | 707 | 157 | 304 | 136 | 64 | 73 |
| 11 | 73 | 100 | 89 | 284 | 1,340 | 261 | 540 | 179 | 261 | 124 | 62 | 93 |
| 12 | 71 | 95 | 120 | 258 | 862 | 284 | 444 | 168 | 432 | 120 | 75 | 139 |
| 13 | 69 | 91 | 228 | 234 | 670 | 268 | 379 | 146 | 401 | 115 | 62 | 87 |
| 14 | 68 | 87 | 228 | 207 | 540 | 261 | 335 | 146 | 575 | 127 | 61 | 112 |
| 15 | 66 | 85 | 252 | 184 | 458 | 249 | 301 | 159 | 449 | 179 | 242 | 106 |
| 16 | 66 | 85 | 225 | 179 | 426 | 234 | 280 | 146 | 367 | *193 | 184 | 115 |
| 17 | 66 | 178 | 193 | 149 | 363 | 225 | 264 | 131 | 387 | 144 | 146 | 343 |
| 18 | 69 | 193 | 182 | 109 | 331 | 219 | 249 | 131 | 408 | 219 | 122 | 312 |
| 19 | 69 | 152 | 165 | 129 | 343 | 228 | 237 | 136 | 383 | 176 | 159 | 184 |
| 20 | 66 | 136 | 152 | 149 | 331 | 210 | 225 | 159 | 327 | 127 | 144 | 141 |
| 21 | 69 | 127 | 162 | 165 | 287 | 199 | 216 | 134 | 264 | 115 | 109 | 120 |
| 22 | 100 | 141 | 199 | 157 | 271 | 213 | 213 | 139 | 234 | 106 | 95 | 115 |
| 23 | 113 | 118 | 219 | 301 | 258 | 207 | 243 | 149 | 266 | 98 | 83 | 170 |
| 24 | 89 | 113 | 400 | 237 | 249 | 193 | 271 | 164 | 304 | 204 | 79 | 144 |
| 25 | 81 | 104 | 347 | 213 | 243 | 210 | 249 | 254 | 294 | 134 | 77 | 118 |
| 26 | 77 | 111 | 271 | 210 | 290 | 199 | 216 | 190 | 264 | 111 | 83 | 102 |
| 27 | 93 | 106 | 231 | 324 | 274 | 207 | 202 | 785 | 294 | 100 | 75 | 95 |
| 28 | 89 | 95 | 202 | *1,870 | 335 | 190 | 199 | 476 | 243 | 95 | 69 | 91 |
| 29 | 81 | 104 | 190 | 2,760 | - | 184 | 210 | 287 | 280 | 93 | 68 | 120 |
| 30 | 79 | 98 | 168 | 2,110 | ------ | 179 | 204 | 228 | 368 | 89 | 62 | 190 |
| 31 | 81 | --- | 159 | 2,330 | ------ | 176 | ------ | 193 | ------ | 93 | 59 | ---- |
| Total | 2,613 | 3,405 | 5,287 | 14,672 | 24,291 | 7,811 | 15,424 | 6,420 | 10,921 | 4,828 | 3,015 | 3,544 |
| Mean | 84.3 | 114 | 171 | 473 | 868 | 252 | 514 | 207 | 364 | 156 | 97.3 | 118 |
| Cfsm | 0.615 | 0.832 | 1.25 | 3.45 | 6.34 | 1.84 | 3.75 | 1.51 | 2.66 | 1.14 | 0.710 | 0.861 |
| In. | 0.71 | 0.92 | 1.44 | 3.98 | 6.59 | 2.12 | 4.19 | 1.74 | 2.96 | 1.31 | 0.82 | 0.96 |

Calendar year 1956: Max 3,080 Min 46 Mean 219 Cfsm 1.60 In. 21.77
Water year 1956-57: Max 4,090 Min 56 Mean 280 Cfsm 2.04 In. 27.74

Peak discharge (base, 1,700 cfs).--Jan. 29 (10:30 p.m.) 4,210 cfs (5.26 ft); Feb. 1 (12:30 a.m.) 4,990 cfs (5.65 ft); Feb. 10 (8:30 a.m.) 2,630 cfs (4.38 ft); Apr. 5 (3 a.m.) 6,190 cfs (6.25 ft); Apr. 8 (6 a.m.) 1,700 cfs (3.70 ft).
* Discharge measurement made on this day.

## Watauga River at Elizabethton, Tenn.

Location.--Lat 36°21'21", long 82°13'26", on left bank 25 ft upstream from bridge on U. S. Highway 19E at Elizabethton, Carter County, 0.6 mile downstream from Doe River, and at mile 25.9.

Drainage area.--692 sq mi.

Records available.--February 1926 to July 1949, July 1953 to September 1957. Gage-height records collected in this vicinity December 1909 to July 1949 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,486.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Dec. 1, 1909, to Feb. 20, 1926, U. S. Weather Bureau tape gage and Feb. 21 to Oct. 4, 1926, staff gage, on Southern Railway bridge 10 ft upstream at same datum.

Average discharge.--26 years (1926-48, 1953-57), 1,051 cfs (unadjusted).

Extremes.--Maximum discharge during year, 9,360 cfs Apr. 5 (gage height, 9.13 ft); minimum, 109 cfs Aug. 14 (gage height, 1.94 ft); minimum daily, 115 cfs Oct. 15-17, Aug. 13.

1926-49, 1953-57: Maximum discharge, 75,100 cfs Aug. 14, 1940 (gage height, 20.87 ft), from rating curve extended above 29,000 cfs on basis of contracted-opening determination of peak flow; minimum, 42 cfs Sept. 20, 1932; minimum daily, 85 cfs Dec. 3, 1953; minimum gage height, 1.54 ft Sept. 20, 1932.

Maximum stage known, about 21 ft in May 1901 (discharge, 75,900 cfs), from high-water profile by Tennessee Valley Authority.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow partly regulated by Watauga Lake, 10 miles upstream (see p. 223).

Revisions (water years).--WSP 758: 1932(M). WSP 823: Drainage area. WSP 1336: 1927-28(M), 1930, 1931-32(m).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.9 | 101 | 4.0 | 1,200 |
| 2.1 | 143 | 6.0 | 3,280 |
| 2.5 | 260 | 7.0 | 4,700 |
| 3.0 | 480 | 8.2 | 7,040 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,010 | 1,030 | 1,650 | 287 | 5,680 | 875 | a1,250 | 3,160 | 271 | 491 | 168 | 136 |
| 2 | *a1,070 | 710 | 1,410 | 1,140 | 3,910 | 786 | *1,320 | *3,150 | 250 | 473 | 242 | 850 |
| 3 | a1,110 | 162 | 1,730 | *917 | 2,050 | 660 | 1,340 | 3,120 | 1,140 | 331 | 1,730 | *1,910 |
| 4 | a1,080 | 150 | *1,690 | 290 | 2,090 | 1,310 | 1,540 | 2,920 | *1,550 | 290 | 265 | 2,210 |
| 5 | a1,110 | *1,060 | 1,670 | 480 | 2,230 | 870 | 6,830 | 2,340 | 2,120 | 271 | 1,300 | 2,020 |
| 6 | a160 | 510 | 1,260 | 460 | *2,230 | *1,390 | 3,220 | 2,980 | 3,020 | 250 | *1,000 | 1,940 |
| 7 | a140 | 487 | 1,460 | 435 | 1,980 | 1,270 | 2,070 | 3,120 | 2,490 | 232 | 2,360 | 239 |
| 8 | a130 | 906 | 1,370 | 712 | 2,260 | 1,050 | 3,600 | 3,110 | 3,020 | 950 | 1,260 | 132 |
| 9 | a1,100 | 1,390 | 1,560 | 518 | 3,500 | 450 | 4,770 | 2,780 | 2,420 | 603 | 1,380 | 994 |
| 10 | a1,060 | 1,050 | 2,550 | 716 | 3,730 | 411 | 4,010 | 2,640 | 1,980 | 381 | 262 | 1,260 |
| 11 | a1,140 | 186 | 2,740 | 907 | 2,800 | 833 | 3,890 | 2,460 | 1,700 | 197 | 143 | 1,020 |
| 12 | a1,050 | 250 | 1,690 | 524 | 1,580 | 480 | 3,700 | 497 | 2,060 | 1,100 | 148 | 1,070 |
| 13 | a120 | 1,500 | 698 | 465 | 1,170 | 786 | 3,590 | 914 | 2,030 | 606 | 115 | 1,540 |
| 14 | a120 | 172 | 506 | 620 | 939 | 455 | 2,760 | 566 | 2,170 | 197 | 158 | 304 |
| 15 | a115 | 141 | 421 | 902 | 779 | 1,030 | 2,490 | 279 | 2,170 | 1,100 | 800 | 189 |
| 16 | 115 | 404 | 392 | 1,800 | 709 | 485 | 2,340 | 246 | 1,820 | *764 | 686 | 1,280 |
| 17 | 115 | 344 | 470 | 2,550 | 608 | 379 | 2,470 | 225 | 2,010 | 1,220 | 410 | 2,160 |
| 18 | 117 | 250 | 1,330 | 2,500 | 553 | 607 | 2,370 | 219 | 1,170 | 338 | 170 | 2,140 |
| 19 | 121 | 686 | 1,250 | 1,640 | 670 | 397 | 2,320 | 225 | 589 | 260 | 252 | 2,120 |
| 20 | 119 | 206 | 1,980 | 363 | 788 | a1,800 | 2,330 | 881 | 524 | 203 | 186 | 2,110 |
| 21 | 117 | 369 | 823 | 1,400 | 675 | 644 | 1,660 | 1,030 | 416 | 186 | 153 | 2,320 |
| 22 | 141 | 584 | 421 | 287 | 634 | a1,500 | 2,890 | 564 | 370 | 178 | 143 | 2,360 |
| 23 | 1,150 | 1,170 | 465 | 912 | 430 | 361 | 3,110 | 1,040 | 383 | 231 | 155 | 1,970 |
| 24 | 1,460 | 714 | 751 | 1,430 | 406 | 318 | 3,020 | 899 | 435 | 310 | 148 | 1,970 |
| 25 | 1,710 | 1,250 | 681 | 1,180 | 397 | a1,250 | 3,160 | 357 | 421 | 210 | 145 | 1,920 |
| 26 | 1,710 | 1,140 | 508 | 718 | 440 | a1,200 | 3,110 | 271 | 383 | 180 | 994 | 2,230 |
| 27 | 1,340 | 1,590 | 416 | 552 | 425 | a1,280 | 1,970 | 1,810 | 406 | 170 | 1,100 | 2,220 |
| 28 | 200 | 1,790 | 476 | 3,730 | 518 | a1,230 | 1,680 | 1,730 | 343 | 165 | 558 | 1,680 |
| 29 | 1,050 | 1,660 | 651 | 5,620 | - | a1,200 | 2,990 | 1,200 | 912 | 157 | 1,630 | 225 |
| 30 | 1,050 | 1,700 | 323 | 3,950 | ------- | 412 | 3,150 | 339 | 470 | 220 | 2,110 | 1,980 |
| 31 | 1,040 | ------- | 360 | 3,860 | ------- | 271 | ------- | 744 | ------- | 136 | 338 | ------- |
| Total | 22,070 | 23,601 | 33,702 | 41,665 | 44,181 | 25,990 | 84,950 | 45,816 | 39,043 | 12,400 | 20,509 | 44,499 |
| Mean | 712 | 787 | 1,087 | 1,350 | 1,578 | 838 | 2,832 | 1,478 | 1,301 | 400 | 662 | 1,483 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 5,540 | Min 112 | Mean 664 | Mean 991 | Cfsm 1.43 | In. 19.50 |
| Water year 1956-57: | Max 6,830 | Min 115 | Mean 1,202 | Mean 1,279 | Cfsm 1.85 | In. 25.08 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for station below Wilbur Dam.

## South Fork Holston River at Kingsport, Tenn.

Location.--Lat 36°31'51", long 82°33'29", on left bank 1,000 ft downstream from new bridge on State Highway 81, 1¼ miles upstream from Reedy Creek, and 3¾ miles upstream from confluence with North Fork Holston River.

Drainage area.--1,935 sq mi.

Records available.--September 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,175.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Dec. 2, 1953, at site 2 miles upstream at datum 8.47 ft higher.

Average discharge.--32 years, 2,505 cfs (unadjusted).

Extremes.--Maximum discharge during year, 15,800 cfs Feb. 10 (gage height, 6.67 ft); minimum, 306 cfs Jan. 6 (gage height, 0.48 ft); minimum daily, 460 cfs Oct. 28.
1925-57: Maximum discharge, 68,800 cfs Aug. 14, 1940 (gage height, 18.80 ft, site and datum then in use); minimum, 210 cfs Jan. 28, 1940 (gage height, -0.20 ft, site and datum then in use); minimum daily, 301 cfs June 13, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 223). Some diversion upstream by the city of Kingsport, Tennessee Eastman Corp., and Holston Ordnance Works.

Revisions (water years).--WSP 823: Drainage area. WSP 1033: 1930(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 400 | 3.0 | 4,080 |
| 1.0 | 800 | 5.0 | 9,300 |
| 1.5 | 1,400 | 6.7 | 15,900 |
| 2.0 | 2,180 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4,740 | 1,140 | 5,240 | 704 | 14,300 | 2,900 | 3,000 | 5,860 | 676 | 1,120 | a3,700 | 792 |
| 2 | 4,400 | 1,120 | 5,090 | 2,820 | *15,200 | 3,480 | 3,070 | 6,140 | 743 | 780 | a2,700 | 2,120 |
| 3 | *4,440 | 737 | 4,720 | 2,060 | 15,200 | 3,280 | *3,000 | *6,060 | 2,840 | 1,040 | a2,000 | 5,420 |
| 4 | 4,370 | 716 | 2,060 | 1,300 | 9,240 | 3,800 | 2,110 | 6,170 | *3,050 | 1,000 | a800 | 3,520 |
| 5 | 4,120 | 1,600 | *1,880 | 720 | 10,100 | 3,180 | 2,800 | 4,320 | 4,300 | 752 | a1,900 | *3,720 |
| 6 | 513 | 725 | 2,100 | 736 | 12,100 | 3,070 | 3,170 | 5,220 | 5,260 | 796 | a2,300 | 3,410 |
| 7 | 475 | 738 | 2,460 | 710 | *9,180 | *2,880 | 794 | 5,570 | 7,390 | 770 | *2,960 | 894 |
| 8 | 3,790 | 1,760 | 3,610 | 1,190 | 9,450 | 1,650 | 6,030 | 5,710 | 7,130 | 2,640 | 3,550 | 756 |
| 9 | 4,820 | 3,160 | 5,420 | 968 | 15,600 | 2,010 | 7,890 | 5,420 | 1,270 | *1,760 | 3,090 | 5,050 |
| 10 | 4,450 | 2,400 | 6,180 | 1,320 | 15,200 | 834 | 8,130 | 5,240 | 5,500 | 870 | 888 | 2,340 |
| 11 | 4,360 | 704 | 4,800 | 3,330 | 14,300 | 4,410 | 8,280 | 5,380 | 5,730 | 852 | 787 | 2,030 |
| 12 | 4,300 | 976 | 4,100 | 2,720 | *14,100 | 1,210 | 7,860 | 1,740 | 5,750 | 2,430 | 1,520 | 2,560 |
| 13 | 501 | 3,430 | 1,010 | 818 | 9,120 | 1,840 | 7,950 | 2,000 | 5,730 | 1,390 | 2,220 | 4,870 |
| 14 | 498 | 720 | 548 | 2,270 | 8,910 | 900 | 5,060 | 866 | 5,320 | 745 | 2,590 | 2,030 |
| 15 | 3,520 | 700 | 762 | 2,570 | 8,700 | 2,370 | 5,060 | 755 | 4,790 | 1,990 | 2,870 | 808 |
| 16 | 3,530 | 1,130 | 686 | 4,720 | 9,000 | 944 | 5,030 | 1,040 | 749 | 781 | 3,360 | 2,880 |
| 17 | 3,290 | 1,440 | 1,590 | 6,500 | 9,030 | 862 | 5,220 | 867 | 5,350 | 1,390 | 3,080 | 4,670 |
| 18 | 3,320 | 702 | 2,280 | 6,750 | 9,030 | 3,180 | 5,380 | 742 | 1,530 | 676 | 1,650 | 5,860 |
| 19 | 3,290 | 1,650 | 1,950 | 4,240 | 9,060 | 3,060 | 5,080 | 775 | 754 | 744 | 1,410 | 5,860 |
| 20 | 466 | 902 | 4,060 | 1,220 | 6,440 | 4,680 | 5,180 | 1,990 | 754 | 810 | 2,230 | a4,500 |
| 21 | 472 | 1,900 | 1,380 | 3,260 | 5,840 | 4,060 | 2,540 | 2,090 | 768 | 782 | 2,230 | a6,400 |
| 22 | 482 | 1,080 | 1,620 | 1,180 | 5,080 | *4,100 | 4,560 | 2,550 | 755 | 788 | 1,650 | a4,500 |
| 23 | 1,910 | 5,520 | 796 | 2,520 | 3,870 | 862 | 3,880 | 2,740 | 752 | 1,290 | 1,020 | a5,000 |
| 24 | *6,480 | 734 | 2,060 | 3,130 | 870 | 830 | 3,900 | 3,630 | 1,660 | 759 | 761 | a3,000 |
| 25 | 6,030 | 3,870 | 2,030 | 1,870 | 1,800 | 3,810 | 4,380 | 2,390 | 2,190 | 786 | 866 | a2,500 |
| 26 | 4,680 | 3,920 | 2,020 | 1,300 | 3,590 | 4,390 | 4,720 | 1,080 | 736 | 854 | 2,510 | a3,500 |
| 27 | 962 | 4,190 | 2,030 | 894 | 2,740 | 4,220 | 4,530 | 2,410 | 740 | 798 | 2,780 | a4,200 |
| 28 | 460 | 5,070 | 2,450 | 2,360 | 1,390 | 4,330 | 4,460 | 2,510 | 1,630 | 830 | 2,690 | a3,300 |
| 29 | 1,140 | 5,460 | 774 | 5,030 | - | 4,160 | 5,920 | 3,000 | 3,990 | 770 | 2,760 | a800 |
| 30 | 1,060 | 5,400 | 720 | *12,600 | ------- | 898 | 6,490 | 1,190 | 1,040 | 750 | 3,340 | a3,300 |
| 31 | 1,010 | | 694 | 10,200 | ------- | 815 | ------- | 2,310 | ------- | 782 | 1,070 | ------- |
| Total | 87,879 | 63,594 | 77,120 | 92,010 | 248,440 | 83,015 | 145,474 | 97,765 | 88,877 | 32,565 | 67,282 | 100,590 |
| Mean | 2,835 | 2,120 | 2,488 | 2,968 | 8,873 | 2,678 | 4,849 | 3,154 | 2,963 | 1,050 | 2,170 | 3,353 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 11,600 | Min 424 | Mean 1,880 | Mean 2,485 | Cfsm 1.28 | In. 17.48 |
| Water year 1956-57: | Max 15,600 | Min 460 | Mean 3,246 | Mean 3,287 | Cfsm 1.70 | In. 23.06 |

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for station at Surgoinsville and Fort Patrick Henry powerplant records.

## North Fork Holston River near Saltville, Va.

Location.--Lat 36°53'48", long 81°44'47", on right bank 0.5 mile upstream from Cedar Branch bridge, 1.5 miles northeast of Saltville, Smyth County, and 7.8 miles downstream from Laurel Creek.

Drainage area.--222 sq mi.

Records available.--June 1907 to November 1908, November 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,703.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 11, 1907, to Nov. 12, 1908, chain gage on highway bridge 2.1 miles downstream at different datum. Nov. 2, 1920, to May 23, 1934, chain gage on highway bridge 0.5 mile downstream at datum 7.74 ft lower.

Average discharge.--36 years (1921-57), 289 cfs.

Extremes.--Maximum discharge during year, 16,500 cfs Jan. 29 (gage height, 13.20 ft), from rating curve extended above 7,200 cfs on basis of slope-area determination of peak flow; minimum, 27 cfs Sept. 8 (gage height, 0.57 ft).

1907-8, 1920-57: Maximum discharge, that of Jan. 29, 1957; minimum, 1 cfs Oct. 15, 16, 1947 (gage height, 0.13 ft), flow retarded by mine cave-in; minimum daily, 2 cfs Oct. 15, 1947.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Prior to September 1947, small diurnal fluctuation at low flow caused by mills above station.

Revisions (water years).--WSP 758: Drainage area. WSP 1113: 1944-47.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 19, 20)

| Oct. 1 to Jan. 28 | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.6 | 32 | 0.5 | 21 | 3.0 | 1,200 |
| .8 | 56 | .7 | 42 | 5.0 | 3,340 |
| 1.0 | 96 | 1.0 | 97 | 8.0 | 7,300 |
| 1.5 | 260 | 1.5 | 272 | 10.0 | 10,400 |
| 2.0 | 500 | 2.0 | 500 | | |

Note.--Same as following table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 72 | 390 | 87 | 213 | 5,580 | 1,310 | 244 | 260 | 105 | 167 | 73 | 29 |
| 2 | 70 | 700 | 83 | 181 | 3,300 | 1,120 | 330 | 240 | 95 | 135 | 63 | 28 |
| 3 | 56 | 385 | 81 | 138 | 1,760 | 819 | 378 | 221 | 146 | 110 | 56 | 28 |
| 4 | 55 | 246 | 81 | 174 | 1,310 | 610 | 391 | 203 | 276 | 93 | 56 | 28 |
| 5 | 55 | 184 | 78 | 228 | 1,370 | 485 | 2,870 | 189 | 338 | 91 | 75 | 28 |
| 6 | 58 | 147 | 78 | 292 | 2,000 | 405 | 2,170 | 178 | 539 | 85 | 77 | 28 |
| 7 | 58 | 128 | 78 | 304 | 1,950 | 382 | 1,120 | 164 | 391 | 73 | 52 | 28 |
| 8 | 53 | 170 | 78 | 284 | 2,970 | 430 | 1,480 | 153 | 292 | 69 | 48 | 28 |
| 9 | 52 | 224 | 78 | 1,820 | 5,290 | 425 | 3,340 | 146 | 264 | 67 | 45 | 30 |
| 10 | 48 | 192 | 81 | 3,340 | 3,730 | 378 | 1,420 | 138 | 221 | 91 | 41 | 35 |
| 11 | 47 | 160 | 81 | 1,500 | 2,280 | 356 | 945 | 131 | 174 | 89 | 41 | 40 |
| 12 | 44 | 144 | 101 | 1,320 | 1,320 | 378 | 721 | 128 | 149 | 67 | 40 | 44 |
| 13 | 44 | 128 | 246 | 1,020 | 980 | 391 | 546 | 119 | 131 | 61 | 38 | 41 |
| 14 | 43 | 114 | 352 | 488 | 735 | 369 | 440 | 113 | 210 | 57 | 38 | 75 |
| 15 | 43 | 106 | 934 | 376 | 578 | 343 | 374 | 124 | 207 | 56 | 73 | 79 |
| 16 | 42 | 101 | 1,550 | 322 | 485 | 308 | 321 | 121 | 146 | 59 | 89 | 83 |
| 17 | 42 | 101 | 875 | 260 | 415 | a300 | 292 | 105 | 444 | 75 | 65 | 200 |
| 18 | 42 | 104 | 584 | 220 | 365 | a300 | 264 | 110 | 300 | 171 | 51 | 221 |
| 19 | 42 | 99 | 476 | 210 | 435 | a320 | 248 | 248 | 330 | 73 | 48 | 272 |
| 20 | 43 | 94 | 400 | 200 | 1,160 | a280 | 225 | 280 | 225 | 63 | 45 | 174 |
| 21 | 47 | 94 | 376 | 206 | 840 | a250 | 218 | 203 | 160 | 54 | 41 | 131 |
| 22 | 58 | 109 | 400 | 228 | 644 | a280 | 210 | 160 | 121 | 52 | 37 | 100 |
| 23 | 92 | 119 | 488 | 635 | 506 | a330 | 254 | 131 | 113 | 67 | 36 | 81 |
| 24 | 99 | 114 | 1,600 | 770 | 430 | a360 | 1,360 | 116 | 142 | 138 | 35 | 71 |
| 25 | 89 | 109 | 910 | 565 | 387 | a400 | 875 | 108 | 185 | 91 | 35 | 61 |
| 26 | 81 | 117 | 784 | 440 | 382 | a380 | 578 | a130 | 182 | 67 | 35 | 54 |
| 27 | 105 | 112 | 532 | 483 | 387 | a350 | 435 | a200 | 142 | 57 | 34 | 51 |
| 28 | 174 | 101 | *400 | 2,890 | *410 | a320 | 365 | a370 | *121 | 332 | 34 | 48 |
| 29 | *122 | *96 | 330 | *10,300 | - | *a300 | *325 | a200 | 210 | 146 | *32 | 162 |
| 30 | 96 | 92 | 276 | 7,190 | ------- | 284 | 292 | a150 | 196 | *89 | 31 | 1,410 |
| 31 | 85 | ------- | 235 | 4,220 | ------- | 264 | ------- | *113 | ------- | 83 | 30 | ------- |
| Total | 2,057 | 4,980 | 12,733 | 40,817 | 41,999 | 13,227 | 23,031 | 5,252 | 6,555 | 2,928 | 1,494 | 3,688 |
| Mean | 66.4 | 166 | 411 | 1,317 | 1,500 | 427 | 768 | 169 | 218 | 94.5 | 48.2 | 123 |
| Cfsm | 0.299 | 0.748 | 1.85 | 5.93 | 6.76 | 1.92 | 3.46 | 0.761 | 0.982 | 0.426 | 0.217 | 0.554 |
| In. | 0.34 | 0.83 | 2.13 | 6.84 | 7.04 | 2.21 | 3.86 | 0.88 | 1.10 | 0.49 | 0.25 | 0.62 |

Calendar year 1956: Max 6,200 Min 29 Mean 312 Cfsm 1.41 In. 19.16
Water year 1956-57: Max 10,300 Min 28 Mean 435 Cfsm 1.96 In. 26.59

Peak discharge (base, 3,000 cfs).--Jan. 9 (12 p.m.) 5,200 cfs (6.39 ft); Jan. 29 (5 p.m.) 16,500 cfs (13.20 ft); Feb. 9 (1 to 2 p.m.) 6,080 cfs (7.11 ft); Apr. 5 (5 p.m.) 4,060 cfs (5.55 ft); Apr. 9 (3 to 4 a.m.) 4,730 cfs (6.07 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, records for North Fork Holston River at Holston and Middle Fork Holston River at Sevenmile Ford.

## North Fork Holston River at Holston, Va.

Location.--Lat 36°46'29", long 82°04'22", on left bank at downstream side of bridge on U. S. Highway 19, 100 ft downstream from Greendale Creek, 0.4 mile upstream from Garrett Creek, 0.5 mile east of Holston, Washington County, and 0.6 mile upstream from Little Moccasin Creek.

Drainage area.--402 sq mi.

Records available.--June 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,437.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 512 cfs.

Extremes.--Maximum discharge during year, 24,300 cfs Jan. 29 (gage height, 16.50 ft), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum, 44 cfs Sept. 8 (gage height, 1.97 ft).
1951-57: Maximum discharge, that of Jan. 29, 1957; minimum, 41 cfs Sept. 8, 1954, Dec. 1, 1955; minimum gage height, that of Sept. 8, 1957.

Remarks.--Records good.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 18, 19)

| Oct. 1 to Jan. 28 | | | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.1 | 55 | 4.0 | 1,050 | 1.9 | 35 | 4.0 | 1,000 |
| 2.2 | 80 | 6.0 | 2,640 | 2.0 | 48 | 6.0 | 2,580 |
| 2.5 | 185 | 8.0 | 4,800 | 2.3 | 130 | 8.0 | 4,800 |
| 3.0 | 400 | 9.0 | 6,250 | 2.6 | 258 | 10.0 | 7,800 |
| | | | | 3.0 | 450 | 14.0 | 17,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *140 | 273 | 150 | 368 | *10,600 | 2,180 | *410 | *410 | 188 | 318 | 121 | 51 |
| 2 | 115 | 910 | 140 | 328 | 6,040 | 1,940 | 535 | 375 | 174 | 263 | 106 | 47 |
| 3 | 115 | 552 | *136 | 261 | 3,220 | 1,380 | 583 | 341 | *179 | 223 | 95 | *45 |
| 4 | 146 | 364 | 140 | 288 | 2,600 | *1,070 | 660 | 313 | 360 | 188 | 92 | 47 |
| 5 | 143 | *283 | 140 | 400 | 2,520 | 852 | 4,630 | 290 | 465 | 192 | *90 | 45 |
| 6 | 337 | 237 | 140 | 498 | 3,400 | 742 | 3,480 | 267 | 770 | 179 | 109 | 45 |
| 7 | 201 | 217 | 143 | *528 | 3,950 | 688 | 1,820 | 249 | 638 | 154 | 103 | 45 |
| 8 | 150 | 253 | 143 | 504 | 5,080 | 880 | 3,460 | 232 | 475 | 138 | 84 | 45 |
| 9 | 132 | 324 | 146 | 1,880 | 8,600 | 825 | 4,670 | 223 | 385 | *121 | 79 | 45 |
| 10 | 108 | 292 | 160 | 5,220 | 7,000 | 742 | 2,100 | 210 | 336 | 121 | 64 | 77 |
| 11 | 108 | 261 | 157 | 2,640 | 3,960 | 715 | 1,460 | 201 | 276 | 150 | 71 | 109 |
| 12 | 90 | 241 | 296 | 1,620 | 2,340 | 852 | 1,100 | 196 | 245 | 124 | 82 | 74 |
| 13 | 90 | 221 | 693 | 1,140 | 1,660 | 798 | 880 | 188 | 240 | 109 | 69 | 95 |
| 14 | 87 | 205 | 840 | 875 | 1,260 | 742 | 742 | 179 | 435 | 103 | 66 | 341 |
| 15 | 80 | 193 | 1,680 | 665 | 1,000 | 660 | 627 | 201 | 345 | 138 | 158 | 272 |
| 16 | 78 | 189 | 2,240 | 552 | 880 | 594 | 572 | 201 | 272 | 109 | 192 | 196 |
| 17 | 78 | 205 | 1,400 | 440 | 742 | 530 | 515 | 183 | 530 | 106 | 146 | 450 |
| 18 | 75 | 201 | 1,050 | 330 | 654 | 505 | 475 | 162 | 490 | 232 | 106 | 490 |
| 19 | 78 | 197 | 910 | 300 | 880 | 515 | 435 | 170 | 430 | 188 | 90 | 561 |
| 20 | 75 | 185 | 749 | 342 | 1,740 | 485 | 405 | 375 | 345 | 124 | 87 | 395 |
| 21 | 80 | 185 | 819 | 364 | 1,300 | 430 | 385 | 380 | 258 | 106 | 77 | 290 |
| 22 | 115 | 225 | 910 | 396 | 1,000 | 485 | 390 | 290 | 210 | 95 | 74 | 218 |
| 23 | 150 | 225 | 1,020 | 1,120 | 852 | 644 | 932 | 236 | 485 | 97 | 66 | 166 |
| 24 | 168 | 213 | 2,240 | 1,280 | 742 | 660 | 1,820 | 201 | 475 | 223 | 64 | 130 |
| 25 | 154 | 205 | 2,480 | 945 | 688 | 660 | 1,260 | 183 | 588 | 192 | 64 | 112 |
| 26 | 150 | 197 | 1,480 | 770 | 660 | 622 | 852 | 179 | 450 | 134 | 69 | 95 |
| 27 | 150 | 197 | 980 | 1,010 | 649 | 588 | 688 | 309 | 332 | 109 | 64 | 87 |
| 28 | 205 | 178 | 735 | 5,000 | 742 | 535 | 572 | 561 | 313 | 272 | 58 | 84 |
| 29 | 209 | 168 | 600 | *15,900 | - | 490 | 515 | 365 | 460 | 249 | 56 | 214 |
| 30 | 178 | 160 | 492 | 14,100 | ------- | 465 | 455 | 263 | 390 | 158 | 53 | 1,390 |
| 31 | 164 | ------- | 415 | 7,020 | ------- | 435 | ------- | 218 | ------- | 121 | 53 | ------- |
| Total | 4,149 | 7,756 | 23,624 | 67,084 | 74,759 | 23,709 | 37,428 | 8,151 | 11,539 | 5,036 | 2,708 | 6,261 |
| Mean | 134 | 259 | 762 | 2,164 | 2,670 | 765 | 1,248 | 263 | 385 | 162 | 87.4 | 209 |
| Cfsm | 0.333 | 0.644 | 1.90 | 5.38 | 6.64 | 1.90 | 3.10 | 0.654 | 0.958 | 0.403 | 0.217 | 0.520 |
| In. | 0.38 | 0.72 | 2.19 | 6.20 | 6.91 | 2.19 | 3.46 | 0.75 | 1.07 | 0.46 | 0.25 | 0.58 |

Calendar year 1956: Max 10,800 Min 50 Mean 569 Cfsm 1.42 In. 19.27
Water year 1956-57: Max 15,900 Min 45 Mean 746 Cfsm 1.86 In. 25.16

Peak discharge (base, 4,000 cfs).--Jan. 10 (9:30 a.m.) 6,380 cfs (9.09 ft); Jan. 29 (12 p.m.) 24,300 cfs (16.50 ft); Feb. 9 (12 to 1 p.m.) 10,200 cfs (11.17 ft); Apr. 5 (6:30 p.m.) 6,280 cfs (9.02 ft); Apr. 9 (1:30 a.m.) 6,760 cfs (9.34 ft).
* Discharge measurement made on this day.

## Big Moccasin Creek near Gate City, Va.

Location.--Lat 36°38'47", long 82°33'12", on left bank at downstream side of bridge on State Highway 71, 0.2 mile downstream from Franklin Branch, 0.9 mile upstream from Pike Branch, 1.6 miles upstream from Little Moccasin Creek, and 1.6 miles east of Gate City, Scott County.

Drainage area.--79.6 sq mi.

Records available.--October 1952 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,267.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years, 102 cfs.

Extremes.--Maximum discharge during year, 3,340 cfs Jan. 29 (gage height, 8.36 ft); minimum, 7.4 cfs Sept. 5; minimum gage height, 1.14 ft Aug. 11, Sept. 5.
1952-57: Maximum discharge, that of Jan. 29, 1957; minimum, 3.0 cfs Sept. 11, 1954 (gage height, 1.04 ft).

Remarks.--Records good.

Rating tables, water years 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 3-22; stage-discharge relation affected by ice Jan. 20, 21)

| Oct. 1 to Dec. 24 | | | | Dec. 25 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.2 | 11 | 2.5 | 210 | 1.1 | 5.0 | 2.5 | 225 |
| 1.4 | 29 | 3.0 | 335 | 1.2 | 11 | 3.0 | 360 |
| 1.7 | 67 | 4.0 | 670 | 1.4 | 26 | 4.0 | 710 |
| 2.0 | 109 | | | 1.7 | 62 | 6.0 | 1,700 |
| | | | | 2.0 | 113 | 8.0 | 3,050 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 28 | 25 | 70 | 2,390 | 790 | 65 | 43 | 26 | 51 | 14 | 8.0 |
| 2 | 26 | 38 | 25 | 62 | 1,680 | 472 | 65 | 46 | 19 | 43 | 14 | 8.0 |
| 3 | *23 | 39 | 23 | 52 | 774 | 321 | *68 | *44 | 27 | 37 | 14 | 8.0 |
| 4 | 22 | 28 | 23 | 49 | 502 | 248 | 76 | 43 | *32 | 34 | 16 | 8.0 |
| 5 | 21 | 23 | *19 | 80 | 412 | 202 | 508 | 42 | 40 | 32 | 18 | *8.0 |
| 6 | 21 | 19 | 18 | 88 | 525 | *170 | 420 | 42 | 54 | 30 | *16 | 8.6 |
| 7 | 20 | *19 | 20 | 83 | 742 | 166 | 230 | 38 | 54 | 30 | 14 | 8.0 |
| 8 | 21 | 21 | 20 | 80 | 1,080 | 354 | 511 | 37 | 35 | 14 | 14 | 8.0 |
| 9 | 21 | 27 | 21 | *328 | 1,000 | 280 | 1,050 | 36 | 29 | 12 | 13 | 8.6 |
| 10 | 20 | 26 | 20 | 810 | 1,400 | 215 | 438 | 37 | 26 | 16 | 13 | 14 |
| 11 | 19 | 26 | 19 | 508 | 930 | 186 | 288 | 34 | 28 | *17 | 13 | 19 |
| 12 | 19 | 24 | 74 | 275 | 490 | 177 | 222 | 34 | 28 | 20 | 16 | 28 |
| 13 | 17 | 23 | 222 | 200 | 342 | 164 | 179 | 36 | 28 | 21 | 13 | 22 |
| 14 | 17 | 21 | 270 | 157 | 262 | 146 | 151 | 37 | 28 | 20 | 13 | 84 |
| 15 | 18 | 18 | 455 | 129 | 212 | 133 | 129 | 32 | 38 | 20 | 122 | 110 |
| 16 | 17 | 21 | 245 | 113 | 182 | 123 | 117 | 33 | 26 | 22 | 52 | 47 |
| 17 | 17 | 26 | 160 | 97 | 155 | 108 | 108 | 38 | 25 | 17 | 32 | 56 |
| 18 | 22 | 33 | 130 | 76 | 135 | 104 | 99 | 37 | 32 | 15 | 22 | 81 |
| 19 | 17 | 32 | 144 | 65 | 159 | 106 | 90 | 36 | 44 | 13 | 16 | 55 |
| 20 | 17 | 30 | 114 | 60 | 312 | 99 | 83 | 32 | 21 | 16 | 14 | 37 |
| 21 | 19 | 28 | 139 | 65 | 225 | 90 | 78 | 37 | 20 | 12 | 14 | 31 |
| 22 | 24 | 36 | 222 | 78 | 188 | 92 | 73 | 40 | 20 | 12 | 11 | 28 |
| 23 | 26 | 48 | 292 | 179 | 164 | 97 | 78 | 37 | 19 | 14 | 11 | 23 |
| 24 | 26 | 43 | 485 | 195 | 142 | 88 | 75 | 38 | 24 | 15 | 10 | 21 |
| 25 | 33 | 37 | 405 | 137 | 131 | 83 | 70 | 35 | 46 | 12 | 10 | 20 |
| 26 | 27 | 33 | 235 | 121 | 131 | 83 | 62 | 28 | 75 | 16 | 14 | 17 |
| 27 | 27 | 29 | 164 | 217 | 129 | 83 | 59 | 36 | 47 | 15 | 12 | 17 |
| 28 | 26 | 28 | 127 | 1,380 | 230 | 78 | 52 | 36 | 41 | 14 | 10 | 13 |
| 29 | 24 | 27 | 106 | *2,850 | - | 73 | 48 | 33 | 51 | 14 | 9.8 | 30 |
| 30 | 23 | 25 | 90 | 2,160 | -------- | 72 | 47 | 29 | 58 | 13 | 8.6 | 49 |
| 31 | 21 | -------- | 78 | 1,620 | -------- | 65 | -------- | 26 | -------- | 14 | 9.2 | -------- |
| Total | 681 | 856 | 4,390 | 12,384 | 15,024 | 5,468 | 5,539 | 1,132 | 1,042 | 631 | 578.6 | 875.2 |
| Mean | 22.0 | 28.5 | 142 | 399 | 537 | 176 | 185 | 36.5 | 34.7 | 20.4 | 18.7 | 29.2 |
| Cfsm | 0.276 | 0.358 | 1.78 | 5.01 | 6.75 | 2.21 | 2.32 | 0.459 | 0.436 | 0.256 | 0.235 | 0.367 |
| In. | 0.32 | 0.40 | 2.05 | 5.78 | 7.03 | 2.55 | 2.59 | 0.53 | 0.49 | 0.30 | 0.27 | 0.41 |

Calendar year 1956: Max 2,550 Min 6.2 Mean 113 Cfsm 1.42 In. 19.34
Water year 1956-57: Max 2,850 Min 8.0 Mean 133 Cfsm 1.67 In. 22.72

Peak discharge (base, 1,200 cfs).--Jan. 29 (10 p.m.) 3,340 cfs (8.36 ft); Feb. 1 (3 a.m.) 2,660 cfs (7.44 ft); Feb. 10 (8 p.m.) 1,680 cfs (5.97 ft); Apr. 9 (8:30 a.m.) 1,450 cfs (5.58 ft).
* Discharge measurement made on this day.

## North Fork Holston River near Gate City, Va.

Location.--Lat 36°36'31", long 82°34'05", on left bank 100 ft upstream from bridge on U. S. Highway 23, 1.6 miles downstream from Big Moccasin Creek, and 2.1 miles southeast of Gate City, Scott County.

Drainage area.--672 sq mi.

Records available.--November 1931 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,197.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--25 years (1932-57), 841 cfs.

Extremes.--Maximum discharge during year, 28,700 cfs Jan. 30 (gage height, 16.73 ft); minimum, 63 cfs Sept. 7-9 (gage height, 1.30 ft).
1931-57: Maximum discharge, that of Jan. 30, 1957; minimum, 37 cfs Dec. 24, 1943, result of freezeup; minimum gage height, 1.00 ft Jan. 6, 1940.

Remarks.--Records good except those for periods of doubtful gage-height record, which are fair. Diurnal fluctuation at low flow caused by small dam above station.

Revisions (water years).--WSP 783: 1932(M). WSP 823: Drainage area. WSP 1276: 1932-34.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-6, Mar. 3-8)

| | | | |
|---|---|---|---|
| 1.3 | 55 | 4.0 | 1,760 |
| 1.6 | 132 | 6.0 | 4,240 |
| 2.0 | 310 | 10.0 | 12,300 |
| 3.0 | 910 | 16.0 | 26,800 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 280 | 240 | 190 | 666 | 19,500 | 3,500 | 610 | 598 | 270 | 504 | 178 | 78 |
| 2 | 198 | 330 | 182 | 592 | 14,400 | 3,780 | 628 | *544 | 245 | 410 | 151 | 75 |
| 3 | *159 | 980 | 174 | 509 | 7,460 | 2,880 | *724 | 504 | 245 | 345 | 143 | 75 |
| 4 | 136 | 610 | 162 | 454 | 4,980 | 2,140 | 849 | 460 | 250 | 285 | 136 | 73 |
| 5 | 159 | 426 | *162 | 598 | 4,110 | 1,710 | 4,150 | 426 | 421 | 240 | *132 | *67 |
| 6 | 170 | 325 | 174 | 805 | 5,300 | *1,420 | 8,110 | 410 | 712 | 215 | d135 | 67 |
| 7 | 432 | *275 | 170 | 875 | 7,090 | 1,290 | 3,890 | 380 | 945 | 225 | d140 | 65 |
| 8 | 345 | 275 | 174 | 875 | 10,300 | 1,810 | 4,070 | 360 | 686 | 210 | d135 | 63 |
| 9 | 250 | 315 | 178 | *1,900 | 10,800 | 1,760 | 10,800 | 340 | 526 | 174 | 122 | 67 |
| 10 | 202 | 400 | 178 | 7,900 | 13,600 | 1,520 | 6,060 | 325 | 426 | 162 | 100 | 92 |
| 11 | 178 | 370 | 178 | 6,260 | 9,160 | 1,290 | 3,120 | 310 | 395 | *155 | 128 | 151 |
| 12 | 151 | 325 | 426 | 3,000 | 4,740 | 1,290 | 2,240 | 300 | 345 | 166 | 106 | 178 |
| 13 | 147 | 285 | 1,130 | 2,020 | 3,120 | 1,380 | 1,710 | 290 | 300 | 170 | 106 | 183 |
| 14 | 126 | 255 | 1,560 | d1,490 | 2,360 | 1,290 | 1,420 | 285 | 305 | 216 | 106 | 526 |
| 15 | 122 | 230 | 2,300 | d1,170 | 1,860 | 1,170 | 1,210 | 280 | 498 | 147 | 759 | 604 |
| 16 | 119 | 230 | 2,820 | d945 | 1,520 | 1,020 | 1,050 | 290 | 432 | 159 | 492 | 448 |
| 17 | 113 | 230 | 2,640 | d745 | 1,340 | 910 | 980 | 275 | 355 | 159 | 355 | 410 |
| 18 | 106 | 240 | 1,660 | d600 | 1,130 | 840 | 910 | 245 | 510 | 143 | 260 | 640 |
| 19 | 113 | 235 | 1,470 | d580 | 1,130 | 819 | 826 | 230 | 616 | 216 | 198 | 666 |
| 20 | 103 | 215 | 1,250 | d685 | 2,020 | 798 | 764 | 315 | 460 | 270 | 162 | 686 |
| 21 | 103 | 210 | 1,290 | d740 | 2,410 | 738 | 712 | 465 | 416 | 178 | 136 | 598 |
| 22 | 116 | 250 | 1,710 | d770 | 1,810 | 718 | 672 | 405 | 315 | 140 | 126 | 448 |
| 23 | 132 | 290 | 1,970 | d1,210 | 1,470 | 791 | 686 | 335 | 260 | 140 | 106 | 365 |
| 24 | 178 | 290 | 3,450 | 1,970 | 1,250 | 945 | 1,430 | 300 | 524 | 159 | 100 | 290 |
| 25 | 194 | 270 | 4,240 | 1,610 | 1,130 | 945 | 2,020 | 270 | 798 | 166 | 95 | 225 |
| 26 | 220 | 260 | 2,580 | d1,350 | 1,050 | 910 | 1,420 | 270 | 750 | 280 | 103 | 182 |
| 27 | 202 | 245 | 1,660 | 1,690 | 1,020 | 840 | 1,050 | 290 | 586 | 198 | 110 | 159 |
| 28 | 190 | 240 | 1,290 | 7,250 | 1,290 | 798 | 875 | 443 | 448 | 155 | 103 | 143 |
| 29 | 202 | 215 | 1,050 | 20,600 | - | 724 | 750 | 574 | 426 | 188 | 92 | 215 |
| 30 | 285 | 198 | 875 | *26,200 | -------- | 679 | 666 | 410 | 532 | 355 | 88 | 419 |
| 31 | 235 | -------- | 757 | 14,000 | -------- | 646 | -------- | 315 | -------- | 225 | 82 | -------- |
| Total | 5,666 | 9,259 | 38,050 | 110,059 | 137,350 | 41,351 | 64,402 | 11,244 | 13,997 | 6,755 | 5,185 | 8,258 |
| Mean | 183 | 309 | 1,227 | 3,550 | 4,905 | 1,334 | 2,147 | 363 | 467 | 218 | 167 | 275 |
| Cfsm | 0.272 | 0.460 | 1.83 | 5.28 | 7.30 | 1.99 | 3.19 | 0.540 | 0.695 | 0.324 | 0.249 | 0.409 |
| In. | 0.31 | 0.51 | 2.11 | 6.09 | 7.60 | 2.29 | 3.56 | 0.62 | 0.78 | 0.37 | 0.29 | 0.46 |

Calendar year 1956: Max 19,700 Min 69 Mean 956 Cfsm 1.42 In. 19.35
Water year 1956-57: Max 26,200 Min 63 Mean 1,237 Cfsm 1.84 In. 24.99

Peak discharge (base, 6,000 cfs).--Jan. 10 (8 p.m.) 10,400 cfs (9.11 ft); Jan. 30 (12 m.) 28,700 cfs (16.73 ft); Feb. 10 (3 a.m.) 14,400 cfs (11.00 ft); Apr. 6 (8 a.m.) 9,240 cfs (8.54 ft); Apr. 9 (4:30 a.m.) 11,100 cfs (9.44 ft).

* Discharge measurement made on this day.

d Doubtful gage-height record; discharge estimated on basis of weather records, records for North Fork Holston River at Holston, and Big Moccasin Creek near Gate City.

## Holston River at Surgoinsville, Tenn.

Location.--Lat 36°28'19", long 82°50'50", on right bank 1,500 ft upstream from Surgoinsville Creek and county bridge at Surgoinsville, Hawkins County, 9.8 miles upstream from Big Creek, and at mile 118.4. Records include flow of Surgoinsville Creek.

Drainage area.--2,874 sq mi, includes that of Surgoinsville Creek.

Records available.--April 1941 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,088.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--16 years, 3,530 cfs (unadjusted).

Extremes.--Maximum discharge during year, 45,100 cfs Jan. 30 (gage height, 14.32 ft); minimum, 570 cfs Sept. 8 (gage height, 1.38 ft).
1941-57: Maximum discharge, 59,600 cfs Feb. 18, 1944 (gage height, 17.48 ft); minimum, 470 cfs Oct. 21, 1941 (gage height, 1.16 ft).

Remarks.--Records good. Flow partly regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 223).

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,400 | 1,510 | 5,500 | 1,300 | 38,100 | 6,050 | 3,040 | 7,140 | 2,060 | 1,600 | 1,110 | 818 |
| 2 | 4,880 | 1,460 | 6,130 | 2,940 | *36,700 | 8,720 | 3,850 | 7,040 | 912 | 1,420 | 4,380 | 1,170 |
| 3 | *4,380 | 1,500 | 4,670 | 2,570 | 25,600 | 7,090 | *3,800 | *6,950 | 1,890 | 1,150 | 2,860 | 3,740 |
| 4 | 4,230 | 1,510 | 3,460 | 1,950 | 17,400 | 6,580 | 3,280 | 6,820 | 3,130 | 1,510 | 1,540 | 3,930 |
| 5 | 4,190 | 1,740 | *2,170 | 1,690 | 14,500 | 6,020 | 7,040 | 6,150 | *4,520 | 1,140 | 1,200 | *4,650 |
| 6 | 2,130 | 1,540 | 2,040 | 1,580 | 19,200 | 5,240 | 12,100 | 4,660 | 4,830 | 1,140 | 2,260 | 3,410 |
| 7 | 852 | *1,120 | 2,300 | 1,690 | 16,700 | 3,920 | 6,980 | 6,820 | 8,630 | 1,000 | *2,650 | 2,290 |
| 8 | *2,420 | 1,130 | 3,130 | 1,870 | *21,800 | 4,660 | 8,370 | 6,050 | 8,410 | 1,710 | 3,150 | 730 |
| 9 | 3,980 | 3,110 | 4,770 | 3,260 | 25,100 | 4,160 | *20,700 | 6,020 | 3,720 | 2,750 | 3,340 | 2,420 |
| 10 | 4,540 | 3,330 | 6,520 | 7,330 | 31,400 | 3,580 | 16,700 | 6,130 | 4,010 | 1,530 | 2,430 | 4,410 |
| 11 | 4,010 | 2,140 | 5,810 | 11,400 | 26,100 | 4,600 | 13,600 | 5,480 | 6,580 | 1,070 | 864 | 1,870 |
| 12 | 4,240 | 1,140 | 5,190 | 7,520 | 20,400 | 4,620 | 11,100 | 3,410 | 6,280 | 1,070 | 1,210 | 2,430 |
| 13 | 2,530 | 3,340 | 3,350 | 4,460 | 14,900 | 3,610 | 10,300 | 2,340 | 6,180 | 3,340 | 1,910 | 3,840 |
| 14 | 818 | 1,840 | 2,650 | 3,940 | 12,300 | 2,650 | 7,910 | 2,150 | 5,320 | 1,000 | 2,110 | 5,370 |
| 15 | 2,180 | 1,040 | 3,220 | 4,010 | 11,500 | 2,860 | 6,090 | 1,050 | 5,840 | 1,300 | 3,220 | 1,530 |
| 16 | 3,610 | 1,090 | 3,420 | 4,980 | 11,200 | 3,260 | 6,900 | 1,060 | 3,270 | *1,920 | 4,020 | 1,770 |
| 17 | 3,490 | 1,740 | 4,510 | *8,240 | 11,000 | 2,050 | 6,600 | 1,500 | 3,830 | 1,320 | 3,930 | 4,750 |
| 18 | 3,460 | 1,320 | 3,700 | 8,210 | 10,700 | 3,150 | 6,330 | 1,070 | *3,680 | 1,330 | 2,620 | 5,610 |
| 19 | 3,610 | 1,580 | 3,490 | 5,910 | 10,700 | 4,560 | 6,360 | 1,060 | 1,690 | 912 | 1,260 | 6,740 |
| 20 | 2,160 | 1,320 | 4,890 | 3,830 | 9,280 | 5,250 | 6,010 | 1,510 | 1,250 | 1,020 | 1,580 | 5,900 |
| 21 | 785 | 1,240 | 4,180 | 2,790 | 8,860 | 4,980 | 4,580 | 2,900 | 1,190 | 1,040 | *2,310 | 5,720 |
| 22 | 796 | 2,240 | 3,310 | 3,640 | 7,710 | *5,810 | 4,720 | 2,480 | 1,120 | 924 | 2,310 | 6,570 |
| 23 | 996 | 4,380 | 3,630 | 3,240 | 6,820 | 3,140 | 5,080 | *3,130 | 1,060 | 1,000 | 1,440 | 4,500 |
| 24 | *4,990 | 2,780 | 5,480 | 5,480 | 3,900 | 1,780 | 4,740 | 4,010 | 1,950 | 1,480 | 939 | 4,710 |
| 25 | 7,040 | 2,600 | 6,790 | 4,540 | 3,020 | 3,770 | 6,850 | 3,100 | 2,880 | 960 | 818 | 2,040 |
| 26 | 5,580 | 4,370 | 5,420 | 3,770 | 4,150 | 5,150 | 6,520 | 2,470 | 2,240 | 988 | 1,200 | 3,770 |
| 27 | 3,150 | 4,480 | 4,080 | 3,070 | 4,980 | 5,490 | 6,000 | 1,800 | 1,460 | 1,100 | 2,790 | 3,520 |
| 28 | 864 | 4,910 | 3,980 | 10,000 | *3,870 | 5,350 | 5,500 | 2,400 | 1,310 | 974 | 2,690 | 4,400 |
| 29 | 807 | 5,630 | 2,340 | 26,700 | - | 5,250 | 6,680 | 3,490 | 4,320 | 936 | 2,710 | 1,960 |
| 30 | 1,490 | 5,550 | 1,700 | 42,800 | ------- | 3,380 | 7,300 | 2,640 | 2,750 | 974 | 3,490 | 2,320 |
| 31 | 1,670 | ------- | 1,540 | 33,400 | ------- | 1,540 | ------- | 1,680 | ------- | 1,020 | 2,420 | ------- |
| Total | 92,278 | 72,680 | 123,370 | 228,110 | 427,890 | 138,270 | 225,030 | 114,510 | 106,312 | 40,628 | 70,761 | 106,888 |
| Mean | 2,977 | 2,423 | 3,980 | 7,358 | 15,280 | 4,460 | 7,501 | 3,694 | 3,544 | 1,311 | 2,283 | 3,563 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 30,300 | Min 700 | Mean 3,204 | Mean 3,809 | Cfsm 1.33 | In. 18.04 | |
| Water year 1956-57: | Max 42,800 | Min 730 | Mean 4,786 | Mean 4,827 | Cfsm 1.68 | In. 22.80 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

## Mossy Spring near Jefferson City, Tenn.

Location.--Lat 36°07'17", long 83°28'22", in spring pool, 15 ft upstream from water plant intake, 300 ft south of city water plant, tributary to unnamed branch at point 500 ft upstream from confluence of Buffalo Wallows Branch and unnamed branch, 1.1 miles east of Jefferson City Post Office.

Records available.--September 1950 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,092.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Average discharge.--7 years, 43.2 cfs.

Extremes.--Maximum discharge during year, 316 cfs Feb. 1 (gage height, 3.00 ft), from rating curve extended above 120 cfs; minimum daily, 11 cfs Dec. 3-11.
1950-57: Maximum discharge, that of Feb. 1, 1957; minimum daily, 7.4 cfs Jan. 8, 9, 1954.

Remarks.--Records good. Records do not include diversion averaging above 0.75 cfs for the water supply of Jefferson City.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 10 | 1.5 | 98 |
| .7 | 16 | 2.0 | 166 |
| .8 | 23 | 2.7 | 268 |
| 1.0 | 39 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 24 | 12 | 56 | 257 | 118 | 81 | 69 | 40 | *30 | 21 | 16 |
| 2 | 17 | *20 | 12 | 54 | 261 | 118 | 81 | 67 | 39 | 29 | 21 | 15 |
| 3 | *17 | 16 | 11 | *51 | 228 | 116 | 80 | 66 | 38 | 29 | 20 | 15 |
| 4 | 16 | 16 | 11 | 50 | 208 | 112 | 87 | 64 | 38 | 29 | 27 | *15 |
| 5 | 17 | 15 | *11 | 56 | 191 | 111 | 120 | 63 | 37 | 28 | 29 | 15 |
| 6 | 16 | 15 | 11 | 54 | 180 | 110 | 115 | *62 | 37 | 27 | *24 | 15 |
| 7 | 16 | 14 | 11 | 50 | 184 | *108 | 108 | 60 | 35 | 27 | 22 | 15 |
| 8 | 16 | 14 | 11 | 48 | 194 | 115 | 115 | 59 | 34 | 27 | 21 | 15 |
| 9 | 16 | 14 | 11 | 51 | 242 | 115 | 124 | 58 | 35 | 26 | 20 | 15 |
| 10 | 16 | 14 | 11 | 56 | 257 | 114 | 118 | 58 | 34 | 26 | 19 | 15 |
| 11 | 16 | 14 | 11 | 55 | 232 | 112 | *112 | 56 | 33 | 26 | 19 | 15 |
| 12 | 14 | 13 | 52 | 51 | 211 | 111 | 108 | 54 | *31 | 26 | 18 | 14 |
| 13 | 14 | 13 | 110 | 49 | 193 | 110 | 104 | 52 | 31 | 25 | 18 | 14 |
| 14 | 14 | 13 | 108 | 47 | 177 | 108 | 101 | 51 | 31 | 25 | 18 | 13 |
| 15 | 14 | 13 | 99 | 45 | 166 | 107 | 97 | 49 | 31 | 25 | 23 | 14 |
| 16 | 14 | 21 | 98 | 44 | 158 | 106 | 94 | 48 | 31 | 25 | 22 | 15 |
| 17 | 14 | 24 | 89 | 43 | 152 | 104 | 92 | 47 | 31 | 28 | 22 | 15 |
| 18 | 14 | 18 | 82 | 40 | 148 | 103 | 89 | 47 | 31 | 50 | 20 | 14 |
| 19 | 14 | 16 | 77 | 39 | 144 | 101 | 86 | 47 | 30 | 47 | 18 | 14 |
| 20 | 14 | 14 | 71 | 37 | 141 | 99 | 84 | 47 | 30 | 43 | 18 | 14 |
| 21 | 14 | 14 | 68 | 37 | 137 | 98 | 82 | 45 | 30 | 37 | 18 | 14 |
| 22 | 14 | 14 | 86 | 36 | 131 | 97 | 81 | 45 | 29 | 34 | 17 | 14 |
| 23 | 15 | 14 | 89 | 44 | 128 | 94 | 80 | 44 | 29 | 31 | 18 | 14 |
| 24 | 14 | 13 | 90 | 44 | 124 | 93 | 80 | 43 | 31 | 28 | 17 | 13 |
| 25 | 13 | 13 | 88 | 40 | *121 | 90 | 78 | 42 | 44 | 27 | 17 | 13 |
| 26 | 13 | 13 | 81 | 39 | 120 | 89 | 75 | 47 | 37 | 26 | 17 | 13 |
| 27 | 12 | 13 | 76 | 56 | 118 | 88 | 75 | 52 | 34 | 25 | 16 | 14 |
| 28 | 12 | 12 | 71 | 115 | 118 | 86 | 73 | 47 | 33 | 25 | 16 | 13 |
| 29 | 12 | 12 | 67 | 134 | - | 85 | 73 | 44 | 32 | 24 | 16 | 14 |
| 30 | 12 | 12 | 62 | 145 | ------- | 84 | 71 | 44 | 31 | 23 | 16 | 14 |
| 31 | 12 | ------- | 59 | 172 | ------- | 82 | ------- | 42 | ------- | 21 | 16 | ------- |
| Total | 449 | 451 | 1,746 | 1,838 | 4,921 | 3,184 | 2,764 | 1,619 | 1,007 | 899 | 604 | 429 |
| Mean | 14.5 | 15.0 | 56.3 | 59.3 | 176 | 103 | 92.1 | 52.2 | 33.6 | 29.0 | 19.5 | 14.3 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 160 Min 11 Mean 51.6 Cfsm - In. -
Water year 1956-57: Max 261 Min 11 Mean 54.6 Cfsm - In. -

* Discharge measurement made on this day.

## Holston River near Jefferson City, Tenn.

Location.--Lat 36°10'03", long 83°30'10", on left bank 250 ft upstream from bridge on State Highway 92, 0.2 mile downstream from Cherokee Dam, 2.5 miles upstream from Mill Spring Creek, and 3 miles north of Jefferson City, Jefferson County.

Drainage area.--3,429 sq mi.

Records available.--April 1937 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 900.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 30, 1941, at datum 20.02 ft higher.

Average discharge.--20 years, 4,006 cfs (unadjusted).

Extremes.--Maximum discharge during year, 25,900 cfs Feb. 11 (gage height, 32.19); minimum, 50 cfs Dec. 21 (gage height, 20.30 ft); minimum daily, 53 cfs Dec. 21.
1937-57: Maximum discharge, 58,700 cfs Aug. 15, 1940 (gage height, 41.82 ft, present datum); minimum, 2.2 cfs Dec. 8, 1941, discharge measurement; minimum daily, 2.6 cfs Dec. 25, 1941; minimum gage height recorded, 19.75 ft Dec. 25, 1941.

Remarks.--Records good. Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes (see p. 223,224).

Revisions (water years).--WSP 923: 1939-40(m).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 20.3 | 50 | 22.0 | 1,340 |
| 20.4 | 80 | 23.0 | 2,740 |
| 20.7 | 210 | 25.0 | 6,580 |
| 21.0 | 410 | 30.0 | 19,400 |
| 21.5 | 830 | 32.2 | 25,900 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6,760 | 4,490 | 11,300 | 9,670 | 17,800 | 1,240 | 4,690 | 6,800 | 6,000 | *1,080 | 7,690 | 3,900 |
| 2 | 6,140 | *2,880 | 10,800 | 11,400 | *19,000 | 4,110 | 3,320 | 6,870 | 6,200 | 96 | 7,340 | 5,100 |
| 3 | *5,580 | 2,880 | 10,100 | *10,900 | 20,900 | 80 | 3,240 | 6,330 | 6,800 | 100 | 7,390 | 8,200 |
| 4 | 5,740 | 3,130 | 3,250 | 10,100 | 25,700 | 5,980 | 383 | 4,380 | 6,470 | 104 | 3,270 | *7,660 |
| 5 | 5,210 | 3,190 | *3,250 | 2,860 | 23,700 | 6,490 | 112 | 2,420 | 6,060 | 108 | 6,290 | 10,600 |
| 6 | 4,600 | 5,620 | 3,380 | 71 | *22,200 | 311 | 172 | 5,160 | 6,020 | 3,240 | *13,100 | 6,100 |
| 7 | 4,280 | 3,570 | 3,910 | 4,200 | 22,100 | 1,400 | 116 | 6,530 | 4,350 | 124 | 8,420 | 2,250 |
| 8 | 6,430 | 5,630 | 4,010 | 9,370 | 22,100 | 5,150 | 144 | 6,320 | 4,100 | 3,700 | 6,490 | 2,400 |
| 9 | 6,260 | 7,020 | 5,240 | 7,860 | 22,000 | 2,270 | 148 | 8,330 | 4,240 | 3,220 | 4,580 | 7,380 |
| 10 | 6,260 | 7,580 | 9,230 | 9,460 | 22,300 | 1,300 | 1,920 | 7,640 | 4,260 | 2,880 | 4,630 | 7,900 |
| 11 | 6,290 | 3,760 | 8,510 | 8,120 | 24,000 | 3,900 | *7,940 | 3,800 | 2,670 | 3,540 | 6,270 | 7,910 |
| 12 | 6,310 | 6,690 | 4,890 | 7,580 | *25,800 | *3,720 | 3,820 | 2,000 | *4,150 | 4,470 | 7,820 | 9,640 |
| 13 | 6,360 | 8,970 | 68 | 5,390 | 24,400 | 3,200 | 269 | 8,970 | 849 | 3,480 | 7,460 | 7,790 |
| 14 | 3,310 | 5,440 | 62 | 5,910 | 22,400 | 74 | 3,310 | 3,660 | 1,100 | 3,080 | 6,110 | 132 |
| 15 | 5,400 | 5,020 | 62 | 6,790 | 20,900 | 1,420 | 3,650 | 6,280 | 1,350 | 6,640 | 5,580 | 71 |
| 16 | 4,450 | 6,260 | 65 | 10,300 | 19,000 | 3,680 | 3,360 | 6,920 | 462 | 3,480 | 6,110 | 900 |
| 17 | 3,870 | 5,220 | 65 | 11,900 | 18,900 | 74 | 3,240 | 2,970 | 4,940 | 6,030 | 5,960 | 68 |
| 18 | 4,430 | 5,230 | 65 | 11,900 | 18,900 | 3,730 | 5,790 | 421 | 3,720 | 3,380 | 4,360 | 71 |
| 19 | 4,670 | 5,130 | 65 | 11,900 | 17,600 | 3,390 | 5,190 | 160 | 328 | 4,000 | 7,180 | 74 |
| 20 | 4,040 | 3,940 | 2,600 | 2,070 | 14,200 | 4,760 | 5,250 | 3,760 | 1,940 | 3,350 | 4,050 | 68 |
| 21 | 690 | 4,000 | 53 | 6,550 | 11,500 | 1,540 | 3,210 | 7,900 | 1,570 | 3,170 | 6,270 | 348 |
| 22 | 4,560 | 4,000 | 128 | 1,840 | 9,990 | 1,570 | 4,040 | 7,150 | 1,400 | 5,970 | 5,960 | 68 |
| 23 | 4,620 | 6,960 | 56 | 3,540 | 3,680 | 1,580 | 3,320 | *120 | 308 | 6,400 | 3,240 | 6,580 |
| 24 | 7,020 | 6,790 | 56 | 3,680 | 3,490 | 1,400 | 3,740 | 136 | 2,760 | 4,870 | 2,010 | 7,430 |
| 25 | 6,600 | 4,220 | 56 | 65 | 3,230 | 2,620 | 3,320 | 558 | 254 | 4,620 | 310 | 7,330 |
| 26 | 6,220 | 7,640 | 6,080 | 62 | 4,980 | 2,370 | 6,430 | 1,660 | 96 | 5,680 | 6,660 | 4,470 |
| 27 | 5,830 | 11,800 | 8,460 | 65 | 1,600 | 2,100 | 6,690 | 6,300 | 96 | 5,010 | 7,520 | 4,550 |
| 28 | 3,780 | 11,400 | 9,820 | 80 | 1,170 | 2,760 | 6,670 | 3,210 | 100 | 5,290 | 7,940 | 4,470 |
| 29 | 7,370 | 12,000 | 9,700 | 96 | - | 3,500 | 6,690 | 4,290 | 3,380 | 7,410 | 8,120 | 3,020 |
| 30 | 7,090 | 12,300 | 9,720 | 112 | ------- | 1,670 | 6,780 | 4,480 | 3,170 | 9,660 | 8,190 | 3,160 |
| 31 | 7,350 | ------- | 9,650 | 5,840 | ------- | 3,590 | ------- | 6,220 | ------- | 8,510 | 6,570 | ------- |
| Total | 167,520 | 182,760 | 134,701 | 179,681 | 463,540 | 80,979 | 106,954 | 141,745 | 89,143 | 122,692 | 192,890 | 129,640 |
| Mean | 5,404 | 6,092 | 4,345 | 5,796 | 16,560 | 2,612 | 3,565 | 4,572 | 2,971 | 3,958 | 6,222 | 4,321 |

| | Observed | | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 13,500 | Min | 34 | Mean | 3,803 | Mean | 4,643 | Cfsm | 1.35 | In. | 18.43 |
| Water year 1956-57: | Max | 25,800 | Min | 53 | Mean | 5,458 | Mean | 5,735 | Cfsm | 1.67 | In. | 22.70 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga, South Holston, Boone, Fort Patrick Henry, and Cherokee Lakes.

## Mill Spring near Jefferson City, Tenn.

Location.--Lat 36°09'08", long 83°31'35", in spring pool at Tennessee Valley Authority pumping station, 300 ft northwest of State Highway 92, half a mile upstream from mouth, and 3 miles northwest of Jefferson City, Jefferson County.

Records available.--August 1951 to September 1957 in reports of Geological Survey. October 1940 to September 1948 in files of Tennessee Valley Authority.

Gage.--Water-stage recorder and concrete weir. Datum of gage is 962.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Average discharge.--6 years, 5.04 cfs.

Extremes.--Maximum discharge during year, 26 cfs Feb. 1 (gage height, 1.70 ft); minimum daily, 2.0 cfs Dec. 2-11.
1951-57: Maximum discharge, that of Feb. 1, 1957; minimum daily, 1.7 cfs Nov. 18-20, 1954.

Remarks.--Records good. Records do not include diversion averaging about 0.05 cfs for the domestic water supply of Cherokee Dam.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 1.3 | 1.0 | 12 |
| .3 | 2.4 | 1.7 | 26 |
| .5 | 4.8 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 2.3 | 2.1 | 3.9 | 22 | 12 | 8.3 | 7.1 | 4.3 | *3.6 | 3.1 | 2.5 |
| 2 | 2.5 | *2.2 | 2.0 | 3.8 | 25 | 12 | 8.2 | 7.1 | 4.3 | 3.5 | 3.1 | 2.5 |
| 3 | *2.4 | 2.2 | 2.0 | *3.6 | 23 | 12 | 8.0 | 7.0 | 4.3 | 3.5 | 3.1 | 2.5 |
| 4 | 2.3 | 2.2 | 2.0 | 3.6 | 21 | 12 | *8.3 | 6.8 | 4.3 | 3.5 | 3.1 | *2.5 |
| 5 | 2.3 | 2.2 | *2.0 | 3.5 | 20 | 12 | 11 | 6.6 | 4.2 | 3.5 | 3.0 | 2.5 |
| 6 | 2.3 | 2.2 | 2.0 | 3.5 | 19 | 11 | 11 | *6.5 | 4.2 | 3.5 | *3.0 | 2.5 |
| 7 | 2.3 | 2.2 | 2.0 | 3.5 | 19 | *11 | 11 | 6.4 | 4.2 | 3.5 | 3.0 | 2.5 |
| 8 | 2.3 | 2.2 | 2.0 | 3.4 | 19 | 11 | 12 | 6.4 | 4.0 | 3.5 | 2.8 | 2.5 |
| 9 | 2.3 | 2.2 | 2.0 | 3.4 | 22 | 11 | 13 | 6.2 | 4.0 | 3.5 | 2.8 | 2.5 |
| 10 | 2.3 | 2.2 | 2.0 | 3.4 | 24 | 11 | 13 | 6.1 | 3.9 | 3.4 | 2.8 | 2.5 |
| 11 | 2.3 | 2.2 | 2.0 | 3.5 | 23 | 11 | 12 | 6.1 | 3.9 | 3.4 | 2.8 | 2.5 |
| 12 | 2.3 | 2.2 | 2.5 | 3.3 | 22 | 11 | 12 | 5.9 | *3.8 | 3.4 | 2.8 | 2.4 |
| 13 | 2.3 | 2.2 | 5.4 | 3.3 | 21 | 11 | 12 | 5.8 | 3.8 | 3.4 | 2.7 | 2.4 |
| 14 | 2.3 | 2.2 | 5.4 | 3.2 | *20 | 11 | 11 | 5.6 | 3.8 | 3.4 | 2.7 | 2.5 |
| 15 | 2.3 | 2.2 | 5.1 | 3.2 | 19 | 11 | 11 | 5.6 | 3.8 | 3.3 | 2.7 | 2.5 |
| 16 | 2.2 | 2.3 | 4.8 | 3.2 | 18 | 10 | 10 | 5.5 | 3.6 | 3.3 | 2.7 | 2.6 |
| 17 | 2.2 | 2.2 | 4.4 | 3.1 | 17 | 10 | 10 | 5.5 | 3.6 | 3.3 | 2.7 | 2.5 |
| 18 | 2.2 | 2.2 | 4.3 | 3.1 | 16 | 10 | 9.8 | 5.4 | 3.6 | 3.3 | 2.7 | 2.4 |
| 19 | 2.2 | 2.1 | 4.0 | 3.1 | 15 | 10 | 9.5 | 5.4 | 3.5 | 3.3 | 2.6 | 2.4 |
| 20 | 2.2 | 2.1 | 3.9 | 3.1 | 15 | 10 | 9.4 | 5.2 | 3.5 | 3.3 | 2.6 | 2.4 |
| 21 | 2.2 | 2.1 | 3.8 | 3.0 | 14 | 9.8 | 9.2 | 5.1 | 3.5 | 3.3 | 2.6 | 2.4 |
| 22 | 2.2 | 2.1 | 4.4 | 3.0 | 14 | 9.8 | 8.9 | 4.9 | 3.5 | 3.2 | 2.6 | 2.5 |
| 23 | 2.2 | 2.1 | 4.7 | 3.2 | 13 | 9.7 | 8.8 | 4.9 | 3.5 | 3.2 | 2.6 | 2.4 |
| 24 | 2.2 | 2.1 | 4.7 | 3.2 | 13 | 9.4 | 8.6 | 4.8 | 3.5 | 3.2 | 2.6 | 2.4 |
| 25 | 2.2 | 2.1 | 4.7 | 3.2 | 13 | 9.2 | 8.3 | 4.8 | 3.5 | 3.2 | 2.6 | 2.4 |
| 26 | 2.2 | 2.1 | 4.5 | 3.1 | 12 | 9.0 | 8.2 | 4.7 | 3.5 | 3.2 | 2.6 | 2.4 |
| 27 | 2.2 | 2.1 | 4.5 | 3.8 | 12 | 8.9 | 8.0 | 4.5 | 3.6 | 3.1 | 2.5 | 2.4 |
| 28 | 2.2 | 2.1 | 4.4 | 8.1 | 12 | 8.8 | 7.7 | 4.5 | 3.6 | 3.1 | 2.5 | 2.4 |
| 29 | 2.2 | 2.1 | 4.3 | 10 | - | 8.6 | 7.4 | 4.4 | 3.6 | 3.1 | 2.5 | 2.4 |
| 30 | 2.2 | 2.1 | 4.2 | 11 | ------- | 8.6 | 7.2 | 4.4 | 3.6 | 3.1 | 2.5 | 2.4 |
| 31 | 2.2 | ------- | 4.0 | 14 | ------- | 8.4 | ------- | 4.4 | ------- | 3.1 | 2.5 | ------- |
| Total | 70.2 | 65.0 | 110.1 | 133.3 | 503 | 320.2 | 292.8 | 173.6 | 114.0 | 103.2 | 84.9 | 73.7 |
| Mean | 2.26 | 2.17 | 3.55 | 4.30 | 18.0 | 10.3 | 9.76 | 5.60 | 3.80 | 3.33 | 2.74 | 2.46 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 19 Min 2.0 Mean 5.52 Cfsm - In. -
Water year 1956-57: Max 25 Min 2.0 Mean 5.60 Cfsm - In. -

* Discharge measurement made on this day.

## Holston River near Knoxville, Tenn.

Location.--Lat 36°00'56", long 83°49'54", on left bank 300 ft upstream from bridge on U. S. Highway 70, 1.8 miles northeast of Knoxville city limits, Knox County, and 5.5 miles upstream from confluence with French Broad River.

Drainage area.--3,747 sq mi.

Records available.--October 1930 to September 1957. Published as "at Strawberry Plains" 1930-48. Records published for both sites June 1945 to September 1948.

Gage.--Water-stage recorder at present site and datum since June 19, 1945. Datum of gage is 815.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1930, to June 8, 1931, staff gage and June 9, 1931, to Sept. 30, 1948, water-stage recorder, at site 12 miles upstream at datum 22.55 ft higher.

Average discharge.--27 years, 4,404 cfs (unadjusted).

Extremes.--Maximum discharge during year, 29,700 cfs Feb. 1 (gage height, 10.82 ft); minimum, 297 cfs Sept. 22; minimum gage height, 1.50 ft Dec. 20; minimum daily discharge, 310 cfs Sept. 21.

1930-57: Maximum discharge, 62,900 cfs Mar. 28, 1935 (gage height, 20.20 ft, site and datum then in use); minimum, 44 cfs Dec. 12, 21, 22, 1941 (gage height, -0.58 ft, site and datum then in use); minimum daily, 44 cfs Dec. 21, 22, 1941.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes (see p. 223,224).

Revisions (water years).--WSP 893: 1935(M). WSP 1336: 1939.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 22 to Sept. 25)

| Oct. 1-25 | | Oct. 26 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 2.5 | 1,640 | 1.4 | 310 | 3.0 | 2,670 |
| 2.7 | 2,000 | 1.7 | 580 | 5.0 | 7,850 |
| 3.0 | 2,580 | 2.0 | 940 | 10.5 | 28,400 |
| 4.8 | 7,200 | 2.5 | 1,710 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6,980 | 6,240 | 11,700 | 9,600 | 24,000 | 2,710 | 4,080 | *6,960 | 6,780 | 2,420 | *8,510 | 5,680 |
| 2 | 7,010 | 3,840 | 10,800 | 10,600 | *25,600 | 2,930 | *4,740 | 6,870 | 6,270 | *1,440 | 7,610 | 4,060 |
| 3 | 5,490 | 3,220 | 10,700 | 10,900 | 21,700 | 3,380 | 4,480 | 6,870 | 6,410 | 466 | 7,880 | 6,680 |
| 4 | 5,840 | 3,100 | 5,360 | 11,100 | 27,600 | 2,870 | 3,100 | 4,840 | 6,790 | 348 | 5,710 | 8,280 |
| 5 | *6,010 | 2,960 | 3,420 | 7,040 | 27,600 | 6,080 | 3,030 | 4,090 | 5,930 | 318 | 4,660 | *8,830 |
| 6 | 5,230 | *4,310 | 3,320 | 2,340 | 24,400 | 5,060 | 1,730 | 3,410 | *6,640 | 332 | 10,200 | 8,860 |
| 7 | 4,530 | 4,990 | 3,480 | 774 | 24,600 | *1,180 | 1,230 | 5,330 | 4,650 | 3,120 | *12,500 | 5,370 |
| 8 | 5,050 | 3,830 | a4,000 | 7,130 | 25,100 | 4,450 | 1,870 | 6,240 | 4,380 | 646 | 6,100 | 2,710 |
| 9 | 6,490 | 6,760 | a5,000 | 7,960 | 27,200 | 4,570 | 2,950 | 6,870 | 4,860 | 3,770 | 4,960 | 4,290 |
| 10 | 6,160 | 7,640 | a7,000 | 9,310 | 26,900 | 2,520 | 1,690 | 7,430 | 4,790 | 3,420 | 5,300 | 8,740 |
| 11 | 6,340 | 5,470 | a9,000 | 9,380 | 25,700 | 2,680 | 5,990 | 5,930 | 2,970 | 3,480 | 6,040 | 7,750 |
| 12 | 6,400 | 3,780 | a10,000 | 7,730 | 28,400 | 4,460 | 6,980 | 2,740 | 3,460 | 3,650 | 6,990 | 9,490 |
| 13 | 6,370 | 9,630 | a4,000 | 6,440 | *28,000 | 4,570 | 3,720 | 5,280 | 3,350 | 4,980 | 7,760 | 8,560 |
| 14 | 5,290 | 5,990 | a2,500 | 5,790 | 24,200 | 2,680 | 1,710 | 5,200 | 1,210 | 4,020 | 7,050 | 6,330 |
| 15 | 3,740 | 5,080 | a1,500 | 6,020 | 23,500 | 786 | 4,260 | 4,790 | 1,180 | 5,070 | 4,810 | 762 |
| 16 | 5,920 | 5,110 | a900 | *8,450 | 20,200 | 2,590 | 4,140 | 6,380 | 1,540 | 5,580 | 6,550 | 679 |
| 17 | 3,960 | 6,250 | *580 | 11,800 | 19,700 | 3,060 | 3,780 | 4,630 | *1,770 | 4,140 | 6,640 | 1,660 |
| 18 | 4,480 | 5,900 | 506 | 11,900 | 19,500 | 1,380 | 4,510 | 2,440 | 4,740 | 5,490 | 5,470 | 570 |
| 19 | 3,900 | 4,690 | 448 | 11,800 | 18,400 | 4,040 | 5,960 | 849 | 3,280 | 3,470 | 5,120 | 370 |
| 20 | 4,100 | 4,890 | *577 | 7,200 | 16,300 | 4,110 | 5,600 | *531 | 646 | 4,100 | 6,380 | 318 |
| 21 | 3,660 | 3,960 | 2,620 | 3,910 | 12,200 | 3,950 | 5,120 | 4,720 | 1,940 | 4,460 | 5,100 | 310 |
| 22 | *1,710 | 4,090 | 1,380 | 5,270 | 11,800 | 1,940 | 3,780 | 8,330 | 2,030 | 4,270 | 6,520 | 473 |
| 23 | 4,630 | 5,060 | 1,220 | 2,310 | 7,710 | 1,870 | 4,640 | 4,360 | 1,670 | 7,310 | 4,820 | 2,460 |
| 24 | 5,730 | 6,080 | 1,120 | 4,190 | 4,210 | 1,920 | 4,040 | 580 | 1,700 | 6,900 | 3,230 | 6,730 |
| 25 | 6,610 | 6,610 | 810 | 2,890 | 4,040 | 2,110 | 4,240 | 370 | 3,110 | 3,060 | 2,440 | *7,710 |
| 26 | 6,280 | 5,140 | 1,840 | 610 | 4,270 | 2,650 | 4,970 | 607 | 810 | 6,380 | 1,870 | 7,160 |
| 27 | 6,050 | 9,700 | 6,840 | 793 | 4,850 | 2,710 | 7,020 | 3,280 | 538 | 5,270 | 8,040 | 3,740 |
| 28 | 4,420 | 11,600 | 9,950 | 2,920 | 2,690 | 2,440 | 7,050 | 4,790 | 378 | 5,630 | 8,300 | 5,020 |
| 29 | 5,660 | *11,700 | 9,730 | 5,900 | - | 3,690 | 6,990 | 3,830 | 645 | 6,870 | 7,990 | 5,690 |
| 30 | 6,990 | 12,100 | 9,600 | 4,000 | ------- | 2,950 | 6,990 | 4,190 | 4,040 | 8,830 | 8,850 | 4,270 |
| 31 | 7,200 | ------- | 9,730 | 4,800 | ------- | 2,420 | ------- | 4,920 | ------- | 9,630 | 8,360 | ------- |
| Total | 168,230 | 179,720 | 149,631 | 200,857 | 530,370 | 94,756 | 130,390 | 137,657 | 98,507 | 128,870 | 201,760 | 143,552 |
| Mean | 5,427 | 5,991 | 4,827 | 6,479 | 18,940 | 3,057 | 4,346 | 4,441 | 3,284 | 4,157 | 6,508 | 4,785 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 12,100 | Min 339 | Mean 4,275 | Mean 5,115 | Cfsm 1.37 | In. 18.58 |
| Water year 1956-57: | Max 28,400 | Min 310 | Mean 5,930 | Mean 6,205 | Cfsm 1.66 | In. 22.48 |

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.
a No gage-height record; discharge estimated on basis of records for station near Jefferson City.

493799 O - 59 - 9

## First Creek at Mineral Springs Avenue, at Knoxville, Tenn.

Location.--Lat 36°00'53", long 83°55'18", on right bank at Mineral Springs Avenue Bridge in Knoxville, Knox County, 0.3 mile downstream from Whites Creek, 4.1 miles upstream from gage at Fifth Avenue in Knoxville, and 5.9 miles upstream from mouth.

Drainage area.--15.7 sq mi, includes 3.8 sq mi without surface drainage.

Records available.--April 1945 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 940.87 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years, 22.7 cfs.

Extremes.--Maximum discharge during year, 460 cfs Feb. 1 (gage height, 6.40 ft); minimum, 2.2 cfs Sept. 7; minimum gage height, 1.54 ft Aug. 7.
1945-57: Maximum discharge, 1,280 cfs Feb. 13, 1948 (gage height, 8.62 ft); minimum, 1.8 cfs Sept. 26, 1948; minimum gage height, 1.32 ft Sept. 21, Oct. 1, 1945.

Remarks.--Records good except those for period of no gage-height record, which are fair. Discharge measurements generally made twice a month.

Revisions.--WSP 1276: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7 to Nov. 11, Dec. 13-14, Feb. 21-25, Mar. 8-12, Sept. 4-11)

| | | | |
|---|---|---|---|
| 1.4 | 1.8 | 3.0 | 38 |
| 1.5 | 2.4 | 4.0 | 72 |
| 1.7 | 4.2 | 5.0 | 115 |
| 2.0 | 8.6 | 5.5 | 195 |
| 2.5 | 22 | 6.1 | 360 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.3 | 8.2 | 3.2 | 12 | 360 | 35 | 16 | 12 | 6.7 | 7.5 | 3.9 | 2.4 |
| 2 | 5.1 | 4.0 | 3.2 | 11 | 244 | 30 | 17 | 17 | 6.5 | 7.2 | 3.6 | 2.5 |
| 3 | 4.2 | 3.6 | 3.3 | 9.7 | 131 | 27 | 13 | 12 | 6.4 | 6.7 | 3.6 | 2.7 |
| 4 | 3.9 | 3.3 | 3.3 | 17 | 128 | 26 | 70 | 11 | 7.0 | 6.4 | 5.7 | 2.4 |
| 5 | 3.7 | 3.2 | 3.3 | 26 | 114 | 24 | 116 | 10 | 16 | 6.1 | 3.8 | 2.4 |
| 6 | 3.5 | 3.1 | 3.2 | 16 | 105 | 25 | 45 | 9.9 | 8.8 | 5.8 | 3.2 | 2.3 |
| 7 | 3.3 | 3.2 | 3.2 | 14 | a135 | 36 | 35 | 9.7 | 7.3 | 5.7 | 3.2 | 2.3 |
| 8 | 3.2 | 3.5 | 3.1 | 12 | a160 | 53 | 81 | 9.5 | 7.0 | 5.5 | 3.3 | 2.3 |
| 9 | 3.0 | 3.4 | 3.1 | 12 | a250 | 36 | 56 | 8.8 | 6.7 | 5.4 | 3.3 | 2.7 |
| 10 | 2.8 | 3.2 | 3.0 | 14 | a200 | 31 | 43 | 8.6 | 6.5 | 5.4 | 3.2 | 2.6 |
| 11 | 3.0 | 3.2 | 3.1 | 13 | a125 | 28 | 37 | 8.6 | 7.0 | 5.4 | 3.5 | 3.7 |
| 12 | 3.1 | 3.3 | 46 | 12 | a95 | 31 | 33 | 8.2 | 10 | 5.3 | 4.0 | 10 |
| 13 | 3.2 | 3.1 | 208 | 11 | a72 | 26 | 30 | 8.1 | 6.5 | 5.2 | 3.6 | 36 |
| 14 | 3.2 | 3.1 | 93 | 11 | a62 | 25 | 26 | 7.7 | 6.2 | 5.0 | 3.9 | 76 |
| 15 | 3.2 | 3.1 | 50 | 11 | a56 | 23 | 25 | 7.7 | 6.0 | 5.8 | 4.3 | 16 |
| 16 | 3.1 | 8.6 | 37 | 10 | a46 | 21 | 23 | 7.3 | 6.0 | 4.8 | 3.9 | 60 |
| 17 | 3.0 | 4.2 | 26 | 8.4 | a40 | 20 | 22 | 7.0 | 26 | 4.6 | 4.0 | 44 |
| 18 | 4.0 | 3.5 | 23 | 8.2 | a36 | 21 | 21 | 7.0 | 20 | 4.6 | 6.4 | 19 |
| 19 | 3.7 | 3.3 | 18 | 7.9 | a60 | 20 | 20 | 8.5 | 8.6 | 4.6 | 3.9 | 15 |
| 20 | 3.6 | 3.2 | 16 | 7.5 | a45 | 19 | 18 | 8.1 | 7.2 | 4.3 | 3.6 | 12 |
| 21 | 3.5 | 4.2 | 33 | 9.3 | 39 | 18 | 17 | 7.3 | 6.5 | 4.3 | 3.4 | 11 |
| 22 | 4.0 | 3.9 | 61 | 14 | 36 | 19 | 18 | 21 | 6.2 | 4.0 | 3.4 | 13 |
| 23 | 3.5 | 3.5 | 56 | 46 | 34 | 18 | 20 | 9.3 | 6.5 | 4.5 | 3.2 | 16 |
| 24 | 2.9 | 3.5 | 41 | 23 | 32 | 17 | 17 | 8.2 | 65 | 4.8 | 3.2 | 10 |
| 25 | 2.7 | 3.4 | 29 | 21 | 31 | 17 | 15 | 7.9 | 68 | 4.2 | 3.5 | 9.0 |
| 26 | 3.0 | 3.4 | 24 | 19 | 33 | 15 | 14 | 17 | 15 | 4.0 | 3.0 | 8.6 |
| 27 | 3.1 | 3.3 | 21 | 65 | 30 | 14 | 13 | 9.3 | 11 | 4.0 | 3.0 | 8.1 |
| 28 | 3.0 | 3.4 | 18 | 240 | 34 | 14 | 13 | 7.7 | 11 | 4.0 | 2.9 | 8.2 |
| 29 | 2.9 | 3.4 | 16 | 148 | - | 13 | 12 | 7.9 | 9.5 | 3.9 | 2.8 | 25 |
| 30 | 2.9 | 3.2 | 15 | 98 | -------- | 13 | 12 | 7.5 | 8.1 | 3.8 | 2.6 | 18 |
| 31 | 5.0 | -------- | 13 | 249 | -------- | 12 | -------- | 7.0 | -------- | 3.8 | 2.6 | -------- |
| Total | 105.6 | 112.5 | 879.0 | 1,176.0 | 2,733 | 727 | 898 | 296.8 | 389.2 | 156.6 | 111.5 | 443.2 |
| Mean | 3.41 | 3.75 | 28.4 | 37.9 | 97.6 | 23.5 | 29.9 | 9.57 | 13.0 | 5.05 | 3.60 | 14.8 |
| Cfsm | 0.217 | 0.239 | 1.81 | 2.41 | 6.22 | 1.50 | 1.90 | 0.610 | 0.828 | 0.322 | 0.229 | 0.943 |
| In. | 0.25 | 0.27 | 2.08 | 2.79 | 6.47 | 1.72 | 2.13 | 0.70 | 0.92 | 0.37 | 0.26 | 1.05 |

Calendar year 1956: Max 289 Min 2.7 Mean 24.0 Cfsm 1.53 In. 20.80
Water year 1956-57: Max 360 Min 2.3 Mean 22.0 Cfsm 1.40 In. 19.01

Peak discharge (base, 300 cfs).--Jan. 28 (9 to 10 a.m.) 306 cfs (5.92 ft); Feb. 1 (8 to 9 p.m.) 460 cfs (6.40 ft).

a No gage-height record; discharge estimated on basis of records for station at Fifth Avenue.

## First Creek at Fifth Avenue, at Knoxville, Tenn.

Location.--Lat 35°58'40", long 83°54'51", on left bank at Fifth Avenue Bridge in Knoxville, Knox County, 1.8 miles upstream from mouth and 4.1 miles downstream from gage at Mineral Springs Avenue in Knoxville.

Drainage area.--21.1 sq mi, includes 4.5 sq mi without surface drainage.

Records available.--June 1932 to March 1934, April 1945 to September 1957. Published as "at Knoxville" 1932-34.

Gage.--Water-stage recorder. Datum of gage is 883.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 23, 1932, to Mar. 31, 1934, staff gage at McCalla Avenue Bridge a quarter of a mile downstream at different datum.

Average discharge.--13 years (1932-33, 1945-57), 28.5 cfs.

Extremes.--Maximum discharge during year, 618 cfs Feb. 1 (gage height, 6.97 ft); minimum, 2.1 cfs Sept. 7; minimum gage height, 0.73 ft Oct. 17.
1932-34, 1945-57: Maximum discharge, 1,230 cfs Feb. 13, 1948 (gage height, 8.92 ft); minimum, 2.1 cfs Sept. 8, 1955, Sept. 7, 1957: minimum gage height, 0.24 ft Jan. 9, 1954.

Remarks.--Records good. Discharge measurements generally made twice each month.

Revisions (water years).--WSP 1276: Drainage area. WSP 1336: 1933.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.4 | 13 | 3.6 | 16 | 524 | 38 | 22 | 14 | 7.9 | 9.2 | 4.3 | 2.8 |
| 2 | 5.0 | 4.3 | 3.4 | 15 | 324 | 31 | 20 | 20 | 7.7 | 8.4 | 4.5 | 2.9 |
| 3 | 5.1 | 3.9 | 3.4 | 14 | 141 | 29 | 16 | 18 | 7.7 | 8.4 | 4.5 | 28 |
| 4 | 4.2 | 3.6 | 3.6 | 24 | 139 | 27 | 99 | 13 | 16 | 7.9 | 21 | 3.4 |
| 5 | 3.9 | 3.4 | 3.7 | 28 | 120 | 27 | 160 | 13 | 22 | 7.7 | 6.9 | 2.8 |
| 6 | 3.7 | 3.3 | 3.6 | 18 | 115 | 27 | 53 | 12 | 11 | 7.5 | 3.9 | 2.8 |
| 7 | 3.6 | 4.0 | 3.7 | 17 | 156 | 44 | 41 | 12 | 9.0 | 7.1 | 4.2 | 2.4 |
| 8 | 3.3 | 4.7 | 3.9 | 16 | 197 | 66 | 118 | 12 | 8.4 | 6.9 | 4.0 | 2.7 |
| 9 | 3.4 | 3.7 | 3.9 | 16 | 346 | 38 | 72 | 11 | 7.9 | 6.7 | 4.5 | 9.0 |
| 10 | 3.6 | 3.4 | 3.7 | 17 | 256 | 33 | 47 | 11 | 7.7 | 6.7 | 4.0 | 4.5 |
| 11 | 3.6 | 3.6 | 3.7 | 15 | 142 | 31 | 41 | 11 | 11 | 6.6 | 4.5 | 22 |
| 12 | 3.6 | 3.7 | 75 | 15 | 103 | 32 | 38 | 10 | 16 | 6.7 | 4.8 | 30 |
| 13 | 3.6 | 3.4 | 310 | 13 | 82 | 29 | 34 | 10 | 7.9 | 6.4 | 4.5 | 69 |
| 14 | 3.4 | 3.3 | 138 | 13 | 70 | 27 | 30 | 9.7 | 7.3 | 6.2 | 4.7 | 102 |
| 15 | 3.4 | 3.3 | 51 | 13 | 64 | 26 | 28 | 9.5 | 7.1 | 11 | 8.0 | 21 |
| 16 | 3.3 | 21 | 37 | 12 | 58 | 23 | 27 | 9.0 | 7.1 | 6.7 | 5.1 | 94 |
| 17 | 3.2 | 5.1 | 28 | 11 | 47 | 22 | 25 | 8.4 | 30 | 18 | 5.5 | 61 |
| 18 | 5.9 | 4.0 | 27 | 10 | 43 | 23 | 24 | 11 | 34 | 5.3 | 27 | 21 |
| 19 | 4.5 | 3.7 | 20 | 10 | 71 | 23 | 23 | 12 | 12 | 5.0 | 5.7 | 17 |
| 20 | 3.9 | 3.6 | 22 | 10 | 54 | 21 | 22 | 10 | 9.2 | 4.8 | 4.2 | 15 |
| 21 | 3.9 | 7.6 | 37 | 11 | 44 | 20 | 20 | 8.8 | 8.4 | 4.8 | 3.7 | 15 |
| 22 | 6.2 | 4.7 | 74 | 19 | 42 | 21 | 20 | 29 | 8.7 | 4.7 | 3.9 | 16 |
| 23 | 4.5 | 3.7 | 64 | 47 | 40 | 20 | 22 | 12 | 9.6 | 13 | 3.6 | 24 |
| 24 | 3.3 | 3.7 | 42 | 27 | 38 | 18 | 18 | 14 | 83 | 6.7 | 3.6 | 14 |
| 25 | 3.0 | 3.7 | 29 | 27 | 38 | 18 | 17 | 9.2 | 116 | 5.1 | 7.1 | 12 |
| 26 | 3.9 | 3.7 | 25 | 25 | 40 | 17 | 16 | 21 | 18 | 4.7 | 4.8 | 11 |
| 27 | 3.6 | 3.6 | 23 | 91 | 33 | 16 | 16 | 12 | 14 | 4.5 | 3.6 | 11 |
| 28 | 3.2 | 3.6 | 22 | 276 | 38 | 16 | 15 | 9.0 | 17 | 4.5 | 3.4 | 13 |
| 29 | 3.0 | 3.6 | 20 | 173 | - | 15 | 14 | 11 | 12 | 4.5 | 3.4 | 42 |
| 30 | 3.2 | 3.6 | 18 | 112 | -------- | 15 | 14 | 9.5 | 10 | 4.2 | 3.2 | 27 |
| 31 | 12 | -------- | 17 | 332 | -------- | 14 | -------- | 8.4 | -------- | 5.4 | 3.7 | -------- |
| Total | 127.4 | 143.5 | 1,119.2 | 1,443 | 3,365 | 807 | 1,112 | 380.5 | 543.6 | 215.3 | 179.8 | 698.3 |
| Mean | 4.11 | 4.78 | 36.1 | 46.5 | 120 | 26.0 | 37.1 | 12.3 | 18.1 | 6.95 | 5.80 | 23.3 |
| Cfsm | 0.195 | 0.227 | 1.71 | 2.20 | 5.69 | 1.23 | 1.76 | 0.583 | 0.858 | 0.329 | 0.275 | 1.10 |
| In. | 0.22 | 0.25 | 1.97 | 2.54 | 5.93 | 1.42 | 1.96 | 0.67 | 0.96 | 0.38 | 0.32 | 1.23 |

Calendar year 1956: Max 416 Min 3.0 Mean 29.7 Cfsm 1.41 In. 19.14
Water year 1956-57: Max 524 Min 2.4 Mean 27.8 Cfsm 1.32 In. 17.85

Peak discharge (base, 400 cfs).--Dec. 13 (12 m.) 402 cfs (6.11 ft); Feb. 1 (11 p.m.) 618 cfs (6.97 ft); Feb. 9 (4 a.m.) 448 cfs (6.19 ft).

## Tennessee River at Knoxville, Tenn.

Location.--Lat 35°57'17", long 83°51'42", on left bank 0.7 mile downstream from confluence of French Broad and Holston Rivers, 3.5 miles upstream from First Creek, 3.6 miles upstream from Gay Street Bridge at Knoxville, Knox County, and at mile 651.4.

Drainage area.--8,934 sq mi, includes that of First Creek.

Records available.--January 1899 to December 1912 (1899 and 1910-12, gage heights only) and October 1918 to September 1957 in reports of Geological Survey. October 1899 to September 1924 (prior to October 1918, revised) in Tennessee Division of Geology Bulletin 34. Gage-height records collected in this vicinity since 1883 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 797.38 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 1, 1943, staff or recording gages at several sites within 4 miles of present site at various datums. Since Sept. 1, 1943, auxiliary water-stage recorder 6.3 miles downstream.

Average discharge.--58 years (1899-1957), 12,730 cfs (unadjusted).

Extremes.--Maximum discharge during year, 67,500 cfs Feb. 1, 9; maximum gage height, 21.29 ft Feb. 2; minimum daily discharge, 1,130 cfs Apr. 7; minimum gage height, 9.56 ft Jan. 21.

1899-1957: Maximum discharge observed, 195,000 Mar. 1, 1902 (gage height, 36.4 ft, site and datum then in use), from rating curve extended above 130,000 cfs; minimum daily, 1,010 cfs Mar. 28, 1954; minimum gage height, -1.7 ft Sept. 11, 1925, site and datum then in use.

Maximum stage known, 45.8 ft Mar. 10, 1867, site and datum of gage at old city pumping plant, 3.2 miles downstream from base gage (discharge, 270,000 cfs, from rating curve extended above 130,000 cfs), from high-water profile by Corps of Engineers and Tennessee Valley Authority.

Remarks.--Records good except those below 10,000 cfs and those for period of indefinite slope-stage-discharge relation, which are fair. Flow regulated by Douglas, South Holston, Boone, Fort Patrick Henry, Cherokee, and Watauga Lakes (see p. 223,224).

Revisions (water years).--WSP 583: 1902(M). WSP 823: Drainage area. See also Records available.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14,600 | 11,700 | 17,500 | 22,700 | 63,800 | 17,400 | 15,600 | 15,300 | 17,400 | 5,070 | 16,900 | 11,100 |
| 2 | 15,600 | 8,020 | 15,000 | 23,100 | 59,800 | 17,200 | 15,000 | 15,700 | 15,600 | 7,200 | 15,500 | 8,300 |
| 3 | 14,200 | 6,470 | 13,900 | 22,700 | 48,500 | 18,300 | 11,600 | 16,200 | 15,900 | 2,770 | 15,200 | 19,500 |
| 4 | 14,400 | 6,550 | 9,520 | 18,100 | 58,100 | 18,100 | 7,980 | 12,200 | 17,700 | 3,440 | 10,700 | 22,800 |
| 5 | 13,200 | 7,870 | 6,920 | 13,400 | *61,600 | 22,300 | 11,600 | 11,000 | 17,200 | 2,650 | 10,300 | 18,700 |
| 6 | 9,340 | 11,000 | 6,970 | 8,480 | 57,300 | 13,100 | 6,190 | 11,100 | 18,000 | 3,840 | 16,100 | 18,400 |
| 7 | 8,020 | 11,200 | 6,970 | 5,570 | 56,700 | 9,080 | 1,130 | 14,200 | 14,600 | 9,860 | 19,300 | 12,400 |
| 8 | 9,850 | 10,300 | 7,430 | 12,900 | 58,600 | 9,210 | 9,700 | *15,100 | 11,000 | 6,090 | 13,400 | 5,880 |
| 9 | 13,400 | 15,500 | 7,690 | 14,300 | 66,100 | 13,200 | 9,910 | 17,000 | 13,700 | 10,400 | 9,250 | 12,300 |
| 10 | 11,600 | 14,600 | 12,600 | 17,100 | 63,900 | 9,130 | 3,210 | 16,800 | 10,300 | 8,870 | 12,300 | 16,700 |
| 11 | 11,500 | 13,200 | 12,900 | 17,500 | 61,000 | 12,200 | 14,800 | 20,500 | 7,940 | 9,460 | 12,500 | 17,800 |
| 12 | 13,200 | 10,300 | 16,400 | 15,400 | 63,000 | 16,300 | 16,600 | 6,530 | 8,820 | 10,600 | 13,600 | 19,300 |
| 13 | 11,100 | 17,600 | 11,800 | 11,100 | *62,500 | 13,600 | 10,000 | 15,000 | 6,440 | 12,200 | 14,800 | 18,000 |
| 14 | 9,300 | 13,300 | 5,530 | 10,200 | 59,400 | 9,040 | 7,810 | 15,400 | 3,670 | 10,400 | 14,300 | 9,900 |
| 15 | 8,360 | 11,500 | 6,330 | 13,200 | 58,000 | 9,460 | 13,000 | 15,000 | 4,210 | 15,600 | 14,400 | e2,000 |
| 16 | 12,500 | 10,100 | 4,500 | 16,500 | 54,800 | 14,400 | 13,900 | 18,800 | 4,290 | 14,200 | *14,700 | e3,000 |
| 17 | 9,340 | 8,320 | 3,930 | 22,100 | 52,400 | 17,300 | 12,100 | 14,100 | 8,970 | 14,200 | 15,100 | e3,500 |
| 18 | 10,700 | 7,240 | 6,750 | 19,500 | 49,000 | 15,200 | 12,800 | 7,290 | 13,200 | 12,300 | 13,900 | e2,500 |
| 19 | 9,480 | 6,060 | 10,500 | 17,600 | 48,300 | 18,700 | 14,500 | 5,670 | 8,270 | 8,280 | 12,300 | e2,000 |
| 20 | 9,970 | 8,600 | *10,800 | 12,600 | 46,000 | 17,600 | 13,900 | 6,840 | 7,320 | 10,400 | 15,500 | e3,000 |
| 21 | 8,180 | 9,290 | 13,100 | 7,550 | *38,200 | 16,100 | 14,400 | 15,400 | 5,950 | 9,160 | 14,400 | e2,500 |
| 22 | 6,040 | 10,100 | 12,300 | 10,600 | 33,800 | 13,700 | 11,700 | 19,200 | 7,060 | 14,000 | 15,600 | e2,500 |
| 23 | 10,800 | 10,200 | 6,840 | 4,880 | 30,600 | 13,200 | 12,500 | 8,150 | 5,560 | 20,200 | 11,600 | 7,500 |
| 24 | 12,100 | 11,400 | 8,610 | 7,340 | 23,100 | 13,000 | 11,900 | 4,110 | 9,040 | 18,700 | 7,680 | 14,700 |
| 25 | 15,000 | 12,300 | 11,500 | 6,480 | 22,500 | 15,000 | 11,600 | 4,740 | *10,300 | 13,100 | 4,030 | 15,700 |
| 26 | 14,500 | 12,400 | 13,100 | 7,900 | 22,700 | 15,000 | 12,200 | 6,730 | 3,600 | 14,900 | 10,500 | 13,900 |
| 27 | 13,700 | 17,300 | 21,200 | 9,040 | 23,300 | 12,500 | 15,000 | 11,800 | 2,810 | 11,500 | 18,800 | 8,620 |
| 28 | 12,200 | 17,100 | 24,200 | 16,500 | 18,200 | *11,500 | 15,000 | 11,500 | 3,470 | 11,900 | 19,000 | 8,900 |
| 29 | *11,600 | 16,900 | 23,800 | 13,800 | - | 12,700 | 15,000 | 12,700 | 9,090 | *16,400 | 16,200 | 7,880 |
| 30 | 13,200 | 18,100 | 23,300 | 13,400 | ------- | 12,000 | 15,200 | 13,400 | 14,400 | 17,800 | 18,500 | 7,700 |
| 31 | 12,600 | ------- | 23,300 | 31,000 | ------- | 10,200 | ------- | 16,300 | ------- | 17,500 | 18,100 | ------- |
| Total | 359,580 | 344,520 | 375,190 | 442,540 | ‡1,361.2 | 435,720 | 355,830 | 393,760 | 295,810 | 342,890 | 434,460 | 316,980 |
| Mean | 11,600 | 11,480 | 12,100 | 14,280 | 48,610 | 14,060 | 11,860 | 12,700 | 9,860 | 11,060 | 14,010 | 10,570 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 24,200 Min 1,640 Mean 11,270 Cfsm 1.26 In. 17.18
Water year 1956-57: Max 66,100 Min 1,130 Mean 14,960 Cfsm 1.67 In. 22.72

* Discharge measurement made on this day.
‡ Expressed in thousands.
e Indefinite slope-stage-discharge relation; discharge estimated on basis of records for Holston River near Knoxville and French Broad River near Knoxville.

## Little River near Maryville, Tenn.

Location.--Lat 35°47'10", long 83°53'04", on right bank on downstream side of bridge on U. S. Highway 411, 0.8 mile downstream from Crooked Creek, 5.0 miles east of Maryville, Blount County, and at mile 17.3.

Drainage area.--269 sq mi.

Records available.--July 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 850.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 486 cfs.

Extremes.--Maximum discharge during year, 19,600 cfs Feb. 1 (gage height, 21.18 ft); minimum, 36 cfs Oct. 12 (gage height, 6.89 ft).

1951-57: Maximum discharge, that of Feb. 1, 1957; minimum, 32 cfs Aug. 27, 1956 (gage height, 6.85 ft); minimum gage height, 6.72 ft Sept. 16, 18, Oct. 7, 1954.

Floods in March 1875 and April 1920 reached stages of 31.0 ft and 24.0 ft, respectively, present datum. Flood of Mar. 29, 1951, reached a stage of 21.05 ft (discharge, 19,200 cfs, revised) present datum, from floodmarks.

Remarks.--Records good. Diurnal fluctuation at low flow caused by small mills above station. The town of Maryville diverted an average of about 1.5 cfs for municipal supply, 300 ft above the gage.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 24 to July 19)

| Oct. 1 to Jan. 28 | | | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 6.9 | 37 | 8.0 | 475 | 7.0 | 47 | 8.0 | 430 |
| 7.0 | 54 | 10.0 | 2,150 | 7.1 | 68 | 10.0 | 2,150 |
| 7.2 | 104 | 12.3 | 4,530 | 7.3 | 126 | 14.0 | 6,500 |
| 7.6 | 245 | | | 7.5 | 195 | 19.0 | 13,600 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 77 | 236 | 120 | 295 | 13,500 | 1,200 | 288 | 507 | 288 | 618 | 120 | 66 |
| 2 | *61 | *198 | 114 | *255 | 7,130 | 882 | *424 | *507 | 280 | *472 | *105 | 68 |
| 3 | 68 | 133 | *110 | 229 | 3,130 | 730 | 345 | 521 | *497 | 382 | 105 | *62 |
| 4 | 60 | 110 | 110 | 241 | *3,370 | 626 | 1,040 | 437 | 698 | 320 | 111 | 71 |
| 5 | 68 | 96 | 114 | 423 | 3,840 | *556 | 4,580 | 388 | 1,320 | 284 | 143 | 74 |
| 6 | 133 | 90 | 117 | 404 | 2,900 | 500 | 2,160 | 350 | 989 | 248 | 120 | 64 |
| 7 | 82 | 85 | 117 | 398 | 2,850 | 594 | 1,280 | 320 | 746 | 216 | 99 | 62 |
| 8 | 68 | 128 | 114 | 362 | 3,680 | 1,320 | 3,790 | 302 | 549 | 195 | 90 | 53 |
| 9 | 56 | 160 | 114 | 339 | 3,640 | 908 | 3,210 | 284 | 778 | 181 | 85 | 64 |
| 10 | 59 | 130 | 133 | 362 | 3,410 | 722 | 1,350 | 266 | 810 | 170 | 82 | 62 |
| 11 | 64 | 114 | 120 | 344 | 2,540 | 690 | 962 | 275 | 507 | 157 | 79 | 114 |
| 12 | 56 | 104 | 799 | 312 | 1,720 | 1,010 | 778 | 270 | 451 | 146 | 79 | 170 |
| 13 | 54 | 104 | 1,730 | 295 | 1,310 | 1,080 | 658 | 244 | 360 | 133 | 74 | 157 |
| 14 | 51 | 96 | 952 | 275 | 1,050 | 899 | 563 | 239 | 311 | 126 | 82 | 181 |
| 15 | 61 | 93 | 1,590 | 255 | 866 | 770 | 493 | 226 | 275 | 136 | 96 | 170 |
| 16 | 52 | 222 | 1,560 | 250 | 826 | 642 | 444 | 220 | 257 | 133 | 105 | 193 |
| 17 | 54 | 322 | 888 | 221 | 682 | 556 | 406 | 220 | 275 | 126 | 125 | 325 |
| 18 | 60 | 229 | 629 | 184 | 594 | 514 | 382 | 284 | 365 | 120 | 288 | 184 |
| 19 | 70 | 191 | 482 | 177 | 714 | 556 | 360 | 270 | *320 | 233 | 220 | 153 |
| 20 | 72 | 167 | 398 | 202 | 802 | 479 | 340 | 257 | 594 | 174 | 143 | 143 |
| 21 | 72 | 174 | 615 | 198 | 650 | 430 | 345 | 206 | 350 | 150 | 105 | 133 |
| 22 | 99 | 306 | 738 | 198 | 578 | 444 | 430 | 278 | 316 | 140 | 96 | 133 |
| 23 | 194 | 205 | 960 | 1,210 | 528 | 418 | 586 | 394 | 316 | 133 | 90 | 209 |
| 24 | 133 | 180 | 1,860 | 816 | 486 | 382 | 514 | 270 | 576 | 220 | 88 | 184 |
| 25 | 107 | 163 | 1,220 | 629 | 458 | 424 | 424 | 325 | 1,960 | 209 | 88 | 140 |
| 26 | 93 | 156 | 808 | 559 | 507 | 376 | 376 | 270 | 842 | 157 | 126 | 120 |
| 27 | 88 | 153 | 615 | 1,870 | 514 | 360 | 345 | 388 | 549 | 143 | 96 | 129 |
| 28 | 85 | 139 | 496 | *4,520 | 842 | 335 | 330 | 388 | 521 | 146 | 85 | 150 |
| 29 | 82 | 133 | 436 | 2,590 | - | 320 | 340 | 302 | 1,120 | 133 | 76 | 482 |
| 30 | 77 | 130 | 362 | 3,570 | -------- | 306 | 682 | 311 | 714 | 123 | 71 | 335 |
| 31 | 82 | -------- | 322 | *10,600 | -------- | 293 | -------- | 284 | -------- | 126 | 66 | -------- |
| Total | 2,438 | 4,745 | 18,743 | 32,583 | 63,117 | 19,322 | 28,225 | 9,803 | 17,934 | 6,250 | 3,338 | 4,451 |
| Mean | 78.6 | 158 | 605 | 1,051 | 2,254 | 623 | 941 | 316 | 598 | 202 | 108 | 148 |
| Cfsm | 0.292 | 0.587 | 2.25 | 3.91 | 8.38 | 2.32 | 3.50 | 1.17 | 2.22 | 0.751 | 0.401 | 0.550 |
| In. | 0.34 | 0.66 | 2.59 | 4.50 | 8.73 | 2.67 | 3.90 | 1.36 | 2.48 | 0.86 | 0.46 | 0.62 |

Calendar year 1956: Max 7,760 Min 51 Mean 507 Cfsm 1.88 In. 25.65
Water year 1956-57: Max 13,500 Min 51 Mean 578 Cfsm 2.15 In. 29.17

Peak discharge (base, 4,800 cfs).--Jan. 28 (12:30 p.m.) 5,610 cfs (13.26 ft); Feb. 1 (1:30 a.m.) 19,600 cfs (21.18 ft); Apr. 5 (10:30 a.m.) 5,710 cfs (13.34 ft); Apr. 8 (8:30 p.m.) 8,040 cfs (15.26 ft).

* Discharge measurement made on this day.

## Little Tennessee River near Prentiss, N. C.

Location.--Lat 35°08'57", long 83°22'46", on left bank 600 ft upstream from Owenby Branch, 0.5 mile upstream from Cartoogechaye Creek, and 2 miles north of Prentiss, Macon County.

Drainage area.--140 sq mi.

Records available.--June 1944 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,008.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 368 cfs.

Extremes.--Maximum discharge during year, 3,750 cfs Apr. 5; maximum gage height, 9.83 ft Apr. 5; minimum discharge, 90 cfs Sept. 8 (gage height, 1.38 ft).

1944-57: Maximum discharge, 5,900 cfs June 16, 1949 (gage height, 12.85 ft); minimum, 65 cfs Oct. 16, 17, 1954 (gage height, 1.21 ft).

Flood in October 1898 reached a stage of about 15 ft, from profiles by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of backwater or ice effect, which are good.

Revisions (water years).--WSP 1236: 1949(M).

Rating tables, water year 1956-57, except periods of backwater or ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 5

| | | | |
|---|---|---|---|
| 1.4 | 98 | 4.0 | 1,200 |
| 1.8 | 175 | 5.0 | 1,750 |
| 2.2 | 285 | 6.0 | 2,250 |
| 3.0 | 600 | 7.0 | 2,720 |
| 3.5 | 860 | 8.2 | 3,310 |

Apr. 6 to Sept. 30

| | | | |
|---|---|---|---|
| 1.3 | 78 | 2.5 | 395 |
| 1.5 | 110 | 3.0 | 585 |
| 2.0 | 213 | 3.5 | 860 |

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 122 | 261 | 117 | 296 | *k2,340 | 984 | 566 | *507 | 250 | 516 | 163 | 102 |
| 2 | 117 | 204 | 115 | 275 | *k1,680 | 750 | 1,110 | 428 | 242 | *411 | 161 | 98 |
| 3 | 115 | 171 | 115 | 263 | *1,100 | 650 | *720 | 403 | 245 | 373 | 153 | 96 |
| 4 | 117 | 157 | 115 | 266 | k1,290 | 591 | k922 | 399 | 245 | 337 | 153 | 95 |
| 5 | 119 | *147 | 113 | 450 | 1,140 | 560 | *k3,300 | 380 | *1,170 | 314 | 163 | 98 |
| 6 | 115 | 139 | 112 | 338 | 955 | 528 | *k2,110 | 365 | 605 | 288 | 145 | 93 |
| 7 | 112 | 137 | 112 | 324 | 1,020 | 528 | *1,240 | 351 | 440 | 273 | 141 | 92 |
| 8 | 106 | 155 | 112 | 288 | 878 | 578 | k1,180 | 344 | 369 | 259 | 136 | 95 |
| 9 | 106 | 137 | 110 | 275 | 824 | 514 | 1,270 | 334 | 337 | 250 | 132 | *178 |
| 10 | 103 | 131 | *108 | 272 | 750 | 482 | 976 | 327 | 314 | 239 | 124 | 300 |
| 11 | 103 | 129 | 106 | 266 | 680 | 462 | 860 | 384 | 304 | 226 | 121 | 178 |
| 12 | 103 | 126 | 216 | 256 | 620 | 450 | 783 | 365 | 288 | 221 | 119 | 141 |
| 13 | 101 | 122 | 324 | 247 | 582 | 434 | 728 | 334 | 264 | 211 | 115 | 136 |
| 14 | 100 | 120 | 448 | 239 | 546 | 426 | 673 | 317 | 253 | 213 | 168 | 145 |
| 15 | 100 | 119 | 770 | 231 | 510 | 414 | 635 | 307 | 276 | 203 | 187 | 130 |
| 16 | 98 | 119 | 908 | 222 | 542 | 394 | 600 | 300 | 250 | 203 | 138 | 505 |
| 17 | 98 | 151 | 532 | 215 | 490 | 383 | 575 | 291 | 444 | *203 | 128 | 354 |
| 18 | 108 | 168 | 402 | b200 | 466 | 394 | 565 | 282 | 337 | 199 | 165 | 253 |
| 19 | 171 | 139 | 338 | b205 | 502 | 506 | 545 | 282 | 314 | 201 | *211 | 208 |
| 20 | 129 | 133 | 299 | b205 | 498 | *422 | 521 | 291 | 304 | 196 | 167 | 206 |
| 21 | 128 | 131 | 285 | *209 | 462 | 398 | 502 | 267 | 264 | 185 | 143 | 196 |
| 22 | 405 | 141 | 424 | 304 | 438 | 418 | 497 | 267 | 253 | 178 | 136 | 178 |
| 23 | *288 | 129 | 693 | 866 | 422 | 398 | 507 | 285 | 282 | 176 | 128 | 180 |
| 24 | 187 | 126 | *1,100 | 591 | 410 | 390 | 475 | 270 | 428 | 178 | 126 | 163 |
| 25 | 160 | 124 | 745 | 510 | 414 | 490 | 448 | 288 | 466 | 199 | 123 | 151 |
| 26 | 145 | 124 | 555 | 482 | 819 | 446 | 428 | 264 | 348 | 176 | 121 | 145 |
| 27 | 141 | 122 | 470 | 458 | 725 | 418 | 415 | 304 | 300 | 169 | 115 | 145 |
| 28 | 131 | 120 | 414 | 446 | 820 | 394 | 403 | 267 | k558 | 171 | 112 | 167 |
| 29 | 128 | 119 | 372 | 605 | - | 383 | 436 | 250 | k1,020 | 165 | 110 | 373 |
| 30 | 126 | 119 | 341 | 630 | ------- | 372 | 444 | 300 | 580 | 163 | 108 | 323 |
| 31 | 126 | ------- | 316 | k904 | ------- | 358 | ------- | 267 | ------- | 165 | *103 | ------- |
| Total | 4,208 | 4,220 | 11,187 | 11,338 | 21,923 | 14,915 | 24,434 | 10,020 | 11,750 | 7,261 | 4,315 | 5,524 |
| Mean | 136 | 141 | 361 | 366 | 783 | 481 | 814 | 323 | 392 | 234 | 139 | 184 |
| Cfsm | 0.971 | 1.01 | 2.58 | 2.61 | 5.59 | 3.44 | 5.81 | 2.31 | 2.80 | 1.67 | 0.993 | 1.31 |
| In. | 1.12 | 1.12 | 2.97 | 3.01 | 5.82 | 3.96 | 6.49 | 2.66 | 3.12 | 1.93 | 1.15 | 1.47 |

Calendar year 1956: Max 3,000 Min 92 Mean 305 Cfsm 2.18 In. 29.68
Water year 1956-57: Max 3,300 Min 92 Mean 359 Cfsm 2.56 In. 34.82

Peak discharge (base, 1,500 cfs).--Feb. 1 (8 a.m.) 2,560 cfs (8.64 ft at 5:30 a.m.); Apr. 5 (1 p.m.) 3,750 cfs (9.83 ft at 11 a.m.).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
k Backwater from Cartoogechaye Creek; discharge computed by using fall as a factor.

## Cullasaja River at Highlands, N. C.

Location.--Lat 35°04'14", long 83°13'57", on right bank 0.6 mile downstream from Highlands municipal dam, 1.0 mile downstream from Big Creek, and 2.3 miles northwest of Highlands, Macon County.

Drainage area.--14.9 sq mi.

Records available.--December 1927 to September 1957. Except for figures of momentary maximum discharge, records prior to Aug. 29, 1931, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 3,373.63 ft above mean sea level. Prior to Aug. 29, 1931, water-stage recorder on crest of Highlands municipal dam 0.6 mile upstream at datum 230.22 ft higher.

Average discharge.--26 years (1931-57), 58.1 cfs.

Extremes.--Maximum discharge during year, 926 cfs Apr. 4 (gage height, 3.37 ft); minimum, 5.4 cfs Aug. 22 (gage height, 0.35 ft); minimum daily, 7.6 cfs Oct. 15-17.
1927-57: Maximum discharge, 5,100 cfs Aug. 30, 1940 (gage height, 9.35 ft), from rating curve extended above 800 cfs on basis of computation of peak flow over dam; minimum, 0.2 cfs Oct. 13, 14, 1947; minimum daily, 0.2 cfs Oct. 13, 1947.

Remarks.--Records excellent. Low flow regulated by Sequoyah Lake. Some diurnal fluctuation caused by powerplant at Highlands municipal dam.

Revisions (water years).--WSP 728: 1931. WSP 823: Drainage area. WSP 953: 1941(M). WSP 1206: 1950(m). See also Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.4 | 7.0 | 1.7 | 140 |
| .6 | 16 | 2.0 | 212 |
| .8 | 27 | 2.3 | 308 |
| 1.0 | 41 | 2.6 | 446 |
| 1.2 | 60 | 2.8 | 562 |
| 1.4 | 86 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *11 | 124 | 15 | 50 | 313 | 202 | 165 | *58 | 28 | 102 | 27 | 13 |
| 2 | 10 | 48 | 15 | *47 | 207 | 147 | 216 | 46 | 26 | *89 | 35 | 12 |
| 3 | 11 | 37 | 15 | 44 | *176 | 126 | *116 | 40 | 26 | 78 | 24 | 12 |
| 4 | 12 | 41 | 15 | 52 | 196 | 113 | 401 | 40 | 84 | 67 | 22 | 11 |
| 5 | 12 | *37 | 15 | 68 | 153 | 104 | 505 | 36 | 473 | 61 | 22 | 11 |
| 6 | 11 | 26 | 15 | 49 | 136 | 100 | 250 | 37 | 132 | 56 | 19 | 11 |
| 7 | 10 | 25 | 14 | 48 | 151 | 100 | 186 | 33 | 94 | 52 | 18 | 11 |
| 8 | 9.2 | 29 | 14 | 44 | 126 | 97 | 202 | 32 | 79 | 47 | 17 | 14 |
| 9 | 8.8 | 23 | 14 | 43 | 128 | 85 | 174 | 32 | 67 | 45 | 17 | *31 |
| 10 | 9.2 | 21 | *14 | 41 | 118 | 80 | 144 | 34 | 59 | 43 | 17 | 85 |
| 11 | 12 | 21 | 14 | 39 | 104 | 79 | 124 | 52 | *56 | 42 | 16 | 26 |
| 12 | 8.8 | 20 | 63 | 38 | 94 | 79 | 115 | 50 | 52 | 38 | 15 | 18 |
| 13 | 8.0 | 19 | 70 | 38 | 88 | 71 | 104 | 47 | 48 | 35 | 15 | 15 |
| 14 | 8.0 | 18 | 210 | 36 | 83 | 73 | 97 | 38 | 45 | 34 | 16 | 17 |
| 15 | 7.6 | 18 | 196 | 35 | 79 | 70 | 91 | 38 | 44 | 68 | 20 | 19 |
| 16 | 7.6 | 19 | 166 | 34 | 82 | 66 | 86 | 35 | 45 | 65 | 19 | 140 |
| 17 | 7.6 | 38 | 99 | 31 | 72 | 58 | 82 | 33 | 60 | 47 | 18 | 92 |
| 18 | 9.6 | 29 | 78 | 29 | 67 | 65 | 83 | 31 | 60 | 42 | 21 | 80 |
| 19 | 11 | 22 | 64 | 29 | 99 | 92 | 76 | 33 | 44 | 46 | *35 | 59 |
| 20 | 12 | 21 | 56 | 29 | 83 | *67 | 70 | 33 | 38 | 37 | 31 | 94 |
| 21 | 35 | 21 | 51 | 31 | 72 | 61 | 65 | 29 | 35 | 31 | 20 | 59 |
| 22 | 192 | 20 | 82 | 169 | 66 | 66 | 68 | 28 | 111 | 29 | 19 | 47 |
| 23 | 66 | 18 | 158 | 243 | 61 | 58 | 64 | 28 | 61 | 29 | 15 | 47 |
| 24 | 36 | 19 | 189 | 107 | 59 | 59 | 58 | 34 | 102 | 30 | 14 | 37 |
| 25 | 29 | 17 | 111 | 97 | 96 | 86 | 53 | 34 | 92 | 31 | 14 | 29 |
| 26 | 25 | 18 | 92 | 86 | 319 | 67 | 50 | 29 | 83 | 29 | 14 | 27 |
| 27 | 23 | 17 | 82 | 80 | 149 | 59 | 48 | 41 | 67 | 26 | 13 | 26 |
| 28 | 20 | 16 | 71 | 78 | 241 | 56 | 47 | 31 | 250 | 24 | 13 | 39 |
| 29 | 19 | 16 | 65 | 116 | - | 53 | 47 | 29 | 198 | 22 | 13 | 96 |
| 30 | 21 | 16 | 56 | 106 | ------- | 50 | 47 | 41 | 120 | 24 | 13 | 66 |
| 31 | 21 | ------- | 54 | 241 | ------- | 48 | ------- | 31 | ------- | 26 | 13 | ------- |
| Total | 683.4 | 814 | 2,173 | 2,178 | 3,618 | 2,537 | 3,834 | 1,133 | 2,679 | 1,395 | 585 | 1,244 |
| Mean | 22.0 | 27.1 | 70.1 | 70.3 | 129 | 81.8 | 128 | 36.5 | 89.3 | 45.0 | 18.9 | 41.5 |
| Cfsm | 1.48 | 1.82 | 4.70 | 4.72 | 8.66 | 5.49 | 8.59 | 2.45 | 5.99 | 3.02 | 1.27 | 2.79 |
| In. | 1.71 | 2.03 | 5.42 | 5.44 | 9.03 | 6.33 | 9.57 | 2.83 | 6.69 | 3.48 | 1.46 | 3.10 |

Calendar year 1956: Max 412 Min 2.4 Mean 45.4 Cfsm 3.05 In. 41.45
Water year 1956-57: Max 505 Min 7.6 Mean 62.7 Cfsm 4.21 In. 57.09

Peak discharge (base, 550 cfs).--Jan. 31 (9 p.m.) 562 cfs (2.80 ft); Apr. 4 (9:30 p.m.) 926 cfs (3.37 ft); June 5 (5:30 a.m.) 822 cfs (3.21 ft); June 28 (6:30 p.m.) 605 cfs (2.87 ft).
* Discharge measurement made on this day.

## Cullasaja River at Cullasaja, N. C.

Location.--Lat 35°09'59", long 83°19'25", on right bank at Cullasaja, Macon County, 1.4 miles downstream from Ellijay Creek and 4.1 miles upstream from mouth.

Drainage area.--86.5 sq mi.

Records available.--June 1907 to December 1909, February 1921 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,023.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 23, 1934, staff gages at same site and datum.

Average discharge.--38 years, 222 cfs.

Extremes.--Maximum discharge during year, 3,450 cfs Apr. 4 (gage height, 11.30 ft); minimum, 45 cfs Oct. 16, 17 (gage height, 0.71 ft).

1907-9, 1921-57: Maximum discharge, 16,500 cfs Aug. 30, 1940 (gage height, 20.83 ft), from rating curve extended above 8,100 cfs on basis of slope-area determination of peak flow; minimum, 19 cfs Sept. 18-22, 1925, Jan. 2, 1940.

Maximum stage known, that of Aug. 30, 1940. A stage of 17.2 ft, from floodmarks, occurred in July 1916, but has been exceeded at other times, according to information by State Highway Commission.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Slight regulation at low flow by Sequoyah Lake and mill on Buck Creek.

Revisions (water years).--WSP 823: Drainage area. WSP 1143: 1907-10, 1921-31, 1932(M), 1933-38, 1939(M), 1940-43, 1944(M), 1946, 1947(M).

Rating table, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 44 | 2.0 | 229 |
| .8 | 52 | 3.0 | 490 |
| 1.0 | 71 | 5.0 | 1,080 |
| 1.2 | 94 | 7.0 | 1,780 |
| 1.5 | 136 | 8.6 | 2,340 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *56 | 203 | 61 | 160 | 1,440 | 780 | 420 | *343 | 141 | a300 | 98 | 56 |
| 2 | 53 | 120 | 60 | *149 | 888 | 554 | 723 | 269 | 139 | *234 | 115 | 55 |
| 3 | 53 | 97 | 59 | b140 | 676 | 470 | *440 | 262 | 136 | 234 | 95 | 53 |
| 4 | 56 | 89 | 59 | b150 | 708 | 418 | 1,340 | 254 | 206 | 279 | 92 | 54 |
| 5 | 58 | *93 | 58 | 211 | 591 | 388 | *2,320 | 234 | 1,370 | 197 | 97 | 55 |
| 6 | 59 | 82 | 58 | 160 | 540 | 364 | 1,060 | 216 | 521 | 182 | 83 | 51 |
| 7 | 54 | 78 | 57 | 157 | 588 | 358 | 780 | 206 | 369 | 173 | 80 | 51 |
| 8 | 50 | 86 | 57 | 144 | 510 | 364 | 792 | 193 | 304 | 159 | 76 | 55 |
| 9 | 49 | 78 | 57 | 139 | 493 | 317 | 714 | 195 | 266 | 152 | 76 | *95 |
| 10 | 48 | 72 | *57 | 138 | 456 | 296 | 597 | 182 | 238 | 147 | 71 | 239 |
| 11 | 48 | 70 | 56 | 128 | 402 | 286 | 532 | 231 | 222 | 141 | 70 | 100 |
| 12 | 51 | 69 | 161 | 126 | *366 | 281 | 484 | 218 | 207 | 134 | 69 | 74 |
| 13 | 47 | 65 | 197 | 122 | 340 | 262 | 442 | 216 | *191 | 133 | 67 | 69 |
| 14 | 46 | 64 | 451 | 120 | 314 | 259 | 404 | 189 | 178 | 126 | 82 | 66 |
| 15 | 46 | 64 | 552 | 117 | 294 | 247 | 380 | 189 | 169 | 133 | 108 | 78 |
| 16 | 45 | 65 | 530 | 115 | 298 | 236 | 356 | 171 | a170 | 166 | 82 | 304 |
| 17 | 46 | 99 | 291 | 108 | 266 | 225 | 337 | 169 | a220 | 201 | 75 | 209 |
| 18 | 71 | 97 | 220 | b95 | 252 | 238 | 335 | 162 | a225 | 152 | 100 | 201 |
| 19 | 92 | 78 | 185 | b105 | 296 | 309 | 314 | 164 | a160 | 144 | *138 | 147 |
| 20 | 59 | 72 | 164 | b105 | 288 | *243 | 298 | 164 | a140 | 130 | 107 | 183 |
| 21 | 69 | 72 | 152 | 108 | 252 | 229 | 291 | 149 | a130 | 118 | 83 | 155 |
| 22 | 426 | 74 | 270 | 253 | 234 | 238 | 298 | 152 | a400 | 114 | 76 | 121 |
| 23 | 201 | 66 | 457 | 559 | 222 | 225 | 319 | 150 | a220 | 111 | 66 | 130 |
| 24 | 114 | 67 | 730 | 278 | 216 | 225 | 281 | 159 | a350 | 120 | 68 | 110 |
| 25 | 94 | 65 | 410 | 252 | 243 | 306 | 259 | 164 | a290 | 120 | 67 | 95 |
| 26 | 84 | 65 | 309 | 227 | 739 | 257 | 245 | 147 | a250 | 108 | 66 | 89 |
| 27 | 79 | 64 | 257 | 227 | 468 | 236 | 236 | 176 | a200 | 104 | 63 | 87 |
| 28 | 73 | 61 | 225 | 222 | 716 | 222 | 254 | 154 | a750 | 102 | 61 | 110 |
| 29 | 69 | 64 | 203 | 407 | - | 214 | 248 | 139 | a550 | 97 | 59 | 231 |
| 30 | 70 | 62 | 182 | 436 | ------- | 197 | 318 | 182 | a360 | 98 | 59 | 183 |
| 31 | 68 | ------- | 173 | 954 | ------- | 199 | ------- | 150 | ------- | 104 | 57 | ------- |
| Total | 2,434 | 2,401 | 6,758 | 6,612 | 13,096 | 9,443 | 15,817 | 5,949 | 9,072 | 4,673 | 2,506 | 3,506 |
| Mean | 78.5 | 80.0 | 218 | 213 | 468 | 305 | 527 | 192 | 302 | 151 | 80.8 | 117 |
| Cfsm | 0.908 | 0.925 | 2.52 | 2.46 | 5.41 | 3.53 | 6.09 | 2.22 | 3.49 | 1.75 | 0.934 | 1.35 |
| In. | 1.05 | 1.03 | 2.91 | 2.84 | 5.63 | 4.06 | 6.80 | 2.56 | 3.90 | 2.01 | 1.08 | 1.51 |

Calendar year 1956: Max 1,650 Min 41 Mean 174 Cfsm 2.01 In. 27.38
Water year 1956-57: Max 2,320 Min 45 Mean 225 Cfsm 2.60 In. 35.38

Peak discharge (base, 2,000 cfs).--Jan. 31 (11 p.m.) 2,430 cfs (8.83 ft); Apr. 4 (11:30 p.m.) 3,450 cfs (11.30 ft); June 5 (7 a.m.) 2,270 cfs (8.40 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station at Highlands.

b Stage-discharge relation affected by ice.

## Little Tennessee River at Needmore, N. C.

Location.--Lat 35°20'11", long 83°31'39", on left bank 0.8 mile downstream from DeHart Creek, 0.8 mile north of Needmore, Swain County, 2.4 miles downstream from Brush Creek, and 6.3 miles downstream from Tellico Creek.

Drainage area.--436 sq mi.

Records available.--June 1944 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,761.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 1,013 cfs.

Extremes.--Maximum discharge during year, 12,700 cfs Apr. 5 (gage height, 8.77 ft); minimum, 106 cfs Oct. 17 (gage height, 1.35 ft); minimum daily, 191 cfs Nov. 3.

1944-57: Maximum discharge, 20,200 cfs June 16, 1949 (gage height, 11.10 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 52 cfs Nov. 7, 8, 1954 (gage height, 1.16 ft); minimum daily, 71 cfs Nov. 7, 1954.

Floods of October 1898 and Aug. 30, 1940, reached stages of about 13 and 11.5 ft, respectively, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent. Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.6 | 185 | 5.0 | 3,960 |
| 2.0 | 370 | 6.0 | 5,880 |
| 2.5 | 720 | 7.0 | 8,080 |
| 3.0 | 1,160 | 8.0 | 10,600 |
| 4.0 | 2,360 | 8.4 | 11,600 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 316 | 516 | 315 | 784 | 10,400 | 2,990 | 1,070 | 1,540 | 798 | 1,510 | 462 | 310 |
| 2 | 305 | 648 | 320 | 704 | 6,380 | 2,210 | 2,900 | 1,260 | 752 | 1,230 | 482 | 295 |
| 3 | 300 | 191 | 315 | 702 | 4,050 | 1,800 | 1,910 | 1,180 | 734 | 1,110 | 456 | 290 |
| 4 | 315 | 390 | 315 | 710 | 4,230 | *1,630 | 3,030 | 1,180 | 732 | 1,020 | 430 | 300 |
| 5 | 326 | 376 | 320 | 942 | 3,920 | 1,530 | *11,600 | 1,120 | 3,260 | 935 | 495 | 305 |
| 6 | 326 | 406 | 315 | 908 | 3,630 | 1,450 | 6,990 | 1,060 | 2,360 | 863 | 424 | 295 |
| 7 | 326 | 394 | 315 | 818 | 3,660 | 1,450 | 3,980 | 1,020 | 1,540 | 815 | 394 | 271 |
| 8 | 300 | 456 | 315 | 760 | 3,140 | 1,590 | 3,470 | 998 | 1,230 | 792 | 370 | 281 |
| 9 | 281 | 450 | 315 | 722 | 2,950 | 1,420 | 3,820 | 971 | 1,100 | 718 | 370 | 370 |
| 10 | 263 | 376 | 305 | 732 | 2,590 | 1,310 | 2,950 | 953 | 1,040 | 719 | 359 | *742 |
| 11 | 276 | 364 | 314 | 682 | 2,280 | 1,260 | 2,580 | 1,100 | 980 | 682 | 348 | 662 |
| 12 | 290 | 348 | 616 | 647 | 1,990 | 1,240 | 2,330 | 1,110 | 917 | 668 | 337 | 430 |
| 13 | 262 | 348 | 1,170 | 656 | 1,830 | 1,190 | 2,110 | 1,020 | 854 | 602 | 332 | 446 |
| 14 | 276 | 342 | 995 | 626 | 1,680 | 1,160 | 1,920 | 962 | 800 | 622 | 364 | 516 |
| 15 | 266 | 337 | 1,290 | 614 | 1,540 | 1,130 | 1,790 | 926 | 809 | 621 | 522 | 406 |
| 16 | 252 | 326 | 2,630 | 612 | 1,590 | 1,060 | 1,680 | 890 | 766 | 672 | 443 | 1,120 |
| 17 | 256 | 382 | 1,470 | 587 | 1,440 | 1,030 | 1,600 | 922 | 1,050 | 652 | 376 | 1,160 |
| 18 | 290 | 502 | 1,060 | 537 | 1,330 | 1,040 | 1,570 | 924 | 998 | *721 | 509 | 845 |
| 19 | 462 | 406 | 872 | 537 | 1,370 | 1,290 | 1,520 | 874 | *874 | 620 | 1,040 | 659 |
| 20 | 400 | *382 | 776 | 551 | 1,430 | 1,130 | 1,430 | 954 | 893 | 610 | 572 | 654 |
| 21 | 342 | 370 | 736 | 544 | 1,280 | 1,040 | 1,400 | 849 | 776 | 558 | 469 | 617 |
| 22 | 980 | 382 | 1,010 | 656 | 1,210 | 1,110 | 1,480 | 808 | 774 | 544 | 412 | 564 |
| 23 | 1,020 | 388 | 1,630 | *2,300 | 1,140 | 1,060 | 1,490 | *845 | 894 | 530 | 388 | 575 |
| 24 | 610 | 376 | 3,640 | 1,630 | 1,120 | 1,040 | 1,480 | 818 | 1,080 | 551 | 364 | 528 |
| 25 | *434 | 354 | 2,290 | 1,290 | 1,120 | 1,230 | 1,320 | 914 | 1,200 | 602 | 370 | 462 |
| 26 | 412 | 342 | 1,500 | 1,210 | *2,000 | 1,150 | 1,240 | 797 | 998 | 530 | *354 | 436 |
| 27 | 400 | 342 | 1,220 | 1,330 | 2,030 | 1,080 | 1,190 | 956 | 886 | 495 | 348 | 418 |
| 28 | 376 | 332 | 1,070 | 1,400 | 2,040 | 1,030 | 1,180 | 872 | 1,200 | 482 | 342 | 493 |
| 29 | 614 | 342 | 971 | 1,920 | - | 1,010 | 1,240 | 762 | 3,110 | 482 | 332 | 1,010 |
| 30 | 376 | 348 | 881 | 2,660 | ------- | 980 | 1,190 | 832 | 1,730 | 476 | 320 | 1,060 |
| 31 | 359 | ------- | *818 | 5,800 | ------- | 935 | ------- | 780 | ------- | 469 | 315 | ------- |
| Total | 12,011 | 11,516 | 30,109 | 34,571 | 73,370 | 40,575 | 73,460 | 30,197 | 35,135 | 21,901 | 13,099 | 16,520 |
| Mean | 387 | 384 | 971 | 1,115 | 2,620 | 1,309 | 2,449 | 974 | 1,171 | 706 | 423 | 551 |
| Cfsm | 0.888 | 0.881 | 2.23 | 2.56 | 6.01 | 3.00 | 5.62 | 2.23 | 2.69 | 1.62 | 0.970 | 1.26 |
| In. | 1.02 | 0.98 | 2.57 | 2.95 | 6.26 | 3.46 | 6.27 | 2.58 | 3.00 | 1.87 | 1.12 | 1.41 |

Calendar year 1956: Max 7,900 Min 191 Mean 863 Cfsm 1.98 In. 23.94
Water year 1956-57: Max 11,600 Min 191 Mean 1,075 Cfsm 2.47 In. 33.49

Peak discharge (base, 5,000 cfs).--Feb. 1 (10 a.m.) 11,500 cfs (8.36 ft); Apr. 5 (11 a.m.) 12,700 cfs (8.77 ft).

* Discharge measurement made on this day.

## Nantahala River near Rainbow Springs, N. C.

Location.--Lat 35°07'35", long 83°37'11", on right bank on Nantahala Forest Service road 300 ft upstream from Roaring Fork, 1,000 ft downstream from Buck Creek, and 5 miles downstream from town of Rainbow Springs, Macon County.

Drainage area.--51.9 sq mi.

Records available.--October 1940 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 3,072.97 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 195 cfs.

Extremes.--Maximum discharge during year, 4,860 cfs Jan. 31 (gage height, 8.15 ft); minimum, 46 cfs Sept. 7, 8 (gage height, 0.66 ft).

1940-57: Maximum discharge, 6,300 cfs June 16, 1949 (gage height, 9.70 ft), from rating curve extended above 3,000 cfs on basis of slope-area determination of peak flow; minimum, 33 cfs Nov. 18, 19, 1953 (gage height, 0.60 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good. Occasional regulation caused by fish trap.

Revisions (water years).--WSP 973: 1941(M).

Rating tables, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 15

| | | | |
|---|---|---|---|
| 0.6 | 37 | 1.5 | 242 |
| .8 | 70 | 2.0 | 426 |
| 1.0 | 111 | 2.3 | 550 |
| 1.2 | 157 | | |

Dec. 16 to Sept. 30

| | | | |
|---|---|---|---|
| 0.6 | 37 | 3.0 | 910 |
| 1.0 | 108 | 3.5 | 1,210 |
| 1.4 | 207 | 4.0 | 1,550 |
| 2.0 | 424 | 5.0 | 2,250 |
| 2.5 | 642 | 5.3 | 2,470 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 59 | 118 | b62 | 187 | 2,420 | 374 | 385 | 288 | 123 | 303 | 86 | 54 |
| 2 | 57 | 74 | b62 | 173 | 1,340 | 340 | 518 | 250 | 121 | 236 | 82 | 52 |
| 3 | 56 | 70 | 61 | 168 | *1,140 | 317 | 340 | 236 | 118 | 226 | 80 | 52 |
| 4 | 65 | 66 | *59 | 209 | 1,570 | 296 | 1,060 | 226 | *144 | 204 | 105 | 59 |
| 5 | 65 | 65 | 59 | 260 | 1,180 | 285 | 1,780 | 210 | 377 | 190 | 90 | 54 |
| 6 | 63 | 63 | 59 | 201 | 988 | *281 | 904 | 198 | 223 | 175 | *78 | 50 |
| 7 | 57 | 78 | 59 | 210 | 922 | 288 | 657 | 192 | 192 | 165 | 75 | 49 |
| 8 | 52 | *94 | 57 | 187 | 802 | 281 | 726 | 187 | 168 | 157 | 73 | 64 |
| 9 | 52 | 74 | 59 | 195 | 716 | 256 | 604 | 181 | 157 | 150 | 71 | 98 |
| 10 | 52 | 70 | 59 | 210 | 662 | 246 | 524 | 175 | 150 | 143 | 69 | *149 |
| 11 | *52 | 68 | 56 | 187 | 568 | 239 | 461 | 217 | 145 | 138 | 67 | 77 |
| 12 | 52 | 66 | 363 | 181 | 507 | 253 | 420 | 187 | 138 | 134 | 66 | 67 |
| 13 | 52 | 65 | 220 | 173 | 461 | 233 | 385 | 178 | 129 | 129 | 64 | 84 |
| 14 | 50 | 63 | 301 | 168 | 420 | 229 | 358 | *168 | 127 | 125 | 104 | 94 |
| 15 | 50 | 63 | 508 | *168 | 397 | 220 | 336 | 162 | 127 | 149 | 118 | 71 |
| 16 | 50 | 70 | 491 | 162 | 408 | 207 | 317 | 157 | 134 | *136 | 77 | 216 |
| 17 | 50 | 111 | 303 | 150 | 358 | 201 | 303 | 152 | 152 | 138 | 77 | 134 |
| 18 | 54 | 86 | 233 | b145 | 332 | 217 | 296 | 147 | 134 | 125 | 145 | 102 |
| 19 | 74 | 76 | 195 | b145 | 351 | 233 | *278 | 162 | 129 | 121 | 137 | 96 |
| 20 | 56 | 72 | 184 | b140 | 317 | 204 | 264 | 155 | 118 | 112 | 86 | 92 |
| 21 | 66 | 88 | 204 | 143 | 296 | 198 | 256 | 140 | 112 | 108 | 77 | 92 |
| 22 | 250 | 88 | 338 | 289 | 281 | 217 | 253 | 143 | 125 | 104 | 73 | 86 |
| 23 | 111 | 74 | 491 | 424 | 270 | 198 | 264 | 140 | 138 | 108 | 67 | 98 |
| 24 | 86 | 72 | 684 | 274 | 260 | 204 | 408 | 157 | 147 | 110 | 66 | 78 |
| 25 | 76 | 70 | 444 | 310 | 278 | 236 | 270 | 143 | 138 | 104 | 66 | 71 |
| 26 | 72 | 68 | 351 | 278 | 420 | 207 | 253 | 143 | 116 | 94 | 64 | 67 |
| 27 | 68 | 66 | 303 | 374 | 336 | 198 | 236 | 168 | 112 | 92 | 60 | 66 |
| 28 | 65 | b66 | 270 | 408 | 408 | 190 | 229 | 136 | 675 | 92 | 59 | 126 |
| 29 | 63 | 66 | 239 | 636 | - | 184 | 236 | 131 | 470 | 90 | 59 | 260 |
| 30 | 61 | 63 | 213 | 595 | ------- | 178 | 296 | 127 | 368 | 94 | 57 | 168 |
| 31 | 61 | ------- | 201 | 2,300 | ------- | 173 | ------- | 125 | ------- | 94 | 55 | ------- |
| Total | 2,097 | 2,233 | 7,188 | 9,650 | 18,408 | 7,383 | 13,617 | 5,381 | 5,507 | 4,386 | 2,453 | 2,826 |
| Mean | 67.6 | 74.4 | 232 | 311 | 657 | 238 | 454 | 174 | 184 | 141 | 79.1 | 94.2 |
| Cfsm | 1.30 | 1.43 | 4.47 | 5.99 | 12.66 | 4.59 | 8.75 | 3.35 | 3.55 | 2.72 | 1.52 | 1.82 |
| In. | 1.50 | 1.60 | 5.15 | 6.91 | 13.19 | 5.29 | 9.76 | 3.86 | 3.95 | 3.13 | 1.76 | 2.03 |

Calendar year 1956: Max 875 Min 48 Mean 183 Cfsm 3.53 In. 47.94
Water year 1956-57: Max 2,420 Min 49 Mean 222 Cfsm 4.28 In. 58.13

Peak discharge (base, 1,500 cfs).--Jan. 31 (9 p.m.) 4,860 cfs (8.15 ft); Feb. 4 (4:30 a.m.) 1,870 cfs (4.46 ft); Apr. 5 (4:30 a.m.) 2,470 cfs (5.30 ft); June 28 (5:30 p.m.) 2,010 cfs (4.66 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Nantahala River at Nantahala, N. C.

Location.--Lat 35°17'55", long 83°39'22", on left bank on U. S. Highway 19, 1 mile northeast of Nantahala, Swain County, 2.3 miles downstream from Rowlin Creek, and 2.6 miles downstream from Nantahala Dam powerhouse.

Drainage area.--144 sq mi.

Records available.--May 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,894.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 484 cfs (adjusted for stroage).

Extremes.--Maximum discharge during year, 4,320 cfs Jan. 31 (gage height, 6.41 ft); minimum, 23 cfs Oct. 15 (gage height, 1.27 ft); minimum daily, 25 cfs Oct. 7.
1942-57: Maximum discharge, 7,510 cfs Feb. 10, 1946 (gage height, 8.15 ft); minimum, 16 cfs Nov. 9, 1953 (gage height, 1.19 ft); minimum daily, 17 cfs Nov. 8, 16, 1952, Oct. 25, 1953.

Remarks.--Records excellent. Flow regulated by Nantahala Lake (see p. 224) and Queens Creek Lake (capacity, about 300 cfs-days).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.3 | 25 | 3.0 | 558 |
| 1.4 | 35 | 3.5 | 885 |
| 1.7 | 77 | 4.0 | 1,260 |
| 2.0 | 140 | 4.5 | 1,740 |
| 2.5 | 302 | 5.1 | 2,440 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 590 | 608 | 592 | 214 | 2,000 | 802 | 684 | 750 | 618 | 685 | 620 | 68 |
| 2 | 608 | 94 | 306 | 392 | 1,170 | 782 | 730 | 750 | 72 | 672 | 620 | 31 |
| 3 | 600 | 27 | 616 | 431 | 838 | 770 | 698 | 750 | 628 | 652 | 608 | 443 |
| 4 | 614 | 26 | 626 | 292 | 936 | 756 | 804 | 744 | 735 | 279 | 224 | 609 |
| 5 | 614 | 28 | 618 | 313 | 824 | 750 | 2,050 | 724 | 986 | 270 | 608 | 620 |
| 6 | 80 | 28 | 455 | 280 | 795 | 501 | 1,850 | 730 | 892 | 90 | 589 | 588 |
| 7 | 25 | 30 | 592 | 176 | 667 | 575 | 1,360 | 730 | 843 | 64 | 608 | 80 |
| 8 | 564 | 328 | 59 | 368 | 698 | 538 | 1,740 | 730 | 802 | 492 | 601 | 30 |
| 9 | 478 | 594 | 382 | 69 | 1,060 | 565 | 1,220 | 730 | 796 | 626 | 608 | 459 |
| 10 | 614 | 150 | 583 | 248 | 1,020 | 149 | 1,020 | 730 | 782 | 633 | 608 | *464 |
| 11 | 614 | 26 | 633 | 344 | 948 | 616 | 878 | 737 | 776 | 626 | 41 | 490 |
| 12 | 608 | 392 | 414 | 86 | 892 | 763 | 892 | 602 | 738 | 626 | 358 | 512 |
| 13 | 160 | 320 | 440 | 53 | 850 | 789 | 892 | 724 | 763 | 209 | 614 | 450 |
| 14 | 91 | 192 | 160 | 442 | 815 | 802 | 871 | 724 | 756 | 51 | 579 | 486 |
| 15 | 438 | 168 | 195 | 456 | 802 | 796 | 850 | 724 | 750 | 92 | 604 | 388 |
| 16 | 300 | 310 | 164 | 480 | 808 | 608 | 829 | 724 | 750 | *123 | 608 | 501 |
| 17 | 568 | 404 | 223 | 478 | 782 | 599 | 802 | 724 | 744 | 91 | 590 | 466 |
| 18 | 302 | 36 | *434 | 454 | 756 | 578 | 789 | 730 | 744 | 91 | 246 | 596 |
| 19 | *256 | *390 | 449 | 624 | 770 | 770 | 763 | 718 | 737 | 77 | 526 | 532 |
| 20 | 98 | 407 | 464 | 229 | 750 | 763 | 730 | 770 | 737 | 54 | 626 | 640 |
| 21 | 30 | 427 | 460 | 465 | 744 | 617 | 756 | 730 | 730 | 55 | 602 | 614 |
| 22 | 452 | 431 | 345 | 76 | 744 | 700 | 763 | 730 | 730 | 53 | 614 | 552 |
| 23 | 572 | 472 | 194 | 505 | 744 | 692 | 759 | *724 | *500 | 53 | *338 | 635 |
| 24 | 626 | 399 | 387 | 343 | 744 | 698 | 796 | 746 | 706 | 466 | 207 | 544 |
| 25 | 620 | 582 | 176 | 462 | 744 | 704 | 770 | 430 | 604 | 592 | 166 | 640 |
| 26 | 460 | 396 | 487 | 318 | 770 | 704 | 763 | 730 | 718 | 603 | 614 | 640 |
| 27 | 570 | 429 | 272 | 204 | 750 | 698 | 756 | 796 | 674 | 484 | 614 | 640 |
| 28 | 174 | 440 | 406 | 231 | 815 | 692 | 763 | 756 | 672 | 89 | 614 | 666 |
| 29 | 182 | 526 | 342 | 610 | - | 698 | 763 | 744 | 782 | 562 | 584 | 330 |
| 30 | 208 | 427 | 77 | *648 | ------- | 666 | *756 | 737 | 711 | 626 | 614 | 458 |
| 31 | 233 | ------- | 200 | 2,390 | ------- | 366 | ------- | 566 | ------- | 626 | 614 | ------- |
| Total | 12,349 | 9,087 | 11,751 | 12,681 | 24,236 | 20,507 | 28,097 | 22,234 | 21,476 | 10,712 | 16,067 | 14,172 |
| Mean | 398 | 303 | 379 | 409 | 866 | 662 | 937 | 717 | 716 | 346 | 518 | 472 |
| (†) | -7,300 | -4,400 | +4,900 | +10,800 | +23,400 | -1,600 | +1,900 | -8,200 | -6,000 | -700 | -9,200 | -7,100 |

Adjusted for change in contents in Nantahala Lake

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 163 | 156 | 537 | 757 | 1,701 | 610 | 1,000 | 453 | 516 | 323 | 222 | 236 |
| Cfsm | 1.13 | 1.08 | 3.73 | 5.26 | 11.81 | 4.24 | 6.94 | 3.15 | 3.58 | 2.24 | 1.54 | 1.64 |
| In. | 1.30 | 1.21 | 4.30 | 6.06 | 12.30 | 4.88 | 7.75 | 3.62 | 4.00 | 2.59 | 1.77 | 1.83 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 1,140 | Min 23 | Mean 376 | Mean 437 | Cfsm 3.03 | In. 41.29 |
| Water year 1956-57: | Max 2,390 | Min 25 | Mean 557 | Mean 548 | Cfsm 3.81 | In. 51.61 |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nantahala Lake; furnished by Tennessee Valley Authority.

## Tuckasegee River at Tuckasegee, N. C.

Location.--Lat 35°16'55", long 83°07'37", on right bank 0.9 mile north of Tuckasegee, Jackson County, and 1.0 mile downstream from West Fork Tuckasegee River.

Drainage area.--143 sq mi.

Records available.--June 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,125.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 385 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 7,630 cfs Apr. 4 (gage height, 9.90 ft); minimum, 5.8 cfs Oct. 7, 8, 14, 15 (gage height, 0.56 ft); minimum daily, 6.4 cfs Oct. 7. 1934-57: Maximum discharge, 40,800 cfs Aug. 30, 1940 (gage height, 21.1 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of slope-area determinations at gage heights 14.3 and 21.1 ft; minimum, 5.2 cfs Sept. 3, 1956 (gage height, 0.54 ft); minimum daily, that of Oct. 7, 1956.

Remarks.--Records excellent. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 224,229).

Revisions (water years).--WSP 823: Drainage area. WSP 1053: 1943.

Rating table, water year 1956-57 (gage height, in feet) and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.5 | 4.0 | 2.5 | 605 |
| .6 | 7.0 | 3.0 | 940 |
| .8 | 21 | 3.5 | 1,320 |
| 1.0 | 44 | 4.0 | 1,710 |
| 1.3 | 95 | 5.0 | 2,550 |
| 1.6 | 177 | 6.0 | 3,450 |
| 2.0 | 340 | 6.4 | 3,820 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 153 | *249 | 160 | 96 | 1,670 | 950 | 648 | 561 | 437 | 317 | *357 | 53 |
| 2 | *162 | 33 | 92 | 180 | 1,160 | 666 | 895 | 807 | 300 | 308 | 414 | 18 |
| 3 | 160 | 22 | 209 | *180 | 929 | 632 | 791 | 771 | 522 | 628 | 260 | *261 |
| 4 | 158 | 20 | 252 | 131 | 928 | 626 | 2,480 | 807 | 293 | 142 | 214 | 248 |
| 5 | 162 | 76 | 252 | 50 | 815 | 609 | 3,790 | 800 | 696 | 428 | 438 | 328 |
| 6 | 30 | 196 | *186 | 79 | 802 | 716 | 1,640 | *800 | *212 | 108 | 393 | 349 |
| 7 | 6.4 | 476 | 250 | 100 | 808 | 768 | 1,210 | 670 | 482 | 44 | 314 | 46 |
| 8 | 156 | 612 | 21 | 155 | 690 | 628 | 1,180 | 630 | 726 | 522 | 359 | 19 |
| 9 | 83 | 726 | 150 | 29 | 648 | 608 | 1,070 | 640 | 446 | 588 | 384 | 476 |
| 10 | 147 | 600 | 235 | 122 | 668 | 616 | 919 | 588 | 642 | 439 | 261 | 411 |
| 11 | 168 | 502 | 252 | 124 | 667 | 577 | 1,020 | 379 | 788 | 372 | 42 | 322 |
| 12 | 160 | 532 | 192 | 40 | 645 | 592 | *940 | 317 | 814 | *560 | 264 | 289 |
| 13 | 18 | 277 | 156 | 38 | 620 | 466 | 910 | 702 | 814 | 70 | 358 | 319 |
| 14 | 16 | 92 | 97 | 188 | 612 | 534 | 752 | 800 | 772 | 31 | 341 | 212 |
| 15 | 170 | 78 | 102 | 190 | 560 | 497 | 933 | 800 | 683 | 524 | 360 | 166 |
| 16 | 18 | 132 | 104 | 198 | 550 | 546 | 874 | 807 | 312 | 256 | 565 | 542 |
| 17 | 526 | 30 | 100 | 202 | 550 | 82 | 924 | 793 | 414 | 459 | 261 | 430 |
| 18 | 542 | 26 | 200 | 198 | 412 | 516 | 544 | 793 | 347 | 366 | 120 | 584 |
| 19 | 526 | 252 | 185 | 196 | 90 | 530 | 830 | 800 | 378 | 280 | 520 | 698 |
| 20 | 516 | 448 | 201 | 98 | 82 | 493 | 814 | 424 | 308 | 210 | 481 | 558 |
| 21 | 501 | 72 | 136 | 200 | 222 | *549 | 890 | 42 | 516 | 39 | 342 | 243 |
| 22 | 852 | 175 | 59 | 60 | 220 | 678 | 316 | 217 | 349 | 101 | 281 | 228 |
| 23 | 436 | 482 | *126 | 115 | 62 | 316 | 221 | 323 | 472 | 298 | 284 | 373 |
| 24 | 226 | 588 | 235 | 153 | 368 | 92 | 362 | 364 | 596 | 439 | 32 | 342 |
| 25 | 260 | 136 | 122 | 572 | 540 | 398 | 206 | 52 | 262 | 278 | 106 | 360 |
| 26 | 186 | 163 | 218 | 660 | 1,010 | 375 | 441 | 50 | 357 | 252 | 400 | 438 |
| 27 | 226 | 168 | 104 | 546 | 692 | 64 | 356 | 340 | 521 | 420 | 382 | 500 |
| 28 | 110 | 171 | 172 | 550 | 980 | 198 | 218 | 338 | 793 | 108 | 338 | 490 |
| 29 | 214 | 206 | 168 | 551 | - | 236 | 132 | 348 | 842 | 344 | 360 | 577 |
| 30 | 104 | 159 | 46 | 752 | ------- | 60 | 458 | 48 | 554 | 415 | 447 | 676 |
| 31 | 218 | ------- | 100 | 1,130 | ------- | 60 | ------- | 292 | ------- | 422 | 252 | ------- |
| Total | 7,210.4 | 7,699 | 4,882 | 7,883 | 18,000 | 14,678 | 26,764 | 16,103 | 15,648 | 9,761 | 9,930 | 10,556 |
| Mean | 233 | 257 | 157 | 254 | 643 | 473 | 892 | 519 | 522 | 315 | 320 | 352 |
| (†) | -1,734 | -3,459 | +7,160 | +5,366 | +7,349 | +2,168 | +6,233 | -3,477 | +1,398 | -2,501 | -4,790 | -3,527 |

Adjusted for change in lake contents

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 177 | 141 | 388 | 427 | 905 | 543 | 1,100 | 407 | 568 | 234 | 166 | 234 |
| Cfsm | 1.24 | 0.986 | 2.71 | 2.99 | 6.33 | 3.80 | 7.69 | 2.85 | 3.97 | 1.64 | 1.16 | 1.64 |
| In. | 1.42 | 1.10 | 3.13 | 3.45 | 6.59 | 4.38 | 8.58 | 3.28 | 4.43 | 1.89 | 1.34 | 1.83 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 1,080 | Min 6.4 | Mean 277 | Mean 306 | Cfsm 2.14 | In. 29.09 |
| Water year 1956-57: | Max 3,790 | Min 6.4 | Mean 409 | Mean 436 | Cfsm 3.05 | In. 41.42 |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Thorpe, Cedar Cliff, Bear Creek and Tennessee Creek project Lakes; furnished by Tennessee Valley Authority and Nantahala Power and Light Co.

## Scott Creek above Sylva, N. C.

Location.--Lat 35°23'02", long 83°12'51", on right bank 800 ft downstream from Allens Branch, 3,500 ft upstream from Cope Creek, and 0.8 mile upstream from Sylva, Jackson County.

Drainage area.--50.7 sq mi.

Records available.--June 1941 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 2,056.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--16 years, 105 cfs.

Extremes.--Maximum discharge during year, 2,320 cfs Jan. 31 (gage height, 7.39 ft); minimum, 40 cfs Oct. 17 (gage height, 1.84 ft).

1941-57: Maximum discharge, that of Jan. 31, 1957; minimum, 8.0 cfs Sept. 22, 23, 1941 (gage height, 1.30 ft); minimum daily, 22 cfs Sept. 19, 29, 30, Oct. 4, 1954.

Maximum stage known, 8.6 ft Aug. 30, 1940, from floodmarks (discharge, 3,200 cfs, from rating curve extended above 1,800 cfs by logarithmic plotting).

Remarks.--Records good except those for period of ice effect, which are fair.

Revisions (water years).--WSP 1053: 1942-44(M).

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.8 | 35 | 3.5 | 500 | 2.0 | 35 | 3.5 | 396 |
| 2.0 | 61 | 4.0 | 700 | 2.2 | 60 | 4.0 | 613 |
| 2.2 | 94 | 4.5 | 900 | 2.4 | 91 | 4.5 | 861 |
| 2.4 | 133 | 5.0 | 1,120 | 2.7 | 151 | 5.0 | 1,100 |
| 2.7 | 207 | 5.3 | 1,260 | 3.0 | 231 | 5.6 | 1,370 |
| 3.0 | 303 | | | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47 | *71 | 48 | 105 | 1,370 | *237 | 161 | 166 | 142 | 123 | *62 | 43 |
| 2 | *45 | 57 | 48 | 98 | *832 | 209 | 198 | 166 | 140 | 111 | 68 | 43 |
| 3 | 46 | 54 | 48 | *98 | *647 | 195 | 151 | 171 | 133 | 107 | 68 | *43 |
| 4 | 47 | 53 | 48 | 111 | 608 | 187 | 587 | 164 | 178 | 102 | 74 | 54 |
| 5 | 48 | 51 | 48 | 121 | 633 | 181 | 901 | 149 | 478 | 100 | 68 | 46 |
| 6 | 47 | 50 | *47 | 105 | 712 | 179 | 454 | *144 | *261 | 96 | 57 | 43 |
| 7 | 45 | 54 | 47 | 109 | 628 | 190 | 357 | 140 | 206 | 93 | 55 | 42 |
| 8 | 43 | 75 | 47 | 98 | 524 | 184 | 400 | 136 | 187 | 89 | 54 | 46 |
| 9 | 43 | 57 | 47 | 98 | 463 | 168 | 333 | 133 | 171 | 88 | 54 | 54 |
| 10 | 43 | 54 | 47 | 105 | 415 | 161 | 300 | 131 | 164 | 86 | 52 | 132 |
| 11 | 43 | 53 | 47 | 96 | *367 | 158 | 274 | 168 | 156 | 86 | 51 | 54 |
| 12 | 42 | 51 | 169 | 94 | 333 | 166 | *258 | 138 | 144 | *75 | 50 | 50 |
| 13 | 42 | 50 | 113 | 92 | 306 | 156 | 243 | 131 | 136 | 75 | 51 | 46 |
| 14 | 42 | 48 | 200 | 89 | 287 | 154 | 228 | 129 | 138 | 75 | 54 | 60 |
| 15 | 41 | 47 | 307 | 91 | 267 | 147 | 220 | 127 | 131 | 94 | 57 | 57 |
| 16 | 41 | 54 | 259 | 87 | 280 | 142 | 206 | 123 | 131 | 88 | 52 | 154 |
| 17 | 40 | 94 | 165 | 80 | 243 | 138 | 198 | 226 | 154 | 104 | 59 | 86 |
| 18 | 63 | 69 | 133 | b71 | 225 | 149 | 195 | 174 | 125 | 113 | 87 | 72 |
| 19 | 74 | 61 | 115 | b77 | 231 | 151 | 187 | 174 | 129 | 86 | 149 | 64 |
| 20 | 48 | 58 | 107 | b77 | 211 | 136 | 181 | 164 | 119 | 77 | 60 | 66 |
| 21 | 53 | 63 | 107 | 86 | 198 | 136 | 176 | 142 | 111 | 75 | 52 | 63 |
| 22 | 218 | 64 | 162 | 135 | 190 | 151 | 198 | 154 | 109 | 80 | 50 | 59 |
| 23 | 104 | 55 | *239 | 436 | 181 | 136 | 181 | 140 | 121 | 74 | 46 | 69 |
| 24 | 75 | 55 | 408 | 191 | 176 | 144 | 200 | 181 | 129 | 85 | 47 | 55 |
| 25 | 66 | 54 | 228 | 188 | 179 | 156 | 171 | 142 | 119 | 70 | 47 | 48 |
| 26 | 61 | 54 | 183 | 165 | 211 | 138 | *161 | 147 | 107 | 69 | 54 | 47 |
| 27 | 58 | 53 | 158 | 256 | 181 | 138 | 156 | 174 | 102 | 68 | *46 | 46 |
| 28 | 55 | 51 | 144 | 247 | 264 | 133 | 158 | 142 | 181 | 66 | *47 | 60 |
| 29 | 53 | 51 | 129 | 293 | - | 129 | 164 | 136 | 147 | 64 | 47 | 66 |
| 30 | 53 | 50 | 119 | 263 | ------- | 127 | 154 | 140 | 147 | 64 | 47 | 55 |
| 31 | 53 | ------- | 115 | 1,240 | ------- | 125 | ------- | 136 | ------- | 63 | 45 | ------- |
| Total | 1,779 | 1,711 | 4,082 | 5,402 | 11,162 | 4,901 | 7,751 | 4,688 | 4,696 | 2,646 | 1,810 | 1,823 |
| Mean | 57.4 | 57.0 | 132 | 174 | 399 | 158 | 258 | 151 | 157 | 85.4 | 58.4 | 6.08 |
| Cfsm | 1.13 | 1.12 | 2.60 | 3.43 | 7.87 | 3.12 | 5.09 | 2.98 | 3.10 | 1.68 | 1.15 | 1.20 |
| In. | 1.30 | 1.26 | 2.99 | 3.96 | 8.19 | 3.60 | 5.69 | 3.44 | 3.44 | 1.94 | 1.33 | 1.34 |

Calendar year 1956: Max 461 Min 32 Mean 103 Cfsm 2.03 In. 27.64
Water year 1956-57: Max 1,370 Min 40 Mean 144 Cfsm 2.84 In. 38.48

Peak discharge (base, 900 cfs).--Jan. 23 (6 a.m.) 932 cfs (4.58 ft); Jan. 31 (8 p.m.) 2,320 cfs (7.39 ft); Feb. 5 (11 p.m.) 991 cfs (4.77 ft); Apr. 5 (3:30 a.m.) 1,290 cfs (5.44 ft); May 17 (7:30 p.m.) 1,210 cfs (5.25 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Tuckasegee River at Dillsboro, N. C.

Location.--Lat 35°21'59", long 83°15'38", on left bank 0.4 mile downstream from Scott Creek and 0.5 mile downstream from U. S. Highway 23 at Dillsboro, Jackson County.

Drainage area.--347 sq mi.

Records available.--June 1928 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,950.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 24, 1934, staff gage at site below Scott Creek 0.4 mile upstream at datum 7.27 ft higher.

Average discharge.--29 years, 753 cfs (unadjusted).

Extremes.--Maximum discharge during year, 13,200 cfs Apr. 5 (gage height, 11.54 ft); minimum, 103 cfs Dec. 6 (gage height, 1.96 ft); minimum daily, 155 cfs Oct. 14.
1928-57: Maximum discharge, 52,600 cfs Aug. 30, 1940 (gage height, 21.96 ft, from floodmarks), from rating curve extended above 8,400 cfs on basis of slope-area determination and computation of peak flow over dam; minimum, 35 cfs Sept. 17, 1953 (gage height, 1.60 ft); minimum daily, 107 cfs Sept. 19, 1954.

Remarks.--Records excellent. Considerable diurnal fluctuation caused by Dillsboro power-plant 0.7 miles above station. Flow partly regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 224,229).

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 4

| | | | |
|---|---|---|---|
| 2.1 | 138 | 5.0 | 2,000 |
| 2.2 | 167 | 6.0 | 3,050 |
| 2.4 | 235 | 7.0 | 4,340 |
| 2.7 | 360 | 8.0 | 5,860 |
| 3.0 | 500 | 9.0 | 7,610 |
| 3.5 | 790 | 9.7 | 9,000 |
| 4.0 | 1,140 | | |

Apr. 5 to Sept. 30

| | | | |
|---|---|---|---|
| 2.2 | 159 | 3.0 | 478 |
| 2.4 | 218 | 3.5 | 780 |
| 2.7 | 333 | 4.0 | 1,140 |

Note.--Same as preceding table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 219 | *491 | 328 | 438 | 6,400 | 2,140 | 958 | 1,110 | 895 | 760 | *620 | 343 |
| 2 | *318 | 320 | 330 | 478 | 4,040 | 1,540 | 1,720 | 1,350 | 741 | 709 | 659 | 178 |
| 3 | 324 | 216 | 324 | 478 | 2,940 | 1,420 | 1,340 | 1,310 | 948 | 883 | 542 | *332 |
| 4 | 325 | 201 | 428 | 496 | 2,840 | 1,360 | 3,510 | 1,330 | 737 | 687 | 434 | 427 |
| 5 | 372 | 268 | 423 | 534 | *2,580 | 1,310 | *8,890 | 1,300 | 2,610 | 610 | 672 | 480 |
| 6 | 310 | 200 | *352 | 436 | 2,690 | *1,330 | 3,860 | *1,270 | *1,240 | 612 | 598 | 506 |
| 7 | 186 | 670 | 414 | *422 | 2,780 | 1,430 | 2,640 | 1,230 | 1,130 | 369 | 479 | 316 |
| 8 | 204 | 784 | 286 | 450 | 2,380 | 1,350 | 2,560 | 988 | 1,330 | 636 | 576 | 174 |
| 9 | 307 | 897 | 204 | 436 | 2,200 | 1,210 | 2,450 | 1,080 | 1,140 | 918 | 566 | 454 |
| 10 | 225 | 815 | 396 | 413 | 2,130 | 1,180 | 2,010 | 1,030 | 1,060 | 788 | 457 | 892 |
| 11 | 314 | 672 | 414 | 432 | 1,900 | 1,140 | 1,990 | 1,030 | 1,270 | 562 | 340 | 541 |
| 12 | 309 | 658 | 754 | 426 | 1,740 | 1,160 | 1,930 | 801 | 1,270 | *896 | 348 | 476 |
| 13 | 265 | 591 | 556 | 342 | 1,620 | 1,150 | 1,740 | 1,040 | 1,280 | 469 | 528 | 499 |
| 14 | 155 | 314 | 712 | 393 | 1,530 | 925 | 1,590 | 1,210 | 1,270 | 338 | 559 | 470 |
| 15 | 194 | 250 | 920 | 496 | 1,430 | 1,030 | 1,680 | 1,210 | 1,190 | 657 | 632 | 380 |
| 16 | 264 | 258 | 982 | 494 | 1,440 | 1,050 | 1,600 | 1,190 | 794 | 666 | 640 | 978 |
| 17 | 403 | 378 | 646 | 482 | 1,350 | 717 | 1,620 | 1,330 | 972 | 790 | 608 | 851 |
| 18 | 771 | 291 | 539 | 452 | 1,240 | 842 | 1,320 | 1,300 | 821 | 724 | 472 | 769 |
| 19 | 819 | 280 | 556 | 450 | 861 | 1,140 | 1,450 | 1,290 | 870 | 526 | 1,010 | 920 |
| 20 | 694 | 694 | 520 | 408 | 794 | 1,020 | 1,440 | 1,100 | 742 | 667 | 834 | 906 |
| 21 | 690 | 357 | 527 | 447 | 764 | 922 | 1,490 | 501 | 824 | 338 | 490 | 484 |
| 22 | 1,580 | 340 | 630 | 514 | 994 | 1,250 | 1,190 | 624 | 845 | 362 | 582 | 466 |
| 23 | 922 | 538 | 818 | 1,020 | 680 | 800 | 893 | 649 | 831 | 515 | 406 | 625 |
| 24 | 504 | 760 | 1,660 | 696 | 832 | 707 | 920 | 1,060 | 1,100 | 656 | 400 | 562 |
| 25 | 495 | 447 | 938 | 890 | 1,100 | 860 | 878 | 548 | 701 | 616 | 263 | 515 |
| 26 | 412 | 345 | 766 | 1,100 | 1,740 | 914 | 936 | 482 | 684 | 511 | 437 | 604 |
| 27 | 465 | 358 | 704 | 1,300 | 1,380 | 614 | 942 | 726 | 910 | 546 | 666 | 672 |
| 28 | 346 | 360 | 560 | 1,250 | 1,900 | 662 | 892 | 771 | 1,220 | 568 | 520 | 625 |
| 29 | 312 | 392 | 612 | 1,460 | - | 691 | 674 | 766 | 1,350 | 494 | 531 | 871 |
| 30 | 414 | 342 | 494 | 1,870 | ------- | 530 | 982 | 596 | 1,140 | 548 | 608 | 888 |
| 31 | 309 | ------- | 448 | 5,130 | ------- | 510 | ------- | 484 | ------- | 780 | 434 | ------- |
| Total | 13,427 | 13,487 | 18,241 | 24,633 | 54,255 | 32,904 | 56,095 | 30,706 | 31,915 | 19,201 | 16,911 | 17,204 |
| Mean | 433 | 450 | 588 | 795 | 1,938 | 1,061 | 1,870 | 991 | 1,064 | 619 | 546 | 573 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 3,380 Min 143 Mean 641 Cfsm 1.85 In. 25.14
Water year 1956-57: Max 8,890 Min 155 Mean 901 Cfsm 2.60 In. 35.26

Peak discharge (base, 4,500 cfs).--Jan. 31 (11:30 p.m.) 9,420 cfs (9.90 ft); Apr. 5 (1:30 a.m.) 13,200 cfs (11.54 ft).
* Discharge measurement made on this day.

## Oconaluftee River at Birdtown, N. C.

Location.--Lat 35°27'42", long 83°21'13", on right bank 200 ft upstream from county bridge, 0.5 mile south of Birdtown, Swain County, 0.6 mile downstream from Adams Creek, 0.6 mile upstream from Goose Creek, and 2.2 miles southwest of Cherokee.

Drainage area.--184 sq mi.

Records available.--July 1945 to September 1946, July 1948 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,843.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 10, 1945, to Sept. 30, 1946, staff gage at same site and datum.

Average discharge.--10 years, 501 cfs.

Extremes.--Maximum discharge during year, 11,600 cfs Jan. 31 (gage height, 10.10 ft); minimum, 110 cfs Sept. 7, 8 (gage height, 0.81 ft).
1945-46, 1948-57: Maximum discharge, 15,000 cfs Jan. 7, 1946 (gage height, 12.0 ft, from floodmarks), from rating curve extended above 8,300 cfs on basis of computation of peak flow over dam; minimum, 80 cfs Oct. 19, 1954 (gage height, 0.66 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good.

Rating table, water year 1956-57, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 107 | 3.0 | 1,440 |
| 1.0 | 169 | 4.0 | 2,420 |
| 1.2 | 240 | 7.0 | 6,450 |
| 1.5 | 370 | 7.4 | 7,090 |
| 2.0 | 665 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 163 | 339 | 163 | 395 | 6,950 | 728 | 448 | 791 | 348 | 487 | 176 | 125 |
| 2 | 153 | 240 | 159 | b345 | 4,310 | 632 | 652 | 646 | 348 | 410 | 166 | 122 |
| 3 | 159 | 203 | 159 | b320 | 2,740 | 587 | 511 | 600 | 348 | 370 | 163 | 122 |
| 4 | *169 | 189 | 159 | 356 | 3,040 | *554 | 1,770 | 554 | 415 | 338 | 277 | 150 |
| 5 | 172 | 179 | 159 | 493 | 2,840 | 535 | 3,960 | 505 | 910 | 316 | 352 | *134 |
| 6 | 163 | 172 | 159 | 405 | 2,870 | 529 | 1,930 | 475 | 721 | 294 | 222 | 119 |
| 7 | 147 | 172 | 159 | 405 | 2,510 | 587 | 1,350 | 448 | 574 | 272 | 183 | 113 |
| 8 | 137 | 225 | 156 | *375 | 2,140 | 620 | 1,570 | 436 | 481 | 260 | *169 | 113 |
| 9 | 134 | 193 | 156 | 370 | 2,560 | 542 | 1,530 | 410 | 448 | 248 | 163 | 128 |
| 10 | 131 | 172 | 156 | 448 | 2,200 | 511 | 1,270 | *395 | 415 | 244 | 153 | 298 |
| 11 | 128 | 169 | *150 | 415 | 1,760 | 517 | *1,110 | 453 | 395 | *229 | 147 | 189 |
| 12 | 128 | 166 | 532 | 380 | 1,420 | 646 | 985 | 415 | 370 | 218 | 140 | 176 |
| 13 | 125 | 163 | 763 | 366 | 1,220 | 632 | 880 | 390 | 348 | 214 | 153 | 150 |
| 14 | 122 | *159 | 988 | 348 | 1,050 | 606 | 791 | 380 | 356 | 218 | 150 | 361 |
| 15 | 119 | 156 | 1,780 | 343 | 925 | 587 | 721 | 385 | 316 | 264 | 207 | 233 |
| 16 | 116 | 232 | 1,430 | 330 | 902 | 535 | 665 | 361 | 312 | 244 | 183 | 811 |
| 17 | 116 | 361 | 805 | b300 | 777 | 511 | 632 | 356 | *374 | 264 | 191 | 453 |
| 18 | 147 | 302 | 600 | b245 | 707 | 511 | 600 | 395 | 343 | 294 | 414 | 338 |
| 19 | 200 | 248 | 487 | b260 | 707 | 626 | 568 | 460 | 348 | 244 | 514 | 294 |
| 20 | 143 | 225 | 431 | b290 | 707 | 523 | 535 | 470 | 316 | 214 | 260 | 264 |
| 21 | 143 | 225 | 442 | 294 | 626 | 493 | 523 | 380 | 280 | 203 | 210 | 252 |
| 22 | 507 | 256 | 561 | 472 | 587 | 529 | 529 | 395 | 307 | 260 | 189 | 225 |
| 23 | 356 | 210 | 1,040 | 3,160 | 561 | 499 | 548 | 375 | 316 | 203 | 169 | 240 |
| 24 | 248 | 203 | 2,040 | 1,170 | 542 | 487 | 665 | 370 | 380 | 340 | 159 | 214 |
| 25 | 207 | 189 | 1,170 | 955 | *535 | 587 | 523 | 366 | 539 | 233 | 156 | 183 |
| 26 | 193 | 189 | 865 | 798 | 600 | 517 | 487 | 343 | 356 | 203 | 193 | 169 |
| 27 | 189 | 183 | 700 | 1,220 | 561 | 493 | 458 | 582 | 312 | 193 | 159 | 166 |
| 28 | 172 | 169 | 594 | 1,340 | 679 | 464 | 548 | 420 | 676 | 186 | 147 | 223 |
| 29 | 166 | 179 | 535 | 1,570 | - | 448 | 517 | 366 | 1,200 | 179 | 140 | 410 |
| 30 | 163 | 169 | 464 | 1,680 | ------- | 431 | 697 | 352 | 561 | 179 | 134 | 284 |
| 31 | 159 | ------- | 420 | 6,690 | ------- | 415 | ------- | 361 | ------- | 196 | 128 | ------- |
| Total | 5,375 | 6,237 | 18,382 | 26,538 | 47,026 | 16,882 | 27,973 | 13,635 | 13,413 | 8,017 | 6,167 | 7,059 |
| Mean | 173 | 208 | 593 | 856 | 1,680 | 545 | 932 | 440 | 447 | 259 | 199 | 235 |
| Cfsm | 0.940 | 1.13 | 3.22 | 4.65 | 9.13 | 2.96 | 5.07 | 2.39 | 2.43 | 1.41 | 1.08 | 1.28 |
| In. | 1.09 | 1.26 | 3.72 | 5.36 | 9.50 | 3.41 | 5.65 | 2.76 | 2.71 | 1.62 | 1.25 | 1.43 |

Calendar year 1956: Max 3,880 Min 116 Mean 493 Cfsm 2.68 In. 36.44
Water year 1956-57: Max 6,950 Min 113 Mean 539 Cfsm 2.93 In. 39.76

Peak discharge (base, 4,000 cfs).--Jan. 23 (6 a.m.) 7,410 cfs (7.60 ft); Jan. 31 (9 p.m.) 11,600 cfs (10.10 ft); Apr. 5 (7 a.m.) 5,360 cfs (6.27 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Tuckasegee River at Bryson City, N. C.

Location.--Lat 35°25'40", long 83°26'50", on left bank 400 ft downstream from bridge on State Highway 288 at Bryson City, Swain County, and 0.6 mile downstream from Deep Creek.

Drainage area.--655 sq mi.

Records available.--November 1897 to September 1957 in reports of Geological Survey. Records prior to October 1913 revised in Tennessee Division of Geology Bulletin 34 and North Carolina Department of Conservation and Development Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,716.54 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Nov. 7, 1897, to Feb. 2, 1914, and May 18, 1920, to June 27, 1927, staff gages at bridge 400 ft upstream at same datum. Feb. 3, 1914, to May 17, 1920, water-stage recorder at site 200 ft upstream at same datum.

Average discharge.--59 years (1898-1957), 1,565 cfs (unadjusted).

Extremes.--Maximum discharge during year, 30,000 cfs Jan. 31 (gage height, 11.11 ft); minimum, 272 cfs Sept. 8 (gage height, 0.68 ft); minimum daily, 308 cfs Oct. 15.

1897-1957: Maximum discharge, 61,600 cfs Aug. 30, 1940 (gage height, 15.96 ft), from rating curve extended above 25,000 cfs on basis of logarithmic plotting and slope-area determination of peak flow; minimum, 27 cfs Sept. 10, 1925; minimum gage height, 0.47 ft Oct. 26, 1952; minimum daily discharge, 31 cfs Sept. 9, 10, 1925, caused by filling reservoir on Oconaluftee River; minimum daily during normal regulation, 186 cfs Oct. 13, 1925.

Flood of May 18, 1840, reached a stage of 21 ft, from survey by Tennessee Valley Authority.

Remarks.--Records excellent except those for period of ice effect, which are good. Considerable diurnal fluctuation caused by powerplants above station. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, Tennessee Creek project lakes (see p. 224,229 ), and two small reservoirs with combined capacity of about 250 cfs-days.

Revisions (water years).--WSP 523: 1916, 1918-20. WSP 823: Drainage area. WSP 1336: 1899(M), 1907, 1915(M), 1916-20, 1921-29(M), 1933-34(M). See also Records available.

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 285 | 4.0 | 5,710 |
| 1.0 | 530 | 5.0 | 8,180 |
| 1.5 | 1,120 | 6.0 | 11,000 |
| 2.0 | 1,830 | 7.0 | 14,100 |
| 3.0 | 3,590 | 8.2 | 18,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 392 | 912 | 530 | 996 | *18,200 | 3,350 | 1,410 | 2,150 | 1,410 | 1,520 | 878 | 587 |
| 2 | 492 | 696 | 538 | 924 | 10,600 | 2,620 | 2,720 | 2,270 | 1,340 | 1,320 | 910 | 398 |
| 3 | 505 | 466 | 479 | 926 | 7,200 | 2,380 | 2,170 | 2,150 | 1,420 | 1,310 | 871 | 370 |
| 4 | 533 | 439 | 625 | 998 | 7,530 | *2,350 | 4,900 | 2,170 | 1,420 | 1,370 | 772 | 698 |
| 5 | 532 | 456 | 625 | 1,340 | 7,020 | 2,170 | 15,200 | 2,040 | 3,960 | 952 | 1,030 | *612 |
| 6 | 565 | 424 | 570 | 994 | 7,150 | 2,150 | 6,940 | 1,990 | 2,520 | 1,170 | 926 | 708 |
| 7 | 368 | 721 | 590 | 1,020 | 6,580 | 2,370 | 4,740 | 1,930 | 2,040 | 764 | 785 | 598 |
| 8 | 330 | 1,020 | 569 | 921 | 5,640 | 2,440 | 4,900 | 1,600 | 1,540 | 848 | *804 | 368 |
| 9 | 464 | 1,140 | 392 | 978 | 5,870 | 2,120 | 4,810 | 1,690 | 1,910 | 1,270 | 778 | 455 |
| 10 | 390 | 1,060 | 552 | 974 | 5,220 | 2,040 | 3,990 | *1,660 | 1,590 | 1,180 | 717 | 1,290 |
| 11 | 450 | 908 | 606 | 1,020 | 4,470 | 2,010 | *3,660 | 1,820 | 1,890 | *931 | 622 | 862 |
| 12 | 462 | 872 | 1,400 | 943 | 3,900 | 2,140 | 3,440 | 1,430 | 1,800 | 1,100 | 438 | 748 |
| 13 | 449 | 851 | 1,630 | 820 | 3,490 | 2,180 | 3,090 | 1,540 | 1,790 | 935 | 756 | 692 |
| 14 | 322 | 548 | 1,890 | 802 | 3,200 | 1,880 | 2,890 | 1,780 | 1,810 | 646 | 751 | 1,050 |
| 15 | 308 | 446 | 3,320 | 931 | 2,940 | 1,920 | 2,770 | 1,810 | 1,710 | 738 | 919 | 755 |
| 16 | 438 | 512 | 3,040 | 934 | 2,920 | 1,950 | 2,680 | 1,730 | 1,390 | 1,160 | 830 | 1,800 |
| 17 | 460 | 835 | 1,760 | 880 | 2,610 | 1,640 | 2,640 | 1,710 | 1,510 | 1,020 | 986 | 1,560 |
| 18 | 938 | 680 | *1,370 | b790 | 2,450 | 1,510 | 2,410 | 2,010 | *1,380 | 1,170 | 1,010 | 1,250 |
| 19 | *1,030 | *530 | 1,230 | b760 | 2,130 | 2,200 | 2,280 | 1,940 | 1,450 | 954 | 1,690 | 1,300 |
| 20 | 863 | 884 | 1,110 | b730 | 1,950 | 1,860 | 2,320 | 1,950 | 1,220 | 922 | 1,250 | 1,360 |
| 21 | 872 | 748 | 1,150 | *754 | 1,800 | 1,730 | 2,300 | 1,170 | 1,170 | 709 | 898 | 870 |
| 22 | 2,090 | 634 | 1,430 | 1,050 | 1,990 | 2,090 | 2,190 | 1,120 | 1,370 | 652 | 844 | 748 |
| 23 | 1,570 | 665 | 2,200 | 5,410 | 1,630 | 1,710 | 1,790 | 1,230 | 1,230 | 735 | 650 | 936 |
| 24 | 828 | 1,030 | 4,570 | 2,410 | 1,630 | 1,570 | 1,960 | 1,590 | 1,710 | 1,000 | 722 | 886 |
| 25 | 742 | 838 | 2,720 | 2,190 | 2,010 | 1,670 | 1,720 | 1,210 | 1,570 | 1,010 | 468 | 770 |
| 26 | 681 | 546 | 1,980 | 2,240 | 2,600 | 1,770 | 1,700 | 980 | 1,200 | 813 | 622 | 784 |
| 27 | 662 | 578 | 1,720 | 3,160 | 2,340 | 1,520 | 1,640 | 1,460 | 1,380 | 718 | 845 | 922 |
| 28 | 601 | 566 | 1,420 | 3,280 | 2,770 | 1,360 | 1,740 | 1,430 | 1,890 | 959 | 756 | 904 |
| 29 | 482 | 584 | 1,350 | 3,720 | - | 1,390 | 1,460 | 1,310 | 2,760 | 536 | 721 | 1,480 |
| 30 | 660 | 584 | 1,190 | 4,350 | -------- | 1,380 | 1,870 | 1,200 | 2,060 | 851 | 745 | 1,230 |
| 31 | 432 | -------- | 1,030 | 16,600 | -------- | 1,200 | -------- | 975 | -------- | 981 | 739 | -------- |
| Total | 19,911 | 21,173 | 43,586 | 63,845 | 127,840 | 60,670 | 98,330 | 51,045 | 51,840 | 30,464 | 25,733 | 26,991 |
| Mean | 642 | 706 | 1,406 | 2,060 | 4,566 | 1,957 | 3,278 | 1,647 | 1,728 | 983 | 830 | 900 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 9,080 Min 300 Mean 1,339 Cfsm 2.04 In. 27.83
Water year 1956-57: Max 18,200 Min 308 Mean 1,703 Cfsm 2.60 In. 35.28

Peak discharge (base, 9,000 cfs).--Jan. 31 (11 p.m.) 30,000 cfs (11.11 ft); Apr. 5 (6 a.m.) 20,000 cfs (8.70 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Noland Creek near Bryson City, N. C.

Location.--Lat 35°29'06", long 83°30'15", on right bank in Great Smoky Mountain National Park, 1.1 miles downstream from Mill Creek, 3.6 miles upstream from Fontana Lake, and 5 miles northwest of Bryson City, Swain County.

Drainage area.--13.8 sq mi.

Records available.--October 1935 to September 1957.

Gage.--Water-stage recorder. Altitude of gage is 2,280 ft (from topographic map).

Average discharge.--22 years, 44.2 cfs.

Extremes.--Maximum discharge during year, 1,430 cfs Jan. 31 (gage height, 4.74 ft), from rating curve extended as explained below; minimum, 7.1 cfs Oct. 15-17; minimum gage height, 0.82 ft Sept. 8.

1935-57: Maximum discharge, 1,530 cfs Aug. 30, 1940 (gage height, 4.87 ft), from rating curve extended above 540 cfs on basis of critical-depth determination of peak flow; minimum, 3.5 cfs Oct. 24, 1939 (gage height, 0.66 ft).

Remarks.--Records good except those for period of ice effect, which are fair.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1936, 1937-39(M).

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 6.1 | 2.0 | 92 |
| .9 | 8.7 | 2.3 | 143 |
| 1.0 | 12 | 2.6 | 210 |
| 1.2 | 21 | 3.0 | 337 |
| 1.4 | 33 | 3.5 | 565 |
| 1.6 | 48 | 4.0 | 850 |
| 1.8 | 67 | 4.2 | 980 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.7 | 38 | 10 | 38 | 686 | 64 | 46 | 38 | 20 | 52 | 13 | 8.4 |
| 2 | 8.2 | 15 | 9.7 | 34 | 653 | 58 | 61 | 35 | 23 | 45 | 14 | 8.2 |
| 3 | 8.2 | 12 | 9.7 | 32 | 318 | 56 | 48 | 34 | 26 | 40 | 12 | 7.9 |
| 4 | 9.4 | 11 | 9.7 | 39 | 386 | 52 | 158 | 33 | 45 | 36 | 13 | 9.4 |
| 5 | *9.4 | 11 | 9.7 | 52 | 326 | 50 | 311 | 32 | 74 | 33 | 14 | 8.7 |
| 6 | 9.0 | *10 | 9.4 | 43 | 290 | 51 | 168 | 30 | 48 | 30 | 11 | 7.9 |
| 7 | 8.4 | 10 | 9.4 | 43 | 255 | *56 | 122 | 29 | 39 | 27 | 11 | 7.7 |
| 8 | 8.2 | 13 | 9.0 | *39 | 218 | 57 | 154 | 28 | 33 | 25 | 11 | 7.9 |
| 9 | 8.2 | 10 | 9.4 | 39 | 221 | 52 | 147 | 27 | 30 | 24 | 10 | 10 |
| 10 | 7.9 | 9.7 | 9.4 | 51 | 205 | 50 | 122 | 26 | 28 | 23 | 10 | 14 |
| 11 | 7.9 | 9.4 | *8.7 | 42 | 166 | 52 | 104 | 32 | 28 | 21 | 9.7 | 11 |
| 12 | 7.9 | 9.4 | 78 | 40 | 137 | 66 | 92 | 28 | 29 | 20 | 9.4 | 12 |
| 13 | 7.4 | 8.7 | 64 | 39 | 116 | 62 | 80 | 26 | 26 | 19 | 9.0 | 12 |
| 14 | 7.4 | 8.7 | 159 | 36 | *102 | 62 | 73 | 25 | 25 | 19 | 9.0 | 37 |
| 15 | 7.1 | 8.7 | 157 | 36 | 92 | 64 | 66 | 25 | 22 | 20 | 16 | 20 |
| 16 | 7.1 | 26 | 109 | 34 | 92 | 57 | 61 | 24 | 23 | 20 | 12 | 71 |
| 17 | 7.1 | 25 | 67 | 29 | 78 | 53 | 59 | 23 | 25 | 21 | 12 | 28 |
| 18 | 8.4 | 18 | 51 | b25 | 72 | 54 | 56 | 23 | 22 | 20 | 30 | 20 |
| 19 | 10 | 15 | 43 | b25 | 79 | 64 | 52 | 25 | 22 | 18 | 28 | 18 |
| 20 | 7.9 | 13 | 39 | 25 | 72 | 54 | 50 | 26 | *20 | 16 | 15 | 18 |
| 21 | 9.0 | 15 | 49 | 26 | 66 | 53 | 50 | 22 | 19 | 15 | 13 | 21 |
| 22 | 33 | 17 | 65 | 60 | 62 | 56 | 48 | 24 | 18 | 15 | 12 | 18 |
| 23 | 15 | 13 | 135 | 332 | 59 | 52 | 48 | 24 | 23 | 15 | 11 | 20 |
| 24 | 12 | 13 | 210 | 126 | 56 | 52 | 46 | 23 | 68 | 18 | 11 | 16 |
| 25 | 11 | 12 | 117 | 109 | 54 | 60 | 42 | 22 | 79 | 14 | 11 | 14 |
| 26 | 10 | 12 | 84 | 94 | 62 | 54 | 40 | 21 | 36 | 14 | 11 | *13 |
| 27 | 10 | 11 | 67 | 162 | 57 | 52 | 39 | 27 | 30 | 14 | 10 | 12 |
| 28 | 9.7 | 10 | 58 | 188 | 67 | 50 | 36 | 23 | 111 | 14 | 9.7 | 26 |
| 29 | 8.7 | 11 | 52 | 224 | - | 47 | *37 | *21 | 87 | *13 | 9.4 | 34 |
| 30 | 8.7 | 10 | 45 | 210 | -------- | 46 | 38 | 23 | 63 | 13 | *9.0 | 22 |
| 31 | 8.7 | -------- | 42 | 923 | -------- | 43 | -------- | 23 | -------- | 16 | 8.7 | -------- |
| Total | 299.6 | 405.6 | 1,795.1 | 3,195 | 5,047 | 1,699 | 2,454 | 822 | 1,142 | 690 | 384.9 | 533.1 |
| Mean | 9.66 | 13.5 | 57.9 | 103 | 180 | 54.8 | 81.8 | 26.5 | 38.1 | 22.3 | 12.4 | 17.8 |
| Cfsm | 0.700 | 0.978 | 4.20 | 7.46 | 13.04 | 3.97 | 5.93 | 1.92 | 2.76 | 1.62 | 0.899 | 1.29 |
| In. | 0.81 | 1.09 | 4.84 | 8.61 | 13.60 | 4.58 | 6.61 | 2.22 | 3.08 | 1.86 | 1.04 | 1.44 |

Calendar year 1956: Max 337 Min 7.1 Mean 46.2 Cfsm 3.35 In. 45.60
Water year 1956-57: Max 923 Min 7.1 Mean 50.6 Cfsm 3.67 In. 49.78

Peak discharge (base, 600 cfs).--Jan. 23 (3 a.m.) 1,230 cfs (4.52 ft); Jan. 31 (10:30 a.m.) 1,430 cfs (4.74 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

493799 O - 59 - 10

## Little Tennessee River at Calderwood, Tenn.

Location.--Lat 35°30'24", long 84°00'14", on right bank 250 ft downstream from Scona Lodge Ferry, two-thirds of a mile west of Calderwood, Blount County, 2½ miles downstream from Calderwood Dam, and at mile 41.1.

Drainage area.--1,862 sq mi.

Records available.--January 1912 to December 1918, January 1921 to August 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 861.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1927, staff gages and water-stage recorders at several sites within 1 mile of present site at various datums.

Average discharge.--40 years (1912-18, 1922-56), 4,270 cfs (unadjusted).

Extremes.--Maximum discharge during period October 1956 to August 1957, 13,400 cfs Jan. 31 (gage height, 3.97 ft); minimum, 39 cfs June 9 (gage height, -0.52 ft); minimum daily, 76 cfs June 9.

1912-18, 1921-57: Maximum discharge, 82,000 cfs Mar. 4, 1917; maximum gage height observed, 11.75 ft Mar. 4, 1917, before breaking of levee near gage; minimum discharge, 7.2 cfs Sept. 4, 1955 (gage height, -0.66 ft); minimum daily, that of June 9, 1957.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by several reservoirs above station (see p. 224).

Cooperation.--Water-stage recorder inspected by employee of Aluminum Co. of America.

Revisions (water years).--WSP 803: 1933-35. WSP 823: 1917(M), drainage area. WSP 923: 1930. WSP 1336: 1912, 1916, 1926.

Rating table, Oct. 1, 1956, to Aug. 5, 1957 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| -0.5 | 44 | 1.0 | 1,590 |
| -.4 | 80 | 1.5 | 2,830 |
| -.2 | 180 | 2.0 | 4,430 |
| .2 | 480 | 2.5 | 6,350 |
| .6 | 930 | 3.4 | 10,400 |

Discharge, in cubic feet per second, October 1956 to August 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6,190 | a6,600 | 7,070 | 4,060 | 8,880 | 7,110 | 4,960 | 6,430 | 3,740 | 6,600 | 6,640 | |
| 2 | 6,270 | a6,000 | 6,580 | 5,300 | *9,190 | 7,720 | 4,720 | 6,020 | 2,470 | 6,020 | 6,610 | |
| 3 | *5,980 | a5,400 | 5,500 | 5,500 | 7,030 | 7,720 | 3,880 | 4,590 | 3,660 | 4,760 | 6,300 | |
| 4 | 5,980 | a2,000 | *5,840 | *4,200 | 9,240 | 7,590 | 3,770 | 4,830 | 4,680 | 1,620 | 4,650 | |
| 5 | 6,190 | *a6,600 | 6,530 | 1,440 | 10,200 | 7,540 | 5,810 | 4,650 | 4,680 | 1,350 | 4,500 | |
| 6 | 5,350 | 6,640 | 4,340 | 1,560 | 9,190 | *5,310 | 2,110 | 4,190 | 4,980 | 1,590 | - | |
| 7 | 2,820 | 6,860 | 4,360 | 3,950 | 9,050 | 5,670 | 1,460 | *3,530 | 5,580 | 3,060 | - | |
| 8 | 5,560 | 7,200 | 4,900 | 4,550 | 9,420 | 5,720 | 3,720 | 4,560 | 3,340 | 6,190 | - | |
| 9 | 6,520 | 7,500 | 4,980 | 2,350 | 10,000 | 5,320 | 2,540 | 6,160 | 76 | 6,480 | - | |
| 10 | 6,620 | 6,140 | 6,560 | 3,680 | 10,000 | 2,270 | 3,850 | 5,820 | 3,200 | 5,700 | - | |
| 11 | 6,700 | 3,230 | 6,140 | 4,860 | 10,100 | 5,760 | *6,900 | 4,490 | 6,480 | 5,570 | - | |
| 12 | 6,340 | 6,190 | 5,740 | 2,030 | 10,300 | 7,590 | 7,240 | 1,960 | 7,370 | 5,860 | - | |
| 13 | 5,180 | 6,560 | 1,830 | 3,060 | 9,560 | 7,590 | 6,640 | 5,320 | 7,070 | 4,500 | - | |
| 14 | 4,010 | 6,980 | 1,170 | 5,800 | 9,010 | 7,540 | 7,420 | 4,490 | 5,820 | 2,070 | - | |
| 15 | 5,830 | 7,460 | 1,180 | 5,500 | 9,100 | 6,600 | 7,420 | 4,900 | 7,200 | 5,620 | - | |
| 16 | 6,120 | 6,520 | 1,180 | 5,740 | 10,200 | 7,240 | 7,420 | 6,040 | 6,190 | 6,000 | - | |
| 17 | 6,250 | 6,140 | 1,150 | 6,580 | 9,560 | 7,540 | 7,460 | 5,740 | 6,980 | 7,420 | - | |
| 18 | 5,310 | 3,570 | 1,130 | 6,070 | 9,560 | 7,500 | 7,110 | 5,570 | 7,200 | 3,800 | - | |
| 19 | 6,440 | 7,200 | 1,150 | 6,210 | 9,950 | 7,500 | 7,370 | 2,610 | 5,310 | 4,500 | - | |
| 20 | 4,710 | 6,770 | 2,800 | 4,340 | 10,200 | 5,810 | 7,500 | 3,760 | 6,680 | 3,190 | - | |
| 21 | 3,010 | 6,640 | 2,320 | 5,440 | 9,420 | 3,880 | 7,500 | 4,470 | 7,160 | 4,310 | - | |
| 22 | 5,490 | 6,580 | 1,900 | 2,040 | 9,280 | 3,170 | 7,460 | 4,860 | 7,030 | 5,590 | - | |
| 23 | 4,860 | 7,240 | 1,180 | 4,690 | 9,370 | 2,460 | 7,330 | 4,610 | 1,480 | 6,620 | - | |
| 24 | 4,790 | 7,420 | 1,350 | 4,890 | 7,940 | 1,900 | 6,270 | 4,980 | 4,530 | 3,320 | - | |
| 25 | 6,150 | 7,460 | 2,190 | 2,980 | 6,060 | 4,440 | 5,160 | 5,280 | 5,510 | 5,410 | - | |
| 26 | a6,800 | 6,480 | 2,760 | 3,970 | 4,860 | 6,180 | 4,750 | 4,680 | 4,570 | 5,150 | - | |
| 27 | a7,400 | 7,030 | 2,760 | 2,720 | 5,460 | 3,520 | 4,160 | 4,680 | 3,280 | 2,650 | - | |
| 28 | a5,600 | 7,110 | 4,390 | 2,790 | 6,390 | 3,720 | 3,100 | 5,240 | 3,570 | 3,870 | - | |
| 29 | a5,600 | 6,770 | 4,630 | 2,580 | - | 4,920 | 4,820 | 5,240 | 6,860 | 5,290 | - | |
| 30 | a6,200 | 7,070 | 3,860 | 4,540 | ------- | 3,120 | 6,480 | 4,940 | 5,710 | 2,550 | - | |
| 31 | a6,300 | ------- | 5,090 | 7,690 | ------- | 2,700 | ------- | 4,940 | ------- | 5,420 | - | |
| Total | 176,570 | 191,360 | 112,560 | 131,110 | 248,520 | 172,650 | 166,330 | 149,580 | 152,406 | 142,080 | - | |
| Mean | 5,696 | 6,379 | 3,631 | 4,229 | 8,876 | 5,569 | 5,544 | 4,825 | 5,080 | 4,583 | - | |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 7,500 | Min 1,110 | Mean 3,555 | Mean 4,073 | Cfsm 2.19 | In. 29.78 |
| Water year 1956-57: | Max - | Min - | Mean - | Mean - | Cfsm - | In. - |

* Discharge measurement made on this day.

† Adjusted for change in contents in Fontana, Cheoah, Calderwood, Nantahala, Thorpe, and Santeetlah Lakes.

a No gage-height record; discharge estimated on basis of records for station at McGhee and Calderwood Dam releases.

## Tellico River at Tellico Plains, Tenn.

Location.--Lat 35°21'42", long 84°16'44", on right bank 200 ft upstream from bridge on Tellico Plains-Rafter road, 0.4 mile downstream from Laurel Creek, 0.8 mile east of Tellico Plains, Monroe County, and at mile 28.2.

Drainage area.--118 sq mi.

Records available.--July 1925 to September 1957. Published as "near Tellico Plains" October 1927 to September 1930.

Gage.--Water-stage recorder. Datum of gage is 846.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 20, 1925, to Sept. 30, 1927, staff gage at same site and datum. Oct. 1, 1927, to Sept. 30, 1930, staff gage at site half a mile upstream at datum 8.29 ft higher.

Average discharge.--32 years, 280 cfs.

Extremes.--Maximum discharge during year, 17,500 cfs Jan. 31 (gage height, 13.60 ft), from rating curve extended above 9,600 cfs; minimum, 31 cfs Oct. 16 (gage height, 0.99 ft). 1925-27: Maximum discharge, that of Jan. 31, 1957; minimum, 13 cfs Sept. 7, 1925 (gage height, 0.25 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions (water years).--WSP 1336: 1927-28(M), 1936, 1940, 1944.

*Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)*

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 32 | 5.0 | 1,800 | 1.1 | 35 | 3.0 | 670 |
| 1.2 | 60 | 7.0 | 3,050 | 1.3 | 65 | 5.0 | 1,800 |
| 1.5 | 123 | 8.0 | 3,930 | 1.5 | 103 | 7.0 | 3,050 |
| 2.0 | 268 | 9.8 | 6,870 | 2.0 | 242 | 8.0 | 3,930 |
| 3.0 | 705 | | | 2.5 | 430 | 9.8 | 6,870 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 180 | 54 | 161 | *4,820 | 575 | 239 | 426 | 201 | 645 | 103 | a54 |
| 2 | *37 | *80 | 54 | *145 | 2,420 | 452 | *371 | *363 | 303 | *493 | *101 | a51 |
| 3 | 36 | 58 | *52 | 142 | 1,510 | 383 | 282 | 375 | *249 | 417 | 87 | *49 |
| 4 | 37 | 52 | 54 | 147 | 2,040 | 343 | 1,560 | 340 | 791 | 359 | 93 | 65 |
| 5 | 47 | 47 | 55 | 282 | 1,680 | *317 | 2,570 | 292 | 1,260 | 321 | 131 | 62 |
| 6 | 57 | 46 | 54 | 212 | 1,450 | 300 | 946 | 265 | 1,380 | 289 | 89 | 52 |
| 7 | 44 | 46 | 54 | 236 | 1,660 | 328 | 640 | 245 | 886 | 262 | 81 | 48 |
| 8 | 37 | 64 | 52 | 209 | 1,200 | 506 | 675 | 232 | 545 | 242 | 78 | 46 |
| 9 | 36 | 60 | 52 | 197 | *1,090 | 413 | 620 | 220 | 560 | 223 | 76 | 55 |
| 10 | 34 | 50 | 64 | 221 | 1,070 | 379 | 520 | 210 | 498 | 210 | 74 | 59 |
| 11 | 33 | 47 | 55 | 197 | 880 | 417 | 466 | 252 | 404 | 198 | 70 | 63 |
| 12 | 33 | 46 | 474 | 183 | 695 | 630 | 421 | 216 | 351 | 186 | 72 | 74 |
| 13 | 33 | 44 | 424 | 174 | 595 | 600 | 379 | 195 | 328 | 172 | 93 | 62 |
| 14 | 33 | 43 | 523 | 164 | 520 | 511 | 347 | 189 | 355 | 163 | 74 | 158 |
| 15 | 33 | 42 | 735 | 155 | 466 | 439 | 325 | 201 | 278 | 160 | 81 | 83 |
| 16 | 32 | 144 | 630 | 155 | 484 | 379 | 306 | 213 | 252 | 163 | 78 | 252 |
| 17 | 32 | 139 | 329 | 131 | 408 | 351 | 292 | 172 | 332 | 186 | 72 | 155 |
| 18 | 37 | 91 | 233 | 128 | 375 | 347 | 282 | 166 | 340 | 210 | 146 | 93 |
| 19 | 46 | 71 | 186 | 136 | 439 | 379 | 268 | 177 | 347 | 252 | 134 | 87 |
| 20 | 40 | 62 | 164 | 142 | 452 | 321 | 262 | 396 | 292 | 158 | 93 | 74 |
| 21 | 39 | 67 | 189 | 128 | 396 | 300 | 274 | 216 | 242 | 144 | a89 | 78 |
| 22 | 140 | 128 | 330 | 142 | 359 | 303 | 466 | 303 | 226 | 136 | a87 | 76 |
| 23 | 82 | 82 | 722 | 1,040 | 328 | 286 | 452 | 328 | 236 | 131 | a85 | 85 |
| 24 | 55 | 71 | 1,000 | 460 | 310 | 275 | 498 | 258 | 1,170 | 149 | a83 | 70 |
| 25 | 46 | 65 | 524 | 380 | 296 | 317 | 367 | 232 | 1,470 | 129 | a81 | 62 |
| 26 | 43 | 62 | 360 | 340 | 351 | 272 | 325 | 210 | 535 | 121 | a78 | 59 |
| 27 | 47 | 65 | 282 | 1,110 | 396 | 262 | 300 | 278 | 387 | 115 | a74 | 59 |
| 28 | 44 | 55 | 236 | 976 | 516 | 245 | 386 | 223 | 797 | 112 | a70 | 78 |
| 29 | 42 | 62 | 212 | 1,300 | - | 236 | 502 | 195 | 1,050 | 112 | a65 | 158 |
| 30 | 40 | 60 | 186 | 1,320 | -------- | 226 | 484 | 195 | 695 | 107 | a60 | 134 |
| 31 | 43 | -------- | 172 | *6,690 | -------- | 216 | -------- | 226 | -------- | 105 | a57 | -------- |
| Total | 1,375 | 2,129 | 8,511 | 17,403 | 27,206 | 11,308 | 15,825 | 7,809 | 16,760 | 6,666 | 2,655 | 2,501 |
| Mean | 44.4 | 71.0 | 275 | 561 | 972 | 365 | 528 | 252 | 559 | 215 | 85.6 | 83.4 |
| Cfsm | 0.376 | 0.602 | 2.33 | 4.75 | 8.24 | 3.09 | 4.47 | 2.14 | 4.74 | 1.82 | 0.725 | 0.707 |
| In. | 0.43 | 0.67 | 2.68 | 5.48 | 8.57 | 3.56 | 4.99 | 2.46 | 5.28 | 2.10 | 0.84 | 0.79 |

Calendar year 1956: Max 3,420 Min 32 Mean 253 Cfsm 2.14 In. 29.23
Water year 1956-57: Max 6,690 Min 32 Mean 329 Cfsm 2.79 In. 37.85

Peak discharge (base, 2,800 cfs).--Jan. 31 (8 p.m.) 17,500 cfs (13.60 ft); Apr. 5 (4 a.m.) 3,760 cfs (7.84 ft); June 24 (10:30 p.m.) 5,720 cfs (9.22 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Little River near Maryville.

## Little Tennessee River at McGhee, Tenn.

Location.--Lat 35°36'16", long 84°12'43", on right bank at mouth of Tellico River, 100 ft upstream from bridge on U. S. Highway 411, 0.3 mile upstream from Louisville & Nashville Railroad bridge, and 0.5 mile south of McGhee, Monroe County. Records include flow of Tellico River.

Drainage area.--2,443 sq mi, includes that of Tellico River.

Records available.--January 1905 to December 1913 (gage heights only, October to December 1913), and October 1918 to September 1957 in reports of Geological Survey. November 1904 to September 1924 (most records prior to 1919, revised) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 760.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 6, 1929, chair or staff gages located at various sites and datums within 0.4 mile of present site.

Average discharge.--52 years (1905-57), 5,634 cfs (unadjusted).

Extremes.--Maximum discharge during year, 40,300 cfs Feb. 1 (gage height, 18.53 ft); minimum, 1,010 cfs Aug. 1 (gage height, 3.15 ft); minimum daily, 1,570 cfs June 10.

1904-57: Maximum discharge, 104,000 cfs Nov. 19, 1906 (gage height, 30.8 ft, at site used December 1905 to September 1925, to datum used October 1918 to September 1925), from rating curve extended above 66,000 cfs; minimum, 273 cfs Oct. 27, 1941; minimum daily, 500 cfs Sept. 13, 14, 1925.

Maximum stage known, 39.0 ft in March 1867, original site and datum.

Remarks.--Records good. Flow regulated by many reservoirs above station.

Revisions (water years).--WSP 803: 1933-35. WSP 823: Drainage area. WSP 1336: 1905, 1906-10(M), 1911, 1912(M), 1913, 1914(M), 1915-22, 1923-24(M), 1925-29. See also Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 3.5 | 1,490 | 10.0 | 16,800 |
| 4.0 | 2,330 | 15.0 | 29,900 |
| 5.0 | 4,380 | 17.7 | 37,500 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5,740 | 6.730 | 7,330 | 4,950 | *37,400 | 9,720 | 5,330 | 7,710 | 4,450 | 7,930 | 4,450 | 4,960 |
| 2 | 6,390 | 6,870 | 6,920 | 5,340 | 29,100 | 9,620 | 5,570 | 7,370 | 3,750 | 7,320 | 4,200 | 4,540 |
| 3 | *6,320 | 5,620 | 5,410 | 5,910 | 15,200 | 9,220 | 5,500 | 6,170 | 3,070 | 5,930 | 3,800 | 3,630 |
| 4 | 6,270 | 3,320 | *6,010 | *5,250 | 14,700 | 8,840 | 4,960 | 5,310 | 5,930 | 4,220 | 2,930 | 3,630 |
| 5 | 6,510 | *5,180 | 6,410 | 3,110 | 16,400 | 8,650 | 15,200 | 6,320 | 7,280 | 1,980 | 3,110 | 3,750 |
| 6 | 5,840 | 6,970 | 4,720 | 2,600 | 18,900 | *6,560 | 9,620 | 5,380 | 8,050 | 1,830 | 1,810 | 5,430 |
| 7 | 3,970 | 7,040 | 5,090 | 3,250 | 19,200 | 6,530 | 4,040 | *3,710 | 7,210 | 2,600 | *3,930 | 3,930 |
| 8 | 4,500 | 7,400 | 4,840 | 5,290 | 19,200 | 9,050 | 6,270 | 4,470 | 7,060 | 5,210 | 4,240 | 2,410 |
| 9 | 6,370 | 7,730 | 5,090 | 4,150 | *16,800 | 7,520 | 6,680 | 6,390 | 2,130 | *6,750 | 5,650 | *4,560 |
| 10 | 6,850 | 6,970 | 6,170 | 3,970 | 15,200 | 5,230 | 4,290 | 6,100 | *1,570 | 6,700 | 5,190 | 5,430 |
| 11 | 6,870 | 4,400 | 6,370 | 5,130 | 14,200 | 5,650 | *8,360 | 5,550 | 5,630 | 5,960 | 2,870 | 5,330 |
| 12 | 6,750 | 4,890 | 7,660 | 4,090 | 13,100 | 9,850 | 8,550 | 3,510 | 7,880 | 5,670 | 4,790 | 6,030 |
| 13 | 5,620 | 6,870 | 5,260 | 2,700 | 12,100 | 10,300 | 8,020 | 4,380 | 8,090 | 5,810 | 4,240 | 5,670 |
| 14 | 4,860 | 7,350 | 2,910 | 5,120 | 10,800 | 9,600 | 8,260 | 4,960 | 6,630 | 3,600 | 4,180 | 4,180 |
| 15 | 4,820 | 7,760 | 2,760 | 6,080 | 10,600 | 8,170 | 8,430 | 4,170 | 7,810 | 3,670 | 4,810 | 2,390 |
| 16 | 5,890 | 7,110 | 3,050 | 6,270 | 11,600 | 8,620 | 8,330 | 6,390 | 6,890 | 6,270 | 5,430 | 4,440 |
| 17 | 6,270 | 6,770 | 2,310 | 7,090 | 11,000 | 8,690 | 8,360 | 6,220 | 7,330 | 7,590 | 5,960 | 6,050 |
| 18 | 5,600 | 4,490 | 1,880 | 6,460 | 10,800 | 8,650 | 8,020 | 6,170 | 7,810 | 5,480 | 2,880 | 4,910 |
| 19 | 6,940 | 7,010 | 1,700 | 6,530 | 11,000 | 8,670 | 8,190 | 4,720 | 7,160 | 4,150 | 3,800 | 3,850 |
| 20 | 4,680 | 6,850 | 2,450 | 5,480 | 12,200 | 7,090 | 8,240 | 3,520 | 6,250 | 4,110 | 5,450 | 3,150 |
| 21 | 4,630 | 6,920 | 3,540 | 5,290 | 10,900 | 5,620 | 8,240 | 4,820 | 7,590 | 3,860 | 5,790 | 5,000 |
| 22 | 4,210 | 7,300 | 2,490 | 3,770 | 10,500 | 4,220 | 8,380 | 5,360 | 7,640 | 5,740 | 6,100 | 5,790 |
| 23 | 5,890 | 7,400 | 2,930 | 5,760 | 10,400 | 3,480 | 8,430 | 6,080 | 4,400 | 6,460 | 3,740 | 6,200 |
| 24 | 5,000 | 7,730 | 3,890 | 6,510 | 9,520 | 2,640 | 7,520 | 5,840 | 5,380 | 4,770 | 2,660 | 7,640 |
| 25 | 5,740 | 7,730 | 3,670 | 5,360 | 7,640 | 4,260 | 7,090 | 5,810 | 13,300 | 4,520 | 2,370 | 7,230 |
| 26 | 6,890 | 6,800 | 3,780 | 4,400 | 6,250 | 6,410 | 5,740 | 6,390 | 8,050 | 4,930 | 3,890 | 6,030 |
| 27 | 7,570 | 7,350 | 3,780 | 7,250 | 6,700 | 5,170 | 5,310 | 5,170 | 5,140 | 4,360 | 4,890 | 6,270 |
| 28 | 6,440 | 7,350 | 4,370 | 8,930 | 8,170 | 3,930 | 4,170 | 5,790 | 3,710 | 3,860 | 4,380 | 6,030 |
| 29 | 5,360 | 7,180 | 5,370 | 6,650 | - | 5,670 | 4,470 | 5,720 | 7,970 | 4,110 | 4,380 | 5,820 |
| 30 | 6,220 | 7,210 | 4,590 | 10,700 | ------- | 4,150 | 7,780 | 5,690 | 7,350 | 4,430 | 5,960 | 4,330 |
| 31 | 6,630 | | 4,890 | 20,200 | | 2,750 | | 5,450 | | 3,350 | 5,530 | |
| Total | 181,640 | 200,300 | 137,640 | 183,590 | 389,580 | 214,530 | 217,350 | 170,640 | 192,510 | 153,370 | 133,410 | 148,610 |
| Mean | 5,859 | 6,677 | 4,440 | 5,922 | 13,910 | 6,920 | 7,245 | 5,505 | 6,417 | 4,947 | 4,304 | 4,954 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 17,700 | Min 1,110 | Mean 4,384 | Mean 4,903 | Cfsm 2.01 | In. 27.32 |
| Water year 1956-57: | Max 37,400 | Min 1,570 | Mean 6,365 | Mean 6,154 | Cfsm 2.52 | In. 34.20 |

* Discharge measurement made on this day.

† Adjusted for change in contents in Santeetlah, Fontana, Thorpe, Cheoah, Calderwood, Nantahala, and Chilhowee Lakes.

## Clinch River at Richlands, Va.

Location.--Lat 37°05'10", long 81°46'52", on right bank 1 mile southeast of Richlands, Tazewell County, 1.6 miles downstream from Middle Creek, and 2.2 miles upstream from Big Creek.

Drainage area.--139 sq mi.

Records available.--January 1946 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,923.99 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Aug. 6, 1950, wire-weight gage at bridge 1.1 miles downstream at datum 6.53 ft lower.

Average discharge.--11 years, 187 cfs.

Extremes.--Maximum discharge during year, 9,640 cfs Jan. 29 (gage height, 19.3 ft, from floodmark), from rating curve extended above 4,800 cfs on basis of contracted-opening determination of peak flow; minimum, 8.0 cfs Sept. 6 (gage height, 0.56 ft); minimum daily, 15 cfs Sept. 5, 6.

1946-57: Maximum discharge, that of Jan. 29, 1957; minimum, 3.2 cfs Sept. 8, 1955; minimum gage height, 0.45 ft July 2, 3, 1951; minimum daily discharge, 9.0 cfs Sept. 5, 1955.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low flow caused by mill above station.

Rating table, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 10 | 5.0 | 1,150 |
| .7 | 18 | 7.0 | 2,000 |
| 1.0 | 60 | 10.0 | 3,400 |
| 2.0 | 237 | 16.0 | 7,100 |
| 3.0 | 488 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *83 | 130 | 60 | a140 | 2,660 | 1,030 | *128 | *144 | 46 | 114 | 38 | 16 |
| 2 | 70 | 207 | 58 | a120 | 2,170 | 690 | 186 | 126 | 44 | 88 | 35 | 16 |
| 3 | 63 | 133 | *57 | a110 | 1,190 | 502 | 177 | 115 | *62 | 71 | 34 | *18 |
| 4 | 66 | 102 | 58 | a120 | 771 | *380 | 169 | 103 | 124 | 63 | 39 | 21 |
| 5 | 150 | *83 | 58 | a160 | 608 | 315 | 446 | 95 | 193 | 56 | 84 | 15 |
| 6 | 186 | 71 | 56 | a210 | 582 | 275 | 690 | 88 | 220 | 51 | 60 | 15 |
| 7 | 139 | 68 | 56 | *211 | 630 | 261 | 461 | 86 | 132 | 46 | *45 | 16 |
| 8 | 108 | 70 | 54 | 189 | 1,270 | 303 | 653 | 68 | 90 | 45 | 39 | 18 |
| 9 | 91 | 70 | 54 | 901 | 2,360 | 279 | 1,150 | 71 | 70 | *54 | 31 | 26 |
| 10 | 76 | 63 | 62 | 1,550 | 2,320 | 264 | 660 | 66 | 60 | 114 | 34 | 60 |
| 11 | 68 | 56 | 60 | 832 | 1,430 | 264 | 461 | 66 | 56 | 63 | 30 | 46 |
| 12 | 62 | 52 | 81 | 516 | a1,000 | 275 | 353 | 65 | 51 | 50 | 30 | 30 |
| 13 | 56 | 50 | 160 | 366 | a600 | 257 | 291 | 58 | 57 | 41 | 31 | 69 |
| 14 | 54 | 48 | 245 | 279 | a450 | 241 | 249 | 57 | 148 | 39 | 31 | 203 |
| 15 | 51 | 45 | 474 | 231 | a380 | 228 | 218 | 58 | 81 | 38 | 54 | 150 |
| 16 | 48 | 50 | 380 | b190 | a320 | 205 | 198 | 52 | 63 | 37 | 51 | 176 |
| 17 | 46 | 54 | 272 | b170 | a290 | 191 | 184 | 50 | 60 | 69 | 39 | 394 |
| 18 | 45 | 51 | 224 | b155 | a250 | 184 | 168 | 50 | 57 | 135 | 34 | 503 |
| 19 | 45 | 46 | 193 | b140 | a600 | 184 | 159 | 92 | 51 | 58 | 30 | 615 |
| 20 | 45 | 46 | 171 | b135 | a1,200 | 173 | 150 | 124 | 48 | 45 | 31 | 231 |
| 21 | 44 | 46 | a200 | 159 | a700 | 159 | 148 | 83 | 44 | 41 | 26 | 191 |
| 22 | 50 | 83 | a250 | 169 | 502 | 224 | 160 | 68 | 42 | 38 | 24 | 144 |
| 23 | 56 | 79 | a350 | 502 | 407 | 264 | 224 | 63 | 76 | 48 | 27 | 115 |
| 24 | 57 | 74 | a500 | 461 | 340 | 249 | 380 | 62 | 340 | 57 | 19 | 90 |
| 25 | 56 | 70 | a600 | 340 | 303 | 224 | 380 | 57 | 407 | 56 | 22 | 71 |
| 26 | 50 | 71 | a400 | 270 | 303 | 204 | 251 | 56 | 211 | 37 | 23 | 60 |
| 27 | 54 | 68 | a300 | 392 | 279 | 191 | 209 | 65 | 135 | 38 | 23 | 57 |
| 28 | 62 | 63 | a200 | 2,110 | 407 | 169 | 182 | 63 | 103 | 103 | 27 | 51 |
| 29 | 56 | 62 | a170 | *7,000 | - | 148 | 314 | 54 | 130 | 71 | 22 | 288 |
| 30 | 51 | 62 | a160 | 5,160 | ------- | 148 | 175 | 50 | 119 | 54 | 19 | 1,230 |
| 31 | 51 | ------- | a150 | 2,150 | ------- | 133 | ------- | 46 | ------- | 44 | 16 | ------- |
| Total | 2,139 | 2,173 | 6,113 | 25,438 | 24,322 | 8,614 | 9,574 | 2,301 | 3,320 | 1,864 | 1,048 | 4,935 |
| Mean | 69.0 | 72.4 | 197 | 821 | 869 | 278 | 319 | 74.2 | 111 | 60.1 | 33.8 | 164 |
| Cfsm | 0.496 | 0.521 | 1.42 | 5.91 | 6.25 | 2.00 | 2.29 | 0.534 | 0.799 | 0.432 | 0.243 | 1.18 |
| In. | 0.57 | 0.58 | 1.64 | 6.81 | 6.51 | 2.31 | 2.56 | 0.62 | 0.89 | 0.50 | 0.28 | 1.32 |

Calendar year 1956: Max 3,000 Min 25 Mean 200 Cfsm 1.44 In. 19.63
Water year 1956-57: Max 7,000 Min 15 Mean 252 Cfsm 1.81 In. 24.59

Peak discharge (base, 1,300 cfs).--Jan. 9 (11:30 p.m.) 1,910 cfs (6.81 ft); Jan. 29 (6 p.m.) 9,640 cfs (19.3 ft); Feb. 10 (2 p.m.) 2,610 cfs (8.36 ft); Apr. 9 (3 a.m.) 1,520 cfs (5.92 ft); Sept. 30 (3 p.m.) 1,550 cfs (6.00 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Clinch River at Cleveland and Cedar Creek near Lebanon.

b Stage-discharge relation affected by ice.

## Cedar Creek near Lebanon, Va.

Location.--Lat 36°54'29", long 82°02'20", on right bank 800 ft upstream from Roaring Spring Creek, 1.3 miles downstream from Burgess Creek, 1.9 miles upstream from Little Cedar Creek, and 2.3 miles east of Lebanon, Russell County.
Drainage area.--51.5 sq mi.
Records available.--October 1952 to September 1957.
Gage.--Water-stage recorder. Datum of gage is 1,928.96 ft above mean sea level (Tennessee Valley Authority benchmark).
Average discharge.--5 years, 72.7 cfs.
Extremes.--Maximum discharge during year, 2,740 cfs Jan. 29 (gage height, 4.48 ft in gage well, 4.7 ft from outside), from rating curve extended above 2,300 cfs on basis of contracted-opening determination of peak flow; minimum, 6.0 cfs Sept. 7 (gage height, 1.30 ft).

1952-57: Maximum discharge, that of Jan. 29, 1957; minimum, 3.8 cfs Jan. 15, 1956; minimum gage height, 1.27 ft Oct. 19, 1952, Dec. 26, 1953 (result of freezeup).

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 1386 | 1953 | May 19, 1953 | 2,600 | 4.20 |
| 1386 | 1955 | Mar. 16, 1955 | 2,650 | 4.27 |
| 1436 | 1956 | Apr. 16, 1956 | 2,510 | 4.02 |

Remarks.--Records good except those for period of no gage-height record, which are fair.
Revisions.--The figures of peak discharge for the water years 1953 and 1955 have been revised as shown below, superseding those published in WSP 1386.

Revised peak discharge.--1952-53: June 21 (9 p.m.) 2,500 cfs (4.01 ft).
1954-55: Mar. 6 (12:30 p.m.) 2,410 cfs (3.84 ft).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 28

| | | | |
|---|---|---|---|
| 1.4 | 7.0 | 2.0 | 110 |
| 1.5 | 13 | 2.1 | 160 |
| 1.6 | 22 | 2.3 | 300 |
| 1.7 | 34 | 2.6 | 580 |
| 1.8 | 51 | 3.0 | 1,090 |
| 1.9 | 75 | | |

Mar. 1 to Sept. 30

| | | | |
|---|---|---|---|
| 1.2 | 2.5 | 2.0 | 125 |
| 1.3 | 7.5 | 2.1 | 165 |
| 1.4 | 14 | 2.3 | 300 |
| 1.5 | 22 | 2.6 | 580 |
| 1.6 | 34 | 3.0 | 1,090 |
| 1.7 | 49 | 3.5 | 2,050 |
| 1.8 | 70 | 4.0 | 2,500 |
| 1.9 | 95 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *20 | 23 | 15 | 39 | 1,550 | 336 | *43 | *33 | 19 | 40 | 12 | 8.1 |
| 2 | 18 | 26 | 14 | 32 | 895 | 213 | 55 | 32 | 18 | 34 | 12 | 7.0 |
| 3 | 17 | 20 | *12 | 29 | 412 | 153 | 51 | 30 | *34 | 28 | 12 | *7.0 |
| 4 | 23 | 17 | 12 | 30 | 284 | *119 | 55 | 28 | 53 | 23 | 13 | 6.5 |
| 5 | 30 | *14 | 12 | 46 | 327 | 104 | 364 | 27 | 92 | 23 | *14 | 6.5 |
| 6 | a50 | 13 | 12 | 53 | 345 | 90 | 270 | 26 | 101 | 23 | 12 | 6.5 |
| 7 | a40 | 12 | 12 | *51 | 557 | 90 | 141 | 23 | 62 | 20 | 12 | 6.5 |
| 8 | a30 | 13 | 12 | 48 | 714 | 141 | 344 | 22 | 42 | 19 | 11 | 6.5 |
| 9 | a25 | 17 | 13 | 317 | 1,060 | 119 | 372 | 21 | 32 | *17 | 10 | 7.0 |
| 10 | a22 | 18 | 15 | 580 | 1,490 | 110 | 213 | 20 | 26 | 18 | 10 | 14 |
| 11 | a19 | 17 | 15 | 292 | 580 | 107 | 149 | 20 | 22 | 17 | 11 | 20 |
| 12 | a17 | 14 | 52 | 172 | 300 | 116 | 116 | 19 | 21 | 16 | 10 | 14 |
| 13 | a16 | 14 | 115 | 115 | 208 | 104 | 101 | 19 | 27 | 15 | 10 | 36 |
| 14 | a15 | 13 | 141 | 86 | 166 | 92 | 88 | 19 | 236 | 17 | 9.9 | 169 |
| 15 | a14 | 12 | 208 | 65 | 130 | 85 | 75 | 24 | 60 | 16 | 17 | 49 |
| 16 | a13 | 14 | 140 | 58 | 110 | 78 | 66 | 20 | 38 | 15 | 19 | 62 |
| 17 | a13 | 17 | 92 | 46 | 96 | 68 | 62 | 19 | 32 | 14 | 14 | 129 |
| 18 | a12 | 17 | 96 | 39 | 86 | 66 | 57 | 18 | 30 | 20 | 12 | 113 |
| 19 | 12 | 15 | 89 | 34 | 244 | 64 | 53 | 27 | 28 | 17 | 11 | 104 |
| 20 | 12 | 14 | 70 | 34 | 252 | 60 | 49 | 29 | 23 | 14 | 12 | 64 |
| 21 | 12 | 14 | 70 | 41 | 172 | 55 | 46 | 26 | 19 | 14 | 11 | 44 |
| 22 | 13 | 24 | 115 | 44 | 140 | 70 | 46 | 22 | 19 | 13 | 8.7 | 32 |
| 23 | 15 | 23 | 145 | 150 | 120 | 80 | 69 | 20 | 283 | 16 | 9.3 | 27 |
| 24 | 14 | 21 | 284 | 103 | 103 | 72 | 128 | 19 | 213 | 19 | 9.3 | 23 |
| 25 | 12 | 20 | 184 | 78 | 89 | 66 | 64 | 19 | 189 | 18 | 9.3 | 19 |
| 26 | 12 | 18 | 120 | 65 | 89 | 62 | 51 | 21 | 95 | 15 | 12 | 18 |
| 27 | 11 | 18 | 82 | 149 | 86 | 57 | 44 | 55 | 64 | 13 | 10 | 16 |
| 28 | 11 | 17 | 65 | 1,010 | 119 | 53 | 42 | 40 | 53 | 13 | 9.9 | 15 |
| 29 | 11 | 16 | 56 | *2,230 | - | 49 | 38 | 27 | 66 | 12 | 9.3 | 74 |
| 30 | 11 | 16 | 46 | 1,220 | -------- | 48 | 36 | 21 | 48 | 12 | 9.3 | 141 |
| 31 | 11 | -------- | 42 | 1,390 | -------- | 43 | -------- | 19 | -------- | 12 | 9.6 | -------- |
| Total | 551 | 507 | 2,356 | 8,646 | 10,724 | 2,970 | 3,288 | 765 | 2,045 | 563 | 351.6 | 1,244.6 |
| Mean | 17.8 | 16.9 | 76.0 | 279 | 383 | 95.8 | 110 | 24.7 | 68.2 | 18.2 | 11.3 | 41.5 |
| Cfsm | 0.346 | 0.328 | 1.48 | 5.42 | 7.44 | 1.86 | 2.14 | 0.480 | 1.32 | 0.353 | 0.219 | 0.806 |
| In. | 0.40 | 0.37 | 1.71 | 6.25 | 7.75 | 2.14 | 2.39 | 0.55 | 1.47 | 0.41 | 0.25 | 0.90 |

Calendar year 1956: Max 1,350 Min 7.0 Mean 72.3 Cfsm 1.40 In. 19.09
Water year 1956-57: Max 2,230 Min 6.5 Mean 93.2 Cfsm 1.81 In. 24.59

Peak discharge (base, 700 cfs).--Jan. 10 (9 a.m.) 908 cfs (2.87 ft); Jan. 29 (4 p.m.) 2,740 cfs (4.48 ft); Feb. 10 (6 a.m.) 2,220 cfs (3.62 ft); Apr. 8 (7 p.m.) 936 cfs (2.89 ft); June 23 (8 p.m.) 1,360 cfs (3.16 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Clinch River at Cleveland and Richlands.

## Clinch River at Cleveland, Va.

Location.--Lat 36°56'41", long 82°09'18", on right bank 500 ft upstream from highway bridge at Cleveland, Russell County, 0.5 mile downstream from Muddy Hollow, 2.3 miles downstream from Weaver Creek, and 4.4 miles downstream from Thompson Creek.

Drainage area.--528 sq mi.

Records available.--October 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,500.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 1, 1931, chain gage on highway bridge 500 ft downstream at different datum.

Average discharge.--35 years (1921-23, 1924-57), 691 cfs.

Extremes.--Maximum discharge during year, 31,000 cfs Jan. 30 (gage height, 24.40 ft), from rating curve extended above 13,000 cfs on basis of contracted-opening determination of peak flow; minimum, 43 cfs Sept. 9 (gage height, 1.32 ft).
1920-57: Maximum discharge, that of Jan. 30, 1957; minimum, 36 cfs Nov. 30, 1955; minimum gage height, 0.96 ft Feb. 10, 1934.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 823: Drainage area. WSP 1276: 1926(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 19, 20; shifting-control method used Sept. 30)

Oct. 1 to Mar. 1

| | | | |
|---|---|---|---|
| 1.5 | 115 | 8.0 | 4,400 |
| 2.0 | 228 | 12.0 | 8,800 |
| 2.5 | 385 | 18.0 | 18,100 |
| 3.0 | 590 | 21.0 | 23,700 |
| 5.0 | 1,800 | | |

Mar. 2 to Sept. 30

| | | | |
|---|---|---|---|
| 1.3 | 40 | 2.5 | 310 |
| 1.6 | 90 | 3.0 | 520 |
| 2.0 | 170 | 4.0 | 1,100 |

Note.--Same as preceding table above 4.6 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *286 | 185 | 156 | 440 | *11,300 | 3,310 | *462 | *462 | 163 | 338 | 133 | 57 |
| 2 | 228 | 451 | 148 | 399 | 9,130 | 3,040 | 515 | 418 | 163 | 298 | 121 | 54 |
| 3 | 197 | 472 | *137 | 325 | 5,120 | 2,150 | 632 | 390 | *208 | 250 | 106 | *50 |
| 4 | 202 | 344 | 139 | 338 | 3,190 | *1,660 | 575 | 354 | 298 | 215 | 114 | 50 |
| 5 | 220 | *277 | 137 | 436 | 2,480 | 1,340 | 1,380 | 330 | 515 | 200 | *123 | 50 |
| 6 | 566 | 242 | 135 | 640 | 2,470 | 1,140 | 2,630 | 314 | 860 | 185 | 150 | 54 |
| 7 | 550 | 218 | 135 | *665 | 2,710 | 1,010 | 2,010 | 292 | 686 | 166 | 150 | 54 |
| 8 | 371 | 215 | 131 | 615 | 3,800 | 1,200 | 1,990 | 286 | 530 | 152 | 116 | 48 |
| 9 | 286 | 218 | 131 | 1,290 | 7,600 | 1,280 | 4,800 | 265 | 378 | *144 | 97 | 48 |
| 10 | 236 | 218 | 135 | 5,200 | 8,800 | 1,170 | 2,950 | 256 | 280 | 148 | 90 | 83 |
| 11 | 205 | 205 | 141 | 3,600 | 6,170 | 1,140 | 2,010 | 250 | 241 | 200 | 85 | 170 |
| 12 | 197 | 188 | 205 | 2,040 | 3,400 | 1,170 | 1,520 | 244 | 215 | 175 | 85 | 175 |
| 13 | 169 | 178 | 558 | 1,430 | 2,390 | 1,140 | 1,240 | 238 | 198 | 142 | 76 | 116 |
| 14 | 169 | 169 | 950 | 1,100 | 1,800 | 1,040 | 1,040 | 259 | 778 | 138 | 79 | 855 |
| 15 | 150 | 163 | 1,760 | 860 | 1,490 | 950 | 860 | 268 | 605 | 135 | 125 | 672 |
| 16 | 146 | 174 | 1,490 | 740 | 1,280 | 830 | 740 | 244 | a350 | 121 | 175 | 418 |
| 17 | 141 | 197 | 1,220 | 605 | 1,130 | 740 | 680 | 220 | a300 | 123 | 138 | 1,310 |
| 18 | 135 | 197 | 950 | 488 | 980 | 680 | 605 | 247 | a250 | 152 | 114 | 1,240 |
| 19 | 135 | 185 | 830 | 480 | 1,860 | 656 | 555 | 326 | a350 | 256 | 99 | 1,730 |
| 20 | 131 | 174 | 690 | 470 | 4,600 | 620 | 510 | 470 | a270 | 161 | 95 | 1,170 |
| 21 | 133 | 174 | 640 | 486 | 2,790 | 560 | 480 | 390 | a210 | 129 | 85 | 626 |
| 22 | 139 | 220 | 830 | 500 | 2,010 | 620 | 495 | 289 | 188 | 119 | 77 | 555 |
| 23 | 167 | 248 | 1,070 | 1,190 | 1,590 | 1,040 | 686 | 253 | a250 | 125 | 70 | 410 |
| 24 | 163 | 228 | 1,700 | 1,700 | 1,340 | 1,040 | 1,100 | 226 | a500 | 232 | 69 | 318 |
| 25 | 160 | 202 | 2,150 | 1,280 | 1,220 | 920 | 1,240 | 215 | a1,200 | 190 | 74 | 256 |
| 26 | 158 | 188 | 1,430 | 1,010 | 1,130 | 830 | 950 | 218 | 1,070 | 155 | 69 | 212 |
| 27 | 152 | 188 | 1,040 | 1,080 | 1,100 | 770 | 728 | 256 | 610 | 131 | 70 | 185 |
| 28 | 148 | 176 | 800 | 5,370 | 1,190 | 662 | 605 | 256 | 422 | 194 | 69 | 185 |
| 29 | 156 | 163 | 665 | 20,100 | - | 590 | 590 | 241 | 398 | 247 | 65 | 543 |
| 30 | 156 | 158 | 563 | *22,200 | ------- | 540 | 575 | 198 | 386 | 178 | 67 | 2,180 |
| 31 | 150 | ------- | 484 | 8,740 | ------- | 510 | -------- | 180 | -------- | 148 | 60 | ------- |
| Total | 6,402 | 6,615 | 21,550 | 85,817 | 94,070 | 34,348 | 35,153 | 8,855 | 12,872 | 5,547 | 3,046 | 13,874 |
| Mean | 207 | 220 | 695 | 2,768 | 3,360 | 1,108 | 1,172 | 286 | 429 | 179 | 98.3 | 462 |
| Cfsm | 0.392 | 0.417 | 1.32 | 5.24 | 6.36 | 2.10 | 2.22 | 0.542 | 0.812 | 0.339 | 0.186 | 0.875 |
| In. | 0.45 | 0.47 | 1.52 | 6.04 | 6.62 | 2.42 | 2.48 | 0.62 | 0.91 | 0.39 | 0.21 | 0.98 |

Calendar year 1956: Max 12,600 Min 91 Mean 772 Cfsm 1.46 In. 19.92
Water year 1956-57: Max 22,200 Min 48 Mean 899 Cfsm 1.70 In. 23.11

Peak discharge (base, 5,000 cfs).--Jan. 10 (2 to 3 p.m.) 6,060 cfs (9.60 ft); Jan. 30 (1 a.m.) 31,000 cfs (24.40 ft); Feb. 10 (9 a.m.) 9,570 cfs (12.59 ft); Feb. 20 (7 to 8 a.m.) 5,020 cfs (8.62 ft); Apr. 9 (9 to 10 a.m.) 5,350 cfs (8.95 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Fork Holston River at Holston and Clinch River at Speers Ferry.

## Guest River at Coeburn, Va.

Location.--Lat 36°55'45", long 82°27'23", on right bank at downstream side of bridge on State Highway 72, 1.0 mile southeast of Coeburn, Wise County, 1.4 miles upstream from Jaybird Branch, 1.8 miles downstream from Pine Camp Creek, and 6 miles upstream from mouth.

Drainage area.--87.3 sq mi.

Records available.--September 1949 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,925.00 ft above mean sea level (Interstate Railroad benchmark).

Average discharge.--8 years, 142 cfs.

Extremes.--Maximum discharge during year, 6,360 cfs Jan. 29 (gage height, 14.20 ft, from floodmarks), from rating curve extended above 3,500 cfs on basis of logarithmic plotting and slope-area determination of peak flow; minimum, 2.1 cfs Sept. 8-10 (gage height, 1.34 ft).

1949-57: Maximum discharge, that of Jan. 29, 1957; minimum, 1.6 cfs Oct. 21, 22, 25, 26, Nov. 9, 10, 1953; minimum gage height, 1.23 ft Sept. 22, 23, 1955.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair.

Revisions (water years).--WSP 1436: 1950, 1955(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 18-20)

Oct. 1 to Dec. 24

| | | | |
|---|---|---|---|
| 1.4 | 6.0 | 3.0 | 240 |
| 1.5 | 15 | 4.0 | 490 |
| 1.7 | 36 | 5.0 | 825 |
| 2.0 | 78 | | |

Dec. 25 to Sept. 30

| | | | |
|---|---|---|---|
| 1.3 | 1.0 | 3.0 | 230 |
| 1.4 | 3.7 | 4.0 | 490 |
| 1.5 | 12 | 6.0 | 1,200 |
| 1.6 | 22 | 8.0 | 2,060 |
| 1.8 | 50 | 11.0 | 4,000 |
| 2.0 | 78 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 109 | 34 | 90 | 1,500 | 220 | 85 | 100 | 27 | 64 | 11 | 2.9 |
| 2 | *15 | 124 | 31 | 83 | 1,520 | 250 | *100 | *90 | 35 | 50 | 8.7 | 2.6 |
| 3 | 14 | 63 | 30 | 78 | 688 | 220 | 150 | 80 | 60 | 42 | 7.0 | 2.6 |
| 4 | 13 | 43 | *30 | 78 | 398 | 200 | 250 | 70 | *80 | 35 | 7.8 | *2.6 |
| 5 | 13 | 34 | 28 | 80 | 295 | *180 | 900 | 60 | 152 | 32 | 8.7 | 2.6 |
| 6 | 13 | *28 | 26 | 90 | 288 | 160 | 450 | 55 | 223 | 28 | *7.8 | 2.6 |
| 7 | 14 | 23 | 26 | 103 | 292 | 140 | 350 | 52 | 141 | 22 | 6.2 | 2.6 |
| 8 | 12 | 23 | 26 | *101 | 400 | 200 | 600 | 52 | 92 | 20 | 5.4 | 2.4 |
| 9 | 11 | 25 | 25 | 211 | 895 | 220 | 800 | 50 | 67 | 18 | 3.7 | 2.1 |
| 10 | 11 | 23 | 26 | 895 | 1,240 | 200 | 450 | 48 | 53 | *16 | 3.7 | 6.2 |
| 11 | 10 | 21 | 25 | 685 | 790 | 200 | 300 | 46 | 44 | 15 | 3.2 | 15 |
| 12 | 10 | 20 | 42 | 335 | 415 | 190 | 230 | 45 | 39 | 14 | 2.9 | 9.5 |
| 13 | 9.6 | 20 | 194 | 225 | 278 | 170 | 190 | 42 | 35 | 12 | 3.2 | 7.0 |
| 14 | 9.6 | 19 | 338 | 167 | 216 | 160 | 160 | 45 | 92 | 12 | 6.2 | 43 |
| 15 | 9.6 | 19 | 375 | 132 | 179 | 150 | 140 | 50 | 88 | 14 | 21 | 28 |
| 16 | 12 | 35 | 270 | 118 | 163 | 130 | 130 | 40 | 60 | 17 | 26 | 51 |
| 17 | 9.6 | 54 | 186 | 103 | 147 | 120 | 120 | 35 | 86 | 30 | 15 | 128 |
| 18 | 9.6 | 43 | 158 | 100 | 134 | 110 | 110 | 35 | 132 | 46 | 12 | 58 |
| 19 | 9.6 | 39 | 130 | 90 | 303 | 115 | 105 | 160 | 185 | 25 | 9.5 | 39 |
| 20 | 9.6 | 35 | 113 | 85 | 565 | 100 | 95 | 70 | 88 | 16 | 7.0 | 29 |
| 21 | 8.7 | 36 | 108 | 92 | 370 | 90 | 90 | 50 | 60 | 14 | 5.4 | 22 |
| 22 | 12 | 77 | 178 | 101 | 250 | 100 | 110 | 40 | 46 | 16 | 4.5 | 20 |
| 23 | 26 | 70 | 388 | 618 | 220 | 110 | 150 | 37 | 43 | 15 | 4.5 | 30 |
| 24 | 29 | 58 | 702 | 505 | 190 | 100 | 170 | 35 | 75 | 23 | 3.7 | 28 |
| 25 | 22 | 51 | 445 | 285 | 170 | 100 | 140 | 32 | 184 | 19 | 3.4 | 20 |
| 26 | 18 | 50 | 250 | 201 | 160 | 100 | 120 | 70 | 110 | 14 | 7.0 | 17 |
| 27 | 17 | 46 | 183 | 220 | 150 | 94 | 100 | 50 | 71 | 12 | 12 | 14 |
| 28 | 17 | 42 | 150 | 1,120 | 180 | 90 | 90 | 35 | 67 | 10 | 7.0 | 13 |
| 29 | 16 | 37 | 128 | 4,000 | - | 84 | 130 | 31 | 109 | 9.5 | 4.5 | 37 |
| 30 | 14 | 35 | 113 | *3,280 | ------- | 80 | 110 | 29 | 84 | 9.5 | 3.7 | 74 |
| 31 | 14 | ------- | 96 | 1,270 | ------- | 75 | ------- | 28 | ------- | 13 | 3.2 | ------- |
| Total | 424.9 | 1,302 | 4,854 | 15,541 | 12,396 | 4,458 | 6,925 | 1,662 | 2,628 | 683.0 | 234.9 | 711.7 |
| Mean | 13.7 | 43.4 | 157 | 501 | 443 | 144 | 231 | 53.6 | 87.6 | 22.0 | 7.58 | 23.7 |
| Cfsm | 0.157 | 0.497 | 1.80 | 5.74 | 5.07 | 1.65 | 2.65 | 0.614 | 1.00 | 0.252 | 0.087 | 0.271 |
| In. | 0.18 | 0.55 | 2.08 | 6.62 | 5.28 | 1.90 | 2.96 | 0.71 | 1.12 | 0.29 | 0.10 | 0.30 |

Calendar year 1956: Max 3,460 Min 8.7 Mean 164 Cfsm 1.88 In. 25.60
Water year 1956-57: Max 4,000 Min 2.1 Mean 142 Cfsm 1.63 In. 22.09

Peak discharge (base, 1,500 cfs).--Jan. 29 (12 p.m.) 6,360 cfs (14.20 ft).
* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record Dec. 28 to Jan. 6, Jan. 14-16, Feb. 21 to June 4; discharge estimated on basis of 4 discharge measurements, weather records, records for Powell River at Big Stone Gap and Clinch River at Richlands.

## Copper Creek near Gate City, Va.

Location.--Lat 36°40'26", long 82°33'57", on right bank at upstream side of highway bridge, 0.2 mile upstream from Plank Camp Creek, 1.1 miles downstream from Obeys Creek, and 2.6 miles northeast of Gate City, Scott County.

Drainage area.--106 sq mi.

Records available.--September 1947 to September 1957.

Gage.--Water-stage recorder. Altitude of gage is 1,290 ft (from topographic map). Prior to Aug. 30, 1953, wire-weight gage on highway bridge at same site and datum.

Average discharge.--10 years, 144 cfs.

Extremes.--Maximum discharge during year, 3,200 cfs Jan. 30 (gage height, 9.93 ft); minimum, 20 cfs Sept. 6-9 (gage height, 2.25 ft).
1947-57: Maximum discharge, 6,800 cfs Jan. 30, 1950 (gage height, 13.0 ft, from graph based on gage readings); minimum, 3.6 cfs Jan. 15, 1956 (gage height, 1.98 ft), result of freezeup.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions (water years).--WSP 1143: 1948. WSP 1276: 1950(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 3-6)

| | | | |
|---|---|---|---|
| 2.2 | 17 | 6.0 | 785 |
| 2.3 | 24 | 7.0 | 1,060 |
| 2.5 | 47 | 8.0 | 1,590 |
| 3.0 | 118 | 10.0 | 3,220 |
| 4.0 | 305 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48 | 50 | 35 | 105 | 2,690 | a1,000 | 88 | 86 | 48 | 50 | 34 | 22 |
| 2 | 44 | 60 | 34 | 98 | 1,910 | a600 | 94 | 86 | 60 | 43 | 31 | 22 |
| 3 | *42 | 48 | 33 | 84 | 956 | a400 | *90 | *83 | 76 | 39 | 30 | 22 |
| 4 | 40 | 38 | 32 | 69 | 704 | a300 | 100 | 80 | *43 | 37 | 31 | 22 |
| 5 | 39 | 35 | *32 | 107 | 609 | a250 | 522 | 77 | 54 | 37 | 32 | *22 |
| 6 | 38 | 34 | 32 | 115 | 772 | *a220 | 422 | 76 | 130 | 35 | *28 | 21 |
| 7 | 37 | *34 | 32 | 107 | 810 | 206 | 261 | 72 | 115 | 34 | 26 | 20 |
| 8 | 35 | 38 | 31 | 93 | 1,040 | 315 | 485 | 69 | 72 | 33 | 24 | 20 |
| 9 | 34 | 40 | 31 | *390 | 1,160 | 315 | 946 | 68 | 57 | 33 | 24 | 21 |
| 10 | 33 | 39 | 31 | 910 | a1,500 | 261 | 498 | 68 | 52 | 32 | 24 | 31 |
| 11 | 33 | 38 | 31 | 585 | a1,100 | 237 | 345 | 66 | 50 | *31 | 29 | 43 |
| 12 | 32 | 37 | 87 | 305 | a600 | 219 | 285 | 68 | 50 | 30 | 26 | 37 |
| 13 | 32 | 34 | 275 | 225 | a450 | 201 | 231 | 65 | 47 | 30 | 26 | 35 |
| 14 | 32 | 33 | 305 | 175 | a350 | 188 | 195 | 69 | 47 | 30 | 32 | 147 |
| 15 | 32 | 32 | 485 | 142 | a300 | 174 | 172 | 69 | 46 | 47 | 248 | 112 |
| 16 | 32 | 38 | 239 | 126 | a240 | 156 | 157 | 68 | 44 | 40 | 74 | 64 |
| 17 | 32 | 47 | 157 | 115 | a210 | 145 | 145 | 61 | 54 | 40 | 42 | 90 |
| 18 | 32 | 52 | 137 | 112 | a200 | 138 | 135 | 60 | 51 | 35 | 32 | 98 |
| 19 | 32 | 44 | 157 | 104 | a210 | 138 | 125 | 63 | 63 | 48 | 30 | 65 |
| 20 | 33 | 40 | 128 | 96 | a400 | 130 | 116 | 66 | 46 | 39 | 28 | 52 |
| 21 | 33 | 43 | 140 | 102 | a300 | 118 | 115 | 65 | 42 | 34 | 27 | 43 |
| 22 | 38 | 55 | 285 | 113 | a250 | 126 | 110 | 64 | 39 | 37 | 26 | 38 |
| 23 | 40 | 63 | 365 | 261 | a230 | 126 | 112 | 63 | 39 | 37 | 24 | 38 |
| 24 | 37 | 54 | 585 | 261 | a210 | 118 | 138 | 59 | 47 | 48 | 24 | 32 |
| 25 | 35 | 47 | 422 | 186 | a200 | 116 | 118 | 59 | 76 | 48 | 24 | 31 |
| 26 | 33 | 44 | 245 | 157 | a190 | 108 | 108 | 60 | 65 | 37 | 29 | 28 |
| 27 | 33 | 42 | 177 | 254 | a200 | 104 | 102 | 64 | 48 | 33 | 27 | 27 |
| 28 | 34 | 39 | 144 | 1,580 | a300 | 98 | 98 | 60 | 46 | 32 | 26 | 27 |
| 29 | 32 | 37 | 125 | *2,960 | - | 94 | 94 | 56 | 69 | 31 | 24 | 63 |
| 30 | 31 | 37 | 118 | 2,280 | ------- | 92 | 90 | 52 | 63 | 32 | 23 | 150 |
| 31 | 31 | ------- | 113 | 1,860 | ------- | 90 | ------- | 50 | ------- | 33 | 22 | ------- |
| Total | 1,089 | 1,272 | 5,043 | 14,077 | 18,091 | 6,783 | 6,497 | 2,072 | 1,739 | 1,145 | 1,127 | 1,443 |
| Mean | 35.1 | 42.4 | 163 | 454 | 646 | 219 | 217 | 66.8 | 58.0 | 36.9 | 36.4 | 48.1 |
| Cfsm | 0.331 | 0.400 | 1.54 | 4.28 | 6.09 | 2.07 | 2.05 | 0.630 | 0.547 | 0.348 | 0.343 | 0.454 |
| In. | 0.38 | 0.45 | 1.78 | 4.93 | 6.34 | 2.39 | 2.29 | 0.73 | 0.61 | 0.40 | 0.40 | 0.51 |

Calendar year 1956: Max 2,700 Min 10 Mean 163 Cfsm 1.54 In. 20.93
Water year 1956-57: Max 2,960 Min 20 Mean 165 Cfsm 1.56 In. 21.21

Peak discharge (base, 1,200 cfs).--Jan. 30 (4 a.m.) 3,200 cfs (9.98 ft); Feb. 10 (time unknown) 2,100 cfs (8.65 ft); Apr. 9 (7 a.m.) 1,300 cfs (7.52 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, 1 discharge measurement, weather records, and records for Clinch River at Speers Ferry and Big Moccasin Creek near Gate City.

## Clinch River at Speers Ferry, Va.

Location.--Lat 36°38'55", long 82°45'02", on right bank 100 ft downstream from highway bridge on U. S. Highway 58, 0.5 mile downstream from Copper Creek, 0.8 mile northwest of Speers Ferry, Scott County, and 1.8 miles downstream from Clinchport.

Drainage area.--1,126 sq mi.

Records available.--October 1920 to September 1957. Gage-height records collected in this vicinity February 1895 to July 1933 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,196.52 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 22, 1926, staff gage at site 400 ft upstream at datum 1.50 ft higher. Nov. 22, 1926, to Nov. 6, 1931, chain gage at present site and datum.

Average discharge.--37 years, 1,572 cfs.

Extremes.--Maximum discharge during year, 45,300 cfs Jan. 30 (gage height, 28.92 ft); minimum, 108 cfs Sept. 8 (gage height, 1.22 ft).
1920-57: Maximum discharge, that of Jan. 30, 1957; minimum, 42 cfs Sept. 29, Oct. 23, 1939; minimum daily, 77 cfs Oct. 7, 8, 14, 22, 1930.

Remarks.--Records good except those for period of no gage-height record, which are fair. Prior to May 1951, diurnal fluctuation at low flow caused by mill above station.

Revisions (water years).--WSP 823: Drainage area. WSP 1276: 1925(M), 1927, 1928-31(M), 1932, 1935(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 105 | 6.0 | 3,100 |
| 1.6 | 168 | 9.0 | 6,560 |
| 2.0 | 268 | 13.0 | 11,600 |
| 2.5 | 431 | 20.0 | 24,100 |
| 3.0 | 645 | 28.0 | 43,000 |
| 4.0 | 1,260 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 572 | 371 | 310 | 940 | 23,200 | 5,840 | 1,000 | a1,000 | 335 | 595 | 254 | 124 |
| 2 | 427 | 506 | 298 | 828 | 22,300 | 6,920 | 1,000 | *a930 | 351 | 498 | 219 | 122 |
| 3 | *361 | 664 | 289 | 720 | 12,800 | 4,880 | *1,040 | 882 | 385 | 443 | 197 | 118 |
| 4 | 323 | 695 | 277 | 720 | 7,420 | 3,540 | 1,260 | 772 | *447 | 385 | 192 | *118 |
| 5 | 298 | 550 | *268 | 910 | 5,400 | 2,800 | 5,480 | 720 | 550 | 348 | 183 | 114 |
| 6 | 307 | 427 | 265 | 1,080 | 5,600 | 2,350 | 5,600 | 670 | 1,420 | 314 | *172 | 113 |
| 7 | 534 | *381 | 260 | 1,260 | 6,320 | 2,110 | 4,310 | 620 | 1,500 | 292 | 172 | 109 |
| 8 | 645 | 355 | 257 | 1,220 | 8,600 | 2,700 | 4,090 | 572 | 1,080 | 268 | 192 | 108 |
| 9 | 478 | 339 | 257 | *2,540 | 11,900 | 3,100 | 8,840 | 550 | 800 | 248 | 188 | 110 |
| 10 | 385 | 332 | 251 | 7,280 | 17,700 | 2,700 | 7,400 | 510 | 620 | *235 | 162 | 134 |
| 11 | 332 | 329 | 251 | 9,080 | 14,600 | 2,450 | 4,530 | 490 | 482 | 219 | 154 | 152 |
| 12 | 298 | 317 | 703 | 5,240 | 8,120 | 2,350 | 3,210 | 486 | 420 | 214 | 162 | 188 |
| 13 | 271 | 292 | 2,160 | 3,320 | 5,120 | 2,250 | a2,500 | 458 | 385 | 265 | 141 | 274 |
| 14 | 251 | 274 | 2,700 | 2,450 | 3,870 | 2,110 | a2,000 | 498 | 385 | 230 | 158 | 392 |
| 15 | 237 | 262 | 3,650 | 1,930 | 3,100 | 1,930 | a1,700 | 620 | 1,070 | 224 | 1,040 | 1,090 |
| 16 | 224 | 292 | 3,210 | 1,620 | 2,700 | 1,750 | a1,500 | 510 | 745 | 232 | 323 | 882 |
| 17 | 217 | 361 | 2,350 | 1,420 | 2,350 | 1,580 | a1,300 | 427 | 620 | 212 | 280 | 910 |
| 18 | 212 | 395 | 1,930 | 1,140 | 1,980 | 1,460 | a1,200 | 392 | 550 | 207 | 260 | 1,620 |
| 19 | 207 | 378 | 1,700 | 882 | 1,980 | 1,420 | a1,100 | 420 | 772 | 232 | 224 | 1,380 |
| 20 | 204 | 345 | 1,500 | 910 | 5,720 | 1,340 | a1,050 | 572 | 572 | 280 | 195 | 1,880 |
| 21 | 207 | 335 | 1,500 | 1,000 | 5,840 | 1,220 | a950 | 670 | 424 | 283 | 168 | 1,180 |
| 22 | 227 | 378 | 2,400 | 1,020 | 3,870 | 1,260 | a1,100 | 572 | 355 | 224 | 158 | 745 |
| 23 | 222 | 447 | 3,540 | 3,360 | 3,000 | 1,460 | a1,400 | 474 | 320 | 214 | 148 | 670 |
| 24 | 271 | 490 | 4,880 | 4,460 | 2,500 | 1,800 | a2,200 | 530 | 1,160 | 246 | 140 | 550 |
| 25 | 260 | 470 | 4,420 | 3,320 | 2,200 | 1,750 | a2,500 | 482 | 1,840 | 251 | 136 | 458 |
| 26 | 248 | 424 | 3,000 | 2,460 | 2,060 | 1,620 | a1,800 | 482 | 1,660 | 301 | 143 | 378 |
| 27 | 246 | 395 | 2,160 | 2,450 | 1,980 | 1,460 | a1,400 | 530 | 1,040 | 248 | 146 | 323 |
| 28 | 237 | 375 | 1,700 | 9,600 | 2,160 | 1,340 | a1,200 | 494 | 800 | 217 | 140 | 286 |
| 29 | 222 | 348 | 1,460 | 26,500 | - | 1,220 | a1,150 | 447 | 855 | 204 | 134 | 392 |
| 30 | 224 | 329 | 1,220 | *42,500 | ------- | 1,110 | a1,100 | 409 | 695 | 251 | 131 | 932 |
| 31 | 248 | ------- | 1,080 | 29,300 | ------- | 1,040 | ------- | 358 | ------- | 317 | 122 | ------- |
| Total | 9,395 | 11,856 | 50,246 | 171,460 | 194,390 | 70,860 | 74,910 | 17,547 | 22,638 | 8,697 | 6,434 | 15,852 |
| Mean | 303 | 395 | 1,621 | 5,531 | 6,942 | 2,286 | 2,497 | 566 | 755 | 281 | 208 | 528 |
| Cfsm | 0.269 | 0.351 | 1.44 | 4.91 | 6.17 | 2.03 | 2.22 | 0.503 | 0.671 | 0.250 | 0.185 | 0.469 |
| In. | 0.31 | 0.39 | 1.66 | 5.66 | 6.42 | 2.34 | 2.48 | 0.58 | 0.75 | 0.29 | 0.21 | 0.52 |

Calendar year 1956: Max 27,200 Min 160 Mean 1,777 Cfsm 1.58 In. 21.48
Water year 1956-57: Max 42,500 Min 108 Mean 1,793 Cfsm 1.59 In. 21.61

Peak discharge (base, 10,000 cfs).--Jan. 11 (4 a.m.) 10,400 cfs (12.18 ft); Jan. 30 (3 p.m.) 45,300 cfs (28.92 ft); Feb. 10 (10 p.m.) 18,800 cfs (17.37 ft); Apr. 9 (5 p.m.) 10,000 cfs (11.86 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Clinch River at Cleveland and North Fork Holston River at Holston.

## North Fork Clinch River at Duffield, Va.

Location.--Lat 36°42'40", long 82°47'45", on right bank at upstream side of bridge on U. S. Highways 58 and 421, 0.2 mile downstream from Spurlock Branch, 0.5 mile south of Duffield, Scott County, and 1.6 miles upstream from Harris Branch.

Drainage area.--23.1 sq mi.

Records available.--October 1952 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,814.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years, 34.8 cfs.

Extremes.--Maximum discharge during year, 789 cfs Jan. 28 (gage height, 7.34 ft); minimum, 1.7 cfs Aug. 28 to Sept. 10; minimum gage height, 1.34 ft Aug. 11, 14.
1952-57: Maximum discharge, 800 cfs Apr. 15, 1956 (gage height, 7.40 ft); minimum, 1.0 cfs Sept. 17-19, 23, 24, 1954.

Remarks.--Records good.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.3 | 1.3 | 2.0 | 42 |
| 1.4 | 3.3 | 3.0 | 136 |
| 1.5 | 6.3 | 4.0 | 275 |
| 1.6 | 12 | 7.0 | 734 |
| 1.8 | 26 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.9 | 23 | 6.3 | 22 | 590 | 91 | 24 | 24 | 4.8 | 6.3 | 2.5 | 1.7 |
| 2 | *3.1 | 13 | 6.0 | 19 | 425 | 84 | *28 | *22 | 5.7 | 5.1 | 2.5 | 1.7 |
| 3 | 3.3 | 8.2 | 5.7 | 16 | 216 | 70 | 24 | 21 | 6.0 | 4.5 | 2.5 | 1.7 |
| 4 | 4.5 | 6.0 | *5.1 | 18 | 136 | 60 | 80 | 19 | *5.7 | 3.9 | 2.7 | *1.7 |
| 5 | 4.5 | 5.4 | 5.1 | 28 | 116 | *50 | 416 | 18 | 5.7 | 3.9 | 2.7 | 1.7 |
| 6 | 4.5 | *4.5 | 5.1 | 32 | 123 | 45 | 173 | 16 | 8.8 | 3.6 | *2.5 | 1.7 |
| 7 | 4.5 | 4.5 | 5.1 | 34 | 252 | 47 | 97 | 15 | 7.1 | 3.3 | 2.3 | 1.7 |
| 8 | 4.5 | 5.1 | 4.8 | *31 | 290 | 102 | 187 | 14 | 5.7 | 3.1 | 2.3 | 1.7 |
| 9 | 4.5 | 5.1 | 4.8 | 197 | 372 | 88 | 238 | 13 | 5.4 | 2.9 | 2.3 | 1.7 |
| 10 | 4.2 | 4.8 | 4.8 | 362 | 455 | 72 | 128 | 12 | 5.1 | *2.7 | 2.3 | 3.9 |
| 11 | 4.2 | 4.5 | 4.8 | 193 | 245 | 63 | 83 | 12 | 4.8 | 2.5 | 2.5 | 3.1 |
| 12 | 3.9 | 4.2 | 46 | 107 | 140 | 60 | 65 | 11 | 4.8 | 2.3 | 2.9 | 2.9 |
| 13 | 3.9 | 3.9 | 147 | 72 | 93 | 53 | 55 | 10 | 5.1 | 2.3 | 2.5 | 2.7 |
| 14 | 3.9 | 3.9 | 133 | 55 | 73 | 50 | 47 | 9.4 | 7.6 | 2.3 | 3.1 | 6.7 |
| 15 | 3.9 | 3.9 | 117 | 46 | 60 | 45 | 41 | 8.8 | 5.7 | 2.3 | 26 | 4.5 |
| 16 | 3.6 | 7.6 | 78 | 40 | 54 | 40 | 38 | 8.2 | 6.0 | 2.3 | 6.0 | 17 |
| 17 | 3.9 | 13 | 57 | 32 | 47 | 36 | 35 | 7.1 | 13 | 2.3 | 3.9 | 16 |
| 18 | 3.9 | 10 | 48 | 28 | 42 | 36 | 32 | 6.7 | 7.6 | 2.3 | 3.1 | 8.2 |
| 19 | 3.9 | 8.2 | 40 | 25 | 51 | 35 | 30 | 6.7 | 6.0 | 2.3 | 2.9 | 5.7 |
| 20 | 4.2 | 6.7 | 36 | 23 | 63 | 32 | 28 | 7.1 | 5.4 | 2.3 | 2.5 | 4.8 |
| 21 | 4.2 | 7.1 | 37 | 25 | 60 | 28 | 26 | 6.7 | 4.8 | 2.3 | 2.3 | 4.8 |
| 22 | 6.0 | 16 | 91 | 28 | 55 | 37 | 28 | 6.3 | 4.8 | 2.3 | 2.1 | 5.4 |
| 23 | 6.3 | 14 | 109 | 208 | 49 | 40 | 50 | 6.3 | 5.7 | 2.7 | 1.9 | 6.0 |
| 24 | 5.4 | 12 | 107 | 111 | 45 | 40 | 55 | 11 | 6.0 | 7.1 | 1.9 | 5.4 |
| 25 | 5.4 | 11 | 81 | 78 | 43 | 40 | 44 | 13 | 8.2 | 4.5 | 1.9 | 4.5 |
| 26 | 5.4 | 9.4 | 61 | 60 | 42 | 38 | 38 | 11 | 6.0 | 3.6 | 2.1 | 3.9 |
| 27 | 5.4 | 8.2 | 49 | 80 | 40 | 34 | 35 | 11 | 5.1 | 3.3 | 2.1 | 3.6 |
| 28 | 5.1 | 7.6 | 41 | 574 | 46 | 31 | 31 | 7.6 | 6.0 | 3.1 | 1.9 | 3.6 |
| 29 | 5.1 | 7.1 | 36 | 723 | - | 28 | 29 | 6.7 | 15 | 2.9 | 1.7 | 13 |
| 30 | 4.8 | 6.3 | 28 | 472 | ------- | 27 | 26 | 6.0 | 9.4 | 2.7 | 1.7 | 14 |
| 31 | 5.1 | ------- | 25 | 504 | ------ | 25 | ------- | 5.4 | ------- | 2.7 | 1.7 | ------- |
| Total | 138.0 | 244.2 | 1,424.6 | 4,243 | 4,223 | 1,527 | 2,211 | 352.0 | 197.0 | 99.7 | 101.3 | 155.0 |
| Mean | 4.45 | 8.14 | 46.0 | 137 | 151 | 49.3 | 73.7 | 11.4 | 6.57 | 3.22 | 3.27 | 5.17 |
| Cfsm | 0.193 | 0.352 | 1.99 | 5.93 | 6.54 | 2.13 | 3.19 | 0.494 | 0.284 | 0.139 | 0.142 | 0.224 |
| In. | 0.22 | 0.39 | 2.29 | 6.84 | 6.81 | 2.46 | 3.56 | 0.57 | 0.32 | 0.16 | 0.16 | 0.25 |

Calendar year 1956: Max 652 Min 2.5 Mean 48.9 Cfsm 2.12 In. 28.79
Water year 1956-57: Max 723 Min 1.7 Mean 40.9 Cfsm 1.77 In. 24.03

Peak discharge (base, 500 cfs).--Jan. 28 (6 p.m.) 789 cfs (7.34 ft); Feb. 1 (9 to 10 p.m.) 654 cfs (6.50 ft); Feb. 10 (6 a.m.) 566 cfs (5.94 ft); Apr. 5 (5 a.m.) 538 cfs (5.75 ft).
* Discharge measurement made on this day.

## Clinch River above Tazewell, Tenn.

Location.--Lat 36°25'30", long 83°23'54", on right bank 0.4 mile upstream from Grissom Island, 4.6 miles downstream from Big War Creek, 10 miles east of Tazewell, Claiborne County, and at mile 159.8.

Drainage area.--1,474 sq mi.

Records available.--April 1919 to September 1927 (published as "near Long Mountain"), August 1927 to December 1936 (published as "near Tazewell"), July 1935 to September 1957.

Gage.--Water-stage recorder at present site and datum since Dec. 4, 1935. Datum of gage is 1,060.7 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Apr. 1, 1919, to Sept. 30, 1927, chain gage on railroad bridge 23 miles downstream at datum 102.7 ft lower. Aug. 8, 1927, to Dec. 31, 1936, water-stage recorder at site 7.7 miles downstream at datum 47.2 ft lower. July 29 to Dec. 3, 1935, staff gage at present site and datum.

Average discharge.--38 years, 2,076 cfs.

Extremes.--Maximum discharge during year, 51,100 cfs Jan. 31 (gage height, 21.00 ft); minimum, 125 cfs Sept. 9 (gage height, 0.43 ft).
1919-57: Maximum discharge, that of Jan. 31, 1957; minimum observed, 108 cfs Sept. 11, 1925.
Maximum stage known, about 24 ft in 1862, present site and datum, from information by local resident.

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1928.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 10 | | | | Jan. 11 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 220 | 3.0 | 2,100 | 0.4 | 116 | 3.0 | 1,990 |
| 1.0 | 355 | 5.0 | 4,800 | .5 | 146 | 5.0 | 4,800 |
| 1.5 | 675 | 6.1 | 6,630 | 1.0 | 350 | 9.0 | 12,400 |
| 2.0 | 1,070 | | | 1.5 | 650 | 15.0 | 28,800 |
| | | | | 2.0 | 1,030 | 20.1 | 47,300 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 881 | *466 | 434 | 1,350 | 34,000 | *4,290 | 1,240 | 1,450 | 484 | 830 | 346 | 164 |
| 2 | *640 | 612 | 410 | 1,190 | 31,400 | 8,220 | 1,300 | 1,340 | 438 | *706 | 318 | 153 |
| 3 | 516 | 612 | 394 | 1,060 | 21,900 | 7,190 | *1,280 | 1,220 | 532 | 629 | 274 | *153 |
| 4 | 440 | 735 | 388 | 994 | 12,300 | 5,140 | 1,700 | 1,080 | *532 | 538 | 252 | 150 |
| 5 | 399 | 780 | 372 | 1,510 | 8,170 | 3,900 | 6,880 | 990 | 568 | 484 | *244 | 143 |
| 6 | 377 | 633 | *360 | 1,660 | 7,080 | 3,200 | 9,080 | *926 | 713 | 427 | 236 | 140 |
| 7 | 360 | 549 | 355 | *1,650 | 7,510 | 2,770 | 6,610 | 854 | 1,550 | 394 | 212 | 131 |
| 8 | 483 | 509 | 350 | 1,730 | 10,700 | 3,460 | 5,820 | 798 | 1,410 | 356 | 209 | 128 |
| 9 | 705 | 490 | 345 | 2,620 | 12,100 | 4,460 | 9,760 | 755 | 1,050 | 336 | 212 | 125 |
| 10 | 556 | 452 | 345 | 6,500 | 18,500 | 4,080 | 11,100 | 720 | 854 | 318 | 232 | 131 |
| 11 | 458 | 440 | 340 | 11,000 | 21,000 | 3,470 | 7,400 | 692 | 699 | 292 | 212 | 157 |
| 12 | 399 | 428 | 1,000 | 8,850 | 14,000 | 3,160 | 4,980 | 664 | 594 | 274 | 193 | 197 |
| 13 | 360 | 422 | 3,750 | 5,220 | 8,280 | 2,950 | 3,740 | 643 | 532 | 260 | 190 | 228 |
| 14 | 330 | 399 | 4,470 | 3,560 | 5,800 | 2,730 | 2,990 | 615 | 671 | 292 | 190 | 514 |
| 15 | 305 | 372 | 4,400 | 2,680 | 4,450 | 2,470 | 2,490 | 608 | 514 | 300 | 792 | 490 |
| 16 | 292 | 434 | 4,640 | 2,180 | 3,640 | 2,230 | 2,160 | 748 | 918 | 278 | 1,290 | 1,200 |
| 17 | 278 | 591 | 3,770 | 1,840 | 3,100 | 2,000 | 1,940 | 664 | 838 | 292 | 508 | 1,270 |
| 18 | *274 | 570 | 2,930 | 1,550 | 2,680 | 1,840 | 1,750 | 580 | 713 | 282 | 372 | 1,090 |
| 19 | 264 | 556 | 2,460 | 1,290 | 2,360 | 1,720 | 1,600 | 550 | 629 | 282 | 341 | 1,640 |
| 20 | 256 | 516 | 2,150 | 1,090 | 3,660 | 1,640 | 1,470 | 532 | 741 | 269 | 318 | 1,320 |
| 21 | 252 | 483 | 1,990 | 1,130 | 7,580 | 1,540 | 1,370 | 629 | 692 | 269 | 278 | 1,700 |
| 22 | 269 | 516 | 3,100 | 1,240 | 5,770 | 1,520 | 1,300 | 762 | 532 | 356 | 244 | 1,110 |
| 23 | 278 | 542 | 4,560 | 2,260 | 4,120 | 1,630 | 1,380 | 748 | 490 | 310 | 216 | 862 |
| 24 | 282 | 584 | 5,800 | 5,600 | 3,330 | 1,860 | 5,250 | 650 | 508 | 323 | 209 | 748 |
| 25 | 292 | 626 | 6,020 | 4,910 | 2,860 | 2,080 | 3,960 | 608 | 951 | 310 | 193 | 622 |
| 26 | 320 | 605 | 5,170 | 3,600 | 2,600 | 1,980 | 3,130 | 692 | 1,740 | 292 | 190 | 526 |
| 27 | 315 | 556 | 3,700 | 3,460 | 2,490 | 1,800 | 2,540 | 650 | 1,630 | 336 | 182 | 449 |
| 28 | 300 | 516 | 2,730 | 9,470 | 2,550 | 1,640 | 2,020 | 615 | 1,200 | 323 | 186 | 394 |
| 29 | 296 | 483 | 2,170 | *29,400 | - | 1,500 | 1,730 | 636 | 1,010 | 282 | 190 | 508 |
| 30 | 287 | 464 | 1,810 | *42,700 | -------- | 1,380 | 1,530 | 568 | 926 | 269 | 182 | 678 |
| 31 | 278 | -------- | 1,550 | 47,300 | -------- | 1,290 | -------- | 538 | -------- | 260 | 175 | -------- |
| Total | 11,742 | 15,941 | 72,263 | 210,594 | 263,930 | 89,140 | 109,500 | 23,525 | 24,659 | 11,169 | 9,186 | 17,121 |
| Mean | 379 | 531 | 2,331 | 6,793 | 9,426 | 2,875 | 3,650 | 759 | 822 | 360 | 296 | 571 |
| Cfsm | 0.257 | 0.360 | 1.58 | 4.61 | 6.39 | 1.95 | 2.48 | 0.515 | 0.558 | 0.244 | 0.201 | 0.387 |
| In. | 0.30 | 0.40 | 1.82 | 5.31 | 6.66 | 2.25 | 2.76 | 0.59 | 0.62 | 0.28 | 0.23 | 0.43 |

Calendar year 1956: Max 29,500 Min 228 Mean 2,334 Cfsm 1.58 In. 21.54
Water year 1956-57: Max 47,300 Min 125 Mean 2,353 Cfsm 1.60 In. 21.65

Peak discharge (base, 14,000 cfs).--Jan. 31 (4:30 a.m.) 51,100 cfs (21.00 ft); Feb. 11 (6 to 7 a.m.) 22,100 cfs (12.82 ft).
* Discharge measurement made on this day.

## Powell River at Big Stone Gap, Va.

Location.--Lat 36°52'08", long 82°46'32", on right bank 10 ft upstream from bridge on U. S. Highway 23 at Big Stone Gap, Wise County, 1 mile upstream from South Fork Powell River, and 2.5 miles downstream from Pigeon Creek.

Drainage area.--112 sq mi.

Records available.--October 1944 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,459.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 27, 1948, staff gage at same site and datum.

Average discharge.--12 years (1945-57), 205 cfs.

Extremes.--Maximum discharge during year, 11,000 cfs Jan. 29 (gage height, 9.67 ft); minimum, 9.5 cfs Sept. 7-10; minimum gage height, 0.75 ft several days in October and September.

1944-57: Maximum discharge, 16,500 cfs Jan. 7, 1946 (gage height, 9.8 ft, from floodmark); minimum, 4.0 cfs Sept. 16, 17, 19, 1955.

Remarks.--Records good.

Revisions (water years).--WSP 1053: Drainage area. WSP 1276: 1948. WSP 1436: 1949(M), 1950, 1951-54(M), 1955.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to June 13 | | | | June 14 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 9.0 | 2.5 | 550 | 0.7 | 5.0 | 1.5 | 145 |
| .8 | 20 | 3.0 | 850 | .8 | 14 | 2.0 | 320 |
| 1.0 | 45 | 4.0 | 1,750 | .9 | 26 | 2.5 | 550 |
| 1.5 | 155 | 6.0 | 4,400 | 1.0 | 41 | 3.0 | 850 |
| 2.0 | 320 | 8.0 | 7,800 | 1.2 | 80 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 190 | 41 | 115 | 2,180 | 300 | 102 | 120 | 36 | 74 | 22 | 11 |
| 2 | *22 | 131 | 40 | 105 | 1,880 | 328 | *118 | *110 | 38 | 64 | 20 | 11 |
| 3 | 20 | 73 | 38 | 95 | 933 | 296 | 105 | 95 | 57 | 56 | 19 | 11 |
| 4 | 28 | 54 | *37 | 102 | 636 | 231 | 187 | 88 | *152 | 52 | 36 | *12 |
| 5 | 26 | 45 | 37 | 136 | 520 | *198 | 1,200 | 84 | 144 | 52 | 35 | 12 |
| 6 | 24 | *40 | 36 | 150 | 460 | 177 | 744 | 77 | 161 | 45 | *20 | 10 |
| 7 | 22 | 40 | 37 | 161 | 485 | 177 | 445 | 71 | 112 | 40 | 16 | 10 |
| 8 | 21 | 40 | 37 | *147 | 636 | 280 | 648 | 70 | 75 | 38 | 15 | 11 |
| 9 | 19 | 41 | 38 | 398 | 1,080 | 284 | 1,080 | 66 | 60 | 36 | 14 | 10 |
| 10 | 17 | 36 | 37 | 1,160 | 1,540 | 269 | 600 | 64 | 52 | *36 | 14 | 21 |
| 11 | 17 | 33 | 37 | 696 | 936 | 265 | 415 | 62 | 51 | 32 | 13 | 24 |
| 12 | 17 | 32 | 73 | 415 | 600 | 258 | 320 | 60 | 48 | 32 | 14 | 15 |
| 13 | 17 | 30 | 362 | 304 | 450 | 234 | 269 | 56 | 176 | 30 | 16 | 21 |
| 14 | 16 | 30 | 545 | 234 | 364 | 212 | 218 | 57 | 634 | 29 | 20 | 54 |
| 15 | 18 | 30 | 530 | 192 | 300 | 198 | 192 | 64 | 217 | 34 | 84 | 29 |
| 16 | 17 | 51 | 328 | 169 | 262 | 169 | 177 | 52 | 157 | 35 | 38 | 214 |
| 17 | 14 | 60 | 221 | 133 | 228 | 155 | 169 | 48 | 266 | 51 | 29 | 159 |
| 18 | 16 | 54 | 183 | 123 | 203 | 147 | 152 | 46 | 210 | 54 | 24 | 70 |
| 19 | 17 | 51 | 150 | 110 | 376 | 144 | 142 | 46 | 138 | 38 | 20 | 47 |
| 20 | 16 | 46 | 139 | 105 | 600 | 133 | 131 | 50 | 106 | 30 | 18 | 36 |
| 21 | 18 | 54 | 128 | 115 | 470 | 120 | 123 | 50 | 88 | 26 | 15 | 34 |
| 22 | 33 | 81 | 482 | 125 | 376 | 139 | 128 | 50 | 84 | 26 | 14 | 35 |
| 23 | 40 | 73 | 684 | 1,030 | 320 | 139 | 221 | 51 | 92 | 41 | 14 | 49 |
| 24 | 30 | 66 | 678 | 595 | 280 | 133 | 221 | 46 | 88 | 45 | 14 | 34 |
| 25 | 25 | 58 | 475 | 384 | 254 | 136 | 189 | 41 | 106 | 32 | 15 | 29 |
| 26 | 24 | 58 | 324 | 280 | 237 | 136 | 158 | 94 | 94 | 26 | 18 | 25 |
| 27 | 25 | 52 | 243 | 308 | 221 | 128 | 139 | 66 | 74 | 24 | 19 | 24 |
| 28 | 24 | 46 | 200 | 1,750 | 231 | 118 | 123 | 45 | 86 | 22 | 14 | 22 |
| 29 | 25 | 45 | 172 | *6,330 | - | 112 | 175 | 41 | 125 | 21 | 12 | 112 |
| 30 | 22 | 42 | 142 | 2,340 | ------- | 107 | 144 | 38 | 94 | 22 | 12 | 102 |
| 31 | 21 | ------- | 128 | 1,300 | ------- | 102 | ------- | 37 | ------- | 30 | 12 | ------- |
| Total | 673 | 1,682 | 6,602 | 19,607 | 17,058 | 5,825 | 9,035 | 1,945 | 3,821 | 1,173 | 646 | 1,254 |
| Mean | 21.7 | 56.1 | 213 | 632 | 609 | 188 | 301 | 62.7 | 127 | 37.8 | 20.8 | 41.8 |
| Cfsm | 0.194 | 0.501 | 1.90 | 5.64 | 5.44 | 1.68 | 2.69 | 0.560 | 1.13 | 0.338 | 0.186 | 0.373 |
| In. | 0.22 | 0.56 | 2.19 | 6.50 | 5.66 | 1.94 | 3.00 | 0.65 | 1.26 | 0.39 | 0.21 | 0.42 |

Calendar year 1956 : Max 3,360 Min 14 Mean 245 Cfsm 2.19 In. 29.83
Water year 1956-57 : Max 6,330 Min 10 Mean 190 Cfsm 1.70 In. 23.00

Peak discharge (base,1,600 cfs).--Jan. 29 (3 p.m.) 11,000 cfs (9.67 ft); Feb. 10 (11 a.m.) 1,740 cfs (3.99 ft).

* Discharge measurement made on this day.

## Powell River near Jonesville, Va.

Location.--Lat 36°39'43", long 83°05'42", on right bank 35 ft downstream from highway bridge, 2 miles southeast of Jonesville, Lee County, and 10 miles upstream from Wallen Creek.

Drainage area.--319 sq mi.

Records available.--November 1931 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,259.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--25 years (1932-57), 506 cfs.

Extremes.--Maximum discharge during year, 19,800 cfs Jan. 30 (gage height, 26.87 ft); minimum, 24 cfs Sept. 9 (gage height, 0.95 ft).
1931-57: Maximum discharge, 30,000 cfs Jan. 8, 1946 (gage height, 30.8 ft), from rating curve extended above 20,000 cfs by logarithmic plotting; minimum, 17 cfs Sept. 19, 20, 1954.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 1033: 1932-44. WSP 1436: 1946, 1948(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 18-20)

| | | | |
|---|---|---|---|
| 0.9 | 20 | 4.0 | 1,040 |
| 1.0 | 28 | 6.0 | 2,220 |
| 1.3 | 61 | 10.0 | 4,820 |
| 1.6 | 103 | 15.0 | 8,170 |
| 2.0 | 184 | 20.0 | 12,000 |
| 3.0 | 540 | 22.0 | 14,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 54 | 101 | 85 | 280 | 6,540 | 815 | 248 | 262 | 88 | 270 | 45 | 28 |
| 2 | *49 | 364 | 81 | 242 | 6,310 | 925 | *287 | *238 | 82 | 182 | 46 | 26 |
| 3 | 48 | 190 | 77 | 198 | 2,970 | 815 | 312 | 215 | 106 | 141 | 40 | 26 |
| 4 | 48 | 131 | *74 | 204 | 1,780 | 692 | 343 | 192 | *120 | 117 | 40 | *26 |
| 5 | 49 | 102 | 74 | 308 | 1,320 | 580 | 3,780 | 174 | 276 | 105 | 41 | 26 |
| 6 | 58 | *88 | 74 | 354 | 1,230 | *520 | 2,940 | 164 | 368 | 97 | *64 | 26 |
| 7 | 52 | 82 | 71 | 371 | 1,560 | 488 | 1,470 | 151 | 332 | 88 | 51 | 26 |
| 8 | 48 | 80 | 70 | *364 | 2,290 | 952 | 1,560 | 141 | 399 | 78 | 40 | 25 |
| 9 | 47 | 81 | 71 | 1,240 | 3,260 | 1,060 | 3,980 | 133 | 159 | 71 | 35 | 25 |
| 10 | 45 | 80 | 73 | 4,170 | 5,020 | 842 | 1,980 | 128 | 124 | *70 | 34 | 26 |
| 11 | 42 | 74 | 74 | 2,800 | 3,520 | 740 | 1,290 | 124 | 110 | 66 | 32 | 30 |
| 12 | 40 | 69 | 188 | 1,350 | 1,800 | 692 | 980 | 122 | 102 | 64 | 32 | 39 |
| 13 | 39 | 68 | 1,260 | 898 | 1,230 | 625 | 765 | 117 | 102 | 58 | 32 | 52 |
| 14 | 38 | 65 | 1,680 | 670 | 1,010 | 560 | 625 | 112 | 945 | 56 | 32 | 131 |
| 15 | 38 | 62 | 1,680 | 540 | 765 | 500 | 540 | 117 | 560 | 57 | 177 | 112 |
| 16 | 37 | 81 | 1,090 | 460 | 648 | 452 | 476 | 124 | 329 | 85 | 169 | 353 |
| 17 | 37 | 139 | 692 | 382 | 560 | 402 | 444 | 105 | 461 | 78 | 94 | 735 |
| 18 | 37 | 139 | 540 | 285 | 488 | 382 | 402 | 96 | 580 | 70 | 65 | 308 |
| 19 | 36 | 117 | 448 | 240 | 540 | 368 | 374 | 94 | 392 | 98 | 57 | 164 |
| 20 | 35 | 103 | 382 | 240 | 1,320 | 354 | 343 | 96 | 266 | 82 | 48 | 115 |
| 21 | 35 | 100 | 364 | 270 | 1,140 | 315 | 318 | 106 | 192 | 71 | 41 | 97 |
| 22 | 37 | 151 | 1,110 | 304 | 870 | 326 | 340 | 105 | 153 | 66 | 37 | 88 |
| 23 | 40 | 187 | 1,860 | 2,070 | 715 | 374 | 382 | 113 | 273 | 65 | 34 | 91 |
| 24 | 64 | 151 | 1,860 | 1,860 | 602 | 346 | 456 | 110 | 238 | 98 | 33 | 100 |
| 25 | 62 | 133 | 1,320 | 1,090 | 560 | 350 | 428 | 108 | 368 | 110 | 32 | 84 |
| 26 | 51 | 128 | 870 | 765 | 520 | 350 | 374 | 112 | 340 | 77 | 32 | 69 |
| 27 | 48 | 118 | 648 | 775 | 520 | 343 | 332 | 385 | 228 | 62 | 33 | 61 |
| 28 | 47 | 108 | 520 | 5,030 | 520 | 312 | 298 | 273 | 166 | 53 | 33 | 58 |
| 29 | 45 | 96 | 436 | 13,200 | - | 287 | 280 | 162 | 399 | 48 | 32 | 224 |
| 30 | 42 | 91 | 364 | *11,600 | ------- | 276 | 322 | 120 | 428 | 45 | 30 | 406 |
| 31 | 44 | ------- | 315 | 4,360 | ------- | 266 | ------- | 102 | ------- | 44 | 28 | ------- |
| Total | 1,392 | 3,479 | 18,451 | 56,920 | 49,608 | 16,309 | 26,669 | 4,601 | 8,686 | 2,672 | 1,539 | 3,577 |
| Mean | 44.9 | 116 | 595 | 1,836 | 1,772 | 526 | 889 | 148 | 290 | 86.2 | 49.6 | 119 |
| Cfsm | 0.141 | 0.364 | 1.87 | 5.76 | 5.55 | 1.65 | 2.79 | 0.464 | 0.909 | 0.270 | 0.155 | 0.373 |
| In. | 0.16 | 0.41 | 2.16 | 6.64 | 5.78 | 1.90 | 3.11 | 0.53 | 1.01 | 0.31 | 0.18 | 0.42 |

Calendar year 1956: Max 11,500 Min 35 Mean 633 Cfsm 1.98 In. 27.02
Water year 1956-57: Max 13,200 Min 25 Mean 531 Cfsm 1.66 In. 22.61

Peak discharge (base, 5,000 cfs).--Jan. 30 (2 a.m.) 19,800 cfs (26.87 ft); Feb. 10 (5 p.m.)6,020 cfs (11.85 ft).
* Discharge measurement made on this day.

## Powell River near Arthur, Tenn.

Location.--Lat 36°32'30", long 83°37'49", on left bank 500 ft upstream from bridge on U. S. Highway 25E, 2.3 miles east of Arthur, Claiborne County, and 2.4 miles downstream from Indian Creek.

Drainage area.--685 sq mi.

Records available.--October 1919 to September 1957 in reports of Geological Survey. Gage-height records collected at same site December 1892 to August 1920 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,045.84 ft above mean sea level (Tennessee River Survey datum). Prior to July 22, 1927, chain gage at same site and datum.

Average discharge.--38 years, 1,137 cfs.

Extremes.--Maximum discharge during year, 23,500 cfs Jan. 30 (gage height, 22.07 ft); minimum, 77 cfs Sept. 8, 9 (gage height, -0.38 ft).
1919-57: Maximum discharge, 33,000 cfs Jan. 9, 1946 (gage height, 27.15 ft, from floodmark), from rating curve extended above 23,000 cfs on basis of slope-area determination of peak flow; minimum, 47 cfs Jan. 6, 1940, result of freezeup; minimum gage height, that of Sept. 8, 9, 1957; minimum daily discharge, 60 cfs Sept. 22, 1955.
Maximum stage known, 27.2 ft Jan. 29, 1918 (discharge, 33,000 cfs).

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1920, 1921(M), 1923.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 9 to Apr. 5, May 7-28)

| Oct. 1 to Dec. 12 | | Dec. 13 to May 28 | | | | May 28 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.1 | 100 | 0.9 | 250 | 5.0 | 3,000 | -0.4 | 73 | 2.0 | 930 |
| .2 | 120 | 1.0 | 280 | 10.0 | 7,600 | 0.0 | 173 | 4.0 | 2,210 |
| .5 | 210 | 1.5 | 505 | 15.0 | 13,000 | 1.0 | 485 | 5.2 | 3,180 |
| 1.1 | 477 | 2.0 | 800 | 21.9 | 23,200 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 154 | *206 | 189 | 505 | 12,600 | *1,740 | 543 | 632 | 270 | 595 | 132 | 100 |
| 2 | *151 | 230 | 175 | 430 | 14,500 | 1,940 | 614 | 602 | 249 | *460 | 124 | 97 |
| 3 | 140 | 367 | 166 | 378 | *11,100 | 1,920 | *626 | 584 | 240 | 363 | 119 | *107 |
| 4 | 178 | 462 | 160 | 360 | 6,060 | 1,720 | 800 | 494 | *249 | 303 | 124 | 100 |
| 5 | 151 | 312 | 154 | 722 | 4,080 | 1,500 | 3,320 | 445 | 300 | 270 | *122 | 91 |
| 6 | 140 | 242 | *148 | 824 | 3,280 | 1,340 | 6,150 | *405 | 427 | 243 | 109 | 86 |
| 7 | 132 | 206 | 148 | *746 | 3,310 | 1,280 | 4,730 | 382 | 516 | 222 | 102 | 82 |
| 8 | 128 | 192 | 145 | 680 | 4,990 | 2,100 | 3,380 | 368 | 510 | 208 | 102 | 80 |
| 9 | 135 | 178 | 148 | 1,040 | 5,530 | 2,470 | 4,890 | 347 | 420 | 199 | 119 | 80 |
| 10 | 120 | 166 | 145 | 3,790 | 7,100 | 2,230 | 6,100 | 327 | 353 | 188 | 107 | 97 |
| 11 | 125 | 160 | 145 | 6,290 | 8,610 | 1,830 | 3,890 | 315 | 306 | 176 | 100 | 107 |
| 12 | 118 | 157 | 338 | 4,760 | 6,340 | 1,610 | 2,620 | 304 | 288 | 167 | 93 | 107 |
| 13 | 116 | 148 | 1,660 | 2,600 | 3,880 | 1,450 | 1,980 | 294 | 261 | 159 | 91 | 171 |
| 14 | 114 | 140 | 3,500 | 1,780 | 2,780 | 1,290 | 1,620 | 298 | 249 | 156 | 91 | 575 |
| 15 | 112 | 132 | 3,490 | 1,330 | 2,140 | 1,160 | 1,370 | 284 | 712 | 170 | 1,010 | 548 |
| 16 | 110 | 160 | 2,820 | 1,030 | 1,780 | 1,040 | 1,200 | 278 | 815 | 176 | 1,030 | 1,990 |
| 17 | 110 | 242 | 1,870 | 842 | 1,540 | 944 | 1,090 | 284 | 496 | 173 | 478 | 3,170 |
| 18 | *112 | 246 | 1,280 | 692 | 1,360 | 878 | 1,010 | 277 | 427 | 228 | 340 | 1,810 |
| 19 | 112 | 290 | 1,020 | 554 | 1,350 | 836 | 926 | 339 | *708 | 188 | 249 | 930 |
| 20 | 110 | 270 | 830 | 488 | 1,670 | 794 | 872 | 318 | 548 | 170 | *199 | 567 |
| 21 | 108 | 238 | 698 | 456 | 2,260 | 752 | 812 | 286 | 411 | 173 | 167 | 434 |
| 22 | 118 | 234 | 1,720 | 483 | 2,010 | 734 | 764 | 323 | 343 | 167 | 153 | 359 |
| 23 | 138 | 246 | 3,070 | 1,230 | 1,690 | 752 | 806 | 386 | 321 | 170 | 140 | 347 |
| 24 | 122 | 320 | 3,570 | 2,900 | 1,460 | 776 | 854 | 350 | 380 | 170 | 129 | 363 |
| 25 | 114 | 329 | 3,040 | 2,960 | 1,330 | 740 | 938 | 355 | 613 | 225 | 122 | 327 |
| 26 | 114 | 282 | 3,010 | 1,870 | 1,260 | 716 | 860 | 319 | 510 | 182 | 117 | 285 |
| 27 | 142 | 258 | 1,510 | 1,680 | 1,250 | 704 | 782 | 312 | 502 | 205 | 112 | 255 |
| 28 | 135 | 242 | 1,110 | 5,800 | 1,340 | 668 | 704 | 429 | 424 | 173 | 109 | 326 |
| 29 | 125 | 226 | 878 | *15,800 | - | 614 | 668 | 478 | 440 | 159 | 105 | 315 |
| 30 | 116 | 206 | 716 | *23,100 | -------- | 578 | 638 | 363 | 420 | 159 | 105 | 685 |
| 31 | 118 | -------- | 596 | 19,500 | -------- | 549 | -------- | 300 | -------- | 151 | 102 | -------- |
| Total | 3,918 | 7,087 | 38,449 | 105,620 | 116,600 | 37,655 | 55,557 | 11,478 | 12,708 | 6,748 | 6,202 | 14,591 |
| Mean | 126 | 236 | 1,240 | 3,407 | 4,164 | 1,215 | 1,852 | 370 | 424 | 218 | 200 | 486 |
| Cfsm | 0.184 | 0.345 | 1.81 | 4.97 | 6.08 | 1.77 | 2.70 | 0.540 | 0.619 | 0.318 | 0.292 | 0.709 |
| In. | 0.21 | 0.38 | 2.09 | 5.73 | 6.33 | 2.04 | 3.02 | 0.62 | 0.69 | 0.37 | 0.34 | 0.79 |

Calendar year 1956: Max 16,400 Min 108 Mean 1,330 Cfsm 1.94 In. 26.43
Water year 1956-57: Max 23,100 Min 80 Mean 1,141 Cfsm 1.67 In. 22.61

Peak discharge (base, 9,000 cfs).--Jan. 30 (5 a.m.) 23,500 cfs (22.07 ft); Feb. 2 (8 a.m.) 15,000 cfs (16.50 ft).
* Discharge measurement made on this day.

## Clinch River below Norris Dam, Tenn.

Location.--Lat 36°12'56", long 84°04'56", 0.5 mile upstream from Clear Creek, 1.0 mile downstream from Norris Dam, 1.5 miles north of Norris, Anderson County, and at mile 78.8.

Drainage area.--2,913 sq mi.

Records available.--October 1918 to September 1927 (published as "at Clinton"), May 1927 to September 1937 (published as "near Coal Creek"), and April 1936 to September 1957 in reports of Geological Survey. October 1903 to September 1924 (published as "at Clinton") in Bulletin 34 of Tennessee Division of Geology. Gage-height records collected in vicinity of Clinton from 1884 to 1943 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder at present site and datum since Jan. 28, 1937. Datum of gage is 819.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1903, to June 30, 1920, staff gage at railroad bridge 19.6 miles downstream at datum 42.49 ft lower. July 1, 1920, to Sept. 30, 1927, chain gage at highway bridge 19.8 miles downstream (1,000 ft downstream from previous site) at datum 42.59 ft lower. May 27 to Sept. 8, 1927, staff gage and Sept. 9, 1927, to Sept. 30, 1935, water-stage recorder, at site 2.9 miles downstream at datum 10.50 ft lower. Oct. 1, 1935, to Sept. 30, 1937, water-stage recorder at site 2.9 miles downstream at datum 13.50 ft lower. Apr. 16, 1936, to Jan. 27, 1937, staff gage at present site and datum.

Average discharge.--54 years, 4,327 cfs (unadjusted).

Extremes.--Maximum discharge during year, 26,600 cfs Feb. 12 (gage height, 11.65 ft); minimum, 47 cfs July 20 (gage height, 1.17 ft); minimum daily, 64 cfs July 28.

1903-57: Maximum discharge, 87,000 cfs Mar. 5, 1917 (gage height, 38.5 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 62,000 cfs; minimum, 1.3 cfs May 17, 18, 20, 24-26, May 29 to June 5, 1936 (gage height, 0.62 ft); minimum daily, 1.3 cfs May 17, 18, 24-26, May 29 to June 4, 1936.

Flood of Mar. 31, 1886, reached a stage of 45 ft (discharge, 113,000 cfs) at Clinton.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow completely regulated by Norris Lake (see p. 225).

Revisions (water years).--WSP 1336: 1917-18, 1928.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 56 | 3.0 | 2,450 |
| 1.3 | 97 | 5.0 | 6,890 |
| 1.4 | 160 | 10.0 | 21,800 |
| 1.6 | 360 | 11.7 | 26,700 |
| 2.0 | 880 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6,130 | 1,980 | 3,800 | 6,760 | 8,680 | 8,560 | 3,410 | 4,590 | 3,270 | 982 | 2,110 | 1,740 |
| 2 | 6,130 | 1,100 | 4,600 | 6,810 | 8,850 | 8,560 | 2,720 | 4,720 | 2,930 | 2,960 | 2,830 | 3,580 |
| 3 | 5,840 | 1,980 | 6,140 | 6,890 | 11,700 | 8,560 | 2,460 | *3,950 | 3,740 | 1,380 | 1,560 | 4,630 |
| 4 | 5,700 | 1,960 | 3,660 | 6,920 | 20,100 | 8,560 | 372 | 4,210 | 5,020 | 80 | 84 | 4,940 |
| 5 | 5,340 | 5,870 | 3,290 | 3,840 | 21,800 | 7,830 | 84 | 2,810 | 4,200 | 80 | 2,500 | 6,110 |
| 6 | 5,300 | 3,400 | *3,680 | 219 | 21,800 | 3,780 | 76 | 3,990 | 3,400 | 2,460 | *3,360 | *3,680 |
| 7 | 4,880 | 3,140 | 3,440 | 2,650 | *21,800 | 5,140 | 76 | 4,020 | 4,300 | 2,410 | 5,100 | 2,460 |
| 8 | *5,480 | 4,420 | 3,440 | 6,120 | 21,800 | 5,250 | 80 | 3,910 | 3,160 | *4,330 | 3,720 | 2,410 |
| 9 | 5,260 | 5,910 | 4,190 | 5,630 | 21,900 | 5,520 | 80 | 4,420 | 3,140 | 5,890 | 3,440 | 4,210 |
| 10 | 5,320 | 5,820 | 6,460 | 5,640 | 21,900 | 3,160 | 389 | 2,700 | 3,720 | 5,720 | 3,390 | 4,270 |
| 11 | 5,240 | 3,240 | 6,530 | 5,670 | 23,900 | 5,940 | 80 | 2,860 | 3,270 | 4,890 | 3,420 | 4,470 |
| 12 | 5,270 | 3,940 | 5,460 | 5,990 | *26,600 | *6,200 | 536 | 3,180 | *3,410 | 4,100 | 4,220 | 5,220 |
| 13 | 4,560 | 3,650 | 88 | 6,330 | 26,500 | 3,460 | 80 | 6,560 | 1,740 | 2,600 | 4,350 | 5,230 |
| 14 | 4,080 | *3,520 | 88 | 6,300 | 26,400 | 4,030 | 80 | 2,500 | 1,600 | 2,790 | 3,450 | 140 |
| 15 | 4,680 | 3,340 | 84 | 6,360 | 26,300 | 4,040 | 2,940 | 5,410 | 1,550 | 3,690 | 3,750 | 88 |
| 16 | 4,850 | 4,130 | 80 | 6,790 | 26,200 | 5,760 | 2,990 | 5,750 | 724 | 2,620 | 5,120 | 400 |
| 17 | 4,350 | 3,340 | 80 | 7,890 | 24,100 | 4,540 | 228 | 2,960 | 4,360 | 2,400 | 2,280 | 88 |
| 18 | 4,890 | 3,380 | 80 | 7,860 | 21,400 | 6,060 | 4,180 | 1,330 | 4,220 | 1,150 | 1,390 | 88 |
| 19 | 5,740 | 3,420 | 80 | 7,830 | 21,300 | 6,130 | 3,170 | 2,030 | 2,340 | 1,910 | 2,140 | 88 |
| 20 | 4,190 | 2,660 | 3,060 | 7,830 | 21,200 | 3,330 | 3,070 | 4,240 | 3,660 | 1,020 | 3,410 | 88 |
| 21 | 762 | 3,060 | 4,360 | 7,500 | 21,100 | 4,370 | 2,080 | 4,740 | 2,680 | 2,530 | 3,370 | a700 |
| 22 | 4,340 | 2,700 | 1,670 | *4,410 | 19,300 | 3,170 | 4,200 | 2,740 | 3,540 | 2,040 | 4,880 | a90 |
| 23 | 4,580 | 5,660 | 80 | 4,780 | 16,900 | 3,140 | 3,110 | 1,300 | 136 | 3,370 | 1,840 | a4,900 |
| 24 | 4,610 | 5,760 | 80 | 3,720 | 14,700 | 3,170 | 3,350 | 1,010 | 2,050 | 2,270 | 1,500 | a3,100 |
| 25 | 4,480 | 3,940 | 80 | 3,280 | 12,700 | 4,320 | 3,130 | 1,360 | 512 | 708 | 1,740 | a3,200 |
| 26 | 4,520 | 3,820 | 5,320 | 2,040 | 10,800 | 3,510 | 4,760 | 110 | 80 | 1,730 | 4,820 | a3,500 |
| 27 | 4,670 | 6,840 | 5,550 | 2,640 | 8,590 | 2,320 | 3,170 | 381 | 80 | 1,080 | 4,940 | a3,500 |
| 28 | 4,400 | 6,710 | 5,650 | 97 | 8,590 | 2,780 | 3,170 | 3,650 | 84 | 64 | 5,060 | a2,700 |
| 29 | 4,730 | 6,840 | 6,630 | 110 | - | 5,180 | 4,560 | 3,270 | 2,780 | 3,130 | 5,360 | a1,000 |
| 30 | 3,510 | 6,210 | 6,710 | 2,300 | ------- | 2,320 | 4,240 | 3,270 | 3,810 | 2,480 | 6,260 | a2,600 |
| 31 | 3,800 | ------- | 6,730 | 6,890 | ------- | 2,960 | ------- | 2,740 | ------- | 2,610 | 4,000 | ------- |
| Total | 147,632 | 121,740 | 101,190 | 158,096 | 536,910 | 151,650 | 62,871 | 100,711 | 79,506 | 75,474 | 105,394 | 79,220 |
| Mean | 4,762 | 4,058 | 3,264 | 5,100 | 19,180 | 4,892 | 2,096 | 3,249 | 2,650 | 2,435 | 3,400 | 2,641 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 16,900 | Min 42 | Mean 4,278 | Mean 4,874 | Cfsm 1.67 | In. 22.78 |
| Water year 1956-57: | Max 26,600 | Min 64 | Mean 4,713 | Mean 4,584 | Cfsm 1.57 | In. 21.36 |

* Discharge measurement made on this day.

† Adjusted for change in contents in Norris Lake.

a No gage-height record; discharge estimated on basis of powerplant records at Norris Dam and records for station at Scarboro.

## Clinch River near Scarboro, Tenn.

Location.--Lat 35°56'45", long 84°13'17", on right bank 0.6 mile downstream from Beaver Creek, 2½ miles south of Scarboro, Anderson County, 4¾ miles downstream from Solway Bridge, and 17 miles west of Knoxville.

Drainage area.--3,300 sq mi.

Records available.--September 1936 to September 1957. Published as "near Wheat" September 1936 to January 1941.

Gage.--Water-stage recorder. Datum of gage is 753.35 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 1, 1941, at site 24.5 miles downstream at datum 35.99 ft lower.

Average discharge.--21 years, 4,543 cfs (unadjusted).

Extremes.--Maximum discharge during year, 28,600 cfs Feb. 12 (gage height, 15.60 ft); minimum, 160 cfs July 6 (gage height, 1.07 ft); minimum daily, 194 cfs July 6.
1936-57: Maximum discharge, 42,900 cfs Feb. 9, 1937 (gage height, 23.45 ft, site and datum then in use), from rating curve extended above 27,000 cfs; minimum, 111 cfs Oct. 27, 28, 1947; minimum daily, 131 cfs Jan. 23, 1941.

Remarks.--Records good. Flow regulated by Norris Lake, 41 miles upstream (see p. 225). The town of Oak Ridge diverts an average of about 25 cfs for municipal supply, 2½ miles above station.

Revisions (water years).--WSP 1386: 1937.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 175 | 4.0 | 4,990 |
| 1.2 | 236 | 10.0 | 17,000 |
| 1.5 | 501 | 15.5 | 28,300 |
| 2.0 | 1,160 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *6,050 | 3,460 | 4,080 | 7,050 | 19,100 | *9,930 | 3,360 | 4,950 | 3,310 | 2,980 | 2,670 | 3,130 |
| 2 | 6,090 | *2,100 | 4,010 | 7,050 | 19,900 | 9,710 | *3,830 | *4,550 | 2,850 | *1,750 | *2,370 | 2,820 |
| 3 | 5,770 | 1,260 | 6,430 | *7,110 | 14,800 | 9,530 | 3,070 | 4,910 | 2,810 | 3,230 | 2,830 | *3,450 |
| 4 | 5,710 | 1,990 | *4,190 | 7,270 | *20,300 | 9,370 | 2,990 | 4,290 | 4,910 | 856 | 1,530 | 5,010 |
| 5 | 5,410 | 3,800 | 3,700 | 7,670 | 24,400 | 9,210 | 4,250 | 3,930 | *5,250 | 224 | 401 | 5,610 |
| 6 | 5,270 | 4,570 | 3,400 | 208 | 24,600 | 5,950 | 2,910 | 3,650 | 3,650 | 194 | 2,640 | 4,790 |
| 7 | 5,330 | 3,170 | 3,860 | 899 | *25,000 | 4,230 | 1,580 | 3,850 | 4,850 | 2,520 | 3,850 | 3,770 |
| 8 | 4,730 | 3,650 | 3,410 | 5,070 | 25,600 | 9,070 | 2,110 | 4,370 | 3,850 | 3,050 | 4,590 | 2,480 |
| 9 | 5,530 | 5,610 | 3,610 | 6,090 | 27,200 | 5,110 | 3,970 | 4,290 | 3,750 | 5,670 | 3,970 | 2,990 |
| 10 | 5,150 | 5,850 | 6,210 | 5,730 | 27,300 | 5,690 | 2,340 | 3,410 | 4,410 | 6,030 | 3,910 | 4,510 |
| 11 | 5,270 | 4,330 | 6,450 | 5,930 | 26,400 | 5,510 | 1,940 | 2,960 | 2,870 | 5,110 | 3,510 | 4,610 |
| 12 | 5,250 | 3,670 | 7,410 | 6,210 | *28,300 | 6,950 | 1,210 | 3,080 | 3,870 | 4,510 | 3,280 | 5,130 |
| 13 | 4,670 | 4,150 | 6,810 | 6,530 | 28,000 | 5,390 | 1,440 | 5,510 | 3,550 | 3,240 | 4,060 | 5,770 |
| 14 | 5,030 | 3,170 | 6,310 | 6,490 | 27,600 | 4,070 | 898 | 4,650 | 1,710 | 3,270 | 4,770 | 5,030 |
| 15 | 3,530 | 3,370 | 4,110 | 6,470 | 27,200 | 4,750 | 1,330 | 4,010 | 1,750 | 2,910 | 3,190 | 1,160 |
| 16 | 5,150 | 3,530 | 1,870 | 6,530 | 27,000 | 5,650 | 3,510 | 6,270 | 1,710 | 3,110 | 4,550 | 1,920 |
| 17 | 4,390 | 4,310 | 1,100 | 7,910 | 26,600 | 5,790 | 2,880 | 4,040 | 1,660 | 2,570 | 4,140 | 3,590 |
| 18 | 4,770 | 3,470 | 805 | 8,070 | 22,800 | 5,570 | 1,580 | 2,980 | 5,070 | 2,310 | 2,270 | 1,190 |
| 19 | 5,630 | 3,550 | 640 | 8,030 | 22,500 | 6,590 | 4,550 | 1,660 | 4,250 | 1,340 | 1,610 | 640 |
| 20 | 4,410 | 3,480 | 1,210 | 8,030 | 22,700 | 5,370 | 3,510 | 3,250 | 2,460 | 1,880 | 3,150 | 463 |
| 21 | 3,740 | 2,420 | 4,170 | 7,950 | 22,400 | 3,530 | 2,860 | 4,070 | 3,510 | 1,580 | 3,390 | 378 |
| 22 | 1,340 | 3,240 | 5,550 | 7,410 | 21,900 | 4,510 | 3,410 | 4,790 | 3,490 | 2,230 | 4,110 | 1,070 |
| 23 | 4,690 | 4,390 | 3,180 | 4,630 | 18,200 | 3,500 | 4,330 | 2,570 | 2,940 | 3,170 | 3,390 | 2,060 |
| 24 | 4,590 | 5,770 | 1,910 | 6,070 | 17,300 | 3,610 | 3,870 | 1,590 | 558 | 2,610 | 1,900 | 4,630 |
| 25 | 4,610 | 5,170 | 1,220 | 4,310 | 13,700 | 3,750 | 3,830 | 1,240 | 3,200 | 2,290 | 1,570 | 3,330 |
| 26 | 4,510 | 2,850 | 2,140 | 3,640 | 13,400 | 4,250 | 3,930 | 1,580 | 1,260 | 1,450 | 2,490 | 3,950 |
| 27 | 4,610 | 6,050 | 6,070 | 4,890 | 9,870 | 3,900 | 4,730 | 428 | 405 | 1,190 | 5,090 | 3,560 |
| 28 | 4,450 | 7,030 | 6,090 | 5,510 | 9,730 | 2,760 | 3,510 | 940 | 275 | 1,130 | 5,050 | 3,800 |
| 29 | 4,550 | 6,810 | 6,990 | 10,900 | - | 3,250 | 3,890 | 3,990 | 310 | 736 | 5,410 | 2,870 |
| 30 | 4,350 | 6,910 | 7,030 | 7,990 | ------- | 2,700 | 4,510 | 3,350 | 3,890 | 2,670 | 5,510 | 2,480 |
| 31 | 3,630 | ------- | 7,030 | 11,800 | ------- | 2,850 | ------- | 2,900 | ------- | 2,210 | 5,490 | ------- |
| Total | 148,210 | 123,130 | 130,995 | 199,447 | 613,800 | 172,050 | 92,128 | 108,058 | 88,378 | 78,020 | 106,691 | 96,191 |
| Mean | 4,781 | 4,104 | 4,226 | 6,434 | 21,920 | 5,550 | 3,071 | 3,486 | 2,946 | 2,517 | 3,442 | 3,206 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 20,500 | Min 314 | Mean 4,891 | Mean 5,488 | Cfsm 1.66 | In. 22.64 |
| Water year 1956-57: | Max 28,300 | Min 194 | Mean 5,362 | Mean 5,232 | Cfsm 1.59 | In. 21.52 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Norris Lake.

493799 O - 59 - 11

## Whiteoak Creek below Oak Ridge National Laboratory, near Oak Ridge, Tenn.

Location.--Lat 35°54'44", long 84°18'59", on right bank 0.1 mile upstream from Melton Branch, 1 mile south of Oak Ridge National Laboratory, Roane County, and 7 miles south of Oak Ridge.

Drainage area.--3.62 sq mi.

Records available.--June 1950 to July 1953, July 1955 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 750.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 511 cfs Sept. 16 (gage height, 5.20 ft); minimum, 2.8 cfs Dec. 11; minimum gage height, 0.80 ft Oct. 30.
1950-53, 1955-57: Maximum discharge recorded, 642 cfs Aug. 30, 1950 (gage height, 5.18 ft), from rating curve extended above 230 cfs, but may have been higher Aug. 2, 1950; minimum, 1.9 cfs Oct. 2, 1950; minimum gage height, 0.64 ft July 2, 9-11, 1950, Oct. 28, Nov. 4, 1952.

Remarks.--Records good. Natural flow of stream affected by operations of Oak Ridge National Laboratory.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 16 to Jan. 27)

| Oct. 1 to Jan. 27 | | | | Jan. 27 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 1.9 | 3.5 | 79 | 0.8 | 2.3 | 3.0 | 64 |
| 1.0 | 9.8 | 3.8 | 105 | 1.0 | 6.0 | 3.5 | 94 |
| 2.0 | 30 | 4.1 | 159 | 2.0 | 30 | 3.9 | 136 |
| 3.0 | 58 | | | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *5.0 | 6.9 | 3.8 | 4.6 | 128 | *18 | 9.2 | 4.8 | 3.8 | 5.8 | 6.4 | 5.6 |
| 2 | 5.4 | *5.4 | 3.8 | 4.6 | 47 | 14 | *7.8 | *4.6 | 4.0 | *5.8 | *6.0 | 5.4 |
| 3 | 5.8 | 5.0 | 4.4 | *4.6 | 26 | 11 | 6.8 | 4.2 | 4.0 | 5.0 | 5.8 | *6.0 |
| 4 | 5.6 | 4.6 | *4.4 | 11 | *29 | 10 | 38 | 3.7 | 4.0 | 5.4 | 6.5 | 5.4 |
| 5 | 5.6 | 5.0 | 4.4 | 12 | 23 | 9.0 | 35 | 3.7 | *22 | 5.6 | 5.4 | 5.4 |
| 6 | 5.2 | 5.0 | 4.2 | 7.6 | 27 | 9.0 | 16 | 3.8 | 6.2 | 4.6 | 4.8 | 5.0 |
| 7 | 4.8 | 5.4 | 4.6 | 7.0 | 58 | 19 | 12 | 4.0 | 5.2 | 4.6 | 4.2 | 4.6 |
| 8 | 5.0 | 5.0 | 4.4 | 6.6 | 53 | 22 | *26 | 4.0 | 5.0 | 5.4 | 5.0 | 4.2 |
| 9 | 5.0 | 5.2 | 3.2 | 6.2 | 70 | 15 | 18 | 4.2 | 5.0 | 6.0 | 5.4 | 5.0 |
| 10 | 5.0 | 5.2 | 3.4 | 6.4 | 38 | 12 | 13 | 4.2 | 4.6 | 4.8 | 4.6 | 6.5 |
| 11 | 5.0 | 4.8 | 3.2 | 5.2 | 22 | 11 | 11 | 4.0 | 5.4 | 4.6 | 4.8 | 7.2 |
| 12 | 5.0 | 5.2 | 25 | 4.8 | 16 | 12 | 9.5 | 4.0 | 7.6 | 4.6 | 6.6 | 6.4 |
| 13 | 4.8 | 5.0 | *148 | 4.6 | 13 | 9.2 | 7.6 | 4.2 | 6.8 | 4.8 | 5.4 | 24 |
| 14 | 4.8 | 5.2 | *98 | 5.0 | 11 | 8.8 | 7.2 | 4.4 | 6.4 | 5.5 | 5.8 | 50 |
| 15 | 5.0 | 5.4 | 21 | 5.0 | 10 | 8.2 | 6.6 | 4.2 | 6.2 | 5.8 | 6.4 | 41 |
| 16 | 5.0 | 12 | 12 | 5.0 | 9.8 | 7.4 | 6.4 | 4.4 | 6.0 | 5.4 | 5.4 | 127 |
| 17 | 5.0 | 5.6 | 8.8 | 4.6 | 8.5 | 7.0 | 6.2 | 4.0 | 6.2 | 14 | 4.6 | 21 |
| 18 | 6.0 | 4.8 | 7.8 | 4.4 | 8.0 | 7.6 | 6.0 | 3.7 | 5.8 | 6.4 | 4.4 | 12 |
| 19 | 5.2 | 4.8 | 6.8 | 4.2 | 16 | 7.4 | 6.0 | 7.1 | 5.6 | 5.8 | 5.2 | 10 |
| 20 | 6.7 | 4.8 | 6.6 | 4.0 | 12 | 6.8 | 6.0 | 4.2 | 5.2 | 5.8 | 5.5 | 9.2 |
| 21 | 5.8 | 7.6 | 9.7 | 5.0 | 10 | 6.6 | 5.4 | 4.0 | 5.4 | 5.6 | 5.0 | 7.6 |
| 22 | 10 | 5.2 | 17 | 13 | 9.5 | 7.2 | 5.4 | 7.0 | 5.4 | 6.2 | 5.2 | 8.5 |
| 23 | 5.6 | 5.2 | 18 | 22 | 8.8 | 7.0 | 5.2 | 4.4 | 5.2 | 7.0 | 5.0 | 7.4 |
| 24 | 5.2 | 4.4 | 12 | 9.8 | 8.2 | 6.2 | 5.2 | 3.8 | 6.2 | 5.8 | 4.4 | 5.6 |
| 25 | 5.0 | 4.4 | 8.6 | 9.4 | 8.5 | 6.4 | 5.2 | 3.7 | 5.2 | 5.8 | 4.4 | 6.0 |
| 26 | 5.6 | 4.6 | 7.8 | 8.0 | 17 | 6.0 | 5.0 | 6.2 | 5.0 | 6.0 | 5.2 | 5.6 |
| 27 | 4.8 | 4.6 | 7.2 | 30 | 16 | 5.8 | 5.0 | 4.2 | 5.4 | 6.0 | 4.6 | 7.5 |
| 28 | 4.8 | 5.0 | 6.4 | 106 | 20 | 5.6 | 5.0 | 3.7 | 5.8 | 6.0 | 5.0 | 6.9 |
| 29 | 5.0 | 4.4 | 5.8 | 42 | - | 5.6 | 5.2 | 5.0 | 5.2 | 6.4 | 5.6 | 12 |
| 30 | 4.8 | 4.4 | 5.2 | 25 | ------- | 5.2 | 4.6 | 6.6 | 5.8 | 5.6 | 5.6 | 8.5 |
| 31 | 12 | ------- | 4.8 | 108 | ------- | 5.4 | ------- | 4.0 | ------- | 5.4 | 5.6 | ------- |
| Total | 173.5 | 160.1 | 480.3 | 495.6 | 723.3 | 291.4 | 305.5 | 138.0 | 179.6 | 181.5 | 163.8 | 436.5 |
| Mean | 5.60 | 5.34 | 15.5 | 16.0 | 25.8 | 9.40 | 10.2 | 4.45 | 5.99 | 5.85 | 5.28 | 14.6 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 148 Min 3.2 Mean 10.0 Cfsm - In. -
Water year 1956-57: Max 148 Min 3.2 Mean 10.2 Cfsm - In. -

Peak discharge (base, 280 cfs).--Dec. 13 (3:30 a.m.) 362 cfs (4.82 ft); Sept. 16 (1 p.m.) 511 cfs (5.20 ft).
* Discharge measurement made on this day.

## Melton Branch near Oak Ridge, Tenn.

Location.--Lat 35°54'38", long 84°18'54", on right bank 0.1 mile above mouth, 1 mile south of Oak Ridge National Laboratory, Roane County, and 7 miles south of Oak Ridge, Anderson County.

Drainage area.--1.48 sq mi.

Records available.--August 1955 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 751.90 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 117 cfs Sept. 16 (gage height, 4.58 ft); minimum, 0.1 cfs Oct. 1-9, 13, July 3-7, 20, 21, Aug. 3, 5, 7-9, 11-14, Sept. 4, 5, 7.
1955-57: Maximum discharge, that of Sept. 16, 1957; no flow for many days during August, September, October, and November 1955.

Remarks.--Records good. Natural flow affected by operations of Oak Ridge National Laboratory.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 29

| | | | |
|---|---|---|---|
| 0.7 | 0.1 | 1.4 | 7.8 |
| .9 | .2 | 1.5 | 12 |
| 1.0 | .4 | 1.7 | 22 |
| 1.1 | .8 | 2.0 | 30 |
| 1.2 | 2.0 | 3.0 | 57 |
| 1.3 | 4.5 | | |

May 30 to Sept. 30

| | |
|---|---|
| 1.5 | 12 |
| 2.0 | 26 |
| 2.6 | 43 |

Note.--Same as preceding table below 1.5 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.1 | 0.4 | 0.4 | 0.5 | 52 | *8.2 | 2.1 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 |
| 2 | .1 | *.2 | .4 | .4 | 14 | 4.8 | *3.2 | *.4 | .3 | *.2 | *.2 | .2 |
| 3 | .1 | .2 | .4 | *.4 | 6.5 | 3.2 | 2.2 | .4 | .3 | .2 | .1 | *.2 |
| 4 | .1 | .2 | *.3 | 1.6 | *8.5 | 2.5 | 17 | .3 | .2 | .1 | .2 | .1 |
| 5 | .1 | .2 | .3 | 4.0 | 7.8 | 2.0 | 15 | .3 | *5.3 | .1 | .1 | .1 |
| 6 | .1 | .5 | .3 | 2.0 | 7.8 | 2.0 | 4.8 | .3 | 1.9 | .1 | .2 | .2 |
| 7 | .1 | .2 | .3 | 1.5 | 27 | 5.1 | 3.0 | .3 | 1.0 | .1 | .1 | .1 |
| 8 | .1 | .2 | .2 | 1.2 | 21 | 9.6 | *11 | .3 | .6 | .2 | .1 | .2 |
| 9 | .1 | .2 | .2 | 1.1 | 26 | 5.5 | 7.1 | .2 | .6 | .2 | .1 | .2 |
| 10 | .2 | .2 | .2 | 1.2 | 13 | 3.5 | 3.8 | .2 | .8 | .2 | .2 | .3 |
| 11 | .2 | .2 | .2 | 1.2 | 6.5 | 2.8 | 2.8 | .2 | .8 | .2 | .1 | .5 |
| 12 | .2 | .2 | 2.1 | 1.1 | 4.2 | 3.2 | 1.9 | .2 | 1.3 | .2 | .1 | .3 |
| 13 | .1 | .2 | *55 | 1.0 | 3.2 | 2.5 | 1.7 | .2 | .7 | .2 | .1 | 1.6 |
| 14 | .2 | .2 | *46 | .8 | 2.5 | 2.2 | 1.4 | .2 | .4 | .2 | .1 | 9.5 |
| 15 | .2 | .2 | 5.8 | .8 | 2.2 | 1.9 | 1.3 | .2 | .3 | .2 | .4 | 15 |
| 16 | .2 | .6 | 1.9 | .8 | 2.5 | 1.8 | 1.2 | .2 | .3 | .2 | .3 | 43 |
| 17 | .2 | .3 | 1.3 | .8 | 1.8 | 1.7 | 1.2 | .2 | .3 | .7 | .3 | 5.7 |
| 18 | .2 | .2 | 1.0 | .8 | 1.7 | 1.8 | 1.2 | .2 | .3 | .2 | .2 | 1.5 |
| 19 | .2 | .2 | .8 | .7 | 5.8 | 1.8 | 1.1 | .6 | .3 | .2 | .3 | 1.2 |
| 20 | .3 | .2 | 1.0 | .7 | 5.2 | 1.5 | 1.0 | .5 | .2 | .1 | .3 | .8 |
| 21 | .2 | .4 | 2.0 | .8 | 3.2 | 1.5 | 1.0 | .3 | .2 | .1 | .2 | .6 |
| 22 | .6 | .3 | 5.5 | 3.5 | 2.2 | 1.8 | .8 | .8 | .2 | .2 | .3 | .7 |
| 23 | .3 | .3 | 6.5 | 12 | 2.2 | 1.7 | .8 | .5 | .2 | .2 | .2 | .8 |
| 24 | .3 | .2 | 3.2 | 3.2 | 1.8 | 1.5 | .8 | .3 | .2 | .2 | .2 | .5 |
| 25 | .4 | .2 | 1.7 | 2.5 | 1.7 | 1.7 | .8 | .3 | .3 | .2 | .2 | .8 |
| 26 | .8 | .2 | 1.3 | 1.9 | 5.6 | 1.4 | .7 | 1.6 | .2 | .2 | .2 | .8 |
| 27 | .5 | .2 | 1.1 | 12 | 6.8 | 1.4 | .7 | .8 | .2 | .2 | .2 | 1.2 |
| 28 | .2 | .3 | .8 | 48 | 8.9 | 1.4 | .5 | .4 | .2 | .2 | .2 | 1.4 |
| 29 | .2 | .4 | .7 | 15 | - | 1.3 | .4 | .7 | .2 | .2 | .2 | 4.0 |
| 30 | .2 | .4 | .7 | 7.8 | -------- | 1.2 | .4 | 1.4 | .2 | .2 | .2 | 2.8 |
| 31 | .6 | -------- | .6 | 47 | -------- | 1.2 | -------- | .6 | -------- | .2 | .2 | -------- |
| Total | 7.4 | 7.9 | 142.2 | 176.3 | 251.6 | 83.7 | 90.9 | 13.5 | 18.4 | 6.1 | 6.0 | 94.5 |
| Mean | 0.24 | 0.26 | 4.59 | 5.69 | 8.99 | 2.70 | 3.03 | 0.44 | 0.61 | 0.20 | 0.19 | 3.15 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 55 Min 0.1 Mean 2.24 Cfsm - In. -
Water year 1956-57: Max 55 Min 0.1 Mean 2.46 Cfsm - In. -

Peak discharge (base, 86 cfs).--Dec. 14 (4:30 a.m.) 90 cfs (3.89 ft); Feb. 1 (5 p.m.) 87 cfs (3.83 ft); Sept. 16 (1 p.m.) 117 cfs (4.58 ft).
* Discharge measurement made on this day.

## Emory River near Wartburg, Tenn.

Location.--Lat 36°06'46", long 84°36'54", on right bank 50 ft downstream from highway bridge on Wartburg-Lancing Road, 1.1 miles downstream from Rock Creek, 1¼ miles northwest of Wartburg, Morgan County, 6.1 miles upstream from Obed River, and at mile 34.5.

Drainage area.--83.2 sq mi.

Records available.--May 1934 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,003.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 146 cfs.

Extremes.--Maximum discharge during year, 11,900 cfs Jan. 28 (gage height, 21.42 ft); no flow Aug. 9-14, Sept. 6-9.
1934-57: Maximum discharge, 18,700 cfs Feb. 3, 1939 (gage height, 23.62 ft), from rating curve extended above 7,700 cfs; no flow at times.

Remarks.--Records good except those below 1 cfs, which are poor.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1935.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 20 to Apr. 1, Apr. 15-21, Apr. 27 to May 1)

| | | | |
|---|---|---|---|
| 1.1 | 0 | 2.2 | 81 |
| 1.2 | .3 | 2.5 | 140 |
| 1.3 | 2.1 | 3.0 | 244 |
| 1.4 | 5.7 | 4.0 | 510 |
| 1.6 | 16 | 7.0 | 1,600 |
| 1.8 | 32 | 12.0 | 4,120 |
| 2.0 | 53 | 14.4 | 5,660 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.6 | *181 | 20 | 57 | 3,130 | *263 | *68 | *42 | 16 | *65 | *0.5 | 0.2 |
| 2 | 3.2 | 87 | 18 | *46 | 1,460 | 240 | 114 | 40 | 14 | 45 | .4 | .1 |
| 3 | *11 | 53 | *16 | 39 | *594 | 202 | 110 | 37 | *13 | 34 | .3 | .1 |
| 4 | 83 | 40 | 16 | 86 | 381 | 162 | 2,140 | 31 | 14 | 26 | .5 | *.1 |
| 5 | 70 | 33 | 14 | 579 | 305 | 132 | 1,460 | 28 | 20 | 20 | .5 | .1 |
| 6 | 43 | 28 | 14 | 423 | 342 | 112 | 573 | 26 | 30 | 16 | .2 | 0 |
| 7 | 30 | 29 | 13 | 289 | 537 | 175 | 308 | 22 | 27 | 13 | .1 | 0 |
| 8 | 20 | 32 | 13 | 210 | 726 | 660 | 322 | 20 | 20 | 11 | .1 | 0 |
| 9 | 15 | 29 | 13 | 181 | 1,110 | 468 | 414 | 18 | 17 | 9.0 | 0 | 0 |
| 10 | 12 | 26 | 13 | 166 | 1,100 | 328 | 289 | 17 | 32 | 8.0 | 0 | .1 |
| 11 | 10 | 23 | 13 | 134 | 667 | 303 | 219 | 17 | 30 | 7.1 | 0 | .1 |
| 12 | 8.0 | 22 | 619 | 128 | 372 | 285 | 168 | 15 | 25 | 5.7 | *0 | .4 |
| 13 | 6.6 | 20 | *4,290 | 126 | 250 | 240 | 128 | 13 | 20 | 4.8 | 0 | 4.5 |
| 14 | 5.7 | 18 | 3,920 | 110 | 181 | 206 | 98 | 12 | 22 | 4.4 | 0 | 117 |
| 15 | 5.2 | 16 | 1,030 | 90 | 136 | 175 | 81 | 12 | 23 | 4.0 | 3.8 | 60 |
| 16 | 4.8 | 22 | 411 | 79 | 132 | 138 | 71 | 13 | 18 | 3.6 | 7.1 | 683 |
| 17 | 4.8 | 38 | 244 | 61 | 96 | 114 | 65 | 12 | 15 | 3.2 | 3.6 | 248 |
| 18 | 5.2 | 37 | 170 | 51 | 79 | *102 | 59 | 14 | 79 | 2.9 | 14 | 87 |
| 19 | 6.6 | 33 | 122 | 42 | 162 | 90 | 53 | 14 | 49 | 5.2 | 30 | 51 |
| 20 | 7.1 | 30 | 96 | 40 | 375 | 71 | 51 | 19 | 32 | 4.0 | 12 | 35 |
| 21 | 7.6 | 28 | 87 | 58 | 296 | 61 | 53 | 18 | 22 | 3.6 | 7.1 | 29 |
| 22 | 12 | 36 | 480 | 78 | 221 | 75 | 80 | 86 | 16 | 2.6 | 4.8 | 46 |
| 23 | 51 | 34 | 664 | 432 | 168 | 70 | 144 | 138 | 18 | 2.1 | 2.9 | 126 |
| 24 | 38 | 33 | 579 | 390 | 134 | 63 | 122 | 84 | 116 | 2.4 | 2.4 | 64 |
| 25 | 30 | 32 | 338 | 289 | 114 | 71 | 138 | 280 | 320 | 2.4 | 1.8 | 38 |
| 26 | 25 | 31 | 240 | 221 | 150 | 75 | 92 | 108 | 124 | 2.1 | 1.4 | 26 |
| 27 | 26 | 30 | 183 | 352 | 210 | 76 | 70 | 65 | 65 | 1.6 | 1.2 | 20 |
| 28 | 23 | 26 | 144 | 5,620 | 246 | 73 | 59 | 44 | 60 | 1.6 | .9 | 22 |
| 29 | 20 | 23 | 114 | 5,420 | - | 71 | 52 | 32 | 152 | 1.8 | .6 | 33 |
| 30 | 19 | 22 | 85 | 1,500 | ------- | 70 | 49 | 26 | 96 | 1.2 | .5 | 41 |
| 31 | 24 | ------- | 68 | 2,000 | ------- | 65 | ------- | 20 | ------- | .8 | .3 | ------- |
| Total | 630.4 | 1,092 | 14,047 | 19,297 | 13,674 | 5,236 | 7,650 | 1,323 | 1,505 | 314.1 | 97.0 | 1,731.7 |
| Mean | 20.3 | 36.4 | 453 | 622 | 488 | 169 | 255 | 42.7 | 50.2 | 10.1 | 3.13 | 57.7 |
| Cfsm | 0.244 | 0.438 | 5.44 | 7.48 | 5.87 | 2.03 | 3.06 | 0.513 | 0.603 | 0.121 | 0.038 | 0.694 |
| In. | 0.28 | 0.49 | 6.28 | 8.63 | 6.11 | 2.34 | 3.42 | 0.59 | 0.67 | 0.14 | 0.04 | 0.77 |

Calendar year 1956: Max 4,290 Min 0.2 Mean 203 Cfsm 2.44 In. 33.22
Water year 1956-57: Max 5,620 Min 0 Mean 182 Cfsm 2.19 In. 29.76

Peak discharge (base, 3,600 cfs).--Dec. 13 (7:30 a.m.) 6,260 cfs (15.25 ft); Jan. 28 (11 p.m.) 11,900 cfs (21.42 ft); Feb. 1 (8:30 p.m.) 3,640 cfs (11.16 ft); Apr. 4 (4:30 p.m.) 4,850 cfs (13.17 ft).

* Discharge measurement or observation of no flow made on this day.

## Daddys Creek near Crab Orchard, Tenn.

Location.--Lat 35°55'33", long 84°54'47", on left bank 0.6 mile upstream from North Creek, 1.5 miles downstream from bridge on U. S. Highway 70, 1.5 miles downstream from Bird Creek, and 2 miles northwest of Crab Orchard, Cumberland County.

Drainage area.--93.5 sq mi.

Records available.--October 1930 to September 1957. Prior to October 1952, published as Daddy Creek near Crab Orchard.

Gage.--Water-stage recorder. Datum of gage is 1,569.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 17, 1934, staff gage at same site and datum.

Average discharge.--27 years, 171 cfs.

Extremes.--Maximum discharge during year, 6,290 cfs Dec. 13 (gage height, 15.27 ft); minimum, 0.03 cfs Sept. 7-9 (gage height, 0.37 ft).
1930-57: Maximum discharge, 11,600 cfs Feb. 13, 1948 (gage height, 21.30 ft); no flow Sept. 23, 24, 1936, Sept. 11-22, 1954.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 13

| | | | |
|---|---|---|---|
| 0.62 | 1.7 | 2.0 | 93 |
| .7 | 2.8 | 2.5 | 156 |
| .8 | 4.2 | 3.5 | 356 |
| .9 | 6.6 | 5.0 | 754 |
| 1.0 | 9.8 | 7.0 | 1,430 |
| 1.1 | 14 | 11.0 | 3,510 |
| 1.5 | 42 | 14.0 | 5,430 |

Dec. 14 to Sept. 30

| | | | |
|---|---|---|---|
| 0.37 | 0.03 | 0.7 | 1.8 |
| .4 | .05 | .8 | 3.8 |
| .5 | .22 | .9 | 6.6 |
| .6 | .72 | | |

Note.--Same as preceding table above 0.9 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.9 | 203 | 48 | 114 | a4,000 | 720 | 100 | 112 | 54 | 83 | 1.2 | 0.1 |
| 2 | 1.7 | 172 | 44 | 102 | a2,000 | 496 | 175 | 94 | 43 | 60 | 1.1 | .1 |
| 3 | 39 | 123 | 41 | 91 | a1,000 | 361 | 177 | 90 | 38 | 46 | 1.0 | .09 |
| 4 | 187 | 95 | 37 | 110 | a750 | 277 | 955 | 75 | 31 | 37 | 1.0 | .08 |
| 5 | 138 | 78 | 36 | 315 | 642 | *224 | 1,520 | 63 | 209 | 30 | 1.3 | .06 |
| 6 | 75 | 66 | 33 | 306 | 787 | 198 | 805 | 53 | 290 | 22 | 1.0 | *.05 |
| 7 | 47 | 70 | 33 | 248 | 1,260 | 250 | 480 | 46 | 158 | 18 | .7 | .03 |
| 8 | 31 | 131 | 33 | *200 | 1,360 | 470 | 509 | 40 | 105 | 13 | .7 | .03 |
| 9 | 23 | 110 | 31 | 174 | 1,050 | 404 | *659 | 35 | 178 | 11 | 1.1 | .03 |
| 10 | 17 | 84 | *30 | 174 | 901 | 333 | 464 | 31 | 546 | 9.2 | 1.1 | .4 |
| 11 | 13 | 76 | 30 | 155 | 648 | 288 | 344 | 33 | 347 | 7.6 | .9 | 3.0 |
| 12 | 11 | 66 | 1,120 | 141 | 444 | 264 | 258 | 35 | 213 | 6.6 | .6 | 2.4 |
| 13 | 9.5 | 56 | 5,420 | 128 | 333 | 236 | 205 | 46 | 143 | 5.1 | .5 | 4.5 |
| 14 | 8.2 | 48 | 4,910 | 116 | 262 | 203 | 166 | *205 | 118 | 4.8 | .4 | 16 |
| 15 | 7.2 | 42 | 1,870 | 110 | 218 | 182 | 141 | 338 | 93 | 4.2 | 1.1 | 11 |
| 16 | 41 | 59 | 778 | 106 | 262 | 156 | 124 | 196 | 70 | 3.8 | 1.4 | 65 |
| 17 | 31 | 85 | 470 | 94 | 226 | 138 | 112 | 124 | 56 | 3.6 | .8 | 162 |
| 18 | 10 | 81 | 340 | 82 | 196 | 127 | 103 | 126 | 46 | 4.2 | .7 | 90 |
| 19 | 7.9 | 70 | 258 | 73 | 344 | 127 | 94 | 129 | 40 | 4.2 | .7 | 46 |
| 20 | 7.6 | 62 | 211 | 71 | 488 | 115 | 85 | 169 | 41 | 4.8 | .6 | 36 |
| 21 | 8.5 | 63 | 196 | 102 | 375 | 103 | 90 | 129 | 37 | 4.0 | .5 | 28 |
| 22 | 10 | 90 | 729 | 149 | 286 | 116 | 122 | 833 | 32 | 3.0 | .4 | 38 |
| 23 | 55 | 93 | 820 | 614 | 228 | 117 | 120 | 751 | 30 | 2.8 | .4 | 326 |
| 24 | 67 | 82 | 611 | 496 | 193 | 110 | 106 | 406 | 102 | 2.8 | .4 | 186 |
| 25 | *50 | 74 | 411 | 354 | 174 | 122 | 94 | 344 | *172 | 2.2 | .3 | 101 |
| 26 | 36 | 68 | 308 | 308 | 637 | 129 | 84 | 218 | 100 | 1.8 | .3 | 67 |
| 27 | 34 | *64 | 242 | 484 | 681 | 128 | 75 | 169 | 67 | 1.7 | *.2 | 46 |
| 28 | 34 | 58 | 200 | 2,840 | 636 | 120 | 68 | 129 | 62 | 1.5 | .2 | 39 |
| 29 | 30 | 55 | 167 | *2,480 | - | 111 | 147 | 100 | 122 | 1.3 | .2 | 96 |
| 30 | 27 | 52 | 143 | a2,000 | -------- | 102 | 172 | 83 | 108 | 1.2 | .2 | 189 |
| 31 | 36 | -------- | 128 | a2,500 | -------- | 94 | -------- | 66 | -------- | 1.2 | .2 | -------- |
| Total | 1,094.5 | 2,476 | 19,728 | 15,237 | 20,381 | 6,821 | 8,554 | 5,268 | 3,651 | 401.6 | 21.2 | 1,552.87 |
| Mean | 35.3 | 82.5 | 636 | 492 | 728 | 220 | 285 | 170 | 122 | 13.0 | 0.68 | 51.8 |
| Cfsm | 0.378 | 0.882 | 6.80 | 5.26 | 7.79 | 2.35 | 3.05 | 1.82 | 1.30 | 0.139 | 0.0073 | 0.554 |
| In. | 0.44 | 0.98 | 7.85 | 6.06 | 8.11 | 2.71 | 3.40 | 2.10 | 1.45 | 0.16 | 0.008 | 0.62 |

Calendar year 1956: Max 5,420 Min 1.7 Mean 247 Cfsm 2.64 In. 33.00
Water year 1956-57: Max 5,420 Min 0.03 Mean 233 Cfsm 2.49 In. 33.89

Peak discharge (base, 1,700 cfs).--Dec. 13 (7 a.m.) 6,290 cfs (15.27 ft); Jan. 28 (10 a.m.) 3,170 cfs (10.44 ft); Jan. 31 or Feb. 1 (time unknown) 5,400 cfs (13.96 ft); Feb. 7 (7 p.m.) 1,840 cfs (7.91 ft); Apr. 4 (4 p.m.) 1,830 cfs (7.89 ft); May 22 (5 p.m.) 2,000 cfs (8.23 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, floodmarks, and records for stations on nearby streams.

## Emory River at Oakdale, Tenn.

Location.--Lat 35°58'59", long 84°33'29", at Oakdale, Morgan County, 1,000 ft downstream from highway bridge and 1,100 ft downstream from Mud Lick Creek.

Drainage area.--764 sq mi.

Records available.--June 1927 to September 1957. Prior to October 1929, published as Emery River at Harriman and October 1929 to September 1934 as Emery River at Oakdale.

Gage.--Water-stage recorder. Datum of gage is 763.38 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1929, staff gage at site 5.8 miles downstream at datum 45.60 ft lower.

Average discharge.--30 years, 1,398 cfs.

Extremes.--Maximum discharge during year, 53,300 cfs Jan. 28 (gage height, 22.86 ft); minimum, 3.0 cfs Aug. 14, 15 (gage height, 0.94 ft).

1927-57: Maximum discharge, 195,000 cfs Mar. 23, 1929 (gage height, about 42.3 ft, present site and datum, and 61.1 ft, site and datum then in use, from floodmarks), from rating curve extended above 85,000 cfs by logarithmic plotting; no flow at times in 1944, 1952-53.

Maximum stage known, that of Mar. 23, 1929.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940. WSP 1386: 1928-30(M), 1932, 1943, 1945(P).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 2.0 | 2.6 | 310 |
| 1.0 | 4.4 | 3.0 | 560 |
| 1.1 | 7.7 | 4.0 | 1,330 |
| 1.3 | 18 | 7.0 | 4,460 |
| 1.6 | 47 | 10.0 | 9,320 |
| 1.9 | 90 | 15.0 | 20,400 |
| 2.3 | 180 | 18.8 | 33,700 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | *444 | 164 | 968 | 28,500 | *4,150 | *819 | *1,270 | 316 | *515 | 22 | 7.0 |
| 2 | *21 | 872 | 156 | *826 | 17,700 | 3,490 | 1,300 | 1,010 | 260 | 444 | 20 | 6.0 |
| 3 | 18 | 630 | *148 | 714 | *7,400 | 2,750 | 1,560 | 1,360 | *208 | 321 | 16 | 5.7 |
| 4 | 115 | 438 | 139 | 721 | 4,860 | 2,200 | 9,980 | 1,060 | 198 | 233 | 13 | 5.4 |
| 5 | 714 | 321 | 129 | 2,920 | 4,520 | 1,820 | 13,600 | 812 | 208 | 180 | 12 | 4.2 |
| 6 | 413 | 251 | 125 | 3,280 | 4,310 | 1,600 | 7,160 | 672 | 1,940 | 143 | 12 | 3.7 |
| 7 | 238 | 215 | 121 | 2,580 | 5,760 | 1,640 | 4,090 | 553 | 1,520 | 116 | 11 | 4.4 |
| 8 | 158 | 224 | 114 | 2,010 | 8,220 | 4,030 | 3,490 | 464 | 984 | 97 | 9.5 | 4.2 |
| 9 | 118 | 326 | 114 | 1,730 | 10,100 | 3,740 | 4,980 | 395 | 805 | 84 | 8.2 | 3.7 |
| 10 | 95 | 300 | 112 | 1,690 | 8,860 | 3,070 | 3,670 | 343 | 3,340 | 71 | 6.7 | 4.4 |
| 11 | 77 | 256 | 110 | 1,580 | 6,560 | 2,750 | 2,820 | 310 | 2,590 | 59 | 5.4 | 4.4 |
| 12 | 64 | 215 | 1,690 | 1,420 | 4,170 | 2,560 | 2,230 | 290 | 1,630 | 51 | 4.2 | 6.6 |
| 13 | 55 | 187 | *31,100 | 1,320 | 3,070 | 2,280 | 1,830 | 270 | 1,140 | 43 | 3.7 | 21 |
| 14 | 47 | 164 | *31,100 | 1,190 | 2,420 | 1,970 | 1,530 | 260 | 1,030 | 38 | 3.2 | 290 |
| 15 | 43 | 146 | 13,000 | 1,060 | 1,980 | 1,750 | 1,290 | 1,090 | 984 | 35 | 4.4 | 332 |
| 16 | 37 | 153 | 5,400 | 976 | 2,100 | 1,550 | 1,140 | 1,080 | 721 | 32 | 11 | 2,810 |
| 17 | *33 | 166 | 3,300 | 864 | 1,990 | 1,330 | 1,040 | 735 | 525 | 32 | 29 | 2,080 |
| 18 | 30 | 228 | 2,350 | 721 | 1,760 | 1,200 | 928 | 546 | 413 | 35 | 36 | 968 |
| 19 | 36 | 233 | 1,830 | 602 | 2,020 | 1,140 | 819 | 518 | 365 | 44 | 56 | 588 |
| 20 | 50 | 215 | 1,540 | 602 | 4,150 | 1,060 | 742 | 665 | 270 | 35 | 87 | 389 |
| 21 | 40 | 198 | 1,400 | 665 | 3,380 | 912 | 728 | 665 | 215 | 29 | 56 | 348 |
| 22 | 38 | 198 | 3,540 | 1,030 | 2,660 | 952 | 1,290 | 1,300 | 180 | 26 | 42 | 376 |
| 23 | 36 | 242 | 5,860 | 3,340 | 2,180 | 1,050 | 1,910 | 4,380 | 172 | 22 | 32 | 672 |
| 24 | 87 | 270 | 5,420 | 3,730 | 1,850 | 960 | 1,560 | 2,140 | 376 | 26 | 26 | 848 |
| 25 | 118 | 251 | 3,640 | 2,820 | 1,650 | 992 | 1,580 | 2,100 | 1,490 | 24 | 22 | 553 |
| 26 | 136 | 233 | 2,670 | 2,300 | 2,100 | 1,140 | 1,320 | 1,480 | 992 | 23 | 18 | 338 |
| 27 | 116 | 220 | 2,070 | 2,570 | 3,300 | 1,110 | 1,090 | 1,100 | 609 | 22 | 15 | 238 |
| 28 | 104 | 201 | 1,740 | *26,400 | 3,360 | 1,060 | 928 | 856 | 458 | 19 | 13 | 184 |
| 29 | 97 | 184 | 1,470 | 33,600 | - | 1,000 | 848 | 651 | 896 | 16 | 12 | 224 |
| 30 | 97 | 172 | 1,240 | 16,400 | ------- | 936 | 1,190 | 525 | 880 | 14 | *9.5 | 338 |
| 31 | 99 | ------ | 1,090 | 17,800 | ------- | 856 | ------- | 407 | ------- | *17 | 8.2 | ------- |
| Total | 3,355 | 8,153 | 122,882 | 138,429 | 150,930 | 57,048 | 77,462 | 29,307 | 25,715 | 2,946 | 624.0 | 11,656.7 |
| Mean | 108 | 272 | 3,964 | 4,465 | 5,390 | 1,840 | 2,582 | 945 | 857 | 95.0 | 20.1 | 389 |
| Cfsm | 0.141 | 0.356 | 5.19 | 5.84 | 7.05 | 2.41 | 3.38 | 1.24 | 1.12 | 0.124 | 0.026 | 0.509 |
| In. | 0.16 | 0.40 | 5.98 | 6.74 | 7.35 | 2.78 | 3.77 | 1.43 | 1.25 | 0.14 | 0.03 | 0.57 |

Calendar year 1956: Max 31,100 Min 7.4 Mean 1,809 Cfsm 2.37 In. 32.21
Water year 1956-57: Max 33,600 Min 3.2 Mean 1,722 Cfsm 2.25 In. 30.60

Peak discharge (base, 19,000 cfs).--Dec. 13 (11 a.m.) 42,100 cfs (20.69 ft); Jan. 28 (11:30 p.m.) 53,300 cfs (22.86 ft); Feb. 2 (10 p.m.) 31,000 cfs (18.15 ft); Apr. 4 (7 p.m.) 20,300 cfs (14.96 ft).

* Discharge measurement made on this day.

## Sewee Creek near Decatur, Tenn.

Location.--Lat 35°34'53", long 84°44'53", on right bank a third of a mile downstream from bridge on State Highway 58, half a mile downstream from Dry Fork, 4½ miles upstream from mouth, and 5 miles north of Decatur, Meigs County.

Drainage area.--117 sq mi.

Records available.--May 1934 to September 1957. Prior to October 1935, published as Suee Creek near Decatur.

Gage.--Water-stage recorder. Datum of gage is 694.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 190 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs Sept. 16 (gage height, 16.85 ft), from rating curve extended as explained below; minimum, 15 cfs Dec. 11, 12; minimum gage height, 0.17 ft Sept. 7, 8.

1934-57: Maximum discharge, 29,000 cfs Jan. 7, 1946 (gage height, 23.97 ft, from floodmarks), from rating curve extended above 6,700 cfs on basis of contracted-opening determination of peak flow; minimum, 11 cfs Sept. 24, 1935, Jan. 7-10, Oct. 4, 5, 7, 11, 12, 14, 15, 1940; minimum gage height, 0.15 ft Sept. 2, 3, 7-9, 13, 20, 1954.

Remarks.--Records good.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 9-12, June 5)

| | | | |
|---|---|---|---|
| 0.18 | 16 | 0.7 | 255 |
| .2 | 19 | 1.0 | 370 |
| .25 | 27 | 5.0 | 1,580 |
| .3 | 39 | 10.0 | 4,280 |
| .4 | 75 | 12.6 | 6,060 |
| .5 | 125 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 95 | 19 | 120 | *6,050 | 471 | 110 | 120 | 59 | 34 | 20 | 18 |
| 2 | *18 | 31 | 18 | 100 | 3,570 | 382 | 201 | 120 | 55 | 31 | 22 | 16 |
| 3 | 18 | 23 | 18 | 95 | 1,140 | 320 | 120 | 120 | 55 | 29 | 22 | 16 |
| 4 | 25 | 22 | 17 | 125 | 932 | 273 | 873 | 110 | 75 | 29 | 25 | 18 |
| 5 | 23 | *20 | 16 | 264 | 878 | *243 | 1,540 | 105 | 480 | 27 | 36 | 18 |
| 6 | 19 | 20 | *16 | 160 | 827 | 219 | 659 | 100 | *231 | 27 | 22 | *18 |
| 7 | 19 | 20 | 16 | 139 | 893 | 257 | 442 | 95 | 71 | 25 | 20 | 16 |
| 8 | 19 | 22 | 16 | 120 | 932 | 480 | 2,030 | 90 | 63 | 23 | 20 | 16 |
| 9 | 19 | 20 | 16 | 110 | 1,370 | 343 | *1,610 | 90 | 156 | *23 | 20 | 18 |
| 10 | 19 | 20 | 16 | 110 | 992 | 282 | 684 | 90 | 146 | 23 | 20 | 23 |
| 11 | 19 | 19 | 16 | 95 | 670 | 255 | 505 | 95 | 95 | 23 | 19 | 54 |
| 12 | 19 | 19 | 81 | 90 | 502 | 273 | 400 | 95 | 71 | 22 | *19 | 63 |
| 13 | 19 | 19 | *1,620 | 90 | 403 | 231 | 343 | 90 | 59 | 22 | 19 | 133 |
| 14 | 19 | 19 | 2,810 | *85 | 336 | 207 | 300 | *85 | 51 | 22 | 19 | 409 |
| 15 | 19 | 19 | 987 | 80 | 291 | 195 | 278 | 95 | 48 | 23 | 19 | 801 |
| 16 | 19 | 44 | 394 | 80 | 340 | 167 | 260 | 90 | 44 | 59 | 19 | 5,630 |
| 17 | 19 | 44 | 260 | 71 | 255 | 153 | 237 | 80 | 42 | 55 | 19 | 3,050 |
| 18 | 20 | 27 | 213 | 67 | 231 | 146 | 219 | 75 | 42 | 140 | 20 | 564 |
| 19 | 22 | 23 | 174 | 67 | 474 | 160 | 207 | 65 | 39 | 39 | 22 | 421 |
| 20 | 19 | 22 | 153 | 63 | 466 | 132 | 195 | 125 | 42 | 31 | 20 | 320 |
| 21 | 19 | 23 | 273 | 67 | 355 | 120 | 195 | 85 | 36 | 29 | 19 | 260 |
| 22 | 25 | 29 | 967 | 80 | 291 | 139 | 231 | 85 | 36 | 27 | 20 | 213 |
| 23 | 25 | 25 | 854 | 571 | 249 | 120 | 219 | 105 | 36 | 27 | 19 | 291 |
| 24 | 22 | 23 | 600 | 268 | 231 | 115 | 174 | 80 | 44 | 27 | 19 | 174 |
| 25 | 19 | 22 | 373 | 264 | 225 | 115 | 153 | 85 | 51 | 27 | 19 | 132 |
| 26 | 19 | 20 | 282 | 273 | 501 | 110 | 146 | 75 | 36 | 25 | 19 | 115 |
| 27 | 20 | 20 | 243 | 803 | 424 | 100 | 139 | 71 | 34 | 23 | 19 | 105 |
| 28 | 22 | 20 | 213 | 2,490 | 488 | 95 | 139 | 63 | 31 | 22 | 18 | 139 |
| 29 | 22 | 20 | 174 | *1,550 | - | 90 | 125 | 63 | 36 | 22 | 18 | 586 |
| 30 | 22 | 20 | 146 | 1,100 | -------- | 85 | 120 | 85 | 36 | 22 | 18 | 485 |
| 31 | 29 | -------- | 132 | *3,550 | -------- | 85 | -------- | 63 | -------- | 20 | 18 | -------- |
| Total | 635 | 770 | 11,133 | 13,147 | 24,316 | 6,363 | 12,854 | 2,815 | 2,300 | 978 | 628 | 14,122 |
| Mean | 20.5 | 25.7 | 359 | 424 | 868 | 205 | 428 | 90.8 | 76.7 | 31.5 | 20.3 | 471 |
| Cfsm | 0.175 | 0.220 | 3.07 | 3.62 | 7.42 | 1.75 | 3.66 | 0.776 | 0.656 | 0.269 | 0.174 | 4.03 |
| In. | 0.20 | 0.24 | 3.54 | 4.18 | 7.73 | 2.02 | 4.09 | 0.89 | 0.73 | 0.31 | 0.20 | 4.49 |

Calendar year 1956: Max 4,260 Min 15 Mean 185 Cfsm 1.58 In. 21.47
Water year 1956-57: Max 6,050 Min 16 Mean 247 Cfsm 2.11 In. 28.62

Peak discharge (base, 2,000 cfs).--Dec. 14 (4 p.m.) 3,310 cfs (8.38 ft); Jan. 28 (8 p.m.) 3,580 cfs (8.83 ft); Feb. 1 (12:30 a.m.) 6,790 cfs (13.22 ft); Apr. 5 (1:30 a.m.) 2,340 cfs (6.63 ft); Apr. 8 (10 p.m.) 4,130 cfs (9.75 ft); Sept. 16 (8 p.m.) 13,000 cfs (16.85 ft).

* Discharge measurement made on this day.

## Hiwassee River at Presley, Ga.

Location.--Lat 34°54'17", long 83°43'01", on left bank 0.1 mile downstream from Cynth Creek, 0.5 mile southeast of Presley, Towns County, 1.3 miles upstream from Hightower Creek, and at mile 133.9.

Drainage area.--45.5 sq mi.

Records available.--December 1941 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,932.69 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years (1942-57), 127 cfs.

Extremes.--Maximum discharge during year, 1,830 cfs Apr. 5 (gage height, 8.64 ft); minimum, 22 cfs Sept. 8 (gage height, 1.56 ft).

1941-57: Maximum discharge, 5,700 cfs Mar. 11, 1952 (gage height, 15.24 ft), from rating curve extended above 2,000 cfs on basis of slope-area and contracted-opening determinations at gage heights 12.80 and 15.24 ft, respectively; minimum, 22 cfs Sept. 27-30, Oct. 5, 6, 10, 11, 12, 14, 1954, Sept. 8, 1957; minimum gage height, 1.56 ft Sept. 8, 1957.

Remarks.--Records excellent except those for period of ice effect, which are good.

Revisions (water years).--WSP 973: 1942.

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 15, June 29 to Sept. 30 | | | | Dec. 16 to June 28 | | | |
|---|---|---|---|---|---|---|---|
| 1.5 | 18 | 2.5 | 134 | 1.7 | 33 | 4.0 | 465 |
| 1.7 | 32 | 3.0 | 232 | 1.9 | 54 | 5.0 | 720 |
| 1.9 | 51 | 3.1 | 254 | 2.1 | 79 | 6.0 | 990 |
| 2.1 | 74 | | | 2.5 | 138 | 6.8 | 1,220 |
| | | | | 3.0 | 237 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 43 | 91 | 43 | 95 | 717 | 295 | 338 | 179 | 91 | 127 | 47 | 26 |
| 2 | 42 | 70 | 42 | 89 | 477 | 252 | 396 | 169 | 89 | 111 | 45 | 25 |
| 3 | 42 | 63 | 42 | 86 | 377 | 226 | 260 | 156 | *88 | 100 | 43 | 24 |
| 4 | 46 | 59 | *41 | 109 | 375 | 212 | 539 | 151 | 92 | 91 | 44 | 27 |
| 5 | 43 | 56 | 40 | 136 | 324 | *195 | 1,220 | 151 | 114 | 87 | 44 | 26 |
| 6 | 40 | 54 | 40 | 114 | 298 | 185 | 544 | 147 | 102 | 80 | *40 | 24 |
| 7 | 39 | 56 | 39 | 110 | 295 | 197 | 398 | 143 | 96 | 77 | 38 | 23 |
| 8 | 38 | *62 | 39 | 102 | 271 | 199 | 379 | 143 | 91 | *73 | 37 | 36 |
| 9 | 38 | 54 | 39 | 99 | 252 | 183 | 342 | 138 | 89 | 70 | 36 | 51 |
| 10 | 37 | 53 | 38 | 105 | 237 | 171 | 309 | 131 | 88 | 68 | 36 | 55 |
| 11 | *36 | 52 | 38 | 96 | 218 | 166 | 284 | 164 | 88 | 67 | 35 | 36 |
| 12 | 36 | 51 | 61 | 93 | 203 | 166 | 269 | 140 | 84 | 68 | 35 | 33 |
| 13 | 36 | 49 | 60 | 91 | 191 | 156 | 254 | 130 | 82 | 62 | 35 | 37 |
| 14 | 35 | 49 | 124 | 88 | 181 | 154 | 237 | *124 | 79 | 59 | 33 | 36 |
| 15 | 34 | 48 | 251 | *86 | 173 | 147 | 226 | 121 | 76 | 70 | 39 | 33 |
| 16 | 34 | 48 | 245 | 83 | 175 | 142 | 218 | 118 | 88 | 70 | 36 | *67 |
| 17 | 34 | 62 | 149 | b78 | 162 | 138 | 212 | 114 | 99 | 66 | 33 | 52 |
| 18 | 36 | 54 | 118 | b72 | 154 | 151 | 212 | 114 | 86 | 62 | 49 | 44 |
| 19 | 50 | 51 | 102 | b75 | 171 | 162 | *201 | 121 | 80 | 61 | 46 | 39 |
| 20 | 40 | 50 | 93 | 75 | 160 | 149 | 195 | 116 | 78 | 58 | 41 | 41 |
| 21 | 66 | 51 | 88 | 76 | 152 | 145 | 197 | 106 | 74 | 54 | 37 | 42 |
| 22 | 176 | 50 | 131 | 152 | 145 | 149 | 210 | 126 | 82 | 53 | 36 | 37 |
| 23 | 87 | 48 | 220 | 329 | 140 | 140 | 231 | 118 | 89 | 52 | 34 | 36 |
| 24 | 69 | 48 | 347 | 206 | 136 | 143 | 280 | 124 | 103 | 55 | 34 | 34 |
| 25 | 61 | 47 | 224 | 208 | 176 | 166 | 226 | 118 | 95 | 62 | 33 | 32 |
| 26 | 56 | 47 | 171 | 189 | 368 | 158 | 206 | 112 | 82 | 52 | 32 | 32 |
| 27 | 54 | 46 | 147 | 175 | 282 | 149 | 191 | 106 | 76 | 52 | 30 | 31 |
| 28 | 52 | 44 | 130 | 181 | 304 | 142 | 183 | 106 | 278 | 51 | 30 | 59 |
| 29 | 50 | 44 | 118 | 258 | - | 136 | 193 | 103 | 248 | 48 | 29 | 119 |
| 30 | 49 | 43 | 108 | 302 | -------- | 133 | 183 | 98 | 154 | 51 | 28 | 79 |
| 31 | 50 | -------- | 102 | 439 | -------- | 126 | -------- | 96 | -------- | 49 | 27 | -------- |
| Total | 1,549 | 1,600 | 3,430 | 4,397 | 7,114 | 5,233 | 9,133 | 3,983 | 3,061 | 2,106 | 1,142 | 1,236 |
| Mean | 50.0 | 53.3 | 111 | 142 | 254 | 169 | 304 | 128 | 102 | 67.9 | 36.8 | 41.2 |
| Cfsm | 1.10 | 1.17 | 2.44 | 3.12 | 5.58 | 3.71 | 6.68 | 2.81 | 2.24 | 1.49 | 0.809 | 0.905 |
| In. | 1.27 | 1.31 | 2.80 | 3.59 | 5.81 | 4.28 | 7.46 | 3.26 | 2.50 | 1.72 | 0.93 | 1.01 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 872 | Min | 33 | Mean | 102 | Cfsm | 2.24 | In. | 30.47 |
| Water year 1956-57: | Max | 1,220 | Min | 23 | Mean | 121 | Cfsm | 2.66 | In. | 35.94 |

Peak discharge (base, 800 cfs).--Feb. 1 (1 a.m.) 906 cfs (5.69 ft); Apr. 5 (5 a.m.) 1,830 cfs (8.64 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## Hiwassee River below Chatuge Dam, near Hayesville, N. C.

Location.--Lat 35°01'45", long 83°47'45", on left bank 0.4 mile upstream from Hyatt Mill Creek, 1.6 miles downstream from Chatuge Dam, 1.7 miles southeast of Hayesville, Clay County, and at mile 119.3.

Drainage area.--190 sq mi.

Records available.--May 1907 to December 1909 (fragmentary), August 1922 to September 1923 (gage heights only), April 1942 to September 1957. Published as "near Hayesville" 1907-9, 1922-23.

Gage.--Water-stage recorder. Datum of gage is 1,789.90 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 20, 1907, to Dec. 31, 1909, staff gage and Aug. 16, 1922, to Sept. 30, 1923, chain gage, at site 1.1 miles upstream at different datum.

Average discharge.--15 years (1942-57), 432 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,590 cfs May 8 (gage height, 5.42 ft); minimum, 6.8 cfs Oct. 12, 13 (gage height, 0.74 ft).
1907-9, 1922-23, 1942-57: Maximum gage height recorded, 11.9 ft Mar. 13, 1909, site and datum then in use (discharge not determined); minimum discharge, 0.6 cfs Oct. 21, 1952; minimum gage height, 0.30 ft Aug. 3, 1942, Oct. 21, 1952.

Remarks.--Records excellent except those below 10 cfs, which are good. Flow completely regulated by Chatuga Lake (see p. 225 ).

Revisions (water years).--WSP 973: 1942.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 6.0 | 2.0 | 211 |
| .8 | 8.2 | 2.5 | 355 |
| 1.0 | 16 | 3.0 | 515 |
| 1.1 | 24 | 3.5 | 695 |
| 1.2 | 38 | 4.0 | 895 |
| 1.4 | 75 | 5.0 | 1,360 |
| 1.7 | 138 | 5.3 | 1,520 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.0 | 9.8 | 11 | 11 | 32 | 806 | 1,120 | 849 | 969 | 1,000 | 918 | 990 |
| 2 | 9.0 | 9.5 | 10 | 355 | 19 | 858 | 78 | 852 | 978 | 1,090 | 864 | 570 |
| 3 | 8.8 | 9.5 | 1,130 | 62 | 18 | 896 | 15 | 831 | *861 | 1,150 | 628 | 459 |
| 4 | 8.8 | 9.5 | *1,180 | 13 | 20 | 833 | 1,150 | 17 | 1,290 | 120 | 140 | 432 |
| 5 | 8.5 | 9.5 | 1,180 | 13 | 16 | 287 | 39 | 15 | 1,490 | 448 | 694 | 486 |
| 6 | 8.0 | 9.5 | 1,180 | 12 | 15 | *16 | 298 | 845 | 1,320 | 15 | *647 | 501 |
| 7 | 7.4 | 9.8 | 1,070 | 11 | 14 | 398 | 19 | 823 | 1,430 | 774 | 11 | 11 |
| 8 | 7.2 | *112 | 14 | 11 | *14 | 501 | 1,050 | 916 | 1,430 | 1,240 | 11 | 11 |
| 9 | 7.2 | 10 | 11 | 10 | 13 | 456 | 1,510 | 877 | 1,430 | *1,180 | 10 | 646 |
| 10 | 7.2 | 9.5 | 868 | 10 | 13 | 16 | 1,490 | 804 | 1,420 | 1,170 | 10 | 776 |
| 11 | *7.0 | 9.5 | 923 | 9.8 | 113 | 504 | 1,340 | 18 | 1,440 | 1,100 | 10 | 404 |
| 12 | 6.8 | 9.3 | 694 | 9.3 | 16 | 17 | 1,320 | 15 | 1,460 | 1,100 | 10 | 11 |
| 13 | 8.9 | 9.3 | 13 | 8.8 | 15 | 15 | 1,310 | 852 | 1,450 | 968 | 178 | 11 |
| 14 | 8.8 | 9.3 | 15 | 700 | 15 | 409 | 1,300 | 834 | 1,440 | 674 | 11 | 11 |
| 15 | 8.5 | 9.3 | 16 | *810 | 15 | 16 | 1,310 | *900 | 648 | 1,020 | 11 | 11 |
| 16 | 82 | 9.5 | 13 | 778 | 15 | 15 | 982 | 860 | 1,040 | 1,400 | 11 | *11 |
| 17 | 9.3 | 9.8 | 12 | 733 | 14 | 15 | 904 | 850 | 1,060 | 1,290 | 116 | 404 |
| 18 | 19 | 9.5 | 11 | 726 | 13 | 279 | 882 | 25 | 1,150 | 1,090 | 12 | 11 |
| 19 | 9.3 | 9.3 | 11 | 658 | 13 | 112 | *880 | 15 | 1,130 | 1,170 | 292 | 11 |
| 20 | 9.8 | 9.3 | 11 | 13 | 14 | 15 | 793 | 812 | 1,100 | 1,210 | 11 | 11 |
| 21 | 9.8 | 9.3 | 11 | 786 | 96 | 15 | 18 | 850 | 1,080 | 138 | 11 | 11 |
| 22 | 11 | 8.8 | 14 | 726 | 155 | 15 | 859 | 581 | 1,080 | 1,040 | 769 | 12 |
| 23 | 10 | 608 | 14 | 17 | 14 | 14 | 552 | 872 | 120 | 992 | 774 | 11 |
| 24 | 9.8 | 11 | 16 | 629 | 14 | 15 | 804 | 820 | 1,200 | 1,080 | 774 | 11 |
| 25 | 9.5 | 9.8 | 12 | 14 | 14 | 820 | 873 | 860 | 1,060 | 1,070 | 19 | 11 |
| 26 | 62 | 640 | 11 | 12 | 14 | 16 | 742 | 276 | 18 | 1,120 | 972 | 11 |
| 27 | 9.8 | 580 | 13 | 12 | 52 | 15 | 17 | 909 | 16 | 778 | 948 | 11 |
| 28 | 9.5 | 634 | 12 | 14 | 18 | 15 | 15 | 972 | 18 | 12 | 650 | 13 |
| 29 | 9.5 | 631 | 12 | 91 | - | 14 | 812 | 1,000 | 948 | 974 | 971 | 13 |
| 30 | 10 | 550 | 12 | 14 | ------- | 14 | 886 | 976 | 58 | 1,090 | 1,130 | 12 |
| 31 | 9.8 | ------- | 11 | 142 | ------- | 14 | ------ | 998 | ------- | 1,010 | 792 | ------ |
| Total | 411.2 | 3,974.6 | 8,511 | 7,410.9 | 794 | 7,431 | 23,368 | 21,124 | 30,134 | 28,513 | 12,405 | 5,896 |
| Mean | 13.3 | 132 | 275 | 239 | 28.4 | 240 | 779 | 681 | 1,004 | 920 | 400 | 197 |
| (†) | +4,000 | -100 | +3,600 | +8,400 | +25,600 | +8,800 | +10,500 | -9,000 | -17,800 | -21,600 | -8,200 | -1,500 |
| Adjusted for change in contents in Chatuge Lake | | | | | | | | | | | | |
| Mean | 142 | 129 | 391 | 510 | 943 | 524 | 1,129 | 391 | 411 | 223 | 136 | 147 |
| Cfsm | 0.747 | 0.679 | 2.06 | 2.68 | 4.96 | 2.76 | 5.94 | 2.06 | 2.16 | 1.17 | 0.716 | 0.774 |
| In. | 0.86 | 0.76 | 2.37 | 3.09 | 5.17 | 3.18 | 6.63 | 2.37 | 2.41 | 1.37 | 0.82 | 0.86 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1956 : | Max 1,460 | Min 2.1 | Mean 245 | Mean 354 | Cfsm 1.86 | In. 25.36 |
| Water year 1956-57 : | Max 1,510 | Min 6.8 | Mean 411 | Mean 418 | Cfsm 2.20 | In. 29.87 |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Chatuge Lake, furnished by Tennessee Valley Authority.

## Hiwassee River above Murphy, N. C.

Location.--Lat 35°04'50", long 84°00'10", on right bank on U. S. Highway 64, 600 ft upstream from Will Scott Creek, 1.9 miles east of Murphy, Cherokee County, and at mile 99.2.

Drainage area.--406 sq mi.

Records available.--June 1896 to August 1897 (gage heights only), October 1897 to June 1917, and October 1918 to September 1957 in reports of Geological Survey. Published as "at Murphy" prior to April 1940. October 1897 to December 1923 (including revised records for January 1901 to December 1902 and January 1904 to June 1917) in North Carolina Department of Conservation and Development Bulletin 34. October 1897 to September 1924 (including revised records for January 1901 to December 1902 and January 1904 to June 1917) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,538.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Jan. 30, 1921, wire-weight or chain gages at bridge 2.8 miles downstream at datum 30.40 ft lower. Jan. 30, 1921, to Nov. 8, 1926, chain gage 2.8 miles downstream at datum 28.40 ft lower. Nov. 9, 1926, to Apr. 30, 1940, water-stage recorder 2.8 miles downstream at datum 28.20 ft lower.

Average discharge.--59 years (1898-1957), 910 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 15,300 cfs Jan. 31 (gage height, 12.56 ft); minimum, 62 cfs Oct. 17 (gage height, 1.87 ft); minimum daily, 65 cfs Oct. 17.
1896-1917, 1918-57: Maximum discharge observed, 23,100 cfs Mar. 19, 1899 (gage height, 18.4 ft, site and datum then in use), from rating curve extended above 5,000 cfs; minimum daily, 10 cfs Dec. 3, 1924, result of freezeup and filling of Andrews Reservoir; minimum daily during normal regulation, 62 cfs Oct. 19, 1952.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Considerable diurnal fluctuation caused by Mission powerplant at Andrews Dam (normal regulated storage, about 75 cfs-days). Flow regulated by Chatuge Lake (see p. 225).

Revisions (water years).--WSP 583: 1899(M). WSP 973: Drainage area. WSP 1003: 1943. See also Records available.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.8 | 50 | 4.0 | 1,280 | 2.0 | 80 | 5.0 | 2,200 |
| 2.0 | 89 | 5.0 | 2,260 | 2.3 | 170 | 6.0 | 3,440 |
| 2.3 | 187 | 6.0 | 3,440 | 2.6 | 305 | 7.0 | 4,780 |
| 2.6 | 328 | 7.0 | 4,780 | 3.0 | 525 | 8.0 | 6,280 |
| 3.0 | 563 | 8.0 | 6,280 | 3.5 | 850 | 9.0 | 7,980 |
| 3.5 | 910 | | | 4.0 | 1,240 | 9.1 | 8,160 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 116 | 172 | 385 | 304 | *8,100 | 1,680 | 1,180 | 1,320 | 1,250 | 1,140 | 1,080 | 1,090 |
| 2 | 116 | 142 | 121 | 532 | 3,260 | 1,630 | 977 | 1,250 | 1,190 | 1,480 | 1,000 | 914 |
| 3 | 109 | 133 | 798 | 425 | 2,010 | 1,590 | 513 | 1,230 | 1,180 | 1,450 | 800 | 315 |
| 4 | 120 | 132 | *1,300 | 319 | 3,680 | 1,410 | 3,530 | 700 | 1,410 | 804 | 542 | 574 |
| 5 | 120 | 126 | 1,280 | 584 | 3,330 | *1,190 | 6,280 | 448 | 2,160 | 715 | *520 | 658 |
| 6 | 130 | 128 | 1,280 | 423 | 1,860 | 598 | 2,310 | 955 | 1,940 | 310 | 1,060 | 550 |
| 7 | 120 | 126 | 1,280 | 440 | 1,840 | 877 | 1,330 | 1,110 | *1,920 | 772 | 221 | 196 |
| 8 | 107 | *179 | 443 | 388 | 1,560 | 1,240 | 1,980 | 1,300 | 1,800 | 1,350 | 120 | 123 |
| 9 | 109 | 252 | 229 | 371 | 1,370 | 1,030 | 2,620 | 1,220 | 1,790 | *1,390 | 122 | 492 |
| 10 | 103 | 130 | 488 | 382 | 1,220 | 727 | 2,390 | 1,180 | 1,790 | 1,350 | 121 | 695 |
| 11 | *103 | 134 | 1,010 | a360 | 1,120 | 862 | 2,170 | 674 | 1,760 | 1,340 | 112 | 753 |
| 12 | 105 | 130 | 1,720 | a340 | 888 | 791 | 2,020 | 426 | 1,760 | 1,280 | 110 | 256 |
| 13 | 100 | 126 | 721 | a320 | 801 | 585 | 1,950 | 832 | 1,730 | 1,150 | 248 | 120 |
| 14 | 108 | 122 | 855 | a1,040 | 731 | 845 | 1,880 | 1,170 | 1,730 | 1,030 | 135 | 236 |
| 15 | 220 | 122 | 1,350 | *1,110 | 658 | 628 | 1,840 | 1,220 | 1,110 | 1,030 | 190 | 138 |
| 16 | 106 | 126 | 1,200 | 1,000 | 735 | 507 | 1,510 | 1,180 | 1,120 | 1,580 | 137 | *168 |
| 17 | 65 | 153 | 658 | 1,030 | 610 | 483 | 1,400 | 1,160 | 1,350 | 1,490 | 190 | 482 |
| 18 | 84 | 150 | 528 | 998 | 585 | 621 | 1,340 | 716 | 1,430 | 1,260 | 246 | 188 |
| 19 | 129 | 138 | 260 | 920 | 615 | 714 | 1,350 | 360 | 1,440 | 1,350 | 560 | 126 |
| 20 | 114 | 128 | 320 | 502 | 585 | 501 | *1,230 | 844 | 1,390 | 1,370 | 170 | 120 |
| 21 | 126 | 140 | 344 | 668 | 621 | 465 | 767 | 1,120 | 1,340 | 738 | 142 | 120 |
| 22 | 477 | 156 | 712 | 1,050 | 642 | 507 | 1,150 | 992 | 1,330 | 788 | 588 | 120 |
| 23 | 254 | 416 | 1,170 | 943 | 495 | 465 | 1,240 | 1,120 | 778 | 1,160 | 872 | 146 |
| 24 | 164 | 437 | 2,380 | 1,030 | 477 | 460 | 1,190 | 1,140 | 1,530 | 1,240 | 767 | 122 |
| 25 | 147 | 134 | 1,100 | 697 | 471 | 1,110 | 1,310 | 1,150 | 1,730 | 1,230 | 478 | 108 |
| 26 | 144 | 527 | 713 | 623 | 631 | 720 | 1,160 | 884 | 656 | 1,260 | 687 | 102 |
| 27 | 186 | 668 | 542 | 770 | 672 | 483 | 736 | 980 | 350 | 1,120 | 1,050 | 108 |
| 28 | 132 | 738 | 470 | 1,040 | 1,340 | 449 | 460 | 1,250 | 472 | 321 | 715 | 156 |
| 29 | 124 | 743 | 411 | 1,860 | - | 432 | 918 | 1,240 | 1,410 | 773 | 1,030 | 266 |
| 30 | 128 | 678 | 360 | 1,820 | ------- | 416 | 1,450 | 1,230 | 955 | 1,220 | 1,210 | 208 |
| 31 | 128 | ------- | 333 | 6,180 | ------- | 399 | ------- | 1,210 | ------- | 1,180 | 851 | ------- |
| Total | 4,294 | 7,486 | 24,761 | 28,469 | 40,907 | 24,414 | 50,181 | 31,611 | 41,801 | 34,671 | 16,074 | 9,650 |
| Mean | 139 | 250 | 799 | 918 | 1,461 | 788 | 1,673 | 1,020 | 1,393 | 1,118 | 519 | 322 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 4,090 | Min 65 | Mean 663 | Mean 772 | Cfsm 1.90 | In. 25.88 |
| Water year 1956-57: | Max 8,100 | Min 65 | Mean 861 | Mean 869 | Cfsm 2.14 | In. 29.04 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge Lake.
a No gage-height record; discharge estimated on basis of records for station below Chatuge Dam and Valley River at Tomotla.

## Valley River at Tomotla, N. C.

Location.--Lat 35°08'20", long 83°58'50", on right bank at highway bridge at Tomotla, Cherokee County, 0.2 mile upstream from Rogers Creek, 4.7 miles northeast of Murphy, and 6.6 miles upstream from mouth.

Drainage area.--104 sq mi.

Records available.--June 1904 to December 1909, January 1914 to April 1917, October 1918 to September 1957.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,556.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 11, 1934, various staff or chain gages at same site and datum.

Average discharge.--45 years (1904-9, 1914-16, 1919-57), 252 cfs.

Extremes.--Maximum discharge during year, 8,320 cfs Jan. 31 (gage height, 16.70 ft), from rating curve extended above 5,800 cfs; minimum, 36 cfs Oct. 15, 16, 17 (gage height, 1.70 ft).

1904-9, 1914-17, 1918-57: Maximum discharge observed, 9,030 cfs Nov. 19, 1906 (gage height, 17.3 ft), from rating curve extended above 5,800 cfs; minimum, 12 cfs several times in August and September 1925 (gage height, 0.52 ft).

Remarks.--Records excellent.

Revisions (water years).--WSP 503: 1905-9, 1915-17. WSP 783: 1907(M). WSP 823: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1

| | | | |
|---|---|---|---|
| 1.7 | 36 | 5.0 | 1,140 |
| 1.9 | 67 | 6.0 | 1,490 |
| 2.1 | 110 | 7.0 | 1,890 |
| 2.5 | 222 | 8.0 | 2,290 |
| 3.0 | 405 | 10.0 | 3,150 |
| 3.5 | 620 | 12.0 | 4,200 |
| 4.0 | 800 | 13.5 | 5,240 |

Feb. 2 to Sept. 30

| | | | |
|---|---|---|---|
| 1.7 | 36 | 3.0 | 388 |
| 1.8 | 49 | 3.5 | 598 |
| 1.9 | 64 | 4.0 | 793 |
| 2.1 | 102 | 5.0 | 1,140 |
| 2.5 | 208 | | |

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 43 | 94 | 46 | 162 | *5,170 | 656 | 254 | 260 | 138 | 333 | 82 | 54 |
| 2 | 42 | 60 | 46 | 146 | *2,520 | 514 | 278 | 240 | 138 | 271 | 82 | 52 |
| 3 | 40 | 53 | *46 | 138 | 1,790 | 437 | 250 | 230 | 138 | 234 | 73 | 50 |
| 4 | 47 | 50 | 46 | 198 | 2,570 | 392 | 1,310 | 227 | *150 | 205 | 92 | 58 |
| 5 | 49 | 47 | 46 | 311 | 1,840 | *352 | 2,800 | 208 | 399 | 184 | *96 | 54 |
| 6 | 55 | 46 | 46 | 245 | 1,990 | 348 | 1,130 | 196 | 422 | 170 | 73 | 49 |
| 7 | 46 | *47 | 46 | 248 | 1,550 | 384 | 750 | 187 | 400 | 156 | 68 | 46 |
| 8 | 42 | 69 | 44 | 216 | *1,260 | 463 | 735 | 181 | 281 | *142 | 66 | 48 |
| 9 | 40 | 55 | 46 | 213 | 1,050 | 396 | 660 | 175 | 350 | 135 | 62 | 58 |
| 10 | *39 | 52 | 46 | 206 | 922 | 256 | 564 | 172 | 376 | 128 | 61 | 68 |
| 11 | 37 | 49 | 44 | 188 | 757 | 337 | 492 | 202 | 292 | 120 | 60 | 56 |
| 12 | 39 | 47 | 462 | 179 | 640 | 392 | 442 | 176 | 243 | 114 | 58 | 54 |
| 13 | 39 | 46 | 286 | 174 | 556 | 352 | 396 | 172 | 208 | 109 | 56 | 54 |
| 14 | 37 | 43 | 589 | *162 | 492 | 348 | 364 | 164 | 193 | 107 | 62 | 161 |
| 15 | 36 | 42 | 760 | 165 | 442 | 325 | 337 | *175 | 172 | 118 | 100 | 77 |
| 16 | 36 | 57 | 517 | 162 | 488 | 299 | 314 | 170 | 175 | 120 | 71 | *96 |
| 17 | 37 | 75 | 297 | 146 | 408 | 285 | 299 | 158 | 193 | 116 | 148 | 77 |
| 18 | 43 | 65 | 219 | 135 | 372 | 303 | 288 | 196 | 175 | 125 | 173 | 71 |
| 19 | 49 | 57 | 176 | 125 | 429 | 340 | 274 | 196 | 201 | 120 | 248 | 66 |
| 20 | 43 | 53 | 157 | 130 | 392 | 299 | *257 | 193 | 175 | 102 | 114 | 64 |
| 21 | 50 | 57 | 200 | 130 | 364 | 285 | 250 | 167 | 150 | 94 | 88 | 71 |
| 22 | 154 | 75 | 332 | 143 | 333 | 306 | 271 | 178 | 175 | 90 | 80 | 66 |
| 23 | 87 | 58 | 912 | 691 | 314 | 281 | 271 | 178 | 164 | 86 | 75 | 88 |
| 24 | 60 | 57 | 1,540 | 413 | 299 | 285 | 285 | 164 | 337 | 98 | 69 | 68 |
| 25 | 53 | 53 | 648 | 421 | 288 | 344 | 250 | 156 | 428 | 88 | 68 | 61 |
| 26 | 52 | 53 | 397 | 405 | 352 | 299 | 237 | 153 | 247 | 82 | 68 | 58 |
| 27 | 52 | 50 | 300 | 763 | 352 | 281 | 224 | 214 | 202 | 80 | 62 | 56 |
| 28 | 47 | 49 | 252 | 925 | 689 | 264 | 221 | 167 | 377 | 80 | 61 | 73 |
| 29 | 46 | 49 | 219 | 1,180 | - | 254 | 282 | 150 | 581 | 78 | 58 | 135 |
| 30 | 46 | 47 | 191 | 1,160 | -------- | 243 | 274 | 148 | 413 | 84 | 58 | 107 |
| 31 | 49 | -------- | 176 | 4,840 | -------- | 234 | -------- | 150 | -------- | 90 | 55 | -------- |
| Total | 1,535 | 1,655 | 9,132 | 14,720 | 28,629 | 10,654 | 14,759 | 5,705 | 7,893 | 4,059 | 2,587 | 2,096 |
| Mean | 49.5 | 55.2 | 295 | 475 | 1,022 | 344 | 492 | 184 | 263 | 131 | 83.5 | 69.9 |
| Cfsm | 0.476 | 0.531 | 2.84 | 4.57 | 9.83 | 3.31 | 4.73 | 1.77 | 2.53 | 1.26 | 0.803 | 0.672 |
| In. | 0.55 | 0.59 | 3.27 | 5.26 | 10.24 | 3.81 | 5.28 | 2.04 | 2.82 | 1.45 | 0.93 | 0.75 |

Calendar year 1956: Max 2,270 Min 32 Mean 236 Cfsm 2.27 In. 30.83
Water year 1956-57: Max 5,170 Min 36 Mean 283 Cfsm 2.72 In. 36.99

Peak discharge (base, 1,700 cfs).--Dec. 14 (9 p.m.) 1,710 cfs (6.54 ft); Dec. 24 (5:30 a.m.) 2,150 cfs (7.65 ft); Jan. 31 (6:30 p.m.) 8,320 cfs (16.70 ft); Feb. 4 (6 a.m.) 3,040 cfs (9.75 ft); Apr. 5 (9:30 a.m.) 3,690 cfs (11.10 ft).

* Discharge measurement made on this day.

## Nottely River near Blairsville, Ga.

Location.--Lat 34°50'28", long 83°56'10", on left bank 250 ft upstream from county road bridge, 0.1 mile downstream from Arkaqua Creek, 0.2 mile upstream from Akins Creek, and 2.7 miles southeast of Blairsville, Union County.

Drainage area.--74.8 sq mi.

Records available.--January 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,812.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 170 cfs.

Extremes.--Maximum discharge during year, 3,630 cfs Apr. 5 (gage height, 10.30 ft); minimum, 34 cfs Sept. 8 (gage height, 1.80 ft).
1942-57: Maximum discharge, 8,500 cfs Mar. 11, 1952 (gage height, 16.78 ft, from floodmark), from rating curve extended above 3,000 cfs on basis of contracted-opening determination of peak flow; minimum, 27 cfs Sept. 8, Oct. 7, 1947 (gage height, 1.77 ft).

Remarks.--Records excellent except those for period of ice effect, which are good. Slight diurnal fluctuation at low flow caused by mills above station. Occasional regulation by Lake Trahlyta in Vogel State Park.

Revisions (water years).--WSP 1053: 1942(M), 1943. WSP 1236: 1946(M), 1950(M).

Rating tables, water year 1956-57, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1-21 | | Oct. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.8 | 30 | 1.8 | 34 | 4.5 | 960 |
| 1.9 | 37 | 2.0 | 50 | 5.0 | 1,250 |
| 2.0 | 46 | 2.3 | 90 | 5.5 | 1,480 |
| 2.2 | 70 | 2.6 | 149 | 6.0 | 1,690 |
| | | 3.0 | 247 | 7.0 | 2,070 |
| | | 3.5 | 425 | 7.6 | 2,290 |
| | | 4.0 | 670 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 108 | 46 | 120 | 1,560 | 452 | 550 | 234 | 118 | 303 | 66 | 40 |
| 2 | 43 | 69 | 46 | 112 | 894 | 349 | 694 | 218 | 116 | 195 | 64 | 38 |
| 3 | 44 | 62 | *46 | 106 | 600 | 300 | 389 | 218 | *114 | 162 | 60 | 38 |
| 4 | 48 | 59 | 47 | 147 | *600 | 268 | 1,260 | 215 | 120 | 143 | 68 | 41 |
| 5 | 44 | 81 | 47 | 193 | 488 | *247 | 2,280 | 202 | 180 | 130 | *66 | 41 |
| 6 | 43 | 114 | 47 | 153 | 421 | 231 | 906 | 193 | 160 | 116 | 58 | 38 |
| 7 | 43 | *122 | 47 | 149 | 405 | 256 | 595 | 182 | 145 | 108 | 56 | 37 |
| 8 | 42 | 99 | 46 | 134 | 349 | 268 | 595 | 178 | 128 | *103 | 54 | 47 |
| 9 | 42 | 58 | 47 | 128 | 310 | 236 | 497 | 173 | 122 | 99 | 53 | 65 |
| 10 | *40 | 56 | 46 | 134 | 284 | 220 | 425 | 171 | 118 | 95 | 51 | 76 |
| 11 | 40 | 53 | 46 | 122 | 253 | 210 | 381 | 223 | 122 | 90 | 49 | 51 |
| 12 | 38 | 52 | 77 | 118 | 234 | 212 | 345 | 190 | 114 | 85 | 47 | 47 |
| 13 | 36 | 50 | 82 | 114 | 218 | 198 | 314 | 198 | 106 | 80 | 47 | 51 |
| 14 | 36 | 50 | 160 | *108 | 205 | 193 | 290 | *173 | 103 | 77 | 48 | 52 |
| 15 | 36 | 49 | 487 | 104 | 195 | 183 | 271 | 167 | 99 | 80 | 65 | 47 |
| 16 | 36 | 50 | 384 | 103 | 200 | 176 | 256 | 160 | 133 | 82 | 51 | *74 |
| 17 | 36 | 65 | 200 | b90 | 181 | 169 | 247 | 156 | 132 | 85 | 49 | 70 |
| 18 | 38 | 58 | 153 | b85 | 171 | 200 | 250 | 151 | 108 | 82 | 74 | 59 |
| 19 | 44 | 53 | 132 | b85 | 212 | 212 | *236 | 164 | 99 | 84 | 69 | 53 |
| 20 | 39 | 52 | 120 | 90 | 193 | 190 | 231 | 158 | 95 | 76 | 57 | 56 |
| 21 | 67 | 53 | 112 | 92 | 178 | 183 | 262 | 145 | 92 | 70 | 52 | 60 |
| 22 | 235 | 53 | 208 | 216 | 169 | 195 | 290 | 174 | 92 | 68 | 51 | 53 |
| 23 | 90 | 50 | 488 | 532 | 162 | 178 | 295 | 160 | 110 | 66 | 49 | 54 |
| 24 | 68 | 50 | 692 | 284 | 160 | 188 | 674 | 151 | 108 | 116 | 48 | 49 |
| 25 | 61 | 49 | 338 | 287 | 217 | 223 | 369 | 145 | 110 | 110 | 47 | 46 |
| 26 | 58 | 49 | 244 | 256 | 510 | 202 | 307 | 134 | 92 | 74 | 47 | 46 |
| 27 | 57 | 49 | 200 | 236 | 349 | 190 | 277 | 145 | 90 | 71 | 46 | 46 |
| 28 | 53 | 48 | 173 | 264 | 525 | 181 | 262 | 130 | 410 | 71 | 45 | 90 |
| 29 | 52 | 48 | 158 | 492 | - | 171 | 250 | 128 | 296 | 66 | 43 | 153 |
| 30 | 51 | 47 | 141 | 525 | -------- | 167 | 242 | 126 | 284 | 90 | 41 | 95 |
| 31 | 52 | -------- | 130 | 992 | -------- | 160 | -------- | 122 | -------- | 74 | 40 | -------- |
| Total | 1,656 | 1,856 | 5,190 | 6,571 | 10,243 | 6,808 | 14,240 | 5,285 | 4,116 | 3,154 | 1,661 | 1,713 |
| Mean | 53.4 | 61.9 | 167 | 212 | 366 | 220 | 475 | 170 | 137 | 102 | 53.6 | 57.1 |
| Cfsm | 0.714 | 0.828 | 2.23 | 2.83 | 4.89 | 2.94 | 6.35 | 2.27 | 1.83 | 1.36 | 0.717 | 0.763 |
| In. | 0.82 | 0.92 | 2.58 | 3.27 | 5.09 | 3.38 | 7.08 | 2.63 | 2.05 | 1.57 | 0.83 | 0.85 |

Calendar year 1956: Max 1,650 Min 36 Mean 144 Cfsm 1.93 In. 26.19
Water year 1956-57: Max 2,280 Min 36 Mean 171 Cfsm 2.29 In. 31.07

Peak discharge (base, 1,500 cfs).--Jan. 31 (9 p.m.) 2,680 cfs (8.51 ft); Apr. 1 (10 p.m.) 1,560 cfs (5.67 ft); Apr. 5 (4:30 a.m.) 3,630 cfs (10.30 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Nottely River at Nottely Dam, near Ivylog, Ga.

Location.--Lat 34°57'55", long 84°05'25", on right bank 1,600 ft downstream from Rhodes Branch, 0.6 mile downstream from Nottely Dam, 0.6 mile upstream from Dooley Creek, and 1.8 miles west of Ivylog, Union County.

Drainage area.--215 sq mi.

Records available.--July 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,599.21 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 401 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,070 cfs Mar. 29 (gage height, 5.28 ft); minimum, 0.4 cfs Jan. 9 (gage height, 0.22 ft).
1942-57: Maximum discharge, 3,130 cfs May 23, 1955 (gage height, 6.54 ft); minimum, 0.1 cfs Sept. 6-9, 19, 1954 (gage height, 0.15 ft).

Remarks.--Records excellent except those below 20 cfs, which are fair. Flow completely regulated by Nottely Lake (see p. 226).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 0.3 | 1.2 | 71 |
| .3 | 1.3 | 1.5 | 126 |
| .4 | 3.1 | 1.8 | 195 |
| .5 | 6.0 | 2.1 | 282 |
| .6 | 10 | 2.5 | 427 |
| .7 | 16 | 3.0 | 645 |
| .8 | 22 | 4.0 | 1,200 |
| .9 | 30 | 4.7 | 1,650 |
| 1.0 | 42 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.3 | 9.1 | 8.3 | 7.9 | 14 | 1,020 | 1,440 | 861 | 999 | 656 | 930 | 21 |
| 2 | 7.9 | 9.1 | 14 | 352 | 12 | 944 | 50 | 864 | 990 | 666 | 956 | 118 |
| 3 | 7.9 | 8.7 | *827 | 58 | 12 | 981 | 12 | 907 | 986 | 652 | 525 | 394 |
| 4 | 9.6 | 14 | 852 | 9.6 | 12 | 972 | 1,360 | 14 | *1,490 | 12 | 162 | 10 |
| 5 | 10 | 8.7 | 866 | 9.1 | 12 | *12 | 24 | 29 | 1,530 | 528 | *1,380 | 10 |
| 6 | 10 | 8.7 | 896 | 8.7 | 12 | 11 | 14 | 862 | 1,540 | 11 | 924 | 10 |
| 7 | 10 | 9.1 | 893 | 9.6 | 12 | 504 | 20 | 847 | 1,540 | 626 | 930 | 10 |
| 8 | 89 | 286 | 7.9 | 1.0 | 12 | 618 | 14 | 878 | 1,560 | 667 | 920 | 11 |
| 9 | 8.3 | 524 | 7.5 | .7 | 12 | 12 | 14 | 768 | 1,550 | *861 | 930 | 698 |
| 10 | *7.9 | 8.7 | 980 | 5.5 | 12 | 12 | 1,170 | 849 | 1,550 | 740 | 494 | 642 |
| 11 | 12 | 8.3 | 962 | 48 | 169 | 319 | 44 | 14 | 1,570 | 735 | 7.9 | 11 |
| 12 | 8.3 | 968 | 676 | 8.7 | 12 | 12 | 18 | 13 | 1,600 | 734 | 564 | 10 |
| 13 | 8.3 | 968 | 7.5 | 14 | 12 | 12 | 981 | 872 | 1,620 | 346 | 324 | 23 |
| 14 | 8.3 | 973 | 9.1 | *637 | 12 | 12 | 982 | 884 | 1,640 | 10 | 316 | 12 |
| 15 | 8.3 | 988 | 8.7 | 675 | 12 | 12 | 964 | *844 | 634 | 874 | 339 | 12 |
| 16 | 8.3 | 992 | 7.9 | 830 | 12 | 12 | 840 | 852 | 710 | 1,030 | 344 | *12 |
| 17 | 8.3 | 8.7 | 7.5 | 706 | 12 | 12 | 868 | 847 | 739 | 1,040 | 306 | 550 |
| 18 | 8.7 | 8.3 | 7.5 | 704 | 12 | 305 | 856 | 13 | 729 | 1,050 | 9.6 | 12 |
| 19 | 8.7 | 1,020 | 7.5 | 650 | 12 | 210 | 862 | 13 | 730 | 1,050 | 345 | 12 |
| 20 | 8.7 | 1,030 | 7.5 | 9.1 | 257 | 12 | *836 | 885 | 818 | 1,020 | 9.1 | 12 |
| 21 | 9.1 | 1,070 | 7.5 | 664 | 194 | 30 | 14 | 874 | 721 | 1,040 | 9.1 | 12 |
| 22 | 14 | 8.7 | 8.3 | 645 | 184 | 488 | 883 | 880 | 710 | 1,020 | 18 | 12 |
| 23 | 894 | 1,050 | 8.7 | 9.1 | 12 | 12 | 860 | 832 | 16 | 1,010 | 9.1 | 12 |
| 24 | 979 | 8.3 | 9.1 | 685 | 12 | 12 | 814 | 842 | 734 | 1,090 | 9.1 | 12 |
| 25 | 998 | 7.9 | 8.3 | 9.1 | 930 | 1,060 | 880 | 904 | 42 | 1,100 | 9.1 | 12 |
| 26 | 912 | 680 | 7.9 | 9.1 | 954 | 12 | 872 | 230 | 12 | 1,100 | 117 | 12 |
| 27 | 12 | 556 | 7.9 | 9.1 | 850 | 12 | 14 | 928 | 22 | 774 | 118 | 12 |
| 28 | 8.7 | 590 | 7.9 | 10 | 866 | 12 | 14 | 1,000 | 12 | 783 | 226 | 13 |
| 29 | 8.3 | 606 | 7.9 | 87 | - | 892 | 868 | 1,000 | 639 | 962 | 243 | 13 |
| 30 | 8.3 | 579 | 7.9 | 10 | ------- | 12 | 868 | 998 | 12 | 970 | 219 | 13 |
| 31 | 8.7 | ------ | 7.9 | 108 | ------- | 12 | ------ | 890 | ------- | 937 | 10 | ------- |
| Total | 4,108.9 | 13,006.3 | 7,142.2 | 6,989.3 | 4,646 | 8,558 | 17,456 | 21,494 | 27,445 | 24,094 | 11,703.0 | 2,713 |
| Mean | 133 | 434 | 230 | 225 | 166 | 276 | 582 | 693 | 915 | 777 | 378 | 90.4 |
| (†) | +800 | -7,800 | +4,800 | +8,100 | +17,400 | +6,400 | +13,800 | -8,600 | -15,900 | -15,800 | -5,900 | +2,600 |

Adjusted for change in lake contents

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 158 | 174 | 385 | 487 | 787 | 483 | 1,042 | 416 | 385 | 268 | 187 | 177 |
| *Cfsm* | 0.735 | 0.809 | 1.79 | 2.27 | 3.66 | 2.25 | 4.85 | 1.93 | 1.79 | 1.25 | 0.870 | 0.823 |
| In. | 0.85 | 0.90 | 2.07 | 2.61 | 3.81 | 2.59 | 5.41 | 2.23 | 2.00 | 1.43 | 1.00 | 0.92 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 1,720 | Min 7.1 | Mean 529 | Mean 362 | Cfsm 1.68 | In. 22.88 |
| Water year 1956-57: | Max 1,640 | Min 0.7 | Mean 409 | Mean 409 | Cfsm 1.90 | In. 25.82 |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nottely Lake; furnished by Tennessee Valley Authority.

## Turtletown Creek at Turtletown, Tenn.

Location.--Lat 35°07'57", long 84°20'37", on left bank half a mile north of Turtletown, Polk County, three-quarters of a mile downstream from Nigger Creek, and 6 miles upstream from mouth.

Drainage area.--26.9 sq mi.

Records available.--May 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,490.61 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 48.8 cfs.

Extremes.--Maximum discharge during year, 867 cfs Feb. 1 (gage height, 5.83 ft); minimum, 16 cfs Oct. 10-18, Dec. 2-12; minimum gage height, 0.96 ft Oct. 16-18.
1934-57: Maximum discharge, 1,120 cfs June 13, 1952 (gage height, 6.50 ft); minimum, 9.3 cfs Oct. 10, 1941; minimum gage height, 0.86 ft Oct. 10, 1941, Sept. 23, 1955.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 1143: 1936(M), 1946-47(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Jan. 31, Feb. 2)

| | | | |
|---|---|---|---|
| 0.97 | 16 | 3.0 | 304 |
| 1.2 | 34 | 4.0 | 435 |
| 1.5 | 70 | 5.1 | 609 |
| 2.0 | 138 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 41 | 17 | 30 | 592 | 83 | 56 | 83 | 49 | 49 | 26 | 19 |
| 2 | 17 | 24 | 17 | 28 | 280 | 74 | a70 | 76 | 49 | 45 | 26 | 18 |
| 3 | 17 | 22 | 16 | 26 | 229 | 70 | a65 | 79 | 49 | 44 | 26 | 19 |
| 4 | 20 | 21 | 16 | 36 | 242 | 67 | a160 | 80 | 62 | 42 | 31 | 21 |
| 5 | 20 | 20 | 16 | 62 | 169 | 66 | *a210 | 75 | 86 | 41 | 37 | 19 |
| 6 | 18 | 19 | *16 | 42 | 163 | 62 | 145 | 69 | 78 | 40 | 27 | 19 |
| 7 | 18 | *20 | 16 | 40 | 171 | 70 | 110 | 66 | 73 | 37 | 24 | 18 |
| 8 | 17 | 26 | 16 | 35 | 155 | *95 | 105 | 64 | 61 | 36 | 24 | 19 |
| 9 | 17 | 22 | 16 | *34 | *135 | 82 | 95 | *64 | 85 | 36 | 24 | 23 |
| 10 | *17 | 20 | 16 | 34 | 122 | 78 | 84 | 64 | 91 | 36 | 24 | 22 |
| 11 | 16 | 19 | 16 | 32 | 106 | 74 | 83 | 66 | 74 | 36 | 24 | 21 |
| 12 | 16 | 19 | 91 | 31 | 95 | 87 | 82 | 69 | *65 | 36 | 24 | *22 |
| 13 | 16 | 18 | 60 | 30 | 87 | 80 | 79 | 66 | 56 | 36 | 24 | 27 |
| 14 | 16 | 18 | 70 | 29 | 84 | 80 | 76 | 64 | 52 | 36 | 24 | 65 |
| 15 | 16 | 18 | 83 | 28 | 80 | 78 | 74 | 64 | 50 | 36 | *25 | 30 |
| 16 | 16 | 22 | 73 | 29 | 87 | 71 | 73 | 64 | 47 | 35 | 24 | 99 |
| 17 | 16 | 22 | 44 | 27 | 80 | 69 | 71 | 64 | 46 | 35 | 54 | 62 |
| 18 | 17 | 21 | 35 | 26 | 75 | 70 | 70 | 62 | 45 | *36 | 65 | 41 |
| 19 | 18 | 19 | 30 | 24 | 78 | 79 | 70 | 61 | 45 | 40 | 37 | 34 |
| 20 | 18 | 19 | 30 | 25 | 82 | 70 | 69 | 60 | 45 | 31 | 29 | 30 |
| 21 | 19 | 19 | 30 | 27 | 75 | 66 | 78 | 60 | 45 | 30 | 26 | 30 |
| 22 | 57 | 21 | 59 | 29 | 70 | 67 | 99 | 65 | 45 | 29 | 28 | 30 |
| 23 | 26 | 19 | 101 | 47 | 67 | 67 | 83 | 69 | 57 | 29 | 26 | 33 |
| 24 | 22 | 19 | 123 | 35 | 66 | 65 | 110 | 57 | 75 | 28 | 24 | 27 |
| 25 | 20 | 19 | 66 | 40 | 65 | 79 | 84 | 56 | 116 | 28 | 24 | 24 |
| 26 | 19 | 19 | 50 | 42 | 73 | 70 | 79 | 52 | 61 | 27 | 23 | 24 |
| 27 | 20 | 18 | 42 | 56 | 78 | 65 | 75 | 65 | 52 | 27 | 22 | 24 |
| 28 | 19 | 18 | 37 | 69 | 84 | 61 | 73 | 58 | 58 | 27 | 22 | 35 |
| 29 | 19 | 18 | 34 | 112 | - | 60 | 80 | 52 | 67 | 26 | 21 | 90 |
| 30 | 19 | 18 | 32 | 119 | -------- | 60 | 86 | 50 | 52 | 26 | 20 | 55 |
| 31 | 21 | -------- | 30 | 399 | -------- | 57 | -------- | 49 | -------- | 26 | 19 | -------- |
| Total | 604 | 618 | 1,298 | 1,623 | 3,690 | 2,222 | 2,694 | 1,993 | 1,836 | 1,066 | 854 | 1,000 |
| Mean | 19.5 | 20.6 | 41.9 | 52.4 | 132 | 71.7 | 89.8 | 64.3 | 61.2 | 34.4 | 27.5 | 33.3 |
| Cfsm | 0.725 | 0.766 | 1.56 | 1.95 | 4.91 | 2.67 | 3.34 | 2.39 | 2.28 | 1.28 | 1.02 | 1.24 |
| In. | 0.84 | 0.85 | 1.79 | 2.24 | 5.10 | 3.07 | 3.72 | 2.76 | 2.54 | 1.47 | 1.18 | 1.38 |

Calendar year 1956: Max 243 Min 16 Mean 48.2 Cfsm 1.79 In. 24.40
Water year 1956-57: Max 592 Min 16 Mean 53.4 Cfsm 1.99 In. 26.94

Peak discharge (base, 300 cfs).--Feb. 1 (1 to 3 a.m.) 867 cfs (5.83 ft); Feb. 4 (2 to 3 a.m.) 307 cfs (3.02 ft); Apr. 4 or 5 (time unknown) 443 cfs (4.07 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Hiwassee River near McFarland, Tenn.

Location.--Lat 35°10'48", long 84°26'36", on left bank a quarter of a mile downstream from Smith Creek, 0.4 mile downstream from Apalachia powerhouse of Tennessee Valley Authority, 2.8 miles west of McFarland, Polk County, and at mile 53.2.

Drainage area.--1,136 sq mi.

Records available.--October 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 830.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 2,348 cfs (unadjusted).

Extremes.--Maximum discharge during year, 11,700 cfs Jan. 31 (gage height, 7.31 ft); minimum, 70 cfs Sept. 8 (gage height, 1.26 ft); minimum daily, 82 cfs Aug. 11.
1942-57: Maximum discharge, 22,500 cfs June 13, 1952 (gage height, 10.42 ft), from rating curve extended above 15,000 cfs; minimum daily, 30 cfs (estimated) Sept. 18-20, 1955.

Remarks.--Records good except those below 500 cfs, which are fair. Flow regulated by Chatuge, Nottely, Hiwassee, and Apalachia Lakes (see p. 225,226).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.31 | 80 | 3.0 | 1,200 |
| 1.6 | 165 | 4.0 | 2,900 |
| 1.8 | 240 | 5.0 | 5,090 |
| 2.4 | 620 | 7.1 | 11,100 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,540 | 2,330 | 2,700 | 2,720 | 7,350 | 2,610 | 266 | 1,550 | 1,750 | 2,630 | 2,660 | 1,210 |
| 2 | 2,100 | 1,810 | 2,720 | 2,840 | 4,920 | 2,380 | 1,690 | 1,530 | 1,480 | 2,760 | 2,680 | 1,380 |
| 3 | 2,400 | 1,450 | 2,740 | 2,720 | 4,780 | 2,490 | 915 | 1,580 | 2,690 | 2,760 | 2,630 | 1,990 |
| 4 | 2,550 | 1,460 | 2,380 | 2,760 | 10,400 | 3,010 | 1,300 | 2,430 | 2,800 | 997 | 892 | 2,610 |
| 5 | 2,300 | 1,690 | 2,680 | 2,900 | 10,500 | 2,840 | 2,680 | 2,590 | 2,980 | 1,790 | 2,210 | 2,540 |
| 6 | 1,680 | 1,470 | 2,300 | 2,160 | *10,700 | 1,940 | 1,360 | 1,500 | 2,960 | 1,970 | 2,290 | 2,570 |
| 7 | 1,480 | 1,440 | 2,650 | *2,510 | 10,900 | 2,280 | 606 | 1,480 | 2,900 | 2,740 | 1,820 | 2,180 |
| 8 | 2,360 | 2,400 | 2,140 | 2,800 | 10,400 | 2,960 | 1,040 | 1,480 | 2,800 | 2,720 | 1,390 | 594 |
| 9 | 2,340 | *2,740 | 2,230 | 2,430 | 10,200 | 3,560 | 1,550 | 1,470 | 2,840 | 2,700 | 1,400 | 2,500 |
| 10 | 2,440 | 1,920 | 2,670 | 2,520 | 6,540 | 3,500 | 1,110 | 1,420 | 2,980 | 2,700 | 960 | 1,900 |
| 11 | 2,660 | 1,470 | 2,720 | 2,800 | 5,440 | 3,480 | 2,730 | 1,500 | 2,640 | 2,700 | 82 | 1,910 |
| 12 | 2,580 | 2,600 | 2,200 | 2,780 | 4,180 | 3,600 | 2,800 | 1,260 | *2,780 | 2,700 | 923 | 2,440 |
| 13 | 1,510 | 2,760 | 375 | 2,780 | 4,360 | 3,160 | 2,820 | 1,470 | 2,760 | 2,700 | 940 | 2,120 |
| 14 | 1,540 | 2,760 | 294 | 2,780 | 5,970 | 3,040 | 1,660 | 1,560 | 2,720 | 1,160 | 933 | 1,670 |
| 15 | 1,420 | 2,090 | 263 | 2,810 | 3,770 | 3,000 | 2,760 | 2,040 | 2,740 | 2,650 | 1,580 | 202 |
| 16 | 2,220 | 2,230 | 340 | 3,090 | 2,960 | 2,940 | 2,350 | 2,760 | 2,740 | 2,700 | 1,000 | 2,490 |
| 17 | 2,050 | 2,510 | 186 | 3,070 | 2,860 | 2,900 | 2,410 | 2,700 | 2,720 | 2,700 | 838 | 1,830 |
| 18 | 2,500 | 1,520 | 146 | 2,890 | 2,780 | 2,890 | 2,800 | 2,700 | 2,720 | 2,720 | 296 | 795 |
| 19 | 1,460 | 2,440 | 1,570 | 2,140 | 2,900 | 2,900 | 2,800 | 2,680 | 2,700 | 2,700 | 1,490 | 446 |
| 20 | 1,470 | 2,060 | 2,670 | 1,450 | 2,840 | 2,610 | 2,380 | 2,760 | 2,700 | 2,680 | 936 | 1,830 |
| 21 | 925 | 2,200 | 2,740 | 1,480 | 2,800 | 2,330 | 2,370 | 2,700 | 2,700 | 2,650 | 998 | 2,460 |
| 22 | 1,230 | 2,430 | 2,630 | 556 | 2,780 | 1,640 | 2,610 | 2,720 | 2,700 | 2,660 | 1,400 | 2,430 |
| 23 | 1,500 | 2,740 | 621 | 1,820 | 2,820 | 1,580 | *2,900 | 2,800 | 2,700 | 2,650 | *1,020 | 2,490 |
| 24 | 2,700 | 2,700 | 1,050 | 1,470 | 2,760 | 386 | 2,900 | 2,840 | 2,890 | 2,660 | 950 | 2,660 |
| 25 | 2,700 | 2,720 | 2,490 | 1,480 | 2,760 | 1,150 | 2,840 | 2,720 | 3,140 | 2,660 | 218 | 2,660 |
| 26 | 2,260 | 2,740 | 2,770 | 1,640 | 2,770 | 2,080 | 2,800 | 2,700 | 2,830 | 2,660 | 1,920 | 2,680 |
| 27 | 2,720 | 2,740 | 2,800 | 1,960 | 2,560 | 1,390 | 1,630 | 2,780 | 2,690 | 1,670 | 2,030 | 2,660 |
| 28 | 1,720 | 2,300 | 2,720 | 820 | 2,670 | 396 | 1,740 | 2,700 | 2,130 | 1,460 | 1,740 | 2,720 |
| 29 | 1,780 | 2,620 | 2,740 | 1,120 | - | 716 | 1,580 | 2,740 | 2,880 | 2,460 | 2,270 | 1,820 |
| 30 | 2,040 | 2,720 | 2,720 | 1,880 | -------- | 236 | 1,470 | 2,720 | 2,770 | 2,660 | 2,390 | 2,310 |
| 31 | 2,140 | -------- | 2,720 | 5,590 | -------- | 228 | -------- | 2,720 | -------- | 2,650 | 1,750 | -------- |
| Total | 63,315 | 67,060 | 61,975 | 72,766 | 146,670 | 70,222 | 60,867 | 68,600 | 80,830 | 76,017 | 44,636 | 60,097 |
| Mean | 2,042 | 2,235 | 1,999 | 2,347 | 5,238 | 2,265 | 2,029 | 2,213 | 2,694 | 2,452 | 1,440 | 2,003 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 4,340 | Min 146 | Mean 2,192 | Mean 2,163 | Cfsm 1.90 | In. 25.92 |
| Water year 1956-57: | Max 10,900 | Min 82 | Mean 2,392 | Mean 2,454 | Cfsm 2.16 | In. 29.32 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge, Nottely, Hiwassee, and Apalachia Lakes.

## Toccoa River near Dial, Ga.

Location.--Lat 34°47'24", long 84°14'24", on right bank 1.4 miles upstream from Shallowford Bridge, 1.8 miles upstream from Stanley Creek, and 2.5 miles northwest of Dial, Fannin County.

Drainage area.--177 sq mi.

Records available.--January 1913 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,782.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1927, water-stage recorder and Oct. 1, 1927, to Nov. 16, 1928, staff gage, at same site and datum.

Average discharge.--44 years, 482 cfs.

Extremes.--Maximum discharge during year, 5,490 cfs Apr. 5 (gage height, 7.56 ft); minimum, 124 cfs Dec. 2 (gage height, 0.76 ft).
1913-57: Maximum discharge, 10,800 cfs Mar. 11, 1952 (gage height, 11.20 ft), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 60 cfs Sept. 6, 1925 (gage height, 0.40 ft).
Flood in 1898 reached a stage about 2.8 ft higher than that of Mar. 11, 1952.

Remarks.--Records excellent.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1923(M), 1924, 1927(M), 1929-32(M), 1933, 1934(M), 1944(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.78 | 128 | 4.0 | 1,780 |
| 1.5 | 338 | 5.0 | 2,650 |
| 2.0 | 544 | 6.6 | 4,330 |
| 3.0 | 1,060 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 157 | 244 | 128 | 287 | 3,390 | 1,170 | 914 | 849 | 410 | 664 | 217 | 147 |
| 2 | 154 | 186 | 130 | 270 | 2,000 | 918 | 1,530 | 828 | 403 | 500 | 244 | 143 |
| 3 | 152 | 162 | 130 | 257 | 1,510 | 833 | *908 | 808 | 395 | 448 | 214 | 141 |
| 4 | 170 | 154 | *128 | 348 | 1,950 | 768 | 2,290 | 813 | *406 | 410 | 214 | 139 |
| 5 | 170 | 157 | 128 | 599 | 1,490 | 725 | 4,220 | 778 | 686 | 391 | 229 | 143 |
| 6 | 157 | 167 | 128 | 395 | 1,240 | *687 | 2,050 | 720 | 531 | 368 | 202 | 134 |
| 7 | 152 | *202 | 128 | 365 | 1,120 | 725 | 1,520 | 670 | 491 | 349 | 194 | 132 |
| 8 | 145 | 211 | 128 | 331 | *983 | 823 | 1,660 | *627 | 448 | 338 | 188 | 154 |
| 9 | 143 | 162 | 128 | *318 | 930 | 701 | 1,510 | 604 | 427 | 328 | 188 | 244 |
| 10 | *141 | 152 | 132 | 324 | 880 | 654 | 1,290 | 595 | 414 | 314 | 183 | 304 |
| 11 | 141 | 145 | 128 | 301 | 828 | 631 | 1,180 | 749 | 406 | 307 | 177 | *188 |
| 12 | 139 | 143 | 260 | 290 | 783 | 654 | 1,120 | 654 | 387 | 301 | 175 | 180 |
| 13 | 139 | 141 | 469 | 280 | 754 | 608 | 1,050 | 608 | 376 | 294 | 170 | 279 |
| 14 | 136 | 136 | 572 | 273 | 716 | 604 | 989 | 590 | 387 | 287 | *170 | 337 |
| 15 | 136 | 136 | 795 | 267 | 682 | 581 | 941 | 585 | 357 | 287 | 277 | 202 |
| 16 | 134 | 139 | 810 | 264 | 677 | 558 | 908 | 562 | 384 | 314 | 202 | 376 |
| 17 | 134 | 167 | 395 | 251 | 654 | 553 | 886 | 540 | 384 | *339 | 208 | 314 |
| 18 | 134 | 164 | 307 | 244 | 627 | 581 | 913 | 526 | 342 | 339 | 297 | 241 |
| 19 | 139 | 145 | 267 | 244 | 622 | 682 | 896 | 531 | 357 | 301 | 301 | 214 |
| 20 | 139 | 143 | 248 | 251 | 650 | 590 | 859 | 531 | 342 | 284 | 214 | 202 |
| 21 | 171 | 145 | 254 | 244 | 631 | 567 | 870 | 496 | 324 | 267 | 194 | 223 |
| 22 | 387 | 154 | 500 | 511 | 599 | 599 | 965 | 526 | 328 | 260 | 188 | 208 |
| 23 | 220 | 143 | 864 | 947 | 576 | 558 | 965 | 531 | 406 | 254 | 183 | 214 |
| 24 | 175 | 141 | 1,200 | 558 | 558 | 567 | 1,680 | 487 | 435 | 260 | 177 | 188 |
| 25 | 157 | 134 | 641 | 576 | 549 | 673 | 1,090 | 474 | 482 | 254 | 175 | 175 |
| 26 | 150 | 136 | 474 | 518 | 1,030 | 590 | 959 | 456 | 365 | 241 | 175 | 170 |
| 27 | 150 | 136 | 406 | 509 | 918 | 562 | 913 | 469 | 335 | 239 | 167 | 170 |
| 28 | 145 | 132 | 365 | 526 | 1,350 | 540 | 880 | 443 | 864 | 244 | 162 | 251 |
| 29 | 143 | 134 | 342 | 947 | - | 526 | 864 | 431 | 990 | 239 | 157 | 500 |
| 30 | 141 | 134 | 314 | 1,050 | -------- | 522 | 854 | 422 | 627 | 229 | 154 | 365 |
| 31 | 147 | -------- | 301 | 2,010 | -------- | 504 | -------- | 422 | -------- | 223 | 152 | -------- |
| Total | 4,898 | 4,645 | 11,200 | 14,555 | 28,697 | 20,254 | 37,674 | 18,325 | 13,489 | 9,869 | 6,148 | 6,678 |
| Mean | 158 | 155 | 361 | 470 | 1,025 | 653 | 1,256 | 591 | 450 | 318 | 198 | 223 |
| Cfsm | 0.893 | 0.876 | 2.04 | 2.66 | 5.79 | 3.69 | 7.10 | 3.34 | 2.54 | 1.80 | 1.12 | 1.26 |
| In. | 1.03 | 0.98 | 2.35 | 3.06 | 6.03 | 4.26 | 7.92 | 3.85 | 2.83 | 2.07 | 1.29 | 1.40 |

Calendar year 1956: Max 2,830 Min 128 Mean 416 Cfsm 2.35 In. 31.97
Water year 1956-57: Max 4,220 Min 128 Mean 483 Cfsm 2.73 In. 37.07

Peak discharge (base, 2,400 cfs).--Feb. 1 (1 a.m.) 4,770 cfs (6.97 ft); Apr. 5 (5 a.m.) 5,490 cfs (7.56 ft); Apr. 24 (7 a.m.) 2,570 cfs (4.91 ft).
* Discharge measurement made on this day.

## Toccoa River near Blue Ridge, Ga.

Location.--Lat 34°53'14", long 84°17'07", on left bank three-eighths of a mile downstream from Blue Ridge Dam of Tennessee Valley Authority, 2¼ miles west of Morganton, and 2½ miles northeast of Blue Ridge, Fannin County.

Drainage area.--233 sq mi.

Records available.--November 1898 to March 1903 and April 1913 to September 1957 in reports of Geological Survey. November 1898 to March 1903 and April 1913 to September 1924 (prior to April 1913, revised) in Tennessee Division of Geology Bulletin 34, published as Toccoa River near Morganton.

Gage.--Water-stage recorder. Datum of gage is 1,538.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 20, 1931, staff gage and water-stage recorders at sites within 1 mile of present site at different datum.

Average discharge.--44 years (1913-57), 581 cfs (unadjusted).

Extremes.--Maximum discharge during year, 2,010 cfs Apr. 24 (gage height, 5.32 ft); minimum, 12 cfs many days in November, December, and January; minimum gage height, 0.98 ft Dec. 13, 14, 19; minimum daily discharge, 12 cfs Dec. 13, 15, 16, 18, 25-27, Jan. 25.

1913-57: Maximum discharge, 13,900 cfs July 9, 1916 (gage height, 13.0 ft), site and datum then in use), from rating curve extended above 5,000 cfs; no flow Dec. 6, 1930, to Mar. 3, 1931 (caused by closing of Blue Ridge Dam).

Remarks.--Records good. Flow regulated by Blue Ridge Lake beginning Dec. 6, 1930 (see p. 226).

Revisions (water years).--WSP 783: 1934 (adjusted monthly mean and runoff). WSP 823: Drainage area. WSP 1386: 1901-2, 1927, 1928(M), 1929, 1931-33. See also Records available.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31

| | |
|---|---|
| 1.0 | 12 |
| 1.2 | 28 |
| 1.4 | 52 |

Note.--Same as following table above 1.4 ft.

Feb. 1 to Sept. 30

| | | | |
|---|---|---|---|
| 1.01 | 16 | 2.0 | 216 |
| 1.2 | 29 | 3.0 | 640 |
| 1.4 | 52 | 4.5 | 1,480 |
| 1.6 | 90 | 5.1 | 1,870 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 545 | 898 | 770 | 777 | 33 | 88 | 178 | 766 | 1,140 | 25 | 762 | 857 |
| 2 | 16 | 931 | 794 | 803 | 19 | 266 | 927 | 802 | 1,180 | 1,120 | 730 | 700 |
| 3 | 16 | 881 | 760 | 566 | 18 | 244 | *701 | 1,080 | 1,190 | 715 | 646 | 613 |
| 4 | 111 | 956 | *830 | 400 | 18 | 242 | 126 | 913 | 1,080 | 520 | 654 | 764 |
| 5 | 15 | 926 | 837 | 65 | 17 | 19 | 25 | 934 | 35 | 713 | 738 | 824 |
| 6 | 1,570 | 675 | 663 | 17 | 17 | 18 | 21 | 1,040 | 563 | 625 | 650 | 812 |
| 7 | 786 | 678 | 781 | 544 | 17 | 390 | 23 | 930 | 1,080 | 621 | 656 | 799 |
| 8 | 750 | 818 | 833 | 773 | *17 | 280 | 22 | 890 | 1,160 | 680 | 715 | 825 |
| 9 | 856 | 712 | 794 | 773 | 16 | 18 | 196 | 966 | 916 | 629 | 823 | 848 |
| 10 | 951 | 722 | 685 | 807 | 20 | 18 | 1,340 | 996 | 91 | 543 | 655 | 19 |
| 11 | 962 | 672 | 745 | 200 | 17 | 18 | 1,280 | 931 | 1,220 | 535 | 626 | 713 |
| 12 | 1,000 | 634 | 218 | 536 | 418 | 587 | 1,450 | 456 | 1,200 | 475 | 771 | 912 |
| 13 | 452 | 660 | 12 | 542 | 557 | 855 | 765 | 1,000 | 1,210 | 589 | 763 | 678 |
| 14 | 932 | 771 | 466 | 558 | 816 | 970 | 934 | 1,090 | 1,230 | 578 | 804 | 100 |
| 15 | 796 | 736 | 12 | 674 | 570 | 313 | 880 | 1,180 | 919 | 662 | 865 | 504 |
| 16 | 958 | 642 | 12 | 769 | 17 | 298 | 706 | 996 | 895 | 525 | 694 | 110 |
| 17 | 996 | 710 | 33 | 642 | 382 | 293 | 814 | 644 | 1,050 | *563 | 728 | 645 |
| 18 | 832 | 578 | 12 | 367 | 423 | 418 | 780 | 1,050 | 687 | 798 | 748 | 249 |
| 19 | 833 | 604 | 594 | 646 | 64 | 410 | 778 | 843 | 1,070 | 546 | 20 | 1,100 |
| 20 | 778 | 856 | 854 | 648 | 16 | 19 | 788 | 1,050 | 1,060 | 532 | 1,040 | 1,190 |
| 21 | 110 | 801 | 786 | 600 | 73 | 330 | 733 | 1,060 | 1,210 | 624 | 723 | 863 |
| 22 | 78 | 742 | 206 | 658 | 17 | 389 | 1,190 | 1,070 | 1,210 | 596 | 723 | 273 |
| 23 | 840 | 790 | 13 | 147 | 17 | 334 | 1,440 | 666 | 1,230 | 621 | 926 | 852 |
| 24 | 730 | 688 | 14 | 634 | 376 | 324 | 1,840 | 1,000 | 1,010 | 738 | 766 | 922 |
| 25 | 907 | 718 | 12 | 12 | 358 | 364 | 1,850 | 1,050 | 22 | 770 | 770 | 861 |
| 26 | 813 | 719 | 12 | 369 | 369 | 19 | 1,860 | 1,080 | 904 | 793 | 801 | 812 |
| 27 | 849 | 656 | 12 | 368 | 405 | 689 | 1,280 | 1,070 | 1,210 | 784 | 798 | 304 |
| 28 | 837 | 694 | 439 | 463 | 18 | 803 | 892 | 1,020 | 825 | 697 | 786 | 97 |
| 29 | 755 | 643 | 618 | 13 | - | 1,060 | 847 | 1,010 | 207 | 756 | 840 | 17 |
| 30 | 478 | 683 | 614 | 13 | ------- | 1,150 | 891 | 1,030 | 1,270 | 688 | 842 | 17 |
| 31 | 450 | ------- | 590 | 100 | ------- | 652 | ------- | 1,040 | ------- | 760 | 838 | ------- |
| Total | 21,002 | 22,194 | 14,021 | 14,484 | 5,105 | 11,878 | 25,557 | 29,653 | 28,074 | 19,821 | 22,901 | 18,280 |
| Mean | 677 | 740 | 452 | 467 | 182 | 383 | 852 | 957 | 936 | 639 | 739 | 609 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 1,570 | Min 4.0 | Mean 455 | Mean 510 | Cfsm 2.19 | In. 29.81 |
| Water year 1956-57: | Max 1,860 | Min 12 | Mean 638 | Mean 600 | Cfsm 2.58 | In. 34.95 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge Lake.

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## Ocoee River at Copperhill, Tenn.

Location.--Lat 34°59'29", long 84°22'36", on right bank 0.2 mile upstream from Fightingtown Creek and 0.4 mile downstream from Copperhill, Polk County.

Drainage area.--352 sq mi.

Records available.--March 1903 to December 1913, October 1918 to August 1925 (gage heights only), and November 1942 to September 1957 in reports of Geological Survey. March 1903 to September 1924 (March 1903 to December 1911, revised records; gage heights only after December 1913) in Tennessee Divisions of Geology Bulletin 34.

Gage.--Water-stage recorder and wooden control. Datum of gage is 1,445.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Aug. 27, 1925, staff or chain gages at several sites within 0.5 mile of present site at different datum.

Average discharge.--22 years (1903-6, 1907-10, 1911-13, 1943-57), 831 cfs (unadjusted).

Extremes.--Maximum discharge during year, 5,480 cfs Feb. 1 (gage height, 6.29 ft); minimum, 103 cfs Sept. 3 (gage height, 1.77 ft); minimum daily, 117 cfs Oct. 5.
1903-13, 1918-25, 1942-57: Maximum gage height observed, 18.5 ft Nov. 19, 1906, site and datum then in use (discharge not determined); minimum daily discharge determined, 76 cfs Dec. 24, 1943, Oct. 5, 1947.

Remarks.--Records good except those for periods of backwater and no gage-height record, which are fair. Sixty-six percent of drainage area regulated by Blue Ridge Lake beginning Dec. 6, 1930 (see p. 226). Record includes diversion from this stream by Tennessee Copper Co.

Revisions (water years).--WSP 973: Drainage area. WSP 1386: 1945. See also Records available.

Rating table, water year 1956-57, except periods of backwater from Fightingtown Creek (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.82 | 117 | 3.5 | 1,450 |
| 2.2 | 305 | 4.0 | 2,120 |
| 2.8 | 755 | 4.7 | 3,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 680 | 961 | 800 | 777 | *c3,380 | 482 | 445 | 1,160 | 1,240 | 646 | 852 | 690 |
| 2 | 134 | 1,020 | a840 | 928 | c1,300 | 570 | 1,100 | 1,040 | 1,300 | 1,290 | 777 | 1,010 |
| 3 | 120 | 1,060 | a880 | a700 | c840 | 518 | 952 | 1,240 | 1,350 | 746 | 811 | 473 |
| 4 | 220 | 1,020 | a900 | a550 | c969 | 514 | *c1,490 | 1,300 | 1,200 | 842 | 594 | 972 |
| 5 | 117 | 1,060 | *a900 | a300 | 792 | 293 | *c2,480 | 1,160 | *674 | 832 | 920 | 886 |
| 6 | 1,410 | 867 | 892 | a200 | 678 | 281 | 755 | 1,170 | 919 | 807 | 824 | 864 |
| 7 | 1,260 | 771 | 781 | a650 | 606 | *658 | 552 | 1,270 | 1,140 | 744 | 736 | 838 |
| 8 | 879 | *1,010 | 866 | a840 | 538 | 763 | 652 | 1,080 | 1,240 | 785 | 779 | 750 |
| 9 | 984 | 876 | 832 | a840 | 500 | 391 | 729 | *1,170 | 1,460 | 758 | 810 | 934 |
| 10 | 1,050 | 823 | 882 | 848 | 470 | 350 | 1,600 | 1,130 | 422 | 662 | 821 | 290 |
| 11 | *1,050 | 752 | 718 | 620 | 426 | 324 | 1,690 | 1,190 | 1,110 | 652 | 723 | 555 |
| 12 | 1,070 | 758 | 801 | 643 | 539 | 844 | 2,190 | 873 | 1,360 | 618 | 729 | *964 |
| 13 | 697 | 738 | 290 | 695 | 1,010 | 993 | 1,150 | 989 | 1,370 | 664 | 855 | 971 |
| 14 | 832 | 829 | 692 | 697 | 922 | 1,410 | 1,240 | 1,190 | 1,380 | 722 | 693 | 802 |
| 15 | 983 | 857 | 532 | 758 | 1,040 | 701 | 1,340 | 1,390 | 1,230 | 818 | *1,120 | 435 |
| 16 | 972 | 778 | 377 | 788 | 434 | 587 | 1,000 | 1,220 | 1,130 | 642 | 860 | 660 |
| 17 | 1,060 | 820 | 245 | 868 | 567 | 564 | 1,100 | 1,040 | 1,160 | 786 | 734 | 781 |
| 18 | 1,070 | 738 | 190 | 548 | 691 | 710 | 1,150 | 1,020 | 745 | *911 | 827 | 487 |
| 19 | 945 | 684 | 668 | 632 | 467 | 726 | 1,100 | 1,230 | 1,310 | 699 | 314 | 938 |
| 20 | 874 | 852 | 841 | 890 | 312 | 299 | 1,100 | 1,080 | 1,180 | 657 | 802 | 1,260 |
| 21 | 313 | 894 | 912 | 746 | 357 | 603 | 1,170 | 1,220 | 1,210 | 741 | 1,040 | 1,320 |
| 22 | 450 | 895 | 705 | 774 | 275 | 655 | 1,530 | 1,300 | 1,350 | 714 | 836 | 263 |
| 23 | 929 | 900 | 469 | 594 | 269 | 594 | 2,080 | 878 | 1,370 | 712 | 846 | 998 |
| 24 | 890 | 817 | 797 | 768 | 587 | 606 | 2,590 | 1,240 | 1,500 | 801 | 961 | 992 |
| 25 | 882 | 856 | 350 | 332 | 592 | 745 | 2,390 | 1,160 | 556 | 861 | 636 | 1,050 |
| 26 | 1,020 | 734 | 263 | 564 | 638 | 318 | 2,330 | 1,170 | 1,010 | 858 | 960 | 977 |
| 27 | 974 | 896 | 225 | 580 | 648 | 826 | 1,690 | 1,340 | 1,200 | 862 | 846 | 474 |
| 28 | 972 | 732 | 548 | 796 | 508 | 1,130 | 1,520 | 1,120 | 1,030 | 574 | 831 | 340 |
| 29 | 962 | 754 | 739 | 493 | - | 1,180 | 1,170 | 1,300 | 835 | 1,050 | 884 | 440 |
| 30 | 578 | 810 | 793 | 433 | ------- | 1,320 | 1,220 | 1,120 | 1,170 | 773 | 886 | 299 |
| 31 | 634 | | 761 | c1,550 | ------- | 1,120 | ------- | 1,130 | ------- | 791 | 957 | ------- |
| Total | 25,011 | 25,562 | 20,489 | 21,402 | 20,355 | 21,075 | 41,505 | 35,920 | 34,151 | 24,018 | 25,264 | 22,713 |
| Mean | 807 | 852 | 661 | 690 | 727 | 680 | 1,384 | 1,159 | 1,138 | 775 | 815 | 757 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 2,560 | Min 117 | Mean 704 | | Mean 759 | Cfsm 2.16 | In. 29.37 | |
| Water year 1956-57: | Max 3,380 | Min 117 | Mean 870 | | Mean 831 | Cfsm 2.36 | In. 32.06 | |

* Discharge measurement made on this day.
† Adjusted for change in content in Blue Ridge Lake.
a No gage-height record; discharge estimated on basis of weather records and records for Toccoa River near Blue Ridge.
c Backwater from Fightingtown Creek.

## Fightingtown Creek at McCaysville, Ga.

Location.--Lat 34°58'53", long 84°23'12", on right bank 0.2 mile upstream from highway bridge, 0.9 mile upstream from mouth, and 0.9 mile west of McCaysville, Fannin County.

Drainage area.--70.9 sq mi.

Records available.--November 1942 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 1,449.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--14 years (1943-57), 195 cfs.

Extremes.--Maximum discharge during year, 3,800 cfs Feb. 1 (gage height, 9.85 ft); minimum, 48 cfs Oct. 16 (gage height, 1.43 ft).
1942-57: Maximum discharge, 5,420 cfs Mar. 29, 1951 (gage height, 11.92 ft); minimum, 37 cfs Nov. 19, 1953, Sept. 29, 30, Oct. 22, 23, 24, 25, 26, 27, 28, 1954.

Remarks.--Records good. Diurnal fluctuation at low flow caused by small mills above station prior to November 1948; occasional fluctuation thereafter.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.45 | 50 | 3.0 | 430 |
| 1.6 | 67 | 5.0 | 1,270 |
| 2.0 | 140 | 7.7 | 2,350 |
| 2.5 | 262 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 57 | 104 | 52 | 132 | *2,340 | 308 | 251 | 262 | 147 | 572 | 100 | 66 |
| 2 | 55 | 74 | 53 | 124 | 1,330 | 277 | 277 | 242 | 144 | 308 | 102 | 65 |
| 3 | 52 | 66 | 51 | 120 | 1,100 | 262 | 231 | 234 | 142 | 262 | 96 | 63 |
| 4 | 60 | 62 | 51 | 138 | 1,400 | 254 | *619 | 229 | 162 | 231 | 108 | 67 |
| 5 | 63 | 60 | *51 | 258 | 1,030 | 248 | 1,150 | 216 | *254 | 213 | 108 | 67 |
| 6 | 56 | 59 | 52 | 175 | 852 | 242 | 588 | 211 | 234 | 196 | 96 | 63 |
| 7 | 54 | 61 | 52 | 169 | 724 | *274 | 444 | 203 | 206 | 184 | 93 | 61 |
| 8 | 52 | 76 | 52 | 153 | 632 | 336 | 490 | 198 | 186 | 177 | 91 | 63 |
| 9 | 51 | 67 | 52 | 144 | 556 | 280 | 430 | *196 | 203 | 169 | 89 | 78 |
| 10 | 50 | 65 | 52 | 155 | 516 | 259 | 384 | 196 | 213 | 164 | 86 | 76 |
| 11 | *50 | 63 | 52 | 144 | 458 | 248 | 356 | 237 | 191 | 158 | 84 | 68 |
| 12 | 51 | 61 | 316 | 140 | 420 | 274 | 336 | 208 | 175 | 151 | 82 | *70 |
| 13 | 51 | 60 | 212 | 138 | 388 | 254 | 315 | 194 | 169 | 147 | 80 | 190 |
| 14 | 51 | 59 | 322 | 134 | 367 | 262 | 299 | 216 | 184 | 142 | 82 | 396 |
| 15 | 50 | 56 | 292 | 134 | 350 | 254 | 283 | 208 | 162 | 162 | *118 | 126 |
| 16 | 50 | 60 | 271 | *134 | 364 | 237 | 271 | 194 | 175 | 173 | 91 | 206 |
| 17 | 50 | 68 | 182 | 130 | 322 | 231 | 265 | 184 | 182 | 147 | 87 | 186 |
| 18 | 50 | 63 | 144 | 120 | 305 | 248 | 271 | 184 | 153 | *147 | 146 | 130 |
| 19 | 51 | 59 | 126 | 126 | 346 | 280 | 259 | 191 | 166 | 160 | 112 | 110 |
| 20 | 50 | 56 | 114 | 120 | 315 | 242 | 248 | 198 | 160 | 138 | 93 | 100 |
| 21 | 59 | 57 | 114 | 120 | 292 | 237 | 274 | 173 | 147 | 132 | 86 | 95 |
| 22 | 184 | 65 | 186 | 140 | 277 | 254 | 302 | 206 | 144 | 128 | 87 | 89 |
| 23 | 80 | 60 | 482 | 336 | 262 | 240 | 292 | 206 | 144 | 124 | 89 | 114 |
| 24 | 67 | 57 | 652 | 213 | 256 | 240 | 378 | 182 | 260 | 122 | 82 | 95 |
| 25 | 63 | 56 | 342 | 229 | 254 | 299 | 283 | 175 | 437 | 118 | 80 | 86 |
| 26 | 62 | 56 | 240 | 218 | 295 | 251 | 262 | 166 | 224 | 116 | 79 | 82 |
| 27 | 62 | 56 | 198 | 224 | 280 | 237 | 248 | 169 | 189 | 112 | 76 | 82 |
| 28 | 59 | 54 | 175 | 240 | 325 | 231 | 259 | 160 | 449 | 114 | 73 | 104 |
| 29 | 59 | 54 | 162 | 367 | - | 224 | 262 | 155 | 512 | 110 | 72 | 421 |
| 30 | 57 | 53 | 149 | 367 | -------- | 218 | 254 | 153 | 440 | 108 | 68 | 256 |
| 31 | 60 | -------- | 140 | 1,150 | -------- | 211 | -------- | 151 | -------- | 104 | 67 | -------- |
| Total | 1,866 | 1,867 | 5,389 | 6,492 | 16,356 | 7,912 | 10,581 | 6,097 | 6,554 | 5,289 | 2,803 | 3,675 |
| Mean | 60.2 | 62.2 | 174 | 209 | 584 | 255 | 353 | 197 | 218 | 171 | 90.4 | 122 |
| Cfsm | 0.849 | 0.877 | 2.45 | 2.95 | 8.24 | 3.60 | 4.98 | 2.78 | 3.07 | 2.41 | 1.28 | 1.72 |
| In. | 0.98 | 0.98 | 2.83 | 3.41 | 8.58 | 4.15 | 5.55 | 3.20 | 3.44 | 2.77 | 1.47 | 1.93 |

Calendar year 1956: Max 1,580 Min 50 Mean 180 Cfsm 2.54 In. 34.50
Water year 1956-57: Max 2,340 Min 50 Mean 205 Cfsm 2.89 In. 39.29

Peak discharge (base, 1,200 cfs).--Feb. 1 (2 a.m.) 3,800 cfs (9.85 ft); Feb. 4 (10 a.m.) 1,520 cfs (5.71 ft); Apr. 5 (7 a.m.) 1,400 cfs (5.37 ft); July 1 (1 a.m.) 1,220 cfs (4.87 ft).
* Discharge measurement made on this day.

## Davis Mill Creek at Copperhill, Tenn.

Location.--Lat 34°59'43", long 84°22'56", on right bank 0.4 mile northwest of Louisville & Nashville Railroad station, 0.8 mile from post office at Copperhill, Polk County, and 0.1 mile upstream from mouth.

Drainage area.--5.16 sq mi.

Records available.--July 1940 to September 1941 (published as Mill Creek at Copperhill), December 1948 to September 1957.

Gage.--Water-stage recorder and concrete San Dimas flume and dam. Datum of gage is 1,451.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 16, 1940, to Sept. 30, 1941, water-stage recorder and sharp-crested weir at site 145 ft upstream at datum 1.58 ft higher.

Average discharge.--8 years (1949-57), 35.0 cfs.

Extremes.--Maximum discharge during year, 1,670 cfs July 15 (gage height, 4.45 ft), from rating curve extended as explained below; minimum daily, 17 cfs Oct. 3.
1940-41, 1948-57: Maximum discharge, 3,950 cfs Oct. 6, 1949 (gage height, 6.02 ft), from rating curve extended above 150 cfs on basis of critical-depth determination of peak flow; minimum daily, 3.1 cfs July 30, 1940.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Flow includes an unknown amount of diversion from other drainage basins through the sulphuric acid plant of Tennessee Copper Co. Some fluctuation due to irregular release of wastes by Tennessee Copper Co. just above gage.

Cooperation.--Water-stage recorder inspected by employee of Tennessee Copper Co.

Revisions.--WSP 1206: Drainage area.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 22, Aug. 5 to Sept. 30 | | Dec. 23 to Aug. 4 | |
|---|---|---|---|
| 1.4 | 17 | 1.38 | 18 |
| 2.0 | 47 | 1.8 | 40 |
| 2.3 | 72 | 2.5 | 99 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 35 | a23 | 25 | 84 | 45 | 48 | 47 | 36 | 47 | 45 | 36 |
| 2 | 25 | 30 | a22 | 21 | a70 | 43 | 41 | 47 | 42 | 47 | 42 | a35 |
| 3 | 17 | 31 | 22 | 22 | 60 | 42 | 42 | 47 | 39 | 47 | 41 | 35 |
| 4 | 32 | 30 | a22 | 35 | 58 | 42 | *93 | 44 | 43 | 47 | 48 | 36 |
| 5 | 34 | 30 | *21 | 33 | 55 | 42 | *75 | 45 | *50 | 45 | 38 | 36 |
| 6 | 34 | 30 | 22 | 28 | 50 | 43 | *47 | 44 | 80 | 44 | 38 | 36 |
| 7 | 32 | 33 | 24 | 28 | a50 | 48 | 47 | 44 | 50 | 42 | 38 | a35 |
| 8 | 30 | *30 | 23 | 27 | 49 | *45 | 51 | 45 | 46 | 43 | 36 | 37 |
| 9 | 32 | 28 | a22 | 28 | *47 | 38 | 50 | 45 | 54 | 41 | 36 | 36 |
| 10 | *32 | 28 | 22 | *32 | 48 | 40 | 48 | *46 | 50 | 40 | 36 | 38 |
| 11 | 30 | 28 | 21 | 29 | 44 | 41 | 47 | 48 | 50 | 42 | 34 | 38 |
| 12 | 32 | 26 | 49 | 27 | 43 | 45 | 47 | 43 | 47 | 42 | 38 | 36 |
| 13 | 30 | a25 | 32 | 26 | 42 | 42 | 45 | 45 | 50 | 41 | 37 | *61 |
| 14 | 30 | 25 | 49 | 26 | 44 | 45 | 44 | 47 | 49 | 38 | 36 | 58 |
| 15 | 30 | 26 | 43 | 30 | 45 | 42 | 46 | 47 | 47 | 62 | 36 | 39 |
| 16 | 30 | 28 | 34 | 29 | 45 | 42 | 46 | 46 | 50 | 45 | *37 | 72 |
| 17 | 30 | 26 | 28 | 25 | 42 | 43 | 47 | 46 | 46 | 45 | 38 | a45 |
| 18 | 33 | a25 | 30 | 24 | 43 | 47 | 47 | 43 | 44 | *43 | 40 | a42 |
| 19 | 33 | 24 | 29 | 24 | 48 | 44 | 47 | 47 | 48 | 42 | 38 | a40 |
| 20 | 31 | 26 | 28 | 18 | 44 | 42 | 45 | 42 | 44 | 42 | 36 | a39 |
| 21 | 39 | 28 | 28 | 28 | 38 | 42 | 61 | 42 | 47 | 42 | 36 | a38 |
| 22 | 58 | a25 | 40 | 34 | 42 | 42 | 48 | a45 | 45 | 43 | a38 | a37 |
| 23 | 36 | 23 | 60 | 35 | 42 | 40 | 50 | a42 | 60 | 44 | 36 | a36 |
| 24 | 34 | 23 | 44 | a30 | 42 | 44 | 47 | a43 | 67 | 44 | 36 | a35 |
| 25 | 34 | 23 | 33 | 35 | 43 | 42 | 45 | a40 | 50 | 44 | 34 | a35 |
| 26 | 34 | 24 | a31 | 27 | 47 | 39 | 45 | a37 | 47 | 44 | 36 | a35 |
| 27 | 32 | 24 | a29 | 31 | 43 | 38 | 43 | 42 | 45 | 42 | 36 | a35 |
| 28 | 30 | 22 | a27 | 35 | 50 | 38 | 43 | 42 | 62 | 41 | 36 | a40 |
| 29 | 32 | a22 | a27 | 41 | - | 38 | 45 | 41 | 46 | 41 | 36 | a70 |
| 30 | 32 | 23 | a26 | 36 | ------- | 37 | 49 | 39 | 50 | 37 | 36 | 41 |
| 31 | 36 | ------- | 26 | 96 | ------- | 36 | ------- | 38 | ------- | 41 | 36 | ------- |
| Total | 1,006 | 801 | 937 | 965 | 1,358 | 1,297 | 1,479 | 1,359 | 1,484 | 1,348 | 1,164 | 1,232 |
| Mean | 32.5 | 26.7 | 30.2 | 31.1 | 48.5 | 41.8 | 49.3 | 43.8 | 49.5 | 43.5 | 37.5 | 41.1 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 124 Min 17 Mean 36.6 Cfsm - In. -
Water year 1956-57: Max 96 Min 17 Mean 39.5 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## North Potato Creek near Ducktown, Tenn.

Location.--Lat 35°00'54", long 84°22'58", on right bank 50 ft upstream from bridge on State Highway 40, 1½ miles south of Ducktown, Polk County, and 2 miles upstream from mouth.

Drainage area.--13.0 sq mi.

Records available.--May 1934 to September 1957. Prior to October 1950, published as Potato Creek near Ducktown.

Gage.--Water-stage recorder and concrete San Dimas flume. Datum of gage is 1,492.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 8, 1935, water-stage recorder and wooden weir and Oct. 8, 1935, to Aug. 25, 1948, water-stage recorder and Parshall flume, at same site and datum.

Average discharge.--23 years, 28.6 cfs.

Extremes.--Maximum discharge during year, 1,160 cfs July 15 (gage height, 5.35 ft); minimum daily, 13 cfs Nov. 25, 26, Dec. 11.
1934-57: Maximum discharge, 7,080 cfs Apr. 6, 1936 (gage height, 7.2 ft), from rating curve extended above 1,100 cfs; minimum daily, 2.8 cfs June 16, 17, 1941.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Discharge includes diversion from Brush Creek and from Ocoee River. This diversion was small prior to June 1941. Some fluctuations caused by Tennessee Copper Co. plant's irregular pumpage from mines.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1935.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.94 | 13 | 3.0 | 134 |
| 1.5 | 32 | 3.5 | 220 |
| 2.0 | 54 | 3.7 | 275 |
| 2.5 | 87 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 30 | a15 | 19 | 197 | 49 | 50 | 44 | 28 | 42 | 21 | 16 |
| 2 | 19 | 22 | a15 | a18 | 85 | 37 | 44 | 38 | 32 | 35 | 22 | 17 |
| 3 | 20 | 20 | a15 | a17 | 90 | 31 | 36 | 41 | 31 | 31 | 20 | 17 |
| 4 | 24 | 17 | a15 | 42 | 85 | 34 | *210 | 36 | 41 | 25 | 42 | 21 |
| 5 | 20 | 20 | *15 | 33 | 83 | 38 | *165 | 33 | *56 | 25 | 25 | 18 |
| 6 | 20 | 20 | 15 | 30 | 76 | 40 | *64 | 32 | 102 | 25 | 21 | 16 |
| 7 | 18 | *26 | 15 | 29 | 60 | 52 | 49 | a31 | 36 | 24 | 20 | 14 |
| 8 | 19 | 20 | 14 | 21 | 62 | 56 | 55 | a31 | 35 | 23 | 20 | 14 |
| 9 | 18 | 17 | 15 | *21 | *65 | 47 | 43 | a32 | 112 | 21 | 19 | 20 |
| 10 | 18 | 18 | 14 | 27 | 61 | 40 | 41 | *36 | 47 | 20 | 18 | 18 |
| 11 | *17 | 18 | 13 | 22 | 50 | 36 | 44 | 47 | 36 | 20 | 16 | 17 |
| 12 | 16 | 18 | 96 | 20 | a48 | 47 | 44 | a40 | 34 | 23 | 21 | 14 |
| 13 | 17 | a17 | 38 | a19 | a46 | 41 | 39 | 35 | 32 | 23 | 19 | *84 |
| 14 | 18 | a16 | 85 | a18 | a45 | 43 | 37 | 37 | 30 | 22 | 21 | 62 |
| 15 | 19 | a17 | 77 | a21 | a45 | 34 | 40 | 35 | 23 | 95 | 20 | 21 |
| 16 | 18 | a19 | 44 | 20 | a50 | 36 | 36 | 32 | 31 | 40 | *19 | 95 |
| 17 | 17 | 16 | 32 | a18 | a45 | 38 | 36 | 57 | 33 | *27 | 82 | 35 |
| 18 | 22 | 14 | 25 | a17 | 42 | 50 | 37 | 30 | 30 | 32 | 36 | 28 |
| 19 | 18 | 14 | 22 | a17 | 52 | 44 | 35 | 41 | 48 | 25 | 31 | a25 |
| 20 | 18 | 17 | 21 | a16 | a54 | 39 | 36 | 34 | 30 | 22 | 20 | a20 |
| 21 | 40 | 19 | 21 | a16 | a50 | 41 | 126 | 30 | 32 | 20 | 20 | a20 |
| 22 | 87 | 17 | 43 | 27 | 42 | 44 | 66 | 50 | 28 | 22 | 20 | a21 |
| 23 | 27 | 15 | 83 | 36 | 35 | 38 | 52 | 35 | 48 | 19 | 17 | a20 |
| 24 | 23 | 15 | 60 | 28 | 34 | 48 | 77 | 40 | 126 | 19 | 15 | a18 |
| 25 | 20 | 13 | a45 | 36 | 36 | 38 | 41 | 32 | 46 | 20 | 16 | a15 |
| 26 | 19 | 13 | a38 | 27 | 49 | 31 | 39 | 30 | 34 | 18 | 18 | a15 |
| 27 | 20 | a14 | a34 | 37 | 30 | 39 | 38 | 42 | 32 | 20 | 18 | a16 |
| 28 | 21 | a14 | a31 | 48 | 42 | 32 | 36 | 30 | 57 | 21 | 17 | a20 |
| 29 | 22 | a14 | 28 | 86 | - | 32 | 39 | 30 | 31 | 22 | 17 | a100 |
| 30 | 19 | a14 | 22 | 52 | -------- | 32 | 74 | 28 | 59 | 23 | 18 | a50 |
| 31 | 34 | -------- | 21 | 273 | -------- | a32 | -------- | 28 | -------- | 19 | 16 | -------- |
| Total | 708 | 524 | 1,027 | 1,111 | 1,659 | 1,239 | 1,729 | 1,117 | 1,340 | 823 | 705 | 867 |
| Mean | 22.8 | 17.5 | 33.1 | 35.8 | 59.2 | 40.0 | 57.6 | 36.0 | 44.7 | 26.5 | 22.7 | 28.9 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 189 Min 13 Mean 33.7 Cfsm - In. -
Water year 1956-57: Max 273 Min 13 Mean 35.2 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## Ocoee River at Emf, Tenn.

Location.--Lat 35°05'48", long 84°32'07", on left bank 700 ft downstream from Tennessee Valley Authority powerplant, three-quarters of a mile upstream from former village of Emf, Polk County, and 2 miles downstream from Goforth Creek.

Drainage area.--524 sq mi.

Records available.--January 1913 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 837.88 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--44 years, 1,220 cfs (unadjusted).

Extremes.--Maximum discharge during year, 13,200 cfs Feb. 1 (gage height, 9.50 ft); minimum, 9.5 cfs Oct. 5, 6 (gage height, 2.33 ft); minimum daily, 10 cfs Oct. 4, 5.
1913-57: Maximum discharge, 29,400 cfs July 10, 1916 (gage height, 13.7 ft), from rating curve extended above 17,000 cfs; minimum daily, 5.0 cfs July 28, 1944.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Blue Ridge and Ocoee No. 3 Lakes (see p. 226) and by powerplant above station.

Cooperation.--Water-stage recorder inspected by employee of Tennessee Valley Authority.

Revisions (water years).--WSP 783: 1913-34.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.34 | 10 | 4.0 | 760 |
| 2.4 | 15 | 4.5 | 1,200 |
| 2.5 | 30 | 5.0 | 1,790 |
| 2.8 | 99 | 6.0 | 3,360 |
| 3.0 | 162 | 7.0 | 5,250 |
| 3.5 | 404 | 8.6 | 10,000 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 998 | 1,020 | 972 | 981 | 9,870 | 1,100 | 1,410 | 2,100 | 1,550 | 2,170 | 998 | 938 |
| 2 | 374 | 998 | 972 | 990 | *4,390 | 1,060 | 1,580 | 1,560 | 1,550 | 1,610 | 981 | 922 |
| 3 | 12 | 972 | 981 | 972 | 2,320 | 1,100 | 1,580 | 1,660 | 1,550 | 1,550 | 964 | 1,090 |
| 4 | *10 | 990 | 972 | 1,040 | 4,400 | 1,100 | 1,920 | 1,610 | 1,580 | 1,120 | 990 | 938 |
| 5 | 10 | 998 | 972 | 1,120 | 2,610 | 1,070 | 5,780 | 1,600 | 1,640 | 1,020 | 998 | 930 |
| 6 | 856 | 981 | *972 | 1,020 | 1,750 | 1,050 | 1,890 | 1,580 | 1,720 | 1,030 | 1,010 | 904 |
| 7 | 1,010 | 990 | 972 | 1,020 | 2,510 | 1,050 | 1,660 | 1,560 | 1,690 | 1,020 | 1,010 | 956 |
| 8 | 1,010 | 998 | 972 | 1,020 | 1,740 | 1,380 | 1,640 | 1,560 | 1,600 | 1,020 | 998 | 930 |
| 9 | 1,010 | 990 | 972 | 998 | 1,700 | 1,320 | 1,600 | 1,550 | 1,760 | 990 | 990 | 938 |
| 10 | 1,010 | 981 | 972 | 998 | 1,560 | 1,100 | 1,590 | *1,560 | 1,760 | 990 | 981 | 1,120 |
| 11 | 998 | 981 | 981 | 1,010 | 1,650 | 1,100 | 1,940 | 1,580 | 1,640 | 972 | 1,010 | 956 |
| 12 | 998 | 981 | 1,050 | 998 | 1,600 | *1,120 | 2,580 | 1,550 | 1,590 | 964 | 990 | 938 |
| 13 | 938 | 972 | 1,350 | 998 | 1,560 | 1,160 | 2,030 | 1,550 | 1,560 | 981 | 972 | *972 |
| 14 | 1,010 | 956 | 1,140 | 998 | 1,600 | 1,540 | 1,580 | 1,550 | 1,560 | 998 | 1,010 | 2,440 |
| 15 | 1,010 | 845 | 1,020 | 998 | 1,600 | 1,600 | 2,060 | 1,590 | 1,550 | 1,020 | 998 | 1,200 |
| 16 | 1,020 | 990 | 1,010 | 981 | 1,100 | 1,100 | 1,550 | 1,550 | 1,540 | 1,180 | 930 | 1,490 |
| 17 | 1,010 | 981 | 998 | 981 | 1,020 | 1,020 | 1,550 | 1,550 | 1,550 | 998 | 990 | 1,090 |
| 18 | 998 | 981 | 1,020 | 972 | 1,040 | 1,020 | 1,540 | 1,550 | 1,560 | 998 | 981 | 1,280 |
| 19 | 998 | 972 | 990 | 964 | 1,030 | 1,030 | 1,540 | 1,550 | 1,540 | *1,010 | 1,100 | 1,030 |
| 20 | 998 | 981 | 990 | 998 | 1,040 | 1,030 | 1,540 | 1,650 | 1,600 | 998 | 981 | 972 |
| 21 | 1,010 | 981 | 998 | 998 | 1,040 | 1,020 | 1,540 | 1,550 | 1,540 | 990 | 981 | 972 |
| 22 | 1,030 | 981 | 1,050 | 998 | 1,040 | 1,010 | 2,240 | 1,600 | 1,540 | 1,010 | 998 | 981 |
| 23 | 1,020 | 981 | 1,180 | 1,050 | 1,040 | 1,010 | 2,720 | 1,600 | 1,600 | 1,010 | 990 | 990 |
| 24 | 1,010 | 981 | 1,730 | 1,020 | 1,040 | 1,020 | 3,280 | 1,550 | 2,110 | 998 | 990 | 981 |
| 25 | 998 | 964 | 1,250 | 1,030 | 1,040 | 1,030 | 3,220 | 1,550 | 2,680 | 1,010 | 964 | 1,040 |
| 26 | 1,010 | 932 | 1,020 | 1,030 | 1,040 | 1,310 | 2,790 | 1,550 | 1,620 | 1,050 | 964 | 964 |
| 27 | 998 | 972 | 990 | 1,070 | 1,060 | 1,550 | 2,310 | 1,330 | 1,560 | 1,020 | 972 | 956 |
| 28 | 998 | 972 | 981 | 1,120 | 1,100 | 1,540 | 1,560 | 1,550 | 1,590 | 1,020 | 972 | 981 |
| 29 | 998 | 972 | 998 | 1,690 | - | 1,540 | 1,600 | 1,550 | 1,600 | 1,010 | 972 | 1,160 |
| 30 | 998 | 981 | 990 | 1,270 | -------- | 1,270 | 1,620 | 1,550 | 1,580 | 990 | 964 | 1,120 |
| 31 | 998 | -------- | 981 | 4,840 | -------- | 1,200 | -------- | 1,550 | -------- | 990 | 956 | -------- |
| Total | 27,346 | 29,275 | 32,446 | 36,173 | 54,490 | 36,550 | 61,440 | 48,940 | 49,510 | 33,737 | 30,605 | 32,179 |
| Mean | 882 | 976 | 1,047 | 1,167 | 1,946 | 1,179 | 2,048 | 1,579 | 1,650 | 1,088 | 987 | 1,073 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 6,080 | Min 10 | Mean 1,061 | Mean 1,116 | Cfsm 2.13 | In. 28.98 |
| Water year 1956-57: | Max 9,870 | Min 10 | Mean 1,295 | Mean 1,261 | Cfsm 2.41 | In. 32.67 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge and Ocoee No. 3 Lakes.
Note.--No gage-height record Feb. 14-28, Mar. 3-11, May 12 to June 3; discharge estimated on basis of recorded range in stage and records for Ocoee No. 3 powerplant.

## Ocoee River at Parksville, Tenn.

Location.--Lat 35°05'48", long 84°39'15", on right bank 0.4 mile downstream from dam and Ocoee No. 1 powerplant of Tennessee Valley Authority at Parksville, Polk County, and at mile 11.5.

Drainage area.--595 sq mi.

Records available.--January 1911 to September 1916, March 1921 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 716.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--41 years, 1,280 cfs (unadjusted).

Extremes.--Maximum discharge during year, 14,400 cfs Feb. 1 (gage height, 15.04 ft); minimum, 102 cfs July 24 (gage height, 2.93 ft); minimum daily, 122 cfs July 7, 14.
1911-16, 1921-57: Maximum discharge, 21,700 cfs Mar. 29, 1951 (gage height, 20.22 ft); minimum daily, 10 cfs Oct. 28, 1925.

Remarks.--Records excellent. Flow regulated by Blue Ridge, Ocoee No. 3, and Parksville Lakes (see p. 226,227).

Cooperation.--Water-stage recorder inspected by employees of Tennessee Valley Authority.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1926.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.98 | 122 | 6.0 | 2,770 |
| 3.1 | 175 | 10.0 | 7,800 |
| 3.5 | 400 | 14.2 | 13,300 |
| 4.0 | 775 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 783 | 1,560 | 214 | 1,230 | 13,300 | 2,020 | 1,900 | 1,120 | 222 | 1,580 | 1,350 | 130 |
| 2 | 859 | 1,210 | 139 | 1,280 | *8,440 | 148 | 1,630 | 1,740 | 195 | 1,980 | 1,380 | 1,250 |
| 3 | 901 | 166 | 1,410 | 1,460 | 4,910 | 144 | 2,120 | 1,570 | 2,090 | 2,170 | 152 | 1,210 |
| 4 | 1,100 | 1,150 | 1,550 | 1,000 | 4,710 | 1,830 | 2,340 | 1,690 | 2,170 | 1,750 | 171 | 1,370 |
| 5 | 371 | 1,450 | 1,500 | 170 | 4,360 | 1,630 | 4,860 | 180 | 2,140 | 1,640 | 1,140 | 1,430 |
| 6 | 166 | 1,510 | 1,670 | 170 | 3,250 | 1,850 | 3,830 | 1,980 | 1,920 | 130 | 1,260 | 1,300 |
| 7 | 166 | 1,560 | 1,460 | 1,500 | 2,920 | 1,680 | 2,920 | 1,860 | 2,080 | 122 | 1,080 | 148 |
| 8 | 700 | 1,570 | 152 | 1,590 | 2,950 | 1,920 | 1,320 | 1,980 | 2,070 | 1,310 | 1,370 | 152 |
| 9 | 1,460 | 1,350 | 152 | 1,470 | 2,960 | 1,740 | 2,060 | 2,020 | 297 | 1,210 | 1,330 | 1,330 |
| 10 | 1,500 | 194 | 1,190 | 1,500 | 2,990 | 175 | 2,300 | 2,040 | 2,450 | 1,360 | 302 | 1,390 |
| 11 | 1,040 | 190 | 1,680 | 1,610 | 3,020 | 1,590 | 2,090 | 1,440 | 2,760 | 1,640 | 152 | 1,320 |
| 12 | 1,060 | 1,580 | 1,730 | 229 | 2,980 | *1,500 | 1,960 | 594 | 2,140 | *1,670 | 1,200 | 1,210 |
| 13 | 200 | 1,640 | 1,740 | 166 | 2,480 | 1,740 | 1,850 | 1,810 | 2,060 | 130 | 1,510 | 1,470 |
| 14 | 144 | 1,650 | 1,750 | 1,500 | 2,110 | 1,350 | 1,740 | 2,010 | 2,170 | 122 | 1,440 | 2,820 |
| 15 | 1,100 | 1,650 | 1,310 | 1,600 | 1,910 | 1,670 | 2,110 | 2,140 | 1,180 | 1,290 | 1,460 | 2,150 |
| 16 | 1,470 | 882 | 1,130 | *1,720 | 162 | 152 | 1,770 | 2,080 | 162 | 1,300 | 1,200 | 1,210 |
| 17 | 1,560 | 148 | 1,120 | 1,420 | 162 | 157 | 1,800 | 2,110 | 2,050 | 1,520 | 144 | 1,200 |
| 18 | 1,570 | 726 | 1,720 | 1,460 | 162 | 1,660 | 1,910 | 1,310 | 2,020 | 1,390 | 139 | 1,420 |
| 19 | 1,110 | 1,370 | 1,240 | 185 | 162 | 1,790 | 2,120 | 175 | 2,110 | 1,390 | 1,230 | 1,700 |
| 20 | 157 | 1,670 | 1,360 | 175 | 1,590 | 1,930 | 913 | 2,010 | 2,110 | 134 | 1,380 | 1,740 |
| 21 | 162 | 1,600 | 1,260 | 1,300 | 1,610 | 1,820 | 1,270 | 2,070 | 2,170 | 126 | 1,350 | 238 |
| 22 | 1,230 | 976 | 152 | 1,180 | 1,710 | 1,680 | 2,000 | 2,230 | 249 | 1,300 | 1,400 | 134 |
| 23 | 1,500 | 1,520 | 148 | 1,250 | 175 | 148 | 2,310 | 2,170 | 170 | 1,400 | 1,350 | 1,290 |
| 24 | 1,930 | 220 | 1,860 | 1,840 | 175 | 144 | 3,280 | 2,150 | 1,780 | 1,330 | 139 | 1,290 |
| 25 | 1,570 | 144 | 1,820 | 1,840 | 1,420 | 1,510 | 3,810 | 1,010 | 3,560 | 1,400 | 139 | 1,320 |
| 26 | 1,920 | 1,210 | 1,780 | 162 | 1,550 | 1,450 | 2,870 | 641 | 2,720 | 1,390 | 1,250 | *1,320 |
| 27 | 283 | *1,560 | 2,150 | 162 | 1,600 | 2,120 | 2,860 | *2,050 | 2,180 | 152 | 1,250 | 1,350 |
| 28 | 152 | 1,580 | 2,540 | 1,240 | 1,750 | 2,100 | 2,850 | 2,100 | 2,010 | 152 | 1,260 | 139 |
| 29 | 1,110 | 1,580 | 1,200 | 1,660 | - | 2,080 | 1,880 | 2,130 | 1,650 | 1,380 | 1,410 | 1,700 |
| 30 | 1,540 | 1,600 | 152 | 1,780 | ------- | 1,050 | 1,260 | 2,120 | 1,530 | 1,300 | 1,410 | 2,550 |
| 31 | 1,520 | ------- | 1,150 | 2,830 | ------- | 175 | ------- | 2,070 | ------- | 1,380 | 130 | ------- |
| Total | 30,334 | 35,216 | 38,429 | 36,679 | 75,518 | 40,953 | 67,933 | 52,600 | 52,415 | 35,148 | 30,478 | 37,281 |
| Mean | 979 | 1,174 | 1,240 | 1,183 | 2,697 | 1,321 | 2,264 | 1,697 | 1,747 | 1,134 | 983 | 1,243 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 6,720 | Min 118 | Mean 1,203 | Mean 1,260 | Cfsm 2.12 | In. 28.82 | |
| Water year 1956-57: | Max 13,300 | Min 122 | Mean 1,460 | Mean 1,421 | Cfsm 2.39 | In. 32.41 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge, Ocoee No. 3, and Parksville Lakes.

## Hiwassee River above Charleston, Tenn.

Location.--Lat 35°12'33", long 84°39'31", on right bank 0.2 mile downstream from Ocoee River, a third of a mile upstream from Louisville & Nashville Railroad bridge, 2½ miles north of Benton, Polk County, 15.2 miles upstream from Charleston, and at mile 34.1.

Drainage area.--2,001 sq mi.

Records available.--October 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 682.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Auxiliary water-stage recorder 1.8 miles downstream.

Extremes.--Maximum discharge during year, 32,700 cfs Feb. 1; maximum gage height, 24.26 ft Feb. 1; minimum discharge, 350 cfs Aug. 26 (gage height, 1.46 ft); minimum daily, 857 cfs Aug. 25.

1953-57: Maximum discharge, that of Feb. 1, 1957; maximum gage height, that of Feb. 1, 1957; minimum discharge, 320 cfs Nov. 14, 15, 1954; minimum daily, 355 cfs Nov. 14, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by seven reservoirs (see p. 223).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Feb. 1-5)

| | | | |
|---|---|---|---|
| 2.36 | 852 | 10.0 | 9,800 |
| 4.0 | 2,080 | 15.0 | 17,200 |
| 6.0 | 4,400 | 21.6 | 30,700 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,890 | 3,880 | 3,260 | 4,160 | 30,700 | 6,010 | 2,150 | 3,000 | 3,400 | 4,470 | 4,090 | 1,590 |
| 2 | 2,860 | 3,430 | 2,890 | 4,140 | *21,900 | 4,020 | 2,890 | 3,500 | 1,990 | 4,960 | 4,130 | 2,190 |
| 3 | 2,930 | 2,000 | 4,060 | 4,140 | 11,600 | 3,290 | 4,000 | 3,370 | 3,860 | 5,080 | 3,100 | 3,030 |
| 4 | 3,320 | 2,120 | 3,940 | 4,140 | 15,800 | *4,940 | 4,550 | 4,050 | 5,190 | 3,780 | 1,940 | 4,220 |
| 5 | 3,030 | 3,390 | 4,220 | 3,650 | *16,700 | 4,940 | 11,200 | 3,340 | 5,570 | 2,940 | 2,280 | 4,240 |
| 6 | 1,620 | 2,910 | 3,980 | 2,960 | *15,800 | 4,320 | 8,440 | 3,780 | 5,640 | 2,610 | 3,680 | 3,980 |
| 7 | 1,840 | 3,010 | 4,330 | 3,580 | 15,300 | 4,580 | 4,920 | 3,630 | 5,920 | 2,870 | 3,340 | 2,570 |
| 8 | 2,640 | 3,560 | 2,490 | 4,610 | 14,800 | 6,380 | 3,330 | 3,600 | 5,460 | 3,930 | 2,820 | 1,500 |
| 9 | *3,510 | 4,150 | 2,430 | 4,270 | 14,600 | 4,800 | 3,000 | 3,560 | 4,110 | 3,960 | 2,810 | 3,070 |
| 10 | 3,870 | 2,900 | 3,650 | 3,910 | 12,000 | 4,000 | 3,800 | 3,740 | 5,720 | 4,270 | 1,720 | 3,420 |
| 11 | 3,790 | 1,710 | 4,430 | 4,560 | 9,710 | 5,000 | 4,800 | 3,590 | 5,860 | 4,390 | 1,080 | 3,470 |
| 12 | 3,580 | 3,420 | 4,630 | 3,530 | 8,330 | 4,800 | 5,000 | 2,520 | 5,260 | *4,400 | 1,220 | 3,810 |
| 13 | 2,200 | 4,370 | 3,010 | 3,030 | 7,420 | 4,500 | 4,800 | 2,930 | 5,270 | 3,460 | 2,600 | 3,530 |
| 14 | 1,730 | 4,360 | 2,800 | *3,990 | 7,840 | 4,200 | 4,200 | 3,900 | 5,210 | 2,010 | 2,520 | 4,620 |
| 15 | 2,510 | 4,000 | 2,470 | 4,500 | 7,200 | 4,500 | 5,000 | *4,200 | 4,480 | 3,220 | 2,590 | 3,650 |
| 16 | 3,160 | 3,250 | 1,530 | 4,660 | 4,220 | 3,500 | 4,500 | 5,290 | 3,170 | 4,100 | 2,830 | 3,320 |
| 17 | 3,620 | 2,830 | 1,710 | 5,440 | 3,610 | 3,000 | 4,200 | 5,180 | 4,670 | 4,100 | 1,260 | 4,240 |
| 18 | 3,890 | 2,480 | 2,240 | 4,790 | 3,480 | 4,500 | 4,800 | 4,740 | 5,010 | 4,260 | 1,320 | 3,220 |
| 19 | 3,090 | 3,650 | *1,870 | 2,880 | 3,670 | 4,800 | 5,000 | 3,490 | 5,040 | 4,080 | 1,950 | 2,520 |
| 20 | 1,690 | 3,770 | 4,170 | 1,760 | 4,950 | 4,500 | 4,000 | 4,630 | 5,040 | 3,500 | 2,710 | 2,860 |
| 21 | 1.470 | 3,740 | 4,150 | 2,500 | 4,910 | 4,200 | 4,500 | 5,280 | 5,050 | 2,880 | *2,180 | 3,230 |
| 22 | 2,160 | 3,720 | 3,610 | 2,450 | 4,930 | 3,800 | 5,000 | 5,220 | 3,470 | 3,730 | 2,940 | 3,020 |
| 23 | 3,120 | 4,090 | 2,020 | 3,120 | 3,540 | 2,350 | 5,500 | 5,500 | 3,120 | 4,050 | 2,490 | 3,610 |
| 24 | 4,110 | 3,240 | 2,880 | 4,170 | 3,430 | 1,470 | 6,000 | 5,250 | 4,490 | 3,800 | 1,470 | 4,140 |
| 25 | 4,490 | 2,870 | 4,680 | 3,770 | 4,320 | 2,280 | 7,000 | 4,560 | 6,950 | 4,310 | 857 | 4,160 |
| 26 | 4,000 | 3,670 | 4,560 | 2,250 | 5,010 | 3,560 | 6,000 | 3,680 | 5,820 | 4,140 | 2,090 | *4,070 |
| 27 | 3,430 | *4,320 | 5,110 | 3,680 | 4,610 | 4,070 | 5,000 | 4,750 | 5,220 | 2,660 | 3,530 | 4,150 |
| 28 | 2,240 | 3,980 | 5,320 | 4,390 | 5,830 | 3,000 | 5,000 | 4,980 | 4,280 | 2,070 | 3,180 | 3,160 |
| 29 | 2,350 | 4,090 | 4,310 | 5,230 | - | 3,010 | 4,000 | 5,020 | 4,890 | 3,210 | 3,760 | 3,700 |
| 30 | 3,700 | 4,340 | 3,320 | 6,330 | ------- | 1,920 | 3,500 | 5,040 | 4,790 | 4,000 | 3,830 | 5,890 |
| 31 | 3,660 | ------- | 3,570 | 11,500 | ------- | 958 | ------- | 5,050 | ------- | 4,080 | 2,410 | ------- |
| Total | 92,500 | 103,250 | 107,640 | 128,090 | 266,210 | 121,198 | 146,080 | 130,370 | 143,950 | 115,320 | 78,727 | 103,980 |
| Mean | 2,984 | 3,442 | 3,472 | 4,132 | 9,508 | 3,910 | 4,869 | 4,205 | 4,798 | 3,720 | 2,540 | 3,466 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 14,100 | Min 898 | Mean 3,745 | Mean 3,773 | Cfsm 1.89 | In. 25.66 |
| Water year 1956-57: | Max 30,700 | Min 857 | Mean 4,212 | Mean 4,234 | Cfsm 2.12 | In. 28.72 |

* Discharge measurement made on this day.
† Adjusted for change in contents in 7 reservoirs above station.
Note.--No gage-height record Mar. 10-22, Apr. 9 to May 2; discharge estimated on basis of records for Apalachia and Parksville powerplants.

## Oostanaula Creek near Sanford, Tenn.

Location.--Lat 35°19'39", long 84°42'19", on right bank 20 ft downstream from highway bridge, 1.3 miles southeast of Sanford, 3.5 miles northeast of Calhoun, McMinn County, and 5.6 miles above mouth.

Drainage area.--57.0 sq mi.

Records available.--October 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 716.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 1,910 cfs Feb. 1 (gage height, 8.59 ft); minimum, 18 cfs Oct. 2, 7-9, 11, 13, 15-18, 30; minimum gage height, 2.14 ft Oct. 17.
1954-57: Maximum discharge, that of Feb. 1, 1957; minimum observed, 16 cfs Oct. 13-28, 1954; minimum gage height observed, 2.12 ft Oct. 28, 1954.

Remarks.--Records good.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to June 5, Sept. 17-30 | | | | June 6 to Sept. 16 | |
|---|---|---|---|---|---|
| 2.15 | 18 | 5.0 | 436 | 2.16 | 20 |
| 2.5 | 37 | 6.0 | 700 | 2.5 | 42 |
| 3.0 | 82 | 7.0 | 1,060 | 3.0 | 91 |
| 3.5 | 138 | 8.4 | 1,800 | 3.5 | 157 |
| 4.0 | 219 | | | 4.0 | 242 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 47 | 20 | 51 | *1,760 | 179 | 80 | 73 | 45 | 114 | 29 | 22 |
| 2 | *18 | 41 | 20 | 47 | 1,550 | 167 | 110 | 72 | 43 | 60 | 29 | 20 |
| 3 | 19 | 26 | 20 | 46 | 679 | 150 | 97 | 71 | 85 | 52 | 30 | 20 |
| 4 | 20 | 22 | 20 | 52 | 512 | *141 | 175 | 69 | 58 | 49 | 30 | 20 |
| 5 | 20 | *21 | *20 | 113 | 462 | 134 | 327 | 67 | 66 | 46 | 29 | 20 |
| 6 | 20 | 20 | 20 | 80 | 365 | 130 | 264 | 66 | *207 | 43 | 29 | *20 |
| 7 | 18 | 20 | 20 | 64 | 383 | 132 | 167 | 65 | 152 | 41 | 28 | 20 |
| 8 | 18 | 20 | 20 | 58 | 338 | 194 | *165 | 63 | 81 | 40 | 26 | 20 |
| 9 | 18 | 21 | 20 | 55 | 308 | 181 | 530 | 62 | 101 | *37 | 26 | 20 |
| 10 | 19 | 20 | 19 | 54 | 321 | 151 | 388 | 60 | 86 | 37 | 25 | 24 |
| 11 | 18 | 19 | 19 | 57 | 300 | 139 | 223 | 62 | 70 | 36 | 25 | 32 |
| 12 | 19 | 19 | 52 | 51 | 235 | 138 | 183 | 62 | 65 | 36 | 25 | 32 |
| 13 | 18 | 19 | 136 | 49 | 199 | 137 | 159 | 58 | 63 | 34 | 24 | 34 |
| 14 | 19 | 19 | 219 | *47 | 179 | 128 | 144 | 57 | 59 | 34 | 23 | 85 |
| 15 | 18 | 19 | 213 | 45 | 162 | 126 | 133 | *71 | 56 | 33 | 23 | 156 |
| 16 | 18 | 40 | 116 | 45 | 161 | 120 | 126 | 92 | 54 | 36 | 23 | *230 |
| 17 | 18 | 72 | 84 | 43 | 152 | 115 | 120 | 62 | 53 | 34 | 25 | 213 |
| 18 | 18 | 34 | 69 | 42 | 137 | 114 | 115 | 55 | 53 | 37 | 36 | 92 |
| 19 | 20 | 26 | 62 | 40 | 175 | 116 | 112 | 55 | 53 | 40 | 31 | 66 |
| 20 | 19 | 24 | 58 | 39 | 227 | 113 | 108 | 116 | 49 | 40 | 29 | 58 |
| 21 | 19 | 24 | 57 | 41 | 171 | 106 | 103 | 61 | 49 | 33 | *26 | 54 |
| 22 | 23 | 32 | 65 | 43 | 147 | 104 | 101 | 57 | 48 | 32 | 31 | 51 |
| 23 | 27 | 29 | 105 | 135 | 136 | 102 | 98 | 64 | 93 | 32 | 27 | 75 |
| 24 | 22 | 25 | 122 | 94 | 127 | 97 | 96 | 56 | 80 | 59 | 24 | 78 |
| 25 | 20 | 24 | 85 | 79 | 123 | 96 | 91 | 54 | 102 | 44 | 24 | 54 |
| 26 | 19 | 23 | 72 | 89 | 136 | 93 | 86 | 51 | 66 | 33 | 24 | 51 |
| 27 | 19 | 22 | 66 | 182 | 143 | 89 | 83 | 49 | 55 | 33 | 24 | 48 |
| 28 | 19 | 22 | 63 | 292 | 155 | 85 | 81 | 47 | 50 | 32 | 23 | 47 |
| 29 | 19 | 21 | 58 | *298 | - | 83 | 78 | 51 | 49 | 31 | 23 | 106 |
| 30 | 18 | 21 | 54 | 292 | -------- | 81 | 75 | 59 | 58 | 31 | 22 | 124 |
| 31 | 21 | -------- | 52 | 569 | -------- | 79 | -------- | 54 | -------- | 29 | 22 | -------- |
| Total | 600 | 792 | 2,026 | 3,192 | 9,743 | 3,820 | 4,618 | 1,961 | 2,149 | 1,268 | 815 | 1,892 |
| Mean | 19.4 | 26.4 | 65.4 | 103 | 348 | 123 | 154 | 63.3 | 71.6 | 40.9 | 26.3 | 63.1 |
| Cfsm | 0.340 | 0.463 | 1.15 | 1.81 | 6.11 | 2.16 | 2.70 | 1.11 | 1.26 | 0.718 | 0.461 | 1.11 |
| In. | 0.39 | 0.52 | 1.32 | 2.08 | 6.36 | 2.49 | 3.01 | 1.28 | 1.40 | 0.83 | 0.53 | 1.23 |

Calendar year 1956: Max 788 Min 18 Mean 82.2 Cfsm 1.44 In. 19.62
Water year 1956-57: Max 1,760 Min 18 Mean 90.1 Cfsm 1.58 In. 21.44

Peak discharge (base, 400 cfs).--Feb. 1 (4 p.m.) 1,910 cfs (8.59 ft); Apr. 9 (4:30 p.m.) 916 cfs (6.64 ft).
* Discharge measurement made on this day.

## South Chickamauga Creek below Georgia-Tennessee State line

Location.--Lat 34°59'52", long 85°10'36", on right bank 1,200 ft downstream from Mackey Branch, 1.0 mile downstream from Georgia-Tennessee State line, and 16.3 miles upstream from mouth.

Drainage area.--249 sq mi.

Records available.--July 1952 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 659.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years, 330 cfs.

Extremes.--Maximum discharge during year, 10,000 cfs Feb. 1 (gage height, 18.77 ft), from rating curve extended as explained below; minimum, 50 cfs Sept. 8 (gage height, 1.58 ft).
1952-57: Maximum discharge, 10,700 cfs Jan. 17, 1954 (gage height, 18.78 ft), from rating curve extended above 8,500 cfs on basis of velocity-area study; minimum, 44 cfs Oct. 5, 1954; minimum gage height, 1.46 ft Sept. 3, 1954.

Remarks.--Records good. Some diurnal fluctuation caused by small mills above station.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 23 | | Dec. 24 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.65 | 56 | 1.59 | 51 | 10.0 | 2,400 |
| 2.0 | 104 | 2.0 | 109 | 13.0 | 3,860 |
| 4.0 | 480 | 4.0 | 440 | 15.0 | 5,410 |
| 6.1 | 1,010 | 6.0 | 990 | 17.7 | 8,560 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58 | *117 | 64 | 146 | *8,480 | *1,260 | *320 | *188 | 102 | *212 | *62 | 53 |
| 2 | 58 | 91 | 63 | 133 | 7,160 | 795 | 948 | 174 | 100 | 169 | 65 | 55 |
| 3 | *58 | 78 | *63 | 124 | 3,210 | 595 | 454 | 162 | *96 | 122 | 65 | *52 |
| 4 | 62 | 75 | 62 | 243 | 3,300 | 482 | 2,100 | 157 | 94 | 112 | 65 | 51 |
| 5 | 63 | 74 | 62 | 786 | 2,380 | 429 | 5,160 | 152 | 128 | 104 | 64 | 52 |
| 6 | 63 | 73 | 63 | 388 | 1,580 | 408 | 2,430 | 142 | 162 | 100 | 61 | 52 |
| 7 | 62 | 110 | 62 | 294 | 1,690 | 488 | 1,050 | 136 | 118 | 91 | 60 | 51 |
| 8 | 61 | 102 | 61 | 245 | 1,510 | 987 | 729 | 132 | 124 | 92 | 58 | 51 |
| 9 | 60 | 85 | 61 | 212 | 1,130 | 717 | 615 | 132 | 305 | 86 | 57 | 52 |
| 10 | 60 | 78 | 60 | 201 | 840 | 518 | 456 | 130 | 1,280 | 85 | 57 | 60 |
| 11 | 60 | 75 | 60 | 193 | 645 | 436 | 397 | 169 | 356 | 82 | 58 | 69 |
| 12 | 59 | 74 | 459 | 166 | 495 | 474 | 359 | 188 | 213 | 79 | 58 | 72 |
| 13 | 58 | 73 | 684 | 160 | 429 | 464 | 319 | 146 | 172 | 79 | 58 | 73 |
| 14 | 58 | 72 | 634 | 152 | 379 | 409 | 287 | 139 | 182 | 79 | 58 | 346 |
| 15 | 58 | 69 | 366 | 144 | 345 | 408 | 262 | 184 | 151 | 78 | 60 | 785 |
| 16 | 58 | 127 | 228 | 140 | 393 | 345 | 248 | 168 | 132 | 79 | 60 | 351 |
| 17 | 56 | 107 | 176 | 132 | 343 | 311 | 233 | 152 | 122 | 78 | 62 | 491 |
| 18 | 56 | 80 | 143 | 121 | 294 | 308 | 228 | 133 | 115 | 196 | 71 | 172 |
| 19 | 56 | 78 | 123 | 114 | 420 | 379 | 229 | 132 | 106 | 126 | 98 | 134 |
| 20 | 56 | 75 | 112 | 112 | 525 | 318 | 210 | 127 | 103 | 88 | 82 | 140 |
| 21 | 59 | 74 | 134 | 114 | 373 | 279 | 221 | 124 | 102 | 82 | 68 | 387 |
| 22 | 67 | 74 | 305 | 171 | 326 | 314 | 253 | 124 | 96 | 73 | 62 | 214 |
| 23 | 84 | 73 | 1,000 | *726 | 294 | 314 | 340 | 144 | 97 | 72 | 61 | 198 |
| 24 | 78 | 72 | 1,040 | 330 | 275 | 285 | 285 | 128 | 204 | 71 | 62 | 136 |
| 25 | 74 | 70 | 495 | 413 | 270 | 480 | 220 | 142 | 186 | 69 | 62 | 106 |
| 26 | 72 | 69 | 324 | 512 | 2,550 | 390 | 194 | 142 | 116 | 66 | 60 | 97 |
| 27 | 70 | 68 | 258 | 498 | 2,900 | 319 | 181 | 121 | 104 | 66 | 58 | 91 |
| 28 | 69 | 67 | 223 | 719 | 1,940 | 285 | 172 | 115 | 108 | 66 | 57 | 156 |
| 29 | 69 | 66 | 196 | 1,530 | - | 263 | 166 | 110 | 172 | 66 | 56 | 1,040 |
| 30 | 68 | 64 | 174 | *1,670 | -------- | 245 | 193 | 109 | 150 | 65 | 56 | 842 |
| 31 | 69 | -------- | *158 | 3,310 | -------- | 229 | -------- | 100 | -------- | 62 | 55 | -------- |
| Total | 1,959 | 2,410 | 7,913 | 14,199 | 44,476 | 13,934 | 19,259 | 4,402 | 5,496 | 2,895 | 1,936 | 6,429 |
| Mean | 63.2 | 80.3 | 255 | 458 | 1,588 | 449 | 642 | 142 | 183 | 93.4 | 62.5 | 214 |
| Cfsm | 0.254 | 0.322 | 1.02 | 1.84 | 6.38 | 1.80 | 2.58 | 0.570 | 0.735 | 0.375 | 0.251 | 0.859 |
| In. | 0.29 | 0.36 | 1.18 | 2.12 | 6.64 | 2.08 | 2.88 | 0.66 | 0.82 | 0.43 | 0.29 | 0.96 |

Calendar year 1956: Max 4,620 Min 56 Mean 334 Cfsm 1.34 In. 18.26
Water year 1956-57: Max 8,480 Min 51 Mean 343 Cfsm 1.38 In. 18.71

Peak discharge (base, 4,000 cfs).--Feb. 1 (8:30 p.m.) 10,000 cfs (18.77 ft); Apr. 5 (10 a.m.) 5,760 cfs (15.35 ft).
* Discharge measurement made on this day.

## South Chickamauga Creek near Chickamauga, Tenn.

Location.--Lat 35°00'50", long 85°12'27", on right bank a third of a mile upstream from bridge on U. S. Highway 11, 1½ miles south of Chickamauga, Hamilton County, 6 miles east of Chattanooga, and 12 miles upstream from mouth.

Drainage area.--428 sq mi.

Records available.--October 1928 to September 1957. Prior to October 1937, published as Chickamauga Creek near Chickamauga.

Gage.--Water-stage recorder. Datum of gage is 651.12 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1930, staff gage at same site and datum.

Average discharge.--29 years, 690 cfs.

Extremes.--Maximum discharge during year, 14,200 cfs Feb. 2 (gage height, 16.68 ft); minimum, 82 cfs Sept. 4 (gage height, 0.41 ft).
1928-57: Maximum discharge, 27,600 cfs Mar. 30, 1951 (gage height, 20.73 ft); minimum, 61 cfs Oct. 8, 1941; minimum gage height, that of Sept. 4, 1957.

Remarks.--Records good except those for period of backwater from Tennessee River, which are fair. Some diurnal fluctuation at low flow caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1937. WSP 1386: 1932.

Rating table, water year 1956-57, except period of backwater from Tennessee River (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Nov. 3-7, 10-16, Nov. 18 to Dec. 12, Dec. 30 to Jan. 4)

| | | | |
|---|---|---|---|
| 0.45 | 88 | 10.0 | 4,000 |
| 1.0 | 185 | 12.0 | 5,720 |
| 2.0 | 468 | 14.0 | 8,650 |
| 4.0 | 1,140 | 15.8 | 13,300 |
| 8.0 | 2,790 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 101 | *227 | 102 | 254 | c10,500 | *2,450 | *515 | *526 | 159 | 456 | 115 | 91 |
| 2 | 112 | 224 | 104 | 224 | *c13,200 | 1,340 | 1,580 | 369 | 157 | 357 | 117 | 94 |
| 3 | *110 | 146 | *99 | 205 | c7,500 | 1,010 | 1,110 | 330 | *159 | 249 | 115 | *96 |
| 4 | 163 | 124 | 102 | 327 | c5,500 | 862 | 2,800 | 309 | 156 | 222 | 112 | 88 |
| 5 | 126 | 122 | 101 | 1,470 | c4,800 | 762 | 7,390 | 291 | 212 | 198 | *114 | 99 |
| 6 | 112 | 114 | 101 | 914 | c3,500 | 695 | 6,400 | 268 | 246 | 183 | 112 | 90 |
| 7 | 117 | 168 | 101 | 590 | c3,200 | 762 | 3,530 | 252 | 189 | 167 | 106 | 90 |
| 8 | 104 | 249 | 101 | 494 | c2,500 | 1,430 | 1,490 | 240 | 235 | 165 | 106 | 99 |
| 9 | 110 | 212 | 102 | 426 | c2,000 | 1,090 | 1,150 | 232 | 323 | 156 | 104 | 107 |
| 10 | 112 | 152 | 93 | 399 | c1,600 | 824 | 876 | 227 | 1,860 | 150 | 99 | 124 |
| 11 | 101 | 127 | 98 | 378 | 1,340 | 714 | 756 | 271 | 925 | 146 | 102 | 132 |
| 12 | 104 | 119 | 561 | 333 | 939 | 730 | 673 | 309 | 408 | 141 | 101 | 119 |
| 13 | 115 | 110 | 1,490 | 312 | 772 | 746 | 602 | 249 | 312 | 139 | 102 | 127 |
| 14 | 98 | 107 | 1,470 | 297 | 673 | 663 | 538 | 230 | 294 | 138 | 106 | 731 |
| 15 | 106 | 106 | *1,070 | 277 | 615 | 654 | 490 | 274 | 252 | 138 | 101 | 2,700 |
| 16 | 107 | 216 | 577 | 268 | 692 | 567 | 456 | 257 | 217 | 141 | 99 | 2,000 |
| 17 | 110 | 205 | 423 | 252 | 612 | 513 | 429 | 257 | 200 | 141 | 109 | 1,480 |
| 18 | 104 | 163 | 345 | 230 | 522 | 510 | 420 | 222 | 189 | 244 | 114 | 580 |
| 19 | 107 | 136 | 294 | 217 | 662 | 622 | 426 | 214 | 198 | 189 | 131 | 408 |
| 20 | 106 | 127 | 260 | 207 | 900 | 561 | 402 | 212 | 183 | 146 | 115 | 393 |
| 21 | 124 | 122 | 294 | 207 | 670 | 481 | 402 | 203 | 177 | 138 | 101 | 806 |
| 22 | 152 | 126 | 486 | 302 | 574 | 535 | 529 | 203 | 169 | 127 | 98 | 580 |
| 23 | 240 | 120 | 1,380 | *1,330 | 513 | 583 | 876 | 217 | 177 | 124 | 99 | 435 |
| 24 | 163 | 119 | 2,100 | 708 | 478 | 516 | 834 | 203 | 712 | 122 | 98 | 318 |
| 25 | 131 | 112 | 1,110 | 740 | 462 | 830 | 538 | 205 | 885 | 120 | 96 | 252 |
| 26 | 122 | 110 | 660 | 1,020 | 3,260 | 807 | 447 | 214 | 348 | *120 | 93 | 220 |
| 27 | 119 | 110 | 506 | 928 | 4,810 | 634 | 396 | 187 | 246 | 119 | 96 | 203 |
| 28 | 120 | 107 | 423 | 1,140 | 4,160 | 561 | 366 | 177 | 227 | 119 | 91 | 263 |
| 29 | 114 | 107 | 366 | 2,320 | - | 503 | 342 | 173 | 395 | 115 | 91 | 1,590 |
| 30 | 120 | 107 | 315 | *2,900 | -------- | 459 | 384 | 169 | 462 | 117 | 90 | 2,020 |
| 31 | 138 | -------- | *280 | *4,530 | -------- | 429 | -------- | 161 | -------- | 112 | 88 | -------- |
| Total | 3,768 | 4,294 | 15,514 | 24,199 | 76,974 | 23,843 | 37,147 | 7,651 | 10,672 | 5,199 | 3,221 | 16,335 |
| Mean | 122 | 143 | 500 | 781 | 2,749 | 769 | 1,238 | 247 | 356 | 168 | 104 | 544 |
| Cfsm | 0.285 | 0.334 | 1.17 | 1.82 | 6.42 | 1.80 | 2.89 | 0.577 | 0.832 | 0.393 | 0.243 | 1.27 |
| In. | 0.33 | 0.37 | 1.35 | 2.10 | 6.69 | 2.07 | 3.23 | 0.66 | 0.93 | 0.45 | 0.28 | 1.42 |

Calendar year 1956: Max 8,210 Min 93 Mean 606 Cfsm 1.42 In. 19.28
Water year 1956-57: Max 13,200 Min 88 Mean 627 Cfsm 1.46 In. 19.88

Peak discharge (base, 5,500 cfs).--Feb. 2 (4 to 5 a.m.) 14,200 cfs (16.68 ft); Apr. 5 (8 p.m.) 8,010 cfs (13.66 ft).
* Discharge measurement made on this day.
c Backwater from Tennessee River.

## Tennessee River at Chattanooga, Tenn.

Location.--Lat 35°05'12", long 85°16'43", on right bank at Meadow Lake Country Club golf course, half a mile downstream from South Chickamauga Creek, 3 miles downstream from Chickamauga Dam, 3½ miles upstream from Walnut Street Bridge in Chattanooga, Hamilton County, and at mile 467.6.

Drainage area.--21,400 sq mi, approximately.

Records available.--April 1874 to October 1913, March 1915 to June 1930, and January 1936 to September 1957 in reports of Geological Survey. April 1874 to September 1924 in Tennessee Division of Geology Bulletin 34. July 1930 to September 1957 at site 38 miles downstream, published as Tennessee River at Hales Bar, near Chattanooga. Gage-height records collected in this vicinity since 1874 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 621.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 1, 1939, staff or chain gages or water-stage recorders at several sites from 7 miles upstream from Chattanooga to Hales Bar Dam 33 miles downstream at or within 0.2 ft of present datum; except staff gage at Bridgeport, Ala., 49.9 miles downstream at different datum Oct. 22, 1913, to Feb. 28, 1915, and Oct. 1, 1918, to Jan. 5, 1921. Auxiliary gages at several sites parts of period since Feb. 28, 1915. Present auxiliary gage at site 2¼ miles downstream from base gage.

Average discharge.--83 years (1874-1957), using records at Hales Bar July 1930 to December 1935, 37,090 cfs.

Extremes.--Maximum discharge during year, 208,000 cfs Feb. 2; maximum gage height, 34.22 ft Feb. 2; maximum gage height at Walnut Street, 32.24 ft Feb. 2; minimum daily discharge, 9,600 cfs July 7; minimum gage height, 11.46 ft Aug. 26.

1874-1957: Maximum discharge observed, 410,000 Mar. 1, 1875 (gage height, 53.8 ft, present datum, at Walnut Street), from rating curve extended above 250,000 cfs; minimum daily, 1,200 cfs Nov. 1, 1953; minimum gage height, 0.0 ft Sept. 11-14, 1881, Sept. 19, 1883 (before filling of Hales Bar pool).

Maximum stage known, 57.9 ft Mar. 11, 1867, present datum at Walnut Street (discharge, about 459,000 cfs).

Remarks.--Records good. Since 1936, flow regulated by increasing numbers of reservoirs above station (see p. 223).

Revisions (water years).--WSP 353: 1874-1912. WSP 783: 1917. WSP 823: 1875(M). WSP 973: 1942. WSP 1386: 1932-34 (station at Hales Bar near Chattanooga).

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32,000 | 25,600 | 36,300 | 44,300 | 191,000 | 67,100 | 22,000 | 35,600 | 26,900 | 26,400 | *27,800 | 29,400 |
| 2 | *32,000 | 29,600 | 28,900 | 44,700 | 202,000 | 63,200 | *26,500 | 35,100 | 21,500 | 26,500 | 28,500 | 31,000 |
| 3 | 28,500 | 31,400 | *27,400 | 44,900 | *199,000 | 57,300 | 33,500 | 34,700 | 33,500 | 23,700 | 27,500 | 29,700 |
| 4 | 27,800 | 23,300 | 27,400 | 43,300 | 192,000 | 56,600 | 28,300 | 32,600 | 32,700 | 15,500 | 26,200 | 29,000 |
| 5 | 25,600 | 27,900 | 23,800 | 31,000 | 192,000 | 52,100 | 39,600 | 36,400 | 36,100 | 21,100 | 27,800 | 28,800 |
| 6 | 30,000 | 28,100 | 22,700 | 29,500 | 183,000 | 46,000 | 40,300 | 34,900 | 36,500 | 15,700 | 23,800 | 29,200 |
| 7 | 30,500 | 27,200 | 25,500 | 28,900 | 177,000 | 37,700 | 42,700 | 33,600 | 37,900 | 9,600 | 23,600 | 30,000 |
| 8 | 29,700 | 28,900 | 19,700 | 34,900 | 175,000 | 49,000 | 40,800 | 31,500 | 37,300 | 21,600 | 21,600 | 29,400 |
| 9 | 28,700 | 29,800 | 20,500 | 38,400 | 178,000 | 56,300 | 42,500 | 30,800 | 29,000 | 29,400 | 24,500 | 29,100 |
| 10 | 28,500 | 37,100 | 30,800 | 37,100 | 176,000 | 47,400 | 40,500 | 27,800 | 32,500 | 27,600 | 25,900 | 29,900 |
| 11 | 27,300 | 30,400 | 36,900 | 31,800 | 171,000 | 37,300 | 34,800 | 25,600 | 30,200 | 27,900 | 19,400 | 30,200 |
| 12 | 27,500 | 31,500 | 34,400 | 31,100 | 155,000 | 45,700 | 33,600 | 26,500 | 31,400 | 27,700 | 27,000 | 30,000 |
| 13 | 26,100 | 31,500 | 47,000 | 28,200 | 141,000 | 48,300 | 33,400 | 29,100 | 30,300 | 27,400 | 30,200 | 30,900 |
| 14 | 21,100 | 29,400 | 96,900 | 27,800 | 128,000 | 47,100 | 37,400 | 26,900 | 29,100 | 24,000 | 28,200 | 28,700 |
| 15 | 26,800 | 28,600 | 99,500 | 35,400 | 124,000 | 46,700 | 38,300 | 29,900 | 22,800 | 23,200 | 26,200 | 28,500 |
| 16 | 30,700 | 29,200 | 69,200 | 41,700 | 118,000 | 43,400 | 30,100 | 31,000 | 14,700 | 28,000 | 29,200 | 37,100 |
| 17 | 20,400 | 29,600 | 44,100 | 43,300 | 115,000 | 38,100 | 31,500 | 31,500 | 24,900 | 28,900 | 26,000 | 42,700 |
| 18 | 26,000 | 28,600 | 28,000 | 38,700 | 107,000 | 42,600 | 33,100 | 31,400 | 30,900 | 30,100 | 25,300 | 41,400 |
| 19 | 21,300 | 27,200 | 25,100 | 33,900 | 103,000 | 43,600 | 36,700 | 20,400 | 29,900 | 30,400 | 24,900 | 42,200 |
| 20 | 22,600 | 27,800 | 22,500 | 29,700 | 100,000 | 36,500 | 28,000 | 26,300 | 28,900 | 24,000 | 24,500 | 41,500 |
| 21 | 16,900 | 29,400 | 26,600 | 21,800 | 93,500 | 43,600 | 26,000 | 34,800 | 28,400 | 14,000 | 28,000 | 29,800 |
| 22 | 26,000 | 23,400 | 34,900 | 28,400 | 86,600 | 40,300 | 30,400 | 35,200 | 19,400 | 22,700 | 29,200 | 22,400 |
| 23 | 31,600 | 33,500 | 46,400 | 29,100 | 83,400 | 30,600 | 36,400 | 33,000 | 21,600 | 27,000 | 30,000 | 30,200 |
| 24 | 31,300 | 33,300 | 39,600 | 44,000 | 68,400 | 28,700 | 38,000 | 27,900 | 27,500 | 32,000 | 23,600 | 31,000 |
| 25 | 34,500 | 32,500 | 26,100 | 44,400 | 59,000 | 27,400 | 37,700 | 24,600 | 21,400 | 29,900 | 14,600 | 34,900 |
| 26 | 35,300 | 32,800 | 35,300 | 30,000 | 63,100 | 33,400 | 38,100 | 14,800 | 28,200 | 30,400 | 21,700 | 30,000 |
| 27 | 36,300 | 37,000 | 43,800 | 32,400 | 67,600 | 33,000 | 35,100 | 23,000 | 33,200 | 25,300 | 30,300 | 29,900 |
| 28 | 28,200 | 36,900 | 44,000 | 56,000 | 68,900 | 32,800 | 31,300 | 32,300 | 31,600 | 23,100 | 31,800 | 30,500 |
| 29 | 28,000 | 38,900 | 44,600 | 111,000 | - | 31,200 | 35,700 | 30,100 | 28,300 | 24,900 | 31,000 | 31,500 |
| 30 | 30,700 | 36,200 | 39,200 | 123,000 | -------- | 26,700 | 33,900 | 27,000 | 24,800 | 26,800 | 31,200 | 31,500 |
| 31 | 28,500 | -------- | 41,600 | 138,000 | -------- | 26,400 | -------- | 28,100 | -------- | 27,900 | 29,200 | -------- |
| Total | 870,400 | 916,600 | ‡1,188.7 | ‡1,376.7 | ‡3,717.5 | ‡1,316.1 | ‡1,036.2 | 922,400 | 861,400 | 772,700 | 818,700 | 950,400 |
| Mean | 28,080 | 30,550 | 38,350 | 44,410 | 132,800 | 42,450 | 34,540 | 29,750 | 28,710 | 24,930 | 26,410 | 31,680 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 158,000 Min 6,700 Mean 32,950 Cfsm 1.54 In. 20.96
Water year 1956-57: Max 202,000 Min 9,600 Mean 40,400 Cfsm 1.89 In. 25.63

* Discharge measurement made on this day.
‡ Expressed in thousands.

## Chattanooga Creek near Flintstone, Ga.

Location.--Lat 34°58'20", long 85°19'40", on right bank 0.8 mile south of Georgia-Tennessee State line and 2.3 miles northeast of Flintstone, Walker County.

Drainage area.--50.6 sq mi.

Records available.--December 1950 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 649.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years (1951-57), 76.6 cfs.

Extremes.--Maximum discharge during year, 2,600 cfs Feb. 1 (gage height, 10.43 ft); minimum, 3.6 cfs Aug. 31, Sept. 1, 2, 3, 4 (gage height, 0.75 ft).
1950-57: Maximum discharge, 6,140 cfs Mar. 29, 1951 (gage height, 12.90 ft, from high-water mark in gage well); minimum, 1.0 cfs Sept. 8, 9, 1954; minimum gage height, 0.15 ft July 29, 1952.

Remarks.--Records fair. Some diurnal fluctuation at low flow caused by bleachery above station.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12-17, 22-27, Jan. 5-10, 22-27, Jan. 29 to Feb. 1, Sept. 14-22, 29, 30)

| Oct. 1 to Jan. 23 | | Jan. 24 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.96 | 5.4 | 0.77 | 3.9 | 6.5 | 340 |
| 1.5 | 10 | 1.0 | 7.4 | 7.0 | 450 |
| 2.0 | 23 | 1.5 | 16 | 8.0 | 815 |
| 4.0 | 136 | 2.0 | 33 | 8.5 | 1,080 |
| 6.3 | 308 | 5.0 | 218 | 9.5 | 1,800 |
| | | 6.0 | 290 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.5 | *22 | 12 | 32 | 1,780 | *262 | *89 | *46 | 11 | *105 | *6.6 | 4.0 |
| 2 | 5.5 | 17 | 12 | 27 | 905 | 206 | 173 | 42 | 11 | 66 | 6.3 | 3.9 |
| 3 | *5.4 | 14 | *12 | 23 | 576 | 169 | 131 | 39 | *10 | 46 | 6.1 | *3.9 |
| 4 | 6.6 | 14 | 11 | 43 | 486 | 145 | 878 | 35 | 9.8 | 32 | 6.3 | 3.9 |
| 5 | 7.5 | 13 | 11 | 219 | 355 | 121 | 1,230 | 30 | 16 | 24 | 6.8 | 4.3 |
| 6 | 6.5 | 12 | 11 | 135 | 303 | 106 | 522 | 27 | 13 | 20 | 6.0 | 4.3 |
| 7 | 6.3 | 27 | 11 | 106 | 559 | 106 | 287 | 24 | 13 | 17 | 5.8 | 4.2 |
| 8 | 6.0 | 63 | 11 | 84 | 486 | 131 | 231 | 23 | 12 | 15 | 5.5 | 5.6 |
| 9 | 5.9 | 30 | 11 | 74 | 330 | 125 | 193 | 22 | 37 | 14 | 5.4 | 7.9 |
| 10 | 5.9 | 22 | 11 | 71 | 259 | 108 | 160 | 23 | 340 | 13 | 5.0 | 7.7 |
| 11 | 5.9 | 18 | 10 | 65 | 203 | 105 | 137 | 36 | 121 | 12 | 5.0 | 8.5 |
| 12 | 6.0 | 16 | 82 | 60 | 164 | 111 | 118 | 25 | 71 | 12 | 5.0 | 8.5 |
| 13 | 5.9 | 14 | 160 | 56 | 137 | 110 | 102 | 22 | 48 | 11 | 4.8 | 11 |
| 14 | 6.0 | 13 | 275 | 50 | 117 | 101 | 88 | 20 | 33 | 11 | 5.4 | 166 |
| 15 | 6.2 | 13 | *204 | 46 | 103 | 95 | 78 | 19 | 25 | 10 | 6.0 | 257 |
| 16 | 6.2 | 22 | 114 | 44 | 113 | 85 | 71 | 32 | 21 | 14 | 5.5 | 509 |
| 17 | 6.3 | 32 | 79 | 37 | 95 | 75 | 64 | 22 | 19 | 11 | 5.0 | 355 |
| 18 | 6.5 | 24 | 59 | 33 | 88 | 80 | 62 | 19 | 24 | 11 | 5.6 | 154 |
| 19 | 6.6 | 20 | 48 | 29 | 119 | 101 | 57 | 21 | 18 | 11 | 5.8 | 113 |
| 20 | 6.8 | 17 | 42 | 27 | 140 | 83 | 51 | 22 | 17 | 11 | 5.4 | 151 |
| 21 | 7.8 | 17 | 47 | 27 | 125 | 82 | 63 | 18 | 15 | 9.7 | 5.2 | 128 |
| 22 | 14 | 18 | 69 | 41 | 110 | 95 | 79 | 16 | 14 | 8.8 | 5.0 | 98 |
| 23 | 11 | 18 | 165 | *297 | 97 | 84 | 116 | 17 | 25 | 8.4 | 4.9 | 76 |
| 24 | 9.7 | 16 | 159 | 281 | 87 | 81 | 149 | 16 | 58 | 8.2 | 4.6 | 53 |
| 25 | 9.2 | 16 | 113 | *240 | 87 | 109 | 122 | 16 | 55 | 7.9 | 4.6 | 37 |
| 26 | 9.3 | 15 | 86 | 222 | 611 | 103 | 100 | 15 | 32 | 7.4 | 4.4 | 31 |
| 27 | 9.2 | 14 | 69 | 223 | 425 | 95 | 85 | 14 | 23 | 7.1 | 4.3 | 26 |
| 28 | 9.2 | 13 | 59 | *233 | 350 | 85 | 72 | 13 | 35 | 6.9 | 4.3 | 38 |
| 29 | 9.2 | 13 | 50 | 584 | - | 79 | 61 | 12 | 115 | 6.8 | 4.3 | 344 |
| 30 | 9.2 | 13 | 42 | *615 | -------- | 73 | 52 | 12 | 62 | 6.8 | 4.2 | 345 |
| 31 | 10 | -------- | *37 | *1,130 | -------- | 65 | -------- | 12 | -------- | 6.6 | 4.0 | -------- |
| Total | 231.3 | 576 | 2,082 | 5,154 | 9,210 | 3,376 | 5,621 | 710 | 1,303.8 | 550.6 | 163.1 | 2,958.7 |
| Mean | 7.46 | 19.2 | 67.2 | 166 | 329 | 109 | 187 | 22.9 | 43.5 | 17.8 | 5.26 | 98.6 |
| Cfsm | 0.147 | 0.379 | 1.33 | 3.28 | 6.50 | 2.15 | 3.70 | 0.453 | 0.860 | 0.352 | 0.104 | 1.95 |
| In. | 0.17 | 0.42 | 1.53 | 3.79 | 6.77 | 2.48 | 4.13 | 0.52 | 0.96 | 0.40 | 0.12 | 2.17 |

Calendar year 1956: Max 1,870 Min 5.4 Mean 76.7 Cfsm 1.52 In. 20.64
Water year 1956-57: Max 1,780 Min 3.9 Mean 87.5 Cfsm 1.73 In. 23.46

Peak discharge (base, 800 cfs).--Feb. 1 (3 to 4 a.m.) 2,600 cfs (10.43 ft); Feb. 26 (1 to 2 p.m.) 875 cfs (8.13 ft); Apr. 4 (7 to 8 p.m.) 1,940 cfs (9.65 ft).
* Discharge measurement made on this day.

## Tennessee River at Hales Bar, near Chattanooga, Tenn.

Location.--Lat 35°01'43", long 85°32'48", in center pier of bridge on U. S. Highways 41, 64, and 72, 1.4 miles downstream from Hales Bar Dam, 5½ miles southeast of Jasper, Marion County, 7 miles upstream from Sequatchie River, 34.5 miles downstream from Chattanooga, and at mile 429.7.

Drainage area.--21,800 sq mi, approximately.

Records available.--July 1930 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 588.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 13, 1932, water-stage recorder on lower lock wall 1.4 miles upstream at datum 0.35 ft higher. Since Jan. 27, 1939, auxiliary water-stage recorder 22 miles downstream.

Average discharge.--27 years, 34,230 cfs.

Extremes.--Maximum discharge during year, 217,000 cfs Feb. 2 (computed on basis of records at Hales Bar Dam); maximum gage height, 29.55 ft Feb. 2; minimum daily discharge, 10,200 cfs July 7; minimum gage height, 5.35 ft July 6.

1930-57: Maximum discharge, 241,000 cfs Dec. 31, 1932, Jan. 1, 1933, Mar. 30, 1936 (gage height, 31.2 ft); minimum daily, 2,900 cfs Nov. 1, 15, 1953; minimum gage height, 1.21 ft Oct. 27, 1931, site and datum then in use.

Maximum stage known, 44.6 ft in March 1867, present site and datum. A stage of 37.4 ft occurred Mar. 8, 1917, present site and datum (discharge, 320,000 cfs, from rating curve extended above 225,000 cfs).

Remarks.--Records good. Since 1936, flow regulated by increasing numbers of reservoirs above station (see p. 223).

Revisions (water years).--WSP 853: Drainage area. WSP 973: 1942. WSP 1386: 1932-34.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31,700 | 26,100 | 37,500 | 45,000 | 205,000 | 69,800 | 22,800 | 35,500 | 27,200 | 26,000 | 27,900 | 30,900 |
| 2 | 31,400 | 30,200 | 29,100 | 45,800 | 216,000 | 64,000 | 28,500 | 34,600 | 22,700 | 25,000 | 28,800 | 30,500 |
| 3 | 29,700 | 31,500 | 28,500 | 45,500 | *209,000 | 58,200 | 34,300 | 33,600 | 32,400 | 21,900 | 27,200 | 28,800 |
| 4 | 29,200 | 23,500 | 28,300 | 43,500 | 196,000 | 58,700 | 37,600 | 31,600 | 32,700 | 14,000 | 28,600 | 28,600 |
| 5 | 26,300 | 28,000 | 25,900 | 32,500 | 192,000 | 54,300 | 51,600 | 34,000 | 34,900 | 18,600 | 28,500 | 28,600 |
| 6 | 30,700 | 28,000 | 23,700 | 30,500 | 187,000 | 48,000 | 49,900 | 34,200 | 36,800 | 16,700 | 24,000 | 28,300 |
| 7 | 31,200 | 27,500 | 25,000 | 30,000 | 178,000 | 39,100 | 48,600 | 33,200 | 37,100 | 10,200 | 22,000 | 31,000 |
| 8 | 30,200 | 29,500 | 21,600 | 35,500 | 175,000 | 49,000 | 45,600 | 31,000 | 38,000 | 19,000 | 20,700 | 31,400 |
| 9 | 30,200 | 30,000 | 20,500 | 39,000 | 176,000 | 57,900 | 48,400 | 29,100 | 30,000 | 26,800 | 21,900 | 30,200 |
| 10 | 29,400 | 37,500 | 31,300 | 38,000 | 175,000 | 48,400 | 47,400 | 26,900 | 35,000 | 26,300 | 26,300 | 29,700 |
| 11 | 27,600 | 32,000 | 35,500 | 32,500 | 170,000 | 40,800 | 40,100 | 25,000 | 31,000 | 27,800 | 21,200 | 29,800 |
| 12 | 28,200 | 32,000 | 37,300 | 33,000 | 157,000 | 44,300 | 35,700 | 24,000 | 32,000 | 27,500 | 25,600 | 30,700 |
| 13 | 26,400 | 32,000 | 47,200 | 29,000 | 145,000 | 48,600 | 35,300 | 30,000 | 31,000 | 27,100 | 28,300 | 31,000 |
| 14 | 20,900 | *30,100 | 93,400 | 28,500 | 126,000 | 47,000 | 37,600 | 27,500 | 29,500 | 25,200 | 27,900 | 32,200 |
| 15 | 24,400 | *29,000 | 101,000 | 36,000 | 121,000 | 47,300 | 39,100 | 30,500 | 24,000 | 23,200 | 25,300 | 33,800 |
| 16 | 30,500 | *31,100 | 70,000 | 42,000 | 117,000 | 44,600 | 31,900 | 32,000 | 16,000 | 26,400 | 29,700 | 40,000 |
| 17 | *20,100 | *30,400 | 45,000 | 41,000 | 114,000 | 40,200 | 32,400 | 32,500 | 25,000 | 26,900 | 27,000 | 44,000 |
| 18 | *26,300 | *29,200 | 28,500 | 41,000 | 107,000 | 42,300 | 33,100 | 32,000 | 31,500 | 29,800 | 27,000 | 44,000 |
| 19 | *19,700 | *27,900 | 25,500 | 34,000 | 99,700 | 44,000 | 37,900 | 21,000 | 30,000 | 30,900 | 24,600 | 43,000 |
| 20 | 21,100 | *27,300 | 21,500 | 30,000 | 98,000 | 38,700 | 30,200 | 29,000 | 29,000 | 23,100 | 24,600 | 42,000 |
| 21 | 15,800 | *29,100 | 25,500 | 22,000 | 92,600 | 42,900 | 27,200 | 35,500 | 28,500 | 17,000 | 27,200 | 31,500 |
| 22 | 25,300 | 24,000 | 33,500 | 29,000 | 85,000 | 42,100 | 30,400 | 36,000 | 21,000 | 21,100 | 28,700 | 20,000 |
| 23 | 31,200 | 30,800 | 48,000 | 31,500 | 81,400 | 31,600 | 35,300 | 33,500 | 22,000 | 25,200 | 28,800 | 30,000 |
| 24 | 28,800 | 33,900 | 41,000 | 46,000 | 70,000 | 30,300 | 38,300 | 28,500 | 28,000 | 30,300 | 25,200 | 31,000 |
| 25 | 36,000 | 33,500 | 27,000 | 46,000 | 61,100 | 29,200 | 39,100 | 25,000 | 22,000 | 30,400 | 16,900 | 34,000 |
| 26 | 36,500 | 33,000 | 36,000 | 32,000 | 65,600 | 33,800 | 37,900 | 17,000 | 29,000 | 30,800 | 19,700 | 30,500 |
| 27 | 36,100 | 36,900 | 44,500 | 34,000 | 71,200 | 36,000 | 34,800 | 23,500 | 33,500 | 25,800 | 29,300 | 30,500 |
| 28 | 28,700 | 38,100 | 44,500 | 58,000 | 72,500 | 35,200 | 32,700 | 35,000 | 33,000 | 26,200 | 31,500 | 31,000 |
| 29 | 28,400 | 38,700 | 45,000 | 116,000 | - | 33,100 | 35,700 | 32,000 | 29,000 | 24,000 | 30,500 | 34,000 |
| 30 | 30,400 | 37,200 | 39,500 | 128,000 | ------- | 28,900 | *35,000 | 28,000 | 28,000 | 27,200 | 30,100 | *34,500 |
| 31 | 29,700 | ------- | 41,500 | 147,000 | ------- | 28,700 | ------- | 29,000 | ------- | *27,200 | 30,300 | ------- |
| Total | 872,100 | 928,000 | ‡1,202.3 | ‡1,421.8 | ‡3,763.1 | ‡1,357 | ‡1,114.4 | 930,200 | 879,800 | 757,600 | 815,300 | 975,500 |
| Mean | 28,130 | 30,930 | 38,780 | 45,860 | 134,400 | 43,770 | 37,150 | 30,010 | 29,330 | 24,440 | 26,300 | 32,520 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 159,000 Min 4,600 Mean 33,840 Cfsm 1.55 In. 21.13
Water year 1956-57: Max 216,000 Min 10,200 Mean 41,140 Cfsm 1.89 In. 25.62

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--No gage-height record at base or auxiliary gages Nov. 3-13, Dec. 15-30, Jan. 3 to Feb. 2, May 11-31, June 8 to July 2, Sept. 16-30; discharge estimated on basis of records at Hales Bar Dam.

## Sequatchie River near Whitwell, Tenn.

Location.--Lat 35°12'22", long 85°29'48", on right bank 15 ft downstream from highway bridge, 1½ miles east of Whitwell, Marion County, 3 miles upstream from bridge on State Highway 27, and 4½ miles downstream from Griffith Creek.

Drainage area.--384 sq mi.

Records available.--December 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 632.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1936 (levels by Tennessee Valley Authority). Prior to Sept. 18, 1927, staff gage at same site at datum 0.03 ft higher. Sept. 18, 1927, to Oct. 31, 1929, staff gage and Nov. 1, 1929, to Sept. 30, 1930, wire-weight gage, at bridge 15 ft upstream at present datum.

Average discharge.--36 years (1921-57), 725 cfs.

Extremes.--Maximum discharge during year, 17,600 cfs Feb. 1 (gage height, 16.00 ft); minimum, 33 cfs Sept. 5-8 (gage height, 0.60 ft).
1920-57: Maximum discharge, 21,400 cfs Jan. 5, 1949 (gage height, 16.55 ft); minimum, 16 cfs Sept. 6-21, 27, 28, 1925.

Remarks.--Records good. Prior to 1950, some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 603: 1922(M). WSP 758: 1929(M). WSP 823: Drainage area. WSP 1033: 1943(M). WSP 1386: 1921-22, 1923-25(M), 1927-28(M), 1930(M), 1933(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 14-19, 29-30)

Oct. 1 to Feb. 1

| | | | |
|---|---|---|---|
| 0.71 | 47 | 10.0 | 3,000 |
| 1.0 | 69 | 12.0 | 4,120 |
| 1.5 | 125 | 13.0 | 5,200 |
| 2.0 | 209 | 14.0 | 7,220 |
| 3.0 | 482 | 14.5 | 9,000 |
| 6.0 | 1,510 | 15.8 | 16,300 |

Feb. 2 to Sept. 30

| | | | |
|---|---|---|---|
| 0.60 | 33 | 2.0 | 209 |
| 1.0 | 63 | 3.0 | 482 |
| 1.5 | 120 | | |

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *47 | *79 | 92 | 568 | 15,800 | *2,110 | 492 | 495 | 169 | *167 | 57 | 36 |
| 2 | 47 | 85 | 88 | 508 | *15,300 | 1,690 | 918 | 437 | 150 | 175 | 57 | 36 |
| 3 | 50 | 144 | *86 | 460 | 9,180 | 1,440 | 949 | 492 | 142 | 144 | 53 | *35 |
| 4 | 397 | 137 | 84 | 508 | 5,730 | 1,230 | 2,140 | 536 | 135 | 128 | 54 | 36 |
| 5 | 409 | 115 | 81 | 1,110 | 3,930 | 1,070 | 4,740 | 418 | 135 | 117 | 57 | 33 |
| 6 | 315 | 103 | 79 | 1,210 | 3,170 | 955 | 4,240 | 366 | 142 | 108 | 52 | 33 |
| 7 | 191 | 96 | 78 | 1,040 | 3,610 | 962 | 2,900 | 323 | 142 | 103 | 48 | 33 |
| 8 | 140 | 90 | 76 | 857 | 3,940 | 1,380 | *3,060 | 297 | 230 | 97 | 46 | 34 |
| 9 | 112 | 84 | 75 | 765 | 4,170 | 1,480 | 6,940 | 274 | 222 | 93 | 45 | 44 |
| 10 | 99 | 85 | 72 | 697 | 3,960 | 1,310 | 3,980 | 260 | 248 | 88 | 44 | 86 |
| 11 | 89 | 84 | 71 | 609 | 3,100 | 1,150 | 2,290 | 257 | 334 | 83 | 44 | 55 |
| 12 | 83 | 81 | 136 | 552 | 2,290 | 1,090 | 1,650 | 253 | 346 | 79 | 47 | 89 |
| 13 | 77 | 78 | 3,540 | 524 | 1,760 | 1,040 | 1,300 | 238 | 302 | 76 | 44 | 111 |
| 14 | 74 | 76 | 14,000 | 492 | 1,430 | 962 | 1,060 | 233 | 236 | 74 | 42 | 211 |
| 15 | 69 | 74 | *10,900 | 463 | 1,210 | 884 | 911 | 238 | 198 | 76 | 43 | 615 |
| 16 | 67 | 94 | 6,630 | 440 | 1,140 | 799 | 806 | 255 | 177 | 107 | 44 | 418 |
| 17 | 65 | 107 | 3,350 | 406 | 1,030 | 728 | 724 | 229 | 159 | 79 | 52 | 643 |
| 18 | 63 | 110 | 1,790 | 374 | 942 | 694 | 666 | 222 | 149 | 124 | 65 | 546 |
| 19 | 63 | 114 | 1,230 | 348 | 1,100 | 687 | 619 | 241 | 138 | 101 | 50 | 383 |
| 20 | 62 | 109 | 921 | 326 | 1,680 | 639 | 572 | 227 | 130 | 93 | 49 | 265 |
| 21 | 62 | 114 | 938 | 318 | 1,540 | 598 | 540 | 218 | 123 | 77 | 47 | 213 |
| 22 | 69 | 131 | 1,680 | 343 | 1,290 | 602 | 609 | 203 | 122 | 73 | 46 | 180 |
| 23 | 69 | 125 | 2,220 | 1,160 | 1,080 | 598 | 670 | 203 | 117 | 69 | 45 | 205 |
| 24 | 64 | 125 | 2,240 | 1,260 | 945 | 572 | 707 | 257 | 120 | 68 | 44 | 209 |
| 25 | 66 | 122 | 1,770 | 1,240 | 881 | 592 | 666 | 274 | 142 | 78 | 44 | 233 |
| 26 | 74 | 118 | 1,370 | 1,070 | 2,300 | 605 | 588 | 262 | 144 | 68 | 43 | 190 |
| 27 | 69 | 111 | 1,060 | 1,500 | 3,160 | 588 | 521 | 227 | 135 | 62 | 41 | 159 |
| 28 | 66 | 105 | 904 | 3,210 | 2,750 | 559 | 476 | 209 | 132 | 60 | 39 | 147 |
| 29 | 64 | 101 | 796 | 6,260 | - | 530 | 440 | 186 | 149 | 58 | 38 | 326 |
| 30 | 64 | 97 | 697 | 6,460 | ------- | 501 | *466 | 177 | 154 | 58 | 37 | *552 |
| 31 | 69 | ------- | 626 | 7,340 | ------- | 472 | ------- | *186 | ------- | *57 | 36 | ------- |
| Total | 3,255 | 3,094 | 57,680 | 42,418 | 98,418 | 28,517 | 46,640 | 8,693 | 5,222 | 2,840 | 1,453 | 6,156 |
| Mean | 105 | 103 | 1,861 | 1,368 | 3,515 | 920 | 1,555 | 280 | 174 | 91.6 | 46.9 | 205 |
| Cfsm | 0.273 | 0.268 | 4.85 | 3.56 | 9.15 | 2.40 | 4.05 | 0.729 | 0.453 | 0.239 | 0.122 | 0.534 |
| In. | 0.32 | 0.30 | 5.59 | 4.11 | 9.53 | 2.76 | 4.52 | 0.84 | 0.51 | 0.28 | 0.14 | 0.60 |

Calendar year 1956: Max 14,000 Min 47 Mean 874 Cfsm 2.28 In. 31.01
Water year 1956-57: Max 15,800 Min 33 Mean 834 Cfsm 2.17 In. 29.50

Peak discharge (base, 5,500 cfs).--Dec. 14 (1 p.m.) 14,600 cfs (15.54 ft); Feb. 1 (10:30 p.m.) 17,600 cfs (16.00 ft); Apr. 9 (8 a.m.) 7,910 cfs (14.22 ft).
* Discharge measurement made on this day.

## Paint Rock River near Woodville, Ala.

Location.--Lat 34°37'27", long 86°18'23", in NW¼ sec. 10, T. 5 S., R. 3 E., on left bank 20 ft downstream from bridge on U. S. Highway 72, 1,000 ft downstream from Southern Railway bridge, 2 miles west of Woodville, 4.1 miles (revised) upstream from Little Paint Creek, and at mile 26.6.

Drainage area.--320 sq mi.

Records available.--December 1935 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 570.95 ft above mean sea level, datum of 1929. Dec. 23, 1935, to Jan. 16, 1938, staff gage and Jan. 17, 1938, to July 24, 1940, water-stage recorder, at site 20 ft upstream at same datum.

Average discharge.--21 years (1936-57), 622 cfs.

Extremes.--Maximum discharge during year, 25,900 cfs Feb. 1 (gage height, 20.16 ft); minimum, 7.8 cfs Oct. 19, 20 (gage height, 0.35 ft); minimum gage height, 0.27 ft Sept. 7, 8. 1935-57: Maximum discharge, 31,300 cfs Dec. 28, 1942; maximum gage height, 20.84 ft Jan. 5, 1949; minimum discharge, 1.3 cfs Oct. 21, 1954 (gage height, 0.28 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 5-9, 16, Nov. 28 to Dec. 4, Mar. 29 to Apr. 2, July 1, 2; rate of change in stage used as a factor Dec. 13-16, 23, 24, Jan. 5-7, Jan. 28 to Feb. 10, Feb. 26-28, Apr. 4-7, 9-11)

Oct. 1 to Jan. 31

| | | | |
|---|---|---|---|
| 0.35 | 7.8 | 1.5 | 74 |
| .5 | 12 | 2.0 | 123 |
| 1.0 | 40 | 4.0 | 400 |

Note.--Same as following table above 4.0 ft.

Feb. 1 to Sept. 30

| | | | |
|---|---|---|---|
| 0.27 | 11 | 11.0 | 2,290 |
| .5 | 17 | 14.0 | 3,620 |
| 1.0 | 37 | 16.0 | 5,050 |
| 1.5 | 65 | 17.0 | 6,650 |
| 2.0 | 108 | 18.0 | 10,000 |
| 3.0 | 230 | 19.0 | 16,300 |
| 4.0 | 400 | 20.0 | 24,500 |
| 8.0 | 1,320 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | *15 | 23 | 231 | 24,300 | 1,200 | *404 | *167 | 147 | *233 | *19 | 12 |
| 2 | *14 | 15 | 21 | 202 | 16,200 | 954 | 533 | 154 | 101 | 170 | 18 | *12 |
| 3 | 12 | 14 | 20 | 178 | 6,880 | 766 | 615 | 143 | 78 | 129 | 17 | 12 |
| 4 | 12 | 17 | 19 | 326 | 4,420 | 641 | 1,280 | 133 | 64 | 102 | 17 | 12 |
| 5 | 12 | 23 | 18 | 2,290 | 3,450 | 558 | 3,570 | 122 | 57 | 84 | 19 | 12 |
| 6 | 11 | 20 | 18 | 3,000 | 3,060 | 495 | 4,240 | 110 | 54 | 68 | 17 | 12 |
| 7 | 11 | 20 | 17 | 1,500 | 3,320 | 497 | 2,460 | 101 | 51 | 60 | 20 | 11 |
| 8 | 10 | 21 | 17 | 796 | 3,460 | 971 | 1,400 | 94 | 68 | 52 | 18 | 12 |
| 9 | 9.7 | 18 | 16 | 591 | 2,570 | 1,050 | 2,440 | 87 | 100 | 46 | 21 | 13 |
| 10 | 9.4 | 18 | 16 | 487 | 2,050 | 793 | 2,810 | 90 | 182 | 42 | 21 | 12 |
| 11 | 8.8 | 18 | 15 | 413 | 1,480 | 676 | 1,540 | 114 | 619 | 38 | 19 | 13 |
| 12 | 8.5 | 18 | 282 | 356 | 1,100 | 743 | 939 | 134 | 230 | 34 | 17 | 13 |
| 13 | 8.5 | 18 | 2,340 | 328 | 846 | 1,050 | 727 | 118 | a150 | 32 | 16 | 15 |
| 14 | 8.5 | 17 | 6,210 | 305 | 679 | 887 | 584 | 99 | a100 | 30 | 15 | 20 |
| 15 | 8.8 | 16 | 5,840 | 277 | 569 | 734 | 487 | 90 | a75 | 30 | 16 | 28 |
| 16 | 8.5 | 30 | 3,060 | 256 | 839 | 619 | 424 | 215 | a65 | 32 | 18 | 41 |
| 17 | 8.1 | 52 | 1,260 | 232 | 1,140 | 525 | 378 | 190 | a60 | 28 | 18 | 83 |
| 18 | 8.1 | 87 | 481 | 211 | 816 | 479 | 344 | 145 | a55 | 44 | 16 | 69 |
| 19 | 7.8 | 75 | 335 | 192 | 716 | 473 | 312 | 111 | 50 | 57 | 51 | 61 |
| 20 | 7.8 | 54 | 277 | 178 | 1,120 | 447 | 283 | 96 | 47 | 47 | 40 | 54 |
| 21 | 8.8 | 45 | 390 | *167 | 1,040 | 396 | 265 | 94 | 43 | 39 | 31 | 44 |
| 22 | 9.0 | 39 | 1,090 | 171 | 777 | 408 | 387 | 92 | 44 | 34 | 27 | 38 |
| 23 | 9.7 | 36 | 2,330 | 420 | 632 | 475 | 307 | 91 | 43 | 30 | 23 | 33 |
| 24 | 11 | 36 | 2,290 | 887 | 536 | 461 | 300 | 167 | 44 | 29 | 20 | 29 |
| 25 | 11 | 42 | 1,240 | 672 | 495 | 643 | 273 | 141 | 49 | 29 | 18 | 27 |
| 26 | 14 | 42 | 734 | 703 | 1,830 | 935 | 244 | 105 | 97 | 34 | 16 | 25 |
| 27 | 14 | 36 | 536 | 935 | 2,970 | 734 | 219 | *90 | 110 | 28 | 15 | 22 |
| 28 | 14 | 32 | 422 | 2,590 | *1,860 | 604 | 202 | 79 | 93 | 24 | 14 | 22 |
| 29 | 15 | 27 | 353 | 4,400 | - | 522 | 187 | 73 | 615 | 22 | 13 | 33 |
| 30 | 14 | *24 | 300 | 5,970 | -------- | 471 | 177 | 156 | 551 | 21 | 13 | 60 |
| 31 | 14 | -------- | *261 | *6,340 | -------- | 426 | -------- | 226 | -------- | 19 | 12 | -------- |
| Total | 333.0 | 925 | 30,231 | 35,604 | 89,155 | 20,633 | 28,241 | 3,828 | 4,042 | 1,667 | 615 | 850 |
| Mean | 10.7 | 30.8 | 975 | 1,149 | 3,184 | 666 | 941 | 123 | 135 | 53.8 | 19.8 | 28.3 |
| Cfsm | 0.033 | 0.096 | 3.05 | 3.59 | 9.95 | 2.08 | 2.94 | 0.384 | 0.422 | 0.168 | 0.062 | 0.088 |
| In. | 0.04 | 0.11 | 3.51 | 4.14 | 10.36 | 2.40 | 3.28 | 0.44 | 0.47 | 0.19 | 0.07 | 0.10 |

Calendar year 1956: Max 17,700 Min 7.8 Mean 659 Cfsm 2.06 In. 28.02
Water year 1956-57: Max 24,300 Min 7.8 Mean 592 Cfsm 1.85 In. 25.11

Peak discharge (base, 6,000 cfs).--Dec. 14 (7 p.m.) 8,360 cfs (17.59 ft); Feb. 1 (1 to 2 p.m.) 25,900 cfs (20.16 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Flint River near Chase, Ala.

Location.--Lat 34°49'08", long 86°28'52", in SW¼ sec. 36, T. 2 S., R. 1 E., on left bank 250 ft downstream from Nashville, Chattanooga & St. Louis Railway bridge, a quarter of a mile downstream from highway bridge, a third of a mile downstream from Brier Fork, and 5 miles northeast of Chase.

Drainage area.--342 sq mi.

Records available.--May 1930 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 640.37 ft above mean sea level, datum of 1929. Prior to May 18, 1934, staff gage at railway bridge 250 ft upstream at same datum.

Average discharge.--27 years, 515 cfs.

Extremes.--Maximum discharge during year, 25,900 cfs Feb. 1 (gage height, 19.7 ft); minimum, 65 cfs Aug. 8; minimum gage height, 0.96 ft Sept. 7.
1930-57: Maximum discharge, 42,000 cfs Jan. 21, 1954 (gage height, 25.00 ft); minimum, 44 cfs Sept. 20, 27, 30, 1931; minimum gage height, 0.82 ft Sept. 3, 27, 1954.
Flood in September 1929 reached a stage of 25.0 ft, from floodmarks (discharge, 42,000 cfs, from rating curve extended above 27,000 cfs).

Remarks.--Records good above 200 cfs and fair below. Some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1936(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 59 | 8.0 | 4,120 |
| 1.2 | 136 | 12.0 | 8,050 |
| 1.5 | 226 | 15.0 | 12,400 |
| 2.0 | 406 | 19.0 | 23,800 |
| 4.0 | 1,400 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 78 | *124 | 93 | 255 | 22,000 | 822 | *339 | 214 | 139 | *214 | 72 | 76 |
| 2 | *80 | 106 | *88 | 239 | 9,000 | 702 | 343 | 208 | 130 | 184 | 70 | 76 |
| 3 | 93 | 88 | 90 | 226 | 2,630 | 607 | 444 | 211 | 127 | 169 | 70 | 76 |
| 4 | 121 | 80 | 90 | 622 | 2,760 | 552 | 394 | 208 | 124 | 154 | 70 | 76 |
| 5 | 109 | 80 | 88 | 1,860 | 3,040 | 510 | 1,430 | 190 | 127 | 139 | 124 | 76 |
| 6 | 90 | 83 | 88 | 822 | 1,860 | 524 | 1,240 | 178 | 127 | 130 | 85 | 74 |
| 7 | 80 | 101 | 88 | 607 | 1,740 | 1,350 | 678 | 172 | 202 | 118 | 76 | 74 |
| 8 | 78 | 96 | 88 | 483 | 1,370 | 1,800 | 524 | 166 | 351 | 115 | 70 | 76 |
| 9 | 76 | 98 | 88 | 419 | 1,800 | 1,020 | 1,820 | 166 | 283 | 112 | 67 | 88 |
| 10 | 74 | 93 | 88 | 390 | 1,340 | 774 | 3,190 | 169 | 285 | 101 | 67 | 88 |
| 11 | 76 | 88 | 88 | 347 | 1,020 | 678 | 1,070 | *181 | 223 | 98 | 67 | 93 |
| 12 | 76 | 85 | 712 | 321 | 822 | 774 | 726 | 178 | 172 | *93 | 118 | 101 |
| 13 | 78 | 83 | 5,540 | 310 | 726 | 774 | 584 | 172 | 151 | 93 | 130 | 176 |
| 14 | 76 | 88 | 4,460 | 289 | 654 | 630 | 497 | 160 | 148 | 90 | 106 | 774 |
| 15 | 76 | 83 | 1,620 | 275 | 726 | 547 | 440 | 211 | 133 | 98 | 90 | 226 |
| 16 | 74 | 101 | 750 | 265 | 1,680 | 479 | 398 | 200 | 124 | 124 | 101 | 320 |
| 17 | 74 | 98 | 529 | 242 | 920 | 440 | 370 | 160 | 112 | 118 | 93 | 187 |
| 18 | 74 | 101 | 431 | 229 | 702 | 427 | 347 | 151 | 109 | 98 | 187 | 148 |
| 19 | 74 | 96 | 398 | 223 | 1,240 | 466 | 328 | 181 | 122 | 88 | 133 | 130 |
| 20 | 76 | 96 | 358 | 220 | 1,320 | 435 | 314 | 217 | 242 | 85 | *101 | 136 |
| 21 | 90 | 98 | 347 | *226 | 846 | 398 | 292 | 178 | 142 | 87 | 93 | 145 |
| 22 | 101 | 96 | 607 | 258 | 678 | 448 | 292 | 264 | 121 | 80 | 90 | 130 |
| 23 | 98 | 96 | 920 | 607 | 607 | 457 | 317 | 328 | 115 | 80 | 88 | 124 |
| 24 | 90 | 96 | 774 | 501 | 556 | 440 | 822 | 214 | 162 | 87 | 85 | 118 |
| 25 | 85 | 96 | 543 | 444 | 556 | 774 | 427 | 184 | 422 | 78 | 85 | 106 |
| 26 | 78 | 96 | 435 | 479 | 1,860 | 607 | 324 | 303 | 169 | 78 | 85 | 101 |
| 27 | 74 | 96 | 374 | 2,360 | 1,260 | 492 | 275 | 481 | 139 | 74 | 80 | 101 |
| 28 | 78 | 93 | 328 | 3,400 | *970 | 435 | 255 | *229 | 386 | 74 | 76 | 115 |
| 29 | 78 | 93 | 306 | 4,400 | - | 390 | 236 | 178 | 618 | 74 | 76 | 169 |
| 30 | 78 | 93 | 282 | 3,620 | ------- | 362 | 226 | 160 | 272 | 72 | 76 | 205 |
| 31 | 96 | ------- | 272 | 10,200 | ------- | 347 | ------- | 148 | ------- | 72 | 76 | ------- |
| Total | 2,579 | 2,821 | 20,963 | 35,139 | 64,683 | 19,461 | 18,942 | 6,360 | 5,977 | 3,263 | 2,807 | 4,385 |
| Mean | 83.2 | 94.0 | 676 | 1,134 | 2,310 | 628 | 631 | 205 | 199 | 105 | 90.5 | 146 |
| Cfsm | 0.243 | 0.275 | 1.98 | 3.32 | 6.75 | 1.84 | 1.85 | 0.599 | 0.582 | 0.307 | 0.265 | 0.427 |
| In. | 0.28 | 0.31 | 2.28 | 3.82 | 7.03 | 2.12 | 2.06 | 0.69 | 0.65 | 0.35 | 0.31 | 0.48 |

Calendar year 1956 : Max 11,000 Min 74 Mean 502 Cfsm 1.47 In. 20.00
Water year 1956-57 : Max 22,000 Min 67 Mean 513 Cfsm 1.50 In. 20.38

Peak discharge (base, 5,000 cfs).--Dec. 13 (10 p.m.) 8,270 cfs (12.2 ft); Jan. 29 (4 a.m.) 5,900 cfs (9.9 ft); Feb. 1 (6 a.m.) 25,900 cfs (19.7 ft); Apr. 10 (4 a.m.) 5,340 cfs (9.3 ft).
* Discharge measurement made on this day.

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## Tennessee River at Whitesburg, Ala.

Location.--Lat 34°34'27", long 86°32'42", in NE¼ sec. 30, T. 5 S., R. 1 E., on right bank at Whitesburg, a quarter of a mile upstream from Aldridge Creek, a third of a mile upstream from Clement C. Clay Bridge on State Highway 38, 5½ miles downstream from Flint River, 11 miles south of Huntsville, 15½ miles downstream from Guntersville Dam, 58½ miles upstream from Wheeler Dam, and at mile 333.3.

Drainage area.--25,610 sq mi, approximately.

Records available.--October 1924 to September 1957. Prior to October 1936, published as "at Decatur." Gage-height records collected in this vicinity since 1875 (fragmentary prior to April 1909) are contained in files of Corps of Engineers and in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 549.00 ft above mean sea level, datum of 1929. Oct. 1, 1924, to Dec. 2, 1926, staff gage and Dec. 3, 1926, to Sept. 30, 1936, water-stage recorder, at site 28.3 miles downstream at datum 14.70 ft lower. Since Mar. 4, 1937, auxiliary water-stage recorder 28.3 miles downstream.

Average discharge.--32 years (1924-36, 1937-57), 42,010 cfs.

Extremes.--Maximum discharge during year, 293,000 cfs Feb. 2 (gage height, 23.93 ft); minimum daily, 1,100 cfs July 6; minimum gage height, 0.98 ft Dec. 20.
1924-36, 1937-57: Maximum discharge, that of Feb. 2, 1957; minimum daily, 700 cfs Sept. 7, 1952, Nov. 1, 1953, Aug. 1, 1954.
Maximum stage known, 31.4 ft in March 1867 present site and datum, from high-water profile by Corps of Engineers.

Remarks.--Records good. Discharge below 20,000 cfs computed on basis of records for Guntersville Dam, adjusted for storage and inflow. Since 1936, flow regulated by increasing numbers of reservoirs above station (see p. 223).

Revisions (water years).--WSP 1436: 1938-39, 1941-42.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30,600 | *25,400 | 41,200 | 49,600 | 242,000 | 88,800 | 21,000 | 31,800 | 30,600 | 33,100 | 32,800 | 15,000 |
| 2 | 29,100 | 27,700 | 29,700 | 46,200 | 288,000 | 80,500 | *27,600 | 29,500 | 21,900 | 37,400 | *37,000 | 20,700 |
| 3 | 30,100 | 40,100 | 28,200 | 41,900 | 285,000 | 79,000 | 38,000 | a36,000 | 37,600 | 28,000 | 9,200 | 33,700 |
| 4 | 29,000 | 27,000 | 28,800 | 43,000 | *278,000 | 74,100 | 33,400 | a34,000 | 29,500 | 25,600 | 9,800 | 35,100 |
| 5 | 32,100 | 30,100 | 26,100 | 54,600 | 274,000 | 62,800 | 62,200 | a34,000 | *40,600 | 34,900 | 32,700 | 34,800 |
| 6 | 28,700 | 29,000 | 26,000 | 56,200 | 267,000 | 52,700 | 74,600 | a33,000 | 41,500 | 1,100 | 30,900 | 34,100 |
| 7 | 22,700 | 29,000 | 34,200 | *56,500 | 258,000 | 51,800 | 72,400 | a30,000 | 40,600 | 1,400 | 30,700 | 13,000 |
| 8 | 27,900 | 31,300 | 23,500 | 42,200 | 251,000 | 57,200 | 75,100 | a28,000 | 40,100 | 23,500 | 24,000 | 13,000 |
| 9 | 26,000 | 33,100 | 27,300 | 35,800 | 238,000 | 58,200 | 72,200 | a25,000 | 34,700 | 35,800 | 29,600 | 30,700 |
| 10 | 28,900 | 42,700 | 35,100 | 46,100 | 230,000 | 60,400 | 62,600 | a34,000 | 35,600 | 32,200 | 11,000 | 32,700 |
| 11 | 27,000 | 36,000 | 32,600 | 42,500 | 222,000 | 58,800 | 59,500 | a32,000 | 40,700 | 33,000 | 3,600 | 34,100 |
| 12 | 23,000 | 30,800 | 36,700 | 37,300 | 213,000 | 55,300 | 58,300 | a18,000 | 42,500 | 32,000 | 34,700 | 34,000 |
| 13 | 24,500 | 31,000 | 60,400 | 41,200 | 194,000 | 54,700 | 57,800 | a33,000 | 36,800 | 16,000 | 36,900 | 34,300 |
| 14 | 22,000 | 30,700 | 96,200 | 43,000 | 173,000 | 52,200 | 52,600 | a39,000 | 42,600 | 11,000 | 34,700 | 28,100 |
| 15 | 21,000 | 28,600 | 121,000 | 41,400 | 157,000 | 51,600 | 45,700 | 32,100 | 23,000 | 31,600 | 33,400 | 32,200 |
| 16 | a23,000 | 29,000 | 117,000 | a40,000 | 145,000 | 50,800 | 29,900 | 37,600 | 21,300 | 37,300 | 26,800 | 42,800 |
| 17 | a25,000 | 36,500 | 91,200 | a39,000 | 136,000 | 49,400 | 35,900 | 33,000 | 31,100 | 42,300 | 8,200 | 51,800 |
| 18 | a24,000 | 28,900 | 69,700 | 44,400 | 130,000 | 51,200 | 42,200 | 32,200 | 41,900 | 33,800 | 8,900 | 51,400 |
| 19 | 20,000 | 28,900 | 41,200 | 42,000 | 121,000 | 52,600 | 42,500 | 22,500 | 43,000 | 7,300 | 38,000 | 51,600 |
| 20 | 21,000 | 27,200 | 22,200 | 33,100 | 119,000 | 47,100 | 38,200 | 28,500 | 38,900 | 15,000 | 37,100 | 34,300 |
| 21 | 12,000 | 29,200 | 30,600 | 25,500 | 109,000 | 45,900 | 29,100 | 40,800 | 40,400 | 14,000 | 37,800 | 21,800 |
| 22 | 34,300 | 35,900 | 35,900 | 35,400 | 99,500 | 45,400 | 25,900 | 37,800 | 9,000 | 33,000 | 35,400 | 17,000 |
| 23 | 26,400 | 35,300 | 58,000 | 46,300 | 95,300 | 37,900 | 35,900 | 31,900 | 1,300 | 38,600 | 35,400 | 35,700 |
| 24 | 42,100 | 35,400 | 68,400 | 50,200 | 87,300 | 33,500 | 43,400 | 25,200 | 24,100 | 40,800 | 12,000 | 33,500 |
| 25 | 41,400 | 37,100 | 54,300 | 49,800 | 80,700 | 40,200 | 46,200 | 26,100 | 34,200 | 35,500 | 1,600 | 33,600 |
| 26 | 39,800 | 38,600 | 48,300 | 39,800 | 76,100 | 43,600 | 47,100 | 24,500 | 41,500 | 31,600 | 33,700 | 33,000 |
| 27 | 33,700 | 37,400 | 47,700 | 43,000 | 91,500 | 46,600 | 44,300 | 26,900 | 45,100 | 8,800 | 23,900 | 33,200 |
| 28 | 20,900 | 32,600 | 49,900 | 64,900 | 92,400 | 41,900 | 43,200 | 40,900 | 44,800 | 11,000 | 35,700 | 27,400 |
| 29 | 29,000 | 36,400 | 52,100 | 111,000 | - | 35,900 | 45,500 | 30,700 | 21,300 | 30,700 | 36,300 | 31,400 |
| 30 | 26,200 | 37,400 | 46,600 | 152,000 | -------- | 33,000 | 42,500 | 23,400 | 8,600 | 39,500 | 35,400 | 35,600 |
| 31 | 24,000 | -------- | 47,900 | 177,000 | -------- | 28,800 | -------- | 29,400 | -------- | 31,400 | 17,000 | -------- |
| Total | 845,400 | 978,300 | ‡1,528 | ‡1,670.9 | ‡4,952.8 | ‡1,621.9 | ‡1,404.8 | 958,800 | 984,800 | 827,200 | 814,200 | 959,600 |
| Mean | 27,270 | 32,610 | 49,290 | 53,900 | 176,900 | 52,320 | 46,830 | 30,930 | 32,830 | 26,680 | 26,260 | 31,990 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 226,000 Min 1,300 Mean 40,070 Cfsm 1.56 In. 21.30
Water year 1956-57: Max 288,000 Min 1,100 Mean 48,070 Cfsm 1.88 In. 25.48

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records at Guntersville Dam.

## Flint Creek near Falkville, Ala.

Location.--Lat 34°22'23", long 86°56'01", in SW¼ sec. 2, T. 8 S., R. 4 W., near left bank on downstream side of highway bridge, 1.2 miles downstream from Robinson Creek, 1.5 miles west of Falkville, and 2.8 miles upstream from Cedar Creek.

Drainage area.--86.3 sq mi.

Records available.--July 1952 to September 1957.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Average discharge.--5 years, 106 cfs.

Extremes.--Maximum discharge during year, 5,070 cfs Feb. 1 (gage height, 13.3 ft); no flow Oct. 7-22, Sept. 3-8.
1952-57: Maximum discharge, 6,100 cfs Mar. 21, 1955 (gage height, 14.60 ft); no flow for many days each year.

Remarks.--Records fair except those above 1,500 cfs, which are poor.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 13 to Dec. 11, Feb. 13-15, Feb. 17 to Apr. 3, July 25 to Aug. 4)

| Oct. 1 to Jan. 31 | | | | Feb. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 0 | 4.5 | 99 | 0.6 | 0 | 3.5 | 54 |
| .8 | .1 | 6.0 | 183 | .7 | .1 | 4.5 | 99 |
| .9 | .4 | 7.0 | 255 | .8 | .2 | 6.0 | 183 |
| 1.0 | .8 | 8.0 | 361 | .9 | .4 | 7.0 | 255 |
| 1.1 | 1.4 | 9.0 | 550 | 1.0 | .8 | 8.0 | 361 |
| 1.3 | 3.1 | 10.0 | 795 | 1.1 | 1.3 | 10.0 | 645 |
| 1.6 | 6.8 | 10.5 | 970 | 1.3 | 2.8 | 10.5 | 860 |
| 2.0 | 14 | 11.0 | 1,280 | 1.6 | 7.3 | 11.0 | 1,340 |
| 2.5 | 24 | 12.0 | 2,230 | 2.0 | 15 | 12.0 | 2,730 |
| 3.5 | 54 | | | 2.5 | 25 | 13.0 | 4,530 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.1 | 0.2 | 0.8 | 52 | 4,890 | *135 | 120 | 24 | 3.6 | a104 | 4.6 | 0.2 |
| 2 | .1 | .2 | *.8 | 45 | *3,120 | 114 | *212 | 21 | 2.9 | *74 | 3.8 | .1 |
| 3 | .1 | .2 | .8 | 39 | 1,240 | 109 | 132 | 21 | 2.5 | 42 | 3.2 | 0 |
| 4 | .1 | .4 | .8 | 160 | 705 | 106 | 846 | 21 | 2.3 | 30 | 2.9 | 0 |
| 5 | .1 | .4 | .8 | 901 | *571 | 99 | *1,140 | 18 | *2.1 | 23 | *40 | 0 |
| 6 | .1 | .3 | .9 | 688 | 459 | 106 | 564 | 16 | 2.0 | 18 | 14 | 0 |
| 7 | 0 | .6 | .9 | 291 | 571 | 124 | 312 | 15 | 8.2 | 14 | 5.3 | 0 |
| 8 | 0 | .9 | .9 | 197 | 1,050 | 183 | 225 | 14 | 47 | 11 | 2.7 | 0 |
| 9 | 0 | 2.1 | 1.0 | 165 | 627 | 159 | 272 | 13 | 30 | 8.7 | 1.7 | *.1 |
| 10 | 0 | 1.6 | 1.0 | 138 | 487 | 147 | 171 | *13 | 25 | 6.6 | 1.2 | .1 |
| 11 | 0 | 1.1 | 1.0 | 106 | 301 | 135 | 141 | 35 | 16 | 5.2 | .8 | .2 |
| 12 | 0 | .8 | 79 | 94 | 218 | 204 | 116 | 26 | 11 | 3.8 | .7 | 1.1 |
| 13 | 0 | .6 | 428 | 86 | 190 | 183 | 99 | 19 | 7.6 | 3.1 | .5 | 24 |
| 14 | 0 | .5 | 745 | 76 | 165 | 165 | 84 | 17 | 5.9 | 3.3 | .4 | 287 |
| 15 | 0 | .3 | 294 | 69 | 147 | 150 | 72 | 16 | 4.2 | 6.3 | .3 | 94 |
| 16 | 0 | 2.7 | 114 | 63 | 239 | 124 | 63 | 16 | 3.3 | 36 | .3 | 28 |
| 17 | 0 | 3.2 | 72 | a54 | 165 | 114 | 57 | 14 | 2.5 | 22 | .2 | 23 |
| 18 | 0 | 3.3 | 54 | a50 | 141 | 112 | 57 | 11 | 3.7 | 13 | 15 | 18 |
| 19 | 0 | 2.3 | 44 | a48 | 171 | 119 | 52 | 18 | 20 | 8.7 | 24 | 23 |
| 20 | 0 | 1.6 | 39 | a46 | 159 | 99 | 46 | 20 | 3.6 | 6.4 | 9.2 | 92 |
| 21 | 0 | 1.6 | 69 | a45 | 132 | 86 | 44 | 14 | 2.4 | 4.6 | 4.1 | 104 |
| 22 | 0 | 1.4 | 245 | *50 | 122 | 106 | 40 | 11 | 1.8 | 3.2 | 2.2 | 52 |
| 23 | .6 | 1.4 | 766 | 72 | 109 | 102 | 36 | 9.0 | 1.5 | 2.4 | 1.4 | 21 |
| 24 | 1.0 | 1.5 | 747 | 57 | 104 | 106 | 34 | 9.2 | 16 | 34 | 1.0 | 24 |
| 25 | .6 | 1.5 | 304 | 163 | 112 | 197 | 30 | 8.5 | 63 | 43 | .8 | 20 |
| 26 | .4 | 1.5 | 171 | 225 | 183 | 150 | 26 | 8.0 | 18 | 18 | .5 | 16 |
| 27 | .3 | 1.5 | 129 | *218 | 150 | 126 | 24 | 8.5 | 9.8 | 12 | .4 | 14 |
| 28 | .3 | 1.2 | 106 | 272 | 138 | 114 | 23 | 7.1 | 29 | 9.0 | .3 | 19 |
| 29 | *.1 | .9 | 89 | 646 | - | 104 | 23 | 5.9 | a112 | 7.1 | .2 | 67 |
| 30 | .1 | .8 | 69 | 1,020 | ------- | 94 | 34 | 5.2 | 36 | 5.6 | .2 | 63 |
| 31 | .2 | ------- | 59 | 1,730 | ------- | 84 | ------- | 4.1 | ------- | 4.7 | .2 | ------- |
| Total | 4.2 | 36.6 | 4,632.7 | 7,866 | 16,666 | 3,956 | 5,095 | 458.5 | 492.9 | 582.7 | 142.1 | 990.8 |
| Mean | 0.14 | 1.22 | 149 | 254 | 595 | 128 | 170 | 14.8 | 16.4 | 18.8 | 4.58 | 33.0 |
| Cfsm | 0.0016 | 0.014 | 1.73 | 2.94 | 6.89 | 1.48 | 1.97 | 0.171 | 0.190 | 0.218 | 0.053 | 0.382 |
| In. | 0.002 | 0.02 | 2.00 | 3.39 | 7.18 | 1.70 | 2.20 | 0.20 | 0.21 | 0.25 | 0.06 | 0.43 |

Calendar year 1956: Max 1,700 Min 0 Mean 98.9 Cfsm 1.15 In. 15.61
Water year 1956-57: Max 4,890 Min 0 Mean 112 Cfsm 1.30 In. 17.64

Peak discharge (base, 2,000 cfs).--Feb. 1 (6 a.m.) 5,070 cfs (13.3 ft); Apr. 4 (9:30 a.m.) 2,100 cfs (11.6 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of normal recession and knowledge of the stream.

## West Fork Flint Creek near Oakville, Ala.

Location.--Lat 34°28'35", long 87°08'30", in SW¼ sec. 35, T. 6 S., R. 6 W., on left bank at upstream side of bridge on county highway, 0.9 mile east of Five Points, 0.9 mile upstream from Shoal Creek, 1¼ miles downstream from McDaniel Branch, and 2¾ miles northeast of Oakville.

Drainage area.--87.6 sq mi.

Records available.--August 1952 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 576.59 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 105 cfs.

Extremes.--Maximum discharge during year, 4,210 cfs Feb. 1 (gage height, 21.3 ft); no flow Oct. 17-19.

1952-57: Maximum discharge, that of Feb. 1, 1957; no flow for many days in most years.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 1336 | 1954 | Jan. 22, 1954 | 3,540 | 19.75 |
| 1386 | 1955 | Mar. 22, 1955 | 3,760 | 20.28 |
| 1436 | 1956 | Feb. 4, 1956 | 3,160 | 18.9 |

Remarks.--Records good except those below 10 cfs and those for period of no gage-height record, which are fair.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in water years 1954-55, superseding those published in WSP 1336 and 1386, are given herewith:

Jan. 22, 1954..... 3,120
Jan. 23, 1954..... 2,430
Mar. 22, 1955..... 3,280

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| January 1954..... | 12,739.5 | 3,120 | 5.3 | 411 | 4.69 | 5.41 |
| Water year 1953-54..... | - | 3,120 | 0 | 63.6 | .726 | 9.85 |
| Calendar year 1954..... | - | 3,120 | 0 | 79.2 | .904 | 12.27 |
| March 1955..... | 11,410 | 3,280 | 71 | 368 | 4.20 | 4.84 |
| Water year 1954-55..... | - | 3,280 | 0 | 110 | 1.26 | 17.04 |
| Calendar year 1955..... | - | 3,280 | 0 | 95.2 | 1.09 | 14.76 |

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0 | 0.3 | 1.2 | 0.7 | 14 | 3.0 | 278 | 16.0 | 2,120 |
| .1 | .2 | .4 | 2.7 | 1.0 | 33 | 6.0 | 538 | 21.0 | 4,080 |
| .2 | .5 | .5 | 4.7 | 1.5 | 83 | 11.0 | 1,090 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.3 | 7.2 | 10 | 82 | 3,850 | *148 | 116 | 30 | 7.6 | *206 | 5.9 | a0.7 |
| 2 | .5 | 7.6 | *9.5 | 71 | *3,280 | 131 | 137 | 28 | 6.7 | 202 | 4.4 | a.6 |
| 3 | 1.0 | 5.9 | 8.5 | 66 | 1,690 | 122 | *105 | 33 | 5.9 | 74 | 3.9 | a.6 |
| 4 | 1.3 | 5.1 | 8.0 | 223 | 725 | 115 | 461 | 32 | 5.9 | 48 | 3.3 | a.5 |
| 5 | 1.6 | 4.7 | 7.6 | 610 | 455 | 106 | 538 | 25 | 31 | 35 | *3.0 | a.5 |
| 6 | .9 | 4.4 | 7.2 | 431 | 366 | 136 | 272 | 22 | *27 | 25 | 2.5 | a.4 |
| 7 | .7 | 17 | 6.7 | 267 | 391 | 320 | 187 | 20 | 140 | 20 | 2.4 | a.4 |
| 8 | .7 | 40 | 6.3 | 194 | 357 | 391 | 291 | 19 | 38 | 16 | 2.2 | a.4 |
| 9 | .6 | 19 | 5.9 | 163 | 289 | 278 | 431 | 18 | 122 | 14 | 1.8 | *a20 |
| 10 | .5 | 15 | 5.5 | 145 | 250 | 220 | 232 | *18 | 87 | 11 | 1.6 | 15 |
| 11 | .5 | 13 | 5.5 | 120 | 207 | 187 | 180 | 21 | 46 | 8.5 | 1.3 | 6.3 |
| 12 | .4 | 12 | 287 | 106 | 173 | 238 | 148 | 19 | 35 | 7.2 | 1.3 | 13 |
| 13 | .4 | 10 | *1,300 | 99 | 154 | 200 | 126 | 16 | 27 | 5.5 | 1.2 | 476 |
| 14 | .4 | 9.0 | 1,700 | 90 | *138 | 166 | 106 | 14 | 22 | 4.7 | 1.1 | 797 |
| 15 | .3 | 8.0 | 1,160 | 82 | 133 | 147 | 93 | 14 | 19 | 4.4 | .9 | 366 |
| 16 | .2 | 28 | 478 | 76 | 226 | 126 | 86 | 12 | 16 | 9.0 | .8 | 220 |
| 17 | 0 | 34 | 238 | 66 | 156 | 113 | 80 | 10 | 14 | 206 | 5.2 | 116 |
| 18 | 0 | 21 | 187 | 60 | 131 | 110 | 79 | 9.5 | 13 | 26 | 58 | 86 |
| 19 | 0 | 17 | 151 | 56 | 328 | 115 | 71 | 49 | 22 | 66 | 39 | 115 |
| 20 | .2 | 16 | 133 | 55 | 320 | 99 | 64 | 44 | 13 | 24 | 11 | 157 |
| 21 | 49 | 16 | 126 | 56 | 214 | 92 | 61 | 23 | 11 | 16 | 5.9 | 278 |
| 22 | 37 | 20 | 193 | *74 | 173 | 119 | 73 | 18 | 9.0 | 13 | 3.9 | 238 |
| 23 | 15 | 18 | 447 | 97 | 148 | 106 | 60 | 18 | 8.0 | 12 | 3.2 | 124 |
| 24 | 10 | 17 | 348 | 74 | 134 | 140 | 53 | 14 | 8.5 | 87 | 2.7 | 90 |
| 25 | 6.7 | 16 | 226 | 273 | 141 | 320 | 47 | 14 | 10 | 24 | 2.2 | 73 |
| 26 | 5.1 | 14 | 180 | 289 | 200 | 207 | 40 | 20 | 9.0 | 16 | 1.8 | 59 |
| 27 | 4.4 | 14 | 148 | 310 | 180 | 162 | 38 | 21 | 10 | 13 | 1.6 | 53 |
| 28 | 3.7 | 12 | 131 | *400 | 163 | 134 | 36 | 16 | 14 | 12 | 1.2 | 73 |
| 29 | *3.3 | 12 | 115 | 1,020 | - | 119 | 37 | 12 | 36 | 10 | 1.0 | 187 |
| 30 | 3.3 | 11 | 100 | 1,140 | ------- | 108 | 33 | 10 | 39 | 8.5 | .9 | 158 |
| 31 | 3.9 | -------- | 91 | 1,850 | ------- | 99 | -------- | 9.5 | -------- | 7.2 | .8 | ------ |
| Total | 151.9 | 443.9 | 7,819.7 | 8,645 | 14,972 | 5,074 | 4,281 | 629.0 | 852.6 | 1,231.0 | 176.0 | 3,724.4 |
| Mean | 4.90 | 14.8 | 252 | 279 | 535 | 164 | 143 | 20.3 | 28.4 | 39.7 | 5.68 | 124 |
| Cfsm | 0.056 | 0.169 | 2.88 | 3.18 | 6.11 | 1.87 | 1.63 | 0.232 | 0.324 | 0.453 | 0.065 | 1.42 |
| In. | 0.06 | 0.19 | 3.32 | 3.67 | 6.36 | 2.15 | 1.82 | 0.27 | 0.36 | 0.52 | 0.07 | 1.58 |

Calendar year 1956: Max 2,700 Min 0 Mean 128 Cfsm 1.46 In. 19.83
Water year 1956-57: Max 3,850 Min 0 Mean 132 Cfsm 1.51 In. 20.37

Peak discharge (base, 2,000 cfs).--Feb. 1 (8 p.m.) 4,210 cfs (21.3 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

## Elk River near Pelham, Tenn.

Location.--Lat 35°17'48", long 85°52'12", on right bank at downstream side of bridge on U. S. Highway 41, 1.1 miles southeast of Pelham, Grundy County, and 1.8 miles upstream from Caldwell Creek.

Drainage area.--65.6 sq mi.

Records available.--November 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 981.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years (1952-57), 125 cfs.

Extremes.--Maximum discharge during year, 4,950 cfs Feb. 1 (gage height, 12.02 ft); minimum daily, 1.3 cfs Dec. 6-11; minimum gage height, 1.78 ft Sept. 1, 2.
1951-57: Maximum discharge, that of Feb. 1, 1957; minimum, 1.0 cfs Sept. 27, 28, 1954; minimum gage height, that of Sept. 1, 2, 1957.

Remarks.--Records good above 5 cfs and fair below.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-10, 14-16, Nov. 5-17, 20, Dec. 7-12, Aug. 23 to Sept. 13)

| | | | |
|---|---|---|---|
| 2.0 | 1.3 | 3.5 | 92 |
| 2.1 | 2.3 | 8.0 | 745 |
| 2.2 | 4.0 | 9.0 | 1,020 |
| 2.3 | 6.7 | 10.0 | 1,840 |
| 2.6 | 20 | 11.7 | 4,380 |
| 3.0 | 46 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.1 | *2.5 | 1.5 | 49 | *4,300 | 227 | 85 | 68 | 80 | 32 | 2.3 | 1.7 |
| 2 | 2.1 | 2.2 | 1.5 | 39 | 2,160 | 190 | 183 | 58 | 60 | 24 | 2.2 | 1.7 |
| 3 | 3.0 | 2.0 | 1.5 | 34 | 816 | 163 | 156 | 80 | 42 | 19 | 2.1 | 1.7 |
| 4 | 5.1 | 1.9 | 1.4 | 118 | 609 | 138 | 542 | 69 | 37 | 16 | 3.0 | 1.6 |
| 5 | 3.0 | 1.9 | 1.4 | 538 | 681 | 123 | 864 | 53 | 32 | 14 | 3.3 | 1.6 |
| 6 | 2.1 | 2.6 | *1.3 | 359 | 564 | 116 | 525 | 43 | 28 | 11 | 2.3 | 1.6 |
| 7 | 2.0 | 3.2 | 1.3 | 230 | 820 | 220 | 306 | 36 | 33 | 9.5 | 2.1 | 1.5 |
| 8 | 1.9 | 2.8 | 1.3 | 170 | 735 | 366 | 2,150 | 32 | 47 | 7.9 | 2.0 | 1.7 |
| 9 | *1.8 | 2.6 | 1.3 | 135 | 707 | 283 | 1,410 | *29 | 60 | 6.4 | 1.9 | 2.3 |
| 10 | 1.8 | 2.5 | 1.3 | 114 | 532 | 219 | *578 | 27 | *185 | 5.9 | 1.9 | 2.8 |
| 11 | 1.8 | 2.3 | 1.3 | 91 | 394 | 185 | 330 | 33 | 109 | 5.1 | 1.8 | 3.3 |
| 12 | 1.8 | 2.3 | 42 | 79 | 279 | 198 | 232 | 36 | 69 | 4.5 | 1.8 | 5.1 |
| 13 | 1.8 | 2.3 | 1,420 | 73 | 216 | *204 | 181 | 27 | 45 | 4.3 | 2.2 | 11 |
| 14 | 1.8 | *2.3 | 1,560 | 64 | 174 | 176 | 149 | 29 | 32 | 4.0 | 2.6 | 22 |
| 15 | 1.8 | 2.2 | 644 | 58 | 156 | 149 | 125 | 105 | 27 | 4.5 | 3.8 | 153 |
| 16 | *1.8 | 3.2 | 271 | 57 | 213 | 125 | 109 | 94 | 21 | 5.1 | 3.3 | 80 |
| 17 | 1.7 | 2.8 | 162 | 48 | 181 | 110 | 95 | 69 | 18 | 5.1 | 3.3 | *102 |
| 18 | 1.7 | 2.3 | 109 | 39 | 156 | 101 | 84 | 51 | 19 | 4.8 | 4.5 | 47 |
| 19 | 1.7 | 2.1 | 88 | 34 | 202 | 104 | 78 | 52 | 16 | 4.5 | 3.8 | 26 |
| 20 | 2.0 | 2.8 | 70 | 32 | 253 | 92 | 70 | 110 | 14 | 4.0 | 3.2 | 18 |
| 21 | 2.1 | 2.5 | 70 | *35 | 212 | 80 | 67 | 91 | 12 | 3.8 | 3.0 | 13 |
| 22 | 2.3 | 2.2 | 142 | 50 | 173 | 90 | 98 | 104 | 12 | 3.7 | 2.6 | 9.5 |
| 23 | 2.1 | *1.9 | 309 | 211 | 141 | 99 | 108 | 253 | 11 | *3.5 | *2.4 | 6.2 |
| 24 | 1.8 | 1.8 | 328 | 226 | 123 | 89 | 356 | 174 | 11 | 3.7 | 2.3 | 5.6 |
| 25 | 1.7 | 1.7 | 218 | 192 | 120 | 124 | 213 | 114 | 23 | 3.5 | 2.2 | 5.1 |
| 26 | 1.7 | 1.8 | 155 | 192 | 286 | 132 | 148 | 88 | 21 | 3.3 | 2.1 | 3.8 |
| 27 | 1.7 | 1.7 | 119 | 299 | 278 | 120 | 110 | 120 | 15 | 3.2 | 2.0 | 2.8 |
| 28 | 1.7 | 1.6 | 95 | 1,760 | 250 | 107 | 89 | 88 | 15 | 3.2 | 1.9 | 2.6 |
| 29 | 1.7 | 1.6 | 79 | 1,690 | - | 95 | 75 | 66 | 40 | 3.0 | *1.7 | 3.0 |
| 30 | 1.7 | 1.5 | 64 | *1,200 | -------- | 86 | 78 | 273 | 37 | 2.8 | 1.7 | 34 |
| 31 | 2.1 | -------- | 57 | 2,520 | -------- | 78 | -------- | 128 | -------- | 2.6 | 1.7 | -------- |
| Total | 63.4 | 67.1 | 6,017.1 | 10,736 | 15,731 | 4,589 | 9,594 | 2,600 | 1,171 | 227.9 | 77.0 | 571.2 |
| Mean | 2.05 | 2.24 | 194 | 346 | 562 | 148 | 320 | 83.9 | 39.0 | 7.35 | 2.48 | 19.0 |
| Cfsm | 0.031 | 0.034 | 2.96 | 5.27 | 8.57 | 2.26 | 4.88 | 1.28 | 0.595 | 0.112 | 0.038 | 0.290 |
| In. | 0.04 | 0.04 | 3.41 | 6.09 | 8.92 | 2.60 | 5.44 | 1.47 | 0.66 | 0.13 | 0.04 | 0.32 |

Calendar year 1956: Max 3,090 Min 1.3 Mean 128 Cfsm 1.95 In. 26.58
Water year 1956-57: Max 4,300 Min 1.3 Mean 141 Cfsm 2.15 In. 29.16

Peak discharge (base, 1,000 cfs).--Dec. 13 (8:30 p.m.) 2,640 cfs (10.63 ft); Jan. 28 (5 p.m.) 2,940 cfs (10.83 ft); Feb. 1 (1 a.m.) 4,950 cfs (12.02 ft); Apr. 5 (12:30 a.m.) 1,000 cfs (8.95 ft); Apr. 8 (2:30 p.m.) 4,400 cfs (11.71 ft).
* Discharge measurement made on this day.

## Bradley Creek near Prairie Plains, Tenn.

Location.--Lat 35°21'21", long 85°58'45", on left bank 165 ft downstream from highway bridge, 1.1 miles northwest of Prairie Plains, Coffee County, and 3.6 miles upstream from mouth.

Drainage area.--41.3 sq mi.

Records-available.--November 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 968.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years (1952-57), 64.1 cfs.

Extremes.--Maximum discharge during year, 3,550 cfs Jan. 31 (gage height, 11.58 ft), from rating curve extended as explained below; minimum, 3.3 cfs Dec. 4, 5, 6; minimum gage height, 1.18 ft Sept. 5-11.

1951-57: Maximum discharge, 4,050 cfs Mar. 22, 1955 (gage height, 11.95 ft), from rating curve extended above 2,100 cfs on basis of slope-conveyance study; minimum, 3.2 cfs Nov. 23, 24, 1954; minimum gage height, 1.01 ft Nov. 17, 18, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions (water years).--WSP 1386: 1952, 1954(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31

| | | | |
|---|---|---|---|
| 1.23 | 3.3 | 1.5 | 13 |
| 1.3 | 3.8 | 1.7 | 31 |
| 1.4 | 6.8 | | |

Note.--Same as following table above 1.7 ft.

Feb. 1 to Sept. 30

| | | | |
|---|---|---|---|
| 1.18 | 4.4 | 3.0 | 166 |
| 1.3 | 7.5 | 5.0 | 462 |
| 1.4 | 11 | 7.0 | 820 |
| 1.7 | 31 | 9.0 | 1,480 |
| 2.0 | 61 | 10.7 | 2,500 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.0 | 4.0 | 3.4 | 41 | 2,500 | 120 | 44 | 26 | 25 | 16 | 7.5 | 4.6 |
| 2 | 6.0 | 4.0 | 3.4 | 38 | 865 | 100 | 59 | 23 | 22 | 16 | 7.1 | 4.6 |
| 3 | 6.0 | 4.0 | 3.4 | 35 | 384 | 90 | 47 | 22 | 21 | 14 | 7.1 | 4.6 |
| 4 | 13 | 3.8 | 3.3 | 61 | 433 | 85 | 141 | 21 | 20 | 14 | 8.6 | 4.6 |
| 5 | 9.2 | 3.8 | 3.3 | 115 | 368 | 80 | 116 | 20 | 20 | 14 | 9.2 | 4.4 |
| 6 | 8.2 | 3.8 | *3.4 | 74 | 382 | 75 | 76 | 19 | 29 | 13 | 7.5 | 4.4 |
| 7 | 7.7 | 3.8 | 3.4 | 64 | 371 | 115 | 62 | 19 | 22 | 12 | 7.1 | 4.4 |
| 8 | 7.2 | 3.8 | 3.4 | 57 | 321 | 180 | 230 | 19 | 24 | 12 | 6.7 | 4.4 |
| 9 | *6.8 | 3.8 | 3.4 | 53 | 300 | 140 | 148 | *19 | 22 | 12 | 6.7 | 4.4 |
| 10 | 6.0 | 3.7 | 3.4 | 50 | 250 | 110 | *103 | 19 | *22 | 11 | 6.7 | 4.4 |
| 11 | 5.6 | 3.6 | 3.4 | 45 | 170 | 95 | 85 | 20 | 21 | 11 | 6.4 | 4.4 |
| 12 | 5.3 | 3.6 | 56 | 43 | 140 | 100 | 74 | 20 | 21 | 10 | 6.4 | 5.0 |
| 13 | 5.3 | 3.5 | 778 | 41 | 110 | *99 | 66 | 19 | 20 | 10 | 6.4 | 38 |
| 14 | 5.0 | *3.5 | 353 | 37 | 95 | 87 | 58 | 21 | 27 | 10 | 6.1 | 31 |
| 15 | 5.0 | 3.5 | 183 | 36 | 85 | 78 | 50 | 21 | 20 | 10 | 6.1 | 15 |
| 16 | *4.7 | 3.5 | 112 | 35 | 110 | 71 | 47 | 19 | 19 | 9.6 | 6.1 | 13 |
| 17 | 4.7 | 3.5 | 87 | 32 | 100 | 67 | 43 | 19 | 19 | 9.2 | 7.1 | *12 |
| 18 | 4.7 | 3.5 | 74 | 29 | 85 | 65 | 41 | 18 | 17 | 9.2 | 5.8 | 12 |
| 19 | 4.7 | 3.5 | 63 | 27 | 105 | 68 | 38 | 24 | 17 | 8.9 | 5.8 | 11 |
| 20 | 5.0 | 3.5 | 56 | 26 | 125 | 59 | 34 | 22 | 16 | 8.6 | 5.6 | 11 |
| 21 | 5.0 | 3.5 | 53 | *30 | 110 | 56 | 33 | 20 | 16 | 8.2 | 5.6 | 11 |
| 22 | 5.0 | 3.5 | 143 | 38 | 95 | 61 | 36 | 60 | 16 | 8.2 | 5.6 | 10 |
| 23 | 5.0 | *3.5 | 201 | 105 | 85 | 57 | 36 | 46 | 29 | *8.2 | *5.6 | 9.6 |
| 24 | 4.7 | 3.5 | 136 | 68 | 80 | 53 | 37 | 27 | 22 | 7.8 | 5.6 | 9.2 |
| 25 | 4.7 | 3.5 | 101 | 68 | 75 | 71 | 31 | 22 | 20 | 7.5 | 5.6 | 8.9 |
| 26 | 4.4 | 3.5 | 83 | 66 | 145 | 61 | 28 | 49 | 19 | 7.5 | 5.4 | 8.9 |
| 27 | 4.4 | 3.5 | 73 | 280 | 140 | 54 | 26 | 40 | 19 | 7.5 | 5.4 | 8.6 |
| 28 | 4.2 | 3.5 | 66 | *1,350 | 125 | 49 | 25 | 28 | 18 | 7.5 | 5.2 | 7.8 |
| 29 | 4.2 | 3.4 | 58 | 698 | - | 46 | 37 | 37 | 19 | 7.5 | 5.0 | 8.6 |
| 30 | 4.0 | 3.4 | 51 | *548 | -------- | 43 | 30 | 39 | 17 | 7.5 | 4.8 | 9.2 |
| 31 | 4.2 | -------- | 46 | *1,720 | -------- | 40 | -------- | 28 | -------- | 7.5 | 4.8 | -------- |
| Total | 175.9 | 108.5 | 2,810.2 | 5,910 | 8,154 | 2,475 | 1,881 | 806 | 619 | 315.4 | 194.6 | 289.0 |
| Mean | 5.67 | 3.62 | 90.7 | 191 | 291 | 79.8 | 62.7 | 26.0 | 20.6 | 10.2 | 6.28 | 9.63 |
| Cfsm | 0.137 | 0.088 | 2.20 | 4.62 | 7.05 | 1.93 | 1.52 | 0.630 | 0.499 | 0.247 | 0.152 | 0.233 |
| In. | 0.16 | 0.10 | 2.53 | 5.32 | 7.34 | 2.23 | 1.69 | 0.73 | 0.56 | 0.23 | 0.18 | 0.26 |

Calendar year 1956: Max 1,580 Min 3.3 Mean 69.4 Cfsm 1.68 In. 22.89
Water year 1956-57: Max 2,500 Min 3.3 Mean 65.0 Cfsm 1.57 In. 21.38

Peak discharge (base, 600 cfs).--Dec. 13 (11 a.m.) 1,220 cfs (8.29 ft); Jan. 28 (11 a.m.) 2,050 cfs (10.20 ft); Jan. 31 (12 p.m.) 3,550 cfs (11.58 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 9 to Mar. 12; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Elk River at Estill Springs, Tenn.

Location.--Lat 35°15'30", long 86°07'17", in center of stream on downstream side of pier of old bridge, 250 ft upstream from bridge on U. S. Highway 41A, 400 ft downstream from Nashville, Chattanooga & St. Louis Railway bridge, three-quarters of a mile southeast of Estill Springs, Franklin County, 1.0 mile upstream from Taylor Creek, and 1.4 miles upstream from Rock Creek.

Drainage area.--282 sq mi.

Records available.--December 1920 to September 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 859.10 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1926, staff gage at site 100 ft downstream at same datum.

Average discharge.--36 years (1921-57), 476 cfs (unadjusted).

Extremes.--Maximum discharge during year, 12,500 cfs Feb. 1 (gage height, 16.50 ft); minimum, 22 cfs Nov. 29 to Dec. 7 (gage height, 1.25 ft).

1920-57: Maximum discharge, 22,900 cfs Mar. 23, 1929 (gage height, 20.2 ft), from rating curve extended above 18,000 cfs; minimum, 10 cfs Oct. 9, 10, 1925; minimum daily, 11 cfs Oct. 10, 1925; minimum gage height, 0.4 ft for several days in September, October, November 1924, October 1925.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Prior to August 1949, diurnal fluctuation caused by powerplant upstream. Flow regulated by Woods Reservoir since 1952 (see p. 227).

Revisions (water years).--WSP 603: 1922(M). WSP 803: 1929(M), 1934-35.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 3-22)

| | | | |
|---|---|---|---|
| 1.23 | 22 | 3.0 | 495 |
| 1.4 | 37 | 5.0 | 1,610 |
| 1.6 | 61 | 7.0 | 3,000 |
| 1.8 | 93 | 10.0 | 5,480 |
| 2.2 | 198 | 14.7 | 10,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 41 | 97 | 22 | 251 | *10,400 | 1,030 | 824 | a85 | 237 | 91 | 36 | 115 |
| 2 | 41 | 55 | 22 | 204 | 8,490 | 770 | 824 | a80 | 234 | 91 | 35 | 106 |
| 3 | 256 | 37 | 22 | 148 | 7,110 | 740 | 830 | *79 | 186 | 89 | 33 | 95 |
| 4 | 450 | 36 | 22 | 462 | 4,770 | 576 | 972 | 77 | 111 | 88 | 38 | 88 |
| 5 | 265 | 36 | 22 | 1,180 | 2,740 | 495 | a1,000 | 72 | 108 | 89 | 38 | 84 |
| 6 | 168 | 37 | *22 | 1,180 | 2,680 | 490 | a1,600 | 77 | 160 | 140 | 38 | 125 |
| 7 | 135 | 37 | 23 | 1,350 | 2,690 | 630 | a1,500 | 126 | 149 | 183 | 36 | 234 |
| 8 | 61 | 37 | 25 | 813 | 3,320 | 1,040 | a1,000 | 67 | 74 | 168 | 33 | 237 |
| 9 | *59 | 34 | 31 | 176 | 3,740 | 1,160 | a4,800 | 65 | 248 | 154 | 32 | 220 |
| 10 | 59 | 30 | 44 | 65 | 2,500 | 1,160 | *a4,200 | 65 | *468 | 143 | 32 | 201 |
| 11 | 59 | 30 | 60 | 86 | 1,700 | 830 | 1,020 | 64 | 376 | 111 | 31 | 168 |
| 12 | 59 | 28 | 520 | 374 | 1,190 | 635 | 640 | 62 | 120 | 69 | 31 | 138 |
| 13 | 59 | 28 | 3,410 | 328 | 928 | 626 | 464 | 61 | 135 | 68 | 31 | 356 |
| 14 | 59 | *28 | *3,520 | 540 | 818 | *626 | 459 | 62 | 189 | 68 | 29 | 500 |
| 15 | 69 | 27 | 2,680 | 775 | 608 | 621 | 442 | 62 | 198 | 68 | 29 | 500 |
| 16 | 108 | 28 | 1,130 | 770 | 830 | 621 | 430 | 61 | 195 | 72 | 29 | 500 |
| 17 | 138 | 27 | 290 | 718 | 956 | 513 | 780 | 61 | 189 | 68 | 31 | 418 |
| 18 | 154 | 27 | 227 | 69 | 950 | 442 | a900 | 67 | 189 | 68 | 32 | 300 |
| 19 | 154 | 27 | 244 | 194 | 1,060 | 582 | a400 | 69 | 189 | 68 | 36 | 300 |
| 20 | 174 | 26 | 464 | 621 | 1,140 | 1,030 | a150 | 65 | 135 | 65 | 36 | 300 |
| 21 | 251 | 28 | 426 | *621 | 830 | 382 | a100 | 79 | 75 | 62 | 47 | 300 |
| 22 | 290 | 49 | 428 | 665 | 567 | 382 | a120 | 262 | 75 | 60 | 97 | 276 |
| 23 | 168 | 55 | 950 | 760 | 680 | 370 | a100 | 775 | 104 | 55 | *201 | 130 |
| 24 | 97 | 36 | 645 | 755 | 710 | 464 | a200 | 923 | 293 | *54 | 183 | 61 |
| 25 | 59 | 32 | 725 | 760 | 567 | 613 | a150 | 796 | 265 | 53 | 171 | 36 |
| 26 | 57 | 28 | 598 | 695 | 720 | 422 | a120 | 680 | 108 | 49 | 151 | 32 |
| 27 | 42 | 25 | 442 | 715 | 967 | 450 | a100 | 399 | 82 | 39 | 130 | 31 |
| 28 | 37 | 23 | 363 | 3,370 | 1,100 | 508 | a90 | 75 | 172 | 39 | 118 | 30 |
| 29 | 37 | 22 | 262 | 4,900 | - | 526 | a90 | 100 | 105 | 39 | 106 | 60 |
| 30 | 35 | 22 | 251 | *4,780 | ------- | 715 | a90 | 352 | 88 | 37 | 113 | 88 |
| 31 | 43 | ------- | 251 | 5,260 | ------- | 808 | ------- | 672 | ------- | 39 | 125 | ------- |
| Total | 3,684 | 1,032 | 18,141 | 33,585 | 64,761 | 20,257 | 24,395 | 6,540 | 5,257 | 2,480 | 2,108 | 6,029 |
| Mean | 119 | 34.4 | 585 | 1,083 | 2,313 | 653 | 813 | 211 | 175 | 80.0 | 68.0 | 201 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 4,940 | Min 22 | Mean 441 | Mean 456 | Cfsm 1.62 | In. 22.00 |
| Water year 1956-57: | Max 10,400 | Min 22 | Mean 516 | Mean 511 | Cfsm 1.81 | In. 24.59 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Woods Reservoir.
a No gage-height record; discharge estimated on basis of records for Woods Reservoir, weather records, and records for stations on nearby streams.

## West Fork Mulberry Creek at Mulberry, Tenn.

Location.--Lat 35°12'34", long 86°27'46", near right bank on downstream side of old bridge, 1,000 ft downstream from State Highway 50, 0.2 mile southwest of Mulberry, Lincoln County, and 1.7 miles upstream from confluence with East Fork.

Drainage area.--41.2 sq mi.

Records available.--December 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 687.72 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,780 cfs Sept. 15 (gage height, 11.71 ft); no flow Oct. 1, 2, Aug. 3 to Sept. 12.

1953-57: Maximum discharge, 8,140 cfs (revised) Dec. 4, 1955 (gage height, 13.28 ft), from rating curve extended above 5,600 cfs on basis of contracted-opening determination at gage height 14.8 ft; no flow at times each year.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 1336 | 1954 | Apr. 16, 1954 | 6,400 | 12.57 |
| 1386 | 1955 | Mar. 21, 1955 | 7,790 | 13.15 |
| 1436 | 1956 | Dec. 4, 1955 | 8,140 | 13.28 |

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Revisions.--The supplemental peak discharge for the water year 1956 has been revised as shown below, superseding figure published in WSP 1436.

Revised peak discharge.--1955-56: Apr. 4 (2:30 a.m.) 6,360 cfs (12.55 ft).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 21 to Dec. 12)

| | | | |
|---|---|---|---|
| 0.9 | 0 | 1.8 | 33 |
| 1.0 | .09 | 2.0 | 51 |
| 1.1 | .3 | 2.5 | 129 |
| 1.2 | 1.8 | 3.5 | 337 |
| 1.3 | 4.8 | 5.0 | 816 |
| 1.5 | 13 | 9.2 | 2,470 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 7.1 | 1.0 | 13 | 2,250 | 98 | 39 | 20 | 3.0 | 1.4 | 0.02 | 0 |
| 2 | 0 | 3.3 | 1.2 | 11 | 735 | 76 | 32 | *18 | 2.4 | .8 | .01 | 0 |
| 3 | .04 | 1.4 | .8 | *9.9 | 248 | 63 | 31 | 16 | 2.1 | .7 | 0 | 0 |
| 4 | 2.8 | 1.2 | .8 | 375 | 542 | *52 | *578 | 13 | *1.8 | .5 | 0 | 0 |
| 5 | 1.8 | 1.0 | 1.0 | 225 | 298 | 48 | 194 | 11 | 2.1 | .5 | 0 | *0 |
| 6 | 1.8 | 1.0 | *1.0 | 115 | 334 | 47 | 115 | 10 | 39 | .5 | *0 | 0 |
| 7 | .3 | 1.0 | 1.0 | 71 | 256 | 361 | 79 | 9.0 | 14 | .4 | 0 | 0 |
| 8 | .2 | 1.0 | 1.0 | 49 | 187 | 198 | 636 | 8.2 | 5.9 | .3 | 0 | 0 |
| 9 | .1 | *1.0 | 1.0 | 39 | 156 | 142 | 181 | 7.8 | 9.6 | .2 | 0 | 0 |
| 10 | .09 | 1.0 | .8 | 31 | 147 | 104 | 122 | 8.6 | 12 | .2 | 0 | 0 |
| 11 | *.07 | .8 | .8 | 23 | 107 | 80 | 87 | 8.6 | 13 | .1 | 0 | 0 |
| 12 | .06 | .8 | 348 | 21 | 80 | 124 | 64 | 7.5 | 7.5 | .09 | 0 | 0 |
| 13 | .05 | 1.0 | a2,000 | 19 | 66 | 87 | 49 | 6.7 | 5.6 | .07 | 0 | 392 |
| 14 | .05 | .8 | a700 | 17 | 53 | 69 | 40 | 5.6 | 3.6 | .07 | 0 | 75 |
| 15 | .06 | 1.0 | 154 | 16 | 145 | 59 | 35 | 5.6 | 2.7 | .06 | 0 | 1,100 |
| 16 | .06 | 1.2 | 73 | 14 | 142 | 48 | 31 | 4.8 | 2.1 | .4 | 0 | 243 |
| 17 | .06 | 1.4 | 43 | 12 | 88 | 45 | 28 | 4.2 | 1.4 | .2 | 0 | 101 |
| 18 | .03 | 1.8 | 30 | 11 | 70 | 43 | 25 | 4.2 | 1.0 | *.8 | 0 | 46 |
| 19 | .03 | 1.2 | 22 | 9.9 | 418 | 40 | 23 | 4.8 | .7 | .6 | 0 | 28 |
| 20 | .03 | 1.2 | 20 | 9.5 | 216 | 33 | 21 | 5.6 | 1.0 | .3 | 0 | 25 |
| 21 | .1 | 2.1 | 37 | 15 | 138 | 34 | 532 | 4.5 | 1.4 | .3 | 0 | 27 |
| 22 | 2.1 | 4.5 | 158 | 126 | 93 | 39 | 200 | 17 | .7 | .2 | 0 | 97 |
| 23 | 4.2 | 3.0 | 346 | 212 | 67 | 35 | 221 | 13 | .7 | .2 | 0 | a80 |
| 24 | 3.6 | 1.8 | 133 | 95 | 55 | 52 | 140 | 6.7 | 1.0 | .1 | 0 | a50 |
| 25 | 3.0 | 1.0 | 71 | 100 | 207 | 82 | 70 | 5.2 | 1.8 | .1 | 0 | a35 |
| 26 | 2.4 | 1.0 | 46 | 87 | 303 | 62 | 46 | 12 | .8 | .08 | 0 | a25 |
| 27 | 1.8 | 1.0 | 35 | 785 | 170 | 50 | 35 | 11 | .7 | .06 | 0 | a20 |
| 28 | 1.2 | 1.0 | 28 | 2,000 | 129 | 43 | 30 | 6.3 | 4.5 | .05 | 0 | a35 |
| 29 | 1.0 | 1.0 | 23 | 651 | - | 39 | 42 | 4.8 | 5.6 | .04 | 0 | a50 |
| 30 | 1.0 | 1.0 | 18 | 400 | -------- | 35 | 24 | 3.9 | 2.7 | .03 | 0 | a30 |
| 31 | 4.8 | -------- | 15 | *2,450 | -------- | 32 | -------- | 3.3 | -------- | .02 | 0 | -------- |
| Total | 32.83 | 47.6 | 4,310.4 | 8,012.3 | 7,700 | 2,320 | 3,750 | 266.9 | 150.4 | 9.37 | 0.03 | 2,459 |
| Mean | 1.06 | 1.59 | 139 | 258 | 275 | 74.8 | 125 | 8.61 | 5.01 | 0.302 | 0.001 | 82.0 |
| Cfsm | 0.026 | 0.039 | 3.37 | 6.26 | 6.67 | 1.82 | 3.03 | 0.209 | 0.122 | 0.0073 | 0.000024 | 1.99 |
| In. | 0.03 | 0.04 | 3.89 | 7.23 | 6.95 | 2.09 | 3.39 | 0.24 | 0.14 | 0.008 | 0.00003 | 2.22 |

Calendar year 1956: Max 2,000 Min 0 Mean 73.2 Cfsm 1.78 In. 24.20
Water year 1956-57: Max 2,450 Min 0 Mean 79.6 Cfsm 1.93 In. 26.23

Peak discharge (base, 3,500 cfs).--Dec. 13 (time and discharge unknown); Jan. 28 (5 a.m.) 3,750 cfs (10.93 ft); Jan. 31 (6 p.m.) 4,540 cfs (11.55 ft); Apr. 21 (9 p.m.) 4,420 cfs (11.47 ft); Sept. 15 (8 p.m.) 4,780 cfs (11.71 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## Elk River above Fayetteville, Tenn.

Location.--Lat 35°08'04", long 86°32'23", on right bank 100 ft downstream from highway bridge, 1¾ miles southeast of Fayetteville, Lincoln County, 4 miles upstream from Norris Creek, and at mile 93.9.

Drainage area.--827 sq mi.

Records available.--August 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 650.58 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 1,375 cfs (unadjusted).

Extremes.--Maximum discharge during year, 33,700 cfs Feb. 2 (gage height, 26.54 ft); minimum, 134 cfs Aug. 23 (gage height, 1.51 ft); minimum gage height, 1.38 ft Dec. 7, 8, 9, 10, 11.
1934-57: Maximum discharge, 35,500 cfs Jan. 5, 1949 (gage height, 27.14 ft); minimum, 111 cfs Sept. 17, 1954; minimum gage height, 1.02 ft Oct. 27, 1941.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952 (see p. 227).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 14, 15, May 28 to June 20)

| Oct. 1 to Dec. 14 | | | | Dec. 15 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.38 | 139 | 10.0 | 5,050 | 1.52 | 137 | 15.0 | 9,050 |
| 2.0 | 350 | 15.0 | 9,050 | 2.0 | 323 | 19.0 | 13,300 |
| 3.0 | 800 | 16.4 | 10,400 | 4.0 | 1,250 | 22.0 | 20,200 |
| 6.0 | 2,410 | | | 10.0 | 5,050 | 25.8 | 31,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 196 | 228 | 145 | 664 | 29,000 | 2,810 | a1,500 | 1,290 | 1,120 | 392 | 169 | 195 |
| 2 | 166 | 210 | 145 | 620 | 31,300 | 2,550 | a1,400 | *1,080 | 710 | 367 | 162 | 199 |
| 3 | 234 | 224 | 148 | *581 | a21,000 | 2,170 | a1,300 | 980 | 646 | 351 | 154 | 192 |
| 4 | 417 | 186 | *145 | 1,050 | 14,700 | *2,000 | *3,700 | 810 | *598 | 339 | 179 | 188 |
| 5 | 568 | 166 | 142 | 2,410 | 12,800 | 1,760 | 3,150 | 705 | 535 | 311 | 418 | *180 |
| 6 | 470 | 160 | 142 | 2,530 | 8,930 | 1,610 | 2,980 | 642 | 573 | 307 | *299 | 162 |
| 7 | 326 | *169 | 142 | 2,180 | 6,470 | 2,590 | 2,720 | 594 | 577 | 339 | 192 | 154 |
| 8 | 276 | 189 | 142 | 2,070 | 5,930 | 3,470 | 6,320 | 598 | 628 | 363 | 169 | 219 |
| 9 | *252 | 178 | 142 | 1,510 | 6,090 | 3,170 | 8,460 | 552 | 565 | 347 | 154 | 291 |
| 10 | 196 | 166 | 139 | 885 | 6,710 | 2,790 | 8,100 | 518 | 1,200 | 327 | 148 | 315 |
| 11 | 189 | 160 | 142 | 664 | 5,120 | 2,510 | 5,220 | 531 | 865 | 315 | 148 | 307 |
| 12 | 175 | 157 | 1,050 | 573 | 3,650 | 2,330 | 2,570 | 510 | 905 | 303 | 151 | 315 |
| 13 | 172 | 151 | a6,400 | 845 | 2,910 | 2,070 | 1,960 | 476 | 723 | 267 | 169 | 1,090 |
| 14 | 172 | 148 | *10,400 | 775 | 2,490 | 1,920 | 1,600 | 455 | 510 | 259 | 215 | 1,160 |
| 15 | 169 | 145 | 9,270 | 925 | 2,430 | 1,760 | 1,480 | 493 | 531 | 271 | 173 | 1,870 |
| 16 | 172 | 157 | 4,880 | 1,180 | 2,740 | 1,640 | 1,390 | 455 | 514 | 311 | 162 | 1,760 |
| 17 | 169 | 166 | 2,420 | 1,140 | 2,550 | 1,560 | 1,280 | 430 | 493 | 291 | 151 | 1,020 |
| 18 | 206 | 160 | 1,290 | 1,100 | 2,400 | 1,470 | 1,550 | 405 | 476 | *275 | 227 | 736 |
| 19 | 234 | 151 | 1,020 | 527 | 3,130 | 1,350 | 1,380 | 489 | 493 | 291 | 199 | 539 |
| 20 | 245 | 145 | 900 | 392 | 3,410 | 1,390 | 980 | 660 | 514 | 279 | 165 | 489 |
| 21 | 256 | 154 | 1,000 | 925 | 3,010 | 1,770 | 915 | 468 | 430 | 259 | 151 | 741 |
| 22 | 308 | 172 | 1,450 | 1,110 | 2,420 | 1,200 | 2,400 | 573 | 376 | 243 | 137 | 539 |
| 23 | 382 | 178 | 2,250 | 1,910 | 1,990 | 1,170 | 1,340 | 850 | 359 | 259 | 144 | 565 |
| 24 | 336 | 172 | 2,460 | 1,780 | 1,940 | 1,180 | 1,870 | 1,180 | 384 | 283 | 211 | 413 |
| 25 | 252 | 189 | 1,800 | 1,660 | 1,990 | 1,460 | 1,640 | 1,320 | 586 | 243 | 279 | 295 |
| 26 | 210 | 178 | 1,570 | 1,610 | 3,310 | a1,400 | 1,150 | 1,370 | 514 | 219 | 267 | 223 |
| 27 | 178 | 166 | 1,360 | 3,390 | 3,120 | a1,300 | 960 | 1,650 | 401 | 203 | 251 | 173 |
| 28 | 169 | 160 | 1,120 | 9,260 | 2,800 | a1,200 | 850 | 1,160 | 443 | 188 | 231 | 235 |
| 29 | 160 | 151 | 1,000 | 10,800 | - | a1,200 | 1,110 | 678 | 539 | 180 | 211 | 355 |
| 30 | 148 | 148 | 785 | *11,900 | ------- | a1,100 | 1,550 | 598 | 539 | 176 | 199 | 355 |
| 31 | 175 | ------- | 710 | *14,500 | ------- | a1,100 | ------- | 741 | ------- | 169 | 188 | ------- |
| Total | 7,578 | 5,084 | 54,709 | 81,466 | 194,340 | 57,000 | 72,825 | 23,261 | 17,747 | 8,719 | 6,073 | 15,275 |
| Mean | 244 | 169 | 1,765 | 2,628 | 6,941 | 1,839 | 2,428 | 750 | 592 | 281 | 196 | 509 |

| | Observed | | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max | 16,400 | Min | 139 | Mean | 1,315 | Mean | 1,330 | Cfsm | 1.61 | In. | 21.89 |
| Water year 1956-57: | Max | 31,300 | Min | 137 | Mean | 1,491 | Mean | 1,486 | Cfsm | 1.80 | In. | 24.39 |

Peak discharge (base, 8,000 cfs).--Dec. 14 (6 p.m.) 12,000 cfs (17.92 ft); Feb. 2 (1:30 a.m.) 33,700 cfs (26.54 ft); Apr. 8 (5 p.m.) 9,130 cfs (15.08 ft).

* Discharge measurement made on this day.

† Adjusted for change in contents in Woods Reservoir.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Note.--Doubtful gage-height record June 5 to July 17; discharge computed on basis of recorder graph, weather records, and records for stations on nearby streams.

## Bradshaw Creek at Frankewing, Tenn.

Location.--Lat 35°11'31", long 86°50'43", on downstream side of second pier from right abutment of bridge on U. S. Highway 64, 0.4 mile east of Frankewing, 2.2 miles downstream from Little Bradshaw Creek, and 10.5 miles east of Pulaski, Giles County.

Drainage area.--36.5 sq mi.

Records available.--November 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 655.61 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,730 cfs Jan. 31 (gage height, 12.08 ft); no flow Oct. 15-20, Aug. 27 to Sept. 11.
1954-57: Maximum discharge, 12,600 cfs Mar. 21, 1955 (gage height, 16.38 ft), from rating curve extended above 7,200 cfs on basis of contracted-opening determination of peak flow; no flow at times each year.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to June 12 | | | | June 13 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.05 | 0 | 1.7 | 15 | 1.52 | 3.7 | 2.4 | 60 | 0.97 | 0 | 1.6 | 6.5 |
| 1.1 | .05 | 2.0 | 36 | 1.6 | 5.0 | 3.0 | 140 | 1.0 | .01 | 1.8 | 17 |
| 1.2 | .6 | 2.5 | 78 | 1.7 | 7.4 | 6.0 | 728 | 1.1 | .3 | 2.4 | 64 |
| 1.3 | 2.0 | 3.0 | 138 | 1.8 | 11 | 7.0 | 1,010 | 1.2 | .7 | 2.8 | 111 |
| 1.5 | 6.5 | 4.4 | 420 | 2.0 | 23 | 9.3 | 1,940 | 1.3 | 1.4 | 3.3 | 189 |
| | | | | | | | | 1.4 | 2.4 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.02 | 2.6 | 0.6 | 14 | 1,480 | 85 | 112 | 9.2 | 5.0 | 1.3 | 0.21 | 0 |
| 2 | .02 | 1.2 | .5 | 12 | 491 | 68 | 64 | 8.8 | 4.7 | 1.0 | .1 | 0 |
| 3 | .03 | .9 | .5 | 11 | 257 | 57 | 47 | 7.8 | 4.7 | .9 | .1 | 0 |
| 4 | .04 | .6 | *.5 | 270 | 484 | 48 | 483 | 6.9 | 4.7 | .7 | .07 | 0 |
| 5 | .04 | .6 | .5 | 131 | 269 | 39 | 191 | 6.7 | 5.2 | .7 | .07 | *0 |
| 6 | .03 | .6 | .6 | 80 | 282 | 58 | 115 | 6.4 | 4.2 | .5 | **.04 | 0 |
| 7 | .03 | *1.2 | .6 | 54 | 212 | *193 | 82 | *6.2 | 4.0 | .4 | .04 | 0 |
| 8 | .02 | .8 | .6 | 41 | 186 | 125 | 259 | 5.2 | 4.0 | .4 | .04 | 0 |
| 9 | *.02 | .6 | .6 | *36 | 146 | 95 | *136 | 5.0 | 4.2 | .4 | .01 | 0 |
| 10 | .02 | .6 | .5 | 28 | 115 | 75 | 98 | 5.2 | 52 | .4 | .01 | 0 |
| 11 | .02 | .5 | .6 | 22 | 90 | 65 | 77 | 5.5 | a10 | .3 | .01 | 0 |
| 12 | .01 | .4 | 418 | 20 | 72 | 129 | 59 | 4.7 | *5.0 | .3 | .01 | 19 |
| 13 | .01 | .3 | 1,370 | 19 | 60 | 80 | 47 | 4.4 | 3.0 | .3 | .01 | 173 |
| 14 | .01 | .3 | 684 | 16 | 50 | 67 | 39 | 4.4 | 1.0 | .3 | .01 | 7.0 |
| 15 | 0 | .4 | 154 | 15 | 181 | 53 | 34 | 4.4 | 1.0 | **.5 | .01 | a150 |
| 16 | 0 | .8 | 72 | 14 | 130 | 44 | 31 | 3.9 | .8 | .5 | .01 | a50 |
| 17 | 0 | .8 | 41 | 12 | 90 | 38 | 29 | 3.7 | 1.3 | .4 | 2.3 | a20 |
| 18 | 0 | .6 | 27 | 11 | 75 | 38 | 24 | 3.7 | 1.3 | 6.1 | .5 | a10 |
| 19 | 0 | .5 | 20 | 10 | 394 | 33 | 21 | 9.4 | 1.5 | 1.0 | .2 | a6.0 |
| 20 | 0 | .5 | 19 | 11 | 187 | 26 | 20 | 5.5 | 1.2 | .5 | .07 | a5.0 |
| 21 | .2 | 1.3 | 25 | 29 | 128 | 27 | 17 | 4.2 | 1.0 | .4 | .01 | a10 |
| 22 | .6 | 2.0 | 138 | 197 | 93 | 32 | 20 | 48 | 1.0 | .3 | .01 | a20 |
| 23 | .9 | 1.5 | 192 | 154 | 72 | 26 | 16 | 11 | 1.0 | .3 | .01 | a10 |
| 24 | .6 | 1.2 | 98 | 80 | 59 | 28 | 14 | 6.2 | 1.0 | .3 | .01 | a7.0 |
| 25 | .4 | 1.0 | 60 | 90 | 166 | 49 | 12 | 5.0 | 1.1 | .2 | .01 | a4.0 |
| 26 | .4 | 1.0 | 42 | 70 | 223 | 39 | 11 | 115 | .9 | .2 | .01 | a3.0 |
| 27 | .5 | .6 | 33 | 714 | 145 | 34 | 11 | 59 | 1.0 | .2 | 0 | a2.0 |
| 28 | .4 | .6 | 28 | *1,620 | 111 | 31 | 10 | 14 | 2.1 | .2 | 0 | a30 |
| 29 | .4 | .6 | 21 | *524 | - | 29 | 11 | 9.2 | 1.9 | .2 | 0 | a40 |
| 30 | .4 | .5 | 17 | 357 | -------- | 25 | 9.2 | 7.2 | 2.2 | .2 | 0 | a20 |
| 31 | 4.8 | -------- | 15 | *1,940 | -------- | 23 | -------- | 6.2 | -------- | .3 | 0 | -------- |
| Total | 9.92 | 25.1 | 3,480.1 | 6,602 | 6,248 | 1,759 | 2,099.2 | 402.0 | 132.0 | 19.7 | 3.87 | 586.0 |
| Mean | 0.320 | 0.837 | 112 | 213 | 223 | 56.7 | 70.0 | 13.0 | 4.40 | 0.635 | 0.125 | 19.5 |
| Cfsm | 0.0088 | 0.023 | 3.07 | 5.84 | 6.11 | 1.55 | 1.92 | 0.356 | 0.121 | 0.017 | 0.0034 | 0.534 |
| In. | 0.01 | 0.03 | 3.55 | 6.73 | 6.37 | 1.79 | 2.14 | 0.41 | 0.31 | 0.02 | 0.004 | 0.60 |

Calendar year 1956 : Max 1,940 Min 0 Mean 62.5 Cfsm 1.71 In. 23.32
Water year 1956-57 : Max 1,940 Min 0 Mean 58.5 Cfsm 1.60 In. 21.78

Peak discharge (base, 2,500 cfs).--Dec. 13 (1 a.m.) 3,370 cfs (11.66 ft); Jan. 28 (6:30 a.m.) 2,920 cfs (11.05 ft); Jan. 31 (5 p.m.) 3,730 cfs (12.08 ft).
* Discharge measurement or observation of no flow made on this day.
** Field estimate made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Weakley Creek near Bodenham, Tenn.

Location.--Lat 35°15'08", long 87°10'08", on right downstream bank at wing wall of highway bridge, 1.6 miles northwest of Bodenham, 1.6 miles downstream from Muckle Creek, 4.9 miles upstream from mouth, and 8.7 miles northwest of Pulaski, Giles County.

Drainage area.--24.4 sq mi.

Records available.--July 1955 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 688.62 ft above mean sea level, datum of 1929.

Extremes.--1955: Maximum discharge during period July to September, 466 cfs July 27 (gage height, 4.43 ft); minimum, 4.4 cfs Sept. 9 (gage height, 0.89 ft).
1955-56: Maximum discharge during water year, 1,720 cfs Jan. 29 (gage height, 7.18 ft), from rating curve extended above 670 cfs; minimum, 3.8 cfs Sept. 18; minimum gage height, 0.66 ft Sept. 18, June 10-12.
1956-57: Maximum discharge during water year, 1,440 cfs Jan. 31 (gage height, 6.91 ft), from rating curve extended above 670 cfs; minimum, 4.7 cfs Aug. 31; minimum gage height, 0.72 ft Oct. 1.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Discharge, in cubic feet per second, 1955

| Day | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 7.3 | 5.2 | 9 | - | 10 | 4.5 | 17 | - | 9.7 | 4.5 | 25 | - | 5.9 | 5.5 |
| 2 | - | 7.1 | 5.0 | 10 | - | *12 | 4.8 | 18 | - | 7.3 | 4.5 | 26 | - | 5.9 | 5.4 |
| 3 | - | 6.6 | 5.0 | 11 | - | 10 | 4.8 | 19 | - | 6.4 | 4.5 | 27 | *41 | 5.7 | 5.4 |
| 4 | - | 6.4 | 5.0 | 12 | - | 8.2 | 5.2 | 20 | - | 7.3 | 4.5 | 28 | 14 | 5.4 | 5.4 |
| 5 | - | 6.2 | 5.0 | 13 | - | 7.3 | 4.7 | 21 | - | 8.2 | 4.5 | 29 | 11 | 5.2 | 5.5 |
| 6 | - | 6.2 | 4.8 | 14 | - | 6.6 | *4.5 | 22 | - | 6.9 | 4.5 | 30 | 9.2 | 5.2 | 7.1 |
| 7 | - | 6.0 | 4.8 | 15 | - | 6.4 | 4.5 | 23 | - | 6.4 | 4.7 | 31 | 8.0 | 5.2 | - |
| 8 | - | 11 | 4.8 | 16 | - | 8.9 | 4.5 | 24 | - | 6.2 | 5.7 | | | | |
| Total | | | | | | | | | | | | | - | 223.1 | 148.8 |
| Mean | | | | | | | | | | | | | - | 7.20 | 4.96 |
| Cubic feet per second per square mile | | | | | | | | | | | | | - | 0.295 | 0.203 |
| Runoff in inches | | | | | | | | | | | | | - | 0.34 | 0.23 |

Peak discharge (base, 1,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1955 to September 1956

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.4 | 6.0 | 10 | 9.7 | 126 | 58 | 28 | 25 | 13 | 20 | 6.2 | a6.0 |
| 2 | 5.9 | 5.9 | 12 | 9.7 | 273 | 64 | 28 | 24 | 12 | 17 | 9.5 | a5.0 |
| 3 | 5.7 | 5.9 | 18 | 9.7 | 533 | 62 | 28 | 24 | 10 | 14 | 8.6 | a4.5 |
| 4 | 5.5 | 6.0 | 194 | 9.4 | 625 | 62 | 47 | 25 | 10 | 12 | 7.9 | a4.5 |
| 5 | *5.5 | 6.0 | 73 | 9.2 | 245 | 56 | *31 | 25 | *9.8 | 11 | 8.9 | a4.5 |
| 6 | 5.5 | a6.0 | 45 | *9.4 | 187 | *52 | 135 | 24 | 10 | 11 | 7.6 | *7.3 |
| 7 | 5.5 | 6.0 | *34 | 9.2 | 119 | 53 | 66 | 24 | 9.8 | 9.8 | 6.5 | 7.6 |
| 8 | 5.9 | *5.9 | 27 | 8.9 | 95 | 56 | 47 | 23 | 9.4 | 9.2 | *5.3 | a6.0 |
| 9 | 5.7 | 6.2 | 23 | 8.7 | 81 | 50 | 38 | *21 | 9.4 | 14 | 5.1 | a5.0 |
| 10 | 5.5 | 7.1 | 19 | 8.7 | 75 | 50 | 32 | 20 | 9.1 | 15 | 4.9 | a4.8 |
| 11 | 5.4 | 6.9 | 17 | 8.7 | 72 | 48 | 31 | 19 | 9.1 | *11 | 4.9 | a4.5 |
| 12 | 5.5 | 23 | a16 | 8.7 | 65 | 47 | 26 | 18 | 9.1 | 9.2 | 5.1 | a4.4 |
| 13 | 5.7 | 95 | a15 | 8.4 | 62 | 48 | 25 | 17 | 9.4 | 9.2 | 4.9 | a4.3 |
| 14 | 5.5 | 125 | a15 | 8.2 | 60 | 204 | 56 | 17 | 11 | 8.9 | 5.3 | a4.2 |
| 15 | 5.5 | 24 | a14 | 8.2 | 78 | 126 | 113 | 39 | 15 | 8.9 | 9.5 | a4.2 |
| 16 | 5.5 | 39 | a14 | 8.2 | 91 | 114 | 97 | 21 | 14 | 8.2 | 7.3 | a4.1 |
| 17 | 5.5 | 25 | a13 | 8.2 | 617 | 80 | 60 | 18 | 12 | 7.3 | 6.2 | a4.0 |
| 18 | 5.5 | 20 | a12 | 10 | 471 | 61 | 54 | 17 | 10 | 6.7 | 6.2 | 3.9 |
| 19 | 5.5 | 168 | 12 | 10 | 173 | 50 | 51 | 16 | 16 | 6.7 | 6.0 | 4.1 |
| 20 | 5.5 | 42 | 11 | a10 | 108 | 45 | 44 | 16 | 284 | 6.5 | 8.6 | 4.6 |
| 21 | a5.5 | 23 | 12 | 9.7 | 88 | 40 | 38 | 15 | 84 | 6.5 | 13 | 4.9 |
| 22 | a5.5 | 19 | 14 | 9.4 | 79 | 38 | 34 | 14 | 31 | 6.5 | 11 | 5.1 |
| 23 | a5.5 | 27 | 13 | 9.4 | 77 | 38 | 32 | 13 | 24 | 6.2 | a9.0 | 5.6 |
| 24 | 5.5 | 20 | 13 | 11 | 77 | 36 | 29 | 13 | 21 | 5.8 | a8.0 | 6.7 |
| 25 | 5.5 | 19 | 12 | 11 | 77 | 36 | 28 | 12 | 105 | 5.8 | a6.0 | 5.6 |
| 26 | 5.5 | 17 | 12 | 12 | 70 | 34 | 28 | 12 | 35 | 5.6 | a5.0 | 4.9 |
| 27 | 5.7 | 16 | 12 | 12 | 66 | 33 | 26 | 12 | 40 | 5.3 | 5.1 | 4.9 |
| 28 | 7.3 | 14 | 11 | 12 | 62 | 32 | 25 | 12 | 28 | 4.9 | 11 | 4.9 |
| 29 | 7.9 | 13 | 10 | 310 | 60 | 32 | 24 | 13 | 23 | 4.9 | a9.0 | 4.9 |
| 30 | 6.2 | 12 | 10 | *482 | -------- | 31 | 24 | 12 | 21 | 5.1 | a8.0 | 4.9 |
| 31 | 6.0 | -------- | 9.7 | 146 | -------- | 31 | -------- | 12 | -------- | 5.3 | a7.0 | -------- |
| Total | 178.3 | 808.9 | 722.7 | 1,205.7 | 4,812 | 1,767 | 1,325 | 573 | 904.1 | 277.5 | 226.6 | 149.9 |
| Mean | 5.75 | 27.0 | 23.3 | 38.9 | 166 | 57.0 | 44.2 | 18.5 | 30.1 | 8.95 | 7.31 | 5.00 |
| Cfsm | 0.236 | 1.11 | 0.955 | 1.59 | 6.80 | 2.34 | 1.81 | 0.758 | 1.23 | 0.367 | 0.300 | 0.205 |
| In. | 0.27 | 1.23 | 1.10 | 1.84 | 7.33 | 2.69 | 2.02 | 0.87 | 1.38 | 0.42 | 0.35 | 0.23 |

Calendar year 1955: Max - Min - Mean - Cfsm - In. -
Water year 1955-56: Max 625 Min 3.9 Mean 35.4 Cfsm 1.45 In. 19.73

Peak discharge (base, 1,000 cfs).--Jan. 29 (8 p.m.) 1,720 cfs (7.18 ft); Feb. 4 (5 a.m.) 1,230 cfs (6.64 ft); Feb. 17 (9 p.m.) 1,190 cfs (6.58 ft); June 20 (8 p.m.) 1,590 cfs (7.06 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Weakley Creek near Bodenham, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.1 | 9.2 | 6.2 | 19 | 910 | 60 | 87 | 19 | 22 | 10 | 7.1 | 4.8 |
| 2 | 5.3 | 7.9 | 6.2 | 18 | 367 | 55 | 68 | 19 | 20 | 9.0 | 6.6 | 4.8 |
| 3 | 9.2 | 7.0 | 6.0 | 17 | 166 | 50 | 58 | 19 | 60 | 9.0 | 6.0 | 4.8 |
| 4 | 8.9 | 6.7 | 6.2 | 45 | 114 | 48 | 178 | 19 | 40 | 9.0 | 5.6 | 5.0 |
| 5 | 7.3 | 6.7 | *6.5 | 35 | 95 | 45 | 121 | 18 | 50 | 8.1 | 5.4 | *4.8 |
| 6 | 7.3 | 7.0 | 6.5 | 30 | 182 | *106 | 93 | 18 | 50 | 7.7 | *5.4 | 4.8 |
| 7 | 6.7 | 8.2 | 6.2 | 28 | 178 | 133 | 77 | *17 | 45 | 7.4 | 5.3 | 4.8 |
| 8 | 6.5 | *7.3 | 6.2 | 26 | 126 | 125 | 118 | 17 | 40 | 7.1 | 5.1 | 5.1 |
| 9 | 6.5 | 6.5 | 6.2 | *25 | 104 | 98 | 83 | 17 | 35 | 6.9 | 5.0 | 6.6 |
| 10 | *5.6 | 6.2 | 6.2 | 24 | 85 | 76 | *71 | 17 | 150 | 6.6 | 5.0 | 6.0 |
| 11 | 5.1 | 6.5 | 6.5 | 23 | 72 | 69 | 55 | 17 | 50 | 6.4 | 5.0 | 5.6 |
| 12 | 5.1 | 6.2 | 133 | 22 | 62 | 112 | 46 | 17 | *36 | 6.4 | 5.4 | 6.2 |
| 13 | 5.3 | 6.2 | *415 | 21 | 54 | 94 | 36 | 16 | 28 | 6.6 | 7.1 | 18 |
| 14 | 5.3 | 6.2 | 276 | 20 | 49 | 78 | 32 | 16 | 25 | 7.1 | 6.4 | 6.9 |
| 15 | 5.3 | 6.7 | 71 | 19 | 76 | 67 | 29 | 15 | 22 | *7.1 | 5.8 | 6.0 |
| 16 | 5.3 | 7.0 | 41 | 18 | 69 | 62 | 28 | 15 | 20 | 7.4 | 5.4 | 5.8 |
| 17 | 5.3 | 7.0 | 34 | 17 | 58 | 60 | 26 | 15 | 18 | 7.1 | 5.4 | 5.4 |
| 18 | 5.3 | 6.5 | 28 | 16 | 53 | 58 | 25 | 15 | 15 | 9.5 | 5.6 | 6.0 |
| 19 | 5.6 | 6.5 | 26 | 16 | 233 | 55 | 24 | 20 | 13 | 9.5 | 5.6 | 8.5 |
| 20 | 5.8 | 6.5 | 25 | 15 | 157 | 50 | 24 | 18 | 9.5 | 7.7 | 5.3 | 9.5 |
| 21 | 8.9 | 7.6 | 32 | 25 | 105 | 50 | 23 | 17 | 9.0 | 6.9 | 5.3 | 13 |
| 22 | 12 | 8.6 | 44 | 60 | 82 | 50 | 23 | 145 | 8.1 | 6.6 | 5.3 | 17 |
| 23 | 9.8 | 7.3 | 50 | 80 | 66 | 47 | 23 | 40 | 8.1 | 6.4 | 5.1 | 12 |
| 24 | 7.9 | 7.0 | 42 | 50 | 57 | 44 | 23 | 32 | 8.5 | 7.4 | 5.0 | 8.0 |
| 25 | 7.0 | 6.7 | 35 | 60 | 59 | 46 | 23 | 31 | 10 | 7.7 | 5.0 | 6.5 |
| 26 | 6.7 | 6.5 | 32 | 50 | 78 | 45 | 21 | 60 | 9.5 | 6.9 | 5.0 | 5.5 |
| 27 | 6.7 | 6.5 | 28 | 300 | 78 | 43 | 21 | 150 | 9.0 | 6.2 | 4.8 | 6.0 |
| 28 | 6.7 | 6.5 | 25 | 900 | 69 | 42 | 20 | 50 | 10 | 6.2 | 4.8 | 8.0 |
| 29 | 6.7 | 6.5 | 22 | *420 | - | 41 | 20 | 40 | 12 | 6.2 | 4.8 | 12 |
| 30 | 6.7 | 6.5 | 21 | 280 | -------- | 40 | 19 | 30 | 10 | 5.6 | 4.8 | 10 |
| 31 | 7.9 | -------- | 20 | 1,050 | -------- | 39 | -------- | 26 | -------- | 6.6 | 4.8 | -------- |
| Total | 208.8 | 207.7 | 1,468.9 | 3,729 | 3,804 | 1,988 | 1,495 | 965 | 842.7 | 223.3 | 168.2 | 227.4 |
| Mean | 6.74 | 6.92 | 47.4 | 120 | 136 | 64.1 | 49.8 | 31.1 | 28.1 | 7.36 | 5.43 | 7.58 |
| Cfsm | 0.276 | 0.284 | 1.94 | 4.92 | 5.57 | 2.63 | 2.04 | 1.27 | 1.15 | 0.302 | 0.223 | 0.311 |
| In. | 0.32 | 0.32 | 2.24 | 5.68 | 5.80 | 3.03 | 2.28 | 1.47 | 1.28 | 0.35 | 0.26 | 0.35 |

Calendar year 1956: Max 625 Min 3.9 Mean 35.9 Cfsm 1.47 In. 20.01
Water year 1956-57: Max 1,050 Min 4.8 Mean 42.0 Cfsm 1.72 In. 23.38

Peak discharge (base, 1,000 cfs).--Dec. 12 (10:30 p.m.) 1,110 cfs (6.47 ft); Jan. 28 (time unknown) 1,170 cfs (6.56 ft); Jan. 31 (7 a.m.) 1,440 cfs (6.91 ft); May 27 (time unknown) 1,040 cfs (6.35 ft); June 10 (time unknown) 1,220 cfs (6.62 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 26 to Jan. 8, Jan. 13-28, May 26 to June 11, Sept. 23-30; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Richland Creek near Pulaski, Tenn.

Location.--Lat 35°12'51", long 87°06'05", on right bank 1,200 ft upstream from bridge on U. S. Highway 64, 1 mile downstream from Weakley Creek, and 4 miles west of Pulaski, Giles County.

Drainage area.--366 sq mi.

Records available.--April 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 642.54 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 591 cfs.

Extremes.--Maximum discharge during year, 22,400 cfs Jan. 31 (gage height, 19.38 ft); minimum, 17 cfs Aug. 31, Sept. 1, 2, 3, 7, 8 (gage height, 0.71 ft).
1934-57: Maximum discharge, 75,000 cfs Mar. 21, 1955 (gage height, 27.49 ft), from rating curve extended above 32,000 cfs on basis of contracted-opening determination of peak flow; minimum, 7.9 cfs Sept. 11, 1954 (gage height, 0.52 ft).

Remarks.--Records good except those for periods of no gage-height record and backwater from diversion dam, which are fair.

Revisions (water years).--WSP 823: 1935-36(M), drainage area. WSP 1386: 1935-36, 1938, 1944, 1945-46(M), 1948, 1950-51(M).

Rating tables, water year 1956-57, except periods of backwater from diversion dam (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Jan. 29 | | | | Jan. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.76 | 21 | 12.0 | 4,310 | 0.72 | 18 | 12.0 | 4,280 |
| 1.3 | 90 | 15.0 | 7,050 | 1.3 | 85 | 15.0 | 6,900 |
| 2.0 | 225 | 15.5 | 7,640 | 2.0 | 200 | 15.5 | 7,620 |
| 3.0 | 500 | 16.5 | 10,000 | 3.0 | 440 | 16.5 | 9,900 |
| 6.0 | 1,620 | 17.2 | 12,800 | 6.0 | 1,620 | 17.5 | 13,200 |
| 10.0 | 3,220 | | | 10.0 | 3,220 | 18.5 | 17,900 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 66 | 41 | 255 | *17,900 | 988 | 658 | 140 | 234 | 170 | 54 | 18 |
| 2 | 22 | 56 | 41 | 218 | 8,600 | 820 | 974 | 132 | 222 | 136 | c52 | 18 |
| 3 | 38 | 44 | 41 | 196 | 3,770 | a730 | 688 | 142 | 242 | 122 | c46 | 18 |
| 4 | 43 | 40 | 40 | 499 | 2,700 | a650 | 2,230 | 128 | 258 | 106 | c43 | 18 |
| 5 | 41 | 36 | *38 | 1,220 | 2,300 | a610 | 2,270 | 119 | 276 | 98 | c40 | 19 |
| 6 | 35 | 37 | 38 | 888 | 2,320 | *1,020 | 1,420 | 109 | 240 | 89 | c36 | *18 |
| 7 | 29 | 43 | 38 | 720 | 2,820 | 1,390 | 1,020 | 101 | 222 | 82 | *c32 | 18 |
| 8 | 25 | *41 | 38 | *577 | 2,300 | 1,750 | 1,240 | *102 | 182 | 76 | 30 | 32 |
| 9 | 25 | 37 | 40 | 494 | 1,920 | 1,500 | 1,160 | 101 | 743 | 72 | 28 | 64 |
| 10 | *25 | 36 | 38 | 425 | 1,550 | 1,190 | *892 | 101 | 2,560 | 68 | 26 | 44 |
| 11 | 25 | 34 | 40 | 342 | 1,180 | 992 | 748 | 106 | 736 | 66 | 26 | 36 |
| 12 | 25 | 34 | 608 | 310 | 948 | 1,620 | 612 | 104 | 422 | 65 | 28 | 102 |
| 13 | 25 | 32 | 8,170 | 285 | 800 | 1,450 | 496 | 94 | *294 | 61 | 41 | 573 |
| 14 | 25 | 31 | *7,960 | 262 | 676 | 1,230 | 416 | 92 | 240 | 60 | 37 | 235 |
| 15 | 24 | 32 | 3,980 | 242 | 968 | 984 | 362 | 89 | 196 | 62 | 35 | 149 |
| 16 | 24 | 44 | 1,430 | 215 | 1,460 | 780 | 330 | 84 | 166 | *62 | 30 | 501 |
| 17 | 24 | 54 | 896 | 189 | 1,080 | 668 | 308 | 84 | 142 | 60 | 28 | 188 |
| 18 | 24 | 47 | 647 | 172 | 920 | 608 | 288 | 94 | 126 | 246 | 36 | 119 |
| 19 | 25 | 42 | 485 | 162 | 3,210 | 552 | 266 | 178 | 128 | 95 | 38 | 92 |
| 20 | 25 | 40 | 419 | 162 | 3,000 | 454 | 248 | 264 | 123 | 68 | 34 | 101 |
| 21 | 47 | 47 | 412 | 208 | 1,860 | 407 | 236 | 139 | 105 | 59 | 30 | 129 |
| 22 | 62 | 59 | 1,160 | 268 | 1,310 | 425 | 252 | 1,580 | 105 | 53 | 28 | 503 |
| 23 | 51 | 56 | 1,590 | 1,130 | 992 | 371 | 234 | 1,180 | 109 | 52 | 25 | 1,180 |
| 24 | 37 | 52 | 1,280 | 938 | a900 | 353 | 212 | 374 | 178 | 55 | 21 | 328 |
| 25 | 34 | 49 | 888 | 840 | a840 | 410 | 194 | 258 | 144 | 53 | 22 | 200 |
| 26 | 32 | 47 | 692 | 748 | a1,090 | 392 | 178 | 2,160 | 111 | 49 | 22 | 142 |
| 27 | 32 | 44 | 542 | 1,680 | a1,200 | 359 | 168 | 2,560 | 106 | 44 | 21 | 119 |
| 28 | 32 | 43 | 461 | 12,600 | a1,070 | 338 | 160 | 832 | 208 | 42 | 20 | 126 |
| 29 | 32 | 42 | 386 | 10,500 | - | 322 | 149 | 496 | 172 | 43 | 20 | 164 |
| 30 | 31 | 41 | 328 | *5,940 | -------- | 308 | 146 | 345 | 228 | 47 | 18 | 170 |
| 31 | 70 | -------- | 292 | 13,000 | -------- | 294 | -------- | 278 | -------- | 50 | 18 | -------- |
| Total | 1,010 | 1,306 | 33,049 | 55,685 | 69,684 | 23,965 | 18,555 | 12,586 | 9,218 | 2,411 | 965 | 5,424 |
| Mean | 32.6 | 43.5 | 1,066 | 1,796 | 2,489 | 773 | 618 | 406 | 307 | 77.8 | 31.1 | 181 |
| Cfsm | 0.089 | 0.119 | 2.91 | 4.91 | 6.80 | 2.11 | 1.69 | 1.11 | 0.839 | 0.213 | 0.085 | 0.495 |
| In. | 0.10 | 0.13 | 3.36 | 5.66 | 7.08 | 2.44 | 1.89 | 1.28 | 0.94 | 0.24 | 0.10 | 0.55 |

Calendar year 1956: Max 9,820 Min 19 Mean 539 Cfsm 1.47 In. 20.05
Water year 1956-57: Max 17,900 Min 18 Mean 641 Cfsm 1.75 In. 23.77

Peak discharge (base, 6,000 cfs).--Dec. 13 (9 p.m.) 9,860 cfs (16.46 ft); Jan. 28 (5 p.m.) 17,600 cfs (18.27 ft); Jan. 31 (9:30 p.m.) 22,400 cfs (19.38 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.
c Backwater from temporary diversion dam.

## Elk River near Prospect, Tenn.

Location.--Lat 35°01'39", long 86°56'52", on right bank 50 ft upstream from highway bridge, 1.1 miles downstream from Richland Creek, 3.2 miles east of Prospect, Giles County, 5.4 miles upstream from Ford Creek, 7.9 miles upstream from Tennessee-Alabama State line, and at mile 41.5.

Drainage area.--1,784 sq mi.

Records available.--July 1904 to February 1908, January 1919 to September 1957. Published as "near Elkmont, Ala." 1904-8, 1919-34.

Gage.--Water-stage recorder. Datum of gage is 563.29 ft above mean sea level, datum of 1929. July 1904 to February 1908 and January 1919 to March 1934, chain gage at site 11¾ miles downstream at datum 13.52 ft lower.

Average discharge.--41 years (1904-7, 1919-57), 2,999 cfs (unadjusted).

Extremes.--Maximum discharge during year, 65,600 cfs Feb. 2 (gage height, 34.85 ft); minimum, 165 cfs Aug. 24, 25 (gage height, 0.64 ft).
1904-8, 1919-57: Maximum discharge, 104,000 cfs Mar. 22, 1955 (gage height, 38.96 ft), from rating curve extended above 63,000 cfs on basis of contracted-opening determination of peak flow; minimum, 85 cfs Sept. 18-20, 1925, Sept. 11, 1931.

Remarks.--Records excellent. Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952 (see p. 227).

Revisions (water years).--WSP 523: 1904-8, 1919-20. WSP 823: Drainage area. WSP 1436: 1920-22, 1923(M), 1924, 1927, 1929, 1931-32(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.64 | 165 | 18.0 | 15,600 |
| 1.0 | 270 | 25.0 | 25,100 |
| 1.8 | 590 | 30.0 | 36,400 |
| 3.0 | 1,260 | 33.0 | 51,500 |
| 6.0 | 3,640 | 34.7 | 64,400 |
| 10.0 | 7,280 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 234 | 336 | 213 | 1,290 | 49,500 | 5,350 | 1,910 | 1,990 | 1,020 | 796 | 213 | 198 |
| 2 | 231 | 348 | 207 | 1,170 | *63,800 | 4,860 | 2,750 | 1,520 | 1,320 | 612 | 207 | 192 |
| 3 | 219 | 316 | 207 | 1,080 | 51,000 | 4,190 | 2,300 | 1,640 | 944 | 540 | 198 | 201 |
| 4 | 270 | 305 | *204 | 2,370 | 38,600 | 3,660 | 6,260 | 1,290 | 890 | 500 | 186 | 198 |
| 5 | 491 | 264 | 204 | 6,610 | 30,700 | 3,310 | 9,280 | 1,080 | 852 | 464 | 178 | *189 |
| 6 | 635 | 243 | 204 | 5,260 | 25,100 | *3,310 | 6,710 | 956 | 791 | 428 | *324 | 183 |
| 7 | 545 | *255 | 204 | 4,360 | 19,800 | 5,290 | 5,340 | *868 | 846 | 396 | 298 | 175 |
| 8 | 404 | 249 | 204 | *3,650 | 12,400 | 7,530 | 9,650 | 813 | 1,100 | 380 | 277 | 180 |
| 9 | *316 | 249 | 204 | 3,160 | 10,900 | 6,980 | *12,600 | 813 | 1,230 | 404 | 204 | 291 |
| 10 | 291 | 249 | 201 | 2,400 | 10,200 | 5,840 | 11,500 | 760 | 3,910 | 420 | 180 | 360 |
| 11 | 237 | 231 | 198 | 1,680 | 9,650 | 5,000 | 10,200 | 750 | 2,250 | 392 | 230 | 356 |
| 12 | 219 | 219 | 874 | 1,400 | 7,210 | 5,670 | 6,260 | 750 | *1,600 | 372 | 376 | 388 |
| 13 | 207 | 216 | 16,400 | 1,310 | 5,470 | 5,260 | 3,850 | 710 | 1,250 | 356 | 401 | 1,790 |
| 14 | 204 | 210 | *22,700 | 1,440 | 4,460 | 4,520 | 3,000 | 662 | 857 | 336 | 240 | 2,790 |
| 15 | 201 | 204 | 25,300 | 1,340 | 4,570 | 3,960 | 2,620 | 635 | 755 | *316 | 277 | 1,970 |
| 16 | 198 | 210 | 18,600 | 1,520 | 6,820 | 3,440 | 2,360 | 626 | 725 | 308 | 243 | 6,570 |
| 17 | 198 | 216 | 6,910 | 1,590 | 5,390 | 3,100 | 2,200 | 612 | 680 | 305 | 201 | 2,650 |
| 18 | 195 | 234 | 3,450 | 1,560 | 4,770 | 2,950 | 2,110 | 590 | 635 | 529 | 219 | 1,460 |
| 19 | 222 | 234 | 2,310 | 1,390 | 7,930 | 2,750 | 2,290 | 581 | 622 | 651 | 288 | 1,060 |
| 20 | 261 | 219 | 1,900 | 950 | 10,800 | 2,480 | 1,910 | 879 | 648 | 396 | 261 | 938 |
| 21 | 319 | 222 | 1,770 | 920 | 8,110 | 2,570 | 1,560 | 926 | 640 | 340 | 213 | 908 |
| 22 | 360 | 231 | 3,220 | 1,760 | 6,030 | 2,630 | 2,930 | 1,050 | 576 | 298 | 192 | 1,160 |
| 23 | 404 | 246 | 6,110 | 5,440 | 4,620 | 2,170 | 2,690 | 2,850 | 504 | 270 | 178 | 2,050 |
| 24 | 480 | 258 | 6,970 | 4,590 | 3,850 | 2,080 | 2,350 | 1,610 | 496 | 316 | 165 | 1,460 |
| 25 | 436 | 246 | 4,520 | 4,110 | 3,730 | 2,510 | 2,560 | 1,700 | 599 | 326 | 168 | 902 |
| 26 | 340 | 255 | 3,330 | 3,940 | 7,200 | 2,800 | 1,990 | 2,260 | 720 | 284 | 270 | 671 |
| 27 | 270 | 255 | 2,800 | 7,760 | 7,230 | 2,590 | 1,560 | 5,190 | 680 | 261 | 277 | 540 |
| 28 | 237 | 237 | 2,300 | 19,000 | 6,100 | 2,180 | 1,360 | 3,010 | 635 | 240 | 261 | 608 |
| 29 | 219 | 231 | 1,950 | 27,700 | - | 2,090 | 1,320 | 1,820 | 710 | 225 | 237 | 852 |
| 30 | 213 | 219 | 1,670 | 30,400 | ------- | 2,090 | 1,510 | 1,180 | 745 | 219 | 225 | 1,160 |
| 31 | 240 | ------- | 1,420 | 29,200 | ------- | 1,880 | ------- | 962 | ------- | 219 | 213 | ------- |
| Total | 9,296 | 7,407 | 135,754 | 180,350 | 425,940 | 115,040 | 124,930 | 41,083 | 29,230 | 11,899 | 7,400 | 32,450 |
| Mean | 300 | 247 | 4,379 | 5,818 | 15,210 | 3,711 | 4,164 | 1,325 | 974 | 384 | 239 | 1,082 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1956: | Max 35,700 | Min 195 | Mean 2,682 | Mean 2,697 | Cfsm 1.51 | In. 20.58 | |
| Water year 1956-57: | Max 63,800 | Min 165 | Mean 3,071 | Mean 3,066 | Cfsm 1.72 | In. 23.33 | |

Peak discharge (base, 17,000 cfs).--Dec. 15 (7:30 a.m.) 25,600 cfs (25.36 ft); Feb. 2 (5 to 6 a.m.) 65,600 cfs (34.85 ft).

* Discharge measurement made on this day.

† Adjusted for change in contents in Woods Reservoir.

Note.--Discharge for Jan. 16-30, Mar. 16 to Apr. 9, Apr. 11-18, May 15, 16, 19-23, computed from graph based on bihourly radio-gage readings furnished by Tennessee Valley Authority.

## Big Nance Creek at Courtland, Ala.

Location.--Lat 34°40'12", long 87°19'02", in SW¼ sec. 30, T. 4 S., R. 7 W., near right bank on downstream side of pier of bridge on State Highway 20, at Courtland, 12¾ miles upstream from mouth.

Drainage area.--166 sq mi.

Records available.--July 1935 to September 1940, March 1945 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 537.60 ft above mean sea level, datum of 1929. July 25, 1935, to Sept. 30, 1940, staff gage at same site and datum.

Average discharge.--17 years, 263 cfs.

Extremes.--Maximum discharge during year, 9,330 cfs Feb. 1 (gage height, 21.5 ft); minimum daily, 0.5 cfs Oct. 11.
1935-40, 1945-57: Maximum discharge, 12,300 cfs Jan. 7, 1950 (gage height, 22.60 ft); minimum daily, 0.4 cfs Sept. 15-17, 1954, Oct. 3-6, 12-17, 20-22, 1955; minimum gage height observed, 1.18 ft Oct. 25, 1954.

Remarks.--Records good above 30 cfs and fair below.

Revisions (water years).--WSP 1033: 1939, 1940(M). WSP 1053: 1939(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19 to Dec. 11; rate of change in stage used as a factor Dec. 13-15, Jan. 31, Feb. 1, 3, 4)

Oct. 1 to Dec. 14

| | | | |
|---|---|---|---|
| 1.23 | 0.5 | 2.0 | 65 |
| 1.3 | 2.0 | 3.0 | 188 |
| 1.4 | 6.4 | 4.0 | 350 |
| 1.5 | 14 | 6.0 | 750 |

Note.--Same as following table above 6.0 ft.

Dec. 15 to Sept. 30

| | | | |
|---|---|---|---|
| 1.22 | 0.9 | 4.0 | 340 |
| 1.3 | 2.5 | 6.0 | 750 |
| 1.4 | 6.5 | 10.0 | 1,760 |
| 1.5 | 14 | 16.0 | 3,860 |
| 2.0 | 56 | 19.0 | 5,640 |
| 3.0 | 178 | 21.0 | 8,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *2.0 | 17 | 5.8 | 83 | *7,640 | 228 | 124 | 48 | 20 | 13 | 3.7 | 3.4 |
| 2 | 3.6 | 22 | 4.8 | 72 | 8,220 | *192 | 322 | 49 | 18 | 27 | 2.8 | 3.4 |
| 3 | 3.6 | 14 | *4.4 | 64 | 4,360 | 165 | *213 | 52 | 16 | *52 | 2.0 | 3.4 |
| 4 | 4.4 | 9.8 | 4.0 | 299 | 1,600 | 154 | 604 | 53 | 17 | 23 | 2.8 | 3.1 |
| 5 | 16 | 6.4 | 4.8 | 1,540 | *850 | 144 | 1,370 | 47 | 37 | 14 | 3.1 | 2.8 |
| 6 | 7.6 | 5.8 | 5.8 | 1,230 | 640 | 296 | 540 | 42 | *42 | 8.6 | *2.8 | 2.2 |
| 7 | 3.6 | 6.4 | 7.0 | 450 | 520 | 872 | 244 | 36 | 67 | 6.0 | 2.2 | 2.2 |
| 8 | 1.7 | 14 | 9.8 | 313 | 480 | 1,180 | 470 | 33 | 54 | 4.5 | 1.6 | 3.1 |
| 9 | 1.0 | 32 | 12 | 236 | 400 | 706 | 982 | 31 | 39 | 4.1 | 2.2 | 4.1 |
| 10 | .8 | 22 | 13 | 206 | 340 | 390 | 470 | *31 | 76 | 3.4 | 3.1 | *2.8 |
| 11 | .5 | 9.8 | 13 | 199 | 286 | 295 | 268 | 29 | 108 | 3.1 | 3.4 | 8.6 |
| 12 | 1.0 | 5.8 | 104 | 161 | 236 | 360 | 213 | 28 | 47 | 2.5 | 3.1 | 9.4 |
| 13 | 1.2 | 4.0 | 2,370 | 144 | 206 | 440 | 177 | 27 | 30 | 2.2 | 2.8 | 186 |
| 14 | 1.7 | 3.2 | 3,520 | 132 | 185 | 286 | 148 | 25 | 24 | 1.8 | 3.1 | 460 |
| 15 | 2.0 | 4.0 | 2,510 | 116 | 178 | 228 | 131 | 24 | 20 | 1.4 | 3.7 | 234 |
| 16 | 2.4 | 5.8 | 802 | 107 | 340 | 185 | 119 | 23 | 17 | 1.1 | 3.7 | 74 |
| 17 | 2.0 | 5.3 | 286 | 96 | 331 | 158 | 112 | 21 | 15 | .9 | 17 | 54 |
| 18 | 2.0 | 4.8 | 199 | 82 | 206 | 148 | 113 | 20 | 13 | 73 | 169 | 38 |
| 19 | 1.4 | 8.3 | 158 | 71 | 547 | 154 | 112 | 19 | 12 | 41 | 185 | 28 |
| 20 | 2.8 | 6.4 | 136 | 67 | 982 | 148 | 98 | 18 | 11 | 20 | 60 | 24 |
| 21 | 8.3 | 7.0 | 126 | 70 | 440 | 127 | 88 | 18 | 11 | 14 | 22 | 29 |
| 22 | 22 | 7.0 | 192 | *85 | 286 | 163 | 84 | 127 | 11 | 11 | 11 | 34 |
| 23 | 17 | 7.6 | 620 | 153 | 228 | 213 | 86 | 146 | 10 | 8.6 | 7.8 | 33 |
| 24 | 6.4 | 9.8 | 560 | 157 | 199 | 174 | 76 | 46 | 10 | 7.2 | 5.5 | 26 |
| 25 | 3.2 | 9.8 | 268 | 206 | 199 | 480 | 65 | 33 | 10 | 6.0 | 4.5 | 20 |
| 26 | 3.6 | 9.0 | 185 | 500 | 430 | 420 | 64 | 44 | 9.4 | 5.5 | 3.7 | 17 |
| 27 | 3.2 | 7.6 | 148 | 520 | 440 | 213 | 54 | 61 | 8.6 | 8.6 | 3.1 | 14 |
| 28 | 2.4 | 6.4 | 130 | 1,050 | 286 | 167 | 51 | 35 | 11 | 8.6 | 3.1 | 16 |
| 29 | *1.4 | *5.8 | 115 | 1,560 | - | 143 | 49 | 29 | 11 | 5.5 | 3.1 | 52 |
| 30 | 2.0 | 5.8 | 101 | 1,790 | ------- | 127 | 47 | 24 | 14 | 5.0 | 3.4 | 56 |
| 31 | 6.4 | ------- | 90 | 2,900 | ------- | 115 | ------- | 22 | ------- | 4.5 | 3.4 | ------- |
| Total | 137.2 | 282.6 | 12,704.4 | 14,659 | 31,055 | 9,071 | 7,494 | 1,241 | 789.0 | 387.1 | 547.7 | 1,443.5 |
| Mean | 4.43 | 9.42 | 410 | 473 | 1,109 | 293 | 250 | 40.0 | 26.3 | 12.5 | 17.7 | 48.1 |
| Cfsm | 0.027 | 0.057 | 2.47 | 2.85 | 6.68 | 1.77 | 1.51 | 0.241 | 0.158 | 0.075 | 0.107 | 0.290 |
| In. | 0.03 | 0.06 | 2.85 | 3.28 | 6.96 | 2.03 | 1.68 | 0.28 | 0.18 | 0.09 | 0.12 | 0.32 |

Calendar year 1956: Max 3,780 Min 0.5 Mean 207 Cfsm 1.25 In. 17.02
Water year 1956-57: Max 8,220 Min 0.5 Mean 219 Cfsm 1.32 In. 17.88

Peak discharge (base, 3,800 cfs).--Feb. 1 (12 p.m.) 9,330 cfs (21.5 ft).
* Discharge measurement made on this day.

## Shoal Creek at Iron City, Tenn.

Location.--Lat 35°01'20", long 87°34'44", on right bank 600 ft upstream from Louisville & Nashville Railroad bridge, 700 ft downstream from highway bridge, 0.2 mile downstream from Holly Creek, a quarter of a mile east of Iron City, Lawrence County, and at mile 21.7.

Drainage area.--348 sq mi.

Records available.--July 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 534.91 ft above mean sea level, datum of 1929. Prior to Feb. 25, 1931, staff gage at railroad bridge 600 ft downstream at datum 1.54 ft lower. Feb. 25, 1931, to Sept. 30, 1933, staff gage at site 75 ft downstream at present datum.

Average discharge.--32 years, 630 cfs.

Extremes.--Maximum discharge during year, 19,100 cfs Jan. 31 (gage height, 16.02 ft); minimum, 81 cfs Oct. 1; minimum daily, 81 cfs Oct. 1; minimum gage height, 0.21 ft Oct. 1, 2. 1925-57: Maximum discharge, 132,000 cfs Mar. 21, 1955 (gage height, 27.22 ft), from rating curve extended above 32,000 cfs on basis of contracted-opening determination at gage height 22.9 ft and a slope-area determination at gage height 27.22 ft; minimum, 38 cfs Aug. 31, 1943 (gage height, -0.02 ft).

Remarks.--Records good. Prior to January 1951, diurnal fluctuation at low flow caused by powerplant near Lawrenceburg.

Revisions (water years).--WSP 823: Drainage area. WSP 1113: 1927(M). WSP 1436: 1926(M), 1927-29, 1930(M), 1932, 1933(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 26 to May 19, May 21, 22)

| | | | |
|---|---|---|---|
| 0.18 | 81 | 3.0 | 1,150 |
| .5 | 117 | 8.0 | 4,250 |
| 1.0 | 217 | 10.0 | 6,410 |
| 1.5 | 390 | 14.0 | 13,800 |
| 2.0 | 615 | 14.8 | 15,800 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 81 | 153 | 120 | 234 | 15,800 | 858 | 708 | 263 | 286 | 303 | 140 | 96 |
| 2 | 88 | 135 | 118 | 214 | 7,790 | 760 | 1,330 | 263 | 278 | 275 | 130 | 96 |
| 3 | 102 | 126 | 118 | 200 | 2,700 | 680 | 985 | 263 | 680 | 282 | 124 | 97 |
| 4 | 120 | 122 | 118 | 343 | 2,740 | 615 | 1,550 | 242 | 444 | 239 | 122 | 101 |
| 5 | 128 | 118 | *120 | 755 | 2,220 | 560 | 1,780 | 234 | 660 | 217 | 117 | 101 |
| 6 | 107 | 120 | 120 | 580 | 1,770 | 836 | 1,270 | 228 | 547 | 197 | 113 | *95 |
| 7 | 102 | 144 | 120 | 484 | 2,150 | *1,120 | 990 | 223 | 462 | 185 | *111 | 93 |
| 8 | 97 | *142 | 120 | 414 | 1,600 | 1,280 | 1,420 | *223 | 434 | 176 | 109 | 94 |
| 9 | 98 | 128 | 122 | *374 | 1,460 | 1,100 | 1,930 | 212 | 382 | 167 | 107 | 116 |
| 10 | *98 | 123 | 122 | 334 | 1,260 | 919 | *1,330 | 214 | 660 | 163 | 107 | 124 |
| 11 | 97 | 122 | 120 | 289 | 1,040 | 809 | 1,060 | 223 | 470 | 155 | 106 | 112 |
| 12 | 97 | 120 | 319 | 263 | 875 | 1,190 | 875 | 225 | 374 | 147 | 145 | 134 |
| 13 | 97 | 118 | *4,370 | 248 | 770 | 1,170 | 740 | 214 | *314 | 146 | 346 | 319 |
| 14 | 97 | 117 | *2,790 | 237 | 690 | 1,000 | 630 | 210 | 282 | 147 | 185 | 217 |
| 15 | 97 | 118 | 1,560 | 223 | 745 | 853 | 547 | 210 | 254 | 157 | 135 | 159 |
| 16 | 97 | 130 | 853 | 212 | 1,470 | 730 | 498 | 202 | 234 | *159 | 123 | 171 |
| 17 | 97 | 146 | 595 | 194 | 1,100 | 650 | 466 | 197 | 220 | 149 | 128 | 163 |
| 18 | 97 | 132 | 452 | 187 | 930 | 615 | 439 | 207 | 217 | 217 | 140 | 139 |
| 19 | 98 | 124 | 366 | 180 | 1,840 | 590 | 422 | 263 | 242 | 260 | 130 | 132 |
| 20 | 100 | 124 | 318 | 183 | 2,340 | 529 | 386 | 585 | 251 | 183 | 118 | 132 |
| 21 | 114 | 134 | 310 | 245 | 1,530 | 484 | 374 | 286 | 207 | 155 | 113 | 144 |
| 22 | 231 | 185 | 760 | 282 | 1,160 | 506 | 475 | 540 | 200 | 147 | 110 | 159 |
| 23 | 163 | 159 | 946 | 864 | 941 | 475 | 466 | 1,080 | 239 | 144 | 109 | 180 |
| 24 | 129 | 137 | 826 | 870 | 809 | 452 | 402 | 452 | 580 | 163 | 106 | 142 |
| 25 | 117 | 129 | 630 | 755 | 776 | 516 | 374 | 350 | 439 | 167 | 105 | 126 |
| 26 | 115 | 128 | 506 | 675 | 1,070 | 529 | 338 | 656 | 296 | 149 | 105 | 120 |
| 27 | 117 | 126 | 422 | 936 | 1,110 | 484 | 314 | 1,400 | 251 | 140 | 102 | 120 |
| 28 | 117 | 124 | 370 | 7,400 | 974 | 452 | 306 | 565 | 398 | 137 | 100 | 122 |
| 29 | 115 | 123 | 322 | *8,670 | - | 434 | 292 | 430 | 475 | 139 | 97 | 130 |
| 30 | 115 | 122 | 282 | 4,080 | -------- | 418 | 275 | 358 | 342 | 146 | 96 | 134 |
| 31 | 126 | -------- | 257 | 9,690 | -------- | 406 | -------- | 314 | -------- | 153 | 95 | -------- |
| Total | 3,454 | 3,929 | 18,572 | 40,615 | 59,660 | 22,020 | 22,972 | 11,332 | 11,118 | 5,564 | 3,874 | 4,068 |
| Mean | 111 | 131 | 599 | 1,310 | 2,131 | 710 | 766 | 366 | 371 | 179 | 125 | 136 |
| Cfsm | 0.319 | 0.376 | 1.72 | 3.76 | 6.12 | 2.04 | 2.20 | 1.05 | 1.07 | 0.514 | 0.359 | 0.391 |
| In. | 0.37 | 0.42 | 1.98 | 4.34 | 6.38 | 2.35 | 2.45 | 1.21 | 1.19 | 0.59 | 0.41 | 0.43 |

Calendar year 1956: Max 12,300 Min 77 Mean 511 Cfsm 1.47 In. 19.98
Water year 1956-57: Max 15,800 Min 81 Mean 568 Cfsm 1.63 In. 22.12

Peak discharge (base, 6,000 cfs).--Dec. 13 (7 p.m.) 6,780 cfs (10.23 ft); Jan. 28 (7 p.m.) 12,600 cfs (13.48 ft); Jan. 31 (10:30 p.m.) 19,100 cfs (16.02 ft).
* Discharge measurement made on this day.

## Tennessee River at Florence, Ala.

Location.--Lat 34°47'12", long 87°40'08", in SW¼ sec. 14, T. 3 S., R. 11 W., on left bank at lock and dam 1 at lower end of Patten Island, 700 ft upstream from Southern Railway bridge, 1,000 ft upstream from O'Neal Bridge on U. S. Highway 72, 1 mile south of Florence, 1.7 miles upstream from Cypress Creek, 2.7 miles downstream from Wilson Dam, and at mile 256.7.

Drainage area.--30,810 sq mi, approximately.

Records available.--November 1871 to September 1894 (gage heights only), October 1894 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 401.12 ft above mean sea level, datum of 1929. Prior to Apr. 1, 1926, several U. S. Weather Bureau staff gages at or near Southern Railway bridge 700 ft downstream at same datum. Since Oct. 1, 1938, auxiliary water-stage recorder 15¼ miles downstream.

Average discharge.--63 years (1894-1957), 50,620 cfs.

Extremes.--Maximum discharge during year, 367,000 cfs Feb. 2, 4; maximum gage height, 26.20 ft Feb. 4; minimum daily discharge, 11,700 cfs Aug. 24; minimum gage height, 6.81 ft Dec. 12.

1871-1957: Maximum discharge observed, 444,000 cfs Mar. 19, 1897 (gage height, 32.5 ft), from rating curve extended above 390,000 cfs; minimum daily, 250 cfs Sept. 13, 1953 (computed on basis of Wilson Dam records); minimum gage height, -3.0 ft Oct. 8, 1925, caused by filling of Wilson Lake.

Remarks.--Records good. Discharge below 25,000 cfs computed on basis of records for Wilson Dam. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 223). Flow now almost completely regulated.

Cooperation.--Auxiliary water-stage recorder graph furnished by the Tennessee Valley Authority.

Revisions (water years).--WSP 473: 1897(M). WSP 1436: 1897, 1899, 1916.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26,100 | 30,900 | 38,300 | a53,800 | 325,000 | 103,000 | 31,400 | 38,000 | 28,200 | 37,700 | 32,300 | 21,100 |
| 2 | 30,800 | 38,100 | 28,200 | a53,300 | 364,000 | 101,000 | 37,900 | 38,100 | 22,300 | 33,600 | 37,600 | 19,200 |
| 3 | 29,800 | 25,800 | 29,800 | *a46,700 | 362,000 | 92,000 | 37,200 | 42,500 | 40,200 | 30,100 | 18,000 | 40,400 |
| 4 | 35,600 | 23,500 | 32,700 | 54,800 | *360,000 | 85,900 | *40,000 | 38,400 | 32,700 | 20,700 | 18,900 | 44,000 |
| 5 | 39,000 | 29,400 | 25,500 | 74,500 | 351,000 | 81,100 | 65,500 | 36,700 | 39,400 | 28,500 | 26,000 | 37,500 |
| 6 | 36,900 | 29,500 | 24,800 | 67,600 | 330,000 | 70,100 | 74,400 | 38,000 | 41,800 | 13,300 | 27,600 | 22,300 |
| 7 | 32,800 | 38,400 | 28,100 | 66,500 | 304,000 | 61,000 | 66,700 | 37,500 | *46,900 | 14,800 | *27,200 | 16,900 |
| 8 | 31,400 | 41,200 | 16,500 | 54,300 | 295,000 | 69,500 | 91,500 | 34,200 | 34,000 | 21,800 | 27,200 | 17,600 |
| 9 | 29,000 | 35,800 | 28,800 | 47,300 | 268,000 | 74,700 | 96,700 | 30,600 | 26,200 | 30,300 | 29,500 | 23,000 |
| 10 | 30,800 | 34,500 | 36,700 | a48,000 | 241,000 | 69,900 | 77,100 | 27,100 | 38,100 | 28,700 | 21,300 | 33,100 |
| 11 | 27,600 | 24,200 | 38,200 | 55,100 | 229,000 | 72,700 | 69,900 | 29,000 | 45,000 | 29,500 | 12,900 | 39,500 |
| 12 | 22,500 | 28,100 | 46,900 | a45,000 | 226,000 | 74,900 | 70,800 | 23,100 | 45,900 | 27,800 | 30,600 | 38,300 |
| 13 | 26,900 | 36,800 | 107,000 | 43,900 | *204,000 | 73,100 | 56,500 | 33,000 | 35,300 | 25,300 | 30,500 | 38,500 |
| 14 | 21,700 | 31,100 | 169,000 | a46,000 | 189,000 | 72,600 | 61,600 | 39,300 | 39,800 | 25,900 | 30,000 | 43,500 |
| 15 | 25,600 | 30,400 | 162,000 | 46,100 | 166,000 | 56,400 | 49,200 | 33,300 | 32,000 | 25,700 | 32,500 | 35,400 |
| 16 | 28,000 | 27,800 | 132,000 | a47,000 | 159,000 | 52,200 | 43,700 | 37,700 | 22,000 | 31,400 | 34,700 | 44,200 |
| 17 | 21,800 | 27,600 | 113,000 | 43,800 | 159,000 | 46,600 | 45,100 | 37,600 | 30,400 | 29,400 | 19,300 | 45,100 |
| 18 | 27,700 | 27,500 | 96,300 | a42,000 | 144,000 | 62,900 | 46,300 | 32,900 | 35,800 | 26,800 | 17,400 | 45,900 |
| 19 | 20,300 | 35,200 | 66,000 | 42,200 | 138,000 | 57,500 | 40,200 | 31,800 | 39,600 | 32,100 | 33,500 | 54,500 |
| 20 | 18,000 | 27,800 | 35,700 | a32,000 | 149,000 | 48,900 | 36,200 | 35,900 | 40,100 | 28,300 | 34,100 | 44,200 |
| 21 | 16,800 | 34,800 | 36,100 | 30,200 | 129,000 | 49,100 | 26,100 | 37,800 | 41,100 | 24,800 | 32,400 | 28,800 |
| 22 | 34,800 | 37,300 | a50,000 | a51,000 | 118,000 | 46,900 | 37,400 | 34,300 | 24,800 | 32,900 | 36,300 | 26,100 |
| 23 | 31,900 | 38,600 | a63,000 | 55,100 | 108,000 | 42,800 | 41,100 | 40,800 | 16,700 | 29,200 | 33,100 | 35,000 |
| 24 | 49,200 | 32,500 | a76,000 | a51,000 | 95,000 | 35,700 | 43,200 | 40,500 | 20,900 | a33,000 | 11,700 | 37,500 |
| 25 | 39,000 | 25,800 | a58,000 | 61,900 | 88,800 | 44,300 | 43,100 | 28,500 | 20,300 | a30,000 | 18,400 | 32,500 |
| 26 | 40,700 | 38,800 | a56,000 | a54,000 | 95,300 | 43,900 | 52,800 | 28,900 | 35,900 | 31,400 | 30,900 | 34,300 |
| 27 | 31,500 | 41,100 | a64,000 | a58,000 | 103,000 | 47,600 | 44,000 | 33,300 | 51,200 | 20,900 | 32,600 | 29,200 |
| 28 | 20,400 | 29,700 | a56,000 | 97,500 | 103,000 | 36,100 | 44,500 | 40,100 | 51,200 | 17,300 | 32,800 | 36,100 |
| 29 | 33,200 | 35,800 | a55,000 | a175,000 | - | 44,300 | 48,400 | 40,000 | 26,000 | 25,100 | 33,300 | 25,100 |
| 30 | *23,600 | 38,200 | a48,000 | a200,000 | ------- | 32,200 | 45,200 | 29,100 | 16,700 | 34,600 | 29,500 | *35,300 |
| 31 | 30,100 | ------ | a52,000 | a235,000 | ------ | 27,900 | -------- | 34,000 | -------- | 30,500 | 22,300 | -------- |
| Total | 903,500 | 976,200 | ‡1,869.6 | ‡2,078.6 | ‡5,803.1 | ‡1,876.8 | ‡1,563.7 | ‡1,082 | ‡1,020.5 | 851,400 | 854,400 | ‡1,024.1 |
| Mean | 29,150 | 32.540 | 60,310 | 67,050 | 207,300 | 60,540 | 52,120 | 34,900 | 34,020 | 27,460 | 27,560 | 34,140 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 263,000 Min 10,300 Mean 46,150 Cfsm 1.50 In. 20.39
Water year 1956-57: Max 364,000 Min 11,700 Mean 54,530 Cfsm 1.77 In. 24.03

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record at base or auxiliary gage; discharge estimated on basis of records at Wilson Dam.

## Tuscumbia Spring at Tuscumbia, Ala.

Location.--Lat 34°43'45", long 87°42'15", in NW¼ sec. 9, T. 4 S., R. 11 W., at south end of Main Street in Tuscumbia, about an eighth of a mile upstream from mouth.

Records available.--November 1928 to April 1930, January 1956 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 409.65 ft above mean sea level, datum of 1929. Prior to April 1930 at approximately the same location at different datum.

Extremes.--Maximum daily discharge during year, 124 cfs Feb. 19-28, Mar. 6, 7; minimum daily, 13 cfs Dec. 4-11.
1928-30, 1956-57: Maximum daily discharge, 160 cfs Mar. 9, 1929; minimum daily, that of Dec. 4-11.

Remarks.--Records good. Records include diversion averaging about 1 cfs for water supply for city of Tuscumbia.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 23 | 14 | 80 | 113 | 120 | 112 | a99 | 74 | 54 | 39 | 23 |
| 2 | *27 | 23 | 14 | 78 | a113 | *120 | 112 | a98 | 73 | 54 | 38 | 23 |
| 3 | 30 | 23 | *14 | 77 | a113 | 120 | 112 | a97 | 72 | 54 | 38 | 23 |
| 4 | 29 | 23 | 13 | 79 | a113 | 120 | *112 | a97 | 71 | *54 | 37 | 21 |
| 5 | 28 | 22 | 13 | 83 | a113 | 120 | 112 | a96 | 73 | 53 | 36 | 21 |
| 6 | 27 | 21 | 13 | 80 | a114 | 124 | 112 | a96 | 71 | 52 | 35 | 21 |
| 7 | 27 | 21 | 13 | 80 | a114 | 124 | 108 | a96 | *71 | 51 | *33 | 21 |
| 8 | 27 | 21 | 13 | 79 | a115 | 120 | 112 | 96 | 71 | 50 | 33 | 21 |
| 9 | 26 | 20 | 13 | 78 | a116 | 120 | 116 | *95 | 71 | 48 | 32 | 21 |
| 10 | 25 | 20 | 13 | *79 | a117 | 119 | 116 | 94 | 70 | 48 | 31 | *21 |
| 11 | 25 | 20 | 13 | 79 | a118 | 120 | 112 | 94 | 69 | 47 | 31 | 20 |
| 12 | 25 | 19 | 15 | 79 | a119 | 120 | 112 | 93 | 67 | 46 | 32 | 21 |
| 13 | 24 | 19 | 71 | 82 | a120 | 120 | 112 | 92 | 66 | 45 | 32 | 21 |
| 14 | 24 | 19 | *73 | 85 | *120 | 120 | 112 | 91 | 65 | 44 | 31 | 21 |
| 15 | 23 | 19 | 71 | 83 | 120 | 120 | 112 | 89 | 64 | 43 | 31 | 21 |
| 16 | 23 | 18 | 70 | a81 | 120 | 120 | 108 | 89 | 64 | 42 | 31 | 21 |
| 17 | 23 | 18 | 70 | a78 | 120 | 120 | 108 | 89 | 63 | 43 | 31 | 21 |
| 18 | 23 | 16 | 71 | a75 | 120 | 116 | 108 | 89 | 63 | 48 | 31 | 21 |
| 19 | 22 | 17 | 71 | 73 | 124 | 116 | 106 | 89 | 62 | 48 | 30 | 21 |
| 20 | 22 | 17 | 71 | 69 | 124 | 116 | 106 | 89 | 61 | 46 | 29 | 21 |
| 21 | 23 | 17 | 73 | 69 | 124 | 116 | 106 | 88 | 60 | 45 | 29 | 21 |
| 22 | 23 | 17 | 83 | 69 | 124 | 116 | 106 | 87 | 60 | 44 | 28 | 23 |
| 23 | 23 | 17 | 86 | *69 | 124 | 116 | 105 | 84 | 59 | 43 | 28 | 27 |
| 24 | 23 | 17 | 85 | 68 | 124 | 116 | a104 | 82 | 59 | 48 | 27 | 25 |
| 25 | 23 | 17 | 85 | 68 | 124 | 112 | a103 | 81 | 58 | 47 | 27 | 24 |
| 26 | 23 | 16 | 85 | 67 | 124 | 112 | a103 | 81 | 57 | 46 | 27 | 23 |
| 27 | a22 | 15 | 84 | 71 | 124 | 112 | a102 | 80 | 56 | 44 | 25 | 23 |
| 28 | a21 | 15 | 83 | 88 | 124 | 112 | a101 | 78 | 56 | 43 | 25 | 23 |
| 29 | a21 | *15 | 83 | 105 | - | 112 | a100 | 78 | 56 | 41 | 23 | 23 |
| 30 | *20 | 15 | 82 | 112 | -------- | 112 | a100 | 76 | 54 | 42 | 23 | 22 |
| 31 | 22 | -------- | 81 | 113 | -------- | 108 | -------- | 75 | -------- | 40 | 23 | -------- |
| Total | 751 | 562 | 1,641 | 2,476 | 3,338 | 3,639 | 3,250 | 2,758 | 1,936 | 1,453 | 946 | 659 |
| Mean | 24.2 | 18.7 | 52.9 | 79.9 | 119 | 117 | 108 | 90.0 | 64.5 | 46.9 | 30.5 | 22.0 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956 : Max 132 Min 13 Mean 59.0 Cfsm - In. -
Water year 1956-57 : Max 124 Min 13 Mean 64.1 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of hydrographic plottings.
Note.--Daily discharges include water diverted from spring pool for water supply for city of Tuscumbia. Records of discharge do not include local runoff.

## Bear Creek near Hackleburg, Ala.

Location.--Lat 34°17'01", long 87°46'26", in SW¼ sec. 11, T. 9 S., R. 12 W., on right bank at downstream side of bridge on U. S. Highway 43, 2 miles upstream from Bluff Creek and 3½ miles east of Hackleburg, Ala.

Drainage area.--143 sq mi.

Records available.--July 1956 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 646.50 ft above mean sea level, datum of 1929.

Extremes.--1956: Maximum discharge during period July to September, 1,700 cfs July 2 (gage height, 7.8 ft); minimum, 6.1 cfs Sept. 18, 19.
1956-57: Maximum discharge during water year, 7,000 cfs Jan. 31 (gage height, 20.0 ft); minimum, 6.6 cfs Sept. 3,7.

Remarks.--Records good.

Rating table, July 1, 1956, to Sept. 30, 1957 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 10 to July 13, 1957)

| | | | |
|---|---|---|---|
| 1.3 | 6.2 | 3.0 | 260 |
| 1.5 | 10.6 | 7.0 | 1,460 |
| 1.7 | 18 | 11.0 | 2,800 |
| 1.9 | 34 | 15.0 | 4,500 |
| 2.2 | 72 | 18.0 | 6,000 |
| 2.5 | 126 | | |

Discharge, in cubic feet per second, 1956

| Day | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 10 | 13 | 9 | 36 | 9.6 | 11 | 17 | 22 | 11 | 6.7 | 25 | 12 | 12 | 14 |
| 2 | 685 | 18 | 9.8 | 10 | 43 | 16 | 9.3 | 18 | 18 | 9.3 | 6.2 | 26 | 11 | 10 | 9.6 |
| 3 | 150 | 66 | 8.5 | 11 | 30 | 44 | 8.3 | 19 | 15 | 9.3 | 6.2 | 27 | 10 | 9.8 | 8.3 |
| 4 | 85 | 23 | 7.8 | 12 | 24 | 18 | 7.8 | 20 | 14 | 132 | 6.2 | 28 | 8.8 | 12 | 7.5 |
| 5 | *61 | 26 | 14 | 13 | 22 | 15 | 7.6 | 21 | 14 | 254 | 6.6 | 29 | 22 | 21 | 6.9 |
| 6 | 69 | 13 | *39 | 14 | 23 | 12 | 7.5 | 22 | 13 | 45 | 6.7 | 30 | 38 | 13 | 6.7 |
| 7 | 45 | 13 | 22 | 15 | 19 | 12 | 7.3 | 23 | 21 | 19 | 6.9 | 31 | 13 | 11 | - |
| 8 | 36 | *11 | 17 | 16 | 19 | 16 | 7.1 | 24 | 15 | 14 | 8.3 | | | | |
| Total | | | | | | | | | | | | | 1,643.8 | 905.0 | 303.8 |
| Mean | | | | | | | | | | | | | 53.0 | 29.2 | 10.1 |
| Cubic feet per second per square mile | | | | | | | | | | | | | 0.371 | 0.204 | 0.071 |
| Runoff in inches | | | | | | | | | | | | | 0.43 | 0.24 | 0.08 |

Peak discharge (base, 2,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.0 | 77 | 30 | 118 | *5,650 | 332 | 410 | 83 | 32 | 323 | 13 | 6.9 |
| 2 | *13 | 45 | 30 | 102 | *2,580 | 281 | 374 | 82 | 30 | 287 | 12 | 7.1 |
| 3 | 15 | 33 | 29 | 92 | *1,340 | *260 | 287 | 179 | 41 | 213 | 10 | 7.1 |
| 4 | 18 | 29 | *28 | 766 | 980 | 224 | 1,280 | 139 | 58 | *139 | 16 | 7.1 |
| 5 | 18 | 25 | 27 | 1,580 | 860 | 204 | *950 | 108 | 171 | 90 | 19 | 7.3 |
| 6 | 16 | 25 | 27 | 710 | 710 | 440 | 590 | 95 | 109 | 66 | *12 | 7.1 |
| 7 | 13 | 36 | 28 | 485 | 830 | 560 | 410 | 85 | 184 | 50 | 10 | 6.7 |
| 8 | 10 | 90 | 27 | 356 | 590 | 665 | 890 | *59 | *92 | 40 | 8.8 | 7.6 |
| 9 | 8.8 | 55 | 27 | *299 | 485 | 560 | 770 | 59 | 428 | 31 | 8.5 | 8.5 |
| 10 | 8.3 | 42 | 25 | 242 | 410 | 440 | 500 | 58 | 440 | 27 | 8.5 | *10 |
| 11 | 8.3 | 36 | 26 | 187 | 329 | 359 | 410 | 65 | 350 | 23 | 8.3 | 9.6 |
| 12 | 8.3 | 33 | 753 | 168 | 263 | 395 | 335 | 61 | 201 | 22 | 8.8 | 10 |
| 13 | 8.0 | 29 | *3,780 | 158 | 227 | 344 | 278 | 52 | 126 | 17 | 8.5 | 41 |
| 14 | 9.2 | 27 | *2,220 | 139 | 201 | 326 | 218 | 53 | 88 | 16 | 8.0 | 57 |
| 15 | 8.0 | 26 | 1,040 | 126 | 204 | 296 | 193 | 48 | 64 | 16 | 8.0 | 44 |
| 16 | 8.0 | 49 | 620 | 116 | 395 | 263 | 179 | 45 | 45 | 16 | 8.0 | 122 |
| 17 | 8.0 | 50 | 425 | 99 | 275 | 236 | 168 | 42 | 41 | 19 | 9.8 | 36 |
| 18 | 8.3 | 37 | 317 | 85 | 236 | 224 | 173 | 58 | 248 | 88 | 54 | 20 |
| 19 | 8.3 | 33 | 245 | 80 | 605 | 233 | 148 | 86 | 403 | 41 | 54 | 23 |
| 20 | 16 | 37 | 207 | 86 | 560 | 204 | 130 | 96 | 156 | 25 | 19 | 35 |
| 21 | 336 | 55 | 210 | 93 | 455 | 184 | 133 | 58 | 80 | 18 | 17 | 42 |
| 22 | 216 | 77 | 329 | 114 | 374 | 251 | 130 | 256 | 59 | 15 | 11 | 31 |
| 23 | 80 | 58 | 830 | 160 | 320 | 201 | 118 | 195 | 72 | 15 | 9.6 | 30 |
| 24 | 45 | 49 | 545 | 120 | 284 | 263 | 106 | 97 | 72 | 15 | 9.6 | 21 |
| 25 | 32 | 44 | 365 | 620 | 287 | 470 | 101 | 72 | 50 | 17 | 8.5 | 15 |
| 26 | 29 | 43 | 272 | 605 | 590 | 395 | 92 | 71 | 37 | 17 | 8.0 | 13 |
| 27 | 30 | 38 | 224 | *620 | 470 | 311 | 88 | 86 | 30 | 14 | 7.8 | 13 |
| 28 | 29 | 35 | 195 | 1,060 | 380 | 248 | 86 | 57 | 413 | 13 | 7.8 | 38 |
| 29 | 24 | *34 | 170 | 2,760 | - | 207 | 86 | 45 | 515 | 13 | 7.3 | 120 |
| 30 | 22 | 33 | 148 | 1,700 | ------- | 193 | 90 | 42 | 266 | 13 | 6.9 | 66 |
| 31 | *36 | ------- | 130 | 4,740 | ------- | 179 | ------- | 34 | ------- | ------- | ------- | ------- |
| Total | 1,097.5 | 1,280 | 13,329 | 18,586 | 20,890 | 9,748 | 9,723 | 2,566 | 4,901 | 1,711 | 404.6 | 862.0 |
| Mean | 35.4 | 42.7 | 430 | 600 | 746 | 314 | 324 | 82.8 | 163 | 55.2 | 13.1 | 28.7 |
| Cfsm | 0.248 | 0.299 | 3.01 | 4.20 | 5.22 | 2.20 | 2.27 | 0.579 | 1.14 | 0.386 | 0.092 | 0.201 |
| In. | 0.29 | 0.33 | 3.47 | 4.83 | 5.43 | 2.54 | 2.53 | 0.67 | 1.27 | 0.44 | 0.11 | 0.22 |

Calendar year 1956: Max - Min - Mean - Cfsm - In. -
Water year 1956-57: Max 5,650 Min 6.7 Mean 233 Cfsm 1.63 In. 22.13

Peak discharge (base, 2,000 cfs).--Dec. 13 (4 p.m.) 5,350 cfs (16.7 ft); Jan. 5 (1:30 a.m.) 2,520 cfs (10.3 ft); Jan. 29 (2 a.m.) 3,960 cfs (13.8 ft); Jan. 31 (12 p.m.) 7,000 cfs (20.0 ft); Apr. 4 (1:30 p.m.) 2,000 cfs (8.8 ft).
* Discharge measurement made on this day.

## Bear Creek at Bishop, Ala.

Location.--Lat 34°39'21", long 88°07'21", in SE¼ sec. 5, T. 5 S., R. 15 W., on left bank 20 ft upstream from highway bridge, half a mile downstream from Cedar Creek (formerly called Little Bear Creek), three-quarters of a mile southwest of Bishop, and at mile 27.3.

Drainage area.--667 sq mi.

Records available.--August 1926 to March 1932, June 1933 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 419.91 ft above mean sea level, datum of 1929. Prior to June 23, 1928, and Feb. 10, 1929, to Mar. 31, 1932, staff gage at site 35 ft downstream at datum 5.00 ft lower. June 7, 1933, to May 28, 1934, chain gage at bridge 20 ft downstream at same datum as staff gage.

Average discharge.--27 years (1926-27, 1929-31, 1933-57), 1,055 cfs.

Extremes.--Maximum discharge during year, 28,900 cfs Feb. 2 (gage height, 20.22 ft); minimum, 30 cfs Oct. 19, 20; minimum gage height, 0.90 ft Sept. 7, 8.
1926-57: Maximum discharge, 37,000 cfs Mar. 22, 1955; maximum gage height, 22.0 ft (present datum) Dec. 26, 1926, from floodmarks; minimum discharge, 9.3 cfs Sept. 15-17, 1954; minimum gage height, -0.15 ft Sept. 1, 1943.

Remarks.--Records good.

Revisions (water years).--WSP 698: 1929. WSP 823: Drainage area. WSP 853: 1927, 1928(M), 1929, 1930(M), 1932(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 2

| | | | |
|---|---|---|---|
| 0.95 | 31 | 10.0 | 3,650 |
| 1.2 | 59 | 13.0 | 6,200 |
| 1.5 | 103 | 15.0 | 9,300 |
| 2.0 | 195 | 17.0 | 14,700 |
| 3.0 | 460 | 20.0 | 27,900 |
| 5.0 | 1,210 | | |

Feb. 3 to Sept. 30

| | | | |
|---|---|---|---|
| 0.92 | 40 | 2.0 | 202 |
| 1.1 | 59 | 3.0 | 460 |
| 1.5 | 114 | | |

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *42 | *106 | 113 | 525 | 25,000 | 1,670 | 1,590 | 620 | 266 | 1,120 | 155 | 46 |
| 2 | 43 | 128 | 108 | *478 | 27,900 | 1,430 | 2,520 | 672 | 259 | 1,160 | 132 | 46 |
| 3 | 58 | 139 | *106 | 436 | *18,300 | *1,280 | *1,850 | 665 | 283 | *1,080 | 114 | 46 |
| 4 | 97 | 151 | 106 | 1,380 | 9,720 | 1,170 | 2,280 | 630 | 251 | 852 | 98 | 46 |
| 5 | 93 | 123 | 106 | 5,620 | 5,810 | 1,080 | 2,690 | 581 | 1,110 | 644 | 95 | 45 |
| 6 | 97 | 113 | 103 | 3,540 | 3,670 | 2,110 | 2,540 | 494 | *1,090 | 490 | *91 | 43 |
| 7 | 72 | 112 | 103 | 2,980 | 2,760 | 2,520 | 2,120 | 436 | 763 | 403 | 81 | 40 |
| 8 | 62 | 135 | 108 | 2,240 | 2,320 | 2,550 | 3,830 | 397 | 598 | 335 | 75 | 48 |
| 9 | 59 | 177 | 110 | 1,520 | 2,170 | 2,380 | 4,140 | *364 | 766 | 288 | 75 | 57 |
| 10 | 59 | 171 | 106 | 1,250 | 1,800 | 2,070 | 2,850 | 343 | 770 | 246 | 69 | 56 |
| 11 | 51 | 175 | 110 | 1,080 | 1,570 | 1,790 | 2,240 | 338 | 1,400 | 218 | 64 | *58 |
| 12 | 46 | 148 | 281 | 912 | 1,340 | 2,380 | 1,750 | 325 | 1,170 | 200 | 61 | 98 |
| 13 | 39 | 130 | 3,690 | 802 | 1,180 | 2,160 | 1,440 | 310 | 808 | 184 | 92 | 212 |
| 14 | 36 | 118 | 9,000 | 735 | 1,060 | 1,800 | 1,250 | 312 | 598 | 171 | 91 | 111 |
| 15 | 35 | 108 | 6,360 | 665 | 1,030 | 1,550 | 1,070 | 335 | 460 | 175 | 80 | 98 |
| 16 | 35 | 106 | 5,560 | 602 | 1,550 | 1,340 | 960 | 308 | 376 | 208 | 74 | 135 |
| 17 | 36 | 103 | 4,350 | 546 | 1,390 | 1,200 | 896 | 310 | 349 | 164 | 66 | 166 |
| 18 | 34 | 101 | 1,760 | 490 | 1,210 | 1,120 | 892 | 312 | 1,140 | 173 | 141 | 182 |
| 19 | 31 | 106 | 1,100 | 454 | 2,810 | 1,120 | 830 | 315 | 637 | 186 | 406 | 166 |
| 20 | 32 | 135 | 872 | 430 | 2,980 | 1,030 | 798 | 424 | 686 | 170 | 266 | 271 |
| 21 | 39 | 142 | 774 | 436 | 2,260 | 964 | 794 | 409 | 598 | 184 | 164 | 276 |
| 22 | 64 | 148 | 1,790 | 464 | 1,830 | 1,040 | 844 | 364 | 521 | 150 | 125 | 218 |
| 23 | 272 | 155 | 2,300 | 1,140 | 1,510 | 1,020 | 780 | 1,770 | 463 | 134 | 98 | 430 |
| 24 | 292 | 169 | 2,400 | 836 | 1,300 | 992 | 700 | 1,190 | 436 | 134 | 83 | 271 |
| 25 | 193 | 171 | 1,930 | 920 | 1,260 | 1,180 | 634 | 665 | 385 | 182 | 72 | 182 |
| 26 | 141 | 155 | 1,400 | 1,380 | 1,510 | 1,210 | 581 | 539 | 332 | 152 | 67 | 137 |
| 27 | 115 | 146 | 1,080 | 2,560 | 1,980 | 1,190 | 526 | 525 | 280 | 130 | 63 | 117 |
| 28 | 101 | 134 | 880 | 4,250 | 1,980 | 1,050 | 494 | 475 | 553 | 114 | 60 | 106 |
| 29 | 98 | 122 | 752 | 5,530 | - | 936 | 868 | 403 | 1,720 | 112 | 57 | 114 |
| 30 | 90 | 118 | 665 | 5,390 | -------- | 856 | 777 | 346 | 1,470 | 122 | 52 | 139 |
| 31 | 103 | -------- | 595 | 9,760 | -------- | 808 | -------- | 298 | -------- | 124 | 48 | -------- |
| Total | 2,565 | 4,045 | 48,718 | 59,371 | 129,200 | 44,996 | 45,536 | 15,475 | 20,438 | 10,005 | 3,215 | 3,960 |
| Mean | 82.7 | 135 | 1,572 | 1,915 | 4,614 | 1,451 | 1,518 | 499 | 681 | 323 | 104 | 132 |
| Cfsm | 0.124 | 0.202 | 2.36 | 2.87 | 6.92 | 2.18 | 2.28 | 0.748 | 1.02 | 0.484 | 0.156 | 0.198 |
| In. | 0.14 | 0.23 | 2.72 | 3.31 | 7.20 | 2.51 | 2.54 | 0.86 | 1.14 | 0.56 | 0.18 | 0.22 |

Calendar year 1956: Max 10,100 Min 24 Mean 965 Cfsm 1.45 In. 19.69
Water year 1956-57: Max 27,900 Min 31 Mean 1,062 Cfsm 1.59 In. 21.61

Peak discharge (base, 7,500 cfs).--Dec. 14 (5 p.m.) 9,990 cfs (15.33 ft); Feb. 2 (4 a.m.) 28,900 cfs (20.22 ft).
* Discharge measurement made on this day.

## Tennessee River at Savannah, Tenn.

Location.--Lat 35°13'29", long 88°15'36", on left bank pier of bridge on U. S. Highway 64, at Savannah, Hardin County, 16.8 miles downstream from Pickwick Landing Dam and at mile 189.9.

Drainage area.--33,140 sq mi, approximately.

Records available.--September 1930 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level, datum of 1929. Prior to Apr. 7, 1945, at datum 41.61 ft higher. Since Oct. 1, 1948, auxiliary water-stage recorder on downstream end of lock wall in lower pool at Pickwick Landing Dam, 16.8 miles upstream. Apr. 5, 1937, to Jan. 31, 1939, auxiliary staff gage 4.0 miles downstream and Feb. 1, 1939, to Sept. 30, 1948, water-stage recorder 4.3 miles downstream.

Average discharge.--27 years, 51,810 cfs.

Extremes.--Maximum discharge during year, 403,000 cfs Feb. 6; maximum gage height, 92.42 ft Feb. 6; minimum daily discharge, 16,400 cfs Oct. 21; minimum gage height, 54.19 ft Dec. 9.

1930-57: Maximum discharge, that of Feb. 6, 1957; maximum gage height, that of Feb. 6, 1957; minimum daily discharge, 1,100 cfs Sept. 3, 1945, caused by experimental closure of Pickwick Landing Dam; minimum gage height, 41.20 ft, present datum, Oct. 20, 1931.

Maximum stage known, 101.2 ft Mar. 21, 1897, present datum, from floodmarks (discharge, 450,000 cfs, from rating curve extended above 320,000 cfs). Flood of Jan. 2, 1927, reached a stage of 92.7 ft, present datum (discharge, 349,000 cfs).

Minimum stage known, 38.8 ft Sept. 8, 1925, present datum.

Remarks.--Records good. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 223). Flow now almost completely regulated.

Cooperation.--Auxiliary water-stage-recorder graph furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 853: 1937, drainage area.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28,600 | 28,400 | 39,200 | 50,800 | 298,000 | 103,000 | 30,400 | 47,300 | 34,800 | 41,000 | 31,200 | 35,900 |
| 2 | 33,200 | 41,400 | 31,000 | 53,700 | 339,000 | 103,000 | 40,300 | 44,700 | 27,800 | 40,400 | 33,400 | 18,500 |
| 3 | 32,600 | 30,700 | 31,900 | 43,600 | 364,000 | 98,700 | 42,500 | 51,500 | a42,500 | 33,600 | 32,800 | 35,000 |
| 4 | 39,100 | 22,700 | 32,900 | 50,600 | 387,000 | 91,700 | 44,100 | 44,100 | a36,300 | 27,600 | 33,400 | 40,600 |
| 5 | 43,200 | 32,600 | *27,900 | 79,300 | 395,000 | 85,900 | 72,100 | 33,600 | a50,800 | 31,100 | 27,400 | 31,400 |
| 6 | 39,300 | 30,500 | 21,500 | 78,600 | 395,000 | 77,800 | 84,600 | 43,100 | a58,500 | 29,300 | 24,600 | 20,000 |
| 7 | 28,600 | 36,000 | 21,600 | 73,700 | 369,000 | 74,600 | 64,400 | 44,600 | a23,000 | 30,600 | 25,000 | 31,100 |
| 8 | 34,700 | 42,900 | 20,200 | 52,500 | 358,000 | 78,200 | 86,800 | 36,600 | a39,900 | 23,100 | 24,000 | 30,600 |
| 9 | 31,000 | 36,900 | 29,900 | 44,400 | 326,000 | 81,300 | 90,100 | 34,900 | a31,700 | 29,700 | 30,700 | 22,600 |
| 10 | 33,100 | 27,900 | 42,900 | 51,700 | 284,000 | 77,000 | 89,200 | 25,300 | a36,300 | 28,800 | 35,400 | 30,500 |
| 11 | 27,000 | 25,300 | 42,800 | 59,200 | 266,000 | 70,800 | 88,400 | 29,000 | a60,000 | 26,300 | 27,200 | 37,300 |
| 12 | 26,500 | 33,200 | 36,400 | 47,600 | 254,000 | 69,700 | 88,700 | 26,000 | *59,500 | 23,800 | 27,800 | 37,500 |
| 13 | a30,600 | 40,000 | 90,500 | 41,100 | 236,000 | 77,600 | 83,300 | 34,300 | 45,100 | 36,000 | 29,100 | 35,800 |
| 14 | a24,400 | 34,700 | 163,000 | 47,900 | 213,000 | 79,600 | 69,400 | 52,900 | 43,600 | 34,600 | 29,200 | 48,500 |
| 15 | a25,500 | 30,000 | 174,000 | 45,100 | 195,000 | 72,700 | 69,800 | 37,000 | 46,400 | 26,700 | 29,400 | 41,200 |
| 16 | a26,100 | 28,400 | 150,000 | 49,700 | 180,000 | 50,700 | 61,400 | 42,100 | 33,400 | 31,100 | 33,500 | 42,300 |
| 17 | a26,400 | 31,100 | 117,000 | 40,100 | 171,000 | 41,000 | 47,700 | 43,300 | 34,400 | 32,800 | 31,300 | 48,300 |
| 18 | a27,400 | 28,900 | 97,800 | 34,000 | 160,000 | 57,100 | 52,100 | 34,300 | 46,200 | 29,800 | 29,900 | 37,500 |
| 19 | a16,900 | 36,100 | 74,500 | 37,200 | 152,000 | 52,300 | 48,700 | 34,100 | 45,700 | 36,700 | 33,200 | 57,700 |
| 20 | a21,700 | 24,100 | 50,700 | 35,500 | 158,000 | 46,400 | 37,600 | 36,000 | 40,700 | 44,400 | 30,600 | 32,600 |
| 21 | a16,400 | 31,800 | 51,100 | 30,000 | 149,000 | 51,400 | 27,000 | 39,600 | 44,100 | 37,800 | *32,500 | 33,800 |
| 22 | a40,700 | 43,400 | 34,500 | 51,400 | 132,000 | 42,400 | 38,300 | 38,100 | 39,400 | 31,700 | 35,700 | 34,500 |
| 23 | 34,400 | 46,500 | 62,800 | 65,700 | 122,000 | 39,300 | *41,500 | 45,600 | 30,700 | 29,700 | 28,800 | 36,000 |
| 24 | 49,300 | 30,900 | 76,400 | 59,400 | 96,400 | 37,100 | 48,900 | 50,500 | 25,500 | 33,600 | 22,600 | 45,200 |
| 25 | 40,500 | 25,000 | 62,800 | 58,400 | 86,500 | 42,000 | 52,300 | 35,800 | 21,000 | 29,200 | 33,500 | 44,800 |
| 26 | 38,000 | 37,800 | 64,800 | 53,300 | *92,700 | 45,300 | 59,000 | 29,200 | 41,000 | 30,500 | 31,800 | 43,400 |
| 27 | 28,800 | 41,900 | 63,600 | 67,300 | 103,000 | 48,500 | 46,400 | 38,700 | 54,700 | 33,000 | 28,500 | 39,600 |
| 28 | a21,700 | 29,200 | 59,400 | 103,000 | 104,000 | 42,100 | 43,100 | 45,400 | 48,200 | 32,700 | 29,900 | 39,600 |
| 29 | a32,700 | 35,800 | 53,200 | 171,000 | - | 26,000 | 49,800 | 45,600 | 32,600 | 24,600 | 30,200 | 33,400 |
| 30 | *27,900 | 37,900 | 46,500 | 210,000 | -------- | 30,500 | 53,300 | 28,700 | 31,600 | 34,700 | 29,100 | 34,700 |
| 31 | 28,700 | -------- | 49,900 | 231,000 | -------- | 26,800 | -------- | 39,400 | -------- | 29,500 | 35,200 | -------- |
| Total | 955,000 | ‡1,002 | ‡1,920.7 | ‡2,116.8 | ‡6,385.6 | ‡1,920.5 | ‡1,751.2 | ‡1,211.3 | ‡1,205.4 | 984,400 | 936,900 | ‡1,099.9 |
| Mean | 30,810 | 33,400 | 61,960 | 68,280 | 228,100 | 61,950 | 58,370 | 39,070 | 40,180 | 31,750 | 30,220 | 36,660 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 276,000 Min 13,100 Mean 49,810 Cfsm 1.50 In. 20.46
Water year 1956-57: Max 395,000 Min 16,400 Mean 58,880 Cfsm 1.78 In. 24.12

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record at auxiliary gage; discharge computed on basis of records at Pickwick Landing Dam.

## Duck River below Manchester, Tenn.

Location.--Lat 35°28'15", long 87°07'18", on right bank 50 ft downstream from Power's bridge, 2 miles southwest of Manchester, Coffee County, 3¼ miles downstream from Little Duck River, and 7 miles upstream from Crumpton Creek.

Drainage area.--107 sq mi.

Records available.--April 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 878.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 176 cfs.

Extremes.--Maximum discharge during year, 7,740 cfs Jan. 28 (gage height, 12.65 ft); minimum, 11 cfs Aug. 30 (gage height, 1.10 ft).

1934-57: Maximum discharge, 30,000 cfs Feb. 13, 1948 (gage height, 18.93 ft), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum, 8 cfs Aug. 12, 1934; minimum gage height, 0.57 ft Sept. 19, 20, 1947.

Maximum stage known, 23.2 ft in March 1929 (discharge, about 50,000 cfs), from high-water mark by Tennessee Valley Authority. Flood of March 1902 reached approximately the same stage as the flood of March 1929.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Occasional regulation for short periods during low flow by small reservoir above station.

Revisions (water years).--WSP 1436: 1946-47.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.15 | 13 | 4.0 | 895 |
| 1.4 | 29 | 7.0 | 2,480 |
| 1.7 | 65 | 9.0 | 3,850 |
| 2.0 | 120 | 11.2 | 5,920 |
| 2.5 | 280 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 27 | 19 | 62 | *5,860 | 368 | 150 | 180 | 44 | 40 | 20 | 13 |
| 2 | 17 | 23 | 19 | 54 | 2,480 | 264 | 200 | 110 | 40 | 38 | 20 | 13 |
| 3 | 28 | 23 | 19 | 50 | 760 | 202 | 150 | 85 | 37 | 37 | 20 | 13 |
| 4 | 39 | 22 | 19 | 83 | 700 | 172 | 800 | 75 | 36 | 35 | 20 | 14 |
| 5 | 29 | 21 | 20 | 348 | 740 | 145 | 500 | 65 | 47 | 33 | 20 | *13 |
| 6 | 23 | 22 | *20 | 219 | 656 | 154 | 350 | 55 | 54 | 31 | 18 | 13 |
| 7 | 20 | 23 | 20 | 151 | 944 | 639 | 250 | 50 | 71 | 29 | 18 | 14 |
| 8 | 20 | 22 | 20 | 116 | 836 | 926 | 350 | 48 | 54 | 29 | *18 | 13 |
| 9 | *19 | 20 | 20 | 99 | 568 | 444 | 220 | *45 | 49 | 28 | 18 | 15 |
| 10 | 19 | 20 | 20 | 97 | 512 | 296 | 180 | 46 | 70 | 27 | 18 | 19 |
| 11 | 19 | 20 | 20 | 88 | 416 | 208 | *160 | 47 | 52 | 26 | 18 | 17 |
| 12 | 19 | 20 | 178 | 78 | 288 | 332 | 140 | 46 | 45 | 25 | 18 | 19 |
| 13 | 19 | 20 | 2,090 | 73 | 226 | *336 | 120 | 43 | 39 | 25 | 19 | 215 |
| 14 | 19 | 19 | 1,270 | *68 | 190 | 226 | 105 | 43 | 40 | 25 | 23 | 128 |
| 15 | 18 | *19 | 640 | 64 | 178 | 181 | 95 | 45 | 37 | 27 | 20 | 76 |
| 16 | 18 | 21 | 236 | 59 | 360 | 145 | 85 | 44 | 35 | 35 | 18 | 47 |
| 17 | 17 | 20 | 142 | 54 | 256 | 125 | 78 | 39 | 34 | 27 | 19 | 49 |
| 18 | 18 | 19 | 105 | 49 | 187 | 122 | 73 | 38 | 34 | 27 | 21 | 38 |
| 19 | 18 | 19 | 86 | 46 | 598 | 154 | 70 | 47 | 38 | 26 | 20 | 29 |
| 20 | 18 | 19 | 76 | 50 | 764 | 132 | 67 | 54 | 34 | 23 | 18 | 27 |
| 21 | 21 | 24 | 75 | 75 | 368 | 120 | 65 | 47 | 33 | 21 | 50 | 27 |
| 22 | 24 | 23 | 208 | 116 | 256 | 120 | 70 | 132 | 33 | 21 | 64 | 27 |
| 23 | 23 | 21 | 420 | 540 | 199 | 110 | 80 | 272 | 34 | *23 | 36 | 33 |
| 24 | 21 | 20 | 316 | *360 | 172 | 150 | 70 | 116 | 35 | 24 | 27 | 29 |
| 25 | 20 | 20 | 181 | 222 | 166 | 170 | 60 | 76 | *39 | 23 | 20 | 27 |
| 26 | 21 | 20 | 128 | 196 | 744 | 200 | 55 | 94 | 38 | 21 | 17 | 24 |
| 27 | 21 | 20 | 103 | 750 | 524 | 170 | 52 | 128 | 37 | 20 | 15 | 23 |
| 28 | 20 | 20 | 90 | 5,530 | 412 | 130 | 55 | 86 | 46 | 20 | 14 | 36 |
| 29 | 20 | 20 | 81 | 2,420 | - | 120 | 100 | 62 | 44 | 20 | 14 | 44 |
| 30 | 20 | 20 | 73 | *1,550 | -------- | 110 | 300 | 54 | 41 | 20 | 13 | 49 |
| 31 | 27 | -------- | 67 | 4,790 | -------- | 100 | -------- | 47 | -------- | 20 | 13 | -------- |
| Total | 652 | 627 | 6,781 | 18,457 | 20,360 | 7,071 | 5,050 | 2,319 | 1,270 | 826 | 667 | 1,104 |
| Mean | 21.0 | 20.9 | 219 | 595 | 727 | 228 | 168 | 74.8 | 42.3 | 26.6 | 21.5 | 36.8 |
| Cfsm | 0.196 | 0.195 | 2.05 | 5.56 | 6.79 | 2.13 | 1.57 | 0.699 | 0.395 | 0.249 | 0.201 | 0.344 |
| In. | 0.23 | 0.22 | 2.36 | 6.42 | 7.08 | 2.46 | 1.76 | 0.81 | 0.44 | 0.29 | 0.23 | 0.38 |

Calendar year 1956: Max 4,400 Min 17 Mean 180 Cfsm 1.68 In. 22.85
Water year 1956-57: Max 5,860 Min 13 Mean 179 Cfsm 1.67 In. 22.68

Peak discharge (base, 2,500 cfs).--Jan. 28 (10 a.m.) 7,740 cfs (12.65 ft); Jan. 31 (10 p.m.) 7,430 cfs (12.46 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 4, Mar. 21 to Apr. 10, Apr. 12-17, Apr. 19 to May 8; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Garrison Fork at Fairfield, Tenn.

Location.--Lat 35°33'59", long 86°17'00", near left bank on downstream side of center pier of highway bridge, 0.1 mile east of Fairfield, 0.6 mile downstream from Noah Fork, and 4.5 miles northeast of Wartrace, Bedford County.

Drainage area.--66.3 sq mi.

Records available.--November 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 800.85 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 6,300 cfs Jan. 28 (gage height, 15.64 ft), from rating curve extended as explained below; minimum, 1.5 cfs Sept. 7-9 (gage height, 0.79 ft).

1953-57: Maximum discharge, 25,300 cfs Mar. 21, 1955 (gage height, 23.13 ft), from rating curve extended above 3,800 cfs on basis of slope-area determination of peak flow; minimum, 1.2 cfs Sept. 17-20, 1954; minimum gage height, that of Sept. 7-9, 1957.

Remarks.--Records good.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 27

| | | | |
|---|---|---|---|
| 0.9 | 4.8 | 2.0 | 127 |
| 1.0 | 9.0 | 3.0 | 350 |
| 1.2 | 20 | 8.1 | 2,110 |
| 1.5 | 49 | | |

Jan. 28 to Sept. 30

| | | | |
|---|---|---|---|
| 0.76 | 1.5 | 2.0 | 115 |
| .8 | 2.0 | 2.5 | 216 |
| .9 | 4.8 | 3.0 | 345 |
| 1.0 | 9.0 | 10.0 | 2,830 |
| 1.2 | 20 | 12.5 | 3,840 |
| 1.5 | 49 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.9 | 12 | 7.5 | 33 | 2,790 | 153 | 126 | 30 | 23 | 18 | 5.2 | 1.8 |
| 2 | 5.9 | 10 | 7.5 | 28 | 938 | 132 | 108 | 35 | 23 | 16 | 4.2 | 1.6 |
| 3 | 38 | 8.0 | 7.5 | 26 | 435 | 115 | 93 | 37 | 22 | 17 | 3.9 | 1.6 |
| 4 | 26 | 7.5 | 7.5 | 216 | 372 | 103 | 856 | 29 | 28 | 14 | 7.0 | 1.8 |
| 5 | 13 | 7.5 | 7.5 | 237 | 305 | 92 | 369 | 26 | 32 | 12 | 8.3 | *1.8 |
| 6 | 9.5 | 7.0 | 7.5 | 149 | 625 | 100 | 207 | 26 | 163 | 12 | 2.3 | 1.6 |
| 7 | 7.0 | 7.0 | *7.5 | 108 | 763 | 330 | 147 | 25 | 42 | 10 | 2.3 | 1.6 |
| 8 | 6.6 | 7.0 | 7.5 | 83 | 465 | 333 | 310 | 24 | 29 | 10 | *2.3 | 1.5 |
| 9 | 5.9 | 7.0 | 7.5 | 72 | 300 | 238 | 185 | *23 | 45 | 9.0 | 2.3 | 1.5 |
| 10 | *5.9 | 6.6 | 7.5 | 64 | 260 | 176 | 149 | 25 | 36 | 9.0 | 2.3 | 1.9 |
| 11 | 4.8 | 6.6 | 7.5 | 48 | 189 | 145 | *125 | 26 | 26 | 8.0 | 2.3 | 2.6 |
| 12 | 5.2 | 6.6 | 709 | 44 | 151 | 296 | 108 | 23 | 23 | 7.5 | 2.6 | 38 |
| 13 | 5.6 | 6.2 | *2,090 | 42 | 127 | *204 | 90 | 24 | 22 | 7.0 | 3.3 | 203 |
| 14 | 5.6 | 5.9 | 1,050 | *39 | 109 | 164 | 80 | 23 | 22 | 7.5 | 5.9 | 72 |
| 15 | 5.6 | *5.9 | 325 | 37 | 158 | 132 | 72 | 23 | 22 | 8.0 | 7.0 | 1,070 |
| 16 | 5.6 | 7.5 | 163 | 34 | 136 | 108 | 67 | 23 | 22 | 8.0 | 6.2 | 233 |
| 17 | 5.9 | 8.0 | 108 | 30 | 114 | 99 | 63 | 23 | 21 | 8.0 | 4.8 | 96 |
| 18 | 6.2 | 7.0 | 77 | 27 | 102 | 97 | 60 | 23 | 21 | 10 | 4.5 | 61 |
| 19 | 6.2 | 6.6 | 59 | 27 | 748 | 87 | 55 | 26 | 20 | 9.0 | 4.5 | 44 |
| 20 | 6.6 | 6.6 | 53 | 26 | 417 | 74 | 51 | 28 | 20 | 7.5 | 4.5 | 34 |
| 21 | 9.0 | 10 | 54 | 45 | 245 | 72 | 49 | 22 | 19 | 6.6 | 3.9 | 29 |
| 22 | 14 | 12 | 138 | 358 | 166 | 76 | 47 | 163 | 19 | 5.9 | 3.3 | 40 |
| 23 | 12 | 10 | 227 | 572 | 129 | 69 | 45 | 67 | 117 | *5.6 | 3.1 | 59 |
| 24 | 8.5 | 9.0 | 156 | 237 | 109 | 73 | 44 | 39 | 64 | 12 | 2.8 | 39 |
| 25 | 7.0 | 8.0 | 108 | 165 | 182 | 96 | 40 | 30 | *42 | 7.5 | 2.6 | 29 |
| 26 | 6.6 | 8.0 | 83 | 124 | 317 | 93 | 36 | 82 | 24 | 6.2 | 2.3 | 24 |
| 27 | 6.6 | 8.0 | 68 | 1,050 | 221 | 93 | 33 | 56 | 19 | 5.6 | 2.3 | 23 |
| 28 | 6.6 | 8.0 | 58 | *3,760 | 182 | 87 | 32 | 37 | 30 | 4.8 | 2.0 | 26 |
| 29 | 6.6 | 7.5 | 49 | 1,570 | - | 83 | 35 | 30 | 30 | 4.8 | 2.0 | 70 |
| 30 | 7.0 | 7.5 | 44 | 890 | -------- | 77 | 32 | 26 | 20 | 4.8 | 1.9 | 71 |
| 31 | 9.0 | -------- | 38 | 3,320 | -------- | 72 | -------- | 24 | -------- | 5.2 | 1.9 | -------- |
| Total | 273.9 | 234.5 | 5,739.5 | 13,461 | 11,055 | 4,069 | 3,714 | 1,098 | 1,046 | 276.5 | 113.8 | 2,280.3 |
| Mean | 8.84 | 7.82 | 185 | 434 | 395 | 131 | 124 | 35.4 | 34.9 | 8.92 | 3.67 | 76.0 |
| Cfsm | 0.133 | 0.118 | 2.79 | 6.55 | 5.96 | 1.98 | 1.87 | 0.534 | 0.526 | 0.135 | 0.055 | 1.15 |
| In. | 0.15 | 0.13 | 3.22 | 7.55 | 6.20 | 2.28 | 2.08 | 0.62 | 0.59 | 0.16 | 0.06 | 1.28 |

Calendar year 1956: Max 2,730 Min 3.9 Mean 100 Cfsm 1.51 In. 20.58
Water year 1956-57: Max 3,760 Min 1.5 Mean 119 Cfsm 1.79 In. 24.32

Peak discharge (base, 3,000 cfs).--Dec. 13 (12:30 a.m.) 6,170 cfs (15.53 ft); Jan. 28 (12:30 a.m.) 6,300 cfs (15.64 ft); Jan. 31 (6 p.m.) 4,600 cfs (13.80 ft); Sept. 15 (7 p.m.) 4,000 cfs (12.84 ft).

* Discharge measurement made on this day.

## Wartrace Creek at Bell Buckle, Tenn.

Location.--Lat 35°35'16", long 86°20'22", on downstream right bank wing wall of bridge on State Highway 82, 0.2 mile downstream from Kelly Creek, 0.9 mile east of Bell Buckle, Bedford County, 4.0 miles northeast of Fairfield, and 7.7 miles upstream from mouth.

Drainage area.--16.3 sq mi.

Records available.--December 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 822.74 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,220 cfs Dec. 12 (gage height, 9.45 ft), from rating curve extended as explained below; no flow Oct. 1, 2, July 14 to Aug. 12, Aug. 21 to Sept. 8.

1954-57: Maximum discharge, 8,240 cfs Mar. 21, 1955 (gage height, 11.25 ft), from rating curve extended above 1,200 cfs on basis of contracted-opening determination of peak flow; no flow at times each year.

Remarks.--Records fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-20, Dec. 8-10)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.11 | 0 | 2.7 | 7.8 | 2.02 | 0 | 2.7 | 6.8 |
| 2.2 | .04 | 2.8 | 14 | 2.1 | .1 | 2.8 | 12 |
| 2.3 | .2 | 3.0 | 32 | 2.2 | .3 | 3.0 | 27 |
| 2.4 | .5 | 3.5 | 98 | 2.3 | .5 | 3.5 | 95 |
| 2.5 | 1.6 | 4.5 | 298 | 2.4 | .7 | 4.5 | 298 |
| 2.6 | 3.8 | 5.6 | 650 | 2.5 | 1.3 | 6.4 | 930 |
| | | | | 2.6 | 3.3 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 3.3 | 1.2 | 4.6 | 695 | 27 | 75 | 2.5 | 1.2 | 0.5 | 0 | 0 |
| 2 | 0 | 2.1 | .9 | 3.0 | 158 | 22 | 38 | 2.0 | 1.0 | .4 | 0 | 0 |
| 3 | 27 | 1.8 | .7 | 2.8 | 82 | 18 | 27 | 2.0 | .8 | .5 | 0 | 0 |
| 4 | 12 | 1.4 | .6 | 99 | 76 | 16 | 310 | 1.6 | 1.5 | .4 | 0 | 0 |
| 5 | 2.8 | 1.2 | .6 | 64 | 66 | 13 | 84 | 1.4 | 1.4 | .3 | 0 | *0 |
| 6 | 1.8 | 1.0 | .5 | 34 | 220 | 20 | 45 | 1.3 | 1.0 | .3 | 0 | 0 |
| 7 | .9 | .9 | *.4 | 23 | 132 | 90 | 31 | 1.3 | .8 | .3 | 0 | 0 |
| 8 | .8 | .7 | .4 | 18 | 89 | 64 | 86 | 1.2 | .7 | .3 | *0 | 0 |
| 9 | .6 | .6 | .4 | 14 | 61 | 43 | 36 | *1.2 | 3.0 | .2 | 0 | .04 |
| 10 | *.6 | .3 | .4 | 12 | 82 | 32 | 27 | 1.4 | 1.2 | .1 | 0 | .3 |
| 11 | 1.0 | .3 | 1.4 | 8.8 | 48 | 26 | *22 | 1.6 | .8 | .08 | 0 | .1 |
| 12 | .9 | .3 | 642 | 7.8 | 35 | 117 | 18 | 1.1 | .7 | .04 | 0 | 17 |
| 13 | .9 | .2 | *664 | 6.8 | 27 | *47 | 14 | 1.0 | .6 | .01 | 1.5 | 44 |
| 14 | .9 | .2 | *372 | *6.4 | 21 | 37 | 11 | 1.0 | .5 | 0 | .3 | 8.4 |
| 15 | 1.0 | *.1 | 79 | 5.7 | 57 | 28 | 9.8 | 1.2 | .5 | 0 | .1 | 262 |
| 16 | .9 | .2 | 37 | 4.6 | 35 | 22 | 8.8 | 1.0 | .4 | 0 | .06 | 47 |
| 17 | .9 | .2 | 23 | 3.9 | 25 | 18 | 8.3 | 1.1 | .4 | 0 | .05 | 16 |
| 18 | .9 | .1 | 16 | 3.6 | 21 | 19 | 7.3 | 1.1 | .4 | 0 | .05 | 8.3 |
| 19 | 1.0 | .1 | 11 | 3.3 | 296 | 16 | 6.1 | 1.4 | .4 | 0 | .05 | 4.9 |
| 20 | 1.4 | .1 | 9.3 | 3.3 | 84 | 12 | 5.7 | 1.8 | .4 | 0 | .02 | 3.6 |
| 21 | 2.1 | 4.1 | 13 | 10 | 49 | 12 | 4.9 | 1.0 | .4 | 0 | 0 | 2.5 |
| 22 | 3.6 | 3.8 | 47 | 203 | 34 | 14 | 4.6 | 49 | .4 | 0 | 0 | 20 |
| 23 | 2.8 | 3.3 | 70 | 116 | 25 | 12 | 4.9 | 8.6 | 1.0 | *0 | 0 | 21 |
| 24 | 2.6 | 3.1 | 36 | 49 | 21 | 15 | 3.9 | 3.3 | .6 | 0 | 0 | 9.3 |
| 25 | 2.6 | 2.6 | 23 | 36 | 77 | 25 | 3.3 | 1.8 | *.5 | 0 | 0 | 5.3 |
| 26 | 2.3 | 2.6 | 18 | 27 | 102 | 25 | 2.8 | 58 | .4 | 0 | 0 | 3.6 |
| 27 | 2.1 | 2.3 | 13 | 576 | 48 | 24 | 2.5 | 16 | .4 | 0 | 0 | 2.8 |
| 28 | 2.1 | 1.9 | 10 | 837 | 35 | 21 | 2.2 | 6.4 | 1.4 | 0 | 0 | 2.8 |
| 29 | 2.1 | 1.8 | 8.3 | *379 | - | 18 | 2.8 | 3.6 | .7 | 0 | 0 | 20 |
| 30 | 2.1 | 1.4 | 6.8 | 200 | -------- | 16 | 2.5 | 2.2 | .6 | 0 | 0 | 16 |
| 31 | 2.3 | -------- | 5.7 | 909 | -------- | 13 | -------- | 1.6 | -------- | 0 | 0 | -------- |
| Total | 83.0 | 42.0 | 2,111.6 | 3,670.6 | 2,701 | 882 | 904.4 | 179.7 | 24.1 | 3.43 | 2.13 | 514.94 |
| Mean | 2.68 | 1.40 | 68.1 | 118 | 96.5 | 28.5 | 30.1 | 5.80 | 0.803 | 0.111 | 0.069 | 17.2 |
| Cfsm | 0.164 | 0.086 | 4.18 | 7.24 | 5.92 | 1.75 | 1.85 | 0.356 | 0.049 | 0.0068 | 0.0042 | 1.06 |
| In. | 0.19 | 0.10 | 4.82 | 8.37 | 6.16 | 2.01 | 2.06 | 0.41 | 0.05 | 0.008 | 0.005 | 1.17 |

Calendar year 1956: Max 1,390 Min 0 Mean 27.4 Cfsm 1.68 In. 22.89
Water year 1956-57: Max 909 Min 0 Mean 30.5 Cfsm 1.87 In. 25.35

Peak discharge (base, 2,000 cfs).--Dec. 12 (11 p.m.) 4,220 cfs (9.45 ft); Jan. 22 (10 p.m.) 2,120 cfs (8.24 ft); Jan. 27 (10:30 p.m.) 3,100 cfs (8.85 ft); Sept. 15 (5:30 p.m.) 2,160 cfs (8.27 ft).

* Discharge measurement or observation of no flow made on this day.

## Duck River near Shelbyville, Tenn.

Location.--Lat 35°28'49", long 86°29'57", on right bank 150 ft downstream from Sims Bridge, 2.1 miles upstream from Sugar Creek, 2.2 miles west of Shelbyville, Bedford County, 2.9 miles downstream from Flat Creek, and at mile 216.2.

Drainage area.--481 sq mi.

Records available.--April 1934 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 685.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years, 798 cfs.

Extremes.--Maximum discharge during year, 23,500 cfs Feb. 1 (gage height, 27.04 ft); minimum, 48 cfs Sept. 5 (gage height, 0.79 ft).

1934-57: Maximum discharge, 62,900 cfs Feb. 13, 1948 (gage height, 36.40 ft, from floodmark), from rating curve extended above 27,000 cfs on basis of slope-area determination of peak flow; minimum, 5 cfs Aug. 23, 1936; minimum daily, 20 cfs Sept. 2, 1945.

Flood in March 1929 reached a stage of 37.6 ft (discharge, about 70,000 cfs), from high-water profile by Tennessee Valley Authority. Flood in March 1902 reached a stage about 2 ft higher than that in March 1929, from information by local residents.

Remarks.--Records good. Prior to 1948, diurnal fluctuation caused by powerplant upstream.

Revisions (water years).--WSP 783: 1934. WSP 853: Drainage area.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 13-15)

| | | | |
|---|---|---|---|
| 0.82 | 49 | 6.0 | 2,200 |
| 1.0 | 73 | 12.0 | 5,650 |
| 1.5 | 167 | 20.0 | 12,600 |
| 2.0 | 285 | 23.0 | 16,400 |
| 2.5 | 460 | 26.0 | 21,400 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 67 | 103 | 84 | 279 | 21,400 | 1,560 | 610 | 700 | 196 | 133 | 70 | 55 |
| 2 | 66 | 107 | 83 | 247 | 18,900 | 1,340 | 975 | 482 | 180 | 123 | 69 | 54 |
| 3 | 380 | 100 | 83 | 222 | 6,560 | 1,100 | 760 | *464 | 167 | 116 | 66 | 53 |
| 4 | 303 | 89 | 83 | *840 | 3,430 | 940 | 3,590 | 354 | 167 | 114 | 65 | 51 |
| 5 | 176 | 87 | 84 | 2,140 | 3,270 | 820 | *3,000 | 297 | *171 | 109 | 65 | *49 |
| 6 | 152 | 83 | *86 | 1,470 | 3,300 | 770 | 2,020 | 265 | 178 | 102 | 67 | 49 |
| 7 | 116 | 83 | 86 | 1,080 | 3,930 | 1,590 | 1,340 | 247 | 354 | 98 | 67 | 51 |
| 8 | 94 | 84 | 86 | 780 | 3,430 | 2,890 | 1,500 | 231 | 204 | 94 | *65 | 51 |
| 9 | 86 | *83 | 86 | 625 | 2,790 | 2,420 | 1,520 | 220 | 215 | 91 | 63 | 54 |
| 10 | 79 | 81 | 86 | 536 | 2,360 | 1,640 | 1,260 | 215 | 243 | 87 | 62 | 55 |
| 11 | *78 | 79 | 86 | 432 | 1,810 | 1,280 | 980 | 222 | 215 | 84 | 62 | 58 |
| 12 | 76 | 79 | 1,080 | 374 | 1,540 | 1,850 | 820 | 215 | 182 | 81 | 69 | 65 |
| 13 | 75 | 79 | 12,800 | 340 | 1,260 | 1,540 | 680 | 204 | 163 | 79 | 73 | 749 |
| 14 | 73 | 78 | *8,700 | 322 | 1,050 | 1,320 | 580 | 193 | 149 | 78 | 169 | 1,280 |
| 15 | 73 | 76 | 4,320 | 285 | 1,060 | 1,090 | 514 | 191 | 143 | 78 | 103 | 2,320 |
| 16 | 73 | 79 | 2,050 | 265 | 1,480 | 885 | 464 | 189 | 133 | 79 | 84 | 4,650 |
| 17 | 73 | 83 | 1,180 | 243 | 1,200 | 765 | 436 | 178 | 125 | 112 | 83 | 990 |
| 18 | 72 | 86 | 820 | 224 | 995 | 715 | 410 | 167 | 123 | 100 | 103 | 496 |
| 19 | 72 | 86 | 600 | 211 | 3,500 | 715 | 385 | 171 | 125 | *100 | 89 | 322 |
| 20 | 73 | 84 | 478 | 202 | 3,170 | 650 | 360 | 193 | 129 | 98 | 78 | 243 |
| 21 | 81 | 89 | 410 | 231 | 2,300 | 580 | 336 | 187 | 121 | 93 | 73 | 326 |
| 22 | 94 | 98 | 790 | 491 | 1,550 | 605 | 357 | 480 | 116 | 84 | 69 | 357 |
| 23 | 102 | 107 | 1,800 | 2,940 | 1,190 | 625 | 364 | 915 | 121 | 81 | 76 | 528 |
| 24 | 98 | 102 | 1,700 | 1,780 | 985 | 635 | 340 | 580 | 227 | 78 | 91 | 357 |
| 25 | 89 | 94 | 1,200 | 1,320 | 935 | 830 | 312 | 343 | 174 | 76 | 81 | 240 |
| 26 | 83 | 89 | 840 | 1,020 | 2,660 | 905 | 297 | 519 | 149 | 78 | 75 | 196 |
| 27 | 81 | 89 | 625 | 3,050 | 2,360 | 845 | 274 | 755 | 127 | 76 | 67 | 174 |
| 28 | 79 | 87 | 505 | 15,200 | 1,860 | 750 | 282 | 402 | 129 | 75 | 65 | 360 |
| 29 | 79 | 86 | 428 | *16,200 | - | 675 | 680 | 300 | 160 | 73 | 60 | 570 |
| 30 | 78 | 86 | 360 | 8,500 | -------- | 605 | 775 | 247 | 156 | 72 | 58 | 730 |
| 31 | 83 | -------- | 315 | 12,700 | -------- | 550 | -------- | 222 | -------- | 72 | 57 | -------- |
| Total | 3,204 | 2,636 | 41,934 | 74,549 | 100,275 | 33,485 | 26,221 | 10,348 | 5,042 | 2,814 | 2,344 | 15,533 |
| Mean | 103 | 87.9 | 1,353 | 2,405 | 3,581 | 1,080 | 874 | 334 | 168 | 90.8 | 75.6 | 518 |
| Cfsm | 0.214 | 0.183 | 2.81 | 5.00 | 7.44 | 2.25 | 1.82 | 0.694 | 0.349 | 0.189 | 0.157 | 1.08 |
| In. | 0.25 | 0.20 | 3.24 | 5.76 | 7.75 | 2.59 | 2.03 | 0.80 | 0.39 | 0.22 | 0.18 | 1.20 |

Calendar year 1956: Max 14,400 Min 66 Mean 798 Cfsm 1.66 In. 22.56
Water year 1956-57: Max 21,400 Min 49 Mean 872 Cfsm 1.81 In. 24.61

Peak discharge (base, 8,000 cfs).--Dec. 13 (6 p.m.) 14,300 cfs (21.47 ft); Jan. 28 (9:30 p.m.) 18,300 cfs (24.21 ft); Feb. 1 (7 p.m.) 23,500 cfs (27.04 ft); Sept. 16 (12:30 a.m.) 8,640 cfs (15.60 ft).

* Discharge measurement made on this day.

## Big Rock Creek at Lewisburg, Tenn.

Location.--Lat 35°26'56", long 86°47'09", on downstream side of center pier of bridge on State Highway 50, 800 ft east of Marshall County courthouse in Lewisburg and at mile 17.9.

Drainage area.--24.9 sq mi.

Records available.--January 1954 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 705.01 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,180 cfs Dec. 12 (gage height, 11.37 ft), from rating curve extended as explained below; no flow for several days in July and August. 1954-57: Maximum discharge, 16,700 cfs Mar. 21, 1955 (gage height, 17.62 ft, from floodmarks), from rating curve extended above 2,400 cfs on basis of contracted-opening determination 0.6 mile upstream (drainage area, 19.0 sq mi) at gage height 17.62 ft; no flow at times each year.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 12 | | | | Dec. 13 to Sept. 22 | | | | Sept. 23-30 | |
|---|---|---|---|---|---|---|---|---|---|
| 0.21 | 0.01 | 0.9 | 14 | 0.36 | 0 | 1.0 | 10 | 1.44 | 34 |
| .3 | .03 | 1.4 | 53 | .5 | .5 | 1.4 | 46 | 2.2 | 140 |
| .4 | .1 | 2.0 | 110 | .6 | 1.0 | 1.8 | 100 | | |
| .5 | .6 | 3.0 | 290 | .7 | 1.8 | 5.0 | 760 | | |
| .6 | 2.0 | 4.6 | 660 | .8 | 3.2 | 8.2 | 1,640 | | |
| .7 | 4.5 | | | .9 | 5.5 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.01 | 5.7 | 0.6 | 11 | 1,040 | 62 | 78 | 6.4 | 5.3 | 1.2 | 0 | 0.09 |
| 2 | .01 | 2.5 | .6 | 9.6 | 330 | 52 | 43 | *5.5 | 4.8 | .7 | 0 | .06 |
| 3 | 9.6 | 1.0 | .6 | *9.1 | a160 | 44 | 35 | 5.5 | 13 | .6 | 0 | .03 |
| 4 | 6.5 | .8 | .6 | 93 | a200 | *39 | *326 | 4.8 | *14 | .3 | 0 | .03 |
| 5 | .8 | .5 | .9 | 63 | 152 | 35 | 98 | 4.4 | 11 | .4 | 0 | .03 |
| 6 | .2 | .5 | *.5 | 43 | 171 | 47 | 66 | 4.1 | 7.8 | .2 | 0 | *.03 |
| 7 | .1 | .5 | .4 | 33 | 138 | 104 | 52 | 3.9 | 5.3 | .09 | *0 | .03 |
| 8 | .05 | .8 | .4 | 28 | 127 | 82 | 64 | 3.7 | 4.4 | .03 | 0 | 1.0 |
| 9 | .05 | *.4 | .4 | 25 | 96 | 67 | 42 | 3.7 | 6.0 | .2 | .09 | 3.2 |
| 10 | .05 | .4 | .4 | 20 | 94 | 54 | 36 | 4.4 | 8.2 | .09 | 0 | .2 |
| 11 | *.04 | .3 | 2.4 | 16 | 68 | 53 | 32 | 4.4 | 5.3 | .03 | 0 | .6 |
| 12 | .03 | .3 | 649 | 15 | 56 | 161 | 28 | 3.9 | 3.9 | .03 | 12 | 3.0 |
| 13 | .03 | .3 | 871 | a14 | 47 | 74 | 26 | 3.7 | 2.8 | 0 | 1.4 | 129 |
| 14 | .03 | .2 | 680 | a12 | 41 | 62 | 22 | 3.4 | 2.2 | 0 | .5 | 60 |
| 15 | .03 | 1.6 | 138 | a11 | 120 | 57 | 21 | 3.4 | 1.9 | 0 | .3 | 428 |
| 16 | .03 | 7.0 | 67 | a10 | 75 | 44 | 19 | 3.4 | 1.6 | .1 | .3 | 131 |
| 17 | .03 | 3.0 | 43 | a10 | 54 | 39 | 17 | 3.1 | 1.3 | 1.2 | .7 | 74 |
| 18 | .03 | 1.6 | 32 | a9.5 | 46 | 38 | 15 | 2.9 | 1.2 | *1.0 | .4 | 48 |
| 19 | .03 | 1.2 | 26 | a9.2 | 434 | 35 | 14 | 6.9 | 2.6 | .2 | .4 | 58 |
| 20 | .07 | 1.1 | 22 | a9.0 | 132 | 29 | 13 | 8.3 | 1.5 | .09 | .3 | 58 |
| 21 | 3.5 | 4.0 | 50 | a12 | 86 | 31 | 12 | 4.1 | 1.2 | .09 | .3 | 189 |
| 22 | 2.5 | [illegible] | 131 | a100 | 64 | 32 | 14 | 108 | .9 | .09 | .2 | 478 |
| 23 | .7 | [illegible] | 116 | a150 | 51 | 28 | 11 | 25 | .9 | .09 | .2 | 137 |
| 24 | .4 | [illegible] | 63 | a70 | 43 | 29 | 9.1 | 13 | 1.8 | .09 | .1 | 72 |
| 25 | .2 | [illegible] | 50 | a80 | 122 | 34 | 7.8 | 7.8 | .9 | .09 | .1 | 52 |
| 26 | .1 | 1.1 | 33 | a70 | 205 | 30 | 7.3 | 166 | .6 | .06 | .2 | 34 |
| 27 | .1 | 1.0 | 28 | a600 | 108 | 27 | 6.4 | 43 | 1.0 | .03 | .3 | 45 |
| 28 | .05 | .8 | 23 | a1,400 | 79 | 26 | 6.4 | 23 | 3.1 | 0 | .2 | 66 |
| 29 | .2 | .7 | 19 | *a500 | - | 24 | 11 | 14 | 2.0 | .03 | .1 | 100 |
| 30 | .1 | .7 | 16 | 352 | ------ | 23 | 8.6 | 10 | 1.2 | .2 | .1 | 63 |
| 31 | 12 | ------ | 14 | 1,610 | ------ | 22 | ------ | 7.8 | ------ | .03 | .1 | ------ |
| Total | 37.57 | 47.2 | 3,078.8 | 5,394.4 | 4,339 | 1,484 | 1,140.6 | 511.5 | 117.7 | 7.26 | 18.29 | 2,230.30 |
| Mean | 1.21 | 1.57 | 99.3 | 174 | 155 | 47.9 | 38.0 | 16.5 | 3.92 | 0.234 | 0.590 | 74.3 |
| Cfsm | 0.049 | 0.063 | 3.99 | 6.99 | 6.22 | 1.92 | 1.53 | 0.663 | 0.157 | 0.0094 | 0.024 | 2.98 |
| In. | 0.06 | 0.07 | 4.60 | 8.06 | 6.48 | 2.22 | 1.70 | 0.76 | 0.18 | 0.01 | 0.03 | 3.33 |

Calendar year 1956: Max 871 Min 0 Mean 35.1 Cfsm 1.41 In. 19.17
Water year 1956-57: Max 1,610 Min 0 Mean 50.4 Cfsm 2.02 In. 27.50

Peak discharge (base, 1,500 cfs).--Dec. 12 (10 p.m.) 4,180 cfs (11.37 ft); Jan. 28 (time unknown) 3,190 cfs (10.59 ft); Jan. 31 (6 a.m.) 2,470 cfs (9.77 ft); Apr. 4 (7 a.m.) 1,670 cfs (8.29 ft); Sept. 15 (5 p.m.) 2,400 cfs (9.67 ft); Sept. 22 (6 p.m.) 2,400 cfs (9.67 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Duck River at Columbia, Tenn.

Location.--Lat 35°37'05", long 87°01'56", on right bank 4 ft downstream from bridge on former U. S. Highway 31, 2 blocks north of public square at Columbia, Maury County, 0.7 mile downstream from Columbia hydroelectric plant, 2.4 miles upstream from Rutherford Creek, and at mile 132.8.

Drainage area.--1,208 sq mi.

Records available.--October 1904 to December 1908 and April 1920 to September 1957 in reports of Geological Survey. October 1904 to December 1908 and April 1920 to October 1924 (prior to December 1922, revised) in Tennessee Division of Geology Bulletin 34. Gage-height records collected in this vicinity during periods of high water since 1886 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 535.52 ft above mean sea level, datum of 1929. Prior to Jan. 9, 1925, chain, tape, or staff gages near this site; all gages at datum 2.37 ft higher prior to Oct. 1, 1933.

Average discharge.--41 years (1904-8, 1920-57), 1,920 cfs.

Extremes.--Maximum discharge during year, 34,200 cfs Feb. 2 (gage height, 40.48 ft); minimum, 44 cfs Sept. 12; minimum gage height, 1.80 ft Dec. 11; minimum daily discharge, 46 cfs Sept. 10.

1904-8, 1920-57: Maximum discharge, 61,100 cfs Feb. 14, 1948 (gage height, 51.75 ft); no flow Oct. 22, 1922.

Flood of Mar. 30, 1902, reached a stage of 48.0 ft, present datum (discharge, 50,700 cfs).

Remarks.--Records good. Occasional diurnal fluctuation and infrequent regulation at low flow caused by powerplants above station. Prior to about 1952, fluctuation and regulation were more pronounced.

Revisions (water years).--WSP 783: 1929(M). See also Records available.

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-13, 22-29, Nov. 3-8, 16-28, May 30 to June 9, June 11 to Sept. 14, Sept. 20-23, 26-30)

| | | | |
|---|---|---|---|
| 1.6 | 42 | 6.0 | 2,180 |
| 1.7 | 62 | 9.0 | 4,100 |
| 1.8 | 90 | 20.0 | 13,700 |
| 2.0 | 168 | 30.0 | 22,700 |
| 4.0 | 1,020 | 40.5 | 34,200 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 70 | 98 | 90 | 826 | *32,400 | 4,000 | 1,280 | 718 | 587 | 262 | 90 | 58 |
| 2 | 70 | 98 | 90 | 730 | 34,100 | 3,140 | 2,240 | *975 | 512 | 269 | 87 | 56 |
| 3 | 89 | 106 | 87 | 570 | 33,000 | 2,610 | 2,340 | 658 | 442 | 258 | 84 | 56 |
| 4 | 98 | 113 | 90 | *778 | 28,000 | 2,190 | 2,630 | 679 | *773 | 215 | 76 | 56 |
| 5 | 230 | 113 | *87 | 2,950 | 13,800 | *1,890 | *8,160 | 499 | 804 | 191 | 70 | 56 |
| 6 | 442 | 113 | 84 | 4,400 | 7,920 | 2,460 | 5,750 | 442 | 553 | 184 | 62 | *54 |
| 7 | 309 | 106 | 82 | 2,860 | 8,850 | 3,730 | 3,460 | 413 | 587 | 160 | *60 | 52 |
| 8 | 223 | *102 | 84 | 2,200 | 8,800 | 5,600 | 6,970 | 377 | 434 | 148 | 56 | 54 |
| 9 | 180 | 98 | 84 | 1,710 | 7,860 | 5,730 | 5,390 | 349 | 807 | 129 | 56 | 48 |
| 10 | 145 | 98 | 84 | 1,440 | 6,330 | 4,630 | 3,450 | 329 | 1,080 | 117 | 58 | 46 |
| 11 | *117 | 98 | 84 | 1,270 | 5,240 | 3,260 | 2,610 | 325 | 646 | 102 | 56 | 48 |
| 12 | 110 | 98 | 2,280 | 1,030 | 3,940 | 3,760 | 2,080 | 305 | 536 | 90 | 56 | 59 |
| 13 | 102 | 98 | 15,300 | 936 | 3,110 | 4,880 | 1,660 | 313 | 450 | 90 | 58 | 421 |
| 14 | 94 | 98 | *23,600 | 866 | 2,540 | 3,430 | 1,410 | 417 | 357 | 87 | 76 | 290 |
| 15 | 90 | 102 | 25,700 | 795 | 2,460 | 2,840 | 1,220 | 333 | 289 | 87 | 168 | 1,730 |
| 16 | 90 | 106 | 16,800 | 722 | 3,900 | 2,360 | 1,080 | 285 | 250 | 84 | 150 | 3,290 |
| 17 | 87 | 106 | 5,160 | 583 | 3,650 | 1,950 | 1,100 | 269 | 219 | 84 | 258 | 6,720 |
| 18 | 87 | 110 | 2,980 | 578 | 2,610 | 1,700 | 853 | 273 | 199 | *110 | 321 | 2,240 |
| 19 | 84 | 113 | 2,080 | 532 | 5,990 | 1,560 | 817 | 1,750 | 184 | 148 | 199 | 1,040 |
| 20 | 84 | 113 | 1,660 | 508 | 11,700 | 1,480 | 786 | 714 | 191 | 152 | 137 | 599 |
| 21 | 98 | 113 | 1,460 | 524 | 7,600 | 1,320 | 654 | 373 | 176 | 141 | 129 | 520 |
| 22 | 102 | 110 | 3,260 | 2,160 | 4,820 | 1,280 | 726 | 5,210 | 168 | 113 | 117 | 566 |
| 23 | 102 | 110 | 4,400 | 4,530 | 3,210 | 1,310 | 662 | 3,040 | 180 | 106 | 90 | 2,620 |
| 24 | 102 | 110 | 4,720 | 6,270 | 2,540 | 1,270 | 646 | 1,760 | 242 | 98 | 79 | 2,340 |
| 25 | 106 | 110 | 3,510 | 3,640 | 2,160 | 1,290 | 541 | 1,120 | 293 | 87 | 68 | 1,200 |
| 26 | 110 | 110 | 2,600 | 2,800 | 4,800 | 1,600 | 625 | 4,380 | 361 | 82 | 62 | 646 |
| 27 | 110 | 110 | 1,960 | 3,240 | 7,500 | 1,640 | 450 | 5,360 | 373 | 79 | 70 | 499 |
| 28 | 106 | 106 | 1,540 | 17,700 | 5,500 | 1,580 | 471 | 2,520 | 357 | 79 | 79 | 377 |
| 29 | 102 | 102 | 1,190 | *26,800 | -- | 1,410 | 458 | 1,410 | 273 | 90 | 76 | 434 |
| 30 | 98 | 94 | 1,050 | 30,500 | -------- | 1,280 | 574 | 970 | 266 | 121 | 68 | 903 |
| 31 | 98 | -------- | 927 | 30,600 | -------- | 1,160 | -------- | 743 | -------- | 98 | 60 | -------- |
| Total | 3,935 | 3,162 | 123,123 | 155,048 | 264,330 | 78,340 | 61,093 | 37,309 | 12,589 | 4,061 | 3,076 | 27,078 |
| Mean | 127 | 105 | 3,972 | 5,002 | 9,440 | 2,527 | 2,036 | 1,204 | 420 | 131 | 99.2 | 903 |
| Cfsm | 0.105 | 0.087 | 3.29 | 4.14 | 7.81 | 2.09 | 1.69 | 0.997 | 0.348 | 0.108 | 0.082 | 0.748 |
| In. | 0.12 | 0.10 | 3.79 | 4.77 | 8.14 | 2.41 | 1.88 | 1.15 | 0.39 | 0.13 | 0.09 | 0.83 |

Calendar year 1956: Max 26,200 Min 70 Mean 1,898 Cfsm 1.57 In. 21.38
Water year 1956-57: Max 34,100 Min 46 Mean 2,118 Cfsm 1.75 In. 23.80

Peak discharge (base, 16,000 cfs).--Dec. 15 (5 a.m.) 26,200 cfs (33.62 ft); Feb. 2 (11 a.m.) 34,200 cfs (40.48 ft).

* Discharge measurement made on this day.

## Rutherford Creek near Carters Creek, Tenn.

Location.--Lat 35°40'23", long 86°58'42", on right bank at upstream side of county road bridge, 1 mile downstream from Double Branch, 3.2 miles south of town of Carters Creek, Maury County, 3.5 miles upstream from Carters Creek, and 5.1 miles northeast of Columbia.

Drainage area.--68.8 sq mi.

Records available.--September 1953 to September 1957.

Gage.--Water-stage recorder. Altitude of gage is 590 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,730 cfs Dec. 13 (gage height, 15.89 ft); no flow Oct. 1, 2, Sept. 6, 7.
1953-57: Maximum discharge, 11,800 cfs Mar. 22, 1955 (gage height, 24.38 ft, from high-water mark in gage house), from rating curve extended above 4,000 cfs on basis of slope-area determination of peak flow; no flow for many days each year.

Remarks.--Records fair except those below 10 cfs, which are poor.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 28 to Dec. 9)

| Oct. 1 to Jan. 29 | | | | Jan. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.1 | 0 | 1.8 | 13 | 1.1 | 0 | 1.8 | 19 |
| 1.2 | .2 | 2.0 | 28 | 1.2 | .02 | 2.0 | 41 |
| 1.3 | .8 | 2.4 | 79 | 1.3 | .7 | 3.0 | 176 |
| 1.4 | 1.9 | 3.0 | 176 | 1.4 | 2.0 | 6.0 | 792 |
| 1.5 | 3.0 | 6.0 | 792 | 1.5 | 3.7 | 10.0 | 1,840 |
| 1.6 | 4.7 | 10.0 | 1,840 | 1.6 | 6.6 | 11.0 | 2,150 |
| 1.7 | 7.5 | 12.0 | 2,520 | 1.7 | 11 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 14 | 1.1 | 53 | 1,900 | 200 | 88 | 20 | 65 | 9.7 | 2.8 | 0.01 |
| 2 | 0 | *4.5 | 1.1 | 44 | 804 | 168 | 92 | *29 | 76 | 8.2 | *2.1 | .01 |
| 3 | *2.5 | 3.0 | *1.4 | *40 | 517 | 141 | *69 | 81 | 140 | 6.9 | 1.8 | .01 |
| 4 | 3.6 | 2.8 | 1.3 | 141 | 393 | 124 | 122 | 24 | *130 | 5.8 | 1.8 | .01 |
| 5 | 2.2 | 2.7 | 1.1 | 190 | *307 | *112 | 95 | 18 | 91 | 5.2 | 1.5 | .01 |
| 6 | 2.4 | 2.5 | 1.1 | 134 | 294 | 296 | 82 | 16 | 69 | 4.7 | 1.1 | 0 |
| 7 | 1.6 | 2.5 | 1.3 | 110 | 424 | 491 | 72 | 14 | 54 | 4.2 | .7 | 0 |
| 8 | 1.4 | 2.4 | 1.6 | 94 | 395 | 417 | 1,700 | 12 | 69 | 3.9 | .5 | .03 |
| 9 | 1.6 | 2.3 | 1.6 | 85 | 389 | 312 | 391 | 11 | 86 | 3.7 | .3 | .05 |
| 10 | 1.5 | 2.5 | 1.9 | 90 | 339 | 242 | 256 | 10 | 92 | 3.4 | .2 | .02 |
| 11 | 1.4 | 2.4 | 2.5 | 73 | 252 | 197 | 191 | 11 | 62 | 3.2 | .1 | .02 |
| 12 | 1.2 | 2.4 | 984 | 68 | 206 | 280 | 151 | 9.2 | 48 | 3.0 | .05 | *3.1 |
| 13 | 1.2 | 2.4 | *1,900 | 65 | 171 | 183 | 127 | 10 | 37 | 2.8 | .05 | 37 |
| 14 | 1.2 | 2.4 | 1,050 | 58 | 146 | 156 | 108 | 38 | 29 | 2.8 | .03 | 6.4 |
| 15 | 1.1 | 3.5 | 383 | 53 | 306 | 138 | 95 | 12 | 23 | *2.7 | .03 | 31 |
| 16 | 1.1 | 8.3 | 240 | 47 | 238 | 118 | 87 | 8.2 | 18 | 2.7 | .02 | 82 |
| 17 | 1.0 | 12 | 169 | 40 | 165 | 108 | 80 | 18 | 15 | 2.7 | 9.6 | 17 |
| 18 | 1.0 | 5.3 | 129 | 40 | 141 | 104 | 72 | 39 | 13 | 9.4 | 33 | 7.7 |
| 19 | 1.1 | 3.1 | 104 | 37 | 651 | 97 | 66 | *1,010 | 11 | 6.2 | 3.4 | 6.2 |
| 20 | 1.1 | 2.2 | 90 | 35 | 345 | 86 | 58 | 202 | 10 | 2.7 | 1.9 | 5.8 |
| 21 | 1.8 | 4.0 | 209 | 60 | 251 | 80 | 57 | 98 | 8.7 | 2.1 | 1.5 | 5.8 |
| 22 | 2.5 | 4.0 | 496 | 1,850 | 197 | 84 | 52 | 1,600 | 7.7 | 1.9 | 1.2 | 6.2 |
| 23 | 2.3 | 5.3 | 318 | 923 | 160 | 75 | 49 | 357 | 7.7 | 2.5 | .9 | 8.7 |
| 24 | 2.9 | 4.9 | 220 | 403 | 142 | 71 | 42 | 195 | 27 | 1.9 | .6 | 6.2 |
| 25 | 2.5 | 3.5 | 166 | 305 | 155 | 83 | 36 | 135 | 12 | 1.9 | .3 | 4.7 |
| 26 | 2.4 | 2.5 | 129 | 233 | 605 | 79 | 33 | 558 | 8.7 | 2.0 | .2 | 4.4 |
| 27 | 2.2 | 2.1 | 107 | 558 | 339 | 74 | 29 | 247 | 7.3 | 1.9 | .05 | 3.9 |
| 28 | 2.1 | 1.6 | 90 | 1,160 | 256 | 66 | 27 | 152 | 11 | 1.9 | .02 | 3.9 |
| 29 | 2.1 | 1.4 | 79 | *2,160 | - | 61 | 32 | 118 | 11 | 1.9 | .02 | 4.7 |
| 30 | 2.0 | 1.3 | 69 | 810 | -------- | 57 | 25 | 96 | 14 | 3.0 | .02 | 4.7 |
| 31 | 4.7 | -------- | 62 | 1,160 | -------- | 52 | -------- | 78 | -------- | 3.2 | .01 | -------- |
| Total | 55.7 | 113.8 | 7,010.0 | 11,119 | 10,488 | 4,752 | 4,384 | 5,226.4 | 1,253.1 | 118.1 | 65.80 | 249.57 |
| Mean | 1.80 | 3.79 | 226 | 359 | 375 | 153 | 146 | 169 | 41.8 | 3.81 | 2.12 | 8.32 |
| Cfsm | 0.026 | 0.055 | 3.28 | 5.22 | 5.45 | 2.22 | 2.12 | 2.46 | 0.608 | 0.055 | 0.031 | 0.121 |
| In. | 0.03 | 0.06 | 3.79 | 6.01 | 5.67 | 2.57 | 2.37 | 2.83 | 0.68 | 0.06 | 0.04 | 0.13 |

Calendar year 1956: Max 3,910 Min 0 Mean 111 Cfsm 1.61 In. 21.96
Water year 1956-57: Max 2,160 Min 0 Mean 123 Cfsm 1.79 In. 24.24

Peak discharge (base, 1,800 cfs).--Dec. 13 (4 a.m.) 4,730 cfs (15.89 ft); Dec. 14 (10:30 a.m.) 2,160 cfs (11.02 ft); Jan. 22 (8:30 p.m.) 4,440 cfs (15.45 ft); Jan. 29 (7:30 p.m.) 4,410 cfs (15.40 ft); Feb. 1 (5 p.m.) 2,340 cfs (11.54 ft); Apr. 8 (1:30 p.m.) 3,410 cfs (13.76 ft); May 19 (3 p.m.) 2,430 cfs (11.78 ft); May 22 (5 p.m.) 3,550 cfs (14.01 ft).
* Discharge measurement made on this day.

## Big Bigby Creek at Sandy Hook, Tenn.

Location.--Lat 35°29'19", long 87°13'59", on right bank 45 ft west of Louisville & Nashville Railroad track, 0.2 mile downstream from bridge on U. S. Highway 43, 0.4 mile northeast of Sandy Hook, Maury County, 0.5 mile upstream from Dry Creek, and 3.5 miles southwest of Mount Pleasant.

Drainage area.--17.5 sq mi.

Records available.--September 1953 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 670.59 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,390 cfs May 22 (gage height, 6.98 ft), from rating curve extended above 830 cfs; minimum, 2.4 cfs Oct. 8-19 (gage height, 0.85 ft).
1953-57: Maximum discharge, 2,550 cfs Mar. 21, 1955 (gage height, 11.22 ft), from rating curve extended above 830 cfs; minimum, 1.5 cfs Sept. 4-7, 1954; minimum gage height, 0.80 ft Sept. 17, 1956.

Remarks.--Records fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 2, 3, 7)

| Oct. 1 to Jan. 27 | | | | Jan. 28 to Feb. 19 | | Feb. 20 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.85 | 2.4 | 2.0 | 59 | 1.7 | 22 | 1.05 | 4.3 | 2.0 | 55 |
| 1.0 | 4.8 | 2.5 | 103 | 2.0 | 47 | 1.2 | 7.5 | 2.5 | 106 |
| 1.2 | 9.2 | 3.0 | 176 | 2.5 | 102 | 1.3 | 10 | 3.0 | 176 |
| 1.3 | 12 | 4.0 | 385 | 3.0 | 176 | 1.5 | 19 | 4.2 | 438 |
| 1.6 | 30 | | | 4.0 | 385 | | | | |
| | | | | 5.1 | 702 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.6 | 4.7 | 4.0 | 7.7 | 641 | 34 | 29 | 11 | 22 | *19 | 6.6 | 4.5 |
| 2 | 2.6 | *4.2 | 4.0 | 7.2 | 180 | 30 | 40 | *12 | 33 | 18 | *6.4 | 4.5 |
| 3 | *3.0 | 4.2 | *4.0 | *7.0 | 100 | 26 | *35 | 13 | 33 | 17 | 5.9 | 4.7 |
| 4 | 3.6 | 4.0 | 4.0 | 22 | 70 | 24 | 86 | 12 | *46 | 14 | 5.9 | 5.1 |
| 5 | 3.0 | 3.8 | 4.0 | 31 | *51 | *22 | 65 | 11 | 56 | 13 | 5.7 | 4.7 |
| 6 | 2.8 | 3.8 | 4.3 | 21 | 52 | 30 | 48 | 11 | 39 | 12 | 5.5 | 4.5 |
| 7 | 2.5 | 4.2 | 4.3 | 16 | 52 | 76 | 39 | 10 | 29 | 11 | 5.5 | 4.3 |
| 8 | 2.5 | 4.2 | 4.5 | 12 | 45 | 80 | 280 | 9.9 | 25 | 10 | 5.3 | 5.3 |
| 9 | 2.4 | 4.0 | 4.7 | 11 | 42 | 57 | 114 | 9.6 | 255 | 9.6 | 5.1 | 6.8 |
| 10 | 2.4 | 4.0 | 4.5 | 10 | 43 | 45 | 69 | 9.6 | 147 | 9.0 | 5.1 | 5.7 |
| 11 | 2.4 | 4.0 | 4.7 | 9.5 | 37 | 38 | 51 | 9.6 | 65 | 8.2 | 5.1 | 5.5 |
| 12 | 2.4 | 4.0 | 283 | 9.2 | 31 | 51 | 41 | 9.6 | 43 | 8.2 | 5.5 | *7.5 |
| 13 | 2.4 | 3.8 | 331 | 8.7 | *26 | 41 | 35 | 9.3 | 33 | 7.9 | 6.4 | 14 |
| 14 | 2.4 | 3.6 | 136 | 8.4 | 24 | 38 | 30 | 9.0 | 28 | 8.2 | 6.2 | 9.6 |
| 15 | 2.4 | 4.0 | 58 | 7.9 | 43 | 36 | 26 | 9.0 | 23 | 9.0 | 5.9 | 8.8 |
| 16 | 2.4 | 7.5 | 31 | 7.7 | 55 | 31 | 24 | 8.8 | 20 | 8.5 | 5.7 | 12 |
| 17 | 2.4 | 4.7 | *21 | 7.0 | 41 | 28 | 23 | 14 | 18 | 7.9 | 6.4 | 8.8 |
| 18 | 2.4 | 4.2 | 14 | 6.8 | 32 | 27 | 22 | 12 | 17 | 8.2 | 6.8 | 7.7 |
| 19 | 2.4 | 4.0 | 11 | 6.6 | 170 | 26 | 21 | 312 | 16 | 8.2 | 6.4 | 7.0 |
| 20 | 2.5 | 3.8 | 10 | 6.6 | 104 | 23 | 20 | 87 | 14 | 7.5 | 5.7 | 7.0 |
| 21 | 3.8 | 5.0 | 11 | 9.2 | 60 | 21 | 19 | 45 | 12 | 6.8 | 5.5 | 7.2 |
| 22 | 4.7 | 6.4 | 34 | 24 | 45 | 21 | 18 | 429 | 12 | 6.6 | 5.3 | 7.2 |
| 23 | 3.6 | 5.4 | 38 | 50 | 36 | 19 | 15 | 131 | 34 | 6.6 | 5.3 | 7.2 |
| 24 | 3.3 | 5.0 | 25 | 31 | 31 | 18 | 14 | 62 | 68 | 7.5 | 5.1 | 6.8 |
| 25 | 3.1 | 4.7 | 17 | 25 | 31 | 19 | 14 | 43 | 36 | 7.2 | 5.1 | 6.4 |
| 26 | 3.1 | 4.7 | 12 | 18 | 47 | 20 | 13 | 296 | 24 | 6.8 | 4.9 | 6.2 |
| 27 | 3.3 | 4.5 | 11 | 195 | 44 | 19 | 12 | 118 | 22 | 6.6 | 4.9 | 6.2 |
| 28 | 3.3 | 4.3 | 10 | 408 | 39 | 17 | 12 | 60 | 28 | 6.4 | 4.7 | 6.4 |
| 29 | 3.3 | 4.3 | 9.5 | *387 | - | 16 | 12 | 43 | 22 | 6.6 | 4.5 | 7.2 |
| 30 | 3.3 | 4.3 | 8.7 | 164 | -------- | 16 | 12 | 31 | 21 | 8.2 | 4.5 | 7.0 |
| 31 | 4.6 | -------- | 8.2 | 693 | -------- | 15 | -------- | 25 | -------- | 7.7 | 4.5 | -------- |
| Total | 90.9 | 133.3 | 1,126.4 | 2,227.5 | 2,172 | 964 | 1,239 | 1,872.4 | 1,241 | 291.4 | 171.4 | 205.8 |
| Mean | 2.93 | 4.44 | 36.3 | 71.9 | 77.6 | 31.1 | 41.3 | 60.4 | 41.4 | 9.40 | 5.53 | 6.86 |
| Cfsm | 0.167 | 0.254 | 2.07 | 4.11 | 4.43 | 1.78 | 2.36 | 3.45 | 2.37 | 0.537 | 0.316 | 0.392 |
| In. | 0.19 | 0.28 | 2.39 | 4.73 | 4.62 | 2.05 | 2.63 | 3.98 | 2.64 | 0.62 | 0.36 | 0.44 |

Calendar year 1956: Max 552 Min 2.1 Mean 21.8 Cfsm 1.25 In. 16.94
Water year 1956-57: Max 693 Min 2.4 Mean 32.2 Cfsm 1.84 In. 24.93

Peak discharge (base, 600 cfs).--Dec. 12 (8:30 p.m.) 1,350 cfs (6.88 ft); Jan. 27 (11 p.m.) 1,200 cfs (6.51 ft); Jan. 29 (1:30 p.m.) 826 cfs (5.46 ft); Jan. 31 (10 p.m.) 959 cfs (5.84 ft); Apr. 8 (7:30 a.m.) 722 cfs (5.16 ft); May 19 (11 a.m.) 1,000 cfs (5.97 ft); May 22 (11 a.m.) 1,390 cfs (6.98 ft); May 26 (11:30 a.m.) 952 cfs (5.82 ft); June 9 (6:30 p.m.) 1,300 cfs (6.75 ft).
* Discharge measurement made on this day.

## Big Bigby Creek near Mount Pleasant, Tenn.

Location.--Lat 35°30'12", long 87°13'54", near midchannel on downstream side of pier of bridge on U. S. Highway 43, 400 ft downstream from small water-supply dam, 0.7 mile downstream from Dry Creek, 2.55 miles southwest of Mount Pleasant, Maury County, and 2.6 miles upstream from West Fork.

Drainage area.--25.8 sq mi.

Records available.--September 1953 to June 1957 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 654.99 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during period October 1956 to June 1957, 2,430 cfs May 22 (gage height, 5.70 ft), from rating curve extended above 1,100 cfs; minimum, 1.9 cfs Oct. 1, 2 (gage height, 0.77 ft).

1953-57: Maximum discharge, 3,740 cfs Mar. 21, 1955 (gage height, 10.20 ft), from rating curve extended above 2,200 cfs; minimum, 0.9 cfs Oct. 20-22, 1954; minimum gage height, 0.58 ft Sept. 23, 27-29, 1954.

Remarks.--Records poor. Irregular discharge at low flow caused by removal and delayed return of ore-processing water upstream.

Discharge, in cubic feet per second, October 1956 to June 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.0 | 6.7 | 4.8 | 12 | 1,030 | 55 | 43 | 13 | 28 | †22 | | |
| 2 | 2.0 | *5.5 | 4.8 | 10 | 282 | 48 | 53 | *14 | 47 | | | |
| 3 | *3.1 | 5.5 | *4.5 | *10 | 137 | 42 | *47 | 17 | 41 | | | |
| 4 | 4.1 | 5.3 | 4.5 | 30 | 101 | 38 | 116 | 14 | *68 | | | |
| 5 | 3.6 | 5.3 | 4.8 | 46 | *82 | *32 | 98 | 13 | 78 | | | |
| 6 | 3.8 | 5.3 | 4.8 | 35 | 84 | 50 | 70 | 12 | 56 | | | |
| 7 | 3.4 | 5.5 | 5.0 | 28 | 82 | 111 | 56 | 12 | 39 | | | |
| 8 | 3.2 | 5.3 | 5.3 | 24 | 74 | 120 | 382 | 12 | 34 | | | |
| 9 | 3.1 | 5.3 | 5.3 | 21 | 66 | 94 | 170 | 11 | 300 | | | |
| 10 | 3.4 | 5.0 | 5.0 | 20 | 68 | 73 | 102 | 11 | 156 | | | |
| 11 | 3.4 | 4.8 | 5.5 | 17 | 57 | 63 | 74 | 11 | 78 | | | |
| 12 | 3.2 | 4.8 | 443 | 15 | 50 | 81 | 60 | 11 | 50 | | | |
| 13 | 3.8 | 4.8 | *495 | 14 | *41 | 68 | 50 | 10 | 36 | | | |
| 14 | 3.6 | 4.5 | 217 | 13 | 36 | 61 | 41 | 10 | 30 | | | |
| 15 | 3.6 | 6.0 | 94 | 12 | 68 | 57 | 36 | 9.9 | 26 | | | |
| 16 | 3.6 | 13 | 54 | 11 | 87 | 48 | 32 | 9.9 | 22 | | | |
| 17 | 3.6 | 7.3 | *36 | 10 | 66 | 44 | 30 | 16 | 18 | | | |
| 18 | 3.6 | 6.2 | 26 | 10 | 54 | 42 | 29 | 13 | 17 | | | |
| 19 | 3.6 | 5.5 | 21 | 9.5 | 252 | 40 | 26 | 448 | 16 | | | |
| 20 | 3.8 | 5.0 | 18 | 10 | 158 | 33 | 24 | 116 | 15 | | | |
| 21 | 7.0 | 10 | 22 | 14 | 96 | 30 | 23 | 59 | 13 | | | |
| 22 | 7.9 | 9.0 | 63 | 29 | 70 | 31 | 22 | 733 | 18 | | | |
| 23 | 5.8 | 7.0 | 70 | *73 | 55 | 30 | 20 | 175 | 79 | | | |
| 24 | 5.0 | 6.2 | 50 | 50 | 46 | 29 | 18 | 90 | 92 | | | |
| 25 | 4.8 | 5.5 | 36 | 41 | 50 | 32 | 17 | 57 | 52 | | | |
| 26 | 4.8 | 5.5 | 26 | 31 | 77 | 32 | 16 | 465 | 32 | | | |
| 27 | 4.8 | 5.3 | 21 | 240 | 73 | 30 | 15 | 168 | 30 | | | |
| 28 | 4.8 | 5.0 | 19 | 720 | 65 | 27 | 14 | 90 | 38 | | | |
| 29 | 4.8 | 5.0 | 17 | *592 | - | 26 | 14 | 59 | 33 | | | |
| 30 | 4.8 | 4.8 | 15 | 260 | -------- | 24 | 13 | 42 | 30 | | | |
| 31 | 7.3 | -------- | 13 | 998 | -------- | 23 | -------- | 30 | -------- | | | -------- |
| Total | 129.3 | 179.9 | 1,810.3 | 3,405.5 | 3,407 | 1,514 | 1,711 | 2,751.8 | 1,572 | | | |
| Mean | 4.17 | 6.00 | 58.4 | 110 | 122 | 48.8 | 57.0 | 88.8 | 52.4 | | | |
| Cfsm | 0.162 | 0.233 | 2.26 | 4.26 | 4.73 | 1.89 | 2.21 | 3.44 | 2.03 | | | |
| In. | 0.19 | 0.26 | 2.61 | 4.91 | 4.91 | 2.18 | 2.47 | 3.97 | 2.27 | | | |

Calendar year 1956: Max 1,040 Min 1.8 Mean 33.2 Cfsm 1.29 In. 17.50
Water year 1956-57: Max - Min - Mean - Cfsm - In. -

Peak discharge (base, 1,000 cfs).--Dec. 12 (6:30 p.m.) 2,240 cfs (5.46 ft); Jan. 27 (12 p.m.) 2,130 cfs (5.33 ft); Jan. 29 (2 p.m.) 1,140 cfs (4.04 ft); Jan. 31 (9:30 p.m.) 1,520 cfs (4.56 ft); May 19 (9 a.m.) 1,360 cfs (4.36 ft); May 22 (11 a.m.) 2,430 cfs (5.70 ft); May 26 (11 a.m.) 1,360 cfs (4.35 ft); June 9 (6 p.m.) 1,610 cfs (4.67 ft); June 23 (8 p.m.) 1,170 cfs (4.03 ft).

* Discharge measurement made on this day.
† Result of discharge measurement.

## Duck River above Hurricane Mills, Tenn.

Location (revised).--Lat 35°55'48", long 87°44'25", on left bank 0.4 mile downstream from Tumbling Creek, 1.3 miles upstream from bridge on State Highway 13, 3.6 miles southeast of Hurricane Mills, Humphreys County, and at mile 26.0.

Drainage area.--2,557 sq mi.

Records available.--July 1925 to September 1957. Prior to October 1951, published as "near Hurricane Mills."

Gage.--Water-stage recorder. Datum of gage is 370.53 ft above mean sea level, datum of 1929. Prior to June 2, 1927, tape gage, June 2, 1927, to Feb. 20, 1934, staff gage, and Feb. 21, 1934, to Sept. 30, 1951, water-stage recorder, at bridge 5.6 miles downstream at datum 8.80 ft lower.

Average discharge.--32 years, 3,935 cfs.

Extremes.--Maximum discharge during year, 54,800 cfs Feb. 3 (gage height, 23.83 ft); minimum, 320 cfs Oct. 2, 3 (gage height, 0.58 ft).
1925-57: Maximum discharge, 122,000 cfs Feb. 14, 1948 (gage height, 30.70 ft, from floodmark in gage house, present site and datum); minimum, 185 cfs Sept. 11, 12, 1925; minimum gage height, 0.15 ft Oct. 2, 1941, site and datum then in use.

Remarks.--Records good. Occasional minor fluctuations at low flow from small dams upstream. Prior to about 1953, fluctuation and regulation were more pronounced. Minor diversions for irrigation.

Cooperation.--Radio-gage readings furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 803: 1935. WSP 823: 1927(M). WSP 853: Drainage area. WSP 1436: 1926-28, 1938(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 26 to Dec. 12)

| Oct. 1 to Feb. 3 | | | | Feb. 4 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.5 | 280 | 9.0 | 9,600 | 0.8 | 408 | 9.0 | 9,600 |
| 1.0 | 535 | 16.0 | 23,000 | 1.0 | 510 | 16.0 | 23,000 |
| 2.0 | 1,180 | 20.0 | 34,700 | 2.0 | 1,080 | 20.0 | 34,700 |
| 6.0 | 5,100 | 24.0 | 56,000 | 4.0 | 2,830 | 24.0 | 56,000 |
| | | | | 7.0 | 6,200 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *325 | 470 | 440 | 2,030 | 44,000 | 10,700 | 2,690 | 1,490 | 2,560 | 2,680 | 773 | 448 |
| 2 | *320 | 470 | 430 | 1,900 | 51,000 | 8,470 | 2,890 | 1,530 | 2,350 | 2,430 | 717 | 443 |
| 3 | 320 | 480 | 415 | 1,620 | 53,900 | 6,690 | 3,690 | 1,680 | 3,210 | 2,110 | 640 | 443 |
| 4 | 375 | 496 | *400 | 1,530 | 48,800 | 5,650 | 15,100 | 1,980 | 4,310 | 1,860 | 602 | 443 |
| 5 | 491 | 470 | 395 | 1,600 | 43,800 | 4,910 | 14,200 | 1,590 | 4,910 | 1,610 | 569 | 438 |
| 6 | 535 | 455 | 390 | 3,050 | 37,600 | 4,430 | 12,600 | 1,480 | 6,120 | 1,410 | 548 | 433 |
| 7 | 502 | 455 | 395 | 5,680 | 17,600 | 4,860 | 11,300 | 1,320 | 4,910 | 1,320 | 521 | 428 |
| 8 | 579 | *455 | 486 | 4,620 | 14,200 | 7,870 | 7,960 | 1,200 | 3,770 | 1,140 | 510 | 428 |
| 9 | 618 | 460 | 524 | 3,790 | 15,500 | 10,600 | 13,200 | 1,150 | 3,260 | 1,050 | 500 | 453 |
| 10 | 540 | 455 | 513 | 3,210 | 14,000 | 10,700 | 12,200 | 1,090 | 4,280 | 964 | 484 | 463 |
| 11 | 480 | 445 | 470 | 2,770 | 12,200 | 9,290 | 8,160 | 1,070 | 5,550 | 898 | 479 | 484 |
| 12 | 450 | 435 | 491 | 2,460 | 10,100 | 7,730 | 6,140 | 1,040 | 3,800 | 840 | 479 | 521 |
| 13 | 420 | 430 | 2,670 | 2,240 | 8,160 | 7,570 | 5,070 | 1,000 | *2,890 | 790 | 510 | 532 |
| 14 | 405 | 420 | 17,300 | 1,960 | 6,560 | 8,390 | 4,310 | 1,030 | 2,390 | 728 | 678 | 711 |
| 15 | 390 | 435 | 22,200 | 1,850 | 5,710 | 7,200 | 3,750 | 1,010 | 2,020 | 739 | *717 | 1,310 |
| 16 | 380 | 491 | 26,100 | 1,690 | 6,340 | 6,000 | 3,320 | 1,010 | 1,720 | 745 | 580 | 1,150 |
| 17 | 365 | 584 | 28,200 | 1,560 | 7,780 | 5,130 | 2,970 | 970 | 1,520 | *739 | 602 | 2,240 |
| 18 | 360 | 590 | 13,400 | 1,420 | 7,580 | 4,540 | 2,720 | 1,020 | 1,600 | 773 | 886 | 6,110 |
| 19 | 360 | 552 | 5,480 | 1,260 | 7,370 | 4,110 | 2,620 | 1,160 | 1,440 | 892 | 1,010 | 4,330 |
| 20 | 360 | 496 | 4,090 | 1,200 | 13,300 | 3,750 | 2,240 | 4,650 | 1,250 | 818 | 922 | 2,240 |
| 21 | 360 | 496 | 3,340 | 1,250 | 17,200 | *3,440 | 2,130 | 4,840 | 1,140 | 750 | 778 | 1,560 |
| 22 | 385 | 508 | 3,180 | 4,900 | 14,500 | 3,230 | 2,060 | 2,730 | 1,070 | 722 | 667 | 1,400 |
| 23 | 405 | 546 | 4,840 | 22,400 | 10,100 | 3,050 | 2,270 | 11,100 | 1,050 | 689 | 602 | 1,320 |
| 24 | 435 | 552 | 6,420 | 18,900 | 7,220 | 2,910 | *2,240 | 11,300 | 2,140 | 840 | 559 | *1,420 |
| 25 | 445 | 524 | 6,870 | *12,300 | 5,910 | 3,020 | 2,000 | 5,380 | 5,480 | 818 | 548 | 3,410 |
| 26 | 440 | 491 | 5,750 | 8,770 | 5,650 | 3,120 | 1,860 | 4,060 | 3,890 | 756 | 521 | 2,240 |
| 27 | 440 | 470 | 4,480 | 6,560 | *8,540 | 3,170 | 1,650 | 8,140 | 2,610 | 683 | 500 | 1,600 |
| 28 | 440 | 465 | 3,660 | 9,050 | 12,400 | 3,300 | 1,640 | 10,700 | 2,170 | 650 | 484 | 1,220 |
| 29 | 440 | 465 | 3,090 | 29,300 | - | 3,210 | 1,670 | *6,200 | 2,430 | 629 | 463 | 1,020 |
| 30 | 435 | 455 | 2,610 | 40,500 | ------- | 3,000 | 1,600 | 4,170 | 2,520 | 689 | *453 | 946 |
| 31 | 440 | ------- | 2,220 | 41,600 | ------- | 2,770 | ------- | 3,160 | ------- | 756 | 453 | ------- |
| Total | 13,240 | 14,516 | 171,249 | 242,970 | 507,020 | 172,810 | 156,250 | 100,250 | 88,360 | 32,518 | 18,755 | 40,184 |
| Mean | 427 | 484 | 5,524 | 7,838 | 18,110 | 5,575 | 5,208 | 3,234 | 2,945 | 1,049 | 605 | 1,339 |
| Cfsm | 0.167 | 0.189 | 2.16 | 3.07 | 7.08 | 2.18 | 2.04 | 1.26 | 1.15 | 0.410 | 0.237 | 0.524 |
| In. | 0.19 | 0.21 | 2.49 | 3.53 | 7.37 | 2.51 | 2.27 | 1.46 | 1.29 | 0.47 | 0.27 | 0.58 |

Calendar year 1956: Max 46,200 Min 320 Mean 3,697 Cfsm 1.45 In. 19.67
Water year 1956-57: Max 53,900 Min 320 Mean 4,269 Cfsm 1.67 In. 22.64

* Discharge measurement made on this day.
Note.--Discharge for Feb. 1-26, Aug. 11, 13, 14 computed from bihourly radio-gage readings.

## Piney River at Vernon, Tenn.

Location (revised).--Lat 35°52'17", long 87°30'00", on left bank 350 ft upstream from county highway bridge, 400 ft upstream from Pretty Creek, 0.2 mile northwest of Vernon, Hickman County, 2.2 miles downstream from Mill Creek, 6.6 miles north of Centerville, and 8.4 miles upstream from mouth.

Drainage area.--193 sq mi.

Records available.--July 1925 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 464.89 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1927, tape gage and Aug. 30, 1927, to Feb. 8, 1931, chain gage, at same site and datum. Feb. 9, 1931, to May 10, 1934, staff gage at site half a mile downstream at datum 2.77 ft lower.

Average discharge.--32 years, 304 cfs.

Extremes.--Maximum discharge during year, 14,000 cfs Jan. 29 (gage height, 13.39 ft); minimum, 54 cfs Oct. 1, 2 (gage height, 0.65 ft).
1925-57: Maximum discharge observed, 32,500 cfs Dec. 21, 1926 (gage height, 16.5 ft); minimum discharge, 35 cfs Sept. 19, 20, 1936; minimum gage height observed, -0.09 ft Sept. 27, Oct. 16, 1951.

Remarks.--Records fair.

Revisions (water years).--WSP 758: 1927(M). WSP 823: Drainage area. WSP 1436: 1926(M), 1927, 1929, 1930-31(M), 1932, 1934(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 8-14, 18-20, 25, 26, Dec. 2-5, 10, 11, Jan. 2, 3, Apr. 6-11, May 23, June 5, 6, 9-11, 30)

| Oct. 1 to Jan. 28 | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.6 | 53 | 0.5 | 102 | 4.0 | 1,600 |
| 1.0 | 124 | .8 | 129 | 8.0 | 4,660 |
| 1.5 | 285 | 1.0 | 162 | 10.0 | 7,100 |
| 2.0 | 485 | 1.5 | 290 | 12.0 | 10,800 |
| 4.0 | 1,600 | 2.0 | 485 | | |
| 8.0 | 4,660 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 54 | 81 | 65 | 66 | 1,760 | 615 | 278 | 189 | 160 | 441 | 116 | 104 |
| 2 | 56 | 71 | 60 | 62 | 1,660 | 512 | 311 | 184 | 169 | 393 | 114 | 104 |
| 3 | 64 | 65 | 60 | 60 | 1,080 | 457 | 401 | 177 | 194 | 341 | 113 | 105 |
| 4 | 70 | 65 | *58 | 76 | 765 | 409 | 6,850 | 166 | 213 | 284 | 111 | 105 |
| 5 | 65 | 65 | 60 | 111 | 600 | 373 | 2,130 | 158 | 600 | 247 | 109 | 103 |
| 6 | 62 | 66 | 65 | 104 | 521 | 369 | 1,180 | 155 | 508 | 216 | 107 | 103 |
| 7 | 60 | 71 | 74 | 100 | 508 | 417 | 820 | 149 | 385 | 194 | 107 | 102 |
| 8 | 59 | *62 | 78 | 91 | 560 | 615 | 780 | 144 | 398 | 177 | 106 | 104 |
| 9 | 60 | 56 | 66 | 88 | 780 | 615 | 615 | 142 | 695 | 164 | 106 | 107 |
| 10 | 62 | 56 | 59 | 86 | 755 | 535 | 494 | 141 | 790 | 155 | 105 | 105 |
| 11 | *60 | 56 | 56 | 81 | 615 | 494 | 441 | 141 | 457 | 146 | 106 | 103 |
| 12 | 60 | 56 | 74 | 78 | 521 | 585 | 409 | 136 | 373 | 140 | 108 | 107 |
| 13 | 60 | 56 | 243 | 76 | 461 | 535 | 365 | 135 | *300 | 136 | 127 | 111 |
| 14 | 60 | 58 | 171 | 74 | 417 | 494 | 325 | 148 | 263 | 135 | 155 | 113 |
| 15 | 62 | 65 | 124 | 71 | 453 | 477 | 297 | 135 | 224 | 138 | *120 | 127 |
| 16 | 62 | 84 | 95 | 71 | 540 | 417 | 281 | 129 | 201 | 132 | 114 | 125 |
| 17 | 62 | 66 | 82 | 71 | 457 | 389 | 263 | 140 | 342 | *127 | 195 | 113 |
| 18 | 62 | 60 | 76 | 70 | 425 | 373 | 247 | 148 | 304 | 182 | 191 | 108 |
| 19 | 59 | 59 | 71 | 68 | 1,240 | 357 | 237 | 290 | 211 | 136 | 135 | 107 |
| 20 | 60 | 60 | 74 | 71 | 1,280 | 322 | 229 | 266 | 182 | 126 | 122 | 107 |
| 21 | 66 | 78 | 84 | 88 | 845 | *304 | 216 | 221 | 169 | 122 | 117 | 108 |
| 22 | 78 | 76 | 162 | 2,110 | 630 | 294 | 211 | 417 | 169 | 121 | 114 | 171 |
| 23 | 73 | 66 | 194 | 4,410 | 512 | 278 | 224 | *469 | 206 | 126 | 112 | 141 |
| 24 | 68 | 65 | 168 | 964 | 449 | 266 | *206 | 365 | 377 | 138 | 111 | 121 |
| 25 | 68 | 62 | 127 | *580 | 425 | 322 | 196 | 287 | 244 | 122 | 110 | *115 |
| 26 | 71 | 62 | 104 | 433 | 635 | 329 | 189 | 269 | 211 | 118 | 108 | 113 |
| 27 | 73 | 65 | 95 | 389 | *735 | 311 | 184 | 244 | 186 | 116 | 107 | 111 |
| 28 | 70 | 65 | 86 | 901 | 730 | 294 | 180 | 211 | 211 | 116 | 106 | 108 |
| 29 | 70 | 65 | 81 | 9,440 | - | 281 | 189 | 194 | 239 | 130 | 105 | 107 |
| 30 | 70 | 66 | 74 | 3,080 | -------- | 272 | 211 | 182 | 469 | 140 | 105 | 107 |
| 31 | 78 | -------- | 71 | 1,440 | -------- | 260 | -------- | 171 | -------- | 124 | 104 | -------- |
| Total | 2,004 | 1,948 | 2,957 | 25,410 | 20,359 | 12,571 | 18,959 | 6,303 | 9,450 | 5,383 | 3,666 | 3,365 |
| Mean | 64.6 | 64.9 | 95.4 | 820 | 727 | 406 | 632 | 203 | 315 | 174 | 118 | 112 |
| Cfsm | 0.335 | 0.336 | 0.494 | 4.25 | 3.77 | 2.10 | 3.27 | 1.05 | 1.63 | 0.902 | 0.611 | 0.580 |
| In. | 0.39 | 0.38 | 0.57 | 4.90 | 3.92 | 2.42 | 3.65 | 1.21 | 1.82 | 1.04 | 0.71 | 0.65 |

Calendar year 1956: Max 7,660 Min 54 Mean 304 Cfsm 1.58 In. 21.46
Water year 1956-57: Max 9,440 Min 54 Mean 308 Cfsm 1.60 In. 21.66

Peak discharge (base, 4,000 cfs).--Jan. 23 (1:30 a.m.) 10,100 cfs (11.67 ft); Jan. 29 (4 p.m.) 14,000 cfs (13.39 ft); Apr. 4 (1 p.m.) 12,700 cfs (12.88 ft).
* Discharge measurement made on this day.

## Buffalo River near Lobelville, Tenn.

Location.--Lat 35°48'46", long 87°47'51", on right bank 30 ft upstream from Standing Rock Bridge, 1.4 miles downstream from State Highway 13, 3 miles north of Lobelville, Perry County, 13 miles downstream from Cane Creek, and at mile 17.7.

Drainage area.--707 sq mi.

Records available.--November 1927 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 403.15 ft above mean sea level, datum of 1929. Prior to June 1, 1934, staff gage 40 ft downstream on left bank at same datum.

Average discharge.--29 years (1928-57), 1,160 cfs.

Extremes.--Maximum discharge during year, 21,100 cfs Feb. 2 (gage height, 15.64 ft); minimum, 182 cfs Oct. 1, 2; minimum gage height, 1.21 ft Oct. 1.

1927-57: Maximum discharge, 100,000 cfs Feb. 14, 1948 (gage height, 23.76 ft, from high-water mark in gage house), from rating curve extended above 40,000 cfs on basis of slope-area determination of peak flow; minimum, 135 cfs Aug. 18, 1953, caused by regulation upstream at unknown location; minimum discharge unaffected by regulation, 142 cfs Oct. 1-8, 1931; minimum gage height, 0.36 ft Oct. 3, 4, 7, 8, 1931.

Remarks.--Records good.

Cooperation.--Radio-gage readings furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 803: 1935. WSP 853: 1928-37. WSP 1436: 1932(m).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 23-30)

| Oct. 1 to Dec. 15 | | Dec. 16 to Apr. 4 | | Apr. 5 to Sept. 30 | |
|---|---|---|---|---|---|
| 1.2 | 182 | 2.0 | 397 | 1.4 | 266 |
| 1.5 | 260 | 3.0 | 740 | 2.0 | 390 |
| 2.0 | 397 | 6.0 | 2,470 | 3.0 | 720 |
| 3.0 | 750 | 10.0 | 5,370 | 6.0 | 2,220 |
| 6.0 | 2,280 | 12.0 | 8,000 | 12.0 | 8,000 |
| 10.0 | 5,370 | 13.0 | 9,950 | 13.0 | 9,950 |
| 12.0 | 8,000 | 14.0 | 13,000 | | |
| 13.0 | 9,950 | 15.0 | 17,700 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | g182 | 257 | 265 | 566 | 9,660 | 2,100 | 843 | 940 | 1,190 | 1,300 | 376 | 271 |
| 2 | *g182 | 260 | 263 | 522 | 17,800 | 1,890 | 935 | 854 | 1,250 | 1,180 | 367 | 273 |
| 3 | 187 | 268 | 257 | 490 | 17,000 | 1,680 | 1,260 | 796 | 1,490 | 1,070 | 356 | 284 |
| 4 | 200 | 268 | *257 | 484 | 7,290 | 1,490 | 6,470 | 752 | 1,480 | 971 | 342 | 282 |
| 5 | 218 | 263 | 255 | 572 | 3,700 | 1,340 | 5,450 | 712 | 3,480 | 868 | 334 | 282 |
| 6 | 242 | 257 | 257 | 696 | 2,970 | 1,260 | 3,240 | 664 | 8,370 | 776 | 323 | 282 |
| 7 | 257 | 255 | 263 | 772 | 2,820 | 1,390 | 2,440 | 618 | 4,590 | 700 | 315 | 280 |
| 8 | 250 | *250 | 302 | 740 | 3,160 | 2,090 | 2,100 | 586 | 2,600 | 633 | 311 | 280 |
| 9 | 234 | 252 | 313 | 700 | 2,960 | 2,440 | 2,510 | 558 | 2,180 | 578 | 303 | 294 |
| 10 | 221 | 257 | 300 | 668 | 2,610 | 2,360 | 4,210 | 537 | 3,350 | 534 | 299 | 305 |
| 11 | 216 | 257 | 289 | 636 | 2,360 | 2,130 | 3,070 | 524 | 2,850 | 496 | 295 | 315 |
| 12 | 213 | 252 | 291 | 604 | 2,080 | 2,100 | 2,180 | 508 | 2,220 | 465 | 297 | 329 |
| 13 | 211 | 250 | 658 | 566 | 1,790 | 1,990 | 1,750 | 496 | *1,600 | 441 | 313 | 338 |
| 14 | 211 | 250 | 3,260 | 525 | 1,540 | 1,960 | 1,480 | 502 | 1,300 | 430 | 309 | 378 |
| 15 | 208 | 255 | 8,630 | 503 | 1,500 | 1,770 | 1,300 | 483 | 1,120 | 422 | *319 | 462 |
| 16 | 208 | 300 | 4,770 | 480 | 2,160 | 1,570 | 1,160 | 471 | 976 | 419 | 331 | 483 |
| 17 | 208 | 324 | 2,370 | g461 | 2,370 | 1,420 | 1,060 | 453 | 858 | *414 | 369 | 438 |
| 18 | 208 | 340 | 1,630 | g439 | 2,210 | 1,290 | 980 | 450 | 948 | 422 | 372 | 407 |
| 19 | 211 | 354 | 1,230 | g418 | 2,340 | 1,200 | 912 | 548 | 1,200 | 430 | 340 | 402 |
| 20 | 213 | 337 | 1,020 | g412 | 3,110 | 1,100 | 854 | 656 | 1,020 | 441 | 331 | 390 |
| 21 | 221 | 321 | 895 | g449 | 3,950 | *1,020 | 814 | 822 | 840 | 430 | 323 | 385 |
| 22 | 229 | 318 | 940 | g1,990 | 3,200 | 955 | 908 | 1,060 | 740 | 402 | 315 | 462 |
| 23 | 239 | 324 | 1,110 | g8,770 | 2,480 | 900 | 958 | 1,600 | 688 | 422 | 305 | 528 |
| 24 | 255 | 346 | 1,310 | g5,760 | 2,010 | 866 | *899 | 2,360 | 1,200 | 471 | 299 | *480 |
| 25 | 268 | 340 | 1,230 | *g3,300 | 1,740 | 1,020 | 818 | 1,840 | 3,100 | 417 | 294 | 444 |
| 26 | 270 | 316 | 1,080 | 2,190 | 1,680 | 1,170 | 752 | 1,550 | 3,370 | 407 | 290 | 414 |
| 27 | 268 | 300 | 935 | 1,840 | *1,860 | 1,120 | 708 | 4,370 | 2,040 | 395 | 288 | 388 |
| 28 | 263 | 286 | 830 | 3,000 | 2,160 | 1,030 | 680 | 5,910 | 1,500 | 378 | 284 | 362 |
| 29 | 260 | 276 | 744 | 7,840 | - | 950 | 845 | *3,180 | 1,380 | 369 | 280 | 360 |
| 30 | 257 | 273 | 672 | 13,800 | ------- | 885 | 1,020 | 1,840 | 1,440 | 365 | 279 | 372 |
| 31 | 255 | ------- | 618 | 11,900 | ------- | 838 | ------- | 1,400 | ------- | 381 | 273 | ------- |
| Total | 7,065 | 8,606 | 37,244 | 72,093 | 110,510 | 45,324 | 52,606 | 38,040 | 60,370 | 17,427 | 9,832 | 10,970 |
| Mean | 228 | 287 | 1,201 | 2,326 | 3,947 | 1,462 | 1,754 | 1,227 | 2,012 | 562 | 317 | 366 |
| Cfsm | 0.322 | 0.406 | 1.70 | 3.29 | 5.58 | 2.07 | 2.48 | 1.74 | 2.85 | 0.795 | 0.448 | 0.518 |
| In. | 0.37 | 0.45 | 1.96 | 3.79 | 5.81 | 2.38 | 2.77 | 2.00 | 3.18 | 0.92 | 0.52 | 0.58 |

Calendar year 1956: Max 12,200 Min 182 Mean 952 Cfsm 1.35 In. 18.32
Water year 1956-57: Max 17,800 Min 182 Mean 1,288 Cfsm 1.82 In. 24.73

Peak discharge (base, 5,200 cfs).--Dec. 15 (4 p.m.) 9,710 cfs (12.90 ft); Jan. 23 (1 p.m.) 10,500 cfs (13.20 ft); Jan. 30 (12:30 p.m.) 14,900 cfs (14.44 ft); Feb. 2 (9 p.m.) 21,100 cfs (15.64 ft); Apr. 4 (8 p.m.) 9,490 cfs (12.81 ft); May 28 (10 a.m.) 6,300 cfs (10.82 ft); June 6 (9 a.m.) 9,360 cfs (12.75 ft).

* Discharge measurement made on this day.

g Computed from bihourly radio-gage readings furnished by Tennessee Valley Authority.

## Buffalo River near Flat Woods, Tenn.

Location.--Lat 35°29'45", long 87°49'58", on right bank 0.5 mile downstream from Little Opossum Creek and bridge on State Highway 13, 1.3 miles north of Flat Woods, Perry County, 3.9 miles upstream from Sinking Creek, and at mile 58.7.

Drainage area.--447 sq mi.

Records available.--May 1920 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 513.58 ft above mean sea level, datum of 1929. Prior to May 27, 1934, staff gage at same site and datum.

Average discharge.--37 years, 725 cfs.

Extremes.--Maximum discharge during year, 17,200 cfs Feb. 1 (gage height, 20.38 ft); minimum, 120 cfs Oct. 1 (gage height, 1.83 ft).
1920-57: Maximum discharge, 90,000 cfs Feb. 13, 1948 (gage height, 32.0 ft, from high-water mark in gage house), from rating curve extended above 50,000 cfs on basis of slope-area and contracted-opening determinations of peak flow and rainfall-runoff study; minimum observed, 65 cfs Sept. 9, 1925; minimum gage height observed, 1.12 ft Sept. 26, 1931.

Remarks.--Records good.

Revisions (water years).--WSP 758: 1933. WSP 803: 1935. WSP 823: Drainage area. WSP 1436: 1921(M), 1922-24, 1925(M), 1927(M), 1934(M).

Rating table, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.8 | 120 | 10.0 | 4,800 |
| 2.0 | 170 | 14.0 | 8,550 |
| 4.0 | 930 | 16.0 | 11,000 |
| 6.0 | 1,880 | 19.0 | 15,100 |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 125 | 185 | 179 | 333 | 14,900 | 1,060 | 490 | 494 | 666 | 762 | 246 | 150 |
| 2 | *130 | 194 | 176 | 308 | 13,000 | 938 | 886 | 478 | 654 | 670 | 228 | 158 |
| 3 | 142 | 182 | 173 | 288 | 4,800 | 846 | 979 | 474 | 782 | 626 | 210 | 162 |
| 4 | 179 | 170 | 176 | 308 | 2,470 | 770 | 1,340 | 454 | 934 | 546 | 204 | 162 |
| 5 | 207 | 165 | *176 | 526 | 1,880 | 714 | 1,700 | 410 | 3,120 | 478 | 197 | 162 |
| 6 | 182 | 165 | 173 | 554 | 1,600 | 758 | 1,420 | 386 | 2,500 | 426 | 191 | 158 |
| 7 | 160 | 168 | 176 | 502 | 2,030 | 984 | 1,140 | 372 | 1,420 | 386 | 179 | 150 |
| 8 | 152 | *176 | 182 | 466 | 1,820 | 1,380 | 1,500 | 354 | 1,050 | 358 | 176 | 162 |
| 9 | 148 | 173 | 185 | 434 | 1,490 | 1,400 | 3,980 | 340 | 962 | 333 | 173 | 191 |
| 10 | 145 | 170 | 176 | 422 | 1,330 | 1,240 | 2,330 | 336 | 1,800 | 308 | 173 | 224 |
| 11 | 145 | 168 | 176 | 396 | 1,190 | 1,070 | 1,560 | 333 | 1,440 | 288 | 170 | 204 |
| 12 | 145 | 165 | 249 | 364 | 997 | 1,060 | 1,210 | 322 | *942 | 277 | 170 | 204 |
| 13 | 145 | 162 | 5,730 | 340 | 878 | 1,170 | 1,000 | 308 | 758 | 270 | 185 | 246 |
| 14 | 145 | 165 | 8,940 | 326 | 790 | 1,030 | 862 | 308 | 650 | 263 | 228 | 302 |
| 15 | 145 | 173 | 3,260 | 312 | 786 | 930 | 754 | 308 | 558 | 266 | 224 | 308 |
| 16 | 145 | 232 | 1,600 | 298 | 1,250 | 846 | 678 | 288 | 478 | 274 | *204 | 263 |
| 17 | 145 | 294 | 1,030 | 277 | 1,300 | 762 | 634 | 294 | 510 | 263 | 197 | 266 |
| 18 | 145 | 242 | 778 | 260 | 1,060 | 714 | 586 | 389 | 1,020 | 277 | 204 | 266 |
| 19 | 148 | 204 | 630 | 249 | 1,380 | 686 | 534 | 438 | 674 | *340 | 214 | 232 |
| 20 | 150 | 191 | 546 | 249 | 2,990 | 638 | 522 | 806 | 530 | 294 | 200 | 235 |
| 21 | 155 | 200 | 498 | 302 | 2,080 | *586 | 498 | 718 | 454 | 263 | 188 | 263 |
| 22 | 182 | 252 | 570 | 1,530 | 1,500 | 562 | 486 | 904 | 410 | 249 | 176 | 291 |
| 23 | 214 | 256 | 786 | 3,570 | 1,190 | 554 | *490 | *2,260 | 442 | 242 | 173 | 294 |
| 24 | 191 | 221 | 766 | 1,700 | 992 | 522 | 490 | 1,480 | 1,560 | 274 | 170 | 270 |
| 25 | 173 | 197 | 682 | *1,150 | 894 | 574 | 462 | 930 | 2,590 | 284 | 168 | *232 |
| 26 | 170 | 191 | 598 | 922 | *1,010 | 586 | 438 | 2,660 | 1,330 | 266 | 165 | 214 |
| 27 | 173 | 188 | 526 | 910 | 1,230 | 546 | 414 | 5,490 | 882 | 246 | 165 | 207 |
| 28 | 170 | 191 | 470 | 4,860 | 1,190 | 510 | 406 | 2,350 | 914 | 235 | 160 | 204 |
| 29 | 165 | 185 | 422 | 9,200 | - | 482 | 494 | 1,270 | 984 | 235 | 158 | 210 |
| 30 | 165 | 182 | 389 | 9,130 | -------- | 466 | 530 | 942 | 842 | 256 | 155 | 224 |
| 31 | 170 | -------- | 358 | 6,480 | -------- | 454 | -------- | 782 | -------- | 263 | 150 | -------- |
| Total | 4,956 | 5,807 | 30,776 | 46,966 | 68,027 | 24,838 | 28,813 | 27,678 | 31,856 | 10,518 | 5,801 | 6,614 |
| Mean | 160 | 194 | 993 | 1,515 | 2,430 | 801 | 960 | 893 | 1,062 | 339 | 187 | 220 |
| Cfsm | 0.358 | 0.434 | 2.22 | 3.39 | 5.44 | 1.79 | 2.15 | 2.00 | 2.38 | 0.758 | 0.418 | 0.492 |
| In. | 0.41 | 0.48 | 2.56 | 3.91 | 5.66 | 2.07 | 2.40 | 2.30 | 2.65 | 0.88 | 0.48 | 0.55 |

Calendar year 1956: Max 10,300 Min 115 Mean 630 Cfsm 1.41 In. 19.17
Water year 1956-57: Max 14,900 Min 125 Mean 802 Cfsm 1.79 In. 24.35

Peak discharge (base, 4,500 cfs).--Dec. 14 (3 a.m.) 11,900 cfs (16.68 ft); Jan. 30 (8 a.m.) 10,200 cfs (15.36 ft); Feb. 1 (9 p.m.) 17,200 cfs (20.38 ft); May 27 (6:30 a.m.) 6,270 cfs (11.69 ft).
* Discharge measurement made on this day.

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## Big Sandy River at Bruceton, Tenn.

Location.--Lat 36°02'19", long 88°13'42", on downstream end of right abutment of county bridge, 700 ft downstream from bridge on U. S. Highway 70, 0.6 mile upstream from Cherry Creek, and 0.9 mile east of Bruceton, Carroll County.

Drainage area.--205 sq mi.

Records available.--July 1929 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 380.76 ft above mean sea level, datum of 1929. Prior to Mar. 1, 1940, chain gage at same site and datum.

Average discharge.--28 years, 294 cfs.

Extremes.--Maximum discharge during year, 5,150 cfs Jan. 30 (gage height, 13.00 ft); minimum, 39 cfs Oct. 1 (gage height, 2.23 ft).
1929-57: Maximum discharge, 17,000 cfs Jan. 21, 1935 (gage height, 16.16 ft, from graph based on gage readings), from rating curve extended above 9,200 cfs; minimum, 28 cfs Aug. 17-19, 22, Sept. 1, 1943.

Remarks.--Records good.

Revisions (water years).--WSP 853: Drainage area. WSP 923: 1929-35.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 65 | 58 | 76 | 2,490 | 575 | 222 | 146 | 84 | 653 | 61 | 49 |
| 2 | 41 | 60 | 58 | 71 | 1,920 | 302 | 437 | 152 | 94 | *579 | 56 | *50 |
| 3 | 111 | 58 | 58 | 72 | 1,440 | 243 | 284 | 95 | 354 | 718 | 53 | 51 |
| 4 | 77 | 57 | *58 | *159 | 867 | 216 | 1,870 | 83 | 304 | 443 | 52 | 52 |
| 5 | 61 | 57 | 60 | 355 | 476 | 201 | 2,260 | 78 | 472 | 166 | 51 | 50 |
| 6 | 56 | 58 | 62 | 174 | 376 | 244 | 2,390 | 76 | 433 | 106 | 48 | 48 |
| 7 | 53 | 65 | 64 | 132 | 330 | 349 | 1,090 | 75 | 427 | 88 | 47 | 48 |
| 8 | 51 | 61 | 242 | 113 | 488 | 341 | *714 | 74 | 255 | 77 | 46 | 53 |
| 9 | 50 | 59 | 200 | 108 | *792 | 240 | 449 | 72 | 212 | 70 | 46 | 76 |
| 10 | 50 | 59 | 103 | 121 | 811 | 198 | 277 | 73 | 473 | 68 | 45 | 62 |
| 11 | *50 | 61 | 86 | 108 | 473 | 207 | 232 | 93 | 353 | 63 | 45 | 56 |
| 12 | 50 | 61 | 110 | 98 | 296 | 711 | 206 | 72 | 154 | 60 | *166 | 128 |
| 13 | 43 | 59 | 367 | 92 | 246 | 632 | 214 | *186 | 96 | 58 | 251 | 407 |
| 14 | 42 | 61 | 306 | 89 | 219 | 388 | 182 | 330 | 110 | 73 | 169 | 485 |
| 15 | 42 | 70 | 209 | 85 | 418 | 336 | 164 | 130 | 78 | 162 | *123 | 305 |
| 16 | 42 | 204 | 124 | 79 | 785 | 216 | 166 | 88 | 66 | 101 | 76 | 414 |
| 17 | 43 | 94 | *98 | 74 | 824 | 176 | 205 | 85 | *76 | 69 | 813 | 388 |
| 18 | 43 | 65 | 130 | 70 | 678 | *175 | 179 | 114 | 91 | 194 | 437 | 162 |
| 19 | 43 | *60 | 109 | 70 | 992 | 190 | 158 | 409 | 101 | 117 | 125 | 106 |
| 20 | 44 | 68 | 216 | 89 | 1,030 | 154 | 143 | 254 | 76 | 72 | 84 | 98 |
| 21 | 45 | 104 | 302 | 219 | 1,020 | 145 | 136 | 121 | 63 | 62 | 69 | 140 |
| 22 | 50 | 100 | 275 | 999 | 458 | 197 | 136 | 976 | 65 | 58 | 64 | 526 |
| 23 | 50 | 69 | 229 | 2,020 | 278 | 168 | 322 | 1,120 | 118 | 306 | 61 | 330 |
| 24 | 48 | 61 | 159 | 2,410 | 237 | 154 | 190 | 910 | 409 | 292 | 59 | 142 |
| 25 | 48 | 60 | 112 | 2,160 | 290 | 391 | 134 | 714 | 305 | 94 | 61 | 101 |
| 26 | 53 | 62 | 96 | 714 | 1,310 | 280 | 124 | 649 | 121 | 69 | 58 | 88 |
| 27 | 74 | 61 | 91 | 363 | *1,200 | 199 | 111 | 466 | 84 | 62 | 54 | 83 |
| 28 | 57 | 60 | 89 | 1,320 | 1,260 | 160 | 100 | 218 | 397 | 59 | 52 | 79 |
| 29 | 53 | 59 | 87 | 2,740 | - | 145 | 93 | 134 | 378 | 64 | 50 | 78 |
| 30 | 55 | 58 | 84 | 4,790 | ------- | 137 | 87 | 110 | 1,460 | 81 | 50 | 78 |
| 31 | 57 | ------- | 80 | 3,670 | ------- | 131 | ------- | 94 | ------- | 70 | 49 | ------- |
| Total | 1,622 | 2,096 | 4,322 | 23,640 | 22,004 | 8,201 | 13,255 | 8,197 | 7,709 | 5,154 | 3,421 | 4,733 |
| Mean | 52.3 | 69.9 | 139 | 763 | 786 | 265 | 442 | 264 | 257 | 166 | 110 | 158 |
| Cfsm | 0.255 | 0.341 | 0.678 | 3.72 | 3.83 | 1.29 | 2.16 | 1.29 | 1.25 | 0.810 | 0.537 | 0.771 |
| In. | 0.29 | 0.38 | 0.78 | 4.29 | 3.99 | 1.49 | 2.40 | 1.49 | 1.40 | 0.94 | 0.62 | 0.86 |

Calendar year 1956: Max 10,200 Min 36 Mean 271 Cfsm 1.32 In. 17.96
Water year 1956-57: Max 4,790 Min 40 Mean 286 Cfsm 1.40 In. 18.93

Peak discharge (base, 2,000 cfs).--Jan. 24 (7:30 p.m.) 2,720 cfs (12.01 ft); Jan. 30 (5 p.m.) 5,150 cfs (13.00 ft); Apr. 6 (4 a.m.) 2,700 cfs (12.00 ft).
* Discharge measurement made on this day.

## Tennessee River near Paducah, Ky.

Location.--Lat 37°01'11", long 88°16'50", on left bank at Gilbertsville, Marshall County, 3,500 ft downstream from Kentucky Dam, 2.3 miles upstream from Shadie Creek, 16 miles east of Paducah, McCracken County, and at mile 21.7.

Drainage area.--40,200 sq mi, approximately (at Gilbertsville).

Records available.--October 1875 to September 1957. Prior to September 1889 (gage heights only) and October 1889 to September 1931, published as "at Johnsonville, Tenn." July 1930 to September 1931, published as "at Aurora Landing, Ky." October 1931 to August 1944, published as "near Johnsonville, Tenn." October 1931 to September 1935, published as "at Shannon dam site near Murray, Ky." October 1935 to December 1942, published as "near Buchanan, Tenn."

Gage.--Water-stage recorder at present site since Feb. 8, 1939. Datum of gage is 286.35 ft above mean sea level, datum of 1929. Feb. 8, 1939, to Sept. 30, 1942, water-stage recorder 16.3 miles downstream at same datum (prior to July 30, 1940, at datum 3.65 ft higher); Oct. 1, 1942, to Jan. 1, 1946, water-stage recorder 500 ft upstream from present site at same datum. Auxiliary water-stage recorder 16.3 miles downstream at same datum. Feb. 15, 1939, to Sept. 30, 1942, water-stage recorder 500 ft upstream from present base gage at same datum (prior to July 30, 1940, at datum 3.65 ft higher).

Prior to Oct. 21, 1926, U. S. Weather Bureau staff gages at various sites and datums in the vicinity of old Nashville, Chattanooga & St. Louis Railway bridge near Johnsonville. Oct. 21, 1926, to Oct. 7, 1931, water-stage recorder at site 3.9 miles downstream from present U. S. Highway 70 bridge, at datum 320.72 ft above mean sea level, datum of 1929. Oct. 1, 1931, to Aug. 20, 1944, water-stage recorder at U. S. Highway 70 bridge at datum 1.21 ft lower. July 15, 1930, to Dec. 12, 1942, staff and wire-weight gages and water-stage recorders used as base and auxiliary gages at five different locations, ranging from Paducah to river mile 66.2, all at different datums.

Average discharge.--68 years (1889-1957), 63,730 cfs.

Extremes.--Maximum discharge during year, 407,000 cfs Feb. 5; maximum gage height, 51.20 ft Feb. 10; minimum daily discharge, 25,300 cfs July 14; minimum gage height, 13.54 ft May 11.

1889-1957: Maximum discharge, 500,000 cfs Feb. 17, 1948; maximum gage height, 62.43 ft Feb. 2, 1937 (at Gilbertsville, present datum); minimum daily discharge, 500 cfs Sept. 7, 1944.

Remarks.--Records good. Backwater from Ohio River and dam 52; discharge computed using fall as determined by auxiliary water-stage recorder as a factor. Discharge for days of extremely low fall (below 0.40 ft) computed on basis of records for Kentucky Dam. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 223). Flow now almost completely regulated. Records of chemical analyses and water temperatures for the water year 1957 are given in WSP 1520.

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35,300 | 34,000 | 36,400 | 55,200 | 315,000 | 129,000 | 38,000 | 35,300 | 47,000 | 46,200 | 37,100 | 28,400 |
| 2 | 36,100 | 34,500 | 32,200 | 54,800 | 346,000 | 129,000 | 39,100 | 34,100 | 42,400 | 47,500 | 37,900 | 27,900 |
| 3 | 35,500 | 34,600 | 39,100 | 55,300 | 367,000 | 128,000 | 43,700 | 35,700 | 44,700 | 50,000 | 33,700 | 33,800 |
| 4 | 35,700 | 32,800 | 36,000 | 56,300 | 382,000 | 117,000 | 67,900 | 35,700 | 48,100 | 52,400 | 27,400 | 33,300 |
| 5 | 35,200 | 40,900 | 31,300 | 65,800 | *405,000 | 106,000 | 123,000 | 35,800 | 51,000 | 53,000 | 35,800 | 35,500 |
| 6 | 34,700 | 35,600 | 31,500 | 78,800 | 405,000 | 98,300 | 147,000 | 43,500 | 53,700 | 53,200 | 29,300 | 35,500 |
| 7 | 35,800 | 35,700 | 31,800 | 78,100 | 404,000 | 88,900 | 136,000 | 43,500 | 51,500 | 52,500 | *29,500 | 33,200 |
| 8 | *35,900 | 38,400 | 32,300 | 82,200 | 402,000 | 89,900 | 119,000 | 41,900 | 50,700 | 46,000 | 28,600 | 27,900 |
| 9 | 35,600 | 38,900 | 34,500 | 82,200 | 400,000 | 95,800 | 121,000 | 37,200 | 47,900 | 27,000 | 32,700 | *35,700 |
| 10 | 35,200 | 37,600 | 37,800 | 64,700 | 390,000 | 103,000 | 121,000 | 37,600 | 58,300 | 26,400 | 30,000 | 38,500 |
| 11 | 32,800 | 30,900 | 37,400 | 56,400 | 379,000 | 104,000 | 121,000 | 32,700 | 78,800 | 26,200 | 30,700 | 38,500 |
| 12 | 31,700 | 36,000 | 44,800 | 57,000 | 377,000 | 102,000 | 106,000 | 50,300 | 76,400 | 25,600 | 36,900 | 39,600 |
| 13 | 27,000 | 34,800 | 78,700 | 56,400 | 355,000 | 96,300 | 77,100 | 45,100 | 71,200 | 25,800 | 31,000 | 39,900 |
| 14 | 26,500 | 33,300 | 138,000 | 55,500 | 302,000 | 91,300 | 59,300 | 34,100 | 64,700 | 25,300 | 36,200 | 42,300 |
| 15 | 27,100 | 28,600 | 199,000 | 54,100 | 270,000 | 89,000 | 51,800 | 31,000 | 53,700 | 29,800 | 38,600 | 42,100 |
| 16 | 27,000 | 29,200 | 206,000 | 55,400 | 259,000 | 75,800 | 55,400 | 38,100 | 45,800 | 37,100 | 38,400 | 42,100 |
| 17 | 25,500 | 31,700 | *195,000 | 54,300 | 247,000 | 64,700 | *59,000 | 41,700 | 46,600 | 36,100 | 41,200 | 42,300 |
| 18 | 27,100 | 31,500 | 161,000 | 53,700 | 214,000 | 65,800 | 52,800 | 39,100 | 48,200 | 38,900 | 37,900 | 41,800 |
| 19 | 26,700 | 29,300 | 124,000 | 40,500 | 194,000 | 60,100 | 49,600 | 36,100 | 49,700 | 39,000 | 34,900 | 41,100 |
| 20 | 27,100 | 39,400 | 89,200 | 29,200 | 197,000 | 54,700 | 49,800 | 37,600 | 50,400 | 38,500 | 39,100 | 41,900 |
| 21 | 26,500 | 48,200 | 58,900 | 30,700 | 193,000 | *54,900 | 50,400 | *48,200 | 50,300 | 38,600 | 38,300 | 42,100 |
| 22 | 27,000 | 48,500 | 50,200 | 57,500 | 179,000 | 55,200 | 50,300 | 58,000 | 42,100 | 38,200 | 38,900 | 41,900 |
| 23 | 28,300 | 48,400 | 61,900 | 99,700 | 159,000 | 55,100 | 49,800 | 77,600 | 35,300 | 34,900 | 29,100 | 41,900 |
| 24 | 30,500 | 36,400 | 74,600 | 133,000 | 138,000 | 29,300 | 51,100 | 81,700 | 39,400 | 34,500 | 29,100 | 42,200 |
| 25 | 35,200 | 36,500 | 75,000 | 127,000 | 129,000 | 36,000 | 51,700 | 68,500 | *40,800 | 34,300 | 29,700 | 42,400 |
| 26 | 31,500 | 39,200 | 74,100 | 114,000 | 129,000 | 33,400 | 52,000 | 53,900 | 47,400 | 35,100 | 31,600 | 42,300 |
| 27 | 26,600 | 41,800 | 74,700 | 100,000 | 126,000 | 42,200 | 41,000 | 53,900 | 48,000 | 32,200 | 32,400 | 42,000 |
| 28 | 35,300 | *39,500 | 75,000 | 120,000 | 127,000 | 45,600 | 30,300 | 54,000 | 48,300 | 31,500 | 33,200 | 42,600 |
| 29 | 33,700 | 40,400 | 68,700 | 192,000 | - | 36,600 | 29,200 | 53,900 | 48,700 | 35,600 | 33,000 | 43,300 |
| 30 | 35,600 | 39,300 | 65,100 | 262,000 | -------- | 40,900 | 35,600 | 54,100 | 47,900 | 37,900 | 33,000 | 42,800 |
| 31 | 34,600 | -------- | 60,200 | 293,000 | -------- | 29,300 | -------- | 54,400 | -------- | 37,500 | 32,200 | -------- |
| Total | 978,300 | ‡1,105.9 | ‡2,354.4 | ‡2,714.8 | ‡7,788 | ‡2,347.1 | ‡2,078.9 | ‡1,424.3 | ‡1,529 | ‡1,166.8 | ‡1,047.4 | ‡1,164.8 |
| Mean | 31,560 | 36,860 | 75,950 | 87,570 | 278,100 | 75,710 | 69,300 | 45,950 | 50,970 | 37,640 | 33,790 | 38,830 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1956: Max 310,000 Min 19,700 Mean 59,910 Cfsm 1.49 In. 20.29
Water year 1956-57: Max 405,000 Min 25,300 Mean 70,410 Cfsm 1.75 In. 23.78

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--No gage-height record at auxiliary gage Dec. 2-12, Jan. 30, 31, Feb. 8 to Mar. 24; discharge computed on basis of records at Kentucky Dam.

## East Fork Clarks River at Murray, Ky.

Location.--Lat 36°35'34", long 88°18'00", on downstream side of left pier of Nashville, Chattanooga & St. Louis Railway bridge, 0.1 mile downstream from bridge on State Highway 121, 1 mile south of Murray, Calloway County, and 1½ miles upstream from Clayton Creek.

Drainage area.--89.7 sq mi.

Records available.--October 1951 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 459.88 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 95.9 cfs.

Extremes.--Maximum discharge during year, 7,220 cfs May 23 (gage height, 12.48 ft); no flow for many days.

1951-57: Maximum discharge, 32,300 cfs (revised) Mar. 22, 1952 (gage height, 15.2 ft, revised, from floodmark); no flow for many days each year.

Revisions.--The maximum discharge and gage height for the water year 1952 have been revised to 32,300 cfs Mar. 22, 1952 (gage height, 15.2 ft), superseding figures published in WSP 1236.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 28, June 11-17)

| Oct. 1 to Jan. 28 | | | | Jan. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.26 | 0 | 2.5 | 55 | 1.36 | 0 | 5.0 | 380 |
| 1.3 | .1 | 3.0 | 105 | 1.4 | .3 | 7.0 | 810 |
| 1.35 | .4 | 4.0 | 260 | 1.5 | 1.3 | 8.0 | 1,100 |
| 1.4 | .7 | 7.0 | 1,060 | 1.6 | 3.6 | 10.0 | 2,050 |
| 1.45 | 1.2 | 9.0 | 1,780 | 2.0 | 25 | 11.0 | 3,100 |
| 1.5 | 2.0 | 9.5 | 2,040 | 2.8 | 84 | 12.0 | 5,500 |
| 1.55 | 3.4 | 10.0 | 2,540 | 4.0 | 225 | | |
| 2.0 | 26 | 11.0 | 4,140 | | | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | *0 | 0.4 | 1.0 | 1,420 | 58 | 19 | 2.5 | 12 | 88 | 4.9 | 0.1 |
| 2 | | 0 | .3 | .9 | 496 | 43 | 26 | 3.3 | 77 | *710 | 3.3 | .1 |
| 3 | | 0 | .4 | 1.0 | 115 | 34 | *52 | 7.9 | 49 | 138 | 2.5 | .1 |
| 4 | | 0 | .4 | 1.5 | 69 | 28 | 2,400 | 2.8 | 17 | 47 | 2.1 | 0 |
| 5 | | 0 | .6 | 2.2 | 677 | 24 | 1,020 | 1.7 | 405 | 26 | 1.4 | 0 |
| 6 | | 0 | .4 | 1.8 | 310 | 37 | 204 | 1.3 | 179 | 16 | 1.2 | 0 |
| 7 | | 0 | .6 | 1.7 | 106 | 182 | 83 | 1.2 | 47 | 10 | 1.0 | 0 |
| 8 | | 0 | 1.4 | 1.7 | 363 | 69 | 1,160 | 1.1 | 51 | 6.9 | .6 | 0 |
| 9 | | 0 | .8 | 2.2 | 298 | 42 | 196 | 1.3 | 286 | 4.9 | *.8 | 0 |
| 10 | | 0 | .6 | 4.2 | 832 | 31 | 78 | 1.1 | 1,630 | 4.9 | .7 | 0 |
| 11 | (*) | 0 | .6 | *2.7 | 133 | 29 | 53 | 1.2 | 115 | 2.8 | .5 | 0 |
| 12 | | 0 | 1.0 | 2.4 | 66 | 66 | 38 | 1.0 | *42 | 1.9 | 1.6 | .1 |
| 13 | | 0 | .8 | 4.0 | 46 | *42 | 31 | 20 | 58 | 1.3 | 53 | .4 |
| 14 | | 0 | 1.0 | 2.7 | 36 | 29 | 24 | 122 | 45 | 118 | 45 | .5 |
| 15 | | 0 | .7 | a1.5 | 70 | 23 | 20 | 41 | 17 | 265 | 23 | .4 |
| 16 | | 0 | .7 | a1 | 130 | 19 | 32 | *10 | 8.4 | 23 | 3.3 | .3 |
| 17 | | 0 | .7 | a1 | 53 | 17 | 92 | 3.6 | 2,100 | 11 | 4.7 | .3 |
| 18 | | 0 | .8 | a1 | 37 | 16 | 50 | 21 | 115 | *514 | 11 | .2 |
| 19 | | 0 | .8 | a1.3 | 810 | 16 | 32 | 200 | 74 | 124 | 2.1 | .1 |
| 20 | | 3.2 | *6.5 | 1.8 | 195 | 14 | 21 | 63 | 23 | 34 | 1.0 | .2 |
| 21 | | 26 | 2.7 | 3.0 | *72 | 12 | 15 | 20 | 12 | 17 | .6 | .6 |
| 22 | | 5.0 | 1.5 | 1,330 | 51 | 15 | 13 | 574 | 46 | 11 | .3 | .7 |
| 23 | | .8 | 1.5 | *1,170 | 40 | 17 | *11 | 4,370 | 98 | 9.4 | .1 | .5 |
| 24 | | .5 | 1.7 | 54 | 35 | 17 | 10 | *437 | 89 | 11 | .2 | .3 |
| 25 | | .4 | 1.2 | 33 | 192 | 314 | 8.4 | 103 | 33 | 5.9 | .1 | .1 |
| 26 | | .5 | 1.2 | 24 | 1,350 | 104 | 6.9 | 220 | 13 | 4.0 | 0 | *0 |
| 27 | | .5 | 1.4 | 118 | 309 | 54 | 5.4 | 88 | 7.4 | 3.0 | 0 | 0 |
| 28 | | .5 | 1.1 | 3,440 | 91 | 35 | 4.0 | 44 | 643 | 2.8 | 0 | 0 |
| 29 | | .5 | 1.1 | 3,940 | - | 25 | 3.0 | 29 | 178 | 39 | 0 | 0 |
| 30 | | .2 | 1.1 | 468 | -------- | 20 | 2.5 | 18 | 112 | 28 | .1 | 0 |
| 31 | | -------- | 1.4 | 137 | -------- | 17 | -------- | 15 | -------- | 11 | .2 | -------- |
| Total | 0 | 38.1 | 35.4 | 10,754.6 | 8,402 | 1,449 | 5,700.2 | 6,425.0 | 6,581.8 | 2,288.8 | 165.5 | 5.0 |
| Mean | 0 | 1.27 | 1.14 | 347 | 300 | 46.7 | 190 | 207 | 219 | 73.8 | 5.34 | 0.17 |
| Cfsm | 0 | 0.014 | 0.013 | 3.87 | 3.34 | 0.521 | 2.12 | 2.31 | 2.44 | 0.823 | 0.060 | 0.0019 |
| In. | 0 | 0.02 | 0.01 | 4.46 | 3.48 | 0.60 | 2.36 | 2.66 | 2.73 | 0.95 | 0.07 | 0.002 |

Calendar year 1956: Max 4,040 Min 0 Mean 88.1 Cfsm 0.982 In. 13.36
Water year 1956-57: Max 4,370 Min 0 Mean 115 Cfsm 1.28 In. 17.34

Peak discharge (base, 3,000 cfs).--Jan. 23 (1 a.m.) 3,380 cfs (10.56 ft); Jan. 29 (3:30 p.m.) 4,720 cfs (11.71 ft); Apr. 4 (11:30 a.m.) 3,480 cfs (11.20 ft); May 23 (7:30 a.m.) 7,220 cfs (12.48 ft); June 10 (4:30 a.m.) 3,380 cfs (11.15 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

## East Fork Clarks River near Benton, Ky.

Location.--Lat 36°52'24", long 88°20'48", on downstream side of right pier of bridge on U. S. Highway 641 and State Highway 58, 1 mile north of Benton, Marshall County, and 6.8 miles upstream from Middle Fork Creek.

Drainage area.--227 sq mi.

Records available.--May 1938 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 344.53 ft above mean sea level, datum of 1929 (Tennessee Valley Authority benchmark). Prior to Sept. 10, 1951, wire-weight gage at same site and datum.

Average discharge.--19 years, 276 cfs.

Extremes.--Maximum discharge during year, 12,800 cfs May 24 (gage height, 14.80 ft); minimum daily, 2.7 cfs Oct. 12-20; Nov. 13, 14.
1938-57: Maximum discharge, 27,600 cfs Mar. 22, 1952 (gage height, 16.68 ft), from rating curve extended above 17,000 cfs; minimum observed, 1.8 cfs Aug. 9, 1948.
Maximum stage known, 17.8 ft in February 1937, from floodmarks.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Revisions (water years).--WSP 923: Drainage area. WSP 1143: 1938-47. WSP 1206: 1949(M).

Rating tables, water year 1956-57 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 15-18, June 12-18, July 16-18)

| Oct. 1 to Jan. 29 | | | | Jan. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.15 | 2.4 | 5.0 | 190 | 2.2 | 4.7 | 11.0 | 1,020 |
| 2.2 | 3.0 | 10.0 | 755 | 2.4 | 9.4 | 12.0 | 1,480 |
| 2.4 | 7.5 | 11.5 | 1,140 | 2.6 | 16 | 12.5 | 2,500 |
| 2.6 | 14 | 12.0 | 1,480 | 3.0 | 36 | 13.0 | 4,120 |
| 3.0 | 32 | 12.5 | 2,500 | 5.0 | 200 | 14.0 | 7,900 |
| 3.5 | 56 | 13.2 | 4,780 | 8.0 | 540 | 14.3 | 9,400 |
| 4.0 | 93 | | | 10.0 | 805 | | |

Discharge, in cubic feet per second, water year October 1956 to September 1957

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | *4.4 | 6 | 15 | 1,200 | 1,000 | 88 | 50 | 154 | 220 | 70 | 11 |
| 2 | 4.0 | 4.4 | 6 | 15 | 1,840 | 500 | 90 | 96 | 553 | *157 | 49 | 10 |
| 3 | 4.0 | 4.2 | 6 | 15 | 2,340 | 200 | *106 | 57 | 598 | 651 | 37 | 10 |
| 4 | 4.4 | 4.7 | 6 | 17 | 539 | 150 | 1,910 | 39 | 175 | 208 | 31 | 9.1 |
| 5 | 4.0 | 6.2 | 6 | 18 | 510 | 100 | 3,830 | 35 | 1,220 | 107 | 26 | 8.6 |
| 6 | 3.6 | 3.0 | 6 | 18 | 1,210 | 100 | 3,380 | 31 | 825 | 77 | 22 | 8.4 |
| 7 | 3.4 | 2.9 | 6 | 20 | 765 | 400 | 841 | 28 | 313 | 59 | 20 | 8.1 |
| 8 | 3.2 | 3.2 | 8 | 19 | 697 | 300 | 706 | 26 | 148 | 48 | 18 | 8.1 |
| 9 | 3.2 | 3.4 | 10 | 20 | 1,060 | 150 | 1,410 | 24 | 208 | 40 | *16 | 8.1 |
| 10 | 3 | 3.8 | 7 | 28 | 1,270 | 100 | 858 | 24 | 694 | 34 | 15 | 7.8 |
| 11 | *2.9 | 4.6 | 9 | *45 | 1,340 | 100 | 287 | 42 | 1,210 | 31 | 14 | 7.6 |
| 12 | 2.7 | 6.2 | 9.8 | 30 | 506 | 150 | 198 | 31 | *382 | 27 | 44 | 7.6 |
| 13 | 2.7 | 2.7 | 11 | 24 | 260 | *179 | 153 | 65 | 139 | 24 | 267 | 7.6 |
| 14 | 2.7 | 2.7 | 11 | 22 | 186 | 129 | 128 | 256 | 140 | 454 | 152 | 8.1 |
| 15 | 2.7 | 4 | 12 | 21 | 186 | 107 | 111 | 208 | 109 | 1,460 | 220 | 8.4 |
| 16 | 2.7 | 7 | 11 | 21 | 340 | 91 | 138 | *91 | 72 | 819 | 90 | 8.1 |
| 17 | 2.7 | 5 | 10 | 19 | 285 | 81 | 310 | 48 | 52 | 167 | 172 | 7.8 |
| 18 | 2.7 | 4 | 10 | 17 | 175 | 77 | 307 | 87 | 217 | *479 | 115 | 7.3 |
| 19 | 2.7 | 3 | 10 | 17 | 590 | 74 | 186 | 554 | 458 | 834 | 58 | 6.8 |
| 20 | 2.7 | 3 | *41 | 18 | *1,340 | 68 | 136 | 470 | 148 | 276 | 41 | 6.8 |
| 21 | 3 | 40 | 45 | 21 | 1,500 | 62 | 111 | 180 | 84 | 132 | 30 | 89 |
| 22 | 3.5 | 50 | 32 | 663 | 700 | 70 | 97 | 1,280 | 63 | 96 | 24 | 46 |
| 23 | 4 | 30 | 24 | 2,260 | 400 | 73 | 88 | 5,160 | 77 | 334 | 21 | 11 |
| 24 | 3.5 | 15 | 21 | 2,990 | 250 | 72 | *81 | *9,100 | 143 | 193 | 19 | 8.9 |
| 25 | 3 | 10 | 18 | 599 | 600 | 254 | 68 | 3,480 | 118 | 81 | 18 | 7.8 |
| 26 | 4 | 10 | 17 | 194 | 2,000 | 591 | 60 | 688 | 77 | 61 | 17 | *6.4 |
| 27 | 5 | 9 | 17 | 164 | 4,000 | 262 | 54 | 421 | 49 | 49 | 16 | 6.4 |
| 28 | 4 | 8 | 16 | 1,250 | 2,000 | 163 | 48 | 220 | 370 | 133 | 15 | 6.8 |
| 29 | 3.5 | *6.2 | 16 | 4,480 | - | 125 | 44 | 147 | 974 | 466 | 14 | 6.0 |
| 30 | 3 | 6 | 16 | *5,960 | ------- | 105 | 39 | 115 | 321 | 242 | 12 | 5.8 |
| 31 | 4 | ------- | 16 | 4,000 | ------- | 92 | ------- | 94 | ------- | 120 | 12 | ------- |
| Total | 104.5 | 266.6 | 439.8 | 23,000 | 28,089 | 5,925 | 15,863 | 23,147 | 10,091 | 8,179 | 1,675 | 359.4 |
| Mean | 3.37 | 8.89 | 14.2 | 742 | 1,003 | 191 | 529 | 747 | 336 | 264 | 54.0 | 12.0 |
| Cfsm | 0.015 | 0.039 | 0.063 | 3.27 | 4.42 | 0.841 | 2.33 | 3.29 | 1.48 | 1.16 | 0.238 | 0.053 |
| In. | 0.02 | 0.04 | 0.07 | 3.77 | 4.60 | 0.97 | 2.60 | 3.79 | 1.65 | 1.34 | 0.27 | 0.06 |

Calendar year 1956: Max 8,200 Min 2.7 Mean 223 Cfsm 0.982 In. 13.34
Water year 1956-57: Max 9,100 Min 2.7 Mean 321 Cfsm 1.41 In. 19.18

Peak discharge (base, 4,400 cfs).--Jan. 30 (4 a.m.) 6,320 cfs (13.63 ft); Feb. 27 (time and discharge unknown); Apr. 5 (11 p.m.) 4,640 cfs (13.16 ft); May 24 (3:30 a.m.) 12,800 cfs (14.80 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 8-10, 12-31, Nov. 14-28, Nov. 30 to Dec. 11, Feb. 21 to Mar. 12; discharge estimated on basis of recorded range in stage, weather records, and records for station at Murray.

Reservoirs in Tennessee River basin

Douglas Lake.--Lat 35°57'40", long 83°32'20", at Douglas Dam on French Broad River, 6½ miles north of Sevierville, Sevier County, Tenn., and at mile 32.3. Drainage area, 4,541 sq mi. Records available, February 1943 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 607,500 cfs-days July 6 (elevation, 991.42 ft); minimum, 51,600 cfs-days Jan. 22 (elevation, 921.42 ft). Maximum contents during period 1943-57, 760,000 cfs-days July 25, 1949 (elevation, 1,001.79 ft); minimum (after first filling), 1,000 cfs-days Jan. 16, 1956 (elevation, 883.7 ft, estimated).

Reservoir formed by concrete main dam and 10 saddle dams. Spillway equipped with 11 taintor gates, 32 ft high by 40 ft wide and 8 sluice gates 10 ft high by 5.67 ft wide. Closure of dam was made Feb. 19, 1943; water in reservoir first reached minimum pool elevation Feb. 25, 1943. Total capacity at elevation 1,002.00 ft (top of gates) is 763,400 cfs-days, of which 715,800 cfs-days is controlled storage above elevation 920.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 1276: 1948.

South Holston Lake.--Lat 36°31'15", long 82°05'11", 470 ft upstream from South Holston Dam on South Fork Holston River in Sullivan County, Tenn., 7.0 miles southeast of Bristol, Virginia-Tennessee, and at mile 49.8. Drainage area, 703 sq mi. Records available, November 1950 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 11, 1951, staff gage at same site and datum. Maximum contents during year, 307,000 cfs-days Apr. 15 (elevation, 1,725.07 ft); minimum, 132,100 cfs-days Dec. 12 (elevation, 1,661.68 ft). Maximum contents during period 1950-57, that of Apr. 15, 1957; minimum (after first filling), 57,700 cfs-days Jan. 13, 1956 (elevation, 1,614.15 ft).

Reservoir is formed by rock and rolled earth-fill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with 6 piers 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Nov. 20, 1950; water in reservoir first reached minimum pool elevation Jan. 25, 1951. Total capacity at elevation 1,742.00 ft (spillway crest) is 375,100 cfs-days, of which 315,200 cfs-days is controlled storage above elevation 1,616.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Watauga Lake.--Lat 36°19'20", long 82°07'16", at Watauga Dam on Watauga River, 5 miles east of Elizabethton, Carter County, Tenn., and at mile 36.7. Drainage area, 468 sq mi. Records available, December 1948 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 286,900 cfs-days Apr. 10 (elevation, 1,958.90 ft); minimum, 146,400 cfs-days Dec. 12 (elevation, 1,906.83 ft). Maximum contents during period 1948-57, that of Apr. 10, 1957; minimum (after first filling), 25,100 cfs-days Jan. 13, 1956 (elevation, 1,813.47 ft).

Reservoir is formed by rock and rolled earth-fill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with 6 piers 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Dec. 1, 1948; water in reservoir first reached minimum pool elevation Dec. 31, 1948. Total capacity at elevation 1,975.00 ft (spillway crest) is 342,200 cfs-days, of which 316,200 cfs-days is controlled storage above elevation 1,815.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Boone Lake.--Lat 36°26'26", long 82°26'16", at Boone Dam on South Fork Holston River in Sullivan County, Tenn., 0.7 mile northeast of Spurgeon, Washington County, Tenn., 1.3 miles downstream from Watauga River, and at mile 18.6. Drainage area, 1,840 sq mi. Records available, December 1952 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 93,800 cfs-days Aug. 16 (elevation, 1,382.57 ft); minimum, 44,900 cfs-days Jan. 21 (elevation, 1,352.05 ft). Maximum contents during period 1952-57, 98,100 cfs-days June 10, 1953 (elevation, 1,384.52 ft); minimum (after first filling), 21,300 cfs-days Jan. 23, 1956 (elevation, 1,327.06 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 5 radial gates, 35 ft high by 35 ft wide. Storage began Dec. 16, 1952; water in reservoir first reached minimum pool elevation Jan. 5, 1953. Total capacity at elevation 1,385.0 ft (top of gates) is 99,200 cfs-days, of which 75,700 cfs-days is controlled storage above elevation 1,330 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Fort Patrick Henry Lake.--Lat 36°29'53", long 82°30'32", at Fort Patrick Henry Dam on South Fork Holston River, 0.2 mile upstream from bridge on U. S. Highway 23, 4.5 miles southeast of Kingsport, Sullivan County, Tenn., and at mile 8.2. Drainage area, 1,903 sq mi. Records available, October 1953 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 13,700 cfs-days Dec. 5 (elevation, 1,263.00 ft); minimum, 11,400 cfs-days Feb. 22 (elevation, 1,257.80 ft). Maximum contents during period 1953-57, 14,000 cfs-days Feb. 11, 1954 (elevation, 1,263.80 ft); minimum (after first filling), 9,300 cfs-days Mar. 16, 1954 (elevation, 1,252.32 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 5 radial gates, 35 ft high by 35 ft wide. Storage began Oct. 27, 1953; water in reservoir first reached minimum pool elevation Dec. 8, 1953. Total capacity at elevation 1,263 ft (top of gates) is 13,700 cfs-days, of which 1,700 cfs-days is controlled storage above elevation 1,258 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Cherokee Lake.--Lat 36°10'00", long 83°29'55", at Cherokee Dam on Holston River, 0.3 mile upstream from bridge on State Highway 92, 2.7 miles upstream from Mill Spring Creek, 2.8 miles north of Jefferson City, Jefferson County, Tenn., and at mile 52.3. Drainage area, 3,429 sq mi. Records available, December 1941 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 609,700 cfs-days July 6 (elevation, 1,062.43 ft); minimum, 91,800 cfs-days Jan. 22 (elevation, 995.25 ft). Maximum contents during period 1941-57, 779,400 cfs-days May 11, 1944 (elevation, 1,074.37 ft); minimum (after first filling), 48,400 cfs-days Jan. 7, 1954 (elevation, 980.77 ft).

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 9 radial gates 32 ft high by 40 ft wide. Storage began Dec. 5, 1941; water in reservoir first reached minimum pool elevation Jan. 6, 1942. Total capacity at elevation 1,075.0 ft (top of gates) is 789,200 cfs-days, of which 742,700 cfs-days is controlled storage above elevation 980.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Fort Loudoun Lake.--Lat 35°47'30", long 84°14'35", at Fort Loudoun Dam on Tennessee River, 1 mile northeast of Lenoir City, Loudon County, Tenn., and at mile 602.3. Drainage area, 9,550 sq mi. Records available, July 1943 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 184,000 cfs-days June 9; maximum elevation, 814.04 ft June 13; minimum 12 p.m. contents, 140,000 cfs-days Jan. 20; minimum elevation, 806.83 ft Dec. 24. Maximum elevation during period 1943-57, 815.00 ft Sept. 11, 1943, May 14, 1945; minimum (after first filling), 805.54 ft Jan. 18, 1954. Contents based on backwater profile.

Reservoir formed by concrete dam with earth embankment. Spillway equipped with 14 taintor gates 32 ft high by 40 ft wide. Closure of dam was made Aug. 2, 1943; water in reservoir first reached ordinary minimum pool elevation Sept. 4, 1943. Total level pool capacity at elevation 815.00 ft (top of gates) is 194,900 cfs-days, of which 55,100 cfs-days is controlled flood storage above elevation 807.00 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Nantahala Lake.--Lat 35°11'56", long 83°59'17", at Nantahala Dam on Nantahala River, 4.2 miles southeast of Topton, Cherokee County, N. C., 5.5 miles upstream from Whiteoak Creek, and at mile 22.8. Drainage area, 91.0 sq mi. Records available, October 1944 to September 1957. Gage, water-stage recorder. Datum of gage is a local datum which is 122.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 70,400 cfs-days Apr. 12 (elevation, 2,890.55 ft); minimum, 25,600 cfs-days Dec. 12 (elevation, 2,817.93 ft). Maximum contents during period 1944-57, that of Apr. 12, 1957; minimum, 6,700 cfs-days Jan. 28, 1955 (elevation, 2,760.11 ft).

Reservoir is formed by rock-fill dam with side channel gate-controlled spillway supplemented by fuse-plug dam. Dam completed and storage began Jan. 30, 1942; water in reservoir first reached minimum pool elevation Feb. 16, 1942. Total capacity at elevation 2,890.0 ft (top of gates) is 69,900 cfs-days, of which 63,300 cfs-days is controlled storage above 2,760.0 ft (minimum pool). Reservoir is used for flood control and power. Gage-height record furnished by the Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Thorpe Lake.--Lat 35°11'57", long 83°09'15", at Thorpe Dam on West Fork Tuckasegee River, 2.3 miles northwest of Glenville, Jackson County, N. C., 3.0 miles upstream from Shoal Creek, and at mile 9.7. Drainage area, 36.7 sq mi. Records available, October 1944 to September 1957. Prior to October 1948, published as Glenville Reservoir. Gage, water-stage recorder. Datum of gage is a local datum which is 391.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 33,000 cfs-days June 7 (elevation, 3,096.26 ft); minimum, 12,700 cfs-days Dec. 12 (elevation, 3,061.08 ft). Maximum contents during period 1944-57, 35,700 cfs-days Mar. 13, 1950 (elevation, 3,100.01 ft); minimum, 2,200 cfs-days Feb. 5, 1955, Jan. 13, 1956; minimum elevation, 3,025.10 ft Feb. 5, 1955.

Reservoir is formed by earth and rock dam and six 40-foot fuse-plug dams. Side channel spillway equipped with 2 taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Feb. 12, 1941. Water in reservoir first reached minimum pool elevation Mar. 15, 1941. Total capacity at elevation 3,100.0 ft (top of gates) is 35,700 cfs-days, of which 33,600 cfs-days is controlled storage above elevation 3,025.0 ft (minimum pool). Reservoir is used for flood control and power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Fontana Lake.--Lat 35°27'07", long 83°48'18", at Fontana Dam on Little Tennessee River, 5.7 miles upstream from Twenty Mile Creek, 9.0 miles north of Robbinsville, Graham County, N. C., 9.5 miles upstream from Cheoah Dam, and at mile 61.0. Drainage area, 1,571 sq mi. Records available, November 1944 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 580,400 cfs-days June 11 (elevation, 1,679.87 ft); minimum, 209,300 cfs-days Dec. 12 (elevation, 1,561.99 ft). Maximum contents during period 1944-57, 722,300 cfs-days July 23, 1949 (elevation, 1,708.91 ft); minimum (after first filling), 78,300 cfs-days Jan. 29, 1955 (elevation, 1,472.0 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 4 radial gates 35 ft high by 35 ft wide. Storage began Nov. 7, 1944; dam completed March 1945; water in reservoir first reached minimum pool elevation Jan. 16, 1945. Total capacity at elevation 1,710.0 ft (top of gates) is 728,200 cfs-days, of which 583,500 cfs-days is controlled storage above elevation 1,525.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Santeetlah Lake.--Lat 35°22'38", long 83°52'33", at Santeetlah Dam on Cheoah River, 1 mile downstream from Santeetlah Creek, 5.5 miles northwest of Robbinsville, Graham County, N. C., and at mile 9.3. Drainage area, 176 sq mi. Records available, October 1946 to September 1957. Gage, water-stage recorder. Datum of gage is a local datum which is 122.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 79,800 cfs-days Apr. 10 (elevation, 1,817.03 ft); minimum, 16,800 cfs-days Dec. 11 (elevation, 1,749.47 ft). Maximum contents during period 1946-57, 80,100 cfs-days Feb. 4, 1949 (elevation, 1,817.19 ft); minimum, 14,500 cfs-days Jan. 13, 1956 (elevation, 1,744.56 ft).

Reservoir is formed by concrete gravity and arch dam with concrete spillway controlled by 6 taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Dec. 7, 1927. Water in reservoir first reached minimum pool elevation December 1927. Total capacity at elevation 1,817.00 ft (top of gates) is 79,800 cfs-days, of which 67,200 cfs-days is controlled storage above 1,740.08 ft (minimum pool). Reservoir is used for power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Chilhowee Lake.--Lat 35°32'44", long 84°03'01", at Chilhowee Dam on Little Tennessee River, 2.4 miles southwest of Chilhowee, Blount County, Tenn., 2.6 miles upstream from Citico Creek, 10.1 miles downstream from Calderwood Dam, and at mile 33.6. Drainage area, 1,976 sq mi. Records available, August to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during period August to September 1957, 24,800 cfs-days Sept. 22 (elevation, 873.98 ft); minimum 12 p.m. contents (since minimum pool elevation was reached), 21,600 cfs-days Aug. 22 (elevation, 870.20 ft).

Reservoir is formed by concrete dam with rock-fill end abutments. Spillway controlled by 6 taintor gates 38 ft high by 35 ft wide. Closure of dam was made June 9, 1957. Storage above spillway crest (elevation, 836.0 ft) began Aug. 1, 1957; water in reservoir first reached minimum pool elevation Aug. 9, 1957. Total capacity at elevation 874.0 ft (top of gates) is 24,800 cfs-days, of which 3,400 cfs-days is controlled storage above elevation 870.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Norris Lake.--Lat 36°13'29", long 84°05'29", at Norris Dam on Clinch River, 2½ miles northwest of Norris, Anderson County, Tenn., and at mile 79.8. Drainage area, 2,912 sq mi. Records available, June 1935 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912, and 0.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Elevations given herein are referred to adjustment of 1912. Maximum contents during year, 756,900 cfs-days Feb. 4 (elevation, 1,002.25 ft); minimum, 282,800 cfs-days Dec. 12 (elevation, 955.55 ft). Maximum contents during period 1935-57, 1,236,700 cfs-days Feb. 11, 1937 (elevation, 1,031.10 ft); minimum (after first filling), 75,500 cfs-days Jan. 24, 1956 (elevation, 909.35 ft).

Reservoir is formed by concrete gravity dam with 3 drum gates 100 ft wide by 14 ft high. Some storage began in June 1935; dam was completely closed and placed in operation Mar. 4, 1936; water in reservoir first reached minimum pool elevation Mar. 24, 1936. Total capacity at elevation 1,034.0 ft (top of gates) is 1,294,200 cfs-days, of which 1,150,000 cfs-days is controlled storage above elevation 930.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Watts Bar Lake.--Lat 35°37'13", long 84°47'00", at Watts Bar Dam on Tennessee River, 6.5 miles southeast of Spring City, Rhea County, Tenn., 72.4 miles downstream from Fort Loudoun Dam, and at mile 529.9. Drainage area, 17,310 sq mi, approximately. Records available, October 1941 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 519,000 cfs-days Sept. 17; maximum elevation, 742.60 ft Sept. 18; minimum 12 p.m. contents, 384,000 cfs-days Dec. 19; minimum elevation, 734.98 ft Dec. 24. Maximum elevation during period 1941-57, 745.12 ft Mar. 9, 1942; minimum (after first filling), 733.44 ft Mar. 20, 1945. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 20 taintor gates 32 ft high by 40 ft wide, also one 2-section leaf trashway gate 16.3 ft high by 24 ft wide. Storage began with partial closure Dec. 12, 1941, and final closure Jan. 1, 1942; water in reservoir first reached minimum navigation pool elevation Feb. 17, 1942. Total level pool capacity at elevation 745.0 ft (top of gates) is 570,700 cfs-days, of which 190,400 cfs-days is controlled flood storage above elevation 735.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Chatuge Lake.--Lat 35°01'01", long 83°47'28", at Chatuge Dam on Hiwassee River, 2.0 miles upstream from Hyatt Mill Creek, 2.5 miles downstream from Georgia-North Carolina State line, 2.5 miles southeast of Hayesville, Clay County, N. C., and at mile 121.0. Drainage area, 189 sq mi. Records available, February 1942 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 107,100 cfs-days Apr. 8 (elevation, 1,922.76 ft); minimum, 40,700 cfs-days Dec. 12 (elevation, 1,893.72 ft). Maximum contents during period 1942-57, 124,200 cfs-days Apr. 20, 1943 (elevation, 1,927.80 ft); minimum (after first filling), 9,400 cfs-days Sept. 5, 1947, Jan. 27, 1956; minimum elevation, 1,860.11 ft Sept. 5, 1947.

Reservoir is formed by a rolled earth-fill dam with side channel spillway equipped with flashboards. Storage began Feb. 12, 1942; water in reservoir first reached minimum pool elevation Feb. 26, 1942. Total capacity at elevation 1,928.0 (top of flashboards) is 124,900 cfs-days, of which 115,600 cfs-days is controlled storage above elevation 1,860.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Nottely Lake.--Lat 34°57'29", long 84°05'22", at Nottely Dam on Nottely River, 1.3 miles upstream from Dooley Creek, 1.8 miles west of Ivylog, Union County, Ga., 2.5 miles upstream from Georgia-North Carolina State line, and at mile 21.0. Drainage area, 314 sq mi. Records available, January 1942 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 69,600 cfs-days Apr. 13 (elevation, 1,767.69 ft); minimum, 12,400 cfs-days Dec. 12 (elevation, 1,706.18 ft). Maximum contents during period 1942-57, 94,100 cfs-days Apr. 20, 1943 (elevation, 1,780.50 ft); minimum (after first filling), 200 cfs-days Oct. 6, 1947 (elevation, 1,638.6 ft).

Reservoir is formed by rock and rolled earth-fill dam with side channel spillway equipped with flashboards. Storage began Jan. 24, 1942; water in reservoir first reached minimum pool elevation Jan. 26, 1942. Total capacity at elevation 1,780.00 ft (top of flashboards) is 93,000 cfs-days, of which 92,800 cfs-days is controlled storage above elevation 1,640.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Hiwassee Lake.--Lat 35°09'05", long 84°10'40", at Hiwassee Dam on Hiwassee River, a third of a mile northwest of village of Hiwassee Dam, Cherokee County, N. C., 3.9 miles upstream from Shoal Creek, and at mile 75.8. Drainage area, 968 sq mi. Records available, October 1939 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, preliminary adjustment of 1929. Subtract 0.63 ft from all elevations to reduce to datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 204,000 cfs-days June 26 (elevation, 1,521.03 ft); minimum, 47,100 cfs-days Jan. 18 (elevation, 1,428.40 ft). Maximum contents during period 1939-57, 220,700 cfs-days Apr. 24, 1944 (elevation, 1,526.48 ft); minimum (after first filling), 35,800 cfs-days Jan. 28, 1948 (elevation, 1,413.41 ft).

Reservoir is formed by gravity overflow concrete dam with 7 taintor gates 23 ft high by 32 ft long. Slight storage began Apr. 13, 1939, during construction; systematic storage operation began Jan. 14, 1940; dam completed February 1940; water in reservoir first reached minimum pool elevation Feb. 23, 1940. Total capacity at elevation 1,526.5 ft (top of gates) is 220,800 cfs-days, of which 183,800 cfs-days is controlled storage above elevation 1,415.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Apalachia Lake.--Lat 35°10'04", long 84°17'49", at Apalachia Dam on Hiwassee River in Cherokee County, N. C., 0.1 mile upstream from North Carolina-Tennessee State line, 1.5 miles northeast of Farner, Polk County, Tenn., 9.8 miles downstream from Hiwassee Dam, and at mile 66.1. Drainage area, 1,018 sq mi. Records available, February 1943 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 29,600 cfs-days Apr. 2 (elevation, 1,280.16 ft); minimum, 25,100 cfs-days Jan. 8 (elevation, 1,272.00 ft). Maximum contents during period 1943-57, 30,300 cfs-days June 13, 1952 (elevation, 1,281.40 ft); minimum (after first filling), 15,700 cfs-days Aug. 28, 1955 (elevation, 1,251.73 ft).

Reservoir is formed by concrete gravity dam. Spillway equipped with 10 radial gates. Storage began Feb. 14, 1943; water in reservoir first reached minimum pool elevation Feb. 21, 1943. Total capacity at elevation 1,280.00 ft (top of gates) is 29,500 cfs-days, of which 18,000 cfs-days is controlled storage above elevation 1,240.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Blue Ridge Lake.--Lat 34°52'52", long 84°16'49", 400 ft upstream from Blue Ridge Dam on Toccoa River, 2½ miles northeast of Blue Ridge, Fannin County, Ga., and at mile 53.0. Drainage area, 232 sq mi. Records available, December 1930 to September 1957. Gage, water-stage recorder. To convert elevations given herein to datum of 1929, supplementary adjustment of 1936, 0.18 ft should be subtracted. Maximum contents during year, 98,400 cfs-days Apr. 22 (elevation, 1,689.25 ft); minimum, 23,900 cfs-days Dec. 12 (elevation, 1,623.09 ft). Maximum 12 p.m. contents during period 1930-57, 100,900 cfs-days Feb. 11, 1946 (elevation, 1,690.83 ft); minimum (after first filling), 6,500 cfs-days Jan. 16, 1956 (elevation, 1,587.75 ft).

Reservoir is formed by earth dam. Spillway equipped with 5 taintor gates 15 ft high by 32 ft wide. Dam completed and storage began Dec. 6, 1930. Total capacity at elevation 1,690.0 ft (top of gates) is 99,600 cfs-days, of which 92,300 cfs-days is controlled storage above elevation 1,590.0 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Ocoee No. 3 Lake.--Lat 35°02'25", long 84°28'00", at Ocoee No. 3 Dam on Ocoee River, 5 miles west of Ducktown, Polk County, Tenn., and at mile 29.2. Drainage area, 496 sq mi. Records available, October 1942 to September 1957. Gage, water-stage recorder. Datum of gage is 1,410.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936; gage readings have been adjusted to mean sea level. Maximum contents during year, 4,500 cfs-days June 24 (elevation, 1,435.40 ft); minimum, 1,500 cfs-days Oct. 1 (elevation, 1,415.07 ft). Maximum contents during period 1942-57, 7,800 cfs-days Jan. 8, 1946 (elevation, 1,436.7 ft, estimated); minimum 12 p.m. contents (after first filling) 1,100 cfs-days Apr. 3, 1943 (elevation, 1,394.95 ft).

Reservoir is formed by concrete dam. Spillway with crest at elevation 1,412.00 ft equipped with 7 taintor gates 23 ft high by 32 ft wide. Storage began Aug. 15, 1942; water in reservoir first reached minimum pool elevation Dec. 28, 1942. Capacity of reservoir has been considerably reduced by silting; revised capacity tables used after Sept. 30, 1946, and after Dec. 31, 1953. Total capacity at elevation, 1,435.00 ft (top of gates) is 4,400 cfs-days, of which 3,000 cfs-days is controlled storage above elevation 1,413.00 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Parksville Lake.--Lat 35°05'44", long 84°38'51", at Parksville Dam on Ocoee River at Parksville, Polk County, Tenn., 13¾ miles east of Cleveland, and at mile 11.9. Drainage area, 595 sq mi. Records available, June 1914 to September 1957. Prior to October 1953, published as Parksville (Ocoee No. 1) Reservoir. Indicator gage. Datum of gage is 6.89 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Gage readings have been reduced to elevations above mean sea level. Maximum contents during year, 45,300 cfs-days Feb. 1 (elevation, 839.1 ft); minimum, 33,400 cfs-days Jan. 18 (elevation, 826.1 ft). Maximum 12 p.m. contents during period 1914-57, 53,300 cfs-days July 9, 1916; maximum 12 p.m. elevation, 840.2 ft Feb. 10, 1946; minimum contents, 27,300 cfs-days Jan. 27, 1956 (elevation, 817.7 ft); minimum 12 p.m. elevation, 814.8 ft Dec. 14, 1934.

Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with 4 floodgates 7 ft high by 20 ft wide and 265 ft of flashboards about 5 2/3 ft high. Crest of spillway is 1.0 ft lower under gates. Dam completed and storage began in 1911. Capacity of reservoir has been considerably reduced by silting; revised capacity table used after Oct. 31, 1952. Total capacity at elevation 837.55 ft (about top of flashboards) is 43,700 cfs-days, of which 16,900 cfs-days is controlled storage above elevation 816.9 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Chickamauga Lake.--Lat 35°06'07", long 85°13'42", at Chickamauga Dam on Tennessee River, 5¾ miles northeast of Chattanooga, Hamilton County, Tenn., 58.9 miles downstream from Watts Bar Dam, and at mile 471.0. Drainage area, 20,790 sq mi, approximately. Records available, October 1939 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 343,000 cfs days Feb. 2; maximum elevation, 683.01 ft May 22; minimum 12 p.m. contents, 194,000 cfs-days Jan. 9; minimum elevation, 674.70 ft Jan. 17. Maximum elevation during period 1939-57, 685.37 ft May 20, 1950; minimum (after first filling), 673.27 ft Jan. 21, 1942. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with eighteen 2-section lift gates 40.44 ft high by 40 ft wide. Storage began Feb. 6, 1940; water in reservoir first reached minimum navigation pool elevation Mar. 10, 1940. Total level pool capacity at elevation 685.44 ft (top of gates) is 355,600 cfs-days, of which 166,100 cfs-days is controlled flood storage above elevation 675.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Hales Bar Lake.--Lat 35°02'48", long 85°22'19", at Hales Bar Dam on Tennessee River, 5¼ miles southeast of Jasper, Marion County, Tenn., 8.5 miles upstream from Sequatchie River, 39.9 miles downstream from Chickamauga Dam, and at mile 431.1. Drainage area, 21,790 sq mi, approximately. Records available, October 1914 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 123,000 cfs-days Feb. 1; maximum elevation, 634.85 ft Sept. 16; minimum 12 p.m. contents, 70,000 cfs-days July 7; minimum elevation, 631.87 ft Mar. 7. Maximum elevation during period 1914-57, 642.8 ft Mar. 8, 1917; minimum (after first filling), 619.0 ft Apr. 16, 1918. Contents based on backwater profile.

Reservoir is formed by concrete dam with earth embankments containing concrete core walls. Spillway with crest at 616.0 ft equipped with 17 taintor gates 19 ft high by 40 ft wide, and 1 trash gate 5.5 ft high by 15 ft wide (prior to July 1948 spillway, with crest elevation at 626.25 ft, equipped with flashboards 3 ft high prior to July 1944 and 5 ft high thereafter). Dam completed and storage began Oct. 13, 1913. Capacity of reservoir has been considerably reduced by silting. Total level pool capacity at elevation 634.0 ft (maximum allowable pool) is 77,800 cfs-days, of which 6,600 cfs-days is controlled flood storage above elevation 632.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Guntersville Lake.--Lat 34°25'17", long 86°23'34", in powerhouse at Guntersville Dam on Tennessee River in sec. 14, T. 7 S., R. 2 E., 11 miles northwest of Guntersville, Ala., 82.1 miles downstream from Hales Bar Dam, and at mile 349.0. Drainage area, 24,450 sq mi, approximately. Records available, October 1938 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 692,000 cfs-days Feb. 3; maximum elevation, 595.44 ft May 13; minimum 12 p.m. contents, 433,000 cfs-days Oct. 5, minimum elevation, 592.73 ft Aug. 23. Maximum elevation during period 1939-57, 596.29 ft Mar. 2, 1944; minimum (after start of operation plan in April 1940), 591.65 ft Sept. 8, 1953. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with eighteen 2-section lift gates 40.44 ft high by 50 ft wide. Dam completed and storage began Jan. 16, 1939; water in reservoir first reached minimum navigation pool elevation Jan. 27, 1939. Total level pool capacity at elevation 595.44 ft (top of gates) is 513,600 cfs-days, of which 82,100 cfs-days is controlled flood storage above elevation 593.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Woods Reservoir.--Lat 35°17'54", long 86°05'48", at Elk River Dam on Elk River, 1.2 miles upstream from Spring Creek, 2½ miles northeast of Estill Springs, Franklin County, Tenn., and 6.8 miles upstream from bridge on U. S. Highway 41A. Drainage area, 263 sq mi. Records available, May 1952 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 41,100 cfs-days May 22 (elevation, 960.42 ft); minimum, 28,600 cfs-days Mar. 25 (elevation, 953.46 ft). Maximum contents during period 1952-57, 42,300 cfs-days Apr. 21, 22, 1956 (elevation, 960.98 ft); minimum (after first filling), 26,300 cfs-days Nov. 8-11, 1953 (elevation, 951.93 ft).

Reservoirs in Tennessee River basin--Continued

Woods Reservoir--Continued.

Reservoir is formed by concrete gravity and earth-fill type dam with riprapped embankments. Spillway equipped with 3 taintor gates, 25 ft high by 50 ft wide and 2 sluice gates 6 ft high by 4 ft wide. Closure of dam was made May 1, 1952; water in reservoir first reached minimum pool elevation Feb. 6, 1953. Total capacity at elevation 962.0 ft (surcharge pool) is 44,400 cfs-days of which 9,900 cfs-days is controlled storage above elevation 957.0 ft (minimum pool). Reservoir is used for cooling water, flood control, and recreational purposes. Records furnished by U. S. Air Force.

Wheeler Lake.--Lat 34°47'52", long 87°22'51", at Wheeler Dam on Tennessee River, in SW¼ sec. 9, T. 3 S., R. 8 W., 0.8 mile upstream from Big Nance Creek, 30.1 miles downstream from Decatur, Ala., 74.1 miles downstream from Guntersville Dam, and at mile 274.9. Drainage area, 29,590 sq mi, approximately. Records available, October 1936 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 753,000 cfs-days Feb. 3; maximum elevation, 556.29 ft May 24; minimum 12 p.m. contents, 410,000 cfs-days Dec. 19; minimum elevation, 549.87 ft Dec. 15. Maximum elevation during period 1936-57, 557.32 ft Mar. 1, 1944; minimum (after start of operation plan in August 1937), 548.92 ft Nov. 1, 1937. Contents based on backwater profile.

Reservoir is formed by concrete dam with 60 taintor gates 15 ft high by 40 ft wide and 2 trashway gates 6 ft high by 37.5 ft wide. Storage began Oct. 3, 1936; water in reservoir first reached minimum pool elevation Dec. 10, 1936. Total level pool capacity at elevation 556.28 ft (top of gates) is 580,000 cfs-days, of which 175,200 cfs-days is controlled flood storage above elevation 550.0 ft (ordinary minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Wilson Lake.--Lat 34°47'46", long 87°37'27", in SE¼ sec. 18, T. 3 S., R. 10 W., at cooling-water intake at Wilson Dam on Tennessee River, 2.9 miles southeast of Florence, Ala., 4.1 miles upstream from Cypress Creek, 15.5 miles downstream from Wheeler Dam, and at mile 259.4. Drainage area, 30,750 sq mi, approximately. Records available, August 1926 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum contents during year, 328,500 cfs-days Apr. 30 (elevation, 507.98 ft); minimum, 298,500 cfs-days Mar. 10 (elevation, 504.17 ft). Maximum contents during period 1926-57, 329,200 cfs-days Apr. 20, 1954 (elevation, 508.07 ft); maximum elevation, 508.35 ft Feb. 11, 1948; minimum contents, 233,200 cfs-days Apr. 6, 1927 (elevation, 501.3 ft).

Reservoir is formed by concrete gravity dam with fixed ogee crest. Spillway equipped with 58 Stoney gates 20.54 ft (18.77 ft prior to June 1941) high by 38 ft wide. Storage began Apr. 14, 1924. Revised capacity table used after Dec. 31, 1953. Total capacity at elevation 507.88 ft (top of gates) is 327,700 cfs-days, of which 26,700 cfs-days is controlled flood storage above elevation 504.50 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Pickwick Lake.--Lat 35°04'16", long 88°15'04", at Pickwick Landing Dam on Tennessee River, 1½ miles north of town of Pickwick Dam, Hardin County, Tenn., 6.1 miles upstream from Lick Creek, 52.7 miles downstream from Wilson Dam, and at mile 206.7. Drainage area, 32,820 sq mi, approximately. Records available, October 1937 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 540,000 cfs-days Feb. 3; maximum elevation, 416.38 ft Apr. 10; minimum 12 p.m. contents, 341,000 cfs-days Dec. 21; minimum elevation, 407.90 ft Dec. 22. Maximum elevation during period 1937-57, 419.49 ft Mar. 30, 1944; minimum (after first filling), 407.12 ft Dec. 18, 1944. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with twenty-two 2-section lift gates 40 ft high by 40 ft wide, one of which is used as a trash gate. Dam completed and storage began Feb. 8, 1938; water in reservoir first reached minimum pool elevation Feb. 18, 1938. Total level pool capacity at elevation 418.0 ft (top of gates) is 550,200 cfs-days, of which 210,900 cfs-days is controlled flood storage above elevation 408.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Kentucky Lake.--Lat 37°00'45", long 88°16'12", at Kentucky Dam on Tennessee River at Gilbertsville, Marshall County, Ky., and at mile 22.4. Drainage area, 40,200 sq mi, approximately. Records available, July 1944 to September 1957. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 2,039,000 cfs-days Feb. 6; maximum elevation, 359.99 ft June 9; minimum 12 p.m. contents, 986,000 cfs-days Jan. 18; minimum elevation, 351.41 ft Feb. 13. Maximum elevation during period 1944-57, 368.81 ft Jan. 24, 1950; minimum (after first filling) 349.20 ft Jan. 22, 1947. Contents based on backwater profile.

Reservoir is formed by concrete dam with 24 lift gates 50 ft high by 40 ft wide. Storage began Aug. 16, 1944, and final closure was made Aug. 30, 1944. Water in reservoir reached minimum pool elevation Apr. 7, 1945. Total level pool capacity at elevation 375.0 ft (top of gates) is 3,026,300 cfs-days, of which 2,022,100 cfs-days is controlled storage above 354.0 ft (ordinary minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Other reservoirs.--The following smaller reservoirs in the Tennessee River basin are described herein, but records of contents are not published:

Burnett Lake on North Fork Swannanoa River near Black Mountain, N. C., with total capacity of 11,600 cfs-days, of which 8,900 cfs-days is controlled storage. Storage began Jan. 28, 1954.

Lake Walters on Pigeon River near Waterville, N. C., with total capacity of 12,700 cfs-days, of which 10,300 cfs-days is controlled storage. Storage began Oct. 27, 1929.

Reservoirs in Tennessee River basin--Continued

Davy Crockett Lake on Nolichucky River at Nolichucky Dam, Tenn., with total capacity of 8,070 cfs-days of which 4,060 cfs-days is controlled storage.

Tennessee Creek project lakes, Wolf Creek Lake on Wolf Creek and East Fork Lake on Tuckasegee River near Tuckasegee, N. C., with total capacity of 5,750 cfs-days, of which 4,480 cfs-days is controlled storage. Storage began Mar. 22, 1955.

Bear Creek Lake on Tuckasegee River near Tuckasegee, N. C., with total capacity of 17,500 cfs-days, of which 2,290 cfs-days is controlled storage. Storage began Oct. 9, 1953.

Cedar Cliff Lake on Tuckasegee River near Tuckasegee, N. C., with total capacity of 3,200 cfs-days, of which 400 cfs-days is controlled storage. Storage began Apr. 26, 1952.

Cheoah Lake on Little Tennessee River at Cheoah, N. C., with total capacity of 17,700 cfs-days, of which 3,700 cfs-days is controlled storage. Storage began Dec. 8, 1918.

Calderwood Lake on Little Tennessee River at Calderwood, Tenn., with total capacity of 20,800 cfs-days of which 2,060 cfs-days is controlled storage.

Month-end elevation and contents, water year October 1956 to September 1957

| Date | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) |
|---|---|---|---|---|---|---|---|---|---|
| | Douglas Lake | | | South Holston Lake | | | Watauga Lake | | |
| Sept.30..... | 953.20 | 212,000 | - | 1,689.45 | 195,800 | - | 1,920.63 | 178,500 | - |
| Oct. 31..... | 939.31 | 123,700 | -88,300 | 1,673.75 | 157,600 | -38,200 | 1,916.94 | 169,600 | -1,900 |
| Nov. 30..... | 926.36 | 67,200 | -56,600 | 1,667.71 | 144,500 | -13,100 | 1,913.54 | 161,600 | -8,000 |
| Dec. 31..... | 930.73 | 83,700 | +16,500 | 1,672.28 | 154,400 | +9,900 | 1,909.74 | 152,900 | -8,700 |
| Calendar year 1956. | - | - | +33,100 | - | - | +89,900 | - | - | +119,900 |
| Jan. 31..... | 955.09 | 226,200 | +142,500 | 1,703.62 | 235,600 | +81,200 | 1,922.05 | 182,000 | +29,100 |
| Feb. 28..... | 952.07 | 203,700 | -22,500 | 1,709.85 | 254,900 | +19,300 | 1,946.96 | 249,800 | +67,800 |
| Mar. 31..... | 950.29 | 191,000 | -12,700 | 1,712.70 | 264,100 | +9,200 | 1,949.93 | 258,800 | +9,000 |
| Apr. 30..... | 985.59 | 531,500 | +340,500 | 1,721.68 | 294,800 | +30,700 | 1,949.87 | 258,600 | -200 |
| May 31..... | 982.57 | 494,600 | -36,900 | 1,713.90 | 268,100 | -26,700 | 1,942.55 | 236,900 | -21,700 |
| June 30..... | 990.24 | 591,600 | +97,000 | 1,710.19 | 256,000 | -12,100 | 1,944.11 | 241,400 | +4,500 |
| July 31..... | 983.09 | 500,800 | -90,800 | 1,707.18 | 246,500 | -9,500 | 1,945.57 | 245,700 | +4,300 |
| Aug. 31..... | 969.28 | 350,500 | -150,300 | 1,695.99 | 213,500 | -33,000 | 1,942.27 | 236,100 | -9,600 |
| Sept.30..... | 962.88 | 290,700 | -59,800 | 1,684.47 | 183,000 | -30,500 | 1,931.59 | 206,600 | -29,500 |
| Water year 1956-57. | - | - | +78,700 | - | - | -12,800 | - | - | +28,100 |
| | Boone Lake | | | Fort Patrick Henry Lake | | | Cherokee Lake | | |
| Sept.30..... | 1,378.09 | 84,700 | - | 1,261.87 | 13,200 | - | 1,033.43 | 307,200 | - |
| Oct. 31..... | 1,372.05 | 73,700 | -11,000 | 1,262.08 | 13,200 | 0 | 1,023.66 | 235,000 | -72,200 |
| Nov. 30..... | 1,365.18 | 62,500 | -11,200 | 1,260.60 | 12,600 | -600 | 1,002.79 | 121,800 | -113,200 |
| Dec. 31..... | 1,358.45 | 52,900 | -9,600 | 1,259.61 | 12,200 | -400 | 1,009.34 | 152,300 | +30,500 |
| Calendar year 1956. | - | - | +11,900 | - | - | -200 | - | - | +86,000 |
| Jan. 31..... | 1,368.08 | 67,000 | +14,100 | 1,260.75 | 12,700 | +500 | 1,028.55 | 269,400 | +117,100 |
| Feb. 28..... | 1,369.62 | 69,600 | +2,600 | 1,260.44 | 12,500 | -200 | 1,035.83 | 327,100 | +57,700 |
| Mar. 31..... | 1,369.25 | 69,000 | -600 | 1,260.64 | 12,600 | +100 | 1,045.49 | 416,100 | +89,000 |
| Apr. 30..... | 1,379.29 | 87,100 | +18,100 | 1,259.98 | 12,300 | -300 | 1,060.13 | 580,400 | +164,300 |
| May 31..... | 1,379.86 | 88,200 | +1,100 | 1,260.70 | 12,600 | +300 | 1,059.72 | 575,300 | -5,100 |
| June 30..... | 1,378.16 | 84,900 | -3,300 | 1,260.76 | 12,700 | +100 | 1,061.97 | 603,800 | +28,500 |
| July 31..... | 1,380.99 | 90,500 | +5,600 | 1,260.97 | 12,800 | +100 | 1,055.33 | 522,400 | -81,400 |
| Aug. 31..... | 1,381.74 | 92,000 | +1,500 | 1,261.44 | 13,000 | +200 | 1,044.90 | 410,200 | -112,200 |
| Sept.30..... | 1,378.17 | 84,900 | -7,100 | 1,261.55 | 13,000 | 0 | 1,043.05 | 392,300 | -17,900 |
| Water year 1956-57. | - | - | +200 | - | - | -200 | - | - | +85,100 |
| | Fort Loudoun Lake‡ | | | Nantahala Lake* | | | Thorpe Lake* | | |
| Sept.30..... | 813.17 | 181,000 | - | 2,848.25 | 41,100 | - | 3,071.40 | 17,700 | - |
| Oct. 31..... | 812.92 | 179,000 | -2,000 | 2,834.95 | 33,800 | -7,300 | 3,067.74 | 15,800 | -1,900 |
| Nov. 30..... | 808.04 | 146,000 | -33,000 | 2,826.38 | 29,500 | -4,300 | 3,064.73 | 14,400 | -1,400 |
| Dec. 31..... | 808.18 | 148,000 | +2,000 | 2,835.91 | 34,300 | +4,800 | 3,065.88 | 14,900 | +500 |
| Calendar year 1956. | - | - | +4,000 | - | - | +22,100 | - | - | +11,700 |
| Jan. 31..... | 809.57 | 158,000 | +10,000 | 2,854.96 | 45,100 | +10,800 | 3,068.71 | 16,300 | +1,400 |
| Feb. 28..... | 808.41 | 149,000 | -9,000 | 2,888.26 | 68,500 | +23,400 | 3,081.50 | 23,400 | +7,100 |
| Mar. 31..... | 807.30 | 142,000 | -7,000 | 2,886.19 | 66,900 | -1,600 | 3,087.04 | 26,900 | +3,500 |
| Apr. 30..... | 812.95 | 179,000 | +37,000 | 2,888.55 | 68,800 | +1,900 | 3,095.83 | 32,700 | +5,800 |
| May 31..... | 813.19 | 181,000 | +2,000 | 2,878.00 | 60,600 | -8,200 | 3,093.65 | 31,200 | -1,500 |
| June 30..... | 813.18 | 181,000 | 0 | 2,869.61 | 54,600 | -6,000 | 3,093.34 | 31,000 | -200 |
| July 31..... | 812.29 | 175,000 | -6,000 | 2,868.50 | 53,900 | -700 | 3,089.53 | 28,500 | -2,500 |
| Aug. 31..... | 812.74 | 178,000 | +3,000 | 2,854.30 | 44,700 | -9,200 | 3,082.21 | 23,800 | -4,700 |
| Sept.30..... | 813.20 | 181,000 | +3,000 | 2,842.13 | 37,600 | -7,100 | 3,077.36 | 21,000 | -2,800 |
| Water year 1956-57. | - | - | 0 | - | - | -3,500 | - | - | +3,300 |

* Elevation is above a local datum; see text for adjustment to datum of 1929, supplementary adjustment of 1936.
† Elevation at 12 p.m.
‡ Contents based on backwater profile.

Reservoirs in Tennessee River basin--Continued

Month-end elevation and contents, water year October 1956 to September 1957

| Date | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) |
|---|---|---|---|---|---|---|---|---|---|
| | Pontana Lake | | | Santeetlah Lake* | | | Chilhowee Lake** | | |
| Sept.30..... | 1,660.97 | 499,800 | - | 1,771.25 | 30,400 | - | - | - | - |
| Oct. 31..... | 1,628.97 | 383,000 | -116,800 | 1,762.31 | 24,100 | -6,300 | - | - | - |
| Nov. 30..... | 1,581.92 | 252,100 | -130,900 | 1,753.67 | 19,000 | -5,100 | - | - | - |
| Dec. 31..... | 1,586.17 | 262,100 | +10,000 | 1,771.53 | 30,600 | +11,600 | - | - | - |
| Calendar year 1956. | - | - | +144,000 | - | - | +12,400 | - | - | - |
| Jan. 31..... | 1,607.68 | 318,200 | +56,100 | 1,790.55 | 47,400 | +16,800 | - | - | - |
| Feb. 28..... | 1,638.55 | 415,400 | +97,200 | 1,815.72 | 77,990 | +30,500 | - | - | - |
| Mar. 31..... | 1,642.27 | 428,600 | +13,200 | 1,813.25 | 74,500 | -3,400 | - | - | - |
| Apr. 30..... | 1,673.06 | 550,400 | +121,800 | 1,814.36 | 76,000 | +1,500 | - | - | - |
| May 31..... | 1,674.49 | 556,600 | +6,200 | 1,804.79 | 63,400 | -12,600 | - | - | - |
| June 30..... | 1,677.92 | 571,700 | +15,100 | 1,803.76 | 62,100 | -1,300 | - | - | - |
| July 31..... | 1,666.78 | 523,700 | -48,000 | 1,800.82 | 58,600 | -3,500 | - | - | - |
| Aug. 31..... | 1,650.51 | 459,000 | -64,700 | 1,785.11 | 42,100 | -16,500 | 870.50 | 21,800 | - |
| Sept.30..... | 1,634.53 | 401,600 | -57,400 | 1,768.39 | 28,300 | -13,800 | 872.43 | 23,500 | +1,700 |
| Water year 1956-57. | - | - | -98,200 | - | - | -2,100 | - | - | - |
| | Norris Lake | | | Watts Bar Lake‡ | | | Chatuge Lake | | |
| Sept.30..... | 984.64 | 539,100 | - | 740.43 | 478,000 | - | 1,895.10 | 42,800 | - |
| Oct. 31..... | 972.49 | 417,900 | -121,200 | 739.08 | 453,000 | -25,000 | 1,897.43 | 46,600 | +3,800 |
| Nov. 30..... | 961.49 | 325,900 | -92,000 | 736.04 | 401,000 | -52,000 | 1,897.42 | 46,500 | -100 |
| Dec. 31..... | 967.47 | 373,600 | +47,700 | 735.74 | 399,000 | -2,000 | 1,899.50 | 50,100 | +3,600 |
| Calendar year 1956. | - | - | +218,400 | - | - | +13,000 | - | - | +39,800 |
| Jan. 31..... | 991.45 | 617,100 | +243,500 | 736.82 | 435,000 | +36,000 | 1,903.90 | 58,500 | +8,400 |
| Feb. 28..... | 987.90 | 575,600 | -41,500 | 735.90 | 399,000 | -36,000 | 1,914.90 | 84,100 | +25,600 |
| Mar. 31..... | 989.00 | 588,400 | +12,800 | 735.42 | 388,000 | -11,000 | 1,918.08 | 92,900 | +8,800 |
| Apr. 30..... | 1,000.87 | 737,800 | +149,400 | 740.95 | 489,000 | +101,000 | 1,921.58 | 103,400 | +10,500 |
| May 31..... | 996.95 | 686,000 | -51,800 | 741.01 | 488,000 | -1,000 | 1,918.60 | 94,400 | -9,000 |
| June 30..... | 994.58 | 655,700 | -30,300 | 740.11 | 471,000 | -17,000 | 1,911.99 | 76,600 | -17,800 |
| July 31..... | 990.30 | 603,500 | -52,200 | 740.54 | 480,000 | +9,000 | 1,902.12 | 55,000 | -21,600 |
| Aug. 31..... | 982.71 | 518,400 | -85,100 | 740.65 | 483,000 | +3,000 | 1,897.57 | 46,800 | -8,200 |
| Sept.30..... | 980.17 | 491,800 | -26,600 | 740.61 | 481,000 | -2,000 | 1,896.68 | 45,300 | -1,500 |
| Water year 1956-57. | - | - | -47,300 | - | - | +3,000 | - | - | +2,500 |
| | Nottely Lake | | | Hiwassee Lake | | | Apalachia Lake | | |
| Sept.30..... | 1,727.42 | 24,500 | - | 1,498.01 | 145,200 | - | 1,278.68 | 28,800 | - |
| Oct. 31..... | 1,728.55 | 25,300 | +800 | 1,476.19 | 103,900 | -41,300 | 1,277.73 | 28,200 | -600 |
| Nov. 30..... | 1,716.41 | 17,500 | -7,800 | ††1,450.5 | 68,800 | -35,100 | 1,278.10 | 28,500 | +300 |
| Dec. 31..... | 1,724.26 | 22,300 | +4,800 | 1,453.52 | 72,300 | +3,500 | 1,274.82 | 26,600 | -1,900 |
| Calendar year 1956. | - | - | -61,200 | - | - | +12,400 | - | - | -1,400 |
| Jan. 31..... | 1,735.12 | 30,400 | +8,100 | 1,463.47 | 84,900 | +12,600 | 1,277.88 | 28,300 | +1,700 |
| Feb. 28..... | 1,752.52 | 47,800 | +17,400 | 1,464.92 | 86,900 | +2,000 | 1,277.73 | 28,200 | -100 |
| Mar. 31..... | 1,757.54 | 54,200 | +6,400 | 1,471.04 | 95,800 | +8,900 | 1,279.21 | 29,100 | +900 |
| Apr. 30..... | 1,766.75 | 68,000 | +13,800 | 1,506.79 | 165,600 | +69,800 | 1,278.38 | 28,600 | -500 |
| May 31..... | 1,761.20 | 59,400 | -8,600 | 1,512.74 | 180,800 | +15,200 | 1,274.50 | 26,500 | -2,100 |
| June 30..... | 1,748.79 | 43,500 | -15,900 | 1,519.93 | 200,800 | +20,000 | 1,278.70 | 28,800 | +2,300 |
| July 31..... | 1,731.80 | 27,700 | -15,800 | 1,520.13 | 201,400 | +600 | 1,277.90 | 28,400 | -400 |
| Aug. 31..... | 1,723.48 | 21,800 | -5,900 | 1,518.79 | 197,500 | -3,900 | 1,277.59 | 28,200 | -200 |
| Sept.30..... | 1,727.40 | 24,400 | +2,600 | 1,506.68 | 165,300 | -32,200 | 1,278.56 | 28,700 | +500 |
| Water year 1956-57. | - | - | -100 | - | - | +20,100 | - | - | -100 |
| | Blue Ridge Lake | | | Ocoee No. 3 Lake | | | Parksville Lake | | |
| Sept.30..... | 1,664.66 | 62,800 | - | 1,422.30 | 2,100 | - | 836.1 | 42,300 | - |
| Oct. 31..... | 1,651.66 | 47,900 | -14,900 | 1,431.73 | 3,500 | +1,400 | 833.8 | 40,100 | -2,200 |
| Nov. 30..... | 1,632.99 | 30,800 | -17,100 | 1,430.06 | 3,200 | -300 | 829.3 | 36,100 | -4,000 |
| Dec. 31..... | 1,633.56 | 31,300 | +500 | 1,429.15 | 3,000 | -200 | 827.6 | 34,600 | -1,500 |
| Calendar year 1956 | - | - | +20,300 | - | - | -400 | - | - | +800 |
| Jan. 31..... | 1,638.80 | 35,600 | +4,300 | 1,434.92 | 4,400 | +1,400 | 838.1 | 44,300 | +9,700 |
| Feb. 28..... | 1,666.80 | 65,500 | +29,900 | 1,431.27 | 3,400 | -1,000 | 831.3 | 38,800 | -5,500 |
| Mar. 31..... | 1,675.95 | 77,900 | +12,400 | 1,433.51 | 4,000 | +600 | 833.1 | 39,400 | +600 |
| Apr. 30..... | 1,688.30 | 96,800 | +18,900 | 1,434.53 | 4,200 | +200 | 834.0 | 40,300 | +900 |
| May 31..... | 1,683.69 | 89,500 | -7,300 | 1,432.20 | 3,600 | -600 | 833.7 | 40,000 | -300 |
| June 30..... | 1,677.24 | 79,800 | -9,700 | 1,433.88 | 4,100 | +500 | 828.4 | 41,500 | +1,500 |
| July 31..... | 1,671.90 | 72,200 | -7,600 | 1,433.88 | 4,100 | 0 | 835.0 | 41,200 | -300 |
| Aug. 31..... | 1,660.40 | 57,700 | -14,500 | 1,434.22 | 4,200 | +100 | 835.5 | 41,700 | +500 |
| Sept.30..... | 1,652.57 | 48,800 | -8,900 | 1,432.63 | 3,700 | -500 | 833.9 | 40,200 | -1,500 |
| Water year 1956-57. | - | - | -14,000 | - | - | +1,600 | - | - | -2,100 |

* Elevation is above a local datum; see text for adjustment to datum of 1929, supplementary adjustment of 1936.
† Elevation at 12 p.m.
‡ Contents based on backwater profile.
** Storage above spillway crest began Aug. 1, 1957, and reached minimum pool elevation Aug. 9, 1957.
†† Estimated.

Reservoirs in Tennessee River basin--Continued

Month-end elevation and contents, water year October 1956 to September 1957

| Date | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents (cfs-days) |
|---|---|---|---|---|---|---|---|---|---|
| | Chickamauga Lake‡ | | | Hales Bar Lake‡ | | | Guntersville Lake‡ | | |
| Sept.30..... | 678.61 | 242,000 | - | 633.81 | 76,000 | - | 593.10 | 444,000 | - |
| Oct. 31..... | 677.90 | 230,000 | -12,000 | 633.75 | 75,000 | -1,000 | 593.75 | 463,000 | +19,000 |
| Nov. 30..... | 676.71 | 214,000 | -16,000 | 633.85 | 76,000 | +1,000 | 593.21 | 449,000 | -14,000 |
| Dec. 31..... | 675.70 | 205,000 | -9,000 | 632.60 | 74,000 | -2,000 | 593.00 | 446,000 | -3,000 |
| Calendar year 1956. | - | - | +10,000 | - | - | +3,000 | - | - | +8,000 |
| Jan. 31..... | 676.42 | 250,000 | +45,000 | 632.55 | 105,000 | +31,000 | 593.71 | 591,000 | +145,000 |
| Feb. 28..... | 675.87 | 211,000 | -39,000 | 632.51 | 79,000 | -26,000 | 593.19 | 468,000 | -123,000 |
| Mar. 31..... | 675.43 | 195,000 | -16,000 | 632.47 | 71,000 | -8,000 | 593.19 | 444,000 | -24,000 |
| Apr. 30..... | 682.53 | 303,000 | +108,000 | 634.00 | 76,000 | +5,000 | 594.60 | 493,000 | +49,000 |
| May 31..... | 682.50 | 301,000 | -2,000 | 633.81 | 75,000 | -1,000 | 594.97 | 502,000 | +9,000 |
| June 30..... | 682.48 | 300,000 | -1,000 | 632.64 | 71,000 | -4,000 | 595.14 | 506,000 | +4,000 |
| July 31..... | 681.25 | 280,000 | -20,000 | 633.35 | 74,000 | +3,000 | 593.41 | 452,000 | -54,000 |
| Aug. 31..... | 680.16 | 265,000 | -15,000 | 633.40 | 74,000 | 0 | 593.30 | 449,000 | -3,000 |
| Sept.30..... | 679.77 | 256,000 | -9,000 | 633.73 | 75,000 | +1,000 | 594.20 | 479,000 | +30,000 |
| Water year 1956-57. | - | - | +14,000 | - | - | -1,000 | - | - | +35,000 |
| | Woods Reservoir | | | Wheeler Lake‡ | | | Wilson Lake | | |
| Sept.30..... | 958.02 | 36,400 | - | 553.33 | 492,000 | - | 506.44 | 316,100 | - |
| Oct. 31..... | 957.01 | 34,600 | -1,800 | 551.90 | 450,000 | -42,000 | 506.82 | 319,100 | +3,000 |
| Nov. 30..... | 956.97 | 34,500 | -100 | 551.19 | 440,000 | -10,000 | 505.46 | 308,400 | -10,700 |
| Dec. 31..... | 957.02 | 34,600 | +100 | 550.58 | 431,000 | -9,000 | 505.60 | 309,500 | +1,100 |
| Calendar year 1956. | - | - | +5,600 | - | - | +19,000 | - | - | +5,900 |
| Jan. 31..... | 956.56 | 33,800 | -800 | 551.32 | 562,000 | +131,000 | 505.89 | 311,800 | +2,300 |
| Feb. 28..... | 954.22 | 29,800 | -4,000 | 551.24 | 468,000 | -94,000 | 505.09 | 305,600 | -6,200 |
| Mar. 31..... | 954.09 | 29,600 | -200 | 553.48 | 493,000 | +25,000 | 505.19 | 306,300 | +700 |
| Apr. 30..... | 958.46 | 37,300 | +7,700 | 555.97 | 573,000 | +80,000 | 507.74 | 326,600 | +20,300 |
| May 31..... | 959.71 | 39,700 | +2,400 | 555.77 | 565,000 | -8,000 | 507.15 | 321,800 | -4,800 |
| June 30..... | 959.61 | 39,500 | -200 | 554.97 | 536,000 | -29,000 | 507.57 | 325,200 | +3,400 |
| July 31..... | 959.10 | 38,500 | -1,000 | 554.49 | 528,000 | -8,000 | 507.05 | 321,000 | -4,200 |
| Aug. 31..... | 958.42 | 37,200 | -1,300 | 553.34 | 489,000 | -39,000 | 506.63 | 317,600 | -3,400 |
| Sept.30..... | 957.02 | 34,600 | -2,600 | 554.00 | 511,000 | +22,000 | 507.56 | 325,100 | +7,500 |
| Water year 1956-57. | - | - | -1,800 | - | - | +19,000 | - | - | +9,000 |
| | Pickwick Lake‡ | | | Kentucky Lake‡ | | | | | |
| Sept.30..... | 411.15 | 401,000 | - | 355.06 | 1,060,000 | - | | | |
| Oct. 31..... | 410.20 | 382,000 | -19,000 | 355.26 | 1,072,000 | +12,000 | | | |
| Nov. 30..... | 408.95 | 358,000 | -24,000 | 354.44 | 1,026,000 | -46,000 | | | |
| Dec. 31..... | 408.55 | 356,000 | -2,000 | 353.87 | 1,005,000 | -21,000 | | | |
| Calendar year 1956. | - | - | +4,000 | - | - | -2,000 | | | |
| Jan. 31..... | 410.56 | 443,000 | +87,000 | 353.53 | 1,428,000 | +423,000 | | | |
| Feb. 28..... | 409.27 | 377,000 | -66,000 | 353.94 | 1,086,000 | -342,000 | | | |
| Mar. 31..... | 413.42 | 447,000 | +70,000 | 355.71 | 1,106,000 | +20,000 | | | |
| Apr. 30..... | 414.13 | 464,000 | +17,000 | 358.35 | 1,306,000 | +200,000 | | | |
| May 31..... | 414.27 | 466,000 | +2,000 | 359.10 | 1,361,000 | +55,000 | | | |
| June 30..... | 413.14 | 442,000 | -24,000 | 358.40 | 1,302,000 | -59,000 | | | |
| July 31..... | 412.64 | 431,000 | -11,000 | 356.86 | 1,187,000 | -115,000 | | | |
| Aug. 31..... | 411.50 | 408,000 | -23,000 | 355.76 | 1,106,000 | -81,000 | | | |
| Sept.30..... | 411.21 | 404,000 | -4,000 | 355.81 | 1,117,000 | +11,000 | | | |
| Water year 1956-57. | - | - | +3,000 | - | - | +57,000 | | | |

† Elevation at 12 p.m.
‡ Contents based on backwater profile.

In 1931, a minor drought year, a study was made of large springs in East Tennessee and the results published in WSP 713. From 1950 to 1954, a more detailed study, including some of those springs, was carried on in cooperation with the Ground Water Branch in connection with an investigation of the ground-water resources of the region. This study was made on a roving basis, the discharge of one group of springs being measured monthly for one year and then measurements made on another group for a year. During a round of measurements in June 1954, measurements were made at many springs where regular monthly measurements had previously been discontinued. The results of measurements made were published annually in WSP 1173, 1206, 1236, 1276, and 1336. As some of the springs were measured during the drought year 1931, comparisons might be made to determine probable minimum flow of springs which were not measured in 1931. Many of these springs are used for municipal or industrial water supplies. Others do not have well sustained flow during the dry season. Results of the discharge measurements show the characteristics of the springs and give good indication of the variation of the flow.

During the water years 1955-57 measurements were made at several springs, most of which were measured during the 1950-54 study. The results of discharge measurements during the 1957 water year, showing the yield and in most instances the water temperature, are given in the following table:

Discharge measurements, water year October 1956 to September 1957

| Spring | Location | Tributary to-- | Date | Discharge (gallons per minute | Temperature (degrees Fahrenheit) | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | Air | Water | |
| | | Humphreys County | | | | | |
| Crystal..... | Lat 36°06'43", long 87°54'07", 4.4 miles north of Denver. | Bear Creek to Tennessee River. | Oct. 2 | 740 | 74 | 59 | Clear. |
| Horner..... | Lat 35°51'38", long 87°49'35", 2miles southwest of Buffalo. | Horner Spring Branch to Buffalo River. | Oct. 2 | 615 | 84 | 59 | Clear. |
| | | Loudon County | | | | | |
| Simpson..... | Lat 35°40'29", long 84°16'40", on State Highway 72, 5 miles southeast of Loudon. | Clear Prong to Fork Creek to Little Tennessee River. | Oct. 11 | 1,490 | 63 | 59 | Clear. |
| Lambert..... | Lat 35°42'45", long 84°19'02", 3.3 miles southeast of Loudon. | Clear Branch to Tennessee River. | Sept.12 | 292 | 83 | 59 | Clear. |
| | | Perry County | | | | | |
| Bates..... | Lat 35°44'30", long 87°46'41", 2 miles south of Lobelville. | Jones Hollow Branch to Lagoon Branch to Buffalo River. | Oct. 2 | 170 | 78 | 59 | |
| Bunch Cave (Spring No. 444 in WSP 677). | Lat 35°31'23", long 87°55'15", 1.3 miles west of Horner, 5.0 miles northeast of Peters Landing. | Mayberry Branch to Cedar Creek to Tennessee River. | Oct. 2 | 135 | 86 | 60 | Clear. |
| Hinson (Spring No. 464 in WSP 677). | Lat 35°42'34", long 87°45'01", 2.8 miles east of Beardstown. | Cane Creek to Buffalo River. | Oct. 2 | 1,650 | 77 | 59 | Clear. |
| Ledbetter (Spring No. 466 in WSP 677). | Lat 35°48'96", long 87°46'00", 2.2 miles northeast of Lobelville. | Lost Creek to Buffalo River. | Oct. 2 | 139 | 82 | 58 | Clear. |
| Sinking Creek (Spring No. 449b in WSP 677). | Lat 35°30'22", long 87°46'48", 4 miles northeast of Flat Woods. | Sinking Creek to Buffalo River. | Oct. 2 | 2,660 | 69 | 60 | Clear. |
| Unnamed..... | Lat 35°30'20", long 87°54'49", 4.7 miles northeast of Peters Landing. | Denton Hollow Branch to Mayberry Branch to Cedar Creek to Tennessee River. | Oct. 2 | 40 | 80 | 59 | Clear. |
| | | Stewart County | | | | | |
| Brandon..... | Lat 36°33'54", long 87°53'16", 6.0 miles north of Dover. | Cumberland River... | Nov. 7 | 269 | - | 56 | |
| Brandon..... | Lat 36°33'25", long 87°54'57", 1.5 miles southeast of Tharpe and 6.4 miles northwest of Dover. | Brandon Springs Branch to Brads Creek to Cumberland River. | Aug. 23 | 700 | 75 | 59 | |
| Bubbling..... | Lat 36°28'16", long 87°53'01", 2¾ miles southwest of Dover. | Hinson Creek to Hickman Creek to Cumberland River. | Nov. 9<br>Dec. 4 | 40<br>54 | -<br>- | -<br>- | |

Discharge measurements, water year October 1956 to September 1957--Continued

| Spring | Location | Tributary to-- | Date | Discharge (gallons per minute) | Temperature (degrees Fahrenheit) | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | Air | Water | |
| | | Stewart County--Continued | | | | | |
| Cold..... | Lat 36°26'20", long 87°51'43", 3.6 miles southwest of Dover. | West Fork Lick Creek to Lick Creek to Cumberland River. | Aug. 21 | 45 | - | 56 | |
| Cox..... | Lat 36°26'33", long 87°56'51", 6.8 miles southwest of Dover. | Palmer Branch to Standing Rock Creek to Tennessee river. | Nov. 8<br>Dec. 4 | 117<br>103 | -<br>- | -<br>56 | |
| Melton..... | Lat 36°34'15", long 87°49'28", 2.5 miles south of Bumpus Mills. | Hays Fork to Saline Creek. | Nov. 7<br>Dec. 3 | 58<br>49 | -<br>- | 58<br>57 | |
| Pearl..... | Lat 36°23'32", long 87°55'33", 5.35 miles northwest of McKinnon (Houston County). | North Fork Leatherwood Creek to Tennessee River. | Nov. 8 | 22 | - | 55 | |
| Shelby (Nos. 1 and 2).† | Lat 36°39'22", long 87°52'32", below confluence of outlet of springs, 1.2 miles northeast of Tobaccoport. | Shelby Creek to Cumberland River. | Nov. 7<br>Aug. 21 | 1,270<br>2,780 | -<br>81 | 58<br>59 | |
| Unnamed..... | At Church 0.5 mile north of Carlisle. | South Cross Creek to Cumberland Creek. | Nov. 9 | 310 | - | - | |
| Unnamed..... | Lat 36°28'48", long 87°53'04", at "The Spring Grill", 2½ miles west of Dover. | Hinson Creek to Hickman Creek to Cumberland River. | Nov. 9 | 390 | - | - | |

† Previously published separately.

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## Middle Fork Holston River at Chilhowie, Va.

Location.--Lat 36°48', long 81°41', at highway bridge at Chilhowie, Smyth County.

Drainage area.--155 sq mi.

Records available.--June 1907 to December 1909, October 1920 to December 1931. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Chain gage. Altitude of gage is 1,930 ft (from topographic map).

Average discharge.--13 years (1907-9, 1920-31), 215 cfs (revised).

Extremes.--1907-9, 1920-31: Maximum discharge, 10,000 cfs June 12, 1923 (gage height, 11.4 ft, from floodmark), from rating curve extended above 4,800 cfs by logarithmic plotting; minimum observed, 13 cfs July 28, 1926, Sept. 17, 1931.

Revisions.--The maximum discharge for the water year 1909 has been revised to 4,100 cfs Apr. 30, 1909 (gage height, 7.4 ft, from graph based on gage readings), superseding figure published in WSP 1306.

Remarks.--Some diurnal fluctuations caused by mills above station.

Revisions (water years).--WSP 1306: Drainage area, 1907(M), 1921-25(M), 1927-31(M). Revised figures of discharge, in cubic feet per second, for the high-water period in the water year 1909, superseding those published in WSP 263 and 1306, are given herewith:

Apr. 30, 1909..... 2,040

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| April 1909..... | 2,040 | 132 | 258 | 1.66 | 1.85 |
| Water year 1908-9..... | 2,160 | 25 | 277 | 1.79 | 24.25 |
| Calendar year 1909..... | 2,160 | 25 | 222 | 1.43 | 19.40 |

Measurements of streamflow made at points other than regular gaging stations in the area covered by this report are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. Measurements believed to have been made under base-flow conditions are identified by an asterisk (*) to the left of the discharge figure. These measurements when correlated with the simultaneous discharge of a nearby stream where continuous records are available will give a picture of the low-flow potentiality of stream. The column headed, "Measured previously" shows the water years in which measurements were made at the same, or practically the same, site.

Determinations of peak flow at points other than regular gaging stations are given in a separate table on page 243.

Discharge measurements made at points other than gaging stations during the water year 1957

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Cumberland River basin | | | | |
| Yellow Creek bypass. | Cumberland River. | Lat 36°37'52", long 83°43'45", 1,800 ft above Four Mile Run and 1,600 ft below Lick Fork, at Middlesboro, Ky. | - | 1940-41, 1944-50, 1952-55 | Dec. 18<br>Jan. 21<br>Apr. 23<br>May 28<br>June 25<br>Aug. 14 | 47.2<br>36.6<br>90.9<br>20.3<br>64.1<br>0 |
| Brown's Creek | Watts Creek | Lat 36°46'26", long 84°08'16", at bridge on State Highway 26, at Wofford, Ky., 0.1 mile above mouth and 0.9 mile northeast of junction of State Highway 26 and U. S. Highway 25W. | - | | Jan. 10 | 47.3 |
| Jellico Creek | Cumberland River. | Lat 36°40'57", long 84°15'20", at bridge on State Highway 92, 200 ft below Parks Branch and 7.7 miles southwest of Williamsburg, Ky. | - | 1953-54 | Sept. 9 | *.02 |
| Whippoorwill Creek. | Red River.... | Lat 36°48'59", long 87°00'38", at bridge on U. S. Highway 68, 7.2 miles southwest of Russellville, Logan County, Ky. | - | | Sept.12 | *.14 |
| Big West Fork | ....do..... | Lat 36°44'48", long 87°18'10", at bridge on U. S. Highway 41E, 3 miles northwest of Trenton, Todd County, Ky. | - | 1954 | Sept.12 | *2.45 |
| Red River.... | Cumberland River. | Lat 36°42'03", long 86°51'41", at bridge on State Highway 75, 0.5 mile downstream from Little Whippoorwill Creek and 2 miles north of Adairville, Logan County, Ky. | - | 1954 | Sept.10 | *22.8 |
| South Cross Creek. | ....do..... | Lat 36°26'30", long 87°45'13", 1.2 miles north of Carlisle, Stewart County, Tenn. | a13 | | Aug. 22 | *4.93 |
| Long Creek... | ....do..... | Lat 36°28'38", long 87°48'08", just above tributary, 200 ft above bridge on State Highway 49 and 2.2 miles east of Dover, Stewart County, Tenn. | 14.7 | | Aug. 21 | *2.47 |
| Do..... | ....do..... | Lat 36°28'45", long 87°48'14", 300 ft below bridge on State Highway 49, 2.1 miles east of Dover, Stewart County, Tenn. | 16.2 | 1951,1956 | Nov. 8<br>Dec. 3<br>Aug. 21 | *1.33<br>*1.68<br>*2.96 |
| Lick Creek... | ....do..... | Lat 36°27'49", long 87°49'15", at State Highway 49, just above Smith Hollow, 1.2 miles southeast of Dover, Stewart County, Tenn. | 11.9 | 1956 | Nov. 8<br>Dec. 3 | *1.80<br>*2.50 |
| Dyers Creek.. | ....do..... | Lat 36°30'34", long 87°49'59", 200 ft below bridge on Dover-Bumpus Mills road and 1.5 miles north of Dover, Stewart County, Tenn. | 17.2 | | Aug. 22 | *3.09 |
| Barrett Creek | Bards Creek.. | Lat 36°33'48", long 87°55'08", 75 ft above bridge on county road and 1.1 miles southeast of Tharpe, Stewart County, Tenn. | 7.71 | | Aug. 23 | *1.00 |
| Neville Creek | Cumberland River. | Lat 36°36'18", long 87°56'24", at bridge on State Highway 49, 2.2 miles north of Tharpe, Stewart County, Tenn. | 2.37 | | Aug. 23 | 0 |
| Unnamed creek | ....do..... | Lat 36°37'54", long 87°54'48", at first bridge above mouth, 3.6 miles east of Model, Stewart County, Tenn. | 1.15 | | Aug. 23 | *.16 |
| Saline Creek. | ....do..... | Lat 36°36'33", long 87°52'58", 300 ft above county highway bridge, 2½ miles west of Bumpus Mills, Stewart County, Tenn. | 52.2 | 1951,1956 | Nov. 7<br>Dec. 3<br>Aug. 22 | *4.23<br>*4.17<br>*33.4 |
| Shelby Creek. | ....do..... | Lat 36°39'20", long 87°52'35", 30 ft below confluence of outflow of Shelby Springs Nos. 1 and 2 and 1.2 miles northeast of Tobaccoport, Stewart Creek, Tenn. | 6.02 | | Nov. 7<br>Aug. 21 | *2.82<br>*6.18 |

* Base flow.
a Approximately.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Cumberland River basin--Continued | | | | |
| Sinking Fork. | Little River. | Lat 36°50'38", long 87°38'30", at bridge on State Highway 117, 2.5 miles south of Gracey, Christian County, Ky. | - | 1953-54 | Sept.11 | *0.32 |
| Muddy Fork... | ....do..... | Lat 36°56'46", long 87°47'14", at bridge on State Highway 128, 0.2 mile northwest of Wallonia, Trigg County, Ky. | - | | Sept.11 | *.43 |
| Do..... | ....do..... | Lat 36°54'50", long 87°50'37", at bridge on State Highway 139, 3.3 miles north of Cadiz, Trigg County, Ky. | - | 1953-54 | Sept.11 | *15.3 |
| Eddy Creek... | Cumberland River. | Lat 37°00'32", long 88°01'00", at bridge on State Highway 93, 4 miles southeast of Eddyville, Lyon County, Ky. | - | 1953-54 | Sept.11 | *16.7 |
| Livingston Creek. | ....do..... | Lat 37°13'38", long 88°04'28", at bridge on U. S. Highway 641 and State Highways 70, 91, 1.3 miles northwest of Fredonia, Caldwell County, Ky. | - | | Sept.12 | 0 |
| Do..... | ....do..... | Lat 37°08'35", long 88°09'50", at bridge on State Highway 295, 1.6 miles southeast of Dycusburg, Crittenden County, Ky. | - | 1954 | Sept.12 | *9.31 |
| | | Tennessee River basin | | | | |
| Robinson Creek. | Cane Creek... | Lat 35°27'04", long 82°28'44", at county road bridge, 0.25 mile above mouth near Fletcher, N. C. | 5.47 | | Aug. 21 | *3.38 |
| Powell Creek. | French Broad River. | Lat 35°28'27", long 82°33'09", 450 ft above mouth and 0.6 mile upstream from State Highway 280 and Long Shoals Bridge near Skyland, N. C. | 4.86 | 1925 | Aug. 20 | *2.15 |
| North Fork Swannanoa River. | Swannanoa River. | Lat 35°39'42", long 82°20'42", at Burnett Dam near Black Mountain, N. C. | 21.9 | 1955 | Nov. 2<br>Dec. 5<br>Feb. 13<br>Apr. 10<br>June 11 | 82.5<br>3.94<br>105<br>150<br>85.2 |
| Brush Creek.. | French Broad River. | Lat 35°50'40", long 82°44'30", at county road bridge, 0.7 mile southwest of Walnut, N. C., and 0.8 mile above mouth. | 7.99 | 1954-56 | Feb. 1 | 80.0 |
| Richland Creek. | Pigeon River. | Lat 35°27'57", long 83°00'41", 20 ft below Hyatt Creek and 0.3 mile above Allen Creek at Hazelwood, N. C. | 13.2 | 1941, 1954-56 | Oct. 10<br>Nov. 2<br>Dec. 7<br>Jan. 4<br>Mar. 7<br>Apr. 2<br>May 3<br>June 12<br>July 3<br>Aug. 5<br>Sept. 5 | *9.44<br>*16.0<br>*12.8<br>33.2<br>46.6<br>44.1<br>43.7<br>35.0<br>20.3<br>*11.3<br>*7.66 |
| Muddy Fork... | Big Limestone Creek. | Lat 36°18'52", long 82°32'38", at bridge on State Highway 81, 0.7 mile west of Fairview and 4.2 miles northwest of Jonesboro, Washington County, Tenn. | 9.86 | | Oct. 16<br>Feb. 5 | *2.36<br>46.9 |
| Little Limestone Creek. | Nolichucky River. | Lat 36°17'00", long 82°29'04", at bridge on State Highway 81, at Jonesboro, Washington County, Tenn. | 4.21 | 1950-54 | Oct. 16 | *2.36 |
| Richland Creek. | ....do..... | Lat 36°05'52", long 82°51'09", at culvert under county road, 0.5 mile above mouth and 4.7 miles south of Greeneville, Greene County, Tenn. | 14.9 | 1944,1947, 1950-52 | Oct. 16 | *7.16 |
| Long Creek... | ....do..... | Lat 36°07'00", long 83°17'08", at bridge on U. S. Highway 25E, 0.5 mile north of White Pine, Jefferson County, Tenn. | 29.1 | 1952-54 | Oct. 16 | *4.10 |
| Little Pigeon River. | French Broad River. | Lat 35°51'38", long 83°30'13", at Hodsden Bridge on U. S. Highway 411, 4.25 miles east of Sevierville, Sevier County, Tenn., and 4.5 miles above mouth. | 110 | 1952-55 | Oct. 11 | *41.3 |
| East Fork Little Pigeon River. | Little Pigeon River. | Lat 35°51'55", long 83°29'17", at bridge on U. S. Highway 411, at Harrisburg, 1.3 miles above mouth and 5.2 miles east of Sevierville, Sevier County, Tenn. | 64.1 | 1944, 1952-55 | Oct. 11 | *19.3 |
| Little Pigeon River. | French Broad River. | Lat 35°52'12", long 83°34'04", at bridge on State Highway 66, at Sevierville, Sevier County, Tenn., 150 ft above West Fork. | 201 | | Oct. 11 | *63.3 |
| Fighting Creek. | West Fork Little Pigeon River. | Lat 35°41'09", long 83°32'27", at bridge on State Highway 73, 3.0 miles southwest of Gatlinburg, Sevier County, Tenn. | 4.59 | 1955 | Oct. 11 | *1.20 |

* Base flow.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Horse Branch. | West Fork Little Pigeon River. | Lat 35°43'27", long 83°29'27", at culvert under State Highway 73, 1.5 miles east of intersection of State Highway 73 and U. S. Highway 441, near Gatlinburg, Sevier County, Tenn. | 0.90 | 1955 | Oct. 11 | *0.321 |
| West Fork Little Pigeon River. | Little Pigeon River. | Lat 35°48'21", long 83°34'28", at site of former gaging station on old State Highway 71, 1.6 miles northwest of Pigeon Forge and 4.3 miles south of Sevierville, Sevier County, Tenn. | 76.2 | 1946-49, 1952-55 | Oct. 11 | *24.4 |
| Walden Creek. | West Fork Little Pigeon River. | Lat 35°48'03", long 83°35'17", at bridge 0.5 mile above mouth, 0.8 mile west of intersection of U. S. Highway 441 and county road, and 2.5 miles northwest of Pigeon Forge, Sevier County, Tenn. | 50.2 | 1900, 1953-54 | Oct. 19 | *11.1 |
| Beaverdam Creek. | Laurel Creek. | Lat 36°31'14", long 81°55'14", at bridge on U. S. Highway 421, at Shady Valley, Johnson County, Tenn. | 14.3 | 1952-54 | Oct. 17 | *5.33 |
| Sinking Creek | Beildman Creek. | Lat 36°32'43", long 82°08'12", at county bridge 0.4 mile below U. S. Highway 421 and 4.3 miles southeast of Briston RR. station, at Ruthton, Sullivan County, Tenn. | 16.3 | | Oct. 17 | *4.79 |
| Beck Creek... | Beaver Creek. | Lat 36°31'08", long 82°15'39", at bridge on U. S. Highway 11E, 100 ft above mouth and 3 miles north of Bluff City, Sullivan County, Tenn. | - | | Oct. 17 | *2.71 |
| Beaver Creek. | South Fork Holston River. | Lat 36°30'26", long 82°16'25", at bridge on State Highway 37, 2.5 miles northwest of Bluff City, Sullivan County, Tenn., and 3.9 miles above mouth. | 95.0 | 1947, 1953-54 | Oct. 17 | *32.3 |
| Town Creek... | Roan Creek... | Lat 36°28'01", long 81°48'15", along U. S. Highway 421, 25 ft below confluence of Goose Creek and Furnace Creek and 500 ft below substation at Mountain City, Johnson County, Tenn. | 24.4 | 1952-54 | Oct. 17 | *3.00 |
| Doe Creek.... | ....do..... | Lat 36°23'39", long 81°58'03", at bridge on State Highway 67, 100 ft below Dugger Branch and 2.1 miles northeast of Doe Station, Johnson County, Tenn. | 36.0 | 1952-54 | Oct. 17 | *21.8 |
| Stoney Creek. | Watauga River | Lat 36°19'05", long 82°04'31", at culvert under State Highway 67, 0.9 mile above mouth and 7.0 miles northeast of Hampton, Carter County, Tenn. | 5.36 | | Oct. 17 | *1.67 |
| Shook Branch. | ....do..... | Lat 36°18'07", long 82°07'44", at culvert under State Highway 67, 2.9 miles northeast of Hampton, Carter County, Tenn. | .69 | | Oct. 17 | *0 |
| Stoney Creek. | ....do..... | Lat 36°22'17", long 82°09'19", at bridge on county road at Hunter, Carter County, Tenn., 0.3 mile above mouth. | 7.8 | 1900, 1952-54 | Oct. 16 | *15.8 |
| Buffalo Creek | ....do..... | Lat 36°19'42", long 82°16'15", at bridge on State Highway 91, at Rio Vista, near Elizabethton, Carter County, Tenn. | 39.0 | 1900, 1951-54 | Oct. 16 | *10.7 |
| Kendrick Creek. | South Fork Holston River. | Lat 36°29'48", long 82°30'49", 0.1 mile above mouth, 0.7 mile below Straight Branch, and 5 miles southeast of Kingsport, Sullivan County, Tenn. | - | 1953-54 | Oct. 18 | *6.45 |
| Horse Creek. | ....do..... | Lat 36°30'08", long 82°33'51", at bridge on State Highway 81, 500 ft below Little Horse Creek and about 3 miles south of Kingsport, Sullivan County, Tenn. | 44.5 | 1943, 1952-53 | Oct. 18 | *2.04 |
| Reedy Creek.. | ....do..... | Lat 36°33'27", long 82°33'35", along county highway 0.1 mile below Roach Branch and 0.4 mile east of intersection of U. S. Highway 23 and county highway, at Kingsport, Sullivan County, Tenn. | - | 1953 | Oct. 18 | *7.99 |
| Cove Creek... | North Fork Holston River. | Lat 36°39'26", long 82°20'37", at bridge on U. S. Highway 58, 2 miles north of Shelleys, Va. | 17.3 | 1952-56 | Feb. 7 | 797 |
| Big Creek.... | Holston River | Lat 36°25'34", long 82°57'07", at site of former gaging station, 2 miles above mouth and 3.0 miles northeast of Rogersville, Hawkins County, Tenn. | 47.3 | 1942-55 | Oct. 18 | *3.25 |

* Base flow.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Unnamed tributary. | Big Creek.... | Lat 36°25'34", long 82°57'17", at culvert under county road, 300 ft above mouth and 2.8 miles northeast of Rogersville, Hawkins County, Tenn. | 2.0 | 1955 | Oct. 18 | *0.12 |
| Beaver Creek. | Holston River | Lat 36°04'36", long 83°37'36", at bridge on U. S. Highway 11E, 4 miles east of Strawberry Plains, Jefferson County, Tenn. | - | 1952 | Oct. 17 | *2.10 |
| Second Creek. | Tennessee River. | Lat 35°59'29", long 83°57'04", at culvert under Heiskel St. 1.15 miles north of Rule High School at Knoxville, Knox County, Tenn., and 3.5 miles above mouth. | 3.49 | 1944, 1953-54 | Oct. 10 | *.86 |
| Goose Creek.. | ....do..... | Lat 35°56'28", long 83°55'01", 0.2 mile northwest of intersection of Blount Ave. and Maryville Pike and 0.2 mile southeast of Southern Ry. bridge over Blount Ave., at Knoxville, Knox County, Tenn. | - | | Oct. 10 | *1.33 |
| Third Creek.. | ....do..... | Lat 35°57'28", long 83°58'17", at culvert under Papermill Rd., 0.1 mile west of Knoxville city limits, Knox County, Tenn., and 3.5 miles above mouth. | 11.1 | 1944, 1953-54 | Oct. 10 | *3.44 |
| Do..... | ....do..... | Lat 35°57'15", long 83°56'41", 250 ft above U. S. Highways 11-70 in Tyson Park, at Knoxville, Knox County, Tenn., and 1.0 mile above mouth. | 16.5 | 1944, 1953-54 | Oct. 10 | *4.65 |
| Fourth Creek. | ....do..... | Lat 35°55'23", long 83°59'46", at Eastern State Hospital, 100 ft below culvert under Lyons View Rd., 0.75 mile south of Bearden Post Office, Knox County, Tenn., and 1.2 miles above mouth. | 6.46 | 1953-54 | Oct. 10 | *3.53 |
| Tenmile Creek | ....do..... | Lat 35°54'01", long 84°04'25", below culvert under Williams Rd., 0.3 mile northwest of Ebenezer, Knox County, Tenn., and 1.4 miles above Ebenezer Branch. | 13.2 | 1943, 1953-54 | Oct. 10 | *5.77 |
| Turkey Creek. | ....do..... | Lat 35°52'28", long 84°08'51", 200 ft below North Fork, 1,500 ft above bridge, and 0.7 mile northwest of Concord, Knox County, Tenn. | 11.4 | 1944, 1953-54 | Oct. 10 | *2.39 |
| Little River. | ....do..... | Lat 35°39'39", long 83°42'25", along State Highway 73 in Great Smoky Mountain National Park, 600 ft above Middle Prong and 3 miles southeast of Townsend, Blount County, Tenn. | - | 1953-54 | Oct. 12 | *21.1 |
| West Prong Little River. | Middle Prong Little River. | Lat 35°39'21", long 83°42'37", at highway bridge on Cades Cove Rd., in Great Smoky Mountain National Park, 150 ft above Middle Prong and 3 miles southeast of Townsend, Blount County, Tenn. | 18.6 | 1944, 1953-54 | Oct. 12 | *2.99 |
| Middle Prong Little River. | Little River. | Lat 35°39'26", long 83°42'34", on Cades Cove Rd. in Great Smoky Mountain National Park, 100 ft above West Prong, 3 miles southeast of Townsend, Blount County, Tenn., and 3.0 miles above mouth. | 27.3 | 1944, 1953-54 | Oct. 12 | *6.82 |
| Hesse Creek.. | ....do..... | Lat 35°42'44", long 83°49'09", at bridge on State Highway 73, 400 ft above mouth and 1.4 miles south of Walland, Blount County, Tenn. | 27.6 | 1900,1943, 1953-54 | Oct. 12 | *3.62 |
| Ellejoy Creek | ....do..... | Lat 35°46'24", long 83°51'01", at county highway bridge, 500 ft above mouth and 7 miles east of Maryville, Blount County, Tenn. | 38.3 | 1944, 1953-55 | Oct. 12 | *3.50 |
| Crooked Creek | ....do..... | Lat 35°46'17", long 83°52'42", at county highway bridge, 1.2 miles above mouth and 5 miles east of Maryville, Blount County, Tenn. | 31.8 | 1944, 1953-54 | Oct. 12 | *4.78 |
| Nails Creek.. | ....do..... | Lat 35°52'49", long 83°46'47", at culvert under State Highway 71, 0.8 mile southeast of Shooks Gap, Blount County, Tenn., and 1.5 miles northwest of junction of U. S. Highway 411. | .361 | | Oct. 11 | *0 |
| Do..... | ....do..... | Lat 35°48'48", long 83°53'00", at county highway bridge, 0.6 mile above mouth, 1.0 mile northwest of Wildwood, and 6 miles northeast of Maryville, Blount County, Tenn. | 17.9 | 1953-54 | Oct. 12 | *4.02 |

* Base flow.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Town Creek... | Tennessee River. | Lat 35°47'35", long 84°15'44", at bridge on U. S. Highway 11, at Lenoir City, Loudon County, Tenn. | 9.62 | 1954 | Oct. 11 | *2.47 |
| Connelly Creek. | Tuckasegee River. | Lat 35°25'55", long 83°21'42", at Southern Ry. bridge, at mouth at Whittier, N. C. | 13.5 | 1953, 1955-56 | Oct. 2<br>Nov. 1<br>Jan. 3<br>Feb. 15<br>Mar. 21<br>Apr. 12<br>May 24<br>July 17<br>Aug. 29<br>Sept.24 | *8.28<br>10.1<br>14.5<br>56.1<br>32.4<br>56.0<br>21.4<br>12.9<br>*7.46<br>8.36 |
| Deep Creek... | ....do..... | Lat 35°27'51", long 83°26'03", at ranger station, 100 ft below Juney Whank Branch, 2.4 miles above mouth, and 2.6 miles north of Bryson City, N. C. | 40.2 | 1950-56 | Oct. 4<br>Nov. 14<br>Dec. 11<br>Jan. 8<br>Feb. 25<br>Apr. 29<br>May 10<br>July 11<br>Aug. 8<br>Sept. 5 | *31.1<br>*25.6<br>*26.8<br>84.1<br>136<br>102<br>*81.3<br>*57.0<br>*34.3<br>28.0 |
| Jenkins Branch tributary. | Jenkins Branch. | Lat 35°24'50", long 83°27'20", 500 ft upstream from mouth, at culvert on secondary road at city limits, Bryson City, N. C. | .45 | | Apr. 4 | 14.5 |
| Abrams Creek. | Little Tennessee River. | Lat 35°33'25", long 83°59'47", 0.2 mile above mouth, 0.5 mile downstream from Panther Creek, and 0.7 mile east of Chilhowee, Blount County, Tenn. | 87.5 | 1900, 1953-54 | Oct. 11 | *14.0 |
| Citico Creek. | ....do..... | Lat 35°31'54", long 84°06'12", at county highway bridge, 0.1 mile above Smoky Branch and 0.5 mile south of Citico Beach, Monroe County, Tenn. | 67.1 | 1900,1943, 1953-54 | Oct. 11 | *8.20 |
| Harrison Branch. | ....do..... | Lat 35°33'00", long 84°05'22", at culvert under U. S. Highway 129, 2 miles west of Tallassee, Blount County, Tenn. | 1.05 | | Oct. 11 | *0 |
| Tellico River | ....do..... | Lat 35°33'33", long 84°13'32", at site of former gaging station, 0.1 mile upstream from Corn Tassel Branch and 2.3 miles south of Vonore, Monroe County, Tenn. | 271 | 1948-52, 1954 | Oct. 11 | *52.3 |
| Island Creek. | ....do..... | Lat 35°35'38", long 84°14'58", at bridge on State Highway 72, 0.5 mile northwest of Vonore, Monroe County, Tenn. | 11.2 | 1944, 1953-55 | Oct. 11 | *1.31 |
| Bat Creek.... | ....do..... | Lat 35°38'36", long 84°15'12", at bridge on State Highway 72, 1.5 miles west of Morganton and 3.7 miles north of Vonore, Loudon County, Tenn. | 30.7 | 1944, 1953-54 | Oct. 11 | *6.46 |
| Unnamed tributary (published in WSP 1236 and 1336 as Hines Creek) | Hines Creek.. | Lat 35°50'14", long 84°19'08", at culvert under U. S. Highway 70, 1.5 miles west of Eaton Crossroad and 4.5 miles northwest of Lenoir City, Loudon County, Tenn. | .26 | 1952,1954 | Oct. 12 | *†.05 |
| Steekee Creek (published in WSP 1336 as Stukree Creek). | Tennessee River. | Lat 35°44'17", long 84°20'06", at bridge on State Highway 72, at Loudon, Loudon County, Tenn. | 7.25 | 1950-51, 1954 | Oct. 11 | *1.34 |
| Sweetwater Creek. | ....do..... | Lat 35°36'32", long 84°27'40", at U. S. Highway 11 in Sweetwater, Monroe County, Tenn. | 23.3 | 1932-33, 1950-54 | Oct. 11 | *6.62 |
| Do..... | ....do..... | Lat 35°44'17", long 84°22'25", at bridge on State Highway 72, 1.3 miles above mouth and 2.0 miles west of Loudon, Loudon County, Tenn. | 62.2 | 1951,1954 | Oct. 12 | *16.9 |
| Paint Rock Creek. | ....do..... | Lat 35°44'29", long 84°30'32", at bridge on State Highway 72 just below Little Paint Rock Creek, 0.5 mile southeast of Paint Rock, Roane County, Tenn. | 25.7 | 1952,1954 | Oct. 12 | *6.67 |
| Coal Creek... | Clinch River. | Lat 36°13'14", long 84°09'27", at site of former gaging station at bridge on U. S. Highway 25W, in Lake City, Anderson County, Tenn. | 24.5 | 1932-34, 1949-55 | Oct. 11 | *1.09 |
| Buffalo Creek. | Hinds Creek.. | Lat 36°11'05", long 84°03'41", at site of former gaging station on U. S. Highway 441, 1 mile southeast of Norris, Anderson County, Tenn. | 9.45 | 1951-55 | Oct. 11 | *.45 |

* Base flow.
† Estimated.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Bullrun Creek | Clinch River. | Lat 36°06'52", long 83°59'16", just below bridge on U. S. Highway 441, 2.1 miles below Smith Branch and 5.9 miles northwest of Fountain City, Knox County, Tenn. | 68.5 | 1953-55 | Oct. 8 | *6.45 |
| Beaver Creek. | ....do..... | Lat 35°57'04", long 84°12'23", at Couch Ford, 1.1 miles above mouth and 2.5 miles southwest of Solway, Knox County, Tenn. | 90.3 | 1948, 1953-54 | Oct. 11 | *12.6 |
| Conner Creek. | ....do..... | Lat 35°56'01", long 84°13'43", at county highway bridge, 100 ft below spring, 2,000 ft above mouth, and 4.0 miles southwest of Solway, Knox County, Tenn. | 6.40 | 1954 | Oct. 11 | 2.39 |
| Hickory Creek | ....do..... | Lat 35°53'20", long 84°14'44", at county highway bridge on Buttermilk Rd., 1.4 miles above mouth and 5.3 miles west of Farragut, Knox County, Tenn. | 6.92 | | Oct. 11 | *.98 |
| Brushy Fork (Published in WSP 1336 and 1386 as Brushy Creek). | Poplar Creek. | Lat 36°01'33", long 84°17'16", on relocated State Highway 61, 2 miles west of Oak Ridge and 3.4 miles southeast of Oliver Springs, Anderson County, Tenn. | 23.2 | 1954-55 | Oct. 11 | *3.88 |
| Poplar Creek. | Clinch River. | Lat 36°01'20", long 84°18'37", at bridge on State Highway 61, 2.5 miles southeast of Oliver Springs, Anderson County, Tenn., and 4.0 miles above Indian Creek. | 55.9 | 1951-55 | Oct. 11 | *4.55 |
| Bear Creek... | East Fork Poplar Creek. | Lat 35°56'41", long 84°21'46", at bridge on Oak Ridge Pike, 0.5 mile above mouth and 8 miles southwest of Oak Ridge, Roane County, Tenn. | 7.15 | 1951-52, 1954-55 | Oct. 11 | *.70 |
| Rock Creek... | Emory River.. | Lat 36°11'54", long 84°39'39", at bridge on U. S. Highway 27 at Pilot Mountain, 3.5 miles south of Sunbright and 8.0 miles north of Wartburg, Morgan County, Tenn. | 5.54 | 1955-56 | Oct. 2<br>Dec. 13 | *.12<br>272 |
| Crooked Fork Creek. | ....do..... | Lat 36°05'05", long 84°33'18", at bridge on U. S. Highway 27, 2.7 miles southeast of Wartburg, Morgan County, Tenn. | 50.3 | 1952 | Oct. 17 | *.90 |
| Little Emory River. | ....do..... | Lat 35°58'53", long 84°28'56", at county highway bridge, 1.0 mile north of DeArmond and 5.2 miles northeast of Harriman, Roane County, Tenn. | 34.3 | 1952,1954 | Oct. 17 | *†.05 |
| Fall Creek... | Whites Creek. | Lat 35°52'54", long 84°48'35", at bridge on U. S. Highway 70, at Ozone, Cumberland County, Tenn. | - | | Aug. 30 | 0 |
| Mammys Creek. | Piney Creek.. | Lat 35°52'29", long 84°47'19", at bridge on U. S. Highway 70, 1.3 miles southeast of Ozone, Cumberland County, Tenn. | 9.45 | 1955-56 | Aug. 27 | 0 |
| Whites Creek. | Tennessee River. | Lat 35°47'49", long 84°45'37", at site of former gaging station, ¼ mile above Black Creek and 1½ miles southwest of Glen Alice, Roane County, Tenn. | 123 | 1934-56 | Aug. 27 | *.61 |
| Black Creek.. | Whites Creek. | Lat 35°47'45", long 84°45'25", 100 ft above mouth and 1.0 mile southwest of Glen Alice, Roane County, Tenn. | 11.7 | 1944, 1952-53, 1955-56 | Aug. 27 | *2.52 |
| Camp Creek... | ....do..... | Lat 35°46'55", long 84°45'48", at bridge on U. S. Highway 27, 1.0 mile northeast of Roddy, Rhea County, Tenn. | 6.25 | 1955-56 | Aug. 27 | *1.00 |
| Hyatt Creek.. | Valley River. | Lat 35°11'22", long 83°55'14", at county road bridge, 0.1 mile below Allmon Creek and 0.8 mile north of Marble, N. C. | 6.90 | 1955 | Jan. 31 | 479 |
| Shoal Creek.. | Hiwassee River. | Lat 35°06'40", long 84°14'00", at State Highway 294, 50 ft below Thompson Branch and 4.1 miles southwest of Hiwassee Dam, N. C. | 12.6 | 1955 | Jan. 31 | 288 |
| Cane Creek... | Conasauga Creek. | Lat 35°18'04", long 84°32'26", at bridge on U. S. Highway 411, 0.9 mile south of city limits of Etowah, McMinn County, Tenn. | 10.3 | 1950-52, 1954,1956 | Aug. 30 | *.75 |
| Chestuee Creek. | Hiwassee River. | Lat 35°24'22", long 84°29'49", at bridge on U. S. Highway 411, 1.4 miles southwest of Englewood, McMinn County, Tenn. | 33.5 | 1952,1954, 1956 | Aug. 30 | *6.88 |
| Unnamed tributary. | South Mouse Creek. | Lat 35°12'32", long 84°50'15", at bridge on old location of U. S. Highway 11, 4.2 miles northeast of Cleveland, Bradley County, Tenn. | 1.31 | | Sept. 11 | *.57 |

* Base flow.
† Estimated.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Brymer Creek. | Candy Creek.. | Lat 35°07'20", long 84°57'00", at bridge on U. S. Highways 11 and 64, 1.9 miles east of McDonald, Bradley County, Tenn. | 9.68 | | Sept.11 | *2.41 |
| Pryor Cove Branch. | Sequatchie River. | Lat 35°05'25", long 85°37'22", at bridge on State Highway 27, 1.1 miles north of Jasper, Marion County, Tenn. | 12.9 | | Sept.30 | 0 |
| Battle Creek. | Tennessee River. | Lat 35°08'03", long 85°46'15", at bridge on U. S. Highways 41 and 64, 9.2 miles southeast of Monteagle, Marion County, Tenn. | 50.4 | | Oct. 9<br>Aug. 29 | *2.30<br>*2.72 |
| Unnamed tributary. | Battle Creek. | Lat 35°04'48", long 85°44'11", at bridge on U. S. Highways 41 and 64, 4.9 miles west of Kimball, Marion County, Tenn. | 4.42 | | Aug. 29 | 0 |
| Big Huckleberry Creek. | Flint River.. | Lat 35°04'00", long 86°21'29", at culvert under U. S. Highway 64, 1.3 miles southeast of intersection of U. S. Highway 64 and State Highway 121, Lincoln County, Tenn. | 2.18 | | Aug. 30 | 0 |
| Juanita Creek | Gillian Creek | Lat 35°14'46", long 85°50'36", at bridge on U. S. Highway 41, 0.5 mile west of Monteagle, Grundy County, Tenn. | .427 | 1950-54, 1956 | Aug. 29 | *.02 |
| Henley Creek. | Caldwell Creek. | Lat 35°16'30", long 85°51'34", at bridge on U. S. Highway 41, 1.2 miles south of Mount View, Grundy County, Tenn. | 1.88 | 1953-54, 1956 | Aug. 29 | *.36 |
| Caldwell Creek. | Elk River.... | Lat 35°17'05", long 85°53'14", near Bells Mill, 1.5 miles southwest of Mount View and 1.8 miles south of Pelham, Grundy County, Tenn. | 21.6 | 1953-54, 1956 | Aug. 29 | *.37 |
| Beans Creek.. | ....do..... | Lat 35°20'34", long 85°57'37", at county highway bridge, 0.5 mile east of Prairie Plains, Coffee County, Tenn. | 18.1 | 1951, 1953-54, 1956 | Aug. 29 | 0 |
| Miller Creek. | Boiling Fork Creek. | Lat 35°10'17", long 85°59'00", at bridge on U. S. Highway 64, 1.8 miles east of Cowan, Franklin County, Tenn. | 4.30 | 1953-54 | Aug. 30 | 0 |
| Boiling Fork Creek. | Elk River.... | Lat 35°09'45", long 86°00'20", 100 ft above Louisville & Nashville RR. culvert and 1,200 ft southeast of intersection of county road with U. S. Highway 64 in Cowan, Franklin County, Tenn. | 17.0 | | Oct. 9 | *.55 |
| Beans Creek.. | ....do..... | Lat 35°03'46", long 86°14'48", at Beans Creek, 1.5 miles south of Old Salem, Franklin County, Tenn. | 19.0 | 1953-54, 1956 | Sept. 6 | *1.61 |
| Norris Creek. | ....do..... | Lat 35°09'53", long 86°32'43", at bridge on State Highway 50, 2.0 miles northeast of Fayetteville, Lincoln County, Tenn. | 42.6 | 1952,1954 | Oct. 11 | *.10 |
| Chicken Creek | Bradshaw Creek. | Lat 35°11'03", long 86°48'47", at county highway bridge, 500 ft below bridge on U. S. Highway 64, at McBurg, Lincoln County, Tenn. | 7.66 | | Aug. 30 | 0 |
| Robertson Fork. | Richland Creek. | Lat 35°19'50", long 87°01'53", at county highway bridge, at Bufords, Giles County, Tenn. | 52.0 | 1949, 1952-54, 1956 | Aug. 30 | 0 |
| Pigeon Roost Creek. | ....do..... | Lat 35°14'00", long 87°05'04", at county highway bridge, 0.6 mile above mouth and 1.0 mile south of Wales, Giles County, Tenn. | 22.9 | 1950-56 | Aug. 30 | *1.31 |
| Shoal Creek.. | Tennessee River. | Lat 35°14'02", long 87°20'00", at bridge on U. S. Highway 43, 0.5 mile south of intersection of U. S. Highways 43 and 64, in Lawrenceburg, Lawrence County, Tenn. | 27.0 | | Oct. 10 | *10.2 |
| Mayberry Branch. | Cedar Creek.. | Lat 35°31'22", long 87°55'21", just downstream from Bunch Cave Spring Branch, 5.0 miles northeast of Peters Landing, Perry County, Tenn. | - | 1953 | Oct. 2 | *.30 |
| Cypress Creek | Tennessee River. | Lat 35°36'55", long 87°59'24", 100 ft below county highway bridge and 0.25 mile southeast of Pope, Perry County, Tenn. | 16.8 | 1953-54, 1956 | Oct. 18 | *.95 |
| Boiling Springs Branch. | Duck River... | Lat 35°33'54", long 86°05'24", at ford, 2.0 miles northeast of Fredonia, Coffee County, Tenn. | 3.29 | 1953-54, 1956 | Aug. 29 | *.30 |
| Messick Creek | ....do..... | Lat 35°33'02", long 86°04'57", at bridge on State Highway 53, 1.6 miles northeast of Fredonia, Coffee County, Tenn. | 7.12 | 1953-54, 1956 | Aug. 29 | *.24 |

* Base flow.

Discharge measurements made at points other than gaging stations during the water year 1957--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| | | Tennessee River basin--Continued | | | | |
| Wolf Creek... | Little Duck River. | Lat 35°28'51", long 86°03'51", at bridge on county highway, 1.0 mile above mouth and 1.4 miles east of Manchester, Coffee County, Tenn. | 19.2 | 1953-54, 1956 | Aug. 29 | *0.82 |
| Hunt Creek... | ....do..... | Lat 35°27'44", long 86°03'53", at bridge on U. S. Highway 41, 2 miles southeast of Manchester, Coffee County, Tenn. | 9.93 | 1953-54, 1956 | Aug. 29 | *1.41 |
| Little Duck River. | Duck River... | Lat 35°29'10", long 86°05'27", at bridge on U. S. Highway 41, northwest of Manchester, Coffee County, Tenn. | 36.4 | 1948, 1950-56 | Aug. 30 | *4.91 |
| Brewer Creek. | ....do..... | Lat 35°29'35", long 86°07'59", 0.7 mile east of Blanton Chapel, Coffee County, Tenn., and 1.3 miles above mouth. | 8.64 | 1953-54, 1956 | Aug. 30 | *1.09 |
| Crumpton Creek. | ....do..... | Lat 35°25'19", long 86°08'10", 150 ft below Wiley Creek and 0.1 mile north of Rutledge Falls, Coffee County, Tenn. | 28.1 | 1953-54, 1956 | Aug. 29 | *3.93 |
| Shipman Creek | ....do..... | Lat 35°27'32", long 86°18'04", at county highway bridge at Roseville, 0.8 mile above mouth and 2.5 miles west of Normandy, Bedford County, Tenn. | 5.92 | 1953-54, 1956 | Aug. 30 | *4.29 |
| Thompson Creek. | ....do..... | Lat 35°27'19", long 86°19'57", at county highway bridge, 1.5 miles above mouth and 3.0 miles west of Normandy, Bedford County, Tenn. | 18.3 | 1953-54, 1956 | Aug. 30 | *1.10 |
| Flat Creek... | ....do..... | Lat 35°28'17", long 86°28'39", at State Highway 64, 1.2 miles southwest of Shelbyville, Bedford County, Tenn. | 49.6 | 1953-54, 1956 | Aug. 30 | *.34 |
| Big Rock Creek. | ....do..... | Lat 35°30'16", long 86°46'03", at Double Bridges, 1.5 miles south of Oslin and 1.8 miles south of Verona, Marshall County, Tenn. | 48.7 | 1953-54, 1956 | Aug. 30 | *.85 |
| East Rock Creek. | Rock Creek... | Lat 35°30'05", long 86°42'50", at bridge on State Highway 64, 0.2 mile west of Farmington, Marshall County, Tenn. | 43.1 | | Oct. 11 | 0 |
| Fountain Creek. | Duck River... | Lat 35°28'18", long 86°57'22", at bridge on State Highway 50A, 1.6 miles southeast of Culleoka, Maury County, Tenn. | 26.9 | 1953-55, 1956 | Aug. 30 | *.36 |
| Tumbling Creek. | ....do..... | Lat 35°55'46", long 87°44'05", 1,000 ft above mouth and 4.0 miles southeast of Hurricane Mills, Humphreys County, Tenn. | 51.2 | 1944,1953, 1955-56 | Oct. 1<br>2 | *10.7<br>12.0 |
| Sinking Creek. | Buffalo River | Lat 35°30'22", long 87°46'48", just below Sinking Creek Spring, 4 miles northeast of Flat Woods, Perry County, Tenn. | 5.68 | 1953-54 | Oct. 2 | 5.93 |
| Leatherwood Creek. | Tennessee River. | Lat 36°23'01", long 87°56'31", 800 ft above county highway bridge, 5 miles northwest of McKinnon, Houston County, Tenn. | - | 1956 | Nov. 8<br>Aug. 21 | *1.26<br>*4.45 |
| Standing Rock Creek. | ....do..... | Lat 36°26'13", long 87°59'57", at point of flow into Kentucky Lake, 4.9 miles south of Fort Henry, Stewart County, Tenn. | - | 1956 | Nov. 8<br>Dec. 4<br>Aug. 22 | *3.06<br>*2.67<br>*3.06 |
| Bear Creek... | ....do..... | Lat 34°38', long 88°09', in SE¼ sec. 20, T. 5 S., R. 11 E., at bridge on county road, 4 miles east of Tishomingo, Miss. | - | 1913, 1954-56 | Nov. 28 | *79.2 |
| Cripple Deer Creek. | Bear Creek... | Lat 34°42', long 88°18', in SW¼ sec. 26, T. 4 S., R. 10 E., Chickasaw meridian, Tishomingo County, at bridge on State Highway 25, 4½ miles north of Tishomingo, Miss. | - | 1953-56 | Nov. 28 | *1.98 |
| Little Yellow Creek drainage canal. | Yellow Creek. | Lat 34°51', long 88°21', in NW¼ sec. 3, T. 3 S., R. 9 E., Chickasaw meridian, Tishomingo County, at bridge ½ mile upstream from Southern Ry. bridge and 1.5 miles northwest of Burnsville, Miss., on State Highway 72. | - | 1953, 1955-56 | Nov. 28 | *5.03 |
| Yellow Creek drainage canal. | Tennessee River. | Lat 34°50', long 88°18', in S½ sec. 12, T. 3 S., R. 9 E., Chickasaw meridian, Tishomingo County, at bridge ½ mile upstream from Southern Ry. bridge and ¾ mile southeast from Burnsville, Miss., on U. S. Highway 72. | - | 1954-56 | Nov. 28 | *.78 |
| West Fork Clarks River. | Clarks River. | Lat 36°53'03", long 88°33'12", at bridge on State Highway 131, 3.3 miles southwest of Symsonia, Graves County, Ky. | - | | Sept.13 | *13.1 |

* Base flow.

The following table contains determinations of peak discharge made at crest stage by indirect methods or by current meter or computed from rating curve at points other than regular gaging stations.

Determinations of peak discharge at points other than gaging stations during water year 1957

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Straight Creek. | Cumberland River | Lat 36°46'20", long 83°38'55", on State Highway 221, 1.1 miles east of Straight Creek and 1.3 miles above Left Fork Straight Creek, Bell County, Ky. | 53.8 | | Jan. 29 | 16,700 |
| Big Eagle Creek. | West Fork Obey River. | Lat 36°26'50", long 85°16'30", at county highway bridge, 0.5 mile above Little Eagle Creek and 5 miles northeast of Livingston, Overton County, Tenn. | 7.98 | | Jan. 29 | 962 |
| Unnamed tributary. | Mathews Branch. | Lat 36°19"50", long 85°20'25", at culvert under State Highway 42, 0.5 mile above mouth and 5 miles south of Livingston, Overton County, Tenn. | .49 | | Jan. 29 | 99 |
| Spencer Creek | Cumberland River. | Lat 36°14'20", long 86°24'03", at county highway bridge, 100 ft north of junction of county road and U. S. Highway 70N and 6.5 miles west of Lebanon, Wilson County, Tenn. | 3.32 | | Jan. 29 | 2,220 |
| Staley Creek. | Middle Fork Holston River. | Lat 36°49'22", long 81°29'17", above fish hatchery on State Highway 16, 1 mile south of Marion, Va. | 8.34 | 1956 | Jan. 29 | 360 |
| Cove Creek... | Watauga River | Lat 36°15'50", long 81°47'03", at county road bridge, at Cove Creek School, 0.2 mile above George Gap Branch and 0.5 mile southwest of Sherwood, N. C. | 23.1 | 1955 | Apr. 4, 5 | 1,860 |
| Stony Creek.. | Clinch River. | Lat 36°45'30", long 82°34'50", at Fort Blackmore, Va. | 41.4 | 1949-52 | Jan. 29 | 2,300 |
| South Fork Powell River. | Powell River. | Lat 36°51'54", long 82°46'07", at bridge on U. S. Highway 23, at Big Stone Gap, Va. | 44 | 1944-47 | Jan. 29 | 3,550 |
| North Fork Powell River. | ....do..... | Lat 36°46'26", long 83°01'59", along U. S. Highway 421, 1 mile north of Pennington Gap, Va. | 70 | 1944-51 | Jan. 29 | 4,430 |

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