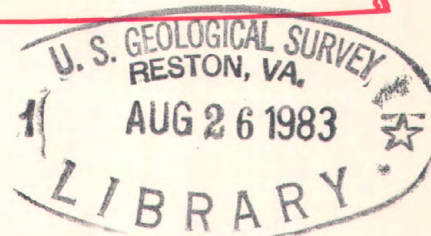




Water Resources Data Virginia Water Year 1982



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-82-1
Prepared in cooperation with the State of Virginia
and with other agencies

CALENDAR FOR WATER YEAR 1982

1981

| OCTOBER | | | | | | | NOVEMBER | | | | | | | DECEMBER | | | | | | | | |
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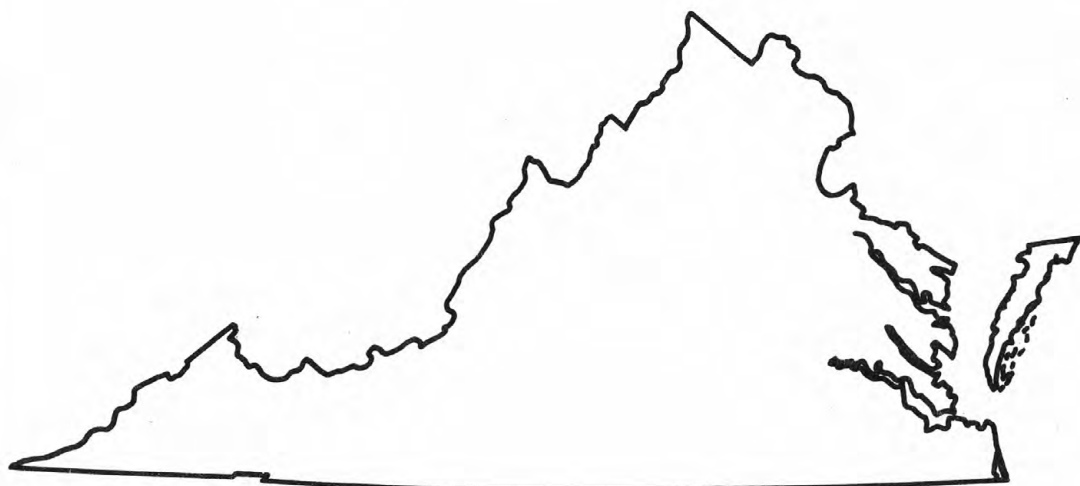
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Water Resources Data Virginia

Water Year 1982

by Byron J. Prugh, Jr., Fred J. Easton, and Dennis D. Lynch



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-82-1
Prepared in cooperation with the State of Virginia
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Virginia write to

Office Chief, Water Resources Division
U.S. Geological Survey
Room 304, 200 West Grace Street
Richmond, Virginia 23220

or

Virginia State Water Control Board
Suite 210, 1936 Arlington Blvd.
Charlottesville, Virginia 22903

1983

PREFACE

The annual hydrologic data report of Virginia is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey and the Virginia State Water Control Board who collected, compiled, analyzed, verified, and organized the data. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following offices contributed significantly to the preparation and completion of this report:

U.S. Geological Survey, Richmond, VA
U.S. Geological Survey, Marion, VA
U.S. Geological Survey, Charlottesville, VA
Virginia State Water Control Board, Charlottesville, VA

This report was prepared in cooperation with the State of Virginia and with other agencies under the general supervision of Herbert J. Freiburger, Chief of the Mid-Atlantic District, and Gary S. Anderson, Acting Chief, Virginia Office.

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[Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (p) pesticides, (t) daily water temperature, (s) sediment, (e) elevation, gage heights, or contents]

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WATER RESOURCES DATA FOR VIRGINIA, 1982

INTRODUCTION

Water resources data for the 1982 water year for Virginia consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 200 gaging stations; stage only at 1 gaging station; stage and contents at 10 lakes and reservoirs; water quality at 32 gaging stations and 8 wells; and water levels at 59 observation wells. Also included are data for 73 crest-stage partial-record stations. Locations of these sites are shown on figures 5 and 6. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 41 coal-monitoring partial-record stations and 199 low-flow partial-record stations. Miscellaneous data were collected at 119 measuring sites and 94 water-quality sampling sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report VA-82-1." These water-data reports are for sale, in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the office chief at the address given on the back of the title page or by telephone (804) 771-2427.

COOPERATION

The U.S. Geological Survey and organizations of the State of Virginia have had cooperative agreements for the systematic collection of streamflow records since 1925, for ground-water levels from 1931 to 1957 and since 1967, and for water-quality records from 1944 to 1957 and since 1967. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Virginia State Water Control Board, Richard N. Burton, acting executive director.
Virginia Department of Highways and Transportation, Harold C. King, commissioner.
City of Alexandria, Douglas Harman, city manager.
City of Newport News, C. C. Crowder, director, Department of Public Utilities.
City of Roanoke, Kit B. Kiser, director, Utilities and Operations.
City of Staunton, R. Gene McCombs, city manager.
Southeastern Public Service Authority, Durwood S. Curling, executive director.
James City County, Wayland Bass, director, Department of Public Works.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 63 gaging stations and 4 water-quality stations published in this report.

Under a cooperative agreement covering the Tennessee River basin, the Tennessee Valley Authority furnished financial assistance for the operation of 3 gaging stations, the records for which are published herein.

Assistance was also furnished by the Water Quality Office, Environmental Protection Agency.

The Appalachian Power Company and the City of Radford aided in collecting records.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

The 1982 water year in Virginia was a transitional year which bridged the gap between the record-setting low flows of 1981 and the consistently above-average flows observed during the first half of 1983. The water year began with a continuation of the drought that started in the summer of 1980. Several sites in the Roanoke and Dan River basins set new record lows for average monthly streamflows in November. Flows began to increase in January, and by February, streamflows were well above normal. A new record high for the month of February was established for the Rapidan River near Culpeper. After February, streamflows declined and April and May were below normal. June streamflows increased dramatically and numerous sites in the Roanoke, Rappahannock, and James River basins had average monthly flows second only to those generated by Hurricane Agnes in 1972. The following table presents monthly mean flow for six gaging stations representative of these three basins.

| <u>Gaging station</u> | <u>Basin</u> | <u>Mean flow June 1982 (cfs)</u> | <u>Rank</u> | <u>Year record high occurred</u> | <u>Length of record (years)</u> |
|---|-----------------------|--|-------------|--|---|
| Dan River at Danville, Va. | Roanoke River | 4240 | 2nd highest | 1972 | 48 |
| Roanoke River at Randolph, Va. | Roanoke River | 4970 | 2nd highest | 1972 | 41 |
| Rappahannock River at Remington, Va. | Rappahannock River | 1450 | 2nd highest | 1972 | 40 |
| Rapidan River near Culpeper, Va. | Rappahannock River | 1380 | 2nd highest | 1972 | 52 |
| Rivanna River at Palmyra, Va. | James River | 1660 | 3rd highest | 1972 | 48 |
| James River near Buchanan, Va. | James River | 5250 | 3rd highest | 1972 | 84 |

Following the near-record highs in July, streamflows generally declined for the remainder of the water year. The exceptionally low flows during the fall months were balanced by the above-average flows in February and in the period June through August. The net result was that the annual mean flows for the 1982 water year were near normal. The following table shows the near-normal annual flow conditions that existed at six representative stations across the State.

| <u>Gaging Station</u> | <u>Portion of State</u> | <u>Annual mean flow for 1982 (cfs)</u> | <u>Percent of median annual flow</u> | <u>Length of record (years)</u> |
|--|---------------------------------|--|--|---|
| Nottoway River near Stony Creek, Va. | Southeast | 496 | 100 | 52 |
| NF Holston River at Saltville, Va. | Southwest | 319 | 107 | 52 |
| James River at Buchanan, Va. | Western | 2360 | 99 | 84 |
| Slate River near Arvonnia, Va. | Central | 229 | 104 | 65 |
| Rapidan River near Culpeper, Va. | Northeast | 508 | 99 | 51 |
| SF Shenandoah River at Front Royal, Va. | Northwest | 1470 | 103 | 82 |

Ground-water levels began the water year at record low levels at the Tyler index well in Louisa County. Other index wells in Fairfax County and in the city of Colonial Heights were also well below normal for that time of year. The below-normal conditions persisted through the entire water year at the Tyler well and new record monthly lows and all-time lows were successively set in October, November, and December. The index well in Colonial Heights rose to above-normal

levels in March and continued above normal for the remainder of the water year. The index well in Fairfax County began the year at near-record low levels and remained below normal for almost the entire year, the exception being at the end of August when the water level briefly rose above normal for the first time in 22 months. Water levels at three index wells began to return to their normal seasonal trends in 1982 and were within 0.6 foot of normal by the end of the water year.

Dissolved-solids concentrations at most stations during the 1982 water year were near normal as a result of near-normal flow conditions. The mean daily concentration at James River at Buchanan for this period was the same as for the previous 10 years.

Suspended-sediment loads in the State were also normal for this period. A large increase in the load of suspended sediment between the drought year of 1981 and the 1982 water year is evident for Rappahannock River at Remington. Trends in specific conductance (a measure of dissolved-solids concentration) and annual suspended-sediment load are given in the following table.

| Gaging Station | Mean discharge (cfs) | | | Annual suspended- sediment load (tons) | | | Mean specific conductance (umhos/cm) | | |
|---|-------------------------|-------|-------|--|--------|---------|--|------|------|
| | Previous 10 years | 1981 | 1982 | Previous 10 years | 1981 | 1982 | Previous 10 years | 1981 | 1982 |
| Rappahannock River at Remington, Va. | 831 | 251 | 570 | 135,000 | 19,100 | 139,000 | 66 | 78 | 74 |
| James River at Buchanan, Va. | 2,770 | 1,090 | 2,360 | - | - | - | 290 | 400 | 290 |

Water temperatures throughout the State were normal to near normal for this period. Average temperatures for Rappahannock River at Remington were 15.0°C, one degree higher than the mean for the previous ten years.

Concentrations of trace metals and residues of pesticides were nearly always far below critical concentrations for various uses. However, detectable concentrations of chlordane, DDD, DDE, DDT, and dieldrin were found in the bottom sediments of Blackwater River near Franklin.

RECORDS COLLECTED BY THE STATE OF VIRGINIA

In addition to data collected by the U.S. Geological Survey, there are included herein records for 103 gaging stations and 17 index wells operated by the Virginia State Water Control Board. These records are published as furnished and are acknowledged in the "COOPERATION" paragraph of each individual station. The State Water Control Board is under the direction of Richard N. Burton, acting executive director. Published material for the gaging-station records and the ground-water wells is supplied, respectively, through the Bureau of Surveillance and Field Studies, Raymond E. Bowles, director, and the Bureau of Water Control Management, Dale F. Jones, director.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System of Units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m³), and periphyton and benthic organisms in grams per square meter (g/m²).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

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

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

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

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

Cubic foot per second (FT³/S, ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved is that material in a representative water sample which passes through a 0.45 μ m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

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

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO₃).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

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

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

| Classification | Size (mm) | Method of analysis |
|----------------|-----------------|-------------------------|
| Clay..... | 0.00024 - 0.004 | Sedimentation. |
| Silt..... | .004 - .062 | Sedimentation. |
| Sand..... | .062 - 2.0 | Sedimentation or sieve. |
| Gravel..... | 2.0 - 64.0 | Sieve. |

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$ for periphyton and macrophytes and $\text{mg C}/(\text{m}^3 \cdot \text{time})$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [$\text{mg O}_2/(\text{m}^2 \cdot \text{time})$ for periphyton and macrophytes and $\text{mg O}_2/(\text{m}^3 \cdot \text{time})$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material refers to the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample.

To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom.....Animal
Phylum.....Arthropoda
Class.....Insecta
Order.....Ephemeroptera
Family.....Ephemeridae
Genus.....Hexagenia
Species.....Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

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

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 03041000, which appears just to the left of the station name, includes the 2-digit part number "03" plus the 6-digit downstream order number "041000".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude and the next 7 digits denote degrees, minutes, and seconds of longitude of a point believed to represent the location of the site; the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph. See figure 1.

A second well-numbering system used in Virginia utilizes 7 1/2-minute quadrangles within the State. The quadrangles are numbered from west to east, and lettered from south to north, omitting the letters "I" and "O." The designation for each quadrangle is determined by the method "Read Right, Up." Wells are numbered serially within each quadrangle. This local well number is shown immediately after the primary well number.

Well records furnished by the State of Virginia also include the well number that is based on an indexing system used by the State Water Control Board.

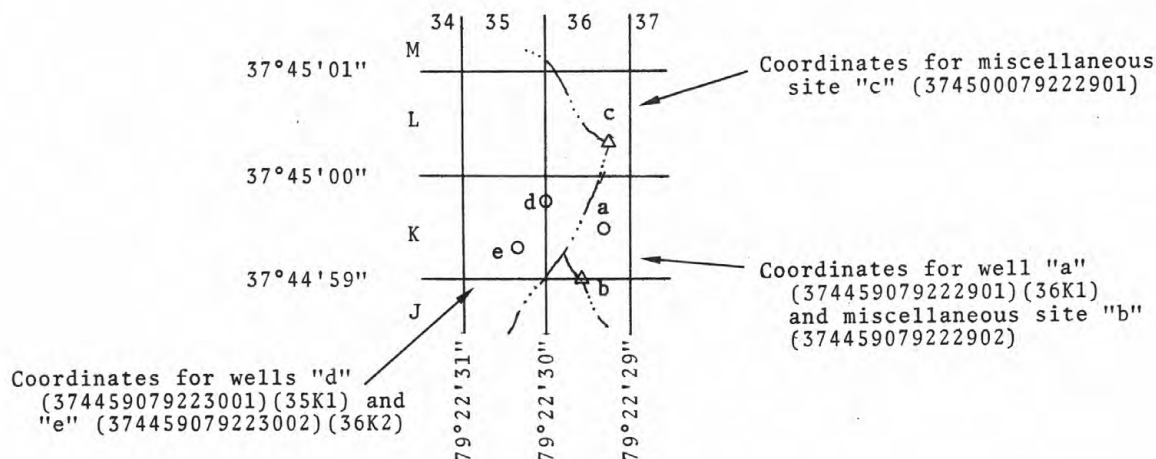


Figure 1. System for numbering wells and miscellaneous sites

SPECIAL NETWORKS AND PROGRAMS

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

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct

readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the 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 computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

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

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

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

For some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" 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, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revisions, the 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.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 6.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

Those records which have been computed and furnished by the Virginia State Water Control Board are identified under "COOPERATION."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following "EXTREMES FOR THE CURRENT YEAR," for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

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

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 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.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

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 interpretations of records.

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

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft³/s; to tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of 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 of runoff in inches are not published unless satisfactory adjustments can be made for diversions, 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 if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the offices whose addresses are given on the back of the title page of this report. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22902, maintains an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S.G.S. Virginia office whose address is given on the back of the title page of this report.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number and (2) a local number that is provided for local needs (see figure 1). The 15-digit number is an identifier, formed initially from the latitude and longitude of a point believed to represent the location of the site. This site identification number, once assigned, is a pure number and has no locational significance. It is used primarily as an internal control number within the computer files.

Measurements are made in many types of wells under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will insure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 (NGVD) or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and at the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlike, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

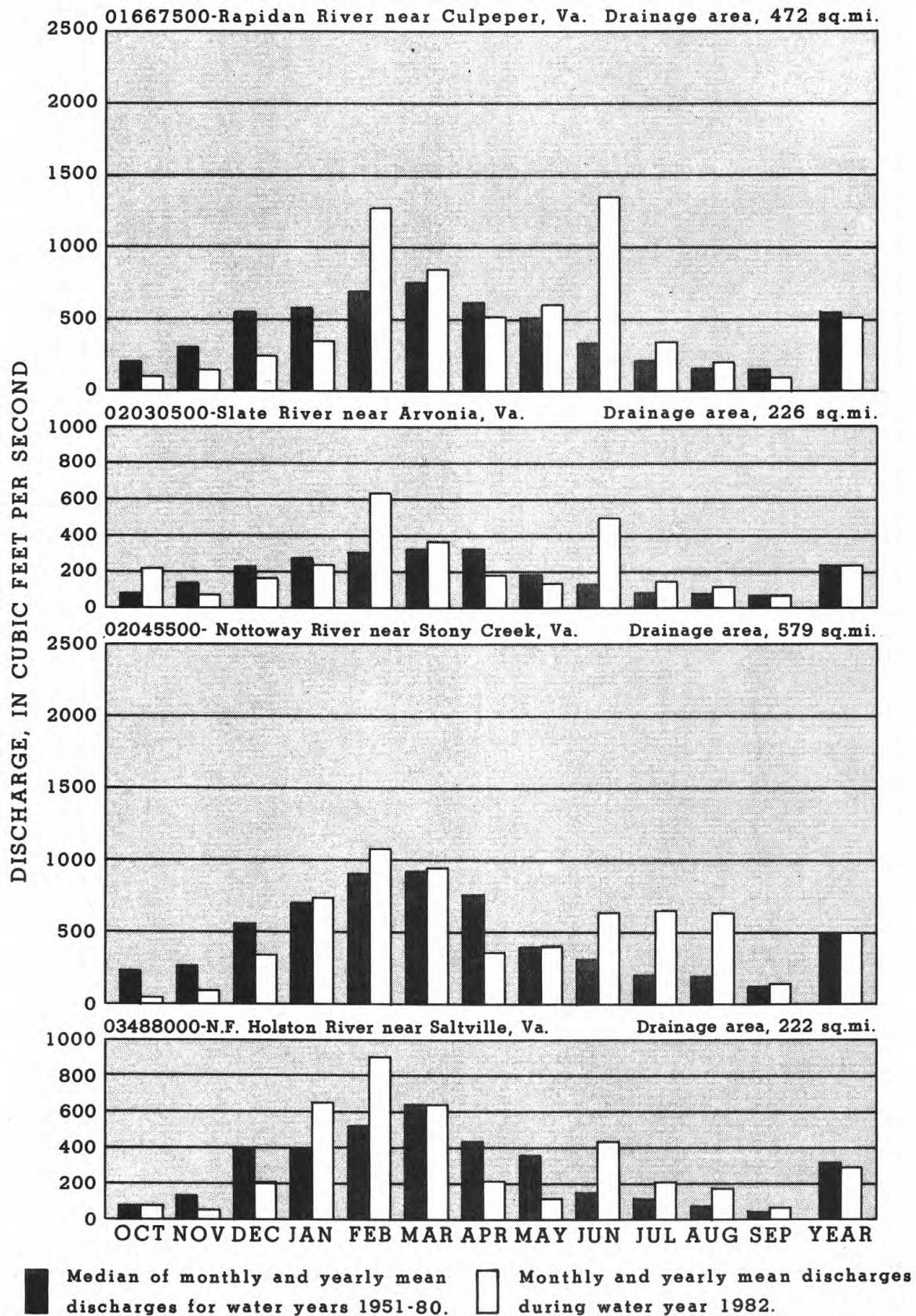


Figure 2. -- Discharge during 1982 water year compared with median discharge for period 1951-80 for four representative gaging stations.

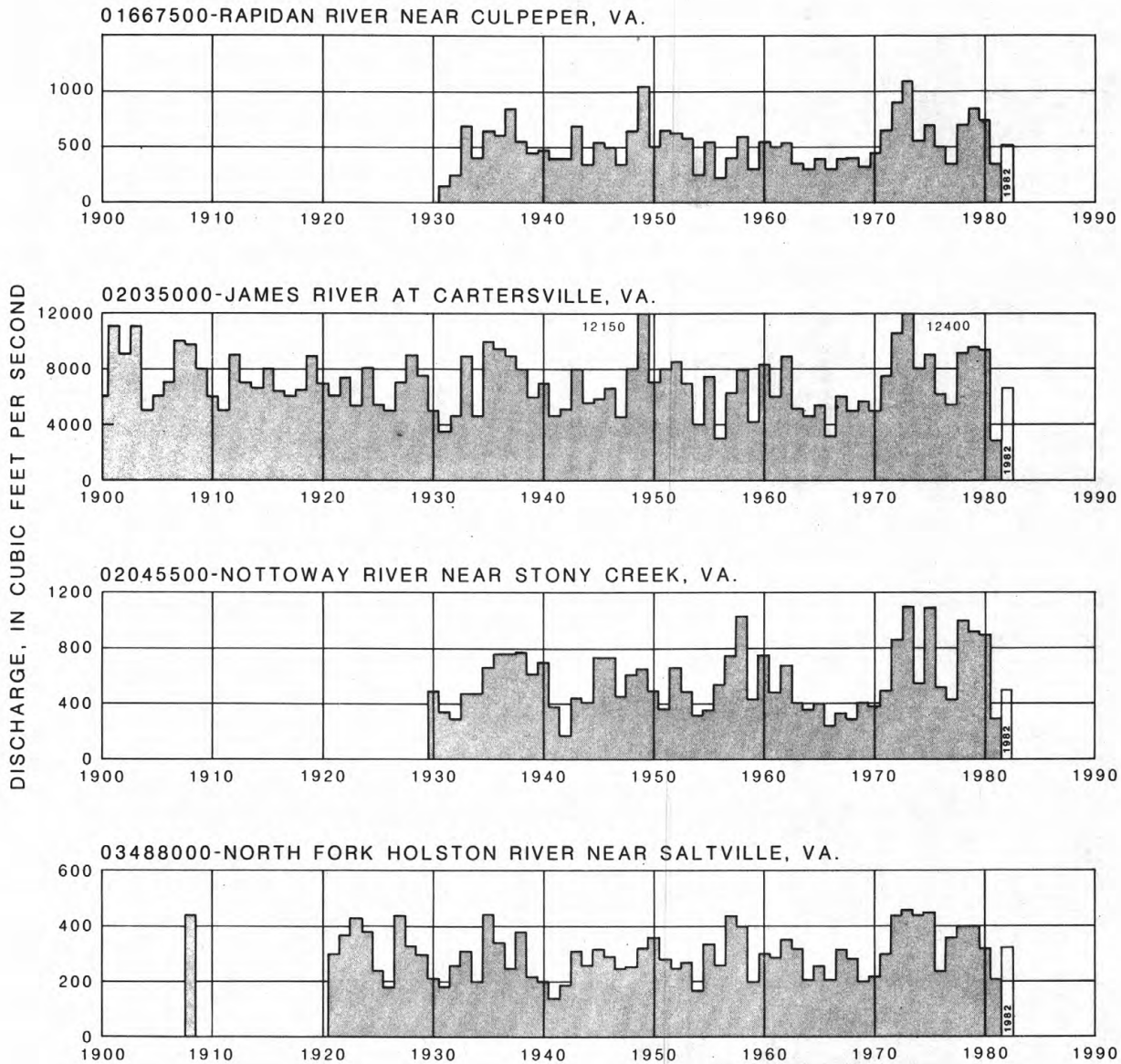


Figure 3. -- Annual mean discharge at selected gaging stations.

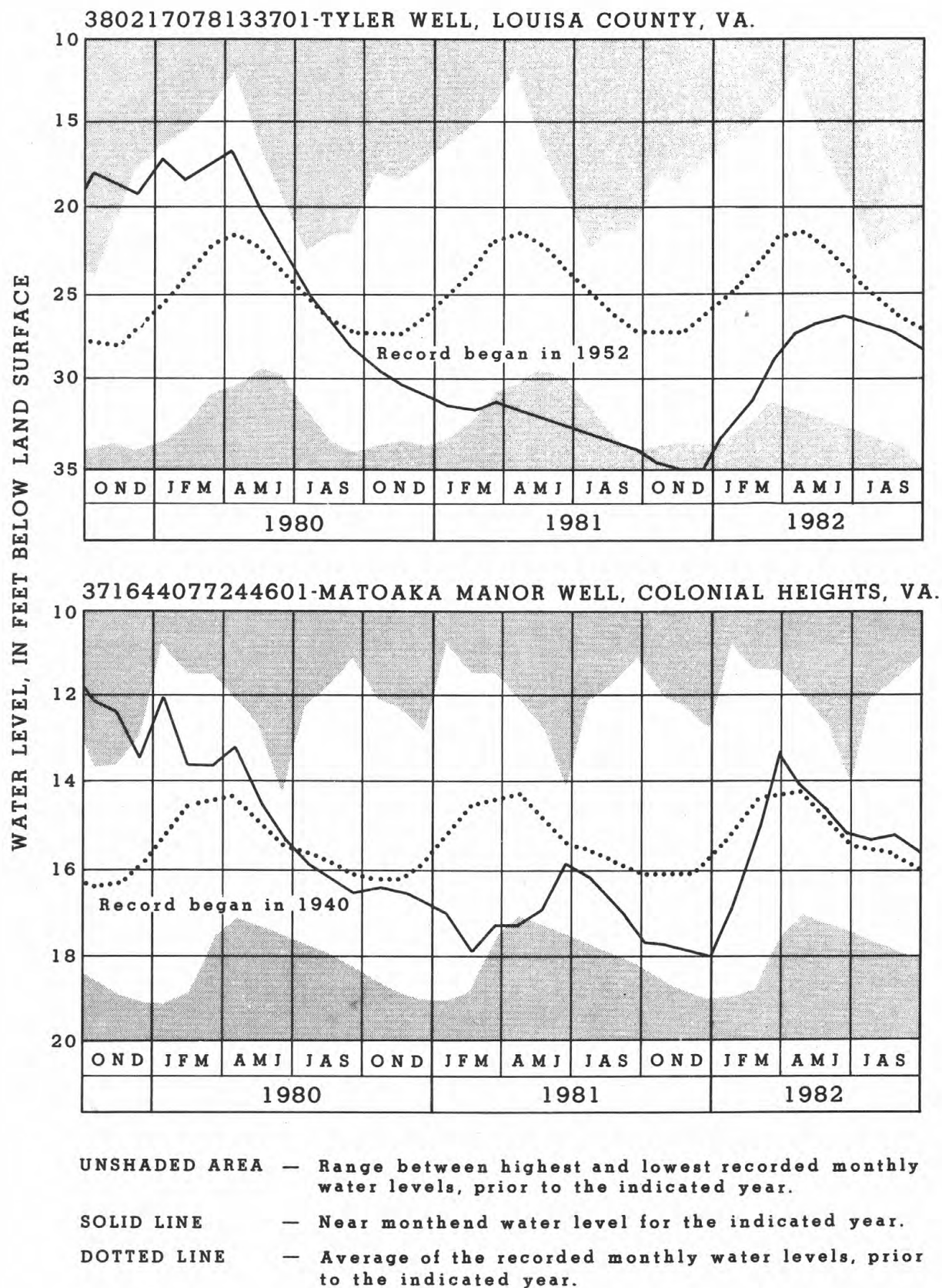


Figure 4. -- Monthly ground-water levels at key observation wells.

WATER RESOURCES DATA FOR VIRGINIA, 1982

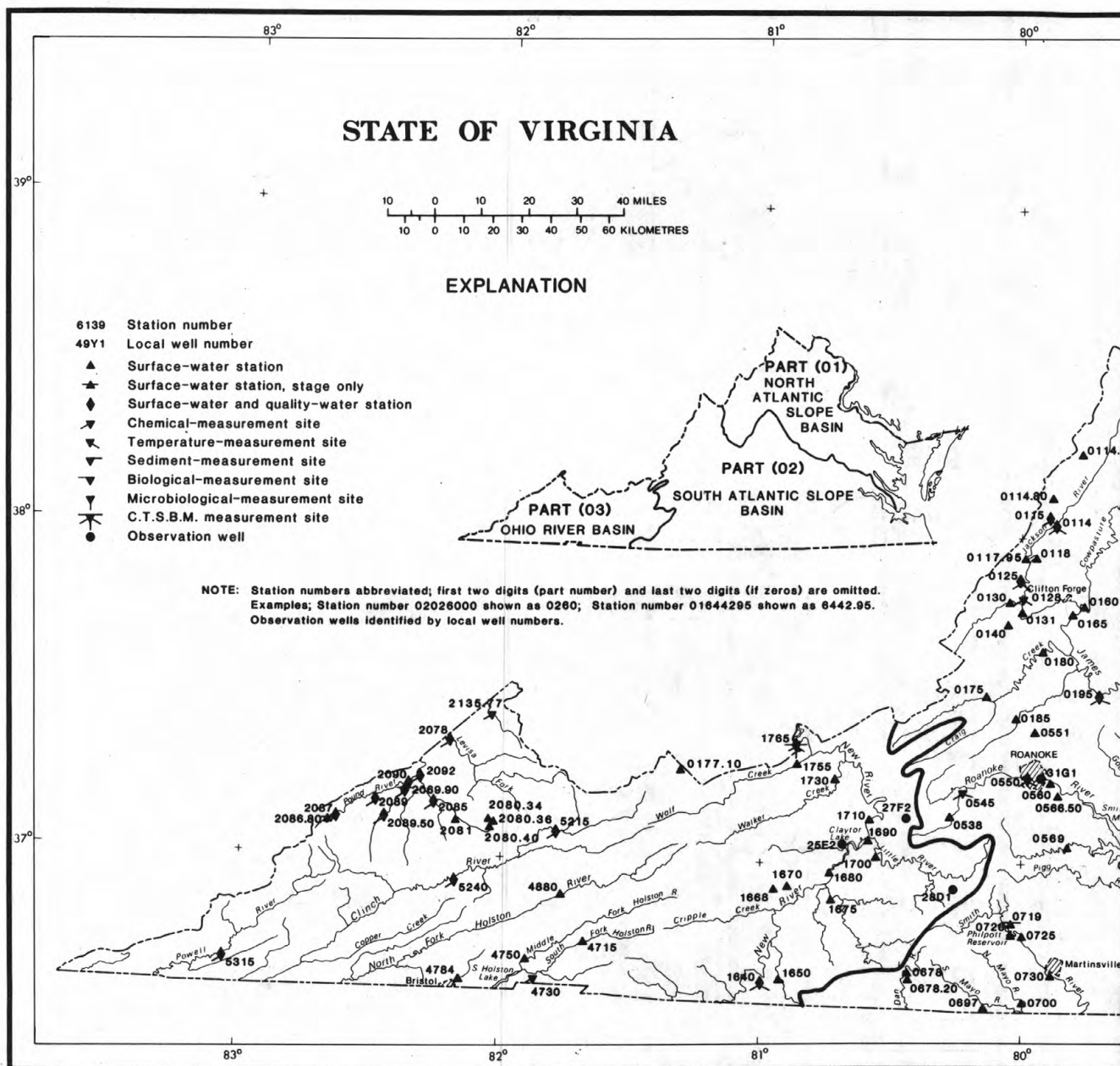
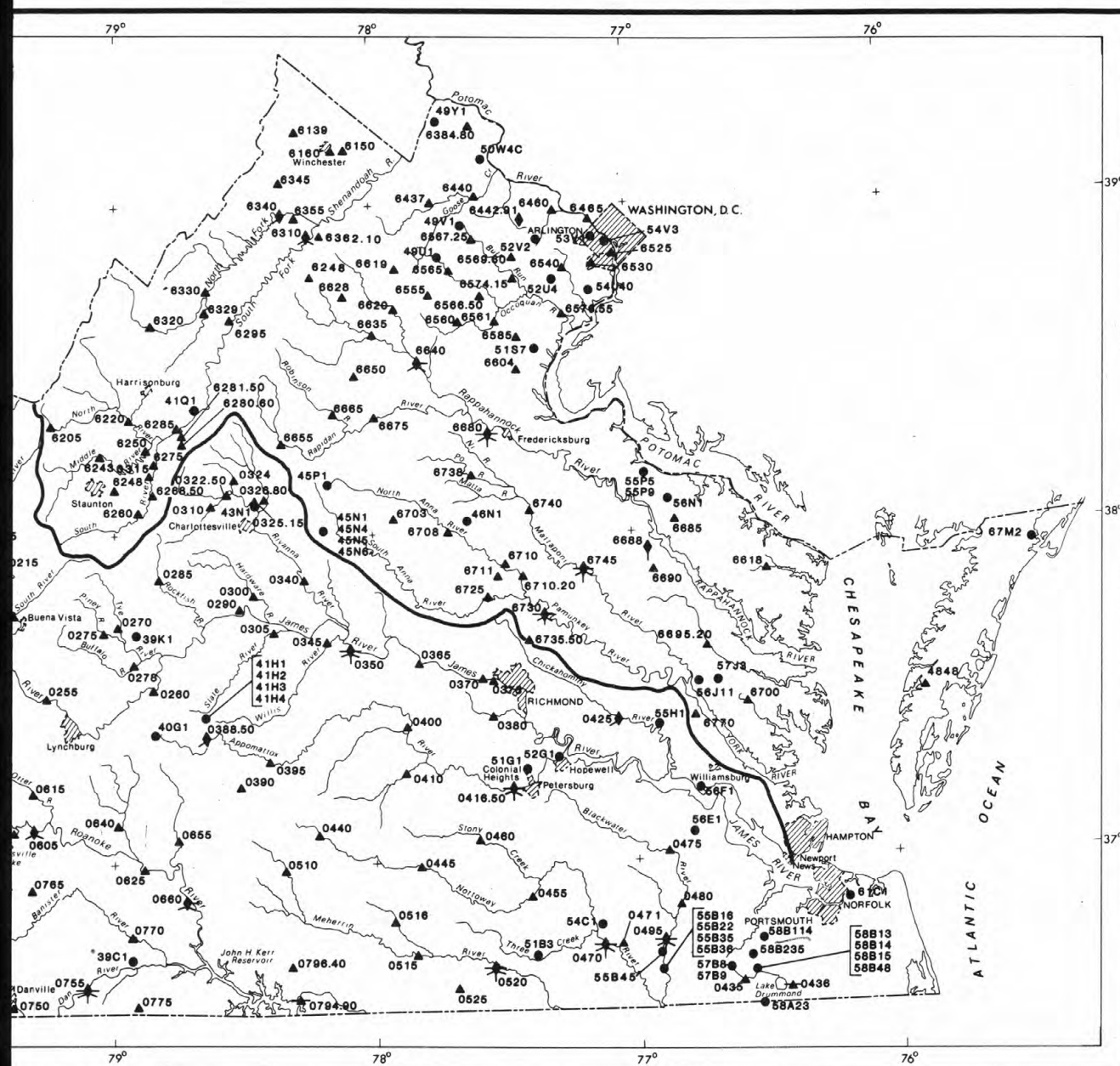


Figure 5. -- Map of Virginia showing location of data-collection stations.



WATER RESOURCES DATA FOR VIRGINIA, 1982

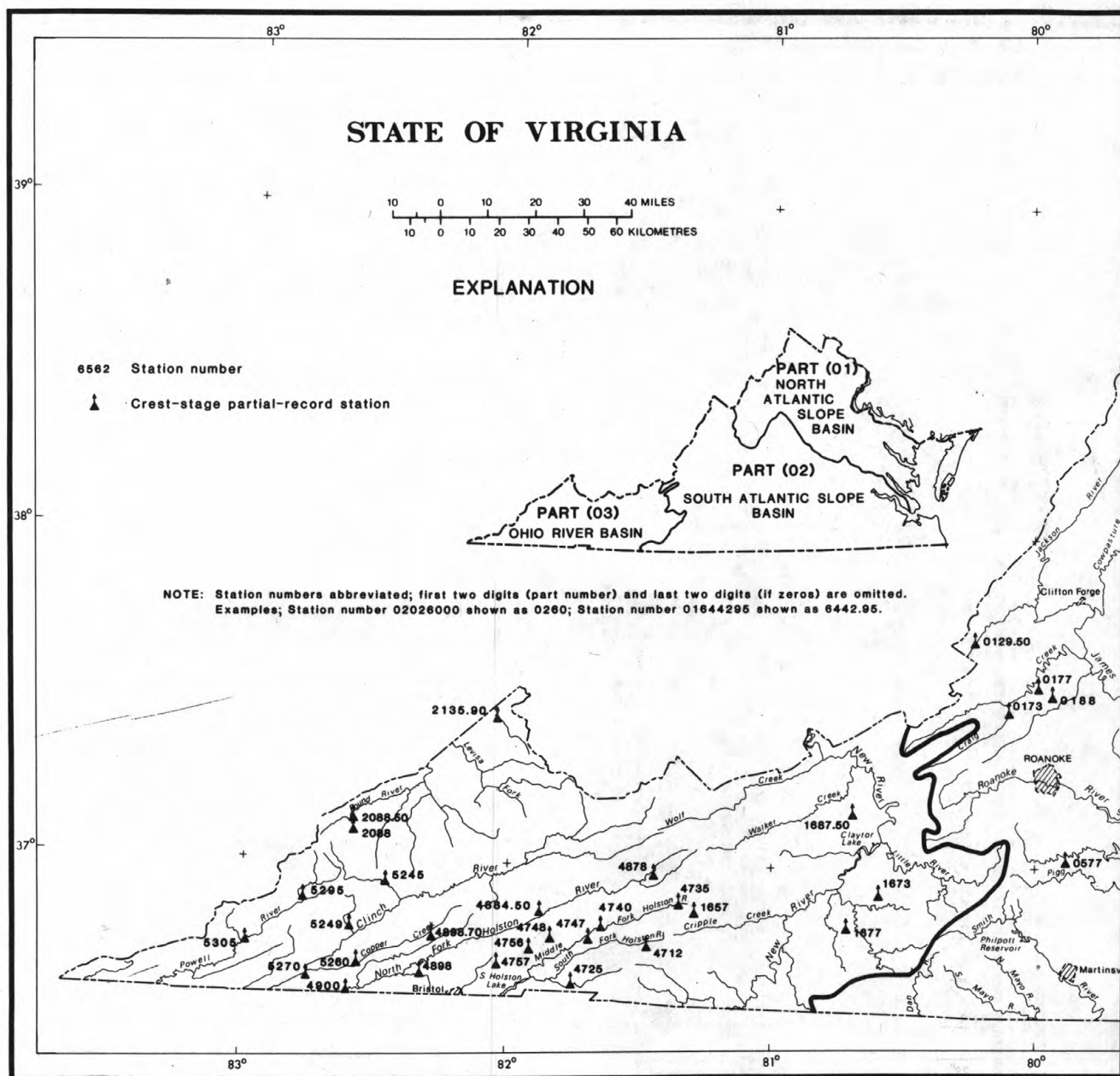
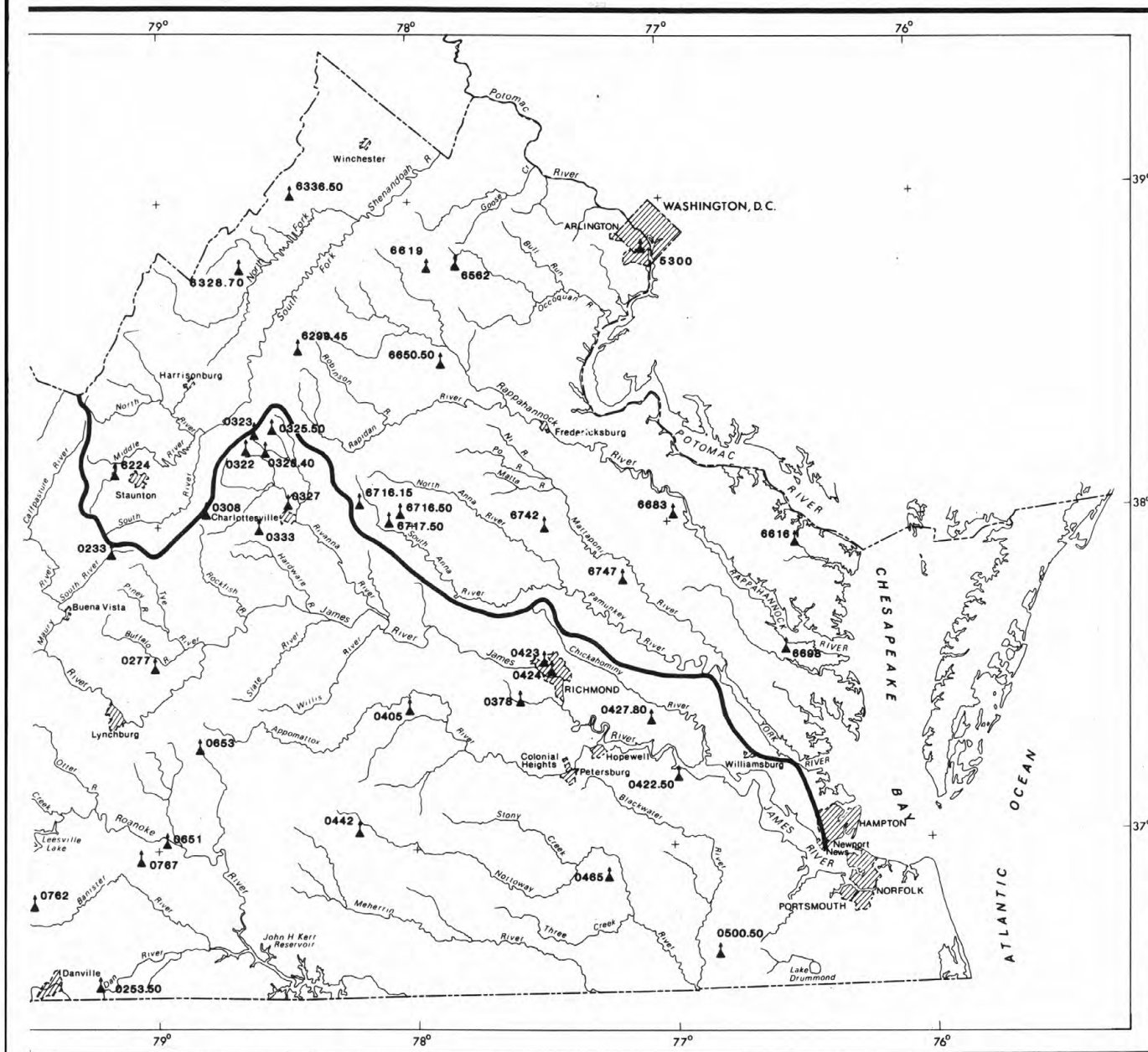


Figure 6. -- Map of Virginia showing location of crest-stage partial-record stations.

WATER RESOURCES DATA FOR VIRGINIA, 1982



HYDROLOGIC-DATA STATION RECORDS

NORTH ATLANTIC SLOPE BASINS

NASSAWADOX CREEK BASIN

01484800 GUY CREEK NEAR NASSAWADOX, VA

LOCATION.--Lat 37°30'08", long 75°52'22", Northampton County, Hydrologic Unit 02080109, on left bank 25 ft (8 m) upstream from bridge on State Highway 606, 1.9 mi (3.1 km) northwest of Nassawadox, and 2.1 mi (3.4 km) upstream from mouth.

DRAINAGE AREA.--1.72 mi² (4.45 km²).

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

GAGE.--Water-stage recorder and wooden control. Datum of gage is 11.67 ft (3.557 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--18 years (water years 1965-82), 1.33 ft³/s (0.038 m³/s), 10.50 in/yr (267 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78 ft³/s (2.21 m³/s) July 31, 1979, gage height, 5.28 ft (1.609 m); no flow at times in 1964, 1966, and 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 21 | 1245 | 22 0.62 | 3.11 0.948 | Aug. 11 | 2015 | *42 1.19 | 4.19 1.277 |

Minimum daily discharge, 0.07 ft³/s (0.002 m³/s) June 25, July 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | .14 | .19 | .29 | 5.5 | 2.3 | 3.6 | 2.3 | 1.7 | .43 | .21 | 2.6 | .79 |
| 2 | .29 | .21 | .43 | 3.6 | 2.2 | 3.0 | 2.1 | 1.4 | .48 | .17 | 1.3 | .79 |
| 3 | .22 | .20 | .38 | 3.3 | 3.0 | 2.7 | 2.1 | 1.3 | .43 | .17 | .79 | .70 |
| 4 | .20 | .22 | .33 | 6.8 | 2.5 | 2.3 | 1.9 | 1.2 | .89 | .21 | .55 | .62 |
| 5 | .14 | .25 | .43 | 4.7 | 2.1 | 2.3 | 1.7 | 1.1 | 1.4 | .17 | .43 | .62 |
| 6 | .15 | .43 | .33 | 3.4 | 2.1 | 4.9 | 2.1 | 1.1 | .89 | .14 | .43 | .62 |
| 7 | .17 | .34 | .29 | 3.0 | 1.7 | 8.8 | 1.7 | .99 | .62 | .14 | .70 | .55 |
| 8 | .13 | .32 | .29 | 2.6 | 1.6 | 8.1 | 1.6 | .99 | .48 | .14 | 3.1 | .55 |
| 9 | .15 | .30 | .25 | 2.3 | 1.7 | 4.5 | 2.3 | .89 | .38 | .21 | 4.4 | .48 |
| 10 | .17 | .32 | .25 | 1.9 | 1.8 | 3.7 | 2.3 | .79 | .25 | .17 | 5.2 | .55 |
| 11 | .17 | .33 | .25 | 1.6 | 1.6 | 4.4 | 1.9 | .79 | .21 | .21 | 16 | .48 |
| 12 | .15 | .33 | .25 | 1.4 | 1.3 | 4.1 | 1.7 | .70 | .21 | .14 | 21 | .48 |
| 13 | .11 | .33 | .25 | 1.4 | 3.3 | 3.4 | 1.7 | .62 | .38 | .14 | 6.8 | .48 |
| 14 | .11 | .38 | .25 | 1.8 | 3.3 | 2.8 | 1.6 | .70 | .38 | .89 | 3.7 | .48 |
| 15 | .12 | .43 | 3.6 | 2.2 | 2.8 | 4.7 | 1.6 | .70 | .21 | .43 | 2.6 | .48 |
| 16 | .12 | .43 | 4.1 | 2.3 | 3.0 | 8.1 | 1.4 | .62 | .21 | .29 | 1.9 | .48 |
| 17 | .10 | .55 | 2.3 | 2.2 | 4.4 | 6.5 | 1.4 | .62 | .21 | .21 | 1.7 | .48 |
| 18 | .14 | .48 | 2.1 | 1.8 | 5.2 | 4.2 | 1.6 | .62 | .21 | .17 | 1.4 | .48 |
| 19 | .23 | .38 | 1.8 | 1.7 | 4.4 | 3.6 | 1.4 | .62 | .48 | .14 | 1.3 | .48 |
| 20 | .21 | .33 | 1.6 | 1.7 | 3.7 | 3.9 | 1.2 | .48 | .33 | .11 | 1.1 | .79 |
| 21 | .23 | .29 | 1.3 | 2.0 | 3.4 | 15 | 1.2 | .43 | .21 | .07 | 1.1 | .89 |
| 22 | .19 | .33 | 1.3 | 2.2 | 2.8 | 8.4 | 1.1 | .48 | .21 | .07 | 1.2 | .79 |
| 23 | .22 | .33 | 1.4 | 9.8 | 2.3 | 4.9 | .99 | .48 | .14 | .48 | .99 | .55 |
| 24 | .40 | .33 | 1.2 | 10 | 2.3 | 3.9 | .99 | .55 | .11 | .29 | .79 | .43 |
| 25 | .70 | .33 | 2.3 | 4.9 | 1.9 | 3.4 | .99 | .62 | .07 | .17 | .79 | .43 |
| 26 | .33 | .33 | 2.8 | 3.7 | 1.8 | 3.1 | 3.0 | .62 | .48 | .11 | .79 | .79 |
| 27 | .22 | .33 | 2.8 | 2.8 | 2.5 | 2.7 | 4.4 | .55 | 1.6 | .11 | .70 | 1.1 |
| 28 | .19 | .33 | 2.2 | 2.6 | 5.5 | 2.3 | 3.0 | .48 | .55 | .11 | 2.2 | .70 |
| 29 | .17 | .33 | 1.8 | 2.5 | --- | 2.2 | 2.3 | .43 | .38 | .21 | 1.3 | .62 |
| 30 | .16 | .33 | 1.6 | 2.3 | --- | 2.2 | 1.9 | .62 | .33 | .21 | 1.1 | .55 |
| 31 | .17 | --- | 1.4 | 2.3 | --- | 2.1 | --- | .48 | --- | 5.3 | .89 | --- |
| TOTAL | 6.20 | 10.01 | 39.87 | 100.3 | 76.5 | 139.8 | 55.47 | 23.67 | 13.16 | 11.59 | 88.85 | 18.23 |
| MEAN | .20 | .33 | 1.29 | 3.24 | 2.73 | 4.51 | 1.85 | .76 | .44 | .37 | 2.87 | .61 |
| MAX | .70 | .55 | 4.1 | 10 | 5.5 | 15 | 4.4 | 1.7 | 1.6 | 5.3 | 21 | 1.1 |
| MIN | .10 | .19 | .25 | 1.4 | 1.3 | 2.1 | .99 | .43 | .07 | .07 | .43 | .43 |
| CFSM | .12 | .19 | .75 | 1.88 | 1.59 | 2.62 | 1.08 | .44 | .26 | .22 | 1.67 | .36 |
| IN. | .13 | .22 | .86 | 2.17 | 1.65 | 3.02 | 1.20 | .51 | .28 | .25 | 1.92 | .39 |

CAL YR 1981 TOTAL 211.33 MEAN .58 MAX 20 MIN .03 CFSM .34 IN 4.57
WTR YR 1982 TOTAL 583.65 MEAN 1.60 MAX 21 MIN .07 CFSM .93 IN 12.62

POTOMAC RIVER BASIN

27

01613900 HOGUE CREEK NEAR HAYFIELD, VA

LOCATION.--Lat 39°12'52", long 78°17'18", Frederick County, Hydrologic Unit 02070004, on right bank 15 ft (5 m) upstream from bridge on State Highway 614, 0.8 mi (1.3 km) upstream from Gap Run, and 1.3 mi (2.1 km) southeast of Hayfield.

DRAINAGE AREA.--15.0 mi² (38.8 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 668.60 ft (203.789 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 14.7 ft³/s (0.416 m³/s), 13.31 in/yr (338 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,760 ft³/s (78.2 m³/s) June 22, 1972, gage height, 8.85 ft (2.697 m), from rating curve extended above 870 ft³/s (25 m³/s); no flow for part of Sept. 14, 1968, cause unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Mar. 16 | 2030 | 444 | 12.6 | 3.38 | 1.030 | June 13 | 0900 | *1380 | 39.1 | 6.03 | 1.838 |
| May 22 | 0100 | 678 | 19.2 | 4.11 | 1.253 | | | | | | |

Minimum daily discharge, 0.53 ft³/s (0.015 m³/s) Oct. 4, 5.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|-------|------|------|-------|-------|--------|------|------|-------|
| 1 | .79 | 2.2 | 2.8 | 7.6 | 32 | 16 | 12 | 18 | 43 | 3.1 | 1.5 | 1.3 |
| 2 | .79 | 2.2 | 7.2 | 8.4 | 31 | 15 | 11 | 15 | 52 | 3.1 | 1.4 | 1.3 |
| 3 | .66 | 1.7 | 6.4 | 8.9 | 120 | 14 | 12 | 13 | 65 | 4.9 | 1.2 | 1.2 |
| 4 | .53 | 1.6 | 5.6 | 61 | 89 | 12 | 11 | 12 | 73 | 5.2 | 1.4 | 1.3 |
| 5 | .53 | 1.6 | 4.4 | 37 | 55 | 12 | 9.2 | 10 | 188 | 3.6 | 1.7 | 1.3 |
| 6 | .92 | 2.8 | 3.9 | 23 | 35 | 11 | 9.5 | 9.5 | 96 | 3.1 | 1.4 | 1.2 |
| 7 | .92 | 2.5 | 3.6 | 18 | 26 | 26 | 9.5 | 8.9 | 62 | 2.9 | 1.7 | 1.1 |
| 8 | .92 | 2.8 | 3.6 | 14 | 21 | 33 | 9.2 | 9.8 | 38 | 2.7 | 5.8 | 1.1 |
| 9 | .92 | 2.0 | 3.0 | 10 | 21 | 28 | 9.5 | 9.2 | 27 | 2.5 | 5.2 | 1.1 |
| 10 | .92 | 1.7 | 2.8 | 8.0 | 19 | 24 | 11 | 8.4 | 73 | 2.5 | 3.6 | 1.2 |
| 11 | .92 | 1.7 | 2.5 | 6.5 | 15 | 23 | 9.8 | 7.5 | 48 | 2.5 | 3.1 | 1.3 |
| 12 | 1.0 | 1.6 | 2.5 | 5.4 | 15 | 55 | 8.9 | 6.9 | 34 | 2.5 | 2.9 | 1.3 |
| 13 | 1.0 | 1.7 | 2.5 | 4.5 | 16 | 37 | 8.6 | 6.6 | 587 | 2.2 | 2.5 | 1.2 |
| 14 | 1.0 | 2.0 | 2.8 | 3.8 | 16 | 26 | 8.9 | 5.9 | 155 | 2.4 | 2.7 | 1.3 |
| 15 | 1.0 | 1.6 | 4.4 | 3.3 | 16 | 26 | 10 | 5.2 | 68 | 2.5 | 2.4 | 1.5 |
| 16 | 1.0 | 1.6 | 4.4 | 2.8 | 36 | 146 | 11 | 4.9 | 55 | 2.9 | 2.5 | 1.5 |
| 17 | 1.0 | 2.2 | 4.4 | 2.5 | 117 | 186 | 12 | 4.6 | 63 | 3.4 | 2.5 | 1.3 |
| 18 | .92 | 2.5 | 4.1 | 2.2 | 75 | 76 | 15 | 4.4 | 31 | 3.3 | 2.2 | 1.0 |
| 19 | 1.2 | 2.5 | 4.1 | 2.1 | 52 | 49 | 12 | 4.9 | 21 | 4.9 | 2.2 | 1.0 |
| 20 | 1.0 | 1.7 | 3.8 | 2.0 | 87 | 99 | 12 | 5.4 | 15 | 5.2 | 2.4 | 1.1 |
| 21 | 1.0 | 1.7 | 3.5 | 2.1 | 120 | 112 | 12 | 4.6 | 12 | 3.4 | 2.2 | 1.2 |
| 22 | .92 | 2.2 | 3.5 | 2.1 | 82 | 69 | 11 | 146 | 10 | 2.9 | 2.1 | 1.8 |
| 23 | 1.3 | 1.6 | 9.8 | 2.0 | 60 | 46 | 11 | 29 | 9.2 | 3.4 | 2.4 | 1.9 |
| 24 | 1.4 | 1.7 | 14 | 2.0 | 58 | 34 | 9.8 | 20 | 8.4 | 2.9 | 2.2 | 1.9 |
| 25 | 1.3 | 2.0 | 12 | 2.0 | 37 | 28 | 7.8 | 16 | 7.8 | 2.5 | 1.8 | 1.5 |
| 26 | 1.6 | 2.0 | 9.8 | 2.0 | 26 | 28 | 21 | 13 | 6.2 | 2.4 | 1.2 | 1.8 |
| 27 | 25 | 2.0 | 8.4 | 2.0 | 22 | 20 | 36 | 12 | 4.4 | 2.4 | 1.3 | 2.5 |
| 28 | 15 | 2.0 | 7.6 | 1.9 | 19 | 16 | 44 | 10 | 4.2 | 2.7 | 1.4 | 1.7 |
| 29 | 6.8 | 1.7 | 6.8 | 2.0 | --- | 14 | 27 | 9.2 | 4.0 | 2.5 | 1.3 | 1.7 |
| 30 | 3.9 | 1.6 | 5.6 | 5.0 | --- | 13 | 21 | 8.6 | 3.8 | 1.9 | 1.2 | 1.2 |
| 31 | 3.0 | --- | 6.0 | 15 | --- | 13 | --- | 8.1 | --- | 1.9 | 1.2 | --- |
| TOTAL | 79.16 | 58.7 | 165.8 | 269.1 | 1318 | 1307 | 412.7 | 446.6 | 1864.0 | 94.3 | 68.6 | 41.8 |
| MEAN | 2.55 | 1.96 | 5.35 | 8.68 | 47.1 | 42.2 | 13.8 | 14.4 | 62.1 | 3.04 | 2.21 | 1.39 |
| MAX | 25 | 2.8 | 14 | 61 | 120 | 186 | 44 | 146 | 587 | 5.2 | 5.8 | 2.5 |
| MIN | .53 | 1.6 | 2.5 | 1.9 | 15 | 11 | 7.8 | 4.4 | 3.8 | 1.9 | 1.2 | 1.0 |
| CFSM | .17 | .13 | .36 | .58 | 3.14 | 2.81 | .92 | .96 | 4.14 | .20 | .15 | .09 |
| IN. | .20 | .15 | .41 | .67 | 3.27 | 3.24 | 1.02 | 1.11 | 4.62 | .23 | .17 | .10 |
| CAL YR 1981 | TOTAL | 2495.98 | MEAN | 6.84 | MAX | 93 | MIN | .20 | CFSM | .46 | IN | 6.19 |
| WTR YR 1982 | TOTAL | 6125.76 | MEAN | 16.8 | MAX | 587 | MIN | .53 | CFSM | 1.12 | IN | 15.19 |

01615000 OPEQUON CREEK NEAR BERRYVILLE, VA

LOCATION.--Lat 39°10'40", long 78°04'20", Frederick County, Hydrologic Unit 02070004, on left bank between the bridges on State Highway 7, 0.2 mi (0.3 km) upstream from Abrams Creek, and 5.0 mi (8.0 km) west of Berryville.

DRAINAGE AREA.--57.4 mi² (148.7 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 503.24 ft (153.388 m) National Geodetic Vertical Datum of 1929. Prior to July 26, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for January, which are fair. Diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 41.5 ft³/s (1.175 m³/s), 9.82 in/yr (249 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s (300 m³/s) Nov. 13, 1970, gage height, 12.82 ft (3.908 m), from rating curve extended above 4,800 ft³/s (140 m³/s); minimum daily, 0.20 ft³/s (0.006 m³/s) Sept. 12, 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 18.4 ft (5.61 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | | Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | |
|---------|------|---|------|-------------------------|-------|---------|------|---|------|-------------------------|-------|
| Feb. 3 | 1900 | 937 | 26.5 | 5.33 | 1.625 | June 13 | 1330 | *2530 | 71.6 | 8.35 | 2.545 |
| Mar. 17 | 0130 | 1340 | 37.9 | 6.30 | 1.920 | | | | | | |

Minimum discharge, 2.9 ft³/s (0.082 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|-------|------|------|------|-------|------|-------|-------|-------|
| 1 | 3.6 | 7.3 | 5.2 | 7.7 | 330 | 37 | 35 | 29 | 17 | 16 | 10 | 6.5 |
| 2 | 3.8 | 6.8 | 7.1 | 12 | 94 | 34 | 28 | 25 | 25 | 15 | 9.0 | 8.0 |
| 3 | 3.6 | 6.4 | 7.1 | 11 | 272 | 33 | 29 | 22 | 149 | 20 | 8.5 | 7.0 |
| 4 | 3.6 | 6.0 | 6.2 | 141 | 203 | 29 | 37 | 20 | 161 | 25 | 8.0 | 6.5 |
| 5 | 3.4 | 6.1 | 5.8 | 68 | 98 | 29 | 26 | 18 | 334 | 18 | 8.0 | 6.5 |
| 6 | 3.6 | 13 | 5.5 | 33 | 69 | 26 | 28 | 16 | 155 | 15 | 8.0 | 6.5 |
| 7 | 3.6 | 11 | 5.2 | 24 | 47 | 61 | 26 | 15 | 78 | 14 | 8.0 | 6.5 |
| 8 | 3.8 | 8.0 | 5.4 | 18 | 37 | 116 | 24 | 25 | 46 | 15 | 30 | 6.0 |
| 9 | 3.6 | 7.1 | 5.4 | 12 | 50 | 104 | 27 | 24 | 32 | 15 | 91 | 6.5 |
| 10 | 3.6 | 6.6 | 4.8 | 10 | 56 | 73 | 31 | 18 | 55 | 21 | 21 | 6.5 |
| 11 | 4.0 | 6.4 | 4.3 | 9.0 | 37 | 59 | 27 | 15 | 50 | 17 | 12 | 6.5 |
| 12 | 4.3 | 6.1 | 4.3 | 8.4 | 30 | 179 | 24 | 14 | 33 | 38 | 11 | 6.0 |
| 13 | 3.6 | 5.8 | 4.4 | 8.0 | 28 | 106 | 23 | 12 | 1320 | 15 | 9.5 | 6.5 |
| 14 | 3.1 | 5.7 | 4.9 | 7.6 | 27 | 69 | 22 | 12 | 299 | 13 | 9.0 | 6.5 |
| 15 | 4.3 | 5.6 | 7.4 | 7.3 | 30 | 54 | 21 | 12 | 106 | 13 | 8.5 | 7.0 |
| 16 | 3.8 | 5.4 | 10 | 7.0 | 50 | 272 | 20 | 11 | 114 | 16 | 8.0 | 9.0 |
| 17 | 3.4 | 5.2 | 10 | 6.6 | 240 | 638 | 21 | 10 | 354 | 12 | 8.0 | 8.0 |
| 18 | 3.8 | 5.2 | 9.1 | 6.4 | 172 | 150 | 32 | 10 | 207 | 10 | 8.0 | 7.0 |
| 19 | 4.8 | 5.1 | 9.2 | 6.4 | 129 | 100 | 24 | 10 | 88 | 13 | 7.0 | 7.5 |
| 20 | 4.5 | 5.6 | 8.6 | 6.6 | 359 | 244 | 21 | 10 | 58 | 12 | 7.0 | 8.0 |
| 21 | 4.0 | 5.9 | 7.2 | 6.8 | 378 | 281 | 20 | 9.5 | 42 | 33 | 7.0 | 8.0 |
| 22 | 4.3 | 5.5 | 7.2 | 6.8 | 191 | 149 | 19 | 9.5 | 35 | 12 | 7.0 | 9.0 |
| 23 | 4.8 | 5.2 | 14 | 6.6 | 122 | 95 | 17 | 11 | 29 | 22 | 7.0 | 10 |
| 24 | 5.5 | 5.4 | 26 | 6.6 | 92 | 72 | 16 | 11 | 26 | 15 | 7.5 | 9.5 |
| 25 | 5.5 | 5.7 | 15 | 6.6 | 69 | 59 | 16 | 10 | 23 | 10 | 7.0 | 9.0 |
| 26 | 7.4 | 5.6 | 13 | 6.6 | 50 | 55 | 67 | 10 | 22 | 10 | 6.5 | 9.5 |
| 27 | 71 | 5.6 | 9.0 | 6.6 | 45 | 45 | 80 | 9.5 | 21 | 9.5 | 6.5 | 15 |
| 28 | 77 | 5.3 | 8.3 | 6.4 | 40 | 38 | 88 | 11 | 20 | 9.5 | 7.0 | 9.0 |
| 29 | 19 | 4.9 | 7.0 | 6.6 | --- | 35 | 48 | 12 | 19 | 10 | 6.5 | 6.0 |
| 30 | 11 | 4.7 | 7.0 | 7.0 | --- | 33 | 35 | 9.5 | 18 | 10 | 6.0 | 5.5 |
| 31 | 8.5 | --- | 7.0 | 53 | --- | 33 | --- | 9.0 | --- | 12 | 6.5 | --- |
| TOTAL | 293.8 | 188.2 | 250.6 | 529.6 | 3345 | 3308 | 932 | 440.0 | 3936 | 486.0 | 364.0 | 229.0 |
| MEAN | 9.48 | 6.27 | 8.08 | 17.1 | 119 | 107 | 31.1 | 14.2 | 131 | 15.7 | 11.7 | 7.63 |
| MAX | 77 | 13 | 26 | 141 | 378 | 638 | 88 | 29 | 1320 | 38 | 91 | 15 |
| MIN | 3.1 | 4.7 | 4.3 | 6.4 | 27 | 26 | 16 | 9.0 | 17 | 9.5 | 6.0 | 5.5 |
| CFSM | .17 | .11 | .14 | .30 | 2.07 | 1.86 | .54 | .25 | 2.28 | .27 | .20 | .13 |
| IN. | .19 | .12 | .16 | .34 | 2.17 | 2.14 | .60 | .29 | 2.55 | .31 | .24 | .15 |
| CAL YR 1981 | TOTAL | 6572.1 | MEAN | 18.0 | MAX | 278 | MIN | 2.5 | CFSM | .31 | IN | 4.26 |
| WTR YR 1982 | TOTAL | 14302.2 | MEAN | 39.2 | MAX | 1320 | MIN | 3.1 | CFSM | .68 | IN | 9.27 |

01616000 ABRAMS CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°10'40", long 78°05'10", Frederick County, Hydrologic Unit 02070004, on right bank 1,000 ft (305 m) upstream from bridge on State Highway 659, 0.9 mi (1.4 km) upstream from mouth, and 4.4 mi (7.1 km) east of Winchester.

DRAINAGE AREA.--16.5 mi² (42.7 km²).

PERIOD OF RECORD.--July 1949 to September 1960, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 526.46 ft (160.465 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 10 to Feb. 24, which are fair. Slight diurnal fluctuation caused by sewage disposal plant above station at Winchester. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by Virginia State Water Control Board.

AVERAGE DISCHARGE.--14 years, 19.4 ft³/s (0.549 m³/s), 15.97 in/yr (406 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 962 ft³/s (27.2 m³/s) Dec. 4, 1950, gage height, 6.16 ft (1.878 m), from rating curve extended above 410 ft³/s (11.6 m³/s); minimum, 3.5 ft³/s (0.099 m³/s) Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1930 | 224 6.34 | 2.83 0.863 | June 16 | 2300 | 427 12.1 | 3.90 1.189 |
| Mar. 16 | 1830 | 226 6.40 | 2.84 .866 | July 16 | 1800 | 214 6.06 | 2.78 .847 |
| June 13 | 1100 | *582 16.5 | 4.63 1.411 | Aug. 8 | 1900 | 258 7.31 | 3.01 .917 |
| June 16 | 1900 | 256 7.25 | 3.00 .914 | Aug. 9 | 0200 | 245 6.94 | 2.94 .896 |

Minimum discharge, 10 ft³/s (0.28 m³/s) Nov. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 14 | 15 | 17 | 20 | 50 | 26 | 24 | 20 | 22 | 30 | 22 | 19 |
| 2 | 14 | 16 | 16 | 17 | 40 | 26 | 24 | 20 | 20 | 28 | 22 | 22 |
| 3 | 12 | 16 | 14 | 17 | 100 | 26 | 32 | 20 | 42 | 42 | 22 | 20 |
| 4 | 12 | 16 | 14 | 51 | 66 | 26 | 26 | 20 | 26 | 31 | 22 | 18 |
| 5 | 12 | 17 | 14 | 26 | 50 | 26 | 24 | 19 | 60 | 26 | 24 | 17 |
| 6 | 14 | 22 | 13 | 20 | 40 | 24 | 26 | 19 | 28 | 26 | 22 | 18 |
| 7 | 13 | 17 | 13 | 20 | 35 | 36 | 24 | 18 | 24 | 26 | 20 | 18 |
| 8 | 13 | 15 | 14 | 18 | 32 | 34 | 24 | 22 | 22 | 30 | 51 | 19 |
| 9 | 14 | 16 | 14 | 17 | 31 | 32 | 26 | 19 | 20 | 26 | 61 | 19 |
| 10 | 14 | 16 | 14 | 16 | 33 | 30 | 24 | 18 | 38 | 26 | 26 | 19 |
| 11 | 14 | 16 | 14 | 16 | 30 | 28 | 22 | 18 | 26 | 26 | 24 | 18 |
| 12 | 15 | 15 | 14 | 15 | 28 | 48 | 22 | 18 | 24 | 26 | 22 | 17 |
| 13 | 16 | 14 | 13 | 15 | 28 | 32 | 22 | 19 | 250 | 24 | 22 | 18 |
| 14 | 16 | 14 | 14 | 14 | 27 | 28 | 22 | 19 | 83 | 26 | 20 | 19 |
| 15 | 16 | 14 | 17 | 14 | 27 | 28 | 22 | 18 | 46 | 26 | 20 | 26 |
| 16 | 16 | 14 | 19 | 14 | 35 | 88 | 22 | 18 | 107 | 48 | 20 | 19 |
| 17 | 16 | 14 | 18 | 13 | 50 | 89 | 26 | 18 | 126 | 28 | 20 | 17 |
| 18 | 16 | 14 | 17 | 13 | 40 | 43 | 24 | 18 | 70 | 24 | 20 | 16 |
| 19 | 14 | 14 | 15 | 13 | 37 | 36 | 20 | 18 | 49 | 26 | 20 | 15 |
| 20 | 14 | 16 | 15 | 14 | 50 | 65 | 20 | 17 | 42 | 26 | 20 | 17 |
| 21 | 14 | 13 | 15 | 15 | 70 | 65 | 20 | 17 | 36 | 26 | 22 | 16 |
| 22 | 14 | 12 | 17 | 14 | 50 | 43 | 20 | 17 | 34 | 24 | 20 | 20 |
| 23 | 17 | 12 | 20 | 14 | 42 | 36 | 19 | 18 | 32 | 26 | 22 | 17 |
| 24 | 15 | 13 | 19 | 14 | 36 | 32 | 19 | 17 | 32 | 24 | 20 | 17 |
| 25 | 14 | 13 | 17 | 14 | 32 | 30 | 19 | 17 | 34 | 22 | 20 | 16 |
| 26 | 22 | 12 | 17 | 14 | 28 | 28 | 39 | 17 | 32 | 22 | 19 | 20 |
| 27 | 88 | 12 | 17 | 14 | 26 | 26 | 32 | 17 | 31 | 26 | 19 | 22 |
| 28 | 28 | 12 | 17 | 14 | 26 | 24 | 28 | 19 | 30 | 26 | 19 | 16 |
| 29 | 20 | 12 | 17 | 14 | --- | 24 | 24 | 17 | 30 | 24 | 18 | 16 |
| 30 | 17 | 12 | 16 | 14 | --- | 24 | 22 | 17 | 31 | 26 | 18 | 16 |
| 31 | 16 | --- | 16 | 15 | --- | 24 | --- | 17 | --- | 24 | 19 | --- |
| TOTAL | 550 | 434 | 487 | 519 | 1139 | 1127 | 718 | 566 | 1447 | 841 | 716 | 547 |
| MEAN | 17.7 | 14.5 | 15.7 | 16.7 | 40.7 | 36.4 | 23.9 | 18.3 | 48.2 | 27.1 | 23.1 | 18.2 |
| MAX | 88 | 22 | 20 | 51 | 100 | 89 | 39 | 22 | 250 | 48 | 61 | 26 |
| MIN | 12 | 12 | 13 | 13 | 26 | 24 | 19 | 17 | 20 | 22 | 18 | 15 |
| CFSM | 1.07 | .88 | .95 | 1.01 | 2.47 | 2.21 | 1.45 | 1.11 | 2.92 | 1.64 | 1.40 | 1.10 |
| IN. | 1.24 | .98 | 1.10 | 1.17 | 2.57 | 2.54 | 1.62 | 1.28 | 3.26 | 1.90 | 1.61 | 1.23 |

CAL YR 1981 TOTAL 6817 MEAN 18.7 MAX 88 MIN 12 CFSM 1.13 IN 15.37
WTR YR 1982 TOTAL 9091 MEAN 24.9 MAX 250 MIN 12 CFSM 1.51 IN 20.49

POTOMAC RIVER BASIN

01620500 NORTH RIVER NEAR STOKESVILLE, VA

LOCATION.--Lat 38°20'15", long 79°14'25", Augusta County, Hydrologic Unit 02070005, George Washington National Forest, on left bank 575 ft (175 m) upstream from highway bridge, 2.8 mi (4.5 km) upstream from city of Staunton dam, 3.8 mi (6.1 km) upstream from Broad Run, 5.0 mi (8.0 km) west of Stokesville, and 7.8 mi (12.6 km) upstream from Skidmore Fork.

DRAINAGE AREA.--17.2 mi² (44.5 km²).

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

REVISED RECORDS.--WSP 1903: 1960. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,054.57 ft (626.233 m) National Geodetic Vertical Datum of 1929. Prior to June 10, 1958, at site 575 ft (175 m) downstream at datum 6.0 ft (1.83 m) lower.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--36 years, 25.7 ft³/s (0.728 m³/s), 20.29 in/yr (515 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s) June 17, 1949, gage height, 10.9 ft (3.32 m), from floodmarks, site and datum then in use, from rating curve extended above 900 ft³/s (25 m³/s) on basis of computation of peak flow over dam; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 15, 16, 19-22, 1962, Sept. 7-13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 8.4 ft (2.56 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2045 | 322 9.12 | 3.90 1.189 | June 13 | 1245 | 453 12.8 | 4.17 1.271 |
| Mar. 20 | 1515 | *496 14.0 | 4.26 1.298 | | | | |

Minimum discharge, 0.36 ft³/s (0.010 m³/s) Oct. 8, 9-15; minimum gage height, 1.93 ft (0.588 m) Sept. 19-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|------|------|------|------|-------|-------|-------|-------|-------|
| 1 | .53 | 5.0 | 2.2 | 13 | 79 | 38 | 21 | 34 | 6.2 | 5.1 | 12 | 2.0 |
| 2 | .57 | 4.1 | 4.4 | 12 | 76 | 38 | 20 | 29 | 6.2 | 4.4 | 9.7 | 2.0 |
| 3 | .53 | 3.2 | 7.6 | 12 | 203 | 38 | 22 | 26 | 6.2 | 3.7 | 7.8 | 2.0 |
| 4 | .51 | 3.0 | 8.9 | 87 | 247 | 37 | 27 | 23 | 6.6 | 3.9 | 6.1 | 1.8 |
| 5 | .46 | 2.5 | 9.2 | 107 | 136 | 37 | 29 | 20 | 12 | 5.2 | 5.7 | 1.7 |
| 6 | .43 | 2.5 | 8.7 | 66 | 88 | 37 | 31 | 18 | 16 | 4.5 | 9.2 | 1.5 |
| 7 | .40 | 2.3 | 8.1 | 49 | 60 | 49 | 29 | 17 | 15 | 3.6 | 24 | 1.4 |
| 8 | .39 | 2.2 | 7.8 | 38 | 48 | 68 | 27 | 15 | 12 | 3.4 | 33 | 1.4 |
| 9 | .37 | 2.0 | 7.3 | 32 | 67 | 68 | 27 | 13 | 11 | 3.9 | 26 | 1.4 |
| 10 | .36 | 1.8 | 6.5 | 27 | 82 | 60 | 26 | 13 | 26 | 4.3 | 20 | 1.3 |
| 11 | .36 | 1.7 | 6.2 | 25 | 69 | 54 | 25 | 12 | 34 | 5.3 | 16 | 1.2 |
| 12 | .36 | 1.5 | 5.8 | 26 | 54 | 66 | 23 | 11 | 34 | 6.1 | 13 | 1.1 |
| 13 | .36 | 1.4 | 5.2 | 27 | 46 | 72 | 22 | 9.7 | 273 | 4.8 | 11 | 1.1 |
| 14 | .36 | 1.3 | 5.5 | 26 | 40 | 68 | 21 | 9.2 | 163 | 4.2 | 9.1 | 1.1 |
| 15 | .38 | 1.3 | 6.1 | 26 | 35 | 61 | 19 | 8.1 | 75 | 17 | 7.8 | 1.0 |
| 16 | .40 | 1.2 | 6.2 | 25 | 35 | 58 | 17 | 8.1 | 45 | 11 | 7.5 | .95 |
| 17 | .45 | 1.2 | 6.2 | 24 | 108 | 89 | 17 | 7.6 | 36 | 9.9 | 6.3 | .95 |
| 18 | .45 | 1.2 | 6.6 | 23 | 173 | 128 | 19 | 6.6 | 29 | 40 | 5.7 | .92 |
| 19 | .51 | 1.2 | 6.6 | 21 | 123 | 103 | 17 | 6.2 | 24 | 60 | 5.2 | .86 |
| 20 | .51 | 1.3 | 6.4 | 17 | 98 | 301 | 17 | 5.8 | 19 | 47 | 4.4 | .86 |
| 21 | .51 | 1.3 | 6.2 | 18 | 86 | 271 | 18 | 5.8 | 16 | 34 | 3.8 | .86 |
| 22 | .51 | 1.3 | 6.3 | 18 | 73 | 139 | 17 | 5.4 | 14 | 28 | 3.5 | .97 |
| 23 | .57 | 1.2 | 11 | 20 | 60 | 83 | 17 | 5.4 | 12 | 26 | 3.4 | .95 |
| 24 | .57 | 1.3 | 27 | 28 | 53 | 56 | 16 | 5.0 | 9.8 | 24 | 3.2 | .95 |
| 25 | .57 | 1.2 | 30 | 27 | 49 | 45 | 15 | 5.0 | 8.8 | 21 | 2.9 | .95 |
| 26 | 1.1 | 1.2 | 27 | 25 | 46 | 38 | 27 | 8.1 | 7.6 | 17 | 2.7 | 1.2 |
| 27 | 26 | 1.2 | 23 | 23 | 44 | 33 | 39 | 8.1 | 6.6 | 14 | 2.6 | 1.8 |
| 28 | 24 | 1.3 | 19 | 24 | 41 | 29 | 46 | 6.6 | 6.0 | 13 | 2.5 | 2.1 |
| 29 | 13 | 1.7 | 16 | 23 | --- | 26 | 45 | 5.8 | 5.8 | 11 | 2.3 | 2.0 |
| 30 | 10 | 1.8 | 14 | 21 | --- | 24 | 39 | 6.6 | 5.6 | 9.7 | 2.2 | 1.8 |
| 31 | 6.6 | --- | 13 | 26 | --- | 23 | --- | 6.2 | --- | 13 | 2.0 | --- |
| TOTAL | 92.12 | 55.4 | 324.0 | 936 | 2319 | 2237 | 735 | 360.3 | 941.4 | 458.0 | 270.6 | 40.12 |
| MEAN | 2.97 | 1.85 | 10.5 | 30.2 | 82.8 | 72.2 | 24.5 | 11.6 | 31.4 | 14.8 | 8.73 | 1.34 |
| MAX | 26 | 5.0 | 30 | 107 | 247 | 301 | 46 | 34 | 273 | 60 | 33 | 2.1 |
| MIN | .36 | 1.2 | 2.2 | 12 | 35 | 23 | 15 | 5.0 | 5.6 | 3.4 | 2.0 | .86 |
| CFSM | .17 | .11 | .61 | 1.76 | 4.81 | 4.20 | 1.42 | .67 | 1.83 | .86 | .51 | .08 |
| IN. | .20 | .12 | .70 | 2.02 | 5.02 | 4.84 | 1.59 | .78 | 2.04 | .99 | .59 | .09 |

CAL YR 1981 TOTAL 4187.77 MEAN 11.5 MAX 187 MIN .36 CFSM .67 IN 9.06
WTR YR 1982 TOTAL 8768.94 MEAN 24.0 MAX 301 MIN .36 CFSM 1.40 IN 18.96

01622000 NORTH RIVER NEAR BURKETOWN, VA

LOCATION.--Lat 38°20'25", long 78°54'50", Rockingham County, Hydrologic Unit 02070005, on right bank 0.8 mi (1.3 km) downstream from Pleasant Run, 2.8 mi (4.5 km) northeast of Burkettown, and 8.5 mi (13.7 km) upstream from Middle River.

DRAINAGE AREA.--379 mi² (982 km²).

PERIOD OF RECORD.--October 1925 to October 1972, May 1975 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1171: 1936(M). WSP 1302: 1928-29(M), 1932-34(M), 1937-38(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.49 ft (336.344 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1938, nonrecording gage at site 3.0 mi (4.8 km) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 367 ft³/s (10.39 m³/s), 13.15 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s (1,770 m³/s) June 18, 1949, gage height, 36.3 ft (11.06 m), from floodmarks, from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurements at gage heights 32.4 ft (9.88 m) and 36.3 ft (11.06 m), and contracted-opening measurement at gage height 36.3 ft (11.06 m); minimum, 16 ft³/s (0.45 m³/s) Nov. 23, 1965, result of temporary dam upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, that of June 18, 1949.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (71 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 31 | 2300 | 3240 91.8 | 7.33 2.234 | July 15 | 0400 | 4100 116 | 8.35 2.545 |
| Feb. 3 | 1830 | 4140 117 | 8.40 2.560 | July 23 | 1000 | 2620 74.2 | 6.55 1.996 |
| Mar. 20 | 1500 | 5410 153 | 9.81 2.990 | Aug. 6 | 1330 | 3960 112 | 8.20 2.499 |
| June 13 | 1330 | *7530 213 | 11.98 3.652 | | | | |

Minimum discharge, 45 ft³/s (1.27 m³/s) Oct. 17, gage height, 1.83 ft (0.558 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 56 | 150 | 76 | 168 | 1200 | 535 | 465 | 616 | 660 | 207 | 347 | 142 |
| 2 | 58 | 136 | 85 | 162 | 770 | 525 | 414 | 525 | 525 | 194 | 295 | 142 |
| 3 | 54 | 127 | 83 | 159 | 2450 | 540 | 423 | 455 | 507 | 184 | 269 | 136 |
| 4 | 58 | 119 | 83 | 553 | 2780 | 510 | 414 | 393 | 544 | 194 | 252 | 124 |
| 5 | 58 | 117 | 83 | 1340 | 1900 | 485 | 386 | 358 | 715 | 204 | 238 | 122 |
| 6 | 54 | 117 | 78 | 1070 | 1420 | 465 | 386 | 328 | 770 | 178 | 1160 | 122 |
| 7 | 56 | 111 | 80 | 820 | 1080 | 726 | 374 | 302 | 627 | 168 | 788 | 124 |
| 8 | 54 | 106 | 83 | 620 | 825 | 1020 | 358 | 280 | 490 | 256 | 748 | 122 |
| 9 | 53 | 106 | 83 | 490 | 1100 | 990 | 355 | 266 | 405 | 433 | 666 | 114 |
| 10 | 51 | 101 | 83 | 397 | 1070 | 891 | 343 | 244 | 746 | 353 | 572 | 111 |
| 11 | 54 | 101 | 83 | 340 | 935 | 792 | 328 | 224 | 896 | 485 | 470 | 111 |
| 12 | 56 | 96 | 85 | 302 | 792 | 770 | 317 | 213 | 891 | 432 | 401 | 109 |
| 13 | 54 | 96 | 83 | 284 | 682 | 770 | 306 | 204 | 4910 | 328 | 347 | 106 |
| 14 | 53 | 94 | 92 | 259 | 572 | 770 | 291 | 190 | 3650 | 269 | 310 | 104 |
| 15 | 53 | 94 | 119 | 227 | 490 | 798 | 277 | 178 | 2090 | 1490 | 291 | 101 |
| 16 | 54 | 92 | 106 | 207 | 465 | 836 | 262 | 172 | 1460 | 525 | 295 | 99 |
| 17 | 49 | 90 | 101 | 181 | 1320 | 1070 | 262 | 165 | 1140 | 475 | 259 | 96 |
| 18 | 54 | 87 | 99 | 172 | 2350 | 1280 | 280 | 156 | 852 | 652 | 241 | 96 |
| 19 | 54 | 83 | 96 | 168 | 1960 | 1260 | 262 | 156 | 660 | 920 | 224 | 96 |
| 20 | 51 | 85 | 92 | 156 | 1750 | 3480 | 255 | 159 | 515 | 1270 | 210 | 101 |
| 21 | 53 | 83 | 92 | 172 | 1600 | 4270 | 255 | 150 | 428 | 974 | 204 | 96 |
| 22 | 54 | 78 | 94 | 172 | 1380 | 2740 | 244 | 194 | 366 | 698 | 194 | 96 |
| 23 | 58 | 78 | 106 | 168 | 1150 | 2010 | 238 | 629 | 328 | 1650 | 187 | 99 |
| 24 | 58 | 80 | 111 | 172 | 946 | 1540 | 227 | 704 | 295 | 1180 | 187 | 94 |
| 25 | 58 | 80 | 142 | 172 | 803 | 1200 | 227 | 803 | 269 | 737 | 181 | 90 |
| 26 | 66 | 78 | 162 | 170 | 693 | 1000 | 358 | 594 | 262 | 550 | 172 | 101 |
| 27 | 336 | 76 | 175 | 165 | 649 | 792 | 633 | 525 | 277 | 441 | 165 | 139 |
| 28 | 248 | 78 | 168 | 172 | 600 | 649 | 842 | 441 | 238 | 382 | 159 | 99 |
| 29 | 227 | 72 | 162 | 178 | --- | 572 | 814 | 382 | 220 | 347 | 150 | 94 |
| 30 | 190 | 74 | 162 | 253 | --- | 510 | 720 | 366 | 227 | 317 | 150 | 90 |
| 31 | 168 | --- | 159 | 852 | --- | 480 | --- | 442 | --- | 400 | 144 | --- |
| TOTAL | 2600 | 2885 | 3306 | 10721 | 33732 | 34276 | 11316 | 10814 | 25963 | 16893 | 10276 | 3276 |
| MEAN | 83.9 | 96.2 | 107 | 346 | 1205 | 1106 | 377 | 349 | 865 | 545 | 331 | 109 |
| MAX | 336 | 150 | 175 | 1340 | 2780 | 4270 | 842 | 803 | 4910 | 1650 | 1160 | 142 |
| MIN | 49 | 72 | 76 | 156 | 465 | 465 | 227 | 150 | 220 | 168 | 144 | 90 |
| CFSM | .22 | .25 | .28 | .91 | 3.18 | 2.92 | 1.00 | .92 | 2.28 | 1.44 | .87 | .29 |
| IN. | .26 | .28 | .32 | 1.05 | 3.31 | 3.36 | 1.11 | 1.06 | 2.55 | 1.66 | 1.01 | .32 |

CAL YR 1981 TOTAL 64293 MEAN 176 MAX 1930 MIN 49 CFSM .46 IN 6.31
WTR YR 1982 TOTAL 166058 MEAN 455 MAX 4910 MIN 49 CFSM 1.20 IN 16.30

POTOMAC RIVER BASIN

01624300 MIDDLE RIVER NEAR VERONA, VA

LOCATION.--Lat 38°14'36", long 79°02'08", Augusta County, Hydrologic Unit 02070005, on right bank at downstream side of bridge on State Highway 742, 2.7 mi (4.3 km) downstream from Moffett Creek, and 3.2 mi (5.1 km) northwest of Verona.

DRAINAGE AREA.--178 mi² (461 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,260.78 ft (384.286 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 180 ft³/s (5.098 m³/s), 13.73 in/yr (349 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,650 ft³/s (245 m³/s) Sept. 6, 1979, gage height, 14.17 ft (4.319 m), from rating curve extended above 6,500 ft³/s (180 m³/s); minimum, 3.7 ft³/s (0.10 m³/s) Jan. 30, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (40 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2130 | 2700 76.5 | 7.60 2.316 | Mar. 20 | 1500 | 3690 105 | 9.01 2.746 |
| Feb. 17 | 2330 | 1980 56.1 | 6.46 1.969 | June 13 | 1230 | *5820 165 | 11.49 3.502 |

Minimum discharge, 28 ft³/s (0.79 m³/s) Oct. 1, 8-11, 14, 15, 17, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|-------|------|------|-------|------|------|-------|
| 1 | 31 | 71 | 42 | 82 | 724 | 183 | 213 | 260 | 118 | 115 | 104 | 63 |
| 2 | 32 | 65 | 45 | 78 | 403 | 197 | 188 | 222 | 109 | 109 | 94 | 65 |
| 3 | 32 | 60 | 49 | 77 | 1330 | 230 | 201 | 201 | 111 | 104 | 86 | 59 |
| 4 | 31 | 56 | 49 | 411 | 1410 | 222 | 251 | 168 | 142 | 104 | 81 | 58 |
| 5 | 31 | 56 | 51 | 546 | 653 | 213 | 237 | 153 | 277 | 123 | 81 | 59 |
| 6 | 32 | 53 | 53 | 324 | 456 | 208 | 230 | 139 | 343 | 110 | 109 | 57 |
| 7 | 30 | 51 | 51 | 235 | 340 | 368 | 208 | 132 | 235 | 98 | 235 | 55 |
| 8 | 30 | 49 | 51 | 177 | 274 | 603 | 192 | 126 | 172 | 98 | 155 | 55 |
| 9 | 29 | 48 | 50 | 143 | 334 | 467 | 194 | 121 | 139 | 100 | 113 | 59 |
| 10 | 29 | 46 | 48 | 102 | 384 | 368 | 183 | 110 | 439 | 100 | 100 | 55 |
| 11 | 30 | 46 | 48 | 100 | 319 | 316 | 170 | 108 | 603 | 141 | 95 | 55 |
| 12 | 31 | 46 | 47 | 90 | 268 | 310 | 160 | 102 | 653 | 162 | 90 | 54 |
| 13 | 31 | 44 | 47 | 85 | 237 | 286 | 157 | 100 | 4060 | 113 | 82 | 52 |
| 14 | 28 | 45 | 50 | 78 | 208 | 268 | 146 | 95 | 1680 | 100 | 82 | 51 |
| 15 | 29 | 43 | 66 | 72 | 185 | 271 | 139 | 92 | 770 | 97 | 79 | 52 |
| 16 | 30 | 43 | 73 | 70 | 177 | 316 | 132 | 88 | 530 | 100 | 192 | 51 |
| 17 | 29 | 43 | 69 | 66 | 794 | 526 | 131 | 90 | 428 | 100 | 134 | 49 |
| 18 | 30 | 43 | 71 | 62 | 1010 | 512 | 179 | 85 | 346 | 88 | 108 | 50 |
| 19 | 31 | 42 | 65 | 60 | 700 | 411 | 160 | 84 | 289 | 126 | 96 | 50 |
| 20 | 30 | 42 | 63 | 57 | 500 | 1850 | 155 | 88 | 246 | 137 | 86 | 52 |
| 21 | 30 | 42 | 62 | 80 | 400 | 1350 | 155 | 85 | 210 | 97 | 84 | 54 |
| 22 | 29 | 41 | 64 | 90 | 350 | 818 | 144 | 92 | 190 | 87 | 79 | 56 |
| 23 | 31 | 38 | 89 | 95 | 320 | 582 | 137 | 160 | 170 | 118 | 74 | 53 |
| 24 | 32 | 42 | 194 | 105 | 275 | 463 | 128 | 105 | 155 | 149 | 74 | 50 |
| 25 | 33 | 40 | 200 | 102 | 250 | 384 | 124 | 172 | 144 | 100 | 70 | 52 |
| 26 | 35 | 40 | 164 | 95 | 228 | 355 | 197 | 387 | 144 | 90 | 68 | 57 |
| 27 | 201 | 40 | 139 | 86 | 215 | 298 | 537 | 283 | 132 | 85 | 67 | 77 |
| 28 | 309 | 39 | 118 | 87 | 203 | 262 | 621 | 203 | 124 | 82 | 68 | 62 |
| 29 | 176 | 41 | 104 | 94 | --- | 237 | 425 | 160 | 118 | 77 | 65 | 55 |
| 30 | 109 | 38 | 91 | 136 | --- | 225 | 319 | 144 | 121 | 95 | 64 | 52 |
| 31 | 84 | --- | 83 | 388 | --- | 213 | --- | 137 | --- | 114 | 63 | --- |
| TOTAL | 1675 | 1393 | 2396 | 4273 | 12947 | 13312 | 6413 | 4492 | 13198 | 3319 | 2978 | 1669 |
| MEAN | 54.0 | 46.4 | 77.3 | 138 | 462 | 429 | 214 | 145 | 440 | 107 | 96.1 | 55.6 |
| MAX | 309 | 71 | 200 | 546 | 1410 | 1850 | 621 | 387 | 4060 | 162 | 235 | 77 |
| MIN | 28 | 38 | 42 | 57 | 177 | 183 | 124 | 84 | 109 | 77 | 63 | 49 |
| CFSM | .30 | .26 | .43 | .78 | 2.60 | 2.41 | 1.20 | .82 | 2.47 | .60 | .54 | .31 |
| IN. | .35 | .29 | .50 | .89 | 2.71 | 2.78 | 1.34 | .94 | 2.76 | .69 | .62 | .35 |
| CAL YR 1981 | TOTAL | 23554 | MEAN | 64.5 | MAX | 669 | MIN | 27 | CFSM | .36 | IN | 4.92 |
| WTR YR 1982 | TOTAL | 68065 | MEAN | 186 | MAX | 4060 | MIN | 28 | CFSM | 1.05 | IN | 14.22 |

01624800 CHRISTIANS CREEK NEAR FISHERSVILLE, VA

LOCATION.--Lat 38°07'42", long 78°59'41", Augusta County, Hydrologic Unit 02070005, on right bank at upstream side of bridge on State Highway 794, 2.2 mi (3.5 km) northwest of Fishersville, and 5.6 mi (9.0 km) upstream from mouth.

DRAINAGE AREA.--70.1 mi² (181.6 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 68.3 ft³/s (1.934 m³/s), 13.23 in/yr (336 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,850 ft³/s (109 m³/s) Oct. 5, 1972, gage height, 12.91 ft (3.935 m), from rating curve extended above 2,400 ft³/s (68 m³/s); minimum, 3.8 ft³/s (0.11 m³/s) Jan. 11, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1830 | 1170 33.1 | 5.92 1.804 | Mar. 20 | 0930 | *1830 51.8 | 7.79 2.374 |
| Feb. 17 | 1730 | 1000 28.3 | 5.42 1.652 | June 13 | 1100 | 1650 46.7 | 7.29 2.222 |

Minimum discharge, 7.7 ft³/s (0.22 m³/s) Dec. 10, 11, gage height, 0.86 ft (0.262 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|-----------|----------|--------|----------|----------|------|------|------|------|------|
| 1 | 13 | 19 | 17 | 24 | 148 | 69 | 84 | 44 | 36 | 72 | 50 | 33 |
| 2 | 13 | 19 | 20 | 24 | 70 | 97 | 73 | 40 | 33 | 58 | 42 | 31 |
| 3 | 13 | 18 | 18 | 25 | 506 | 104 | 76 | 38 | 60 | 55 | 38 | 28 |
| 4 | 13 | 18 | 17 | 72 | 214 | 84 | 67 | 35 | 70 | 58 | 35 | 26 |
| 5 | 13 | 18 | 18 | 62 | 122 | 79 | 63 | 34 | 136 | 63 | 39 | 26 |
| 6 | 13 | 18 | 17 | 45 | 98 | 77 | 63 | 32 | 70 | 54 | 65 | 26 |
| 7 | 12 | 17 | 17 | 39 | 79 | 259 | 57 | 31 | 56 | 49 | 53 | 27 |
| 8 | 13 | 16 | 16 | 32 | 69 | 194 | 56 | 31 | 49 | 49 | 44 | 26 |
| 9 | 13 | 17 | 16 | 27 | 91 | 143 | 60 | 30 | 44 | 51 | 43 | 27 |
| 10 | 13 | 16 | 14 | 25 | 80 | 115 | 55 | 28 | 99 | 51 | 39 | 26 |
| 11 | 13 | 16 | 15 | 12 | 67 | 103 | 52 | 27 | 116 | 44 | 35 | 25 |
| 12 | 14 | 16 | 15 | 11 | 59 | 106 | 50 | 26 | 382 | 43 | 39 | 25 |
| 13 | 13 | 16 | 14 | 11 | 60 | 92 | 48 | 25 | 1320 | 41 | 33 | 24 |
| 14 | 13 | 16 | 17 | 10 | 55 | 83 | 46 | 25 | 414 | 41 | 34 | 24 |
| 15 | 13 | 16 | 31 | 10 | 52 | 98 | 44 | 24 | 236 | 43 | 114 | 25 |
| 16 | 13 | 16 | 29 | 10 | 62 | 126 | 43 | 23 | 177 | 43 | 91 | 24 |
| 17 | 13 | 16 | 24 | 10 | 355 | 132 | 47 | 23 | 184 | 39 | 60 | 23 |
| 18 | 13 | 16 | 22 | 11 | 225 | 104 | 55 | 22 | 145 | 48 | 78 | 21 |
| 19 | 14 | 15 | 18 | 11 | 198 | 95 | 42 | 23 | 125 | 63 | 41 | 21 |
| 20 | 13 | 16 | 16 | 11 | 164 | 726 | 41 | 29 | 109 | 43 | 36 | 24 |
| 21 | 14 | 16 | 17 | 13 | 129 | 321 | 40 | 25 | 99 | 41 | 32 | 24 |
| 22 | 13 | 15 | 21 | 22 | 106 | 181 | 37 | 99 | 92 | 37 | 30 | 27 |
| 23 | 14 | 15 | 53 | 25 | 92 | 144 | 36 | 152 | 86 | 47 | 28 | 24 |
| 24 | 15 | 16 | 52 | 26 | 84 | 124 | 34 | 57 | 80 | 42 | 28 | 22 |
| 25 | 14 | 16 | 38 | 26 | 76 | 114 | 33 | 47 | 75 | 35 | 28 | 22 |
| 26 | 18 | 16 | 31 | 23 | 69 | 128 | 68 | 42 | 71 | 32 | 25 | 45 |
| 27 | 115 | 17 | 28 | 24 | 70 | 101 | 154 | 42 | 69 | 31 | 25 | 59 |
| 28 | 56 | 16 | 25 | 28 | 70 | 91 | 82 | 39 | 66 | 31 | 28 | 27 |
| 29 | 28 | 15 | 23 | 38 | --- | 86 | 55 | 39 | 68 | 30 | 31 | 24 |
| 30 | 23 | 15 | 21 | 67 | --- | 82 | 48 | 49 | 71 | 84 | 31 | 22 |
| 31 | 20 | --- | 21 | 219 | --- | 82 | --- | 41 | --- | 90 | 32 | --- |
| TOTAL | 591 | 492 | 701 | 993 | 3470 | 4340 | 1709 | 1222 | 4638 | 1508 | 1327 | 808 |
| MEAN | 19.1 | 16.4 | 22.6 | 32.0 | 124 | 140 | 57.0 | 39.4 | 155 | 48.6 | 42.8 | 26.9 |
| MAX | 115 | 19 | 53 | 219 | 506 | 726 | 154 | 152 | 1320 | 90 | 114 | 59 |
| MIN | 12 | 15 | 14 | 10 | 52 | 69 | 33 | 22 | 33 | 30 | 25 | 21 |
| CFSM | .27 | .23 | .32 | .46 | 1.77 | 2.00 | .81 | .56 | 2.21 | .69 | .61 | .38 |
| IN. | .31 | .26 | .37 | .53 | 1.84 | 2.30 | .91 | .65 | 2.46 | .80 | .70 | .43 |
| CAL YR 1981 | TOTAL | 7692 | MEAN 21.1 | MAX 234 | MIN 11 | CFSM .30 | IN 4.08 | | | | | |
| WTR YR 1982 | TOTAL | 21799 | MEAN 59.7 | MAX 1320 | MIN 10 | CFSM .85 | IN 11.57 | | | | | |

01625000 MIDDLE RIVER NEAR GROTTOS, VA

LOCATION.--Lat 38°15'42", long 78°51'44", Augusta County, Hydrologic Unit 02070005, on left bank at upstream side of bridge on State Highway 769 at Mount Meridian, 1.8 mi (2.9 km) upstream from mouth, and 2.0 mi (3.2 km) west of Grottoes.

DRAINAGE AREA.--375 mi² (971 km²).

PERIOD OF RECORD.--April 1927 to current year. Records for February 1925 to September 1926, published in WSP 601 and 621, are unreliable and should not be used.

REVISED RECORDS.--WSP 1051: 1928-29, 1930(M), 1932, 1935-37, 1938(M), 1940. WSP 1171: 1933. WSP 1302: 1928-29(M), 1931-34(M). WSP 2103: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,061.51 ft (323.548 m) National Geodetic Vertical Datum of 1929.
Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--55 years, 307 ft³/s (8.694 m³/s), 11.12 in/yr (282 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s (694 m³/s) Mar. 18, 1936, gage height, 28.57 ft (8.708 m), from floodmarks, from rating curve extended above 15,000 ft³/s (420 m³/s); minimum, 19 ft³/s (0.54 m³/s) Jan. 12, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, that of Mar. 18, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85 m³/s) and maximum (*):

| Date | Time | Discharge | | Gage height | | Date | Time | Discharge | | Gage height | |
|---------|------|----------------------|---------------------|-------------|-------|---------|------|----------------------|---------------------|-------------|-------|
| | | (ft ³ /s) | (m ³ /s) | (ft) | (m) | | | (ft ³ /s) | (m ³ /s) | (ft) | (m) |
| Feb. 4 | 0600 | 3230 | 91.5 | 10.33 | 3.149 | June 14 | 0530 | *6930 | 196 | 14.51 | 4.423 |
| Mar. 20 | 1900 | 5080 | 144 | 12.64 | 3.853 | Aug. 16 | 0930 | 3760 | 106 | 11.05 | 3.368 |

Minimum discharge, 52 ft³/s (1.47 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|------|-------|--------|----------|----------|-------|------|------|------|
| 1 | 53 | 146 | 81 | 146 | 1170 | 374 | 409 | 380 | 209 | 250 | 272 | 132 |
| 2 | 61 | 130 | 98 | 149 | 634 | 398 | 365 | 334 | 192 | 224 | 197 | 132 |
| 3 | 62 | 123 | 100 | 143 | 1150 | 480 | 351 | 302 | 183 | 212 | 215 | 129 |
| 4 | 58 | 117 | 99 | 219 | 2420 | 433 | 382 | 277 | 322 | 213 | 169 | 118 |
| 5 | 60 | 111 | 101 | 770 | 1010 | 406 | 372 | 249 | 381 | 225 | 159 | 115 |
| 6 | 61 | 110 | 100 | 527 | 698 | 381 | 362 | 234 | 474 | 232 | 200 | 116 |
| 7 | 58 | 104 | 99 | 384 | 567 | 659 | 331 | 222 | 376 | 201 | 308 | 113 |
| 8 | 61 | 99 | 99 | 309 | 486 | 1040 | 310 | 217 | 295 | 194 | 389 | 111 |
| 9 | 58 | 97 | 97 | 253 | 541 | 771 | 311 | 209 | 247 | 248 | 246 | 111 |
| 10 | 60 | 96 | 95 | 220 | 614 | 608 | 307 | 198 | 281 | 221 | 210 | 114 |
| 11 | 62 | 94 | 88 | 200 | 531 | 517 | 290 | 187 | 692 | 212 | 183 | 111 |
| 12 | 64 | 93 | 90 | 170 | 478 | 509 | 275 | 181 | 661 | 308 | 179 | 108 |
| 13 | 65 | 92 | 91 | 150 | 444 | 463 | 266 | 174 | 3960 | 249 | 169 | 107 |
| 14 | 64 | 89 | 102 | 145 | 416 | 425 | 258 | 169 | 4510 | 203 | 157 | 105 |
| 15 | 65 | 88 | 137 | 140 | 370 | 422 | 247 | 163 | 1330 | 192 | 616 | 105 |
| 16 | 65 | 87 | 161 | 135 | 360 | 509 | 236 | 158 | 858 | 189 | 1270 | 106 |
| 17 | 66 | 86 | 150 | 130 | 752 | 691 | 235 | 154 | 737 | 185 | 703 | 103 |
| 18 | 66 | 87 | 138 | 128 | 1820 | 686 | 274 | 155 | 595 | 183 | 565 | 101 |
| 19 | 66 | 83 | 135 | 122 | 1130 | 585 | 274 | 150 | 499 | 190 | 287 | 100 |
| 20 | 69 | 85 | 130 | 140 | 1030 | 2700 | 252 | 160 | 438 | 263 | 229 | 104 |
| 21 | 70 | 85 | 128 | 170 | 785 | 2890 | 249 | 161 | 390 | 202 | 201 | 108 |
| 22 | 71 | 82 | 140 | 190 | 674 | 1410 | 242 | 158 | 352 | 174 | 184 | 115 |
| 23 | 74 | 82 | 158 | 210 | 585 | 969 | 228 | 374 | 330 | 202 | 171 | 119 |
| 24 | 80 | 82 | 248 | 205 | 524 | 771 | 219 | 248 | 303 | 282 | 164 | 108 |
| 25 | 78 | 88 | 291 | 200 | 482 | 646 | 211 | 231 | 286 | 214 | 160 | 101 |
| 26 | 83 | 86 | 261 | 190 | 435 | 631 | 301 | 283 | 270 | 175 | 149 | 114 |
| 27 | 219 | 83 | 222 | 185 | 406 | 537 | 708 | 414 | 268 | 163 | 145 | 238 |
| 28 | 531 | 83 | 198 | 205 | 399 | 478 | 862 | 318 | 251 | 157 | 148 | 161 |
| 29 | 344 | 82 | 176 | 250 | --- | 443 | 598 | 263 | 241 | 153 | 141 | 125 |
| 30 | 230 | 78 | 160 | 396 | --- | 415 | 454 | 245 | 271 | 193 | 133 | 114 |
| 31 | 170 | --- | 142 | 596 | --- | 400 | --- | 234 | --- | 346 | 133 | --- |
| TOTAL | 3194 | 2848 | 4315 | 7377 | 20911 | 22647 | 10179 | 7202 | 20202 | 6655 | 8452 | 3544 |
| MEAN | 103 | 94.9 | 139 | 238 | 747 | 731 | 339 | 232 | 673 | 215 | 273 | 118 |
| MAX | 531 | 146 | 291 | 770 | 2420 | 2890 | 862 | 414 | 4510 | 346 | 1270 | 238 |
| MIN | 53 | 78 | 81 | 122 | 360 | 374 | 211 | 150 | 183 | 153 | 133 | 100 |
| CFSM | .28 | .25 | .37 | .64 | 1.99 | 1.95 | .90 | .62 | 1.80 | .57 | .73 | .32 |
| IN. | .32 | .28 | .43 | .73 | 2.07 | 2.25 | 1.01 | .71 | 2.00 | .66 | .84 | .35 |
| CAL YR 1981 | TOTAL | 40599 | MEAN 111 | MAX | 535 | MIN 49 | CFSM .30 | IN 4.03 | | | | |
| WTR YR 1982 | TOTAL | 117526 | MEAN 322 | MAX | 4510 | MIN 53 | CFSM .86 | IN 11.66 | | | | |

01626000 SOUTH RIVER NEAR WAYNESBORO, VA

LOCATION.--Lat 38°03'27", long 78°54'30", Waynesboro City, Hydrologic Unit 02070005, on right bank 80 ft (20 m) downstream from bridge on State Highway 664, 1.3 mi (2.1 km) southwest of post office at Waynesboro, and 2.4 mi (3.9 km) downstream from Back Creek.

DRAINAGE AREA.--127 mi² (329 km²), of which 41 mi² (106 km²) are above flood-detention structures.

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

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,296.20 ft (395.082 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 22 to Feb. 26, which are fair. Flow from 41 mi² (106 km²) above station slightly regulated by flood-detention reservoirs (sixteen of which were built by Soil Conservation Service between 1954 and 1961). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--30 years, 136 ft³/s (3.852 m³/s), 14.54 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 ft³/s (493 m³/s) Aug. 20, 1969, gage height, 15.27 ft (4.654 m), from rating curve extended above 4,200 ft³/s (120 m³/s) on basis of contracted-opening measurement at gage height 13.95 ft (4.252 m); minimum, 7.0 ft³/s (0.20 m³/s) July 18, 1966; minimum daily, 17 ft³/s (0.48 m³/s) Aug. 8, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 14.3 ft (4.36 m), from floodmarks, discharge, 14,500 ft³/s (411 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) at 0200 hours June 14, gage height, 5.60 ft (1.707 m), no other peak above base of 1,000 ft³/s (28 m³/s); minimum, 27 ft³/s (0.76 m³/s) Oct. 10, gage height, 2.34 ft (0.713 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 29 | 57 | 36 | 93 | 290 | 154 | 164 | 164 | 100 | 125 | 72 | 45 |
| 2 | 30 | 53 | 39 | 108 | 220 | 164 | 151 | 149 | 87 | 91 | 59 | 44 |
| 3 | 30 | 50 | 39 | 111 | 350 | 189 | 166 | 137 | 85 | 85 | 55 | 42 |
| 4 | 30 | 47 | 38 | 174 | 520 | 174 | 184 | 125 | 100 | 85 | 51 | 41 |
| 5 | 30 | 45 | 39 | 250 | 400 | 169 | 164 | 115 | 164 | 102 | 50 | 41 |
| 6 | 30 | 45 | 38 | 206 | 290 | 161 | 164 | 108 | 159 | 89 | 55 | 41 |
| 7 | 30 | 42 | 37 | 176 | 220 | 199 | 151 | 102 | 132 | 78 | 82 | 41 |
| 8 | 31 | 41 | 37 | 151 | 190 | 253 | 141 | 100 | 115 | 74 | 66 | 39 |
| 9 | 30 | 39 | 36 | 132 | 175 | 237 | 144 | 95 | 102 | 76 | 70 | 39 |
| 10 | 28 | 38 | 34 | 102 | 160 | 222 | 137 | 89 | 166 | 74 | 61 | 39 |
| 11 | 31 | 38 | 35 | 85 | 140 | 209 | 127 | 85 | 258 | 72 | 55 | 39 |
| 12 | 29 | 38 | 35 | 78 | 128 | 211 | 120 | 80 | 248 | 68 | 76 | 39 |
| 13 | 29 | 37 | 34 | 72 | 120 | 196 | 115 | 78 | 939 | 64 | 64 | 39 |
| 14 | 29 | 37 | 37 | 68 | 115 | 184 | 113 | 76 | 930 | 62 | 59 | 39 |
| 15 | 29 | 37 | 50 | 64 | 108 | 186 | 106 | 72 | 566 | 64 | 93 | 38 |
| 16 | 29 | 37 | 55 | 60 | 112 | 206 | 102 | 68 | 407 | 64 | 68 | 38 |
| 17 | 29 | 37 | 51 | 58 | 190 | 227 | 104 | 68 | 319 | 61 | 62 | 38 |
| 18 | 29 | 36 | 51 | 58 | 570 | 211 | 117 | 66 | 261 | 64 | 68 | 38 |
| 19 | 30 | 36 | 45 | 59 | 460 | 206 | 104 | 66 | 217 | 100 | 59 | 38 |
| 20 | 29 | 36 | 44 | 60 | 440 | 290 | 100 | 82 | 186 | 72 | 55 | 39 |
| 21 | 29 | 36 | 44 | 64 | 400 | 363 | 97 | 76 | 164 | 70 | 51 | 39 |
| 22 | 29 | 37 | 50 | 70 | 340 | 339 | 93 | 78 | 146 | 61 | 48 | 42 |
| 23 | 31 | 36 | 82 | 70 | 270 | 287 | 89 | 154 | 134 | 57 | 48 | 41 |
| 24 | 33 | 36 | 117 | 73 | 230 | 256 | 87 | 97 | 122 | 57 | 48 | 38 |
| 25 | 34 | 36 | 106 | 74 | 180 | 232 | 85 | 89 | 115 | 55 | 48 | 38 |
| 26 | 38 | 36 | 93 | 72 | 171 | 243 | 125 | 80 | 108 | 51 | 47 | 48 |
| 27 | 181 | 35 | 85 | 70 | 171 | 217 | 202 | 80 | 104 | 50 | 47 | 74 |
| 28 | 176 | 36 | 76 | 70 | 166 | 194 | 245 | 100 | 97 | 50 | 47 | 50 |
| 29 | 97 | 35 | 70 | 75 | --- | 181 | 211 | 108 | 100 | 48 | 45 | 42 |
| 30 | 74 | 34 | 64 | 80 | --- | 171 | 184 | 108 | 97 | 68 | 44 | 41 |
| 31 | 64 | --- | 64 | 108 | --- | 166 | --- | 100 | --- | 80 | 45 | --- |
| TOTAL | 1377 | 1183 | 1661 | 2991 | 7126 | 6697 | 4092 | 2995 | 6728 | 2217 | 1798 | 1250 |
| MEAN | 44.4 | 39.4 | 53.6 | 96.5 | 255 | 216 | 136 | 96.6 | 224 | 71.5 | 58.0 | 41.7 |
| MAX | 181 | 57 | 117 | 250 | 570 | 363 | 245 | 164 | 939 | 125 | 93 | 74 |
| MIN | 28 | 34 | 34 | 58 | 108 | 154 | 85 | 66 | 85 | 48 | 44 | 38 |
| CFSM | .35 | .31 | .42 | .76 | 2.01 | 1.70 | 1.07 | .76 | 1.76 | .56 | .46 | .33 |
| IN. | .40 | .35 | .49 | .88 | 2.09 | 1.96 | 1.20 | .88 | 1.97 | .65 | .53 | .37 |
| CAL YR 1981 | TOTAL | 18251 | MEAN | 50.0 | MAX | 312 | MIN | 27 | CFSM | .39 | IN | 5.35 |
| WTR YR 1982 | TOTAL | 40115 | MEAN | 110 | MAX | 939 | MIN | 28 | CFSM | .87 | IN | 11.75 |

POTOMAC RIVER BASIN

01626850 SOUTH RIVER NEAR DOOMS, VA

LOCATION.--Lat 38°05'19", long 78°52'38", Augusta County, Hydrologic Unit 02070005, on left bank at downstream side of Hopeman Parkway Road bridge, 1.1 mi (1.8 km) downstream from Steele Run, and 1.6 mi (2.6 km) southwest of Dooms.

DRAINAGE AREA.--149 mi² (386 km²).

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,247.04 ft (380.098 m) National Geodetic Vertical Datum of 1929 (Norfolk and Western Railway bench mark). Prior to Sept. 18, 1980, nonrecording gage at site 30 ft (10 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 193 ft³/s (5.466 m³/s), 17.59 in/yr (447 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 8,000 ft³/s (227 m³/s) Mar. 19, 1975, gage height, 12.02 ft (3.664 m); minimum, 42 ft³/s (1.19 m³/s) Aug. 29, 30, 1981, gage height, 2.17 ft (0.661 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1930 | 1110 31.4 | 5.13 1.564 | June 13 | 1130 | *1780 50.4 | 6.65 2.027 |
| Mar. 20 | 0930 | 1170 33.1 | 5.28 1.609 | | | | |

Minimum discharge, 45 ft³/s (1.27 m³/s) Oct. 22, gage height, 2.19 ft (0.668 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 51 | 85 | 61 | 130 | 448 | 198 | 207 | 220 | 121 | 162 | 101 | 61 |
| 2 | 50 | 80 | 63 | 143 | 326 | 207 | 191 | 201 | 109 | 130 | 87 | 61 |
| 3 | 50 | 75 | 63 | 146 | 598 | 239 | 204 | 185 | 182 | 112 | 80 | 59 |
| 4 | 50 | 72 | 63 | 217 | 777 | 220 | 233 | 169 | 169 | 114 | 75 | 57 |
| 5 | 51 | 68 | 63 | 332 | 483 | 217 | 204 | 156 | 262 | 132 | 72 | 57 |
| 6 | 51 | 68 | 59 | 271 | 367 | 204 | 201 | 146 | 217 | 118 | 75 | 57 |
| 7 | 50 | 68 | 61 | 226 | 294 | 271 | 188 | 143 | 172 | 104 | 109 | 57 |
| 8 | 50 | 66 | 59 | 191 | 252 | 338 | 178 | 137 | 146 | 96 | 90 | 55 |
| 9 | 53 | 66 | 59 | 169 | 242 | 313 | 178 | 130 | 134 | 98 | 92 | 57 |
| 10 | 49 | 63 | 55 | 127 | 223 | 290 | 175 | 124 | 230 | 96 | 86 | 57 |
| 11 | 53 | 61 | 55 | 110 | 194 | 271 | 162 | 118 | 319 | 98 | 74 | 55 |
| 12 | 51 | 61 | 57 | 105 | 178 | 274 | 153 | 112 | 370 | 94 | 95 | 55 |
| 13 | 50 | 61 | 55 | 95 | 172 | 255 | 146 | 109 | 1610 | 88 | 85 | 55 |
| 14 | 48 | 59 | 68 | 88 | 162 | 236 | 143 | 104 | 1410 | 85 | 80 | 55 |
| 15 | 49 | 59 | 77 | 80 | 156 | 242 | 134 | 104 | 769 | 87 | 121 | 55 |
| 16 | 50 | 61 | 82 | 76 | 159 | 271 | 134 | 98 | 515 | 87 | 101 | 52 |
| 17 | 50 | 59 | 75 | 73 | 483 | 303 | 140 | 95 | 396 | 82 | 90 | 52 |
| 18 | 51 | 59 | 75 | 72 | 735 | 281 | 153 | 92 | 329 | 95 | 98 | 52 |
| 19 | 53 | 59 | 70 | 71 | 550 | 271 | 137 | 95 | 271 | 124 | 80 | 52 |
| 20 | 52 | 59 | 68 | 74 | 539 | 634 | 130 | 109 | 230 | 95 | 75 | 55 |
| 21 | 53 | 59 | 68 | 82 | 452 | 566 | 130 | 104 | 201 | 95 | 70 | 55 |
| 22 | 52 | 57 | 75 | 88 | 374 | 480 | 124 | 115 | 182 | 85 | 68 | 63 |
| 23 | 58 | 61 | 101 | 92 | 319 | 399 | 118 | 191 | 169 | 82 | 68 | 57 |
| 24 | 57 | 59 | 150 | 92 | 287 | 348 | 118 | 130 | 156 | 80 | 66 | 55 |
| 25 | 60 | 57 | 140 | 91 | 252 | 313 | 115 | 115 | 146 | 77 | 66 | 52 |
| 26 | 82 | 57 | 124 | 91 | 223 | 319 | 169 | 107 | 137 | 75 | 63 | 130 |
| 27 | 316 | 57 | 115 | 89 | 217 | 284 | 271 | 107 | 130 | 72 | 63 | 104 |
| 28 | 252 | 57 | 107 | 92 | 214 | 249 | 326 | 124 | 128 | 70 | 63 | 70 |
| 29 | 137 | 55 | 98 | 98 | --- | 233 | 278 | 140 | 130 | 70 | 61 | 61 |
| 30 | 107 | 55 | 90 | 107 | --- | 217 | 239 | 134 | 132 | 143 | 61 | 61 |
| 31 | 92 | --- | 87 | 150 | --- | 210 | --- | 124 | --- | 124 | 61 | --- |
| TOTAL | 2278 | 1883 | 2443 | 3868 | 9676 | 9153 | 5279 | 4038 | 9472 | 3070 | 2476 | 1824 |
| MEAN | 73.5 | 62.8 | 78.8 | 125 | 346 | 295 | 176 | 130 | 316 | 99.0 | 79.9 | 60.8 |
| MAX | 316 | 85 | 150 | 332 | 777 | 634 | 326 | 220 | 1610 | 162 | 121 | 130 |
| MIN | 48 | 55 | 55 | 71 | 156 | 198 | 115 | 92 | 109 | 70 | 61 | 52 |
| CFSM | .49 | .42 | .53 | .84 | 2.32 | 1.98 | 1.18 | .87 | 2.12 | .66 | .54 | .41 |
| IN. | .57 | .47 | .61 | .97 | 2.42 | 2.29 | 1.32 | 1.01 | 2.36 | .77 | .62 | .46 |
| CAL YR 1981 | TOTAL | 29392 | MEAN | 80.5 | MAX | 474 | MIN | 44 | CFSM | .54 | IN | 7.34 |
| WTR YR 1982 | TOTAL | 55460 | MEAN | 152 | MAX | 1610 | MIN | 48 | CFSM | 1.02 | IN | 13.85 |

01627500 SOUTH RIVER AT HARRISTON, VA

LOCATION.--Lat 38°13'07", long 78°50'13", Augusta County, Hydrologic Unit 02070005, on left bank 100 ft (30 m) downstream from bridge on State Highway 778, 0.3 mi (0.5 km) northwest of Harrison, 0.6 mi (1.0 km) downstream from Paine Run, and 7.2 mi (11.6 km) upstream from confluence with North River.

DRAINAGE AREA.--212 mi² (549 km²).

PERIOD OF RECORD.--February 1925 to September 1951, October 1968 to current year.

REVISED RECORDS.--WSP 1171: 1926(M), 1927-28, 1929-32(M), 1933, 1934(M), 1935, 1937. WSP 1302: 1937(M), 1938(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,129.87 ft (344.384 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 250 ft³/s (7.080 m³/s), 16.01 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s (654 m³/s) Oct. 15, 1942, gage height, 17.2 ft (5.24 m), from rating curve extended above 10,000 ft³/s (280 m³/s); minimum, 17 ft³/s (0.48 m³/s) Nov. 14, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1870 and 1877 reached a stage of about 18.8 ft (5.73 m), from information by observer in 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1700 | 1340 37.9 | 5.36 1.634 | Mar. 20 | 1430 | 1770 50.1 | 5.97 1.820 |
| Feb. 17 | 2200 | 1280 36.2 | 5.27 1.606 | June 13 | 1600 | *2480 70.2 | 6.90 2.103 |

Minimum discharge, 59 ft³/s (1.67 m³/s) Oct. 14, 15, 17-23, gage height, 2.33 ft (0.710 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 64 | 108 | 68 | 141 | 555 | 258 | 282 | 279 | 152 | 169 | 123 | 77 |
| 2 | 65 | 99 | 74 | 170 | 398 | 262 | 255 | 250 | 147 | 145 | 106 | 75 |
| 3 | 62 | 93 | 73 | 176 | 937 | 305 | 249 | 229 | 139 | 134 | 103 | 73 |
| 4 | 63 | 89 | 70 | 214 | 992 | 291 | 287 | 207 | 265 | 134 | 91 | 69 |
| 5 | 63 | 85 | 73 | 401 | 657 | 279 | 260 | 192 | 343 | 137 | 87 | 68 |
| 6 | 64 | 82 | 70 | 355 | 495 | 267 | 252 | 180 | 307 | 145 | 90 | 68 |
| 7 | 63 | 80 | 68 | 297 | 386 | 334 | 239 | 172 | 247 | 123 | 125 | 68 |
| 8 | 63 | 78 | 68 | 248 | 323 | 464 | 224 | 168 | 215 | 117 | 114 | 68 |
| 9 | 63 | 77 | 67 | 217 | 316 | 437 | 221 | 160 | 192 | 120 | 103 | 67 |
| 10 | 61 | 75 | 66 | 178 | 287 | 401 | 218 | 152 | 256 | 118 | 107 | 67 |
| 11 | 63 | 74 | 64 | 145 | 249 | 373 | 203 | 145 | 419 | 129 | 98 | 67 |
| 12 | 62 | 73 | 65 | 130 | 226 | 373 | 192 | 141 | 424 | 119 | 110 | 66 |
| 13 | 61 | 72 | 65 | 110 | 220 | 347 | 182 | 133 | 2040 | 107 | 110 | 66 |
| 14 | 60 | 71 | 69 | 105 | 206 | 321 | 179 | 129 | 1840 | 103 | 99 | 65 |
| 15 | 60 | 70 | 93 | 98 | 195 | 320 | 169 | 127 | 1080 | 102 | 132 | 66 |
| 16 | 60 | 70 | 97 | 95 | 198 | 357 | 161 | 121 | 715 | 102 | 134 | 65 |
| 17 | 60 | 70 | 91 | 92 | 581 | 404 | 162 | 117 | 538 | 99 | 107 | 65 |
| 18 | 59 | 69 | 87 | 90 | 1070 | 389 | 180 | 115 | 430 | 98 | 133 | 64 |
| 19 | 60 | 68 | 84 | 90 | 833 | 372 | 168 | 115 | 348 | 137 | 107 | 64 |
| 20 | 60 | 69 | 78 | 95 | 822 | 1010 | 157 | 129 | 290 | 115 | 95 | 67 |
| 21 | 60 | 68 | 79 | 108 | 680 | 1110 | 155 | 131 | 250 | 107 | 91 | 66 |
| 22 | 60 | 67 | 84 | 120 | 550 | 850 | 148 | 133 | 223 | 101 | 86 | 77 |
| 23 | 62 | 70 | 98 | 122 | 455 | 649 | 143 | 204 | 206 | 94 | 86 | 71 |
| 24 | 66 | 70 | 162 | 125 | 396 | 531 | 140 | 168 | 189 | 92 | 85 | 68 |
| 25 | 64 | 69 | 168 | 120 | 345 | 453 | 137 | 150 | 178 | 89 | 82 | 65 |
| 26 | 76 | 68 | 154 | 115 | 296 | 457 | 181 | 137 | 171 | 85 | 80 | 94 |
| 27 | 283 | 66 | 142 | 110 | 283 | 396 | 302 | 131 | 160 | 82 | 79 | 177 |
| 28 | 390 | 65 | 132 | 112 | 281 | 341 | 438 | 147 | 153 | 80 | 79 | 98 |
| 29 | 188 | 66 | 122 | 120 | --- | 312 | 375 | 160 | 153 | 78 | 77 | 79 |
| 30 | 138 | 65 | 112 | 142 | --- | 290 | 317 | 175 | 151 | 139 | 76 | 76 |
| 31 | 120 | --- | 108 | 211 | --- | 281 | --- | 160 | --- | 156 | 77 | --- |
| TOTAL | 2743 | 2246 | 2851 | 4852 | 13232 | 13234 | 6576 | 4957 | 12221 | 3556 | 3072 | 2226 |
| MEAN | 88.5 | 74.9 | 92.0 | 157 | 473 | 427 | 219 | 160 | 407 | 115 | 99.1 | 74.2 |
| MAX | 390 | 108 | 168 | 401 | 1070 | 1110 | 438 | 279 | 2040 | 169 | 134 | 177 |
| MIN | 59 | 65 | 64 | 90 | 195 | 258 | 137 | 115 | 139 | 78 | 76 | 64 |
| CFSM | .42 | .35 | .43 | .74 | 2.23 | 2.01 | 1.03 | .76 | 1.92 | .54 | .47 | .35 |
| IN. | .48 | .39 | .50 | .85 | 2.32 | 2.32 | 1.15 | .87 | 2.14 | .62 | .54 | .39 |

| | | | | | | | | | |
|-------------|-------|-------|----------|-----|------|--------|----------|----|-------|
| CAL YR 1981 | TOTAL | 36487 | MEAN 100 | MAX | 462 | MIN 55 | CFSM .47 | IN | 6.40 |
| WTR YR 1982 | TOTAL | 71766 | MEAN 197 | MAX | 2040 | MIN 59 | CFSM .93 | IN | 12.59 |

POTOMAC RIVER BASIN

01628060 WHITE OAK RUN NEAR GROTTOS, VA

LOCATION.--Lat 38°15'01", long 78°44'57", Rockingham County, Hydrologic Unit 02070005, Shenandoah National Park, on left bank 700 ft (213 m) upstream from Madison Run, 0.2 mi (0.3 km) south of Madison Run Forest Trail, 1.4 mi (2.3 km) upstream from southwest boundary of Shenandoah National Park, and 4.3 mi (6.9 km) southeast of Grottoes.

DRAINAGE AREA.--1.94 mi² (5.02 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from topographic map.

REMARKS.--Records good except those below 1.0 ft³/s (0.028 m³/s), which are fair. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 255 ft³/s (7.22 m³/s) June 13, 1982, gage height, 2.85 ft (0.869 m); no flow many days in 1980-82.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft³/s (0.85 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 17 | 2315 | 30 0.85 | 1.97 0.600 | June 13 | 1330 | *255 7.22 | 2.85 0.869 |
| Mar. 21 | 0430 | 51 1.44 | 2.15 .655 | | | | |

No flow many days during October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|------|
| 1 | .00 | .07 | .04 | .89 | 1.5 | 2.9 | 2.5 | 5.0 | .34 | .20 | 6.5 | .13 |
| 2 | .00 | .06 | .04 | 1.2 | 1.7 | 3.2 | 2.2 | 4.0 | .28 | .12 | 3.8 | .12 |
| 3 | .00 | .05 | .05 | 1.3 | 9.1 | 3.4 | 2.3 | 3.2 | .26 | .10 | 2.6 | .11 |
| 4 | .00 | .04 | .04 | 2.6 | 15 | 3.2 | 2.4 | 2.7 | .29 | .10 | 1.7 | .09 |
| 5 | .00 | .03 | .06 | 4.4 | 9.6 | 3.2 | 2.1 | 2.1 | 1.0 | .11 | 1.6 | .09 |
| 6 | .00 | .05 | .06 | 3.8 | 6.8 | 2.8 | 2.1 | 1.7 | 1.4 | .10 | 3.3 | .08 |
| 7 | .00 | .09 | .06 | 2.9 | 5.0 | 3.7 | 1.7 | 1.5 | 1.5 | .08 | 11 | .07 |
| 8 | .00 | .09 | .06 | 2.3 | 3.8 | 5.0 | 1.5 | 1.3 | 1.2 | .67 | 12 | .06 |
| 9 | .00 | .09 | .08 | 2.0 | 4.0 | 6.2 | 1.5 | 1.1 | .94 | .70 | 7.5 | .06 |
| 10 | .00 | .08 | .07 | 1.7 | 3.7 | 5.8 | 1.3 | .93 | 1.2 | .23 | 4.5 | .06 |
| 11 | .00 | .08 | .08 | 1.4 | 3.2 | 5.2 | 1.1 | .82 | 1.5 | .10 | 3.2 | .06 |
| 12 | .00 | .06 | .06 | 1.1 | 2.9 | 5.0 | 1.0 | .73 | 4.1 | .23 | 2.4 | .06 |
| 13 | .00 | .06 | .06 | .99 | 2.9 | 5.0 | .94 | .63 | 142 | 1.0 | 1.8 | .05 |
| 14 | .00 | .05 | .06 | .97 | 2.4 | 5.2 | .81 | .56 | 32 | .67 | 1.4 | .05 |
| 15 | .00 | .05 | .10 | .92 | 2.0 | 5.4 | .71 | .50 | 8.4 | .42 | 1.2 | .05 |
| 16 | .00 | .04 | .13 | .78 | 2.0 | 5.8 | .65 | .45 | 4.1 | .22 | 1.0 | .05 |
| 17 | .00 | .04 | .16 | .70 | 13 | 6.8 | .71 | .40 | 2.6 | .13 | 1.0 | .04 |
| 18 | .00 | .03 | .18 | .60 | 20 | 8.0 | .90 | .36 | 1.8 | 7.4 | 1.4 | .04 |
| 19 | .00 | .03 | .17 | .52 | 13 | 8.0 | .83 | .33 | 1.3 | 6.7 | .91 | .03 |
| 20 | .00 | .04 | .14 | .48 | 11 | 18 | .83 | .30 | .92 | 2.7 | .73 | .05 |
| 21 | .00 | .08 | .12 | .58 | 10 | 38 | .83 | .27 | .63 | 1.5 | .62 | .06 |
| 22 | .00 | .08 | .12 | .56 | 8.9 | 18 | .83 | .25 | .47 | .90 | .51 | .11 |
| 23 | .00 | .08 | .52 | .51 | 7.4 | 11 | .83 | .27 | .38 | .74 | .39 | .13 |
| 24 | .00 | .06 | 1.3 | .76 | 6.2 | 6.8 | .77 | .22 | .29 | .69 | .32 | .10 |
| 25 | .00 | .06 | 1.6 | .77 | 4.6 | 5.4 | .77 | .19 | .24 | .42 | .28 | .08 |
| 26 | .01 | .06 | 1.5 | .74 | 3.8 | 4.5 | 1.5 | .18 | .19 | .29 | .23 | .10 |
| 27 | 1.1 | .06 | 1.3 | .65 | 3.7 | 3.6 | 6.2 | .17 | .17 | .19 | .19 | .36 |
| 28 | .64 | .05 | 1.1 | .56 | 3.3 | 3.2 | 12 | .23 | .15 | .16 | .18 | .09 |
| 29 | .25 | .06 | .90 | .55 | --- | 2.8 | 9.3 | .20 | .14 | .15 | .15 | .04 |
| 30 | .14 | .04 | .74 | .50 | --- | 2.6 | 6.4 | .29 | .22 | .53 | .13 | .02 |
| 31 | .10 | --- | .63 | .63 | --- | 2.6 | --- | .28 | --- | 6.3 | .13 | --- |
| TOTAL | 2.24 | 1.76 | 11.53 | 38.36 | 180.5 | 210.3 | 67.51 | 31.16 | 210.01 | 33.85 | 72.67 | 2.44 |
| MEAN | .072 | .059 | .37 | 1.24 | 6.45 | 6.78 | 2.25 | 1.01 | 7.00 | 1.09 | 2.34 | .081 |
| MAX | 1.1 | .09 | 1.6 | 4.4 | 20 | 38 | 12 | 5.0 | 142 | 7.4 | 12 | .36 |
| MIN | .00 | .03 | .04 | .48 | 1.5 | 2.6 | .65 | .17 | .14 | .08 | .13 | .02 |
| CFSM | .04 | .03 | .19 | .64 | 3.33 | 3.50 | 1.16 | .52 | 3.61 | .56 | 1.21 | .04 |
| IN. | .04 | .03 | .22 | .74 | 3.46 | 4.03 | 1.29 | .60 | 4.02 | .65 | 1.39 | .05 |

CAL YR 1981 TOTAL 237.13 MEAN .65 MAX 13 MIN .00 CFSM .34 IN 4.54
WTR YR 1982 TOTAL 862.33 MEAN 2.36 MAX 142 MIN .00 CFSM 1.22 IN 16.53

POTOMAC RIVER BASIN

39

01628150 DEEP RUN NEAR GROTTOS, VA

LOCATION.--Lat 38°16'23", long 78°45'36", Rockingham County, Hydrologic Unit 02070005, Shenandoah National Park, on right bank, 0.2 mi (0.3 km) southeast of boundary of Shenandoah National Park, 0.5 mi (0.8 km) upstream from culvert on State Highway 708, and 3.7 mi (6.0 km) east of Grottoes.

DRAINAGE AREA.--1.17 mi² (3.03 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from topographic map.

REMARKS.--Records good except those below 0.10 ft³/s (0.003 m³/s), which are poor. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48 ft³/s (1.36 m³/s) Mar. 21, 1982, gage height, 2.15 ft (0.655 m); minimum daily, 0.02 ft³/s (0.001 m³/s) Sept. 14-16, 1980, Aug. 29, Sept. 28-30, Oct. 1, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 21 | 0715 | *48 1.36 | 2.15 0.655 | June 13 | 1515 | 36 1.02 | 2.01 0.613 |

Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | .02 | .07 | .04 | .21 | .83 | 1.7 | 1.7 | 2.8 | .88 | .51 | 1.1 | .18 |
| 2 | .04 | .06 | .04 | .26 | .88 | 1.8 | 1.5 | 2.3 | .51 | .34 | .82 | .18 |
| 3 | .03 | .06 | .05 | .31 | 3.1 | 1.9 | 1.5 | 2.1 | .44 | .31 | .68 | .16 |
| 4 | .03 | .05 | .05 | 1.2 | 4.6 | 1.7 | 1.4 | 1.8 | .60 | .31 | .57 | .14 |
| 5 | .03 | .05 | .05 | 2.1 | 2.8 | 1.7 | 1.3 | 1.6 | 2.2 | .37 | .50 | .14 |
| 6 | .03 | .06 | .06 | 1.3 | 2.2 | 1.7 | 1.3 | 1.4 | 2.1 | .29 | .75 | .12 |
| 7 | .03 | .06 | .06 | .94 | 1.7 | 2.2 | 1.1 | 1.4 | 1.5 | .25 | 1.0 | .12 |
| 8 | .03 | .05 | .06 | .68 | 1.5 | 2.8 | 1.0 | 1.2 | 1.2 | .50 | 1.4 | .11 |
| 9 | .03 | .05 | .07 | .60 | 1.7 | 2.8 | 1.0 | 1.1 | .88 | .59 | 1.3 | .11 |
| 10 | .03 | .05 | .08 | .51 | 1.8 | 2.5 | .99 | .99 | .99 | .37 | 1.2 | .11 |
| 11 | .03 | .05 | .07 | .46 | 1.7 | 2.4 | .88 | .88 | 1.1 | .34 | .98 | .10 |
| 12 | .03 | .04 | .07 | .41 | 1.6 | 2.4 | .88 | .78 | 2.5 | .37 | .84 | .09 |
| 13 | .03 | .04 | .06 | .37 | 1.5 | 2.5 | .83 | .73 | 24 | 2.1 | .72 | .09 |
| 14 | .03 | .04 | .07 | .33 | 1.3 | 2.4 | .83 | .68 | 12 | 1.2 | .66 | .09 |
| 15 | .03 | .04 | .08 | .30 | 1.1 | 2.4 | .73 | .60 | 5.1 | .89 | .62 | .08 |
| 16 | .03 | .04 | .09 | .27 | 1.1 | 2.4 | .68 | .55 | 3.2 | .71 | .55 | .08 |
| 17 | .03 | .04 | .11 | .25 | 3.6 | 2.8 | .78 | .51 | 2.4 | .56 | .57 | .07 |
| 18 | .03 | .04 | .11 | .23 | 6.0 | 2.8 | .99 | .48 | 1.9 | 4.6 | .68 | .07 |
| 19 | .04 | .04 | .11 | .21 | 4.6 | 2.7 | .94 | .44 | 1.6 | 5.4 | .45 | .07 |
| 20 | .04 | .05 | .11 | .20 | 4.6 | 8.8 | .94 | .44 | 1.3 | 2.8 | .39 | .09 |
| 21 | .04 | .05 | .11 | .23 | 4.4 | 28 | .94 | .41 | 1.0 | 1.9 | .36 | .08 |
| 22 | .04 | .04 | .12 | .21 | 4.1 | 10 | .88 | .44 | .88 | 1.4 | .33 | .11 |
| 23 | .07 | .04 | .41 | .21 | 3.4 | 5.2 | .83 | .48 | .73 | 1.3 | .30 | .09 |
| 24 | .07 | .05 | .83 | .28 | 2.8 | 3.6 | .83 | .37 | .64 | 1.1 | .28 | .09 |
| 25 | .07 | .05 | .51 | .37 | 2.4 | 3.0 | .83 | .37 | .55 | .81 | .27 | .09 |
| 26 | .16 | .05 | .37 | .41 | 2.1 | 2.7 | 1.7 | .34 | .51 | .66 | .23 | .32 |
| 27 | .78 | .05 | .31 | .37 | 2.0 | 2.2 | 8.8 | .31 | .48 | .57 | .23 | .64 |
| 28 | .44 | .04 | .26 | .34 | 1.8 | 2.1 | 8.3 | .34 | .44 | .51 | .23 | .21 |
| 29 | .16 | .04 | .21 | .31 | --- | 1.9 | 4.7 | .34 | .41 | .49 | .21 | .12 |
| 30 | .09 | .04 | .18 | .28 | --- | 1.7 | 3.4 | .48 | .64 | .61 | .18 | .10 |
| 31 | .08 | --- | .16 | .37 | --- | 1.7 | --- | .51 | --- | 1.2 | .18 | --- |
| TOTAL | 2.62 | 1.43 | 4.91 | 14.52 | 71.21 | 114.5 | 52.48 | 27.17 | 72.68 | 33.36 | 18.58 | 4.05 |
| MEAN | .085 | .048 | .16 | .47 | 2.54 | 3.69 | 1.75 | .88 | 2.42 | 1.08 | .60 | .14 |
| MAX | .78 | .07 | .83 | 2.1 | 6.0 | 28 | 8.8 | 2.8 | 24 | 5.4 | 1.4 | .64 |
| MIN | .02 | .04 | .04 | .20 | .83 | 1.7 | .68 | .31 | .41 | .25 | .18 | .07 |
| CFSM | .07 | .04 | .14 | .40 | 2.17 | 3.15 | 1.50 | .75 | 2.07 | .92 | .51 | .12 |
| IN. | .08 | .05 | .16 | .46 | 2.26 | 3.64 | 1.67 | .86 | 2.31 | 1.06 | .59 | .13 |

CAL YR 1981 TOTAL 131.39 MEAN .36 MAX 5.3 MIN .02 CFSM .31 IN 4.17
WTR YR 1982 TOTAL 417.51 MEAN 1.14 MAX 28 MIN .02 CFSM .97 IN 13.26

01628500 SOUTH FORK SHENANDOAH RIVER NEAR LYNNWOOD, VA

LOCATION.--Lat 38°19'21", long 78°45'18", Rockingham County, Hydrologic Unit 02070005, on left bank 1.2 mi (1.9 km) northeast of Lynnwood and 3.3 mi (5.3 km) downstream from confluence of North and South Rivers.

DRAINAGE AREA.--1,084 mi² (2,808 km²).

PERIOD OF RECORD.--September 1930 to current year.

REVISED RECORDS.--WSP 1171: 1933(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,013.17 ft (308.814 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow prior to 1960 caused by mill at Lynnwood. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--52 years, 989 ft³/s (28.01 m³/s), 12.39 in/yr (315 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s (2,270 m³/s) Oct. 15, 1942, gage height, 27.2 ft (8.29 m), from rating curve extended above 22,000 ft³/s (620 m³/s) on basis of computations of flow over dam at gage heights 23.60 ft (7.193 m) and 27.2 ft (8.29 m); minimum, 32 ft³/s (0.91 m³/s) Sept. 20, 1932, gage height, 1.63 ft (0.497 m); minimum daily, 93 ft³/s (2.63 m³/s) Sept. 21, 29, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s (200 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 0400 | 8120 230 | 9.95 3.033 | June 13 | 1830 | *14500 411 | 13.52 4.121 |
| Mar. 20 | 2030 | 11700 331 | 12.12 3.694 | | | | |

Minimum discharge, 175 ft³/s (4.96 m³/s) Oct. 7, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|-------|-------|-------|---------|----------|----------|-------|-------|-------|-------|
| 1 | 180 | 381 | 255 | 406 | 3220 | 1250 | 1330 | 1440 | 1180 | 730 | 901 | 416 |
| 2 | 186 | 355 | 275 | 438 | 2070 | 1260 | 1200 | 1260 | 968 | 656 | 680 | 413 |
| 3 | 186 | 336 | 280 | 438 | 3700 | 1440 | 1140 | 1120 | 838 | 613 | 653 | 404 |
| 4 | 181 | 323 | 274 | 675 | 6830 | 1350 | 1240 | 1000 | 1310 | 605 | 579 | 383 |
| 5 | 182 | 317 | 278 | 2460 | 3910 | 1270 | 1160 | 907 | 1470 | 710 | 540 | 374 |
| 6 | 185 | 312 | 276 | 2160 | 2860 | 1200 | 1130 | 832 | 1700 | 651 | 1290 | 373 |
| 7 | 180 | 302 | 270 | 1660 | 2190 | 1790 | 1080 | 774 | 1400 | 581 | 1400 | 369 |
| 8 | 178 | 297 | 276 | 1310 | 1730 | 2890 | 1030 | 731 | 1130 | 554 | 1510 | 370 |
| 9 | 176 | 296 | 272 | 1060 | 1970 | 2490 | 1020 | 698 | 952 | 1070 | 1140 | 361 |
| 10 | 180 | 292 | 269 | 818 | 2140 | 2130 | 1000 | 653 | 1190 | 1070 | 1000 | 359 |
| 11 | 181 | 287 | 264 | 700 | 1820 | 1870 | 947 | 614 | 2330 | 848 | 856 | 357 |
| 12 | 185 | 287 | 265 | 650 | 1560 | 1830 | 898 | 592 | 2090 | 1040 | 774 | 353 |
| 13 | 186 | 284 | 267 | 600 | 1390 | 1740 | 856 | 565 | 10200 | 843 | 702 | 346 |
| 14 | 184 | 280 | 273 | 530 | 1250 | 1670 | 831 | 544 | 10800 | 672 | 629 | 342 |
| 15 | 182 | 277 | 334 | 480 | 1110 | 1670 | 783 | 517 | 4970 | 1730 | 1180 | 340 |
| 16 | 185 | 275 | 358 | 450 | 1060 | 1840 | 745 | 500 | 3410 | 1050 | 1890 | 337 |
| 17 | 184 | 272 | 345 | 420 | 2120 | 2350 | 735 | 490 | 2760 | 845 | 1330 | 333 |
| 18 | 183 | 272 | 328 | 410 | 5500 | 2520 | 821 | 482 | 2190 | 1000 | 1120 | 328 |
| 19 | 184 | 266 | 313 | 430 | 4240 | 2450 | 803 | 472 | 1750 | 1210 | 719 | 327 |
| 20 | 186 | 266 | 317 | 450 | 3970 | 6570 | 737 | 489 | 1460 | 1830 | 610 | 335 |
| 21 | 184 | 264 | 347 | 480 | 3360 | 9460 | 724 | 493 | 1250 | 1470 | 558 | 339 |
| 22 | 185 | 260 | 329 | 500 | 2870 | 5640 | 702 | 505 | 1110 | 1120 | 528 | 348 |
| 23 | 197 | 256 | 341 | 520 | 2370 | 3990 | 668 | 1050 | 1020 | 1690 | 504 | 356 |
| 24 | 205 | 263 | 428 | 525 | 2020 | 3190 | 650 | 1210 | 925 | 2010 | 496 | 342 |
| 25 | 207 | 264 | 527 | 500 | 1730 | 2610 | 633 | 1260 | 851 | 1210 | 484 | 328 |
| 26 | 221 | 263 | 523 | 470 | 1500 | 2380 | 837 | 1100 | 795 | 948 | 465 | 348 |
| 27 | 508 | 256 | 492 | 460 | 1400 | 1960 | 1760 | 1200 | 829 | 792 | 451 | 591 |
| 28 | 1220 | 255 | 462 | 470 | 1360 | 1670 | 2480 | 1020 | 735 | 698 | 450 | 446 |
| 29 | 732 | 254 | 433 | 520 | --- | 1500 | 2040 | 918 | 694 | 651 | 435 | 372 |
| 30 | 533 | 248 | 409 | 655 | --- | 1380 | 1680 | 905 | 740 | 671 | 422 | 349 |
| 31 | 429 | --- | 391 | 1250 | --- | 1310 | --- | 884 | --- | 979 | 419 | --- |
| TOTAL | 8275 | 8560 | 10471 | 22895 | 71250 | 76670 | 31660 | 25225 | 63047 | 30547 | 24715 | 11039 |
| MEAN | 267 | 285 | 338 | 739 | 2545 | 2473 | 1055 | 814 | 2102 | 985 | 797 | 368 |
| MAX | 1220 | 381 | 527 | 2460 | 6830 | 9460 | 2480 | 1440 | 10800 | 2010 | 1890 | 591 |
| MIN | 176 | 248 | 255 | 406 | 1060 | 1200 | 633 | 472 | 694 | 554 | 419 | 327 |
| CFSM | .25 | .26 | .31 | .68 | 2.35 | 2.28 | .97 | .75 | 1.94 | .91 | .74 | .34 |
| IN. | .28 | .29 | .36 | .79 | 2.45 | 2.63 | 1.09 | .87 | 2.16 | 1.05 | .85 | .38 |
| CAL YR 1981 TOTAL | 148995 | | | 408 | 3180 | MIN 175 | CFSM .38 | IN 5.11 | | | | |
| WTR YR 1982 TOTAL | 384354 | | | 1053 | 10800 | MIN 176 | CFSM .97 | IN 13.19 | | | | |

01629500 SOUTH FORK SHENANDOAH RIVER NEAR LURAY, VA

LOCATION.--Lat 38°38'46", long 78°32'06", Page County, Hydrologic Unit 02070005, on right bank between bridges on U.S. Highway 211, 1.2 mi (1.9 km) downstream from Big Run, 2.2 mi (3.5 km) upstream from Mill Creek, and 4.1 mi (6.6 km) west of Luray.

DRAINAGE AREA.--1,377 mi² (3,566 km²).

PERIOD OF RECORD.--April 1925 to September 1930, October 1938 to September 1951, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 721.76 ft (219.992 m) National Geodetic Vertical Datum of 1929. April 1925 to September 1930, nonrecording gage at same site and datum.

REMARKS.--Records good except those for January, which are fair. Diurnal fluctuation at low and medium flow caused by powerplant 10 mi (16 km) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 1,270 ft³/s (35.97 m³/s), 12.52 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s (2,830 m³/s) Oct. 16, 1942, gage height, 25.7 ft (7.833 m); minimum, 70 ft³/s (1.98 m³/s) Sept. 27, 1941, gage height, 2.15 ft (0.655 m); minimum daily, 135 ft³/s (3.82 m³/s) Sept. 16, 1925, Sept. 28, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 23.6 ft (7.19 m), from floodmarks, discharge, 81,600 ft³/s (2,310 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (230 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 1400 | 9920 281 | 8.58 2.615 | Mar. 21 | 0500 | 15700 445 | 10.82 3.298 |
| Feb. 18 | ---- | a8000 230 | Unknown | June 14 | 0330 | *19600 555 | 12.18 3.712 |

a About.

Minimum discharge, 208 ft³/s (5.89 m³/s) Dec. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 285 | 671 | 355 | 590 | 2950 | 1620 | 1640 | 1880 | 1380 | 964 | 1170 | 518 |
| 2 | 291 | 597 | 355 | 678 | 2700 | 1570 | 1550 | 1660 | 1360 | 924 | 989 | 511 |
| 3 | 279 | 547 | 367 | 702 | 2510 | 1650 | 1430 | 1480 | 1230 | 852 | 788 | 498 |
| 4 | 279 | 504 | 392 | 820 | 8680 | 1710 | 1450 | 1360 | 1340 | 828 | 796 | 477 |
| 5 | 279 | 504 | 385 | 1690 | 5760 | 1590 | 1440 | 1240 | 1850 | 844 | 702 | 457 |
| 6 | 279 | 470 | 385 | 2660 | 3770 | 1490 | 1380 | 1160 | 2310 | 900 | 717 | 450 |
| 7 | 274 | 477 | 385 | 2050 | 2800 | 1600 | 1330 | 1070 | 2050 | 820 | 1830 | 450 |
| 8 | 268 | 457 | 379 | 1690 | 2170 | 3100 | 1280 | 1040 | 1670 | 756 | 1640 | 444 |
| 9 | 252 | 444 | 379 | 1390 | 1990 | 3160 | 1250 | 998 | 1380 | 868 | 1530 | 450 |
| 10 | 262 | 430 | 379 | 1140 | 2680 | 2660 | 1250 | 948 | 1320 | 1500 | 1270 | 430 |
| 11 | 252 | 437 | 373 | 820 | 2250 | 2280 | 1200 | 892 | 2170 | 1040 | 1110 | 418 |
| 12 | 257 | 418 | 367 | 780 | 1950 | 2210 | 1150 | 852 | 2530 | 1130 | 980 | 418 |
| 13 | 262 | 385 | 367 | 740 | 1750 | 2200 | 1120 | 820 | 8280 | 1200 | 876 | 418 |
| 14 | 262 | 398 | 367 | 720 | 1590 | 2070 | 1100 | 780 | 17500 | 956 | 844 | 404 |
| 15 | 252 | 392 | 373 | 720 | 1460 | 1980 | 1050 | 748 | 8610 | 1200 | 833 | 398 |
| 16 | 252 | 392 | 520 | 720 | 1370 | 2100 | 1020 | 725 | 5050 | 1690 | 1650 | 398 |
| 17 | 257 | 385 | 518 | 680 | 1730 | 2510 | 972 | 702 | 3790 | 1120 | 2000 | 392 |
| 18 | 252 | 379 | 518 | 680 | 6500 | 2840 | 1010 | 678 | 3050 | 1010 | 1360 | 385 |
| 19 | 257 | 379 | 477 | 680 | 6000 | 2890 | 1070 | 663 | 2380 | 1180 | 1090 | 379 |
| 20 | 257 | 373 | 450 | 660 | 5680 | 5720 | 1020 | 656 | 1970 | 1620 | 820 | 379 |
| 21 | 246 | 367 | 411 | 740 | 4840 | 14400 | 980 | 694 | 1710 | 1930 | 740 | 385 |
| 22 | 246 | 367 | 444 | 740 | 4140 | 8970 | 948 | 686 | 1500 | 1460 | 686 | 418 |
| 23 | 252 | 361 | 486 | 720 | 3280 | 5720 | 924 | 748 | 1370 | 1280 | 605 | 424 |
| 24 | 268 | 361 | 547 | 720 | 2710 | 4330 | 900 | 1430 | 1280 | 2650 | 619 | 424 |
| 25 | 268 | 367 | 678 | 760 | 2300 | 3430 | 876 | 1320 | 1160 | 1720 | 605 | 411 |
| 26 | 291 | 367 | 772 | 720 | 1980 | 3020 | 972 | 1380 | 1100 | 1280 | 590 | 398 |
| 27 | 498 | 367 | 764 | 680 | 1790 | 2550 | 1640 | 1270 | 1050 | 1050 | 568 | 518 |
| 28 | 1530 | 361 | 732 | 680 | 1730 | 2100 | 3460 | 1350 | 1070 | 908 | 561 | 748 |
| 29 | 1370 | 355 | 686 | 720 | --- | 1870 | 2880 | 1300 | 980 | 844 | 554 | 532 |
| 30 | 945 | 355 | 641 | 900 | --- | 1740 | 2240 | 1340 | 940 | 812 | 532 | 470 |
| 31 | 788 | --- | 590 | 1300 | --- | 1640 | --- | 1290 | --- | 908 | 525 | --- |
| TOTAL | 12010 | 12667 | 14842 | 29290 | 89060 | 96720 | 40532 | 33160 | 83380 | 36244 | 29580 | 13402 |
| MEAN | 387 | 422 | 479 | 945 | 3181 | 3120 | 1351 | 1070 | 2779 | 1169 | 954 | 447 |
| MAX | 1530 | 671 | 772 | 2660 | 8680 | 14400 | 3460 | 1880 | 17500 | 2650 | 2000 | 748 |
| MIN | 246 | 355 | 355 | 590 | 1370 | 1490 | 876 | 656 | 940 | 756 | 525 | 379 |
| CFSM | .28 | .31 | .35 | .69 | 2.31 | 2.27 | .98 | .78 | 2.02 | .85 | .69 | .33 |
| IN. | .32 | .34 | .40 | .79 | 2.41 | 2.61 | 1.09 | .90 | 2.25 | .98 | .80 | .36 |

| | | | | | | | | | | | | |
|-------------|-------|--------|------|------|-----|-------|-----|-----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 215136 | MEAN | 589 | MAX | 4040 | MIN | 190 | CFSM | .43 | IN | 5.81 |
| WTR YR 1982 | TOTAL | 490887 | MEAN | 1345 | MAX | 17500 | MIN | 246 | CFSM | .98 | IN | 13.26 |

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA

LOCATION.--Lat 38°54'50", long 78°12'40", Warren County, Hydrologic Unit 02070005, on left bank 0.7 mi (1.1 km) downstream from bridge on State Highway 619, 1.0 mi (1.6 km) west of Front Royal, and 3.5 mi (5.6 km) upstream from confluence with North Fork.

DRAINAGE AREA.--1,642 mi² (4,253 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1899 to September 1906, September 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1171: 1935(M), 1937(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 469.38 ft (143.067 m) National Geodetic Vertical Datum of 1929. June 1899 to July 1906, nonrecording gage at site 1.0 mi (1.6 km) upstream at different datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow caused by powerplants above station prior to 1954; occasional large diurnal fluctuation thereafter. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--59 years, 1,585 ft³/s (44.89 m³/s), 13.11 in/yr (333 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) Oct. 16, 1942, gage height, 34.8 ft (10.61 m), from floodmark in gage well, from rating curve extended above 92,000 ft³/s (2,600 m³/s) on basis of slope-area measurement of peak flow; minimum, 59 ft³/s (1.67 m³/s) Jan. 30, 1934, gage height, 0.56 ft (0.171 m); minimum daily, 103 ft³/s (2.92 m³/s) Sept. 30, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,500 ft³/s (240 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | ---- | Unknown | Unknown | June 14 | 1415 | *18900 535 | 10.38 3.164 |
| Mar. 21 | 1630 | 15400 436 | 9.25 2.819 | | | | |

Minimum discharge, 244 ft³/s (6.91 m³/s) Oct. 17, gage height, 0.94 ft (0.287 m); minimum daily, 263 ft³/s (7.45 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 295 | 780 | 356 | 616 | 3000 | 2050 | 1980 | 2470 | 1580 | 910 | 927 | 526 |
| 2 | 295 | 662 | 371 | 616 | 2900 | 1940 | 1910 | 2110 | 1910 | 935 | 1160 | 542 |
| 3 | 301 | 589 | 363 | 710 | 2800 | 1910 | 1770 | 1840 | 1670 | 902 | 1020 | 523 |
| 4 | 308 | 563 | 378 | 863 | 6000 | 2040 | 1650 | 1610 | 1820 | 862 | 786 | 505 |
| 5 | 263 | 486 | 385 | 1090 | 7000 | 1940 | 1650 | 1450 | 2280 | 810 | 785 | 465 |
| 6 | 295 | 537 | 385 | 2510 | 4800 | 1800 | 1660 | 1290 | 2890 | 826 | 808 | 460 |
| 7 | 295 | 462 | 378 | 2740 | 3580 | 2360 | 1530 | 1210 | 2850 | 854 | 853 | 448 |
| 8 | 282 | 462 | 393 | 2170 | 2870 | 3940 | 1500 | 1100 | 2370 | 820 | 1850 | 446 |
| 9 | 288 | 446 | 378 | 1760 | 2590 | 3470 | 1430 | 1110 | 1920 | 726 | 1850 | 456 |
| 10 | 269 | 431 | 371 | 1370 | 2550 | 3000 | 1400 | 1020 | 1690 | 858 | 1520 | 457 |
| 11 | 269 | 423 | 363 | 800 | 2900 | 2500 | 1370 | 942 | 1670 | 1470 | 1260 | 436 |
| 12 | 269 | 415 | 356 | 650 | 2480 | 2550 | 1310 | 897 | 2790 | 988 | 1120 | 430 |
| 13 | 275 | 400 | 356 | 730 | 2110 | 2450 | 1250 | 832 | 3840 | 1160 | 977 | 426 |
| 14 | 275 | 378 | 363 | 800 | 1870 | 2350 | 1210 | 804 | 15900 | 1130 | 900 | 423 |
| 15 | 282 | 385 | 423 | 790 | 1730 | 2150 | 1140 | 768 | 12200 | 916 | 797 | 443 |
| 16 | 288 | 385 | 454 | 710 | 1640 | 2100 | 1070 | 723 | 6220 | 1420 | 922 | 409 |
| 17 | 269 | 385 | 520 | 640 | 1660 | 2700 | 1050 | 708 | 4520 | 1500 | 1860 | 412 |
| 18 | 275 | 385 | 563 | 610 | 2880 | 3000 | 1020 | 673 | 3910 | 1060 | 1690 | 410 |
| 19 | 275 | 378 | 431 | 640 | 6750 | 3460 | 1040 | 673 | 3020 | 1020 | 1300 | 394 |
| 20 | 282 | 378 | 520 | 730 | 6300 | 3980 | 1100 | 645 | 2460 | 1170 | 1050 | 404 |
| 21 | 282 | 378 | 462 | 940 | 5930 | 12100 | 1010 | 676 | 2070 | 1740 | 849 | 400 |
| 22 | 295 | 356 | 563 | 860 | 5190 | 11400 | 957 | 709 | 1780 | 1780 | 683 | 425 |
| 23 | 308 | 349 | 520 | 800 | 4500 | 7120 | 968 | 720 | 1530 | 1440 | 683 | 454 |
| 24 | 321 | 371 | 571 | 850 | 3800 | 5310 | 858 | 780 | 1400 | 1570 | 618 | 445 |
| 25 | 308 | 363 | 589 | 800 | 3170 | 4320 | 880 | 1630 | 1270 | 2390 | 627 | 433 |
| 26 | 335 | 356 | 710 | 730 | 2700 | 3690 | 989 | 1350 | 1180 | 1590 | 604 | 457 |
| 27 | 589 | 356 | 800 | 700 | 2380 | 3320 | 1310 | 1390 | 1120 | 1230 | 581 | 528 |
| 28 | 927 | 371 | 770 | 700 | 2180 | 2800 | 3000 | 1380 | 1050 | 1020 | 578 | 518 |
| 29 | 1790 | 356 | 750 | 740 | --- | 2440 | 3740 | 1500 | 1050 | 871 | 554 | 736 |
| 30 | 1370 | 342 | 691 | 940 | --- | 2210 | 2990 | 1480 | 983 | 840 | 538 | 565 |
| 31 | 906 | --- | 616 | 1250 | --- | 2020 | --- | 1510 | --- | 809 | 532 | --- |
| TOTAL | 13081 | 12928 | 15149 | 30855 | 98260 | 108420 | 44742 | 36000 | 90943 | 35617 | 30282 | 13976 |
| MEAN | 422 | 431 | 489 | 995 | 3509 | 3497 | 1491 | 1161 | 3031 | 1149 | 977 | 466 |
| MAX | 1790 | 780 | 800 | 2740 | 7000 | 12100 | 3740 | 2470 | 15900 | 2390 | 1860 | 736 |
| MIN | 263 | 342 | 356 | 610 | 1640 | 1800 | 858 | 645 | 983 | 726 | 532 | 394 |
| CFSM | .26 | .26 | .30 | .61 | 2.14 | 2.13 | .91 | .71 | 1.85 | .70 | .60 | .28 |
| IN. | .30 | .29 | .34 | .70 | 2.23 | 2.46 | 1.01 | .82 | 2.06 | .81 | .69 | .32 |
| CAL YR 1981 | TOTAL | 246440 | MEAN | 675 | MAX | 4170 | MIN | 263 | CFSM | .41 | IN | 5.58 |
| WTR YR 1982 | TOTAL | 530253 | MEAN | 1453 | MAX | 15900 | MIN | 263 | CFSM | .89 | IN | 12.01 |

POTOMAC RIVER BASIN

43

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.

WATER TEMPERATURES: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.

SUSPENDED-SEDIMENT DISCHARGE: April 1953 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| OCT | | | | | | | | | | | |
| 05... | 1130 | 275 | 416 | 8.2 | 16.0 | 5 | 140 | 35 | 12 | 22 | 2.8 |
| NOV | | | | | | | | | | | |
| 16... | 1345 | 385 | 359 | 9.1 | 8.0 | 3 | 140 | 36 | 11 | 17 | 2.7 |
| JAN | | | | | | | | | | | |
| 12... | 1115 | 1000 | 198 | 7.5 | 1.5 | 5 | 71 | 20 | 5.1 | 5.5 | 1.5 |
| MAR | | | | | | | | | | | |
| 02... | 1245 | 1940 | 239 | 7.4 | 7.0 | 5 | 97 | 27 | 7.3 | 6.3 | 1.6 |
| APR | | | | | | | | | | | |
| 15... | 1315 | 1090 | 281 | 8.8 | 14.5 | <1 | 120 | 31 | 9.7 | 9.8 | 1.6 |
| JUN | | | | | | | | | | | |
| 03... | 0900 | 1610 | 179 | 8.1 | 22.0 | 5 | 68 | 18 | 5.7 | 5.7 | 2.1 |
| JUL | | | | | | | | | | | |
| 14... | 0950 | 1090 | 349 | 8.3 | 26.0 | 8 | 150 | 41 | 12 | 5.7 | 2.2 |
| SEP | | | | | | | | | | | |
| 08... | 1050 | 454 | 385 | 8.9 | 22.5 | 15 | 170 | 44 | 15 | 17 | 2.6 |

< Actual value is known to be less than the value shown.

| DATE | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|-------|---|---|---|--|---|--|--|---|---|--|--|
| OCT | | | | | | | | | | | |
| 05... | 140 | 35 | 15 | .1 | .4 | 230 | 207 | <.010 | .72 | .150 | 5 |
| NOV | | | | | | | | | | | |
| 16... | 130 | 29 | 12 | .1 | .3 | 203 | 186 | <.010 | 1.0 | .160 | 7 |
| JAN | | | | | | | | | | | |
| 12... | 61 | 16 | 7.2 | <.1 | 5.0 | 110 | 97 | .010 | 1.1 | .110 | 22 |
| MAR | | | | | | | | | | | |
| 02... | 81 | 16 | 8.6 | .1 | 5.3 | 134 | 121 | .020 | 1.5 | .050 | 10 |
| APR | | | | | | | | | | | |
| 15... | 110 | 19 | 9.2 | <.1 | .4 | 160 | 147 | .020 | 1.4 | .050 | 31 |
| JUN | | | | | | | | | | | |
| 03... | 62 | 15 | 5.9 | <.1 | 8.5 | 116 | 98 | .050 | 1.3 | .160 | 84 |
| JUL | | | | | | | | | | | |
| 14... | 140 | 17 | 10 | .1 | 1.5 | 206 | 174 | .020 | 1.8 | .170 | 10 |
| SEP | | | | | | | | | | | |
| 08... | 160 | 26 | 11 | .2 | .7 | 211 | 213 | <.010 | 1.1 | .140 | <3 |

< Actual value is known to be less than the value shown.

01632000 NORTH FORK SHENANDOAH RIVER AT COOTES STORE, VA

LOCATION.--Lat 38°38'13", long 78°51'11", Rockingham County, Hydrologic Unit 02070006, on right bank at Cootes Store, 300 ft (90 m) upstream from bridge on State Highway 259, and 3.7 mi (6.0 km) upstream from Linville Creek.

DRAINAGE AREA.--210 mi² (544 km²).

PERIOD OF RECORD.--February 1925 to current year.

REVISED RECORDS.--WSP 726: 1928-31. WSP 951: 1936, 1939(M). WSP 1171: 1935, 1937, 1938(M). WSP 1502: 1926, 1927-28(M), 1929, 1930-34(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,051.8 ft (320.59 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 15, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 191 ft³/s (5.409 m³/s), 12.35 in/yr (314 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Oct. 15, 1942, gage height, 25.3 ft (7.71 m), from floodmark, from rating curve extended above 9,000 ft³/s (250 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 0.20 ft³/s (0.006 m³/s) Aug. 28, 29, Sept. 4, 1957, Sept. 7-10, 1966; minimum gage height, 1.74 ft (0.530 m) Sept. 7-10, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 20 | 1445 | 5160 146 | 9.54 2.908 | July 23 | 1830 | 4100 116 | 8.59 2.618 |
| June 13 | 1345 | *6470 183 | 10.56 3.219 | | | | |

Minimum discharge, 2.8 ft³/s (0.079 m³/s) Sept. 19-22, gage height, 1.98 ft (0.604 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|------|------|------|-------|-------|------|------|-------|------|--------|-------|
| 1 | 7.9 | 61 | 13 | 43 | 900 | 214 | 168 | 265 | 334 | 24 | 43 | 8.9 |
| 2 | 8.0 | 52 | 14 | 40 | 500 | 210 | 142 | 219 | 258 | 21 | 33 | 9.1 |
| 3 | 7.4 | 42 | 14 | 41 | 800 | 209 | 140 | 185 | 211 | 19 | 29 | 8.3 |
| 4 | 7.0 | 36 | 15 | 400 | 1300 | 191 | 143 | 158 | 348 | 22 | 25 | 7.2 |
| 5 | 6.7 | 33 | 15 | 684 | 760 | 184 | 129 | 136 | 551 | 24 | 22 | 6.7 |
| 6 | 6.4 | 32 | 15 | 386 | 490 | 174 | 127 | 118 | 517 | 22 | 691 | 6.1 |
| 7 | 5.8 | 30 | 16 | 270 | 360 | 292 | 120 | 106 | 334 | 19 | 301 | 5.5 |
| 8 | 5.4 | 28 | 16 | 209 | 330 | 454 | 111 | 98 | 234 | 39 | 435 | 5.5 |
| 9 | 5.2 | 26 | 16 | 173 | 360 | 426 | 110 | 88 | 178 | 81 | 705 | 6.2 |
| 10 | 5.1 | 25 | 16 | 87 | 330 | 388 | 107 | 76 | 175 | 179 | 290 | 4.8 |
| 11 | 5.5 | 23 | 16 | 59 | 284 | 347 | 97 | 66 | 221 | 482 | 178 | 4.7 |
| 12 | 5.6 | 21 | 16 | 64 | 236 | 536 | 92 | 60 | 764 | 176 | 128 | 4.4 |
| 13 | 6.3 | 20 | 16 | 70 | 208 | 544 | 85 | 54 | 3870 | 115 | 94 | 4.1 |
| 14 | 7.6 | 19 | 17 | 78 | 178 | 440 | 81 | 48 | 1930 | 74 | 72 | 3.8 |
| 15 | 7.8 | 18 | 21 | 70 | 158 | 394 | 75 | 42 | 721 | 90 | 58 | 3.8 |
| 16 | 6.4 | 17 | 22 | 65 | 179 | 641 | 68 | 38 | 405 | 95 | 46 | 3.5 |
| 17 | 6.5 | 17 | 21 | 59 | 1570 | 1260 | 69 | 35 | 344 | 94 | 38 | 3.2 |
| 18 | 6.7 | 16 | 22 | 55 | 1440 | 996 | 89 | 33 | 247 | 68 | 33 | 3.0 |
| 19 | 6.6 | 15 | 20 | 50 | 879 | 638 | 80 | 47 | 179 | 72 | 28 | 3.0 |
| 20 | 7.3 | 15 | 18 | 60 | 956 | 3160 | 76 | 162 | 138 | 166 | 24 | 2.9 |
| 21 | 9.5 | 15 | 17 | 75 | 1110 | 2140 | 76 | 123 | 108 | 189 | 24 | 2.9 |
| 22 | 10 | 14 | 22 | 66 | 816 | 1040 | 71 | 105 | 87 | 130 | 21 | 3.9 |
| 23 | 10 | 13 | 24 | 58 | 550 | 640 | 68 | 437 | 70 | 896 | 19 | 3.7 |
| 24 | 11 | 14 | 31 | 60 | 438 | 444 | 66 | 340 | 57 | 574 | 17 | 3.1 |
| 25 | 11 | 14 | 43 | 62 | 382 | 330 | 63 | 599 | 47 | 217 | 15 | 3.0 |
| 26 | 16 | 13 | 46 | 62 | 322 | 295 | 145 | 355 | 44 | 132 | 14 | 3.9 |
| 27 | 362 | 13 | 54 | 62 | 275 | 280 | 305 | 237 | 39 | 91 | 13 | 8.0 |
| 28 | 201 | 12 | 54 | 60 | 236 | 216 | 551 | 183 | 33 | 71 | 12 | 5.8 |
| 29 | 130 | 12 | 51 | 54 | --- | 191 | 439 | 190 | 30 | 58 | 11 | 5.2 |
| 30 | 95 | 12 | 43 | 57 | --- | 176 | 336 | 164 | 27 | 45 | 10 | 5.2 |
| 31 | 76 | --- | 40 | 90 | --- | 165 | --- | 144 | --- | 55 | 9.6 | --- |
| TOTAL | 1062.7 | 678 | 764 | 3669 | 16347 | 17615 | 4229 | 4911 | 12501 | 4340 | 3438.6 | 149.4 |
| MEAN | 34.3 | 22.6 | 24.6 | 118 | 584 | 568 | 141 | 158 | 417 | 140 | 111 | 4.98 |
| MAX | 362 | 61 | 54 | 684 | 1570 | 3160 | 551 | 599 | 3870 | 896 | 705 | 9.1 |
| MIN | 5.1 | 12 | 13 | 40 | 158 | 165 | 63 | 33 | 27 | 19 | 9.6 | 2.9 |
| CFSM | .16 | .11 | .12 | .56 | 2.78 | 2.71 | .67 | .75 | 1.99 | .67 | .53 | .02 |
| IN. | .19 | .12 | .14 | .65 | 2.90 | 3.12 | .75 | .87 | 2.21 | .77 | .61 | .03 |
| CAL YR 1981 TOTAL | 26474.5 | | | 72.5 | 1330 | | 1.5 | | .35 | | 4.69 | |
| WTR YR 1982 TOTAL | 69704.7 | | | 191 | 3870 | | 2.9 | | .91 | | 12.35 | |

POTOMAC RIVER BASIN

45

01632900 SMITH CREEK NEAR NEW MARKET, VA

LOCATION.--38°41'36", long 78°38'35", Shenandoah County, Hydrologic Unit 02070006, on left bank 25 ft (8 m) upstream from bridge on State Highway 616, 3.6 mi (5.8 km) north of New Market, and 4.4 mi (7.1 km) upstream from mouth.

DRAINAGE AREA.--93.2 mi² (241.4 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 881.50 ft (268.681 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1963, on right bank a short distance downstream, at datum 0.71 ft (0.216 m) higher.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 71.4 ft³/s (2.022 m³/s), 10.40 in/yr (264 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s (300 m³/s) Oct. 6, 1972, gage height, 16.38 ft (4.993 m), from rating curve extended above 2,300 ft³/s (65 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 4.5 ft³/s (0.13 m³/s) Feb. 9, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 1, 1959, reached a stage of 10.7 ft (3.26 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,680 ft³/s (47.6 m³/s) at 1830 hours Mar. 20, gage height, 8.43 ft (2.569 m), no other peak above base of 650 ft³/s (18 m³/s); minimum, 8.0 ft³/s (0.23 m³/s) Oct. 1, Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-----------|---------|---------|----------|---------|------|------|------|------|------|
| 1 | 8.8 | 19 | 13 | 23 | 271 | 117 | 136 | 87 | 67 | 45 | 43 | 24 |
| 2 | 8.8 | 18 | 16 | 25 | 94 | 125 | 118 | 83 | 50 | 41 | 34 | 24 |
| 3 | 9.2 | 18 | 16 | 22 | 194 | 131 | 116 | 78 | 82 | 41 | 32 | 24 |
| 4 | 9.6 | 17 | 16 | 101 | 305 | 119 | 115 | 73 | 91 | 43 | 30 | 22 |
| 5 | 9.6 | 16 | 16 | 124 | 151 | 112 | 98 | 68 | 109 | 44 | 28 | 22 |
| 6 | 9.8 | 18 | 16 | 69 | 119 | 106 | 97 | 66 | 89 | 39 | 52 | 22 |
| 7 | 10 | 16 | 15 | 52 | 99 | 204 | 90 | 63 | 69 | 36 | 101 | 22 |
| 8 | 9.2 | 16 | 15 | 43 | 87 | 270 | 86 | 61 | 58 | 35 | 76 | 23 |
| 9 | 9.6 | 16 | 15 | 36 | 165 | 204 | 86 | 59 | 54 | 37 | 158 | 28 |
| 10 | 10 | 15 | 13 | 33 | 177 | 170 | 81 | 54 | 65 | 83 | 60 | 23 |
| 11 | 11 | 15 | 13 | 31 | 125 | 152 | 77 | 53 | 77 | 47 | 49 | 21 |
| 12 | 11 | 15 | 12 | 30 | 105 | 198 | 75 | 51 | 68 | 44 | 47 | 21 |
| 13 | 10 | 14 | 13 | 29 | 98 | 176 | 72 | 50 | 456 | 51 | 41 | 20 |
| 14 | 10 | 14 | 18 | 28 | 90 | 152 | 68 | 47 | 270 | 41 | 39 | 20 |
| 15 | 12 | 14 | 18 | 28 | 85 | 148 | 66 | 46 | 155 | 51 | 36 | 20 |
| 16 | 14 | 14 | 23 | 27 | 99 | 184 | 63 | 43 | 121 | 54 | 35 | 18 |
| 17 | 16 | 14 | 26 | 26 | 320 | 213 | 64 | 41 | 158 | 39 | 34 | 18 |
| 18 | 16 | 14 | 20 | 26 | 371 | 180 | 67 | 39 | 145 | 36 | 35 | 18 |
| 19 | 17 | 14 | 20 | 26 | 280 | 159 | 59 | 38 | 112 | 34 | 32 | 18 |
| 20 | 16 | 14 | 20 | 25 | 326 | 845 | 56 | 41 | 87 | 34 | 30 | 19 |
| 21 | 15 | 14 | 19 | 28 | 322 | 534 | 54 | 43 | 77 | 35 | 33 | 18 |
| 22 | 16 | 13 | 20 | 28 | 260 | 326 | 51 | 42 | 71 | 30 | 30 | 22 |
| 23 | 17 | 13 | 30 | 28 | 205 | 253 | 50 | 49 | 65 | 42 | 29 | 20 |
| 24 | 21 | 13 | 35 | 31 | 180 | 216 | 49 | 47 | 60 | 58 | 28 | 18 |
| 25 | 20 | 15 | 32 | 30 | 158 | 190 | 49 | 58 | 56 | 41 | 28 | 17 |
| 26 | 20 | 14 | 26 | 26 | 136 | 199 | 83 | 50 | 54 | 35 | 26 | 20 |
| 27 | 90 | 15 | 24 | 25 | 129 | 165 | 128 | 43 | 52 | 32 | 24 | 36 |
| 28 | 111 | 15 | 23 | 28 | 124 | 148 | 155 | 43 | 49 | 32 | 26 | 23 |
| 29 | 46 | 14 | 21 | 37 | --- | 138 | 110 | 51 | 47 | 32 | 25 | 20 |
| 30 | 31 | 13 | 20 | 55 | --- | 130 | 94 | 57 | 50 | 32 | 24 | 18 |
| 31 | 26 | --- | 21 | 278 | --- | 128 | --- | 61 | --- | 39 | 24 | --- |
| TOTAL | 640.6 | 450 | 605 | 1398 | 5075 | 6392 | 2513 | 1685 | 2964 | 1283 | 1289 | 639 |
| MEAN | 20.7 | 15.0 | 19.5 | 45.1 | 181 | 206 | 83.8 | 54.4 | 98.8 | 41.4 | 41.6 | 21.3 |
| MAX | 111 | 19 | 35 | 278 | 371 | 845 | 155 | 87 | 456 | 83 | 158 | 36 |
| MIN | 8.8 | 13 | 12 | 22 | 85 | 106 | 49 | 38 | 47 | 30 | 24 | 17 |
| CFSM | .22 | .16 | .21 | .48 | 1.94 | 2.21 | .90 | .58 | 1.06 | .44 | .45 | .23 |
| IN. | .26 | .18 | .24 | .56 | 2.03 | 2.55 | 1.00 | .67 | 1.18 | .51 | .51 | .26 |
| CAL YR 1981 | TOTAL | 9820.8 | MEAN 26.9 | MAX 156 | MIN 8.0 | CFSM .29 | IN 3.92 | | | | | |
| WTR YR 1982 | TOTAL | 24933.6 | MEAN 68.3 | MAX 845 | MIN 8.8 | CFSM .73 | IN 9.95 | | | | | |

POTOMAC RIVER BASIN

01633000 NORTH FORK SHENANDOAH RIVER AT MOUNT JACKSON, VA

LOCATION (REVISED).--Lat 38°44'43", long 78°38'21", Shenandoah County, Hydrologic Unit 02070006, on right bank at upstream side of bridge on State Highway 698 at Mount Jackson and 0.4 mi (0.6 km) downstream from Mill Creek.

DRAINAGE AREA.--506 mi² (1,311 km²).

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

REVISED RECORDS.--WSP 1382: 1945, 1948-50(M), 1951-53(P), 1954(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 838.55 ft (255.590 m) National Geodetic Vertical Datum of 1929. Prior to July 1, 1976, nonrecording gage, and July 1, 1976, to Oct. 23, 1981, water-stage recorder, at site 400 ft (122 m) upstream at same datum.

REMARKS.--Records good except those for January, which are fair. Some diversion during low flow by irrigation at points above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 383 ft³/s (10.85 m³/s), 10.28 in/yr (261 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,500 ft³/s (1,150 m³/s) Oct. 6, 1972, gage height, 18.10 ft (5.517 m), from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of peak runoff for flood in October 1942 for stations at Cootes Store and near Strasburg; minimum observed, 7.0 ft³/s (0.20 m³/s) Sept. 3, 1966, gage height, 1.97 ft (0.600 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 20.2 ft (6.16 m), from floodmarks, discharge, about 80,000 ft³/s (2,300 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Mar. 20 | 1630 | 7260 | 206 | 10.74 | 3.274 | June 13 | 1700 | *7840 | 222 | 11.15 | 3.399 |

Minimum discharge, 26 ft³/s (0.74 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|------|
| 1 | 26 | 110 | 53 | 125 | 1500 | 520 | 500 | 510 | 530 | 172 | 258 | 112 |
| 2 | 30 | 100 | 60 | 122 | 900 | 520 | 440 | 435 | 448 | 158 | 205 | 106 |
| 3 | 27 | 90 | 62 | 122 | 1000 | 525 | 427 | 385 | 420 | 154 | 190 | 100 |
| 4 | 28 | 85 | 60 | 410 | 1700 | 485 | 427 | 335 | 740 | 158 | 165 | 92 |
| 5 | 28 | 80 | 62 | 1200 | 1290 | 458 | 389 | 307 | 825 | 168 | 158 | 92 |
| 6 | 30 | 80 | 62 | 700 | 908 | 435 | 376 | 281 | 914 | 161 | 1020 | 89 |
| 7 | 31 | 76 | 62 | 500 | 674 | 604 | 364 | 265 | 618 | 144 | 848 | 87 |
| 8 | 30 | 74 | 62 | 401 | 530 | 1130 | 343 | 254 | 453 | 165 | 581 | 84 |
| 9 | 30 | 72 | 62 | 331 | 721 | 974 | 339 | 239 | 364 | 231 | 1800 | 100 |
| 10 | 31 | 70 | 60 | 243 | 830 | 866 | 331 | 216 | 359 | 445 | 734 | 79 |
| 11 | 33 | 66 | 60 | 210 | 652 | 772 | 319 | 201 | 453 | 784 | 510 | 74 |
| 12 | 33 | 64 | 60 | 180 | 540 | 914 | 300 | 190 | 822 | 401 | 410 | 74 |
| 13 | 32 | 62 | 60 | 160 | 485 | 1040 | 292 | 179 | 4670 | 327 | 339 | 71 |
| 14 | 32 | 60 | 62 | 140 | 422 | 890 | 277 | 165 | 3300 | 258 | 296 | 69 |
| 15 | 32 | 60 | 76 | 130 | 393 | 794 | 265 | 158 | 1440 | 246 | 262 | 69 |
| 16 | 32 | 57 | 87 | 120 | 397 | 914 | 254 | 151 | 902 | 413 | 243 | 69 |
| 17 | 32 | 55 | 84 | 110 | 1910 | 2050 | 254 | 141 | 830 | 661 | 220 | 66 |
| 18 | 32 | 53 | 81 | 105 | 2780 | 1740 | 284 | 131 | 734 | 327 | 208 | 66 |
| 19 | 35 | 50 | 74 | 100 | 1700 | 1240 | 273 | 131 | 535 | 262 | 190 | 69 |
| 20 | 33 | 55 | 71 | 94 | 1870 | 4090 | 258 | 201 | 427 | 292 | 175 | 69 |
| 21 | 33 | 55 | 69 | 98 | 2080 | 3800 | 250 | 250 | 364 | 406 | 175 | 69 |
| 22 | 36 | 53 | 76 | 100 | 1680 | 2090 | 239 | 216 | 323 | 311 | 158 | 69 |
| 23 | 37 | 50 | 97 | 110 | 1200 | 1420 | 231 | 469 | 296 | 996 | 148 | 74 |
| 24 | 40 | 53 | 112 | 110 | 974 | 1090 | 227 | 505 | 265 | 1510 | 144 | 66 |
| 25 | 50 | 57 | 119 | 100 | 842 | 902 | 224 | 680 | 243 | 586 | 138 | 62 |
| 26 | 100 | 55 | 131 | 96 | 718 | 842 | 311 | 560 | 227 | 401 | 128 | 64 |
| 27 | 450 | 53 | 135 | 94 | 640 | 718 | 565 | 393 | 224 | 319 | 125 | 97 |
| 28 | 700 | 53 | 138 | 98 | 580 | 618 | 926 | 315 | 208 | 277 | 125 | 81 |
| 29 | 230 | 53 | 131 | 110 | --- | 565 | 800 | 319 | 193 | 254 | 122 | 64 |
| 30 | 170 | 50 | 122 | 120 | --- | 520 | 624 | 335 | 190 | 224 | 116 | 60 |
| 31 | 140 | --- | 112 | 1000 | --- | 495 | --- | 277 | --- | 250 | 112 | --- |
| TOTAL | 2603 | 1951 | 2562 | 7539 | 29916 | 34021 | 11109 | 9194 | 22317 | 11461 | 10303 | 2343 |
| MEAN | 84.0 | 65.0 | 82.6 | 243 | 1068 | 1097 | 370 | 297 | 744 | 370 | 332 | 78.1 |
| MAX | 700 | 110 | 138 | 1200 | 2780 | 4090 | 926 | 680 | 4670 | 1510 | 1800 | 112 |
| MIN | 26 | 50 | 53 | 94 | 393 | 435 | 224 | 131 | 190 | 144 | 112 | 60 |
| CFSM | .17 | .13 | .16 | .48 | 2.11 | 2.17 | .73 | .59 | 1.47 | .73 | .66 | .15 |
| IN. | .19 | .14 | .19 | .55 | 2.20 | 2.50 | .82 | .68 | 1.64 | .84 | .76 | .17 |

| | | | | | | | |
|-------------|-------|--------|----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 50124 | MEAN 137 | MAX 1400 | MIN 14 | CFSM .27 | IN 3.68 |
| WTR YR 1982 | TOTAL | 145319 | MEAN 398 | MAX 4670 | MIN 26 | CFSM .79 | IN 10.68 |

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA

LOCATION.--Lat 38°58'36", long 78°20'11", Warren County, Hydrologic Unit 02070006, on right bank at downstream side of bridge on State Highway 55, 1.5 mi (2.4 km) southeast of Strasburg, 2.2 mi (3.5 km) upstream from Cedar Creek, and 10 mi (16 km) upstream from confluence with South Fork.

DRAINAGE AREA.--768 mi² (1,989 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1925 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1001: 1931. WSP 1171: 1929(M), 1933(M), 1936-37. WSP 1302: 1928(M), 1930(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 494.03 ft (150.580 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow from unknown cause. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--57 years, 583 ft³/s (16.51 m³/s), 10.31 in/yr (262 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s (2,830 m³/s) Oct. 16, 1942, gage height, 31.2 ft (9.51 m), from high-water mark in well, from rating curve extended above 46,000 ft³/s (1,300 m³/s); minimum, 6.0 ft³/s (0.17 m³/s) Feb. 9, 1934, gage height, 1.52 ft (0.463 m); minimum daily, 41 ft³/s (1.16 m³/s) Sept. 26, Oct. 1, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 21 | 0830 | 8540 242 | 11.03 3.362 | June 14 | 0715 | *9670 274 | 11.90 3.627 |

Minimum discharge, 53 ft³/s (1.50 m³/s) Dec. 13, gage height, 1.63 ft (0.497 m); minimum daily, 86 ft³/s (2.44 m³/s) Oct. 15-22, Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 95 | 206 | 140 | 168 | 1180 | 850 | 769 | 900 | 437 | 285 | 267 | 148 |
| 2 | 94 | 177 | 95 | 155 | 2780 | 772 | 749 | 769 | 696 | 278 | 350 | 144 |
| 3 | 91 | 178 | 130 | 159 | 2280 | 757 | 685 | 678 | 642 | 255 | 274 | 162 |
| 4 | 91 | 203 | 99 | 226 | 3500 | 749 | 680 | 602 | 795 | 256 | 278 | 139 |
| 5 | 91 | 164 | 129 | 586 | 2470 | 696 | 672 | 538 | 1150 | 261 | 255 | 159 |
| 6 | 93 | 180 | 119 | 1430 | 1640 | 661 | 618 | 486 | 1350 | 246 | 220 | 127 |
| 7 | 93 | 160 | 100 | 915 | 1230 | 689 | 592 | 457 | 1270 | 277 | 1080 | 134 |
| 8 | 93 | 150 | 119 | 659 | 944 | 1110 | 562 | 424 | 899 | 275 | 936 | 131 |
| 9 | 91 | 145 | 114 | 533 | 832 | 1440 | 549 | 426 | 692 | 239 | 1230 | 131 |
| 10 | 90 | 140 | 111 | 480 | 1160 | 1290 | 537 | 392 | 615 | 388 | 1570 | 132 |
| 11 | 88 | 135 | 111 | 310 | 1090 | 1160 | 521 | 350 | 580 | 567 | 861 | 120 |
| 12 | 88 | 130 | 103 | 245 | 875 | 1100 | 495 | 330 | 683 | 895 | 610 | 149 |
| 13 | 88 | 125 | 86 | 265 | 748 | 1360 | 470 | 291 | 2320 | 542 | 501 | 126 |
| 14 | 87 | 120 | 150 | 310 | 676 | 1360 | 454 | 292 | 7610 | 432 | 417 | 129 |
| 15 | 86 | 120 | 115 | 315 | 610 | 1210 | 434 | 274 | 3130 | 364 | 364 | 131 |
| 16 | 86 | 115 | 120 | 290 | 599 | 1320 | 418 | 300 | 1820 | 298 | 326 | 119 |
| 17 | 86 | 110 | 174 | 255 | 862 | 2500 | 404 | 221 | 1370 | 558 | 301 | 113 |
| 18 | 86 | 110 | 117 | 230 | 3420 | 2780 | 416 | 235 | 1300 | 691 | 267 | 132 |
| 19 | 86 | 105 | 146 | 260 | 2650 | 2160 | 451 | 230 | 1030 | 438 | 228 | 91 |
| 20 | 86 | 110 | 150 | 300 | 2380 | 2090 | 426 | 198 | 789 | 335 | 262 | 124 |
| 21 | 86 | 110 | 139 | 350 | 2720 | 6910 | 400 | 263 | 656 | 353 | 190 | 125 |
| 22 | 86 | 105 | 175 | 330 | 2670 | 3990 | 386 | 392 | 560 | 483 | 227 | 107 |
| 23 | 87 | 105 | 160 | 315 | 2080 | 2530 | 362 | 384 | 504 | 434 | 223 | 135 |
| 24 | 118 | 110 | 134 | 335 | 1660 | 1920 | 356 | 632 | 449 | 1530 | 195 | 140 |
| 25 | 123 | 110 | 160 | 315 | 1410 | 1560 | 346 | 711 | 405 | 1310 | 204 | 127 |
| 26 | 156 | 110 | 190 | 290 | 1210 | 1360 | 403 | 871 | 375 | 706 | 192 | 129 |
| 27 | 295 | 105 | 210 | 270 | 1030 | 1260 | 604 | 738 | 350 | 512 | 193 | 153 |
| 28 | 905 | 105 | 220 | 250 | 938 | 1060 | 1110 | 567 | 335 | 412 | 144 | 133 |
| 29 | 841 | 105 | 225 | 245 | --- | 931 | 1370 | 464 | 332 | 371 | 161 | 167 |
| 30 | 458 | 105 | 215 | 290 | --- | 847 | 1120 | 419 | 306 | 337 | 161 | 151 |
| 31 | 316 | --- | 190 | 400 | --- | 794 | --- | 490 | --- | 321 | 168 | --- |
| TOTAL | 5260 | 3953 | 4446 | 11481 | 45644 | 49216 | 17359 | 14324 | 33450 | 14649 | 12655 | 4008 |
| MEAN | 170 | 132 | 143 | 370 | 1630 | 1588 | 579 | 462 | 1115 | 473 | 408 | 134 |
| MAX | 905 | 206 | 225 | 1430 | 3500 | 6910 | 1370 | 900 | 7610 | 1530 | 1570 | 167 |
| MIN | 86 | 105 | 86 | 155 | 599 | 661 | 346 | 198 | 306 | 239 | 144 | 91 |
| CFSM | .22 | .17 | .19 | .48 | 2.12 | 2.07 | .75 | .60 | 1.45 | .62 | .53 | .17 |
| IN. | .25 | .19 | .22 | .56 | 2.21 | 2.38 | .84 | .69 | 1.62 | .71 | .61 | .19 |

| | | | | | | | | | | | | |
|-------------|-------|--------|------|-----|-----|------|-----|----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 89646 | MEAN | 246 | MAX | 1760 | MIN | 69 | CFSM | .32 | IN | 4.34 |
| WTR YR 1982 | TOTAL | 216445 | MEAN | 593 | MAX | 7610 | MIN | 86 | CFSM | .77 | IN | 10.48 |

POTOMAC RIVER BASIN

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1949, 1952, 1956, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1955 to September 1956.

WATER TEMPERATURES: October 1948 to September 1949, October 1955 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| OCT | | | | | | | | | | | |
| 05... | 1030 | 92 | 364 | 8.4 | 14.5 | 5 | 160 | 37 | 16 | 20 | 2.1 |
| NOV | | | | | | | | | | | |
| 16... | 1015 | 115 | 354 | 8.6 | 7.0 | 5 | 160 | 41 | 14 | 9.7 | 2.1 |
| JAN | | | | | | | | | | | |
| 12... | 0945 | 997 | 290 | 7.3 | 1.0 | 5 | 130 | 38 | 9.0 | 6.4 | 1.8 |
| MAR | | | | | | | | | | | |
| 02... | 0930 | 768 | 286 | 8.2 | 5.0 | 3 | 130 | 37 | 9.0 | 4.5 | 1.4 |
| APR | | | | | | | | | | | |
| 15... | 1100 | 434 | 333 | 8.4 | 13.0 | <1 | 140 | 38 | 11 | 5.4 | 1.2 |
| JUN | | | | | | | | | | | |
| 03... | 1030 | 642 | 280 | 8.1 | 22.5 | <1 | 130 | 35 | 9.6 | 4.7 | 2.2 |
| JUL | | | | | | | | | | | |
| 14... | 1300 | 434 | 306 | 8.2 | 24.5 | 16 | 140 | 41 | 8.9 | 2.8 | 3.4 |
| SEP | | | | | | | | | | | |
| 08... | 1250 | 178 | 345 | 8.8 | 22.5 | 20 | 150 | 28 | 19 | 18 | 1.9 |

< Actual value is known to be less than the value shown.

| DATE | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|-------|---|---|---|--|---|--|---|---|---|--|--|
| OCT | | | | | | | | | | | |
| 05... | 150 | 15 | 23 | <.1 | .2 | 207 | 203 | .010 | .14 | .020 | 4 |
| NOV | | | | | | | | | | | |
| 16... | 140 | 18 | 10 | .1 | .1 | 192 | 179 | <.010 | .75 | .020 | 13 |
| JAN | | | | | | | | | | | |
| 12... | 110 | 21 | 9.2 | <.1 | 4.6 | 173 | 156 | .020 | 2.2 | .050 | 17 |
| MAR | | | | | | | | | | | |
| 02... | 100 | 18 | 7.8 | <.1 | 4.7 | 165 | 143 | .010 | 2.0 | .030 | 13 |
| APR | | | | | | | | | | | |
| 15... | 140 | 17 | 8.9 | <.1 | .9 | 185 | 167 | .010 | 1.5 | .010 | 20 |
| JUN | | | | | | | | | | | |
| 03... | 116 | 14 | 7.7 | <.1 | 7.7 | 160 | 151 | .030 | 1.4 | .130 | 15 |
| JUL | | | | | | | | | | | |
| 14... | 122 | 12 | 7.4 | .1 | 5.0 | 192 | 154 | .020 | 1.7 | .100 | 43 |
| SEP | | | | | | | | | | | |
| 08... | 132 | 20 | 21 | .2 | .4 | 177 | 188 | <.010 | .66 | <.010 | 6 |

< Actual value is known to be less than the value shown.

01634500 CEDAR CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°04'52", long 78°19'47", Frederick County, Hydrologic Unit 02070006, on left bank 0.2 mi (0.3 km) upstream from Fawcett Run, 0.3 mi (0.5 km) upstream from bridge on State Highway 628, 1.3 mi (2.1 km) downstream from Froman Run, and 11.4 mi (18.3 km) southwest of Winchester.

DRAINAGE AREA.--103 mi² (267 km²).

PERIOD OF RECORD.--June 1937 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 647.09 ft (197.233 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 92.4 ft³/s (2.617 m³/s), 12.18 in/yr (309 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) Oct. 15, 1942, gage height, 27.0 ft (8.23 m), from floodmarks, from rating curve extended above 15,000 ft³/s (420 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Feb. 19, 1941, Dec. 7, 1958, result of freezeups; minimum daily, 2.8 ft³/s (0.079 m³/s) Sept. 7, 1964, Sept. 3, 4, 7, 8, 1966; minimum gage height, 1.04 ft (0.317 m) Feb. 19, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1936, reached a stage of about 25 ft (7.6 m), discharge, about 18,000 ft³/s (510 m³/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | ---- | Unknown | Ice Jam | Mar. 21 | 1100 | 1580 44.7 | 5.79 1.765 |
| Feb. 17 | 1700 | 1090 30.9 | 4.79 1.460 | June 5 | 1200 | 1620 45.9 | 5.86 1.786 |
| Feb. 21 | 0300 | 1180 33.4 | 4.98 1.518 | June 13 | 1130 | *4600 130 | 10.92 3.328 |
| Mar. 16 | 2300 | 3620 103 | 9.30 2.835 | June 16 | 2300 | 1560 44.2 | 5.75 1.753 |
| Mar. 20 | 1400 | 1660 47.0 | 5.95 1.814 | | | | |

Minimum discharge, 9.6 ft³/s (0.27 m³/s) Oct. 1, Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|-------|-------|------|------|------|------|------|-------|
| 1 | 10 | 24 | 18 | 30 | 437 | 133 | 109 | 150 | 97 | 31 | 22 | 12 |
| 2 | 11 | 22 | 34 | 36 | 296 | 117 | 95 | 126 | 105 | 28 | 18 | 14 |
| 3 | 13 | 21 | 36 | 35 | 1140 | 111 | 198 | 108 | 220 | 31 | 18 | 14 |
| 4 | 14 | 19 | 31 | 219 | 2260 | 99 | 236 | 95 | 263 | 41 | 17 | 12 |
| 5 | 12 | 19 | 28 | 188 | 768 | 90 | 148 | 84 | 904 | 34 | 16 | 11 |
| 6 | 12 | 28 | 24 | 111 | 294 | 82 | 142 | 76 | 390 | 30 | 15 | 11 |
| 7 | 12 | 26 | 23 | 87 | 216 | 134 | 111 | 71 | 198 | 27 | 15 | 11 |
| 8 | 12 | 21 | 22 | 69 | 168 | 188 | 99 | 69 | 138 | 25 | 18 | 11 |
| 9 | 12 | 21 | 21 | 54 | 180 | 170 | 104 | 68 | 99 | 28 | 59 | 12 |
| 10 | 12 | 19 | 18 | 45 | 180 | 160 | 106 | 58 | 133 | 41 | 33 | 12 |
| 11 | 13 | 18 | 19 | 35 | 133 | 145 | 92 | 52 | 122 | 30 | 23 | 12 |
| 12 | 14 | 18 | 18 | 30 | 111 | 368 | 85 | 50 | 99 | 33 | 22 | 12 |
| 13 | 14 | 17 | 21 | 25 | 102 | 285 | 81 | 46 | 2510 | 25 | 19 | 11 |
| 14 | 13 | 16 | 25 | 23 | 92 | 216 | 76 | 42 | 875 | 23 | 17 | 11 |
| 15 | 14 | 16 | 29 | 22 | 100 | 200 | 69 | 38 | 365 | 28 | 16 | 11 |
| 16 | 14 | 17 | 29 | 21 | 205 | 1160 | 65 | 35 | 456 | 34 | 18 | 12 |
| 17 | 14 | 16 | 29 | 20 | 775 | 1750 | 66 | 34 | 597 | 42 | 21 | 11 |
| 18 | 14 | 17 | 27 | 19 | 485 | 625 | 97 | 32 | 255 | 26 | 16 | 10 |
| 19 | 16 | 16 | 27 | 19 | 327 | 382 | 76 | 30 | 175 | 25 | 14 | 11 |
| 20 | 18 | 17 | 26 | 20 | 583 | 951 | 69 | 29 | 128 | 47 | 14 | 11 |
| 21 | 15 | 18 | 25 | 21 | 1010 | 1150 | 66 | 28 | 99 | 51 | 14 | 11 |
| 22 | 15 | 16 | 26 | 21 | 636 | 608 | 61 | 33 | 79 | 33 | 14 | 13 |
| 23 | 17 | 16 | 37 | 20 | 421 | 362 | 58 | 37 | 69 | 104 | 13 | 16 |
| 24 | 20 | 16 | 57 | 20 | 376 | 279 | 55 | 39 | 59 | 58 | 14 | 14 |
| 25 | 20 | 18 | 43 | 20 | 267 | 228 | 54 | 36 | 54 | 35 | 14 | 12 |
| 26 | 21 | 17 | 40 | 20 | 200 | 228 | 139 | 33 | 49 | 28 | 12 | 14 |
| 27 | 177 | 18 | 36 | 20 | 172 | 178 | 323 | 30 | 46 | 24 | 12 | 29 |
| 28 | 129 | 19 | 33 | 20 | 152 | 148 | 570 | 32 | 42 | 24 | 14 | 18 |
| 29 | 51 | 18 | 30 | 21 | --- | 131 | 246 | 39 | 38 | 28 | 12 | 14 |
| 30 | 35 | 17 | 26 | 23 | --- | 117 | 180 | 31 | 37 | 23 | 12 | 13 |
| 31 | 28 | --- | 24 | 90 | --- | 115 | --- | 28 | --- | 28 | 12 | --- |
| TOTAL | 792 | 561 | 882 | 1404 | 12086 | 10910 | 3876 | 1659 | 8701 | 1065 | 554 | 386 |
| MEAN | 25.5 | 18.7 | 28.5 | 45.3 | 432 | 352 | 129 | 53.5 | 290 | 34.4 | 17.9 | 12.9 |
| MAX | 177 | 28 | 57 | 219 | 2260 | 1750 | 570 | 150 | 2510 | 104 | 59 | 29 |
| MIN | 10 | 16 | 18 | 19 | 92 | 82 | 54 | 28 | 37 | 23 | 12 | 10 |
| CFSM | .25 | .18 | .28 | .44 | 4.19 | 3.42 | 1.25 | .52 | 2.82 | .33 | .17 | .13 |
| IN. | .29 | .20 | .32 | .51 | 4.36 | 3.94 | 1.40 | .60 | 3.14 | .38 | .20 | .14 |
| CAL YR 1981 | TOTAL | 17020.4 | MEAN | 46.6 | MAX | 959 | MIN | 7.0 | CFSM | .45 | IN | 6.15 |
| WTR YR 1982 | TOTAL | 42876.0 | MEAN | 117 | MAX | 2510 | MIN | 10 | CFSM | 1.14 | IN | 15.49 |

POTOMAC RIVER BASIN

01635500 PASSAGE CREEK NEAR BUCKTON, VA

LOCATION.--Lat 38°57'29", long 78°16'01", Warren County, Hydrologic Unit 02070006, on right bank 350 ft (107 m) upstream from bridge on State Highway 55, 1.2 mi (1.9 km) south of Buckton railroad station, 1.4 mi (2.3 km) upstream from mouth, and 4.2 mi (6.8 km) west of Riverton.

DRAINAGE AREA.--87.8 mi² (227.4 km²).

PERIOD OF RECORD.--October 1905 to July 1906 (gage heights only), April 1932 to current year. Prior to October 1966, published as "at Buckton."

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 525.14 ft (160.063 m) National Geodetic Vertical Datum of 1929. October 1905 to July 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum. Apr. 4, 1932, to Oct. 7, 1937, nonrecording gage at site 350 ft (107 m) downstream at different datum.

REMARKS.--Records good except those for January, which are fair. Occasional diurnal fluctuation during low flow caused by State Fish Hatchery 2 mi (3 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--50 years, 68.1 ft³/s (1.929 m³/s), 10.53 in/yr (267 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s) Oct. 15, 1942, gage height, 15.5 ft (4.72 m), from high-water mark in well, from rating curve extended above 5,200 ft³/s (150 m³/s); minimum observed, 0.1 ft³/s (0.003 m³/s) Aug. 5, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 20 | 2100 | 1060 30.0 | 6.13 1.868 | June 13 | 2330 | *2130 60.3 | 7.73 2.356 |

Minimum discharge, 1.6 ft³/s (0.045 m³/s) Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-----------|----------|---------|----------|----------|------|------|-------|-------|-------|
| 1 | 4.4 | 20 | 12 | 26 | 400 | 132 | 102 | 92 | 99 | 16 | 12 | 5.8 |
| 2 | 3.8 | 18 | 15 | 25 | 160 | 130 | 86 | 84 | 102 | 14 | 10 | 5.4 |
| 3 | 3.6 | 16 | 18 | 28 | 210 | 120 | 84 | 76 | 74 | 14 | 9.7 | 5.8 |
| 4 | 5.2 | 15 | 16 | 133 | 380 | 109 | 80 | 69 | 220 | 18 | 12 | 5.4 |
| 5 | 5.8 | 14 | 15 | 163 | 209 | 104 | 67 | 60 | 256 | 17 | 10 | 6.5 |
| 6 | 5.8 | 20 | 14 | 98 | 166 | 94 | 67 | 55 | 213 | 16 | 8.3 | 4.8 |
| 7 | 5.0 | 25 | 14 | 78 | 138 | 151 | 63 | 52 | 135 | 14 | 14 | 4.2 |
| 8 | 4.8 | 18 | 14 | 63 | 116 | 248 | 55 | 57 | 109 | 12 | 15 | 3.8 |
| 9 | 5.0 | 16 | 13 | 50 | 160 | 182 | 57 | 58 | 82 | 13 | 17 | 3.8 |
| 10 | 5.0 | 15 | 12 | 40 | 182 | 156 | 58 | 49 | 111 | 15 | 25 | 3.8 |
| 11 | 5.2 | 14 | 12 | 31 | 132 | 142 | 52 | 42 | 125 | 14 | 16 | 3.8 |
| 12 | 5.8 | 14 | 12 | 26 | 114 | 150 | 49 | 38 | 96 | 12 | 14 | 4.0 |
| 13 | 5.2 | 13 | 11 | 23 | 107 | 145 | 47 | 33 | 1020 | 11 | 13 | 3.5 |
| 14 | 5.4 | 13 | 12 | 20 | 98 | 135 | 46 | 32 | 969 | 10 | 11 | 3.2 |
| 15 | 5.2 | 12 | 18 | 18 | 96 | 135 | 42 | 30 | 320 | 9.7 | 10 | 3.8 |
| 16 | 5.2 | 12 | 33 | 16 | 104 | 237 | 39 | 28 | 193 | 9.7 | 8.8 | 3.8 |
| 17 | 5.0 | 12 | 26 | 16 | 261 | 487 | 40 | 24 | 209 | 16 | 8.3 | 3.3 |
| 18 | 5.2 | 12 | 26 | 15 | 340 | 256 | 47 | 22 | 176 | 42 | 8.0 | 3.0 |
| 19 | 7.3 | 11 | 20 | 15 | 256 | 193 | 44 | 20 | 120 | 39 | 7.8 | 3.0 |
| 20 | 5.8 | 12 | 20 | 16 | 407 | 533 | 39 | 19 | 92 | 20 | 6.9 | 3.0 |
| 21 | 5.6 | 12 | 20 | 17 | 608 | 707 | 38 | 22 | 71 | 15 | 6.7 | 2.5 |
| 22 | 5.2 | 12 | 24 | 17 | 416 | 384 | 34 | 29 | 58 | 14 | 6.9 | 3.3 |
| 23 | 6.2 | 11 | 42 | 16 | 280 | 260 | 32 | 27 | 50 | 17 | 9.1 | 4.2 |
| 24 | 7.3 | 11 | 78 | 16 | 240 | 197 | 31 | 35 | 39 | 22 | 8.0 | 6.2 |
| 25 | 8.0 | 12 | 50 | 16 | 190 | 166 | 30 | 28 | 33 | 15 | 7.3 | 5.8 |
| 26 | 8.6 | 12 | 39 | 16 | 153 | 163 | 69 | 25 | 31 | 12 | 7.1 | 6.2 |
| 27 | 83 | 12 | 34 | 15 | 142 | 132 | 142 | 22 | 29 | 10 | 5.4 | 11 |
| 28 | 143 | 12 | 32 | 15 | 138 | 114 | 197 | 20 | 25 | 9.1 | 5.2 | 13 |
| 29 | 53 | 12 | 28 | 16 | --- | 104 | 125 | 23 | 23 | 9.1 | 4.8 | 9.1 |
| 30 | 33 | 11 | 23 | 18 | --- | 96 | 102 | 39 | 21 | 9.7 | 4.8 | 6.9 |
| 31 | 24 | --- | 22 | 95 | --- | 94 | --- | 43 | --- | 11 | 4.8 | --- |
| TOTAL | 480.6 | 419 | 725 | 1157 | 6203 | 6256 | 1964 | 1253 | 5101 | 476.3 | 306.9 | 151.9 |
| MEAN | 15.5 | 14.0 | 23.4 | 37.3 | 222 | 202 | 65.5 | 40.4 | 170 | 15.4 | 9.90 | 5.06 |
| MAX | 143 | 25 | 78 | 163 | 608 | 707 | 197 | 92 | 1020 | 42 | 25 | 13 |
| MIN | 3.6 | 11 | 11 | 15 | 96 | 94 | 30 | 19 | 21 | 9.1 | 4.8 | 2.5 |
| CFSM | .18 | .16 | .27 | .43 | 2.53 | 2.30 | .75 | .46 | 1.94 | .18 | .11 | .06 |
| IN. | .20 | .18 | .31 | .49 | 2.63 | 2.65 | .83 | .53 | 2.16 | .20 | .13 | .06 |
| CAL YR 1981 | TOTAL | 10336.4 | MEAN 28.3 | MAX 388 | MIN 1.6 | CFSM .32 | IN 4.38 | | | | | |
| WTR YR 1982 | TOTAL | 24493.7 | MEAN 67.1 | MAX 1020 | MIN 2.5 | CFSM .76 | IN 10.38 | | | | | |

01636500 SHENANDOAH RIVER AT MILLVILLE, WV
(National stream-quality accounting network station)

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi (0.6 km) downstream from Cattail Run, 1.0 mi (1.6 km) upstream from Millville, 5.0 mi (8.0 km) upstream from Harpers Ferry, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--3,040 mi² (7,874 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-2, 1905, 1907-8, 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 293.00 ft (89.306 m) National Geodetic Vertical Datum of 1929. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi (1.3 km) downstream at datum 0.32 ft (0.098 m) higher.

REMARKS.--Records good except those for January, which are poor. Regulation by hydroelectric plants, particularly that of Potomac Light and Power Co., 0.5 mi (0.8 km) upstream from station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--67 years (water years 1896-1908, 1929-82), 2,678 ft³/s (75.84 m³/s), 11.96 in/yr (304 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft³/s (6,510 m³/s) Oct. 16, 1942, gage height, 32.4 ft (9.88 m), from floodmarks; minimum, about 59 ft³/s (1.67 m³/s) Oct. 4, 1930, gage height, 0.39 ft (0.119 m); minimum daily, 194 ft³/s (5.49 m³/s) July 24, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft (8.035 m), discharge, 151,000 ft³/s (4,280 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15,000 ft³/s (420 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 1415 | 20600 583 | 9.91 3.021 | June 15 | 0330 | *29400 833 | 11.77 3.587 |
| Mar. 22 | 0030 | 24700 700 | 10.83 3.301 | | | | |

Minimum discharge, 331 ft³/s (9.37 m³/s) Nov. 14, gage height, 1.12 ft (0.341 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|
| 1 | 449 | 1530 | 561 | 1040 | 2640 | 3760 | 3530 | 4570 | 2210 | 1670 | 1350 | 800 |
| 2 | 449 | 1120 | 589 | 1050 | 4890 | 3500 | 3410 | 3880 | 2370 | 1550 | 1370 | 813 |
| 3 | 446 | 1080 | 630 | 1020 | 11200 | 3310 | 3240 | 3380 | 3030 | 1540 | 1670 | 850 |
| 4 | 418 | 976 | 607 | 1230 | 10300 | 3250 | 3080 | 3000 | 3130 | 1570 | 1520 | 776 |
| 5 | 423 | 893 | 592 | 1860 | 13200 | 3310 | 2980 | 2650 | 3990 | 1460 | 1300 | 764 |
| 6 | 432 | 865 | 617 | 2500 | 8870 | 3100 | 2960 | 2370 | 5630 | 1410 | 1200 | 726 |
| 7 | 427 | 788 | 616 | 4580 | 6350 | 3050 | 2790 | 2210 | 5500 | 1350 | 1260 | 716 |
| 8 | 422 | 794 | 659 | 3740 | 5090 | 3700 | 2600 | 2090 | 4880 | 1410 | 2120 | 720 |
| 9 | 427 | 771 | 561 | 2960 | 4290 | 5510 | 2540 | 1960 | 3910 | 1430 | 2810 | 666 |
| 10 | 427 | 721 | 586 | 2100 | 4190 | 5930 | 2470 | 1930 | 3180 | 1290 | 3460 | 630 |
| 11 | 418 | 681 | 572 | 1300 | 4940 | 5310 | 2430 | 1800 | 2950 | 1530 | 3020 | 656 |
| 12 | 416 | 670 | 557 | 1100 | 4370 | 4950 | 2360 | 1660 | 2860 | 2250 | 2260 | 681 |
| 13 | 374 | 665 | 551 | 1200 | 3770 | 5000 | 2180 | 1590 | 4480 | 2110 | 1840 | 632 |
| 14 | 423 | 616 | 547 | 1400 | 3300 | 5140 | 2170 | 1480 | 16600 | 1930 | 1650 | 645 |
| 15 | 414 | 622 | 632 | 1400 | 2980 | 4810 | 2030 | 1430 | 25400 | 1800 | 1510 | 578 |
| 16 | 371 | 630 | 710 | 1300 | 2780 | 4800 | 1890 | 1370 | 14000 | 1560 | 1250 | 647 |
| 17 | 440 | 603 | 720 | 1100 | 3090 | 7290 | 1910 | 1210 | 9790 | 1880 | 1400 | 680 |
| 18 | 396 | 606 | 792 | 1000 | 5610 | 8420 | 1900 | 1270 | 7710 | 2170 | 2310 | 598 |
| 19 | 392 | 565 | 828 | 1100 | 11200 | 7460 | 1870 | 1260 | 6410 | 1980 | 2000 | 562 |
| 20 | 394 | 621 | 709 | 1300 | 10300 | 6930 | 1910 | 1160 | 5080 | 1770 | 1630 | 573 |
| 21 | 423 | 552 | 586 | 1500 | 11500 | 14700 | 1940 | 1110 | 4130 | 1720 | 1510 | 562 |
| 22 | 414 | 554 | 618 | 1600 | 10800 | 21500 | 1840 | 1180 | 3500 | 2240 | 1240 | 618 |
| 23 | 400 | 584 | 856 | 1400 | 8760 | 13700 | 1800 | 1280 | 3040 | 2360 | 1050 | 638 |
| 24 | 464 | 556 | 931 | 1500 | 7060 | 9630 | 1690 | 1420 | 2650 | 2130 | 1030 | 579 |
| 25 | 443 | 569 | 994 | 1400 | 6000 | 7620 | 1590 | 1460 | 2430 | 3640 | 1030 | 661 |
| 26 | 555 | 571 | 1000 | 1300 | 5200 | 6440 | 1700 | 2540 | 2230 | 3560 | 896 | 688 |
| 27 | 621 | 564 | 1060 | 1200 | 4560 | 5760 | 2130 | 2340 | 2060 | 2410 | 900 | 799 |
| 28 | 1360 | 562 | 1170 | 1100 | 4060 | 5160 | 3150 | 2350 | 1900 | 1850 | 864 | 885 |
| 29 | 2410 | 556 | 1140 | 1100 | --- | 4470 | 5770 | 2440 | 1780 | 1630 | 846 | 755 |
| 30 | 2800 | 562 | 1120 | 1300 | --- | 3960 | 5570 | 2400 | 1780 | 1440 | 800 | 835 |
| 31 | 1990 | --- | 1060 | 1660 | --- | 3660 | --- | 2160 | --- | 1410 | 805 | --- |
| TOTAL | 20238 | 21447 | 23171 | 49340 | 181300 | 195130 | 77430 | 62950 | 158610 | 58050 | 47901 | 20733 |
| MEAN | 653 | 715 | 747 | 1592 | 6475 | 6295 | 2581 | 2031 | 5287 | 1873 | 1545 | 691 |
| MAX | 2800 | 1530 | 1170 | 4580 | 13200 | 21500 | 5770 | 4570 | 25400 | 3640 | 3460 | 885 |
| MIN | 371 | 552 | 547 | 1000 | 2640 | 3050 | 1590 | 1110 | 1780 | 1290 | 800 | 562 |
| CFSM | .22 | .24 | .25 | .52 | 2.13 | 2.07 | .85 | .67 | 1.74 | .62 | .51 | .23 |
| IN. | .25 | .26 | .28 | .60 | 2.22 | 2.39 | .95 | .77 | 1.94 | .71 | .59 | .25 |

| CAL YR 1981 | TOTAL | 408343 | MEAN | 1119 | MAX | 4950 | MIN | 371 | CFSM | .37 | IN | 5.00 |
|-------------|-------|--------|------|------|-----|-------|-----|-----|------|-----|----|-------|
| WTR YR 1982 | TOTAL | 916300 | MEAN | 2510 | MAX | 25400 | MIN | 371 | CFSM | .83 | IN | 11.21 |

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-63, 1965, 1969-71, 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to current year.

WATER TEMPERATURES: October 1980 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1980.

REMARKS.--Periods of missing record due to instrument malfunction.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 777 micromhos Oct. 27; minimum, 212 micromhos Jan. 17.

WATER TEMPERATURES: Maximum daily, 29°C July 18, 19; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE, AIR (DEG C) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) |
|-------|------|---|---|---------------|-------------------------------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|---|
| NOV | | | | | | | | | | | | |
| 02... | 1115 | 631 | 480 | 8.1 | 20.0 | 14.0 | 4.5 | 10.2 | 36 | 480 | 150 | 24 |
| JAN | | | | | | | | | | | | |
| 19... | 1045 | 1100 | 405 | 7.3 | -6.0 | .0 | 1.5 | 14.8 | <1 | K12 | 130 | 38 |
| MAR | | | | | | | | | | | | |
| 15... | 1030 | 4830 | 260 | 7.9 | 5.0 | 7.0 | 8.0 | 14.6 | 29 | 230 | 110 | 24 |
| MAY | | | | | | | | | | | | |
| 10... | 1045 | 1950 | 350 | 8.2 | 17.5 | 17.5 | 1.9 | 9.0 | K46 | 530 | 120 | 19 |
| JUL | | | | | | | | | | | | |
| 13... | 1115 | 2260 | 405 | 8.5 | 28.0 | 26.0 | 3.2 | 7.8 | 170 | K12000 | 160 | 17 |
| SEP | | | | | | | | | | | | |
| 20... | 1245 | 564 | 490 | 8.1 | 21.0 | 21.5 | 3.7 | 8.0 | K16 | 380 | 190 | 34 |

< Actual value is known to be less than the value shown.

K Result based on colony count outside optimal range.

| DATE | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | PERCENT SODIUM | SODIUM AD- SORP- TION RATIO | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAR (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) |
|-------|--|--|--|-------------------|---|---|---|---|---|--|---|--|
| NOV | | | | | | | | | | | | |
| 02... | 42 | 12 | 29 | 29 | 1.1 | 2.0 | 130 | 60 | 20 | .1 | 3.1 | 262 |
| JAN | | | | | | | | | | | | |
| 19... | 38 | 8.7 | 29 | 32 | 1.2 | 2.2 | 93 | 65 | 10 | <.1 | 5.0 | 222 |
| MAR | | | | | | | | | | | | |
| 15... | 30 | 7.4 | 9.2 | 16 | .4 | 1.4 | 81 | 26 | 8.5 | <.1 | 4.8 | 151 |
| MAY | | | | | | | | | | | | |
| 10... | 33 | 8.4 | 16 | 23 | .7 | 1.5 | 98 | 40 | 9.3 | .1 | 2.9 | 174 |
| JUL | | | | | | | | | | | | |
| 13... | 42 | 13 | 19 | 20 | .7 | 2.1 | 141 | 36 | 12 | .1 | 1.4 | 258 |
| SEP | | | | | | | | | | | | |
| 20... | 48 | 16 | 34 | 28 | 1.2 | 2.8 | 152 | 60 | 23 | .2 | 2.1 | 295 |

< Actual value is known to be less than the value shown.

| DATE | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | SOLIDS, DIS- SOLVED (TONS PER AC-FT) | SOLIDS, DIS- SOLVED (TONS PER DAY) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS TOTAL (MG/L AS P04) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTH0, DIS- SOLVED (MG/L AS P) | PHOS- PHATE, ORTH0, DIS- SOLVED (MG/L AS P04) |
|-------|--|---|---|---|---|---|--|---|--|--|--|---|
| NOV | | | | | | | | | | | | |
| 02... | 246 | .36 | 446 | 1.6 | .050 | .06 | 1.20 | .250 | .77 | .230 | .210 | .64 |
| JAN | | | | | | | | | | | | |
| 19... | 214 | .30 | 659 | 1.5 | .110 | .14 | .51 | .100 | .31 | .090 | .080 | .25 |
| MAR | | | | | | | | | | | | |
| 15... | 136 | .21 | 1970 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | | |
| 10... | 170 | .24 | 916 | .88 | .050 | .06 | .65 | .090 | .28 | .070 | .070 | .21 |
| JUL | | | | | | | | | | | | |
| 13... | 210 | .35 | 1570 | 1.2 | .020 | .03 | .70 | .100 | .31 | .060 | .060 | .18 |
| SEP | | | | | | | | | | | | |
| 20... | 278 | .40 | 449 | 1.0 | .050 | .06 | 1.10 | .200 | .61 | .130 | .130 | .40 |

POTOMAC RIVER BASIN

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01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS- PENDE TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR) |
|--------------|-------------------------------------|--|--|---|---|--|---|--|--|--|
| NOV 02... | 1 | 0 | 2 | 100 | 70 | 30 | <1 | <1 | 10 | -- |
| MAR 15... | 1 | 0 | 1 | 100 | 60 | 36 | 3 | <1 | 30 | 10 |
| MAY 10... | 2 | 1 | 1 | <100 | -- | 35 | <1 | <1 | 20 | 10 |
| SEP 20... | 2 | 0 | 2 | 100 | 50 | 51 | 1 | 2 | 10 | -- |

< Actual value is known to be less than the value shown.

| DATE | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) |
|--------------|---|---|--|---|---|--|---|---|--|---|
| NOV 02... | <10 | 2 | <1 | 45 | 42 | 3 | 270 | 240 | 27 | 79 |
| MAR 15... | 20 | 2 | <1 | 7 | 5 | 2 | 630 | 610 | 17 | 7 |
| MAY 10... | 10 | 3 | <1 | 4 | 1 | 3 | 210 | -- | <3 | 6 |
| SEP 20... | <10 | 1 | <1 | 5 | 0 | 5 | 430 | 420 | 13 | 2 |

< Actual value is known to be less than the value shown.

| DATE | LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG) | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) |
|--------------|---|--|---|---|--|---|---|--|---|
| NOV 02... | 77 | 2 | 30 | 20 | 10 | <.1 | -- | <.1 | 4 |
| MAR 15... | 6 | <1 | 40 | 40 | 4 | .1 | -- | <.1 | 3 |
| MAY 10... | 0 | 6 | 30 | 30 | 3 | .1 | -- | <.1 | 4 |
| SEP 20... | 0 | 2 | 20 | 10 | 8 | .2 | .0 | .2 | 4 |

< Actual value is known to be less than the value shown.

| DATE | NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|--------------|---|--|--|---|---|--|---|---|--|
| NOV 02... | 0 | 5 | <1 | <1 | <1 | <1 | 90 | 80 | 8 |
| MAR 15... | 2 | 1 | <1 | <1 | <1 | <1 | 40 | -- | <4 |
| MAY 10... | 0 | 4 | <1 | <1 | <1 | <1 | 60 | 60 | 3 |
| SEP 20... | 2 | 2 | <1 | <1 | <1 | <1 | 20 | -- | <4 |

< Actual value is known to be less than the value shown.

POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SEDI- MENT, SUS- PENDE (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) |
|--------------|---|---|---|
| NOV 02... | 100 | 11 | 19 |
| JAN 19... | 80 | 56 | 166 |
| MAR 15... | 86 | 32 | 417 |
| JUL 13... | 62 | 24 | 146 |
| SEP 20... | 100 | 10 | 15 |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|---------|-----|------|----------|-----|------|----------|-----|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 530 | 484 | 511 | 481 | 476 | 479 | 624 | 608 | 619 | 505 | 499 | 502 |
| 2 | 537 | 481 | 514 | 486 | 475 | 482 | 606 | 578 | 588 | 500 | 489 | 497 |
| 3 | 552 | 498 | 534 | 473 | 464 | 467 | 609 | 584 | 602 | 495 | 487 | 492 |
| 4 | 579 | 523 | 548 | 480 | 470 | 476 | 612 | 607 | 609 | 492 | 487 | 489 |
| 5 | 594 | 544 | 570 | 482 | 468 | 477 | 622 | 612 | 619 | 487 | 481 | 485 |
| 6 | 598 | 546 | 578 | 470 | 464 | 466 | 622 | 617 | 619 | 483 | 435 | 464 |
| 7 | 614 | 542 | 585 | 488 | 470 | 478 | 619 | 612 | 617 | 431 | 359 | 378 |
| 8 | 624 | 572 | 602 | 510 | 491 | 503 | 611 | 596 | 605 | 356 | 336 | 342 |
| 9 | 635 | 577 | 612 | 511 | 475 | 498 | 600 | 594 | 596 | 340 | 333 | 337 |
| 10 | 650 | 599 | 629 | 488 | 468 | 474 | 603 | 600 | 601 | 334 | 301 | 326 |
| 11 | 652 | 573 | 634 | 510 | 489 | 502 | 611 | 604 | 609 | 329 | 285 | 315 |
| 12 | 652 | 594 | 628 | 508 | 499 | 504 | 611 | 603 | 607 | 335 | 328 | 331 |
| 13 | 647 | 578 | 626 | 508 | 504 | 506 | 603 | 600 | 602 | 334 | 330 | 332 |
| 14 | 654 | 612 | 635 | 507 | 501 | 505 | 606 | 603 | 605 | 333 | 326 | 329 |
| 15 | 667 | 633 | 649 | 509 | 505 | 508 | 602 | 588 | 595 | 390 | 290 | 350 |
| 16 | 668 | 602 | 642 | 508 | 499 | 504 | 589 | 573 | 581 | 397 | 292 | 378 |
| 17 | 656 | 595 | 625 | 518 | 500 | 509 | 627 | 574 | 597 | 377 | 212 | 317 |
| 18 | 658 | 605 | 635 | 526 | 519 | 522 | 647 | 630 | 639 | 393 | 375 | 381 |
| 19 | 669 | 609 | 643 | 551 | 526 | 536 | 656 | 649 | 654 | 413 | 393 | 406 |
| 20 | 665 | 610 | 648 | 570 | 553 | 564 | 654 | 628 | 641 | 420 | 406 | 413 |
| 21 | 674 | 614 | 648 | 571 | 564 | 567 | 627 | 604 | 616 | 434 | 419 | 426 |
| 22 | 702 | 620 | 662 | 566 | 561 | 564 | 603 | 586 | 594 | 465 | 435 | 452 |
| 23 | 732 | 667 | 705 | 588 | 568 | 577 | 584 | 565 | 576 | 473 | 461 | 467 |
| 24 | 749 | 698 | 728 | 596 | 588 | 594 | 563 | 549 | 558 | 477 | 431 | 463 |
| 25 | 753 | 692 | 732 | 594 | 588 | 591 | 573 | 549 | 560 | 482 | 405 | 457 |
| 26 | 770 | 711 | 741 | 588 | 577 | 582 | 593 | 575 | 586 | 503 | 407 | 478 |
| 27 | 777 | 684 | 738 | 623 | 586 | 605 | 573 | 562 | 565 | 519 | 387 | 469 |
| 28 | 732 | 635 | 696 | 633 | 625 | 631 | 565 | 512 | 538 | 512 | 474 | 492 |
| 29 | 706 | 610 | 662 | 631 | 626 | 629 | 510 | 500 | 504 | 501 | 484 | 496 |
| 30 | 639 | 391 | 463 | 627 | 624 | 626 | 503 | 497 | 501 | 492 | 476 | 485 |
| 31 | 476 | 414 | 460 | --- | --- | --- | 503 | 495 | 498 | 493 | 436 | 456 |
| MONTH | 777 | 391 | 622 | 633 | 464 | 531 | 656 | 495 | 590 | 519 | 212 | 420 |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|----------|-----|------|-------|-----|------|--------|-----|------|-----------|-----|------|
| | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 534 | 441 | 499 | 290 | 283 | 288 | 318 | 313 | 315 | 310 | 302 | 304 |
| 2 | 501 | 396 | 467 | 289 | 280 | 284 | 325 | 316 | 319 | 303 | 297 | 299 |
| 3 | 345 | 318 | 325 | 281 | 276 | 278 | 330 | 326 | 329 | 295 | 294 | 295 |
| 4 | 405 | 276 | 345 | 286 | 278 | 282 | 334 | 330 | 332 | 299 | 294 | 296 |
| 5 | 274 | 249 | 256 | 287 | 284 | 286 | 339 | 331 | 335 | 304 | 299 | 302 |
| 6 | 258 | 249 | 254 | 285 | 283 | 284 | 339 | 332 | 335 | 225 | 218 | 222 |
| 7 | 260 | 256 | 259 | 290 | 285 | 287 | 339 | 332 | 336 | 230 | 222 | 226 |
| 8 | 259 | 252 | 255 | 294 | 290 | 293 | 341 | 328 | 335 | 238 | 229 | 234 |
| 9 | 268 | 259 | 264 | 295 | 284 | 292 | 350 | 342 | 345 | 240 | 237 | 239 |
| 10 | 273 | 268 | 270 | 284 | 278 | 280 | 349 | 344 | 348 | 335 | 239 | 296 |
| 11 | 277 | 273 | 275 | 280 | 277 | 278 | 349 | 345 | 347 | 343 | 336 | 340 |
| 12 | 281 | 274 | 278 | 281 | 275 | 279 | 346 | 341 | 344 | 345 | 341 | 342 |
| 13 | 284 | 279 | 281 | 275 | 267 | 270 | 345 | 342 | 343 | 354 | 347 | 350 |
| 14 | 291 | 283 | 287 | 267 | 262 | 265 | 352 | 345 | 349 | 372 | 357 | 368 |
| 15 | 297 | 292 | 295 | 265 | 262 | 264 | 350 | 342 | 344 | 378 | 369 | 374 |
| 16 | 299 | 295 | 296 | 265 | 263 | 265 | 348 | 344 | 346 | 383 | 365 | 374 |
| 17 | 299 | 294 | 296 | 264 | 262 | 263 | 348 | 342 | 345 | 395 | 384 | 389 |
| 18 | 302 | 287 | 295 | 261 | 250 | 253 | 353 | 343 | 347 | 406 | 396 | 401 |
| 19 | 286 | 257 | 270 | 252 | 250 | 251 | 354 | 352 | 353 | 412 | 402 | 408 |
| 20 | 285 | 264 | 275 | 255 | 251 | 253 | 359 | 353 | 356 | 402 | 397 | 399 |
| 21 | 275 | 243 | 253 | 304 | 255 | 266 | 358 | 350 | 353 | 403 | 397 | 400 |
| 22 | 245 | 240 | 242 | 298 | 230 | 264 | 355 | 346 | 350 | 403 | 400 | 401 |
| 23 | 243 | 239 | 241 | 235 | 224 | 228 | 349 | 346 | 348 | 410 | 403 | 406 |
| 24 | 245 | 240 | 242 | 251 | 237 | 244 | 353 | 348 | 351 | 412 | 400 | 407 |
| 25 | 252 | 242 | 247 | 265 | 251 | 258 | 359 | 351 | 355 | 406 | 390 | 398 |
| 26 | 260 | 252 | 255 | 274 | 264 | 269 | 358 | 353 | 356 | 396 | 392 | 395 |
| 27 | 268 | 259 | 265 | 282 | 273 | 279 | 367 | 356 | 362 | 397 | 372 | 384 |
| 28 | 282 | 268 | 274 | 295 | 282 | 289 | 368 | 342 | 361 | 395 | 370 | 382 |
| 29 | --- | --- | --- | 303 | 295 | 300 | 340 | 311 | 324 | 427 | 409 | 422 |
| 30 | --- | --- | --- | 311 | 303 | 306 | 317 | 310 | 314 | 460 | 424 | 446 |
| 31 | --- | --- | --- | 318 | 308 | 313 | --- | --- | --- | 439 | 407 | 421 |
| MONTH | 534 | 239 | 288 | 318 | 224 | 275 | 368 | 310 | 343 | 460 | 218 | 352 |
| | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 421 | 404 | 411 | 361 | 353 | 358 | 495 | 479 | 486 | 504 | 499 | 502 |
| 2 | 409 | 403 | 407 | 361 | 356 | 360 | 508 | 495 | 502 | 515 | 501 | 508 |
| 3 | 420 | 391 | 410 | 357 | 353 | 356 | 519 | 507 | 514 | 512 | 501 | 505 |
| 4 | 393 | 381 | 386 | 366 | 354 | 360 | 512 | 507 | 510 | 499 | 487 | 494 |
| 5 | 389 | 360 | 379 | 365 | 360 | 362 | 508 | 506 | 507 | --- | --- | --- |
| 6 | 369 | 357 | 362 | 365 | 360 | 362 | 507 | 502 | 504 | 499 | 494 | 497 |
| 7 | 357 | 340 | 345 | 367 | 364 | 365 | 522 | 506 | 513 | 497 | 490 | 493 |
| 8 | 351 | 344 | 348 | 376 | 366 | 370 | 525 | 513 | 521 | 497 | 488 | 493 |
| 9 | 366 | 353 | 359 | 396 | 377 | 387 | 514 | 502 | 508 | 499 | 496 | 498 |
| 10 | 371 | 366 | 369 | 405 | 396 | 401 | 516 | 488 | 506 | 500 | 495 | 497 |
| 11 | 390 | 370 | 381 | 410 | 404 | 407 | 487 | 458 | 474 | 501 | 495 | 497 |
| 12 | 397 | 391 | 395 | 419 | 409 | 412 | 469 | 451 | 460 | 499 | 470 | 490 |
| 13 | 395 | 383 | 391 | 426 | 415 | 422 | 475 | 462 | 468 | 509 | 473 | 502 |
| 14 | 385 | 264 | 350 | 573 | 416 | 539 | 465 | 447 | 454 | 513 | 501 | 508 |
| 15 | 313 | 271 | 288 | 604 | 556 | 573 | 476 | 458 | 467 | 513 | 489 | 507 |
| 16 | 277 | 270 | 272 | 598 | 544 | 562 | 485 | 475 | 481 | 505 | 488 | 500 |
| 17 | 290 | 277 | 285 | 551 | 520 | 541 | 493 | 482 | 486 | 505 | 498 | 501 |
| 18 | 298 | 291 | 295 | 520 | 512 | 515 | 497 | 487 | 493 | 498 | 491 | 495 |
| 19 | 311 | 299 | 307 | 522 | 499 | 509 | 496 | 476 | 489 | 495 | 484 | 489 |
| 20 | 320 | 312 | 316 | 497 | 480 | 488 | 485 | 458 | 474 | 551 | 472 | 487 |
| 21 | 330 | 320 | 325 | 497 | 482 | 490 | 484 | 463 | 477 | 478 | 473 | 475 |
| 22 | 338 | 331 | 335 | 515 | 499 | 509 | 486 | 480 | 482 | 479 | 468 | 474 |
| 23 | 345 | 339 | 341 | 511 | 454 | 476 | 487 | 475 | 483 | 468 | 461 | 464 |
| 24 | 351 | 346 | 348 | 490 | 452 | 471 | 474 | 451 | 460 | 485 | 465 | 472 |
| 25 | 357 | 352 | 354 | 493 | 488 | 491 | --- | --- | --- | 505 | 485 | 496 |
| 26 | 362 | 358 | 360 | 492 | 459 | 477 | 473 | 468 | 470 | 522 | 508 | 516 |
| 27 | 364 | 353 | 359 | 459 | 437 | 447 | 485 | 472 | 477 | 514 | 498 | 508 |
| 28 | 369 | 356 | 363 | 446 | 435 | 438 | 492 | 480 | 487 | 497 | 478 | 487 |
| 29 | 366 | 355 | 362 | 464 | 445 | 455 | 498 | 485 | 493 | 478 | 473 | 475 |
| 30 | 361 | 352 | 357 | 474 | 463 | 469 | 504 | 494 | 499 | 478 | 471 | 473 |
| 31 | --- | --- | --- | 483 | 474 | 480 | 507 | 502 | 505 | --- | --- | --- |
| MONTH | 421 | 264 | 352 | 604 | 353 | 447 | 525 | 447 | 488 | 551 | 461 | 493 |
| YEAR | 777 | 212 | 434 | | | | | | | | | |

POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|----------|------|------|----------|------|------|---------|------|------|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 19.0 | 18.0 | 18.5 | 13.0 | 12.0 | 12.5 | 4.5 | 4.0 | 4.0 | 1.5 | 1.0 | 1.5 |
| 2 | 19.0 | 17.5 | 18.0 | 13.5 | 13.0 | 13.0 | 4.0 | 3.5 | 4.0 | 2.0 | 1.5 | 1.5 |
| 3 | 17.5 | 15.5 | 16.5 | 14.0 | 13.5 | 14.0 | 5.0 | 4.0 | 4.5 | 2.0 | 1.5 | 2.0 |
| 4 | 15.5 | 15.0 | 15.0 | 14.0 | 13.5 | 14.0 | 6.0 | 5.0 | 5.5 | 2.5 | 1.5 | 2.0 |
| 5 | 16.5 | 15.0 | 15.5 | 14.0 | 13.5 | 13.5 | 6.0 | 5.5 | 6.0 | 3.0 | 2.5 | 3.0 |
| 6 | 17.0 | 16.5 | 16.5 | 14.0 | 13.0 | 13.5 | 5.5 | 5.0 | 5.0 | 3.0 | 2.5 | 2.5 |
| 7 | 16.5 | 15.5 | 16.0 | 12.5 | 11.0 | 11.5 | 5.0 | 4.5 | 4.5 | 3.5 | 3.0 | 3.5 |
| 8 | 15.5 | 14.0 | 14.5 | 11.0 | 10.5 | 10.5 | 4.5 | 4.0 | 4.5 | 3.0 | 2.5 | 3.0 |
| 9 | 14.5 | 13.5 | 14.0 | 11.0 | 10.0 | 10.5 | 4.5 | 3.0 | 3.5 | 2.5 | 1.5 | 2.0 |
| 10 | 14.5 | 13.5 | 14.0 | 10.5 | 9.5 | 10.0 | 3.0 | 2.0 | 2.5 | 1.5 | .0 | .0 |
| 11 | 14.0 | 13.5 | 13.5 | 10.0 | 9.5 | 9.5 | 2.0 | 1.5 | 2.0 | .5 | .0 | .0 |
| 12 | 14.0 | 13.5 | 13.5 | 9.5 | 8.5 | 9.0 | 2.0 | 1.5 | 1.5 | .5 | .0 | .0 |
| 13 | 14.5 | 13.0 | 13.5 | 8.5 | 8.0 | 8.0 | 2.0 | 1.0 | 1.5 | .0 | .0 | .0 |
| 14 | 14.5 | 13.5 | 14.0 | 8.0 | 7.0 | 7.5 | 1.5 | 1.0 | 1.0 | .0 | .0 | .0 |
| 15 | 14.5 | 13.0 | 14.0 | 8.0 | 7.0 | 7.5 | 1.0 | .5 | .5 | .0 | .0 | .0 |
| 16 | 15.0 | 13.5 | 14.0 | 8.5 | 8.0 | 8.5 | 1.0 | .5 | .5 | .5 | .0 | .0 |
| 17 | 15.0 | 14.0 | 14.5 | 9.0 | 8.5 | 8.5 | 1.0 | .5 | 1.0 | .0 | .0 | .0 |
| 18 | 14.0 | 13.5 | 14.0 | 8.5 | 8.0 | 8.5 | 1.0 | .5 | .5 | .5 | .0 | .0 |
| 19 | 14.0 | 12.5 | 13.0 | 8.5 | 8.0 | 8.0 | 1.0 | .5 | .5 | .0 | .0 | .0 |
| 20 | 12.5 | 11.0 | 12.0 | 9.0 | 8.5 | 8.5 | .5 | .0 | .5 | .5 | .0 | .0 |
| 21 | 12.5 | 11.0 | 12.0 | 8.5 | 7.0 | 8.0 | .5 | .0 | .5 | .0 | .0 | .0 |
| 22 | 13.0 | 12.0 | 12.5 | 7.0 | 6.0 | 6.5 | .5 | .5 | .5 | .0 | .0 | .0 |
| 23 | 13.0 | 13.0 | 13.0 | 5.5 | 5.0 | 5.5 | 1.0 | .5 | .5 | .0 | .0 | .0 |
| 24 | 13.5 | 12.0 | 12.5 | 5.0 | 4.5 | 4.5 | 1.0 | .5 | .5 | .0 | .0 | .0 |
| 25 | 12.5 | 11.5 | 12.0 | 4.5 | 4.0 | 4.0 | 1.0 | .5 | .5 | .0 | .0 | .0 |
| 26 | 11.5 | 11.0 | 11.0 | 4.5 | 4.0 | 4.0 | 1.0 | 1.0 | 1.0 | .0 | .0 | .0 |
| 27 | 12.0 | 11.0 | 11.5 | 5.0 | 4.0 | 4.5 | 1.5 | 1.0 | 1.5 | .0 | .0 | .0 |
| 28 | 13.5 | 12.0 | 12.5 | 5.0 | 5.0 | 5.0 | 2.0 | 1.5 | 2.0 | .0 | .0 | .0 |
| 29 | 13.5 | 12.5 | 13.0 | 5.0 | 4.5 | 5.0 | 2.5 | 2.0 | 2.5 | .5 | .0 | .0 |
| 30 | 12.5 | 12.0 | 12.5 | 5.0 | 4.5 | 4.5 | 2.0 | 2.0 | 2.0 | .5 | .0 | .0 |
| 31 | 12.5 | 12.5 | 12.5 | --- | --- | --- | 1.5 | 1.0 | 1.5 | .5 | .0 | .0 |
| MONTH | 19.0 | 11.0 | 14.0 | 14.0 | 4.0 | 8.5 | 6.0 | .0 | 2.0 | 3.5 | .0 | .5 |
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | .5 | .0 | .0 | 4.5 | 3.0 | 4.0 | 11.5 | 9.0 | 10.5 | 15.5 | 15.0 | 15.0 |
| 2 | .5 | .0 | .0 | 4.0 | 3.5 | 4.0 | 12.5 | 10.0 | 11.0 | 16.5 | 15.0 | 15.5 |
| 3 | .0 | .0 | .0 | 4.5 | 3.5 | 4.0 | 12.0 | 11.0 | 11.5 | 17.5 | 15.0 | 16.5 |
| 4 | .5 | .0 | .0 | 4.5 | 3.5 | 4.0 | 11.5 | 10.5 | 11.0 | 18.0 | 16.0 | 17.0 |
| 5 | 1.5 | .0 | .5 | 5.0 | 3.5 | 4.0 | 10.5 | 9.5 | 10.0 | 18.0 | 16.5 | 17.5 |
| 6 | 2.0 | 1.5 | 1.5 | 4.5 | 4.0 | 4.0 | 10.5 | 7.0 | 9.0 | 20.0 | 18.5 | 19.0 |
| 7 | 2.0 | 1.0 | 1.5 | 4.0 | 3.5 | 3.5 | 7.0 | 5.5 | 6.5 | 21.5 | 19.5 | 20.5 |
| 8 | 2.0 | 1.5 | 1.5 | 4.0 | 3.0 | 3.5 | 8.0 | 6.5 | 7.0 | 20.5 | 19.5 | 20.0 |
| 9 | 2.0 | 1.5 | 2.0 | 4.5 | 3.0 | 4.0 | 7.5 | 7.0 | 7.5 | 20.0 | 18.5 | 19.5 |
| 10 | 2.0 | 1.0 | 1.5 | 4.5 | 3.5 | 4.0 | 8.5 | 7.0 | 7.5 | 20.0 | 18.0 | 19.0 |
| 11 | 2.5 | 1.0 | 1.5 | 6.5 | 4.5 | 5.5 | 10.0 | 8.0 | 9.0 | 20.0 | 18.0 | 19.0 |
| 12 | 2.0 | 1.5 | 1.5 | 8.5 | 6.5 | 7.5 | 10.5 | 8.5 | 9.5 | 21.5 | 18.5 | 20.0 |
| 13 | 2.0 | 1.5 | 2.0 | 9.0 | 8.0 | 8.5 | 11.5 | 10.0 | 10.5 | 22.5 | 20.5 | 21.5 |
| 14 | 2.5 | 1.0 | 1.5 | 9.0 | 8.5 | 8.5 | 13.0 | 11.0 | 12.0 | 23.0 | 21.5 | 22.0 |
| 15 | 3.5 | 1.5 | 2.5 | 8.5 | 7.5 | 8.0 | 13.5 | 12.0 | 12.5 | 23.0 | 21.5 | 22.5 |
| 16 | 5.0 | 3.5 | 4.0 | 7.5 | 6.5 | 7.0 | 15.0 | 12.0 | 13.5 | 23.5 | 22.0 | 22.5 |
| 17 | 5.0 | 3.5 | 4.5 | 7.5 | 6.5 | 7.0 | 17.5 | 14.5 | 16.0 | 24.5 | 22.5 | 23.5 |
| 18 | 3.5 | 2.5 | 3.0 | 8.5 | 6.5 | 7.5 | 17.5 | 16.0 | 17.0 | 25.0 | 24.0 | 24.5 |
| 19 | 3.5 | 2.0 | 2.5 | 9.0 | 8.0 | 8.5 | 16.5 | 15.0 | 16.0 | 25.0 | 24.0 | 24.5 |
| 20 | 4.0 | 3.0 | 3.5 | 9.0 | 8.5 | 8.5 | 16.5 | 15.0 | 16.0 | 24.5 | 23.5 | 24.0 |
| 21 | 4.5 | 3.5 | 4.0 | 8.5 | 8.0 | 8.5 | 17.0 | 15.5 | 16.0 | 24.0 | 23.5 | 23.5 |
| 22 | 4.5 | 4.0 | 4.5 | 8.0 | 7.5 | 8.0 | 16.0 | 15.0 | 15.5 | 23.5 | 22.0 | 22.5 |
| 23 | 5.0 | 4.0 | 4.5 | 8.5 | 7.0 | 8.0 | 15.5 | 13.5 | 14.5 | 22.0 | 20.0 | 20.5 |
| 24 | 5.0 | 4.5 | 5.0 | 9.5 | 7.5 | 8.5 | 16.5 | 14.0 | 15.5 | 19.5 | 19.0 | 19.5 |
| 25 | 5.0 | 4.5 | 5.0 | 10.5 | 8.5 | 9.5 | 17.0 | 15.5 | 16.5 | 20.5 | 19.5 | 20.0 |
| 26 | 4.5 | 3.5 | 4.0 | 10.5 | 9.5 | 9.5 | 17.0 | 16.0 | 16.5 | 21.5 | 20.5 | 21.0 |
| 27 | 4.0 | 3.5 | 4.0 | 9.5 | 7.5 | 8.5 | 16.5 | 15.5 | 16.0 | 23.0 | 21.0 | 22.0 |
| 28 | 4.5 | 3.0 | 3.5 | 8.0 | 7.0 | 7.5 | 16.5 | 14.5 | 15.5 | 23.0 | 22.5 | 22.5 |
| 29 | --- | --- | --- | 8.5 | 6.5 | 7.5 | 16.0 | 14.5 | 15.5 | 24.0 | 22.5 | 23.5 |
| 30 | --- | --- | --- | 9.5 | 7.5 | 8.5 | 16.0 | 15.0 | 15.5 | 25.0 | 23.5 | 24.0 |
| 31 | --- | --- | --- | 10.5 | 8.5 | 9.5 | --- | --- | --- | 26.0 | 24.0 | 25.0 |
| MONTH | 5.0 | .0 | 2.5 | 10.5 | 3.0 | 6.5 | 17.5 | 5.5 | 12.5 | 26.0 | 15.0 | 21.0 |

POTOMAC RIVER BASIN

01638480 CATOCTIN CREEK AT TAYLORSTOWN, VA

LOCATION.--Lat 39°15'16", long 77°34'36", Loudoun County, Hydrologic Unit 02070008, on right bank at upstream side of bridge on State Highway 663 at Taylorstown and 3.2 mi (5.1 km) downstream from Milltown Creek.

DRAINAGE AREA.--89.6 mi² (232.1 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 249.15 ft (75.941 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 106 ft³/s (3.002 m³/s), 16.07 in/yr (408 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s (674 m³/s) June 22, 1972, gage height, 23.83 ft (7.263 m), from floodmarks, from rating curve extended above 7,400 ft³/s (210 m³/s) on basis of contracted-opening measurement of peak flow; minimum daily, 1.9 ft³/s (0.054 m³/s) Sept. 14-17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 1300 | 1600 45.3 | 5.53 1.686 | June 13 | 1400 | 2580 73.1 | 7.59 2.313 |
| Feb. 3 | 1600 | 1980 56.1 | 6.36 1.939 | June 17 | 0100 | *3000 85.0 | 8.45 2.576 |
| June 5 | 1530 | 1560 44.2 | 5.44 1.658 | | | | |

Minimum discharge, 2.8 ft³/s (0.079 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|-------|
| 1 | 3.0 | 8.8 | 8.8 | 30 | 962 | 84 | 98 | 83 | 57 | 65 | 27 | 7.2 |
| 2 | 3.7 | 8.2 | 13 | 48 | 758 | 80 | 73 | 76 | 242 | 56 | 37 | 12 |
| 3 | 3.2 | 6.0 | 16 | 33 | 1310 | 75 | 89 | 67 | 80 | 73 | 52 | 17 |
| 4 | 3.4 | 6.5 | 13 | 150 | 620 | 67 | 108 | 61 | 292 | 110 | 27 | 12 |
| 5 | 4.0 | 7.6 | 11 | 92 | 252 | 66 | 75 | 56 | 794 | 65 | 23 | 8.2 |
| 6 | 3.7 | 9.9 | 9.9 | 51 | 147 | 60 | 81 | 52 | 396 | 57 | 21 | 7.2 |
| 7 | 4.0 | 12 | 8.8 | 42 | 100 | 105 | 75 | 51 | 205 | 51 | 24 | 5.5 |
| 8 | 3.7 | 11 | 8.8 | 34 | 84 | 164 | 65 | 50 | 154 | 47 | 21 | 5.5 |
| 9 | 3.7 | 9.3 | 8.2 | 25 | 93 | 121 | 73 | 53 | 125 | 46 | 23 | 6.6 |
| 10 | 4.0 | 8.2 | 7.6 | 22 | 78 | 103 | 91 | 45 | 152 | 43 | 23 | 7.7 |
| 11 | 4.3 | 7.6 | 7.6 | 20 | 69 | 94 | 75 | 41 | 141 | 42 | 19 | 7.2 |
| 12 | 4.6 | 8.8 | 7.1 | 18 | 65 | 108 | 67 | 38 | 110 | 42 | 22 | 6.0 |
| 13 | 4.6 | 7.6 | 6.5 | 17 | 62 | 103 | 64 | 35 | 1280 | 36 | 20 | 5.5 |
| 14 | 5.4 | 7.1 | 7.6 | 16 | 55 | 91 | 61 | 33 | 521 | 34 | 17 | 5.2 |
| 15 | 6.5 | 7.1 | 20 | 15 | 62 | 78 | 56 | 30 | 265 | 38 | 15 | 4.9 |
| 16 | 7.1 | 7.1 | 30 | 15 | 94 | 131 | 53 | 29 | 514 | 36 | 14 | 4.9 |
| 17 | 7.6 | 7.1 | 23 | 14 | 195 | 527 | 56 | 28 | 1240 | 32 | 13 | 7.2 |
| 18 | 8.2 | 7.1 | 21 | 14 | 179 | 215 | 83 | 27 | 470 | 30 | 13 | 6.0 |
| 19 | 8.8 | 7.1 | 17 | 14 | 171 | 169 | 60 | 25 | 265 | 30 | 13 | 4.6 |
| 20 | 8.2 | 7.1 | 12 | 15 | 402 | 193 | 52 | 37 | 197 | 70 | 12 | 6.6 |
| 21 | 8.8 | 8.2 | 10 | 15 | 451 | 249 | 51 | 30 | 168 | 30 | 18 | 10 |
| 22 | 8.8 | 7.6 | 11 | 17 | 265 | 191 | 47 | 46 | 148 | 26 | 18 | 13 |
| 23 | 10 | 7.6 | 18 | 17 | 187 | 152 | 43 | 46 | 135 | 45 | 14 | 18 |
| 24 | 13 | 7.1 | 51 | 16 | 158 | 135 | 42 | 43 | 114 | 32 | 14 | 12 |
| 25 | 15 | 7.1 | 36 | 15 | 134 | 125 | 41 | 38 | 101 | 26 | 13 | 8.8 |
| 26 | 16 | 7.6 | 26 | 15 | 107 | 125 | 94 | 34 | 93 | 23 | 11 | 9.4 |
| 27 | 37 | 8.2 | 25 | 14 | 100 | 107 | 154 | 32 | 84 | 22 | 8.8 | 142 |
| 28 | 67 | 8.2 | 20 | 14 | 91 | 91 | 185 | 94 | 80 | 23 | 8.8 | 38 |
| 29 | 24 | 8.2 | 20 | 15 | --- | 86 | 108 | 304 | 75 | 24 | 8.8 | 19 |
| 30 | 15 | 8.2 | 16 | 16 | --- | 81 | 91 | 98 | 76 | 23 | 7.7 | 14 |
| 31 | 11 | --- | 15 | 25 | --- | 84 | --- | 66 | --- | 32 | 7.2 | --- |
| TOTAL | 327.3 | 239.2 | 504.9 | 864 | 7251 | 4060 | 2311 | 1748 | 8574 | 1309 | 565.3 | 431.2 |
| MEAN | 10.6 | 7.97 | 16.3 | 27.9 | 259 | 131 | 77.0 | 56.4 | 286 | 42.2 | 18.2 | 14.4 |
| MAX | 67 | 12 | 51 | 150 | 1310 | 527 | 185 | 304 | 1280 | 110 | 52 | 142 |
| MIN | 3.0 | 6.0 | 6.5 | 14 | 55 | 60 | 41 | 25 | 57 | 22 | 7.2 | 4.6 |
| CFSM | .12 | .09 | .18 | .31 | 2.89 | 1.46 | .86 | .63 | 3.19 | .47 | .20 | .16 |
| IN. | .14 | .10 | .21 | .36 | 3.01 | 1.69 | .96 | .73 | 3.56 | .54 | .23 | .18 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|------|-----|-----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 12531.4 | MEAN | 34.3 | MAX | 438 | MIN | 2.5 | CFSM | .38 | IN | 5.20 |
| WTR YR 1982 | TOTAL | 28184.9 | MEAN | 77.2 | MAX | 1310 | MIN | 3.0 | CFSM | .86 | IN | 11.70 |

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'25", long 77°32'35", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi (0.5 km) downstream from Catoclin Creek (Virginia), 6 mi (9.7 km) upstream from Monocacy River, and at mile 159.5 (256.6 km).
DRAINAGE AREA.--9,651 mi² (24,996 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1895 to current year.

REVISED RECORDS.--WSP 192: 1895-1905. WSP 1432: 1899, 1901-2, 1904-5, 1912, 1914(M), 1915, 1917(M), 1918, 1919(M), 1920, 1921-23(M), 1924, 1925-28(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 200.63 ft (61.152 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft (0.317 m) higher.

REMARKS.--Records good except those for January, which are fair. Low flow affected slightly since 1913 by Stony River Reservoir, since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Reservoir. Low flow affected extensively at times by run-of-the-river hydroelectric plants. Gage-height telemeter at station.

AVERAGE DISCHARGE.--87 years, 9,350 ft³/s (264.8 m³/s), 13.16 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft³/s (13,600 m³/s) Mar. 19, 1936, gage height, 41.03 ft (12.506 m), from rating curve extended above 300,000 ft³/s (8,500 m³/s) on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow; minimum, 530 ft³/s (15.0 m³/s) Sept. 11, 12, 1966, gage height, 0.27 ft (0.082 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft (12.25 m), from floodmarks, discharge, about 460,000 ft³/s (13,000 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft³/s (990 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|---------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | Unknown | Unknown | Ice Jam | Mar. 18 | 1330 | 61400 1740 | 12.74 3.883 |
| Feb. 5 | Unknown | Unknown | Ice Jam | Mar. 22 | 1400 | 69600 1970 | 13.85 4.221 |
| Feb. 19 | 1630 | 39900 1130 | 9.48 2.890 | June 15 | 0230 | *92000 2610 | 16.66 5.078 |
| Feb. 22 | 1600 | 41000 1160 | 9.67 2.947 | | | | |

Minimum discharge, 1,170 ft³/s (33.1 m³/s) Oct. 17, 20, gage height, 0.70 ft (0.213 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 1 | 1390 | 7090 | 2020 | 4710 | 5600 | 15000 | 11000 | 12000 | 7040 | 5030 | 4600 | 2080 |
| 2 | 1490 | 5550 | 2560 | 4650 | 8500 | 13900 | 10400 | 10700 | 6940 | 4780 | 4020 | 1960 |
| 3 | 1420 | 4590 | 3010 | 5020 | 17000 | 13300 | 10000 | 9690 | 7230 | 4750 | 4070 | 2070 |
| 4 | 1430 | 4080 | 3710 | 6280 | 37000 | 12600 | 12100 | 8830 | 7360 | 5260 | 3980 | 1960 |
| 5 | 1380 | 3640 | 4100 | 12500 | 47000 | 12100 | 17600 | 8060 | 10300 | 5330 | 3580 | 1970 |
| 6 | 1380 | 3380 | 4140 | 20600 | 37000 | 11400 | 15500 | 7360 | 16600 | 6870 | 3490 | 1960 |
| 7 | 1390 | 3220 | 3800 | 21000 | 25200 | 11400 | 14500 | 6820 | 23500 | 6280 | 3480 | 1950 |
| 8 | 1350 | 3290 | 3520 | 16200 | 18600 | 12300 | 13700 | 6440 | 19100 | 5790 | 3670 | 1880 |
| 9 | 1340 | 3290 | 3330 | 13500 | 15000 | 15100 | 12800 | 6220 | 14800 | 5450 | 5150 | 1760 |
| 10 | 1320 | 3150 | 3210 | 10000 | 13100 | 17300 | 12200 | 6560 | 12200 | 5430 | 5000 | 1710 |
| 11 | 1290 | 3120 | 3470 | 6000 | 12600 | 17000 | 12000 | 6810 | 10800 | 5210 | 5970 | 1840 |
| 12 | 1300 | 3120 | 3630 | 4300 | 12500 | 17100 | 12100 | 6040 | 12600 | 6170 | 4940 | 1940 |
| 13 | 1260 | 2970 | 3420 | 4000 | 11200 | 24600 | 11300 | 5550 | 21300 | 6740 | 4540 | 1860 |
| 14 | 1240 | 2850 | 3290 | 4000 | 10000 | 32600 | 10700 | 5140 | 53900 | 7080 | 4090 | 1570 |
| 15 | 1270 | 2750 | 3280 | 4100 | 8990 | 30100 | 9890 | 4860 | 76400 | 6060 | 3740 | 1560 |
| 16 | 1240 | 2600 | 3390 | 4400 | 8670 | 25900 | 9210 | 4600 | 41500 | 5110 | 3290 | 1650 |
| 17 | 1190 | 2500 | 3340 | 3800 | 13100 | 30000 | 8680 | 4310 | 33000 | 4530 | 3200 | 1790 |
| 18 | 1270 | 2400 | 3340 | 4300 | 32700 | 57100 | 8850 | 4210 | 28800 | 5030 | 3710 | 1750 |
| 19 | 1270 | 2300 | 3260 | 4500 | 39000 | 47500 | 9120 | 3980 | 21500 | 4620 | 3810 | 1600 |
| 20 | 1220 | 2400 | 2990 | 4800 | 35200 | 35300 | 9000 | 3920 | 16400 | 4490 | 3360 | 1630 |
| 21 | 1250 | 2310 | 2590 | 4500 | 34900 | 36200 | 8590 | 3780 | 13200 | 4740 | 3320 | 1630 |
| 22 | 1280 | 2170 | 2360 | 4300 | 40200 | 65600 | 8020 | 3690 | 11300 | 5390 | 2870 | 1590 |
| 23 | 1240 | 2130 | 2390 | 4000 | 37200 | 52400 | 7470 | 3880 | 9780 | 5850 | 2690 | 1770 |
| 24 | 1300 | 2120 | 3240 | 3800 | 32100 | 35800 | 6960 | 4280 | 8520 | 5270 | 2580 | 1670 |
| 25 | 1380 | 2070 | 4120 | 3500 | 29700 | 27300 | 6550 | 4470 | 7680 | 5540 | 2670 | 1550 |
| 26 | 1480 | 2070 | 8980 | 3400 | 24700 | 22100 | 6760 | 6000 | 7030 | 6520 | 2530 | 1740 |
| 27 | 2050 | 2050 | 8290 | 3300 | 20600 | 19000 | 7430 | 6330 | 6370 | 5050 | 2230 | 2560 |
| 28 | 3750 | 2000 | 7210 | 3100 | 17200 | 16700 | 9040 | 6480 | 5890 | 5050 | 2230 | 2700 |
| 29 | 14400 | 1960 | 6650 | 3200 | --- | 14400 | 12100 | 7170 | 5500 | 4460 | 2180 | 2770 |
| 30 | 15000 | 1950 | 5720 | 3300 | --- | 12800 | 13200 | 10100 | 5190 | 4680 | 2160 | 2340 |
| 31 | 9600 | --- | 5030 | 3700 | --- | 11600 | --- | 8310 | --- | 5500 | 2140 | --- |
| TOTAL | 79170 | 89120 | 123390 | 198760 | 644560 | 765500 | 316770 | 196590 | 521730 | 168060 | 109290 | 56810 |
| MEAN | 2554 | 2971 | 3980 | 6412 | 23020 | 24690 | 10560 | 6342 | 17390 | 5421 | 3525 | 1894 |
| MAX | 15000 | 7090 | 8980 | 21000 | 47000 | 65600 | 17600 | 12000 | 76400 | 7080 | 5970 | 2770 |
| MIN | 1190 | 1950 | 2020 | 3100 | 5600 | 11400 | 6550 | 3690 | 5190 | 4460 | 2140 | 1550 |
| CFSM | .27 | .31 | .41 | .66 | 2.39 | 2.56 | 1.09 | .66 | 1.80 | .56 | .37 | .20 |
| IN. | .31 | .34 | .48 | .77 | 2.48 | 2.95 | 1.22 | .76 | 2.01 | .65 | .42 | .22 |

CAL YR 1981 TOTAL 2004490 MEAN 5492 MAX 40400 MIN 1180 CFSM .57 IN 7.73
WTR YR 1982 TOTAL 3269750 MEAN 8958 MAX 76400 MIN 1190 CFSM .93 IN 12.60

POTOMAC RIVER BASIN

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1960 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1960 to current year.

REMARKS.--Water temperatures are measured daily in field at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum daily, 33.5°C Aug. 24, 1964, July 19, 1977; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,350 mg/L Apr. 3, 1970; minimum daily mean, 1 mg/L on many days most years.

SEDIMENT LOADS: Maximum daily, 689,000 tons (625,000 tonnes) June 23, 1972; minimum daily, 2.0 tons (1.8 tonnes) on many days during 1964, 1966-69.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum daily, 29.0°C July 18; minimum daily, 0.0°C Jan. 16.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 648 mg/L June 15; minimum daily mean, 1 mg/L Oct. 24, 25, Nov. 11-22, 27-30.

SEDIMENT LOADS: Maximum daily, 143,000 tons (130,000 tonnes) June 15; minimum daily, 3.5 tons (3.2 tonnes) Oct. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|--------------|------|---|---|---------------|-----------------------------|--|--|---|--|--|--|
| NOV 20... | 1300 | 2400 | 470 | 8.8 | 10.0 | 4 | 150 | 54 | 46 | 9.6 | 22 |
| APR 19... | 1315 | 9160 | 265 | 8.9 | 15.0 | <1 | 110 | 33 | 33 | 7.4 | 8.0 |

< Actual value is known to be less than the value shown.

| DATE | PERCENT SODIUM | SODIUM AD- SORP- TION RATIO | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) | SOLIDS, DIS- SOLVED (TONS PER AC-FT) |
|--------------|-------------------|---|---|---|---|---|--|---|--|---|---|
| NOV 20... | 23 | .8 | 2.2 | 100 | 58 | 16 | .1 | .1 | 242 | 214 | .33 |
| APR 19... | 13 | .3 | 1.5 | 80 | 35 | 8.5 | <.1 | 1.5 | 160 | 143 | .22 |

< Actual value is known to be less than the value shown.

| DATE | SOLIDS, DIS- SOLVED (TONS PER DAY) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS TOTAL (MG/L AS P04) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|--------------|---|--|---|--|---|--|--|---|--|--|
| NOV 20... | 1570 | .88 | .050 | .15 | 150 | 130 | 18 | 20 | 10 | 7 |
| APR 19... | 3960 | 1.1 | .040 | .12 | 170 | 140 | 31 | 20 | 10 | 7 |

POTOMAC RIVER BASIN

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01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TRITIUM IN WATER MOLE- CULES (TU) | TRITIUM WATER MOLE- CULES COUNT ERROR (TU) | DATE | TRITIUM IN WATER MOLE- CULES (TU) | TRITIUM WATER MOLE- CULES COUNT ERROR (TU) |
|-------|--|--|-------|--|--|
| OCT | | | APR | | |
| 01-16 | 34.7 | 1.9 | 01-17 | 33.1 | 1.4 |
| 17-20 | 33.8 | 1.3 | 18-30 | 24.1 | 1.2 |
| 21-31 | 30.5 | 1.2 | MAY | | |
| NOV | | | 01-17 | 33.0 | 1.6 |
| 01-07 | 30.5 | 1.2 | 18-31 | 34.4 | 1.6 |
| 10-29 | 33.3 | 1.5 | JUN | | |
| 30-30 | 10.0 | .5 | 01-15 | 32.3 | 1.5 |
| DEC | | | 16-30 | 36.2 | 1.7 |
| 01-17 | 10.0 | .5 | JUL | | |
| 18-31 | 32.7 | 1.5 | 01-18 | 32.8 | 1.5 |
| JAN | | | 19-31 | 31.7 | 1.6 |
| 01-07 | 32.7 | 1.5 | AUG | | |
| 08-16 | 33.7 | 1.5 | 02-17 | 32.8 | 1.8 |
| FEB | | | 19-31 | 35.7 | 1.9 |
| 04-22 | 29.7 | 1.4 | SEP | | |
| MAR | | | 01-15 | 31.4 | 1.8 |
| 01-18 | 35.6 | 1.5 | 16-30 | 29.8 | 1.6 |
| 18-31 | 33.8 | 1.5 | | | |

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SEDI- MENT, SUS- PENDE (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) | SED. SUSP. FALL DIAM. % FINER THAN .004 MM | SED. SUSP. FALL DIAM. % FINER THAN .008 MM | SED. SUSP. FALL DIAM. % FINER THAN .016 MM |
|-------|------|---|---|---|--|--|--|
| MAR | | | | | | | |
| 18... | 1720 | 60200 | 692 | 112000 | 37 | 47 | 59 |
| 22... | 0920 | 67400 | 313 | 57000 | 38 | 47 | 57 |
| 22... | 1610 | 69500 | 392 | 73600 | 39 | 52 | 60 |

| DATE | SED. SUSP. FALL DIAM. % FINER THAN .031 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM | SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM | SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM |
|-------|--|---|---|---|---|---|
| MAR | | | | | | |
| 18... | 71 | 83 | 93 | 98 | 100 | -- |
| 22... | 66 | 74 | 88 | 96 | 99 | 100 |
| 22... | 70 | 79 | 90 | 97 | 100 | -- |

POTOMAC RIVER BASIN

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 17.0 | 12.0 | 3.0 | 2.0 | --- | 4.0 | 9.0 | 14.0 | 22.0 | 22.0 | 26.0 | 23.0 |
| 2 | 17.0 | 11.0 | 6.0 | 1.0 | --- | 4.0 | 10.0 | 17.0 | 22.0 | 23.0 | 24.0 | 25.0 |
| 3 | 13.0 | 12.0 | 4.0 | 1.5 | --- | 4.0 | 10.0 | 15.0 | 23.0 | 23.0 | 24.0 | 25.0 |
| 4 | 15.0 | 11.0 | 5.0 | 2.0 | --- | 3.0 | 10.0 | 16.0 | 20.0 | 22.0 | 25.0 | 22.0 |
| 5 | 15.0 | 11.0 | 4.0 | 2.0 | 1.0 | 5.0 | 9.0 | 16.0 | 19.0 | 22.0 | 26.0 | 20.0 |
| 6 | 17.0 | 12.0 | 4.0 | 2.0 | 1.0 | 5.0 | 7.0 | 16.0 | 19.0 | 22.0 | 26.0 | 21.0 |
| 7 | 14.0 | 9.0 | 4.0 | 3.0 | 1.0 | 4.0 | 6.0 | 19.0 | 17.0 | 23.0 | 25.0 | 22.0 |
| 8 | 13.0 | 11.0 | 5.0 | 2.0 | 2.0 | 3.0 | 5.0 | 18.0 | 17.0 | 24.0 | 26.0 | 22.0 |
| 9 | 11.0 | 9.0 | 4.0 | 2.0 | 1.0 | 3.0 | 6.0 | 19.0 | 18.0 | 24.0 | 25.0 | 21.0 |
| 10 | 12.0 | 9.0 | 2.0 | 2.0 | 1.0 | 3.0 | 6.0 | 17.0 | 19.0 | 25.0 | 25.0 | 21.0 |
| 11 | 14.0 | 8.0 | 2.0 | 2.0 | 1.0 | 4.0 | 8.0 | 17.0 | 19.0 | 25.0 | 24.0 | 22.0 |
| 12 | 12.0 | 8.0 | 3.0 | 1.0 | 1.0 | 6.0 | 8.0 | 18.0 | 19.0 | 25.0 | 23.0 | 22.0 |
| 13 | 12.0 | 7.0 | 3.0 | 1.0 | 2.0 | 7.0 | 8.0 | 19.0 | 18.0 | 25.0 | 22.0 | 22.0 |
| 14 | 12.0 | 7.0 | 2.0 | 1.0 | 2.0 | 8.0 | 9.0 | 20.0 | 19.0 | 25.0 | 23.0 | 23.0 |
| 15 | 12.0 | 7.0 | 2.0 | 1.0 | 4.0 | 7.0 | 10.0 | 23.0 | 18.0 | 26.0 | 24.0 | 23.0 |
| 16 | 15.0 | 8.0 | 2.0 | .0 | 4.0 | 7.0 | 12.0 | 23.0 | 19.0 | 27.0 | 23.0 | 23.0 |
| 17 | 12.0 | 8.0 | 1.0 | --- | 3.0 | 7.0 | 14.0 | 21.0 | 19.0 | 28.0 | 25.0 | 21.0 |
| 18 | 13.0 | 8.0 | 3.0 | --- | 2.0 | 7.0 | 15.0 | 22.0 | 20.0 | 29.0 | 24.0 | 21.0 |
| 19 | 10.0 | 7.0 | 1.0 | --- | 2.0 | 7.0 | 14.0 | 23.0 | 22.0 | 27.0 | 23.0 | 22.0 |
| 20 | 9.0 | 8.0 | 1.0 | --- | 3.0 | 8.0 | 14.0 | 22.0 | 20.0 | 27.0 | 25.0 | 20.0 |
| 21 | 9.0 | 6.0 | 2.0 | --- | 4.0 | 8.0 | 14.0 | 22.0 | 20.0 | 26.0 | 24.0 | 20.0 |
| 22 | 12.0 | 5.0 | 2.0 | --- | 5.0 | 8.0 | 13.0 | 22.0 | 20.0 | 25.0 | 22.0 | 19.0 |
| 23 | 13.0 | 4.0 | 2.0 | --- | 5.0 | 8.0 | 13.0 | 19.0 | 20.0 | 27.0 | 23.0 | 17.0 |
| 24 | 10.0 | 4.0 | 2.0 | --- | 5.0 | 8.0 | 14.0 | 18.0 | 20.0 | 26.0 | 23.0 | 19.0 |
| 25 | 9.0 | 4.0 | 2.0 | --- | 4.0 | 10.0 | 17.0 | 19.0 | 20.0 | 26.0 | 24.0 | 17.0 |
| 26 | 9.0 | 4.0 | 1.0 | --- | 3.0 | 8.0 | 15.0 | 20.0 | --- | 27.0 | 21.0 | 18.0 |
| 27 | 13.0 | 4.0 | 2.0 | --- | 4.0 | 7.0 | 15.0 | 20.0 | --- | 27.0 | 22.0 | 18.0 |
| 28 | 13.0 | 4.0 | 2.0 | --- | 4.0 | 8.0 | 14.0 | 20.0 | --- | 26.0 | 21.0 | 18.0 |
| 29 | 11.0 | 5.0 | 2.0 | --- | --- | 7.0 | 14.0 | 21.0 | --- | 24.0 | 19.0 | 17.0 |
| 30 | 11.0 | 3.0 | 1.0 | --- | --- | 8.0 | 14.0 | 23.0 | 25.0 | 24.0 | 20.0 | --- |
| 31 | 11.0 | --- | 1.0 | --- | --- | 9.0 | --- | 22.0 | --- | 25.0 | 20.0 | --- |
| MEAN | 12.5 | 7.5 | 2.5 | 1.5 | 2.5 | 6.5 | 11.0 | 19.5 | 20.0 | 25.0 | 23.5 | 21.0 |
| WTR YR 1982 | MEAN | 13.5 | MAX | 29.0 | MIN | .0 | | | | | | |

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| | APRIL | | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
|-------|-------|-------|-----|------|-----|--------|-----|-------|-----|--------|-----|-----------|--|
| 1 | 17 | 505 | 14 | 454 | 35 | 665 | 12 | 163 | 18 | 224 | 8 | 45 | |
| 2 | 17 | 477 | 11 | 318 | 46 | 862 | 10 | 129 | 18 | 195 | 8 | 42 | |
| 3 | 16 | 432 | 11 | 288 | 38 | 742 | 15 | 192 | 20 | 220 | 9 | 50 | |
| 4 | 25 | 817 | 10 | 238 | 33 | 656 | 17 | 241 | 21 | 226 | 9 | 48 | |
| 5 | 50 | 2380 | 8 | 174 | 51 | 1420 | 21 | 302 | 22 | 213 | 11 | 59 | |
| 6 | 42 | 1760 | 8 | 159 | 72 | 3230 | 22 | 408 | 22 | 207 | 13 | 69 | |
| 7 | 34 | 1330 | 7 | 129 | 122 | 7740 | 17 | 288 | 21 | 197 | 9 | 47 | |
| 8 | 25 | 925 | 8 | 139 | 80 | 4130 | 16 | 250 | 16 | 159 | 8 | 41 | |
| 9 | 15 | 518 | 9 | 151 | 55 | 2200 | 25 | 368 | 33 | 459 | 11 | 52 | |
| 10 | 11 | 362 | 10 | 177 | 38 | 1250 | 27 | 396 | 30 | 405 | 12 | 55 | |
| 11 | 10 | 324 | 13 | 239 | 35 | 1020 | 30 | 422 | 33 | 532 | 12 | 60 | |
| 12 | 11 | 359 | 11 | 179 | 40 | 1360 | 32 | 533 | 27 | 360 | 12 | 63 | |
| 13 | 10 | 305 | 8 | 120 | 100 | 5750 | 30 | 546 | 24 | 294 | 10 | 50 | |
| 14 | 9 | 260 | 9 | 125 | 505 | 87600 | 32 | 612 | 21 | 232 | 9 | 38 | |
| 15 | 8 | 214 | 11 | 144 | 648 | 143000 | 30 | 491 | 22 | 222 | 10 | 42 | |
| 16 | 8 | 199 | 13 | 161 | 210 | 23500 | 30 | 414 | 21 | 187 | 10 | 45 | |
| 17 | 7 | 164 | 14 | 163 | 160 | 14300 | 17 | 208 | 17 | 147 | 11 | 53 | |
| 18 | 7 | 167 | 13 | 148 | 155 | 12100 | 18 | 244 | 17 | 170 | 9 | 43 | |
| 19 | 7 | 172 | 13 | 140 | 85 | 4930 | 19 | 237 | 17 | 175 | 6 | 26 | |
| 20 | 8 | 194 | 13 | 138 | 61 | 2700 | 20 | 242 | 16 | 145 | 8 | 35 | |
| 21 | 13 | 302 | 11 | 112 | 42 | 1500 | 25 | 320 | 13 | 117 | 9 | 40 | |
| 22 | 11 | 238 | 11 | 110 | 31 | 946 | 26 | 378 | 11 | 85 | 9 | 39 | |
| 23 | 11 | 222 | 13 | 136 | 26 | 687 | 29 | 458 | 9 | 65 | 9 | 43 | |
| 24 | 12 | 226 | 14 | 162 | 22 | 506 | 29 | 413 | 8 | 56 | 6 | 27 | |
| 25 | 12 | 212 | 18 | 217 | 17 | 353 | 26 | 389 | 10 | 72 | 6 | 25 | |
| 26 | 13 | 237 | 24 | 389 | 15 | 285 | 34 | 599 | 11 | 75 | 7 | 33 | |
| 27 | 14 | 281 | 24 | 410 | 13 | 224 | 30 | 409 | 9 | 54 | 9 | 62 | |
| 28 | 17 | 415 | 25 | 437 | 11 | 175 | 37 | 504 | 10 | 60 | 7 | 51 | |
| 29 | 22 | 719 | 24 | 465 | 11 | 163 | 26 | 313 | 10 | 59 | 10 | 75 | |
| 30 | 22 | 784 | 42 | 1150 | 10 | 140 | 26 | 329 | 9 | 52 | 10 | 63 | |
| 31 | --- | --- | 35 | 785 | --- | --- | 28 | 416 | 9 | 52 | --- | --- | |
| TOTAL | --- | 15500 | --- | 8157 | --- | 324134 | --- | 11214 | --- | 5716 | --- | 1421 | |

TOTAL LOAD FOR YEAR: 976698.6 TONS.

01643700 GOOSE CREEK NEAR MIDDLEBURG, VA

LOCATION.--Lat 38°59'11", long 77°47'49", Loudoun County, Hydrologic Unit 02070008, on right bank 250 ft (76 m) upstream from bridge on State Highway 611, 2.0 mi (3.2 km) downstream from Panther Skin Creek, and 3.4 mi (5.5 km) northwest of Middleburg.

DRAINAGE AREA.--123 mi² (319 km²).

PERIOD OF RECORD.--October 1965 to September 1967, July 1969 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 329.80 ft (100.523 m) National Geodetic Vertical Datum of 1929. October 1965 to September 1967, at site 300 ft (91 m) downstream at datum 0.73 ft (0.223 m) lower.

REMARKS.--Records good except those for January, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 136 ft³/s (3.852 m³/s), 15.02 in/yr (382 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s (544 m³/s) June 22, 1972, gage height, 27.46 ft (8.370 m), from floodmarks, from rating curve extended above 2,900 ft³/s (82 m³/s) on basis of slope-area measurements at gage heights 14.44 ft (4.401 m) and 27.46 ft (8.370 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 1-4, 8-12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,350 ft³/s (38 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 1030 | 1490 42.2 | 7.32 2.231 | June 5 | 1400 | 1650 46.7 | 7.72 2.353 |
| Feb. 3 | 1630 | 1680 47.6 | 7.80 2.377 | June 13 | 1600 | *2700 76.5 | 10.19 3.106 |

Minimum discharge, 2.8 ft³/s (0.079 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|-------|------|------|------|----------|----------|------|------|--------|-------|
| 1 | 3.1 | 27 | 11 | 56 | 895 | 164 | 169 | 135 | 115 | 90 | 34 | 8.3 |
| 2 | 4.8 | 23 | 20 | 75 | 432 | 155 | 133 | 122 | 114 | 80 | 24 | 10 |
| 3 | 4.3 | 21 | 21 | 53 | 1320 | 144 | 175 | 112 | 100 | 80 | 21 | 28 |
| 4 | 4.0 | 19 | 17 | 128 | 518 | 135 | 162 | 102 | 205 | 93 | 19 | 15 |
| 5 | 4.0 | 19 | 15 | 121 | 324 | 130 | 132 | 93 | 866 | 76 | 82 | 8.8 |
| 6 | 4.3 | 31 | 13 | 87 | 242 | 122 | 144 | 87 | 630 | 68 | 249 | 6.0 |
| 7 | 5.1 | 29 | 12 | 75 | 185 | 201 | 121 | 83 | 432 | 59 | 112 | 5.4 |
| 8 | 5.1 | 21 | 11 | 58 | 160 | 218 | 116 | 82 | 321 | 57 | 66 | 6.0 |
| 9 | 4.8 | 18 | 11 | 43 | 257 | 192 | 130 | 87 | 252 | 73 | 65 | 6.0 |
| 10 | 5.1 | 16 | 8.8 | 40 | 216 | 180 | 128 | 71 | 343 | 115 | 92 | 8.8 |
| 11 | 5.1 | 15 | 7.1 | 37 | 160 | 173 | 115 | 64 | 260 | 94 | 53 | 9.4 |
| 12 | 6.0 | 15 | 6.6 | 32 | 143 | 229 | 108 | 61 | 213 | 64 | 47 | 8.3 |
| 13 | 5.4 | 14 | 6.2 | 29 | 138 | 203 | 106 | 57 | 1320 | 50 | 39 | 6.6 |
| 14 | 6.0 | 12 | 7.2 | 27 | 124 | 187 | 102 | 54 | 870 | 61 | 32 | 5.4 |
| 15 | 4.8 | 12 | 32 | 26 | 127 | 178 | 96 | 51 | 550 | 79 | 29 | 5.1 |
| 16 | 4.6 | 12 | 44 | 25 | 146 | 322 | 93 | 47 | 405 | 52 | 25 | 5.1 |
| 17 | 5.4 | 12 | 32 | 24 | 332 | 493 | 94 | 45 | 541 | 45 | 32 | 5.7 |
| 18 | 5.4 | 12 | 27 | 24 | 346 | 357 | 121 | 42 | 363 | 40 | 26 | 5.4 |
| 19 | 6.0 | 12 | 28 | 25 | 355 | 307 | 94 | 40 | 268 | 35 | 21 | 4.6 |
| 20 | 7.7 | 12 | 19 | 25 | 505 | 415 | 89 | 42 | 221 | 37 | 18 | 4.8 |
| 21 | 7.1 | 12 | 14 | 26 | 521 | 461 | 89 | 90 | 185 | 36 | 18 | 6.0 |
| 22 | 7.1 | 11 | 15 | 28 | 423 | 380 | 82 | 147 | 164 | 31 | 19 | 11 |
| 23 | 6.6 | 10 | 25 | 27 | 346 | 324 | 76 | 87 | 162 | 34 | 15 | 19 |
| 24 | 15 | 10 | 57 | 26 | 296 | 282 | 75 | 76 | 136 | 41 | 18 | 15 |
| 25 | 8.8 | 11 | 46 | 26 | 247 | 242 | 73 | 73 | 127 | 31 | 17 | 11 |
| 26 | 12 | 12 | 36 | 26 | 205 | 216 | 193 | 64 | 121 | 25 | 12 | 11 |
| 27 | 112 | 12 | 34 | 25 | 190 | 182 | 205 | 58 | 114 | 21 | 10 | 92 |
| 28 | 181 | 12 | 30 | 24 | 180 | 160 | 208 | 127 | 106 | 20 | 11 | 25 |
| 29 | 64 | 11 | 29 | 24 | --- | 151 | 162 | 439 | 103 | 23 | 11 | 11 |
| 30 | 40 | 9.4 | 23 | 26 | --- | 144 | 146 | 182 | 109 | 24 | 8.3 | 7.1 |
| 31 | 32 | --- | 22 | 56 | --- | 150 | --- | 138 | --- | 44 | 7.7 | --- |
| TOTAL | 586.6 | 462.4 | 679.9 | 1324 | 9333 | 7197 | 3737 | 2958 | 9716 | 1678 | 1233.0 | 370.8 |
| MEAN | 18.9 | 15.4 | 21.9 | 42.7 | 333 | 232 | 125 | 95.4 | 324 | 54.1 | 39.8 | 12.4 |
| MAX | 181 | 31 | 57 | 128 | 1320 | 493 | 208 | 439 | 1320 | 115 | 249 | 92 |
| MIN | 3.1 | 9.4 | 6.2 | 24 | 124 | 122 | 73 | 40 | 100 | 20 | 7.7 | 4.6 |
| CFSM | .15 | .13 | .18 | .35 | 2.71 | 1.89 | 1.02 | .78 | 2.63 | .44 | .32 | .10 |
| IN. | .18 | .14 | .21 | .40 | 2.82 | 2.18 | 1.13 | .89 | 2.94 | .51 | .37 | .11 |
| CAL YR 1981 TOTAL | 13706.4 | | | 37.6 | 413 | 2.2 | CFSM .31 | IN 4.15 | | | | |
| WTR YR 1982 TOTAL | 39275.7 | | | 108 | 1320 | 3.1 | CFSM .88 | IN 11.88 | | | | |

01644000 GOOSE CREEK NEAR LEESBURG, VA

LOCATION.--Lat 39°01'10", long 77°34'40", Loudoun County, Hydrologic Unit 02070008, on left bank 400 ft (120 m) upstream from bridge on State Highway 621 at Evergreen Mills, 1.4 mi (2.3 km) downstream from Little River, 6.7 mi (10.8 km) south of Leesburg, and 10.9 mi (17.5 km) upstream from mouth.

DRAINAGE AREA.--332 mi² (860 km²).

PERIOD OF RECORD.--July 1909 to April 1911, September 1911 to December 1912, January 1930 to current year.

REVISED RECORDS.--WSP 851: 1935-37. WSP 951: 1933(M), 1937. WSP 1302: 1934-35(M). WSP 2103: Drainage area. WDR VA-72-1: 1937(M), 1943(M), 1951(M), 1956(M). WRD VA-79-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 248.93 ft (75.874 m) National Geodetic Vertical Datum of 1929. July 12, 1909, to Dec. 31, 1912, nonrecording gage at site 1,000 ft (300 m) downstream at different datum. Jan. 21, 1930, to Nov. 28, 1938, nonrecording gage at site 400 ft (120 m) downstream at datum 4.20 ft (1.280 m) lower than present datum.

REMARKS.--Records good except those for period of no gage-height record, Apr. 9 to May 26, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years (water years 1910, 1912, 1931-82), 313 ft³/s (8.864 m³/s), 12.80 in/yr (325 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,100 ft³/s (2,210 m³/s) June 22, 1972, gage height, 30.59 ft (9.324 m), from high-water mark in gage house, from rating curve extended above 11,000 ft³/s (310 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.40 ft³/s (0.011 m³/s) Sept. 27-30, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1889 reached a stage of about 29 ft (8.8 m), discharge, about 45,000 ft³/s (1,300 m³/s), site and datum in use 1930-38, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (110 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 1600 | 4920 139 | 7.98 2.432 | June 5 | 1900 | 4100 116 | 6.76 2.060 |
| Feb. 3 | 1700 | 6600 187 | 10.16 3.097 | June 13 | 2130 | *6640 188 | 10.21 3.112 |

Minimum discharge, 14 ft³/s (0.40 m³/s) Sept. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 26 | 56 | 50 | 184 | 2550 | 366 | 412 | 370 | 391 | 214 | 99 | 20 |
| 2 | 29 | 49 | 68 | 265 | 2770 | 342 | 317 | 330 | 485 | 187 | 72 | 45 |
| 3 | 27 | 45 | 81 | 197 | 5000 | 317 | 337 | 310 | 390 | 181 | 59 | 123 |
| 4 | 26 | 41 | 75 | 413 | 2010 | 289 | 462 | 280 | 902 | 234 | 54 | 52 |
| 5 | 26 | 39 | 68 | 458 | 869 | 279 | 326 | 260 | 2570 | 199 | 95 | 32 |
| 6 | 26 | 46 | 62 | 307 | 576 | 255 | 330 | 240 | 1720 | 176 | 690 | 23 |
| 7 | 26 | 57 | 59 | 255 | 432 | 341 | 317 | 230 | 1030 | 159 | 375 | 19 |
| 8 | 27 | 52 | 59 | 212 | 362 | 570 | 277 | 230 | 722 | 154 | 158 | 18 |
| 9 | 29 | 42 | 56 | 165 | 530 | 434 | 310 | 240 | 563 | 195 | 123 | 18 |
| 10 | 28 | 39 | 53 | 120 | 564 | 387 | 310 | 210 | 719 | 168 | 145 | 21 |
| 11 | 27 | 38 | 50 | 105 | 386 | 368 | 290 | 175 | 633 | 235 | 109 | 21 |
| 12 | 29 | 36 | 47 | 90 | 329 | 447 | 280 | 165 | 493 | 168 | 90 | 21 |
| 13 | 30 | 36 | 42 | 80 | 310 | 419 | 270 | 160 | 3600 | 142 | 81 | 20 |
| 14 | 29 | 35 | 52 | 74 | 273 | 388 | 265 | 150 | 2620 | 136 | 64 | 18 |
| 15 | 28 | 40 | 97 | 70 | 283 | 351 | 269 | 140 | 1280 | 195 | 54 | 17 |
| 16 | 30 | 45 | 140 | 68 | 331 | 562 | 269 | 130 | 945 | 150 | 50 | 23 |
| 17 | 34 | 46 | 120 | 66 | 732 | 1700 | 272 | 120 | 1250 | 127 | 45 | 21 |
| 18 | 32 | 45 | 109 | 66 | 876 | 906 | 313 | 115 | 956 | 111 | 54 | 16 |
| 19 | 32 | 45 | 75 | 66 | 861 | 704 | 270 | 110 | 632 | 116 | 49 | 14 |
| 20 | 35 | 49 | 70 | 70 | 1460 | 855 | 250 | 110 | 514 | 139 | 41 | 18 |
| 21 | 35 | 50 | 64 | 76 | 1460 | 1080 | 240 | 250 | 443 | 106 | 38 | 22 |
| 22 | 38 | 47 | 66 | 80 | 1040 | 879 | 220 | 380 | 391 | 88 | 39 | 39 |
| 23 | 44 | 46 | 102 | 76 | 777 | 689 | 210 | 250 | 377 | 83 | 36 | 50 |
| 24 | 54 | 46 | 150 | 74 | 641 | 594 | 210 | 210 | 331 | 96 | 35 | 40 |
| 25 | 79 | 49 | 158 | 70 | 540 | 528 | 200 | 205 | 300 | 86 | 34 | 33 |
| 26 | 69 | 49 | 130 | 68 | 447 | 487 | 335 | 204 | 287 | 70 | 32 | 33 |
| 27 | 147 | 50 | 120 | 66 | 410 | 426 | 611 | 188 | 264 | 60 | 29 | 303 |
| 28 | 379 | 52 | 102 | 66 | 387 | 373 | 698 | 371 | 251 | 56 | 26 | 132 |
| 29 | 175 | 49 | 95 | 68 | --- | 351 | 550 | 1190 | 235 | 56 | 25 | 59 |
| 30 | 104 | 47 | 77 | 72 | --- | 331 | 430 | 659 | 238 | 70 | 25 | 41 |
| 31 | 71 | --- | 64 | 128 | --- | 331 | --- | 455 | --- | 124 | 22 | --- |
| TOTAL | 1771 | 1366 | 2561 | 4175 | 27206 | 16349 | 9850 | 8437 | 25532 | 4281 | 2848 | 1312 |
| MEAN | 57.1 | 45.5 | 82.6 | 135 | 972 | 527 | 328 | 272 | 851 | 138 | 91.9 | 43.7 |
| MAX | 379 | 57 | 158 | 458 | 5000 | 1700 | 698 | 1190 | 3600 | 235 | 690 | 303 |
| MIN | 26 | 35 | 42 | 66 | 273 | 255 | 200 | 110 | 235 | 56 | 22 | 14 |
| CFSM | .17 | .14 | .25 | .41 | 2.93 | 1.59 | .99 | .82 | 2.56 | .42 | .28 | .13 |
| IN. | .20 | .15 | .29 | .47 | 3.05 | 1.83 | 1.10 | .95 | 2.86 | .48 | .32 | .15 |

CAL YR 1981 TOTAL 41601.5 MEAN 114 MAX 1630 MIN 4.9 CFSM .34 IN 4.66
WTR YR 1982 TOTAL 105688.0 MEAN 290 MAX 5000 MIN 14 CFSM .87 IN 11.84

POTOMAC RIVER BASIN

01644291 STAVE RUN NEAR RESTON, VA

LOCATION.--Lat 38°56'56", long 77°22'16", Fairfax County, Hydrologic Unit 02070008, on left bank 450 ft (137 m) downstream from the western boundary line of the U.S. Geological Survey National Center property, 0.31 mi (0.50 km) upstream from mouth, and 1.4 mi (2.3 km) southwest of Sunset Hills in Reston.

DRAINAGE AREA.--0.08 mi² (0.21 km²).

PERIOD OF RECORD.--October 1971 to April 1982 (discontinued).

REVISED RECORDS.--WDR VA-79-1: 1974.

GAGE.--Water-stage recorder, trapezoidal flume, and crest-stage gage. Datum of gage is 367.25 ft (111.738 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 16 to Feb. 1, which are poor.

AVERAGE DISCHARGE.--10 years, 0.12 ft³/s (0.003 m³/s), 20.37 in/yr (517 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 281 ft³/s (7.96 m³/s) Aug. 13, 1978, gage height, 3.43 ft (1.045 m), from rating curve extended above 67 ft³/s (1.90 m³/s) on basis of flow-over-embankment measurement at gage height 2.84 ft (0.866 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1981 to April 1982, 34 ft³/s (0.96 m³/s) Mar. 31, gage-height, 1.62 ft (0.494 m), may have been higher during period of no gage-height record, Jan. 16 to Feb. 1; maximum daily, 1.4 ft³/s (0.040 m³/s) Feb. 3; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1981 TO APRIL 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 1 | .03 | .00 | .12 | .26 | .10 | .00 | .05 | | | | | |
| 2 | .00 | .00 | .03 | .00 | .45 | .00 | .03 | | | | | |
| 3 | .00 | .00 | .00 | .04 | 1.4 | .00 | .25 | | | | | |
| 4 | .00 | .00 | .00 | .53 | .15 | .00 | .03 | | | | | |
| 5 | .00 | .00 | .00 | .01 | .02 | .00 | .01 | | | | | |
| 6 | .01 | .03 | .00 | .00 | .00 | .00 | .16 | | | | | |
| 7 | .01 | .00 | .00 | .00 | .00 | .61 | .02 | | | | | |
| 8 | .00 | .00 | .00 | .00 | .00 | .06 | .00 | | | | | |
| 9 | .00 | .00 | .00 | .00 | .42 | .02 | .15 | | | | | |
| 10 | .00 | .00 | .00 | .00 | .02 | .01 | .02 | | | | | |
| 11 | .00 | .00 | .00 | .00 | .01 | .07 | .01 | | | | | |
| 12 | .00 | .00 | .00 | .00 | .00 | .40 | .00 | | | | | |
| 13 | .00 | .00 | .00 | .28 | .02 | .06 | .00 | | | | | |
| 14 | .00 | .00 | .42 | .07 | .01 | .03 | .00 | | | | | |
| 15 | .00 | .00 | .16 | .00 | .00 | .04 | .00 | | | | | |
| 16 | .00 | .00 | .07 | .00 | .08 | .66 | .00 | | | | | |
| 17 | .00 | .00 | .01 | .00 | .67 | .09 | .00 | | | | | |
| 18 | .00 | .00 | .00 | .00 | .15 | .03 | --- | | | | | |
| 19 | .00 | .00 | .00 | .03 | .61 | .03 | --- | | | | | |
| 20 | .00 | .00 | .00 | .58 | .12 | .21 | --- | | | | | |
| 21 | .00 | .00 | .00 | .30 | .05 | .11 | --- | | | | | |
| 22 | .00 | .00 | .06 | .90 | .03 | .03 | --- | | | | | |
| 23 | .29 | .00 | .14 | .28 | .02 | .02 | --- | | | | | |
| 24 | .02 | .00 | .01 | .08 | .01 | .00 | --- | | | | | |
| 25 | .11 | .00 | .00 | .02 | .00 | .00 | --- | | | | | |
| 26 | .56 | .00 | .00 | .00 | .00 | .06 | --- | | | | | |
| 27 | .73 | .00 | .00 | .00 | .00 | .01 | --- | | | | | |
| 28 | .03 | .00 | .00 | .00 | .01 | .00 | --- | | | | | |
| 29 | .00 | .00 | .00 | .00 | --- | .00 | --- | | | | | |
| 30 | .00 | .00 | .00 | .00 | --- | .00 | --- | | | | | |
| 31 | .00 | --- | .11 | .00 | --- | .39 | --- | | | | | |
| TOTAL | 1.79 | .03 | 1.13 | 3.38 | 4.35 | 2.94 | --- | --- | --- | --- | --- | --- |
| MEAN | .058 | .001 | .036 | .11 | .16 | .095 | --- | --- | --- | --- | --- | --- |
| MAX | .73 | .03 | .42 | .90 | 1.4 | .66 | --- | --- | --- | --- | --- | --- |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | --- | --- | --- | --- | --- | --- |
| CFSM | .73 | .01 | .45 | 1.38 | 2.00 | 1.19 | --- | --- | --- | --- | --- | --- |
| IN. | .82 | .01 | .52 | 1.55 | 2.00 | 1.35 | --- | --- | --- | --- | --- | --- |

CAL YR 1981 TOTAL 21.35 MEAN .058 MAX 1.7 MIN .00 CFSM .73 IN 9.81

01646000 DIFFICULT RUN NEAR GREAT FALLS, VA

LOCATION.--Lat 38°58'33", long 77°14'46", Fairfax County, Hydrologic Unit 02070008, on right bank 250 ft (76 m) downstream from bridge on State Highway 193, 300 ft (91 m) downstream from Rocky Run, 0.7 mi (1.1 km) upstream from mouth, and 1.5 mi (2.4 km) southeast of Great Falls.

DRAINAGE AREA.--57.9 mi² (150.0 km²).

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge only October to December 1934, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M), 1937-38, 1939-40(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 151.30 ft (46.116 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Oct. 14 to Jan. 5, which are poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--48 years, 59.6 ft³/s (1.688 m³/s) 13.98 in/yr (355 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s (912 m³/s) June 22, 1972, gage height, 21.40 ft (6.523 m), from floodmarks, from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of contracted-opening measurement at gage height 13.18 ft (4.017 m) and slope-area measurement at gage height 21.40 ft (6.523 m); minimum, 0.05 ft³/s (0.001 m³/s) Sept. 9, 10, 1966, gage height, 1.65 ft (0.503 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1730 | 1200 34.0 | 7.81 2.380 | June 13 | 1900 | *1500 42.5 | 8.41 2.563 |

Minimum discharge, 5.8 ft³/s (0.16 m³/s) Oct. 9, gage height, 2.49 ft (0.759 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|
| 1 | 7.4 | 15 | 21 | 99 | 285 | 41 | 125 | 51 | 65 | 31 | 18 | 9.7 |
| 2 | 15 | 15 | 46 | 47 | 69 | 39 | 52 | 47 | 97 | 26 | 16 | 10 |
| 3 | 10 | 15 | 20 | 32 | 911 | 37 | 130 | 44 | 47 | 33 | 27 | 27 |
| 4 | 7.4 | 16 | 14 | 194 | 222 | 35 | 109 | 41 | 104 | 45 | 13 | 11 |
| 5 | 7.2 | 17 | 17 | 65 | 81 | 35 | 56 | 39 | 290 | 27 | 13 | 9.2 |
| 6 | 7.6 | 60 | 13 | 34 | 59 | 33 | 96 | 36 | 103 | 24 | 165 | 9.1 |
| 7 | 15 | 20 | 12 | 28 | 47 | 111 | 62 | 36 | 62 | 23 | 50 | 19 |
| 8 | 8.5 | 12 | 12 | 24 | 41 | 107 | 49 | 42 | 47 | 26 | 24 | 41 |
| 9 | 7.2 | 11 | 12 | 22 | 112 | 59 | 62 | 55 | 42 | 33 | 23 | 38 |
| 10 | 7.3 | 12 | 12 | 19 | 87 | 47 | 62 | 36 | 65 | 32 | 20 | 27 |
| 11 | 7.4 | 13 | 13 | 15 | 50 | 45 | 49 | 34 | 60 | 28 | 16 | 9.4 |
| 12 | 7.4 | 12 | 13 | 15 | 43 | 113 | 46 | 32 | 46 | 23 | 104 | 8.6 |
| 13 | 7.6 | 11 | 14 | 15 | 42 | 65 | 44 | 30 | 858 | 20 | 27 | 7.9 |
| 14 | 7.6 | 11 | 22 | 16 | 40 | 56 | 42 | 28 | 277 | 18 | 19 | 7.8 |
| 15 | 7.6 | 11 | 130 | 18 | 39 | 47 | 40 | 26 | 81 | 20 | 16 | 7.6 |
| 16 | 8.0 | 11 | 65 | 18 | 48 | 140 | 40 | 26 | 59 | 18 | 15 | 7.9 |
| 17 | 8.4 | 14 | 39 | 17 | 176 | 216 | 42 | 25 | 57 | 17 | 15 | 7.3 |
| 18 | 10 | 12 | 29 | 15 | 145 | 76 | 73 | 24 | 47 | 15 | 27 | 6.9 |
| 19 | 13 | 11 | 24 | 15 | 202 | 60 | 44 | 23 | 43 | 19 | 19 | 6.8 |
| 20 | 9.0 | 11 | 25 | 16 | 173 | 82 | 41 | 24 | 39 | 28 | 15 | 13 |
| 21 | 7.6 | 12 | 19 | 18 | 109 | 87 | 40 | 27 | 36 | 19 | 30 | 12 |
| 22 | 8.0 | 9.0 | 21 | 18 | 69 | 65 | 37 | 40 | 35 | 14 | 25 | 108 |
| 23 | 70 | 9.0 | 54 | 17 | 54 | 52 | 36 | 31 | 46 | 25 | 15 | 28 |
| 24 | 45 | 10 | 42 | 16 | 49 | 48 | 35 | 29 | 34 | 20 | 15 | 13 |
| 25 | 35 | 12 | 30 | 15 | 45 | 45 | 35 | 28 | 32 | 14 | 14 | 12 |
| 26 | 200 | 10 | 25 | 15 | 40 | 57 | 198 | 28 | 32 | 13 | 12 | 12 |
| 27 | 200 | 10 | 24 | 15 | 40 | 45 | 239 | 26 | 31 | 14 | 11 | 209 |
| 28 | 60 | 10 | 23 | 16 | 42 | 39 | 161 | 70 | 31 | 40 | 11 | 26 |
| 29 | 30 | 9.0 | 22 | 17 | --- | 39 | 70 | 358 | 37 | 16 | 10 | 18 |
| 30 | 17 | 9.0 | 20 | 21 | --- | 39 | 56 | 65 | 50 | 17 | 9.2 | 16 |
| 31 | 15 | --- | 20 | 107 | --- | 68 | --- | 125 | --- | 28 | 9.6 | --- |
| TOTAL | 866.2 | 410.0 | 853 | 999 | 3320 | 2028 | 2171 | 1526 | 2853 | 726 | 803.8 | 738.2 |
| MEAN | 27.9 | 13.7 | 27.5 | 32.2 | 119 | 65.4 | 72.4 | 49.2 | 95.1 | 23.4 | 25.9 | 24.6 |
| MAX | 200 | 60 | 130 | 194 | 911 | 216 | 239 | 358 | 858 | 45 | 165 | 209 |
| MIN | 7.2 | 9.0 | 12 | 15 | 39 | 33 | 35 | 23 | 31 | 13 | 9.2 | 6.8 |
| CFSM | .48 | .24 | .48 | .56 | 2.06 | 1.13 | 1.25 | .85 | 1.64 | .40 | .45 | .43 |
| IN. | .56 | .26 | .55 | .64 | 2.13 | 1.30 | 1.39 | .98 | 1.83 | .47 | .52 | .47 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|-----|-----|-----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 12924.7 | MEAN | 35.4 | MAX | 517 | MIN | 7.2 | CFSM | .61 | IN | 8.30 |
| WTR YR 1982 | TOTAL | 17294.2 | MEAN | 47.4 | MAX | 911 | MIN | 6.8 | CFSM | .82 | IN | 11.11 |

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'58", long 77°07'40", Montgomery County, Md., Hydrologic Unit 02070008, on left bank just above Little Falls Dam, 1 mi (1.6 km) upstream from District of Columbia boundary line, 1.2 mi (1.9 km) upstream from Chain Bridge, 1.8 mi (2.9 km) east of Langley, Fairfax County, Va., and at mile 117.4 (188.9 km).

DRAINAGE AREA.--11,560 mi² (29,940 km²).

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WDR MD-DE-75-1: 1973-74(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 37.95 ft (11.567 m) National Geodetic Vertical Datum of 1929. Prior to June 7, 1930, nonrecording gage, and June 7, 1930, to Jan. 22, 1965, water-stage recorder, at site 1 mi (1.6 km) upstream on right bank at same datum.

REMARKS.--Records good except those for January, which are fair. Diversions at Great Falls through aqueducts, and since June 1959, from gage pool at Little Falls Dam, for municipal supply of Washington, D. C.; since October 1958, at Rockville Filtration Plant, for municipal supply of city of Rockville; since April 1961, at Potomac Filtration Plant, for water supply of Washington Suburban Sanitary District; since October 1961, at Fairfax Water Treatment Plant for water supply of city of Fairfax (from Goose Creek); and since April 1964, at Violets Lock to Chesapeake and Ohio Canal. Low flow affected slightly by Stony River Reservoir and since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Lake. Gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 11,390 ft³/s (322.6 m³/s), 13.38 in/yr (340 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 484,000 ft³/s (13,700 m³/s) Mar. 19, 1936, gage height, 28.1 ft (8.56 m), site then in use; minimum daily observed at gaging station, 121 ft³/s (3.43 m³/s) Sept. 9, 1966, does not include diversion of 489 ft³/s (13.8 m³/s) for municipal use; minimum daily (adjusted), 601 ft³/s (17.0 m³/s) Sept. 10, 1966, includes diversion of 449 ft³/s (12.7 m³/s) for municipal use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, was of approximately the same magnitude as that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 45,000 ft³/s (1,200 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|---------|------|--------------------------------|-------------------------------|------------------|-----------------|---------|------|--------------------------------|-------------------------------|------------------|-----------------|
| Feb. 5 | 2315 | 64600 | 1830 | 7.41 | 2.259 | Mar. 18 | 2100 | 68800 | 1950 | 7.60 | 2.316 |
| Feb. 19 | 2330 | 51000 | 1440 | 6.75 | 2.057 | Mar. 22 | 2215 | 76400 | 2160 | 7.93 | 2.417 |
| Feb. 22 | 1645 | 50200 | 1420 | 6.71 | 2.045 | June 15 | 0945 | *102000 | 2890 | 8.91 | 2.716 |

Minimum daily discharge, 955 ft³/s (27.0 m³/s) Oct. 22, does not include diversion for municipal use; minimum daily (adjusted) discharge, 1,460 ft³/s (41.3 m³/s) Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 1 | 1300 | 9060 | 1950 | 5720 | 6500 | 19100 | 13800 | 16200 | 9060 | 5920 | 5550 | 2100 |
| 2 | 1280 | 6870 | 2080 | 5610 | 9000 | 17200 | 12800 | 14600 | 9350 | 5630 | 4610 | 2000 |
| 3 | 1290 | 5390 | 2450 | 6420 | 17900 | 16300 | 12300 | 13200 | 8730 | 5280 | 4090 | 3150 |
| 4 | 1290 | 4420 | 2990 | 7300 | 35700 | 15500 | 13700 | 12100 | 10100 | 6080 | 3950 | 2170 |
| 5 | 1250 | 3870 | 3760 | 14200 | 45600 | 14600 | 20400 | 11100 | 13200 | 6300 | 3950 | 1990 |
| 6 | 1200 | 3580 | 3940 | 21400 | 51000 | 14000 | 19700 | 10100 | 21100 | 6450 | 3990 | 1950 |
| 7 | 1180 | 3200 | 3960 | 24500 | 33700 | 13800 | 19300 | 9330 | 28100 | 7720 | 4720 | 1810 |
| 8 | 1100 | 3090 | 3680 | 20800 | 24600 | 16100 | 18100 | 8630 | 25600 | 6830 | 3950 | 1790 |
| 9 | 1160 | 3310 | 3150 | 16500 | 20200 | 17500 | 16400 | 8270 | 19700 | 6460 | 3950 | 1800 |
| 10 | 1160 | 3340 | 3040 | 13400 | 17700 | 20000 | 15700 | 7840 | 16000 | 6200 | 5030 | 1730 |
| 11 | 1140 | 3190 | 3020 | 7850 | 15400 | 20500 | 15200 | 8210 | 14300 | 6110 | 5250 | 1530 |
| 12 | 1140 | 3130 | 3250 | 5120 | 14900 | 20300 | 15100 | 8040 | 13600 | 5880 | 6230 | 1570 |
| 13 | 1120 | 3050 | 3410 | 4730 | 14200 | 24300 | 14400 | 6950 | 27400 | 6690 | 5070 | 1620 |
| 14 | 1120 | 2890 | 3380 | 4700 | 12700 | 35300 | 13400 | 6250 | 59800 | 7160 | 4560 | 1690 |
| 15 | 1050 | 2830 | 3770 | 4910 | 11300 | 36500 | 12600 | 5830 | 92700 | 7220 | 4050 | 1470 |
| 16 | 1070 | 2650 | 3720 | 5180 | 10700 | 32300 | 11700 | 5410 | 58100 | 6050 | 3670 | 1330 |
| 17 | 1050 | 2550 | 3630 | 4550 | 13200 | 35200 | 10900 | 5000 | 42600 | 5000 | 3290 | 1350 |
| 18 | 1000 | 2480 | 3530 | 5130 | 32700 | 56600 | 10900 | 4620 | 39500 | 4320 | 3140 | 1480 |
| 19 | 1070 | 2400 | 3400 | 5380 | 46800 | 61100 | 11300 | 4280 | 29500 | 4700 | 3450 | 1570 |
| 20 | 1010 | 2260 | 2700 | 5810 | 46800 | 45500 | 11200 | 4340 | 22200 | 4600 | 3660 | 1490 |
| 21 | 967 | 2310 | 2440 | 5330 | 42400 | 39000 | 10700 | 4290 | 17700 | 4410 | 3320 | 1530 |
| 22 | 955 | 2190 | 2620 | 5200 | 48400 | 63300 | 10000 | 4560 | 14700 | 4570 | 3320 | 2110 |
| 23 | 1090 | 2130 | 2860 | 4760 | 48100 | 67000 | 9280 | 4940 | 12800 | 5410 | 2870 | 1990 |
| 24 | 1270 | 2090 | 2850 | 4520 | 40700 | 46100 | 8670 | 4580 | 11100 | 5690 | 2550 | 1750 |
| 25 | 1190 | 2120 | 3990 | 4220 | 37500 | 34400 | 8090 | 4820 | 9660 | 5020 | 2400 | 1770 |
| 26 | 1390 | 2060 | 5860 | 4100 | 31500 | 27600 | 8630 | 5040 | 8720 | 5650 | 2450 | 1580 |
| 27 | 2000 | 2060 | 9950 | 4000 | 24300 | 23100 | 11700 | 6630 | 7930 | 5950 | 2380 | 2660 |
| 28 | 2910 | 2060 | 8620 | 3800 | 21600 | 20300 | 13800 | 7180 | 7000 | 6700 | 2150 | 3300 |
| 29 | 8890 | 1990 | 7560 | 3900 | --- | 17800 | 14600 | 12800 | 6420 | 5680 | 2120 | 3040 |
| 30 | 17300 | 1940 | 6890 | 4000 | --- | 15700 | 16600 | 10800 | 6140 | 4580 | 2080 | 2990 |
| 31 | 13200 | --- | 5960 | 4500 | --- | 14400 | --- | 11900 | --- | 5170 | 2100 | --- |
| TOTAL | 74142 | 94510 | 124410 | 237540 | 775100 | 900400 | 400970 | 247840 | 662810 | 179430 | 113900 | 58310 |
| MEAN | 2392 | 3150 | 4013 | 7663 | 27680 | 29050 | 13370 | 7995 | 22090 | 5788 | 3674 | 1944 |
| MAX | 17300 | 9060 | 9950 | 24500 | 51000 | 67000 | 20400 | 16200 | 92700 | 7720 | 6230 | 3300 |
| MIN | 955 | 1940 | 1950 | 3800 | 6500 | 13800 | 8090 | 4280 | 6140 | 4320 | 2080 | 1330 |
| (*) | 505 | 496 | 508 | 500 | 483 | 486 | 480 | 517 | 525 | 578 | 545 | 541 |
| MEAN+ | 2898 | 3647 | 4523 | 8162 | 28180 | 29540 | 13850 | 8511 | 22620 | 6366 | 4220 | 2485 |
| CFSM+ | .25 | .32 | .39 | .71 | 2.44 | 2.56 | 1.20 | .74 | 1.96 | .55 | .37 | .22 |
| IN+ | .29 | .35 | .45 | .81 | 2.54 | 2.95 | 1.34 | .85 | 2.18 | .64 | .42 | .24 |
| CAL YR 1981 TOTAL | 2330967 | | | 6386 | | 53400 | 844 | | 6914 | | | 8.12 |
| WTR YR 1982 TOTAL | 3869362 | | | 10600 | | 92700 | 955 | | 11120 | | | 13.06 |

* Diversion in cfs, for municipal supply of Washington, D. C., Washington Suburban Sanitary District, city of Rockville, city of Fairfax (from Goose Creek), and the Chesapeake and Ohio Canal (insignificant diversion to canal during current water year); records furnished by Corps of Engineers, Washington Suburban Sanitary Commission, city of Rockville, and city of Fairfax.

* Adjusted for diversion.

POTOMAC RIVER BASIN

69

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC
(National stream-quality accounting network station)

LOCATION.--Lat 38°55'46", long 77°07'02", Arlington County, Va., Hydrologic Unit 02070010, under right downstream side of bridge on Virginia State Highway 123, and at river mile 115.9 (186.5 km).

DRAINAGE AREA.--11,570 mi² (29,970 km²).

PERIOD OF RECORD.--March 1973 to current year. Prior to October 1977, published as "at Great Falls."

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE, AIR (DEG C) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) |
|--------------|------|---|---|---------------|-------------------------------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|---|
| NOV 10... | 1130 | 3280 | 348 | 8.1 | 9.0 | 9.5 | 3.0 | 12.3 | 54 | 210 | 130 | 47 |
| JAN 20... | 1300 | 5940 | 410 | 8.3 | 2.5 | .0 | 2.6 | 14.6 | K2 | 220 | 120 | 45 |
| MAR 16... | 1030 | 32100 | 185 | 7.6 | 7.0 | 8.0 | 36 | 12.5 | 150 | 380 | 76 | 33 |
| MAY 11... | 1000 | 8250 | 280 | 8.4 | 19.0 | 19.0 | 3.9 | 9.7 | 70 | 1000 | 110 | 28 |
| JUL 14... | 1030 | 7050 | 350 | 8.2 | 26.0 | 29.0 | 5.0 | 8.4 | 26 | 540 | 140 | 43 |
| SEP 21... | 0945 | 1560 | 415 | 8.0 | 18.0 | 20.5 | 6.4 | 8.4 | 110 | 4600 | 150 | 53 |

K Result based on colony count outside optimal range.

| DATE | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | PERCENT SODIUM | SODIUM AD- SORP- TION RATIO | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) |
|--------------|--|--|--|-------------------|---|---|---|---|---|--|---|--|
| NOV 10... | 39 | 8.7 | 15 | 19 | .6 | 3.0 | 86 | 48 | 13 | .1 | 4.7 | 195 |
| JAN 20... | 36 | 7.3 | 15 | 21 | .6 | 2.0 | 75 | 36 | 14 | .1 | 6.7 | 185 |
| MAR 16... | 22 | 5.1 | 6.1 | 15 | .3 | 1.4 | 43 | 26 | 7.8 | <.1 | 5.9 | 118 |
| MAY 11... | 32 | 7.0 | 8.7 | 14 | .4 | 3.5 | 81 | 32 | 9.6 | .2 | .9 | 153 |
| JUL 14... | 39 | 9.8 | 12 | 16 | .5 | 2.0 | 95 | 37 | 15 | .1 | 1.9 | 249 |
| SEP 21... | 39 | 13 | 23 | 24 | .8 | 2.9 | 98 | 58 | 26 | .2 | .4 | 233 |

< Actual value is known to be less than the value shown.

| DATE | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | SOLIDS, DIS- SOLVED (TONS PER AC-FT) | SOLIDS, DIS- SOLVED (TONS PER DAY) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS TOTAL (MG/L AS P04) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) |
|--------------|---|---|---|---|---|---|--|---|--|--|--|---|
| NOV 10... | 183 | .27 | 1730 | 1.3 | .040 | .05 | .40 | .040 | .12 | .070 | .060 | .18 |
| JAN 20... | 162 | .25 | 2970 | 2.2 | .150 | .19 | .40 | .070 | .21 | .050 | .050 | .15 |
| MAR 16... | 100 | .16 | 10200 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 11... | 141 | .21 | 3410 | .71 | .040 | .05 | .71 | .060 | .18 | .020 | <.010 | -- |
| JUL 14... | 174 | .34 | 4740 | .83 | .020 | .03 | .80 | .070 | .21 | .010 | <.010 | -- |
| SEP 21... | 222 | .32 | 981 | .26 | .050 | .06 | 1.20 | .080 | .25 | .020 | <.010 | -- |

< Actual value is known to be less than the value shown.

POTOMAC RIVER BASIN

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS- PENDE TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA) | BARIIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) |
|--------------|-------------------------------------|--|--|--|--|---|---|--|--|--|---|---|
| NOV 10... | 1 | 0 | 1 | 100 | 60 | 36 | 1 | <1 | 10 | -- | <10 | <1 |
| MAR 16... | 1 | 0 | 1 | 100 | 60 | 37 | 3 | <1 | 40 | 10 | 30 | 6 |
| MAY 11... | 1 | 0 | 1 | <100 | -- | 40 | 1 | <1 | 20 | 10 | 10 | 3 |
| SEP 21... | 2 | 0 | 2 | 100 | 40 | 59 | 1 | <1 | 10 | -- | <10 | <1 |

< Actual value is known to be less than the value shown.

| DATE | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN) |
|--------------|--|---|---|--|---|---|--|---|---|--|---|---|
| NOV 10... | <1 | 14 | 10 | 4 | 310 | 280 | 27 | 13 | -- | <1 | 20 | 9 |
| MAR 16... | <1 | 12 | 10 | 2 | 2000 | 2000 | 45 | 16 | 15 | 1 | 180 | 170 |
| MAY 11... | <1 | 4 | 1 | 3 | 420 | -- | <3 | 7 | 5 | 2 | 50 | 50 |
| SEP 21... | <1 | 15 | 9 | 6 | 390 | 380 | 7 | 8 | 6 | 2 | 80 | 80 |

< Actual value is known to be less than the value shown.

| DATE | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG) | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) |
|--------------|--|---|---|--|---|---|--|--|---|---|--|
| NOV 10... | 11 | <.1 | -- | <.1 | 4 | 3 | 1 | <1 | <1 | <1 | <1 |
| MAR 16... | 6 | .1 | -- | <.1 | 120 | 120 | 2 | <1 | <1 | <1 | <1 |
| MAY 11... | 3 | .2 | .1 | .1 | 5 | 0 | 5 | <1 | <1 | <1 | <1 |
| SEP 21... | 2 | .2 | .0 | .2 | 6 | 4 | 2 | <1 | <1 | <1 | <1 |

< Actual value is known to be less than the value shown.

| DATE | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT) | GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) | GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) | GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90) | GROSS BETA, DIS- SOLVED (PCI/L AS YT-90) | RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) | URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) |
|--------------|---|--|---|---|--|--|--|---|---|---|---|
| NOV 10... | 40 | <4 | <4.8 | <.4 | -- | <.4 | 3.4 | <.4 | 3.3 | .07 | .24 |
| MAR 16... | 40 | <4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 11... | 10 | <3 | <3.5 | 1.1 | .7 | <.6 | <2.0 | <.5 | <2.0 | .39 | .13 |
| SEP 21... | 20 | <4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

POTOMAC RIVER BASIN

71

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM | SEDI- MENT, SUS- PENDED (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) |
|--------------|---|--|--|
| NOV 10... | 100 | 6 | 53 |
| JAN 20... | 100 | 3 | 48 |
| MAR 16... | 95 | 97 | 8410 |
| MAY 11... | 67 | 54 | 1200 |
| JUL 14... | 96 | 15 | 286 |
| SEP 21... | 85 | 21 | 88 |

01652500 FOURMILE RUN AT ALEXANDRIA, VA.

LOCATION.--Lat 38°50'35", long 77°05'09", Arlington County, Hydrologic Unit 02070010, on left bank at upstream side of bridge on Shirlington Road, at Arlington County-Alexandria City line, 0.1 mi (0.2 km) upstream from Interstate Highway 95, and 2.5 mi (4.0 km) upstream from mouth.

DRAINAGE AREA.--13.8 mi² (35.7 km²).

PERIOD OF RECORD.--May 1951 to September 1969, October 1969 to September 1973 (annual maximum only), October 1973 to September 1975, October 1975 to September 1977 (annual maximum only), July 1979 to September 1982 (discontinued as continuous-record station; converted to partial-record station).

REVISED RECORDS.--WSP 1622: 1954-55.

GAGE.--Water-stage recorder. Datum of gage is 28.57 ft (8.708 m) National Geodetic Vertical Datum of 1929. May 4, 1951, to Sept. 30, 1969, water-stage recorder, and Oct. 1, 1969, to Sept. 27, 1973, nonrecording gage, at site 0.4 mi (0.6 km) downstream at datum 6.02 ft (1.835 m) lower. Sept. 28, 1973, to Sept. 26, 1975, water-stage recorder, and Sept. 27, 1975, to Sept. 30, 1977, nonrecording gage, at present site and datum.

REMARKS.--Records fair except those above 400 ft³/s (11.3 m³/s), which are poor. Several observations of water temperature were made during the year. Water-quality records have been collected at this location and are published in reports of the Geological Survey.

AVERAGE DISCHARGE.--23 years (water years 1951-69, 1974-75, 1980-82), 15.4 ft³/s (0.436 m³/s), 15.15 in/yr (385 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s (413 m³/s) July 22, 1969, gage height, 11.6 ft (3.536 m), site and datum then in use, from rating curve extended above 670 ft³/s (19.0 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 17.8 ft (5.43 m), from floodmarks, June 21, 1972; minimum discharge, 0.6 ft³/s (0.017 m³/s) Sept. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| May 28 | 2145 | 2680 76.2 | 7.79 2.374 | Aug. 17 | 2000 | 2390 67.7 | 7.38 2.249 |
| June 1 | 1800 | *2960 84.4 | 8.20 2.499 | Aug. 21 | 1745 | 1990 56.4 | 6.81 2.076 |

Minimum discharge, 1.1 ft³/s (0.031 m³/s) Sept. 19; minimum gage height, 3.04 ft (0.927 m) Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1 | 14 | 4.2 | 20 | 44 | 35 | 6.8 | 8.3 | 6.4 | 194 | 12 | 3.4 | 3.9 |
| 2 | 16 | 4.2 | 19 | 6.1 | 120 | 6.8 | 6.2 | 6.0 | 19 | 12 | 18 | 12 |
| 3 | 3.0 | 4.2 | 4.5 | 15 | 258 | 6.2 | 52 | 5.8 | 69 | 72 | 6.0 | 11 |
| 4 | 2.8 | 4.0 | 4.5 | 106 | 17 | 6.2 | 7.2 | 5.9 | 27 | 9.6 | 3.8 | 3.1 |
| 5 | 3.3 | 4.2 | 5.3 | 7.7 | 7.6 | 6.4 | 6.5 | 5.9 | 200 | 7.6 | 49 | 3.1 |
| 6 | 58 | 76 | 4.3 | 6.1 | 6.4 | 6.5 | 29 | 5.8 | 19 | 7.7 | 60 | 2.8 |
| 7 | 7.8 | 5.7 | 4.2 | 5.7 | 5.7 | 79 | 5.8 | 6.2 | 15 | 7.0 | 4.4 | 2.4 |
| 8 | 4.3 | 5.4 | 4.2 | 5.4 | 5.5 | 11 | 5.6 | 49 | 12 | 9.9 | 3.7 | 1.9 |
| 9 | 4.0 | 5.4 | 4.2 | 5.0 | 88 | 7.6 | 21 | 10 | 11 | 8.9 | 30 | 1.9 |
| 10 | 4.2 | 5.1 | 3.7 | 4.8 | 9.0 | 6.9 | 6.1 | 8.1 | 50 | 36 | 4.0 | 2.1 |
| 11 | 4.5 | 5.1 | 3.7 | 4.8 | 6.8 | 6.8 | 5.7 | 7.4 | 17 | 10 | 3.3 | 2.0 |
| 12 | 4.5 | 5.1 | 3.9 | 4.7 | 6.1 | 43 | 5.6 | 8.6 | 20 | 9.1 | 5.9 | 1.8 |
| 13 | 4.6 | 5.1 | 4.0 | 4.7 | 10 | 12 | 5.5 | 7.0 | 376 | 8.6 | 2.8 | 1.8 |
| 14 | 2.9 | 5.3 | 73 | 4.6 | 6.0 | 7.9 | 5.2 | 6.0 | 22 | 58 | 2.8 | 1.5 |
| 15 | 2.5 | 5.1 | 56 | 6.8 | 5.7 | 12 | 5.0 | 6.0 | 14 | 9.7 | 3.0 | 1.4 |
| 16 | 2.5 | 4.8 | 76 | 7.2 | 16 | 87 | 5.1 | 5.9 | 11 | 6.8 | 2.9 | 1.7 |
| 17 | 2.5 | 4.8 | 6.9 | 6.6 | 119 | 16 | 44 | 5.5 | 11 | 6.0 | 129 | 1.5 |
| 18 | 18 | 4.8 | 5.8 | 4.9 | 34 | 10 | 9.8 | 5.9 | 8.9 | 5.3 | 4.8 | 1.6 |
| 19 | 3.7 | 4.8 | 4.4 | 4.7 | 93 | 8.5 | 5.5 | 45 | 8.2 | 33 | 1.7 | 1.3 |
| 20 | 2.2 | 4.9 | 4.3 | 4.6 | 17 | 24 | 5.3 | 8.3 | 8.3 | 9.8 | 1.4 | 2.1 |
| 21 | 2.3 | 5.0 | 4.4 | 4.8 | 10 | 17 | 5.5 | 7.8 | 8.4 | 6.6 | 112 | 1.2 |
| 22 | 2.5 | 4.5 | 7.5 | 5.3 | 8.6 | 7.7 | 5.3 | 84 | 8.7 | 4.6 | 7.9 | 122 |
| 23 | 47 | 4.5 | 7.7 | 6.0 | 7.1 | 6.8 | 5.1 | 6.9 | 9.3 | 6.2 | 5.4 | 3.6 |
| 24 | 6.1 | 4.5 | 5.5 | 6.8 | 6.5 | 6.5 | 5.4 | 6.5 | 8.9 | 4.7 | 4.9 | 2.9 |
| 25 | 15 | 4.5 | 5.1 | 6.2 | 6.0 | 6.5 | 5.3 | 6.0 | 9.3 | 4.7 | 5.1 | 2.6 |
| 26 | 108 | 4.5 | 4.8 | 5.4 | 5.9 | 18 | 178 | 6.1 | 9.3 | 5.1 | 4.7 | 29 |
| 27 | 105 | 4.5 | 5.1 | 4.8 | 7.4 | 6.3 | 116 | 6.9 | 9.3 | 42 | 4.1 | 69 |
| 28 | 7.2 | 4.2 | 4.9 | 4.6 | 12 | 6.1 | 13 | 190 | 9.4 | 8.5 | 3.7 | 3.1 |
| 29 | 4.8 | 4.2 | 4.8 | 4.6 | --- | 6.2 | 7.1 | 74 | 37 | 3.6 | 3.7 | 2.9 |
| 30 | 4.2 | 4.2 | 4.6 | 4.5 | --- | 5.9 | 6.4 | 85 | 15 | 140 | 3.4 | 2.8 |
| 31 | 4.2 | --- | 26 | 4.5 | --- | 30 | --- | 28 | --- | 13 | 4.1 | --- |
| TOTAL | 471.6 | 212.8 | 392.3 | 316.9 | 929.3 | 487.6 | 591.5 | 715.9 | 1237.0 | 578.0 | 498.9 | 300.0 |
| MEAN | 15.2 | 7.09 | 12.7 | 10.2 | 33.2 | 15.7 | 19.7 | 23.1 | 41.2 | 18.6 | 16.1 | 10.0 |
| MAX | 108 | 76 | 76 | 106 | 258 | 87 | 178 | 190 | 376 | 140 | 129 | 122 |
| MIN | 2.2 | 4.0 | 3.7 | 4.5 | 5.5 | 5.9 | 5.0 | 5.5 | 8.2 | 3.6 | 1.4 | 1.2 |
| CFSM | 1.10 | .51 | .92 | .74 | 2.41 | 1.14 | 1.43 | 1.67 | 2.99 | 1.35 | 1.17 | .73 |
| IN. | 1.27 | .57 | 1.06 | .85 | 2.50 | 1.31 | 1.59 | 1.93 | 3.33 | 1.56 | 1.34 | .81 |

| | | | | | | | |
|-------------|-------|--------|-----------|---------|---------|-----------|----------|
| CAL YR 1981 | TOTAL | 5341.2 | MEAN 14.6 | MAX 364 | MIN 1.3 | CFSM 1.06 | IN 14.40 |
| WTR YR 1982 | TOTAL | 6731.8 | MEAN 18.4 | MAX 376 | MIN 1.2 | CFSM 1.33 | IN 18.15 |

POTOMAC RIVER BASIN

73

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA

LOCATION.--Lat 38°48'46", long 77°13'43", Fairfax County, Hydrologic Unit 02070010, on left bank 800 ft (244 m) upstream from bridge on State Highway 620, 0.2 mi (0.3 km) upstream from Long Branch, and 2.3 mi (3.7 km) south-west of Annandale.

DRAINAGE AREA.--23.5 mi² (60.9 km²).

PERIOD OF RECORD.--March 1947 to current year (fragmentary prior to October 1947).

REVISED RECORDS.--WSP 1502: 1952. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 191.24 ft (58.290 m) National Geodetic Vertical Datum of 1929 (levels by Stone and Webster Engineering Corp.). Prior to May 12, 1949, nonrecording gage at site 800 ft (244 m) downstream at datum 0.33 ft (0.101 m) lower. May 12, 1949, to June 4, 1970, water-stage recorder at site 800 ft (244 m) downstream at datum 0.33 ft (0.101 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--35 years, 27.7 ft³/s (0.784 m³/s), 16.01 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) June 22, 1972, gage height, 15.96 ft (4.865 m), from high-water mark in gage house, from rating curve extended above 6,600 ft³/s (190 m³/s) on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 25, 26, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) May 30, June 13, gage height, 7.41 ft (2.259 m), no peak above base of 1,400 ft³/s (40 m³/s); minimum, 0.62 ft³/s (0.018 m³/s) Sept. 19-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-----------|---------|---------|----------|----------|-------|--------|-------|-------|--------|
| 1 | 5.1 | 3.2 | 9.2 | 78 | 142 | 14 | 31 | 15 | 51 | 8.1 | 8.1 | 2.0 |
| 2 | 28 | 3.2 | 28 | 11 | 36 | 12 | 12 | 13 | 27 | 6.4 | 5.7 | 24 |
| 3 | 2.7 | 3.4 | 4.7 | 12 | 508 | 11 | 59 | 12 | 35 | 47 | 6.4 | 32 |
| 4 | 1.4 | 3.4 | 4.0 | 127 | 50 | 11 | 22 | 11 | 47 | 15 | 4.2 | 4.0 |
| 5 | 1.2 | 4.5 | 6.4 | 18 | 24 | 11 | 14 | 11 | 215 | 7.4 | 26 | 2.0 |
| 6 | 16 | 38 | 4.0 | 10 | 17 | 11 | 49 | 9.9 | 35 | 6.4 | 188 | 1.8 |
| 7 | 16 | 4.5 | 2.7 | 8.8 | 13 | 85 | 16 | 9.9 | 24 | 6.0 | 18 | 2.1 |
| 8 | 1.8 | 2.9 | 2.9 | 7.7 | 12 | 36 | 13 | 32 | 16 | 5.7 | 9.9 | 2.0 |
| 9 | 1.1 | 2.7 | 3.2 | 7.0 | 96 | 17 | 32 | 18 | 13 | 6.0 | 11 | 1.8 |
| 10 | 1.0 | 4.2 | 2.9 | 6.4 | 27 | 14 | 17 | 9.9 | 45 | 16 | 6.4 | 1.8 |
| 11 | 1.0 | 5.0 | 3.2 | 5.0 | 15 | 14 | 13 | 8.8 | 17 | 8.4 | 5.3 | 1.7 |
| 12 | 1.0 | 4.0 | 3.4 | 5.0 | 12 | 60 | 13 | 8.4 | 15 | 6.0 | 40 | 1.4 |
| 13 | 1.0 | 4.0 | 3.2 | 5.0 | 17 | 23 | 13 | 8.1 | 549 | 4.7 | 6.4 | 1.1 |
| 14 | 1.1 | 3.2 | 39 | 5.0 | 13 | 17 | 13 | 7.7 | 51 | 5.3 | 4.7 | 1.2 |
| 15 | 1.5 | 2.9 | 92 | 6.0 | 12 | 18 | 12 | 7.7 | 23 | 20 | 4.5 | 1.7 |
| 16 | 1.6 | 2.7 | 33 | 6.0 | 29 | 100 | 11 | 7.4 | 22 | 15 | 4.0 | 1.2 |
| 17 | 2.0 | 3.2 | 15 | 5.3 | 136 | 48 | 26 | 7.0 | 26 | 5.3 | 81 | .83 |
| 18 | 3.2 | 3.2 | 9.9 | 5.0 | 58 | 20 | 42 | 6.7 | 15 | 4.2 | 36 | .76 |
| 19 | 7.5 | 2.9 | 7.0 | 5.0 | 134 | 16 | 13 | 7.0 | 12 | 15 | 6.7 | .69 |
| 20 | 1.5 | 2.9 | 5.0 | 6.4 | 58 | 43 | 12 | 9.9 | 11 | 15 | 5.0 | 8.4 |
| 21 | 1.0 | 3.2 | 4.5 | 9.5 | 32 | 37 | 11 | 27 | 10 | 8.4 | 7.7 | 4.2 |
| 22 | 1.1 | 2.3 | 9.9 | 6.7 | 20 | 20 | 9.9 | 76 | 12 | 3.7 | 6.4 | 102 |
| 23 | 32 | 2.3 | 29 | 6.0 | 16 | 15 | 9.9 | 11 | 18 | 9.5 | 4.0 | 7.7 |
| 24 | 18 | 2.7 | 11 | 5.7 | 15 | 14 | 9.9 | 9.2 | 8.8 | 8.4 | 4.0 | 3.4 |
| 25 | 7.1 | 3.2 | 7.0 | 5.3 | 13 | 13 | 9.9 | 8.8 | 8.1 | 3.4 | 3.7 | 2.3 |
| 26 | 83 | 2.7 | 6.4 | 5.0 | 11 | 27 | 140 | 8.4 | 8.1 | 2.9 | 2.9 | 9.5 |
| 27 | 95 | 2.7 | 6.0 | 5.0 | 12 | 13 | 166 | 7.7 | 7.7 | 7.4 | 2.1 | 214 |
| 28 | 16 | 2.7 | 5.7 | 6.0 | 20 | 11 | 47 | 137 | 7.4 | 23 | 2.3 | 8.4 |
| 29 | 5.3 | 2.4 | 5.0 | 7.4 | --- | 11 | 20 | 190 | 18 | 3.7 | 2.0 | 5.3 |
| 30 | 3.7 | 2.4 | 4.5 | 9.9 | --- | 11 | 16 | 163 | 15 | 129 | 1.8 | 4.2 |
| 31 | 3.2 | --- | 9.9 | 101 | --- | 31 | --- | 55 | --- | 29 | 1.7 | --- |
| TOTAL | 361.1 | 130.6 | 377.6 | 507.1 | 1548 | 784 | 872.6 | 913.5 | 1362.1 | 451.3 | 515.9 | 453.48 |
| MEAN | 11.6 | 4.35 | 12.2 | 16.4 | 55.3 | 25.3 | 29.1 | 29.5 | 45.4 | 14.6 | 16.6 | 15.1 |
| MAX | 95 | 38 | 92 | 127 | 508 | 100 | 166 | 190 | 549 | 129 | 188 | 214 |
| MIN | 1.0 | 2.3 | 2.7 | 5.0 | 11 | 11 | 9.9 | 6.7 | 7.4 | 2.9 | 1.7 | .69 |
| CFSM | .49 | .19 | .52 | .70 | 2.35 | 1.08 | 1.24 | 1.26 | 1.93 | .62 | .71 | .64 |
| IN. | .57 | .21 | .60 | .80 | 2.45 | 1.24 | 1.38 | 1.45 | 2.16 | .71 | .82 | .72 |
| CAL YR 1981 | TOTAL | 5896.40 | MEAN 16.2 | MAX 639 | MIN 1.0 | CFSM .69 | IN 9.33 | | | | | |
| WTR YR 1982 | TOTAL | 8277.28 | MEAN 22.7 | MAX 549 | MIN .69 | CFSM .97 | IN 13.10 | | | | | |

POTOMAC RIVER BASIN

01655500 CEDAR RUN NEAR WARRENTON, VA

LOCATION.--Lat 38°44'25", long 77°47'16", Fauquier County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on State Highway 672, 1.9 mi (3.1 km) north of Warrenton, and 14.5 mi (23.3 km) upstream from Licking Run.

DRAINAGE AREA.--12.3 mi² (31.9 km²).

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

REVISED RECORDS.--WSP 1382: 1951-53. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 419.40 ft (127.833 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for January and September, which are fair. Some regulation since September 1966 by Warrenton municipal water-supply reservoir 400 ft (120 m) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 12.7 ft³/s (0.360 m³/s), 14.02 in/yr (356 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,840 ft³/s (222 m³/s) June 21, 1972, gage height, 12.87 ft (3.923 m), from rating curve extended above 600 ft³/s (17 m³/s) on basis of areal study of flood of 1942; no flow part of each day Aug. 11-14, 1967, probably caused by dam 400 ft (120 m) above gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of about 13 ft (4.0 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.1 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1130 | 336 9.52 | 5.53 1.686 | June 13 | 1300 | *371 10.5 | 5.72 1.743 |

Minimum discharge, 0.05 ft³/s (0.001 m³/s) Nov. 7, result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|--------|-----------|---------|---------|----------|----------|-------|------|------|-------|
| 1 | 2.7 | 8.1 | 2.7 | 17 | 61 | 16 | 20 | 18 | 14 | 4.9 | 1.8 | 1.2 |
| 2 | 6.9 | 7.0 | 4.9 | 13 | 32 | 14 | 13 | 15 | 20 | 4.6 | 1.7 | 1.3 |
| 3 | 3.0 | 5.9 | 4.1 | 12 | 167 | 13 | 19 | 13 | 18 | 5.5 | 1.8 | 1.2 |
| 4 | 1.7 | 5.2 | 3.6 | 21 | 68 | 12 | 19 | 11 | 49 | 6.4 | 2.0 | 1.2 |
| 5 | 2.0 | 5.2 | 6.6 | 17 | 42 | 12 | 14 | 10 | 101 | 5.5 | 2.3 | 1.2 |
| 6 | 2.7 | 8.1 | 4.7 | 14 | 30 | 11 | 18 | 9.2 | 59 | 4.4 | 1.1 | 1.2 |
| 7 | 3.4 | 4.8 | .71 | 13 | 23 | 21 | 12 | 8.4 | 38 | 3.6 | 5.1 | 1.1 |
| 8 | 2.7 | 1.3 | 3.7 | 9.8 | 19 | 22 | 12 | 9.0 | 27 | 3.4 | 3.1 | 1.1 |
| 9 | 2.6 | 3.6 | 5.6 | 9.5 | 32 | 19 | 16 | 9.8 | 21 | 3.9 | 2.6 | 1.1 |
| 10 | 1.9 | 3.2 | 4.7 | 7.2 | 27 | 17 | 15 | 7.7 | 36 | 4.2 | 2.1 | 1.1 |
| 11 | 1.7 | 3.2 | .93 | 2.5 | 21 | 16 | 13 | 6.4 | 26 | 4.4 | 1.8 | 1.1 |
| 12 | 1.7 | 2.2 | .55 | 2.3 | 18 | 22 | 12 | 6.2 | 21 | 3.6 | 4.1 | 1.1 |
| 13 | 1.9 | 2.4 | .50 | 2.2 | 17 | 18 | 11 | 6.0 | 165 | 3.8 | 2.2 | 1.1 |
| 14 | 1.9 | 2.6 | .71 | 2.3 | 15 | 16 | 10 | 5.7 | 84 | 3.9 | 1.7 | 1.1 |
| 15 | 2.0 | 2.7 | 12 | 2.5 | 14 | 20 | 9.5 | 4.9 | 46 | 5.1 | 1.4 | 1.0 |
| 16 | 2.4 | 1.2 | 14 | 2.2 | 21 | 28 | 9.0 | 4.6 | 33 | 3.4 | 1.6 | 1.0 |
| 17 | 6.4 | 2.7 | 10 | 2.0 | 55 | 34 | 9.5 | 4.4 | 27 | 2.8 | 1.7 | 1.0 |
| 18 | 9.1 | 3.9 | 8.8 | 1.8 | 48 | 28 | 11 | 4.1 | 22 | 2.4 | 2.2 | 1.0 |
| 19 | 7.6 | 1.3 | 6.7 | 1.8 | 54 | 25 | 8.4 | 3.9 | 18 | 2.2 | 1.5 | .70 |
| 20 | 8.8 | 3.6 | 5.4 | 1.8 | 57 | 36 | 7.7 | 4.1 | 14 | 2.0 | 1.3 | .35 |
| 21 | 10 | 3.1 | 5.1 | 1.9 | 50 | 58 | 7.7 | 4.6 | 12 | 1.7 | 1.4 | .45 |
| 22 | 10 | 1.6 | 6.0 | 2.0 | 38 | 44 | 6.9 | 9.2 | 11 | 1.5 | 1.2 | 1.1 |
| 23 | 12 | .82 | 8.2 | 2.2 | 29 | 34 | 5.8 | 7.3 | 9.5 | 1.8 | 1.2 | 1.0 |
| 24 | 11 | 1.9 | 9.5 | 2.5 | 25 | 27 | 6.2 | 6.2 | 8.4 | 1.8 | 1.2 | 1.0 |
| 25 | 10 | 2.7 | 8.7 | 2.2 | 21 | 23 | 6.2 | 5.8 | 7.7 | 1.6 | 1.3 | 1.0 |
| 26 | 11 | 1.6 | 8.0 | 1.8 | 17 | 19 | 20 | 5.3 | 8.0 | 1.6 | 1.2 | 1.1 |
| 27 | 12 | 2.6 | 7.5 | 1.7 | 17 | 16 | 35 | 9.8 | 7.1 | 1.6 | 1.2 | 1.5 |
| 28 | 7.6 | 3.0 | 7.1 | 1.5 | 17 | 13 | 38 | 24 | 6.4 | 1.6 | 1.2 | 1.2 |
| 29 | 16 | 1.7 | 6.6 | 1.6 | --- | 13 | 26 | 18 | 6.4 | 1.7 | 1.2 | 1.1 |
| 30 | 12 | 1.2 | 5.8 | 1.9 | --- | 12 | 22 | 18 | 6.0 | 1.8 | 1.2 | 1.0 |
| 31 | 9.1 | --- | 6.2 | 22 | --- | 16 | --- | 11 | --- | 2.0 | 1.2 | --- |
| TOTAL | 193.8 | 98.42 | 179.60 | 196.2 | 1035 | 675 | 432.9 | 280.6 | 921.5 | 98.7 | 66.5 | 31.60 |
| MEAN | 6.25 | 3.28 | 5.79 | 6.33 | 37.0 | 21.8 | 14.4 | 9.05 | 30.7 | 3.18 | 2.15 | 1.05 |
| MAX | 16 | 8.1 | 14 | 22 | 167 | 58 | 38 | 24 | 165 | 6.4 | 11 | 1.5 |
| MIN | 1.7 | .82 | .50 | 1.5 | 14 | 11 | 5.8 | 3.9 | 6.0 | 1.5 | 1.2 | .35 |
| CFSM | .51 | .27 | .47 | .52 | 3.01 | 1.77 | 1.17 | .74 | 2.50 | .26 | .18 | .09 |
| IN. | .59 | .30 | .54 | .59 | 3.13 | 2.04 | 1.31 | .85 | 2.79 | .30 | .20 | .10 |
| CAL YR 1981 TOTAL | 2185.02 | | | MEAN 5.99 | MAX 271 | MIN .50 | CFSM .49 | IN 6.61 | | | | |
| WTR YR 1982 TOTAL | 4209.82 | | | MEAN 11.5 | MAX 167 | MIN .35 | CFSM .94 | IN 12.73 | | | | |

01656000 CEDAR RUN NEAR CATLETT, VA

LOCATION.--Lat 38°38'12", long 77°37'31", Fauquier County, Hydrologic Unit 02070010, on right bank 100 ft (30 m) downstream from bridge on State Highway 806, 0.9 mi (1.4 km) downstream from Licking Run, and 1.4 mi (2.3 km) southeast of Catlett.

DRAINAGE AREA.--93.4 mi² (241.9 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1973-77(P).

GAGE.--Water-stage recorder. Datum of gage is 199.15 ft (60.701 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 87.5 ft³/s (2.478 m³/s), 12.72 in/yr (323 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,600 ft³/s (1,090 m³/s) June 22, 1972, gage height, 27.66 ft (8.431 m), from floodmarks, from rating curve extended above 5,000 ft³/s (140 m³/s) on basis of contracted-opening measurement of peak flow; no flow on many days in 1954, 1957, 1959, 1963, 1964, and 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of about 22 ft (6.7 m), discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 0400 | 2000 | 56.6 | Feb. 17 | 1900 | 1820 | 51.5 |
| Feb. 3 | 1930 | *3620 | 103 | June 13 | 1830 | 2270 | 64.3 |
| | | | | | | | 8.43 |
| | | | | | | | 2.569 |
| | | | | | | | 9.32 |
| | | | | | | | 2.841 |

Minimum discharge, 0.40 ft³/s (0.011 m³/s) Sept. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|------|-------|------|------|--------|------|-------|--------|--------|
| 1 | 4.0 | 33 | 7.6 | 285 | 998 | 128 | 121 | 87 | 33 | 13 | 10 | 1.7 |
| 2 | 4.4 | 29 | 17 | 144 | 289 | 137 | 70 | 70 | 100 | 10 | 6.1 | 1.4 |
| 3 | 8.1 | 25 | 23 | 108 | 2540 | 106 | 86 | 57 | 64 | 7.9 | 4.4 | 3.2 |
| 4 | 7.4 | 21 | 18 | 405 | 899 | 83 | 163 | 47 | 487 | 17 | 3.1 | 5.0 |
| 5 | 4.7 | 20 | 20 | 202 | 326 | 76 | 79 | 40 | 794 | 14 | 18 | 2.4 |
| 6 | 3.9 | 22 | 21 | 115 | 220 | 65 | 75 | 36 | 347 | 11 | 618 | 1.9 |
| 7 | 3.3 | 24 | 17 | 83 | 147 | 357 | 63 | 33 | 185 | 9.0 | 263 | 1.7 |
| 8 | 3.6 | 17 | 12 | 60 | 116 | 330 | 49 | 32 | 127 | 7.3 | 68 | 1.7 |
| 9 | 4.6 | 12 | 11 | 46 | 394 | 163 | 62 | 32 | 86 | 9.8 | 40 | 1.5 |
| 10 | 4.1 | 12 | 13 | 42 | 259 | 121 | 94 | 21 | 269 | 11 | 25 | 2.0 |
| 11 | 3.8 | 11 | 11 | 40 | 148 | 107 | 62 | 16 | 197 | 63 | 16 | 1.9 |
| 12 | 3.9 | 12 | 9.3 | 37 | 116 | 213 | 52 | 15 | 123 | 24 | 27 | 1.7 |
| 13 | 3.2 | 10 | 7.0 | 37 | 112 | 142 | 46 | 14 | 1350 | 18 | 21 | 1.3 |
| 14 | 3.9 | 9.1 | 7.8 | 53 | 104 | 112 | 43 | 13 | 646 | 13 | 12 | 1.1 |
| 15 | 3.8 | 9.1 | 113 | 48 | 99 | 189 | 37 | 12 | 244 | 13 | 8.5 | 1.1 |
| 16 | 5.1 | 9.6 | 138 | 38 | 177 | 338 | 35 | 11 | 162 | 10 | 6.9 | 1.3 |
| 17 | 3.8 | 8.9 | 83 | 29 | 976 | 367 | 35 | 10 | 132 | 7.4 | 23 | 1.7 |
| 18 | 3.6 | 9.9 | 58 | 26 | 610 | 189 | 67 | 9.5 | 140 | 6.1 | 14 | 1.3 |
| 19 | 9.2 | 12 | 44 | 24 | 637 | 148 | 44 | 11 | 87 | 5.3 | 9.2 | .80 |
| 20 | 9.5 | 9.0 | 44 | 25 | 572 | 362 | 35 | 17 | 60 | 4.5 | 5.6 | .55 |
| 21 | 8.1 | 8.0 | 37 | 34 | 406 | 348 | 34 | 13 | 46 | 4.3 | 4.6 | .43 |
| 22 | 11 | 8.8 | 26 | 34 | 237 | 238 | 30 | 20 | 39 | 3.8 | 4.0 | 4.0 |
| 23 | 12 | 7.6 | 91 | 33 | 171 | 159 | 26 | 37 | 37 | 5.5 | 3.7 | 10 |
| 24 | 33 | 7.7 | 95 | 64 | 144 | 130 | 24 | 20 | 30 | 9.0 | 3.3 | 4.2 |
| 25 | 16 | 7.5 | 68 | 34 | 119 | 110 | 24 | 16 | 25 | 6.6 | 3.1 | 2.4 |
| 26 | 48 | 9.5 | 64 | 28 | 94 | 102 | 130 | 14 | 24 | 4.1 | 2.8 | 2.2 |
| 27 | 289 | 8.8 | 52 | 23 | 91 | 79 | 454 | 12 | 23 | 3.2 | 3.0 | 176 |
| 28 | 207 | 8.7 | 43 | 24 | 100 | 63 | 418 | 148 | 21 | 2.6 | 2.4 | 19 |
| 29 | 84 | 8.8 | 38 | 26 | --- | 57 | 159 | 69 | 17 | 2.4 | 2.0 | 7.1 |
| 30 | 57 | 8.0 | 30 | 28 | --- | 53 | 112 | 150 | 15 | 6.7 | 2.0 | 4.6 |
| 31 | 42 | --- | 26 | 186 | --- | 56 | --- | 59 | --- | 12 | 1.8 | --- |
| TOTAL | 905.0 | 399.0 | 1244.7 | 2361 | 11101 | 5128 | 2729 | 1141.5 | 5910 | 334.5 | 1231.5 | 265.18 |
| MEAN | 29.2 | 13.3 | 40.2 | 76.2 | 396 | 165 | 91.0 | 36.8 | 197 | 10.8 | 39.7 | 8.84 |
| MAX | 289 | 33 | 138 | 405 | 2540 | 367 | 454 | 150 | 1350 | 63 | 618 | 176 |
| MIN | 3.2 | 7.5 | 7.0 | 23 | 91 | 53 | 24 | 9.5 | 15 | 2.4 | 1.8 | .43 |
| CFSM | .31 | .14 | .43 | .82 | 4.24 | 1.77 | .97 | .39 | 2.11 | .12 | .43 | .10 |
| IN. | .36 | .16 | .50 | .94 | 4.42 | 2.04 | 1.09 | .45 | 2.35 | .13 | .49 | .11 |

| | | | | | | | |
|-------------|-------|----------|-----------|----------|---------|----------|----------|
| CAL YR 1981 | TOTAL | 13410.51 | MEAN 36.7 | MAX 2300 | MIN .19 | CFSM .39 | IN 5.34 |
| WTR YR 1982 | TOTAL | 32750.38 | MEAN 89.7 | MAX 2540 | MIN .43 | CFSM .96 | IN 13.04 |

POTOMAC RIVER BASIN

01656100 CEDAR RUN NEAR ADEN, VA

LOCATION.--Lat 38°36'58", long 77°33'16", Prince William County, Hydrologic Unit 02070010, on left bank at upstream side of bridge on State Highway 611, 0.5 mi (0.8 km) downstream from Darrels Run, 0.8 mi (1.3 km) downstream from Town Run, and 3.0 mi (4.8 km) southwest of Aden.

DRAINAGE AREA.--155 mi² (401 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 166.27 ft (50.679 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional diurnal fluctuation during low flow caused by irrigation dam 4.5 mi (7.2 km) above gage. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 188 ft³/s (5.324 m³/s), 16.47 in/yr (418 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s (422 m³/s) Oct. 1, 1979, gage height, 15.29 ft (4.660 m), from rating curve extended above 6,600 ft³/s (190 m³/s); minimum daily, 0.25 ft³/s (0.007 m³/s) Oct. 14, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 21.37 ft (6.514 m), from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,800 ft³/s (110 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2200 | *8120 230 | 12.98 3.956 | June 13 | 2330 | 5250 149 | 11.40 3.475 |
| Feb. 17 | 2330 | 4030 114 | 10.64 3.243 | | | | |

Minimum discharge, 1.9 ft³/s (0.054 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|-------|------|------|------|-------|-------|--------|-------|
| 1 | 7.2 | 36 | 11 | 647 | 2190 | 182 | 189 | 135 | 67 | 15 | 27 | 3.4 |
| 2 | 6.3 | 32 | 14 | 321 | 591 | 221 | 115 | 109 | 117 | 13 | 17 | 3.3 |
| 3 | 5.4 | 28 | 28 | 201 | 5330 | 170 | 126 | 88 | 74 | 10 | 13 | 2.9 |
| 4 | 8.8 | 24 | 24 | 1050 | 3490 | 132 | 231 | 70 | 638 | 12 | 10 | 2.8 |
| 5 | 8.1 | 22 | 25 | 455 | 572 | 121 | 117 | 56 | 2000 | 17 | 9.7 | 2.8 |
| 6 | 5.0 | 32 | 27 | 204 | 364 | 104 | 106 | 48 | 657 | 13 | 560 | 2.8 |
| 7 | 4.1 | 32 | 24 | 151 | 227 | 620 | 94 | 44 | 262 | 11 | 470 | 2.6 |
| 8 | 3.8 | 24 | 20 | 117 | 173 | 651 | 68 | 41 | 160 | 11 | 94 | 2.4 |
| 9 | 3.7 | 19 | 17 | 94 | 641 | 268 | 83 | 43 | 113 | 14 | 53 | 2.4 |
| 10 | 4.1 | 16 | 16 | 53 | 456 | 183 | 144 | 38 | 308 | 14 | 35 | 2.4 |
| 11 | 4.4 | 16 | 17 | 44 | 229 | 157 | 102 | 30 | 245 | 48 | 24 | 2.4 |
| 12 | 4.3 | 15 | 15 | 32 | 175 | 364 | 80 | 26 | 146 | 29 | 21 | 2.4 |
| 13 | 3.8 | 15 | 12 | 32 | 165 | 233 | 66 | 24 | 2530 | 18 | 31 | 2.4 |
| 14 | 3.8 | 13 | 12 | 38 | 160 | 178 | 60 | 22 | 1960 | 16 | 17 | 2.5 |
| 15 | 3.7 | 12 | 212 | 39 | 156 | 327 | 50 | 21 | 327 | 12 | 13 | 2.5 |
| 16 | 3.7 | 12 | 341 | 35 | 265 | 630 | 45 | 18 | 192 | 12 | 10 | 2.6 |
| 17 | 3.8 | 12 | 173 | 33 | 1900 | 714 | 45 | 17 | 151 | 9.7 | 49 | 2.5 |
| 18 | 4.1 | 12 | 113 | 26 | 1550 | 327 | 100 | 16 | 156 | 7.8 | 15 | 2.5 |
| 19 | 4.0 | 14 | 77 | 26 | 1210 | 229 | 75 | 17 | 106 | 8.8 | 16 | 2.5 |
| 20 | 7.8 | 14 | 54 | 26 | 1160 | 638 | 52 | 29 | 74 | 10 | 9.1 | 2.8 |
| 21 | 8.3 | 12 | 35 | 30 | 710 | 597 | 46 | 20 | 54 | 6.7 | 7.2 | 2.5 |
| 22 | 8.8 | 11 | 36 | 31 | 380 | 373 | 41 | 34 | 45 | 6.1 | 5.7 | 3.7 |
| 23 | 12 | 11 | 165 | 32 | 251 | 227 | 34 | 61 | 40 | 326 | 5.4 | 2.9 |
| 24 | 20 | 11 | 195 | 39 | 203 | 178 | 30 | 39 | 34 | 100 | 5.2 | 2.4 |
| 25 | 21 | 11 | 127 | 33 | 163 | 150 | 29 | 33 | 28 | 23 | 5.0 | 2.8 |
| 26 | 21 | 11 | 134 | 29 | 129 | 144 | 146 | 30 | 25 | 14 | 4.6 | 3.1 |
| 27 | 351 | 13 | 104 | 25 | 125 | 117 | 889 | 26 | 24 | 10 | 4.6 | 259 |
| 28 | 366 | 12 | 81 | 24 | 138 | 94 | 1000 | 129 | 21 | 8.5 | 4.3 | 46 |
| 29 | 110 | 12 | 66 | 26 | --- | 83 | 270 | 641 | 19 | 7.6 | 3.8 | 17 |
| 30 | 65 | 12 | 50 | 26 | --- | 75 | 170 | 271 | 17 | 28 | 3.4 | 10 |
| 31 | 47 | --- | 41 | 158 | --- | 80 | --- | 131 | --- | 40 | 3.3 | --- |
| TOTAL | 1130.0 | 516 | 2266 | 4077 | 23103 | 8567 | 4603 | 2307 | 10590 | 871.2 | 1546.3 | 402.3 |
| MEAN | 36.5 | 17.2 | 73.1 | 132 | 825 | 276 | 153 | 74.4 | 353 | 28.1 | 49.9 | 13.4 |
| MAX | 366 | 36 | 341 | 1050 | 5330 | 714 | 1000 | 641 | 2530 | 326 | 560 | 259 |
| MIN | 3.7 | 11 | 11 | 24 | 125 | 75 | 29 | 16 | 17 | 6.1 | 3.3 | 2.4 |
| CFSM | .24 | .11 | .47 | .85 | 5.32 | 1.78 | .99 | .48 | 2.28 | .18 | .32 | .09 |
| IN. | .27 | .12 | .54 | .98 | 5.54 | 2.06 | 1.10 | .55 | 2.54 | .21 | .37 | .10 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|------|-----|-----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 22042.7 | MEAN | 60.4 | MAX | 3010 | MIN | 3.3 | CFSM | .39 | IN | 5.29 |
| WTR YR 1982 | TOTAL | 59978.8 | MEAN | 164 | MAX | 5330 | MIN | 2.4 | CFSM | 1.06 | IN | 14.39 |

POTOMAC RIVER BASIN

77

01656500 BROAD RUN AT BUCKLAND, VA

LOCATION.--Lat 38°46'50", long 77°40'22", Prince William County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on U.S. Highway 29 at Buckland and 1.1 mi (1.8 km) upstream from South Run.

DRAINAGE AREA.--50.5 mi² (130.8 km²).

PERIOD OF RECORD.--July 1950 to September 1979, October 1980 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 284.58 ft (86.740 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 51.0 ft³/s (1.444 m³/s), 13.71 in/yr (348 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft³/s (476 m³/s) June 21, 1972, gage height, 13.92 ft (4.243 m), from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurements at gage heights 13.08 ft (3.987 m) and 13.92 ft (4.243 m); minimum, 0.20 ft³/s (0.006 m³/s) Oct. 10, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (23 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | ---- | 1220 34.6 | Ice jam | June 13 | 1400 | *1250 35.4 | 5.59 1.704 |
| Feb. 3 | 1330 | 1130 32.0 | 5.36 1.634 | Aug. 6 | 1330 | 1140 32.3 | 5.37 1.637 |
| May 28 | 2400 | 818 23.2 | 4.73 1.442 | | | | |

Minimum discharge, 3.8 ft³/s (0.11 m³/s) Dec. 11, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1 | 5.1 | 19 | 8.3 | 80 | 289 | 60 | 57 | 51 | 102 | 24 | 11 | 6.9 |
| 2 | 5.8 | 18 | 14 | 67 | 114 | 54 | 41 | 43 | 93 | 19 | 9.1 | 9.1 |
| 3 | 6.5 | 16 | 13 | 46 | 793 | 47 | 57 | 37 | 119 | 20 | 8.7 | 27 |
| 4 | 5.5 | 16 | 11 | 106 | 292 | 43 | 64 | 32 | 201 | 24 | 8.3 | 13 |
| 5 | 4.9 | 14 | 11 | 80 | 154 | 41 | 44 | 29 | 416 | 20 | 32 | 10 |
| 6 | 4.9 | 17 | 10 | 51 | 112 | 38 | 47 | 26 | 239 | 18 | 332 | 9.1 |
| 7 | 6.2 | 19 | 9.6 | 44 | 78 | 92 | 40 | 24 | 147 | 16 | 89 | 8.7 |
| 8 | 6.2 | 15 | 9.1 | 36 | 64 | 110 | 34 | 26 | 106 | 15 | 39 | 8.7 |
| 9 | 5.1 | 13 | 9.1 | 29 | 138 | 76 | 44 | 33 | 80 | 16 | 31 | 9.6 |
| 10 | 4.9 | 12 | 8.7 | 21 | 119 | 62 | 51 | 24 | 130 | 18 | 24 | 9.6 |
| 11 | 4.9 | 11 | 8.3 | 18 | 78 | 57 | 40 | 22 | 106 | 19 | 18 | 11 |
| 12 | 4.9 | 11 | 7.6 | 17 | 62 | 95 | 36 | 20 | 76 | 18 | 30 | 9.1 |
| 13 | 5.1 | 11 | 6.5 | 18 | 59 | 74 | 34 | 19 | 588 | 15 | 19 | 8.7 |
| 14 | 5.8 | 10 | 7.6 | 21 | 51 | 64 | 32 | 18 | 326 | 14 | 14 | 8.3 |
| 15 | 5.8 | 10 | 39 | 20 | 50 | 65 | 29 | 16 | 168 | 31 | 13 | 8.3 |
| 16 | 6.5 | 10 | 38 | 19 | 81 | 117 | 28 | 15 | 123 | 18 | 13 | 8.7 |
| 17 | 6.5 | 9.1 | 27 | 16 | 260 | 168 | 29 | 15 | 104 | 14 | 43 | 8.3 |
| 18 | 6.9 | 8.7 | 22 | 14 | 202 | 110 | 36 | 14 | 87 | 12 | 27 | 8.0 |
| 19 | 7.6 | 8.3 | 15 | 13 | 221 | 89 | 27 | 13 | 68 | 11 | 16 | 8.0 |
| 20 | 7.6 | 8.7 | 13 | 13 | 247 | 152 | 26 | 13 | 57 | 11 | 13 | 10 |
| 21 | 8.0 | 8.7 | 11 | 14 | 212 | 212 | 26 | 19 | 47 | 11 | 14 | 11 |
| 22 | 8.3 | 7.6 | 13 | 16 | 147 | 145 | 23 | 28 | 43 | 10 | 12 | 19 |
| 23 | 10 | 7.6 | 33 | 18 | 117 | 108 | 22 | 25 | 48 | 10 | 11 | 16 |
| 24 | 18 | 7.6 | 44 | 20 | 97 | 89 | 20 | 23 | 37 | 11 | 10 | 12 |
| 25 | 13 | 8.7 | 31 | 17 | 78 | 76 | 21 | 23 | 32 | 9.1 | 10 | 11 |
| 26 | 27 | 8.7 | 26 | 16 | 62 | 68 | 101 | 20 | 34 | 8.0 | 8.3 | 12 |
| 27 | 125 | 8.7 | 24 | 14 | 59 | 59 | 161 | 20 | 36 | 7.6 | 8.0 | 149 |
| 28 | 89 | 8.7 | 21 | 13 | 60 | 50 | 150 | 204 | 27 | 7.3 | 8.0 | 28 |
| 29 | 39 | 8.7 | 19 | 13 | --- | 46 | 85 | 295 | 25 | 8.0 | 7.3 | 17 |
| 30 | 28 | 8.0 | 16 | 13 | --- | 43 | 64 | 100 | 30 | 8.3 | 6.5 | 14 |
| 31 | 22 | --- | 15 | 40 | --- | 46 | --- | 64 | --- | 11 | 6.5 | --- |
| TOTAL | 504.0 | 339.8 | 540.8 | 923 | 4296 | 2556 | 1469 | 1311 | 3695 | 454.3 | 891.7 | 489.1 |
| MEAN | 16.3 | 11.3 | 17.4 | 29.8 | 153 | 82.5 | 49.0 | 42.3 | 123 | 14.7 | 28.8 | 16.3 |
| MAX | 125 | 19 | 44 | 106 | 793 | 212 | 161 | 295 | 588 | 31 | 332 | 149 |
| MIN | 4.9 | 7.6 | 6.5 | 13 | 50 | 38 | 20 | 13 | 25 | 7.3 | 6.5 | 6.9 |
| CFSM | .32 | .22 | .35 | .59 | 3.03 | 1.63 | .97 | .84 | 2.44 | .29 | .57 | .32 |
| IN. | .37 | .25 | .40 | .68 | 3.16 | 1.88 | 1.08 | .97 | 2.72 | .33 | .66 | .36 |

CAL YR 1981 TOTAL 7585.1 MEAN 20.8 MAX 302 MIN 2.3 CFSM .41 IN 5.59
WTR YR 1982 TOTAL 17469.7 MEAN 47.9 MAX 793 MIN 4.9 CFSM .95 IN 12.87

POTOMAC RIVER BASIN

01656650 BROAD RUN NEAR BRISTOW, VA

LOCATION.--Lat 38°44'56", long 77°33'50", Prince William County, Hydrologic Unit 02070010, on left bank 50 ft (15 m) downstream from bridge on State Highway 619, 0.2 mi (0.3 km) upstream from Dawkins Branch, 1.9 mi (3.1 km) downstream from Rocky Branch, and 2.3 mi (3.7 km) northwest of Bristow.

DRAINAGE AREA.--89.6 mi² (232.1 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 185 ft (56.4 m), from topographic map.

REMARKS.--Records good. Town of Manassas diverts about 3.0 ft³/s (0.085 m³/s) daily from municipal water-supply reservoir 6.0 mi (9.7 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 97.3 ft³/s (2.756 m³/s), 14.75 in/yr (375 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s (221 m³/s) Oct. 9, 1976, gage height, 16.11 ft (4.910 m), from rating curve extended above 4,100 ft³/s (120 m³/s); minimum, 0.90 ft³/s (0.025 m³/s) Sept. 30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1300 | *2380 67.4 | 9.57 2.917 | June 5 | 1230 | 1470 41.6 | 7.33 2.234 |
| Feb. 17 | 1700 | 1020 28.9 | 6.09 1.856 | June 13 | 1330 | 2140 60.6 | 9.01 2.746 |
| May 28 | 2330 | 1880 53.2 | 8.34 2.542 | Aug. 6 | 1630 | 1090 30.9 | 6.28 1.914 |

Minimum discharge, 4.5 ft³/s (0.13 m³/s) Nov. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-----------|----------|---------|----------|----------|--------|------|-------|--------|-------|
| 1 | 10 | 14 | 7.8 | 163 | 500 | 93 | 97 | 80 | 131 | 14 | 15 | 5.7 |
| 2 | 8.5 | 12 | 8.5 | 174 | 261 | 91 | 64 | 45 | 245 | 9.9 | 17 | 6.4 |
| 3 | 8.2 | 11 | 8.9 | 136 | 1520 | 78 | 117 | 30 | 152 | 8.8 | 23 | 7.3 |
| 4 | 7.8 | 10 | 7.8 | 264 | 944 | 70 | 157 | 32 | 434 | 15 | 17 | 7.6 |
| 5 | 7.1 | 8.9 | 11 | 214 | 377 | 68 | 78 | 29 | 1060 | 13 | 25 | 8.0 |
| 6 | 7.1 | 14 | 20 | 128 | 242 | 59 | 100 | 24 | 686 | 12 | 402 | 8.4 |
| 7 | 7.1 | 27 | 11 | 100 | 160 | 208 | 74 | 22 | 257 | 10 | 303 | 8.0 |
| 8 | 8.2 | 11 | 9.3 | 80 | 127 | 260 | 34 | 22 | 135 | 8.8 | 57 | 7.6 |
| 9 | 8.9 | 9.3 | 22 | 66 | 246 | 168 | 53 | 35 | 89 | 9.2 | 21 | 8.0 |
| 10 | 8.5 | 8.2 | 20 | 50 | 272 | 119 | 91 | 25 | 222 | 8.8 | 14 | 8.4 |
| 11 | 8.5 | 7.1 | 15 | 37 | 174 | 97 | 76 | 18 | 174 | 10 | 10 | 8.8 |
| 12 | 8.5 | 6.4 | 9.3 | 32 | 124 | 168 | 61 | 16 | 112 | 13 | 11 | 8.8 |
| 13 | 8.5 | 6.0 | 7.4 | 31 | 107 | 141 | 53 | 15 | 1210 | 13 | 11 | 8.4 |
| 14 | 8.5 | 5.7 | 7.4 | 37 | 91 | 114 | 49 | 14 | 836 | 11 | 8.4 | 8.8 |
| 15 | 8.5 | 5.4 | 33 | 34 | 84 | 130 | 44 | 12 | 305 | 10 | 6.7 | 8.8 |
| 16 | 8.5 | 5.4 | 60 | 31 | 135 | 242 | 38 | 10 | 174 | 15 | 6.0 | 8.8 |
| 17 | 8.5 | 8.2 | 75 | 29 | 626 | 320 | 38 | 9.2 | 122 | 14 | 13 | 8.8 |
| 18 | 8.5 | 4.8 | 84 | 24 | 566 | 227 | 59 | 9.6 | 95 | 12 | 20 | 8.8 |
| 19 | 9.3 | 8.2 | 65 | 23 | 515 | 168 | 42 | 9.6 | 76 | 10 | 14 | 9.2 |
| 20 | 10 | 6.8 | 51 | 23 | 578 | 242 | 36 | 13 | 39 | 11 | 8.8 | 9.2 |
| 21 | 10 | 7.4 | 40 | 26 | 470 | 442 | 38 | 16 | 24 | 11 | 8.4 | 8.8 |
| 22 | 10 | 8.9 | 38 | 29 | 314 | 338 | 32 | 22 | 26 | 12 | 7.0 | 10 |
| 23 | 12 | 7.8 | 60 | 34 | 202 | 205 | 26 | 30 | 26 | 11 | 5.4 | 9.2 |
| 24 | 17 | 7.1 | 78 | 35 | 157 | 152 | 18 | 29 | 22 | 9.9 | 5.4 | 8.4 |
| 25 | 20 | 6.8 | 82 | 28 | 112 | 119 | 17 | 24 | 19 | 9.9 | 5.4 | 8.8 |
| 26 | 33 | 6.8 | 77 | 28 | 70 | 119 | 145 | 23 | 19 | 9.6 | 6.4 | 11 |
| 27 | 85 | 6.8 | 68 | 24 | 78 | 84 | 461 | 21 | 19 | 9.2 | 5.7 | 47 |
| 28 | 147 | 6.4 | 62 | 22 | 89 | 36 | 419 | 232 | 16 | 10 | 5.1 | 39 |
| 29 | 72 | 8.5 | 63 | 22 | --- | 42 | 194 | 672 | 15 | 12 | 5.1 | 17 |
| 30 | 17 | 9.3 | 41 | 21 | --- | 45 | 114 | 227 | 15 | 18 | 5.1 | 12 |
| 31 | 16 | --- | 37 | 67 | --- | 53 | --- | 97 | --- | 17 | 5.1 | --- |
| TOTAL | 607.7 | 265.2 | 1179.4 | 2012 | 9141 | 4698 | 2825 | 1863.4 | 6755 | 358.1 | 1067.0 | 335.0 |
| MEAN | 19.6 | 8.84 | 38.0 | 64.9 | 326 | 152 | 94.2 | 60.1 | 225 | 11.6 | 34.4 | 11.2 |
| MAX | 147 | 27 | 84 | 264 | 1520 | 442 | 461 | 672 | 1210 | 18 | 402 | 47 |
| MIN | 7.1 | 4.8 | 7.4 | 21 | 70 | 36 | 17 | 9.2 | 15 | 8.8 | 5.1 | 5.7 |
| CFSM | .22 | .10 | .42 | .72 | 3.64 | 1.70 | 1.05 | .67 | 2.51 | .13 | .38 | .13 |
| IN. | .25 | .11 | .49 | .84 | 3.80 | 1.95 | 1.17 | .77 | 2.80 | .15 | .44 | .14 |
| CAL YR 1981 | TOTAL | 8163.6 | MEAN 22.4 | MAX 270 | MIN 2.3 | CFSM .25 | IN 3.39 | | | | | |
| WTR YR 1982 | TOTAL | 31106.8 | MEAN 85.2 | MAX 1520 | MIN 4.8 | CFSM .95 | IN 12.91 | | | | | |

POTOMAC RIVER BASIN

79

01656725 BULL RUN NEAR CATHARPIN, VA

LOCATION.--Lat 38°53'21", long 77°34'14", Prince William County, Hydrologic Unit 02070010, on right bank 20 ft (6 m) downstream from bridge on State Highway 705, 0.7 mi (1.1 km) downstream from Chestnut Lick, 2.5 mi (4.0 km) north of Catharpin, and 6.7 mi (10.8 km) northeast of Gainesville.

DRAINAGE AREA.--25.8 mi² (66.8 km²).

PERIOD OF RECORD.--May 1969 to current year. Prior to October 1970, published as "on State Highway 705."

REVISED RECORDS.--WDR VA-75-1: 1974(P).

GAGE.--Water-stage recorder. Datum of gage is 237.78 ft (72.475 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 33.6 ft³/s (0.952 m³/s), 17.69 in/yr (449 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,400 ft³/s (1,120 m³/s) June 22, 1972, gage height, 18.92 ft (5.767 m), from floodmarks, from rating curve extended above 3,000 ft³/s (85 m³/s) on basis of slope-area measurement of peak flow; no flow Sept. 8 to Oct. 10, 1970, July 5-9, 1977, Sept. 4-18, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 820 ft³/s (23 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Feb. 3 | 1200 | 1540 43.6 | 6.22 1.896 | Aug. 6 | 1130 | *2190 62.0 | 7.17 2.185 |
| June 13 | 1330 | 1960 55.5 | 6.84 2.085 | | | | |

Minimum discharge, 0.04 ft³/s (0.001 m³/s) Sept. 19, 20.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|------|------|-------|-------|--------|-------|--------|-------|
| 1 | .14 | 1.4 | 2.1 | 45 | 214 | 23 | 48 | 21 | 75 | 5.2 | 1.7 | .39 |
| 2 | .14 | 1.2 | 4.1 | 16 | 57 | 19 | 21 | 18 | 47 | 4.4 | 1.5 | .30 |
| 3 | .27 | 1.4 | 3.8 | 10 | 677 | 17 | 42 | 14 | 39 | 4.4 | 1.2 | .66 |
| 4 | .24 | 1.2 | 3.4 | 82 | 139 | 16 | 39 | 13 | 55 | 5.5 | .93 | .93 |
| 5 | .15 | 1.2 | 2.7 | 39 | 69 | 15 | 22 | 12 | 327 | 4.4 | 1.4 | .75 |
| 6 | .14 | 1.2 | 2.2 | 22 | 50 | 13 | 26 | 9.5 | 75 | 3.6 | 393 | .39 |
| 7 | .18 | 2.6 | 2.6 | 18 | 32 | 73 | 19 | 8.7 | 39 | 3.3 | 12 | .21 |
| 8 | .15 | 2.7 | 2.2 | 14 | 26 | 60 | 16 | 14 | 24 | 5.0 | 3.9 | .15 |
| 9 | .18 | 2.2 | 2.0 | 11 | 91 | 34 | 26 | 18 | 18 | 6.7 | 3.1 | .14 |
| 10 | .21 | 1.6 | 1.4 | 7.5 | 61 | 26 | 33 | 9.5 | 32 | 3.9 | 2.8 | .13 |
| 11 | .21 | 1.5 | 1.6 | 4.9 | 33 | 24 | 23 | 7.5 | 26 | 4.2 | 2.2 | .13 |
| 12 | .18 | 1.5 | 1.8 | 4.8 | 26 | 62 | 19 | 6.7 | 19 | 3.6 | 3.6 | .09 |
| 13 | .18 | 1.5 | 1.5 | 5.0 | 25 | 35 | 17 | 5.9 | 708 | 2.5 | 2.3 | .11 |
| 14 | .15 | 1.2 | 2.0 | 5.2 | 23 | 26 | 15 | 5.2 | 108 | 2.2 | 2.0 | .11 |
| 15 | .18 | 1.2 | 11 | 5.4 | 24 | 25 | 14 | 4.7 | 53 | 2.8 | 1.7 | .09 |
| 16 | .18 | 1.2 | 10 | 5.4 | 48 | 170 | 12 | 4.2 | 34 | 2.6 | 1.7 | .09 |
| 17 | .21 | 1.1 | 6.0 | 5.4 | 247 | 105 | 13 | 3.9 | 28 | 2.0 | 1.8 | .09 |
| 18 | .21 | 1.1 | 4.3 | 5.2 | 101 | 52 | 19 | 3.6 | 23 | 1.7 | 2.2 | .06 |
| 19 | .24 | 1.0 | 2.9 | 5.0 | 213 | 41 | 13 | 3.3 | 19 | 1.5 | 1.7 | .04 |
| 20 | .24 | 1.1 | 2.2 | 4.7 | 199 | 80 | 12 | 3.3 | 14 | 1.4 | 1.4 | .08 |
| 21 | .24 | 1.2 | 1.5 | 5.0 | 111 | 86 | 11 | 3.1 | 12 | 1.4 | 1.2 | .11 |
| 22 | .27 | 1.4 | 2.2 | 5.2 | 69 | 52 | 9.5 | 11 | 10 | 1.2 | 1.1 | .84 |
| 23 | .48 | 1.4 | 9.7 | 5.4 | 48 | 37 | 8.3 | 7.5 | 10 | 1.1 | 1.0 | 2.3 |
| 24 | 1.4 | 1.5 | 9.0 | 5.6 | 38 | 30 | 7.9 | 6.7 | 8.7 | 1.4 | 1.0 | 1.4 |
| 25 | 1.6 | 2.0 | 4.8 | 5.4 | 28 | 26 | 7.5 | 7.9 | 7.5 | 1.5 | 1.0 | .84 |
| 26 | 2.2 | 2.0 | 3.6 | 4.9 | 22 | 24 | 113 | 7.5 | 7.5 | 1.1 | .93 | .84 |
| 27 | 22 | 1.8 | 2.9 | 4.5 | 21 | 19 | 139 | 5.5 | 6.7 | .93 | .84 | 23 |
| 28 | 12 | 1.8 | 2.6 | 4.5 | 23 | 17 | 85 | 28 | 6.3 | .66 | .75 | 2.0 |
| 29 | 3.8 | 1.8 | 2.1 | 4.5 | --- | 16 | 39 | 88 | 6.7 | .48 | .57 | .84 |
| 30 | 2.2 | 1.8 | 1.8 | 5.6 | --- | 16 | 26 | 38 | 7.5 | .57 | .57 | .57 |
| 31 | 1.8 | --- | 1.5 | 27 | --- | 28 | --- | 37 | --- | .93 | .48 | --- |
| TOTAL | 51.77 | 45.8 | 111.5 | 393.1 | 2715 | 1267 | 895.2 | 426.2 | 1845.9 | 82.17 | 451.57 | 37.68 |
| MEAN | 1.67 | 1.53 | 3.60 | 12.7 | 97.0 | 40.9 | 29.8 | 13.7 | 61.5 | 2.65 | 14.6 | 1.26 |
| MAX | 22 | 2.7 | 11 | 82 | 677 | 170 | 139 | 88 | 708 | 6.7 | 393 | 23 |
| MIN | .14 | 1.0 | 1.4 | 4.5 | 21 | 13 | 7.5 | 3.1 | 6.3 | .48 | .48 | .04 |
| CFSM | .07 | .06 | .14 | .49 | 3.76 | 1.59 | 1.16 | .53 | 2.38 | .10 | .57 | .05 |
| IN. | .07 | .07 | .16 | .57 | 3.91 | 1.83 | 1.29 | .61 | 2.66 | .12 | .65 | .05 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|-----|-----|-----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 2716.48 | MEAN | 7.44 | MAX | 244 | MIN | .03 | CFSM | .29 | IN | 3.92 |
| WTR YR 1982 | TOTAL | 8322.89 | MEAN | 22.8 | MAX | 708 | MIN | .04 | CFSM | .88 | IN | 12.00 |

POTOMAC RIVER BASIN

01656960 CUB RUN NEAR BULL RUN, VA

LOCATION.--Lat 38°49'16", long 77°27'57", Fairfax County, Hydrologic Unit 02070010, on right bank 20 ft (6 m) downstream from bridge on State Highway 658, 0.6 mi (1.0 km) downstream from Big Rocky Run, 1.2 mi (1.9 km) southeast of Bull Run, and 2.3 mi (3.7 km) upstream from mouth.

DRAINAGE AREA.--49.9 mi² (129.2 km²).

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 151.54 ft (46.189 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 57.5 ft³/s (1.628 m³/s), 15.65 in/yr (398 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s (300 m³/s) Oct. 1, 1979, gage height, 16.43 ft (5.008 m), from rating curve extended above 4,100 ft³/s (120 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) Oct. 23, 1980, Sept. 30, Oct. 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 28.64 ft (8.729 m), from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Feb. 3 | 2000 | 2000 56.6 | 10.39 3.167 | Aug. 6 | 1830 | 1920 54.4 | 10.25 3.124 |
| June 13 | 2000 | *3110 88.1 | 11.82 3.603 | | | | |

Minimum daily discharge, 0.10 ft³/s (0.003 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|-------|-------|------|------|--------|--------|--------|-------|---------|-------|
| 1 | .18 | 2.0 | 1.8 | 38 | 433 | 28 | 80 | 31 | 82 | 8.5 | 3.4 | 1.2 |
| 2 | .48 | 1.6 | 2.9 | 36 | 115 | 25 | 35 | 26 | 193 | 5.6 | 3.1 | 2.7 |
| 3 | .48 | 1.1 | 3.6 | 17 | 1340 | 23 | 76 | 20 | 42 | 6.2 | 2.7 | 6.6 |
| 4 | .39 | 1.1 | 3.1 | 140 | 462 | 20 | 136 | 17 | 182 | 8.2 | 2.3 | 2.9 |
| 5 | .39 | 1.0 | 2.7 | 70 | 124 | 18 | 44 | 15 | 673 | 5.6 | 7.5 | 2.2 |
| 6 | .30 | 1.8 | 2.3 | 26 | 76 | 17 | 49 | 13 | 211 | 4.8 | 724 | 1.4 |
| 7 | .30 | 1.4 | 2.5 | 17 | 45 | 147 | 47 | 11 | 73 | 3.8 | 99 | 1.2 |
| 8 | .66 | 1.6 | 2.3 | 12 | 33 | 208 | 32 | 12 | 38 | 3.4 | 20 | 1.4 |
| 9 | .22 | 1.4 | 2.2 | 10 | 146 | 78 | 35 | 19 | 27 | 2.9 | 12 | 1.2 |
| 10 | .18 | 1.8 | 2.0 | 6.4 | 162 | 46 | 74 | 14 | 90 | 3.1 | 10 | 1.4 |
| 11 | .18 | 1.6 | 1.8 | 4.8 | 62 | 37 | 41 | 10 | 79 | 3.6 | 6.9 | 1.4 |
| 12 | .22 | 1.4 | 2.0 | 4.2 | 40 | 168 | 30 | 8.8 | 38 | 3.1 | 65 | 1.6 |
| 13 | .18 | 1.4 | 2.0 | 3.8 | 34 | 87 | 26 | 7.2 | 1510 | 2.9 | 17 | 1.6 |
| 14 | .14 | 1.1 | 2.7 | 3.6 | 33 | 61 | 23 | 6.2 | 514 | 2.7 | 9.1 | 1.6 |
| 15 | .10 | 1.2 | 28 | 3.7 | 32 | 41 | 19 | 5.6 | 90 | 3.1 | 6.6 | 1.6 |
| 16 | .14 | 1.4 | 23 | 3.8 | 70 | 184 | 17 | 5.1 | 46 | 2.9 | 5.4 | 1.4 |
| 17 | .14 | 1.4 | 16 | 3.9 | 390 | 378 | 16 | 4.6 | 33 | 2.9 | 4.8 | 1.4 |
| 18 | .14 | 1.2 | 12 | 3.7 | 299 | 101 | 27 | 4.4 | 27 | 2.3 | 9.8 | 1.1 |
| 19 | .30 | 1.2 | 7.5 | 3.5 | 350 | 64 | 23 | 4.4 | 21 | 27 | 5.6 | 1.0 |
| 20 | .22 | 1.2 | 5.4 | 3.2 | 440 | 113 | 17 | 4.4 | 18 | 29 | 4.1 | 2.0 |
| 21 | .18 | 1.2 | 3.8 | 3.2 | 237 | 149 | 15 | 5.1 | 15 | 8.8 | 3.8 | 2.2 |
| 22 | .18 | 1.4 | 3.6 | 3.4 | 116 | 93 | 12 | 8.5 | 13 | 4.6 | 3.1 | 24 |
| 23 | .39 | 1.4 | 9.5 | 3.6 | 67 | 52 | 11 | 8.2 | 14 | 4.1 | 2.7 | 13 |
| 24 | 3.4 | 1.4 | 25 | 3.8 | 48 | 38 | 10 | 6.6 | 9.8 | 4.1 | 2.7 | 5.4 |
| 25 | 3.6 | 2.0 | 14 | 3.5 | 36 | 32 | 9.1 | 5.9 | 8.2 | 2.7 | 2.5 | 3.6 |
| 26 | 9.4 | 2.0 | 9.5 | 3.2 | 29 | 34 | 178 | 5.9 | 7.8 | 2.7 | 2.0 | 3.1 |
| 27 | 42 | 1.8 | 7.2 | 3.1 | 26 | 29 | 361 | 5.6 | 7.5 | 2.5 | 1.6 | 113 |
| 28 | 37 | 1.8 | 6.2 | 3.1 | 26 | 23 | 278 | 17 | 6.6 | 3.4 | 1.2 | 20 |
| 29 | 10 | 1.8 | 5.1 | 3.1 | --- | 20 | 77 | 357 | 9.8 | 2.5 | 1.0 | 9.1 |
| 30 | 4.1 | 1.8 | 4.4 | 3.4 | --- | 19 | 42 | 111 | 15 | 3.1 | .84 | 5.6 |
| 31 | 2.3 | --- | 4.4 | 29 | --- | 19 | --- | 299 | --- | 4.8 | 1.0 | --- |
| TOTAL | 117.89 | 44.5 | 218.5 | 473.0 | 5271 | 2352 | 1840.1 | 1068.5 | 4093.7 | 174.9 | 1040.74 | 235.9 |
| MEAN | 3.80 | 1.48 | 7.05 | 15.3 | 188 | 75.9 | 61.3 | 34.5 | 136 | 5.64 | 33.6 | 7.86 |
| MAX | 42 | 2.0 | 28 | 140 | 1340 | 378 | 361 | 357 | 1510 | 29 | 724 | 113 |
| MIN | .10 | 1.0 | 1.8 | 3.1 | 26 | 17 | 9.1 | 4.4 | 6.6 | 2.3 | .84 | 1.0 |
| CFSM | .08 | .03 | .14 | .31 | 3.77 | 1.52 | 1.23 | .69 | 2.73 | .11 | .67 | .16 |
| IN. | .09 | .03 | .16 | .35 | 3.93 | 1.75 | 1.37 | .80 | 3.05 | .13 | .78 | .18 |
| CAL YR 1981 | TOTAL | 4719.64 | MEAN | 12.9 | MAX | 241 | MIN | .10 | CFSM | .26 | IN | 3.52 |
| WTR YR 1982 | TOTAL | 16930.73 | MEAN | 46.4 | MAX | 1510 | MIN | .10 | CFSM | .93 | IN | 12.62 |

01657415 BULL RUN NEAR CLIFTON, VA

LOCATION.--Lat 38°45'59", long 77°24'52", Fairfax County, Hydrologic Unit 02070010, on left bank 0.6 mi (1.0 km) downstream from Popes Head Creek, 1.6 mi (2.6 km) upstream from Buckhall Branch, and 1.8 mi (2.9 km) southwest of Clifton.

DRAINAGE AREA.--185 mi² (479 km²).

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.24 ft (36.649 m) National Geodetic Vertical Datum of 1929. September 1972 to June 1978, at site 500 ft (152 m) upstream at datum 3.59 ft (1.094 m) higher.

REMARKS.--Records good. Slight diurnal fluctuation caused by Upper Occoquan Sewage Authority treatment plant 4.8 mi (7.7 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 222 ft³/s (6.287 m³/s), 16.30 in/yr (414 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) Sept. 26, 1975, gage height, 19.52 ft (5.950 m), datum then in use, from rating curve extended above 400 ft³/s (11 m³/s) on basis of runoff comparison with upstream station near Manassas; minimum, 4.6 ft³/s (0.13 m³/s) Sept. 21, 1982, gage height, 1.85 ft (0.564 m), from recorded range in stage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of about 35 ft (10.7 m), discharge, about 80,000 ft³/s (2,300 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft³/s (120 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|---------|---|-------------------------|---------|---------|---|-------------------------|
| Feb. 3 | Unknown | 5200 147 | a12.1 3.688 | June 14 | Unknown | 6300 178 | a13.0 3.962 |

a About.

Minimum discharge, 4.6 ft³/s (0.13 m³/s) Sept. 21, gage height, 1.85 ft (0.564 m).

DISCHARGE. IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|------|-------|------|------|------|-------|------|--------|-------|
| 1 | 11 | 30 | 16 | 128 | 1190 | 162 | 250 | 162 | 287 | 53 | 38 | 5.6 |
| 2 | 22 | 27 | 24 | 199 | 457 | 143 | 158 | 128 | 702 | 40 | 27 | 16 |
| 3 | 13 | 26 | 25 | 96 | 3200 | 127 | 214 | 107 | 205 | 43 | 18 | 42 |
| 4 | 12 | 25 | 27 | 398 | 2280 | 115 | 432 | 92 | 620 | 50 | 25 | 24 |
| 5 | 12 | 24 | 25 | 339 | 552 | 105 | 189 | 83 | 1890 | 38 | 48 | 18 |
| 6 | 12 | 30 | 22 | 140 | 364 | 97 | 189 | 74 | 873 | 35 | 856 | 13 |
| 7 | 12 | 24 | 20 | 102 | 246 | 256 | 192 | 68 | 353 | 31 | 635 | 13 |
| 8 | 12 | 18 | 18 | 82 | 182 | 786 | 128 | 72 | 210 | 28 | 110 | 10 |
| 9 | 10 | 17 | 17 | 68 | 415 | 348 | 142 | 100 | 146 | 30 | 71 | 9.2 |
| 10 | 9.8 | 18 | 16 | 58 | 620 | 234 | 268 | 80 | 391 | 31 | 57 | 12 |
| 11 | 10 | 18 | 15 | 46 | 294 | 111 | 187 | 63 | 371 | 32 | 40 | 11 |
| 12 | 9.5 | 18 | 15 | 35 | 210 | 454 | 138 | 55 | 210 | 34 | 100 | 11 |
| 13 | 9.0 | 12 | 14 | 36 | 176 | 378 | 115 | 50 | 2980 | 28 | 81 | 12 |
| 14 | 10 | 14 | 16 | 38 | 164 | 276 | 105 | 45 | 2340 | 26 | 51 | 12 |
| 15 | 9.3 | 15 | 100 | 39 | 152 | 212 | 92 | 40 | 455 | 24 | 38 | 12 |
| 16 | 10 | 16 | 124 | 37 | 240 | 426 | 85 | 38 | 283 | 16 | 29 | 12 |
| 17 | 9.8 | 16 | 84 | 40 | 1100 | 1090 | 83 | 38 | 209 | 13 | 43 | 12 |
| 18 | 9.5 | 15 | 67 | 35 | 1080 | 429 | 128 | 34 | 171 | 13 | 34 | 12 |
| 19 | 11 | 14 | 50 | 32 | 1020 | 298 | 104 | 31 | 128 | 73 | 36 | 12 |
| 20 | 11 | 14 | 42 | 33 | 1360 | 408 | 85 | 34 | 104 | 142 | 30 | 11 |
| 21 | 9.8 | 14 | 33 | 35 | 924 | 662 | 76 | 33 | 89 | 44 | 25 | 5.6 |
| 22 | 11 | 14 | 31 | 35 | 522 | 478 | 70 | 65 | 78 | 26 | 18 | 66 |
| 23 | 13 | 14 | 47 | 39 | 337 | 296 | 62 | 69 | 86 | 25 | 10 | 77 |
| 24 | 27 | 15 | 93 | 43 | 266 | 225 | 58 | 55 | 72 | 27 | 16 | 40 |
| 25 | 14 | 15 | 76 | 42 | 209 | 189 | 57 | 48 | 60 | 24 | 16 | 26 |
| 26 | 36 | 14 | 57 | 39 | 160 | 196 | 366 | 46 | 55 | 21 | 9.2 | 20 |
| 27 | 142 | 14 | 48 | 38 | 142 | 160 | 990 | 43 | 52 | 18 | 16 | 235 |
| 28 | 196 | 14 | 42 | 38 | 142 | 125 | 966 | 114 | 50 | 17 | 14 | 164 |
| 29 | 83 | 14 | 38 | 39 | --- | 111 | 341 | 836 | 46 | 24 | 16 | 50 |
| 30 | 48 | 15 | 30 | 40 | --- | 103 | 218 | 284 | 60 | 122 | 14 | 36 |
| 31 | 35 | --- | 28 | 77 | --- | 105 | --- | 672 | --- | 63 | 9.2 | --- |
| TOTAL | 839.7 | 534 | 1260 | 2446 | 18004 | 9105 | 6488 | 3659 | 13576 | 1191 | 2530.4 | 999.4 |
| MEAN | 27.1 | 17.8 | 40.6 | 78.9 | 643 | 294 | 216 | 118 | 453 | 38.4 | 81.6 | 33.3 |
| MAX | 196 | 30 | 124 | 398 | 3200 | 1090 | 990 | 836 | 2980 | 142 | 856 | 235 |
| MIN | 9.0 | 12 | 14 | 32 | 142 | 97 | 57 | 31 | 46 | 13 | 9.2 | 5.6 |
| CFSM | .15 | .10 | .22 | .43 | 3.48 | 1.59 | 1.17 | .64 | 2.45 | .21 | .44 | .18 |
| IN. | .17 | .11 | .25 | .49 | 3.62 | 1.83 | 1.30 | .74 | 2.73 | .24 | .51 | .20 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|------|-----|-----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 20297.9 | MEAN | 55.6 | MAX | 732 | MIN | 9.0 | CFSM | .30 | IN | 4.08 |
| WTR YR 1982 | TOTAL | 60632.5 | MEAN | 166 | MAX | 3200 | MIN | 5.6 | CFSM | .90 | IN | 12.19 |

POTOMAC RIVER BASIN

01657655 HOOES RUN NEAR OCCOQUAN, VA

LOCATION.--Lat 38°40'48", long 77°17'25", Prince William County, Hydrologic Unit 02070010, on left bank 900 ft (274 m) upstream from bridge on State Highway 641, 0.9 mi (1.4 km) downstream from Lake Omiscol, and 1.6 mi (2.6 km) west of Occoquan.

DRAINAGE AREA.--3.97 mi² (10.28 km²).

PERIOD OF RECORD.--November 1974 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 122.74 ft (37.411 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--7 years, 4.56 ft³/s (0.129 m³/s), 15.60 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft³/s (36.2 m³/s) Sept. 26, 1975, gage height, 8.18 ft (2.493 m), from rating curve extended above 70 ft³/s (2.0 m³/s) on basis of velocity-area study; minimum, 0.01 ft³/s (<0.001 m³/s) Sept. 11, 12, 1976, many days in September and October 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| May 28 | 2100 | 429 12.1 | 4.84 1.475 | Aug. 8 | 1730 | *1030 29.2 | 7.38 2.249 |
| May 28 | 2300 | 424 12.0 | 4.81 1.466 | Aug. 8 | 1830 | 377 10.7 | 4.55 1.387 |

Minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Oct. 11, 16, Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1 | .06 | .88 | .67 | 11 | 21 | 5.4 | 5.7 | 4.9 | 11 | 1.2 | 1.3 | .06 |
| 2 | .15 | .78 | 1.2 | 5.9 | 13 | 2.6 | 4.6 | 4.1 | 14 | 1.2 | .65 | .06 |
| 3 | .06 | .78 | .57 | 4.4 | 65 | 1.2 | 6.5 | 3.4 | 9.3 | 2.4 | .75 | .06 |
| 4 | .06 | .78 | 1.2 | 15 | 25 | 1.1 | 5.7 | 1.7 | 10 | 1.7 | .65 | .06 |
| 5 | .06 | .88 | .98 | 9.0 | 10 | 1.2 | 4.1 | 1.6 | 50 | 1.3 | 1.2 | .06 |
| 6 | .06 | 1.4 | .67 | 5.8 | 6.9 | 1.9 | 4.9 | 2.5 | 17 | 1.2 | 2.0 | .06 |
| 7 | .49 | .98 | .36 | 3.6 | 5.2 | 9.4 | 4.1 | 1.4 | 10 | .98 | 1.4 | .06 |
| 8 | 1.6 | .88 | .36 | 2.5 | 4.1 | 9.6 | 3.4 | 1.3 | 5.4 | 1.7 | 4.8 | .06 |
| 9 | .24 | .88 | .67 | 2.5 | 10 | 5.7 | 5.4 | 2.6 | 2.8 | 1.4 | 13 | .06 |
| 10 | .12 | .78 | .88 | 1.6 | 8.9 | 4.9 | 5.7 | 1.9 | 6.4 | 1.3 | 4.2 | .06 |
| 11 | .04 | .78 | .46 | 1.4 | 5.7 | 4.6 | 5.2 | 1.4 | 6.9 | 3.1 | 1.6 | .06 |
| 12 | 1.4 | .57 | .36 | 1.4 | 4.4 | 7.2 | 4.9 | 1.5 | 4.4 | 3.4 | 1.9 | .06 |
| 13 | .33 | .36 | .33 | 1.4 | 4.4 | 6.2 | 2.6 | 1.2 | 77 | 1.4 | 2.6 | .06 |
| 14 | .21 | .46 | 2.4 | 1.4 | 3.6 | 6.2 | 3.0 | 1.3 | 24 | 1.1 | 1.2 | .06 |
| 15 | .09 | .57 | 12 | 1.4 | 3.6 | 8.2 | 3.2 | 1.3 | 10 | .89 | .88 | .06 |
| 16 | .04 | .57 | 10 | 1.4 | 5.9 | 13 | 1.5 | 1.1 | 6.2 | .80 | .67 | .06 |
| 17 | .09 | .67 | 5.2 | 1.4 | 17 | 11 | 5.0 | .70 | 6.2 | .70 | .72 | .04 |
| 18 | .61 | .57 | 3.4 | 1.4 | 19 | 6.9 | 10 | .70 | 3.8 | .65 | .78 | .04 |
| 19 | .57 | .33 | 2.5 | 1.5 | 21 | 5.2 | 5.7 | .98 | 2.1 | .82 | .98 | .04 |
| 20 | .88 | .36 | 1.7 | 1.5 | 19 | 10 | 5.2 | 1.3 | 1.7 | 1.2 | .57 | .06 |
| 21 | .88 | .36 | 1.4 | 1.6 | 13 | 10 | 3.0 | 3.6 | 1.7 | .98 | .36 | .12 |
| 22 | .78 | .33 | 2.1 | 1.6 | 8.9 | 7.9 | 2.6 | 3.9 | 1.9 | .70 | .30 | 4.3 |
| 23 | 1.7 | .27 | 3.4 | 1.7 | 6.2 | 5.9 | 2.6 | 2.1 | 2.5 | .75 | .27 | .88 |
| 24 | .78 | .27 | 3.6 | 1.7 | 3.9 | 5.4 | 3.0 | 1.5 | 1.7 | .75 | .27 | .33 |
| 25 | 1.4 | .27 | 2.6 | 1.6 | 4.1 | 4.9 | 2.1 | 1.3 | 1.2 | .65 | .27 | .27 |
| 26 | 8.6 | .27 | 2.3 | 1.5 | 3.9 | 5.7 | 11 | 1.2 | 1.9 | .60 | .21 | 1.5 |
| 27 | 15 | .27 | 2.1 | 1.4 | 3.4 | 5.4 | 37 | 1.1 | 1.3 | .70 | .21 | 8.4 |
| 28 | 7.6 | .27 | 1.7 | 1.4 | 3.6 | 4.6 | 15 | 44 | 1.3 | .55 | .21 | 2.4 |
| 29 | 2.2 | .27 | 1.6 | 1.4 | --- | 3.4 | 8.2 | 37 | 1.3 | .40 | .18 | .88 |
| 30 | 1.2 | .21 | 1.4 | 1.9 | --- | 3.2 | 5.9 | 7.6 | 1.4 | 5.2 | .15 | .46 |
| 31 | .88 | --- | 2.5 | 6.7 | --- | 4.4 | --- | 2.8 | --- | 3.6 | .12 | --- |
| TOTAL | 48.18 | 17.05 | 70.61 | 98.0 | 319.7 | 182.3 | 186.8 | 142.98 | 294.4 | 43.32 | 87.60 | 20.68 |
| MEAN | 1.55 | .57 | 2.28 | 3.16 | 11.4 | 5.88 | 6.23 | 4.61 | 9.81 | 1.40 | 2.83 | .69 |
| MAX | 15 | 1.4 | 12 | 15 | 65 | 13 | 37 | 44 | 77 | 5.2 | 48 | 8.4 |
| MIN | .04 | .21 | .33 | 1.4 | 3.4 | 1.1 | 1.5 | .70 | 1.2 | .40 | .12 | .04 |
| CFSM | .39 | .14 | .57 | .80 | 2.87 | 1.48 | 1.57 | 1.16 | 2.47 | .35 | .71 | .17 |
| IN. | .45 | .16 | .66 | .92 | 2.99 | 1.71 | 1.75 | 1.34 | 2.76 | .41 | .82 | .19 |
| CAL YR 1981 | TOTAL | 663.41 | MEAN | 1.82 | MAX | 21 | MIN | .04 | CFSM | .46 | IN | 6.21 |
| WTR YR 1982 | TOTAL | 1511.62 | MEAN | 4.14 | MAX | 77 | MIN | .04 | CFSM | 1.04 | IN | 14.16 |

POTOMAC RIVER BASIN

83

01658500 SOUTH FORK QUANTICO CREEK NEAR INDEPENDENT HILL, VA

LOCATION.--Lat 38°35'14", long 77°25'44", Prince William County, Hydrologic Unit 02070011, on left bank at upstream side of bridge on State Highway 619, 3.4 mi (5.5 km) south of Independent Hill, 5.6 mi (9.0 km) west of Dumfries, and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--7.64 mi² (19.79 km²).

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 238.88 ft (72.811 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Nov. 27 to Dec. 30, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 6.85 ft³/s (0.194 m³/s), 12.18 in/yr (309 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s (112 m³/s) June 21, 1972, gage height, 11.35 ft (3.459 m); no flow at times in 1954, 1957, 1962-66.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 190 ft³/s (5.38 m³/s) June 13, gage height, 5.05 ft (1.539 m), no peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.07 ft³/s (0.002 m³/s) Sept. 18, 19, 20, gage height, 1.93 ft (0.588 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP. |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | .17 | .64 | .50 | 16 | 29 | 6.8 | 7.7 | 6.4 | 4.9 | 1.6 | 1.7 | .11 |
| 2 | .19 | .52 | 1.0 | 7.2 | 14 | 7.8 | 5.3 | 5.2 | 8.7 | 1.1 | .80 | .15 |
| 3 | .18 | .45 | .90 | 4.5 | 32 | 6.1 | 8.0 | 4.4 | 4.5 | 1.4 | 1.1 | .12 |
| 4 | .17 | .45 | .84 | 23 | 28 | 4.8 | 7.1 | 3.5 | 19 | 2.9 | 1.1 | .10 |
| 5 | .17 | .45 | .90 | 11 | 14 | 4.6 | 4.8 | 3.2 | 60 | 2.4 | .90 | .10 |
| 6 | .14 | .92 | .80 | 5.3 | 9.4 | 4.0 | 5.6 | 3.2 | 19 | 1.5 | 2.2 | .10 |
| 7 | .18 | .79 | .70 | 4.4 | 6.2 | 14 | 4.6 | 2.9 | 9.8 | 1.0 | 2.8 | .09 |
| 8 | .10 | .66 | .60 | 3.6 | 5.0 | 16 | 4.1 | 3.0 | 4.6 | 11 | 1.2 | .12 |
| 9 | .08 | .55 | .52 | 3.2 | 9.4 | 8.5 | 5.0 | 2.8 | 3.4 | 7.4 | 1.1 | .16 |
| 10 | .08 | .51 | .50 | 2.6 | 9.4 | 6.3 | 6.0 | 2.3 | 10 | 2.2 | 1.1 | .16 |
| 11 | .08 | .45 | .49 | 1.8 | 6.2 | 5.7 | 5.0 | 2.1 | 8.4 | 1.4 | 1.7 | .13 |
| 12 | .12 | .45 | .49 | 1.6 | 5.0 | 11 | 4.5 | 2.0 | 5.7 | 1.1 | 2.0 | .10 |
| 13 | .30 | .45 | .48 | 1.5 | 4.8 | 8.3 | 4.0 | 1.9 | 95 | .90 | 1.6 | .11 |
| 14 | .38 | .45 | .80 | 1.7 | 4.7 | 6.6 | 3.7 | 1.7 | 29 | .80 | 1.7 | .12 |
| 15 | .48 | .45 | 7.0 | 1.8 | 5.0 | 12 | 3.5 | 1.6 | 9.7 | .70 | 1.7 | .13 |
| 16 | .57 | .45 | 6.4 | 1.7 | 6.0 | 21 | 3.2 | 1.5 | 5.5 | .60 | 1.6 | .12 |
| 17 | .65 | .45 | 4.0 | 1.6 | 24 | 21 | 4.6 | 1.5 | 4.5 | .52 | 1.9 | .10 |
| 18 | .33 | .45 | 2.5 | 1.5 | 23 | 10 | 13 | 1.5 | 3.9 | .38 | 2.0 | .07 |
| 19 | .81 | .45 | 1.9 | 1.5 | 21 | 7.9 | 5.9 | 2.4 | 3.6 | .38 | 2.2 | .07 |
| 20 | .99 | .52 | 1.7 | 1.5 | 18 | 17 | 4.6 | 3.2 | 2.7 | .60 | 1.9 | .10 |
| 21 | 1.0 | .46 | 1.3 | 1.9 | 13 | 15 | 4.1 | 2.4 | 2.1 | .90 | 1.7 | .14 |
| 22 | .81 | .52 | 1.4 | 2.0 | 10 | 9.2 | 3.5 | 5.0 | 2.3 | .70 | 1.4 | .44 |
| 23 | .88 | .52 | 2.9 | 2.0 | 7.4 | 6.8 | 3.2 | 3.9 | 2.3 | 5.6 | 1.6 | .17 |
| 24 | .47 | .55 | 3.0 | 1.9 | 6.1 | 5.9 | 3.0 | 2.8 | 2.3 | 2.3 | 1.4 | .10 |
| 25 | .33 | .60 | 2.8 | 1.7 | 5.0 | 5.3 | 2.8 | 2.6 | 2.2 | .70 | .90 | .08 |
| 26 | 2.1 | .59 | 2.8 | 1.6 | 4.2 | 6.2 | 42 | 2.3 | 2.2 | .70 | .52 | .27 |
| 27 | 5.4 | .55 | 2.3 | 1.7 | 4.3 | 5.3 | 64 | 2.0 | 2.2 | .70 | .27 | 1.6 |
| 28 | 3.1 | .52 | 1.9 | 1.8 | 5.0 | 4.6 | 33 | 2.8 | 2.2 | .80 | .32 | .60 |
| 29 | 1.3 | .50 | 1.5 | 1.9 | --- | 4.3 | 12 | 24 | 2.1 | .90 | .17 | .22 |
| 30 | .88 | .47 | 1.8 | 1.9 | --- | 4.3 | 7.9 | 5.4 | 1.9 | 3.0 | .10 | .27 |
| 31 | .70 | --- | 1.9 | 6.1 | --- | 5.3 | --- | 3.1 | --- | 5.3 | .15 | --- |
| TOTAL | 23.14 | 15.79 | 56.62 | 121.5 | 329.1 | 271.6 | 285.7 | 112.6 | 333.7 | 61.48 | 40.83 | 6.15 |
| MEAN | .75 | .53 | 1.83 | 3.92 | 11.8 | 8.76 | 9.52 | 3.63 | 11.1 | 1.98 | 1.32 | .21 |
| MAX | 5.4 | .92 | 7.0 | 23 | 32 | 21 | 64 | 24 | 95 | 11 | 2.8 | 1.6 |
| MIN | .08 | .45 | .48 | 1.5 | 4.2 | 4.0 | 2.8 | 1.5 | 1.9 | .38 | .10 | .07 |
| CFSM | .10 | .07 | .24 | .51 | 1.55 | 1.15 | 1.25 | .48 | 1.45 | .26 | .17 | .03 |
| IN. | .11 | .08 | .28 | .59 | 1.60 | 1.32 | 1.39 | .55 | 1.62 | .30 | .20 | .03 |

CAL YR 1981 TOTAL 918.30 MEAN 2.52 MAX 26 MIN .08 CFSM .33 IN 4.47
WTR YR 1982 TOTAL 1658.21 MEAN 4.54 MAX 95 MIN .07 CFSM .59 IN 8.07

POTOMAC RIVER BASIN

01660400 AQUIA CREEK NEAR GARRISONVILLE, VA

LOCATION.--Lat 38°29'25", long 77°26'02", Stafford County, Hydrologic Unit 02070011, on right bank at bridge on State Highway 641, 1.1 mi (1.8 km) northwest of Garrisonville, and 3.0 mi (4.8 km) upstream from Beaverdam Run.

DRAINAGE AREA.--34.9 mi² (90.4 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 120 ft (36.6 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 38.2 ft³/s (1.082 m³/s), 14.86 in/yr (377 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s (329 m³/s) June 22, 1972, gage height, 16.32 ft (4.974 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of contracted-opening measurement of peak flow; no flow Sept. 15-17, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 734 ft³/s (20.8 m³/s) at 1900 hours Feb. 3, gage height, 4.00 ft (1.219 m), no other peak above base of 500 ft³/s (14 m³/s); minimum, 0.03 ft³/s (<0.001 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|-------|-----------|---------|---------|----------|----------|--------|-------|--------|-------|
| 1 | 2.2 | 7.5 | 5.3 | 120 | 201 | 39 | 53 | 35 | 22 | 6.3 | 13 | .74 |
| 2 | 2.0 | 7.0 | 11 | 58 | 67 | 45 | 34 | 31 | 23 | 5.8 | 7.2 | .74 |
| 3 | 1.8 | 6.9 | 9.8 | 38 | 560 | 40 | 39 | 27 | 25 | 5.8 | 4.9 | .66 |
| 4 | 2.7 | 6.0 | 8.8 | 154 | 194 | 33 | 42 | 24 | 58 | 7.2 | 3.6 | .58 |
| 5 | 2.4 | 6.5 | 9.6 | 77 | 77 | 31 | 32 | 22 | 225 | 6.3 | 2.7 | .50 |
| 6 | 2.3 | 12 | 8.7 | 39 | 55 | 28 | 33 | 20 | 87 | 5.8 | 2.7 | .42 |
| 7 | 2.0 | 10 | 7.2 | 28 | 42 | 65 | 30 | 19 | 46 | 4.0 | 6.7 | .42 |
| 8 | 2.1 | 8.4 | 6.2 | 21 | 34 | 83 | 27 | 19 | 30 | 4.0 | 16 | .26 |
| 9 | 2.2 | 7.3 | 5.5 | 18 | 64 | 47 | 33 | 19 | 22 | 4.0 | 22 | .06 |
| 10 | 2.2 | 7.0 | 5.4 | 18 | 63 | 37 | 42 | 16 | 24 | 4.5 | 9.8 | .06 |
| 11 | 2.2 | 6.6 | 5.1 | 18 | 40 | 35 | 33 | 14 | 30 | 4.0 | 5.8 | .26 |
| 12 | 2.1 | 6.4 | 5.1 | 18 | 33 | 42 | 31 | 13 | 24 | 4.5 | 4.9 | .26 |
| 13 | 2.1 | 6.2 | 5.0 | 18 | 33 | 40 | 27 | 13 | 228 | 5.4 | 4.5 | .26 |
| 14 | 2.6 | 6.0 | 7.1 | 19 | 32 | 34 | 26 | 12 | 118 | 5.4 | 3.6 | .34 |
| 15 | 2.7 | 5.9 | 97 | 21 | 33 | 40 | 24 | 11 | 49 | 4.0 | 2.9 | .34 |
| 16 | 2.9 | 5.7 | 92 | 18 | 39 | 63 | 23 | 11 | 31 | 4.0 | 2.7 | .66 |
| 17 | 2.9 | 5.0 | 41 | 16 | 166 | 83 | 25 | 11 | 25 | 2.9 | 4.0 | .74 |
| 18 | 3.4 | 4.8 | 27 | 16 | 154 | 52 | 59 | 9.8 | 27 | 2.4 | 46 | .58 |
| 19 | 4.0 | 4.8 | 21 | 16 | 146 | 41 | 35 | 9.2 | 23 | 2.0 | 9.8 | .50 |
| 20 | 5.9 | 4.5 | 17 | 16 | 123 | 69 | 29 | 11 | 19 | 2.0 | 5.8 | .58 |
| 21 | 4.4 | 4.9 | 13 | 21 | 82 | 70 | 27 | 11 | 16 | 1.6 | 4.5 | .50 |
| 22 | 5.1 | 4.8 | 14 | 18 | 55 | 50 | 26 | 12 | 15 | 1.1 | 3.1 | 5.8 |
| 23 | 8.6 | 4.5 | 35 | 19 | 42 | 39 | 22 | 16 | 17 | 1.6 | 2.9 | 4.9 |
| 24 | 7.5 | 4.4 | 38 | 19 | 37 | 35 | 20 | 16 | 12 | 17 | 2.0 | 2.0 |
| 25 | 7.3 | 5.3 | 34 | 17 | 32 | 32 | 20 | 16 | 10 | 8.7 | 1.8 | 1.3 |
| 26 | 57 | 5.6 | 34 | 15 | 28 | 35 | 60 | 14 | 9.2 | 4.5 | .82 | 2.2 |
| 27 | 97 | 5.7 | 25 | 16 | 29 | 31 | 216 | 12 | 9.2 | 2.4 | 1.1 | 33 |
| 28 | 51 | 5.2 | 19 | 17 | 33 | 27 | 152 | 15 | 10 | 2.0 | 1.1 | 16 |
| 29 | 19 | 4.9 | 16 | 18 | --- | 26 | 64 | 123 | 8.1 | 1.3 | .90 | 7.6 |
| 30 | 12 | 4.8 | 12 | 18 | --- | 26 | 44 | 44 | 7.6 | 2.4 | .90 | 4.0 |
| 31 | 9.6 | --- | 12 | 46 | --- | 27 | --- | 26 | --- | 10 | .82 | --- |
| TOTAL | 331.2 | 184.6 | 646.8 | 971 | 2494 | 1345 | 1328 | 652.0 | 1250.1 | 142.9 | 198.54 | 86.26 |
| MEAN | 10.7 | 6.15 | 20.9 | 31.3 | 89.1 | 43.4 | 44.3 | 21.0 | 41.7 | 4.61 | 6.40 | 2.88 |
| MAX | 97 | 12 | 97 | 154 | 560 | 83 | 216 | 123 | 228 | 17 | 46 | 33 |
| MIN | 1.8 | 4.4 | 5.0 | 15 | 28 | 26 | 20 | 9.2 | 7.6 | 1.1 | .82 | .06 |
| CFSM | .31 | .18 | .60 | .90 | 2.55 | 1.24 | 1.27 | .60 | 1.20 | .13 | .18 | .08 |
| IN. | .35 | .20 | .69 | 1.03 | 2.66 | 1.43 | 1.42 | .69 | 1.33 | .15 | .21 | .09 |
| CAL YR 1981 TOTAL | 5234.07 | | | MEAN 14.3 | MAX 469 | MIN .76 | CFSM .41 | IN 5.58 | | | | |
| WTR YR 1982 TOTAL | 9630.40 | | | MEAN 26.4 | MAX 560 | MIN .06 | CFSM .76 | IN 10.26 | | | | |

GREAT WICOMICO RIVER BASIN

85

01661800 BUSH MILL STREAM NEAR HEATHSVILLE, VA

LOCATION.--Lat 37°52'36", long 76°29'42", Northumberland County, Hydrologic Unit 02080102, on right bank 12 ft (4 m) upstream from bridge on State Highway 601, 2.2 mi (3.5 km) northwest of Howland, 3.0 mi (4.8 km) southwest of Heathsville, and 3.5 mi (5.6 km) upstream from mouth.

DRAINAGE AREA.--6.82 mi² (17.66 km²).

PERIOD OF RECORD.--October 1963 to March 1969, October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 23.78 ft (7.248 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 19, 1969, 52 ft (16 m) downstream at datum 0.74 ft (0.226 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--18 years (water years 1964-68, 1979-82), 7.38 ft³/s (0.209 m³/s), 14.70 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 714 ft³/s (20.2 m³/s) July 30, 1979, gage height, 8.52 ft (2.597 m), from rating curve extended above 130 ft³/s (3.7 m³/s); no flow many days in August and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 20, 1969, reached a stage of 6.13 ft (1.868 m), present datum, from floodmarks, discharge, about 450 ft³/s (13 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft³/s (2.07 m³/s) Aug. 7, gage height, 4.51 ft (1.375 m), no peak above base of 100 ft³/s (2.8 m³/s); minimum, 0.16 ft³/s (0.005 m³/s) July 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|-------|-------|-------|------|--------|-------|--------|-------|
| 1 | .44 | 1.9 | 1.7 | 20 | 14 | 8.7 | 7.2 | 4.9 | 14 | .95 | 5.6 | .82 |
| 2 | .62 | 2.0 | 2.3 | 6.7 | 5.8 | 9.3 | 5.2 | 4.7 | 25 | .74 | 1.8 | .78 |
| 3 | .47 | 1.9 | 2.1 | 6.1 | 19 | 8.8 | 6.4 | 4.0 | 4.1 | .66 | 1.1 | .70 |
| 4 | .50 | 1.9 | 2.0 | 13 | 9.2 | 6.3 | 7.8 | 3.8 | 38 | .54 | .82 | .62 |
| 5 | .47 | 2.0 | 2.2 | 7.1 | 5.5 | 6.5 | 5.1 | 3.6 | 22 | .47 | .74 | .62 |
| 6 | .51 | 4.4 | 1.9 | 4.5 | 4.5 | 7.8 | 6.7 | 3.5 | 12 | .38 | .90 | .70 |
| 7 | .56 | 2.7 | 1.6 | 4.0 | 3.8 | 25 | 5.1 | 3.3 | 6.3 | .35 | 33 | .64 |
| 8 | .46 | 2.0 | 1.5 | 3.7 | 3.6 | 23 | 4.9 | 3.3 | 4.8 | .29 | 16 | .63 |
| 9 | .49 | 2.0 | 1.4 | 3.3 | 4.1 | 11 | 9.5 | 3.2 | 3.9 | .41 | 20 | .67 |
| 10 | .62 | 1.8 | 1.4 | 2.8 | 4.9 | 8.4 | 7.4 | 2.7 | 3.5 | 5.6 | 17 | .62 |
| 11 | .69 | 1.8 | 1.4 | 2.2 | 3.5 | 7.6 | 5.5 | 2.5 | 2.7 | 6.8 | 11 | .59 |
| 12 | .68 | 1.8 | 1.4 | 2.4 | 3.2 | 8.0 | 5.1 | 2.3 | 2.3 | 5.5 | 9.0 | .57 |
| 13 | .71 | 1.9 | 1.3 | 2.8 | 3.7 | 6.6 | 4.9 | 2.2 | 5.2 | 6.7 | 3.9 | .61 |
| 14 | .77 | 1.8 | 2.4 | 4.4 | 4.7 | 5.8 | 4.6 | 2.1 | 5.3 | 1.7 | 2.5 | .63 |
| 15 | .78 | 2.0 | 2.1 | 6.0 | 7.1 | 13 | 4.4 | 2.1 | 2.7 | 1.5 | 1.8 | .61 |
| 16 | .86 | 2.0 | 1.7 | 5.6 | 10 | 16 | 4.4 | 1.9 | 2.0 | 1.2 | 1.4 | .60 |
| 17 | .90 | 3.7 | 5.5 | 6.2 | 18 | 10 | 4.6 | 1.8 | 1.8 | .66 | 1.3 | .56 |
| 18 | 1.0 | 3.7 | 3.7 | 5.6 | 19 | 7.6 | 14 | 1.7 | 2.1 | .38 | 2.4 | .52 |
| 19 | 1.4 | 2.4 | 2.8 | 4.9 | 12 | 6.7 | 6.5 | 3.3 | 1.8 | .29 | 1.4 | .49 |
| 20 | 1.4 | 2.1 | 2.2 | 4.6 | 8.5 | 11 | 5.6 | 5.2 | 1.9 | 8.6 | .95 | 1.9 |
| 21 | 1.6 | 1.9 | 2.0 | 4.8 | 7.5 | 19 | 5.4 | 2.8 | 1.5 | 1.6 | .86 | 1.4 |
| 22 | 1.7 | 1.9 | 4.6 | 4.9 | 5.7 | 11 | 5.0 | 2.4 | 1.3 | .58 | .74 | 2.9 |
| 23 | 1.9 | 1.7 | 4.8 | 16 | 4.8 | 7.7 | 4.7 | 2.6 | 1.2 | 1.2 | 11 | 1.9 |
| 24 | 3.1 | 1.8 | 2.9 | 17 | 4.3 | 6.8 | 4.6 | 2.7 | 1.2 | 1.7 | 5.3 | 1.2 |
| 25 | 5.8 | 1.9 | 6.6 | 8.2 | 3.9 | 6.4 | 4.4 | 3.0 | 1.1 | .66 | 1.8 | 1.1 |
| 26 | 4.8 | 1.7 | 5.3 | 5.6 | 3.6 | 6.1 | 6.2 | 2.5 | 1.0 | .50 | 1.0 | 4.0 |
| 27 | 2.4 | 1.8 | 3.8 | 4.8 | 4.0 | 5.6 | 8.2 | 2.2 | 1.0 | .38 | .86 | 1.7 |
| 28 | 2.3 | 1.7 | 3.3 | 4.6 | 9.4 | 5.2 | 11 | 2.1 | .95 | 5.8 | 2.6 | 3.5 |
| 29 | 2.0 | 1.6 | 2.7 | 4.9 | --- | 5.2 | 6.3 | 5.3 | .90 | 4.8 | 1.3 | 2.1 |
| 30 | 1.8 | 1.6 | 2.4 | 5.8 | --- | 5.2 | 5.4 | 6.2 | .90 | 7.8 | .86 | 2.0 |
| 31 | 1.9 | --- | 3.1 | 12 | --- | 5.5 | --- | 3.1 | --- | 21 | .82 | --- |
| TOTAL | 43.63 | 63.4 | 118.3 | 204.5 | 207.3 | 290.8 | 186.1 | 97.0 | 172.45 | 89.74 | 159.75 | 50.98 |
| MEAN | 1.41 | 2.11 | 3.82 | 6.60 | 7.40 | 9.38 | 6.20 | 3.13 | 5.75 | 2.89 | 5.15 | 1.70 |
| MAX | 5.8 | 4.4 | 21 | 20 | 19 | 25 | 14 | 6.2 | 38 | 21 | 33 | 17 |
| MIN | .44 | 1.6 | 1.3 | 2.2 | 3.2 | 5.2 | 4.4 | 1.7 | .90 | .29 | .74 | .49 |
| CFSM | .21 | .31 | .56 | .97 | 1.09 | 1.38 | .91 | .46 | .84 | .42 | .76 | .25 |
| IN. | .24 | .35 | .65 | 1.12 | 1.13 | 1.59 | 1.01 | .53 | .94 | .49 | .87 | .28 |

CAL YR 1981 TOTAL 1044.63 MEAN 2.86 MAX 28 MIN .23 CFSM .42 IN 5.70
WTR YR 1982 TOTAL 1683.95 MEAN 4.61 MAX 38 MIN .29 CFSM .68 IN 9.18

RAPPAHANNOCK RIVER BASIN

01661900 CARTER RUN NEAR MARSHALL, VA

LOCATION.--Lat 38°47'57", long 77°52'09", Fauquier County, Hydrologic Unit 02080103, on left bank 50 ft (15 m) upstream from farm road, 1.2 mi (1.9 km) downstream from Horner Run, 4.7 mi (7.6 km) south of Marshall, 6.7 mi (10.8 km) southwest of The Plains, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--19.5 mi² (50.5 km²).

PERIOD OF RECORD.--October 1976 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 388.39 ft (118.381 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 200 ft³/s (5.7 m³/s), which are poor. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--6 years, 24.4 ft³/s (0.691 m³/s), 16.99 in/yr (432 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s (201 m³/s) Oct. 9, 1976, gage height, 10.4 ft (3.17 m), from floodmarks, from rating curve extended above 190 ft³/s (5.4 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.48 ft³/s (0.014 m³/s) Aug. 11, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.7 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 0500 | 240 6.80 | 4.43 1.350 | June 5 | 1400 | 381 10.8 | 4.97 1.515 |
| Feb. 3 | 1330 | 617 17.5 | 5.59 1.704 | June 13 | 1500 | *751 21.3 | 5.85 1.783 |

Minimum discharge, 2.0 ft³/s (0.057 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|-------|-------|-----------|---------|---------|----------|----------|------|-------|-------|-------|
| 1 | 2.2 | 6.0 | 5.1 | 29 | 131 | 24 | 19 | 23 | 16 | 12 | 5.5 | 2.5 |
| 2 | 2.8 | 5.7 | 7.5 | 24 | 38 | 22 | 27 | 19 | 16 | 11 | 4.6 | 10 |
| 3 | 2.4 | 5.5 | 6.3 | 16 | 326 | 20 | 24 | 16 | 25 | 11 | 4.1 | 7.9 |
| 4 | 2.2 | 5.0 | 5.6 | 39 | 115 | 18 | 21 | 14 | 54 | 12 | 3.5 | 3.8 |
| 5 | 2.3 | 5.1 | 5.5 | 30 | 59 | 17 | 19 | 13 | 188 | 11 | 5.5 | 3.4 |
| 6 | 2.4 | 7.0 | 5.0 | 21 | 39 | 15 | 17 | 11 | 88 | 8.9 | 50 | 3.1 |
| 7 | 3.1 | 6.8 | 4.6 | 15 | 29 | 36 | 17 | 11 | 51 | 7.9 | 20 | 3.1 |
| 8 | 2.7 | 6.0 | 4.9 | 12 | 24 | 38 | 24 | 13 | 35 | 7.2 | 11 | 3.1 |
| 9 | 2.3 | 5.0 | 4.6 | 9.0 | 50 | 29 | 19 | 14 | 28 | 7.4 | 10 | 3.1 |
| 10 | 2.3 | 5.4 | 5.6 | 7.5 | 41 | 25 | 17 | 10 | 43 | 12 | 7.9 | 3.1 |
| 11 | 2.5 | 5.0 | 4.3 | 5.6 | 29 | 25 | 16 | 9.3 | 33 | 19 | 5.9 | 3.0 |
| 12 | 2.5 | 4.9 | 4.0 | 5.2 | 24 | 34 | 16 | 8.4 | 27 | 9.8 | 11 | 2.9 |
| 13 | 2.5 | 4.8 | 3.8 | 5.5 | 23 | 28 | 15 | 7.8 | 296 | 7.8 | 5.9 | 2.8 |
| 14 | 2.9 | 4.5 | 4.6 | 6.8 | 20 | 25 | 14 | 7.3 | 119 | 25 | 5.5 | 2.7 |
| 15 | 2.9 | 4.9 | 17 | 7.5 | 18 | 26 | 13 | 6.5 | 60 | 15 | 5.2 | 2.7 |
| 16 | 2.9 | 4.6 | 13 | 15 | 26 | 43 | 12 | 6.6 | 42 | 8.9 | 5.9 | 2.7 |
| 17 | 2.9 | 4.6 | 9.4 | 15 | 76 | 61 | 14 | 5.9 | 42 | 7.4 | 10 | 2.7 |
| 18 | 2.7 | 5.2 | 8.4 | 7.3 | 75 | 41 | 21 | 5.5 | 34 | 6.2 | 5.9 | 2.7 |
| 19 | 3.1 | 4.5 | 6.2 | 5.0 | 71 | 34 | 15 | 5.8 | 29 | 9.4 | 5.2 | 2.6 |
| 20 | 3.3 | 4.7 | 5.5 | 4.7 | 85 | 60 | 13 | 6.5 | 25 | 10 | 4.3 | 4.0 |
| 21 | 3.3 | 4.6 | 4.3 | 4.6 | 85 | 80 | 11 | 19 | 21 | 6.6 | 4.6 | 4.4 |
| 22 | 3.5 | 4.5 | 5.2 | 4.6 | 61 | 62 | 10 | 33 | 19 | 4.9 | 4.3 | 5.8 |
| 23 | 5.2 | 4.1 | 13 | 4.8 | 47 | 45 | 9.2 | 19 | 19 | 5.9 | 4.1 | 5.4 |
| 24 | 6.6 | 4.5 | 14 | 6.0 | 37 | 36 | 8.6 | 16 | 15 | 5.5 | 3.8 | 4.5 |
| 25 | 4.3 | 4.9 | 11 | 5.7 | 30 | 32 | 11 | 16 | 14 | 4.3 | 3.5 | 4.1 |
| 26 | 10 | 4.9 | 9.4 | 5.4 | 25 | 29 | 40 | 13 | 14 | 4.3 | 2.7 | 6.6 |
| 27 | 33 | 4.9 | 8.4 | 5.5 | 24 | 25 | 70 | 12 | 13 | 4.1 | 2.7 | 26 |
| 28 | 31 | 4.9 | 7.9 | 6.2 | 25 | 23 | 50 | 25 | 12 | 4.1 | 2.7 | 8.4 |
| 29 | 11 | 4.6 | 7.0 | 6.2 | --- | 20 | 31 | 39 | 18 | 4.6 | 2.7 | 5.5 |
| 30 | 7.9 | 4.3 | 6.2 | 6.6 | --- | 21 | 26 | 23 | 21 | 4.3 | 2.5 | 4.3 |
| 31 | 6.5 | --- | 5.5 | 50 | --- | 25 | --- | 15 | --- | 6.6 | 2.5 | --- |
| TOTAL | 175.2 | 151.4 | 222.8 | 385.7 | 1633 | 1019 | 619.8 | 443.6 | 1417 | 274.1 | 223.0 | 146.9 |
| MEAN | 5.65 | 5.05 | 7.19 | 12.4 | 58.3 | 32.9 | 20.7 | 14.3 | 47.2 | 8.84 | 7.19 | 4.90 |
| MAX | 33 | 7.0 | 17 | 50 | 326 | 80 | 70 | 39 | 296 | 25 | 50 | 26 |
| MIN | 2.2 | 4.1 | 3.8 | 4.6 | 18 | 15 | 8.6 | 5.5 | 12 | 4.1 | 2.5 | 2.5 |
| CFSM | .29 | .26 | .37 | .64 | 2.99 | 1.69 | 1.06 | .73 | 2.42 | .45 | .37 | .25 |
| IN. | .33 | .29 | .43 | .74 | 3.12 | 1.94 | 1.18 | .85 | 2.70 | .52 | .43 | .28 |
| CAL YR 1981 TOTAL | 3425.3 | | | MEAN 9.38 | MAX 200 | MIN 1.4 | CFSM .48 | IN 6.53 | | | | |
| WTR YR 1982 TOTAL | 6711.5 | | | MEAN 18.4 | MAX 326 | MIN 2.2 | CFSM .94 | IN 12.80 | | | | |

RAPPAHANNOCK RIVER BASIN

87

01662000 RAPPAHANNOCK RIVER NEAR WARRENTON, VA

LOCATION.--Lat 38°41'05", long 77°54'15", Fauquier County, Hydrologic Unit 02080103, on left bank 50 ft (20 m) downstream from westbound bridge on U.S. Highway 211, 0.9 mi (1.4 km) downstream from Carter Run, 6.2 mi (10.0 km) southwest of Warrenton, 15 mi (24 km) upstream from Hazel River, and at mile 53.0 (85.3 km).

DRAINAGE AREA.--195 mi² (505 km²).

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.57 ft (95.271 m) National Geodetic Vertical Datum of 1929. Oct. 8, 1942, to Dec. 17, 1944, nonrecording gage 50 ft (20 m) upstream at present datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 194 ft³/s (5.494 m³/s), 13.51 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft³/s (906 m³/s) Oct. 15, 1942, gage height, 23.5 ft (7.16 m), from floodmark, from rating curve extended above 24,000 ft³/s (680 m³/s); minimum daily, 0.70 ft³/s (0.020 m³/s) Oct. 4, 5, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2130 | 2110 59.8 | 8.03 2.448 | June 13 | 1800 | *2230 63.2 | 8.29 2.527 |
| June 5 | 1700 | 1960 55.5 | 7.70 2.347 | | | | |

Minimum daily discharge, 7.0 ft³/s (0.20 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|-------|------|------|------|-------|------|------|-------|
| 1 | 10 | 58 | 31 | 124 | 827 | 235 | 267 | 225 | 186 | 103 | 51 | 17 |
| 2 | 10 | 50 | 45 | 194 | 419 | 218 | 205 | 204 | 222 | 88 | 37 | 21 |
| 3 | 8.5 | 47 | 51 | 137 | 1260 | 200 | 224 | 180 | 165 | 86 | 33 | 49 |
| 4 | 7.5 | 44 | 44 | 202 | 942 | 183 | 288 | 163 | 605 | 113 | 32 | 27 |
| 5 | 8.0 | 41 | 40 | 264 | 511 | 176 | 211 | 151 | 1220 | 99 | 30 | 19 |
| 6 | 7.5 | 45 | 40 | 178 | 360 | 162 | 210 | 144 | 923 | 87 | 480 | 16 |
| 7 | 8.0 | 52 | 39 | 145 | 273 | 234 | 185 | 136 | 584 | 77 | 241 | 14 |
| 8 | 7.5 | 43 | 34 | 120 | 223 | 355 | 172 | 142 | 420 | 73 | 108 | 14 |
| 9 | 7.0 | 38 | 34 | 103 | 364 | 273 | 191 | 205 | 319 | 139 | 99 | 15 |
| 10 | 8.0 | 36 | 91 | 74 | 381 | 241 | 204 | 135 | 358 | 124 | 120 | 16 |
| 11 | 8.0 | 36 | 113 | 86 | 269 | 225 | 185 | 117 | 355 | 153 | 74 | 17 |
| 12 | 8.0 | 34 | 43 | 73 | 220 | 298 | 170 | 107 | 278 | 101 | 80 | 15 |
| 13 | 8.0 | 33 | 38 | 74 | 207 | 275 | 161 | 101 | 1190 | 90 | 66 | 13 |
| 14 | 9.2 | 32 | 36 | 79 | 180 | 253 | 155 | 94 | 1090 | 85 | 51 | 12 |
| 15 | 8.0 | 32 | 92 | 81 | 180 | 262 | 144 | 85 | 612 | 116 | 45 | 11 |
| 16 | 8.4 | 32 | 112 | 75 | 212 | 396 | 138 | 81 | 446 | 78 | 41 | 12 |
| 17 | 8.4 | 31 | 82 | 68 | 565 | 578 | 140 | 79 | 400 | 67 | 43 | 12 |
| 18 | 8.8 | 32 | 74 | 58 | 643 | 449 | 160 | 73 | 431 | 59 | 57 | 10 |
| 19 | 9.4 | 31 | 74 | 59 | 531 | 379 | 136 | 70 | 301 | 54 | 41 | 9.9 |
| 20 | 9.2 | 31 | 99 | 60 | 635 | 523 | 126 | 72 | 246 | 62 | 32 | 15 |
| 21 | 9.2 | 30 | 86 | 63 | 668 | 682 | 126 | 90 | 208 | 55 | 32 | 20 |
| 22 | 9.9 | 29 | 62 | 67 | 554 | 596 | 117 | 149 | 184 | 47 | 32 | 22 |
| 23 | 13 | 28 | 62 | 63 | 429 | 467 | 109 | 134 | 180 | 47 | 28 | 26 |
| 24 | 26 | 29 | 92 | 70 | 360 | 395 | 107 | 115 | 154 | 58 | 28 | 20 |
| 25 | 22 | 32 | 86 | 72 | 305 | 345 | 107 | 110 | 140 | 45 | 27 | 17 |
| 26 | 30 | 33 | 73 | 65 | 253 | 319 | 266 | 101 | 150 | 38 | 22 | 18 |
| 27 | 174 | 34 | 68 | 59 | 238 | 274 | 407 | 90 | 130 | 33 | 20 | 141 |
| 28 | 377 | 33 | 61 | 53 | 234 | 240 | 438 | 178 | 122 | 31 | 20 | 71 |
| 29 | 142 | 32 | 59 | 58 | --- | 224 | 303 | 244 | 113 | 33 | 21 | 37 |
| 30 | 90 | 32 | 54 | 60 | --- | 213 | 252 | 230 | 129 | 37 | 18 | 27 |
| 31 | 70 | --- | 63 | 73 | --- | 214 | --- | 147 | --- | 49 | 16 | --- |
| TOTAL | 1130.5 | 1090 | 1978 | 2957 | 12243 | 9884 | 5904 | 4152 | 11861 | 2327 | 2025 | 733.9 |
| MEAN | 36.5 | 36.3 | 63.8 | 95.4 | 437 | 319 | 197 | 134 | 395 | 75.1 | 65.3 | 24.5 |
| MAX | 377 | 58 | 113 | 264 | 1260 | 682 | 438 | 244 | 1220 | 153 | 480 | 141 |
| MIN | 7.0 | 28 | 31 | 53 | 180 | 162 | 107 | 70 | 113 | 31 | 16 | 9.9 |
| CFSM | .19 | .19 | .33 | .49 | 2.24 | 1.64 | 1.01 | .69 | 2.03 | .39 | .34 | .13 |
| IN. | .22 | .21 | .38 | .56 | 2.34 | 1.89 | 1.13 | .79 | 2.26 | .44 | .39 | .14 |

CAL YR 1981 TOTAL 27862.8 MEAN 76.3 MAX 960 MIN 3.0 CFSM .39 IN 5.32
WTR YR 1982 TOTAL 56285.4 MEAN 154 MAX 1260 MIN 7.0 CFSM .79 IN 10.74

RAPPAHANNOCK RIVER BASIN

01662800 BATTLE RUN NEAR LAUREL MILLS, VA

LOCATION.--Lat 38°39'20", long 78°04'27", Rappahannock County, Hydrologic Unit 02080103, on left bank just upstream from bridge on State Highway 729, 0.8 mi (1.3 km) upstream from mouth, and 1.0 mi (1.6 km) northeast of Laurel Mills.

DRAINAGE AREA.--27.6 mi² (71.5 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 374.62 ft (114.184 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Jan. 7 to Feb. 23, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--24 years, 26.1 ft³/s (0.739 m³/s), 12.84 in/yr (326 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,120 ft³/s (258 m³/s) Oct. 9, 1976, gage height, 13.90 ft (4.237 m), from floodmark, from rating curve extended above 2,500 ft³/s (71 m³/s) on basis of velocity-area study; no flow many days in September 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 310 ft³/s (8.8 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| June 3 | 2130 | 460 13.0 | 5.45 1.661 | June 13 | 1300 | 410 11.6 | 5.24 1.597 |
| June 5 | 1030 | *634 18.0 | 6.08 1.853 | | | | |

Minimum discharge, 0.52 ft³/s (0.015 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|-------|------|------|------|-------|------|-------|-------|-------|
| 1 | .72 | 6.1 | 5.0 | 21 | 110 | 27 | 27 | 24 | 43 | 14 | 7.7 | 3.4 |
| 2 | .99 | 5.7 | 7.3 | 21 | 90 | 26 | 23 | 22 | 33 | 13 | 6.7 | 5.2 |
| 3 | 1.1 | 5.4 | 5.6 | 15 | 160 | 24 | 31 | 21 | 84 | 13 | 7.5 | 7.1 |
| 4 | .74 | 5.0 | 5.1 | 25 | 90 | 22 | 28 | 19 | 82 | 16 | 5.8 | 3.4 |
| 5 | .76 | 4.8 | 5.2 | 20 | 50 | 21 | 24 | 18 | 270 | 13 | 6.4 | 3.0 |
| 6 | .94 | 7.4 | 4.6 | 16 | 35 | 20 | 25 | 17 | 111 | 12 | 60 | 2.8 |
| 7 | 1.2 | 5.7 | 4.5 | 14 | 30 | 34 | 22 | 16 | 68 | 10 | 21 | 2.7 |
| 8 | 1.3 | 5.1 | 4.8 | 12 | 26 | 35 | 22 | 21 | 48 | 16 | 15 | 3.3 |
| 9 | 1.3 | 4.8 | 4.7 | 11 | 40 | 30 | 25 | 20 | 38 | 23 | 14 | 3.6 |
| 10 | 1.5 | 4.7 | 4.8 | 10 | 42 | 28 | 23 | 15 | 42 | 17 | 12 | 3.4 |
| 11 | 1.4 | 4.6 | 4.6 | 8.0 | 35 | 27 | 21 | 14 | 35 | 14 | 9.1 | 3.2 |
| 12 | 1.6 | 4.5 | 4.7 | 7.6 | 28 | 32 | 20 | 13 | 32 | 12 | 8.9 | 2.8 |
| 13 | 1.7 | 4.1 | 4.6 | 8.8 | 23 | 28 | 20 | 12 | 208 | 17 | 7.9 | 2.5 |
| 14 | 2.1 | 4.0 | 5.5 | 9.8 | 21 | 26 | 19 | 11 | 117 | 11 | 7.4 | 2.4 |
| 15 | 2.5 | 4.1 | 15 | 9.4 | 21 | 33 | 18 | 9.9 | 73 | 12 | 6.2 | 2.6 |
| 16 | 2.8 | 3.9 | 13 | 9.0 | 23 | 51 | 17 | 9.4 | 53 | 11 | 7.1 | 3.1 |
| 17 | 2.9 | 3.9 | 10 | 8.5 | 70 | 60 | 18 | 9.0 | 64 | 11 | 7.4 | 2.4 |
| 18 | 3.1 | 3.9 | 9.0 | 8.0 | 80 | 48 | 19 | 8.4 | 52 | 9.3 | 8.7 | 2.2 |
| 19 | 3.3 | 3.6 | 8.4 | 8.0 | 66 | 42 | 17 | 10 | 39 | 11 | 5.6 | 2.2 |
| 20 | 3.6 | 3.7 | 6.9 | 8.0 | 70 | 82 | 16 | 10 | 32 | 12 | 4.6 | 6.2 |
| 21 | 4.1 | 3.7 | 5.8 | 9.0 | 66 | 79 | 16 | 9.6 | 28 | 8.9 | 5.0 | 4.1 |
| 22 | 4.4 | 3.5 | 7.2 | 9.0 | 54 | 60 | 15 | 12 | 25 | 7.7 | 4.2 | 5.0 |
| 23 | 6.1 | 3.5 | 9.7 | 11 | 48 | 49 | 15 | 14 | 23 | 10 | 4.2 | 3.9 |
| 24 | 9.2 | 4.2 | 9.3 | 10 | 40 | 42 | 15 | 11 | 21 | 9.1 | 4.5 | 3.1 |
| 25 | 5.5 | 4.8 | 8.2 | 9.0 | 33 | 37 | 14 | 11 | 20 | 7.3 | 3.8 | 3.1 |
| 26 | 11 | 4.7 | 7.8 | 8.0 | 28 | 34 | 37 | 10 | 28 | 6.7 | 3.3 | 8.7 |
| 27 | 50 | 4.8 | 7.8 | 7.6 | 28 | 30 | 37 | 9.7 | 20 | 6.2 | 3.8 | 23 |
| 28 | 28 | 4.5 | 7.4 | 7.4 | 28 | 27 | 34 | 22 | 18 | 6.3 | 4.4 | 6.8 |
| 29 | 12 | 4.1 | 7.4 | 7.4 | --- | 26 | 28 | 18 | 17 | 6.4 | 3.2 | 5.1 |
| 30 | 8.7 | 4.0 | 6.9 | 8.0 | --- | 25 | 26 | 20 | 16 | 8.9 | 3.2 | 4.5 |
| 31 | 7.2 | --- | 7.2 | 15 | --- | 26 | --- | 13 | --- | 11 | 3.5 | --- |
| TOTAL | 181.79 | 136.8 | 218.0 | 351.5 | 1435 | 1131 | 672 | 450.0 | 1740 | 355.8 | 272.1 | 134.8 |
| MEAN | 5.86 | 4.56 | 7.03 | 11.3 | 51.3 | 36.5 | 22.4 | 14.5 | 58.0 | 11.5 | 8.78 | 4.49 |
| MAX | 50 | 7.4 | 15 | 25 | 160 | 82 | 37 | 24 | 270 | 23 | 60 | 23 |
| MIN | .72 | 3.5 | 4.5 | 7.4 | 21 | 20 | 14 | 8.4 | 16 | 6.2 | 3.2 | 2.2 |
| CFSM | .21 | .17 | .26 | .41 | 1.86 | 1.32 | .81 | .53 | 2.10 | .42 | .32 | .16 |
| IN. | .25 | .18 | .29 | .47 | 1.93 | 1.52 | .91 | .61 | 2.35 | .48 | .37 | .18 |

CAL YR 1981 TOTAL 3315.84 MEAN 9.08 MAX 155 MIN .08 CFSM .33 IN 4.47
WTR YR 1982 TOTAL 7078.79 MEAN 19.4 MAX 270 MIN .72 CFSM .70 IN 9.54

RAPPAHANNOCK RIVER BASIN

89

01663500 HAZEL RIVER AT RIXEYVILLE, VA

LOCATION.--Lat 38°35'30", long 77°57'55", Culpeper County, Hydrologic Unit 02080103, on right bank at downstream side of bridge on State Highway 229, 0.4 mi (0.6 km) upstream from Waterford Run, 1.1 mi (1.8 km) northeast of Rixeyville, 2.8 mi (4.5 km) downstream from Thornton River, and 9.1 mi (14.6 km) upstream from mouth.

DRAINAGE AREA.--287 mi² (743 km²).

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1622: 1957-58. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 288.30 ft (87.874 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 339 ft³/s (9.600 m³/s), 16.04 in/yr (407 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,000 ft³/s (1,700 m³/s) Oct. 15, 1942, gage height, 31.8 ft (9.69 m), from rating curve extended above 27,000 ft³/s (760 m³/s); minimum, 1.1 ft³/s (0.031 m³/s) Sept. 10-13, 1966, gage height, 1.69 ft (0.515 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 26, 1937, reached a stage of 28.4 ft (8.66 m), from floodmarks, discharge, 43,500 ft³/s (1,230 m³/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,300 ft³/s (93 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 1500 | 3500 99.1 | 10.87 3.313 | June 13 | 1730 | *4420 125 | 12.22 3.725 |
| June 5 | 1600 | 3520 99.7 | 10.90 3.322 | | | | |

Minimum daily discharge, 15 ft³/s (0.42 m³/s) Oct. 8, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 18 | 143 | 64 | 208 | 1950 | 389 | 368 | 378 | 375 | 175 | 152 | 50 |
| 2 | 19 | 126 | 85 | 352 | 1890 | 384 | 306 | 338 | 778 | 157 | 114 | 51 |
| 3 | 17 | 115 | 90 | 267 | 2320 | 362 | 333 | 305 | 502 | 150 | 165 | 57 |
| 4 | 18 | 104 | 83 | 336 | 1300 | 329 | 426 | 280 | 985 | 175 | 132 | 55 |
| 5 | 19 | 98 | 79 | 456 | 783 | 312 | 323 | 258 | 2110 | 172 | 131 | 42 |
| 6 | 17 | 106 | 76 | 361 | 593 | 293 | 320 | 243 | 1500 | 156 | 1230 | 38 |
| 7 | 19 | 107 | 70 | 309 | 466 | 380 | 290 | 232 | 989 | 141 | 657 | 37 |
| 8 | 15 | 94 | 68 | 264 | 382 | 557 | 275 | 237 | 739 | 130 | 322 | 41 |
| 9 | 16 | 87 | 67 | 223 | 534 | 442 | 290 | 260 | 573 | 157 | 334 | 51 |
| 10 | 15 | 84 | 60 | 162 | 578 | 404 | 294 | 210 | 594 | 225 | 252 | 49 |
| 11 | 15 | 80 | 63 | 190 | 438 | 383 | 268 | 191 | 573 | 177 | 183 | 48 |
| 12 | 16 | 77 | 66 | 165 | 374 | 441 | 255 | 180 | 472 | 151 | 166 | 44 |
| 13 | 17 | 75 | 64 | 160 | 349 | 419 | 249 | 172 | 2300 | 153 | 141 | 39 |
| 14 | 18 | 75 | 67 | 175 | 316 | 397 | 242 | 164 | 1660 | 136 | 125 | 35 |
| 15 | 18 | 71 | 141 | 180 | 292 | 406 | 228 | 153 | 998 | 132 | 117 | 34 |
| 16 | 18 | 71 | 177 | 165 | 311 | 529 | 222 | 144 | 735 | 127 | 104 | 36 |
| 17 | 19 | 70 | 150 | 150 | 934 | 715 | 225 | 139 | 614 | 120 | 100 | 35 |
| 18 | 19 | 70 | 128 | 125 | 1100 | 628 | 243 | 132 | 689 | 117 | 109 | 31 |
| 19 | 19 | 67 | 115 | 135 | 861 | 565 | 218 | 127 | 497 | 106 | 93 | 28 |
| 20 | 20 | 66 | 121 | 130 | 966 | 954 | 208 | 133 | 405 | 146 | 81 | 32 |
| 21 | 21 | 66 | 128 | 140 | 941 | 1060 | 207 | 126 | 340 | 131 | 81 | 53 |
| 22 | 22 | 63 | 109 | 150 | 812 | 855 | 196 | 177 | 300 | 105 | 81 | 54 |
| 23 | 24 | 61 | 110 | 140 | 672 | 705 | 186 | 169 | 280 | 196 | 75 | 55 |
| 24 | 35 | 62 | 153 | 150 | 584 | 605 | 182 | 175 | 248 | 487 | 73 | 48 |
| 25 | 46 | 67 | 148 | 160 | 510 | 530 | 180 | 160 | 230 | 163 | 72 | 41 |
| 26 | 57 | 68 | 133 | 145 | 437 | 493 | 359 | 153 | 243 | 126 | 62 | 43 |
| 27 | 579 | 70 | 121 | 130 | 409 | 428 | 589 | 143 | 221 | 107 | 56 | 307 |
| 28 | 880 | 68 | 115 | 120 | 402 | 375 | 700 | 520 | 208 | 97 | 57 | 143 |
| 29 | 336 | 66 | 109 | 130 | --- | 348 | 507 | 464 | 193 | 96 | 56 | 83 |
| 30 | 222 | 63 | 98 | 130 | --- | 326 | 431 | 571 | 194 | 100 | 49 | 63 |
| 31 | 171 | --- | 90 | 160 | --- | 321 | --- | 372 | --- | 141 | 49 | --- |
| TOTAL | 2745 | 2440 | 3148 | 6068 | 21504 | 15335 | 9120 | 7306 | 20545 | 4752 | 5419 | 1723 |
| MEAN | 88.5 | 81.3 | 102 | 196 | 768 | 495 | 304 | 236 | 685 | 153 | 175 | 57.4 |
| MAX | 880 | 143 | 177 | 456 | 2320 | 1060 | 700 | 571 | 2300 | 487 | 1230 | 307 |
| MIN | 15 | 61 | 60 | 120 | 292 | 293 | 180 | 126 | 193 | 96 | 49 | 28 |
| CFSM | .31 | .28 | .36 | .68 | 2.68 | 1.73 | 1.06 | .82 | 2.39 | .53 | .61 | .20 |
| IN. | .36 | .32 | .41 | .79 | 2.79 | 1.99 | 1.18 | .95 | 2.66 | .62 | .70 | .22 |

| | | | | | | | |
|-------------|-------|--------|----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 47085 | MEAN 129 | MAX 1530 | MIN 12 | CFSM .45 | IN 6.10 |
| WTR YR 1982 | TOTAL | 100105 | MEAN 274 | MAX 2320 | MIN 15 | CFSM .96 | IN 12.98 |

RAPPAHANNOCK RIVER BASIN

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA

LOCATION.--Lat 38°31'50", long 77°48'50", Fauquier County, Hydrologic Unit 02080103, on left bank 80 ft (20 m) upstream from bridge on alternate U.S. Highway 29, at Remington, 0.3 mi (0.5 km) upstream from Tinpot Run, 0.4 mi (0.6 km) downstream from Ruffans Run, 2.5 mi (4.0 km) downstream from Hazel River, and at mile 35.2 (56.6 km).

DRAINAGE AREA.--620 mi² (1,606 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.53 ft (76.971 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1951, nonrecording gage at bridge 80 ft (20 m) downstream at same datum.

REMARKS.--Records good. Gage-height telemeter at station.

AVERAGE DISCHARGE.--40 years, 674 ft³/s (19.09 m³/s), 14.76 in/yr (375 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s (2,550 m³/s) Oct. 16, 1942, gage height, 30.0 ft (9.14 m), from floodmarks, from rating curve extended above 43,000 ft³/s (1,200 m³/s) on basis of slope-area determination of peak flow; minimum, 2.8 ft³/s (0.079 m³/s) Sept. 13, 1966, gage height, 2.31 ft (0.704 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1828, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1945 | 7770 220 | 12.77 3.892 | June 14 | 0030 | 8550 242 | 13.36 4.072 |
| June 5 | 2030 | 6680 189 | 11.79 3.594 | Aug. 6 | 2000 | *9230 261 | 13.86 4.225 |

Minimum discharge, 30 ft³/s (0.85 m³/s) Oct. 9, 10, 11, gage height, 2.78 ft (0.847 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|------|-------|------|
| 1 | 37 | 254 | 119 | 449 | 2110 | 827 | 824 | 786 | 600 | 383 | 309 | 103 |
| 2 | 38 | 222 | 148 | 691 | 2530 | 819 | 685 | 705 | 1240 | 330 | 228 | 103 |
| 3 | 36 | 200 | 179 | 539 | 5360 | 765 | 676 | 625 | 864 | 309 | 235 | 115 |
| 4 | 34 | 185 | 167 | 686 | 4230 | 683 | 956 | 562 | 2170 | 354 | 255 | 143 |
| 5 | 36 | 174 | 158 | 896 | 1890 | 639 | 719 | 511 | 4100 | 376 | 226 | 101 |
| 6 | 35 | 178 | 148 | 667 | 1350 | 596 | 672 | 475 | 3680 | 334 | 3290 | 86 |
| 7 | 37 | 189 | 141 | 547 | 1060 | 808 | 632 | 455 | 1980 | 298 | 2470 | 79 |
| 8 | 35 | 171 | 134 | 464 | 853 | 1310 | 573 | 442 | 1450 | 276 | 770 | 77 |
| 9 | 31 | 154 | 126 | 389 | 1120 | 991 | 592 | 547 | 1130 | 346 | 696 | 85 |
| 10 | 31 | 148 | 160 | 280 | 1400 | 877 | 652 | 442 | 1200 | 483 | 547 | 91 |
| 11 | 31 | 142 | 139 | 320 | 992 | 817 | 581 | 380 | 1300 | 530 | 430 | 88 |
| 12 | 33 | 139 | 123 | 222 | 828 | 936 | 552 | 353 | 1020 | 369 | 361 | 84 |
| 13 | 36 | 134 | 115 | 275 | 748 | 938 | 523 | 340 | 4050 | 336 | 335 | 76 |
| 14 | 37 | 130 | 111 | 297 | 686 | 855 | 506 | 320 | 4920 | 305 | 275 | 68 |
| 15 | 38 | 127 | 325 | 306 | 626 | 840 | 475 | 299 | 2160 | 329 | 247 | 63 |
| 16 | 37 | 126 | 534 | 284 | 700 | 1140 | 459 | 280 | 1550 | 303 | 225 | 63 |
| 17 | 37 | 126 | 340 | 254 | 2150 | 1600 | 457 | 270 | 1300 | 264 | 211 | 64 |
| 18 | 42 | 128 | 277 | 211 | 2900 | 1360 | 514 | 258 | 1460 | 248 | 241 | 60 |
| 19 | 39 | 124 | 207 | 222 | 1940 | 1180 | 472 | 245 | 1090 | 222 | 219 | 53 |
| 20 | 39 | 121 | 207 | 225 | 2230 | 1680 | 434 | 249 | 892 | 250 | 183 | 52 |
| 21 | 42 | 120 | 195 | 236 | 2120 | 2240 | 426 | 246 | 749 | 262 | 175 | 75 |
| 22 | 52 | 116 | 221 | 248 | 1730 | 1840 | 407 | 350 | 660 | 215 | 175 | 103 |
| 23 | 46 | 112 | 269 | 237 | 1380 | 1430 | 379 | 402 | 618 | 360 | 167 | 111 |
| 24 | 40 | 114 | 319 | 259 | 1180 | 1220 | 365 | 378 | 546 | 769 | 158 | 98 |
| 25 | 96 | 121 | 336 | 267 | 1040 | 1080 | 362 | 341 | 493 | 328 | 157 | 82 |
| 26 | 104 | 127 | 296 | 246 | 893 | 1000 | 587 | 331 | 492 | 231 | 141 | 77 |
| 27 | 520 | 130 | 268 | 220 | 830 | 897 | 1410 | 303 | 483 | 196 | 122 | 394 |
| 28 | 1580 | 128 | 250 | 206 | 827 | 795 | 1620 | 603 | 437 | 175 | 119 | 401 |
| 29 | 668 | 122 | 230 | 218 | --- | 731 | 1090 | 891 | 407 | 168 | 118 | 186 |
| 30 | 396 | 119 | 206 | 221 | --- | 687 | 895 | 973 | 411 | 192 | 110 | 131 |
| 31 | 310 | --- | 228 | 271 | --- | 676 | --- | 695 | --- | 270 | 104 | --- |
| TOTAL | 4613 | 4381 | 6676 | 10853 | 45703 | 32257 | 19495 | 14057 | 43452 | 9811 | 13299 | 3312 |
| MEAN | 149 | 146 | 215 | 350 | 1632 | 1041 | 650 | 453 | 1448 | 316 | 429 | 110 |
| MAX | 1580 | 254 | 534 | 896 | 5360 | 2240 | 1620 | 973 | 4920 | 769 | 3290 | 401 |
| MIN | 31 | 112 | 111 | 206 | 626 | 596 | 362 | 245 | 407 | 168 | 104 | 52 |
| CFSM | .24 | .24 | .35 | .57 | 2.63 | 1.68 | 1.05 | .73 | 2.34 | .51 | .69 | .18 |
| IN. | .28 | .26 | .40 | .65 | 2.74 | 1.94 | 1.17 | .84 | 2.61 | .59 | .80 | .20 |

CAL YR 1981 TOTAL 93385 MEAN 256 MAX 2850 MIN 16 CFSM .41 IN 5.60
WTR YR 1982 TOTAL 207909 MEAN 570 MAX 5360 MIN 31 CFSM .92 IN 12.47

RAPPAHANNOCK RIVER BASIN

91

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1951 to September 1956, October 1965 to current year.

WATER TEMPERATURES: May 1951 to September 1956, October 1965 to September 1976, October 1977 to current year.

SUSPENDED-SEDIMENT DISCHARGE: April 1951 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 150 micromhos Sept. 3, 1974; minimum daily, 24 micromhos July 6, 1975.

WATER TEMPERATURES: Maximum, 32.5°C July 19, 1980, July 18, 21, 1981; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,870 mg/L June 13, 1982; minimum daily mean, 1 mg/L on many days during each year.

SEDIMENT LOADS: Maximum daily, 55,600 tons (50,400 tonnes) Sept. 26, 1975; minimum daily, 0.08 ton (0.07 tonne) Oct. 9, 1981.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 118 micromhos Oct. 8; minimum daily, 50 micromhos Aug. 6.

WATER TEMPERATURES: Maximum daily, 29.0°C Aug. 27; minimum observed, 0.5°C Dec. 9, 10.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,870 mg/L June 13; minimum daily mean, 1 mg/L Oct. 3-9, Aug. 30.

SEDIMENT LOADS: Maximum daily, 28,800 tons (26,100 tonnes) June 13; minimum daily, 0.08 ton (0.07 tonne) Oct. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| NOV | | | | | | | | | | | |
| 19... | 1245 | 123 | 83 | 7.2 | 9.0 | 5 | 27 | 7.0 | 2.3 | 5.7 | 1.5 |
| JAN | | | | | | | | | | | |
| 20... | 1100 | 226 | 88 | 6.8 | 1.0 | 5 | 25 | 6.7 | 2.1 | 4.2 | 1.1 |
| MAR | | | | | | | | | | | |
| 08... | 1200 | 1390 | 78 | 7.3 | 4.0 | 15 | 24 | 6.2 | 2.0 | 3.5 | 1.3 |
| APR | | | | | | | | | | | |
| 14... | 1000 | 506 | 73 | 6.8 | 12.0 | 2 | 22 | 5.8 | 1.9 | 4.6 | .8 |
| MAY | | | | | | | | | | | |
| 27... | 1000 | 300 | 74 | 7.2 | 19.5 | <1 | 25 | 6.6 | 2.1 | 3.6 | 1.5 |
| JUL | | | | | | | | | | | |
| 15... | 1045 | 357 | 78 | 7.4 | 23.5 | 7 | 27 | 7.1 | 2.2 | 4.0 | 1.3 |
| SEP | | | | | | | | | | | |
| 09... | 1050 | 80 | 83 | 7.5 | 20.0 | 16 | 28 | 7.4 | 2.3 | 4.2 | 1.9 |

< Actual value is known to be less than the value shown.

| DATE | ALKAL- INITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|-------|---|---|---|--|--|--|---|---|---|--|--|
| NOV | | | | | | | | | | | |
| 19... | 23 | 5.4 | 5.0 | <.1 | 11 | 57 | 52 | <.010 | .22 | <.010 | 260 |
| JAN | | | | | | | | | | | |
| 20... | 21 | 6.6 | 6.0 | <.1 | 12 | 58 | 51 | <.010 | .79 | <.010 | 110 |
| MAR | | | | | | | | | | | |
| 08... | 14 | 9.0 | 5.6 | <.1 | 10 | 54 | 46 | <.010 | .95 | <.010 | 140 |
| APR | | | | | | | | | | | |
| 14... | 18 | 7.0 | 3.9 | <.1 | 9.4 | 44 | 44 | <.010 | .42 | <.010 | 140 |
| MAY | | | | | | | | | | | |
| 27... | 23 | 5.0 | 3.9 | <.1 | 13 | 55 | 50 | .050 | .68 | .040 | 240 |
| JUL | | | | | | | | | | | |
| 15... | 25 | 5.0 | 4.1 | <.1 | 9.7 | 60 | 49 | <.010 | .50 | .010 | 120 |
| SEP | | | | | | | | | | | |
| 09... | 28 | 5.0 | 4.7 | .2 | 7.9 | -- | 51 | <.010 | .25 | <.010 | 90 |

< Actual value is known to be less than the value shown.

RAPPAHANNOCK RIVER BASIN

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

SPFCIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C). WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 100 | 86 | 82 | 72 | --- | 67 | 62 | 75 | 68 | 77 | 80 | 68 |
| 2 | 100 | 86 | 82 | 71 | --- | 67 | 62 | 73 | 64 | 75 | 80 | 70 |
| 3 | 101 | 84 | 82 | 76 | 63 | 67 | 62 | 76 | 62 | 75 | 80 | 78 |
| 4 | 103 | 82 | 75 | 80 | 66 | 66 | 74 | 76 | 65 | 70 | 85 | 70 |
| 5 | 108 | 82 | 80 | 81 | 66 | 66 | 70 | 76 | 80 | 70 | 80 | 70 |
| 6 | 102 | 82 | 76 | 66 | 73 | 78 | 67 | 79 | 80 | 63 | 50 | 68 |
| 7 | 105 | 82 | 75 | 66 | 74 | 78 | 73 | 80 | 83 | 73 | 80 | 68 |
| 8 | 118 | 82 | 78 | 66 | 66 | 70 | 75 | 81 | 72 | 70 | 80 | 70 |
| 9 | 104 | 83 | 79 | 66 | 71 | 66 | 66 | 81 | 71 | 70 | 80 | 75 |
| 10 | 84 | 81 | 78 | 65 | 63 | 68 | 74 | 67 | 76 | 80 | 70 | 70 |
| 11 | 84 | 77 | 78 | 65 | 79 | 64 | 72 | 67 | 76 | 73 | 88 | 73 |
| 12 | 84 | 78 | 78 | 65 | 75 | 66 | 63 | 67 | 65 | 75 | 85 | 74 |
| 13 | 84 | 87 | 77 | 64 | 71 | 65 | 63 | 68 | 70 | 85 | 85 | 74 |
| 14 | 83 | 77 | 73 | 64 | 63 | 65 | 63 | 67 | 78 | 80 | 83 | 74 |
| 15 | 104 | 76 | 72 | 65 | 64 | 65 | 73 | 68 | 71 | 77 | 80 | 73 |
| 16 | 104 | 76 | 71 | --- | 71 | 65 | 74 | 68 | 71 | 75 | 80 | 74 |
| 17 | 94 | 76 | 71 | --- | 68 | 66 | 64 | 69 | 76 | 73 | 80 | 88 |
| 18 | 82 | 76 | 72 | --- | 72 | 60 | 64 | 72 | 77 | 70 | 80 | 93 |
| 19 | 99 | 76 | 73 | --- | 66 | 60 | 63 | 68 | 77 | 80 | 73 | 91 |
| 20 | 84 | 63 | 72 | --- | 66 | 62 | 65 | 68 | 78 | 77 | 75 | 93 |
| 21 | 86 | 74 | 71 | --- | 66 | 62 | 67 | 68 | 79 | 75 | 75 | 73 |
| 22 | 85 | 63 | 71 | --- | 66 | 62 | 68 | 67 | 78 | 80 | 73 | 80 |
| 23 | 82 | 63 | 71 | --- | 69 | 63 | 66 | 71 | 76 | 80 | 70 | 73 |
| 24 | 84 | 71 | 71 | --- | 69 | 61 | 67 | 79 | 75 | 80 | 70 | 72 |
| 25 | 84 | 80 | 72 | --- | 60 | 61 | 66 | 80 | 70 | 75 | 70 | 79 |
| 26 | 83 | 81 | 68 | --- | 60 | 60 | 68 | 77 | 80 | 77 | 63 | 73 |
| 27 | 91 | 82 | 66 | --- | 66 | 61 | 68 | 77 | 80 | 80 | 70 | 73 |
| 28 | 99 | 87 | 68 | --- | 66 | 61 | 68 | 77 | 75 | 75 | 68 | 75 |
| 29 | 96 | 90 | 68 | --- | --- | 61 | 67 | 77 | 77 | 70 | 70 | 78 |
| 30 | 77 | 82 | 67 | --- | --- | 62 | 67 | 72 | 80 | 73 | 70 | 73 |
| 31 | 89 | --- | 66 | --- | --- | 62 | --- | 70 | --- | 77 | 63 | --- |
| MEAN | 93 | 79 | 74 | 69 | 68 | 65 | 67 | 73 | 74 | 75 | 75 | 75 |
| WTR YR 1982 | MEAN | 74 | MAX | 118 | MIN | 50 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|------|------|-----|-----|------|------|------|------|------|------|
| 1 | 19.0 | 15.0 | 5.0 | 6.0 | --- | 4.0 | 9.0 | 21.5 | 19.0 | 27.0 | 21.5 | 24.5 |
| 2 | 19.0 | 16.0 | 5.0 | 6.0 | --- | 5.0 | 8.0 | 22.5 | 18.0 | 28.0 | 21.5 | 24.5 |
| 3 | 18.0 | 15.0 | 5.0 | 6.0 | 2.5 | 4.5 | 9.0 | 20.5 | 17.0 | 27.0 | 22.5 | 22.5 |
| 4 | 17.0 | 16.0 | 6.0 | 5.0 | 3.5 | 4.5 | 10.5 | 21.5 | 18.0 | 27.5 | 21.5 | 23.5 |
| 5 | 15.0 | 15.0 | 6.0 | 6.0 | 4.5 | 5.0 | 10.5 | 22.5 | 19.0 | 25.0 | 24.5 | 24.5 |
| 6 | 15.0 | 14.5 | 5.0 | 5.5 | 3.5 | 6.0 | 9.0 | 23.5 | 21.5 | 25.0 | 22.5 | 20.5 |
| 7 | 16.0 | 14.5 | 1.0 | 5.5 | 3.5 | 5.0 | 12.5 | 22.5 | 20.5 | 26.0 | 21.5 | 20.5 |
| 8 | 17.0 | 15.0 | 1.0 | 6.0 | 2.5 | 5.0 | 11.5 | 23.5 | 22.5 | 27.0 | 20.5 | 19.0 |
| 9 | 17.0 | 16.0 | .5 | 2.0 | 2.5 | 7.0 | 11.5 | 24.5 | 19.5 | 26.0 | 23.5 | 18.0 |
| 10 | 18.0 | 16.0 | .5 | 5.0 | 3.5 | 6.0 | 10.5 | 24.5 | 20.0 | 25.5 | 23.5 | 17.0 |
| 11 | 17.0 | 16.0 | 1.0 | 4.5 | 3.5 | 4.5 | 11.5 | 23.5 | 20.5 | 28.0 | 24.5 | 16.0 |
| 12 | 17.0 | 15.0 | 1.0 | 5.0 | 2.5 | 5.0 | 11.5 | 23.5 | 21.5 | 27.0 | 25.5 | 17.0 |
| 13 | 18.0 | 16.0 | 1.0 | 4.5 | 3.5 | 6.0 | 10.5 | 24.5 | 22.5 | 26.0 | 22.5 | 18.0 |
| 14 | 18.0 | 16.0 | 8.0 | 4.5 | 4.5 | 6.0 | 11.5 | 22.5 | 22.5 | 25.0 | 24.5 | 15.0 |
| 15 | 17.0 | 15.0 | 3.5 | 3.5 | 5.0 | 7.0 | 11.5 | 22.5 | 20.5 | 24.5 | 25.0 | 17.0 |
| 16 | 17.0 | 14.5 | 1.5 | --- | 5.0 | 6.0 | 14.5 | 20.5 | 22.5 | 23.5 | 26.0 | 16.0 |
| 17 | 16.0 | 15.0 | 1.5 | --- | 2.5 | 5.0 | 14.5 | 22.5 | 21.5 | 22.5 | 26.0 | 17.0 |
| 18 | 16.0 | --- | 1.5 | --- | 3.5 | 6.0 | 16.0 | 23.5 | 22.5 | 21.5 | 25.0 | 18.0 |
| 19 | 15.0 | --- | 2.5 | --- | 5.0 | 5.0 | 15.0 | 23.5 | 20.5 | 22.5 | 26.0 | 16.0 |
| 20 | 15.0 | --- | 3.5 | --- | 5.0 | 7.0 | 15.0 | 24.5 | 24.5 | 23.5 | 27.0 | 19.0 |
| 21 | 15.0 | 6.0 | 3.5 | --- | 5.0 | 6.0 | 16.0 | 23.5 | 24.5 | 24.5 | 26.0 | 17.0 |
| 22 | 15.0 | 5.0 | 4.5 | --- | 6.0 | 7.0 | 17.0 | 24.5 | 22.5 | 23.5 | 26.0 | 16.0 |
| 23 | 16.0 | 5.0 | 5.0 | --- | 5.0 | 6.0 | 24.5 | 24.5 | 22.5 | 24.5 | 25.0 | 19.0 |
| 24 | 17.0 | 5.0 | 7.0 | --- | 5.0 | 7.0 | 16.0 | 20.5 | 24.5 | 22.5 | 25.0 | 18.0 |
| 25 | 17.0 | 5.0 | 8.0 | --- | 4.5 | 8.0 | 18.0 | 20.5 | 25.0 | 23.5 | 27.0 | 19.0 |
| 26 | 16.0 | 5.0 | 8.0 | --- | 4.5 | 7.0 | 19.0 | 20.5 | 26.0 | 22.5 | 26.0 | 16.0 |
| 27 | 16.0 | 6.0 | 9.0 | --- | 3.5 | 8.0 | 21.5 | 21.5 | 28.0 | 23.5 | 29.0 | 15.0 |
| 28 | 15.0 | 6.0 | 10.5 | --- | 3.5 | 8.0 | 22.5 | 21.5 | 26.0 | 24.5 | 27.0 | 15.0 |
| 29 | 15.0 | 5.0 | 11.0 | --- | --- | 9.0 | 22.5 | 22.5 | 25.5 | 23.5 | 28.0 | 16.0 |
| 30 | 16.0 | 5.0 | 9.0 | --- | --- | 8.0 | 23.5 | 23.0 | 26.0 | 22.5 | 27.0 | 15.0 |
| 31 | 17.0 | --- | 5.0 | --- | --- | 9.0 | --- | 25.0 | --- | 24.5 | 28.0 | --- |
| MEAN | 16.5 | 11.5 | 4.5 | 5.0 | 4.0 | 6.0 | 14.5 | 23.0 | 22.0 | 25.0 | 25.0 | 18.5 |
| WTR YR 1982 | MEAN | 15.0 | MAX | 29.0 | MIN | .5 | | | | | | |

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
|-------|-------|--------|-----|--------|------|-------|------|-------|--------|---------|-----------|--------|
| 1 | 42 | 93 | 35 | 74 | 48 | 78 | 26 | 27 | 8 | 6.7 | 6 | 1.7 |
| 2 | 35 | 65 | 30 | 57 | 115 | 385 | 15 | 13 | 9 | 5.5 | 3 | .83 |
| 3 | 40 | 73 | 30 | 51 | 55 | 128 | 16 | 13 | 9 | 5.7 | 5 | 1.6 |
| 4 | 53 | 137 | 20 | 30 | 743 | 4900 | 20 | 19 | 23 | 16 | 26 | 10 |
| 5 | 38 | 74 | 18 | 25 | 1040 | 15400 | 22 | 22 | 60 | 37 | 12 | 3.3 |
| 6 | 33 | 60 | 15 | 19 | 1340 | 13300 | 15 | 14 | 616 | 6920 | 7 | 1.6 |
| 7 | 34 | 58 | 15 | 18 | 670 | 3580 | 13 | 10 | 180 | 1200 | 9 | 1.9 |
| 8 | 21 | 32 | 18 | 21 | 320 | 1250 | 10 | 7.5 | 40 | 83 | 5 | 1.0 |
| 9 | 22 | 35 | 23 | 34 | 240 | 732 | 22 | 21 | 180 | 338 | 4 | .92 |
| 10 | 25 | 44 | 20 | 24 | 250 | 810 | 30 | 39 | 140 | 207 | 3 | .74 |
| 11 | 24 | 38 | 12 | 12 | 240 | 842 | 29 | 41 | 135 | 157 | 4 | .95 |
| 12 | 20 | 30 | 10 | 9.5 | 200 | 551 | 20 | 20 | 82 | 80 | 5 | 1.1 |
| 13 | 20 | 28 | 10 | 9.2 | 1870 | 28800 | 19 | 17 | 155 | 140 | 5 | 1.0 |
| 14 | 18 | 25 | 8 | 6.9 | 1200 | 15900 | 15 | 12 | 40 | 30 | 7 | 1.3 |
| 15 | 8 | 10 | 6 | 4.8 | 410 | 2390 | 20 | 18 | 13 | 8.7 | 7 | 1.2 |
| 16 | 7 | 8.7 | 5 | 3.8 | 230 | 963 | 20 | 16 | 5 | 3.0 | 6 | 1.0 |
| 17 | 7 | 8.6 | 5 | 3.6 | 205 | 720 | 17 | 12 | 4 | 2.3 | 5 | .86 |
| 18 | 10 | 14 | 5 | 3.5 | 235 | 926 | 15 | 10 | 13 | 8.5 | 5 | .81 |
| 19 | 4 | 5.1 | 6 | 4.0 | 185 | 544 | 10 | 6.0 | 12 | 7.1 | 4 | .57 |
| 20 | 5 | 5.9 | 7 | 4.7 | 120 | 289 | 13 | 8.8 | 10 | 4.9 | 3 | .42 |
| 21 | 11 | 13 | 5 | 3.3 | 60 | 121 | 14 | 9.9 | 9 | 4.3 | 4 | .81 |
| 22 | 6 | 6.6 | 10 | 9.5 | 50 | 89 | 6 | 3.5 | 10 | 4.7 | 8 | 2.2 |
| 23 | 2 | 2.0 | 16 | 17 | 41 | 68 | 61 | 70 | 8 | 3.6 | 3 | .90 |
| 24 | 2 | 2.0 | 15 | 15 | 30 | 44 | 189 | 444 | 5 | 2.1 | 2 | .53 |
| 25 | 2 | 2.0 | 10 | 9.2 | 27 | 36 | 22 | 19 | 6 | 2.5 | 3 | .66 |
| 26 | 30 | 48 | 10 | 8.9 | 32 | 43 | 30 | 19 | 6 | 2.3 | 6 | 1.2 |
| 27 | 95 | 362 | 8 | 6.5 | 29 | 38 | 17 | 9.0 | 7 | 2.3 | 17 | 18 |
| 28 | 115 | 503 | 72 | 117 | 26 | 31 | 13 | 6.1 | 9 | 2.9 | 40 | 43 |
| 29 | 60 | 177 | 38 | 91 | 25 | 27 | 12 | 5.4 | 3 | .96 | 11 | 5.5 |
| 30 | 51 | 123 | 110 | 289 | 30 | 33 | 12 | 6.2 | 1 | .30 | 2 | .71 |
| 31 | --- | --- | 88 | 165 | --- | --- | 10 | 7.3 | 3 | .84 | --- | --- |
| TOTAL | --- | 2082.9 | --- | 1146.4 | --- | 93018 | --- | 945.7 | --- | 9287.20 | --- | 106.31 |

TOTAL LOAD FOR YEAR: 139467.41 TONS.

RAPPAHANNOCK RIVER BASIN

01665000 MOUNTAIN RUN NEAR CULPEPER, VA

LOCATION.--Lat 38°28'50", long 78°03'10", Culpeper County, Hydrologic Unit 02080103, on left bank 30 ft (9 m) upstream from bridge on State Highway 641, 2.4 mi (3.9 km) upstream from Bond Branch, and 3.0 mi (4.8 km) west of Culpeper.

DRAINAGE AREA.--15.9 mi² (41.2 km²), of which 10.9 mi² (28.2 km²) are above flood-detention structures.

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

REVISED RECORDS.--WSP 1332: 1950-51. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.46 ft (118.707 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since 1959 by two reservoirs, combined flood storage, 2,240 acre-ft (2.76 hm³); 531 acre-ft (0.655 hm³) additional storage used for low-water regulation for municipal supply for town of Culpeper. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 16.4 ft³/s (0.464 m³/s), 14.01 in/yr (356 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,440 ft³/s (154 m³/s) Aug. 18, 1955, from rating curve extended above 910 ft³/s (26 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 11.20 ft (3.414 m) Dec. 4, 1950; minimum discharge, 0.09 ft³/s (0.003 m³/s) Sept. 30, Oct. 1, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 0930 | 333 9.43 | 5.17 1.576 | June 13 | 1130 | 312 8.84 | 5.04 1.536 |
| May 29 | 2000 | 335 9.49 | 5.18 1.579 | Aug. 6 | 1230 | *346 9.80 | 5.25 1.600 |

Minimum daily discharge, 2.1 ft³/s (0.059 m³/s) Oct. 5-7, 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|-------|-------|------|------|-------|-------|--------|-------|-------|-------|
| 1 | 2.4 | 6.5 | 4.2 | 20 | 92 | 15 | 17 | 18 | 17 | 6.9 | 12 | 3.9 |
| 2 | 2.5 | 6.3 | 5.9 | 15 | 38 | 18 | 13 | 16 | 15 | 6.1 | 8.3 | 4.4 |
| 3 | 2.6 | 5.9 | 5.3 | 12 | 194 | 17 | 16 | 14 | 22 | 6.1 | 12 | 4.0 |
| 4 | 2.2 | 5.5 | 5.1 | 20 | 130 | 15 | 19 | 13 | 67 | 6.9 | 9.1 | 3.5 |
| 5 | 2.1 | 5.5 | 5.5 | 18 | 67 | 13 | 15 | 12 | 153 | 6.5 | 6.9 | 3.5 |
| 6 | 2.1 | 6.1 | 5.1 | 14 | 31 | 12 | 16 | 11 | 79 | 6.3 | 73 | 3.4 |
| 7 | 2.1 | 5.5 | 4.4 | 12 | 22 | 34 | 14 | 11 | 32 | 5.9 | 51 | 3.5 |
| 8 | 2.5 | 4.9 | 4.4 | 10 | 17 | 39 | 13 | 11 | 21 | 5.7 | 56 | 4.0 |
| 9 | 2.4 | 4.2 | 4.4 | 9.4 | 30 | 24 | 16 | 11 | 16 | 5.9 | 52 | 4.0 |
| 10 | 2.5 | 4.2 | 4.0 | 8.3 | 27 | 20 | 16 | 9.4 | 35 | 22 | 22 | 4.0 |
| 11 | 2.8 | 4.4 | 3.5 | 6.5 | 20 | 18 | 14 | 8.6 | 27 | 45 | 14 | 3.7 |
| 12 | 2.9 | 4.2 | 4.2 | 6.5 | 16 | 26 | 13 | 8.3 | 23 | 16 | 11 | 3.7 |
| 13 | 2.9 | 4.2 | 3.9 | 7.5 | 16 | 22 | 12 | 8.0 | 191 | 9.1 | 9.4 | 3.7 |
| 14 | 2.5 | 4.2 | 4.6 | 8.3 | 14 | 18 | 12 | 7.5 | 122 | 6.9 | 8.3 | 3.5 |
| 15 | 2.4 | 4.2 | 14 | 8.0 | 13 | 19 | 11 | 6.9 | 75 | 6.5 | 7.5 | 3.4 |
| 16 | 2.2 | 4.4 | 15 | 7.7 | 17 | 26 | 10 | 6.7 | 29 | 6.1 | 7.2 | 3.6 |
| 17 | 2.1 | 4.9 | 11 | 7.2 | 109 | 31 | 12 | 6.3 | 20 | 5.3 | 19 | 3.5 |
| 18 | 2.1 | 4.9 | 8.9 | 6.7 | 104 | 24 | 16 | 6.1 | 17 | 4.7 | 19 | 3.2 |
| 19 | 2.5 | 4.8 | 7.2 | 6.7 | 63 | 20 | 12 | 5.7 | 15 | 5.5 | 11 | 3.2 |
| 20 | 2.5 | 4.6 | 6.1 | 6.9 | 59 | 81 | 11 | 6.1 | 12 | 8.6 | 8.3 | 5.0 |
| 21 | 2.5 | 4.2 | 5.5 | 8.0 | 47 | 61 | 10 | 5.9 | 11 | 6.9 | 7.5 | 4.4 |
| 22 | 2.5 | 4.0 | 5.9 | 7.7 | 30 | 34 | 9.1 | 21 | 11 | 5.5 | 6.7 | 4.7 |
| 23 | 3.6 | 4.0 | 8.0 | 9.4 | 22 | 23 | 8.0 | 18 | 10 | 21 | 6.1 | 4.3 |
| 24 | 6.3 | 4.7 | 8.0 | 8.6 | 17 | 18 | 7.7 | 13 | 9.1 | 14 | 5.9 | 4.1 |
| 25 | 5.3 | 4.9 | 7.2 | 7.5 | 14 | 15 | 8.3 | 11 | 8.6 | 8.3 | 5.7 | 4.1 |
| 26 | 14 | 4.9 | 7.2 | 6.9 | 13 | 15 | 32 | 10 | 8.0 | 6.3 | 4.7 | 7.0 |
| 27 | 74 | 4.9 | 6.9 | 6.5 | 13 | 13 | 55 | 9.1 | 8.0 | 5.3 | 4.6 | 16 |
| 28 | 49 | 4.9 | 6.3 | 6.3 | 14 | 12 | 50 | 20 | 7.7 | 4.9 | 4.6 | 8.3 |
| 29 | 17 | 4.4 | 6.1 | 6.3 | --- | 12 | 29 | 51 | 7.5 | 4.6 | 4.2 | 6.6 |
| 30 | 11 | 4.2 | 5.3 | 6.7 | --- | 11 | 22 | 75 | 7.5 | 8.3 | 4.0 | 5.6 |
| 31 | 8.0 | --- | 5.5 | 13 | --- | 12 | --- | 23 | --- | 16 | 3.7 | --- |
| TOTAL | 241.5 | 144.5 | 198.6 | 297.6 | 1249 | 718 | 509.1 | 453.6 | 1076.4 | 293.1 | 474.7 | 139.8 |
| MEAN | 7.79 | 4.82 | 6.41 | 9.60 | 44.6 | 23.2 | 17.0 | 14.6 | 35.9 | 9.45 | 15.3 | 4.66 |
| MAX | 74 | 6.5 | 15 | 20 | 194 | 81 | 55 | 75 | 191 | 45 | 73 | 16 |
| MIN | 2.1 | 4.0 | 3.5 | 6.3 | 13 | 11 | 7.7 | 5.7 | 7.5 | 4.6 | 3.7 | 3.2 |
| CFSM | .49 | .30 | .40 | .60 | 2.81 | 1.46 | 1.07 | .92 | 2.26 | .59 | .96 | .29 |
| IN. | .56 | .34 | .46 | .70 | 2.92 | 1.68 | 1.19 | 1.06 | 2.52 | .69 | 1.11 | .33 |
| CAL YR 1981 | TOTAL | 3224.2 | MEAN | 8.83 | MAX | 138 | MIN | 1.6 | CFSM | .56 | IN | 7.54 |
| WTR YR 1982 | TOTAL | 5795.9 | MEAN | 15.9 | MAX | 194 | MIN | 2.1 | CFSM | 1.00 | IN | 13.56 |

01665500 RAPIDAN RIVER NEAR RUCKERSVILLE, VA

LOCATION.--Lat 38°16'50", long 78°20'25", Madison County, Hydrologic Unit 02080103, on left bank 250 ft (76 m) downstream from bridge on U.S. Highway 29, 0.2 mi (0.3 km) downstream from Elk Run, 1.7 mi (2.7 km) upstream from White Run, 3.6 mi (5.8 km) northeast of Ruckersville, and at mile 63.5 (102.2 km).

DRAINAGE AREA.--114 mi² (295 km²).

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944-45(M). WSP 1382: 1943(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.44 ft (133.941 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of beaver dam construction, Aug. 15 to Sept. 30, which are fair. Diversion 0.4 mi (0.6 km) above station since 1973 by Rapidan Service Authority for municipal supply of Greene County and town of Stanardsville has averaged less than 0.25 ft³/s (0.007 m³/s). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 149 ft³/s (4.220 m³/s), 17.75 in/yr (451 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,700 ft³/s (869 m³/s) Oct. 15, 1942, gage height, 20.8 ft (6.34 m), from floodmark in gage house, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement at gage height 17.78 ft (5.419 m); minimum daily, 0.90 ft³/s (0.025 m³/s) Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (40 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1600 | 1550 43.9 | 4.68 1.426 | May 29 | 2330 | 4450 126 | 8.59 2.618 |
| Feb. 3 | 1330 | 1670 47.3 | 4.87 1.484 | June 3 | 2200 | 2290 64.9 | 5.79 1.765 |
| Feb. 17 | 1630 | 1440 40.8 | 4.49 1.369 | June 5 | 1000 | 1720 48.7 | 4.95 1.509 |
| Mar. 20 | 1000 | 2150 60.9 | 5.59 1.704 | June 13 | 1030 | 3900 110 | 7.94 2.420 |
| May 28 | 0500 | *6170 175 | 10.37 3.161 | | | | |

Minimum daily, 14 ft³/s (0.40 m³/s) Sept. 19, 20.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|------|------|------|-------|------|------|------|
| 1 | 16 | 96 | 37 | 154 | 450 | 187 | 167 | 246 | 478 | 111 | 83 | 23 |
| 2 | 17 | 82 | 51 | 154 | 300 | 193 | 143 | 212 | 409 | 97 | 63 | 23 |
| 3 | 18 | 72 | 45 | 145 | 1080 | 189 | 194 | 183 | 519 | 92 | 58 | 22 |
| 4 | 18 | 65 | 44 | 203 | 688 | 167 | 202 | 162 | 542 | 95 | 51 | 20 |
| 5 | 18 | 62 | 47 | 213 | 482 | 156 | 178 | 147 | 1180 | 94 | 79 | 19 |
| 6 | 17 | 67 | 41 | 193 | 370 | 148 | 172 | 135 | 748 | 85 | 114 | 18 |
| 7 | 17 | 57 | 42 | 179 | 285 | 238 | 152 | 126 | 547 | 76 | 90 | 17 |
| 8 | 16 | 52 | 41 | 159 | 230 | 254 | 145 | 123 | 422 | 86 | 79 | 16 |
| 9 | 15 | 48 | 40 | 135 | 296 | 213 | 157 | 112 | 338 | 140 | 73 | 17 |
| 10 | 15 | 46 | 37 | 120 | 260 | 198 | 147 | 100 | 539 | 123 | 68 | 18 |
| 11 | 16 | 44 | 37 | 110 | 212 | 187 | 134 | 94 | 462 | 102 | 58 | 18 |
| 12 | 17 | 41 | 36 | 100 | 185 | 207 | 125 | 88 | 533 | 86 | 61 | 17 |
| 13 | 18 | 39 | 35 | 93 | 173 | 194 | 120 | 83 | 2560 | 128 | 51 | 16 |
| 14 | 18 | 39 | 51 | 87 | 153 | 187 | 116 | 79 | 1170 | 83 | 50 | 17 |
| 15 | 18 | 37 | 124 | 82 | 141 | 194 | 107 | 73 | 748 | 114 | 47 | 16 |
| 16 | 17 | 36 | 128 | 80 | 148 | 204 | 102 | 68 | 555 | 90 | 43 | 16 |
| 17 | 18 | 36 | 98 | 77 | 615 | 241 | 108 | 64 | 455 | 92 | 40 | 16 |
| 18 | 18 | 34 | 84 | 79 | 620 | 224 | 118 | 61 | 387 | 108 | 50 | 15 |
| 19 | 19 | 33 | 70 | 79 | 565 | 221 | 98 | 58 | 322 | 90 | 40 | 14 |
| 20 | 18 | 33 | 70 | 75 | 515 | 1030 | 95 | 73 | 271 | 81 | 37 | 14 |
| 21 | 19 | 33 | 61 | 73 | 444 | 769 | 94 | 94 | 234 | 70 | 34 | 15 |
| 22 | 21 | 31 | 74 | 71 | 380 | 547 | 85 | 77 | 208 | 61 | 32 | 17 |
| 23 | 29 | 31 | 74 | 67 | 328 | 436 | 81 | 189 | 188 | 70 | 30 | 19 |
| 24 | 33 | 37 | 84 | 63 | 291 | 363 | 79 | 96 | 167 | 117 | 29 | 18 |
| 25 | 28 | 38 | 80 | 67 | 254 | 310 | 77 | 86 | 154 | 81 | 27 | 18 |
| 26 | 39 | 35 | 76 | 63 | 222 | 297 | 207 | 79 | 144 | 70 | 26 | 19 |
| 27 | 551 | 36 | 75 | 60 | 214 | 249 | 439 | 73 | 134 | 64 | 24 | 55 |
| 28 | 456 | 39 | 72 | 63 | 201 | 212 | 504 | 1530 | 125 | 64 | 24 | 40 |
| 29 | 216 | 33 | 67 | 69 | --- | 190 | 366 | 853 | 120 | 61 | 24 | 29 |
| 30 | 150 | 31 | 61 | 80 | --- | 174 | 296 | 948 | 129 | 88 | 23 | 25 |
| 31 | 114 | --- | 61 | 95 | --- | 169 | --- | 475 | --- | 106 | 22 | --- |
| TOTAL | 2000 | 1363 | 1943 | 3293 | 10102 | 8548 | 5008 | 6787 | 14788 | 2825 | 1530 | 607 |
| MEAN | 64.5 | 45.4 | 62.7 | 106 | 361 | 276 | 167 | 219 | 493 | 91.1 | 49.4 | 20.2 |
| MAX | 551 | 96 | 128 | 213 | 1080 | 1030 | 504 | 1530 | 2560 | 140 | 114 | 55 |
| MIN | 15 | 31 | 35 | 60 | 141 | 148 | 77 | 58 | 120 | 61 | 22 | 14 |
| CFSM | .57 | .40 | .55 | .93 | 3.17 | 2.42 | 1.47 | 1.92 | 4.33 | .80 | .43 | .18 |
| IN. | .65 | .44 | .63 | 1.07 | 3.30 | 2.79 | 1.63 | 2.21 | 4.83 | .92 | .50 | .20 |

CAL YR 1941 TOTAL 35009.6 MEAN 95.9 MAX 998 MIN 8.0 CFSM .84 IN 11.42
WTR YR 1982 TOTAL 58794.0 MEAN 161 MAX 2560 MIN 14 CFSM 1.41 IN 19.19

RAPPAHANNOCK RIVER BASIN

01666500 ROBINSON RIVER NEAR LOCUST DALE, VA

LOCATION.--Lat 38°19'30", long 78°05'45", Madison County, Hydrologic Unit 02080103, on right bank 100 ft (30 m) upstream from bridge on State Highway 614, 1.1 mi (1.8 km) upstream from Great Run, 1.7 mi (2.7 km) upstream from mouth, 2.0 mi (3.2 km) southeast of Locust Dale, and 3.4 mi (5.5 km) downstream from Crooked Run.

DRAINAGE AREA.--179 mi² (464 km²).

PERIOD OF RECORD.--July 1943 to current year. Prior to October 1965, published as Robertson River near Locust Dale.

REVISED RECORDS.--WSP 1171: 1948(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 283.70 ft (86.472 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 12 to Sept. 14, which are fair. Small diurnal fluctuation at low flow caused by Banco Mill 9 mi (14 km) upstream at State Highway 231. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--39 years, 218 ft³/s (6.174 m³/s), 16.54 in/yr (420 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s (694 m³/s) June 22, 1972, gage height, 20.92 ft (6.376 m), from rating curve extended above 9,100 ft³/s (260 m³/s) on basis of records for other stations in Rappahannock River basin; minimum, 1.2 ft³/s (0.034 m³/s) Sept. 7, 13, 1954; minimum daily, 1.8 ft³/s (0.051 m³/s) Sept. 13, 27, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.9 ft (7.28 m), from floodmarks, discharge, about 44,000 ft³/s (1,200 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | ---- | 2500 70.8 | Ice Jam | June 5 | 1400 | 2330 66.0 | 9.13 2.783 |
| May 28 | 1700 | 1890 53.5 | 8.03 2.448 | June 13 | 1430 | *4140 117 | 13.40 4.084 |

Minimum discharge, 13 ft³/s (0.37 m³/s) Oct. 9, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|------|------|------|-------|------|------|-------|
| 1 | 18 | 104 | 49 | 218 | 750 | 230 | 211 | 234 | 397 | 141 | 146 | 46 |
| 2 | 20 | 92 | 66 | 206 | 500 | 243 | 181 | 209 | 462 | 123 | 107 | 48 |
| 3 | 20 | 84 | 60 | 167 | 1700 | 244 | 199 | 190 | 381 | 117 | 113 | 45 |
| 4 | 18 | 77 | 58 | 257 | 897 | 215 | 232 | 172 | 987 | 122 | 95 | 40 |
| 5 | 18 | 74 | 63 | 303 | 501 | 204 | 188 | 158 | 1870 | 123 | 86 | 36 |
| 6 | 19 | 81 | 57 | 236 | 375 | 194 | 192 | 147 | 998 | 115 | 228 | 34 |
| 7 | 19 | 71 | 53 | 202 | 293 | 301 | 174 | 139 | 636 | 103 | 200 | 34 |
| 8 | 18 | 65 | 53 | 171 | 239 | 368 | 164 | 135 | 480 | 104 | 145 | 33 |
| 9 | 15 | 63 | 49 | 149 | 307 | 282 | 175 | 131 | 383 | 171 | 157 | 41 |
| 10 | 16 | 61 | 44 | 115 | 325 | 253 | 173 | 117 | 456 | 363 | 131 | 38 |
| 11 | 18 | 59 | 48 | 135 | 253 | 238 | 159 | 109 | 426 | 215 | 108 | 37 |
| 12 | 20 | 57 | 48 | 125 | 221 | 259 | 151 | 104 | 381 | 145 | 125 | 35 |
| 13 | 20 | 55 | 46 | 115 | 209 | 248 | 147 | 100 | 2680 | 182 | 98 | 33 |
| 14 | 18 | 54 | 58 | 112 | 191 | 232 | 142 | 104 | 1450 | 181 | 87 | 32 |
| 15 | 18 | 55 | 136 | 110 | 178 | 229 | 135 | 91 | 756 | 165 | 95 | 31 |
| 16 | 19 | 54 | 167 | 110 | 181 | 245 | 131 | 86 | 555 | 130 | 82 | 33 |
| 17 | 20 | 54 | 122 | 100 | 770 | 309 | 133 | 83 | 464 | 113 | 80 | 32 |
| 18 | 18 | 53 | 103 | 110 | 761 | 286 | 156 | 79 | 410 | 141 | 87 | 30 |
| 19 | 21 | 51 | 88 | 110 | 591 | 267 | 131 | 75 | 345 | 119 | 80 | 29 |
| 20 | 20 | 50 | 87 | 100 | 610 | 840 | 125 | 80 | 295 | 144 | 70 | 29 |
| 21 | 19 | 49 | 110 | 95 | 507 | 667 | 125 | 79 | 257 | 117 | 64 | 34 |
| 22 | 22 | 46 | 98 | 92 | 428 | 490 | 116 | 128 | 230 | 97 | 60 | 40 |
| 23 | 24 | 45 | 94 | 90 | 364 | 399 | 113 | 194 | 215 | 150 | 59 | 49 |
| 24 | 50 | 50 | 106 | 95 | 324 | 343 | 109 | 122 | 193 | 294 | 60 | 41 |
| 25 | 34 | 55 | 102 | 87 | 290 | 302 | 106 | 109 | 181 | 154 | 61 | 36 |
| 26 | 63 | 51 | 99 | 88 | 255 | 289 | 205 | 98 | 173 | 122 | 54 | 40 |
| 27 | 548 | 52 | 92 | 80 | 244 | 248 | 426 | 91 | 163 | 106 | 49 | 120 |
| 28 | 602 | 51 | 86 | 90 | 242 | 220 | 473 | 1090 | 166 | 99 | 51 | 87 |
| 29 | 237 | 48 | 81 | 100 | --- | 206 | 324 | 555 | 148 | 95 | 52 | 55 |
| 30 | 155 | 46 | 73 | 105 | --- | 195 | 268 | 897 | 154 | 111 | 46 | 45 |
| 31 | 121 | --- | 75 | 130 | --- | 191 | --- | 371 | --- | 175 | 43 | --- |
| TOTAL | 2248 | 1807 | 2471 | 4203 | 12506 | 9237 | 5564 | 6277 | 16692 | 4537 | 2919 | 1263 |
| MEAN | 72.5 | 60.2 | 79.7 | 136 | 447 | 298 | 185 | 202 | 556 | 146 | 94.2 | 42.1 |
| MAX | 602 | 104 | 167 | 303 | 1700 | 840 | 473 | 1090 | 2680 | 363 | 228 | 120 |
| MIN | 15 | 45 | 44 | 80 | 178 | 191 | 106 | 75 | 148 | 95 | 43 | 29 |
| CFSM | .41 | .34 | .45 | .76 | 2.50 | 1.67 | 1.03 | 1.13 | 3.11 | .82 | .53 | .24 |
| IN. | .47 | .38 | .51 | .87 | 2.60 | 1.92 | 1.16 | 1.30 | 3.47 | .94 | .61 | .26 |
| CAL YR 1981 | TOTAL | 35222 | MEAN | 96.5 | MAX | 926 | MIN | 14 | CFSM | .54 | IN | 7.32 |
| WTR YR 1982 | TOTAL | 69724 | MEAN | 191 | MAX | 2680 | MIN | 15 | CFSM | 1.07 | IN | 14.49 |

01667500 RAPIDAN RIVER NEAR CULPEPER, VA

LOCATION.--Lat 38°21'01", long 77°58'31", Culpeper County, Hydrologic Unit 02080103, on left bank 0.7 mi (1.1 km) upstream from Cedar Run and bridge on U.S. Highway 522, 8.5 mi (13.7 km) south of Culpeper, and at mile 29.6 (47.6 km).

DRAINAGE AREA.--472 mi² (1,222 km²).

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 741: 1931. WSP 801: 1934(M), 1936(M). WSP 1081: 1943-46. WSP 1171: 1932(M), 1933-35. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 241.36 ft (73.567 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Dec. 19 to Jan. 28, which are fair. Diurnal fluctuation at low flow caused by mills at Rapidan and on Robinson River at State Highway 231. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 523 ft³/s (14.81 m³/s), 15.05 in/yr (382 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,100 ft³/s (1,650 m³/s) Oct. 16, 1942, gage height, 30.3 ft (9.24 m), from floodmark, from rating curve extended above 43,000 ft³/s (1,200 m³/s) on basis of slope-area measurement of peak flow; minimum, 2.1 ft³/s (0.059 m³/s) Oct. 4, 5, 11, 1954; minimum daily, 2.2 ft³/s (0.062 m³/s) Oct. 4, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1815 | 6650 188 | 9.93 3.027 | June 5 | 1500 | 5050 143 | 7.64 2.329 |
| Mar. 20 | 1930 | 4720 134 | 7.18 2.188 | June 13 | 2115 | *8120 230 | 11.72 3.572 |
| May 28 | 2000 | 6500 184 | 9.71 2.960 | | | | |

Minimum discharge, 50 ft³/s (1.42 m³/s) Oct. 9, 10, gage height, 0.52 ft (0.158 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 60 | 300 | 127 | 630 | 1900 | 650 | 562 | 672 | 1040 | 403 | 357 | 102 |
| 2 | 62 | 263 | 171 | 550 | 1210 | 703 | 498 | 592 | 1200 | 314 | 251 | 105 |
| 3 | 64 | 237 | 182 | 530 | 4400 | 731 | 497 | 530 | 846 | 290 | 226 | 103 |
| 4 | 62 | 216 | 171 | 610 | 3130 | 635 | 634 | 475 | 2230 | 292 | 208 | 90 |
| 5 | 62 | 204 | 182 | 750 | 1600 | 589 | 512 | 432 | 4150 | 309 | 189 | 81 |
| 6 | 60 | 229 | 174 | 620 | 1200 | 551 | 504 | 402 | 2570 | 294 | 307 | 80 |
| 7 | 58 | 208 | 157 | 500 | 944 | 821 | 467 | 383 | 1650 | 266 | 367 | 76 |
| 8 | 55 | 182 | 150 | 440 | 769 | 1200 | 432 | 368 | 1290 | 263 | 287 | 75 |
| 9 | 52 | 171 | 143 | 375 | 838 | 854 | 450 | 363 | 1030 | 336 | 273 | 93 |
| 10 | 52 | 164 | 133 | 310 | 979 | 738 | 473 | 324 | 1060 | 689 | 250 | 86 |
| 11 | 55 | 160 | 127 | 340 | 742 | 681 | 423 | 299 | 1290 | 412 | 220 | 84 |
| 12 | 60 | 153 | 130 | 325 | 639 | 708 | 400 | 284 | 1050 | 323 | 277 | 80 |
| 13 | 62 | 146 | 124 | 300 | 606 | 684 | 385 | 268 | 5390 | 569 | 216 | 76 |
| 14 | 60 | 143 | 124 | 290 | 573 | 639 | 381 | 267 | 4610 | 549 | 185 | 71 |
| 15 | 55 | 143 | 305 | 290 | 523 | 615 | 358 | 246 | 2050 | 385 | 200 | 68 |
| 16 | 60 | 143 | 534 | 280 | 513 | 683 | 345 | 233 | 1490 | 322 | 185 | 68 |
| 17 | 62 | 140 | 387 | 265 | 1540 | 859 | 346 | 223 | 1190 | 269 | 174 | 68 |
| 18 | 62 | 140 | 310 | 275 | 2480 | 773 | 410 | 213 | 1010 | 311 | 237 | 64 |
| 19 | 66 | 133 | 260 | 265 | 1680 | 715 | 359 | 206 | 867 | 299 | 207 | 60 |
| 20 | 64 | 130 | 240 | 255 | 1770 | 2490 | 331 | 228 | 742 | 315 | 164 | 62 |
| 21 | 58 | 127 | 285 | 240 | 1420 | 2490 | 332 | 370 | 642 | 267 | 148 | 68 |
| 22 | 60 | 124 | 260 | 230 | 1190 | 1610 | 313 | 298 | 572 | 224 | 140 | 86 |
| 23 | 71 | 118 | 290 | 225 | 1010 | 1240 | 296 | 487 | 528 | 215 | 132 | 110 |
| 24 | 112 | 124 | 335 | 240 | 905 | 1040 | 287 | 391 | 475 | 432 | 135 | 95 |
| 25 | 127 | 140 | 305 | 220 | 807 | 904 | 281 | 308 | 440 | 305 | 131 | 81 |
| 26 | 143 | 137 | 285 | 215 | 705 | 855 | 422 | 280 | 416 | 243 | 116 | 85 |
| 27 | 954 | 137 | 260 | 210 | 671 | 744 | 1110 | 258 | 395 | 218 | 108 | 258 |
| 28 | 1710 | 140 | 240 | 200 | 682 | 656 | 1600 | 3420 | 384 | 205 | 111 | 203 |
| 29 | 706 | 133 | 225 | 230 | --- | 597 | 992 | 1860 | 355 | 221 | 113 | 128 |
| 30 | 460 | 127 | 210 | 255 | --- | 557 | 788 | 2810 | 364 | 282 | 102 | 105 |
| 31 | 355 | --- | 210 | 275 | --- | 538 | --- | 1310 | --- | 430 | 99 | --- |
| TOTAL | 5949 | 4912 | 7036 | 10730 | 35426 | 27550 | 15188 | 18800 | 41326 | 10252 | 6115 | 2811 |
| MEAN | 192 | 164 | 227 | 346 | 1265 | 889 | 506 | 606 | 1378 | 331 | 197 | 93.7 |
| MAX | 1710 | 300 | 534 | 750 | 4400 | 2490 | 1600 | 3420 | 5390 | 689 | 367 | 258 |
| MIN | 52 | 118 | 124 | 200 | 513 | 538 | 281 | 206 | 355 | 205 | 99 | 60 |
| CFSM | .41 | .35 | .48 | .73 | 2.68 | 1.88 | 1.07 | 1.28 | 2.92 | .70 | .42 | .20 |
| IN. | .47 | .39 | .55 | .85 | 2.79 | 2.17 | 1.20 | 1.48 | 3.26 | .81 | .48 | .22 |

CAL YR 1981 TOTAL 91910 MEAN 252 MAX 1920 MIN 42 CFSM .53 IN 7.24
WTR YR 1982 TOTAL 186095 MEAN 510 MAX 5390 MIN 52 CFSM 1.08 IN 14.67

RAPPAHANNOCK RIVER BASIN

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA
(National stream-quality accounting network station)

LOCATION.--Lat 38°19'20", long 77°31'05", Spotsylvania County, Hydrologic Unit 02080104, on right bank 1.6 mi (2.6 km) upstream from dam of Virginia Electric and Power Co., 2.2 mi (3.5 km) downstream from Motts Run, 3.8 mi (6.1 km) upstream from Fredericksburg, and at mile 4.4 (7.1 km).

DRAINAGE AREA.--1,596 mi² (4,134 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1907 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 801: 1924(M). WSP 951: 1937(M). WSP 1302: 1907-12, 1913(M), 1916(M), 1918(M), 1920-21(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.18 ft (16.819 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1922, nonrecording gage, and Jan. 15, 1922, to Aug. 2, 1966, water-stage recorder at same site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--75 years, 1,655 ft³/s (46.87 m³/s), 14.08 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 ft³/s (3,960 m³/s) Oct. 16, 1942, gage height, 26.9 ft (8.20 m), present datum, from floodmarks, from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of flow over dam and slope-area measurements at gage heights 26.1 ft (7.96 m) and 26.9 ft (8.20 m), present datum; minimum, 5 ft³/s (0.14 m³/s) Oct. 11, 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 was probably several feet lower than that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 16,000 ft³/s (450 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 0300 | *25500 722 | 10.20 3.109 | June 14 | 0700 | 20800 589 | 9.28 2.829 |
| June 5 | 2400 | 16500 467 | 8.35 2.545 | | | | |

Minimum discharge, 125 ft³/s (3.54 m³/s) Oct. 11-13, gage height, 1.40 ft (0.427 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| 1 | 162 | 695 | 329 | 1350 | 5020 | 1650 | 1490 | 1880 | 2020 | 892 | 913 | 223 |
| 2 | 167 | 593 | 344 | 2380 | 6060 | 1850 | 1530 | 1640 | 2460 | 875 | 708 | 236 |
| 3 | 162 | 530 | 395 | 1530 | 12600 | 1940 | 1320 | 1460 | 2290 | 742 | 514 | 251 |
| 4 | 153 | 486 | 471 | 2180 | 18200 | 1700 | 1710 | 1310 | 4870 | 712 | 485 | 249 |
| 5 | 153 | 449 | 454 | 3120 | 5830 | 1490 | 1640 | 1190 | 9850 | 732 | 519 | 269 |
| 6 | 150 | 439 | 450 | 1930 | 3590 | 1380 | 1340 | 1090 | 11600 | 751 | 1460 | 228 |
| 7 | 150 | 457 | 438 | 1450 | 2630 | 1520 | 1320 | 1030 | 5130 | 707 | 8430 | 199 |
| 8 | 145 | 460 | 398 | 1220 | 2010 | 4500 | 1190 | 990 | 3490 | 636 | 2130 | 180 |
| 9 | 140 | 415 | 375 | 1030 | 1900 | 2660 | 1170 | 988 | 2640 | 683 | 1840 | 171 |
| 10 | 138 | 387 | 356 | 807 | 3310 | 2030 | 1330 | 1040 | 2240 | 853 | 1380 | 173 |
| 11 | 130 | 370 | 329 | 798 | 2270 | 1760 | 1290 | 876 | 3020 | 1970 | 939 | 212 |
| 12 | 125 | 359 | 319 | 719 | 1760 | 1790 | 1160 | 811 | 2460 | 1100 | 748 | 220 |
| 13 | 125 | 348 | 307 | 720 | 1540 | 2040 | 1090 | 768 | 6790 | 1590 | 749 | 207 |
| 14 | 132 | 337 | 308 | 785 | 1510 | 1760 | 1050 | 737 | 16900 | 1120 | 600 | 189 |
| 15 | 135 | 329 | 501 | 816 | 1370 | 1600 | 1020 | 708 | 6270 | 1360 | 511 | 173 |
| 16 | 137 | 330 | 1700 | 821 | 1360 | 1940 | 970 | 666 | 3960 | 882 | 519 | 162 |
| 17 | 136 | 333 | 1370 | 781 | 3620 | 3000 | 953 | 633 | 3020 | 727 | 453 | 153 |
| 18 | 134 | 335 | 962 | 687 | 9850 | 2760 | 1090 | 610 | 2780 | 612 | 659 | 149 |
| 19 | 140 | 334 | 746 | 580 | 5610 | 2250 | 1160 | 596 | 2410 | 614 | 721 | 158 |
| 20 | 140 | 334 | 623 | 620 | 6720 | 3030 | 1000 | 584 | 1960 | 584 | 512 | 170 |
| 21 | 138 | 325 | 594 | 640 | 4890 | 7540 | 950 | 591 | 1640 | 666 | 414 | 154 |
| 22 | 136 | 321 | 565 | 643 | 3790 | 5120 | 930 | 735 | 1440 | 588 | 371 | 190 |
| 23 | 142 | 318 | 680 | 693 | 2950 | 3450 | 866 | 880 | 1290 | 500 | 356 | 268 |
| 24 | 168 | 309 | 1050 | 644 | 2460 | 2760 | 828 | 1080 | 1210 | 986 | 333 | 272 |
| 25 | 178 | 316 | 910 | 698 | 2140 | 2360 | 808 | 907 | 1070 | 1030 | 318 | 262 |
| 26 | 319 | 327 | 965 | 667 | 1820 | 2120 | 895 | 800 | 1000 | 616 | 312 | 238 |
| 27 | 499 | 342 | 838 | 649 | 1630 | 1950 | 3050 | 741 | 993 | 488 | 287 | 440 |
| 28 | 4180 | 344 | 722 | 562 | 1630 | 1670 | 6270 | 1080 | 940 | 427 | 260 | 922 |
| 29 | 2330 | 342 | 650 | 535 | --- | 1500 | 3270 | 5790 | 920 | 385 | 243 | 654 |
| 30 | 1220 | 332 | 588 | 574 | --- | 1400 | 2290 | 4370 | 867 | 428 | 247 | 415 |
| 31 | 877 | --- | 532 | 615 | --- | 1330 | --- | 3420 | --- | 641 | 237 | --- |
| TOTAL | 13041 | 11596 | 19269 | 31244 | 118070 | 73850 | 44980 | 40001 | 107530 | 24897 | 28168 | 7787 |
| MEAN | 421 | 387 | 622 | 1008 | 4217 | 2382 | 1499 | 1290 | 3584 | 803 | 909 | 260 |
| MAX | 4180 | 695 | 1700 | 3120 | 18200 | 7540 | 6270 | 5790 | 16900 | 1970 | 8430 | 922 |
| MIN | 125 | 309 | 307 | 535 | 1360 | 1330 | 808 | 584 | 867 | 385 | 237 | 149 |
| CFSM | .26 | .24 | .39 | .63 | 2.64 | 1.49 | .94 | .81 | 2.25 | .50 | .57 | .16 |
| IN. | .30 | .27 | .45 | .73 | 2.75 | 1.72 | 1.05 | .93 | 2.51 | .58 | .66 | .18 |
| CAL YR 1981 | TOTAL | 227668 | MEAN | 624 | MAX | 7120 | MIN | 97 | CFSM | .39 | IN | 5.31 |
| WTR YR 1982 | TOTAL | 520433 | MEAN | 1426 | MAX | 18200 | MIN | 125 | CFSM | .89 | IN | 12.13 |

RAPPAHANNOCK RIVER BASIN

99

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at south bank of river 1.5 mi (2.4 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1929-30, 1956, 1967-74, 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1955 to September 1956, April 1968 to August 1974.

WATER TEMPERATURES: October 1955 to September 1956, April 1968 to August 1974.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| OCT 15... | 1000 | 135 | 90 | 8.5 | 11.5 | 1.4 | 11.5 | K11 | 97 | 28 | 7.1 | 2.5 |
| DEC 17... | 1115 | 1380 | 100 | 7.6 | 1.0 | 20 | 14.0 | 1200 | K4400 | 31 | 7.7 | 2.9 |
| MAR 31... | 0900 | 1330 | 66 | 7.3 | 10.0 | 3.6 | 10.7 | 33 | 41 | 22 | 5.4 | 2.0 |
| APR 28... | 0900 | 7340 | 77 | 6.9 | 14.0 | 59 | 9.0 | E50000 | E50000 | 26 | 6.3 | 2.4 |
| JUL 12... | 1100 | 1090 | 80 | 7.2 | 26.0 | 49 | 6.7 | K1200 | 440 | 26 | 6.6 | 2.3 |
| AUG 17... | 1215 | 449 | 80 | 7.5 | 26.5 | 2.5 | 7.2 | K36 | 140 | 26 | 6.5 | 2.3 |

E Estimated.

K Result based on colony count outside optimal range.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| OCT 15... | 5.2 | 2.5 | 27 | 4.9 | 6.1 | .1 | 5.1 | 59 | 50 | .05 | .110 | .37 |
| DEC 17... | 4.8 | 2.7 | 19 | 11 | 7.0 | <.1 | 11 | 70 | 59 | .72 | .140 | .76 |
| MAR 31... | 3.3 | .8 | 16 | 6.3 | 4.3 | <.1 | 10 | 57 | 42 | .77 | .030 | .30 |
| APR 28... | 4.4 | 1.9 | 17 | 10 | 4.3 | .1 | 9.2 | 70 | 49 | .51 | .070 | .73 |
| JUL 12... | 3.1 | 3.0 | 20 | 8.0 | 5.1 | <.1 | 8.2 | 64 | 48 | .99 | .130 | .70 |
| AUG 17... | 3.8 | 1.6 | 25 | 6.0 | 5.0 | .1 | 11 | -- | 51 | .43 | .040 | .50 |

< Actual value is known to be less than the value shown.

RAPPAHANNOCK RIVER BASIN

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|-------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| OCT | | | | | | | | | | | |
| 15... | .100 | .010 | .010 | 2 | 3 | 100 | 10 | 1 | 2 | 20 | <10 |
| DEC | | | | | | | | | | | |
| 17... | .070 | .030 | <.010 | 1 | <1 | 100 | 26 | 1 | <1 | 40 | 10 |
| MAR | | | | | | | | | | | |
| 31... | .020 | .010 | .010 | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | | |
| 28... | .300 | .080 | .010 | 2 | 1 | 200 | 170 | <1 | <1 | 20 | 10 |
| JUL | | | | | | | | | | | |
| 12... | .180 | .030 | .020 | 1 | 1 | 100 | 25 | 1 | <1 | <10 | <10 |
| AUG | | | | | | | | | | | |
| 17... | .040 | .020 | .020 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-------|---|--|---|--|---|--|---|--|---|--|---|
| OCT | | | | | | | | | | | |
| 15... | 2 | 2 | 9 | 2 | 310 | 92 | 1 | <1 | 20 | 10 | <.1 |
| DEC | | | | | | | | | | | |
| 17... | <1 | <1 | 8 | 1 | 1400 | 360 | 8 | <1 | 80 | 42 | .1 |
| MAR | | | | | | | | | | | |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR | | | | | | | | | | | |
| 28... | 5 | <1 | 11 | 4 | 6600 | 400 | 10 | 1 | 360 | 13 | <.1 |
| JUL | | | | | | | | | | | |
| 12... | 3 | 1 | 16 | 7 | 2800 | 99 | 7 | 1 | 80 | 7 | .4 |
| AUG | | | | | | | | | | | |
| 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDE (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|--|---|--|--|---|---|--|---|--|---|---|
| OCT | | | | | | | | | | | |
| 15... | <.1 | 4 | 2 | <1 | <1 | <1 | <1 | 60 | <4 | 1 | 100 |
| DEC | | | | | | | | | | | |
| 17... | .1 | 3 | 2 | <1 | <1 | <1 | <1 | 60 | 20 | 21 | 96 |
| MAR | | | | | | | | | | | |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 | 75 |
| APR | | | | | | | | | | | |
| 28... | <.1 | 4 | 4 | <1 | <1 | <1 | <1 | 30 | 24 | 238 | 93 |
| JUL | | | | | | | | | | | |
| 12... | <.1 | 5 | 3 | <1 | <1 | <1 | <1 | 30 | <4 | 55 | 99 |
| AUG | | | | | | | | | | | |
| 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4 | 97 |

< Actual value is known to be less than the value shown.

01668500 CAT POINT CREEK NEAR MONTROSS, VA

LOCATION.--Lat 38°02'23", long 76°49'38", Richmond County, Hydrologic Unit 02080104, on right bank 200 ft (61 m) upstream from bridge on State Highway 637, 1.7 mi (2.7 km) west of Farmers Fork, 3.8 mi (6.1 km) south of Montross, and 11.4 mi (18.3 km) upstream from mouth.

DRAINAGE AREA.--45.6 mi² (118.1 km²).

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

REVISED RECORDS.--WSP 1382: 1944(M), 1945, 1946-51(M), 1952(P), 1953-54(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.04 ft (0.927 m), revised, National Geodetic Vertical Datum of 1929. Prior to Aug. 19, 1953, nonrecording gage near right bank at downstream side of highway bridge at same datum.

REMARKS.--Records poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 44.2 ft³/s (1.252 m³/s), 13.16 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,820 ft³/s (193 m³/s) Aug. 20, 1969, gage height, 10.45 ft (3.185 m), from rating curve extended above 1,400 ft³/s (40 m³/s); no flow at times in 1943, 1957, 1959, 1960, 1966, and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1935 exceeded 9.3 ft (2.83 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s (7.1 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| June 4 | 0630 | 558 15.8 | 6.13 1.868 | Aug. 8 | 2130 | *684 19.4 | 6.34 1.932 |
| Aug. 7 | 1130 | 588 16.7 | 6.18 1.884 | | | | |

Minimum daily discharge, 0.40 ft³/s (0.011 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|-------|--------|-------|--------|-------|
| 1 | .40 | 8.0 | 7.5 | 31 | 59 | 45 | 32 | 24 | 64 | 11 | 38 | 7.5 |
| 2 | .52 | 6.9 | 9.5 | 30 | 52 | 47 | 27 | 20 | 163 | 9.4 | 27 | 6.9 |
| 3 | .52 | 6.9 | 9.5 | 26 | 87 | 52 | 28 | 17 | 69 | 8.0 | 18 | 6.8 |
| 4 | .55 | 6.6 | 10 | 39 | 79 | 47 | 32 | 16 | 352 | 7.5 | 14 | 5.7 |
| 5 | .56 | 6.6 | 10 | 35 | 47 | 54 | 33 | 13 | 235 | 6.9 | 10 | 5.5 |
| 6 | .56 | 7.7 | 10 | 29 | 35 | 52 | 33 | 12 | 165 | 5.6 | 37 | 5.3 |
| 7 | .54 | 7.7 | 10 | 21 | 26 | 88 | 32 | 12 | 86 | 5.0 | 288 | 5.2 |
| 8 | .50 | 7.5 | 10 | 18 | 21 | 199 | 27 | 12 | 51 | 5.0 | 411 | 5.0 |
| 9 | .46 | 7.5 | 9.8 | 17 | 20 | 164 | 33 | 12 | 38 | 5.0 | 428 | 5.0 |
| 10 | .50 | 7.3 | 9.2 | 15 | 20 | 88 | 39 | 12 | 32 | 8.2 | 183 | 5.0 |
| 11 | .52 | 7.3 | 9.0 | 14 | 17 | 68 | 38 | 10 | 28 | 22 | 94 | 5.0 |
| 12 | .52 | 7.1 | 8.8 | 13 | 16 | 61 | 33 | 10 | 27 | 14 | 53 | 5.0 |
| 13 | .48 | 6.9 | 8.6 | 14 | 17 | 53 | 31 | 9.8 | 35 | 11 | 40 | 4.8 |
| 14 | .56 | 6.9 | 9.2 | 15 | 17 | 46 | 27 | 9.5 | 71 | 14 | 30 | 4.5 |
| 15 | .56 | 6.9 | 26 | 16 | 20 | 46 | 26 | 9.2 | 57 | 45 | 29 | 4.5 |
| 16 | .60 | 6.9 | 58 | 17 | 26 | 59 | 26 | 9.0 | 43 | 23 | 30 | 4.5 |
| 17 | .58 | 7.5 | 46 | 18 | 46 | 61 | 26 | 7.5 | 28 | 17 | 30 | 4.2 |
| 18 | .60 | 9.5 | 29 | 17 | 116 | 53 | 61 | 7.3 | 22 | 13 | 31 | 3.8 |
| 19 | .72 | 9.2 | 20 | 18 | 128 | 46 | 59 | 7.5 | 22 | 10 | 29 | 3.7 |
| 20 | .70 | 9.0 | 16 | 17 | 96 | 52 | 46 | 12 | 18 | 32 | 24 | 4.1 |
| 21 | .70 | 8.8 | 16 | 19 | 76 | 62 | 39 | 10 | 17 | 23 | 21 | 4.7 |
| 22 | .74 | 8.8 | 15 | 22 | 59 | 50 | 33 | 9.5 | 14 | 18 | 17 | 6.1 |
| 23 | .98 | 8.8 | 18 | 30 | 46 | 46 | 31 | 9.5 | 14 | 22 | 16 | 7.1 |
| 24 | 2.3 | 8.8 | 22 | 34 | 40 | 40 | 27 | 9.8 | 11 | 37 | 16 | 6.8 |
| 25 | 5.9 | 9.0 | 25 | 37 | 38 | 39 | 26 | 10 | 10 | 23 | 14 | 6.5 |
| 26 | 9.0 | 8.8 | 25 | 32 | 33 | 38 | 28 | 10 | 8.2 | 17 | 12 | 7.1 |
| 27 | 11 | 8.8 | 21 | 26 | 33 | 33 | 59 | 10 | 7.7 | 11 | 12 | 10 |
| 28 | 13 | 7.5 | 18 | 21 | 39 | 32 | 94 | 12 | 7.3 | 10 | 10 | 10 |
| 29 | 12 | 7.5 | 16 | 23 | --- | 31 | 40 | 13 | 6.9 | 9.8 | 9.5 | 10 |
| 30 | 10 | 7.3 | 17 | 27 | --- | 31 | 29 | 19 | 7.1 | 14 | 9.0 | 10 |
| 31 | 9.0 | --- | 20 | 33 | --- | 30 | --- | 94 | --- | 32 | 9.0 | --- |
| TOTAL | 85.57 | 234.0 | 539.1 | 724 | 1309 | 1813 | 1095 | 448.6 | 1709.2 | 489.4 | 1989.5 | 180.3 |
| MEAN | 2.76 | 7.80 | 17.4 | 23.4 | 46.8 | 58.5 | 36.5 | 14.5 | 57.0 | 15.8 | 64.2 | 6.01 |
| MAX | 13 | 9.5 | 58 | 39 | 128 | 199 | 94 | 94 | 352 | 45 | 428 | 10 |
| MIN | .40 | 6.6 | 7.5 | 13 | 16 | 30 | 26 | 7.3 | 6.9 | 5.0 | 9.0 | 3.7 |
| CFSM | .06 | .17 | .38 | .51 | 1.03 | 1.28 | .80 | .32 | 1.25 | .35 | 1.41 | .13 |
| IN. | .07 | .19 | .44 | .59 | 1.07 | 1.48 | .89 | .37 | 1.39 | .40 | 1.62 | .15 |

| | | | | | | | |
|-------------|-------|----------|-----------|---------|---------|----------|---------|
| CAL YR 1981 | TOTAL | 7787.25 | MEAN 21.3 | MAX 272 | MIN .40 | CFSM .47 | IN 6.35 |
| WTR YR 1982 | TOTAL | 10616.67 | MEAN 29.1 | MAX 428 | MIN .40 | CFSM .64 | IN 8.66 |

RAPPAHANNOCK RIVER BASIN

01668800 HOSKINS CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°55'38", long 76°57'16", Essex County, Hydrologic Unit 02080104, at bridge on State Highway 717, 0.4 mi (0.6 km) upstream from Criddlin Swamp, 2.9 mi (4.7 km) downstream from site of Hutchinson Mill Pond (destroyed by flood of August 1969), and 5.0 mi (8.0 km) west of Tappahannock.

DRAINAGE AREA.--15.5 mi² (40.1 km²).

PERIOD OF RECORD.--October 1964 to September 1969, June 1970 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.28 ft (11.058 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--17 years, 16.8 ft³/s (0.476 m³/s), 14.72 in/yr (374 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,380 ft³/s (39.1 m³/s) Aug. 20, 1969, gage height, 10.23 ft (3.118 m), from rating curve extended above 100 ft³/s (2.8 m³/s) on basis of velocity-area study; minimum, 0.20 ft³/s (0.006 m³/s) Sept. 12, 13, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 136 ft³/s (3.85 m³/s) at 1200 hours June 4, gage height, 4.02 ft (1.225 m), no other peak above base of 100 ft³/s (2.8 m³/s); minimum daily, 2.3 ft³/s (0.065 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|-------|-----------|--------|---------|----------|----------|-------|-------|-------|-------|
| 1 | 2.3 | 5.4 | 3.6 | 26 | 31 | 19 | 13 | 12 | 22 | 12 | 14 | 5.0 |
| 2 | 2.7 | 5.2 | 5.1 | 19 | 18 | 18 | 12 | 12 | 27 | 11 | 9.8 | 5.0 |
| 3 | 2.7 | 4.6 | 4.9 | 15 | 32 | 21 | 12 | 11 | 25 | 8.5 | 7.9 | 4.8 |
| 4 | 2.6 | 4.4 | 4.8 | 19 | 28 | 20 | 13 | 11 | 98 | 7.9 | 6.9 | 4.6 |
| 5 | 2.5 | 4.2 | 5.0 | 19 | 19 | 25 | 12 | 11 | 81 | 7.0 | 6.4 | 4.5 |
| 6 | 2.4 | 6.6 | 4.4 | 14 | 15 | 21 | 13 | 10 | 52 | 6.5 | 7.2 | 4.5 |
| 7 | 2.4 | 6.7 | 3.8 | 12 | 12 | 37 | 13 | 11 | 34 | 6.1 | 24 | 4.4 |
| 8 | 2.4 | 5.4 | 3.6 | 10 | 10 | 63 | 12 | 10 | 26 | 6.0 | 28 | 4.4 |
| 9 | 2.5 | 4.9 | 3.6 | 9.0 | 11 | 33 | 16 | 10 | 21 | 6.4 | 51 | 4.5 |
| 10 | 2.5 | 4.9 | 3.0 | 7.7 | 12 | 22 | 18 | 9.9 | 18 | 19 | 28 | 4.5 |
| 11 | 2.6 | 4.8 | 3.0 | 6.5 | 10 | 18 | 15 | 9.8 | 17 | 52 | 16 | 4.5 |
| 12 | 2.6 | 4.4 | 2.8 | 5.4 | 8.8 | 16 | 14 | 9.8 | 16 | 17 | 13 | 4.5 |
| 13 | 2.6 | 4.0 | 2.8 | 6.0 | 10 | 14 | 14 | 9.8 | 22 | 17 | 11 | 4.5 |
| 14 | 2.7 | 3.7 | 4.4 | 6.4 | 10 | 12 | 13 | 9.5 | 42 | 22 | 9.2 | 4.5 |
| 15 | 2.8 | 3.8 | 24 | 7.0 | 11 | 14 | 13 | 9.2 | 27 | 43 | 8.5 | 4.5 |
| 16 | 2.8 | 3.6 | 35 | 7.5 | 15 | 18 | 13 | 9.2 | 19 | 32 | 7.7 | 4.5 |
| 17 | 2.9 | 4.0 | 23 | 8.2 | 27 | 16 | 14 | 9.1 | 16 | 15 | 7.1 | 4.4 |
| 18 | 2.9 | 4.8 | 16 | 8.0 | 44 | 13 | 23 | 9.0 | 13 | 10 | 8.2 | 4.2 |
| 19 | 3.2 | 4.5 | 12 | 8.0 | 33 | 12 | 17 | 11 | 13 | 8.4 | 8.2 | 4.1 |
| 20 | 3.4 | 4.1 | 9.3 | 9.0 | 27 | 18 | 14 | 16 | 14 | 8.2 | 7.4 | 4.2 |
| 21 | 3.4 | 3.7 | 7.6 | 10 | 22 | 30 | 13 | 12 | 12 | 8.4 | 7.0 | 4.6 |
| 22 | 3.3 | 3.6 | 10 | 11 | 19 | 23 | 12 | 10 | 11 | 9.2 | 6.7 | 5.5 |
| 23 | 4.0 | 3.2 | 13 | 14 | 17 | 17 | 12 | 10 | 11 | 8.4 | 6.6 | 7.4 |
| 24 | 7.2 | 3.3 | 12 | 18 | 16 | 14 | 11 | 10 | 10 | 8.2 | 6.3 | 7.6 |
| 25 | 10 | 3.9 | 15 | 14 | 15 | 13 | 11 | 12 | 9.0 | 7.4 | 6.0 | 6.1 |
| 26 | 15 | 4.1 | 15 | 11 | 14 | 13 | 13 | 11 | 8.2 | 6.5 | 5.6 | 6.7 |
| 27 | 11 | 3.9 | 12 | 9.5 | 15 | 12 | 23 | 10 | 8.0 | 6.0 | 5.3 | 14 |
| 28 | 10 | 3.5 | 11 | 9.2 | 19 | 12 | 27 | 10 | 7.8 | 7.2 | 5.6 | 11 |
| 29 | 8.0 | 3.4 | 9.1 | 10 | --- | 11 | 16 | 17 | 8.5 | 12 | 5.4 | 8.4 |
| 30 | 6.5 | 3.1 | 7.7 | 11 | --- | 11 | 14 | 51 | 9.8 | 12 | 5.1 | 6.8 |
| 31 | 5.8 | --- | 8.2 | 15 | --- | 12 | --- | 31 | --- | 16 | 5.0 | --- |
| TOTAL | 137.7 | 129.7 | 294.7 | 355.4 | 520.8 | 598 | 436 | 394.3 | 698.3 | 416.3 | 344.1 | 168.2 |
| MEAN | 4.44 | 4.32 | 9.51 | 11.5 | 18.6 | 19.3 | 14.5 | 12.7 | 23.3 | 13.4 | 11.1 | 5.61 |
| MAX | 15 | 6.7 | 35 | 26 | 44 | 63 | 27 | 51 | 98 | 52 | 51 | 14 |
| MIN | 2.3 | 3.1 | 2.8 | 5.4 | 8.8 | 11 | 11 | 9.0 | 7.8 | 6.0 | 5.0 | 4.1 |
| CFSM | .29 | .28 | .61 | .74 | 1.20 | 1.25 | .94 | .82 | 1.50 | .87 | .72 | .36 |
| IN. | .33 | .31 | .71 | .85 | 1.25 | 1.44 | 1.05 | .95 | 1.68 | 1.00 | .83 | .40 |
| CAL YR 1981 TOTAL | 3000.48 | | | MEAN 8.22 | MAX 60 | MIN .98 | CFSM .53 | IN 7.20 | | | | |
| WTR YR 1982 TOTAL | 4493.50 | | | MEAN 12.3 | MAX 98 | MIN 2.3 | CFSM .79 | IN 10.78 | | | | |

RAPPAHANNOCK RIVER BASIN

103

01669000 PISCATAWAY CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°52'37", long 76°54'03", Essex County, Hydrologic Unit 02080104, on right bank at upstream side of bridge on State Highway 691, 0.6 mi (1.0 km) south of Henley Fork, 2.3 mi (3.7 km) downstream from Sturgeon Swamp, and 4.2 mi (6.8 km) southwest of Tappahannock.

DRAINAGE AREA.--28.0 mi² (72.5 km²).

PERIOD OF RECORD.--July 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1970-76(P), 1978(P).

GAGE.--Water-stage recorder. Datum of gage is 2.50 ft (0.762 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 32.3 ft³/s (0.915 m³/s), 15.67 in/yr (398 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s (67.4 m³/s) Aug. 20, 1969, gage height, 7.52 ft (2.292 m), from rating curve extended above 1,400 ft³/s (40 m³/s); minimum, 0.01 ft³/s (<0.001 m³/s) Oct. 2, 1954, gage height, 0.33 ft (0.101 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 168 ft³/s (4.76 m³/s) June 5, gage height, 3.30 ft (1.006 m), no peak above base of 250 ft³/s (7.1 m³/s); minimum, 2.5 ft³/s (0.071 m³/s) Oct. 1, Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|
| 1 | 2.6 | 7.5 | 6.8 | 40 | 47 | 37 | 40 | 30 | 27 | 12 | 28 | 6.2 |
| 2 | 3.2 | 7.6 | 7.5 | 46 | 39 | 36 | 35 | 26 | 22 | 14 | 17 | 6.1 |
| 3 | 3.2 | 8.0 | 8.6 | 39 | 45 | 40 | 32 | 24 | 22 | 11 | 11 | 5.2 |
| 4 | 3.4 | 7.8 | 8.5 | 35 | 51 | 40 | 34 | 22 | 89 | 9.0 | 8.3 | 4.3 |
| 5 | 3.5 | 8.0 | 8.2 | 35 | 36 | 46 | 31 | 21 | 128 | 7.6 | 7.3 | 3.8 |
| 6 | 3.5 | 9.0 | 7.0 | 27 | 28 | 42 | 31 | 19 | 85 | 7.1 | 10 | 3.3 |
| 7 | 3.4 | 9.4 | 6.5 | 22 | 23 | 80 | 29 | 19 | 53 | 6.4 | 24 | 3.4 |
| 8 | 3.1 | 9.6 | 5.9 | 19 | 21 | 124 | 28 | 18 | 40 | 6.1 | 26 | 3.3 |
| 9 | 2.9 | 9.6 | 5.3 | 16 | 21 | 58 | 33 | 17 | 32 | 6.8 | 42 | 3.2 |
| 10 | 3.1 | 9.5 | 5.0 | 14 | 24 | 44 | 40 | 16 | 29 | 27 | 50 | 3.3 |
| 11 | 3.2 | 9.0 | 4.7 | 12 | 23 | 40 | 34 | 15 | 27 | 57 | 24 | 3.5 |
| 12 | 3.2 | 8.4 | 4.8 | 10 | 20 | 41 | 31 | 14 | 25 | 31 | 16 | 3.5 |
| 13 | 3.0 | 7.8 | 4.9 | 10 | 21 | 40 | 28 | 14 | 28 | 16 | 13 | 3.4 |
| 14 | 3.5 | 7.2 | 6.5 | 12 | 21 | 34 | 26 | 14 | 46 | 14 | 12 | 3.2 |
| 15 | 3.5 | 7.0 | 31 | 13 | 24 | 36 | 26 | 12 | 41 | 19 | 10 | 2.9 |
| 16 | 3.7 | 7.0 | 69 | 14 | 31 | 51 | 25 | 12 | 28 | 22 | 8.6 | 2.9 |
| 17 | 3.5 | 7.2 | 46 | 16 | 51 | 46 | 27 | 12 | 23 | 14 | 8.2 | 2.7 |
| 18 | 3.7 | 7.8 | 31 | 14 | 84 | 37 | 62 | 11 | 20 | 11 | 9.6 | 2.5 |
| 19 | 4.5 | 8.2 | 22 | 15 | 62 | 33 | 49 | 16 | 18 | 8.3 | 9.6 | 2.7 |
| 20 | 4.3 | 7.9 | 16 | 14 | 50 | 44 | 35 | 60 | 19 | 7.1 | 8.8 | 4.6 |
| 21 | 4.0 | 7.6 | 12 | 17 | 40 | 86 | 31 | 39 | 18 | 6.4 | 7.7 | 5.2 |
| 22 | 4.0 | 7.2 | 14 | 17 | 33 | 79 | 29 | 22 | 16 | 5.7 | 7.3 | 7.4 |
| 23 | 4.4 | 7.0 | 22 | 23 | 29 | 50 | 27 | 19 | 14 | 5.8 | 9.6 | 10 |
| 24 | 6.6 | 7.1 | 21 | 33 | 26 | 44 | 26 | 20 | 14 | 6.8 | 12 | 10 |
| 25 | 10 | 7.0 | 23 | 36 | 25 | 41 | 25 | 30 | 12 | 7.1 | 12 | 8.2 |
| 26 | 15 | 7.3 | 29 | 17 | 22 | 40 | 29 | 34 | 11 | 6.8 | 8.8 | 9.1 |
| 27 | 15 | 7.6 | 24 | 15 | 23 | 36 | 42 | 25 | 10 | 5.9 | 7.1 | 22 |
| 28 | 13 | 7.6 | 18 | 16 | 31 | 34 | 62 | 22 | 9.8 | 5.5 | 7.6 | 22 |
| 29 | 11 | 7.2 | 16 | 17 | --- | 33 | 42 | 28 | 9.0 | 6.2 | 7.3 | 13 |
| 30 | 8.3 | 6.8 | 14 | 19 | --- | 32 | 32 | 54 | 9.6 | 12 | 7.3 | 9.4 |
| 31 | 7.3 | --- | 14 | 27 | --- | 34 | --- | 40 | --- | 28 | 6.7 | --- |
| TOTAL | 166.6 | 235.9 | 512.2 | 660 | 951 | 1458 | 1021 | 725 | 925.4 | 402.6 | 436.8 | 190.3 |
| MEAN | 5.37 | 7.86 | 16.5 | 21.3 | 34.0 | 47.0 | 34.0 | 23.4 | 30.8 | 13.0 | 14.1 | 6.34 |
| MAX | 15 | 9.6 | 69 | 46 | 84 | 124 | 62 | 60 | 128 | 57 | 50 | 22 |
| MIN | 2.6 | 6.8 | 4.7 | 10 | 20 | 32 | 25 | 11 | 9.0 | 5.5 | 6.7 | 2.5 |
| CFSM | .19 | .28 | .59 | .76 | 1.21 | 1.68 | 1.21 | .84 | 1.10 | .46 | .50 | .23 |
| IN. | .22 | .31 | .68 | .88 | 1.26 | 1.94 | 1.36 | .96 | 1.23 | .53 | .58 | .25 |

CAL YR 1981 TOTAL 4682.3 MEAN 12.8 MAX 139 MIN 2.3 CFSM .46 IN 6.22
WTR YR 1982 TOTAL 7684.8 MEAN 21.1 MAX 128 MIN 2.5 CFSM .75 IN 10.21

LOCATION.--Lat 37°38'01", long 76°41'48", King and Queen County, Hydrologic Unit 02080102, on right bank at upstream side of bridge on State Highway 603, 0.8 mi (1.3 km) east of Mascot, 2.1 mi (3.5 km) downstream from Church Swamp, and 3.3 mi (5.6 km) west of Warner.

DRAINAGE AREA.--108 mi² (279.7 km²).

PERIOD OF RECORD.--August 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 21.60 ft (6.584 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR CURRENT PERIOD.--August to September 1981: Maximum discharge during period, 48 ft³/s (1.36 m³/s) Sept. 18, gage height, 3.69 ft (1.125 m); minimum, 0.30 ft³/s (0.008 m³/s) Sept. 5.

Water year 1982: Maximum discharge, 622 ft³/s (17.6 m³/s) at 1200 hours Mar. 23, gage height, 6.56 ft (1.999 m), no other peak above base of 600 ft³/s (17 m³/s); minimum, 1.0 ft³/s (0.028 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, AUGUST TO SEPTEMBER 1981
MEAN VALUES

[illegible]

PIANKATANK RIVER BASIN

105

01669520 DRAGON SWAMP AT MASCOT, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 2.2 | 21 | 20 | 113 | 166 | 174 | 140 | 111 | 62 | 33 | 226 | 95 |
| 2 | 2.3 | 20 | 22 | 133 | 188 | 173 | 137 | 111 | 129 | 30 | 164 | 75 |
| 3 | 2.3 | 19 | 24 | 129 | 254 | 168 | 131 | 98 | 96 | 33 | 140 | 60 |
| 4 | 1.4 | 17 | 25 | 142 | 280 | 161 | 137 | 80 | 145 | 36 | 114 | 48 |
| 5 | 1.6 | 15 | 26 | 147 | 246 | 160 | 136 | 68 | 143 | 33 | 88 | 38 |
| 6 | 2.1 | 27 | 25 | 129 | 213 | 165 | 140 | 57 | 148 | 25 | 70 | 30 |
| 7 | 5.3 | 24 | 24 | 113 | 180 | 202 | 131 | 49 | 133 | 20 | 109 | 25 |
| 8 | 4.5 | 22 | 23 | 101 | 152 | 320 | 120 | 44 | 117 | 16 | 97 | 22 |
| 9 | 4.1 | 22 | 22 | 89 | 129 | 378 | 124 | 38 | 127 | 14 | 169 | 20 |
| 10 | 4.2 | 22 | 21 | 72 | 122 | 368 | 127 | 34 | 129 | 13 | 164 | 19 |
| 11 | 4.7 | 21 | 20 | 47 | 110 | 290 | 122 | 30 | 110 | 11 | 165 | 18 |
| 12 | 5.0 | 21 | 18 | 30 | 98 | 224 | 119 | 26 | 84 | 10 | 265 | 17 |
| 13 | 5.5 | 20 | 17 | 26 | 96 | 184 | 115 | 25 | 66 | 14 | 224 | 16 |
| 14 | 4.9 | 19 | 19 | 32 | 100 | 159 | 110 | 23 | 71 | 38 | 182 | 16 |
| 15 | 4.9 | 19 | 66 | 36 | 110 | 156 | 104 | 21 | 63 | 173 | 152 | 15 |
| 16 | 4.9 | 19 | 142 | 38 | 125 | 191 | 100 | 19 | 57 | 174 | 118 | 14 |
| 17 | 4.9 | 21 | 157 | 40 | 156 | 220 | 97 | 17 | 61 | 136 | 97 | 14 |
| 18 | 4.7 | 31 | 159 | 39 | 240 | 224 | 110 | 16 | 80 | 100 | 113 | 12 |
| 19 | 6.1 | 28 | 146 | 40 | 290 | 213 | 111 | 15 | 61 | 84 | 84 | 11 |
| 20 | 5.7 | 28 | 116 | 40 | 332 | 216 | 108 | 24 | 58 | 72 | 84 | 11 |
| 21 | 6.1 | 26 | 90 | 45 | 320 | 302 | 114 | 25 | 52 | 48 | 79 | 12 |
| 22 | 5.0 | 23 | 70 | 49 | 259 | 500 | 122 | 25 | 57 | 31 | 67 | 16 |
| 23 | 5.0 | 23 | 78 | 67 | 202 | 608 | 117 | 24 | 53 | 90 | 78 | 17 |
| 24 | 8.7 | 24 | 75 | 114 | 166 | 492 | 106 | 30 | 46 | 118 | 101 | 17 |
| 25 | 12 | 26 | 90 | 125 | 141 | 320 | 93 | 61 | 37 | 78 | 82 | 18 |
| 26 | 20 | 24 | 109 | 130 | 122 | 234 | 91 | 56 | 32 | 69 | 67 | 27 |
| 27 | 22 | 23 | 109 | 118 | 115 | 190 | 108 | 48 | 26 | 54 | 52 | 59 |
| 28 | 23 | 22 | 101 | 108 | 157 | 164 | 139 | 42 | 22 | 42 | 75 | 57 |
| 29 | 22 | 21 | 94 | 104 | --- | 147 | 123 | 39 | 19 | 69 | 89 | 57 |
| 30 | 21 | 20 | 79 | 101 | --- | 136 | 111 | 49 | 18 | 61 | 114 | 60 |
| 31 | 21 | --- | 69 | 118 | --- | 130 | --- | 42 | --- | 200 | 118 | --- |
| TOTAL | 247.1 | 668 | 2056 | 2615 | 5069 | 7569 | 3543 | 1347 | 2302 | 1925 | 3747 | 916 |
| MEAN | 7.97 | 22.3 | 66.3 | 84.4 | 181 | 244 | 118 | 43.5 | 76.7 | 62.1 | 121 | 30.5 |
| MAX | 23 | 31 | 159 | 147 | 332 | 608 | 140 | 111 | 148 | 200 | 265 | 95 |
| MIN | 1.4 | 15 | 17 | 26 | 96 | 130 | 91 | 15 | 18 | 10 | 52 | 11 |
| CFSM | .07 | .21 | .61 | .78 | 1.68 | 2.26 | 1.09 | .40 | .71 | .58 | 1.12 | .28 |
| IN. | .09 | .23 | .71 | .90 | 1.75 | 2.61 | 1.22 | .46 | .79 | .66 | 1.29 | .32 |

WTR YR 1982 TOTAL 32004.1 MEAN 87.7 MAX 608 MIN 1.4 CFSM .81 IN 11.02

WARE RIVER BASIN

01670000 BEAVERDAM SWAMP NEAR ARK, VA

LOCATION.--Lat 37°28'14", long 76°33'48", Gloucester County, Hydrologic Unit 02080102, on right bank 300 ft (91 m) downstream from bridge on State Highway 606, 1.4 mi (2.3 km) upstream from Beech Swamp, 2.3 mi (3.7 km) north of Ark, and 4.3 mi (6.9 km) northwest of Gloucester.

DRAINAGE AREA.--6.63 mi² (17.17 km²).

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

REVISED RECORDS.--WSP 1502: 1950, 1951-52(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.43 ft (11.104 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 7.17 ft³/s (0.203 m³/s), 14.69 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 570 ft³/s (16.1 m³/s) Sept. 12, 1960, gage height, 5.88 ft (1.792 m), from rating curve extended above 130 ft³/s (3.7 m³/s); no flow July 30 to Aug. 2, 1953, Aug. 18, Sept. 4, Sept. 29 to Oct. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 212 ft³/s (6.00 m³/s) at 2230 hours Aug. 11, gage height, 3.93 ft (1.198 m), no other peak above base of 65 ft³/s (1.8 m³/s); no flow Oct. 1 and part of Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| 1 | .00 | 1.4 | 2.7 | 17 | 7.7 | 12 | 5.2 | 6.9 | 4.7 | 4.0 | 14 | 1.7 |
| 2 | .01 | 1.5 | 2.9 | 11 | 5.0 | 7.7 | 4.8 | 5.8 | 12 | 3.9 | 6.4 | 1.4 |
| 3 | .03 | 1.7 | 3.1 | 7.4 | 6.8 | 5.8 | 4.8 | 5.1 | 11 | 2.5 | 2.6 | 1.2 |
| 4 | .07 | 1.8 | 2.3 | 10 | 6.9 | 4.8 | 4.6 | 4.5 | 7.1 | 1.8 | 1.3 | 1.1 |
| 5 | .17 | 2.1 | 2.3 | 8.8 | 4.6 | 4.4 | 4.1 | 4.1 | 7.8 | 1.6 | .80 | 1.0 |
| 6 | .36 | 2.0 | 2.3 | 6.9 | 3.4 | 5.3 | 5.3 | 4.0 | 8.0 | 1.6 | 1.5 | .95 |
| 7 | .73 | 2.0 | 2.5 | 5.1 | 2.8 | 16 | 5.4 | 3.8 | 5.6 | 1.2 | 13 | .90 |
| 8 | .70 | 1.8 | 2.2 | 4.5 | 2.9 | 24 | 4.7 | 3.6 | 4.1 | 1.2 | 16 | .85 |
| 9 | .95 | 1.6 | 2.1 | 3.8 | 3.5 | 10 | 6.1 | 4.0 | 3.2 | 1.1 | 19 | .95 |
| 10 | .85 | 1.5 | 2.2 | 2.5 | 4.2 | 7.2 | 7.4 | 3.5 | 2.6 | 1.1 | 30 | .95 |
| 11 | .65 | 1.5 | 2.2 | 1.6 | 3.5 | 5.9 | 5.7 | 3.0 | 2.2 | 1.0 | 56 | 1.0 |
| 12 | .65 | 1.5 | 2.3 | 1.3 | 4.1 | 5.7 | 4.8 | 2.7 | 1.8 | .95 | 68 | .95 |
| 13 | .65 | 1.4 | 2.4 | 1.8 | 7.2 | 5.3 | 4.4 | 2.6 | 2.0 | .90 | 22 | .90 |
| 14 | .77 | 1.4 | 2.8 | 2.3 | 6.0 | 4.8 | 4.1 | 2.4 | 3.8 | 1.4 | 12 | .90 |
| 15 | .38 | 1.5 | 10 | 3.0 | 7.5 | 7.4 | 3.9 | 2.1 | 3.5 | 5.8 | 8.3 | .90 |
| 16 | .44 | 1.6 | 17 | 3.7 | 9.6 | 18 | 3.6 | 1.8 | 2.4 | 5.3 | 5.9 | .90 |
| 17 | .60 | 1.8 | 8.3 | 4.1 | 11 | 16 | 3.8 | 1.6 | 2.5 | 2.9 | 4.7 | .90 |
| 18 | .70 | 2.0 | 5.6 | 3.8 | 14 | 9.2 | 7.7 | 1.5 | 8.5 | 1.5 | 4.5 | .90 |
| 19 | .41 | 1.7 | 4.1 | 3.6 | 11 | 6.9 | 7.7 | 1.4 | 9.4 | 1.1 | 3.5 | .85 |
| 20 | .15 | 1.7 | 3.0 | 3.6 | 9.0 | 13 | 5.6 | 1.3 | 6.5 | .80 | 3.0 | .85 |
| 21 | .17 | 1.4 | 2.3 | 4.4 | 7.5 | 23 | 5.0 | 1.2 | 4.7 | .50 | 2.6 | .95 |
| 22 | .17 | 1.6 | 3.0 | 4.6 | 5.7 | 15 | 4.7 | 1.2 | 3.3 | .26 | 2.3 | 2.4 |
| 23 | .20 | 1.9 | 4.1 | 10 | 4.7 | 9.2 | 4.4 | 1.8 | 2.6 | .29 | 2.3 | 2.8 |
| 24 | .24 | 1.9 | 3.6 | 18 | 4.1 | 7.2 | 4.0 | 3.2 | 2.1 | 1.5 | 2.5 | 2.2 |
| 25 | 1.8 | 2.3 | 5.0 | 10 | 3.6 | 6.2 | 3.9 | 6.6 | 1.7 | 1.8 | 2.5 | 1.6 |
| 26 | 4.1 | 2.3 | 5.9 | 6.1 | 3.3 | 5.8 | 9.2 | 5.8 | 1.4 | 1.0 | 2.1 | 3.3 |
| 27 | 3.6 | 2.2 | 5.3 | 4.0 | 4.6 | 5.2 | 28 | 4.1 | 1.1 | .47 | 1.8 | 9.8 |
| 28 | 2.7 | 1.9 | 4.6 | 3.3 | 17 | 4.7 | 24 | 3.0 | 1.0 | .44 | 8.3 | 6.5 |
| 29 | 2.1 | 2.0 | 3.9 | 3.9 | --- | 4.6 | 14 | 2.6 | 1.8 | 1.1 | 7.4 | 3.4 |
| 30 | 1.8 | 2.4 | 3.3 | 4.4 | --- | 4.6 | 8.8 | 4.5 | 2.6 | 1.5 | 3.8 | 2.9 |
| 31 | 1.4 | --- | 3.6 | 6.2 | --- | 4.8 | --- | 5.2 | --- | 8.8 | 2.4 | --- |
| TOTAL | 27.55 | 53.4 | 126.9 | 180.7 | 181.2 | 279.7 | 209.7 | 104.9 | 131.0 | 59.31 | 330.50 | 55.90 |
| MEAN | .89 | 1.78 | 4.09 | 5.83 | 6.47 | 9.02 | 6.99 | 3.38 | 4.37 | 1.91 | 10.7 | 1.86 |
| MAX | 4.1 | 2.4 | 17 | 18 | 17 | 24 | 28 | 6.9 | 12 | 8.8 | 68 | 9.8 |
| MIN | .00 | 1.4 | 2.1 | 1.3 | 2.8 | 4.4 | 3.6 | 1.2 | 1.0 | .26 | .80 | .85 |
| CFSM | .13 | .27 | .62 | .88 | .98 | 1.36 | 1.05 | .51 | .66 | .29 | 1.61 | .28 |
| IN. | .15 | .30 | .71 | 1.01 | 1.02 | 1.57 | 1.18 | .59 | .73 | .33 | 1.85 | .31 |
| CAL YR 1981 | TOTAL | 772.32 | MEAN | 2.12 | MAX | 17 | MIN | .00 | CFSM | .32 | IN | 4.33 |
| WTR YR 1982 | TOTAL | 1740.76 | MEAN | 4.77 | MAX | 68 | MIN | .00 | CFSM | .72 | IN | 9.77 |

107

LOCATION.--Lat 38°03'53", long 77°52'45", Louisa County, Hydrologic Unit 02080106, on left bank 400 ft (122 m) downstream from bridge on State Highway 522, and 4.0 mi (6.4 km) northeast of Mineral.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft³/s (6.49 m³/s) at 0600 hours Mar. 21, gage height, 2.34 ft (0.713 m), no other peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.09 ft³/s (0.003 m³/s) Sept. 18, 19.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|-------|--------|---------|----------|---------|-------|-------|-------|-------|
| 1 | .15 | .85 | 1.1 | 22 | 24 | 5.6 | 3.6 | 4.1 | 3.1 | 1.9 | 1.1 | .40 |
| 2 | .25 | .64 | 2.1 | 6.5 | 11 | 9.3 | 3.1 | 3.6 | 2.8 | 1.3 | .76 | .46 |
| 3 | .19 | .55 | 1.7 | 5.0 | 72 | 12 | 6.5 | 3.4 | 2.4 | 1.1 | .68 | .53 |
| 4 | .18 | .55 | 2.1 | 24 | 18 | 8.4 | 7.5 | 3.1 | 11 | 1.1 | .60 | .35 |
| 5 | .18 | .55 | 3.3 | 9.3 | 8.8 | 7.9 | 4.1 | 2.8 | 54 | 1.1 | .88 | .31 |
| 6 | .18 | .55 | 2.1 | 5.6 | 6.5 | 6.1 | 4.1 | 2.6 | 9.4 | 1.0 | .76 | .27 |
| 7 | .16 | .60 | 1.7 | 4.4 | 5.0 | 18 | 3.8 | 2.6 | 5.1 | .88 | .88 | .23 |
| 8 | .18 | .48 | 1.4 | 3.8 | 4.6 | 13 | 3.4 | 2.4 | 3.8 | 1.0 | 1.9 | .31 |
| 9 | .20 | .48 | 1.2 | 3.5 | 6.1 | 7.9 | 4.1 | 2.1 | 3.4 | 1.3 | 1.3 | .35 |
| 10 | .22 | .60 | 1.2 | 2.8 | 7.4 | 6.1 | 4.1 | 2.1 | 3.4 | 1.5 | 1.1 | .31 |
| 11 | .24 | .72 | 1.2 | 2.7 | 5.3 | 5.6 | 3.6 | 1.7 | 3.6 | 1.3 | 1.1 | .31 |
| 12 | .27 | .60 | 1.2 | 2.5 | 4.6 | 6.1 | 3.4 | 1.7 | 3.6 | 1.3 | 2.4 | .23 |
| 13 | .27 | .50 | 1.2 | 2.4 | 4.6 | 5.6 | 3.4 | 1.5 | 16 | 1.3 | 1.1 | .23 |
| 14 | .27 | .50 | 1.7 | 2.3 | 5.0 | 5.0 | 3.1 | 1.5 | 10 | 1.3 | .88 | .20 |
| 15 | .33 | .58 | 28 | 2.4 | 5.6 | 5.0 | 3.1 | 1.5 | 5.1 | 1.1 | 1.1 | .20 |
| 16 | .33 | .68 | 12 | 2.6 | 5.6 | 7.9 | 2.8 | 1.5 | 3.8 | 1.0 | 3.4 | .17 |
| 17 | .33 | .75 | 5.6 | 2.6 | 31 | 7.9 | 3.1 | 1.3 | 3.4 | .76 | 2.6 | .13 |
| 18 | .43 | .75 | 4.1 | 2.3 | 18 | 5.6 | 4.6 | 1.1 | 3.1 | .76 | 3.1 | .10 |
| 19 | .43 | .75 | 3.3 | 2.2 | 25 | 5.0 | 3.4 | 1.1 | 2.8 | .68 | 1.1 | .10 |
| 20 | .30 | .75 | 2.8 | 2.2 | 14 | 43 | 3.1 | 1.3 | 2.6 | .60 | .76 | .53 |
| 21 | .30 | .75 | 2.8 | 2.3 | 8.8 | 61 | 3.1 | 1.1 | 2.1 | .68 | .68 | .53 |
| 22 | .30 | .58 | 3.3 | 2.5 | 7.0 | 14 | 2.8 | 1.9 | 1.9 | .60 | .53 | 3.1 |
| 23 | .76 | .47 | 5.0 | 2.4 | 5.6 | 8.4 | 2.6 | 2.4 | 1.9 | .60 | .46 | 1.1 |
| 24 | 1.5 | .60 | 3.8 | 2.2 | 4.6 | 7.0 | 2.6 | 2.4 | 1.7 | .68 | .46 | .68 |
| 25 | 3.0 | 1.1 | 5.0 | 2.0 | 4.4 | 5.6 | 2.6 | 2.6 | 1.7 | .53 | .46 | .60 |
| 26 | 14 | 1.1 | 4.6 | 1.9 | 3.8 | 5.6 | 13 | 1.9 | 1.5 | .46 | .40 | 2.4 |
| 27 | 15 | .98 | 3.5 | 1.9 | 4.1 | 4.6 | 22 | 1.7 | 1.7 | .40 | .46 | 4.4 |
| 28 | 4.1 | .85 | 3.0 | 2.0 | 5.0 | 4.4 | 11 | 2.6 | 1.5 | .60 | .60 | 1.7 |
| 29 | 1.6 | .85 | 2.8 | 2.2 | --- | 4.1 | 6.0 | 2.1 | 1.3 | 1.0 | .46 | 1.1 |
| 30 | 1.1 | .74 | 2.3 | 2.6 | --- | 3.8 | 4.4 | 6.0 | 1.5 | 1.5 | .40 | 1.0 |
| 31 | .98 | --- | 3.0 | 11 | --- | 3.8 | --- | 3.4 | --- | 1.5 | .40 | --- |
| TOTAL | 47.73 | 20.45 | 118.1 | 144.1 | 325.4 | 313.3 | 148.0 | 71.1 | 169.2 | 30.83 | 32.81 | 22.33 |
| MEAN | 1.54 | .68 | 3.81 | 4.65 | 11.6 | 10.1 | 4.93 | 2.29 | 5.64 | .99 | 1.06 | .74 |
| MAX | 15 | 1.1 | 28 | 24 | 72 | 61 | 22 | 6.0 | 54 | 1.9 | 3.4 | 4.4 |
| MIN | .15 | .47 | 1.1 | 1.9 | 3.8 | 3.8 | 2.6 | 1.1 | 1.3 | .40 | .40 | .10 |
| CFSM | .28 | .12 | .69 | .84 | 2.10 | 1.83 | .89 | .41 | 1.02 | .18 | .19 | .13 |
| IN. | .32 | .14 | .79 | .97 | 2.19 | 2.11 | 1.00 | .48 | 1.14 | .21 | .22 | .15 |
| CAL YR 1981 | TOTAL | 718.57 | MEAN | 1.97 | MAX 28 | MIN .05 | CFSM .36 | IN 4.83 | | | | |
| WTR YR 1982 | TOTAL | 1443.35 | MEAN | 3.95 | MAX 72 | MIN .10 | CFSM .71 | IN 9.71 | | | | |

YORK RIVER BASIN

01670400 NORTH ANNA RIVER NEAR PARTLOW, VA

LOCATION.--Lat 38°00'46", long 77°42'05", Spotsylvania County, Hydrologic Unit 02080106, on left bank 175 ft (53 m) downstream from bridge on State Highway 601, 3.8 mi (6.1 km) southwest of Partlow, and 1.1 mi (1.8 km) upstream from Northwest Creek.

DRAINAGE AREA.--344 mi² (891 km²).

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 168.25 ft (51.283 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of no gage-height record, Feb. 3-5 and June 5 to July 16, which are fair. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³) 0.5 mi (0.8 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Feb. 26, 1979, gage height, 25.30 ft (7.711 m), from rating curve extended above 6,000 ft³/s (170 m³/s); minimum, 33 ft³/s (0.93 m³/s) Sept. 27, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,080 ft³/s (116 m³/s) Feb. 4; minimum discharge, 43 ft³/s (1.22 m³/s) May 7, 8.

DISCHARGE. IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|-------|------|------|------|------|------|------|
| 1 | 53 | 65 | 49 | 60 | 67 | 272 | 344 | 104 | 379 | 50 | 53 | 49 |
| 2 | 56 | 62 | 50 | 56 | 220 | 278 | 340 | 202 | 379 | 50 | 53 | 48 |
| 3 | 52 | 57 | 52 | 59 | 2340 | 282 | 340 | 198 | 363 | 50 | 53 | 50 |
| 4 | 52 | 56 | 50 | 62 | 4080 | 282 | 348 | 198 | 363 | 50 | 53 | 49 |
| 5 | 55 | 56 | 50 | 56 | 1680 | 289 | 296 | 198 | 1480 | 50 | 59 | 49 |
| 6 | 56 | 57 | 50 | 52 | 908 | 286 | 210 | 102 | 2230 | 50 | 391 | 48 |
| 7 | 56 | 57 | 49 | 55 | 904 | 286 | 112 | 43 | 233 | 50 | 399 | 49 |
| 8 | 53 | 55 | 52 | 53 | 904 | 286 | 115 | 43 | 233 | 50 | 563 | 52 |
| 9 | 50 | 53 | 50 | 55 | 904 | 300 | 333 | 44 | 188 | 50 | 1540 | 50 |
| 10 | 52 | 53 | 50 | 57 | 899 | 1230 | 304 | 46 | 150 | 50 | 507 | 50 |
| 11 | 50 | 53 | 49 | 56 | 513 | 1270 | 208 | 45 | 88 | 50 | 53 | 50 |
| 12 | 49 | 52 | 48 | 57 | 363 | 300 | 88 | 44 | 112 | 50 | 55 | 53 |
| 13 | 52 | 52 | 48 | 60 | 359 | 296 | 50 | 44 | 306 | 50 | 53 | 53 |
| 14 | 53 | 52 | 49 | 63 | 340 | 300 | 50 | 44 | 1480 | 50 | 48 | 52 |
| 15 | 55 | 50 | 55 | 65 | 172 | 296 | 84 | 47 | 958 | 50 | 46 | 50 |
| 16 | 56 | 48 | 55 | 65 | 66 | 293 | 138 | 46 | 100 | 50 | 258 | 50 |
| 17 | 57 | 49 | 52 | 62 | 322 | 300 | 154 | 46 | 150 | 50 | 198 | 50 |
| 18 | 57 | 49 | 49 | 56 | 1160 | 296 | 333 | 47 | 144 | 50 | 340 | 52 |
| 19 | 59 | 50 | 48 | 56 | 1430 | 296 | 333 | 49 | 83 | 56 | 348 | 53 |
| 20 | 55 | 53 | 47 | 57 | 1430 | 455 | 333 | 47 | 65 | 59 | 55 | 52 |
| 21 | 55 | 55 | 47 | 60 | 990 | 1480 | 282 | 48 | 50 | 60 | 46 | 50 |
| 22 | 55 | 53 | 48 | 60 | 314 | 1440 | 101 | 48 | 50 | 56 | 48 | 55 |
| 23 | 57 | 50 | 53 | 63 | 289 | 1410 | 101 | 49 | 50 | 56 | 50 | 53 |
| 24 | 63 | 49 | 52 | 65 | 194 | 1400 | 67 | 46 | 50 | 56 | 53 | 53 |
| 25 | 59 | 49 | 50 | 63 | 101 | 698 | 47 | 46 | 50 | 53 | 53 | 53 |
| 26 | 59 | 49 | 52 | 65 | 98 | 53 | 256 | 47 | 50 | 53 | 53 | 56 |
| 27 | 62 | 49 | 53 | 63 | 160 | 55 | 475 | 47 | 50 | 55 | 52 | 60 |
| 28 | 63 | 49 | 53 | 63 | 264 | 222 | 1410 | 100 | 50 | 56 | 52 | 50 |
| 29 | 65 | 49 | 55 | 62 | --- | 344 | 1390 | 253 | 50 | 60 | 50 | 47 |
| 30 | 65 | 49 | 55 | 60 | --- | 344 | 245 | 367 | 50 | 55 | 49 | 52 |
| 31 | 65 | --- | 56 | 60 | --- | 344 | --- | 375 | --- | 52 | 49 | --- |
| TOTAL | 1746 | 1580 | 1576 | 1846 | 21471 | 15683 | 8887 | 3063 | 9984 | 1627 | 5680 | 1538 |
| MEAN | 56.3 | 52.7 | 50.8 | 59.5 | 767 | 506 | 296 | 98.8 | 333 | 52.5 | 183 | 51.3 |
| MAX | 65 | 65 | 56 | 65 | 4080 | 1480 | 1410 | 375 | 2230 | 60 | 1540 | 60 |
| MIN | 49 | 48 | 47 | 52 | 66 | 53 | 47 | 43 | 50 | 50 | 46 | 47 |
| CFSM | .16 | .15 | .15 | .17 | 2.23 | 1.47 | .86 | .29 | .97 | .15 | .53 | .15 |
| IN. | .19 | .17 | .17 | .20 | 2.32 | 1.70 | .96 | .33 | 1.08 | .18 | .61 | .17 |
| CAL YR 1981 | TOTAL | 19364 | MEAN | 53.1 | MAX | 74 | MIN | 46 | CFSM | .15 | IN | 2.09 |
| WTR YR 1982 | TOTAL | 74681 | MEAN | 205 | MAX | 4080 | MIN | 43 | CFSM | .60 | IN | 8.03 |

YORK RIVER BASIN

109

01671000 NORTH ANNA RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°53'15", long 77°29'15", Caroline County, Hydrologic Unit 02080106, on left bank 1.5 mi (2.4 km) upstream from bridge on U.S. Highway 1, 2.5 mi (4.0 km) northwest of Doswell, and 4.4 mi (7.1 km) upstream from Bull Run.

DRAINAGE AREA.--441 mi² (1,142 km²).

PERIOD OF RECORD.--March 1926 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "near Hewlett," 1926-28.

REVISED RECORDS.--WSP 1171: 1943. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.66 ft (16.965 m) National Geodetic Vertical Datum of 1929. Mar. 23, 1926, to Aug. 11, 1928, nonrecording gage at site 10.2 mi (16.4 km) upstream at different datum. Mar. 17, 1929, to Nov. 7, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³), 20.5 mi (33.0 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 383 ft³/s (10.85 m³/s), 11.79 in/yr (299 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Aug. 21, 1969, gage height, 32.60 ft (9.936 m); maximum gage height, 33.7 ft (10.27 m) Aug. 12, 1928, from floodmarks, present site and datum; minimum discharge, 1.0 ft³/s (0.028 m³/s) Sept. 30, Oct. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,750 ft³/s (135 m³/s) Feb. 4, gage height, 13.26 ft (4.042 m); minimum, 54 ft³/s (1.53 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|-------|------|-------|------|------|------|
| 1 | 60 | 80 | 69 | 148 | 236 | 360 | 370 | 186 | 381 | 78 | 93 | 68 |
| 2 | 64 | 75 | 72 | 186 | 236 | 388 | 367 | 188 | 408 | 74 | 86 | 68 |
| 3 | 62 | 72 | 73 | 154 | 1220 | 419 | 370 | 231 | 400 | 72 | 74 | 68 |
| 4 | 59 | 68 | 76 | 192 | 4240 | 415 | 404 | 227 | 506 | 72 | 68 | 66 |
| 5 | 57 | 68 | 78 | 281 | 2500 | 408 | 404 | 222 | 1510 | 70 | 65 | 65 |
| 6 | 59 | 67 | 78 | 191 | 1120 | 396 | 319 | 210 | 2170 | 67 | 224 | 64 |
| 7 | 59 | 66 | 75 | 130 | 1080 | 440 | 193 | 99 | 1410 | 65 | 411 | 62 |
| 8 | 58 | 65 | 72 | 107 | 1070 | 610 | 174 | 80 | 1330 | 67 | 404 | 62 |
| 9 | 57 | 64 | 72 | 96 | 1060 | 492 | 234 | 79 | 704 | 67 | 1380 | 66 |
| 10 | 57 | 64 | 72 | 84 | 1070 | 1070 | 378 | 76 | 331 | 69 | 1120 | 65 |
| 11 | 59 | 65 | 69 | 82 | 830 | 1490 | 295 | 74 | 298 | 66 | 207 | 64 |
| 12 | 57 | 65 | 67 | 82 | 392 | 692 | 222 | 73 | 110 | 64 | 136 | 64 |
| 13 | 57 | 64 | 67 | 83 | 388 | 384 | 117 | 73 | 288 | 72 | 102 | 68 |
| 14 | 57 | 62 | 69 | 88 | 384 | 378 | 104 | 70 | 1440 | 76 | 90 | 68 |
| 15 | 62 | 62 | 93 | 100 | 319 | 378 | 100 | 69 | 1350 | 69 | 78 | 67 |
| 16 | 62 | 61 | 212 | 105 | 158 | 392 | 144 | 72 | 212 | 69 | 180 | 66 |
| 17 | 62 | 62 | 200 | 102 | 287 | 400 | 171 | 72 | 211 | 68 | 360 | 64 |
| 18 | 62 | 65 | 142 | 94 | 1320 | 396 | 274 | 69 | 322 | 68 | 309 | 61 |
| 19 | 62 | 67 | 105 | 87 | 1700 | 378 | 338 | 73 | 236 | 65 | 378 | 64 |
| 20 | 60 | 70 | 93 | 88 | 1660 | 539 | 331 | 76 | 169 | 68 | 268 | 66 |
| 21 | 58 | 70 | 90 | 88 | 1510 | 1910 | 322 | 73 | 94 | 67 | 84 | 66 |
| 22 | 60 | 70 | 79 | 91 | 492 | 1810 | 210 | 74 | 74 | 65 | 76 | 79 |
| 23 | 65 | 68 | 83 | 96 | 408 | 1600 | 140 | 76 | 73 | 64 | 74 | 76 |
| 24 | 70 | 69 | 90 | 97 | 350 | 1540 | 136 | 81 | 73 | 64 | 72 | 72 |
| 25 | 75 | 70 | 94 | 98 | 229 | 1310 | 97 | 83 | 73 | 61 | 70 | 70 |
| 26 | 75 | 70 | 102 | 88 | 203 | 212 | 121 | 81 | 73 | 60 | 68 | 79 |
| 27 | 132 | 70 | 100 | 93 | 207 | 144 | 419 | 80 | 74 | 60 | 66 | 138 |
| 28 | 251 | 70 | 94 | 89 | 334 | 160 | 1330 | 79 | 73 | 67 | 66 | 105 |
| 29 | 150 | 68 | 88 | 88 | --- | 364 | 1530 | 166 | 72 | 83 | 65 | 83 |
| 30 | 105 | 68 | 84 | 88 | --- | 364 | 841 | 316 | 72 | 86 | 62 | 73 |
| 31 | 87 | --- | 83 | 104 | --- | 364 | --- | 378 | --- | 87 | 65 | --- |
| TOTAL | 2320 | 2025 | 2841 | 3500 | 25003 | 20203 | 10455 | 3806 | 14537 | 2150 | 6801 | 2147 |
| MEAN | 74.8 | 67.5 | 91.6 | 113 | 893 | 652 | 349 | 123 | 485 | 69.4 | 219 | 71.6 |
| MAX | 251 | 80 | 212 | 281 | 4240 | 1910 | 1530 | 378 | 2170 | 87 | 1380 | 138 |
| MIN | 57 | 61 | 67 | 82 | 158 | 144 | 97 | 69 | 72 | 60 | 62 | 61 |
| CFSM | .17 | .15 | .21 | .26 | 2.03 | 1.48 | .79 | .28 | 1.10 | .16 | .50 | .16 |
| IN. | .20 | .17 | .24 | .30 | 2.11 | 1.70 | .88 | .32 | 1.23 | .18 | .57 | .18 |

CAL YR 1981 TOTAL 29097 MEAN 79.7 MAX 251 MIN 53 CFSM .18 IN 2.45
WTR YR 1982 TOTAL 95788 MEAN 262 MAX 4240 MIN 57 CFSM .59 IN 8.08

YORK RIVER BASIN

01671020 NORTH ANNA RIVER AT HART CORNER NEAR DOSWELL, VA

LOCATION.--Lat 37°51'00", long 77°25'41", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 30, 0.3 mi (0.5 km) west of Hart Corner, 2.1 mi (3.4 km) east of Doswell, and 5.4 mi (8.7 km) upstream from confluence with South Anna River.

DRAINAGE AREA.--463 mi² (1,199 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 43 ft (13.1 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Feb. 3-14, which are fair. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³), 27.7 mi (44.6 km) upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,800 ft³/s (221 m³/s) Oct. 3, 1979; minimum discharge, 44 ft³/s (1.25 m³/s) Sept. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,650 ft³/s (103 m³/s) Feb. 5; minimum discharge, 55 ft³/s (1.56 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|------|-------|-------|-------|------|-------|------|------|------|
| 1 | 58 | 85 | 72 | 156 | 291 | 400 | 424 | 268 | 407 | 82 | 90 | 73 |
| 2 | 62 | 79 | 77 | 217 | 286 | 440 | 416 | 210 | 424 | 80 | 94 | 73 |
| 3 | 61 | 77 | 78 | 176 | 830 | 480 | 424 | 257 | 426 | 77 | 77 | 71 |
| 4 | 59 | 72 | 80 | 203 | 3640 | 490 | 464 | 246 | 575 | 76 | 68 | 68 |
| 5 | 59 | 72 | 84 | 372 | 3650 | 480 | 468 | 239 | 1270 | 73 | 64 | 67 |
| 6 | 62 | 72 | 83 | 248 | 1420 | 470 | 386 | 232 | 2090 | 71 | 159 | 67 |
| 7 | 62 | 70 | 82 | 168 | 1200 | 520 | 237 | 145 | 1630 | 68 | 426 | 66 |
| 8 | 61 | 70 | 78 | 130 | 1100 | 690 | 196 | 99 | 1340 | 85 | 443 | 66 |
| 9 | 59 | 67 | 76 | 113 | 1080 | 580 | 228 | 96 | 900 | 89 | 1230 | 68 |
| 10 | 58 | 68 | 74 | 94 | 1060 | 1250 | 435 | 92 | 392 | 77 | 1350 | 68 |
| 11 | 60 | 68 | 73 | 87 | 900 | 1600 | 340 | 89 | 359 | 78 | 284 | 67 |
| 12 | 60 | 68 | 71 | 96 | 520 | 820 | 254 | 86 | 178 | 68 | 151 | 67 |
| 13 | 57 | 67 | 71 | 98 | 452 | 456 | 161 | 84 | 227 | 76 | 118 | 71 |
| 14 | 56 | 67 | 72 | 100 | 448 | 435 | 128 | 83 | 1170 | 84 | 100 | 71 |
| 15 | 61 | 67 | 109 | 110 | 393 | 430 | 122 | 82 | 1170 | 100 | 89 | 71 |
| 16 | 65 | 66 | 225 | 111 | 221 | 458 | 147 | 84 | 403 | 77 | 139 | 70 |
| 17 | 64 | 66 | 237 | 109 | 440 | 477 | 185 | 83 | 181 | 71 | 384 | 68 |
| 18 | 66 | 70 | 172 | 106 | 1500 | 456 | 268 | 79 | 344 | 72 | 254 | 65 |
| 19 | 67 | 70 | 121 | 102 | 1850 | 435 | 384 | 84 | 283 | 65 | 395 | 65 |
| 20 | 64 | 76 | 93 | 102 | 1780 | 591 | 384 | 94 | 185 | 71 | 311 | 67 |
| 21 | 62 | 76 | 87 | 108 | 1600 | 1980 | 371 | 84 | 127 | 70 | 108 | 67 |
| 22 | 62 | 74 | 100 | 112 | 670 | 2260 | 273 | 84 | 84 | 66 | 83 | 83 |
| 23 | 67 | 73 | 95 | 118 | 500 | 1990 | 158 | 86 | 83 | 65 | 80 | 82 |
| 24 | 73 | 73 | 95 | 126 | 439 | 1730 | 153 | 94 | 79 | 65 | 78 | 73 |
| 25 | 80 | 77 | 109 | 122 | 301 | 1480 | 123 | 101 | 80 | 64 | 76 | 71 |
| 26 | 91 | 77 | 110 | 114 | 242 | 405 | 131 | 96 | 79 | 61 | 72 | 78 |
| 27 | 113 | 77 | 108 | 106 | 235 | 213 | 462 | 94 | 80 | 60 | 71 | 140 |
| 28 | 269 | 73 | 100 | 108 | 370 | 186 | 1200 | 91 | 80 | 62 | 71 | 118 |
| 29 | 186 | 72 | 94 | 116 | --- | 405 | 1550 | 138 | 77 | 90 | 68 | 91 |
| 30 | 125 | 72 | 88 | 116 | --- | 424 | 1050 | 308 | 82 | 79 | 67 | 78 |
| 31 | 95 | --- | 86 | 139 | --- | 418 | --- | 407 | --- | 96 | 68 | --- |
| TOTAL | 2444 | 2161 | 3100 | 4183 | 27418 | 23449 | 11522 | 4315 | 14805 | 2318 | 7068 | 2250 |
| MEAN | 78.8 | 72.0 | 100 | 135 | 979 | 756 | 384 | 139 | 494 | 74.8 | 228 | 75.0 |
| MAX | 269 | 85 | 237 | 372 | 3650 | 2260 | 1550 | 407 | 2090 | 100 | 1350 | 140 |
| MIN | 56 | 66 | 71 | 87 | 221 | 186 | 122 | 79 | 77 | 60 | 64 | 65 |
| CFSM | .17 | .16 | .22 | .29 | 2.11 | 1.63 | .83 | .30 | 1.07 | .16 | .49 | .16 |
| IN. | .20 | .17 | .25 | .34 | 2.20 | 1.88 | .93 | .35 | 1.19 | .19 | .57 | .18 |
| CAL YR 1981 | TOTAL | 32034 | MEAN | 87.8 | MAX | 323 | MIN | 52 | CFSM | .19 | IN | 2.57 |
| WTR YR 1982 | TOTAL | 105033 | MEAN | 288 | MAX | 3650 | MIN | 56 | CFSM | .62 | IN | 8.44 |

YORK RIVER BASIN

111

01671100 LITTLE RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°52'21", long 77°30'48", Hanover County, Hydrologic Unit 02080106, on left bank at downstream side of bridge on State Highway 685, 0.8 mi (1.3 km) southwest of Verdon, 2.9 mi (4.7 km) west of Doswell, and 9.6 mi (15.4 km) upstream from mouth.

DRAINAGE AREA.--107 mi² (277 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 132.30 ft (40.325 m) National Geodetic Vertical Datum of 1929 (levels by La Prade Bros., Engineers).

REMARKS.--Records good. Frequent quarry dewatering by the General Crushed Stone Co. above gage adds about 0.5 ft³/s (0.014 m³/s) at times. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 97.4 ft³/s (2.758 m³/s), 12.36 in/yr (314 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) Aug. 21, 1969, gage height, 11.09 ft (3.380 m), from rating curve extended above 7,600 ft³/s (220 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 0.10 ft³/s (0.003 m³/s) Sept. 25, 26, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,490 ft³/s (42.2 m³/s) at 0530 hours Mar. 22, gage height, 5.52 ft (1.682 m), no other peak above base of 650 ft³/s (18 m³/s); minimum, 0.45 ft³/s (0.013 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|------|------|------|------|------|------|------|-------|--------|-------|
| 1 | .79 | 40 | 14 | 77 | 158 | 82 | 74 | 74 | 36 | 17 | 6.2 | 11 |
| 2 | .70 | 28 | 16 | 131 | 203 | 97 | 73 | 64 | 44 | 16 | 6.2 | 9.5 |
| 3 | .62 | 20 | 17 | 124 | 217 | 115 | 74 | 56 | 52 | 17 | 6.2 | 8.5 |
| 4 | .60 | 16 | 17 | 119 | 357 | 131 | 83 | 50 | 114 | 19 | 6.5 | 7.3 |
| 5 | .69 | 14 | 22 | 214 | 347 | 126 | 92 | 44 | 231 | 17 | 7.6 | 6.5 |
| 6 | .71 | 11 | 23 | 208 | 190 | 111 | 88 | 40 | 373 | 15 | 11 | 5.8 |
| 7 | .66 | 8.4 | 23 | 123 | 121 | 124 | 74 | 37 | 301 | 14 | 136 | 5.4 |
| 8 | .60 | 8.4 | 22 | 88 | 93 | 252 | 66 | 34 | 158 | 13 | 417 | 5.8 |
| 9 | .60 | 9.1 | 20 | 69 | 79 | 284 | 69 | 32 | 91 | 19 | 224 | 5.8 |
| 10 | .62 | 7.7 | 18 | 52 | 78 | 162 | 74 | 30 | 65 | 21 | 90 | 4.7 |
| 11 | .55 | 7.6 | 16 | 41 | 76 | 118 | 76 | 28 | 53 | 23 | 51 | 3.7 |
| 12 | .56 | 7.8 | 15 | 31 | 72 | 102 | 72 | 25 | 48 | 25 | 45 | 3.3 |
| 13 | .54 | 7.3 | 14 | 27 | 69 | 92 | 66 | 24 | 59 | 24 | 49 | 2.9 |
| 14 | .57 | 7.6 | 15 | 30 | 68 | 86 | 62 | 22 | 116 | 24 | 44 | 2.3 |
| 15 | .69 | 7.9 | 29 | 32 | 66 | 81 | 57 | 21 | 152 | 20 | 34 | 2.2 |
| 16 | .81 | 7.4 | 89 | 34 | 67 | 95 | 54 | 20 | 113 | 16 | 36 | 2.0 |
| 17 | .87 | 8.6 | 155 | 32 | 99 | 122 | 54 | 19 | 73 | 14 | 42 | 1.8 |
| 18 | .84 | 11 | 127 | 31 | 276 | 122 | 73 | 18 | 53 | 12 | 49 | 1.5 |
| 19 | 1.9 | 12 | 86 | 32 | 371 | 105 | 77 | 21 | 44 | 10 | 37 | 1.3 |
| 20 | .93 | 12 | 67 | 33 | 247 | 185 | 73 | 25 | 39 | 9.0 | 37 | 1.4 |
| 21 | .58 | 11 | 57 | 37 | 180 | 814 | 65 | 22 | 32 | 8.5 | 36 | 1.4 |
| 22 | .70 | 11 | 51 | 40 | 141 | 1340 | 59 | 22 | 28 | 8.0 | 29 | 3.9 |
| 23 | .87 | 14 | 53 | 42 | 105 | 573 | 54 | 24 | 25 | 7.3 | 27 | 3.9 |
| 24 | 1.2 | 11 | 55 | 46 | 89 | 208 | 49 | 28 | 22 | 7.6 | 23 | 3.3 |
| 25 | 3.7 | 11 | 60 | 44 | 78 | 143 | 46 | 40 | 19 | 6.5 | 19 | 3.5 |
| 26 | 5.5 | 14 | 66 | 39 | 69 | 122 | 57 | 42 | 17 | 5.8 | 17 | 7.6 |
| 27 | 10 | 16 | 71 | 32 | 66 | 107 | 87 | 38 | 17 | 5.4 | 14 | 26 |
| 28 | 81 | 15 | 64 | 29 | 72 | 96 | 125 | 37 | 16 | 5.4 | 14 | 34 |
| 29 | 163 | 14 | 53 | 31 | --- | 86 | 118 | 35 | 15 | 9.0 | 10 | 27 |
| 30 | 108 | 13 | 42 | 35 | --- | 79 | 91 | 36 | 14 | 5.4 | 8.0 | 23 |
| 31 | 65 | --- | 36 | 54 | --- | 75 | --- | 36 | --- | 5.8 | 9.5 | --- |
| TOTAL | 454.40 | 381.8 | 1413 | 1957 | 4054 | 6235 | 2182 | 1044 | 2420 | 419.7 | 1541.2 | 226.3 |
| MEAN | 14.7 | 12.7 | 45.6 | 63.1 | 145 | 201 | 72.7 | 33.7 | 80.7 | 13.5 | 49.7 | 7.54 |
| MAX | 163 | 40 | 155 | 214 | 371 | 1340 | 125 | 74 | 373 | 25 | 417 | 34 |
| MIN | .54 | 7.3 | 14 | 27 | 66 | 75 | 46 | 18 | 14 | 5.4 | 6.2 | 1.3 |
| CFSM | .14 | .12 | .43 | .59 | 1.36 | 1.88 | .68 | .32 | .75 | .13 | .46 | .07 |
| IN. | .16 | .13 | .49 | .68 | 1.41 | 2.17 | .76 | .36 | .84 | .15 | .54 | .08 |
| CAL YR 1981 | TOTAL | 10786.54 | MEAN | 29.6 | MAX | 163 | MIN | .54 | CFSM | .28 | IN | 3.75 |
| WTR YR 1982 | TOTAL | 22328.40 | MEAN | 61.2 | MAX | 1340 | MIN | .54 | CFSM | .57 | IN | 7.76 |

YORK RIVER BASIN

01672500 SOUTH ANNA RIVER NEAR ASHLAND, VA

LOCATION.--Lat 37°47'48", long 77°32'57", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 54, 4.5 mi (7.2 km) northwest of Ashland, and 7.6 mi (12.2 km) upstream from Newfound River.

DRAINAGE AREA.--394 mi² (1,020 km²).

PERIOD OF RECORD.--October 1930 to current year.

REVISED RECORDS.--WSP 801: 1935(M). WSP 1502: 1935, 1939. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 83.74 ft (25.524 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, diversion 150 ft (46 m) above station for town of Ashland water supply has averaged less than 0.6 ft³/s (0.017 m³/s). Capacity of the diversion pickup is about 1.5 ft³/s (0.042 m³/s). Small diurnal fluctuation at low flow in some years caused by gristmills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 364 ft³/s (10.31 m³/s), 12.55 in/yr (319 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s (484 m³/s) Aug. 23, 1969, gage height, 24.99 ft (7.617 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 12, 1966, caused by diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 15, 1928, reached a stage of about 24 ft (7.3 m), discharge, about 14,500 ft³/s (411 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 7 | 0430 | *2850 80.7 | 9.94 3.030 | Mar. 23 | 1730 | 2610 73.9 | 9.42 2.871 |

Minimum discharge, 3.5 ft³/s (0.099 m³/s) Oct. 6, gage height, 0.95 ft (0.290 m), due to unknown diversion above gage; minimum daily, 8.8 ft³/s (0.25 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|----------|----------|---------|----------|---------|------|-------|------|------|------|
| 1 | 13 | 115 | 70 | 372 | 712 | 315 | 308 | 370 | 229 | 80 | 88 | 44 |
| 2 | 12 | 92 | 71 | 783 | 1090 | 379 | 301 | 297 | 720 | 85 | 77 | 40 |
| 3 | 12 | 80 | 73 | 658 | 1190 | 543 | 297 | 256 | 1030 | 106 | 88 | 40 |
| 4 | 11 | 71 | 81 | 565 | 1760 | 668 | 321 | 226 | 1660 | 95 | 73 | 43 |
| 5 | 12 | 65 | 112 | 1120 | 2010 | 604 | 476 | 203 | 1490 | 83 | 67 | 42 |
| 6 | 9.0 | 63 | 117 | 1040 | 2430 | 504 | 345 | 187 | 712 | 75 | 174 | 44 |
| 7 | 9.6 | 58 | 120 | 504 | 2220 | 576 | 288 | 174 | 404 | 70 | 175 | 45 |
| 8 | 11 | 54 | 110 | 348 | 598 | 1060 | 267 | 165 | 286 | 70 | 178 | 44 |
| 9 | 11 | 53 | 94 | 275 | 444 | 1090 | 263 | 158 | 236 | 65 | 151 | 38 |
| 10 | 12 | 51 | 83 | 229 | 397 | 629 | 284 | 151 | 208 | 66 | 160 | 32 |
| 11 | 11 | 51 | 77 | 249 | 456 | 464 | 288 | 142 | 207 | 109 | 134 | 31 |
| 12 | 9.9 | 51 | 73 | 483 | 364 | 393 | 266 | 133 | 350 | 94 | 115 | 30 |
| 13 | 9.2 | 51 | 68 | 496 | 307 | 360 | 243 | 124 | 475 | 143 | 111 | 29 |
| 14 | 8.8 | 49 | 70 | 431 | 291 | 341 | 228 | 117 | 590 | 133 | 139 | 28 |
| 15 | 10 | 49 | 127 | 405 | 302 | 328 | 217 | 110 | 703 | 112 | 102 | 28 |
| 16 | 11 | 48 | 573 | 396 | 306 | 365 | 207 | 105 | 436 | 87 | 132 | 28 |
| 17 | 12 | 51 | 934 | 339 | 492 | 460 | 204 | 99 | 288 | 77 | 137 | 27 |
| 18 | 16 | 52 | 486 | 312 | 1300 | 502 | 279 | 96 | 222 | 71 | 536 | 23 |
| 19 | 17 | 53 | 317 | 286 | 1730 | 408 | 287 | 105 | 189 | 63 | 462 | 22 |
| 20 | 15 | 54 | 235 | 268 | 1180 | 844 | 275 | 101 | 165 | 56 | 224 | 22 |
| 21 | 11 | 55 | 171 | 263 | 992 | 1930 | 233 | 118 | 144 | 55 | 143 | 21 |
| 22 | 14 | 54 | 178 | 266 | 640 | 2320 | 216 | 157 | 126 | 51 | 104 | 29 |
| 23 | 16 | 53 | 191 | 291 | 500 | 2550 | 204 | 155 | 115 | 47 | 84 | 34 |
| 24 | 22 | 55 | 197 | 303 | 410 | 1380 | 191 | 156 | 105 | 46 | 72 | 32 |
| 25 | 34 | 59 | 312 | 288 | 320 | 599 | 180 | 146 | 96 | 44 | 63 | 38 |
| 26 | 75 | 64 | 353 | 265 | 269 | 501 | 222 | 133 | 91 | 40 | 55 | 46 |
| 27 | 171 | 66 | 349 | 234 | 261 | 451 | 343 | 124 | 86 | 39 | 53 | 99 |
| 28 | 706 | 69 | 267 | 233 | 270 | 392 | 775 | 135 | 83 | 40 | 85 | 99 |
| 29 | 730 | 71 | 214 | 227 | --- | 329 | 889 | 187 | 80 | 46 | 66 | 138 |
| 30 | 308 | 70 | 181 | 237 | --- | 312 | 533 | 194 | 77 | 43 | 51 | 101 |
| 31 | 166 | --- | 163 | 340 | --- | 294 | --- | 204 | --- | 55 | 48 | --- |
| TOTAL | 2485.5 | 1827 | 6467 | 12506 | 23241 | 21891 | 9430 | 5028 | 11603 | 2246 | 4147 | 1317 |
| MEAN | 80.2 | 60.9 | 209 | 403 | 830 | 706 | 314 | 162 | 387 | 72.5 | 134 | 43.9 |
| MAX | 730 | 115 | 934 | 1120 | 2430 | 2550 | 889 | 370 | 1660 | 143 | 536 | 138 |
| MIN | 8.8 | 48 | 68 | 227 | 261 | 294 | 180 | 96 | 77 | 39 | 48 | 21 |
| CFSM | .20 | .16 | .53 | 1.02 | 2.11 | 1.79 | .80 | .41 | .98 | .18 | .34 | .11 |
| IN. | .23 | .17 | .61 | 1.18 | 2.19 | 2.07 | .89 | .47 | 1.10 | .21 | .39 | .12 |
| CAL YP 1981 | TOTAL | 42168.5 | MEAN 116 | MAX 934 | MIN 8.8 | CFSM .29 | IN 3.98 | | | | | |
| WTR YR 1982 | TOTAL | 102188.5 | MEAN 280 | MAX 2550 | MIN 8.8 | CFSM .71 | IN 9.65 | | | | | |

01673000 PAMUNKEY RIVER NEAR HANOVER, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°46'03", long 77°19'57", Hanover County, Hydrologic Unit 02080106, on right bank 100 ft (30 m) downstream from bridge on State Highway 614, 0.3 mi (0.5 km) upstream from Mechumps Creek, 2.0 mi (3.2 km) east of Hanover, and 7.0 mi (11.3 km) upstream from Millpond Creek.

DRAINAGE AREA.--1,081 mi² (2,800 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 1382: 1949. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.72 ft (4.487 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1976, nonrecording gage at same site and datum, and since June 11, 1957, auxiliary nonrecording gage 1.2 mi (1.9 km) downstream from base gage.

REMARKS.--Records good except those for period of no gage-height record, Jan. 11 to Feb. 3, which are fair. Some regulation since January 1972 by Lake Anna, capacity, 373,000 acre-ft (460 hm³) and occasional diurnal fluctuation at low flow caused by mill above station. Unknown amount of diversion for irrigation above gage.

AVERAGE DISCHARGE.--41 years, 992 ft³/s (28.09 m³/s), 12.46 in/yr (316 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft³/s (1,140 m³/s) Aug. 23, 1969, gage height, 31.12 ft (9.485 m), from floodmarks, from rating curve extended above 22,000 ft³/s (620 m³/s); minimum, 12 ft³/s (0.34 m³/s) Sept. 12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 32.6 ft (9.94 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,700 ft³/s (190 m³/s) Mar. 23, gage height, 18.92 ft (5.767 m); minimum, 67 ft³/s (1.90 m³/s) Oct. 13-16, gage height, 2.45 ft (0.747 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|-------|----------|----------|--------|----------|----------|-------|------|-------|------|
| 1 | 80 | 364 | 171 | 547 | 1000 | 995 | 1060 | 1400 | 785 | 178 | 173 | 130 |
| 2 | 81 | 269 | 178 | 1040 | 1500 | 1130 | 1040 | 842 | 815 | 182 | 200 | 133 |
| 3 | 80 | 221 | 184 | 1420 | 2700 | 1360 | 1010 | 777 | 864 | 185 | 185 | 132 |
| 4 | 80 | 191 | 190 | 1120 | 3800 | 1570 | 1050 | 740 | 1670 | 195 | 173 | 126 |
| 5 | 79 | 169 | 207 | 1610 | 5060 | 1690 | 1150 | 683 | 2520 | 187 | 155 | 122 |
| 6 | 75 | 161 | 247 | 2120 | 6040 | 1460 | 1170 | 637 | 4020 | 173 | 169 | 120 |
| 7 | 76 | 153 | 253 | 1420 | 5600 | 1490 | 927 | 582 | 4520 | 159 | 546 | 117 |
| 8 | 76 | 141 | 254 | 880 | 4380 | 2530 | 729 | 437 | 3750 | 152 | 1060 | 116 |
| 9 | 74 | 135 | 235 | 677 | 2440 | 2750 | 710 | 395 | 2410 | 345 | 1620 | 116 |
| 10 | 72 | 133 | 209 | 542 | 1920 | 2220 | 903 | 372 | 1190 | 202 | 2240 | 119 |
| 11 | 71 | 133 | 195 | 415 | 1850 | 2620 | 978 | 352 | 920 | 225 | 1180 | 116 |
| 12 | 71 | 130 | 182 | 510 | 1370 | 2380 | 863 | 330 | 748 | 258 | 461 | 111 |
| 13 | 71 | 131 | 172 | 830 | 1070 | 1310 | 725 | 313 | 549 | 251 | 350 | 104 |
| 14 | 67 | 132 | 167 | 1020 | 1020 | 1140 | 588 | 293 | 1310 | 486 | 304 | 105 |
| 15 | 67 | 132 | 236 | 1030 | 1000 | 1080 | 538 | 276 | 2750 | 625 | 304 | 104 |
| 16 | 70 | 138 | 554 | 990 | 892 | 1190 | 514 | 264 | 2100 | 328 | 276 | 104 |
| 17 | 74 | 146 | 1470 | 880 | 937 | 1330 | 562 | 258 | 840 | 229 | 562 | 102 |
| 18 | 74 | 143 | 1320 | 820 | 2380 | 1410 | 651 | 245 | 732 | 193 | 704 | 99 |
| 19 | 75 | 148 | 833 | 760 | 3980 | 1330 | 914 | 233 | 732 | 173 | 1190 | 96 |
| 20 | 76 | 150 | 543 | 700 | 4400 | 1620 | 932 | 293 | 562 | 149 | 897 | 98 |
| 21 | 75 | 152 | 411 | 660 | 4090 | 3810 | 874 | 298 | 447 | 144 | 546 | 99 |
| 22 | 75 | 149 | 458 | 655 | 2970 | 5320 | 801 | 268 | 323 | 138 | 298 | 109 |
| 23 | 75 | 150 | 453 | 710 | 1570 | 6540 | 606 | 268 | 268 | 135 | 229 | 127 |
| 24 | 80 | 154 | 432 | 760 | 1230 | 6540 | 522 | 326 | 241 | 135 | 204 | 117 |
| 25 | 93 | 156 | 479 | 760 | 1030 | 5270 | 484 | 365 | 223 | 136 | 183 | 109 |
| 26 | 130 | 159 | 696 | 690 | 814 | 2960 | 452 | 388 | 208 | 126 | 162 | 117 |
| 27 | 190 | 167 | 684 | 620 | 749 | 1260 | 819 | 379 | 198 | 117 | 149 | 231 |
| 28 | 603 | 172 | 637 | 590 | 817 | 1010 | 1670 | 350 | 191 | 113 | 166 | 343 |
| 29 | 1300 | 171 | 516 | 570 | --- | 995 | 3020 | 336 | 187 | 133 | 185 | 285 |
| 30 | 1030 | 171 | 430 | 575 | --- | 1070 | 2830 | 523 | 176 | 154 | 154 | 272 |
| 31 | 576 | --- | 372 | 660 | --- | 1040 | --- | 751 | --- | 160 | 135 | --- |
| TOTAL | 5716 | 4921 | 13368 | 26581 | 66609 | 68420 | 29092 | 13974 | 36249 | 6366 | 15160 | 4079 |
| MEAN | 184 | 164 | 431 | 857 | 2379 | 2207 | 970 | 451 | 1208 | 205 | 489 | 136 |
| MAX | 1300 | 364 | 1470 | 2120 | 6040 | 6540 | 3020 | 1400 | 4520 | 625 | 2240 | 343 |
| MIN | 67 | 130 | 167 | 415 | 749 | 995 | 452 | 233 | 176 | 113 | 135 | 96 |
| CFSM | .17 | .15 | .40 | .79 | 2.20 | 2.04 | .90 | .42 | 1.12 | .19 | .45 | .13 |
| IN. | .20 | .17 | .46 | .91 | 2.29 | 2.35 | 1.00 | .48 | 1.25 | .22 | .52 | .14 |
| CAL YR 1981 TOTAL | 101471 | | | MEAN 278 | MAX 1470 | MIN 67 | CFSM .26 | IN 3.49 | | | | |
| WTR YR 1982 TOTAL | 290535 | | | MEAN 796 | MAX 6540 | MIN 67 | CFSM .74 | IN 10.00 | | | | |

YORK RIVER BASIN

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1968 to January 1976.

WATER TEMPERATURES: October 1945 to September 1946, April 1968 to January 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 04... | 1030 | 195 | 110 | 6.8 | 13.5 | 4.5 | 8.5 | 47 | 71 | 25 | 5.8 | 2.6 |
| FEB 03... | 0945 | 2380 | 89 | 7.0 | 1.5 | 85 | 13.2 | K320 | K6500 | 20 | 4.6 | 2.1 |
| MAR 23... | 1015 | 6570 | 54 | 6.4 | 10.0 | 60 | 10.0 | 2400 | 2100 | 13 | 3.0 | 1.4 |
| APR 26... | 1000 | 428 | 120 | 7.2 | 18.0 | 3.5 | 8.6 | 48 | 53 | 28 | 6.6 | 2.7 |
| JUL 19... | 1015 | 167 | 150 | 7.3 | 27.0 | 4.1 | 6.6 | 57 | 270 | 29 | 6.6 | 3.0 |
| AUG 16... | 1000 | 256 | 110 | 7.1 | 23.5 | 9.8 | 7.2 | 350 | 1100 | 24 | 5.6 | 2.5 |

K Result based on colony count outside optimal range.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAR (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+N03 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|--|---|---|--|
| NOV 04... | 9.3 | 3.8 | 23 | 21 | 6.3 | .1 | 11 | 79 | 74 | .23 | .030 | .62 |
| FEB 03... | 9.6 | 1.9 | 19 | 12 | 8.5 | <.1 | 10 | 66 | 61 | .32 | .120 | .88 |
| MAR 23... | 3.3 | 1.9 | 9.0 | 9.4 | 3.6 | <.1 | 7.6 | 50 | 36 | .25 | .030 | .74 |
| APR 26... | 11 | 1.9 | 24 | 21 | 5.4 | <.1 | 9.8 | 73 | 73 | .12 | .050 | .45 |
| JUL 19... | 16 | 2.7 | 27 | 31 | 6.4 | .1 | 11 | 117 | 94 | .34 | .110 | .70 |
| AUG 16... | 8.3 | 2.1 | 24 | 15 | 4.7 | .1 | 11 | 77 | 64 | .29 | .080 | .90 |

< Actual value is known to be less than the value shown.

YORK RIVER BASIN

115

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV 04... | .050 | .040 | .010 | 1 | <1 | 100 | 36 | 1 | <1 | 20 | 10 |
| FEB 03... | .190 | .010 | .010 | 1 | <1 | 100 | 140 | 2 | <1 | 30 | 10 |
| MAR 23... | .040 | .030 | .030 | -- | -- | -- | -- | -- | -- | -- | -- |
| APR 26... | .060 | .030 | <.010 | 2 | 1 | <100 | 36 | 5 | 5 | 10 | <10 |
| JUL 19... | .090 | .080 | .030 | 1 | <1 | 100 | 36 | 3 | 5 | 10 | 10 |
| AUG 16... | .040 | .040 | .030 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PR) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|--------------|---|--|---|--|---|--|---|--|---|--|---|
| NOV 04... | <1 | 1 | 7 | 3 | 750 | 480 | 2 | 1 | 130 | 120 | .1 |
| FEB 03... | 5 | <1 | 11 | 8 | 5800 | 390 | 15 | <1 | 650 | 120 | .1 |
| MAR 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| APR 26... | 1 | 1 | 12 | 5 | 890 | 190 | 5 | 2 | 100 | 70 | .1 |
| JUL 19... | 8 | 8 | 9 | 5 | 900 | 340 | 3 | 3 | 240 | 190 | .1 |
| AUG 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|--|---|--|--|---|---|--|---|--|--|---|
| NOV 04... | <.1 | 2 | 3 | <1 | <1 | <1 | <1 | 50 | 12 | 6 | 91 |
| FEB 03... | <.1 | 1 | <1 | <1 | <1 | <1 | <1 | 70 | 44 | 194 | 90 |
| MAR 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 53 | -- |
| APR 26... | .1 | 2 | 3 | <1 | <1 | <1 | <1 | 40 | <3 | 12 | 84 |
| JUL 19... | .1 | 3 | 1 | <1 | <1 | <1 | <1 | 60 | 25 | 12 | 99 |
| AUG 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28 | 98 |

< Actual value is known to be less than the value shown.

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | PCH, TOTAL (UG/L) | PCH, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | CHLOR- DANE, TOTAL (UG/L) | CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|------|-------------------------|--|--|----------------------------|---|------------------------------------|---|-------------------------|--|-------------------------|--|
| NOV 04... | 1030 | -- | <1 | <1.0 | -- | <.1 | -- | <1.0 | -- | <.1 | -- | <.1 |
| MAR 23... | 1015 | <.10 | -- | -- | <.01 | -- | <.10 | -- | <.01 | -- | <.01 | -- |
| APR 26... | 1000 | <.10 | <1 | <1.0 | <.01 | <.1 | <.10 | <1.0 | <.01 | <.1 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DI- AZINON, TOTAL (UG/L) | DI- ELDRIN TOTAL (UG/L) | DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDO- SULFAN, TOTAL (UG/L) | ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ETHION, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|-------------------------|--|-----------------------------------|----------------------------------|--|-------------------------------------|--|----------------------------|---|----------------------------|-------------------------------------|--|
| NOV 04... | -- | <.1 | -- | -- | <.1 | -- | <.1 | -- | <.1 | -- | -- | <.1 |
| MAR 23... | <.01 | -- | <.01 | <.01 | -- | <.01 | -- | <.01 | -- | <.01 | <.01 | -- |
| APR 26... | <.01 | <.1 | -- | <.01 | <.1 | <.01 | <.1 | <.01 | <.1 | -- | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | HEPTA- CHLOR EPOXIDE TOTAL (UG/L) | HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | MALA- THION, TOTAL (UG/L) | METH- OXY- CHLOR, TOTAL (UG/L) | METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARA- THION, TOTAL (UG/L) | METHYL TRI- THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|---|---|----------------------------|---|------------------------------------|--|--|--|---|---------------------------|--|
| NOV 04... | -- | <.1 | -- | <.1 | -- | -- | <.1 | -- | -- | -- | <.1 |
| MAR 23... | <.01 | -- | <.01 | -- | <.01 | <.01 | -- | <.01 | <.01 | <.01 | -- |
| APR 26... | <.01 | <.1 | <.01 | <.1 | -- | <.01 | <.1 | -- | -- | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) | PARA- THION, TOTAL (UG/L) | PER- THANE TOTAL (UG/L) | PER- THANE IN BOTTOM MATERIAL (UG/KG) | SILVEX, TOTAL (UG/L) | TOX- APHENE, TOTAL (UG/L) | TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | TOTAL TRI- THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2, 4-DP TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) |
|--------------|---|------------------------------------|----------------------------------|--|----------------------------|------------------------------------|---|----------------------------------|---------------------------|----------------------------|----------------------------|
| NOV 04... | -- | -- | -- | <.10 | -- | -- | 5.0 | -- | -- | -- | -- |
| MAR 23... | <.10 | <.01 | <.01 | -- | <.01 | <1 | -- | <.01 | <.01 | <.01 | <.01 |
| APR 26... | <.10 | -- | <.10 | <1.00 | -- | <1 | <10 | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

01673550 TOTOPOTOMOY CREEK NEAR STUDLEY, VA

LOCATION.--Lat 37°29'44", long 77°15'29", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 606, 2.0 mi (3.2 km) southeast of Studley, 2.4 mi (3.9 km) downstream from Hawes millrace, and 4.1 mi (6.6 km) upstream from mouth.

DRAINAGE AREA.--26.2 mi² (67.9 km²).

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 38.36 ft (11.692 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--5 years, 29.7 ft³/s (0.841 m³/s), 15.39 in/yr (391 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 640 ft³/s (18.1 m³/s) Feb. 25, 1979, gage height, 8.77 ft (2.673 m), from rating curve extended above 300 ft³/s (8.5 m³/s); minimum daily, 0.35 ft³/s (0.010 m³/s) Oct. 1-7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft³/s (4.5 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Mar. 8 | 1930 | 174 4.93 | 5.64 1.719 | Aug. 8 | 2400 | *191 5.41 | 5.81 1.771 |
| Mar. 21 | 1630 | 167 4.73 | 5.57 1.698 | | | | |

Minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Oct. 7-9, 11-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|
| 1 | 2.4 | 5.9 | 7.8 | 26 | 46 | 30 | 27 | 21 | 13 | 6.3 | 21 | 13 |
| 2 | 1.9 | 6.2 | 8.5 | 30 | 42 | 31 | 25 | 18 | 12 | 6.5 | 23 | 10 |
| 3 | 1.6 | 5.8 | 9.2 | 24 | 50 | 37 | 25 | 16 | 11 | 7.5 | 16 | 9.0 |
| 4 | 1.4 | 5.6 | 9.6 | 27 | 64 | 42 | 24 | 15 | 16 | 5.6 | 11 | 7.5 |
| 5 | 1.4 | 6.3 | 9.7 | 31 | 40 | 43 | 23 | 14 | 58 | 4.5 | 8.8 | 6.8 |
| 6 | 1.3 | 7.6 | 9.4 | 24 | 28 | 42 | 24 | 12 | 60 | 3.9 | 7.9 | 6.5 |
| 7 | 1.2 | 7.4 | 9.1 | 19 | 22 | 98 | 22 | 12 | 33 | 3.5 | 48 | 5.8 |
| 8 | 1.2 | 7.2 | 8.8 | 17 | 19 | 163 | 21 | 11 | 20 | 6.9 | 76 | 5.6 |
| 9 | 1.2 | 7.1 | 9.2 | 15 | 18 | 101 | 26 | 11 | 15 | 15 | 127 | 5.9 |
| 10 | 1.3 | 6.8 | 8.2 | 14 | 19 | 47 | 28 | 10 | 12 | 12 | 84 | 5.8 |
| 11 | 1.2 | 6.3 | 8.4 | 13 | 18 | 35 | 28 | 9.6 | 10 | 8.8 | 37 | 5.5 |
| 12 | 1.2 | 6.4 | 8.1 | 11 | 18 | 31 | 25 | 9.1 | 9.9 | 20 | 27 | 5.4 |
| 13 | 1.2 | 6.2 | 8.1 | 11 | 19 | 29 | 22 | 8.5 | 13 | 54 | 21 | 5.3 |
| 14 | 1.2 | 6.3 | 8.8 | 13 | 19 | 25 | 20 | 7.9 | 20 | 48 | 19 | 5.4 |
| 15 | 1.2 | 5.8 | 25 | 14 | 20 | 27 | 19 | 7.5 | 22 | 25 | 32 | 5.3 |
| 16 | 1.2 | 5.8 | 59 | 14 | 24 | 40 | 18 | 7.1 | 18 | 23 | 22 | 5.6 |
| 17 | 1.2 | 5.6 | 36 | 13 | 39 | 49 | 18 | 6.9 | 13 | 18 | 18 | 5.9 |
| 18 | 1.4 | 5.9 | 23 | 13 | 73 | 37 | 22 | 6.9 | 9.9 | 13 | 18 | 5.3 |
| 19 | 1.4 | 5.6 | 17 | 13 | 65 | 28 | 25 | 6.5 | 8.2 | 10 | 16 | 5.1 |
| 20 | 1.7 | 5.6 | 15 | 14 | 42 | 76 | 23 | 7.5 | 7.8 | 18 | 16 | 5.9 |
| 21 | 1.8 | 5.5 | 12 | 15 | 35 | 150 | 20 | 7.6 | 7.6 | 17 | 14 | 6.5 |
| 22 | 2.4 | 5.5 | 15 | 15 | 27 | 90 | 18 | 8.2 | 7.1 | 14 | 12 | 11 |
| 23 | 2.2 | 5.5 | 18 | 18 | 23 | 55 | 17 | 8.4 | 6.7 | 15 | 13 | 13 |
| 24 | 3.2 | 6.2 | 17 | 21 | 20 | 42 | 16 | 8.8 | 6.0 | 23 | 14 | 13 |
| 25 | 5.1 | 7.2 | 21 | 20 | 18 | 36 | 17 | 11 | 5.2 | 24 | 13 | 12 |
| 26 | 9.0 | 7.6 | 26 | 18 | 17 | 33 | 21 | 11 | 4.8 | 15 | 12 | 13 |
| 27 | 11 | 7.6 | 21 | 16 | 17 | 30 | 35 | 11 | 4.5 | 10 | 12 | 30 |
| 28 | 9.4 | 7.6 | 18 | 16 | 23 | 28 | 52 | 10 | 4.4 | 9.9 | 30 | 20 |
| 29 | 6.7 | 7.5 | 16 | 15 | --- | 27 | 36 | 9.7 | 4.0 | 14 | 43 | 18 |
| 30 | 6.3 | 7.5 | 14 | 16 | --- | 25 | 25 | 12 | 4.3 | 12 | 23 | 14 |
| 31 | 5.8 | --- | 14 | 22 | --- | 25 | --- | 13 | --- | 18 | 16 | --- |
| TOTAL | 90.7 | 193.1 | 489.9 | 548 | 865 | 1552 | 722 | 328.2 | 436.4 | 481.4 | 850.7 | 281.1 |
| MEAN | 2.93 | 6.44 | 15.8 | 17.7 | 30.9 | 50.1 | 24.1 | 10.6 | 14.5 | 15.5 | 27.4 | 9.37 |
| MAX | 11 | 7.6 | 59 | 31 | 73 | 163 | 52 | 21 | 60 | 54 | 127 | 30 |
| MIN | 1.2 | 5.5 | 7.8 | 11 | 17 | 25 | 16 | 6.5 | 4.0 | 3.5 | 7.9 | 5.1 |
| CFSM | .11 | .25 | .60 | .68 | 1.18 | 1.91 | .92 | .41 | .55 | .59 | 1.05 | .36 |
| IN. | .13 | .27 | .70 | .78 | 1.23 | 2.20 | 1.03 | .47 | .62 | .68 | 1.21 | .40 |

CAL YR 1981 TOTAL 3840.9 MEAN 10.5 MAX 83 MIN 1.0 CFSM .40 IN 5.45
WTR YR 1982 TOTAL 6838.5 MEAN 18.7 MAX 163 MIN 1.2 CFSM .71 IN 9.71

YORK RIVER BASIN

01673800 PO RIVER NEAR SPOTSYLVANIA, VA

LOCATION.--Lat 38°10'17", long 77°35'42", Spotsylvania County, Hydrologic Unit 02080105, on right bank at upstream side of bridge on State Highway 208, 1.6 mi (2.6 km) north of Snell, 2.0 mi (3.2 km) south of Spotsylvania, 4.8 mi (7.7 km) downstream from Gladys Run, and 4.9 mi (7.9 km) upstream from U.S. Highway 1.

DRAINAGE AREA.--77.4 mi² (200.5 km²).

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

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.76 ft (56.010 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--20 years, 74.6 ft³/s (2.113 m³/s), 13.09 in/yr (332 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) June 22, 1972, gage height, 19.03 ft (5.800 m), from rating curve extended above 3,400 ft³/s (96 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) Oct. 24-29, 1963, Sept. 6-13, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) at 1700 hours Feb. 4, gage height, 8.36 ft (2.548 m), no other peak above base of 900 ft³/s (25 m³/s); minimum, 0.16 ft³/s (0.005 m³/s) Oct. 4, 5, 8, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|--------|------|------|------|------|-------|--------|--------|--------|-------|
| 1 | .48 | 4.6 | 4.2 | 78 | 226 | 64 | 51 | 59 | 28 | 19 | 74 | 6.7 |
| 2 | .33 | 3.4 | 6.5 | 165 | 282 | 87 | 47 | 50 | 42 | 10 | 38 | 6.6 |
| 3 | .24 | 2.4 | 9.2 | 71 | 331 | 127 | 60 | 43 | 31 | 7.3 | 21 | 6.2 |
| 4 | .19 | 2.4 | 9.9 | 130 | 964 | 111 | 100 | 37 | 77 | 6.7 | 15 | 5.8 |
| 5 | .16 | 2.5 | 12 | 282 | 343 | 90 | 81 | 34 | 289 | 6.0 | 20 | 5.5 |
| 6 | .28 | 2.6 | 14 | 109 | 114 | 80 | 62 | 29 | 581 | 5.4 | 179 | 4.9 |
| 7 | .28 | 3.5 | 12 | 66 | 81 | 97 | 55 | 26 | 158 | 4.8 | 182 | 4.7 |
| 8 | .22 | 3.8 | 9.9 | 49 | 61 | 245 | 48 | 24 | 76 | 4.5 | 373 | 4.6 |
| 9 | .22 | 3.8 | 7.9 | 39 | 59 | 150 | 50 | 23 | 50 | 5.2 | 395 | 4.6 |
| 10 | .22 | 3.5 | 6.7 | 31 | 79 | 100 | 65 | 21 | 39 | 33 | 178 | 4.6 |
| 11 | .28 | 3.7 | 6.0 | 25 | 72 | 80 | 65 | 19 | 35 | 96 | 78 | 5.2 |
| 12 | .34 | 3.4 | 5.3 | 18 | 54 | 76 | 44 | 17 | 34 | 51 | 50 | 5.2 |
| 13 | .34 | 3.5 | 5.0 | 18 | 51 | 75 | 38 | 15 | 135 | 26 | 37 | 3.6 |
| 14 | .34 | 3.7 | 5.8 | 20 | 74 | 66 | 36 | 14 | 333 | 47 | 28 | 3.9 |
| 15 | .34 | 3.8 | 53 | 23 | 66 | 59 | 34 | 12 | 121 | 298 | 21 | 3.8 |
| 16 | .40 | 4.3 | 253 | 23 | 65 | 62 | 32 | 11 | 64 | 90 | 20 | 4.4 |
| 17 | .40 | 4.5 | 125 | 22 | 142 | 94 | 34 | 11 | 45 | 41 | 27 | 3.9 |
| 18 | .40 | 7.0 | 63 | 22 | 497 | 90 | 64 | 10 | 35 | 25 | 37 | 5.1 |
| 19 | .34 | 3.4 | 42 | 22 | 333 | 67 | 83 | 9.6 | 28 | 17 | 65 | 4.6 |
| 20 | .34 | 3.8 | 42 | 22 | 389 | 136 | 53 | 9.6 | 21 | 40 | 33 | 4.4 |
| 21 | .40 | 3.5 | 39 | 24 | 197 | 425 | 46 | 8.7 | 18 | 55 | 22 | 4.4 |
| 22 | .46 | 3.8 | 26 | 27 | 128 | 229 | 41 | 9.3 | 16 | 26 | 19 | 11 |
| 23 | .64 | 3.7 | 30 | 28 | 93 | 131 | 36 | 9.7 | 14 | 16 | 17 | 17 |
| 24 | 1.6 | 3.8 | 51 | 29 | 74 | 96 | 32 | 11 | 12 | 12 | 15 | 18 |
| 25 | 1.8 | 4.6 | 52 | 26 | 62 | 78 | 30 | 14 | 11 | 9.7 | 13 | 13 |
| 26 | 5.3 | 4.5 | 50 | 23 | 53 | 71 | 46 | 16 | 9.6 | 8.2 | 11 | 13 |
| 27 | 41 | 4.5 | 47 | 20 | 49 | 69 | 198 | 16 | 8.6 | 7.2 | 9.8 | 118 |
| 28 | 90 | 4.8 | 36 | 18 | 55 | 57 | 207 | 15 | 7.6 | 6.7 | 9.4 | 57 |
| 29 | 41 | 4.8 | 28 | 19 | --- | 50 | 119 | 19 | 6.9 | 6.1 | 8.5 | 28 |
| 30 | 16 | 4.0 | 22 | 22 | --- | 47 | 75 | 30 | 11 | 38 | 7.3 | 17 |
| 31 | 8.2 | --- | 19 | 39 | --- | 47 | --- | 35 | --- | 109 | 6.9 | --- |
| TOTAL | 212.54 | 115.6 | 1092.4 | 1510 | 4994 | 3256 | 1932 | 657.9 | 2336.7 | 1126.8 | 2009.9 | 394.7 |
| MEAN | 6.86 | 3.85 | 35.2 | 48.7 | 178 | 105 | 64.4 | 21.2 | 77.9 | 36.3 | 64.8 | 13.2 |
| MAX | 90 | 7.0 | 253 | 282 | 964 | 425 | 207 | 59 | 581 | 298 | 395 | 118 |
| MIN | .16 | 2.4 | 4.2 | 18 | 49 | 47 | 30 | 8.7 | 6.9 | 4.5 | 6.9 | 3.6 |
| CFSM | .09 | .05 | .46 | .63 | 2.30 | 1.36 | .83 | .27 | 1.01 | .47 | .84 | .17 |
| IN. | .10 | .06 | .53 | .73 | 2.40 | 1.56 | .93 | .32 | 1.12 | .54 | .97 | .19 |

CAL YR 1981 TOTAL 7273.78 MEAN 19.9 MAX 410 MIN .16 CFSM .26 IN 3.50
WTR YR 1982 TOTAL 19638.54 MEAN 53.8 MAX 964 MIN .16 CFSM .70 IN 9.44

01674000 MATTAPONI RIVER NEAR BOWLING GREEN, VA

LOCATION.--Lat 38°03'42", long 77°23'10", Caroline County, Hydrologic Unit 02080105, on right bank 0.1 mi (0.2 km) upstream from bridge on State Highway 605, 2.2 mi (3.5 km) northwest of Bowling Green, 2.4 mi (3.9 km) upstream from South River, and 7.1 mi (11.4 km) downstream from confluence of Matta and Poni Rivers.

DRAINAGE AREA.--257 mi² (666 km²).

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1382: 1943, 1945(M), 1948(M), 1949, 1953(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 85.14 ft (25.951 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 17, 1978, gage located on left bank at same datum.

REMARKS.--Records good. Some diurnal fluctuation from gristmill upstream on Po River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 237 ft³/s (6.712 m³/s), 12.52 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) June 23, 1972, gage height, 18.95 ft (5.776 m), from high-water mark in well, from rating curve extended above 8,100 ft³/s (230 m³/s); no flow at times in September and October 1954 and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 19.5 ft (5.94 m) based on relative difference in stage between this flood and flood of Oct. 17, 1942, at Milford 4 mi (6 km) downstream, discharge, 15,000 ft³/s (425 m³/s), from rating curve extended above 8,100 ft³/s (230 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s (36.8 m³/s) Feb. 6, gage height, 8.27 ft (2.521 m), no peak above base of 2,000 ft³/s (57 m³/s); minimum, 0.22 ft³/s (0.006 m³/s) Oct. 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|------|------|-------|-------|------|------|------|------|------|-------|
| 1 | .60 | 54 | 18 | 105 | 266 | 220 | 169 | 266 | 94 | 37 | 203 | 19 |
| 2 | .70 | 37 | 21 | 215 | 405 | 245 | 171 | 198 | 94 | 55 | 189 | 19 |
| 3 | .50 | 25 | 26 | 259 | 537 | 290 | 162 | 162 | 158 | 38 | 125 | 18 |
| 4 | .50 | 21 | 29 | 275 | 664 | 342 | 230 | 137 | 166 | 29 | 73 | 17 |
| 5 | .50 | 18 | 35 | 358 | 880 | 353 | 315 | 115 | 309 | 24 | 53 | 15 |
| 6 | .50 | 15 | 35 | 451 | 1220 | 308 | 279 | 101 | 495 | 21 | 159 | 13 |
| 7 | .50 | 12 | 36 | 465 | 774 | 302 | 222 | 88 | 840 | 18 | 304 | 12 |
| 8 | .41 | 10 | 35 | 297 | 423 | 419 | 185 | 79 | 955 | 17 | 415 | 11 |
| 9 | .35 | 10 | 31 | 195 | 288 | 555 | 175 | 72 | 559 | 25 | 633 | 11 |
| 10 | .41 | 10 | 26 | 142 | 259 | 583 | 194 | 65 | 279 | 82 | 1020 | 11 |
| 11 | .41 | 9.4 | 23 | 115 | 255 | 429 | 203 | 56 | 207 | 209 | 928 | 11 |
| 12 | .28 | 10 | 21 | 100 | 235 | 329 | 189 | 52 | 166 | 225 | 594 | 11 |
| 13 | .32 | 9.4 | 21 | 75 | 206 | 293 | 164 | 47 | 197 | 214 | 333 | 10 |
| 14 | .35 | 9.8 | 21 | 80 | 191 | 270 | 135 | 43 | 397 | 157 | 201 | 10 |
| 15 | .35 | 9.8 | 46 | 90 | 192 | 241 | 134 | 40 | 587 | 209 | 142 | 10 |
| 16 | .35 | 13 | 180 | 92 | 194 | 230 | 126 | 36 | 675 | 453 | 108 | 9.1 |
| 17 | .45 | 10 | 308 | 90 | 235 | 250 | 123 | 33 | 399 | 507 | 98 | 8.7 |
| 18 | .56 | 13 | 304 | 83 | 411 | 275 | 161 | 31 | 220 | 239 | 123 | 9.1 |
| 19 | 1.1 | 15 | 219 | 82 | 682 | 275 | 195 | 29 | 152 | 121 | 134 | 8.4 |
| 20 | 1.4 | 17 | 133 | 79 | 1050 | 291 | 194 | 27 | 115 | 79 | 131 | 8.4 |
| 21 | 1.7 | 14 | 120 | 85 | 1020 | 457 | 166 | 25 | 87 | 89 | 99 | 8.7 |
| 22 | 1.6 | 13 | 102 | 94 | 851 | 660 | 144 | 26 | 70 | 102 | 75 | 15 |
| 23 | 3.5 | 13 | 90 | 100 | 598 | 817 | 128 | 27 | 60 | 77 | 61 | 32 |
| 24 | 3.9 | 14 | 97 | 108 | 405 | 598 | 115 | 33 | 49 | 56 | 54 | 33 |
| 25 | 6.9 | 15 | 114 | 103 | 300 | 387 | 106 | 37 | 41 | 43 | 48 | 32 |
| 26 | 13 | 16 | 131 | 89 | 235 | 302 | 119 | 41 | 35 | 35 | 41 | 27 |
| 27 | 30 | 17 | 124 | 80 | 201 | 254 | 212 | 43 | 32 | 27 | 35 | 70 |
| 28 | 198 | 18 | 112 | 73 | 194 | 220 | 318 | 42 | 29 | 26 | 30 | 212 |
| 29 | 239 | 17 | 91 | 73 | --- | 192 | 395 | 41 | 25 | 79 | 26 | 169 |
| 30 | 157 | 17 | 74 | 77 | --- | 172 | 369 | 70 | 24 | 71 | 23 | 93 |
| 31 | 87 | --- | 60 | 102 | --- | 161 | --- | 91 | --- | 139 | 21 | --- |
| TOTAL | 752.14 | 482.4 | 2683 | 4632 | 13171 | 10720 | 5798 | 2153 | 7516 | 3503 | 6479 | 933.4 |
| MEAN | 24.3 | 16.1 | 86.5 | 149 | 470 | 346 | 193 | 69.5 | 251 | 113 | 209 | 31.1 |
| MAX | 239 | 54 | 308 | 465 | 1220 | 817 | 395 | 266 | 955 | 507 | 1020 | 212 |
| MIN | .28 | 9.4 | 18 | 73 | 191 | 161 | 106 | 25 | 24 | 17 | 21 | 8.4 |
| CFSM | .10 | .06 | .34 | .58 | 1.83 | 1.35 | .75 | .27 | .98 | .44 | .81 | .12 |
| IN. | .11 | .07 | .39 | .67 | 1.91 | 1.55 | .84 | .31 | 1.09 | .51 | .94 | .14 |
| CAL YR 1981 | TOTAL | 22801.94 | MEAN | 62.5 | MAX | 612 | MIN | .28 | CFSM | .24 | IN | 3.30 |
| WTR YR 1982 | TOTAL | 58822.94 | MEAN | 161 | MAX | 1220 | MIN | .28 | CFSM | .63 | IN | 8.51 |

YORK RIVER BASIN

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°53'16", long 77°09'48", King and Queen County, Hydrologic Unit 02080105, on left bank 0.4 mi (0.6 km) upstream from bridge on State Highway 628, 2.4 mi (3.9 km) north of Beulahville, and 2.7 mi (4.3 km) downstream from Maracossic Creek.

DRAINAGE AREA.--601 mi² (1,557 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 12.43 ft (3.789 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Oct. 14, 1942, nonrecording gage, and Oct. 14, 1942, to Aug. 8, 1974, water-stage recorder at site 80 ft (24 m) upstream at same datum.

REMARKS.--Records good. Diurnal fluctuation at times during low flow caused by gristmill on Po River.

AVERAGE DISCHARGE.--41 years, 587 ft³/s (16.62 m³/s), 13.26 in/yr (337 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s (479 m³/s) June 25, 1972, gage height, 23.97 ft (7.306 m), from floodmarks; maximum gage height, 24.04 ft (7.327 m) Aug. 23, 1969; minimum discharge, 5.9 ft³/s (0.17 m³/s) Sept. 14, 1966, gage height, 0.94 ft (0.287 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft³/s (41.6 m³/s) Feb. 24, gage height, 10.91 ft (3.325 m); minimum, 8.2 ft³/s (0.23 m³/s) Oct. 10-11, 13, gage height, 1.45 ft (0.442 m).

DISCHARGE, IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|-------|-------|-------|-------|------|-------|------|-------|------|
| 1 | 11 | 232 | 70 | 288 | 463 | 536 | 445 | 647 | 496 | 115 | 204 | 78 |
| 2 | 9.9 | 168 | 82 | 375 | 602 | 577 | 436 | 553 | 582 | 114 | 236 | 71 |
| 3 | 9.3 | 133 | 95 | 436 | 826 | 628 | 434 | 446 | 415 | 111 | 270 | 66 |
| 4 | 8.9 | 106 | 100 | 518 | 1030 | 676 | 456 | 377 | 642 | 116 | 231 | 62 |
| 5 | 8.7 | 89 | 104 | 619 | 1110 | 739 | 494 | 323 | 944 | 105 | 171 | 58 |
| 6 | 9.3 | 85 | 108 | 651 | 1120 | 754 | 558 | 282 | 1110 | 90 | 132 | 56 |
| 7 | 11 | 95 | 108 | 667 | 1150 | 796 | 559 | 252 | 1100 | 80 | 166 | 52 |
| 8 | 9.9 | 87 | 107 | 664 | 1230 | 1050 | 502 | 239 | 1080 | 75 | 370 | 47 |
| 9 | 9.3 | 74 | 101 | 582 | 1300 | 1150 | 461 | 220 | 1070 | 90 | 891 | 44 |
| 10 | 8.3 | 68 | 95 | 418 | 958 | 1120 | 481 | 198 | 1100 | 131 | 1010 | 43 |
| 11 | 12 | 63 | 89 | 330 | 587 | 1090 | 500 | 178 | 946 | 354 | 1030 | 42 |
| 12 | 11 | 59 | 85 | 300 | 525 | 1010 | 487 | 161 | 531 | 402 | 1050 | 43 |
| 13 | 8.7 | 58 | 84 | 322 | 497 | 804 | 458 | 149 | 459 | 444 | 1080 | 40 |
| 14 | 9.9 | 62 | 82 | 270 | 472 | 646 | 422 | 140 | 665 | 430 | 856 | 38 |
| 15 | 12 | 68 | 146 | 264 | 460 | 577 | 389 | 129 | 876 | 524 | 472 | 37 |
| 16 | 23 | 74 | 319 | 284 | 457 | 599 | 361 | 120 | 920 | 400 | 319 | 35 |
| 17 | 16 | 74 | 430 | 269 | 534 | 626 | 345 | 115 | 914 | 405 | 244 | 34 |
| 18 | 13 | 78 | 521 | 269 | 822 | 606 | 376 | 104 | 845 | 517 | 238 | 32 |
| 19 | 13 | 78 | 521 | 249 | 1020 | 582 | 441 | 103 | 535 | 461 | 257 | 29 |
| 20 | 21 | 68 | 447 | 238 | 1130 | 623 | 475 | 147 | 366 | 312 | 260 | 29 |
| 21 | 22 | 66 | 373 | 250 | 1230 | 904 | 460 | 141 | 287 | 266 | 241 | 31 |
| 22 | 23 | 74 | 326 | 261 | 1330 | 1180 | 426 | 119 | 234 | 190 | 225 | 52 |
| 23 | 24 | 68 | 303 | 279 | 1430 | 1270 | 384 | 116 | 200 | 167 | 190 | 97 |
| 24 | 43 | 63 | 276 | 318 | 1460 | 1300 | 348 | 148 | 176 | 173 | 170 | 97 |
| 25 | 54 | 67 | 282 | 326 | 1240 | 1350 | 316 | 152 | 155 | 184 | 149 | 90 |
| 26 | 100 | 68 | 333 | 315 | 730 | 1280 | 315 | 169 | 136 | 155 | 131 | 86 |
| 27 | 141 | 68 | 353 | 268 | 544 | 879 | 421 | 160 | 124 | 121 | 115 | 158 |
| 28 | 212 | 70 | 320 | 262 | 509 | 626 | 578 | 155 | 112 | 102 | 109 | 210 |
| 29 | 244 | 72 | 280 | 244 | --- | 536 | 670 | 152 | 102 | 185 | 94 | 240 |
| 30 | 336 | 70 | 248 | 241 | --- | 484 | 674 | 280 | 95 | 163 | 84 | 281 |
| 31 | 316 | --- | 218 | 275 | --- | 453 | --- | 349 | --- | 184 | 78 | --- |
| TOTAL | 1750.2 | 2505 | 7006 | 11052 | 24766 | 25451 | 13672 | 6824 | 17217 | 7166 | 11073 | 2278 |
| MEAN | 56.5 | 83.5 | 226 | 357 | 885 | 821 | 456 | 220 | 574 | 231 | 357 | 75.9 |
| MAX | 336 | 232 | 521 | 667 | 1460 | 1350 | 674 | 647 | 1110 | 524 | 1080 | 281 |
| MIN | 8.3 | 58 | 70 | 238 | 457 | 453 | 315 | 103 | 95 | 75 | 78 | 29 |
| CFSM | .09 | .14 | .38 | .59 | 1.47 | 1.37 | .76 | .37 | .96 | .38 | .59 | .13 |
| IN. | .11 | .16 | .43 | .68 | 1.53 | 1.58 | .85 | .42 | 1.07 | .44 | .69 | .14 |

CAL YR 1981 TOTAL 65651.1 MEAN 180 MAX 907 MIN 8.3 CFSM .30 IN 4.06
WTR YR 1982 TOTAL 130760.2 MEAN 358 MAX 1460 MIN 8.3 CFSM .60 IN 8.09

YORK RIVER BASIN

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01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1969, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPF- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- RID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CaCO3) | CALCIUM DIS- SOLVED (MG/L AS Ca) | MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| OCT 14... | 1200 | 11 | 40 | 6.9 | 10.0 | 2.7 | 10.1 | 130 | 200 | 14 | 3.1 | 1.5 |
| DEC 17... | 1100 | 426 | 40 | 6.6 | 3.5 | 11 | 13.5 | 200 | 2000 | 11 | 2.5 | 1.1 |
| MAR 24... | 0945 | 1300 | 54 | 6.3 | 10.0 | 12 | 9.6 | 210 | 130 | 12 | 2.7 | 1.3 |
| MAY 24... | 1200 | 154 | 60 | 6.8 | 19.5 | 10 | 8.4 | 1200 | 730 | 16 | 3.5 | 1.7 |
| AUG 10... | 1100 | 1010 | 51 | 6.5 | 25.0 | 14 | 7.4 | 120 | 380 | 12 | 2.8 | 1.1 |

| DATE | SODIUM, DIS- SOLVED (MG/L AS Na) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CaCO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| OCT 14... | 3.1 | 1.7 | 11 | 6.6 | 4.5 | <.1 | 5.2 | 43 | 33 | .06 | .090 | .37 |
| DEC 17... | 3.1 | 2.0 | 7.0 | 7.7 | 4.9 | <.1 | 8.0 | 43 | 34 | .18 | <.010 | .47 |
| MAR 24... | 4.0 | 1.4 | 6.0 | 9.5 | 5.8 | <.1 | 7.4 | 51 | 36 | .13 | .030 | .51 |
| MAY 24... | 3.0 | 1.0 | 19 | 4.0 | 4.0 | <.1 | 6.9 | 48 | 37 | .22 | .070 | 2.60 |
| AUG 10... | 2.8 | 1.3 | 9.0 | 6.0 | 3.7 | <.1 | 8.3 | 47 | 31 | <.10 | <.010 | .60 |

< Actual value is known to be less than the value shown.

YORK RIVER BASIN

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|-------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| OCT | | | | | | | | | | | |
| 14... | .020 | .020 | .020 | 1 | 2 | 100 | 20 | 7 | 3 | 20 | <10 |
| DEC | | | | | | | | | | | |
| 17... | .060 | .030 | <.010 | 1 | <1 | 100 | 26 | 1 | 2 | 20 | 10 |
| MAR | | | | | | | | | | | |
| 24... | .040 | .020 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | |
| 24... | .080 | .020 | <.010 | 2 | 1 | <100 | 31 | 2 | 1 | 10 | <10 |
| AUG | | | | | | | | | | | |
| 10... | .080 | .010 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-------|---|--|---|--|---|--|---|--|---|--|---|
| OCT | | | | | | | | | | | |
| 14... | 3 | 3 | 7 | 2 | 1700 | 290 | 11 | <1 | 120 | 110 | .2 |
| DEC | | | | | | | | | | | |
| 17... | <1 | <1 | 7 | 1 | 1700 | 340 | 3 | <1 | 140 | 76 | <.1 |
| MAR | | | | | | | | | | | |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | |
| 24... | 2 | <1 | 2 | 2 | 3900 | 830 | 3 | 3 | 190 | 110 | .2 |
| AUG | | | | | | | | | | | |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SED- IMENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|--|---|--|--|---|---|--|---|--|--|---|
| OCT | | | | | | | | | | | |
| 14... | <.1 | 5 | 2 | <1 | <1 | <1 | <1 | 40 | <4 | 1 | 100 |
| DEC | | | | | | | | | | | |
| 17... | <.1 | 3 | 2 | <1 | <1 | <1 | <1 | 40 | 8 | 129 | 99 |
| MAR | | | | | | | | | | | |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 19 | 75 |
| MAY | | | | | | | | | | | |
| 24... | <.1 | 6 | 4 | <1 | <1 | <1 | <1 | 30 | <3 | 9 | 99 |
| AUG | | | | | | | | | | | |
| 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23 | 90 |

< Actual value is known to be less than the value shown.

YORK RIVER BASIN

123

01677000 WARE CREEK NEAR TOANO, VA

LOCATION.--Lat 37°20'17", long 76°47'12", New Kent County, Hydrologic Unit 02080107, on left bank at upstream side of bridge on State Highway 600, 0.8 mi (1.3 km) upstream from France Swamp, and 4.9 mi (7.9 km) north of Toano.

DRAINAGE AREA.--6.29 mi² (16.29 km²).

PERIOD OF RECORD.--October 1979 to October 1981, March 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 10 ft (3 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Oct. 19 to Mar. 2. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36 ft³/s (1.02 m³/s) Nov. 3, 1979, gage height, 2.30 ft (0.701 m); no flow at times September 1980 and July to September 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 26 ft³/s (0.74 m³/s) June 2, gage height, 1.83 ft (0.558 m); minimum daily discharge recorded, 0.64 ft³/s (0.018 m³/s) July 9; minimum gage height recorded, 0.67 ft (0.204 m) July 8-10; discharge and/or gage heights may have been higher or lower during period of no gage-height record, Oct. 19 to Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|-------|------|-------|-------|-------|------|
| 1 | .90 | | | | | --- | 3.9 | 2.9 | 7.1 | 2.8 | 9.1 | 1.5 |
| 2 | 2.0 | | | | | 4.5 | 3.9 | 2.7 | 20 | 2.7 | 4.6 | 1.5 |
| 3 | 2.9 | | | | | 3.5 | 4.1 | 2.7 | 8.5 | 1.6 | 2.6 | 1.6 |
| 4 | 3.0 | | | | | 3.1 | 3.6 | 2.4 | 9.7 | 1.5 | 1.9 | 1.7 |
| 5 | 3.5 | | | | | 3.0 | 3.0 | 2.2 | 8.6 | 1.4 | 1.6 | 1.6 |
| 6 | 4.2 | | | | | 3.7 | 4.1 | 2.2 | 6.5 | 1.2 | 2.1 | 1.5 |
| 7 | 5.0 | | | | | 0.9 | 3.9 | 2.1 | 4.2 | 1.1 | 6.0 | 1.3 |
| 8 | 5.5 | | | | | 8.4 | 3.6 | 2.2 | 3.5 | .81 | 6.5 | 1.3 |
| 9 | 5.7 | | | | | 4.8 | 5.6 | 2.2 | 3.3 | .64 | 16 | 1.3 |
| 10 | 5.9 | | | | | 3.4 | 5.8 | 2.1 | 3.0 | .97 | 7.4 | 1.5 |
| 11 | 6.5 | | | | | 3.1 | 4.7 | 1.8 | 2.6 | 2.8 | 8.3 | 1.6 |
| 12 | 7.0 | | | | | 3.6 | 4.1 | 1.9 | 2.5 | 3.6 | 15 | 1.7 |
| 13 | 6.8 | | | | | 6.1 | 3.9 | 1.7 | 2.4 | 3.9 | 7.1 | 1.8 |
| 14 | 4.9 | | | | | 9.5 | 3.6 | 1.7 | 4.1 | 8.0 | 4.4 | 2.2 |
| 15 | 3.8 | | | | | 14 | 3.9 | 1.6 | 3.7 | 9.7 | 3.4 | 2.1 |
| 16 | 3.4 | | | | | 17 | 3.9 | 1.5 | 2.7 | 5.3 | 3.0 | 2.2 |
| 17 | 3.4 | | | | | 8.7 | 4.3 | 1.5 | 3.7 | 3.0 | 2.8 | 2.1 |
| 18 | 3.2 | | | | | 5.0 | 7.1 | 1.5 | 12 | 2.0 | 4.0 | 1.9 |
| 19 | --- | | | | | 4.7 | 6.9 | 1.6 | 7.9 | 1.5 | 3.8 | 1.7 |
| 20 | --- | | | | | 9.3 | 5.8 | 2.2 | 5.8 | 1.4 | 2.8 | 2.0 |
| 21 | --- | | | | | 11 | 6.0 | 2.1 | 3.7 | 1.7 | 2.6 | 2.1 |
| 22 | --- | | | | | 8.3 | 5.4 | 2.0 | 2.8 | 1.4 | 3.3 | 2.4 |
| 23 | --- | | | | | 6.1 | 3.9 | 3.2 | 2.6 | 2.5 | 3.4 | 2.8 |
| 24 | --- | | | | | 5.4 | 2.7 | 4.1 | 2.3 | 6.5 | 4.0 | 2.1 |
| 25 | --- | | | | | 5.1 | 2.4 | 8.7 | 1.7 | 4.3 | 3.3 | 1.7 |
| 26 | --- | | | | | 4.7 | 4.1 | 6.7 | 1.5 | 2.6 | 2.6 | 3.3 |
| 27 | --- | | | | | 4.3 | 11 | 3.8 | 1.6 | 2.0 | 2.1 | 9.8 |
| 28 | --- | | | | | 4.1 | 6.7 | 3.0 | 1.7 | 1.7 | 4.1 | 5.2 |
| 29 | --- | | | | | 3.6 | 4.3 | 2.8 | 1.8 | 4.4 | 3.5 | 2.8 |
| 30 | --- | | | | | 3.4 | 3.3 | 6.0 | 2.1 | 4.2 | 2.4 | 2.3 |
| 31 | --- | | | | | 3.4 | --- | 5.5 | --- | 8.0 | 2.0 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | 139.5 | 88.6 | 143.6 | 95.22 | 145.7 | 68.6 |
| MEAN | --- | --- | --- | --- | --- | --- | 4.65 | 2.86 | 4.79 | 3.07 | 4.70 | 2.29 |
| MAX | --- | --- | --- | --- | --- | --- | 11 | 8.7 | 20 | 9.7 | 16 | 9.8 |
| MIN | --- | --- | --- | --- | --- | --- | 2.4 | 1.5 | 1.5 | .64 | 1.6 | 1.3 |
| CF5M | --- | --- | --- | --- | --- | --- | .74 | .46 | .76 | .49 | .75 | .36 |
| IN. | --- | --- | --- | --- | --- | --- | .82 | .52 | .85 | .56 | .86 | .41 |

SOUTH ATLANTIC SLOPE BASINS

JAMES RIVER BASIN

02011400 JACKSON RIVER NEAR BACOVA, VA

LOCATION.--Lat 38°02'32", long 79°52'54", Bath County, Hydrologic Unit 02080201, on left bank 0.1 mi (0.2 km) downstream from ford, 1.8 mi (2.9 km) upstream from Back Creek, and 2.2 mi (3.5 km) southwest of Bacova.

DRAINAGE AREA.--158 mi² (409 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,639.20 ft (499.628 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--8 years, 169 ft³/s (4.786 m³/s), 14.53 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,970 ft³/s (197 m³/s) Apr. 5, 1977, gage height, 13.39 ft (4.081 m), from rating curve extended above 1,300 ft³/s (37 m³/s) on basis of slope-area measurements at gage heights 8.88 ft (2.707 m), 11.40 ft (3.475 m), and 13.88 ft (4.231 m); minimum, 17 ft³/s (0.48 m³/s) Sept. 29, 30, Oct. 1, 14, 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 11.40 ft (3.475 m), discharge, 4,800 ft³/s (136 m³/s), and flood of Dec. 26, 1973, reached a stage of 13.88 ft (4.231 m), discharge, 7,560 ft³/s (214 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 1 | 0230 | 1730 49.0 | 7.70 2.347 | Mar. 20 | 1745 | 3830 108 | 10.43 3.179 |
| Feb. 3 | 1730 | 2030 57.5 | 8.16 2.487 | June 13 | 1530 | *3900 110 | 10.50 3.200 |
| Feb. 17 | 2045 | 1720 48.7 | 7.69 2.344 | | | | |

Minimum discharge, 17 ft³/s (0.48 m³/s) Oct. 1, 14, 15; minimum gage height, 2.96 ft (0.902 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|-------|------|------|-------|------|------|-------|
| 1 | 19 | 91 | 44 | 96 | 952 | 177 | 199 | 189 | 230 | 76 | 82 | 33 |
| 2 | 23 | 75 | 86 | 91 | 429 | 194 | 173 | 171 | 187 | 68 | 59 | 34 |
| 3 | 23 | 66 | 89 | 106 | 1450 | 199 | 204 | 151 | 149 | 65 | 52 | 32 |
| 4 | 21 | 59 | 82 | 877 | 1080 | 184 | 279 | 135 | 151 | 72 | 49 | 30 |
| 5 | 20 | 53 | 79 | 693 | 660 | 180 | 238 | 122 | 224 | 70 | 51 | 29 |
| 6 | 20 | 52 | 71 | 418 | 485 | 173 | 238 | 113 | 227 | 63 | 79 | 28 |
| 7 | 20 | 51 | 65 | 321 | 355 | 405 | 206 | 106 | 182 | 59 | 130 | 27 |
| 8 | 20 | 46 | 64 | 273 | 279 | 482 | 184 | 101 | 153 | 66 | 110 | 27 |
| 9 | 19 | 42 | 64 | 223 | 576 | 371 | 189 | 95 | 141 | 68 | 88 | 27 |
| 10 | 19 | 40 | 56 | 165 | 537 | 304 | 187 | 86 | 558 | 80 | 72 | 27 |
| 11 | 19 | 38 | 64 | 150 | 385 | 264 | 166 | 80 | 505 | 98 | 60 | 26 |
| 12 | 19 | 37 | 59 | 140 | 297 | 291 | 158 | 76 | 656 | 158 | 54 | 26 |
| 13 | 19 | 35 | 55 | 130 | 255 | 285 | 149 | 72 | 2960 | 105 | 50 | 25 |
| 14 | 18 | 35 | 64 | 125 | 209 | 279 | 141 | 68 | 1540 | 85 | 47 | 25 |
| 15 | 18 | 33 | 114 | 115 | 182 | 320 | 129 | 65 | 790 | 76 | 45 | 25 |
| 16 | 19 | 33 | 106 | 110 | 255 | 423 | 120 | 62 | 540 | 74 | 42 | 24 |
| 17 | 19 | 33 | 85 | 105 | 977 | 609 | 124 | 60 | 492 | 82 | 42 | 24 |
| 18 | 20 | 32 | 77 | 150 | 1070 | 613 | 153 | 60 | 342 | 86 | 47 | 24 |
| 19 | 21 | 32 | 68 | 198 | 692 | 495 | 129 | 60 | 270 | 111 | 43 | 25 |
| 20 | 20 | 34 | 62 | 132 | 554 | 2100 | 124 | 63 | 217 | 136 | 39 | 25 |
| 21 | 20 | 35 | 55 | 283 | 509 | 1780 | 122 | 65 | 180 | 79 | 38 | 26 |
| 22 | 19 | 32 | 115 | 258 | 426 | 1040 | 115 | 61 | 153 | 67 | 36 | 47 |
| 23 | 21 | 31 | 206 | 169 | 339 | 726 | 108 | 61 | 135 | 66 | 35 | 40 |
| 24 | 23 | 33 | 339 | 174 | 294 | 547 | 103 | 60 | 118 | 72 | 35 | 30 |
| 25 | 21 | 35 | 250 | 145 | 255 | 439 | 100 | 62 | 108 | 59 | 36 | 28 |
| 26 | 30 | 32 | 194 | 110 | 214 | 412 | 187 | 462 | 98 | 53 | 33 | 44 |
| 27 | 853 | 33 | 167 | 90 | 201 | 327 | 264 | 261 | 92 | 50 | 34 | 108 |
| 28 | 521 | 42 | 144 | 100 | 187 | 267 | 285 | 187 | 86 | 47 | 37 | 56 |
| 29 | 224 | 42 | 124 | 95 | --- | 235 | 246 | 147 | 83 | 49 | 33 | 40 |
| 30 | 152 | 39 | 102 | 113 | --- | 209 | 211 | 297 | 82 | 59 | 32 | 35 |
| 31 | 116 | --- | 91 | 228 | --- | 201 | --- | 288 | --- | 80 | 33 | --- |
| TOTAL | 2396 | 1271 | 3241 | 6383 | 14104 | 14531 | 5231 | 3886 | 11649 | 2379 | 1623 | 997 |
| MEAN | 77.3 | 42.4 | 105 | 206 | 504 | 469 | 174 | 125 | 388 | 76.7 | 52.4 | 33.2 |
| MAX | 853 | 91 | 339 | 877 | 1450 | 2100 | 285 | 462 | 2960 | 158 | 130 | 108 |
| MIN | 18 | 31 | 44 | 90 | 182 | 173 | 100 | 60 | 82 | 47 | 32 | 24 |
| CFSM | .49 | .27 | .67 | 1.30 | 3.19 | 2.97 | 1.10 | .79 | 2.46 | .49 | .33 | .21 |
| IN. | .56 | .30 | .76 | 1.50 | 3.32 | 3.42 | 1.23 | .91 | 2.74 | .56 | .38 | .23 |
| CAL YR 1981 | TOTAL | 35160 | MEAN | 96.3 | MAX | 2140 | MIN | 18 | CFSM | .61 | IN | 8.28 |
| WTR YR 1982 | TOTAL | 67691 | MEAN | 185 | MAX | 2960 | MIN | 18 | CFSM | 1.17 | IN | 15.94 |

JAMES RIVER BASIN

125

02011460 BACK CREEK NEAR SUNRISE, VA

LOCATION.--Lat 38°14'43", long 79°46'08", Bath County, Hydrologic Unit 02080201, on right bank 900 ft (270 m) upstream from bridge on State Highway 600, 0.8 mi (1.3 km) upstream from Gap Run, and 4.8 mi (7.7 km) northeast of Sunrise.

DRAINAGE AREA.--56.7 mi² (146.9 km²).

PERIOD OF RECORD.--June 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,200.02 ft (670.566 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 93.4 ft³/s (2.645 m³/s), 22.37 in/yr (568 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,400 ft³/s (153 m³/s) Jan. 26, 1978, gage height, 6.80 ft (2.073 m); minimum, 1.5 ft³/s (0.042 m³/s) Sept. 13, 14, 1980; minimum gage height, 0.07 ft (0.021 m) July 21, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1200 | 1950 55.2 | 4.91 1.497 | Feb. 17 | 1800 | 931 26.4 | 3.76 1.146 |
| Jan. 31 | 2330 | 919 26.0 | 3.74 1.140 | Mar. 20 | ---- | Unknown | Unknown |
| Feb. 3 | 1630 | 901 25.5 | 3.71 1.131 | June 13 | 0930 | *2780 78.7 | 5.51 1.679 |

Minimum discharge, 3.1 ft³/s (0.088 m³/s) Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|---------|------|------|------|------|------|------|------|------|-------|-------|
| 1 | 4.3 | 44 | 45 | 60 | 601 | 107 | 86 | 102 | 106 | 25 | 45 | 9.0 |
| 2 | 5.8 | 36 | 97 | 51 | 288 | 114 | 80 | 88 | 76 | 20 | 32 | 9.0 |
| 3 | 4.9 | 31 | 105 | 56 | 663 | 119 | 152 | 71 | 55 | 18 | 26 | 7.5 |
| 4 | 4.3 | 27 | 88 | 602 | 613 | 114 | 267 | 61 | 52 | 28 | 21 | 6.3 |
| 5 | 4.3 | 25 | 73 | 482 | 365 | 114 | 195 | 53 | 142 | 20 | 20 | 5.6 |
| 6 | 4.3 | 26 | 61 | 267 | 255 | 112 | 168 | 48 | 166 | 18 | 76 | 5.2 |
| 7 | 6.4 | 24 | 54 | 205 | 186 | 216 | 123 | 45 | 115 | 15 | 92 | 4.7 |
| 8 | 5.2 | 21 | 55 | 200 | 150 | 309 | 106 | 43 | 80 | 18 | 96 | 4.7 |
| 9 | 4.6 | 19 | 52 | 168 | 442 | 235 | 104 | 39 | 61 | 20 | 63 | 4.7 |
| 10 | 4.3 | 19 | 50 | 106 | 414 | 186 | 94 | 34 | 139 | 18 | 47 | 4.5 |
| 11 | 4.3 | 18 | 52 | 86 | 267 | 150 | 90 | 30 | 228 | 44 | 36 | 4.5 |
| 12 | 4.3 | 17 | 45 | 76 | 190 | 220 | 89 | 28 | 198 | 61 | 30 | 4.0 |
| 13 | 3.8 | 16 | 42 | 70 | 155 | 243 | 84 | 26 | 1610 | 35 | 25 | 3.8 |
| 14 | 3.8 | 15 | 43 | 64 | 121 | 220 | 77 | 24 | 597 | 27 | 22 | 3.8 |
| 15 | 3.6 | 14 | 56 | 58 | 104 | 200 | 66 | 22 | 300 | 26 | 20 | 3.8 |
| 16 | 3.6 | 14 | 61 | 52 | 151 | 210 | 61 | 22 | 188 | 66 | 16 | 3.5 |
| 17 | 3.3 | 14 | 54 | 43 | 648 | 480 | 70 | 20 | 135 | 140 | 15 | 3.3 |
| 18 | 3.6 | 14 | 55 | 50 | 558 | 470 | 108 | 20 | 102 | 120 | 21 | 3.3 |
| 19 | 4.6 | 14 | 46 | 52 | 334 | 300 | 110 | 20 | 82 | 112 | 15 | 3.3 |
| 20 | 4.6 | 14 | 46 | 46 | 276 | 1300 | 101 | 21 | 66 | 64 | 12 | 3.8 |
| 21 | 4.6 | 15 | 43 | 95 | 300 | 800 | 88 | 22 | 55 | 46 | 12 | 4.0 |
| 22 | 4.3 | 14 | 58 | 96 | 249 | 400 | 71 | 23 | 47 | 35 | 10 | 15 |
| 23 | 4.5 | 13 | 296 | 84 | 192 | 315 | 62 | 23 | 42 | 35 | 9.5 | 12 |
| 24 | 4.8 | 15 | 332 | 102 | 170 | 225 | 55 | 32 | 36 | 34 | 9.0 | 8.2 |
| 25 | 5.5 | 14 | 198 | 92 | 179 | 177 | 51 | 135 | 33 | 25 | 9.0 | 7.1 |
| 26 | 17 | 12 | 145 | 76 | 150 | 150 | 102 | 146 | 30 | 22 | 9.0 | 15 |
| 27 | 1070 | 19 | 116 | 66 | 135 | 123 | 157 | 98 | 28 | 18 | 8.2 | 64 |
| 28 | 322 | 53 | 94 | 64 | 117 | 102 | 175 | 71 | 25 | 18 | 9.0 | 28 |
| 29 | 142 | 50 | 76 | 55 | --- | 92 | 150 | 56 | 27 | 23 | 8.2 | 18 |
| 30 | 85 | 40 | 57 | 54 | --- | 83 | 123 | 126 | 28 | 19 | 7.1 | 14 |
| 31 | 59 | --- | 51 | 264 | --- | 86 | --- | 164 | --- | 50 | 6.7 | --- |
| TOTAL | 1806.6 | 667 | 2646 | 3842 | 8273 | 7972 | 3265 | 1713 | 4849 | 1220 | 827.7 | 283.6 |
| MEAN | 58.3 | 22.2 | 85.4 | 124 | 295 | 257 | 109 | 55.3 | 162 | 39.4 | 26.7 | 9.45 |
| MAX | 1070 | 53 | 332 | 602 | 663 | 1300 | 267 | 164 | 1610 | 140 | 96 | 64 |
| MIN | 3.3 | 12 | 42 | 43 | 104 | 83 | 51 | 20 | 25 | 15 | 6.7 | 3.3 |
| CFSM | 1.03 | .39 | 1.51 | 2.19 | 5.20 | 4.53 | 1.92 | .98 | 2.86 | .70 | .47 | .17 |
| IN. | 1.18 | .44 | 1.74 | 2.52 | 5.43 | 5.23 | 2.14 | 1.12 | 3.18 | .80 | .54 | .19 |
| CAL YR 1981 | TOTAL | 22813.9 | MEAN | 62.5 | MAX | 1120 | MIN | 3.3 | CFSM | 1.10 | IN | 14.96 |
| WTR YR 1982 | TOTAL | 37364.9 | MEAN | 102 | MAX | 1610 | MIN | 3.3 | CFSM | 1.80 | IN | 24.51 |

JAMES RIVER BASIN

02011480 BACK CREEK ON ROUTE 600, NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°08'03", long 79°51'55", Bath County, Hydrologic Unit 02080201, on left bank 100 ft (30 m) downstream from bridge on State Highway 600, 2.8 mi (4.5 km) northeast of Mountain Grove, and 3.0 mi (4.8 km) upstream from Little Back Creek.

DRAINAGE AREA.--85.8 mi² (222.2 km²).

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,818.05 ft (554.142 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 2, 1979, at site 170 ft (52 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--9 years, 141 ft³/s (3.993 m³/s), 22.32 in/yr (567 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,420 ft³/s (210 m³/s) Dec. 26, 1973, gage height, 9.90 ft (3.018 m), from rating curve extended above 5,200 ft³/s (150 m³/s) on basis of runoff comparisons with nearby stations; minimum, 2.2 ft³/s (0.062 m³/s) Sept. 21, 22, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s (37 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1330 | 2910 82.4 | 7.07 2.155 | Feb. 17 | 2030 | 1720 48.7 | 5.85 1.783 |
| Jan. 4 | 1400 | 1540 43.6 | 5.63 1.716 | Mar. 20 | 1400 | *4830 137 | 8.61 2.624 |
| Feb. 1 | 0200 | 1480 41.9 | 5.55 1.692 | June 13 | 1230 | 4780 135 | 8.58 2.615 |
| Feb. 3 | 1800 | 1770 50.1 | 5.91 1.801 | | | | |

Minimum discharge, 3.0 ft³/s (0.085 m³/s) Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|------|------|------|-------|-------|------|------|------|------|-------|-------|
| 1 | 5.1 | 76 | 78 | 102 | 1020 | 140 | 109 | 139 | 174 | 33 | 56 | 12 |
| 2 | 13 | 59 | 139 | 91 | 421 | 147 | 102 | 122 | 120 | 28 | 37 | 14 |
| 3 | 11 | 49 | 142 | 105 | 1160 | 153 | 145 | 104 | 91 | 24 | 29 | 11 |
| 4 | 9.6 | 45 | 126 | 1030 | 1100 | 149 | 276 | 92 | 84 | 35 | 24 | 10 |
| 5 | 7.5 | 41 | 112 | 802 | 562 | 149 | 205 | 80 | 168 | 32 | 27 | 9.6 |
| 6 | 5.1 | 46 | 99 | 401 | 367 | 147 | 180 | 72 | 200 | 25 | 114 | 9.0 |
| 7 | 5.7 | 43 | 90 | 286 | 258 | 290 | 155 | 67 | 145 | 20 | 125 | 7.9 |
| 8 | 8.6 | 36 | 91 | 267 | 198 | 437 | 148 | 65 | 113 | 22 | 113 | 7.2 |
| 9 | 7.5 | 31 | 88 | 222 | 554 | 322 | 148 | 58 | 95 | 29 | 82 | 6.8 |
| 10 | 8.3 | 27 | 80 | 147 | 584 | 245 | 138 | 51 | 337 | 29 | 59 | 6.5 |
| 11 | 10 | 24 | 83 | 110 | 353 | 208 | 127 | 44 | 356 | 44 | 43 | 6.5 |
| 12 | 7.9 | 22 | 76 | 105 | 245 | 279 | 123 | 42 | 388 | 67 | 38 | 5.8 |
| 13 | 6.0 | 21 | 62 | 100 | 198 | 315 | 118 | 40 | 2950 | 43 | 32 | 5.8 |
| 14 | 5.3 | 21 | 79 | 95 | 155 | 298 | 109 | 38 | 1200 | 34 | 29 | 5.8 |
| 15 | 5.1 | 23 | 105 | 90 | 136 | 298 | 98 | 37 | 457 | 29 | 25 | 4.0 |
| 16 | 4.6 | 20 | 112 | 80 | 189 | 338 | 91 | 34 | 270 | 38 | 20 | 4.2 |
| 17 | 5.7 | 19 | 102 | 70 | 1040 | 681 | 95 | 30 | 186 | 132 | 18 | 3.2 |
| 18 | 10 | 20 | 104 | 98 | 1030 | 703 | 134 | 29 | 138 | 101 | 21 | 4.5 |
| 19 | 11 | 20 | 90 | 106 | 526 | 437 | 138 | 30 | 111 | 118 | 19 | 5.0 |
| 20 | 7.9 | 24 | 80 | 95 | 413 | 2430 | 127 | 33 | 92 | 74 | 17 | 5.8 |
| 21 | 6.4 | 23 | 75 | 156 | 417 | 1470 | 115 | 33 | 74 | 53 | 17 | 6.5 |
| 22 | 5.7 | 21 | 108 | 172 | 346 | 703 | 100 | 35 | 63 | 41 | 14 | 21 |
| 23 | 6.8 | 16 | 392 | 147 | 264 | 413 | 89 | 37 | 55 | 37 | 14 | 18 |
| 24 | 8.6 | 21 | 562 | 160 | 222 | 279 | 84 | 35 | 46 | 40 | 14 | 14 |
| 25 | 10 | 22 | 318 | 130 | 225 | 210 | 78 | 128 | 42 | 33 | 14 | 11 |
| 26 | 29 | 20 | 222 | 113 | 190 | 184 | 142 | 215 | 40 | 25 | 11 | 28 |
| 27 | 1620 | 26 | 174 | 91 | 172 | 153 | 213 | 136 | 38 | 21 | 13 | 87 |
| 28 | 599 | 74 | 142 | 97 | 153 | 130 | 236 | 106 | 32 | 20 | 14 | 45 |
| 29 | 214 | 79 | 122 | 95 | --- | 119 | 203 | 92 | 32 | 24 | 14 | 29 |
| 30 | 132 | 70 | 101 | 94 | --- | 109 | 164 | 223 | 33 | 26 | 10 | 22 |
| 31 | 98 | --- | 94 | 236 | --- | 109 | --- | 273 | --- | 50 | 10 | --- |
| TOTAL | 2884.4 | 1039 | 4248 | 5893 | 12498 | 12045 | 4190 | 2520 | 8130 | 1327 | 1073 | 426.1 |
| MEAN | 93.0 | 34.6 | 137 | 190 | 446 | 389 | 140 | 81.3 | 271 | 42.8 | 34.6 | 14.2 |
| MAX | 1620 | 79 | 562 | 1030 | 1160 | 2430 | 276 | 273 | 2950 | 132 | 125 | 87 |
| MIN | 4.6 | 16 | 62 | 70 | 136 | 109 | 78 | 29 | 32 | 20 | 10 | 3.2 |
| CFSM | 1.08 | .40 | 1.60 | 2.21 | 5.20 | 4.53 | 1.63 | .95 | 3.16 | .50 | .40 | .17 |
| IN. | 1.25 | .45 | 1.84 | 2.55 | 5.42 | 5.22 | 1.82 | 1.09 | 3.52 | .58 | .46 | .18 |
| CAL YR 1981 TOTAL | 35362.4 | MEAN | 96.9 | MAX | 2060 | MIN | 3.5 | CFSM | 1.13 | IN | 15.32 | |
| WTR YR 1982 TOTAL | 56273.5 | MEAN | 154 | MAX | 2950 | MIN | 3.2 | CFSM | 1.79 | IN | 24.39 | |

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°04'10", long 79°53'50", Bath County, Hydrologic Unit 02080201, on left bank 0.3 mi (0.5 km) downstream from Cummings Run, 0.8 mi (1.3 km) downstream from bridge on State Highway 39, and 2.1 mi (3.4 km) south of Mountain Grove.

DRAINAGE AREA.--134 mi² (347 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,701.45 ft (518.602 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 184 ft³/s (5.211 m³/s), 18.65 in/yr (474 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) Mar. 7, 1967, gage height, 10.77 ft (3.283 m), from rating curve extended above 4,000 ft³/s (110 m³/s) on basis of slope-area measurements at gage heights 7.39 ft (2.252 m), 9.05 ft (2.758 m), and 9.35 ft (2.850 m); minimum, 1.5 ft³/s (0.042 m³/s) Aug. 18, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft³/s (54 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1330 | 3250 92.0 | 6.66 2.030 | Feb. 17 | 2030 | 2350 66.6 | 5.91 1.801 |
| Jan. 4 | 1315 | 2080 58.9 | 5.67 1.728 | Mar. 20 | 1530 | 5320 151 | 7.91 2.411 |
| Feb. 1 | 0300 | 1910 54.1 | 5.50 1.676 | June 13 | 1015 | *6300 178 | 8.36 2.548 |
| Feb. 3 | 1745 | 2460* 69.7 | 6.00 1.829 | | | | |

Minimum discharge, 5.0 ft³/s (0.14 m³/s) Sept. 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|-------|-------|------|------|-------|------|------|-------|
| 1 | 7.2 | 99 | 88 | 117 | 1410 | 200 | 168 | 228 | 272 | 50 | 85 | 17 |
| 2 | 11 | 78 | 189 | 105 | 670 | 210 | 155 | 195 | 195 | 41 | 59 | 19 |
| 3 | 11 | 65 | 210 | 123 | 1640 | 220 | 204 | 162 | 140 | 37 | 46 | 16 |
| 4 | 11 | 58 | 174 | 1390 | 1490 | 210 | 395 | 138 | 125 | 48 | 39 | 15 |
| 5 | 9.4 | 52 | 145 | 1120 | 777 | 210 | 330 | 123 | 225 | 47 | 37 | 14 |
| 6 | 8.9 | 53 | 125 | 596 | 509 | 220 | 294 | 109 | 276 | 37 | 195 | 13 |
| 7 | 8.9 | 51 | 111 | 410 | 370 | 500 | 237 | 103 | 216 | 30 | 290 | 12 |
| 8 | 11 | 45 | 109 | 366 | 290 | 620 | 210 | 97 | 165 | 39 | 225 | 11 |
| 9 | 11 | 39 | 103 | 314 | 657 | 500 | 210 | 88 | 136 | 56 | 150 | 11 |
| 10 | 11 | 35 | 92 | 270 | 770 | 390 | 201 | 78 | 570 | 86 | 111 | 10 |
| 11 | 12 | 31 | 94 | 200 | 486 | 330 | 186 | 69 | 616 | 129 | 83 | 10 |
| 12 | 12 | 30 | 85 | 170 | 339 | 450 | 180 | 65 | 762 | 129 | 72 | 9.5 |
| 13 | 9.4 | 28 | 70 | 150 | 262 | 500 | 174 | 62 | 4070 | 78 | 60 | 9.0 |
| 14 | 8.9 | 28 | 88 | 140 | 213 | 460 | 162 | 56 | 1560 | 60 | 51 | 9.5 |
| 15 | 9.4 | 29 | 134 | 130 | 177 | 460 | 145 | 55 | 670 | 51 | 45 | 8.0 |
| 16 | 8.9 | 28 | 152 | 110 | 234 | 544 | 132 | 51 | 395 | 58 | 37 | 6.5 |
| 17 | 9.4 | 25 | 134 | 90 | 1370 | 975 | 134 | 46 | 279 | 157 | 34 | 6.0 |
| 18 | 12 | 25 | 127 | 94 | 1400 | 959 | 180 | 44 | 207 | 125 | 37 | 5.5 |
| 19 | 15 | 26 | 105 | 94 | 726 | 596 | 186 | 44 | 162 | 160 | 33 | 7.0 |
| 20 | 12 | 29 | 94 | 94 | 557 | 2770 | 177 | 45 | 134 | 109 | 27 | 8.0 |
| 21 | 11 | 28 | 86 | 160 | 526 | 1850 | 160 | 45 | 111 | 78 | 25 | 9.5 |
| 22 | 10 | 27 | 105 | 228 | 441 | 999 | 142 | 46 | 95 | 65 | 23 | 24 |
| 23 | 11 | 24 | 492 | 186 | 334 | 636 | 127 | 46 | 85 | 83 | 19 | 22 |
| 24 | 12 | 27 | 823 | 210 | 280 | 441 | 119 | 46 | 73 | 117 | 20 | 17 |
| 25 | 14 | 27 | 480 | 190 | 280 | 343 | 115 | 125 | 66 | 70 | 20 | 14 |
| 26 | 27 | 26 | 322 | 170 | 260 | 298 | 237 | 234 | 62 | 51 | 17 | 28 |
| 27 | 1880 | 28 | 249 | 120 | 230 | 249 | 366 | 162 | 60 | 38 | 18 | 117 |
| 28 | 792 | 72 | 195 | 130 | 215 | 213 | 400 | 127 | 51 | 34 | 20 | 70 |
| 29 | 306 | 92 | 155 | 115 | --- | 189 | 334 | 109 | 51 | 37 | 19 | 46 |
| 30 | 183 | 81 | 123 | 111 | --- | 174 | 269 | 326 | 53 | 44 | 17 | 34 |
| 31 | 127 | --- | 113 | 265 | --- | 171 | --- | 375 | --- | 70 | 16 | --- |
| TOTAL | 3582.4 | 1286 | 5572 | 7968 | 16913 | 16887 | 6329 | 3499 | 11882 | 2214 | 1930 | 598.5 |
| MEAN | 116 | 42.9 | 180 | 257 | 604 | 545 | 211 | 113 | 396 | 71.4 | 62.3 | 20.0 |
| MAX | 1880 | 99 | 823 | 1390 | 1640 | 2770 | 400 | 375 | 4070 | 160 | 290 | 117 |
| MIN | 7.2 | 24 | 70 | 90 | 177 | 171 | 115 | 44 | 51 | 30 | 16 | 5.5 |
| CF5M | .87 | .32 | 1.34 | 1.92 | 4.51 | 4.07 | 1.58 | .84 | 2.96 | .53 | .47 | .15 |
| IN. | .99 | .36 | 1.55 | 2.21 | 4.70 | 4.69 | 1.76 | .97 | 3.30 | .61 | .54 | .17 |

| | | | | | | | |
|-------------|-------|---------|----------|----------|---------|-----------|----------|
| CAL YR 1981 | TOTAL | 48145.3 | MEAN 132 | MAX 2830 | MIN 6.7 | CF5M .99 | IN 13.37 |
| WTR YR 1982 | TOTAL | 78660.9 | MEAN 216 | MAX 4070 | MIN 5.5 | CF5M 1.61 | IN 21.84 |

JAMES RIVER BASIN

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 31.0°C Aug. 5, 11, 1980; minimum recorded, 0.0°C on many days during winter periods in 1979, 1981, and Jan. 23, 24, Feb. 7, 1982.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.5°C July 16; minimum recorded, 0.0°C Jan. 23, 24, Feb. 7.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---------|------|------|----------|------|------|----------|-----|-----|---------|-----|-----|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 18.5 | 13.5 | 16.0 | 13.0 | 11.0 | 12.0 | 4.0 | 3.5 | 4.0 | 4.0 | 1.5 | 2.5 |
| 2 | 16.5 | 11.0 | 13.5 | 14.0 | 10.0 | 12.0 | 7.0 | 4.0 | 5.5 | 3.0 | .5 | 2.0 |
| 3 | 14.5 | 10.0 | 12.0 | 15.0 | 11.5 | 13.0 | 6.5 | 5.0 | 5.5 | 3.0 | 2.0 | 2.5 |
| 4 | 13.5 | 9.0 | 11.5 | 14.0 | 11.5 | 13.0 | 5.5 | 4.5 | 5.0 | 6.0 | 3.0 | 4.5 |
| 5 | 16.0 | 11.5 | 14.0 | 14.5 | 11.5 | 13.0 | 5.5 | 4.0 | 5.0 | 5.0 | 3.5 | 4.5 |
| 6 | 19.0 | 14.5 | 16.5 | 13.0 | 9.5 | 12.0 | 4.5 | 3.0 | 3.5 | 5.0 | 3.5 | 4.0 |
| 7 | 17.5 | 13.0 | 14.5 | 9.5 | 7.5 | 8.5 | 5.5 | 2.0 | 3.5 | 7.0 | 5.0 | 5.5 |
| 8 | 16.0 | 11.5 | 13.5 | 9.5 | 5.0 | 7.5 | 6.5 | 4.0 | 5.5 | 4.5 | 2.0 | 3.0 |
| 9 | 14.0 | 9.0 | 12.0 | 9.0 | 7.0 | 8.0 | 4.0 | 1.5 | 2.5 | 2.0 | .5 | 1.0 |
| 10 | 12.5 | 9.5 | 11.5 | 10.5 | 7.0 | 8.5 | 1.5 | .5 | 1.0 | .5 | .5 | .5 |
| 11 | 14.5 | 11.0 | 13.0 | 10.0 | 7.0 | 8.5 | 1.5 | .5 | 1.0 | .5 | .5 | .5 |
| 12 | 14.0 | 12.5 | 13.0 | 8.5 | 5.0 | 7.0 | 3.0 | 1.0 | 2.0 | .5 | .5 | .5 |
| 13 | 16.0 | 11.0 | 13.0 | 7.5 | 3.5 | 5.5 | 2.0 | .5 | 1.0 | .5 | .5 | .5 |
| 14 | 14.5 | 8.5 | 11.5 | 7.5 | 3.0 | 5.5 | 2.0 | .5 | 1.5 | .5 | .5 | .5 |
| 15 | 14.0 | 9.0 | 12.0 | 8.0 | 4.0 | 6.0 | 3.0 | 2.0 | 2.5 | .5 | .5 | .5 |
| 16 | 15.0 | 12.0 | 13.5 | 7.5 | 4.0 | 6.0 | 3.5 | 2.0 | 2.5 | .5 | .5 | .5 |
| 17 | 15.0 | 9.5 | 12.0 | 9.5 | 7.0 | 8.0 | 2.5 | 1.5 | 2.0 | .5 | .5 | .5 |
| 18 | 14.0 | 11.5 | 12.5 | 9.0 | 7.0 | 8.0 | 2.5 | .5 | 2.0 | .5 | .5 | .5 |
| 19 | 11.5 | 8.5 | 10.0 | 9.0 | 5.0 | 7.0 | 2.0 | .5 | .5 | .5 | .5 | .5 |
| 20 | 11.0 | 5.5 | 8.5 | 9.0 | 6.5 | 8.5 | .5 | .5 | .5 | .5 | .5 | .5 |
| 21 | 12.0 | 6.5 | 9.0 | 6.0 | 4.0 | 5.0 | .5 | .5 | .5 | .5 | .5 | .5 |
| 22 | 12.5 | 9.0 | 11.0 | 5.0 | 2.0 | 3.5 | 1.0 | .5 | .5 | .5 | .5 | .5 |
| 23 | 12.0 | 9.0 | 11.5 | 3.0 | .5 | 2.0 | 3.5 | 1.0 | 2.0 | .5 | .0 | .5 |
| 24 | 11.0 | 7.0 | 9.0 | 3.0 | 1.0 | 2.0 | 5.5 | 4.0 | 4.5 | 1.0 | .0 | .5 |
| 25 | 8.5 | 7.0 | 8.0 | 5.0 | 2.5 | 3.5 | 5.0 | 3.5 | 4.5 | .5 | .5 | .5 |
| 26 | 11.0 | 8.5 | 10.0 | 5.0 | 1.5 | 3.0 | 3.5 | 2.5 | 3.0 | .5 | .5 | .5 |
| 27 | 13.0 | 11.5 | 12.0 | 7.0 | 3.5 | 5.0 | 5.0 | 3.5 | 4.0 | --- | --- | --- |
| 28 | 14.0 | 11.5 | 12.5 | 5.5 | 3.5 | 4.5 | 5.0 | 2.5 | 3.5 | .5 | .5 | .5 |
| 29 | 13.0 | 10.0 | 11.5 | 5.0 | 2.5 | 3.5 | 4.5 | 2.0 | 3.5 | .5 | .5 | .5 |
| 30 | 12.0 | 11.0 | 11.5 | 3.5 | 1.5 | 3.0 | 2.5 | .5 | 1.5 | 1.5 | .5 | 1.0 |
| 31 | 13.0 | 10.5 | 11.5 | --- | --- | --- | 1.5 | .5 | .5 | 2.0 | .5 | 1.5 |
| MONTH | 19.0 | 5.5 | 12.0 | 15.0 | .5 | 7.0 | 7.0 | .5 | 2.5 | 7.0 | .0 | 1.5 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|------|-------|------|------|--------|------|------|-----------|------|------|
| FEBRUARY | | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 4.0 | 2.0 | 2.5 | 7.0 | 2.0 | 4.5 | 13.0 | 6.5 | 9.5 | 15.5 | 9.0 | 12.0 |
| 2 | 3.5 | 2.0 | 3.0 | 8.5 | 3.5 | 6.0 | 14.0 | 7.0 | 10.5 | 14.0 | 11.0 | 12.5 |
| 3 | 5.0 | 3.5 | 4.0 | 6.0 | 5.0 | 5.5 | 14.0 | 10.0 | 11.5 | 17.0 | 9.5 | 13.0 |
| 4 | 5.5 | 4.5 | 5.0 | 5.0 | 4.0 | 4.5 | 11.0 | 6.5 | 8.5 | 18.0 | 9.5 | 13.5 |
| 5 | 5.0 | 4.0 | 4.5 | 9.0 | 4.5 | 6.5 | 10.0 | 5.5 | 8.0 | 19.0 | 10.5 | 14.5 |
| 6 | 5.0 | 2.5 | 4.5 | 7.0 | 5.0 | 5.5 | 8.5 | 4.5 | 7.0 | 19.5 | 12.0 | 15.5 |
| 7 | 3.5 | .0 | 2.0 | 5.0 | 3.5 | 5.0 | 8.5 | 2.0 | 5.0 | 17.5 | 14.0 | 16.0 |
| 8 | 4.0 | .5 | 2.0 | 6.5 | 2.5 | 4.0 | 7.5 | 4.0 | 5.5 | 17.0 | 14.0 | 15.5 |
| 9 | 4.5 | 3.5 | 3.5 | 7.5 | 3.0 | 5.0 | 8.5 | 4.5 | 6.5 | 19.5 | 11.5 | 15.0 |
| 10 | 4.0 | 2.0 | 3.0 | 7.0 | 3.5 | 5.5 | 10.5 | 4.5 | 7.0 | 20.0 | 11.5 | 15.5 |
| 11 | 4.5 | 2.0 | 3.0 | 9.5 | 5.5 | 7.5 | 10.0 | 5.0 | 7.5 | 21.5 | 12.5 | 16.5 |
| 12 | 3.5 | 1.5 | 2.5 | 11.0 | 6.5 | 9.0 | 11.0 | 4.5 | 8.0 | 22.5 | 13.5 | 17.5 |
| 13 | 5.0 | 2.0 | 3.5 | 9.0 | 7.0 | 8.0 | 12.0 | 8.5 | 10.0 | 21.5 | 14.5 | 18.0 |
| 14 | 5.0 | .5 | 2.5 | 8.5 | 6.0 | 7.0 | 14.5 | 8.0 | 11.0 | 23.5 | 15.0 | 19.0 |
| 15 | 6.0 | 1.5 | 3.5 | 7.0 | 5.5 | 6.5 | 13.5 | 9.0 | 11.0 | 21.0 | 15.5 | 18.5 |
| 16 | 6.0 | 5.0 | 5.5 | 6.5 | 5.0 | 6.0 | 14.0 | 9.0 | 11.5 | 24.0 | 15.5 | 19.5 |
| 17 | 5.5 | 4.0 | 5.0 | 11.5 | 6.5 | 8.5 | 14.5 | 11.0 | 13.0 | 23.5 | 16.0 | 20.0 |
| 18 | 4.5 | 3.5 | 4.0 | 11.5 | 6.5 | 9.0 | 15.5 | 9.0 | 12.0 | 23.0 | 17.0 | 19.5 |
| 19 | 5.0 | 1.0 | 4.0 | 10.5 | 7.0 | 9.0 | 14.5 | 9.0 | 11.5 | 23.0 | 17.0 | 19.5 |
| 20 | 7.0 | 4.0 | 5.5 | 9.0 | 7.5 | 8.0 | 13.0 | 9.5 | 11.5 | 23.0 | 17.0 | 20.0 |
| 21 | 6.5 | 4.5 | 5.5 | 9.5 | 7.5 | 8.0 | 16.0 | 11.0 | 13.0 | 21.5 | 17.5 | 19.5 |
| 22 | 5.0 | 3.5 | 4.5 | 9.0 | 6.0 | 7.5 | 14.5 | 9.0 | 11.5 | 24.0 | 17.5 | 20.5 |
| 23 | 7.5 | 2.5 | 5.0 | 10.0 | 5.5 | 7.5 | 15.0 | 7.0 | 11.0 | 23.5 | 19.0 | 21.0 |
| 24 | 9.0 | 4.5 | 6.5 | 9.5 | 5.5 | 7.5 | 16.0 | 7.5 | 12.0 | 23.0 | 19.5 | 21.0 |
| 25 | 7.0 | 4.0 | 5.5 | 11.5 | 6.5 | 9.0 | 15.5 | 9.0 | 12.5 | 24.0 | 18.5 | 21.0 |
| 26 | 4.0 | 1.5 | 3.0 | 9.5 | 6.0 | 7.5 | 14.0 | 12.0 | 13.0 | 21.0 | 17.5 | 19.5 |
| 27 | 2.5 | 2.0 | 2.0 | 7.0 | 4.0 | 5.0 | 12.0 | 11.0 | 11.5 | 19.0 | 17.0 | 18.0 |
| 28 | 7.0 | 2.0 | 4.0 | 8.5 | 2.0 | 5.0 | 15.0 | 9.0 | 12.0 | 22.5 | 17.0 | 19.5 |
| 29 | --- | --- | --- | 10.0 | 3.0 | 6.5 | 14.5 | 8.5 | 11.5 | 24.0 | 18.5 | 21.0 |
| 30 | --- | --- | --- | 11.0 | 5.0 | 8.0 | 14.5 | 9.0 | 11.5 | 21.0 | 17.5 | 19.5 |
| 31 | --- | --- | --- | 11.0 | 7.5 | 9.0 | --- | --- | --- | 21.5 | 16.5 | 18.5 |
| MONTH | 9.0 | .0 | 4.0 | 11.5 | 2.0 | 7.0 | 16.0 | 2.0 | 10.0 | 24.0 | 9.0 | 17.5 |
| | | | | | | | | | | | | |
| JUNE | | | | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 18.0 | 16.5 | 17.5 | 25.5 | 17.5 | 21.0 | 27.0 | 21.0 | 24.0 | 22.5 | 18.5 | 20.5 |
| 2 | 22.5 | 15.5 | 18.5 | --- | --- | --- | 25.0 | 20.0 | 22.5 | --- | --- | --- |
| 3 | 20.0 | 16.0 | 18.0 | 22.0 | 19.0 | 20.5 | 28.0 | 20.5 | 24.0 | 26.0 | 20.0 | 22.5 |
| 4 | 17.5 | 16.5 | 17.0 | 24.0 | 19.5 | 21.5 | 27.5 | 21.0 | 24.5 | 24.0 | 17.0 | 20.0 |
| 5 | 18.0 | 15.5 | 16.5 | 24.5 | 20.5 | 22.5 | 27.5 | 22.5 | 25.0 | 23.0 | 16.0 | 19.5 |
| 6 | 16.0 | 14.5 | 15.0 | 27.0 | 20.5 | 23.5 | 25.0 | 20.5 | 23.0 | 23.5 | 16.0 | 19.5 |
| 7 | 20.5 | 14.5 | 17.0 | 28.0 | 21.0 | 24.0 | 21.0 | 19.0 | 20.0 | 23.5 | 16.5 | 20.0 |
| 8 | 21.5 | 15.5 | 18.5 | 26.0 | 22.0 | 23.5 | 23.0 | 18.5 | 20.5 | 24.5 | 18.5 | 21.0 |
| 9 | 22.0 | 17.0 | 19.5 | 25.5 | 21.0 | 22.5 | 22.0 | 20.5 | 21.0 | 24.5 | 19.5 | 21.5 |
| 10 | 20.5 | 15.5 | 17.0 | 27.5 | 20.0 | 22.5 | 26.5 | 19.5 | 22.5 | 23.0 | 18.0 | 20.0 |
| 11 | 19.5 | 14.5 | 16.5 | 25.0 | 19.0 | 21.0 | 24.5 | 19.5 | 22.0 | 25.0 | 18.0 | 21.0 |
| 12 | 16.5 | 13.5 | 15.0 | 26.5 | 20.5 | 23.0 | 25.0 | 20.0 | 22.0 | 24.5 | 17.0 | 20.5 |
| 13 | 14.0 | 12.5 | 13.0 | 23.5 | 20.0 | 22.0 | 24.5 | 18.5 | 21.5 | 23.5 | 17.5 | 20.5 |
| 14 | 16.0 | 12.0 | 14.0 | 25.5 | 20.5 | 22.5 | 25.5 | 19.5 | 22.0 | 24.5 | 19.0 | 22.0 |
| 15 | 17.5 | 12.5 | 15.0 | 27.5 | 21.0 | 24.0 | 27.0 | 19.5 | 23.0 | 27.0 | 20.0 | 23.0 |
| 16 | 19.5 | 14.5 | 17.0 | 29.5 | 22.5 | 25.5 | 27.5 | 20.5 | 23.5 | 26.5 | 20.0 | 22.0 |
| 17 | --- | --- | --- | 26.5 | 21.5 | 24.5 | 23.5 | 20.5 | 22.0 | 23.5 | 17.5 | 20.0 |
| 18 | 21.5 | 15.5 | 18.5 | 27.0 | 21.0 | 24.5 | 27.0 | 19.0 | 22.5 | 21.0 | 16.5 | 18.5 |
| 19 | 23.0 | 17.0 | 19.5 | 26.5 | 21.5 | 24.0 | 26.5 | 19.5 | 23.0 | 18.0 | 16.0 | 17.0 |
| 20 | 23.5 | 16.5 | 19.5 | 26.5 | 21.5 | 24.0 | 26.5 | 20.5 | 23.5 | 17.5 | 16.0 | 17.0 |
| 21 | 22.0 | 16.0 | 18.5 | 28.5 | 21.0 | 24.5 | 27.0 | 21.0 | 23.5 | 17.0 | 14.5 | 15.5 |
| 22 | 21.0 | 16.5 | 18.5 | 27.5 | 22.0 | 25.0 | 24.5 | 17.5 | 21.0 | 15.5 | 13.5 | 14.5 |
| 23 | 23.5 | 16.5 | 19.5 | 27.0 | 20.5 | 24.0 | 23.0 | 18.0 | 20.5 | 15.5 | 12.0 | 13.5 |
| 24 | 22.0 | 16.0 | 19.0 | 26.0 | 20.0 | 22.5 | 25.5 | 19.5 | 22.5 | 16.0 | 12.0 | 14.0 |
| 25 | 24.0 | 17.0 | 20.5 | 27.5 | 20.5 | 24.0 | 27.5 | 20.5 | 23.5 | 17.0 | 13.5 | 15.5 |
| 26 | 24.0 | 18.5 | 21.0 | 27.5 | 21.0 | 24.5 | 26.5 | 18.0 | 22.0 | 15.5 | 14.0 | 14.5 |
| 27 | 24.5 | 19.5 | 21.5 | 28.0 | 21.5 | 25.0 | 21.0 | 18.0 | 19.0 | 16.0 | 13.5 | 14.5 |
| 28 | 27.5 | 19.5 | 23.0 | 26.0 | 22.0 | 24.0 | 24.0 | 17.0 | 19.5 | 17.5 | 14.0 | 15.5 |
| 29 | 26.5 | 21.0 | 23.0 | 28.0 | 20.5 | 24.0 | --- | --- | --- | 17.0 | 14.5 | 15.5 |
| 30 | 25.5 | 20.0 | 22.0 | 24.0 | 21.0 | 22.5 | 19.0 | 16.0 | 17.5 | 18.5 | 14.5 | 16.0 |
| 31 | --- | --- | --- | 24.5 | 21.0 | 23.0 | 19.5 | 17.5 | 18.5 | --- | --- | --- |
| MONTH | 27.5 | 12.0 | 18.0 | 29.5 | 17.5 | 23.5 | 28.0 | 16.0 | 22.0 | 27.0 | 12.0 | 18.5 |
| YEAR | 29.5 | .0 | 12.0 | | | | | | | | | |

JAMES RIVER BASIN

02011795 LAKE MOOMAW NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°57'04", long 79°59'21", Alleghany County, Hydrologic Unit 02080201, in control tower at Gathright Dam on Jackson River, 0.9 mi (1.4 km) upstream from Cedar Creek, 7.6 mi (12.2 km) southwest of Hot Springs, and 19 mi (31 km) upstream from Covington.

DRAINAGE AREA.--344 mi² (891 km²).

PERIOD OF RECORD.--December 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers benchmark).

REMARKS.--Lake is formed by rolled rockfill dam with an impervious compacted earth (clay) core. Spillway with crest at elevation 1,667.5 ft (508.25 m) is in a divide about 2.5 mi (4.0 km) south of the dam, ungated, and 2,450 ft (747 m) long with a base width of 100 ft (30 m). Except for flood flows, all discharge will be through a diversion tunnel with the invert of the entrance being in an intake tower 260 ft (79.2 m) high. Elevation of invert is 1,430.5 ft (436.02 m). Portals in the tower at nine levels permit oxygenated water from the surface and cold water from the bottom of the lake to be mixed for water-quality control. Sluice gates in the tower control flood flow releases. Storage began Dec. 10, 1979. Total capacity at top of dam, elevation 1,684.5 ft (513.44 m) is 502,600 acre-ft (620 hm³) of which 81,100 acre-ft (100 hm³) is above spillway crest. Capacity at maximum conservation pool, elevation, 1,582.0 ft (482.19 m) is 123,700 acre-ft (153 hm³); capacity at minimum conservation pool, elevation 1,554.0 ft (473.66 m) is 63,000 acre-ft (77.7 hm³). Lake is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 138,293 acre-ft (171 hm³) June 14, 1982, elevation, 1,587.6 ft (483.90 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 138,293 acre-ft (171 hm³) June 14, elevation, 1,587.6 ft (483.90 m); minimum (lake is still in the initial filling stage), 79,658 acre-ft (98.2 hm³) Oct. 21-23, elevation, 1,562.7 ft (476.31 m).

MONTHEND ELEVATION AND CONTENTS AT 1500, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 1564.9 | 84200 | |
| Oct. 31..... | 1568.4 | 91680 | +7480 |
| Nov. 30..... | 1569.6 | 94310 | +2630 |
| Dec. 31..... | 1577.3 | 112110 | +17800 |
| CAL YR 1981..... | | | +67930 |
| Jan. 31..... | 1583.2 | 126800 | +14690 |
| Feb. 28..... | 1582.0 | 123740 | -3060 |
| Mar. 31..... | 1582.0 | 123740 | 0 |
| Apr. 30..... | 1582.1 | 123940 | +200 |
| May 31..... | 1582.2 | 124250 | +310 |
| June 30..... | 1581.1 | 121470 | -2780 |
| July 31..... | 1579.4 | 117240 | -4230 |
| Aug. 31..... | 1576.2 | 109470 | -7770 |
| Sept. 30..... | 1573.1 | 102210 | -7260 |
| WTR YR 1982..... | | | +18010 |

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°56'54", long 79°56'58", Alleghany County, Hydrologic Unit 02080201, on right bank 0.4 mi (0.6 km) upstream from Cedar Creek, 0.5 mi (0.8 km) downstream from Gathright Dam and Moomaw Lake, and 7.3 mi (11.7 km) southwest of Hot Springs.

DRAINAGE AREA.--345 mi² (894 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1973, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795).

AVERAGE DISCHARGE.--9 years, 455 ft³/s (12.89 m³/s), 17.91 in/yr (455 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) Dec. 26, 1973, result of cofferdam failure during construction of Gathright Dam, gage height, 18.77 ft (5.721 m), from rating curve extended above 4,400 ft³/s (120 m³/s) on basis of slope-area measurement of peak flow; minimum, 3.0 ft³/s (0.085 m³/s) July 12, 1979, result of gate closure at Gathright Dam, gage height, 7.78 ft (2.371 m); minimum daily, 47 ft³/s (1.33 m³/s) Sept. 2, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 17.20 ft (5.243 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,650 ft³/s (188 m³/s) June 14, gage height, 14.00 ft (4.267 m); minimum, 6.5 ft³/s (0.18 m³/s) Nov. 30, gage height, 7.84 ft (2.390 m); minimum daily, 49 ft³/s (1.39 m³/s) Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|----------|--------|-----------|------------|-----------|-------|------|------|------|
| 1 | 55 | 67 | 61 | 62 | 1300 | 546 | 384 | 521 | 1010 | 268 | 269 | 193 |
| 2 | 56 | 68 | 61 | 64 | 2240 | 544 | 457 | 521 | 555 | 258 | 269 | 197 |
| 3 | 56 | 67 | 61 | 65 | 2290 | 543 | 457 | 521 | 303 | 258 | 269 | 197 |
| 4 | 56 | 67 | 61 | 67 | 3170 | 545 | 458 | 356 | 317 | 264 | 269 | 197 |
| 5 | 57 | 67 | 61 | 67 | 3200 | 544 | 646 | 356 | 336 | 266 | 267 | 197 |
| 6 | 57 | 67 | 61 | 548 | 1830 | 545 | 634 | 272 | 336 | 267 | 251 | 197 |
| 7 | 57 | 67 | 61 | 890 | 1830 | 606 | 808 | 234 | 652 | 228 | 247 | 197 |
| 8 | 57 | 67 | 61 | 732 | 953 | 1250 | 808 | 230 | 706 | 269 | 247 | 172 |
| 9 | 93 | 67 | 61 | 607 | 494 | 1820 | 665 | 231 | 396 | 269 | 247 | 197 |
| 10 | 261 | 67 | 61 | 611 | 902 | 1030 | 445 | 230 | 997 | 269 | 247 | 197 |
| 11 | 261 | 67 | 61 | 442 | 1590 | 700 | 258 | 206 | 1560 | 269 | 215 | 197 |
| 12 | 259 | 67 | 61 | 308 | 1560 | 706 | 258 | 229 | 1210 | 269 | 256 | 197 |
| 13 | 259 | 67 | 61 | 292 | 1190 | 706 | 301 | 229 | 1960 | 269 | 254 | 197 |
| 14 | 258 | 67 | 61 | 292 | 871 | 842 | 328 | 230 | 4750 | 269 | 254 | 197 |
| 15 | 258 | 67 | 53 | 262 | 467 | 1200 | 399 | 230 | 4960 | 269 | 254 | 197 |
| 16 | 258 | 65 | 61 | 247 | 428 | 1410 | 396 | 230 | 4250 | 269 | 254 | 197 |
| 17 | 258 | 60 | 61 | 247 | 1460 | 1600 | 328 | 230 | 1910 | 269 | 256 | 197 |
| 18 | 258 | 62 | 61 | 246 | 2900 | 1710 | 328 | 229 | 692 | 268 | 258 | 197 |
| 19 | 227 | 62 | 61 | 244 | 2710 | 1570 | 486 | 228 | 427 | 269 | 258 | 197 |
| 20 | 49 | 62 | 61 | 243 | 1470 | 2220 | 589 | 229 | 425 | 269 | 258 | 197 |
| 21 | 51 | 62 | 61 | 244 | 934 | 4020 | 473 | 230 | 323 | 269 | 258 | 197 |
| 22 | 54 | 62 | 61 | 245 | 1270 | 4000 | 325 | 233 | 269 | 269 | 258 | 197 |
| 23 | 54 | 62 | 61 | 322 | 974 | 3440 | 248 | 233 | 269 | 269 | 258 | 197 |
| 24 | 55 | 62 | 61 | 472 | 829 | 2080 | 210 | 232 | 269 | 269 | 258 | 197 |
| 25 | 56 | 62 | 61 | 473 | 710 | 1190 | 210 | 233 | 269 | 269 | 258 | 197 |
| 26 | 56 | 61 | 61 | 473 | 543 | 995 | 373 | 231 | 269 | 269 | 258 | 197 |
| 27 | 64 | 61 | 61 | 329 | 543 | 713 | 814 | 230 | 269 | 269 | 258 | 197 |
| 28 | 67 | 61 | 62 | 247 | 544 | 713 | 1010 | 336 | 268 | 269 | 258 | 197 |
| 29 | 67 | 61 | 61 | 247 | --- | 604 | 1010 | 385 | 267 | 269 | 258 | 197 |
| 30 | 67 | 53 | 62 | 247 | --- | 540 | 791 | 612 | 275 | 269 | 258 | 189 |
| 31 | 67 | --- | 62 | 247 | --- | 408 | --- | 1010 | --- | 269 | 229 | --- |
| TOTAL | 3808 | 1924 | 1886 | 10082 | 39202 | 39340 | 14897 | 9707 | 30499 | 8264 | 7908 | 5873 |
| MEAN | 123 | 64.1 | 60.8 | 325 | 1400 | 1269 | 497 | 313 | 1017 | 267 | 255 | 196 |
| MAX | 261 | 68 | 62 | 890 | 3200 | 4020 | 1010 | 1010 | 4960 | 269 | 269 | 197 |
| MTN | 49 | 53 | 53 | 62 | 428 | 408 | 210 | 206 | 267 | 228 | 215 | 172 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |
| MEAN# | 245 | 108 | 350 | 564 | 1345 | 1269 | 500 | 318 | 970 | 198 | 129 | 74 |
| CFSM# | .71 | .31 | 1.01 | 1.63 | 3.90 | 3.68 | 1.45 | .92 | 2.81 | .57 | .37 | .21 |
| IN# | .82 | .35 | 1.17 | 1.89 | 4.06 | 4.24 | 1.62 | 1.06 | 3.14 | .66 | .43 | .24 |
| CAL YR 1981 | TOTAL | 71854 | MEAN 197 | MAX 2830 | MIN 47 | MEAN# 291 | CFSM# .84 | IN# 11.45 | | | | |
| WTR YR 1982 | TOTAL | 173390 | MEAN 475 | MAX 4960 | MIN 49 | MEAN# 500 | CFSM# 1.45 | IN# 19.68 | | | | |

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.

Adjusted for change in contents.

JAMES RIVER BASIN

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.

pH: October 1978 to current year.

WATER TEMPERATURES: October 1978 to current year.

DISSOLVED OXYGEN: October 1978 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments. The intake tower at Gathright Dam permits selective withdrawal of water from one or more reservoir depths.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 225 micromhos Apr. 13, 1981; minimum recorded, 78 micromhos May 14, 1979.

pH: Maximum, 8.6 units Jan. 29, 1982; minimum, 7.0 units on several days in 1979 and 1980.

WATER TEMPERATURES: Maximum, 28.0°C Aug. 1, 2, 1979; minimum, 0.0°C Feb. 16, 17, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 223 micromhos Nov. 30; minimum recorded, 100 micromhos Apr. 30.

pH: Maximum, 8.6 units Jan. 29; minimum, 7.3 units Oct. 15, 16, 18, June 15-18.

WATER TEMPERATURES: Maximum, 22.5°C Aug. 6, 20, 21; minimum, many days in January and February.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---------|-----|-----|----------|-----|-----|----------|-----|-----|---------|-----|-----|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 168 | 166 | 167 | 169 | 168 | 169 | 174 | 172 | 173 | 168 | 167 | 167 |
| 2 | 168 | 165 | 167 | 170 | 168 | 169 | 174 | 172 | 173 | 168 | 167 | 168 |
| 3 | 168 | 166 | 166 | 169 | 167 | 168 | 174 | 173 | 173 | 169 | 166 | 167 |
| 4 | 166 | 164 | 165 | 168 | 166 | 167 | 175 | 173 | 174 | 170 | 164 | 168 |
| 5 | 167 | 164 | 165 | 168 | 167 | 168 | 175 | 173 | 174 | 169 | 167 | 168 |
| 6 | 166 | 163 | 165 | 176 | 169 | 173 | 174 | 173 | 174 | 167 | 155 | 160 |
| 7 | 166 | 165 | 166 | 170 | 168 | 169 | 174 | 173 | 173 | 156 | 155 | 155 |
| 8 | 166 | 164 | 165 | 170 | 169 | 169 | 175 | 173 | 174 | 155 | 154 | 154 |
| 9 | 166 | 159 | 163 | 169 | 168 | 169 | 174 | 173 | 174 | 154 | 153 | 154 |
| 10 | 161 | 159 | 160 | 169 | 168 | 169 | 174 | 173 | 174 | 153 | 152 | 153 |
| 11 | 161 | 159 | 160 | 170 | 167 | 169 | 174 | 173 | 173 | 153 | 151 | 152 |
| 12 | 160 | 158 | 159 | 169 | 167 | 168 | 174 | 173 | 173 | 153 | 152 | 153 |
| 13 | 159 | 158 | 159 | 172 | 168 | 169 | 173 | 172 | 172 | 154 | 153 | 153 |
| 14 | 162 | 158 | 160 | 169 | 168 | 169 | 173 | 171 | 172 | 154 | 153 | 153 |
| 15 | 177 | 159 | 170 | 170 | 168 | 169 | 221 | 172 | 175 | 154 | 153 | 153 |
| 16 | 175 | 158 | 161 | 170 | 169 | 170 | 173 | 171 | 172 | 154 | 153 | 154 |
| 17 | 159 | 157 | 158 | 173 | 170 | 171 | 173 | 171 | 172 | 153 | 152 | 153 |
| 18 | 160 | 158 | 159 | 171 | 170 | 170 | 173 | 171 | 172 | 154 | 153 | 153 |
| 19 | 168 | 158 | 160 | 172 | 171 | 171 | 172 | 171 | 171 | 153 | 152 | 152 |
| 20 | 167 | 165 | 166 | 172 | 170 | 172 | 170 | 170 | 170 | 153 | 152 | 152 |
| 21 | 167 | 165 | 166 | 173 | 171 | 173 | 171 | 169 | 170 | 153 | 152 | 152 |
| 22 | 168 | 166 | 167 | 174 | 172 | 174 | 170 | 168 | 169 | 153 | 152 | 152 |
| 23 | 168 | 166 | 167 | 174 | 173 | 174 | 173 | 169 | 170 | 153 | 150 | 151 |
| 24 | 168 | 166 | 167 | 174 | 172 | 173 | 170 | 169 | 169 | --- | --- | --- |
| 25 | 167 | 166 | 167 | 174 | 172 | 173 | 170 | 168 | 169 | 150 | 148 | 149 |
| 26 | 170 | 165 | 167 | 174 | 172 | 173 | 168 | 167 | 168 | 149 | 147 | 148 |
| 27 | 187 | 167 | 175 | 173 | 171 | 172 | 168 | 167 | 167 | 151 | 146 | 149 |
| 28 | 167 | 165 | 166 | 173 | 172 | 172 | 168 | 166 | 167 | 151 | 150 | 150 |
| 29 | 167 | 165 | 166 | 173 | 171 | 172 | 168 | 167 | 167 | 160 | 150 | 154 |
| 30 | 167 | 165 | 166 | 223 | 172 | 175 | 168 | 166 | 167 | 159 | 153 | 155 |
| 31 | 169 | 167 | 168 | --- | --- | --- | 167 | 166 | 167 | 153 | 152 | 153 |
| MONTH | 187 | 157 | 165 | 223 | 166 | 171 | 221 | 166 | 171 | 170 | 146 | 155 |

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|-----|-----|-------|-----|-----|--------|-----|-----|-----------|-----|-----|------|
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | 153 | 148 | 151 | 131 | 129 | 130 | 117 | 112 | 114 | 111 | 109 | 110 |
| 2 | 149 | 148 | 149 | 129 | 123 | 127 | 115 | 112 | 113 | 111 | 107 | 110 |
| 3 | 149 | 147 | 148 | 127 | 125 | 126 | 115 | 110 | 113 | 111 | 109 | 110 |
| 4 | 148 | 144 | 146 | 128 | 126 | 127 | 114 | 112 | 113 | 153 | 109 | 118 |
| 5 | 148 | 142 | 145 | 127 | 124 | 125 | 113 | 110 | 111 | 115 | 111 | 114 |
| 6 | 148 | 146 | 147 | 124 | 123 | 124 | 170 | 109 | 117 | 117 | 111 | 115 |
| 7 | 147 | 146 | 146 | 124 | 121 | 123 | 111 | 108 | 109 | --- | --- | --- |
| 8 | 149 | 146 | 147 | 121 | 116 | 118 | 114 | 107 | 110 | --- | --- | --- |
| 9 | 150 | 149 | 149 | 117 | 116 | 117 | 131 | 109 | 113 | --- | --- | --- |
| 10 | 151 | 148 | 149 | 179 | 115 | 121 | 118 | 110 | 114 | --- | --- | --- |
| 11 | 150 | 147 | 149 | 115 | 114 | 115 | 120 | 115 | 117 | 130 | 112 | 117 |
| 12 | 148 | 145 | 147 | 115 | 114 | 115 | 119 | 114 | 117 | 120 | 114 | 116 |
| 13 | 149 | 143 | 147 | 115 | 113 | 115 | 118 | 114 | 116 | 118 | 112 | 116 |
| 14 | 148 | 143 | 145 | 115 | 113 | 114 | 116 | 114 | 115 | 122 | 112 | 117 |
| 15 | 148 | 146 | 147 | 113 | 112 | 112 | 119 | 112 | 114 | 121 | 115 | 119 |
| 16 | 148 | 147 | 148 | 113 | 111 | 112 | 117 | 111 | 114 | 121 | 115 | 119 |
| 17 | 150 | 140 | 146 | 112 | 111 | 112 | 117 | 113 | 115 | 121 | 117 | 120 |
| 18 | 140 | 131 | 135 | 112 | 111 | 112 | 117 | 113 | 115 | 123 | 117 | 121 |
| 19 | 136 | 131 | 132 | 112 | 111 | 112 | 116 | 110 | 113 | 123 | 119 | 121 |
| 20 | 143 | 130 | 136 | 113 | 110 | 112 | 115 | 111 | 112 | 123 | 119 | 122 |
| 21 | 142 | 134 | 139 | 112 | 109 | 110 | 115 | 110 | 112 | 125 | 119 | 122 |
| 22 | 136 | 124 | 129 | 111 | 106 | 109 | 118 | 112 | 115 | 124 | 122 | 123 |
| 23 | 135 | 122 | 128 | 111 | 107 | 110 | 120 | 115 | 117 | 124 | 120 | 122 |
| 24 | 138 | 123 | 133 | 114 | 107 | 111 | 122 | 118 | 119 | 124 | 120 | 122 |
| 25 | 123 | 119 | 121 | 113 | 109 | 112 | 121 | 117 | 119 | 124 | 120 | 123 |
| 26 | 124 | 122 | 122 | 114 | 108 | 112 | 121 | 113 | 117 | 124 | 120 | 123 |
| 27 | 130 | 124 | 128 | 114 | 110 | 112 | 117 | 104 | 110 | 124 | 120 | 123 |
| 28 | 130 | 129 | 130 | 114 | 111 | 112 | 108 | 104 | 106 | 124 | 116 | 121 |
| 29 | --- | --- | --- | 114 | 111 | 113 | 106 | 102 | 105 | 123 | 119 | 121 |
| 30 | --- | --- | --- | 114 | 111 | 113 | 108 | 100 | 107 | 123 | 119 | 121 |
| 31 | --- | --- | --- | 118 | 110 | 114 | --- | --- | --- | 119 | 115 | 118 |
| MONTH | 153 | 119 | 141 | 179 | 106 | 116 | 170 | 100 | 113 | 153 | 107 | 119 |
| JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | | |
| 1 | 121 | 115 | 117 | 128 | 124 | 126 | 132 | 128 | 130 | 142 | 140 | 141 |
| 2 | 123 | 117 | 121 | 128 | 124 | 127 | 132 | 126 | 129 | 142 | 140 | 141 |
| 3 | 125 | 121 | 123 | 130 | 122 | 127 | 136 | 130 | 133 | 144 | 140 | 142 |
| 4 | 125 | 119 | 123 | 128 | 124 | 127 | --- | --- | --- | 142 | 140 | 142 |
| 5 | 126 | 124 | 125 | 128 | 122 | 126 | --- | --- | --- | 142 | 142 | 142 |
| 6 | 126 | 122 | 125 | 128 | 122 | 126 | 132 | 130 | 131 | 144 | 142 | 142 |
| 7 | 136 | 120 | 123 | 148 | 122 | 127 | 134 | 128 | 131 | 144 | 140 | 142 |
| 8 | 124 | 114 | 118 | 128 | 122 | 126 | 134 | 130 | 132 | 158 | 142 | 143 |
| 9 | 146 | 116 | 121 | --- | --- | --- | 136 | 132 | 134 | 142 | 140 | 142 |
| 10 | 120 | 108 | 114 | --- | --- | --- | 136 | 132 | 134 | 142 | 142 | 142 |
| 11 | 110 | 108 | 109 | 126 | 122 | 125 | 178 | 132 | 137 | 142 | 142 | 142 |
| 12 | 112 | 108 | 110 | 126 | 122 | 125 | 134 | 134 | 134 | 142 | 140 | 142 |
| 13 | 112 | 108 | 110 | 126 | 122 | 125 | 134 | 132 | 132 | 142 | 142 | 142 |
| 14 | 114 | 108 | 111 | 126 | 122 | 125 | 136 | 134 | 135 | 142 | 140 | 142 |
| 15 | 114 | 112 | 113 | 126 | 120 | 125 | 136 | 134 | 134 | 144 | 140 | 142 |
| 16 | 120 | 110 | 115 | 126 | 122 | 124 | 136 | 134 | 135 | 144 | 140 | 143 |
| 17 | 120 | 114 | 118 | 128 | 122 | 126 | 136 | 134 | 134 | 144 | 140 | 142 |
| 18 | 130 | 118 | 125 | 128 | 122 | 126 | 136 | 134 | 134 | 144 | 140 | 143 |
| 19 | 130 | 126 | 128 | 128 | 124 | 127 | 136 | 134 | 134 | 144 | 142 | 144 |
| 20 | 130 | 126 | 127 | 132 | 126 | 128 | 136 | 134 | 135 | 144 | 140 | 144 |
| 21 | 130 | 126 | 128 | 130 | 128 | 129 | 138 | 134 | 136 | 144 | 140 | 143 |
| 22 | 130 | 126 | 128 | 130 | 128 | 129 | 136 | 134 | 135 | 144 | 140 | 143 |
| 23 | 130 | 124 | 128 | 132 | 130 | 130 | --- | --- | --- | 144 | 140 | 143 |
| 24 | 128 | 124 | 127 | 130 | 128 | 129 | --- | --- | --- | 144 | 140 | 142 |
| 25 | 130 | 126 | 127 | 130 | 128 | 130 | --- | --- | --- | 144 | 140 | 142 |
| 26 | 132 | 122 | 127 | 130 | 126 | 129 | 138 | 136 | 137 | 146 | 140 | 143 |
| 27 | 128 | 122 | 127 | 134 | 128 | 130 | 140 | 138 | 139 | 144 | 142 | 143 |
| 28 | 128 | 126 | 127 | 134 | 128 | 131 | 140 | 138 | 139 | 144 | 140 | 142 |
| 29 | 128 | 122 | 127 | 134 | 128 | 132 | 140 | 138 | 138 | 144 | 142 | 143 |
| 30 | 128 | 122 | 126 | 134 | 128 | 131 | 140 | 138 | 140 | 144 | 140 | 143 |
| 31 | --- | --- | --- | 132 | 128 | 130 | 142 | 138 | 140 | --- | --- | --- |
| MONTH | 146 | 108 | 122 | 148 | 120 | 128 | 178 | 126 | 135 | 158 | 140 | 142 |
| YEAR | 223 | 100 | 140 | | | | | | | | | |

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|-----|-----|------|----------|-----|------|----------|-----|------|---------|-----|------|
| OCTOBER | | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 8.1 | 7.9 | 8.0 | 7.8 | 7.7 | 7.7 | 7.9 | 7.8 | 7.8 | 7.9 | 7.7 | 7.8 |
| 2 | 8.1 | 7.9 | 8.0 | 7.8 | 7.7 | 7.7 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 |
| 3 | 8.1 | 7.9 | 8.0 | 7.8 | 7.7 | 7.8 | 7.9 | 7.8 | 7.8 | 7.9 | 7.7 | 7.8 |
| 4 | 8.1 | 7.9 | 8.0 | 7.9 | 7.7 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 5 | 8.1 | 7.9 | 8.0 | 7.9 | 7.7 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.8 |
| 6 | 8.0 | 7.9 | 7.9 | 8.0 | 7.7 | 7.9 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 7 | 8.1 | 7.9 | 8.0 | 8.0 | 7.9 | 7.9 | --- | --- | --- | 7.7 | 7.7 | 7.7 |
| 8 | 8.1 | 7.9 | 8.0 | 7.9 | 7.9 | 7.9 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 |
| 9 | 8.1 | 7.6 | 7.9 | 8.0 | 7.8 | 7.9 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 10 | 7.6 | 7.6 | 7.6 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.8 |
| 11 | 7.6 | 7.5 | 7.5 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 |
| 12 | 7.5 | 7.4 | 7.5 | 7.8 | 7.8 | 7.8 | 8.0 | 7.9 | 7.9 | 7.8 | 7.8 | 7.8 |
| 13 | 7.4 | 7.4 | 7.4 | 7.8 | 7.7 | 7.8 | 7.9 | 7.8 | 7.9 | 7.8 | 7.7 | 7.8 |
| 14 | 7.5 | 7.4 | 7.4 | 7.8 | 7.7 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 15 | 7.7 | 7.3 | 7.5 | 7.8 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 16 | 7.6 | 7.3 | 7.5 | 7.8 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 |
| 17 | 7.5 | 7.4 | 7.4 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 |
| 18 | 7.4 | 7.3 | 7.4 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.7 |
| 19 | 7.7 | 7.4 | 7.5 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 |
| 20 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.7 | 7.7 | 7.7 |
| 21 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.7 | 7.6 | 7.7 |
| 22 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.9 | 7.9 | 7.8 | 7.8 | 7.7 | 7.6 | 7.6 |
| 23 | 7.8 | 7.8 | 7.8 | 7.9 | 7.8 | 7.9 | 7.9 | 7.8 | 7.8 | 7.7 | 7.6 | 7.6 |
| 24 | 7.9 | 7.8 | 7.8 | 7.9 | 7.9 | 7.9 | 7.9 | 7.7 | 7.8 | --- | --- | --- |
| 25 | 7.8 | 7.8 | 7.8 | 7.9 | 7.9 | 7.9 | 7.9 | 7.7 | 7.8 | 7.7 | 7.6 | 7.6 |
| 26 | 7.8 | 7.8 | 7.8 | 8.0 | 7.9 | 7.9 | 7.9 | 7.7 | 7.8 | 7.7 | 7.6 | 7.7 |
| 27 | 7.8 | 7.8 | 7.8 | 7.9 | 7.9 | 7.9 | 7.9 | 7.7 | 7.8 | 7.7 | 7.6 | 7.7 |
| 28 | 7.9 | 7.8 | 7.8 | 8.0 | 7.9 | 7.9 | --- | --- | --- | 7.7 | 7.6 | 7.7 |
| 29 | 7.8 | 7.7 | 7.8 | 8.0 | 7.9 | 7.9 | 7.9 | 7.7 | 7.8 | 8.6 | 7.6 | 8.2 |
| 30 | 7.8 | 7.7 | 7.7 | 8.0 | 7.9 | 7.9 | 7.8 | 7.7 | 7.8 | 8.5 | 8.2 | 8.4 |
| 31 | 7.8 | 7.7 | 7.7 | --- | --- | --- | 7.8 | 7.7 | 7.8 | 8.2 | 8.1 | 8.1 |
| MONTH | 8.1 | 7.3 | 7.7 | 8.0 | 7.7 | 7.8 | 8.0 | 7.7 | 7.8 | 8.6 | 7.6 | 7.8 |
| FEBRUARY | | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 8.2 | 8.1 | 8.1 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.8 |
| 2 | 8.1 | 8.0 | 8.0 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.8 |
| 3 | 8.1 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 8.1 | 7.8 | 7.9 | 7.8 | 7.7 | 7.8 |
| 4 | 8.1 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 7.7 | 7.9 |
| 5 | 8.0 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 8.1 | 7.9 | 8.0 |
| 6 | 8.0 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 8.4 | 7.8 | 8.0 | 8.2 | 7.9 | 8.0 |
| 7 | 8.0 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 8.0 | 7.8 | 7.9 | --- | --- | --- |
| 8 | 8.1 | 8.0 | 8.1 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | --- | --- | --- |
| 9 | 8.2 | 8.1 | 8.1 | 7.8 | 7.8 | 7.8 | 8.3 | 7.8 | 7.9 | --- | --- | --- |
| 10 | 8.1 | 8.0 | 8.0 | 8.3 | 7.7 | 7.9 | 8.1 | 7.9 | 7.9 | --- | --- | --- |
| 11 | 8.0 | 8.0 | 8.0 | 7.8 | 7.8 | 7.8 | 8.1 | 7.8 | 7.9 | 8.3 | 7.9 | 8.0 |
| 12 | 8.0 | 8.0 | 8.0 | 7.8 | 7.7 | 7.8 | 8.1 | 7.8 | 7.9 | 8.1 | 7.8 | 8.0 |
| 13 | 8.0 | 7.9 | 8.0 | 7.8 | 7.7 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 7.9 | 8.1 |
| 14 | 8.0 | 7.9 | 8.0 | 7.8 | 7.8 | 7.8 | 8.1 | 7.8 | 7.9 | 8.2 | 7.9 | 8.0 |
| 15 | 8.0 | 7.9 | 8.0 | 7.8 | 7.7 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 8.0 | 8.1 |
| 16 | 8.0 | 7.9 | 7.9 | 7.8 | 7.7 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 8.0 | 8.1 |
| 17 | 7.9 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 7.9 | 8.0 |
| 18 | 7.9 | 7.9 | 7.9 | 7.8 | 7.7 | 7.8 | 8.1 | 7.8 | 7.9 | 8.2 | 7.9 | 8.0 |
| 19 | 7.9 | 7.8 | 7.9 | 7.8 | 7.7 | 7.8 | 8.0 | 7.8 | 7.9 | 8.3 | 7.9 | 8.0 |
| 20 | 7.9 | 7.8 | 7.9 | 7.8 | 7.7 | 7.8 | 7.9 | 7.8 | 7.8 | 8.2 | 7.9 | 8.0 |
| 21 | 7.9 | 7.8 | 7.9 | 7.8 | 7.7 | 7.8 | 8.1 | 7.8 | 7.9 | 8.1 | 7.8 | 7.9 |
| 22 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 8.1 | 7.8 | 7.9 | 7.9 | 7.8 | 7.8 |
| 23 | 7.9 | 7.8 | 7.8 | 7.8 | 7.7 | 7.8 | 8.1 | 7.8 | 8.0 | 7.9 | 7.8 | 7.8 |
| 24 | 7.9 | 7.8 | 7.8 | 8.0 | 7.7 | 7.8 | 8.1 | 7.9 | 8.0 | 8.2 | 7.8 | 7.9 |
| 25 | 7.9 | 7.9 | 7.9 | 7.8 | 7.7 | 7.7 | 8.1 | 7.9 | 8.0 | 8.1 | 7.9 | 8.0 |
| 26 | --- | --- | --- | 7.9 | 7.7 | 7.8 | 8.0 | 7.8 | 7.9 | 8.2 | 7.9 | 8.0 |
| 27 | 7.8 | 7.8 | 7.8 | 7.9 | 7.8 | 7.9 | 7.8 | 7.8 | 7.8 | 8.2 | 8.0 | 8.1 |
| 28 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 7.9 | 7.8 | 7.8 | 8.2 | 7.9 | 8.0 |
| 29 | --- | --- | --- | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 8.2 | 8.0 | 8.1 |
| 30 | --- | --- | --- | 7.8 | 7.8 | 7.8 | 7.9 | 7.7 | 7.8 | 8.2 | 7.8 | 8.0 |
| 31 | --- | --- | --- | 7.9 | 7.8 | 7.8 | --- | --- | --- | 8.0 | 7.8 | 7.9 |
| MONTH | 8.2 | 7.8 | 8.0 | 8.3 | 7.7 | 7.8 | 8.4 | 7.7 | 7.9 | 8.3 | 7.7 | 8.0 |

JAMES RIVER BASIN

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|----------|------|------|----------|------|-----|---------|------|------|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 19.0 | 18.0 | 18.5 | 14.0 | 13.5 | 14.0 | 10.0 | 9.5 | 10.0 | 6.0 | 5.5 | 6.0 |
| 2 | 18.5 | 17.5 | 18.0 | 14.0 | 13.5 | 14.0 | 10.0 | 9.5 | 10.0 | 6.0 | 5.5 | 5.5 |
| 3 | 18.0 | 17.0 | 17.5 | 14.5 | 13.5 | 14.0 | 10.0 | 9.5 | 9.5 | 6.0 | 6.0 | 6.0 |
| 4 | 18.0 | 16.5 | 17.0 | 14.5 | 13.5 | 14.0 | 10.0 | 9.5 | 9.5 | 6.0 | 5.5 | 6.0 |
| 5 | 18.0 | 17.0 | 17.5 | 14.5 | 13.5 | 14.0 | 9.5 | 9.0 | 9.0 | 6.0 | 5.5 | 5.5 |
| 6 | 18.0 | 17.0 | 17.5 | 14.0 | 13.0 | 14.0 | 9.0 | 9.0 | 9.0 | 5.5 | 5.0 | 5.0 |
| 7 | 17.5 | 16.5 | 17.0 | 13.0 | 13.0 | 13.0 | --- | --- | --- | 5.0 | 5.0 | 5.0 |
| 8 | 17.5 | 16.5 | 16.5 | 13.0 | 12.5 | 13.0 | 9.5 | 8.5 | 9.0 | 5.0 | 4.5 | 5.0 |
| 9 | 17.0 | 15.5 | 16.5 | 13.5 | 13.0 | 13.0 | 8.5 | 8.0 | 8.5 | 4.5 | 4.0 | 4.5 |
| 10 | 16.0 | 15.5 | 15.5 | 13.5 | 13.0 | 13.0 | 8.0 | 7.5 | 8.0 | 4.0 | 3.5 | 4.0 |
| 11 | 16.0 | 15.5 | 15.5 | 13.0 | 12.5 | 13.0 | 8.0 | 7.5 | 8.0 | 3.5 | 3.0 | 3.5 |
| 12 | 15.5 | 15.5 | 15.5 | 13.0 | 12.5 | 12.5 | 8.0 | 7.5 | 8.0 | 3.5 | 3.0 | 3.5 |
| 13 | 15.5 | 15.0 | 15.5 | 12.5 | 12.0 | 12.5 | 8.0 | 7.5 | 7.5 | 3.5 | 3.5 | 3.5 |
| 14 | 15.5 | 15.0 | 15.5 | 12.5 | 12.0 | 12.5 | 8.0 | 7.5 | 8.0 | 4.0 | 3.5 | 4.0 |
| 15 | 15.5 | 15.0 | 15.5 | 12.5 | 12.0 | 12.5 | 9.5 | 7.5 | 8.0 | 3.5 | 3.5 | 3.5 |
| 16 | 15.5 | 15.5 | 15.5 | 13.0 | 12.0 | 12.5 | 7.5 | 7.0 | 7.5 | 4.0 | 3.5 | 3.5 |
| 17 | 15.5 | 15.0 | 15.0 | 12.5 | 12.5 | 12.5 | 7.5 | 7.0 | 7.5 | 3.5 | 3.0 | 3.5 |
| 18 | 15.5 | 15.0 | 15.0 | 12.5 | 12.0 | 12.0 | 7.5 | 7.0 | 7.0 | 3.5 | 3.5 | 3.5 |
| 19 | 15.0 | 14.0 | 14.5 | 12.5 | 12.0 | 12.0 | 7.0 | 6.5 | 6.5 | 4.0 | 3.5 | 4.0 |
| 20 | 15.0 | 14.0 | 14.5 | 12.5 | 11.5 | 12.0 | 6.5 | 6.0 | 6.5 | 4.0 | 3.5 | 4.0 |
| 21 | 15.0 | 14.0 | 14.5 | 11.5 | 11.5 | 11.5 | 6.5 | 6.0 | 6.5 | 4.0 | 4.0 | 4.0 |
| 22 | 15.0 | 14.0 | 14.5 | 11.5 | 11.0 | 11.0 | 6.5 | 6.5 | 6.5 | 4.0 | 3.5 | 4.0 |
| 23 | 15.0 | 14.0 | 14.5 | 11.0 | 10.5 | 11.0 | 7.0 | 6.5 | 6.5 | 4.0 | 3.5 | 4.0 |
| 24 | 14.5 | 13.5 | 14.0 | 11.0 | 10.5 | 11.0 | 7.0 | 6.5 | 6.5 | --- | --- | --- |
| 25 | 14.0 | 13.5 | 14.0 | 11.0 | 10.5 | 11.0 | 6.5 | 6.0 | 6.5 | 3.5 | 3.0 | 3.5 |
| 26 | 14.0 | 14.0 | 14.0 | 11.0 | 10.5 | 10.5 | 6.5 | 6.0 | 6.0 | 3.5 | 3.0 | 3.5 |
| 27 | 14.5 | 14.0 | 14.0 | 11.0 | 10.5 | 11.0 | 6.5 | 6.0 | 6.0 | 3.5 | 3.0 | 3.5 |
| 28 | 14.5 | 14.0 | 14.0 | 10.5 | 10.0 | 10.5 | 6.5 | 6.0 | 6.0 | 3.5 | 3.5 | 3.5 |
| 29 | 14.5 | 14.0 | 14.0 | 10.0 | 10.0 | 10.0 | 6.0 | 5.5 | 6.0 | 4.0 | 3.5 | 3.5 |
| 30 | 14.0 | 14.0 | 14.0 | 11.0 | 9.5 | 10.0 | 6.0 | 5.5 | 5.5 | 4.0 | 3.5 | 4.0 |
| 31 | 14.0 | 13.5 | 14.0 | --- | --- | --- | 6.0 | 5.0 | 5.5 | 4.0 | 4.0 | 4.0 |
| MONTH | 19.0 | 13.5 | 15.5 | 14.5 | 9.5 | 12.5 | 10.0 | 5.0 | 7.5 | 6.0 | 3.0 | 4.0 |
| | | | | | | | | | | | | |
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | 4.0 | 3.5 | 3.5 | 4.0 | 3.5 | 4.0 | 7.5 | 6.5 | 7.0 | 9.0 | 8.5 | 8.5 |
| 2 | 3.5 | 3.5 | 3.5 | 4.0 | 3.5 | 4.0 | 7.0 | 6.5 | 7.0 | 9.0 | 8.5 | 8.5 |
| 3 | 3.5 | 3.5 | 3.5 | 4.0 | 4.0 | 4.0 | 7.5 | 6.5 | 7.0 | 9.0 | 8.5 | 9.0 |
| 4 | 3.5 | 3.0 | 3.5 | 4.0 | 4.0 | 4.0 | 8.0 | 7.5 | 7.5 | 12.5 | 8.5 | 10.5 |
| 5 | 3.5 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 7.5 | 7.0 | 7.0 | 12.5 | 11.5 | 12.0 |
| 6 | 3.5 | 3.0 | 3.5 | 4.0 | 4.0 | 4.0 | 9.0 | 7.0 | 8.0 | 13.0 | 12.0 | 12.5 |
| 7 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 | 8.0 | 7.5 | 8.0 | --- | --- | --- |
| 8 | 3.5 | 3.0 | 3.5 | 4.0 | 3.5 | 4.0 | 8.0 | 7.5 | 7.5 | --- | --- | --- |
| 9 | 3.5 | 3.5 | 3.5 | 4.0 | 4.0 | 4.0 | 8.5 | 7.5 | 8.0 | --- | --- | --- |
| 10 | 3.5 | 3.5 | 3.5 | 7.0 | 4.0 | 4.5 | 9.0 | 8.0 | 8.5 | --- | --- | --- |
| 11 | 3.5 | 3.0 | 3.5 | 4.5 | 4.0 | 4.5 | 9.0 | 8.5 | 9.0 | 14.0 | 12.0 | 12.5 |
| 12 | 3.5 | 3.0 | 3.5 | 4.5 | 4.5 | 4.5 | 9.5 | 8.5 | 9.0 | 13.0 | 10.0 | 12.5 |
| 13 | 3.5 | 3.0 | 3.5 | 5.0 | 4.5 | 4.5 | 9.0 | 9.0 | 9.0 | 14.0 | 12.5 | 13.0 |
| 14 | 3.5 | 3.0 | 3.5 | 5.0 | 4.5 | 4.5 | 9.5 | 8.5 | 9.0 | 14.0 | 12.5 | 13.5 |
| 15 | 4.0 | 3.5 | 3.5 | 4.5 | 4.5 | 4.5 | 9.0 | 8.5 | 9.0 | 14.0 | 13.5 | 14.0 |
| 16 | 4.0 | 4.0 | 4.0 | 4.5 | 4.5 | 4.5 | 9.0 | 8.5 | 9.0 | 14.5 | 13.5 | 14.0 |
| 17 | 4.0 | 3.5 | 3.5 | 5.5 | 4.5 | 5.0 | 9.5 | 9.0 | 9.0 | 14.0 | 11.5 | 13.5 |
| 18 | 3.5 | 3.0 | 3.0 | 5.5 | 5.0 | 5.5 | 9.5 | 9.0 | 9.0 | 14.5 | 12.5 | 13.5 |
| 19 | 3.5 | 3.0 | 3.5 | 5.5 | 5.0 | 5.0 | 9.0 | 8.5 | 9.0 | 15.5 | 12.5 | 14.0 |
| 20 | 3.5 | 3.5 | 3.5 | 5.5 | 5.0 | 5.0 | 9.0 | 9.0 | 9.0 | 14.5 | 13.0 | 14.0 |
| 21 | 3.5 | 3.5 | 3.5 | 5.5 | 5.5 | 5.5 | 9.5 | 9.0 | 9.0 | 14.5 | 12.0 | 13.0 |
| 22 | 3.5 | 3.5 | 3.5 | 6.0 | 5.5 | 6.0 | --- | --- | --- | 12.5 | 12.0 | 12.0 |
| 23 | 3.5 | 3.5 | 3.5 | 6.0 | 6.0 | 6.0 | --- | --- | --- | 12.5 | 12.0 | 12.0 |
| 24 | 4.0 | 3.5 | 4.0 | 5.5 | 5.5 | 5.5 | --- | --- | --- | 14.0 | 11.5 | 12.5 |
| 25 | 3.5 | 3.5 | 3.5 | 5.5 | 5.5 | 5.5 | --- | --- | --- | 14.5 | 12.5 | 13.5 |
| 26 | --- | --- | --- | 6.5 | 5.5 | 6.0 | --- | --- | --- | 14.5 | 13.5 | 14.0 |
| 27 | 4.0 | 3.5 | 3.5 | 6.5 | 6.0 | 6.5 | --- | --- | --- | 15.0 | 14.0 | 14.5 |
| 28 | 4.0 | 3.5 | 4.0 | 6.5 | 6.0 | 6.0 | 8.5 | 8.0 | 8.0 | 15.0 | 14.0 | 14.5 |
| 29 | --- | --- | --- | 6.5 | 6.0 | 6.5 | 8.5 | 8.0 | 8.0 | 15.5 | 14.0 | 14.5 |
| 30 | --- | --- | --- | 6.5 | 6.0 | 6.5 | 8.5 | 8.0 | 8.5 | 15.0 | 12.5 | 14.0 |
| 31 | --- | --- | --- | 7.0 | 6.0 | 6.5 | --- | --- | --- | 13.5 | 12.5 | 13.0 |
| MONTH | 4.0 | 3.0 | 3.5 | 7.0 | 3.5 | 5.0 | 9.5 | 6.5 | 8.5 | 15.5 | 8.5 | 12.5 |

JAMES RIVER BASIN

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|----------|------|------|----------|------|------|---------|------|------|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 9.3 | 8.4 | 8.8 | 9.9 | 9.4 | 9.6 | 10.2 | 9.9 | 10.1 | 11.8 | 11.2 | 11.4 |
| 2 | 9.2 | 8.5 | 8.8 | 9.9 | 9.4 | 9.6 | 10.4 | 9.9 | 10.1 | 11.8 | 11.3 | 11.5 |
| 3 | 9.5 | 8.7 | 8.9 | 9.9 | 9.5 | 9.6 | 10.5 | 10.0 | 10.2 | 11.8 | 11.3 | 11.5 |
| 4 | 9.5 | 8.6 | 9.0 | 10.1 | 9.6 | 9.7 | 10.5 | 10.1 | 10.2 | 11.6 | 11.2 | 11.3 |
| 5 | 9.4 | 8.4 | 8.9 | 10.0 | 9.5 | 9.7 | 10.7 | 10.2 | 10.4 | 11.7 | 11.2 | 11.5 |
| 6 | 9.1 | 8.4 | 8.7 | 9.8 | 9.2 | 9.5 | 10.7 | 10.3 | 10.4 | 12.4 | 11.4 | 12.0 |
| 7 | 9.2 | 8.4 | 8.7 | 9.7 | 9.2 | 9.4 | 10.7 | 10.1 | 10.4 | 12.5 | 12.4 | 12.4 |
| 8 | 9.3 | 8.4 | 8.7 | 9.7 | 9.3 | 9.4 | 10.7 | 10.2 | 10.4 | 12.6 | 12.3 | 12.4 |
| 9 | 9.1 | 8.4 | 8.7 | 9.9 | 9.3 | 9.5 | 10.8 | 10.3 | 10.5 | 12.3 | 12.2 | 12.2 |
| 10 | --- | --- | --- | 9.8 | 9.3 | 9.5 | 10.9 | 10.4 | 10.6 | 12.5 | 12.2 | 12.4 |
| 11 | --- | --- | --- | 9.8 | 9.4 | 9.5 | 10.9 | 10.5 | 10.7 | 12.6 | 12.3 | 12.4 |
| 12 | --- | --- | --- | 9.8 | 9.5 | 9.6 | 11.0 | 10.5 | 10.7 | 12.5 | 12.3 | 12.4 |
| 13 | --- | --- | --- | 9.8 | 9.5 | 9.6 | 11.0 | 10.7 | 10.8 | 12.4 | 12.2 | 12.3 |
| 14 | --- | --- | --- | 9.8 | 9.4 | 9.6 | 10.9 | 10.5 | 10.7 | 12.2 | 12.1 | 12.1 |
| 15 | 9.1 | 8.2 | 8.9 | 9.7 | 9.4 | 9.5 | 10.8 | 9.7 | 10.6 | 12.4 | 12.2 | 12.3 |
| 16 | 9.0 | 8.0 | 8.7 | 9.8 | 9.4 | 9.5 | 11.2 | 10.6 | 10.9 | 12.3 | 12.2 | 12.2 |
| 17 | 9.1 | 9.0 | 9.1 | 9.8 | 9.4 | 9.5 | 11.2 | 10.7 | 10.9 | 12.5 | 12.3 | 12.4 |
| 18 | 9.0 | 8.9 | 9.0 | 9.8 | 9.4 | 9.6 | 11.3 | 10.8 | 11.0 | 12.5 | 12.3 | 12.4 |
| 19 | 9.0 | 8.7 | 8.9 | 9.8 | 9.3 | 9.6 | 11.4 | 10.8 | 11.1 | 12.5 | 12.3 | 12.4 |
| 20 | 9.0 | 8.7 | 8.9 | 9.8 | 9.3 | 9.5 | 11.4 | 10.9 | 11.2 | 12.6 | 12.3 | 12.4 |
| 21 | 9.1 | 8.8 | 8.9 | 10.0 | 9.6 | 9.7 | 11.5 | 10.9 | 11.2 | 12.5 | 12.3 | 12.4 |
| 22 | 9.2 | 8.8 | 9.0 | 10.1 | 9.7 | 9.8 | 11.4 | 10.9 | 11.1 | 12.6 | 12.4 | 12.5 |
| 23 | 9.1 | 8.8 | 8.9 | 10.0 | 9.8 | 9.9 | 11.5 | 10.9 | 11.1 | 12.5 | 12.3 | 12.4 |
| 24 | 9.3 | 9.0 | 9.2 | 10.1 | 9.7 | 9.9 | 11.7 | 11.1 | 11.3 | 12.8 | 12.5 | 12.7 |
| 25 | 9.3 | 9.1 | 9.2 | 10.2 | 9.8 | 10.0 | 11.7 | 11.1 | 11.3 | 12.8 | 12.6 | 12.7 |
| 26 | 9.4 | 9.0 | 9.2 | 10.3 | 9.9 | 10.1 | 11.6 | 11.1 | 11.3 | 12.9 | 12.6 | 12.8 |
| 27 | 9.5 | 9.1 | 9.2 | 10.2 | 9.8 | 10.0 | 11.6 | 11.1 | 11.3 | 12.9 | 12.5 | 12.7 |
| 28 | 9.6 | 9.2 | 9.3 | 10.3 | 9.9 | 10.1 | 11.7 | 11.2 | 11.3 | 12.7 | 12.5 | 12.5 |
| 29 | 9.7 | 9.3 | 9.4 | 10.4 | 10.1 | 10.2 | 11.8 | 11.2 | 11.4 | 12.7 | 12.5 | 12.6 |
| 30 | 9.8 | 9.4 | 9.5 | 10.5 | 9.8 | 10.2 | 11.8 | 11.3 | 11.5 | 12.6 | 12.4 | 12.5 |
| 31 | 9.8 | 9.5 | 9.6 | --- | --- | --- | 11.7 | 11.2 | 11.4 | 12.5 | 12.2 | 12.3 |
| MONTH | 9.8 | 8.0 | 9.0 | 10.5 | 9.2 | 9.7 | 11.8 | 9.7 | 10.8 | 12.9 | 11.2 | 12.3 |
| | | | | | | | | | | | | |
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | 14.4 | 12.3 | 13.4 | 14.4 | 14.0 | 14.2 | | | | | | |
| 2 | 14.6 | 14.2 | 14.4 | 14.3 | 13.9 | 14.1 | | | | --- | --- | --- |
| 3 | 15.0 | 14.1 | 14.3 | 14.3 | 14.0 | 14.1 | | | | --- | --- | --- |
| 4 | --- | --- | --- | 14.4 | 14.0 | 14.2 | | | | --- | --- | --- |
| 5 | --- | --- | --- | 14.5 | 14.1 | 14.2 | | | | --- | --- | --- |
| 6 | --- | --- | --- | 14.4 | 14.1 | 14.2 | | | | --- | --- | --- |
| 7 | --- | --- | --- | 14.5 | 14.1 | 14.3 | | | | --- | --- | --- |
| 8 | --- | --- | --- | --- | --- | --- | | | | --- | --- | --- |
| 9 | --- | --- | --- | --- | --- | --- | | | | --- | --- | --- |
| 10 | --- | --- | --- | --- | --- | --- | | | | --- | --- | --- |
| 11 | --- | --- | --- | 11.8 | 10.9 | 11.2 | | | | 14.9 | 13.2 | 14.0 |
| 12 | --- | --- | --- | 11.4 | 10.9 | 11.1 | | | | 14.8 | 12.8 | 13.8 |
| 13 | --- | --- | --- | 12.3 | 10.8 | 11.2 | | | | 14.7 | 12.8 | 13.5 |
| 14 | --- | --- | --- | 13.1 | 10.8 | 11.4 | | | | 13.9 | 12.8 | 13.4 |
| 15 | --- | --- | --- | 14.2 | 11.2 | 12.3 | | | | 13.9 | 12.7 | 13.4 |
| 16 | --- | --- | --- | 14.5 | 12.0 | 12.7 | | | | 13.7 | 12.6 | 13.2 |
| 17 | --- | --- | --- | --- | --- | --- | | | | 14.4 | 12.7 | 13.4 |
| 18 | --- | --- | --- | --- | --- | --- | | | | 13.8 | 12.8 | 13.2 |
| 19 | --- | --- | --- | --- | --- | --- | | | | 13.5 | 12.7 | 13.2 |
| 20 | --- | --- | --- | --- | --- | --- | | | | 13.8 | 12.9 | 13.2 |
| 21 | 14.8 | 14.2 | 14.4 | --- | --- | --- | | | | 14.1 | 13.0 | 13.5 |
| 22 | 15.6 | 14.3 | 14.9 | --- | --- | --- | | | | 14.1 | 13.7 | 13.9 |
| 23 | 15.7 | 14.2 | 14.6 | --- | --- | --- | | | | 13.9 | 13.6 | 13.7 |
| 24 | 14.8 | 14.1 | 14.4 | --- | --- | --- | | | | 14.1 | 13.1 | 13.5 |
| 25 | 14.5 | 13.9 | 14.2 | --- | --- | --- | | | | 13.5 | 12.8 | 13.1 |
| 26 | 14.5 | 14.0 | 14.2 | --- | --- | --- | | | | 12.8 | 12.6 | 12.7 |
| 27 | 14.1 | 14.0 | 14.1 | --- | --- | --- | | | | 12.6 | 12.3 | 12.4 |
| 28 | 14.3 | 14.0 | 14.1 | --- | --- | --- | | | | 12.7 | 11.7 | 12.4 |
| 29 | --- | --- | --- | --- | --- | --- | | | | 12.5 | 12.1 | 12.3 |
| 30 | --- | --- | --- | --- | --- | --- | | | | 13.5 | 11.9 | 12.6 |
| 31 | --- | --- | --- | --- | --- | --- | | | | 13.4 | 13.0 | 13.2 |
| MONTH | 15.7 | 12.3 | 14.3 | 14.5 | 10.8 | 13.0 | | | | 14.9 | 11.7 | 13.2 |

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OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

JAMES RIVER BASIN

02012500 JACKSON RIVER AT FALLING SPRING, VA

LOCATION.--Lat 37°52'36", long 79°58'39", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) upstream from Smith Bridge, 0.8 mi (1.3 km) south of town of Falling Spring, 1.6 mi (2.6 km) downstream from Falling Spring Creek, and 5.5 mi (8.8 km) north of Covington.

DRAINAGE AREA.--411 mi² (1,064 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year. Prior to October 1934, published as "at Barber."

REVISED RECORDS.--WSP 952: 1927, 1928(M), 1929-30, 1932-40. WSP 1303: 1926(M), 1930-34(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,333.49 ft (406.448 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795), 7.6 mi (12.2 km) upstream.

AVERAGE DISCHARGE.--57 years, 489 ft³/s (13.85 m³/s), 16.16 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s (700 m³/s) Mar. 17, 1936, gage height, 14.74 ft (4.493 m), from rating curve extended above 17,000 ft³/s (480 m³/s) on basis of records for other stations in James River basin; minimum, 36 ft³/s (1.02 m³/s) Oct. 12, 1946, July 15, 1981; minimum daily, 52 ft³/s (1.47 m³/s) Sept. 8, 1966; minimum gage height, 2.65 ft (0.808 m) Oct. 12, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of about 20 ft (6.1 m), discharge, about 50,000 ft³/s (1,400 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,720 ft³/s (190 m³/s) June 14, gage height, 9.75 ft (2.972 m); minimum, 41 ft³/s (1.16 m³/s) Nov. 30, gage height, 2.88 ft (0.878 m); minimum daily, 63 ft³/s (1.78 m³/s) Oct. 5, 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|------|----------|----------|--------|-----------|------------|-----------|------|------|------|
| 1 | 65 | 89 | 88 | 99 | 1220 | 580 | 423 | 592 | 986 | 297 | 307 | 214 |
| 2 | 66 | 87 | 99 | 101 | 2200 | 589 | 495 | 579 | 645 | 285 | 297 | 218 |
| 3 | 65 | 85 | 94 | 128 | 2850 | 596 | 495 | 566 | 338 | 286 | 293 | 218 |
| 4 | 65 | 84 | 92 | 524 | 3210 | 589 | 489 | 417 | 342 | 290 | 290 | 218 |
| 5 | 63 | 85 | 90 | 286 | 3340 | 587 | 619 | 410 | 363 | 293 | 289 | 218 |
| 6 | 65 | 84 | 89 | 544 | 1880 | 585 | 634 | 329 | 363 | 291 | 282 | 217 |
| 7 | 63 | 83 | 88 | 940 | 1840 | 833 | 788 | 283 | 600 | 251 | 279 | 217 |
| 8 | 63 | 83 | 88 | 799 | 1110 | 1310 | 786 | 275 | 720 | 302 | 288 | 191 |
| 9 | 65 | 83 | 87 | 649 | 581 | 1850 | 681 | 270 | 440 | 307 | 290 | 218 |
| 10 | 280 | 83 | 85 | 633 | 899 | 1080 | 508 | 266 | 860 | 345 | 281 | 217 |
| 11 | 284 | 82 | 84 | 497 | 1520 | 780 | 288 | 241 | 1520 | 305 | 243 | 216 |
| 12 | 284 | 81 | 84 | 351 | 1570 | 771 | 286 | 259 | 1230 | 299 | 281 | 216 |
| 13 | 283 | 81 | 83 | 332 | 1170 | 762 | 314 | 258 | 2400 | 294 | 280 | 216 |
| 14 | 283 | 81 | 91 | 328 | 928 | 855 | 345 | 256 | 4780 | 295 | 278 | 216 |
| 15 | 282 | 81 | 118 | 301 | 514 | 1190 | 394 | 255 | 5060 | 293 | 277 | 216 |
| 16 | 282 | 81 | 119 | 277 | 504 | 1480 | 416 | 254 | 4380 | 291 | 277 | 215 |
| 17 | 284 | 79 | 105 | 278 | 1530 | 1670 | 351 | 253 | 2080 | 293 | 277 | 215 |
| 18 | 285 | 79 | 99 | 272 | 2930 | 1750 | 370 | 252 | 850 | 292 | 281 | 216 |
| 19 | 281 | 80 | 94 | 272 | 2810 | 1620 | 477 | 253 | 511 | 290 | 280 | 216 |
| 20 | 79 | 85 | 90 | 271 | 1600 | 2440 | 597 | 254 | 492 | 291 | 278 | 218 |
| 21 | 70 | 82 | 87 | 332 | 1000 | 4240 | 508 | 253 | 404 | 289 | 277 | 220 |
| 22 | 69 | 81 | 99 | 355 | 1270 | 4030 | 365 | 256 | 325 | 287 | 277 | 230 |
| 23 | 70 | 81 | 174 | 376 | 1030 | 3450 | 290 | 258 | 317 | 287 | 277 | 221 |
| 24 | 70 | 85 | 183 | 552 | 858 | 2230 | 243 | 259 | 311 | 289 | 277 | 219 |
| 25 | 70 | 82 | 146 | 525 | 761 | 1250 | 243 | 266 | 307 | 287 | 277 | 219 |
| 26 | 79 | 81 | 128 | 512 | 579 | 1100 | 426 | 257 | 302 | 286 | 275 | 232 |
| 27 | 268 | 82 | 118 | 395 | 579 | 779 | 903 | 256 | 300 | 285 | 276 | 262 |
| 28 | 137 | 84 | 112 | 290 | 575 | 759 | 1100 | 330 | 297 | 288 | 276 | 230 |
| 29 | 106 | 83 | 106 | 285 | --- | 672 | 1060 | 406 | 297 | 288 | 275 | 224 |
| 30 | 96 | 75 | 100 | 285 | --- | 593 | 889 | 656 | 300 | 319 | 274 | 213 |
| 31 | 93 | --- | 100 | 315 | --- | 490 | --- | 1010 | --- | 325 | 257 | --- |
| TOTAL | 4615 | 2472 | 3220 | 12104 | 40858 | 41510 | 15783 | 10729 | 32120 | 9120 | 8666 | 6576 |
| MEAN | 149 | 82.4 | 104 | 390 | 1459 | 1339 | 526 | 346 | 1071 | 294 | 280 | 219 |
| MAX | 285 | 89 | 183 | 940 | 3340 | 4240 | 1100 | 1010 | 5060 | 345 | 307 | 262 |
| MIN | 63 | 75 | 83 | 99 | 504 | 490 | 243 | 241 | 297 | 251 | 243 | 191 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |
| MEAN# | 271 | 126 | 393 | 629 | 1404 | 1339 | 529 | 351 | 1024 | 225 | 154 | 97 |
| CFSM# | .66 | .31 | .96 | 1.53 | 3.42 | 3.26 | 1.29 | .85 | 2.49 | .55 | .37 | .24 |
| IN# | .76 | .34 | 1.10 | 1.76 | 3.56 | 3.76 | 1.44 | .98 | 2.78 | .63 | .43 | .26 |
| CAL YR 1981 TOTAL | 87757 | | | MEAN 240 | MAX 3010 | MIN 61 | MEAN# 334 | CFSM# .81 | IN# 11.03 | | | |
| WTR YR 1982 TOTAL | 187773 | | | MEAN 514 | MAX 5060 | MIN 63 | MEAN# 539 | CFSM# 1.31 | IN# 17.81 | | | |

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
 # Adjusted for change in contents.

JAMES RIVER BASIN

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02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1968 to current year.

WATER TEMPERATURES: December 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 500 micromhos Oct. 2, 1970; minimum daily, 61 micromhos Dec. 21, 26, 1977.

WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 2, 5, 1975; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 320 micromhos Dec. 23; minimum daily, 115 micromhos June 16.

WATER TEMPERATURES: Maximum daily, 25.0°C Aug. 5; minimum daily, 2.0°C Dec. 21, Jan. 12, 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|--------------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| OCT 14... | 1445 | 284 | 178 | 8.1 | 15.0 | 17 | 74 | 24 | 3.5 | 1.9 | 1.4 |
| DEC 01... | 1330 | 90 | 258 | 8.4 | 6.0 | 4 | 120 | 38 | 5.9 | 2.4 | 2.2 |
| JAN 28... | 1200 | 287 | 176 | 8.2 | 2.0 | 1 | 78 | 25 | 3.7 | 1.9 | 1.5 |
| MAR 09... | 1400 | 1850 | 122 | 8.0 | 6.0 | 3 | 56 | 18 | 2.7 | 1.9 | 1.0 |
| APR 28... | 1230 | 1120 | 120 | 8.0 | 10.5 | <1 | 52 | 17 | 2.3 | 1.6 | 1.1 |
| JUN 07... | 1130 | 523 | 151 | 8.2 | 16.0 | <1 | 65 | 21 | 3.1 | 1.4 | 1.2 |
| JUL 21... | 1000 | 287 | 163 | 8.1 | 20.5 | 1 | 71 | 23 | 3.3 | 1.7 | 1.3 |
| SEP 09... | 1030 | 219 | 178 | 8.1 | 19.5 | 16 | 81 | 26 | 3.8 | 1.9 | 1.2 |

< Actual value is known to be less than the value shown.

| DATE | ALKA- LINITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|--------------|---|---|---|--|---|--|--|---|---|--|--|
| OCT 14... | 66 | 14 | 2.2 | <.1 | 4.5 | 108 | 91 | <.010 | .04 | <.010 | 190 |
| DEC 01... | 84 | 40 | 2.7 | .2 | 4.3 | 156 | 146 | <.010 | .14 | <.010 | 4 |
| JAN 28... | 64 | 19 | 2.4 | .1 | 3.7 | 111 | 96 | .020 | .19 | <.010 | 5 |
| MAR 09... | 44 | 11 | 2.4 | <.1 | 4.3 | 80 | 68 | <.010 | .31 | <.010 | 6 |
| APR 28... | 43 | 13 | 2.2 | <.1 | 4.3 | 75 | 67 | .010 | .27 | .010 | 14 |
| JUN 07... | 53 | 20 | 2.3 | <.1 | 2.7 | 80 | 84 | <.010 | .18 | <.010 | 6 |
| JUL 21... | 59 | 18 | 2.3 | .1 | 2.8 | 108 | 88 | <.010 | <.10 | .010 | 8 |
| SEP 09... | 63 | 18 | 2.2 | .1 | 3.6 | 84 | 95 | <.010 | <.10 | .280 | <3 |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 260 | 256 | 280 | 270 | 157 | 153 | 166 | 155 | 123 | 158 | 169 | 172 |
| 2 | 263 | 256 | 277 | 300 | 156 | 166 | 154 | 154 | 140 | 160 | 156 | 171 |
| 3 | 265 | 257 | 267 | 300 | 139 | --- | 151 | 151 | 150 | 162 | 166 | 182 |
| 4 | 260 | 253 | 263 | 205 | 156 | --- | 156 | 188 | 156 | 160 | 154 | 171 |
| 5 | 260 | 248 | 271 | 260 | 144 | --- | 139 | 157 | 153 | 158 | 169 | 177 |
| 6 | 260 | 255 | 267 | 245 | 157 | --- | 182 | 162 | 156 | 151 | 172 | 169 |
| 7 | 264 | 257 | 270 | 195 | 157 | --- | 138 | 163 | 126 | 154 | 174 | 169 |
| 8 | 262 | 258 | 280 | 230 | 178 | 146 | 136 | 171 | 130 | 152 | 176 | 170 |
| 9 | 265 | 260 | 250 | 240 | 175 | 137 | 148 | 175 | 177 | 156 | 180 | 167 |
| 10 | 193 | 258 | 270 | 238 | 160 | 148 | 153 | 172 | 150 | 158 | 176 | 171 |
| 11 | 185 | 267 | 265 | 250 | 155 | 144 | 178 | 167 | 117 | 163 | 177 | 171 |
| 12 | 183 | 267 | 290 | 260 | 151 | 154 | 171 | 165 | 139 | 156 | 170 | 171 |
| 13 | 185 | 265 | 250 | --- | 169 | 144 | 175 | 158 | 130 | 163 | 156 | 171 |
| 14 | 183 | 268 | 295 | --- | 173 | 137 | 157 | 163 | 120 | 163 | 171 | 171 |
| 15 | 182 | 260 | 300 | 263 | 177 | 134 | 154 | 168 | 117 | 156 | 154 | 171 |
| 16 | 188 | 257 | 270 | 260 | 168 | 133 | 146 | 168 | 115 | 168 | 156 | 169 |
| 17 | 200 | 257 | 260 | 245 | 157 | 129 | 146 | 163 | 136 | 161 | 156 | 171 |
| 18 | 199 | 260 | 280 | 193 | 144 | 129 | 151 | 189 | 162 | 166 | 152 | 172 |
| 19 | 196 | 257 | 295 | --- | 143 | 128 | 148 | 165 | 160 | 154 | 154 | 172 |
| 20 | 235 | 257 | 295 | 193 | 145 | 134 | 144 | 163 | 158 | 156 | 154 | 172 |
| 21 | 260 | 272 | 270 | 188 | 138 | 133 | 137 | 158 | 163 | 153 | 156 | 172 |
| 22 | 260 | 270 | 280 | 189 | 139 | 124 | 156 | 155 | 173 | 154 | 156 | 182 |
| 23 | 260 | 267 | 320 | 178 | 144 | --- | 162 | 161 | 170 | 156 | 156 | 173 |
| 24 | 270 | 262 | 280 | 178 | 154 | 127 | 173 | 158 | 166 | 159 | 155 | 180 |
| 25 | 263 | 270 | 295 | 175 | 139 | 139 | 176 | 157 | 164 | 153 | 155 | 185 |
| 26 | 259 | 265 | 285 | 174 | 148 | 138 | 161 | 155 | 162 | 164 | 155 | 197 |
| 27 | 240 | 274 | 280 | 180 | --- | 168 | 140 | 154 | 161 | 152 | 151 | 195 |
| 28 | 287 | 272 | 283 | 188 | 155 | 157 | 148 | 143 | 159 | 163 | 151 | 190 |
| 29 | 277 | 273 | 245 | 189 | --- | 161 | 143 | 148 | 159 | 154 | 156 | 183 |
| 30 | 272 | 275 | 260 | 144 | --- | 158 | 138 | 139 | 161 | 182 | 156 | 180 |
| 31 | 260 | --- | 250 | --- | --- | 161 | --- | 123 | --- | 172 | 159 | --- |
| MEAN | 239 | 262 | 276 | 221 | 155 | 143 | 154 | 160 | 148 | 159 | 161 | 176 |
| WTR YR 1982 | MEAN | 189 | | MAX | 320 | | MIN | 115 | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|-----|------|-----|------|------|------|------|------|------|
| 1 | 17.0 | 14.0 | 8.0 | 5.0 | 4.5 | 6.5 | 11.0 | 12.0 | 14.5 | 22.0 | 24.0 | 22.0 |
| 2 | 16.5 | 14.5 | 8.5 | 5.0 | 4.0 | 7.0 | 11.0 | 12.0 | 17.5 | 21.5 | 23.0 | 23.5 |
| 3 | 16.0 | 15.0 | 8.0 | 5.5 | 4.5 | --- | 10.5 | 13.0 | 19.0 | 21.0 | 24.5 | 23.0 |
| 4 | 16.0 | 14.5 | 8.0 | 7.0 | 5.0 | --- | 10.0 | 14.0 | 16.5 | 21.5 | 24.0 | 21.0 |
| 5 | 17.0 | 14.5 | 7.5 | 5.5 | 4.0 | --- | 9.0 | 16.5 | 18.0 | 20.5 | 25.0 | 23.0 |
| 6 | 18.5 | 14.0 | 7.0 | 5.5 | 4.5 | --- | 9.0 | 17.0 | 16.0 | 23.0 | 23.5 | 23.0 |
| 7 | 17.0 | 12.5 | 7.0 | 6.0 | 4.5 | --- | 9.0 | 15.5 | 17.0 | 23.5 | 23.5 | 22.5 |
| 8 | 17.0 | 11.5 | 8.0 | 5.5 | 6.0 | 6.0 | 8.0 | 14.5 | 18.0 | 23.0 | 23.5 | 22.0 |
| 9 | 17.0 | 10.5 | 5.5 | 5.0 | 5.0 | 6.0 | 9.0 | 14.0 | 20.0 | 23.0 | 22.0 | 22.0 |
| 10 | 17.0 | 12.0 | 4.0 | 3.0 | 5.0 | 8.0 | 10.5 | 16.5 | 17.0 | 22.5 | 24.5 | 22.0 |
| 11 | 16.5 | 11.0 | 4.0 | 2.5 | 5.0 | 8.0 | 10.0 | 17.0 | 11.0 | 21.0 | 23.5 | 22.5 |
| 12 | 17.0 | 10.5 | 5.5 | 2.0 | 4.5 | 7.0 | 11.0 | 17.0 | 17.0 | 23.0 | 23.0 | 22.0 |
| 13 | 17.0 | 10.0 | 5.0 | --- | 5.5 | 7.0 | 11.0 | 17.0 | 17.5 | 21.5 | 23.0 | 21.5 |
| 14 | 16.5 | 10.0 | 5.0 | --- | 5.5 | 6.5 | 12.5 | 18.0 | 11.0 | 22.5 | 21.5 | 22.0 |
| 15 | 17.0 | 10.5 | 5.5 | 4.5 | 6.0 | 5.0 | 10.5 | 18.0 | 11.0 | 23.0 | 24.5 | 23.0 |
| 16 | 17.0 | 10.5 | 6.0 | 4.0 | 6.0 | 6.0 | 11.0 | 18.0 | 12.0 | 24.5 | --- | 23.0 |
| 17 | 16.0 | 11.0 | 5.0 | 2.0 | 5.0 | 8.0 | 11.5 | 17.5 | 12.0 | 23.5 | 24.0 | 22.0 |
| 18 | 16.0 | 11.5 | 5.0 | 3.5 | 4.0 | 8.0 | 13.0 | 18.5 | 16.0 | 22.5 | 24.0 | 21.0 |
| 19 | 13.0 | 10.5 | 3.0 | --- | 4.5 | 7.5 | 11.0 | 17.0 | 18.0 | 24.0 | 24.5 | 20.0 |
| 20 | 13.0 | 10.5 | 2.5 | 4.5 | 5.5 | 7.0 | 10.5 | 17.5 | 19.0 | 23.0 | 24.5 | 20.0 |
| 21 | 13.5 | 8.0 | 2.0 | 5.0 | 5.0 | 7.0 | 12.0 | 17.0 | 18.0 | 24.5 | 24.0 | 19.0 |
| 22 | 14.0 | 7.5 | 4.5 | 4.0 | 4.5 | 7.0 | 11.5 | 17.0 | 16.0 | 24.0 | 23.0 | 18.5 |
| 23 | 14.0 | 7.5 | 8.0 | 4.0 | 7.0 | --- | 12.0 | 16.5 | 18.5 | 23.0 | 23.0 | 19.5 |
| 24 | 12.0 | 6.5 | 7.0 | 4.0 | 7.0 | 7.0 | 14.0 | 16.0 | 18.0 | 24.5 | 24.0 | 19.0 |
| 25 | 11.0 | 8.0 | 7.0 | 4.0 | 6.0 | 9.0 | 13.0 | 17.5 | 19.0 | 24.0 | 24.0 | 17.5 |
| 26 | 12.0 | 8.0 | 5.5 | 3.5 | 5.0 | 7.0 | 11.5 | 18.0 | 18.5 | 24.0 | 23.5 | 18.0 |
| 27 | 14.5 | 9.0 | 7.0 | 4.0 | --- | 7.0 | 10.0 | 17.0 | 18.0 | 24.5 | 21.0 | 18.5 |
| 28 | 14.0 | 8.0 | 6.0 | 4.0 | 5.5 | 7.5 | 11.5 | 17.5 | 20.0 | 23.5 | 22.5 | 18.5 |
| 29 | 14.0 | 7.0 | 6.0 | 4.0 | --- | 9.5 | 10.5 | 17.5 | 20.0 | 24.0 | 22.0 | 18.5 |
| 30 | 14.0 | 6.0 | 4.0 | 6.0 | --- | 9.5 | 11.0 | 18.0 | 21.0 | 22.5 | 21.5 | 19.0 |
| 31 | 14.0 | --- | 3.0 | --- | --- | 9.0 | --- | 16.5 | --- | 22.5 | 21.0 | --- |
| MEAN | 15.5 | 10.5 | 5.5 | 4.5 | 5.0 | 7.5 | 11.0 | 16.5 | 17.0 | 23.0 | 23.5 | 21.0 |
| WTR YR 1982 | MEAN | 13.5 | | MAX | 25.0 | | MIN | 2.0 | | | | |

JAMES RIVER BASIN

143

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA

LOCATION.--Lat 37°48'39", long 79°59'19", Covington City, Hydrologic Unit 02080201, on left bank 250 ft (76 m) upstream from Dry Run and 1.7 mi (2.7 km) upstream from Dunlap Creek and bridge on U.S. Highway 60.

DRAINAGE AREA.--439 mi² (1,137 km²).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 30.5°C July 21, 1980; minimum recorded, 0.0°C Jan. 13, 1982.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 24.5°C July 19, 25-27, Aug. 5, 10, 16; minimum recorded, 0.0°C Jan. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|---------|------|------|----------|------|------|----------|-----|-----|---------|-----|-----|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 20.0 | 15.5 | 17.5 | 14.5 | 12.0 | 13.0 | 4.5 | 3.0 | 4.0 | 3.5 | .5 | 2.0 |
| 2 | 19.5 | 14.0 | 16.5 | 15.0 | 11.5 | 13.5 | 7.0 | 4.0 | 5.5 | 4.0 | 1.0 | 2.5 |
| 3 | 16.5 | 12.5 | 14.5 | 16.0 | 12.0 | 14.0 | 7.5 | 5.5 | 6.5 | 4.0 | 2.5 | 3.0 |
| 4 | 16.5 | 12.0 | 13.5 | 16.0 | 12.5 | 14.0 | 7.0 | 6.0 | 6.5 | 6.0 | 3.5 | 5.0 |
| 5 | 16.5 | 13.0 | 14.5 | 15.5 | 12.0 | 13.5 | 6.5 | 5.5 | 6.0 | 5.5 | 4.5 | 5.5 |
| 6 | 17.5 | 15.0 | 16.0 | 14.0 | 11.5 | 13.0 | 6.5 | 4.0 | 5.0 | 5.5 | 4.0 | 4.5 |
| 7 | 19.0 | 14.5 | 16.5 | 12.0 | 9.5 | 10.5 | 6.0 | 3.5 | 5.0 | 6.5 | 5.5 | 6.0 |
| 8 | 18.5 | 13.5 | 15.5 | 11.5 | 7.5 | 9.0 | 7.0 | 5.5 | 6.0 | 5.5 | 4.0 | 5.0 |
| 9 | 16.5 | 12.5 | 14.5 | 10.0 | 7.5 | 8.5 | 5.5 | 3.5 | 4.5 | 4.0 | 2.5 | 3.5 |
| 10 | 15.0 | 12.0 | 13.5 | 11.0 | 7.5 | 9.0 | 3.0 | .5 | 2.0 | --- | --- | --- |
| 11 | 16.5 | 13.5 | 15.0 | 11.0 | 7.5 | 9.0 | --- | --- | --- | --- | --- | --- |
| 12 | 16.5 | 15.0 | 15.5 | 10.0 | 7.0 | 8.0 | 3.5 | 1.0 | 2.0 | --- | --- | --- |
| 13 | 16.5 | 14.0 | 15.5 | 9.5 | 6.0 | 7.5 | 3.5 | .5 | 2.0 | 1.0 | .0 | .5 |
| 14 | 16.5 | 13.0 | 14.5 | 9.0 | 5.5 | 7.0 | 2.5 | 1.0 | 2.0 | 2.0 | .5 | 1.0 |
| 15 | 15.5 | 13.0 | 14.5 | 9.5 | 5.5 | 7.5 | 3.5 | 2.5 | 3.0 | 1.5 | .5 | 1.0 |
| 16 | 17.0 | 15.5 | 16.0 | 9.0 | 6.0 | 8.0 | 4.0 | 2.5 | 3.5 | 2.0 | .5 | 1.5 |
| 17 | 15.5 | 13.5 | 14.5 | 10.5 | 8.0 | 9.0 | 3.5 | 2.5 | 3.0 | --- | --- | --- |
| 18 | 15.5 | 14.5 | 15.0 | 11.5 | 9.0 | 10.0 | 4.0 | 2.0 | 3.0 | --- | --- | --- |
| 19 | 14.5 | 12.0 | 13.5 | 11.0 | 8.0 | 9.5 | 2.5 | .5 | 1.5 | 2.5 | 1.0 | 2.0 |
| 20 | 13.5 | 10.0 | 11.5 | 11.0 | 9.0 | 10.5 | --- | --- | --- | 5.0 | 2.5 | 3.5 |
| 21 | 13.5 | 9.0 | 11.5 | 8.5 | 6.5 | 7.5 | --- | --- | --- | 5.0 | 4.0 | 4.5 |
| 22 | 13.5 | 10.5 | 12.5 | 7.5 | 5.0 | 6.0 | --- | --- | --- | 4.0 | 2.5 | 3.0 |
| 23 | 13.5 | 12.0 | 13.0 | 6.0 | 2.5 | 4.5 | 5.5 | .5 | 4.0 | 4.0 | 2.0 | 3.0 |
| 24 | 12.5 | 10.0 | 11.5 | 5.0 | 3.5 | 4.0 | 6.5 | 5.5 | 6.0 | 3.5 | 2.0 | 3.0 |
| 25 | 10.5 | 9.5 | 10.0 | 7.0 | 4.0 | 5.5 | 6.0 | 4.0 | 5.5 | 2.5 | .5 | 1.5 |
| 26 | 10.5 | 9.0 | 10.0 | 7.0 | 4.0 | 5.5 | 5.0 | 3.5 | 4.0 | 3.0 | 1.5 | 2.5 |
| 27 | 14.0 | 11.0 | 12.5 | 7.5 | 5.5 | 6.5 | 5.5 | 4.0 | 4.5 | --- | --- | --- |
| 28 | 15.0 | 13.0 | 14.0 | 8.0 | 5.5 | 6.5 | 5.5 | 3.5 | 4.5 | 3.0 | .5 | 2.0 |
| 29 | 14.5 | 12.0 | 13.0 | 7.0 | 4.0 | 5.5 | 5.5 | 3.5 | 4.5 | 3.5 | 2.0 | 3.0 |
| 30 | 13.0 | 12.0 | 12.5 | 5.0 | 3.0 | 4.0 | 4.0 | 1.5 | 2.5 | 4.5 | 2.5 | 4.0 |
| 31 | 14.0 | 11.5 | 12.5 | --- | --- | --- | --- | --- | --- | 6.0 | 4.5 | 5.0 |
| MONTH | 20.0 | 9.0 | 14.0 | 16.0 | 2.5 | 8.5 | 7.5 | .5 | 4.0 | 6.5 | .0 | 3.0 |

JAMES RIVER BASIN

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|------|-------|------|------|--------|------|------|-----------|------|------|
| FEBRUARY | | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 6.0 | 3.5 | 5.0 | 4.5 | 1.0 | 3.0 | --- | --- | --- | 12.0 | 8.0 | 10.5 |
| 2 | 4.5 | 3.0 | 3.5 | 5.0 | 1.5 | 3.5 | --- | --- | --- | 11.5 | 9.0 | 10.5 |
| 3 | 4.0 | 2.5 | 3.5 | 4.5 | 2.5 | 3.0 | --- | --- | --- | 13.0 | 9.0 | 11.0 |
| 4 | 5.0 | 3.0 | 4.0 | 3.5 | 2.0 | 2.5 | --- | --- | --- | 13.5 | 9.0 | 11.5 |
| 5 | 4.0 | 3.0 | 3.5 | 5.0 | 1.5 | 3.5 | --- | --- | --- | --- | --- | --- |
| 6 | 4.5 | 2.5 | 3.5 | 5.0 | 2.0 | 3.0 | --- | --- | --- | 16.5 | 13.0 | 15.0 |
| 7 | 4.0 | 2.0 | 2.5 | 3.0 | 1.5 | 2.0 | --- | --- | --- | 16.5 | 14.5 | 15.5 |
| 8 | 4.5 | 1.5 | 3.0 | 4.5 | 1.0 | 2.5 | --- | --- | --- | 16.5 | 14.5 | 15.5 |
| 9 | 4.5 | 3.0 | 4.0 | --- | --- | --- | --- | --- | --- | 17.0 | 12.5 | 14.5 |
| 10 | 4.0 | 2.0 | 3.5 | --- | --- | --- | --- | --- | --- | 18.5 | 13.0 | 16.0 |
| 11 | 4.5 | 2.5 | 3.0 | --- | --- | --- | --- | --- | --- | 19.0 | 14.0 | 16.5 |
| 12 | 3.5 | 1.5 | 2.5 | --- | --- | --- | --- | --- | --- | 20.0 | 16.0 | 17.0 |
| 13 | 4.0 | 2.0 | 3.0 | --- | --- | --- | --- | --- | --- | 19.0 | 15.0 | 16.5 |
| 14 | 4.5 | 1.0 | 3.0 | --- | --- | --- | --- | --- | --- | 19.5 | 15.5 | 17.5 |
| 15 | 4.5 | 1.5 | 3.0 | --- | --- | --- | --- | --- | --- | 19.5 | 16.0 | 17.5 |
| 16 | 4.5 | 4.0 | 4.5 | --- | --- | --- | --- | --- | --- | 19.5 | 16.0 | 17.5 |
| 17 | 4.5 | 2.5 | 4.0 | --- | --- | --- | --- | --- | --- | 20.5 | 16.0 | 18.0 |
| 18 | 3.0 | 2.5 | 2.5 | --- | --- | --- | --- | --- | --- | 19.5 | 16.5 | 18.0 |
| 19 | 3.5 | 2.5 | 2.5 | --- | --- | --- | --- | --- | --- | 20.5 | 17.0 | 18.0 |
| 20 | 4.5 | 2.5 | 3.5 | --- | --- | --- | --- | --- | --- | 20.5 | 16.0 | 17.0 |
| 21 | 4.0 | 3.0 | 4.0 | --- | --- | --- | --- | --- | --- | 19.5 | 16.0 | 17.0 |
| 22 | 4.0 | 2.0 | 3.0 | --- | --- | --- | --- | --- | --- | 20.5 | 16.0 | 17.5 |
| 23 | 5.0 | 1.5 | 3.5 | --- | --- | --- | --- | --- | --- | 18.5 | 16.0 | 17.0 |
| 24 | 6.0 | 2.0 | 4.0 | --- | --- | --- | --- | --- | --- | 18.0 | 15.5 | 17.0 |
| 25 | 5.0 | 2.5 | 3.5 | --- | --- | --- | --- | --- | --- | 17.5 | 16.0 | 16.5 |
| 26 | 3.0 | 1.0 | 2.0 | --- | --- | --- | --- | --- | --- | 19.0 | 16.0 | 17.5 |
| 27 | 2.0 | .5 | 1.0 | --- | --- | --- | --- | --- | --- | 18.5 | 17.0 | 17.5 |
| 28 | 4.5 | 1.0 | 3.0 | --- | --- | --- | --- | --- | --- | 18.5 | 16.5 | 17.5 |
| 29 | --- | --- | --- | --- | --- | --- | 11.5 | 7.5 | 9.5 | 18.0 | 16.0 | 17.0 |
| 30 | --- | --- | --- | --- | --- | --- | 12.5 | 7.5 | 9.5 | 18.0 | 15.5 | 17.0 |
| 31 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 17.0 | 13.0 | 15.0 |
| MONTH | 6.0 | .5 | 3.5 | 5.0 | 1.0 | 3.0 | 12.5 | 7.5 | 9.5 | 20.5 | 8.0 | 16.0 |
| | | | | | | | | | | | | |
| JUNF | | | | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 14.5 | 13.0 | 13.5 | 21.5 | 17.5 | 19.5 | 23.5 | 21.0 | 22.0 | 21.5 | 20.0 | 20.5 |
| 2 | 17.5 | 12.5 | 14.5 | 21.5 | 18.5 | 20.0 | 22.5 | 21.0 | 21.5 | 24.0 | 21.0 | 22.0 |
| 3 | 18.0 | 16.5 | 17.0 | 21.0 | 19.5 | 20.0 | 24.0 | 21.0 | 22.5 | 24.0 | 21.0 | 22.0 |
| 4 | 18.0 | 16.0 | 16.5 | 20.5 | 19.0 | 20.0 | 24.0 | 22.0 | 23.0 | 22.5 | 19.0 | 20.5 |
| 5 | 17.0 | 15.5 | 16.0 | 21.5 | 20.0 | 20.5 | 24.5 | 22.5 | 23.5 | 22.0 | 18.5 | 20.0 |
| 6 | 16.0 | 15.0 | 15.5 | 22.5 | 19.5 | 21.0 | 24.0 | 22.5 | 23.0 | 22.5 | 18.5 | 20.0 |
| 7 | 18.0 | 15.0 | 16.5 | 23.5 | 20.5 | 22.0 | 24.0 | 22.0 | 23.0 | 22.5 | 19.0 | 20.5 |
| 8 | 17.5 | 14.5 | 16.0 | 23.5 | 21.5 | 22.0 | 23.0 | 21.5 | 22.5 | 22.0 | 20.0 | 20.5 |
| 9 | 19.5 | 15.0 | 17.0 | 22.0 | 21.0 | 21.5 | 22.0 | 21.0 | 21.5 | 22.0 | 20.0 | 20.5 |
| 10 | 20.0 | 10.5 | 17.0 | 23.0 | 20.0 | 21.5 | 24.5 | 21.0 | 22.5 | 21.5 | 19.0 | 20.0 |
| 11 | 12.0 | 9.0 | 10.5 | 22.5 | 21.5 | 22.0 | 23.5 | 21.5 | 22.5 | 22.0 | 19.0 | 20.0 |
| 12 | 10.5 | 9.0 | 9.5 | 23.0 | 20.5 | 21.5 | 23.0 | 21.0 | 22.0 | 22.5 | 18.5 | 20.5 |
| 13 | 12.5 | 10.0 | 11.5 | 22.0 | 20.0 | 21.0 | 22.0 | 20.5 | 21.5 | 21.0 | 19.5 | 20.5 |
| 14 | 11.0 | 9.0 | 10.0 | 22.0 | 20.0 | 21.0 | 23.5 | 20.5 | 21.5 | 21.5 | 20.0 | 21.0 |
| 15 | 11.0 | 9.0 | 10.0 | 23.5 | 21.0 | 22.0 | 24.0 | 21.0 | 22.0 | 23.5 | 20.5 | 21.5 |
| 16 | 12.0 | 10.0 | 11.0 | 24.0 | 21.5 | 22.5 | 24.5 | 21.5 | 23.0 | 23.0 | 20.5 | 21.5 |
| 17 | 12.5 | 10.0 | 11.0 | 24.0 | 22.0 | 23.0 | 24.0 | 21.5 | 22.5 | 22.0 | 19.0 | 20.5 |
| 18 | 15.0 | 9.5 | 12.0 | 23.5 | 22.0 | 22.5 | 24.0 | 21.0 | 22.5 | 20.5 | 18.0 | 19.5 |
| 19 | 17.5 | 14.5 | 16.5 | 24.5 | 22.0 | 23.0 | 24.0 | 21.0 | 22.0 | 19.0 | 18.0 | 18.5 |
| 20 | 18.5 | 15.5 | 17.0 | 24.0 | 22.0 | 22.5 | 24.0 | 21.5 | 22.5 | 18.5 | 17.5 | 18.0 |
| 21 | 17.5 | 14.5 | 16.5 | 24.0 | 21.0 | 22.5 | 24.0 | 21.5 | 23.0 | 17.5 | 17.0 | 17.0 |
| 22 | 17.5 | 16.0 | 16.5 | 24.0 | 22.0 | 23.0 | 22.0 | 20.0 | 21.0 | 17.5 | 16.0 | 16.5 |
| 23 | 18.5 | 16.0 | 17.0 | 24.0 | 22.5 | 23.0 | 22.0 | 20.5 | 21.0 | 17.0 | 15.0 | 16.0 |
| 24 | 18.0 | 16.0 | 17.0 | 23.5 | 21.5 | 22.5 | 24.0 | 21.0 | 22.0 | 17.0 | 15.0 | 16.0 |
| 25 | 19.0 | 16.0 | 17.5 | 24.5 | 21.5 | 23.0 | 24.0 | 22.0 | 22.5 | 17.5 | 16.0 | 16.5 |
| 26 | 19.0 | 17.5 | 18.0 | 24.5 | 22.0 | 23.0 | 23.0 | 20.5 | 21.5 | 17.0 | 15.5 | 16.5 |
| 27 | 18.5 | 17.0 | 18.0 | 24.5 | 22.5 | 23.5 | 21.0 | 19.0 | 20.0 | 17.0 | 15.5 | 16.0 |
| 28 | 20.0 | 17.5 | 18.5 | 24.0 | 22.0 | 23.0 | 22.5 | 19.5 | 20.5 | 17.0 | 15.5 | 16.5 |
| 29 | 19.5 | 18.0 | 19.0 | 24.0 | 21.0 | 22.5 | 21.5 | 18.5 | 20.0 | 17.5 | 16.0 | 16.5 |
| 30 | 20.5 | 17.5 | 19.0 | 23.0 | 21.5 | 22.0 | 20.0 | 18.5 | 19.5 | 17.5 | 16.0 | 16.5 |
| 31 | --- | --- | --- | 22.0 | 21.0 | 21.5 | 20.5 | 19.5 | 20.0 | --- | --- | --- |
| MONTH | 20.5 | 9.0 | 15.0 | 24.5 | 17.5 | 22.0 | 24.5 | 18.5 | 22.0 | 24.0 | 15.0 | 19.0 |
| YEAR | 24.5 | .0 | 13.0 | | | | | | | | | |

02013000 DUNLAP CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°48'10", long 80°02'50", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) downstream from bridge on U.S. Highway 60, 2.2 mi (3.5 km) downstream from Ogle Creek, and 3.0 mi (4.8 km) west of Covington.

DRAINAGE AREA.--164 mi² (425 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1929-30, 1932-34, 1942. WSP 1303: 1929-35(M), 1937-38(M), 1941-48(M). WSP 2104: Drainage area. WDR VA-74-1: 1969(M), 1972, 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 1,294.70 ft (394.625 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 8, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation caused by dam 7.9 mi (12.7 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 166 ft³/s (4.701 m³/s), 13.75 in/yr (349 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft³/s (776 m³/s) June 21, 1972, gage height, 15.65 ft (4.770 m), from rating curve extended above 4,500 ft³/s (130 m³/s) on basis of step-backwater computations and contracted-opening measurement at gage height 15.65 ft (4.770 m); minimum, 2.0 ft³/s (0.057 m³/s) July 4, 1970; minimum daily, 7.0 ft³/s (0.20 m³/s) Sept. 9, 1966; minimum gage height, 0.69 ft (0.210 m) June 6, July 14, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 18 ft (5.5 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1300 | 2430 68.8 | 5.81 1.771 | Apr. 27 | 2030 | 3120 88.4 | 6.52 1.987 |
| Feb. 3 | 1800 | 3600 102 | 6.96 2.121 | June 13 | 0730 | *6570 186 | 9.32 2.841 |
| Feb. 17 | 0030 | 2660 75.3 | 6.06 1.847 | | | | |

Minimum discharge, 12 ft³/s (0.34 m³/s) Aug. 4, gage height, 1.07 ft (0.326 m), result of unknown regulation upstream; minimum daily, 13 ft³/s (0.37 m³/s) Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|------|------|------|------|
| 1 | 14 | 32 | 33 | 70 | 283 | 146 | 140 | 290 | 141 | 48 | 34 | 19 |
| 2 | 16 | 28 | 44 | 70 | 251 | 259 | 124 | 235 | 106 | 41 | 29 | 19 |
| 3 | 15 | 25 | 51 | 212 | 2190 | 376 | 120 | 195 | 83 | 40 | 26 | 17 |
| 4 | 15 | 23 | 48 | 1780 | 1520 | 341 | 115 | 163 | 72 | 47 | 24 | 16 |
| 5 | 15 | 22 | 45 | 873 | 639 | 293 | 106 | 140 | 120 | 71 | 23 | 15 |
| 6 | 15 | 22 | 41 | 387 | 425 | 247 | 104 | 123 | 136 | 53 | 38 | 15 |
| 7 | 19 | 21 | 39 | 264 | 303 | 727 | 97 | 112 | 112 | 43 | 63 | 15 |
| 8 | 17 | 19 | 37 | 193 | 238 | 951 | 89 | 105 | 92 | 38 | 63 | 15 |
| 9 | 17 | 19 | 35 | 155 | 229 | 542 | 91 | 96 | 85 | 35 | 47 | 14 |
| 10 | 16 | 18 | 31 | 118 | 212 | 402 | 91 | 86 | 105 | 33 | 42 | 14 |
| 11 | 15 | 18 | 27 | 105 | 185 | 327 | 85 | 78 | 172 | 33 | 35 | 14 |
| 12 | 15 | 17 | 28 | 115 | 164 | 306 | 83 | 72 | 510 | 33 | 31 | 14 |
| 13 | 15 | 17 | 23 | 120 | 155 | 293 | 82 | 67 | 4780 | 31 | 27 | 14 |
| 14 | 14 | 17 | 31 | 114 | 135 | 294 | 81 | 62 | 1310 | 32 | 25 | 14 |
| 15 | 14 | 16 | 82 | 102 | 126 | 679 | 77 | 58 | 519 | 30 | 24 | 15 |
| 16 | 15 | 16 | 111 | 84 | 164 | 1070 | 73 | 54 | 316 | 28 | 23 | 14 |
| 17 | 16 | 17 | 90 | 69 | 1340 | 1020 | 77 | 51 | 233 | 27 | 22 | 13 |
| 18 | 16 | 16 | 74 | 90 | 1440 | 618 | 137 | 48 | 171 | 27 | 21 | 13 |
| 19 | 17 | 15 | 61 | 76 | 658 | 433 | 151 | 49 | 133 | 30 | 20 | 13 |
| 20 | 17 | 18 | 50 | 62 | 473 | 571 | 142 | 45 | 109 | 29 | 19 | 16 |
| 21 | 16 | 19 | 49 | 180 | 387 | 647 | 129 | 47 | 92 | 27 | 18 | 16 |
| 22 | 17 | 19 | 124 | 441 | 306 | 534 | 113 | 48 | 80 | 25 | 17 | 28 |
| 23 | 18 | 18 | 770 | 342 | 243 | 414 | 101 | 54 | 71 | 24 | 17 | 22 |
| 24 | 17 | 20 | 596 | 439 | 212 | 327 | 93 | 55 | 63 | 23 | 17 | 18 |
| 25 | 17 | 21 | 290 | 327 | 183 | 269 | 89 | 168 | 57 | 22 | 17 | 17 |
| 26 | 23 | 21 | 192 | 233 | 153 | 244 | 398 | 109 | 53 | 21 | 16 | 22 |
| 27 | 215 | 22 | 144 | 168 | 147 | 210 | 1240 | 78 | 47 | 20 | 17 | 36 |
| 28 | 148 | 28 | 115 | 160 | 142 | 184 | 1500 | 68 | 48 | 22 | 18 | 29 |
| 29 | 74 | 34 | 94 | 132 | --- | 164 | 621 | 61 | 46 | 22 | 16 | 23 |
| 30 | 49 | 31 | 78 | 106 | --- | 152 | 391 | 217 | 47 | 28 | 16 | 20 |
| 31 | 38 | --- | 67 | 117 | --- | 146 | --- | 223 | --- | 36 | 18 | --- |
| TOTAL | 945 | 629 | 3500 | 7704 | 12903 | 13086 | 6740 | 3257 | 9909 | 1019 | 823 | 530 |
| MEAN | 30.5 | 21.0 | 113 | 249 | 461 | 422 | 225 | 105 | 330 | 32.9 | 26.5 | 17.7 |
| MAX | 215 | 34 | 770 | 1780 | 2190 | 1070 | 1500 | 290 | 4780 | 71 | 63 | 36 |
| MIN | 14 | 15 | 23 | 62 | 126 | 146 | 73 | 45 | 46 | 20 | 16 | 13 |
| CFSM | .19 | .13 | .69 | 1.52 | 2.81 | 2.57 | 1.37 | .64 | 2.01 | .20 | .16 | .11 |
| IN. | .21 | .14 | .79 | 1.75 | 2.93 | 2.97 | 1.53 | .74 | 2.25 | .23 | .19 | .12 |

| CAL YR 1981 | TOTAL | 37914 | MEAN 104 | MAX 2930 | MIN 12 | CFSM .63 | IN 8.60 |
|-------------|-------|-------|----------|----------|--------|-----------|----------|
| WTR YR 1982 | TOTAL | 61045 | MEAN 167 | MAX 4780 | MIN 13 | CFSM 1.02 | IN 13.85 |

JAMES RIVER BASIN

02013100 JACKSON RIVER BELOW DUNLAP CREEK, AT COVINGTON, VA

LOCATION.--Lat 37°47'19", long 80°00'03", Covington City, Hydrologic Unit 02080201, on left bank in city recreation park, 0.5 mi (0.8 km) downstream from Dunlap Creek.

DRAINAGE AREA.--614 mi² (1,590 km²).

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR VA-76-1: 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 1,206.50 ft (367.741 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diurnal fluctuation at low flow caused by Westvaco plant 0.8 mi (1.3 km) upstream and occasionally by dam on Dunlap Creek 12.7 mi (20.4 km) upstream. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 19.9 mi (32.0 km) upstream. Diversion by Westvaco plant averages 47 ft³/s (1.33 m³/s) for industrial use of which approximately 42 ft³/s (1.19 m³/s) is returned above station. Diversion 2.0 mi (3.2 km) above station for town of Covington water supply averages less than 4.0 ft³/s (0.11 m³/s). Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 721 ft³/s (20.42 m³/s), 15.95 in/yr (405 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s (657 m³/s), Apr. 5, 1977, gage height, 19.85 ft (6.050 m); minimum, 41 ft³/s (1.16 m³/s) Jan. 5, 1981, gage height, 4.38 ft (1.335 m), result of freezeup; minimum daily, 67 ft³/s (1.90 m³/s) Sept. 3, 27-29, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 24.36 ft (7.425 m), discharge, about 34,000 ft³/s (960 m³/s), from floodmarks, and flood of Dec. 27, 1973, reached a stage of 22.09 ft (6.733 m), from floodmarks, discharge, about 28,000 ft³/s (790 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,870 ft³/s (251 m³/s) June 13, gage height, 11.84 ft (3.609 m); minimum, 61 ft³/s (1.73 m³/s) Oct. 1; minimum daily, 74 ft³/s (2.10 m³/s) Oct. 1; minimum gage height, 4.43 ft (1.350 m) Oct. 1, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 74 | 127 | 128 | 185 | 1290 | 782 | 590 | 982 | 1170 | 367 | 357 | 238 |
| 2 | 81 | 122 | 148 | 184 | 2430 | 914 | 671 | 902 | 881 | 344 | 338 | 243 |
| 3 | 81 | 117 | 156 | 328 | 5100 | 1060 | 665 | 843 | 435 | 343 | 329 | 239 |
| 4 | 81 | 115 | 152 | 2290 | 4710 | 1020 | 652 | 664 | 422 | 354 | 319 | 240 |
| 5 | 81 | 114 | 148 | 1360 | 4260 | 964 | 734 | 623 | 510 | 380 | 320 | 242 |
| 6 | 81 | 112 | 142 | 898 | 2390 | 916 | 785 | 509 | 528 | 360 | 342 | 243 |
| 7 | 81 | 113 | 141 | 1260 | 2200 | 1630 | 948 | 432 | 660 | 312 | 358 | 234 |
| 8 | 81 | 113 | 138 | 1070 | 1600 | 2230 | 936 | 412 | 873 | 345 | 377 | 227 |
| 9 | 81 | 111 | 137 | 840 | 873 | 2490 | 852 | 394 | 590 | 361 | 351 | 225 |
| 10 | 209 | 111 | 133 | 761 | 1100 | 1720 | 705 | 375 | 793 | 388 | 326 | 241 |
| 11 | 285 | 111 | 126 | 627 | 1670 | 1210 | 401 | 348 | 1790 | 362 | 284 | 238 |
| 12 | 285 | 109 | 129 | 465 | 1850 | 1180 | 395 | 342 | 1670 | 347 | 315 | 239 |
| 13 | 287 | 108 | 122 | 428 | 1390 | 1150 | 409 | 339 | 6950 | 340 | 310 | 240 |
| 14 | 286 | 110 | 142 | 412 | 1210 | 1210 | 449 | 331 | 5760 | 347 | 308 | 243 |
| 15 | 281 | 108 | 205 | 388 | 713 | 1860 | 481 | 326 | 5230 | 353 | 301 | 238 |
| 16 | 282 | 108 | 237 | 346 | 702 | 2640 | 541 | 320 | 4620 | 343 | 301 | 239 |
| 17 | 284 | 108 | 209 | 307 | 2540 | 2800 | 451 | 320 | 2580 | 338 | 301 | 241 |
| 18 | 289 | 106 | 183 | 342 | 4480 | 2480 | 537 | 308 | 1200 | 338 | 309 | 240 |
| 19 | 286 | 107 | 166 | 336 | 3710 | 2190 | 632 | 314 | 713 | 337 | 307 | 242 |
| 20 | 160 | 112 | 148 | 326 | 2280 | 2870 | 793 | 314 | 657 | 337 | 299 | 247 |
| 21 | 98 | 112 | 134 | 501 | 1510 | 4970 | 720 | 308 | 566 | 335 | 297 | 252 |
| 22 | 95 | 112 | 219 | 904 | 1640 | 4660 | 533 | 314 | 437 | 327 | 301 | 278 |
| 23 | 100 | 110 | 967 | 759 | 1400 | 4050 | 430 | 325 | 422 | 327 | 304 | 256 |
| 24 | 101 | 119 | 955 | 1070 | 1150 | 2880 | 359 | 374 | 401 | 329 | 302 | 245 |
| 25 | 97 | 115 | 501 | 921 | 1050 | 1630 | 352 | 440 | 389 | 322 | 303 | 243 |
| 26 | 116 | 114 | 352 | 797 | 796 | 1530 | 801 | 382 | 381 | 321 | 295 | 270 |
| 27 | 503 | 116 | 283 | 604 | 791 | 1090 | 2100 | 343 | 372 | 320 | 301 | 315 |
| 28 | 329 | 122 | 240 | 461 | 778 | 1040 | 2830 | 379 | 366 | 327 | 299 | 270 |
| 29 | 190 | 129 | 215 | 433 | --- | 939 | 1850 | 479 | 365 | 328 | 297 | 252 |
| 30 | 153 | 127 | 195 | 403 | --- | 809 | 1470 | 798 | 364 | 363 | 299 | 244 |
| 31 | 137 | --- | 185 | 429 | --- | 733 | --- | 1280 | --- | 381 | 292 | --- |
| TOTAL | 5575 | 3418 | 7336 | 20435 | 55613 | 57647 | 24072 | 14770 | 42095 | 10676 | 9742 | 7404 |
| MEAN | 180 | 114 | 237 | 659 | 1986 | 1860 | 802 | 476 | 1403 | 344 | 314 | 247 |
| MAX | 503 | 129 | 967 | 2290 | 5100 | 4970 | 2830 | 1280 | 6950 | 388 | 377 | 315 |
| MIN | 74 | 106 | 122 | 184 | 702 | 733 | 352 | 308 | 364 | 312 | 284 | 225 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |
| MEAN# | 302 | 158 | 526 | 898 | 1931 | 1860 | 805 | 481 | 1356 | 275 | 188 | 125 |
| CFSM# | .49 | .26 | .86 | 1.46 | 3.14 | 3.03 | 1.31 | .78 | 2.21 | .45 | .31 | .20 |
| IN# | .57 | .29 | .99 | 1.69 | 3.28 | 3.49 | 1.46 | .90 | 2.46 | .52 | .35 | .23 |

CAL YR 1981 TOTAL 131234 MEAN 360 MAX 4930 MIN 67 MEAN# 454 CFSM# .74 IN# 10.04
WTR YR 1982 TOTAL 258783 MEAN 709 MAX 6950 MIN 74 MEAN# 734 CFSM# 1.20 IN# 16.23

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

JAMES RIVER BASIN

147

02014000 POTTS CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°43'44", long 80°02'33", Alleghany County, Hydrologic Unit 02080201, on left bank at downstream side of bridge on State Highway 18, 0.8 mi (1.3 km) downstream from Blue Spring Creek, and 5.2 mi (8.4 km) southwest of Covington.

DRAINAGE AREA.--153 mi² (396 km²).

PERIOD OF RECORD.--October 1928 to September 1956, October 1965 to current year.

REVISED RECORDS.--WSP 1723: 1935, 1936(M), 1940(M), 1942(M), 1948-49(M), 1951-52(M), 1954(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,273.93 ft (388.294 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1956, nonrecording gage at site 1.3 mi (2.1 km) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 178 ft³/s (5.041 m³/s), 15.80 in/yr (401 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s (351 m³/s) June 21, 1972, gage height, 12.33 ft (3.758 m); minimum observed, 13 ft³/s (0.37 m³/s) Nov. 29, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,360 ft³/s (123 m³/s) at 1730 hours June 13, gage height, 8.24 ft (2.512 m), no other peak above base of 2,400 ft³/s (68 m³/s); minimum, 18 ft³/s (0.51 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|-------|------|------|-------|------|------|-------|
| 1 | 18 | 42 | 39 | 72 | 213 | 149 | 135 | 318 | 90 | 73 | 40 | 27 |
| 2 | 19 | 38 | 44 | 84 | 191 | 218 | 121 | 268 | 82 | 62 | 36 | 31 |
| 3 | 19 | 35 | 52 | 200 | 1350 | 344 | 120 | 226 | 71 | 57 | 32 | 29 |
| 4 | 20 | 33 | 48 | 1020 | 1360 | 318 | 120 | 189 | 66 | 79 | 31 | 25 |
| 5 | 20 | 32 | 45 | 918 | 728 | 295 | 112 | 162 | 95 | 84 | 30 | 23 |
| 6 | 22 | 32 | 46 | 499 | 514 | 277 | 115 | 143 | 100 | 67 | 34 | 23 |
| 7 | 23 | 31 | 43 | 361 | 380 | 574 | 111 | 130 | 88 | 58 | 36 | 23 |
| 8 | 20 | 29 | 41 | 285 | 298 | 679 | 103 | 122 | 80 | 60 | 70 | 23 |
| 9 | 20 | 29 | 40 | 225 | 273 | 524 | 108 | 113 | 128 | 55 | 54 | 23 |
| 10 | 20 | 28 | 37 | 145 | 243 | 430 | 111 | 102 | 152 | 51 | 49 | 23 |
| 11 | 20 | 27 | 31 | 120 | 192 | 366 | 104 | 94 | 186 | 53 | 42 | 23 |
| 12 | 20 | 27 | 35 | 115 | 163 | 338 | 100 | 88 | 565 | 212 | 36 | 22 |
| 13 | 21 | 26 | 32 | 110 | 155 | 303 | 99 | 82 | 3540 | 103 | 32 | 23 |
| 14 | 21 | 26 | 39 | 105 | 134 | 297 | 97 | 78 | 1630 | 85 | 32 | 22 |
| 15 | 21 | 26 | 56 | 100 | 135 | 534 | 93 | 73 | 748 | 75 | 31 | 22 |
| 16 | 22 | 26 | 69 | 95 | 165 | 842 | 90 | 69 | 487 | 67 | 30 | 22 |
| 17 | 22 | 26 | 62 | 92 | 533 | 956 | 90 | 65 | 370 | 61 | 31 | 22 |
| 18 | 23 | 26 | 64 | 77 | 853 | 662 | 103 | 62 | 271 | 60 | 39 | 22 |
| 19 | 23 | 27 | 45 | 88 | 609 | 513 | 98 | 61 | 209 | 70 | 30 | 22 |
| 20 | 23 | 27 | 38 | 84 | 488 | 464 | 95 | 64 | 164 | 62 | 27 | 23 |
| 21 | 23 | 27 | 38 | 163 | 408 | 465 | 95 | 64 | 134 | 54 | 27 | 24 |
| 22 | 23 | 27 | 76 | 339 | 335 | 424 | 92 | 70 | 117 | 48 | 26 | 42 |
| 23 | 25 | 27 | 220 | 296 | 273 | 371 | 87 | 71 | 109 | 43 | 25 | 36 |
| 24 | 25 | 29 | 396 | 336 | 237 | 323 | 85 | 78 | 95 | 40 | 25 | 27 |
| 25 | 25 | 34 | 232 | 276 | 202 | 283 | 84 | 92 | 86 | 42 | 25 | 25 |
| 26 | 32 | 36 | 160 | 214 | 167 | 255 | 286 | 87 | 79 | 39 | 25 | 35 |
| 27 | 268 | 36 | 126 | 147 | 160 | 216 | 669 | 90 | 74 | 35 | 25 | 56 |
| 28 | 154 | 37 | 106 | 147 | 156 | 180 | 774 | 105 | 71 | 35 | 25 | 42 |
| 29 | 80 | 40 | 91 | 134 | --- | 157 | 519 | 94 | 75 | 36 | 25 | 31 |
| 30 | 60 | 37 | 78 | 116 | --- | 144 | 397 | 114 | 81 | 40 | 25 | 27 |
| 31 | 49 | --- | 63 | 133 | --- | 138 | --- | 110 | --- | 42 | 25 | --- |
| TOTAL | 1181 | 923 | 2492 | 7096 | 10915 | 12039 | 5213 | 3484 | 10043 | 1948 | 1020 | 818 |
| MEAN | 38.1 | 30.8 | 80.4 | 229 | 390 | 388 | 174 | 112 | 335 | 62.8 | 32.9 | 27.3 |
| MAX | 268 | 42 | 396 | 1020 | 1360 | 956 | 774 | 318 | 3540 | 212 | 70 | 56 |
| MIN | 18 | 26 | 31 | 72 | 134 | 138 | 84 | 61 | 66 | 35 | 25 | 22 |
| CFSM | .25 | .20 | .53 | 1.50 | 2.55 | 2.54 | 1.14 | .73 | 2.19 | .41 | .22 | .18 |
| IN. | .29 | .22 | .61 | 1.73 | 2.65 | 2.93 | 1.27 | .85 | 2.44 | .47 | .25 | .20 |
| CAL YR 1981 | TOTAL | 34956 | MEAN | 95.8 | MAX | 1540 | MIN | 18 | CFSM | .63 | IN | 8.50 |
| WTR YR 1982 | TOTAL | 57172 | MEAN | 157 | MAX | 3540 | MIN | 18 | CFSM | 1.03 | IN | 13.90 |

JAMES RIVER BASIN

02015700 BULLPASTURE RIVER AT WILLIAMSVILLE, VA

LOCATION.--Lat 38°11'43", long 79°34'14", Bath County, Hydrologic Unit 02080201, on left bank 15 ft (5 m) downstream from bridge on State Highway 614 at Williamsville and 0.62 mi (1.00 km) upstream from mouth.

DRAINAGE AREA.--110 mi² (285 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,610.14 ft (490.771 m) National Geodetic Vertical Datum of 1929. Prior to July 12, 1974, at site 700 ft (213 m) upstream at datum 11.84 ft (3.609 m) higher.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 145 ft³/s (4.106 m³/s), 17.90 in/yr (455 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,430 ft³/s (267 m³/s) Apr. 5, 1977, from rating curve extended above 3,300 ft³/s (93 m³/s); maximum gage height, 10.84 ft (3.304 m) Dec. 26, 1973, from floodmarks; minimum discharge, 19 ft³/s (0.54 m³/s) Jan. 4, 1981, result of freezeup; minimum daily, 23 ft³/s (0.65 m³/s) Sept. 8, 9, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 0630 | 2970 84.1 | 6.24 1.902 | Mar. 20 | 1330 | *7060 200 | 8.39 2.557 |
| Jan. 31 | 2230 | 2850 80.7 | 6.16 1.878 | June 10 | 0830 | 2270 64.3 | 5.77 1.759 |
| Feb. 3 | 1700 | 2240 63.4 | 5.75 1.753 | June 13 | 0930 | 6350 180 | 8.07 2.460 |
| Feb. 17 | 1700 | 2360 66.8 | 5.83 1.777 | | | | |

Minimum discharge, 27 ft³/s (0.76 m³/s) Oct. 1, gage height, 2.51 ft (0.765 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 27 | 84 | 54 | 90 | 1090 | 160 | 157 | 160 | 132 | 72 | 76 | 35 |
| 2 | 30 | 76 | 110 | 84 | 382 | 183 | 136 | 143 | 114 | 66 | 58 | 39 |
| 3 | 30 | 68 | 101 | 90 | 1560 | 189 | 201 | 130 | 119 | 61 | 55 | 36 |
| 4 | 29 | 62 | 90 | 914 | 1020 | 170 | 210 | 119 | 132 | 68 | 51 | 33 |
| 5 | 29 | 60 | 86 | 582 | 589 | 167 | 183 | 110 | 316 | 107 | 53 | 32 |
| 6 | 29 | 60 | 74 | 320 | 400 | 162 | 189 | 102 | 204 | 73 | 79 | 31 |
| 7 | 30 | 54 | 72 | 257 | 270 | 438 | 162 | 99 | 160 | 64 | 81 | 31 |
| 8 | 29 | 51 | 72 | 210 | 213 | 450 | 150 | 95 | 132 | 64 | 76 | 30 |
| 9 | 29 | 47 | 70 | 173 | 820 | 314 | 157 | 90 | 119 | 68 | 66 | 33 |
| 10 | 28 | 45 | 57 | 114 | 527 | 244 | 157 | 84 | 920 | 70 | 60 | 30 |
| 11 | 28 | 43 | 60 | 101 | 331 | 213 | 141 | 79 | 482 | 186 | 53 | 30 |
| 12 | 28 | 42 | 60 | 101 | 236 | 275 | 134 | 76 | 526 | 174 | 51 | 30 |
| 13 | 29 | 41 | 48 | 96 | 204 | 244 | 127 | 73 | 3650 | 97 | 47 | 30 |
| 14 | 29 | 41 | 58 | 92 | 173 | 229 | 119 | 70 | 1310 | 79 | 46 | 30 |
| 15 | 29 | 41 | 93 | 91 | 157 | 236 | 112 | 68 | 655 | 72 | 47 | 30 |
| 16 | 29 | 40 | 95 | 83 | 263 | 408 | 106 | 66 | 400 | 72 | 45 | 30 |
| 17 | 29 | 40 | 78 | 66 | 1430 | 662 | 106 | 62 | 371 | 73 | 43 | 30 |
| 18 | 30 | 39 | 78 | 67 | 1000 | 596 | 127 | 61 | 232 | 86 | 45 | 29 |
| 19 | 30 | 39 | 62 | 74 | 648 | 437 | 108 | 62 | 186 | 73 | 42 | 29 |
| 20 | 30 | 42 | 54 | 73 | 520 | 3280 | 106 | 70 | 155 | 78 | 40 | 30 |
| 21 | 30 | 42 | 53 | 174 | 482 | 1680 | 104 | 64 | 134 | 66 | 35 | 30 |
| 22 | 30 | 40 | 67 | 148 | 359 | 888 | 97 | 66 | 121 | 60 | 34 | 41 |
| 23 | 30 | 35 | 221 | 110 | 275 | 575 | 91 | 73 | 110 | 64 | 33 | 39 |
| 24 | 30 | 40 | 261 | 114 | 244 | 418 | 88 | 68 | 99 | 81 | 33 | 31 |
| 25 | 30 | 40 | 192 | 91 | 217 | 326 | 86 | 79 | 91 | 61 | 34 | 31 |
| 26 | 39 | 39 | 157 | 86 | 180 | 293 | 200 | 435 | 86 | 55 | 32 | 35 |
| 27 | 1560 | 42 | 139 | 67 | 173 | 229 | 248 | 183 | 81 | 53 | 32 | 70 |
| 28 | 417 | 55 | 121 | 78 | 167 | 189 | 275 | 146 | 78 | 50 | 33 | 42 |
| 29 | 180 | 50 | 108 | 79 | --- | 170 | 213 | 119 | 76 | 53 | 32 | 35 |
| 30 | 127 | 45 | 86 | 78 | --- | 157 | 178 | 180 | 76 | 51 | 31 | 33 |
| 31 | 101 | --- | 79 | 547 | --- | 155 | --- | 160 | --- | 92 | 34 | --- |
| TOTAL | 3155 | 1443 | 2956 | 5250 | 13930 | 14137 | 4468 | 3392 | 11267 | 2389 | 1477 | 1015 |
| MEAN | 102 | 48.1 | 95.4 | 169 | 498 | 456 | 149 | 109 | 376 | 77.1 | 47.6 | 33.8 |
| MAX | 1560 | 84 | 261 | 914 | 1560 | 3280 | 275 | 435 | 3650 | 186 | 81 | 70 |
| MIN | 27 | 35 | 48 | 66 | 157 | 155 | 86 | 61 | 76 | 50 | 31 | 29 |
| CFSM | .93 | .44 | .87 | 1.54 | 4.53 | 4.15 | 1.36 | .99 | 3.42 | .70 | .43 | .31 |
| IN. | 1.07 | .49 | 1.00 | 1.78 | 4.71 | 4.78 | 1.51 | 1.15 | 3.81 | .81 | .50 | .34 |

| | | | | | | | | | | | | |
|-------------|-------|-------|------|------|-----|------|-----|----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 29228 | MEAN | 80.1 | MAX | 1560 | MIN | 25 | CFSM | .73 | IN | 9.88 |
| WTR YR 1982 | TOTAL | 64879 | MEAN | 178 | MAX | 3650 | MIN | 27 | CFSM | 1.62 | IN | 21.94 |

02016000 COWPASTURE RIVER NEAR CLIFTON FORGE, VA

LOCATION.--Lat 37°47'30", long 79°45'35", Alleghany County, Hydrologic Unit 02080201, on left bank 100 ft (30 m) downstream from highway bridge, 2.5 mi (4.0 km) upstream from confluence with Jackson River, and 4.0 mi (6.4 km) southeast of Clifton Forge.

DRAINAGE AREA.--461 mi² (1,194 km²).

PERIOD OF RECORD.--March 1925 to current year. Records for May 1907 to August 1908, published in WSP 242, are unreliable and should not be used.

REVISED RECORDS.--WSP 952: 1925-41. WSP 2104: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,006.93 ft (306.912 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to October 1934, nonrecording gage at site 100 ft (30 m) upstream at present datum.

REMARKS.--Records good. Low flow affected by springs and by occasional regulation from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 524 ft³/s (14.84 m³/s), 15.44 in/yr (392 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,200 ft³/s (969 m³/s) Mar. 18, 1936, gage height, 18.62 ft (5.675 m), from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of slope-area measurement at gage height 15.70 ft (4.785 m); minimum, 38 ft³/s (1.08 m³/s) Sept. 2, 1932; minimum daily, 40 ft³/s (1.13 m³/s) Sept. 1, 1932; minimum gage height, 1.43 ft (0.436 m) Jan. 31, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 20.8 ft (6.34 m), from floodmarks, discharge, about 45,000 ft³/s (1,300 m³/s), from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of records for other stations in James River basin.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 2330 | 5280 150 | 7.52 2.292 | Mar. 21 | 0630 | 11800 334 | 10.94 3.335 |
| Feb. 4 | 0030 | 8960 254 | 9.60 2.926 | June 10 | 2400 | 5480 155 | 7.65 2.332 |
| Feb. 18 | 0730 | 6260 177 | 8.13 2.478 | June 14 | 0230 | *14400 408 | 12.00 3.658 |

Minimum discharge, 59 ft³/s (1.67 m³/s) Oct. 1, gage height, 1.55 ft (0.472 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 61 | 247 | 132 | 255 | 2660 | 512 | 494 | 747 | 776 | 202 | 226 | 92 |
| 2 | 64 | 205 | 216 | 261 | 1910 | 589 | 457 | 632 | 515 | 184 | 215 | 95 |
| 3 | 65 | 179 | 326 | 311 | 5520 | 756 | 438 | 545 | 412 | 173 | 163 | 91 |
| 4 | 64 | 161 | 309 | 2160 | 6420 | 738 | 539 | 474 | 471 | 173 | 141 | 87 |
| 5 | 66 | 147 | 267 | 3150 | 2680 | 667 | 530 | 417 | 768 | 178 | 157 | 83 |
| 6 | 65 | 141 | 237 | 1520 | 1700 | 632 | 507 | 375 | 931 | 197 | 200 | 79 |
| 7 | 63 | 132 | 209 | 994 | 1260 | 1400 | 500 | 348 | 657 | 181 | 327 | 77 |
| 8 | 61 | 126 | 194 | 797 | 949 | 2360 | 438 | 328 | 498 | 172 | 325 | 76 |
| 9 | 61 | 119 | 185 | 656 | 834 | 1520 | 433 | 310 | 406 | 166 | 322 | 76 |
| 10 | 62 | 114 | 175 | 498 | 1720 | 1120 | 457 | 285 | 2220 | 169 | 240 | 76 |
| 11 | 62 | 109 | 162 | 222 | 1170 | 905 | 445 | 261 | 2910 | 226 | 190 | 77 |
| 12 | 63 | 105 | 143 | 305 | 886 | 841 | 417 | 244 | 1840 | 365 | 160 | 74 |
| 13 | 63 | 102 | 139 | 380 | 745 | 894 | 400 | 229 | 12600 | 404 | 140 | 74 |
| 14 | 62 | 98 | 145 | 340 | 652 | 842 | 386 | 216 | 8790 | 258 | 130 | 73 |
| 15 | 61 | 97 | 318 | 310 | 571 | 855 | 360 | 206 | 2570 | 212 | 123 | 73 |
| 16 | 61 | 95 | 545 | 290 | 584 | 1210 | 330 | 196 | 1510 | 240 | 118 | 71 |
| 17 | 61 | 93 | 415 | 268 | 2190 | 2030 | 338 | 188 | 1220 | 314 | 119 | 70 |
| 18 | 62 | 94 | 315 | 256 | 4830 | 1850 | 721 | 179 | 987 | 268 | 141 | 69 |
| 19 | 65 | 90 | 282 | 293 | 2310 | 1450 | 573 | 172 | 750 | 251 | 137 | 68 |
| 20 | 63 | 95 | 230 | 286 | 1730 | 3730 | 470 | 173 | 607 | 305 | 141 | 73 |
| 21 | 63 | 96 | 165 | 376 | 1440 | 7730 | 428 | 178 | 500 | 319 | 119 | 77 |
| 22 | 64 | 98 | 224 | 969 | 1230 | 3410 | 387 | 174 | 427 | 238 | 107 | 93 |
| 23 | 69 | 93 | 395 | 748 | 980 | 2010 | 349 | 185 | 373 | 194 | 100 | 118 |
| 24 | 69 | 99 | 828 | 627 | 820 | 1420 | 321 | 196 | 327 | 175 | 97 | 102 |
| 25 | 70 | 101 | 824 | 541 | 717 | 1090 | 304 | 264 | 290 | 260 | 96 | 89 |
| 26 | 77 | 102 | 629 | 455 | 622 | 1010 | 778 | 458 | 265 | 215 | 94 | 105 |
| 27 | 1750 | 98 | 507 | 380 | 560 | 855 | 1680 | 779 | 245 | 175 | 93 | 227 |
| 28 | 2790 | 103 | 430 | 300 | 539 | 707 | 1940 | 432 | 229 | 154 | 93 | 211 |
| 29 | 832 | 117 | 365 | 345 | --- | 609 | 1280 | 371 | 218 | 142 | 92 | 151 |
| 30 | 458 | 124 | 314 | 337 | --- | 548 | 933 | 584 | 210 | 163 | 88 | 114 |
| 31 | 318 | --- | 260 | 367 | --- | 512 | --- | 833 | --- | 219 | 87 | --- |
| TOTAL | 7815 | 3580 | 9885 | 18997 | 48229 | 44802 | 17633 | 10979 | 44522 | 6892 | 4781 | 2841 |
| MEAN | 252 | 119 | 319 | 613 | 1722 | 1445 | 588 | 354 | 1484 | 222 | 154 | 94.7 |
| MAX | 2790 | 247 | 828 | 3150 | 6420 | 7730 | 1940 | 833 | 12600 | 404 | 327 | 227 |
| MIN | 61 | 90 | 132 | 222 | 539 | 512 | 304 | 172 | 210 | 142 | 87 | 68 |
| CFSM | .55 | .26 | .69 | 1.33 | 3.74 | 3.13 | 1.28 | .77 | 3.22 | .48 | .33 | .21 |
| IN. | .63 | .29 | .80 | 1.53 | 3.89 | 3.62 | 1.42 | .89 | 3.59 | .56 | .39 | .23 |

CAL YR 1981 TOTAL 100531 MEAN 275 MAX 3480 MIN 55 CFSM .60 IN 8.11
WTR YR 1982 TOTAL 220956 MEAN 605 MAX 12600 MIN 61 CFSM 1.31 IN 17.83

JAMES RIVER BASIN

02016500 JAMES RIVER AT LICK RUN, VA

LOCATION.--Lat 37°46'25", long 79°47'05", Botetourt County, Hydrologic Unit 02080201, on right bank at community of Lick Run, 1,000 ft (305 m) downstream from bridge on U.S. Highway 220, 0.9 mi (1.4 km) downstream from confluence of Cowpasture and Jackson Rivers, 1.8 mi (2.9 km) south of Iron Gate, and at mile 342.3 (550.8 km).

DRAINAGE AREA.--1,373 mi² (3,556 km²).

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1936-37. WSP 972: 1927, 1930(M), 1932(M), 1935-36. WSP 1303: 1927-28(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 978.30 ft (298.186 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by Moomaw Lake (station 02011795) 43.8 mi (70.5 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 1,603 ft³/s (45.40 m³/s), 15.85 in/yr (403 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,600 ft³/s (1,890 m³/s) Mar. 18, 1936; maximum gage height, 27.01 ft (8.233 m) June 21, 1972; minimum discharge, 133 ft³/s (3.77 m³/s) Jan. 6, 1981, result of freezeup; minimum daily, 156 ft³/s (4.42 m³/s) Oct. 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 33 ft (10.1 m), discharge, about 120,000 ft³/s (3,400 m³/s). Flood in March 1913 reached a stage of 30.4 ft (9.27 m), from floodmarks, discharge, about 98,000 ft³/s (2,800 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,900 ft³/s (818 m³/s) June 13, gage height, 17.79 ft (5.422 m); minimum, 192 ft³/s (5.44 m³/s) Oct. 1, gage height, 1.44 ft (0.439 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|
| 1 | 201 | 541 | 380 | 629 | 3900 | 1680 | 1450 | 2480 | 2320 | 768 | 774 | 460 |
| 2 | 207 | 463 | 510 | 648 | 4930 | 1930 | 1440 | 2160 | 1880 | 702 | 714 | 431 |
| 3 | 210 | 414 | 668 | 821 | 13300 | 2480 | 1440 | 1930 | 1140 | 680 | 635 | 421 |
| 4 | 205 | 382 | 654 | 5680 | 15000 | 2440 | 1530 | 1710 | 1160 | 702 | 605 | 407 |
| 5 | 209 | 362 | 593 | 6810 | 9180 | 2260 | 1490 | 1410 | 1590 | 750 | 625 | 398 |
| 6 | 213 | 356 | 540 | 3260 | 5450 | 2150 | 1710 | 1290 | 1800 | 744 | 680 | 398 |
| 7 | 211 | 331 | 497 | 2910 | 4330 | 3860 | 1620 | 1140 | 1490 | 696 | 971 | 393 |
| 8 | 205 | 323 | 474 | 2410 | 3560 | 6280 | 1660 | 1080 | 1700 | 645 | 978 | 384 |
| 9 | 201 | 314 | 453 | 1900 | 2240 | 5360 | 1660 | 1020 | 1410 | 738 | 922 | 365 |
| 10 | 230 | 307 | 434 | 1560 | 3230 | 4210 | 1500 | 950 | 3170 | 714 | 780 | 393 |
| 11 | 456 | 299 | 397 | 1160 | 3180 | 2870 | 1210 | 887 | 5290 | 774 | 680 | 388 |
| 12 | 459 | 293 | 371 | 1030 | 3300 | 2760 | 1100 | 817 | 4320 | 1030 | 595 | 379 |
| 13 | 457 | 283 | 365 | 1070 | 2540 | 2710 | 1080 | 798 | 25600 | 1020 | 600 | 384 |
| 14 | 455 | 278 | 392 | 980 | 2320 | 2640 | 1120 | 768 | 18300 | 831 | 575 | 384 |
| 15 | 454 | 277 | 693 | 942 | 1650 | 3280 | 1080 | 738 | 9670 | 750 | 560 | 379 |
| 16 | 452 | 276 | 1070 | 867 | 1620 | 5290 | 1130 | 714 | 7550 | 786 | 550 | 379 |
| 17 | 451 | 275 | 909 | 724 | 4930 | 6610 | 1100 | 690 | 5110 | 817 | 545 | 369 |
| 18 | 464 | 274 | 738 | 739 | 11600 | 5830 | 1600 | 670 | 2980 | 786 | 595 | 369 |
| 19 | 466 | 270 | 635 | 770 | 7870 | 4880 | 1480 | 660 | 1950 | 768 | 570 | 369 |
| 20 | 420 | 287 | 489 | 773 | 5450 | 7310 | 1580 | 660 | 1680 | 831 | 570 | 388 |
| 21 | 231 | 288 | 822 | 1000 | 3970 | 14200 | 1520 | 670 | 1460 | 824 | 535 | 393 |
| 22 | 214 | 284 | 959 | 2220 | 3580 | 9540 | 1250 | 670 | 1180 | 720 | 515 | 510 |
| 23 | 224 | 278 | 1400 | 1890 | 3200 | 7370 | 1080 | 702 | 1080 | 660 | 510 | 490 |
| 24 | 230 | 314 | 2700 | 1910 | 2530 | 5680 | 971 | 726 | 992 | 645 | 500 | 440 |
| 25 | 224 | 330 | 1900 | 1740 | 2320 | 3550 | 922 | 936 | 922 | 720 | 495 | 416 |
| 26 | 252 | 321 | 1380 | 1520 | 1890 | 3300 | 2080 | 1150 | 873 | 675 | 485 | 500 |
| 27 | 2780 | 319 | 1130 | 1200 | 1760 | 2580 | 4720 | 1450 | 831 | 625 | 495 | 780 |
| 28 | 3810 | 329 | 979 | 1020 | 1730 | 2230 | 6940 | 1040 | 792 | 605 | 500 | 655 |
| 29 | 1350 | 356 | 852 | 1030 | --- | 2030 | 4460 | 1120 | 780 | 605 | 485 | 540 |
| 30 | 875 | 371 | 742 | 972 | --- | 1760 | 3420 | 1840 | 774 | 675 | 480 | 475 |
| 31 | 659 | --- | 644 | 1050 | --- | 1680 | --- | 2560 | --- | 792 | 490 | --- |
| TOTAL | 17475 | 9795 | 24770 | 51235 | 130560 | 130750 | 55343 | 35436 | 109794 | 23078 | 19014 | 13037 |
| MEAN | 564 | 327 | 799 | 1653 | 4663 | 4218 | 1845 | 1143 | 3660 | 744 | 613 | 435 |
| MAX | 3810 | 541 | 2700 | 6810 | 15000 | 14200 | 6940 | 2560 | 25600 | 1030 | 978 | 780 |
| MIN | 201 | 270 | 365 | 629 | 1620 | 1680 | 922 | 660 | 774 | 605 | 480 | 365 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |
| MEAN# | 686 | 371 | 1088 | 1892 | 4608 | 4218 | 1848 | 1148 | 3613 | 675 | 487 | 313 |
| CFSM# | .50 | .27 | .79 | 1.38 | 3.36 | 3.07 | 1.35 | .84 | 2.63 | .49 | .35 | .23 |
| IN# | .58 | .30 | .91 | 1.59 | 3.50 | 3.54 | 1.51 | .97 | 2.93 | .56 | .40 | .26 |

CAL YR 1981 TOTAL 308275 MEAN 845 MAX 12400 MIN 180 MEAN# 939 CFSM# .68 IN# 9.23
WTR YR 1982 TOTAL 620287 MEAN 1699 MAX 25600 MIN 201 MEAN# 1724 CFSM# 1.26 IN# 17.10

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
* Adjusted for change in contents.

JAMES RIVER BASIN

151

02017500 JOHNS CREEK AT NEW CASTLE, VA

LOCATION.--Lat 37°30'22", long 80°06'25", Craig County, Hydrologic Unit 02080201, on right bank 20 ft (6 m) downstream from bridge on State Highway 615 at New Castle and 1,700 ft (518 m) upstream from mouth.

DRAINAGE AREA.--104 mi² (269 km²).

PERIOD OF RECORD.--April 1926 to current year.

REVISED RECORDS.--WSP 972: 1935-36(M), 1940(M). WSP 1203: 1928, 1935. WSP 1303: 1927(M), 1928, 1929-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.30 ft (382.311 m) National Geodetic Vertical Datum of 1929. Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 127 ft³/s (3.597 m³/s), 16.58 in/yr (421 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s (227 m³/s) Jan. 23, 1935, from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 12.48 ft (3.804 m) June 21, 1972; minimum discharge, 6.0 ft³/s (0.17 m³/s) Dec. 5, 1946, result of freezeup; minimum daily, 6.6 ft³/s (0.19 m³/s) Oct. 1, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) at 1200 hours June 13, gage height, 9.37 ft (2.856 m), no other peak above base of 2,100 ft³/s (59 m³/s); minimum, 8.0 ft³/s (0.23 m³/s) Oct. 2, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 9.0 | 31 | 30 | 63 | 172 | 132 | 108 | 229 | 109 | 53 | 21 | 18 |
| 2 | 9.0 | 28 | 36 | 64 | 158 | 193 | 99 | 196 | 97 | 44 | 19 | 19 |
| 3 | 9.0 | 25 | 38 | 172 | 1320 | 322 | 97 | 173 | 82 | 41 | 18 | 14 |
| 4 | 9.0 | 24 | 37 | 885 | 1170 | 284 | 92 | 151 | 77 | 56 | 17 | 12 |
| 5 | 9.3 | 23 | 37 | 668 | 677 | 248 | 85 | 132 | 114 | 48 | 17 | 12 |
| 6 | 9.9 | 22 | 35 | 424 | 498 | 232 | 89 | 117 | 109 | 39 | 15 | 11 |
| 7 | 9.6 | 20 | 33 | 345 | 377 | 493 | 85 | 105 | 97 | 34 | 16 | 11 |
| 8 | 9.0 | 19 | 32 | 300 | 306 | 515 | 78 | 97 | 83 | 33 | 55 | 11 |
| 9 | 9.1 | 19 | 31 | 249 | 275 | 392 | 80 | 88 | 172 | 31 | 71 | 11 |
| 10 | 9.1 | 19 | 29 | 192 | 231 | 325 | 80 | 78 | 475 | 29 | 77 | 11 |
| 11 | 10 | 19 | 27 | 154 | 186 | 284 | 74 | 71 | 395 | 43 | 62 | 11 |
| 12 | 12 | 18 | 29 | 146 | 162 | 251 | 70 | 65 | 336 | 83 | 47 | 10 |
| 13 | 11 | 18 | 26 | 125 | 148 | 221 | 68 | 59 | 2420 | 54 | 36 | 10 |
| 14 | 12 | 18 | 34 | 116 | 131 | 198 | 66 | 55 | 1060 | 46 | 30 | 10 |
| 15 | 13 | 17 | 44 | 103 | 123 | 315 | 65 | 50 | 605 | 39 | 26 | 11 |
| 16 | 10 | 17 | 70 | 103 | 147 | 569 | 62 | 47 | 442 | 40 | 31 | 10 |
| 17 | 11 | 17 | 62 | 76 | 503 | 598 | 70 | 44 | 361 | 64 | 31 | 11 |
| 18 | 11 | 17 | 53 | 92 | 673 | 443 | 100 | 41 | 258 | 50 | 22 | 9.3 |
| 19 | 12 | 17 | 48 | 81 | 507 | 362 | 89 | 51 | 203 | 42 | 20 | 9.6 |
| 20 | 14 | 18 | 33 | 73 | 438 | 340 | 85 | 51 | 158 | 36 | 18 | 10 |
| 21 | 17 | 18 | 30 | 202 | 369 | 356 | 83 | 50 | 126 | 32 | 16 | 12 |
| 22 | 16 | 18 | 48 | 366 | 306 | 304 | 78 | 61 | 105 | 29 | 14 | 23 |
| 23 | 17 | 17 | 127 | 286 | 256 | 264 | 73 | 119 | 91 | 28 | 14 | 17 |
| 24 | 18 | 20 | 212 | 260 | 223 | 233 | 69 | 86 | 82 | 31 | 14 | 12 |
| 25 | 19 | 22 | 173 | 235 | 185 | 209 | 67 | 132 | 67 | 28 | 13 | 12 |
| 26 | 28 | 23 | 145 | 192 | 158 | 191 | 263 | 117 | 58 | 25 | 12 | 16 |
| 27 | 184 | 24 | 121 | 158 | 150 | 169 | 443 | 160 | 51 | 23 | 12 | 24 |
| 28 | 99 | 25 | 99 | 150 | 142 | 150 | 499 | 173 | 56 | 21 | 12 | 18 |
| 29 | 63 | 25 | 81 | 127 | --- | 135 | 339 | 142 | 66 | 21 | 12 | 14 |
| 30 | 46 | 27 | 66 | 112 | --- | 124 | 274 | 149 | 64 | 20 | 11 | 13 |
| 31 | 36 | --- | 57 | 116 | --- | 116 | --- | 134 | --- | 20 | 13 | --- |
| TOTAL | 751.0 | 625 | 1923 | 6635 | 9991 | 8968 | 3830 | 3223 | 8419 | 1183 | 792 | 392.9 |
| MEAN | 24.2 | 20.8 | 62.0 | 214 | 357 | 289 | 128 | 104 | 281 | 38.2 | 25.5 | 13.1 |
| MAX | 184 | 31 | 212 | 885 | 1320 | 598 | 499 | 229 | 2420 | 83 | 77 | 24 |
| MIN | 9.0 | 17 | 26 | 63 | 123 | 116 | 62 | 41 | 51 | 20 | 11 | 9.3 |
| CFSM | .23 | .20 | .60 | 2.06 | 3.43 | 2.78 | 1.23 | 1.00 | 2.70 | .37 | .25 | .13 |
| IN. | .27 | .22 | .69 | 2.37 | 3.57 | 3.21 | 1.37 | 1.15 | 3.01 | .42 | .28 | .14 |

CAL YR 1981 TOTAL 25299.0 MEAN 69.3 MAX 2120 MIN 8.3 CFSM .67 IN 9.05
WTR YR 1982 TOTAL 46732.9 MEAN 128 MAX 2420 MIN 9.0 CFSM 1.23 IN 16.72

JAMES RIVER BASIN

02018000 CRAIG CREEK AT PARR, VA

LOCATION.--Lat 37°39'57", long 79°54'42", Botetourt County, Hydrologic Unit 02080201, on right bank 12 ft (4 m) upstream from Chesapeake and Ohio Railway bridge, 700 ft (213 m) downstream from Stony Run, 0.2 mi (0.3 km) northeast of Horton, 0.4 mi (0.6 km) northwest of Parr, and 12 mi (19 km) upstream from mouth.

DRAINAGE AREA.--329 mi² (852 km²).

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1935-36. WSP 1303: 1929-30(M), 1932-35(M), 1937-38(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 992.50 ft (302.514 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 384 ft³/s (10.87 m³/s), 15.85 in/yr (403 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft³/s (572 m³/s) June 21, 1972, gage height, 19.29 ft (5.880 m), from high-water mark in well; minimum, 20 ft³/s (0.57 m³/s) probably occurred Dec. 21, 25, 1980, or Jan. 4, 1981, gage height, 3.20 ft (0.975 m), result of freezeup; minimum daily, 25 ft³/s (0.71 m³/s) Sept. 4, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft³/s (120 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2230 | 6040 171 | 10.24 3.121 | June 14 | 0100 | *6670 189 | 10.63 3.240 |

Minimum discharge, 29 ft³/s (0.82 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|------|-------|------|------|------|
| 1 | 31 | 90 | 71 | 158 | 502 | 370 | 316 | 718 | 338 | 164 | 61 | 45 |
| 2 | 31 | 78 | 78 | 166 | 574 | 453 | 284 | 607 | 375 | 142 | 61 | 48 |
| 3 | 31 | 70 | 90 | 263 | 2530 | 966 | 280 | 519 | 343 | 125 | 60 | 51 |
| 4 | 31 | 65 | 95 | 2020 | 4630 | 1020 | 276 | 436 | 396 | 125 | 56 | 48 |
| 5 | 33 | 62 | 94 | 2440 | 2100 | 862 | 252 | 375 | 602 | 150 | 55 | 42 |
| 6 | 36 | 60 | 90 | 1230 | 1370 | 760 | 244 | 330 | 596 | 134 | 55 | 40 |
| 7 | 39 | 57 | 88 | 869 | 1020 | 1090 | 244 | 298 | 448 | 115 | 71 | 39 |
| 8 | 38 | 56 | 85 | 712 | 808 | 1930 | 230 | 272 | 356 | 102 | 182 | 38 |
| 9 | 38 | 55 | 82 | 590 | 712 | 1350 | 230 | 252 | 494 | 95 | 188 | 38 |
| 10 | 38 | 53 | 78 | 420 | 646 | 1060 | 236 | 230 | 546 | 97 | 216 | 37 |
| 11 | 39 | 55 | 65 | 390 | 536 | 876 | 230 | 208 | 1810 | 102 | 185 | 37 |
| 12 | 40 | 53 | 72 | 370 | 453 | 778 | 216 | 185 | 995 | 147 | 144 | 37 |
| 13 | 41 | 53 | 66 | 350 | 410 | 676 | 212 | 169 | 3910 | 169 | 115 | 37 |
| 14 | 43 | 53 | 77 | 340 | 375 | 607 | 208 | 161 | 4260 | 132 | 94 | 37 |
| 15 | 44 | 53 | 90 | 330 | 343 | 634 | 198 | 150 | 1870 | 115 | 80 | 37 |
| 16 | 46 | 52 | 161 | 320 | 352 | 1380 | 192 | 142 | 1260 | 106 | 72 | 37 |
| 17 | 51 | 52 | 222 | 310 | 905 | 1880 | 192 | 132 | 1060 | 99 | 144 | 36 |
| 18 | 46 | 52 | 182 | 300 | 2290 | 1450 | 272 | 125 | 760 | 132 | 134 | 35 |
| 19 | 45 | 52 | 144 | 340 | 1510 | 1120 | 316 | 118 | 602 | 150 | 88 | 36 |
| 20 | 46 | 53 | 90 | 316 | 1210 | 988 | 294 | 130 | 475 | 118 | 71 | 36 |
| 21 | 48 | 52 | 86 | 348 | 1020 | 967 | 280 | 134 | 375 | 97 | 61 | 39 |
| 22 | 49 | 52 | 139 | 1080 | 848 | 918 | 260 | 153 | 316 | 87 | 55 | 56 |
| 23 | 53 | 51 | 166 | 1040 | 718 | 814 | 233 | 325 | 276 | 80 | 52 | 61 |
| 24 | 58 | 56 | 644 | 802 | 624 | 724 | 222 | 298 | 240 | 80 | 49 | 64 |
| 25 | 56 | 60 | 612 | 712 | 552 | 646 | 216 | 256 | 216 | 88 | 47 | 50 |
| 26 | 65 | 61 | 458 | 590 | 448 | 596 | 416 | 307 | 188 | 83 | 45 | 51 |
| 27 | 423 | 64 | 356 | 464 | 400 | 508 | 1160 | 264 | 166 | 74 | 44 | 70 |
| 28 | 552 | 65 | 289 | 470 | 395 | 436 | 1540 | 395 | 172 | 66 | 44 | 80 |
| 29 | 244 | 66 | 233 | 450 | --- | 380 | 1170 | 405 | 166 | 62 | 43 | 66 |
| 30 | 155 | 66 | 195 | 320 | --- | 352 | 883 | 366 | 172 | 64 | 42 | 56 |
| 31 | 111 | --- | 166 | 294 | --- | 330 | --- | 390 | --- | 64 | 45 | --- |
| TOTAL | 2601 | 1767 | 5364 | 18804 | 28281 | 26921 | 11302 | 8850 | 23783 | 3364 | 2659 | 1384 |
| MEAN | 83.9 | 58.9 | 173 | 607 | 1010 | 868 | 377 | 285 | 793 | 109 | 85.8 | 46.1 |
| MAX | 552 | 90 | 644 | 2440 | 4630 | 1930 | 1540 | 718 | 4260 | 169 | 216 | 80 |
| MIN | 31 | 51 | 65 | 158 | 343 | 330 | 192 | 118 | 166 | 62 | 42 | 35 |
| CFSM | .26 | .18 | .53 | 1.85 | 3.07 | 2.64 | 1.15 | .87 | 2.41 | .33 | .26 | .14 |
| IN. | .29 | .20 | .61 | 2.13 | 3.20 | 3.04 | 1.28 | 1.00 | 2.69 | .38 | .30 | .16 |

| | | | | | | | |
|-------------|-------|--------|----------|----------|--------|-----------|----------|
| CAL YR 1981 | TOTAL | 69911 | MEAN 192 | MAX 4770 | MIN 31 | CFSM .58 | IN 7.90 |
| WTR YR 1982 | TOTAL | 135080 | MEAN 370 | MAX 4630 | MIN 31 | CFSM 1.13 | IN 15.27 |

02018500 CATAWBA CREEK NEAR CATAWBA, VA

LOCATION.--Lat 37°28'05", long 80°00'20", Botetourt County, Hydrologic Unit 02080201, on right bank 80 ft (24 m) upstream from highway bridge, 1.0 mi (1.6 km) downstream from Little Catawba Creek, 1.9 mi (3.1 km) west of Haymarket town, and 8.2 mi (13.2 km) northeast of Catawba.

DRAINAGE AREA.--34.3 mi² (88.8 km²).

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

REVISED RECORDS.--WSP 1303: 1944-45(M). WSP 2104: Drainage area. WDR VA-72-1: 1954, 1955(P), 1957-58(P), 1959, 1960-62(P), 1963, 1964(M), 1965-67(P), 1968(M), 1969, 1970(M), 1971.

GAGE.--Water-stage recorder. Datum of gage is 1,299.96 ft (396.228 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1953, nonrecording gage at site 80 ft (24 m) downstream at same datum.

REMARKS.--Records good. At a point 5.3 mi (8.5 km) above station, there is an occasional transmountain diversion through a tunnel into Roanoke River basin for municipal water supply of city of Roanoke since December 1974. Prior to October 1976, monthly means adjusted for pumpage by Citadel Cement Corp. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 34.7 ft³/s (0.983 m³/s), 13.74 in/yr (349 mm/yr), adjusted for pumpage from October 1952 to September 1976.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft³/s (219 m³/s) June 21, 1972, gage height, 10.35 ft (3.155 m), from rating curve extended above 1,100 ft³/s (31 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.36 ft³/s (0.010 m³/s) Jan. 3, 1981, result of freezeup; minimum daily, 0.67 ft³/s (0.019 m³/s) Aug. 14, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.26 ft (4.042 m), from information by observer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 562 ft³/s (15.9 m³/s) Feb. 3, gage height, 3.84 ft (1.170 m), no peak above base of 600 ft³/s (17 m³/s); minimum, 0.93 ft³/s (0.026 m³/s) Dec. 9-10, gage height, 1.14 ft (0.347 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-------|-------|------|------|-------|------|-------|-------|-------|
| 1 | 1.8 | 2.9 | 2.4 | 4.1 | 10 | 11 | 25 | 20 | 12 | 9.6 | 8.4 | 8.0 |
| 2 | 1.8 | 3.2 | 2.7 | 4.7 | 11 | 17 | 23 | 20 | 11 | 11 | 8.0 | 6.9 |
| 3 | 2.2 | 2.9 | 1.8 | 14 | 233 | 23 | 24 | 19 | 11 | 12 | 7.6 | 5.9 |
| 4 | 2.2 | 2.9 | 1.6 | 39 | 61 | 21 | 21 | 18 | 16 | 12 | 7.3 | 5.3 |
| 5 | 2.0 | 2.4 | 1.8 | 21 | 31 | 18 | 21 | 15 | 22 | 11 | 8.4 | 5.0 |
| 6 | 2.2 | 2.4 | 1.6 | 14 | 22 | 19 | 22 | 15 | 18 | 11 | 8.8 | 5.3 |
| 7 | 1.4 | 2.0 | 1.8 | 10 | 18 | 44 | 18 | 15 | 16 | 11 | 20 | 5.3 |
| 8 | 1.4 | 1.4 | 1.6 | 8.8 | 14 | 38 | 12 | 14 | 14 | 16 | 16 | 5.0 |
| 9 | 1.6 | 1.6 | 1.2 | 8.0 | 13 | 28 | 13 | 13 | 15 | 13 | 16 | 5.0 |
| 10 | 1.8 | 1.4 | 1.2 | 6.2 | 11 | 24 | 13 | 13 | 57 | 11 | 13 | 5.3 |
| 11 | 2.2 | 1.8 | 1.4 | 5.5 | 9.6 | 25 | 13 | 12 | 48 | 9.6 | 11 | 5.0 |
| 12 | 2.4 | 2.0 | 1.4 | 4.8 | 9.6 | 58 | 12 | 12 | 32 | 8.0 | 11 | 4.7 |
| 13 | 2.7 | 1.8 | 1.4 | 4.3 | 8.8 | 50 | 12 | 12 | 169 | 11 | 10 | 4.7 |
| 14 | 2.0 | 1.6 | 2.7 | 3.7 | 8.4 | 43 | 12 | 11 | 69 | 13 | 8.8 | 5.0 |
| 15 | 2.2 | 1.6 | 5.3 | 3.3 | 8.0 | 54 | 12 | 11 | 41 | 10 | 8.0 | 4.7 |
| 16 | 2.2 | 1.8 | 6.2 | 3.0 | 11 | 71 | 11 | 10 | 53 | 9.2 | 8.8 | 4.4 |
| 17 | 2.2 | 1.8 | 4.4 | 2.7 | 57 | 83 | 12 | 10 | 55 | 9.2 | 10 | 4.1 |
| 18 | 2.4 | 1.6 | 3.2 | 3.0 | 53 | 71 | 11 | 10 | 24 | 12 | 9.6 | 4.1 |
| 19 | 2.2 | 1.6 | 2.2 | 3.5 | 33 | 62 | 11 | 10 | 20 | 11 | 8.0 | 4.4 |
| 20 | 2.2 | 1.8 | 2.0 | 4.7 | 26 | 63 | 11 | 10 | 17 | 11 | 7.3 | 5.3 |
| 21 | 2.4 | 1.6 | 2.0 | 10 | 22 | 64 | 10 | 10 | 16 | 10 | 6.6 | 5.6 |
| 22 | 2.2 | 1.6 | 2.9 | 10 | 19 | 58 | 10 | 11 | 15 | 9.6 | 6.2 | 10 |
| 23 | 2.7 | 2.0 | 7.3 | 8.0 | 16 | 53 | 10 | 11 | 14 | 12 | 6.6 | 7.6 |
| 24 | 2.9 | 2.4 | 7.6 | 7.0 | 14 | 48 | 10 | 11 | 13 | 12 | 6.2 | 5.9 |
| 25 | 2.9 | 2.2 | 5.6 | 6.4 | 13 | 47 | 10 | 10 | 13 | 10 | 5.9 | 5.3 |
| 26 | 5.6 | 2.0 | 4.4 | 5.6 | 11 | 40 | 25 | 9.6 | 12 | 10 | 5.6 | 9.2 |
| 27 | 28 | 2.0 | 3.8 | 4.9 | 12 | 35 | 33 | 10 | 14 | 10 | 5.9 | 13 |
| 28 | 8.8 | 2.0 | 5.6 | 4.5 | 10 | 31 | 32 | 10 | 13 | 9.2 | 5.9 | 8.8 |
| 29 | 6.2 | 1.8 | 4.7 | 4.8 | --- | 28 | 27 | 10 | 12 | 8.8 | 5.3 | 6.9 |
| 30 | 5.0 | 2.2 | 3.2 | 5.0 | --- | 27 | 24 | 12 | 12 | 8.8 | 5.3 | 5.6 |
| 31 | 3.2 | --- | 2.9 | 6.2 | --- | 26 | --- | 10 | --- | 8.8 | 5.6 | --- |
| TOTAL | 111.0 | 60.3 | 97.9 | 240.7 | 765.4 | 1280 | 500 | 384.6 | 854 | 330.8 | 271.1 | 181.3 |
| MEAN | 3.58 | 2.01 | 3.16 | 7.76 | 27.3 | 41.3 | 16.7 | 12.4 | 28.5 | 10.7 | 8.75 | 6.04 |
| MAX | 28 | 3.2 | 7.6 | 39 | 233 | 83 | 33 | 20 | 169 | 16 | 20 | 13 |
| MIN | 1.4 | 1.4 | 1.2 | 2.7 | 8.0 | 11 | 10 | 9.6 | 11 | 8.0 | 5.3 | 4.1 |
| CFSM | .10 | .06 | .09 | .23 | .80 | 1.20 | .49 | .36 | .83 | .31 | .26 | .18 |
| IN. | .12 | .07 | .11 | .26 | .83 | 1.39 | .54 | .42 | .93 | .36 | .29 | .20 |

CAL YR 1981 TOTAL 2080.37 MEAN 5.70 MAX 176 MIN .67 CFSM .17 IN 2.26
WTR YR 1982 TOTAL 5077.10 MEAN 13.9 MAX 233 MIN 1.2 CFSM .41 IN 5.51

JAMES RIVER BASIN

02019500 JAMES RIVER AT BUCHANAN, VA

LOCATION.--Lat 37°31'50", long 79°40'45", Botetourt County, Hydrologic Unit 02080201, on left bank at Chesapeake and Ohio Railway station at Buchanan, 300 ft (91 m) upstream from bridge on U.S. Highway 11, 1,000 ft (305 m) upstream from Purgatory Creek, 1.5 mi (2.4 km) downstream from Looney Creek, and at mile 306.4 (493.0 km).

DRAINAGE AREA.--2,075 mi² (5,374 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for August 1895 to Feb. 11, 1898, published in WSP 11, 15, and 27 are in error and should not be used. Gage-height records collected at this site since 1893 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 602: 1917-24. WSP 972: 1935-36. WSP 1303: 1898-1916, 1917-20(M), 1922(M), 1924(M). WSP 1383: 1927. WSP 2104: Drainage area. WDR VA-72-1: 1913(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 802.90 ft (244.724 m) National Geodetic Vertical Datum of 1929. Prior to July 1, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 79.6 mi (128.1 km) upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 2,466 ft³/s (69.84 m³/s), 16.14 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 ft³/s (3,260 m³/s) Mar. 27, 1913, gage height, 31 ft (9.4 m), from floodmarks; minimum, 202 ft³/s (5.72 m³/s) Sept. 8, 1966, gage height, 1.44 ft (0.439 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of 34.9 ft (10.64 m), from floodmark, discharge, about 142,000 ft³/s (4,000 m³/s), from rating curve extended above 110,000 ft³/s (3,100 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,400 ft³/s (1,230 m³/s) June 13, gage height, 18.37 ft (5.599 m); minimum, 253 ft³/s (7.16 m³/s) Oct. 1, gage height, 1.66 ft (0.506 m); minimum daily, 257 ft³/s (7.28 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|
| 1 | 257 | 810 | 514 | 966 | 3620 | 2360 | 2170 | 3940 | 3200 | 1090 | 915 | 595 |
| 2 | 266 | 688 | 576 | 983 | 6480 | 2520 | 2000 | 3220 | 2650 | 1030 | 865 | 562 |
| 3 | 266 | 607 | 729 | 1300 | 14600 | 3570 | 2000 | 2870 | 2080 | 958 | 791 | 536 |
| 4 | 270 | 555 | 850 | 5300 | 27500 | 4080 | 2000 | 2550 | 2230 | 969 | 725 | 517 |
| 5 | 270 | 518 | 803 | 12400 | 14400 | 3680 | 2010 | 2160 | 2420 | 979 | 698 | 501 |
| 6 | 278 | 493 | 726 | 6400 | 9050 | 3370 | 2080 | 1970 | 2860 | 1030 | 835 | 484 |
| 7 | 299 | 465 | 677 | 4450 | 6480 | 4030 | 2030 | 1760 | 2460 | 976 | 1120 | 482 |
| 8 | 278 | 437 | 639 | 3780 | 5310 | 9390 | 2130 | 1620 | 2250 | 876 | 1500 | 473 |
| 9 | 278 | 428 | 607 | 3140 | 3810 | 8040 | 2090 | 1530 | 2150 | 926 | 1490 | 465 |
| 10 | 272 | 421 | 579 | 2570 | 4020 | 6680 | 1990 | 1430 | 2230 | 908 | 1270 | 443 |
| 11 | 303 | 410 | 539 | 1720 | 4010 | 4840 | 1840 | 1330 | 7240 | 1040 | 1080 | 470 |
| 12 | 515 | 403 | 525 | 1400 | 4050 | 4150 | 1540 | 1240 | 5450 | 1180 | 937 | 466 |
| 13 | 519 | 395 | 494 | 1670 | 3560 | 3910 | 1500 | 1170 | 28800 | 1400 | 826 | 455 |
| 14 | 514 | 386 | 518 | 1520 | 3080 | 3710 | 1490 | 1120 | 33600 | 1180 | 787 | 458 |
| 15 | 513 | 379 | 645 | 1450 | 2580 | 3740 | 1490 | 1070 | 14700 | 1030 | 742 | 459 |
| 16 | 515 | 377 | 1430 | 1390 | 2240 | 6410 | 1470 | 1030 | 10200 | 969 | 716 | 455 |
| 17 | 510 | 378 | 1470 | 1210 | 4520 | 9540 | 1490 | 987 | 7810 | 943 | 710 | 447 |
| 18 | 526 | 374 | 1210 | 1010 | 14800 | 9060 | 1820 | 952 | 4870 | 1030 | 937 | 440 |
| 19 | 528 | 371 | 995 | 1130 | 11600 | 7380 | 2120 | 920 | 3310 | 990 | 794 | 440 |
| 20 | 520 | 375 | 784 | 1160 | 870 | 6450 | 2020 | 918 | 2610 | 1030 | 728 | 450 |
| 21 | 475 | 388 | 609 | 1390 | 6280 | 13400 | 2040 | 981 | 2220 | 1020 | 689 | 475 |
| 22 | 312 | 384 | 707 | 2990 | 5130 | 11900 | 1860 | 952 | 1890 | 951 | 641 | 562 |
| 23 | 296 | 380 | 1240 | 3550 | 4660 | 9360 | 1610 | 1000 | 1640 | 857 | 620 | 637 |
| 24 | 306 | 410 | 3400 | 2930 | 3750 | 7380 | 1450 | 1050 | 1500 | 832 | 616 | 601 |
| 25 | 314 | 454 | 3360 | 2870 | 3250 | 5170 | 1330 | 1250 | 1370 | 801 | 604 | 559 |
| 26 | 352 | 459 | 2430 | 2550 | 2800 | 4330 | 1790 | 1500 | 1270 | 875 | 588 | 585 |
| 27 | 1720 | 450 | 1920 | 2050 | 2520 | 3760 | 5140 | 1950 | 1200 | 795 | 581 | 936 |
| 28 | 5820 | 453 | 1600 | 1730 | 2480 | 3120 | 8730 | 1700 | 1130 | 741 | 600 | 959 |
| 29 | 2570 | 462 | 1370 | 1650 | --- | 2820 | 6960 | 1650 | 1100 | 734 | 586 | 786 |
| 30 | 1450 | 487 | 1180 | 1560 | --- | 2530 | 5090 | 2200 | 1100 | 717 | 570 | 662 |
| 31 | 1030 | --- | 1040 | 1500 | --- | 2350 | --- | 3000 | --- | 852 | 578 | --- |
| TOTAL | 22342 | 13597 | 34166 | 79719 | 184950 | 173030 | 73280 | 51020 | 157540 | 29709 | 25139 | 16360 |
| MEAN | 721 | 453 | 1102 | 2572 | 6605 | 5582 | 2443 | 1646 | 5251 | 958 | 811 | 545 |
| MAX | 5820 | 810 | 3400 | 12400 | 27500 | 13400 | 8730 | 3940 | 33600 | 1400 | 1500 | 959 |
| MIN | 257 | 371 | 494 | 966 | 2240 | 2350 | 1330 | 918 | 1100 | 717 | 570 | 440 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |

CAL YR 1981 TOTAL 424840 MEAN 1164 MAX 25400 MIN 257 MEAN+ 1258 CFSM+ .61 IN+ 8.23
WTR YR 1982 TOTAL 860852 MEAN 2358 MAX 33600 MIN 257 MEAN+ 2383 CFSM+ 1.15 IN+ 15.59

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.

+ Adjusted for change in contents.

JAMES RIVER BASIN

155

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1951-56, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to current year.

WATER TEMPERATURES: October 1947 to September 1948, May 1951 to September 1956, April 1968 to current year.

SUSPENDED-SEDIMENT DISCHARGE: May 1951 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 945 micromhos Sept. 27, 1954; minimum daily, 67 micromhos Oct. 20, 1975, Oct. 10, 1976.

WATER TEMPERATURES: Maximum daily, 31.0°C July 5, 1955, July 17, 21, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 817 micromhos Oct. 14; minimum daily, 79 micromhos Feb. 4, Mar. 21.

WATER TEMPERATURES: Maximum daily, 25.0°C June 28; minimum daily, 0.5°C Jan. 12, 13, 17, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|--------------|------|---|---|---------------|-----------------------------|--|-------------------------------------|--|--|--|--|---|
| OCT 07... | 1050 | 301 | 720 | 8.0 | 16.0 | 32 | 7.9 | 230 | 79 | 8.3 | 41 | 4.1 |
| DEC 02... | 0915 | 564 | 530 | 8.0 | 4.0 | 48 | -- | 180 | 60 | 6.1 | 27 | 3.3 |
| JAN 25... | 1030 | 2850 | 184 | 7.7 | .0 | 14 | -- | 63 | 20 | 3.2 | 7.2 | 1.6 |
| MAR 30... | 1030 | 2520 | 185 | 8.0 | 8.5 | 5 | -- | 67 | 21 | 3.6 | 6.9 | 1.2 |
| MAY 14... | 0945 | 1120 | 230 | 8.0 | 20.0 | 2 | -- | 88 | 27 | 5.1 | 9.8 | 1.8 |
| JUN 23... | 1400 | 1630 | 202 | 8.7 | 22.0 | 8 | -- | 82 | 26 | 4.2 | 6.5 | 1.0 |
| JUL 19... | 1345 | 1010 | 290 | 8.1 | 27.5 | 8 | -- | 110 | 35 | 4.9 | 12 | 2.2 |
| SEP 07... | 1145 | 481 | 375 | 8.3 | 22.0 | 23 | -- | 140 | 44 | 6.9 | 17 | 3.0 |

| DATE | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|--------------|---|---|---|--|---|--|---|---|---|--|--|
| OCT 07... | 120 | 49 | 120 | .1 | 3.1 | 470 | 377 | <.010 | .13 | .680 | 33 |
| DEC 02... | 99 | 40 | 75 | .1 | 1.2 | 325 | 272 | .010 | .09 | .170 | 77 |
| JAN 25... | 36 | 18 | 16 | <.1 | 4.9 | 112 | 93 | .020 | .31 | .030 | 36 |
| MAR 30... | 52 | 18 | 12 | <.1 | 3.6 | 120 | 98 | .010 | .24 | .060 | 28 |
| MAY 14... | 68 | 17 | 12 | <.1 | 2.6 | 130 | 116 | .020 | .20 | .110 | 8 |
| JUN 23... | 64 | 15 | 12 | .1 | 3.5 | 119 | 107 | <.010 | <.10 | .030 | 29 |
| JUL 19... | 76 | 21 | 26 | .1 | 3.5 | 191 | 150 | <.010 | .19 | .180 | 17 |
| SEP 07... | 97 | 29 | 33 | .2 | 4.3 | 182 | 196 | <.010 | <.10 | <.010 | 13 |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 574 | 203 | 525 | 295 | 196 | 180 | 198 | 130 | 190 | 300 | 305 | 370 |
| 2 | 571 | 252 | 520 | 270 | 148 | 194 | 194 | 134 | 175 | 320 | 289 | 380 |
| 3 | 619 | 292 | 590 | 320 | 137 | 175 | 204 | 151 | 195 | 255 | 285 | 340 |
| 4 | 650 | 342 | 500 | 225 | 79 | 139 | 202 | 166 | 145 | 300 | 283 | 340 |
| 5 | 691 | 379 | 460 | 100 | 107 | 144 | 198 | 168 | 195 | 335 | 288 | 335 |
| 6 | 698 | 426 | 430 | 120 | 117 | 148 | --- | 167 | 175 | 335 | 294 | 360 |
| 7 | 693 | 455 | 380 | 125 | 124 | 146 | 213 | 184 | 200 | 295 | 310 | 345 |
| 8 | 718 | 495 | 375 | 200 | 138 | 109 | 198 | 177 | 195 | 285 | 292 | 380 |
| 9 | 653 | 520 | 345 | 205 | 141 | 117 | 201 | 194 | 230 | 267 | 207 | 410 |
| 10 | 644 | 515 | 380 | 220 | 143 | 122 | 195 | 190 | 185 | 274 | 247 | 420 |
| 11 | --- | 523 | 440 | 158 | 140 | 124 | 193 | 186 | 130 | 269 | 225 | 400 |
| 12 | 644 | 550 | 425 | 295 | 156 | 135 | 194 | 199 | --- | 288 | 234 | 295 |
| 13 | 747 | 543 | 420 | 263 | 161 | 145 | 212 | 219 | 100 | --- | 243 | 400 |
| 14 | 817 | 575 | 410 | 265 | 163 | 151 | 222 | 218 | 80 | 245 | 269 | 360 |
| 15 | 629 | 550 | 400 | 280 | 171 | 148 | 228 | 245 | 120 | 243 | --- | 340 |
| 16 | 520 | 550 | 410 | 298 | 168 | 137 | 203 | 249 | 135 | 265 | 309 | 355 |
| 17 | 513 | 640 | 370 | 315 | 175 | 112 | 241 | 257 | 135 | 269 | 317 | 375 |
| 18 | 495 | 643 | 305 | 330 | 99 | 108 | 238 | 270 | 155 | 250 | 320 | 360 |
| 19 | 495 | 645 | 280 | 340 | 104 | 117 | 185 | 273 | 175 | 262 | 266 | 410 |
| 20 | 485 | 650 | 290 | 360 | 117 | 125 | 198 | 288 | 190 | 262 | 315 | 390 |
| 21 | 473 | 600 | 300 | 315 | 120 | 79 | 216 | 299 | 205 | 256 | 320 | 410 |
| 22 | 450 | 580 | 310 | 278 | 129 | 106 | 201 | 286 | 205 | 254 | 310 | 410 |
| 23 | 416 | 600 | 360 | 180 | 139 | 118 | 194 | 284 | 220 | 250 | 335 | 415 |
| 24 | 431 | 650 | 348 | 200 | 142 | 120 | 206 | 248 | 220 | 254 | 360 | 415 |
| 25 | 396 | 610 | 195 | 180 | 155 | 131 | 216 | 265 | 225 | 246 | 370 | 410 |
| 26 | 361 | 590 | 185 | 210 | 159 | 141 | 217 | 252 | 245 | 296 | 340 | 340 |
| 27 | 213 | 650 | 170 | 180 | 168 | 154 | 171 | 247 | 290 | 288 | 390 | 320 |
| 28 | --- | 655 | 210 | 183 | 177 | 156 | 110 | 181 | 270 | 285 | 380 | 320 |
| 29 | 165 | 600 | 195 | 198 | --- | 174 | 105 | 230 | 280 | 309 | 390 | 325 |
| 30 | 193 | 580 | 260 | 181 | --- | 181 | 118 | 235 | 310 | 304 | 343 | 278 |
| 31 | 208 | --- | 290 | 188 | --- | 188 | --- | 215 | --- | 315 | 335 | --- |
| MEAN | 523 | 529 | 357 | 235 | 142 | 139 | 196 | 220 | 192 | 279 | 306 | 367 |
| WTR YR 1982 | MEAN | 290 | MAX | 817 | MIN | 79 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 20.5 | 13.5 | 4.5 | 3.0 | 5.0 | 6.0 | 13.0 | 14.5 | 22.5 | 23.5 | 20.0 | 13.0 |
| 2 | 16.5 | 14.0 | 5.0 | 3.0 | 8.0 | 7.0 | 14.0 | 15.5 | 22.0 | 22.5 | 19.5 | 14.5 |
| 3 | 17.0 | 15.0 | 4.0 | 3.0 | 4.0 | 6.5 | 14.5 | 16.0 | 21.5 | 23.0 | 19.5 | 15.0 |
| 4 | 17.0 | 15.0 | 6.0 | 5.0 | 5.0 | 6.0 | 13.5 | 17.0 | 20.0 | 22.0 | 20.0 | 16.0 |
| 5 | 19.0 | 15.0 | 5.5 | 5.0 | 5.5 | 7.5 | 11.5 | 18.5 | 20.5 | 21.0 | 20.5 | 17.0 |
| 6 | 19.0 | 13.5 | 5.0 | 5.0 | 5.5 | 7.0 | --- | 19.5 | 19.0 | 23.0 | 20.5 | 17.5 |
| 7 | 18.0 | 12.0 | 6.0 | 5.5 | 4.0 | 6.0 | 9.0 | 19.5 | 20.5 | 24.0 | 20.0 | 18.0 |
| 8 | 17.5 | 12.0 | 5.0 | 5.5 | 4.5 | 6.0 | 7.5 | 19.0 | 22.0 | 23.5 | 18.5 | 17.0 |
| 9 | 16.5 | 11.0 | 4.5 | 4.0 | 5.0 | 7.0 | 7.5 | 19.5 | 23.5 | 23.5 | 17.5 | 14.5 |
| 10 | 14.5 | 10.5 | 3.0 | 1.0 | 4.5 | 6.5 | 9.5 | 20.0 | 22.0 | 24.5 | 18.0 | 13.0 |
| 11 | --- | 10.0 | 2.5 | 1.0 | 5.0 | 8.0 | 10.0 | 20.0 | 21.0 | 22.5 | 18.0 | 13.0 |
| 12 | 14.5 | 10.0 | 3.0 | .5 | 4.0 | 11.0 | 12.0 | 23.0 | --- | 23.0 | 17.0 | 13.0 |
| 13 | 15.5 | 9.5 | 2.0 | .5 | 4.5 | 12.0 | 14.0 | 22.0 | 16.5 | --- | 16.5 | 13.0 |
| 14 | 15.5 | 9.0 | 2.5 | 1.0 | 5.0 | 10.0 | 16.5 | 22.5 | 16.5 | 22.0 | 16.5 | 14.5 |
| 15 | 15.5 | 9.5 | 2.5 | 1.0 | 6.0 | 9.0 | 16.0 | 23.0 | 16.5 | 23.0 | --- | 15.0 |
| 16 | 17.0 | 9.0 | 3.0 | 1.0 | 7.0 | 7.0 | 16.0 | 23.0 | 18.0 | 23.5 | 18.0 | 15.5 |
| 17 | 17.0 | 9.0 | 3.0 | .5 | 7.0 | 10.0 | 17.0 | 24.0 | 18.0 | 24.0 | 17.5 | 14.5 |
| 18 | 15.5 | 10.0 | 2.5 | 1.0 | 5.5 | 10.5 | 16.5 | 24.0 | 19.0 | 24.0 | 17.0 | 13.0 |
| 19 | 14.0 | 10.5 | 2.0 | 1.0 | 5.5 | 10.5 | 15.5 | 23.5 | 21.0 | 24.0 | 17.5 | 11.5 |
| 20 | 14.0 | 9.5 | 1.0 | 1.5 | 6.0 | 9.5 | 14.5 | 23.5 | 22.0 | 23.5 | 18.0 | 11.0 |
| 21 | 14.0 | 7.0 | 1.0 | 1.5 | 7.0 | 9.5 | 15.0 | 23.0 | 23.5 | 23.0 | 17.5 | 10.0 |
| 22 | 13.5 | 6.5 | 1.5 | .5 | 6.5 | 9.5 | 14.0 | 23.0 | 21.0 | 22.5 | 16.0 | 9.5 |
| 23 | 12.5 | 7.0 | 3.0 | 1.0 | 8.0 | 10.0 | 15.0 | 22.5 | 22.0 | 22.5 | 15.5 | 8.5 |
| 24 | 10.0 | 5.5 | 4.5 | 1.5 | 9.0 | 10.0 | 15.5 | 23.0 | 22.0 | 21.0 | 16.5 | 8.0 |
| 25 | 11.0 | 5.5 | 4.0 | 1.0 | 8.5 | 11.0 | 15.5 | 24.0 | 23.0 | 22.0 | 16.5 | 8.0 |
| 26 | 13.0 | 6.0 | 4.0 | 1.0 | 7.0 | 10.0 | 16.5 | 24.0 | 22.5 | 23.0 | 16.0 | 6.0 |
| 27 | 14.0 | 7.0 | 4.5 | 1.0 | 4.5 | 8.5 | 15.5 | 23.0 | 24.0 | 22.5 | 14.5 | 8.0 |
| 28 | --- | 6.5 | 4.5 | 2.0 | 5.0 | 9.0 | 18.5 | 23.0 | 25.0 | 22.5 | 14.0 | 8.0 |
| 29 | 14.0 | 6.0 | 4.0 | 3.0 | --- | 9.0 | 14.0 | 23.5 | 24.0 | 21.5 | 14.0 | 8.0 |
| 30 | 12.0 | 5.0 | 4.0 | 3.0 | --- | 10.5 | 14.5 | 24.5 | 24.0 | 19.5 | 13.0 | 8.5 |
| 31 | 13.0 | --- | 2.0 | 5.0 | --- | 11.0 | --- | 23.0 | --- | 19.0 | 12.0 | --- |
| MEAN | 15.0 | 9.5 | 3.5 | 2.0 | 6.0 | 8.5 | 14.0 | 21.5 | 21.0 | 22.5 | 17.0 | 12.5 |
| WTR YR 1982 | MEAN | 13.0 | MAX | 25.0 | MIN | .5 | | | | | | |

02020500 CALFPASTURE RIVER ABOVE MILL CREEK, AT GOSHEN, VA

LOCATION.--Lat 37°59'16", long 79°29'38", Rockbridge County, Hydrologic Unit 02080202, on left bank 20 ft (6 m) upstream from bridge on State Highway 42 at Goshen and 400 ft (122 m) upstream from Mill Creek.

DRAINAGE AREA.--144 mi² (373 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,384.84 ft (422.099 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 161 ft³/s (4.560 m³/s), 15.18 in/yr (386 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft³/s (592 m³/s) Oct. 6, 1972, gage height, 12.78 ft (3.895 m), from rating curve extended above 9,200 ft³/s (260 m³/s) on basis of slope-area measurement of peak flow; no flow Sept. 5, 6, 1957, Sept. 28, 1959, result of diversion.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (71 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2200 | 5090 144 | 7.82 2.384 | June 10 | 1430 | 2950 83.5 | 6.37 1.942 |
| Mar. 20 | 1900 | 5340 151 | 7.96 2.426 | June 13 | 1630 | *10900 309 | 10.66 3.249 |

Minimum discharge, 3.4 ft³/s (0.10 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|---------|------|------|-------|-------|------|------|-------|------|------|-------|
| 1 | 4.2 | 74 | 29 | 96 | 1020 | 172 | 128 | 300 | 129 | 33 | 49 | 15 |
| 2 | 5.0 | 60 | 47 | 84 | 628 | 192 | 109 | 245 | 101 | 30 | 43 | 14 |
| 3 | 4.6 | 51 | 87 | 87 | 2710 | 237 | 117 | 201 | 77 | 28 | 36 | 12 |
| 4 | 4.1 | 44 | 95 | 1030 | 2330 | 233 | 169 | 160 | 219 | 42 | 32 | 10 |
| 5 | 4.1 | 40 | 89 | 1090 | 841 | 223 | 188 | 129 | 403 | 72 | 27 | 9.7 |
| 6 | 4.0 | 38 | 75 | 548 | 537 | 214 | 193 | 113 | 447 | 66 | 41 | 9.4 |
| 7 | 3.8 | 35 | 68 | 372 | 376 | 419 | 172 | 96 | 285 | 57 | 136 | 9.1 |
| 8 | 3.6 | 32 | 65 | 275 | 285 | 747 | 148 | 86 | 184 | 49 | 134 | 8.8 |
| 9 | 3.5 | 30 | 61 | 212 | 354 | 531 | 147 | 79 | 139 | 46 | 103 | 8.8 |
| 10 | 3.7 | 28 | 55 | 172 | 487 | 398 | 146 | 68 | 1590 | 44 | 78 | 8.8 |
| 11 | 4.0 | 26 | 48 | 130 | 383 | 325 | 130 | 64 | 1050 | 42 | 57 | 8.5 |
| 12 | 4.2 | 24 | 44 | 110 | 292 | 335 | 124 | 59 | 990 | 174 | 46 | 8.2 |
| 13 | 4.6 | 23 | 37 | 95 | 241 | 345 | 118 | 53 | 7060 | 110 | 38 | 7.9 |
| 14 | 4.6 | 21 | 46 | 85 | 197 | 325 | 110 | 49 | 2370 | 71 | 32 | 7.6 |
| 15 | 4.0 | 20 | 81 | 75 | 165 | 325 | 99 | 46 | 844 | 61 | 27 | 7.6 |
| 16 | 4.0 | 19 | 114 | 65 | 171 | 372 | 90 | 46 | 463 | 54 | 27 | 7.0 |
| 17 | 4.0 | 19 | 109 | 56 | 807 | 647 | 106 | 42 | 389 | 46 | 42 | 6.8 |
| 18 | 4.1 | 18 | 101 | 57 | 1470 | 677 | 195 | 40 | 256 | 89 | 158 | 6.6 |
| 19 | 4.2 | 18 | 91 | 57 | 698 | 494 | 167 | 40 | 192 | 232 | 125 | 6.8 |
| 20 | 4.4 | 19 | 72 | 52 | 572 | 2360 | 153 | 42 | 154 | 202 | 80 | 7.6 |
| 21 | 4.2 | 19 | 64 | 88 | 494 | 1900 | 140 | 42 | 121 | 138 | 55 | 8.8 |
| 22 | 4.2 | 18 | 83 | 177 | 425 | 913 | 122 | 40 | 99 | 91 | 43 | 13 |
| 23 | 4.8 | 18 | 113 | 125 | 356 | 572 | 107 | 56 | 82 | 71 | 35 | 11 |
| 24 | 5.2 | 20 | 325 | 123 | 300 | 402 | 96 | 53 | 68 | 74 | 30 | 9.4 |
| 25 | 5.2 | 21 | 291 | 97 | 258 | 307 | 86 | 56 | 58 | 80 | 27 | 8.8 |
| 26 | 7.8 | 19 | 224 | 96 | 219 | 282 | 228 | 125 | 53 | 61 | 22 | 12 |
| 27 | 804 | 19 | 180 | 89 | 205 | 227 | 653 | 93 | 49 | 49 | 20 | 21 |
| 28 | 638 | 21 | 148 | 89 | 192 | 192 | 659 | 86 | 43 | 41 | 19 | 15 |
| 29 | 260 | 22 | 123 | 105 | --- | 166 | 494 | 75 | 38 | 35 | 17 | 11 |
| 30 | 145 | 23 | 100 | 99 | --- | 147 | 372 | 110 | 37 | 43 | 15 | 11 |
| 31 | 99 | --- | 94 | 154 | --- | 136 | --- | 132 | --- | 49 | 15 | --- |
| TOTAL | 2060.1 | 839 | 3159 | 5990 | 17013 | 14815 | 5766 | 2826 | 17990 | 2280 | 1609 | 301.2 |
| MEAN | 66.5 | 28.0 | 102 | 193 | 608 | 478 | 192 | 91.2 | 600 | 73.5 | 51.9 | 10.0 |
| MAX | 804 | 74 | 325 | 1090 | 2710 | 2360 | 659 | 300 | 7060 | 232 | 158 | 21 |
| MIN | 3.5 | 18 | 29 | 52 | 165 | 136 | 86 | 40 | 37 | 28 | 15 | 6.6 |
| CFSM | .46 | .19 | .71 | 1.34 | 4.22 | 3.32 | 1.33 | .63 | 4.17 | .51 | .36 | .07 |
| IN. | .53 | .22 | .82 | 1.55 | 4.39 | 3.83 | 1.49 | .73 | 4.65 | .59 | .42 | .08 |
| CAL YR 1981 | TOTAL | 30309.7 | MEAN | 83.0 | MAX | 1310 | MIN | 3.0 | CFSM | .58 | IN | 7.83 |
| WTR YR 1982 | TOTAL | 74648.3 | MEAN | 205 | MAX | 7060 | MIN | 3.5 | CFSM | 1.42 | IN | 19.28 |

JAMES RIVER BASIN

02021500 MAURY RIVER AT ROCKBRIDGE BATHS, VA

LOCATION.--Lat 37°54'26", long 79°25'20", Rockbridge County, Hydrologic Unit 02080202, on right bank at Rockbridge Baths, 1,200 ft (370 m) upstream from bridge on State Highway 39, and 1.0 mi (1.6 km) upstream from Hays Creek.

DRAINAGE AREA.--329 mi² (852 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River at Rockbridge Baths.

REVISED RECORDS.--WSP 972: 1929-40, 1941(M). WSP 1002: 1930(m). WSP 1553: 1931(m).

GAGE.--Water-stage recorder. Datum of gage is 1,100.33 ft (335.381 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 371 ft³/s (10.51 m³/s), 15.31 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Mar. 17, 1936, gage height, 13.07 ft (3.984 m), from rating curve extended above 16,000 ft³/s (450 m³/s); minimum, 5.8 ft³/s (0.16 m³/s) Sept. 10, 1966, gage height, 0.79 ft (0.241 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2200 | 8870 251 | 8.29 2.527 | June 10 | 1600 | 6450 183 | 7.38 2.249 |
| Mar. 20 | 2100 | 7060 200 | 7.64 2.329 | June 13 | 1700 | *18400 521 | 10.68 3.255 |

Minimum discharge, 20 ft³/s (0.57 m³/s) Oct. 7-10, gage height, 1.03 ft (0.314 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|-----------|--------|-----------|----------|------|-------|------|------|------|
| 1 | 22 | 209 | 67 | 208 | 2310 | 399 | 440 | 551 | 556 | 99 | 120 | 59 |
| 2 | 25 | 168 | 124 | 206 | 1550 | 484 | 383 | 471 | 326 | 88 | 98 | 59 |
| 3 | 25 | 143 | 177 | 223 | 5050 | 652 | 371 | 394 | 230 | 83 | 85 | 57 |
| 4 | 24 | 124 | 190 | 1810 | 5180 | 594 | 490 | 317 | 386 | 85 | 79 | 53 |
| 5 | 23 | 118 | 178 | 2300 | 2300 | 555 | 488 | 286 | 727 | 120 | 77 | 52 |
| 6 | 22 | 136 | 155 | 1250 | 1530 | 527 | 485 | 256 | 860 | 121 | 172 | 51 |
| 7 | 21 | 114 | 139 | 853 | 1050 | 1210 | 414 | 233 | 575 | 105 | 334 | 50 |
| 8 | 20 | 99 | 132 | 641 | 796 | 2040 | 348 | 218 | 396 | 93 | 247 | 49 |
| 9 | 20 | 98 | 123 | 502 | 905 | 1420 | 348 | 203 | 342 | 86 | 240 | 49 |
| 10 | 21 | 119 | 112 | 316 | 1130 | 1050 | 354 | 183 | 3320 | 87 | 174 | 49 |
| 11 | 22 | 128 | 105 | 255 | 885 | 842 | 320 | 168 | 2870 | 81 | 134 | 49 |
| 12 | 26 | 113 | 98 | 268 | 697 | 858 | 305 | 156 | 2390 | 193 | 111 | 48 |
| 13 | 64 | 109 | 88 | 255 | 607 | 836 | 295 | 146 | 13600 | 178 | 97 | 48 |
| 14 | 78 | 117 | 98 | 229 | 513 | 762 | 283 | 138 | 5630 | 124 | 89 | 52 |
| 15 | 85 | 87 | 233 | 212 | 451 | 766 | 261 | 130 | 2100 | 105 | 83 | 52 |
| 16 | 81 | 74 | 359 | 194 | 503 | 960 | 241 | 123 | 1290 | 101 | 79 | 50 |
| 17 | 76 | 77 | 300 | 160 | 1790 | 1580 | 246 | 116 | 1060 | 121 | 104 | 49 |
| 18 | 55 | 96 | 255 | 168 | 3230 | 1500 | 651 | 109 | 780 | 150 | 174 | 49 |
| 19 | 50 | 82 | 204 | 166 | 1870 | 1140 | 557 | 108 | 583 | 278 | 189 | 49 |
| 20 | 75 | 79 | 175 | 145 | 1540 | 3690 | 438 | 115 | 450 | 303 | 137 | 51 |
| 21 | 73 | 60 | 157 | 291 | 1280 | 3970 | 354 | 109 | 346 | 212 | 110 | 51 |
| 22 | 56 | 52 | 189 | 633 | 1030 | 2390 | 308 | 105 | 275 | 156 | 94 | 61 |
| 23 | 76 | 48 | 295 | 462 | 815 | 1590 | 274 | 117 | 227 | 124 | 84 | 60 |
| 24 | 59 | 55 | 819 | 463 | 690 | 1140 | 250 | 119 | 191 | 111 | 78 | 54 |
| 25 | 51 | 56 | 695 | 382 | 583 | 888 | 232 | 119 | 165 | 124 | 73 | 52 |
| 26 | 52 | 53 | 523 | 364 | 482 | 886 | 554 | 160 | 146 | 106 | 70 | 60 |
| 27 | 1540 | 53 | 424 | 245 | 452 | 703 | 1140 | 164 | 143 | 90 | 66 | 113 |
| 28 | 1820 | 57 | 346 | 257 | 434 | 584 | 1220 | 148 | 127 | 83 | 66 | 113 |
| 29 | 734 | 58 | 286 | 250 | --- | 511 | 893 | 143 | 114 | 80 | 63 | 89 |
| 30 | 412 | 57 | 230 | 230 | --- | 475 | 683 | 202 | 109 | 108 | 60 | 91 |
| 31 | 281 | --- | 195 | 392 | --- | 462 | --- | 323 | --- | 131 | 59 | --- |
| TOTAL | 5989 | 2839 | 7471 | 14330 | 39653 | 35464 | 13626 | 6130 | 40314 | 3926 | 3646 | 1769 |
| MEAN | 193 | 94.6 | 241 | 462 | 1416 | 1144 | 454 | 198 | 1344 | 127 | 118 | 59.0 |
| MAX | 1820 | 209 | 819 | 2300 | 5180 | 3970 | 1220 | 551 | 13600 | 303 | 334 | 113 |
| MIN | 20 | 48 | 67 | 145 | 434 | 399 | 232 | 105 | 109 | 80 | 59 | 48 |
| CFSM | .59 | .29 | .73 | 1.40 | 4.30 | 3.48 | 1.38 | .60 | 4.09 | .39 | .36 | .18 |
| IN. | .68 | .32 | .84 | 1.62 | 4.48 | 4.01 | 1.54 | .69 | 4.56 | .44 | .41 | .20 |
| CAL YR 1981 | TOTAL | 68384 | MEAN 187 | MAX 2590 | MIN 19 | CFSM .57 | IN 7.73 | | | | | |
| WTR YR 1982 | TOTAL | 175157 | MEAN 480 | MAX 13600 | MIN 20 | CFSM 1.46 | IN 19.80 | | | | | |

02022500 KERRS CREEK NEAR LEXINGTON, VA

LOCATION.--Lat 37°49'32", long 79°26'36", Rockbridge County, Hydrologic Unit 02080202, on right bank 100 ft (30 m) upstream from bridge on Interstate Highway 64, 1.4 mi (2.3 km) upstream from mouth, and 2.9 mi (4.7 km) north of Lexington.

DRAINAGE AREA.--35.0 mi² (90.6 km²).

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1203: 1927-29, 1930-34(M), 1935-40, 1941(M), 1942, 1943-48(M), 1949. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 980.32 ft (298.802 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 27, 1927, to Sept. 30, 1953, nonrecording gage at site 1,000 ft (305 m) downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 35.3 ft³/s (1.000 m³/s), 13.70 in/yr (348 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s (651 m³/s) Sept. 10, 1950, gage height, 13.8 ft (4.21 m), from floodmarks, site and datum then in use, from rating curve extended above 800 ft³/s (23 m³/s) on basis of contracted-opening and slope-area measurements of peak flow; minimum, 0.90 ft³/s (0.025 m³/s) July 22, 1966 (result of temporary dam upstream); minimum daily, 4.0 ft³/s (0.11 m³/s) many days in August and September 1932, Nov. 21, 1938, July 22, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 1400 | 1240 35.1 | 6.02 1.835 | June 13 | 0615 | *2620 74.2 | 7.39 2.252 |
| June 12 | 2200 | 2090 59.2 | 6.94 2.115 | | | | |

Minimum discharge, 4.4 ft³/s (0.12 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1 | 4.8 | 11 | 9.5 | 16 | 134 | 29 | 37 | 39 | 13 | 16 | 10 | 8.2 |
| 2 | 5.4 | 9.9 | 15 | 16 | 63 | 45 | 34 | 35 | 12 | 15 | 8.9 | 8.2 |
| 3 | 5.0 | 9.3 | 12 | 25 | 570 | 60 | 39 | 31 | 12 | 15 | 8.4 | 7.2 |
| 4 | 4.8 | 8.7 | 11 | 116 | 210 | 49 | 33 | 28 | 23 | 16 | 7.9 | 6.7 |
| 5 | 5.0 | 8.3 | 9.7 | 62 | 104 | 44 | 32 | 26 | 39 | 16 | 14 | 6.7 |
| 6 | 5.0 | 8.0 | 8.7 | 38 | 73 | 48 | 33 | 24 | 25 | 14 | 21 | 6.7 |
| 7 | 4.8 | 7.2 | 8.3 | 30 | 53 | 162 | 30 | 23 | 20 | 13 | 14 | 6.4 |
| 8 | 4.6 | 7.2 | 8.4 | 25 | 43 | 121 | 29 | 22 | 17 | 23 | 24 | 6.2 |
| 9 | 4.7 | 7.2 | 7.6 | 22 | 43 | 90 | 32 | 21 | 18 | 17 | 21 | 6.2 |
| 10 | 5.0 | 7.1 | 7.1 | 17 | 36 | 73 | 30 | 19 | 107 | 14 | 15 | 6.4 |
| 11 | 5.2 | 6.9 | 7.2 | 16 | 31 | 63 | 28 | 18 | 69 | 14 | 13 | 6.4 |
| 12 | 5.2 | 6.9 | 7.3 | 16 | 28 | 63 | 28 | 17 | 371 | 15 | 12 | 6.2 |
| 13 | 5.1 | 6.7 | 7.0 | 15 | 28 | 57 | 27 | 17 | 1160 | 13 | 11 | 6.2 |
| 14 | 5.0 | 6.7 | 9.6 | 14 | 26 | 52 | 26 | 16 | 217 | 13 | 10 | 6.2 |
| 15 | 5.1 | 6.7 | 21 | 13 | 25 | 66 | 25 | 15 | 112 | 13 | 9.8 | 6.2 |
| 16 | 5.1 | 6.6 | 25 | 12 | 40 | 93 | 24 | 15 | 81 | 13 | 9.5 | 5.8 |
| 17 | 5.0 | 6.6 | 19 | 11 | 186 | 98 | 27 | 15 | 64 | 12 | 9.2 | 5.6 |
| 18 | 5.1 | 6.4 | 16 | 12 | 144 | 78 | 33 | 13 | 52 | 13 | 8.9 | 5.8 |
| 19 | 5.1 | 6.3 | 12 | 12 | 97 | 69 | 29 | 13 | 43 | 13 | 8.4 | 5.8 |
| 20 | 4.9 | 7.0 | 11 | 12 | 81 | 272 | 28 | 13 | 36 | 11 | 8.4 | 6.4 |
| 21 | 5.0 | 6.6 | 9.2 | 26 | 65 | 172 | 26 | 13 | 33 | 10 | 8.2 | 6.7 |
| 22 | 5.1 | 6.2 | 14 | 26 | 51 | 112 | 25 | 12 | 30 | 10 | 7.6 | 8.9 |
| 23 | 6.0 | 6.2 | 37 | 22 | 43 | 88 | 24 | 14 | 28 | 10 | 7.9 | 7.4 |
| 24 | 5.9 | 8.0 | 41 | 21 | 38 | 73 | 23 | 13 | 25 | 10 | 7.9 | 6.7 |
| 25 | 5.6 | 7.7 | 30 | 21 | 33 | 65 | 23 | 13 | 24 | 9.2 | 7.4 | 6.7 |
| 26 | 10 | 7.4 | 25 | 17 | 30 | 66 | 76 | 12 | 22 | 8.9 | 7.2 | 12 |
| 27 | 159 | 7.5 | 22 | 16 | 31 | 54 | 68 | 16 | 21 | 8.7 | 7.6 | 15 |
| 28 | 35 | 8.6 | 19 | 16 | 29 | 48 | 60 | 13 | 20 | 8.9 | 8.2 | 9.2 |
| 29 | 21 | 7.6 | 17 | 16 | --- | 44 | 50 | 13 | 19 | 9.5 | 7.2 | 8.7 |
| 30 | 16 | 7.2 | 14 | 18 | --- | 42 | 43 | 19 | 19 | 12 | 7.2 | 8.4 |
| 31 | 13 | --- | 14 | 99 | --- | 41 | --- | 14 | --- | 12 | 7.9 | --- |
| TOTAL | 381.5 | 223.7 | 474.6 | 798 | 2335 | 2437 | 1022 | 572 | 2732 | 398.2 | 328.7 | 219.2 |
| MEAN | 12.3 | 7.46 | 15.3 | 25.7 | 83.4 | 78.6 | 34.1 | 18.5 | 91.1 | 12.8 | 10.6 | 7.31 |
| MAX | 159 | 11 | 41 | 116 | 570 | 272 | 76 | 39 | 1160 | 23 | 24 | 15 |
| MIN | 4.6 | 6.2 | 7.0 | 11 | 25 | 29 | 23 | 12 | 12 | 8.7 | 7.2 | 5.6 |
| CFSM | .35 | .21 | .44 | .73 | 2.38 | 2.25 | .97 | .53 | 2.60 | .37 | .30 | .21 |
| IN. | .41 | .24 | .50 | .85 | 2.48 | 2.59 | 1.09 | .61 | 2.90 | .42 | .35 | .23 |

| | | | | | | | |
|-------------|-------|---------|-----------|----------|---------|----------|----------|
| CAL YR 1981 | TOTAL | 5075.3 | MEAN 13.9 | MAX 171 | MIN 4.6 | CFSM .40 | IN 5.39 |
| WTR YR 1982 | TOTAL | 11921.9 | MEAN 32.7 | MAX 1160 | MIN 4.6 | CFSM .93 | IN 12.67 |

JAMES RIVER BASIN

02024000 MAURY RIVER NEAR BUENA VISTA, VA

LOCATION.--Lat 37°45'45", long 79°23'30", Rockbridge County, Hydrologic Unit 02080202, on right bank 0.5 mi (0.8 km) downstream from South River and 2.8 mi (4.5 km) northwest of Buena Vista.

DRAINAGE AREA.--646 mi² (1,673 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River near Buena Vista.

REVISED RECORDS.--WSP 952: 1940-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 846.58 ft (258.038 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calfpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 655 ft³/s (18.55 m³/s), 13.77 in/yr (350 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft³/s (2,970 m³/s) Aug. 20, 1969, gage height, 31.23 ft (9.159 m), from floodmarks, from rating curve extended above 17,000 ft³/s (480 m³/s) on basis of slope-area measurement of peak flow; minimum, 20 ft³/s (0.57 m³/s) Oct. 10, 1941, occurred during filling of a small reservoir 2 mi (3 km) upstream; unqualified minimum, 37 ft³/s (1.05 m³/s) Sept. 9, 1966; minimum gage height, 0.98 ft (0.299 m) Jan. 5, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of about 22 ft (6.7 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,200 ft³/s (180 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2400 | 10200 289 | 10.24 3.121 | June 10 | 2000 | 6820 193 | 8.26 2.518 |
| Mar. 21 | 0130 | 7760 220 | 8.85 2.697 | June 13 | 1830 | *19400 549 | 14.55 4.435 |

Minimum discharge, 68 ft³/s (1.93 m³/s) Oct. 8, 9, gage height, 1.08 ft (0.329 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|-----------|--------|-----------|----------|-------|-------|-------|------|------|
| 1 | 73 | 352 | 137 | 397 | 2920 | 685 | 798 | 795 | 792 | 332 | 308 | 166 |
| 2 | 79 | 300 | 189 | 403 | 2070 | 732 | 721 | 699 | 532 | 304 | 251 | 168 |
| 3 | 80 | 266 | 248 | 430 | 5340 | 965 | 676 | 624 | 410 | 290 | 223 | 161 |
| 4 | 78 | 239 | 281 | 1480 | 7180 | 935 | 769 | 533 | 596 | 313 | 206 | 149 |
| 5 | 79 | 219 | 275 | 2980 | 3220 | 873 | 748 | 485 | 932 | 696 | 199 | 143 |
| 6 | 77 | 228 | 255 | 1700 | 2150 | 842 | 754 | 453 | 1200 | 421 | 299 | 139 |
| 7 | 74 | 214 | 231 | 1210 | 1580 | 1480 | 684 | 424 | 880 | 344 | 462 | 137 |
| 8 | 72 | 195 | 218 | 935 | 1240 | 2780 | 613 | 403 | 647 | 361 | 509 | 134 |
| 9 | 72 | 180 | 208 | 752 | 1160 | 2070 | 598 | 381 | 608 | 349 | 659 | 133 |
| 10 | 73 | 194 | 193 | 529 | 1450 | 1630 | 601 | 353 | 3160 | 329 | 409 | 133 |
| 11 | 75 | 210 | 176 | 447 | 1220 | 1360 | 559 | 331 | 4190 | 292 | 324 | 135 |
| 12 | 77 | 196 | 179 | 498 | 1000 | 1300 | 532 | 315 | 2850 | 302 | 348 | 132 |
| 13 | 91 | 194 | 168 | 502 | 884 | 1250 | 516 | 302 | 16400 | 402 | 279 | 130 |
| 14 | 135 | 194 | 179 | 457 | 784 | 1160 | 504 | 289 | 9060 | 321 | 251 | 130 |
| 15 | 148 | 180 | 306 | 446 | 700 | 1120 | 475 | 275 | 3480 | 295 | 236 | 133 |
| 16 | 149 | 155 | 538 | 399 | 736 | 1330 | 451 | 270 | 2360 | 336 | 223 | 129 |
| 17 | 145 | 144 | 488 | 355 | 1840 | 1870 | 442 | 259 | 1850 | 278 | 266 | 124 |
| 18 | 131 | 161 | 414 | 317 | 4240 | 1910 | 742 | 247 | 1470 | 360 | 265 | 119 |
| 19 | 111 | 159 | 343 | 332 | 2610 | 1600 | 759 | 237 | 1140 | 380 | 354 | 119 |
| 20 | 114 | 158 | 315 | 297 | 2150 | 3720 | 664 | 260 | 937 | 490 | 287 | 127 |
| 21 | 141 | 145 | 300 | 417 | 1840 | 5610 | 557 | 262 | 782 | 395 | 249 | 133 |
| 22 | 128 | 126 | 317 | 933 | 1540 | 3410 | 508 | 249 | 674 | 326 | 223 | 144 |
| 23 | 132 | 116 | 407 | 705 | 1270 | 2360 | 467 | 272 | 590 | 288 | 209 | 148 |
| 24 | 148 | 131 | 973 | 663 | 1090 | 1800 | 439 | 273 | 524 | 281 | 198 | 135 |
| 25 | 123 | 139 | 982 | 599 | 949 | 1460 | 419 | 251 | 476 | 265 | 189 | 130 |
| 26 | 141 | 129 | 771 | 555 | 814 | 1490 | 622 | 277 | 441 | 255 | 176 | 177 |
| 27 | 1340 | 126 | 630 | 437 | 761 | 1220 | 1220 | 329 | 420 | 233 | 171 | 308 |
| 28 | 2460 | 130 | 540 | 437 | 741 | 1060 | 1480 | 301 | 394 | 222 | 175 | 240 |
| 29 | 1070 | 131 | 463 | 440 | --- | 937 | 1190 | 283 | 366 | 216 | 166 | 203 |
| 30 | 622 | 127 | 398 | 401 | --- | 860 | 949 | 359 | 353 | 234 | 158 | 171 |
| 31 | 448 | --- | 348 | 755 | --- | 828 | --- | 384 | --- | 327 | 163 | --- |
| TOTAL | 8686 | 5438 | 11470 | 21208 | 53479 | 50647 | 20457 | 11175 | 58514 | 10237 | 8435 | 4530 |
| MEAN | 280 | 181 | 370 | 684 | 1910 | 1634 | 682 | 360 | 1950 | 330 | 272 | 151 |
| MAX | 2460 | 352 | 982 | 2980 | 7180 | 5610 | 1480 | 795 | 16400 | 696 | 659 | 308 |
| MIN | 72 | 116 | 137 | 297 | 700 | 685 | 419 | 237 | 353 | 216 | 158 | 119 |
| CFSM | .43 | .28 | .57 | 1.06 | 2.96 | 2.53 | 1.06 | .56 | 3.02 | .51 | .42 | .23 |
| IN. | .50 | .31 | .66 | 1.22 | 3.08 | 2.92 | 1.18 | .64 | 3.37 | .59 | .49 | .26 |
| CAL YR 1981 | TOTAL | 109481 | MEAN 300 | MAX 2590 | MIN 57 | CFSM .46 | IN 6.30 | | | | | |
| WTR YR 1982 | TOTAL | 264276 | MEAN 724 | MAX 16400 | MIN 72 | CFSM 1.12 | IN 15.22 | | | | | |

02025500 JAMES RIVER AT HOLCOMBS ROCK, VA

LOCATION.--Lat 37°30'04", long 79°15'46", Bedford County, Hydrologic Unit 02080203, on right bank at Holcombs Rock, 0.9 mi (1.4 km) downstream from Pedlar River, and at mile 268.6 (432.2 km).

DRAINAGE AREA.--3,259 mi² (8,441 km²).

PERIOD OF RECORD.--January 1900 to September 1915 (gage heights only), October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Published as "at Salt Creek" December 1926 to June 1931.

REVISED RECORDS.--WSP 972: 1913(M), 1932-33, 1935(M), 1936. WSP 1303: 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 548.53 ft (167.192 m) National Geodetic Vertical Datum of 1929.

January 1900 to September 1915, nonrecording gage in powerhouse of Owens Illinois Glass Company 1,000 ft (305 m) upstream at different datum. December 1926 to June 1931, water-stage recorder at site 2 mi (3.2 km) downstream at different datum.

REMARKS.--Records good. Some diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 117.5 mi (189 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 3,574 ft³/s (101.2 m³/s), 14.89 in/yr (378 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s (4,250 m³/s) Aug. 20, 1969, gage height, 35.50 ft (10.820 m), from rating curve extended above 73,000 ft³/s (2,100 m³/s) on basis of records for other stations in James River basin; minimum, 71 ft³/s (2.01 m³/s) Oct. 24, 1963; minimum daily, 223 ft³/s (6.32 m³/s) July 28, 1930; minimum gage height, 2.91 ft (0.887 m) Oct. 5, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 31.3 ft (9.54 m), from floodmarks, discharge, 118,000 ft³/s (3,340 m³/s), from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25,000 ft³/s (710 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Feb. 4 | 0815 | 42900 | 1210 | 18.86 | 5.749 | June 13 | 2315 | *67900 | 1920 | 23.67 | 7.215 |

Minimum discharge, 122 ft³/s (3.46 m³/s) Oct. 2, gage height, 3.15 ft (0.960 m).

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|--------|-------|-------|
| 1 | 477 | 1520 | 832 | 2120 | 5650 | 3410 | 3400 | 5350 | 3880 | 1790 | 1430 | 891 |
| 2 | 280 | 1360 | 911 | 2040 | 9050 | 3410 | 3020 | 4310 | 3600 | 1730 | 1390 | 920 |
| 3 | 422 | 1220 | 1020 | 2130 | 15100 | 4410 | 3070 | 3850 | 3030 | 1580 | 1310 | 891 |
| 4 | 453 | 1070 | 1280 | 4220 | 38900 | 5440 | 3070 | 3420 | 3460 | 1610 | 1230 | 837 |
| 5 | 461 | 1040 | 1280 | 16200 | 21700 | 5030 | 3070 | 3100 | 3830 | 1920 | 1080 | 810 |
| 6 | 467 | 997 | 1300 | 10300 | 13900 | 4680 | 3060 | 2780 | 4490 | 1920 | 1180 | 792 |
| 7 | 474 | 934 | 1090 | 6290 | 9230 | 5390 | 3080 | 2570 | 3980 | 1650 | 1580 | 756 |
| 8 | 523 | 871 | 1090 | 5180 | 7230 | 13000 | 2970 | 2370 | 3230 | 1570 | 1860 | 720 |
| 9 | 469 | 788 | 1070 | 4330 | 5860 | 11800 | 2980 | 2340 | 3200 | 1520 | 2380 | 756 |
| 10 | 475 | 809 | 999 | 3340 | 5290 | 9350 | 2960 | 2120 | 5080 | 1610 | 2060 | 683 |
| 11 | 487 | 815 | 977 | 2690 | 5570 | 7140 | 2800 | 1990 | 11700 | 1500 | 1750 | 771 |
| 12 | 487 | 802 | 836 | 2240 | 5160 | 5950 | 2500 | 1880 | 9450 | 1780 | 1550 | 696 |
| 13 | 775 | 797 | 871 | 2280 | 4860 | 5600 | 2400 | 1790 | 45200 | 1860 | 1340 | 718 |
| 14 | 745 | 795 | 875 | 2240 | 4090 | 5230 | 2280 | 1730 | 51700 | 2010 | 1290 | 746 |
| 15 | 747 | 777 | 1160 | 2230 | 3760 | 5100 | 2300 | 1660 | 22600 | 1740 | 1200 | 704 |
| 16 | 759 | 725 | 1930 | 2160 | 3260 | 7690 | 2260 | 1590 | 14800 | 1520 | 1130 | 750 |
| 17 | 766 | 760 | 2430 | 1820 | 4980 | 12200 | 2290 | 1520 | 11300 | 1570 | 1110 | 713 |
| 18 | 765 | 666 | 2050 | 1530 | 18100 | 12100 | 2450 | 1510 | 7870 | 1500 | 1450 | 699 |
| 19 | 809 | 708 | 1780 | 1760 | 17300 | 9860 | 3080 | 1440 | 5440 | 1740 | 1390 | 695 |
| 20 | 806 | 743 | 1430 | 1750 | 12700 | 9740 | 2950 | 1430 | 4190 | 1700 | 1240 | 704 |
| 21 | 682 | 704 | 1120 | 1900 | 9590 | 21000 | 2840 | 1540 | 3630 | 1700 | 1170 | 793 |
| 22 | 733 | 700 | 1280 | 3010 | 7500 | 18100 | 2730 | 1510 | 3160 | 1590 | 1090 | 766 |
| 23 | 755 | 692 | 1590 | 4490 | 6520 | 13500 | 2440 | 1500 | 2770 | 1460 | 1000 | 843 |
| 24 | 531 | 705 | 3250 | 3840 | 5500 | 10500 | 2210 | 1750 | 2480 | 1490 | 998 | 898 |
| 25 | 596 | 773 | 4690 | 3710 | 4690 | 7930 | 2140 | 1700 | 2350 | 1360 | 950 | 875 |
| 26 | 660 | 779 | 3680 | 3410 | 4160 | 6300 | 2550 | 1860 | 2200 | 1310 | 846 | 947 |
| 27 | 2200 | 783 | 2950 | 2980 | 3730 | 5620 | 5240 | 2720 | 2070 | 1330 | 920 | 1440 |
| 28 | 8130 | 769 | 2520 | 2440 | 3590 | 4620 | 9590 | 2840 | 1950 | 1170 | 980 | 1480 |
| 29 | 4950 | 776 | 2210 | 2380 | --- | 4150 | 9470 | 2330 | 1870 | 1150 | 920 | 1340 |
| 30 | 2790 | 783 | 1960 | 2340 | --- | 3810 | 6720 | 2580 | 1770 | 1190 | 910 | 1070 |
| 31 | 1990 | --- | 1790 | 2320 | --- | 3520 | --- | 3190 | --- | 1230 | 864 | --- |
| TOTAL | 35664 | 25661 | 52251 | 109670 | 256970 | 245580 | 101920 | 72270 | 246280 | 488800 | 39598 | 25704 |
| MEAN | 1150 | 855 | 1686 | 3538 | 9178 | 7922 | 3397 | 2331 | 8209 | 1574 | 1277 | 857 |
| MAX | 8130 | 1520 | 4690 | 16200 | 38900 | 21000 | 9590 | 5350 | 51700 | 2010 | 2380 | 1480 |
| MIN | 280 | 666 | 832 | 1530 | 3260 | 3410 | 2140 | 1430 | 1770 | 1150 | 846 | 683 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |
| MEAN# | 1272 | 899 | 1975 | 3777 | 9123 | 7922 | 3400 | 2336 | 8162 | 1505 | 1151 | 735 |
| CFSM# | .39 | .28 | .61 | 1.16 | 2.80 | 2.43 | 1.04 | .72 | 2.50 | .46 | .35 | .23 |
| IN# | .45 | .31 | .70 | 1.34 | 2.92 | 2.80 | 1.16 | .83 | 2.79 | .53 | .40 | .26 |

CAL YR 1981 TOTAL 619666 MEAN 1698 MAX 26200 MIN 244 MEAN# 1792 CFSM# .55 IN# 7.47
WTR YR 1982 TOTAL 1260368 MEAN 3453 MAX 51700 MIN 280 MEAN# 3478 CFSM# 1.07 IN# 14.52

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

02026000 JAMES RIVER AT BENT CREEK, VA

LOCATION.--Lat 37°32'10", long 78°49'30", Nelson County, Hydrologic Unit 02080203, on left bank at town of Bent Creek, 150 ft (46 m) downstream from Bent Creek, 525 ft (160 m) upstream from bridge on U.S. Highway 60, 1.3 mi (2.1 km) southeast of Gladstone, and at mile 227.8 (366.5 km).

DRAINAGE AREA.--3,683 mi² (9,539 km²).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to 1926, published as "at Bent Creek, near Gladstone."

REVISED RECORDS.--WSP 742: 1931(m). WSP 972: 1935-36. WSP 1066: 1940. WSP 1203: 1942. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 381.39 ft (116.248 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 12, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 158.3 mi (254.7 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 4,174 ft³/s (118.2 m³/s), 15.39 in/yr (391 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft³/s (4,980 m³/s) June 21, 1972, gage height, 27.13 ft (8.269 m), from high-water mark in gage house, from rating curve extended above 89,000 ft³/s (2,500 m³/s) on basis of velocity-area studies and records for other stations in James River basin; minimum, 222 ft³/s (6.29 m³/s) Oct. 13, 14, 1930, gage height, 2.21 ft (0.674 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 26,500 ft³/s (750 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 1345 | 44100 1250 | 13.32 4.060 | June 14 | 0915 | *69500 1970 | 16.75 5.105 |

Minimum discharge, 483 ft³/s (13.7 m³/s) Oct. 3, 4, 5, 8, 9, gage height, 2.48 ft (0.756 m); minimum daily, 494 ft³/s (14.0 m³/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|-------|-------|-------|
| 1 | 587 | 1890 | 913 | 2770 | 5180 | 4260 | 4230 | 6670 | 4360 | 2130 | 1370 | 661 |
| 2 | 506 | 1550 | 999 | 2670 | 9720 | 4190 | 4020 | 5580 | 4660 | 1980 | 1670 | 1370 |
| 3 | 506 | 1370 | 1070 | 3180 | 15200 | 4790 | 3610 | 4970 | 4040 | 2000 | 1540 | 763 |
| 4 | 494 | 1340 | 1190 | 5960 | 39100 | 6240 | 3710 | 4330 | 8420 | 1960 | 1290 | 1370 |
| 5 | 494 | 1120 | 1480 | 13400 | 26200 | 6410 | 3970 | 3940 | 8240 | 4810 | 1480 | 636 |
| 6 | 517 | 1060 | 1370 | 13600 | 16100 | 6160 | 3900 | 3450 | 5990 | 2840 | 1320 | 956 |
| 7 | 624 | 1120 | 1320 | 8210 | 10900 | 6500 | 3570 | 3180 | 5360 | 2170 | 1820 | 927 |
| 8 | 517 | 1120 | 1210 | 6590 | 8680 | 12100 | 3550 | 2550 | 4360 | 1920 | 1800 | 927 |
| 9 | 661 | 899 | 1240 | 5610 | 7470 | 13500 | 3920 | 2550 | 4160 | 2370 | 2750 | 790 |
| 10 | 624 | 844 | 1130 | 4680 | 6130 | 11000 | 3230 | 2840 | 6610 | 2150 | 2710 | 1010 |
| 11 | 552 | 999 | 1100 | 3850 | 6590 | 9190 | 3640 | 2510 | 13100 | 1760 | 2230 | 763 |
| 12 | 686 | 858 | 1070 | 2770 | 6100 | 7260 | 3320 | 2170 | 12100 | 1870 | 2990 | 984 |
| 13 | 661 | 790 | 927 | 2510 | 6050 | 6820 | 2860 | 1940 | 29100 | 2390 | 2090 | 711 |
| 14 | 844 | 899 | 970 | 2970 | 5470 | 6470 | 2800 | 1830 | 61900 | 2510 | 1470 | 885 |
| 15 | 817 | 970 | 1540 | 3140 | 4810 | 6210 | 2430 | 1710 | 28900 | 2190 | 1430 | 913 |
| 16 | 763 | 790 | 3050 | 2430 | 4310 | 7290 | 2710 | 1820 | 16300 | 2210 | 1290 | 885 |
| 17 | 899 | 673 | 2840 | 2690 | 4710 | 12000 | 2550 | 1850 | 12800 | 1780 | 1550 | 763 |
| 18 | 844 | 871 | 2750 | 2170 | 13600 | 13200 | 2770 | 1780 | 9980 | 1500 | 2020 | 858 |
| 19 | 817 | 817 | 2130 | 2060 | 19400 | 11400 | 3570 | 1710 | 7230 | 1760 | 1620 | 750 |
| 20 | 956 | 790 | 1870 | 2450 | 14200 | 10200 | 3610 | 1780 | 5660 | 1920 | 1870 | 871 |
| 21 | 858 | 927 | 1620 | 2270 | 11200 | 17300 | 3480 | 1690 | 4860 | 1890 | 1320 | 858 |
| 22 | 737 | 885 | 1270 | 2670 | 9060 | 20300 | 3570 | 1890 | 4040 | 1920 | 1090 | 913 |
| 23 | 817 | 844 | 1600 | 5070 | 7710 | 14800 | 3030 | 1890 | 3610 | 1980 | 1300 | 899 |
| 24 | 956 | 737 | 2490 | 5470 | 6990 | 12100 | 2530 | 1740 | 3010 | 2430 | 1340 | 899 |
| 25 | 699 | 858 | 5390 | 4710 | 5910 | 9880 | 2470 | 2170 | 2820 | 1600 | 970 | 999 |
| 26 | 830 | 942 | 5390 | 4510 | 5390 | 7710 | 3320 | 1830 | 2710 | 1520 | 1070 | 1010 |
| 27 | 3050 | 885 | 3920 | 4110 | 4940 | 7020 | 4660 | 2410 | 2310 | 1830 | 1090 | 1670 |
| 28 | 6470 | 844 | 3320 | 3520 | 4710 | 5990 | 9130 | 4210 | 2450 | 1390 | 1240 | 1660 |
| 29 | 7830 | 970 | 2770 | 2900 | --- | 5420 | 11300 | 3030 | 2150 | 1480 | 1100 | 1620 |
| 30 | 4230 | 885 | 2370 | 2800 | --- | 4970 | 8300 | 3010 | 2090 | 1070 | 1350 | 1320 |
| 31 | 2690 | --- | 2470 | 2570 | --- | 4660 | --- | 3410 | --- | 1850 | 1060 | --- |
| TOTAL | 42536 | 29547 | 62779 | 134310 | 285830 | 275340 | 119760 | 86440 | 283320 | 63180 | 49240 | 29641 |
| MEAN | 1372 | 985 | 2025 | 4333 | 10210 | 8882 | 3992 | 2788 | 9444 | 2038 | 1588 | 988 |
| MAX | 7830 | 1890 | 5390 | 13600 | 39100 | 20300 | 11300 | 6670 | 61900 | 4810 | 2990 | 1670 |
| MIN | 494 | 673 | 913 | 2060 | 4310 | 4190 | 2430 | 1690 | 2090 | 1070 | 970 | 636 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |

CAL YR 1981 TOTAL 698016 MEAN 1912 MAX 20700 MIN 467 MEAN# 2006 CFSM# .54 IN# 7.40
WTR YR 1982 TOTAL 1461923 MEAN 4005 MAX 61900 MIN 494 MEAN# 4030 CFSM# 1.09 IN# 14.86

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
* Adjusted for change in contents.

JAMES RIVER BASIN

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02027000 TYE RIVER NEAR LOVINGSTON, VA

LOCATION.--Lat 37°42'55", long 78°58'55", Nelson County, Hydrologic Unit 02080203, on right bank at downstream side of bridge on State Highway 158, 3.5 mi (5.6 km) downstream from Hat Creek, 4.8 mi (7.7 km) upstream from Piney River, and 6.8 mi (10.9 km) southwest of Lovington.

DRAINAGE AREA.--92.8 mi² (240.4 km²).

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 578.39 ft (176.293 m) National Geodetic Vertical Datum of 1929. Sept. 15, 1969, to Oct. 15, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good above 40 ft³/s (1.13 m³/s) and fair below.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 154 ft³/s (4.361 m³/s), 22.54 in/yr (573 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s (2,270 m³/s) Aug. 20, 1969, gage height, 29.0 ft (8.84 m), from floodmarks, from rating curve extended above 7,600 ft³/s (220 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.50 ft³/s (0.014 m³/s) Sept. 10, 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,350 ft³/s (66.6 m³/s) at 0745 hours June 13, gage height, 5.94 ft (1.811 m), no other peak above base of 1,600 ft³/s (45 m³/s); minimum daily, 14 ft³/s (0.40 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 32 | 119 | 48 | 235 | 445 | 168 | 163 | 211 | 116 | 95 | 57 | 27 |
| 2 | 34 | 108 | 64 | 209 | 302 | 170 | 145 | 197 | 101 | 83 | 51 | 28 |
| 3 | 32 | 97 | 57 | 209 | 668 | 175 | 226 | 182 | 95 | 81 | 49 | 30 |
| 4 | 32 | 87 | 51 | 334 | 664 | 161 | 238 | 170 | 132 | 114 | 48 | 28 |
| 5 | 26 | 106 | 55 | 338 | 499 | 158 | 206 | 158 | 258 | 161 | 49 | 26 |
| 6 | 26 | 104 | 49 | 290 | 391 | 156 | 204 | 149 | 202 | 99 | 79 | 25 |
| 7 | 25 | 77 | 49 | 250 | 312 | 233 | 187 | 143 | 163 | 83 | 83 | 24 |
| 8 | 23 | 71 | 48 | 209 | 269 | 238 | 180 | 138 | 143 | 77 | 73 | 22 |
| 9 | 23 | 66 | 46 | 187 | 258 | 216 | 185 | 130 | 138 | 108 | 66 | 21 |
| 10 | 21 | 62 | 46 | 141 | 221 | 204 | 170 | 121 | 341 | 116 | 58 | 20 |
| 11 | 23 | 58 | 44 | 121 | 192 | 194 | 156 | 112 | 341 | 97 | 51 | 20 |
| 12 | 21 | 57 | 42 | 110 | 178 | 194 | 147 | 106 | 309 | 79 | 67 | 19 |
| 13 | 21 | 55 | 42 | 105 | 170 | 185 | 143 | 99 | 1590 | 67 | 51 | 18 |
| 14 | 21 | 53 | 53 | 100 | 158 | 175 | 138 | 95 | 916 | 67 | 49 | 17 |
| 15 | 21 | 51 | 138 | 92 | 149 | 180 | 132 | 89 | 584 | 145 | 49 | 17 |
| 16 | 21 | 51 | 145 | 88 | 168 | 192 | 127 | 85 | 438 | 127 | 49 | 19 |
| 17 | 20 | 51 | 112 | 85 | 373 | 197 | 141 | 81 | 355 | 83 | 55 | 17 |
| 18 | 20 | 49 | 104 | 81 | 481 | 185 | 149 | 77 | 293 | 71 | 58 | 16 |
| 19 | 25 | 48 | 78 | 80 | 438 | 185 | 132 | 73 | 250 | 75 | 46 | 14 |
| 20 | 21 | 48 | 60 | 85 | 398 | 427 | 130 | 77 | 214 | 73 | 37 | 16 |
| 21 | 20 | 44 | 70 | 110 | 355 | 402 | 127 | 104 | 190 | 64 | 35 | 17 |
| 22 | 20 | 42 | 99 | 98 | 309 | 369 | 121 | 163 | 175 | 58 | 33 | 19 |
| 23 | 25 | 40 | 158 | 86 | 274 | 318 | 116 | 168 | 158 | 89 | 32 | 21 |
| 24 | 39 | 48 | 168 | 80 | 245 | 283 | 114 | 106 | 143 | 77 | 30 | 17 |
| 25 | 32 | 46 | 156 | 76 | 209 | 252 | 112 | 95 | 136 | 60 | 28 | 18 |
| 26 | 37 | 44 | 143 | 74 | 187 | 263 | 250 | 87 | 132 | 57 | 27 | 20 |
| 27 | 640 | 48 | 134 | 71 | 185 | 209 | 274 | 108 | 123 | 57 | 25 | 95 |
| 28 | 322 | 49 | 125 | 108 | 175 | 192 | 274 | 152 | 112 | 57 | 29 | 40 |
| 29 | 204 | 44 | 116 | 89 | --- | 185 | 250 | 114 | 108 | 55 | 27 | 39 |
| 30 | 161 | 42 | 104 | 75 | --- | 175 | 226 | 114 | 104 | 57 | 26 | 25 |
| 31 | 136 | --- | 108 | 149 | --- | 170 | --- | 101 | --- | 60 | 25 | --- |
| TOTAL | 2124 | 1865 | 2712 | 4365 | 8673 | 6811 | 5163 | 3805 | 8360 | 2592 | 1442 | 735 |
| MEAN | 68.5 | 62.2 | 87.5 | 141 | 310 | 220 | 172 | 123 | 279 | 83.6 | 46.5 | 24.5 |
| MAX | 640 | 119 | 168 | 338 | 668 | 427 | 274 | 211 | 1590 | 161 | 83 | 95 |
| MIN | 20 | 40 | 42 | 71 | 149 | 156 | 112 | 73 | 95 | 55 | 25 | 14 |
| CFSM | .74 | .67 | .94 | 1.52 | 3.34 | 2.37 | 1.85 | 1.33 | 3.01 | .90 | .50 | .26 |
| IN. | .85 | .75 | 1.09 | 1.75 | 3.48 | 2.73 | 2.07 | 1.53 | 3.35 | 1.04 | .58 | .29 |
| CAL YR 1981 | TOTAL | 30247 | MEAN | 82.9 | MAX | 687 | MIN | 12 | CFSM | .89 | IN | 12.12 |
| WTR YR 1982 | TOTAL | 48647 | MEAN | 133 | MAX | 1590 | MIN | 14 | CFSM | 1.43 | IN | 19.50 |

02027500 PINEY RIVER AT PINEY RIVER, VA

LOCATION.--Lat 37°42'08", long 79°01'40", Nelson County, Hydrologic Unit 02080203, on left bank at upstream side of bridge on State Highway 151, 0.2 mi (0.3 km) southwest of Piney River Post Office, 1.7 mi (2.7 km) downstream from Indian Creek, and 2.5 mi (4.0 km) southeast of Lowesville.

DRAINAGE AREA.--47.6 mi² (123.3 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 633.58 ft (193.115 m) National Geodetic Vertical Datum of 1929. Prior to May 27, 1969, water-stage recorder, and Nov. 4, 1969, to Feb. 26, 1970, nonrecording gage at site 20 ft (6 m) downstream from former highway bridge at same datum. Feb. 26, 1970, to Sept. 20, 1973, on right bank 20 ft (6 m) upstream from bridge at same datum.

REMARKS.--Records good except those for period of no gage-height record, June 11 to Sept. 30, which are fair. Periodic dewatering of upstream quarries adds small amount of inflow. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 93.7 ft³/s (2.654 m³/s), 26.73 in/yr (679 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s (1,080 m³/s) Aug. 20, 1969, gage height, 13.8 ft (4.21 m), from floodmarks, from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 1.1 ft³/s (0.031 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1949 reached a stage of 9.9 ft (3.02 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) time unknown June 13, gage height, 4.60 ft (1.402 m), from high-water mark in well, no other peak above base of 650 ft³/s (18 m³/s); minimum daily, 9.4 ft³/s (0.27 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 15 | 99 | 32 | 155 | 178 | 115 | 105 | 146 | 47 | 60 | 44 | 18 |
| 2 | 18 | 87 | 38 | 142 | 162 | 115 | 97 | 135 | 43 | 66 | 39 | 20 |
| 3 | 16 | 78 | 33 | 138 | 320 | 115 | 125 | 125 | 43 | 50 | 33 | 23 |
| 4 | 15 | 70 | 33 | 220 | 356 | 108 | 130 | 115 | 49 | 60 | 29 | 21 |
| 5 | 15 | 72 | 34 | 200 | 299 | 106 | 130 | 106 | 96 | 80 | 25 | 20 |
| 6 | 15 | 63 | 33 | 195 | 253 | 106 | 132 | 99 | 70 | 60 | 40 | 19 |
| 7 | 15 | 56 | 33 | 178 | 209 | 137 | 125 | 93 | 64 | 48 | 52 | 18 |
| 8 | 14 | 53 | 34 | 158 | 180 | 142 | 120 | 90 | 64 | 37 | 48 | 17 |
| 9 | 14 | 49 | 33 | 142 | 168 | 142 | 120 | 84 | 85 | 30 | 45 | 16 |
| 10 | 14 | 47 | 32 | 110 | 147 | 142 | 110 | 78 | 211 | 45 | 40 | 15 |
| 11 | 15 | 44 | 31 | 98 | 133 | 137 | 103 | 73 | 180 | 38 | 33 | 14 |
| 12 | 14 | 42 | 32 | 88 | 122 | 135 | 97 | 69 | 150 | 33 | 43 | 14 |
| 13 | 14 | 39 | 32 | 75 | 115 | 128 | 93 | 66 | 800 | 29 | 34 | 13 |
| 14 | 14 | 38 | 37 | 65 | 105 | 120 | 90 | 62 | 670 | 39 | 27 | 12 |
| 15 | 14 | 37 | 75 | 60 | 99 | 123 | 84 | 60 | 500 | 58 | 21 | 12 |
| 16 | 13 | 35 | 75 | 54 | 111 | 130 | 81 | 57 | 350 | 70 | 18 | 11 |
| 17 | 13 | 35 | 64 | 53 | 211 | 132 | 93 | 53 | 280 | 50 | 19 | 10 |
| 18 | 14 | 33 | 63 | 54 | 310 | 130 | 94 | 52 | 230 | 27 | 32 | 9.8 |
| 19 | 15 | 32 | 60 | 58 | 292 | 133 | 88 | 49 | 200 | 28 | 30 | 9.4 |
| 20 | 14 | 33 | 50 | 62 | 266 | 242 | 90 | 52 | 175 | 30 | 28 | 10 |
| 21 | 14 | 31 | 60 | 69 | 240 | 250 | 88 | 52 | 150 | 28 | 25 | 11 |
| 22 | 14 | 30 | 69 | 60 | 211 | 237 | 85 | 60 | 130 | 26 | 23 | 12 |
| 23 | 17 | 29 | 87 | 52 | 187 | 215 | 82 | 57 | 120 | 24 | 21 | 13 |
| 24 | 21 | 32 | 91 | 50 | 168 | 193 | 79 | 52 | 110 | 60 | 19 | 12 |
| 25 | 16 | 31 | 96 | 49 | 151 | 174 | 76 | 48 | 100 | 40 | 18 | 11 |
| 26 | 37 | 30 | 100 | 52 | 137 | 168 | 146 | 48 | 90 | 38 | 17 | 10 |
| 27 | 323 | 32 | 94 | 54 | 133 | 146 | 168 | 66 | 80 | 37 | 16 | 54 |
| 28 | 247 | 32 | 86 | 75 | 123 | 133 | 174 | 81 | 75 | 35 | 19 | 35 |
| 29 | 168 | 29 | 80 | 56 | --- | 123 | 168 | 59 | 70 | 40 | 18 | 25 |
| 30 | 135 | 28 | 80 | 55 | --- | 116 | 156 | 57 | 65 | 42 | 17 | 11 |
| 31 | 113 | --- | 78 | 84 | --- | 111 | --- | 50 | --- | 43 | 16 | --- |
| TOTAL | 1396 | 1346 | 1775 | 2961 | 5386 | 4504 | 3329 | 2294 | 5297 | 1351 | 889 | 496.2 |
| MEAN | 45.0 | 44.9 | 57.3 | 95.5 | 192 | 145 | 111 | 74.0 | 177 | 43.6 | 28.7 | 16.5 |
| MAX | 323 | 99 | 100 | 220 | 356 | 250 | 174 | 146 | 800 | 80 | 52 | 54 |
| MIN | 13 | 28 | 31 | 49 | 99 | 106 | 76 | 48 | 43 | 24 | 16 | 9.4 |
| CFSM | .95 | .94 | 1.20 | 2.01 | 4.03 | 3.05 | 2.33 | 1.56 | 3.72 | .92 | .60 | .35 |
| IN. | 1.09 | 1.05 | 1.39 | 2.31 | 4.21 | 3.52 | 2.60 | 1.79 | 4.14 | 1.06 | .69 | .39 |

CAL YR 1981 TOTAL 17735.4 MEAN 48.6 MAX 323 MIN 6.0 CFSM 1.02 IN 13.86
WTR YR 1982 TOTAL 31024.2 MEAN 85.0 MAX 800 MIN 9.4 CFSM 1.79 IN 24.25

02027800 BUFFALO RIVER NEAR TYE RIVER, VA

LOCATION.--Lat 37°36'20", long 78°55'25", Nelson County, Hydrologic Unit 02080203, on right bank 35 ft (11 m) upstream from bridge on State Highway 657, 2.1 mi (3.4 km) upstream from mouth, and 3.5 mi (5.6 km) southeast of town of Tye River.

DRAINAGE AREA.--147 mi² (381 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 444.39 ft (135.450 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 169 ft³/s (4.786 m³/s), 15.61 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s (1,270 m³/s) Aug. 20, 1969, gage height, 27.95 ft (8.519 m), from floodmark, from rating curve extended above 1,800 ft³/s (51 m³/s) on basis of computation of flow over dam at gage height 11.03 ft (3.362 m) and slope-area measurement at gage height 27.95 ft (8.519 m); minimum, 3.2 ft³/s (0.091 m³/s) Sept. 8-13, 1966; minimum gage height, 0.28 ft (0.085 m) Sept. 9-13, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s (40 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|-------|---|-------------------------|
| Feb. 3 | 1630 | 2520 | 71.4 | 7.75 | 2.362 | | |
| June 10 | 1315 | 2930 | 83.0 | 8.13 | 2.478 | | |
| | | | | June 13 | 1345 | *3820 | 108 |
| | | | | | | | 9.02 2.749 |

Minimum discharge, 29 ft³/s (0.82 m³/s) Oct. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|------|------|------|-------|------|------|-------|
| 1 | 33 | 122 | 45 | 220 | 646 | 155 | 191 | 180 | 100 | 143 | 85 | 57 |
| 2 | 34 | 109 | 57 | 168 | 368 | 165 | 174 | 174 | 97 | 136 | 75 | 59 |
| 3 | 34 | 99 | 55 | 170 | 1410 | 229 | 198 | 167 | 94 | 134 | 70 | 56 |
| 4 | 32 | 91 | 50 | 498 | 949 | 205 | 211 | 154 | 145 | 165 | 67 | 52 |
| 5 | 32 | 85 | 49 | 363 | 622 | 192 | 180 | 145 | 273 | 279 | 68 | 51 |
| 6 | 31 | 121 | 47 | 249 | 465 | 198 | 187 | 141 | 178 | 180 | 71 | 51 |
| 7 | 32 | 88 | 46 | 200 | 365 | 370 | 169 | 136 | 123 | 152 | 75 | 51 |
| 8 | 31 | 75 | 45 | 165 | 297 | 511 | 167 | 130 | 109 | 130 | 71 | 50 |
| 9 | 30 | 70 | 43 | 141 | 275 | 349 | 180 | 127 | 114 | 134 | 80 | 51 |
| 10 | 29 | 68 | 42 | 114 | 250 | 297 | 171 | 116 | 848 | 191 | 81 | 51 |
| 11 | 31 | 63 | 43 | 130 | 207 | 273 | 163 | 114 | 490 | 160 | 69 | 51 |
| 12 | 32 | 59 | 47 | 120 | 185 | 253 | 156 | 110 | 268 | 120 | 70 | 49 |
| 13 | 31 | 57 | 48 | 115 | 180 | 233 | 154 | 107 | 1590 | 105 | 69 | 49 |
| 14 | 31 | 56 | 53 | 110 | 170 | 218 | 152 | 103 | 807 | 90 | 64 | 48 |
| 15 | 31 | 54 | 162 | 108 | 160 | 222 | 147 | 100 | * 472 | 95 | 63 | 49 |
| 16 | 31 | 53 | 269 | 106 | 169 | 308 | 143 | 98 | 357 | 121 | 63 | 49 |
| 17 | 31 | 52 | 134 | 105 | 351 | 362 | 147 | 97 | 337 | 94 | 69 | 47 |
| 18 | 31 | 49 | 105 | 106 | 506 | 284 | 169 | 98 | 323 | 85 | 132 | 46 |
| 19 | 31 | 48 | 80 | 110 | 438 | 257 | 147 | 92 | 255 | 85 | 91 | 46 |
| 20 | 33 | 46 | 70 | 120 | 391 | 414 | 145 | 95 | 222 | 112 | 70 | 48 |
| 21 | 32 | 46 | 90 | 130 | 322 | 417 | 149 | 112 | 202 | 87 | 64 | 50 |
| 22 | 32 | 44 | 115 | 150 | 264 | 339 | 143 | 98 | 189 | 75 | 61 | 52 |
| 23 | 33 | 44 | 131 | 130 | 222 | 297 | 138 | 130 | 182 | 185 | 60 | 54 |
| 24 | 41 | 46 | 123 | 120 | 198 | 270 | 136 | 103 | 176 | 374 | 62 | 49 |
| 25 | 40 | 52 | 114 | 115 | 180 | 251 | 132 | 100 | 174 | 123 | 59 | 49 |
| 26 | 51 | 49 | 116 | 110 | 160 | 268 | 275 | 95 | 160 | 94 | 56 | 54 |
| 27 | 562 | 48 | 101 | 132 | 163 | 231 | 295 | 114 | 165 | 82 | 56 | 116 |
| 28 | 397 | 49 | 91 | 157 | 171 | 211 | 246 | 178 | 156 | 82 | 61 | 68 |
| 29 | 229 | 45 | 83 | 162 | --- | 200 | 209 | 141 | 147 | 98 | 57 | 56 |
| 30 | 169 | 44 | 74 | 156 | --- | 191 | 193 | 130 | 143 | 81 | 54 | 52 |
| 31 | 140 | --- | 77 | 164 | --- | 187 | --- | 109 | --- | 85 | 55 | --- |
| TOTAL | 2357 | 1932 | 2605 | 4944 | 10084 | 8357 | 5267 | 3794 | 8896 | 4077 | 2148 | 1611 |
| MEAN | 76.0 | 64.4 | 84.0 | 159 | 360 | 270 | 176 | 122 | 297 | 132 | 69.3 | 53.7 |
| MAX | 562 | 122 | 269 | 498 | 1410 | 511 | 295 | 180 | 1590 | 374 | 132 | 116 |
| MIN | 29 | 44 | 42 | 105 | 160 | 155 | 132 | 92 | 94 | 75 | 54 | 46 |
| CFSM | .52 | .44 | .57 | 1.08 | 2.45 | 1.84 | 1.20 | .83 | 2.02 | .90 | .47 | .37 |
| IN. | .60 | .49 | .66 | 1.25 | 2.55 | 2.11 | 1.33 | .96 | 2.25 | 1.03 | .54 | .41 |
| CAL YR 1981 | TOTAL | 28233 | MEAN | 77.4 | MAX | 562 | MIN | 20 | CFSM | .53 | IN | 7.14 |
| WTR YR 1982 | TOTAL | 56072 | MEAN | 154 | MAX | 1590 | MIN | 29 | CFSM | 1.05 | IN | 14.19 |

JAMES RIVER BASIN

02028500 ROCKFISH RIVER NEAR GREENFIELD, VA

LOCATION.--Lat 37°52'10", long 78°49'25", Nelson County, Hydrologic Unit 02080203, on left bank 50 ft (15 m) downstream from bridge on State Highway 634, 2.8 mi (4.5 km) downstream from confluence of North and South Forks, and 4.1 mi (6.6 km) south of Greenfield.

DRAINAGE AREA.--94.6 mi² (245.0 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 530.29 ft (161.632 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1943, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 22 to Sept. 9, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 139 ft³/s (3.936 m³/s), 19.95 in/yr (507 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s (1,980 m³/s) Aug. 20, 1969, gage height, 31.2 ft (9.51 m), from floodmarks, from rating curve extended above 8,500 ft³/s (240 m³/s) on basis of contracted-opening measurement at gage height 18.11 ft (5.520 m), slope-area measurements at gage heights 17.2 ft (5.24 m), 23.4 ft (7.13 m), and 31.2 ft (9.51 m), and peak runoff comparison with nearby stations; minimum, 0.20 ft³/s (0.006 m³/s) Sept. 8-12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.4 ft (7.13 m), from floodmarks, discharge, about 30,000 ft³/s (850 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft³/s (54.4 m³/s) at 0800 hours June 13, gage height, 5.85 ft (1.783 m), no other peak above base of 1,500 ft³/s (42 m³/s); minimum, 9.4 ft³/s (0.27 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 14 | 62 | 32 | 139 | 451 | 139 | 125 | 166 | 156 | 79 | 54 | 22 |
| 2 | 15 | 56 | 54 | 137 | 275 | 148 | 113 | 146 | 110 | 69 | 48 | 25 |
| 3 | 14 | 51 | 45 | 125 | 628 | 150 | 260 | 135 | 99 | 68 | 47 | 27 |
| 4 | 12 | 48 | 42 | 206 | 607 | 135 | 288 | 125 | 147 | 74 | 46 | 20 |
| 5 | 14 | 46 | 44 | 196 | 448 | 129 | 237 | 115 | 432 | 94 | 46 | 16 |
| 6 | 14 | 49 | 43 | 171 | 349 | 123 | 207 | 110 | 285 | 74 | 50 | 16 |
| 7 | 12 | 40 | 41 | 152 | 266 | 186 | 171 | 102 | 204 | 66 | 70 | 15 |
| 8 | 10 | 38 | 41 | 133 | 216 | 207 | 156 | 95 | 164 | 62 | 60 | 14 |
| 9 | 10 | 37 | 38 | 113 | 198 | 181 | 152 | 90 | 139 | 61 | 54 | 15 |
| 10 | 10 | 36 | 37 | 96 | 166 | 168 | 137 | 85 | 333 | 80 | 50 | 15 |
| 11 | 12 | 34 | 37 | 86 | 143 | 161 | 127 | 80 | 336 | 66 | 45 | 14 |
| 12 | 16 | 34 | 34 | 80 | 125 | 161 | 117 | 75 | 304 | 61 | 52 | 11 |
| 13 | 16 | 34 | 32 | 72 | 119 | 148 | 112 | 72 | 1340 | 55 | 46 | 11 |
| 14 | 14 | 34 | 41 | 65 | 110 | 139 | 107 | 70 | 827 | 55 | 42 | 10 |
| 15 | 13 | 33 | 86 | 62 | 105 | 141 | 101 | 67 | 578 | 61 | 39 | 12 |
| 16 | 14 | 33 | 101 | 57 | 110 | 156 | 96 | 64 | 454 | 69 | 39 | 13 |
| 17 | 13 | 33 | 83 | 55 | 435 | 168 | 115 | 63 | 358 | 63 | 39 | 12 |
| 18 | 13 | 32 | 75 | 56 | 542 | 156 | 127 | 60 | 291 | 59 | 44 | 10 |
| 19 | 16 | 31 | 58 | 66 | 400 | 168 | 105 | 63 | 234 | 63 | 40 | 9.6 |
| 20 | 14 | 30 | 55 | 75 | 330 | 359 | 92 | 72 | 184 | 56 | 35 | 11 |
| 21 | 14 | 30 | 60 | 83 | 275 | 394 | 91 | 68 | 150 | 39 | 33 | 12 |
| 22 | 15 | 29 | 66 | 75 | 230 | 333 | 86 | 71 | 134 | 54 | 29 | 14 |
| 23 | 18 | 29 | 73 | 66 | 190 | 288 | 83 | 107 | 121 | 70 | 27 | 15 |
| 24 | 27 | 30 | 78 | 60 | 180 | 250 | 84 | 82 | 109 | 60 | 24 | 12 |
| 25 | 22 | 31 | 79 | 58 | 166 | 225 | 84 | 83 | 100 | 56 | 22 | 12 |
| 26 | 48 | 32 | 79 | 60 | 156 | 231 | 192 | 72 | 98 | 54 | 21 | 28 |
| 27 | 573 | 33 | 78 | 66 | 152 | 187 | 244 | 73 | 94 | 54 | 20 | 69 |
| 28 | 239 | 33 | 75 | 71 | 146 | 164 | 256 | 124 | 88 | 53 | 23 | 29 |
| 29 | 109 | 31 | 72 | 65 | --- | 148 | 219 | 99 | 84 | 52 | 22 | 22 |
| 30 | 84 | 29 | 65 | 66 | --- | 135 | 193 | 115 | 80 | 54 | 21 | 19 |
| 31 | 71 | --- | 64 | 157 | --- | 131 | --- | 174 | --- | 56 | 20 | --- |
| TOTAL | 1486 | 1098 | 1808 | 2969 | 7518 | 5809 | 4477 | 2923 | 8033 | 1937 | 1208 | 530.6 |
| MEAN | 47.9 | 36.6 | 58.3 | 95.8 | 269 | 187 | 149 | 94.3 | 268 | 62.5 | 39.0 | 17.7 |
| MAX | 573 | 62 | 101 | 206 | 628 | 394 | 288 | 174 | 1340 | 94 | 70 | 69 |
| MIN | 10 | 29 | 32 | 55 | 105 | 123 | 83 | 60 | 80 | 39 | 20 | 9.6 |
| CFSM | .51 | .39 | .62 | 1.01 | 2.84 | 1.98 | 1.58 | 1.00 | 2.83 | .66 | .41 | .19 |
| IN. | .58 | .43 | .71 | 1.17 | 2.96 | 2.28 | 1.76 | 1.15 | 3.16 | .76 | .48 | .21 |
| CAL YR 1981 | TOTAL | 18949.2 | MEAN | 51.9 | MAX | 573 | MIN | 5.0 | CFSM | .55 | IN | 7.45 |
| WTR YR 1982 | TOTAL | 39796.6 | MEAN | 109 | MAX | 1340 | MIN | 9.6 | CFSM | 1.15 | IN | 15.65 |

02029000 JAMES RIVER AT SCOTTSVILLE, VA

LOCATION.--Lat 37°47'50", long 78°29'30", Albemarle County, Hydrologic Unit 02080203, on left bank 900 ft (270 m) downstream from bridge on State Highway 20 at Scottsville, 6.8 mi (10.9 km) upstream from Hardware River, and at mile 188.6 (303.5 km).

DRAINAGE AREA.--4,584 mi² (11,873 km²).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303. REVISED RECORDS.--WSP 727: 1931(M). WSP 972: 1936(M), 1940(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 253.18 ft (77.169 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 197.5 mi (317.8 km) upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 5,128 ft³/s (145.2 m³/s), 15.19 in/yr (386 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301,000 ft³/s (8,520 m³/s) June 22, 1972, gage height, 34.02 ft (10.369 m), from floodmarks, from rating curve extended above 120,000 ft³/s (3,400 m³/s) on basis of slope-conveyance study; minimum daily, 300 ft³/s (8.50 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1870 reached a stage of 30.7 ft (9.36 m), discharge, about 215,000 ft³/s (6,100 m³/s), and flood in November 1877 reached a stage of 27.9 ft (8.50 m), discharge, about 160,000 ft³/s (4,500 m³/s), from information by local resident. Flood in March 1913 reached a stage of 25.16 ft (7.669 m), from floodmarks, discharge, 121,000 ft³/s (3,430 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft³/s (990 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 4 | 2245 | 44200 1250 | 16.20 4.938 | June 14 | 1915 | *69800 1980 | 20.08 6.120 |

Minimum discharge, 548 ft³/s (15.5 m³/s) Oct. 10, gage height, 2.08 ft (0.634 m); minimum daily, 573 ft³/s (16.2 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| 1 | 816 | 2780 | 1170 | 3750 | 6080 | 5520 | 5480 | 8620 | 4240 | 2940 | 2050 | 1150 |
| 2 | 749 | 2430 | 1300 | 4660 | 10300 | 5440 | 5240 | 7360 | 5220 | 2640 | 1780 | 1010 |
| 3 | 597 | 2230 | 1440 | 3850 | 20600 | 6090 | 4520 | 6250 | 4990 | 2640 | 2070 | 1410 |
| 4 | 595 | 1800 | 1510 | 6340 | 36400 | 7010 | 5330 | 5750 | 9700 | 2310 | 1730 | 1180 |
| 5 | 573 | 1840 | 1630 | 11900 | 35600 | 8080 | 4870 | 4940 | 10900 | 3430 | 1750 | 1280 |
| 6 | 579 | 1680 | 1900 | 17900 | 21600 | 7730 | 4860 | 4780 | 9620 | 5780 | 1780 | 758 |
| 7 | 586 | 1640 | 1680 | 11300 | 15300 | 7820 | 4830 | 3840 | 6850 | 3450 | 2050 | 1060 |
| 8 | 652 | 1600 | 1710 | 8390 | 11700 | 12400 | 4620 | 3940 | 6050 | 2640 | 2150 | 1060 |
| 9 | 631 | 1500 | 1470 | 7080 | 9900 | 16700 | 4770 | 3160 | 4860 | 3350 | 2650 | 1050 |
| 10 | 689 | 1300 | 1640 | 6140 | 8530 | 13700 | 4500 | 3210 | 6110 | 2620 | 3620 | 921 |
| 11 | 685 | 1150 | 1320 | 4700 | 7920 | 11500 | 4450 | 3170 | 15700 | 3170 | 2970 | 1140 |
| 12 | 618 | 1250 | 1390 | 3870 | 7740 | 9360 | 4260 | 3120 | 15300 | 2850 | 2940 | 881 |
| 13 | 750 | 1150 | 1260 | 3120 | 7420 | 8380 | 4040 | 2670 | 21900 | 2910 | 3330 | 1090 |
| 14 | 698 | 1160 | 1210 | 3210 | 7080 | 7840 | 3630 | 2520 | 64100 | 2870 | 1930 | 805 |
| 15 | 920 | 1210 | 1800 | 3370 | 6130 | 7440 | 3610 | 2350 | 44100 | 3040 | 1640 | 999 |
| 16 | 899 | 1270 | 4290 | 3680 | 5880 | 7810 | 3340 | 2170 | 22600 | 3030 | 1790 | 1030 |
| 17 | 840 | 1080 | 4160 | 2990 | 6520 | 12100 | 3470 | 2250 | 17000 | 2490 | 1990 | 994 |
| 18 | 979 | 954 | 3730 | 2770 | 12200 | 14900 | 3710 | 2430 | 13900 | 2140 | 2460 | 840 |
| 19 | 917 | 1140 | 3240 | 2630 | 23700 | 13600 | 3570 | 2160 | 10300 | 2010 | 2160 | 970 |
| 20 | 909 | 1090 | 2480 | 2660 | 18900 | 13300 | 4540 | 2310 | 7960 | 2740 | 2340 | 825 |
| 21 | 1050 | 1030 | 2220 | 3160 | 14900 | 16500 | 4460 | 2330 | 6560 | 2600 | 1760 | 1010 |
| 22 | 944 | 1180 | 2300 | 3130 | 12000 | 23900 | 4080 | 2260 | 5840 | 2420 | 1540 | 997 |
| 23 | 851 | 1110 | 2280 | 3710 | 10200 | 18500 | 3910 | 3010 | 5060 | 2450 | 1420 | 1060 |
| 24 | 978 | 1120 | 2780 | 5980 | 9030 | 15000 | 3570 | 2470 | 4480 | 4900 | 1750 | 1040 |
| 25 | 1130 | 1040 | 4390 | 5940 | 7820 | 12300 | 3080 | 2780 | 3890 | 2650 | 1330 | 1010 |
| 26 | 995 | 1170 | 6570 | 5180 | 6830 | 10200 | 3660 | 2600 | 3710 | 2350 | 1250 | 1190 |
| 27 | 3120 | 1260 | 5660 | 4700 | 6500 | 8760 | 5730 | 2450 | 3240 | 2170 | 1220 | 1680 |
| 28 | 8960 | 1160 | 4320 | 4010 | 6080 | 7760 | 9590 | 4560 | 3280 | 1960 | 1430 | 2370 |
| 29 | 10300 | 1130 | 3790 | 3870 | --- | 6740 | 12800 | 4680 | 3110 | 1980 | 1370 | 1780 |
| 30 | 6890 | 1240 | 3260 | 3780 | --- | 6360 | 10900 | 3840 | 2900 | 1830 | 1240 | 1800 |
| 31 | 4430 | --- | 2850 | 3690 | --- | 5800 | --- | 3920 | --- | 2130 | 1670 | --- |
| TOTAL | 54330 | 41694 | 80750 | 161460 | 352860 | 328540 | 149420 | 111900 | 343470 | 86490 | 61160 | 34390 |
| MEAN | 1753 | 1390 | 2605 | 5208 | 12600 | 10600 | 4981 | 3610 | 11450 | 2790 | 1973 | 1146 |
| MAX | 10300 | 2780 | 6570 | 17900 | 36400 | 23900 | 12800 | 8620 | 64100 | 5780 | 3620 | 2370 |
| MIN | 573 | 954 | 1170 | 2630 | 5880 | 5440 | 3080 | 2160 | 2900 | 1830 | 1220 | 758 |
| (*) | +122 | +44 | +289 | +239 | -55 | 0 | +3 | +5 | -47 | -69 | -126 | -122 |

CAL YR 1981 TOTAL 869482 MEAN 2382 MAX 24200 MIN 573 MEAN# 2476 CFSM# 0.54 IN# 7.33
WTR YR 1982 TOTAL 1806464 MEAN 4949 MAX 64100 MIN 573 MEAN# 4974 CFSM# 1.09 IN# 14.73

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

JAMES RIVER BASIN

02030000 HARDWARE RIVER BELOW BRIERY RUN, NEAR SCOTTSVILLE, VA

LOCATION.--Lat 37°48'45", long 78°27'20", Fluvanna County, Hydrologic Unit 02080203, on left bank 75 ft (23 m) upstream from bridge on State Highway 637, 0.8 mi (1.3 km) downstream from Briery Run, 2.4 mi (3.9 km) northeast of Scottsville, and 10.8 mi (17.4 km) upstream from mouth.

DRAINAGE AREA.--116 mi² (300 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 952: 1941(M). WSP 1002: 1940, 1943. WSP 1032: 1940, 1944.

GAGE.--Water-stage recorder. Datum of gage is 294.96 ft (89.904 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--44 years, 127 ft³/s (3.600 m³/s), 14.87 in/yr (378 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Aug. 20, 1969, gage height, 31.0 ft (9.45 m), from floodmarks, from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of slope-area measurements at gage heights 23.8 ft (7.25 m) and 31.0 ft (9.45 m); minimum, 0.10 ft³/s (0.003 m³/s) Sept. 5-8, 1966; minimum gage height, 0.81 ft (0.247 m) Sept. 8, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,540 ft³/s (71.9 m³/s) at 2100 hours Feb. 3, gage height, 11.28 ft (3.438 m), no other peak above base of 1,500 ft³/s (42 m³/s); minimum, 14 ft³/s (0.40 m³/s) Oct. 9, gage height, 1.50 ft (0.457 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 16 | 46 | 31 | 297 | 831 | 116 | 135 | 116 | 132 | 106 | 62 | 35 |
| 2 | 18 | 42 | 49 | 264 | 358 | 137 | 127 | 110 | 88 | 70 | 51 | 36 |
| 3 | 18 | 39 | 44 | 116 | 1860 | 176 | 137 | 102 | 82 | 64 | 48 | 51 |
| 4 | 17 | 35 | 41 | 347 | 1110 | 145 | 151 | 94 | 591 | 64 | 44 | 36 |
| 5 | 17 | 34 | 43 | 212 | 373 | 135 | 130 | 88 | 1180 | 67 | 43 | 31 |
| 6 | 18 | 57 | 39 | 123 | 252 | 124 | 130 | 86 | 407 | 62 | 84 | 31 |
| 7 | 17 | 42 | 35 | 99 | 202 | 222 | 120 | 85 | 204 | 56 | 74 | 29 |
| 8 | 16 | 36 | 35 | 81 | 172 | 281 | 118 | 84 | 151 | 52 | 75 | 28 |
| 9 | 15 | 34 | 33 | 74 | 167 | 181 | 123 | 81 | 125 | 52 | 70 | 29 |
| 10 | 16 | 34 | 30 | 47 | 163 | 148 | 124 | 76 | 128 | 80 | 57 | 29 |
| 11 | 16 | 33 | 29 | 76 | 145 | 132 | 116 | 74 | 162 | 72 | 68 | 29 |
| 12 | 18 | 32 | 26 | 70 | 135 | 130 | 114 | 70 | 128 | 68 | 143 | 28 |
| 13 | 19 | 30 | 24 | 66 | 134 | 120 | 111 | 69 | 660 | 55 | 63 | 27 |
| 14 | 17 | 29 | 35 | 63 | 134 | 112 | 108 | 67 | 477 | 51 | 54 | 26 |
| 15 | 18 | 30 | 126 | 61 | 127 | 110 | 104 | 64 | 235 | 55 | 151 | 26 |
| 16 | 19 | 29 | 216 | 60 | 128 | 128 | 102 | 62 | 181 | 51 | 186 | 27 |
| 17 | 17 | 29 | 125 | 60 | 370 | 148 | 104 | 60 | 184 | 48 | 91 | 25 |
| 18 | 16 | 28 | 91 | 60 | 577 | 123 | 114 | 58 | 233 | 44 | 119 | 24 |
| 19 | 17 | 27 | 66 | 61 | 314 | 119 | 102 | 56 | 152 | 44 | 73 | 24 |
| 20 | 18 | 28 | 56 | 63 | 257 | 740 | 101 | 63 | 121 | 48 | 57 | 30 |
| 21 | 19 | 27 | 58 | 84 | 200 | 701 | 99 | 62 | 108 | 42 | 49 | 34 |
| 22 | 16 | 26 | 74 | 99 | 165 | 356 | 96 | 64 | 103 | 39 | 44 | 33 |
| 23 | 20 | 25 | 76 | 80 | 142 | 249 | 93 | 70 | 99 | 92 | 42 | 34 |
| 24 | 24 | 28 | 75 | 69 | 132 | 211 | 92 | 70 | 93 | 294 | 42 | 28 |
| 25 | 24 | 31 | 74 | 62 | 121 | 184 | 91 | 68 | 84 | 81 | 39 | 26 |
| 26 | 44 | 31 | 80 | 68 | 110 | 190 | 177 | 62 | 81 | 60 | 38 | 34 |
| 27 | 378 | 32 | 69 | 50 | 112 | 163 | 236 | 74 | 81 | 51 | 36 | 115 |
| 28 | 240 | 33 | 61 | 47 | 118 | 148 | 282 | 576 | 76 | 50 | 39 | 50 |
| 29 | 91 | 30 | 56 | 64 | --- | 144 | 155 | 138 | 73 | 54 | 36 | 36 |
| 30 | 66 | 28 | 50 | 66 | --- | 144 | 125 | 220 | 78 | 58 | 33 | 34 |
| 31 | 52 | --- | 48 | 99 | --- | 137 | --- | 124 | --- | 72 | 33 | --- |
| TOTAL | 1316 | 985 | 1895 | 3088 | 8909 | 6154 | 3817 | 3093 | 6497 | 2102 | 2044 | 1025 |
| MEAN | 42.5 | 32.8 | 61.1 | 99.6 | 318 | 199 | 127 | 99.8 | 217 | 67.8 | 65.9 | 34.2 |
| MAX | 378 | 57 | 216 | 347 | 1860 | 740 | 282 | 576 | 1180 | 294 | 186 | 115 |
| MIN | 15 | 25 | 24 | 47 | 110 | 110 | 91 | 56 | 73 | 39 | 33 | 24 |
| CFSM | .37 | .28 | .53 | .86 | 2.74 | 1.72 | 1.10 | .86 | 1.87 | .58 | .57 | .30 |
| IN. | .42 | .32 | .61 | .99 | 2.86 | 1.97 | 1.22 | .99 | 2.08 | .67 | .66 | .33 |
| CAL YR 1981 | TOTAL | 15766.6 | MEAN | 43.2 | MAX | 664 | MIN | 9.2 | CFSM | .37 | IN | 5.06 |
| WTR YR 1982 | TOTAL | 40925.0 | MEAN | 112 | MAX | 1860 | MIN | 15 | CFSM | .97 | IN | 13.12 |

02030500 SLATE RIVER NEAR ARVONIA, VA

LOCATION.--Lat 37°42'10", long 78°22'40", Buckingham County, Hydrologic Unit 02080203, on left bank 250 ft (76 m), upstream from bridge on State Highway 676, 1.8 mi (2.9 km) northwest of Arvonias, 2.9 mi (4.7 km) upstream from Hunts Creek, and 3.8 mi (6.1 km) upstream from mouth.

DRAINAGE AREA.--226 mi² (585 km²).

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1928-29, 1932, 1933-34(M), 1935. WSP 2104: 1928(M), 1935-37(M), 1940(M), 1944(M), 1949(M), 1955(M), drainage area. WDR VA-72-1: 1935, 1937, 1944, 1949, 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 238.78 ft (72.780 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Feb. 15, 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 230 ft³/s (6.514 m³/s), 13.82 in/yr (351 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft³/s (1,200 m³/s) June 22, 1972, gage height, 25.10 ft (7.650 m), from high-water mark in gage house, from rating curve extended above 5,900 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 2.0 ft³/s (0.057 m³/s) Sept. 28 to Oct. 2, 1930; minimum gage height, 1.35 ft (0.411 m) Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,100 ft³/s (59 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Oct. 28 | 0100 | 2860 81.0 | 9.67 2.947 | June 5 | 1430 | 4000 113 | 11.14 3.395 |
| Feb. 3 | 1530 | *5640 160 | 12.91 3.935 | | | | |

Minimum discharge, 24 ft³/s (0.68 m³/s) Oct. 1, 4, gage height, 2.10 ft (0.640 m).

DISCHARGE. IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 25 | 106 | 62 | 707 | 946 | 205 | 172 | 172 | 131 | 92 | 103 | 65 |
| 2 | 26 | 94 | 80 | 444 | 546 | 245 | 162 | 159 | 109 | 87 | 90 | 66 |
| 3 | 26 | 85 | 94 | 282 | 4140 | 481 | 166 | 150 | 137 | 78 | 81 | 63 |
| 4 | 25 | 79 | 103 | 1160 | 4390 | 437 | 202 | 141 | 2100 | 89 | 76 | 57 |
| 5 | 26 | 75 | 106 | 1020 | 729 | 359 | 165 | 130 | 3520 | 166 | 70 | 52 |
| 6 | 26 | 73 | 103 | 356 | 394 | 475 | 162 | 123 | 2010 | 151 | 74 | 49 |
| 7 | 27 | 68 | 88 | 248 | 289 | 649 | 161 | 120 | 401 | 102 | 75 | 49 |
| 8 | 27 | 64 | 80 | 198 | 232 | 1140 | 146 | 119 | 255 | 106 | 76 | 49 |
| 9 | 28 | 62 | 74 | 168 | 219 | 453 | 158 | 113 | 197 | 536 | 88 | 50 |
| 10 | 28 | 61 | 69 | 143 | 257 | 314 | 183 | 105 | 422 | 194 | 116 | 51 |
| 11 | 28 | 60 | 66 | 120 | 208 | 259 | 162 | 99 | 1160 | 208 | 99 | 51 |
| 12 | 30 | 59 | 64 | 130 | 181 | 234 | 150 | 95 | 470 | 501 | 472 | 50 |
| 13 | 33 | 58 | 62 | 130 | 179 | 211 | 145 | 93 | 452 | 178 | 175 | 47 |
| 14 | 30 | 57 | 66 | 130 | 199 | 196 | 142 | 90 | 725 | 127 | 105 | 45 |
| 15 | 29 | 58 | 466 | 135 | 190 | 194 | 137 | 87 | 353 | 134 | 90 | 45 |
| 16 | 30 | 59 | 1070 | 137 | 186 | 306 | 134 | 83 | 240 | 121 | 95 | 45 |
| 17 | 31 | 58 | 415 | 129 | 673 | 514 | 137 | 81 | 206 | 104 | 96 | 44 |
| 18 | 32 | 57 | 255 | 125 | 1150 | 320 | 194 | 78 | 195 | 93 | 460 | 48 |
| 19 | 31 | 55 | 187 | 120 | 503 | 248 | 179 | 76 | 169 | 86 | 233 | 45 |
| 20 | 32 | 55 | 136 | 120 | 395 | 834 | 149 | 89 | 150 | 84 | 126 | 42 |
| 21 | 33 | 57 | 136 | 134 | 301 | 764 | 149 | 129 | 133 | 99 | 97 | 44 |
| 22 | 32 | 56 | 149 | 162 | 246 | 405 | 144 | 124 | 121 | 103 | 83 | 52 |
| 23 | 35 | 53 | 194 | 154 | 206 | 292 | 132 | 270 | 121 | 89 | 75 | 55 |
| 24 | 48 | 57 | 228 | 155 | 189 | 245 | 126 | 225 | 116 | 289 | 73 | 51 |
| 25 | 58 | 73 | 286 | 133 | 176 | 220 | 123 | 158 | 103 | 170 | 70 | 46 |
| 26 | 108 | 78 | 463 | 134 | 159 | 230 | 208 | 141 | 102 | 107 | 64 | 54 |
| 27 | 1500 | 76 | 258 | 104 | 162 | 226 | 494 | 156 | 109 | 89 | 60 | 195 |
| 28 | 1950 | 77 | 189 | 126 | 194 | 189 | 377 | 526 | 108 | 85 | 106 | 124 |
| 29 | 293 | 70 | 155 | 125 | --- | 176 | 245 | 195 | 100 | 183 | 100 | 74 |
| 30 | 168 | 63 | 133 | 135 | --- | 171 | 193 | 194 | 95 | 101 | 70 | 63 |
| 31 | 128 | --- | 122 | 204 | --- | 170 | --- | 190 | --- | 98 | 64 | --- |
| TOTAL | 4923 | 2003 | 5959 | 7568 | 17639 | 11162 | 5397 | 4511 | 14510 | 4650 | 3662 | 1771 |
| MEAN | 159 | 66.8 | 192 | 244 | 630 | 360 | 180 | 146 | 484 | 150 | 118 | 59.0 |
| MAX | 1950 | 106 | 1070 | 1160 | 4390 | 1140 | 494 | 526 | 3520 | 536 | 472 | 195 |
| MIN | 25 | 53 | 62 | 104 | 159 | 170 | 123 | 76 | 95 | 78 | 60 | 42 |
| CFSM | .70 | .30 | .85 | 1.08 | 2.79 | 1.59 | .80 | .65 | 2.14 | .66 | .52 | .26 |
| IN. | .81 | .33 | .98 | 1.25 | 2.90 | 1.84 | .89 | .74 | 2.39 | .77 | .60 | .29 |

| | | | | | | | | | | | | |
|-------------|-------|-------|------|------|-----|------|-----|----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 36343 | MEAN | 99.6 | MAX | 1950 | MIN | 10 | CFSM | .44 | IN | 5.98 |
| WTR YR 1982 | TOTAL | 83755 | MEAN | 229 | MAX | 4390 | MIN | 25 | CFSM | 1.01 | IN | 13.79 |

LOCATION.--Lat 38°06'09", long 78°35'35", Albemarle County, Hydrologic Unit 02080204, on right bank 20 ft (6 m) downstream from bridge on State Highway 614, 1.5 mi (2.4 km) downstream from Rocky Run, 4.0 mi (6.4 km) south-east of White Hall, and 4.9 mi (7.9 km) upstream from confluence with Moormans River.

PERIOD OF RECORD.--October 1942 to September 1951, October 1979 to current year. Prior to September 1951, published as Mechum River near Ivy.

GAGE.--Water-stage recorder. Datum of gage is 429.75 ft (130.988 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1942, to Sept. 30, 1951, on right bank 20 ft (6 m) downstream from former highway bridge at different datum.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) Oct. 15, 1942, gage height, 30.3 ft (9.24 m), datum then in use, from floodmarks, from rating curve extended above 8,000 ft³/s (230 m³/s); minimum, 0.6 ft³/s (0.017 m³/s) Sept. 9, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 6, 1979, reached a stage of 24.5 ft (7.47 m), from floodmarks, discharge, about 10,500 ft³/s (297 m³/s), from rating curve extended above 3,400 ft³/s (96 m³/s).

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | | Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | |
|---------|------|---|------|-------------------------|-------|---------|------|---|------|-------------------------|-------|
| Oct. 27 | 1530 | 1020 | 28.9 | 8.38 | 2.554 | June 4 | 0030 | 677 | 19.2 | 7.58 | 2.310 |
| Feb. 1 | 0230 | 1350 | 38.2 | 9.10 | 2.774 | June 13 | 1100 | *2680 | 75.9 | 11.77 | 3.587 |
| Feb. 3 | 1800 | 1360 | 38.5 | 9.13 | 2.783 | Aug. 15 | 0300 | 994 | 28.2 | 8.33 | 2.539 |
| Feb. 17 | 1930 | 1230 | 34.8 | 8.85 | 2.697 | Aug. 16 | 0400 | 989 | 28.0 | 8.32 | 2.536 |
| Mar. 20 | 1400 | 2400 | 68.0 | 11.20 | 3.414 | Aug. 17 | 2230 | 1580 | 44.7 | 9.55 | 2.911 |

Minimum discharge, 13 ft³/s (0.37 m³/s) Sept. 19.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 20 | 61 | 32 | 106 | 505 | 96 | 94 | 103 | 63 | 72 | 87 | 31 |
| 2 | 22 | 55 | 47 | 108 | 203 | 103 | 86 | 92 | 61 | 59 | 64 | 31 |
| 3 | 20 | 51 | 41 | 90 | 746 | 111 | 109 | 85 | 55 | 56 | 62 | 29 |
| 4 | 18 | 49 | 38 | 127 | 472 | 99 | 127 | 79 | 224 | 56 | 53 | 25 |
| 5 | 19 | 46 | 41 | 119 | 288 | 96 | 102 | 74 | 376 | 74 | 48 | 26 |
| 6 | 17 | 72 | 39 | 97 | 212 | 89 | 100 | 71 | 195 | 59 | 53 | 22 |
| 7 | 16 | 92 | 37 | 87 | 159 | 133 | 87 | 69 | 130 | 50 | 85 | 21 |
| 8 | 14 | 86 | 36 | 79 | 130 | 181 | 85 | 66 | 102 | 51 | 86 | 20 |
| 9 | 14 | 68 | 33 | 73 | 130 | 139 | 89 | 63 | 87 | 64 | 107 | 21 |
| 10 | 14 | 47 | 31 | 63 | 114 | 118 | 84 | 59 | 192 | 89 | 69 | 21 |
| 11 | 16 | 47 | 31 | 61 | 99 | 109 | 81 | 56 | 271 | 79 | 62 | 21 |
| 12 | 17 | 45 | 32 | 58 | 90 | 113 | 77 | 54 | 226 | 76 | 132 | 20 |
| 13 | 17 | 41 | 28 | 55 | 90 | 107 | 77 | 52 | 1730 | 58 | 80 | 18 |
| 14 | 16 | 33 | 33 | 53 | 84 | 102 | 75 | 49 | 686 | 50 | 68 | 16 |
| 15 | 16 | 33 | 68 | 51 | 80 | 102 | 71 | 47 | 370 | 46 | 305 | 18 |
| 16 | 16 | 33 | 85 | 50 | 82 | 119 | 69 | 44 | 250 | 44 | 266 | 17 |
| 17 | 16 | 33 | 69 | 49 | 456 | 144 | 76 | 43 | 191 | 44 | 296 | 16 |
| 18 | 15 | 31 | 57 | 48 | 490 | 126 | 95 | 41 | 152 | 50 | 372 | 15 |
| 19 | 16 | 30 | 56 | 48 | 343 | 119 | 77 | 41 | 126 | 48 | 113 | 14 |
| 20 | 16 | 30 | 55 | 47 | 285 | 904 | 72 | 51 | 105 | 38 | 80 | 14 |
| 21 | 16 | 29 | 53 | 64 | 218 | 610 | 72 | 44 | 92 | 33 | 64 | 16 |
| 22 | 17 | 27 | 53 | 66 | 168 | 370 | 67 | 47 | 85 | 31 | 52 | 20 |
| 23 | 21 | 27 | 55 | 59 | 139 | 255 | 65 | 65 | 82 | 47 | 46 | 20 |
| 24 | 24 | 31 | 57 | 61 | 122 | 199 | 63 | 57 | 74 | 80 | 44 | 16 |
| 25 | 22 | 34 | 57 | 54 | 108 | 164 | 64 | 55 | 71 | 48 | 42 | 15 |
| 26 | 48 | 34 | 56 | 52 | 96 | 158 | 113 | 52 | 67 | 38 | 36 | 38 |
| 27 | 462 | 34 | 54 | 48 | 95 | 126 | 172 | 50 | 65 | 33 | 33 | 95 |
| 28 | 233 | 33 | 51 | 48 | 100 | 107 | 195 | 152 | 62 | 33 | 36 | 43 |
| 29 | 105 | 30 | 49 | 50 | --- | 102 | 139 | 77 | 60 | 43 | 33 | 32 |
| 30 | 79 | 29 | 45 | 57 | --- | 98 | 114 | 76 | 71 | 177 | 30 | 28 |
| 31 | 67 | --- | 45 | 93 | --- | 94 | --- | 65 | --- | 133 | 30 | --- |
| TOTAL | 1429 | 1291 | 1464 | 2121 | 6104 | 5393 | 2797 | 1979 | 6321 | 1859 | 2934 | 739 |
| MEAN | 46.1 | 43.0 | 47.2 | 68.4 | 218 | 174 | 93.2 | 63.8 | 211 | 60.0 | 94.6 | 24.6 |
| MAX | 462 | 92 | 85 | 127 | 746 | 904 | 195 | 152 | 1730 | 177 | 372 | 95 |
| MIN | 14 | 27 | 28 | 47 | 80 | 89 | 63 | 41 | 55 | 31 | 30 | 14 |
| CFSM | .48 | .45 | .50 | .72 | 2.29 | 1.82 | .98 | .67 | 2.21 | .63 | .99 | .26 |
| IN. | .56 | .50 | .57 | .83 | 2.38 | 2.10 | 1.09 | .77 | 2.46 | .72 | 1.14 | .29 |
| CAL YR 1981 | TOTAL | 16644.0 | MEAN | 45.6 | MAX | 675 | MIN | 7.2 | CFSM | .48 | IN | 6.49 |
| WTR YR 1982 | TOTAL | 34431.0 | MEAN | 94.3 | MAX | 1730 | MIN | 14 | CFSM | .99 | IN | 13.42 |

02032250 MOORMANS RIVER NEAR FREE UNION, VA

LOCATION.--Lat 38°08'26", long 78°33'22", Albemarle County, Hydrologic Unit 02080204, on right bank 130 ft (40 m) upstream from bridge on State Highway 601, 0.4 mi (0.6 km) upstream from confluence with Mechums River, 0.8 mi (1.3 km) downstream from Wards Creek, and 1.1 mi (1.8 km) southeast of Free Union.

DRAINAGE AREA.--74.6 mi² (193.1 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 403.11 ft (122.868 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Rivanna Water and Sewer Authority at Sugar Hollow reservoir 12.0 mi (19.3 km) upstream, capacity, 1,320 acre-ft (1.63 km³), from which an average of 6.8 ft³/s (0.19 m³/s) is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,030 ft³/s (114 m³/s) June 13, 1982, gage height, 12.73 ft (3.880 m), from rating curve extended above 2,700 ft³/s (76 m³/s); minimum, 1.3 ft³/s (0.037 m³/s) Sept. 16, 17, 1980, gage height, 2.86 ft (0.872 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 20.2 ft (6.16 m), from floodmarks, discharge, about 8,800 ft³/s (249 m³/s), and flood of Sept. 6, 1979, reached a stage of 21.55 ft (6.568 m), from floodmarks, discharge, about 9,700 ft³/s (275 m³/s), from rating curve extended above 2,700 ft³/s (76 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (20 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1430 | 848 24.0 | 6.15 1.875 | Feb. 17 | 1900 | 1300 36.8 | 7.15 2.179 |
| Feb. 1 | 0330 | 1580 44.7 | 7.77 2.368 | Mar. 20 | 1300 | 1030 29.2 | 6.55 1.996 |
| Feb. 3 | 1700 | 834 23.6 | 6.12 1.865 | June 13 | 1000 | *4030 114 | 12.73 3.880 |
| Feb. 4 | 0130 | 866 24.5 | 6.19 1.887 | | | | |

Minimum discharge, 4.6 ft³/s (0.13 m³/s) Oct. 9-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 8.4 | 37 | 19 | 83 | 337 | 94 | 78 | 135 | 107 | 56 | 67 | 18 |
| 2 | 8.1 | 33 | 26 | 96 | 121 | 103 | 74 | 115 | 74 | 34 | 40 | 19 |
| 3 | 8.4 | 30 | 25 | 90 | 480 | 115 | 96 | 94 | 63 | 30 | 31 | 17 |
| 4 | 7.0 | 28 | 24 | 117 | 566 | 105 | 110 | 82 | 113 | 31 | 27 | 13 |
| 5 | 7.0 | 26 | 24 | 135 | 316 | 99 | 95 | 70 | 341 | 36 | 24 | 12 |
| 6 | 7.0 | 27 | 24 | 127 | 206 | 96 | 86 | 64 | 242 | 32 | 113 | 12 |
| 7 | 6.0 | 21 | 23 | 115 | 145 | 141 | 77 | 57 | 165 | 27 | 242 | 10 |
| 8 | 5.6 | 21 | 23 | 96 | 163 | 170 | 72 | 52 | 121 | 24 | 190 | 10 |
| 9 | 4.8 | 20 | 23 | 79 | 103 | 145 | 76 | 50 | 96 | 39 | 131 | 11 |
| 10 | 4.8 | 19 | 20 | 63 | 96 | 145 | 70 | 48 | 141 | 32 | 88 | 12 |
| 11 | 5.1 | 18 | 23 | 48 | 105 | 139 | 67 | 45 | 167 | 70 | 64 | 12 |
| 12 | 5.3 | 17 | 22 | 45 | 88 | 135 | 65 | 40 | 412 | 78 | 107 | 10 |
| 13 | 6.0 | 16 | 19 | 41 | 83 | 121 | 63 | 38 | 2890 | 40 | 60 | 9.2 |
| 14 | 6.0 | 15 | 22 | 39 | 78 | 111 | 61 | 35 | 1030 | 31 | 46 | 8.4 |
| 15 | 5.6 | 16 | 45 | 36 | 72 | 115 | 56 | 33 | 532 | 29 | 87 | 8.4 |
| 16 | 7.0 | 17 | 62 | 34 | 76 | 121 | 54 | 32 | 316 | 26 | 62 | 9.2 |
| 17 | 6.4 | 17 | 50 | 32 | 504 | 153 | 53 | 30 | 228 | 23 | 64 | 8.4 |
| 18 | 5.6 | 16 | 43 | 30 | 719 | 155 | 62 | 29 | 174 | 24 | 102 | 7.2 |
| 19 | 6.0 | 15 | 37 | 32 | 438 | 165 | 49 | 27 | 144 | 22 | 59 | 6.0 |
| 20 | 5.6 | 15 | 32 | 34 | 348 | 610 | 49 | 28 | 98 | 19 | 41 | 6.4 |
| 21 | 6.0 | 15 | 30 | 56 | 292 | 690 | 53 | 31 | 86 | 17 | 34 | 7.6 |
| 22 | 6.7 | 15 | 34 | 50 | 242 | 500 | 44 | 32 | 71 | 14 | 30 | 9.6 |
| 23 | 8.1 | 15 | 35 | 42 | 167 | 350 | 40 | 49 | 64 | 83 | 28 | 10 |
| 24 | 11 | 16 | 39 | 43 | 153 | 250 | 40 | 40 | 52 | 62 | 27 | 8.8 |
| 25 | 11 | 18 | 40 | 40 | 115 | 195 | 40 | 38 | 47 | 28 | 26 | 8.0 |
| 26 | 30 | 18 | 41 | 39 | 111 | 150 | 78 | 36 | 43 | 22 | 20 | 14 |
| 27 | 250 | 18 | 41 | 35 | 105 | 130 | 176 | 34 | 40 | 18 | 20 | 49 |
| 28 | 150 | 18 | 40 | 35 | 99 | 120 | 279 | 178 | 36 | 17 | 22 | 22 |
| 29 | 76 | 18 | 38 | 37 | --- | 110 | 219 | 74 | 36 | 18 | 20 | 16 |
| 30 | 56 | 17 | 35 | 44 | --- | 90 | 172 | 76 | 47 | 98 | 17 | 14 |
| 31 | 44 | --- | 38 | 76 | --- | 80 | --- | 61 | --- | 113 | 17 | --- |
| TOTAL | 774.5 | 592 | 997 | 1869 | 6328 | 5703 | 2554 | 1753 | 7976 | 1193 | 1906 | 378.2 |
| MEAN | 25.0 | 19.7 | 32.2 | 60.3 | 226 | 184 | 85.1 | 56.5 | 266 | 38.5 | 61.5 | 12.6 |
| MAX | 250 | 37 | 62 | 135 | 719 | 690 | 279 | 178 | 2890 | 113 | 242 | 49 |
| MIN | 4.8 | 15 | 19 | 30 | 72 | 80 | 40 | 27 | 36 | 14 | 17 | 6.0 |
| CFSM | .34 | .26 | .43 | .81 | 3.03 | 2.47 | 1.14 | .76 | 3.57 | .52 | .83 | .17 |
| IN. | .39 | .30 | .50 | .93 | 3.16 | 2.84 | 1.27 | .87 | 3.98 | .60 | .95 | .19 |

CAL YR 1981 TOTAL 11635.6 MEAN 31.9 MAX 417 MIN 1.8 CFSM .43 IN 5.80
WTR YR 1982 TOTAL 32023.7 MEAN 87.7 MAX 2890 MIN 4.8 CFSM 1.18 IN 15.98

JAMES RIVER BASIN

02032400 BUCK MOUNTAIN CREEK NEAR FREE UNION, VA

LOCATION.--Lat 38°09'16", long 78°32'22", Albemarle County, Hydrologic Unit 02080204, on left bank at downstream side of bridge on State Highway 665, 0.2 mi (0.3 km) downstream from Piney Creek, 1.6 mi (2.6 km) east of Free Union, and 2.0 mi (3.2 km) upstream from mouth.

DRAINAGE AREA.--37.0 mi² (95.8 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 408.71 ft (124.575 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,120 ft³/s (88.4 m³/s) Apr. 9, 1980, gage height, 7.91 ft (2.411 m), from rating curve extended above 1,200 ft³/s (34 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Sept. 11-14, 1980, Aug. 27, 28, 29, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 22, 1979, reached a stage of 11.12 ft (3.389 m), from flood-marks, discharge, about 6,600 ft³/s (187 m³/s), from rating curve extended above 1,200 ft³/s (34 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1415 | 914 25.9 | 4.61 1.405 | Mar. 21 | 0600 | 671 19.0 | 4.04 1.231 |
| Feb. 3 | 1600 | 510 14.4 | 3.60 1.097 | June 13 | 0915 | *2610 73.9 | 7.32 2.231 |
| Feb. 17 | 1715 | 663 18.8 | 4.02 1.225 | July 23 | 1900 | 759 21.5 | 4.26 1.298 |

Minimum discharge, 3.7 ft³/s (0.10 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|------|-----------|----------|---------|-----------|----------|------|------|-------|-------|
| 1 | 6.5 | 19 | 12 | 43 | 144 | 36 | 41 | 50 | 79 | 30 | 43 | 11 |
| 2 | 7.3 | 17 | 14 | 37 | 66 | 41 | 36 | 42 | 55 | 23 | 30 | 11 |
| 3 | 6.2 | 16 | 13 | 34 | 289 | 43 | 48 | 37 | 71 | 22 | 25 | 9.2 |
| 4 | 5.9 | 14 | 12 | 56 | 168 | 37 | 44 | 33 | 136 | 22 | 20 | 7.4 |
| 5 | 6.2 | 14 | 14 | 47 | 106 | 35 | 39 | 30 | 276 | 34 | 19 | 7.1 |
| 6 | 5.6 | 15 | 13 | 38 | 77 | 33 | 34 | 28 | 142 | 24 | 25 | 6.7 |
| 7 | 5.3 | 12 | 13 | 34 | 56 | 60 | 31 | 28 | 89 | 21 | 62 | 6.5 |
| 8 | 5.0 | 12 | 12 | 29 | 43 | 68 | 30 | 26 | 62 | 19 | 45 | 6.6 |
| 9 | 4.6 | 11 | 12 | 26 | 55 | 53 | 35 | 24 | 45 | 26 | 35 | 7.5 |
| 10 | 5.3 | 11 | 11 | 25 | 47 | 46 | 33 | 22 | 119 | 24 | 29 | 7.3 |
| 11 | 5.6 | 11 | 11 | 23 | 38 | 42 | 31 | 21 | 127 | 23 | 25 | 6.7 |
| 12 | 5.9 | 10 | 11 | 22 | 34 | 44 | 29 | 20 | 339 | 23 | 29 | 6.1 |
| 13 | 5.9 | 10 | 11 | 21 | 33 | 40 | 28 | 19 | 1590 | 26 | 21 | 5.6 |
| 14 | 5.6 | 9.7 | 15 | 20 | 30 | 37 | 28 | 19 | 342 | 21 | 19 | 5.5 |
| 15 | 5.9 | 9.6 | 34 | 19 | 28 | 40 | 27 | 17 | 176 | 20 | 28 | 5.6 |
| 16 | 6.2 | 9.5 | 35 | 18 | 30 | 50 | 26 | 17 | 125 | 18 | 36 | 5.5 |
| 17 | 5.9 | 9.5 | 26 | 17 | 240 | 64 | 30 | 16 | 99 | 19 | 69 | 4.8 |
| 18 | 6.2 | 9.7 | 22 | 16 | 207 | 56 | 31 | 16 | 80 | 20 | 59 | 4.5 |
| 19 | 6.2 | 9.5 | 20 | 16 | 146 | 52 | 26 | 16 | 67 | 20 | 29 | 4.0 |
| 20 | 6.2 | 9.7 | 18 | 15 | 123 | 258 | 25 | 19 | 55 | 22 | 22 | 4.8 |
| 21 | 6.2 | 9.6 | 16 | 35 | 96 | 313 | 25 | 16 | 43 | 16 | 19 | 5.7 |
| 22 | 6.9 | 9.2 | 17 | 27 | 76 | 167 | 23 | 16 | 39 | 13 | 16 | 7.0 |
| 23 | 8.7 | 9.1 | 18 | 27 | 62 | 113 | 22 | 24 | 36 | 126 | 15 | 8.4 |
| 24 | 9.9 | 10 | 20 | 25 | 52 | 87 | 22 | 20 | 33 | 52 | 15 | 6.4 |
| 25 | 8.7 | 11 | 22 | 22 | 43 | 71 | 22 | 19 | 32 | 26 | 13 | 5.8 |
| 26 | 18 | 11 | 21 | 20 | 36 | 68 | 55 | 18 | 30 | 21 | 11 | 15 |
| 27 | 248 | 11 | 20 | 19 | 36 | 56 | 141 | 18 | 31 | 18 | 11 | 25 |
| 28 | 91 | 11 | 19 | 18 | 36 | 50 | 123 | 157 | 27 | 16 | 13 | 10 |
| 29 | 40 | 11 | 18 | 22 | --- | 40 | 83 | 54 | 26 | 14 | 10 | 7.9 |
| 30 | 29 | 10 | 16 | 28 | --- | 37 | 62 | 63 | 33 | 65 | 9.9 | 7.3 |
| 31 | 23 | --- | 18 | 57 | --- | 39 | --- | 48 | --- | 77 | 11 | --- |
| TOTAL | 606.9 | 342.1 | 534 | 856 | 2397 | 2176 | 1230 | 953 | 4404 | 901 | 813.9 | 231.9 |
| MEAN | 19.6 | 11.4 | 17.2 | 27.6 | 85.6 | 70.2 | 41.0 | 30.7 | 147 | 29.1 | 26.3 | 7.73 |
| MAX | 248 | 19 | 35 | 57 | 289 | 313 | 141 | 157 | 1590 | 126 | 69 | 25 |
| MIN | 4.6 | 9.1 | 11 | 15 | 28 | 33 | 22 | 16 | 26 | 13 | 9.9 | 4.0 |
| CFSM | .53 | .31 | .47 | .75 | 2.31 | 1.90 | 1.11 | .83 | 3.97 | .79 | .71 | .21 |
| IN. | .61 | .34 | .54 | .86 | 2.41 | 2.19 | 1.24 | .96 | 4.43 | .91 | .82 | .23 |
| CAL YR 1981 TOTAL | 6619.9 | | | MEAN 18.1 | MAX 306 | MIN 1.8 | CFSM .49 | IN 6.65 | | | | |
| WTR YR 1982 TOTAL | 15445.8 | | | MEAN 42.3 | MAX 1590 | MIN 4.0 | CFSM 1.14 | IN 15.52 | | | | |

JAMES RIVER BASIN

173

02032515 SOUTH FORK RIVANNA RIVER NEAR CHARLOTTESVILLE, VA

LOCATION.--Lat 38°06'06", long 78°27'39", Albemarle County, Hydrologic Unit 02080204, on left bank 10 ft (3 m) downstream from upstream bridge on U.S. Highway 29, 0.4 mi (0.6 km) downstream from South Fork Rivanna River dam, 2.5 mi (4.0 km) northeast of Charlottesville city limits, and 2.9 mi (4.7 km) upstream from mouth.

DRAINAGE AREA.--260 mi² (673 km²).

PERIOD OF RECORD.--August 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 330 ft (101 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Mar. 24 to Apr. 29, which are fair. Flow regulated by Rivanna Water and Sewer Authority at South Fork Rivanna and Sugar Hollow reservoirs, combined capacity, 6,540 acre-ft (8.06 hm³), from which an average of 14.3 ft³/s (0.40 m³/s) is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s (430 m³/s) Sept. 6, 1979, gage height, 23.50 ft (7.163 m), from floodmarks, from rating curve extended above 12,000 ft³/s (340 m³/s); minimum daily, 11 ft³/s (0.31 m³/s) June 28, 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,200 ft³/s (232 m³/s) June 13, gage height, 16.23 ft (4.947 m); minimum, 21 ft³/s (0.59 m³/s) Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|--------------------|------|------|------|------|-------|-------|------|------|-------|------|------|------|
| 1 | 50 | 140 | 75 | 278 | 1080 | 294 | 270 | 330 | 298 | 232 | 287 | 79 |
| 2 | 55 | 125 | 104 | 323 | 498 | 305 | 260 | 287 | 276 | 164 | 192 | 83 |
| 3 | 46 | 113 | 96 | 280 | 1760 | 330 | 330 | 256 | 221 | 146 | 160 | 77 |
| 4 | 43 | 104 | 89 | 344 | 1620 | 308 | 370 | 228 | 553 | 140 | 136 | 60 |
| 5 | 44 | 100 | 92 | 400 | 849 | 294 | 300 | 206 | 1250 | 221 | 121 | 53 |
| 6 | 41 | 123 | 87 | 342 | 582 | 278 | 290 | 194 | 831 | 180 | 144 | 51 |
| 7 | 39 | 142 | 83 | 308 | 409 | 361 | 270 | 188 | 505 | 150 | 384 | 55 |
| 8 | 31 | 138 | 85 | 272 | 387 | 540 | 240 | 182 | 382 | 144 | 382 | 48 |
| 9 | 31 | 129 | 72 | 245 | 325 | 409 | 280 | 172 | 312 | 166 | 315 | 62 |
| 10 | 32 | 91 | 72 | 176 | 310 | 382 | 240 | 154 | 467 | 265 | 348 | 53 |
| 11 | 38 | 85 | 70 | 156 | 278 | 355 | 230 | 144 | 771 | 254 | 296 | 53 |
| 12 | 41 | 81 | 66 | 136 | 254 | 355 | 215 | 144 | 1020 | 245 | 325 | 46 |
| 13 | 41 | 77 | 68 | 132 | 247 | 328 | 205 | 134 | 5920 | 160 | 217 | 43 |
| 14 | 39 | 70 | 79 | 129 | 232 | 312 | 195 | 127 | 2520 | 140 | 180 | 39 |
| 15 | 38 | 70 | 160 | 125 | 217 | 305 | 185 | 121 | 1260 | 130 | 584 | 41 |
| 16 | 41 | 68 | 234 | 119 | 221 | 342 | 170 | 113 | 816 | 125 | 576 | 43 |
| 17 | 38 | 68 | 194 | 113 | 988 | 415 | 250 | 108 | 592 | 115 | 375 | 34 |
| 18 | 41 | 66 | 166 | 117 | 1860 | 393 | 280 | 104 | 460 | 127 | 824 | 29 |
| 19 | 41 | 62 | 138 | 117 | 1130 | 384 | 240 | 100 | 393 | 140 | 338 | 26 |
| 20 | 34 | 64 | 112 | 113 | 935 | 1760 | 220 | 123 | 371 | 129 | 221 | 36 |
| 21 | 36 | 59 | 119 | 186 | 726 | 1820 | 220 | 115 | 283 | 96 | 180 | 38 |
| 22 | 39 | 57 | 140 | 213 | 578 | 1120 | 200 | 121 | 252 | 79 | 144 | 55 |
| 23 | 53 | 55 | 146 | 190 | 460 | 735 | 190 | 156 | 236 | 274 | 130 | 64 |
| 24 | 68 | 72 | 150 | 184 | 409 | 600 | 185 | 152 | 210 | 373 | 125 | 53 |
| 25 | 64 | 74 | 156 | 166 | 340 | 500 | 200 | 138 | 200 | 158 | 113 | 39 |
| 26 | 123 | 75 | 158 | 166 | 312 | 450 | 400 | 130 | 192 | 96 | 100 | 70 |
| 27 | 949 | 75 | 152 | 138 | 305 | 380 | 560 | 138 | 184 | 98 | 89 | 44 |
| 28 | 739 | 75 | 144 | 148 | 312 | 330 | 700 | 1870 | 172 | 94 | 96 | 117 |
| 29 | 283 | 68 | 138 | 158 | --- | 290 | 560 | 355 | 170 | 102 | 87 | 72 |
| 30 | 200 | 62 | 132 | 168 | --- | 275 | 387 | 322 | 190 | 372 | 83 | 51 |
| 31 | 164 | --- | 134 | 246 | --- | 260 | --- | 256 | --- | 454 | 79 | --- |
| TOTAL | 3522 | 2588 | 3711 | 6188 | 17624 | 15210 | 8642 | 7168 | 21307 | 5569 | 7631 | 1614 |
| MEAN | 114 | 86.3 | 120 | 200 | 629 | 491 | 288 | 231 | 710 | 180 | 246 | 53.8 |
| MAX | 949 | 142 | 234 | 400 | 1860 | 1820 | 700 | 1870 | 5920 | 454 | 824 | 117 |
| MIN | 31 | 55 | 66 | 113 | 217 | 260 | 170 | 100 | 170 | 79 | 79 | 26 |
| *F ³ /S | 13.4 | 12.5 | 12.2 | 12.3 | 12.9 | 12.7 | 13.9 | 14.5 | 13.6 | 13.1 | 13.5 | 15.0 |

CAL YR 1981 TOTAL 41841 MEAN 115 MAX 1560 MIN 11 *F³/S 12.5
WTR YR 1982 TOTAL 100774 MEAN 276 MAX 5920 MIN 26 *F³/S 13.3

* Diversion, in cubic feet per second, by City of Charlottesville; records furnished by Rivanna Water and Sewer Authority.

JAMES RIVER BASIN

02032680 NORTH FORK RIVANNA RIVER NEAR PROFFIT, VA

LOCATION.--Lat 38°05'16", long 78°24'44", Albemarle County, Hydrologic Unit 02080204, on left bank 50 ft (15 m) downstream from bridge on State Highway 649, 1.9 mi (3.1 km) southeast of Proffit, and 2.2 mi (3.5 km) upstream from confluence with South Fork.

DRAINAGE AREA.--176 mi² (456 km²).

PERIOD OF RECORD.--April 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 323.43 ft (98.581 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Rivanna Water and Sewer Authority diverts about 0.2 ft³/s (0.01 m³/s) daily for municipal water supply 7.8 mi (12.6 km) above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--12 years, 258 ft³/s (7.307 m³/s), 19.91 in/yr (506 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,800 ft³/s (901 m³/s) June 21, 1972, gage height, 30.4 ft (9.27 m), from floodmarks, from rating curve extended above 5,000 ft³/s (140 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Oct. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 1930 | 1960 55.5 | 8.94 2.725 | Mar. 21 | 1130 | 2180 61.7 | 9.58 2.920 |
| Feb. 1 | 0730 | 1520 43.0 | 7.68 2.341 | May 28 | 0900 | *8830 250 | 18.22 5.553 |
| Feb. 3 | 2100 | 2700 76.5 | 11.07 3.374 | May 30 | 0600 | 1720 48.7 | 8.25 2.515 |
| Feb. 18 | 0230 | 1700 48.1 | 8.19 2.496 | June 5 | 1530 | 1970 55.8 | 8.97 2.734 |
| Mar. 20 | 1830 | 2200 62.3 | 9.62 2.932 | June 13 | 1900 | 6140 174 | 16.33 4.977 |

Minimum discharge, 17 ft³/s (0.48 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|-------|-------|------|------|------|
| 1 | 21 | 112 | 47 | 286 | 883 | 198 | 222 | 298 | 466 | 142 | 162 | 27 |
| 2 | 22 | 98 | 65 | 228 | 464 | 196 | 212 | 266 | 430 | 120 | 103 | 28 |
| 3 | 21 | 86 | 60 | 192 | 1570 | 218 | 206 | 240 | 329 | 109 | 83 | 27 |
| 4 | 22 | 76 | 59 | 290 | 1350 | 202 | 244 | 218 | 587 | 105 | 72 | 24 |
| 5 | 21 | 76 | 65 | 276 | 703 | 192 | 212 | 198 | 1440 | 109 | 63 | 22 |
| 6 | 21 | 92 | 59 | 220 | 442 | 182 | 202 | 186 | 821 | 109 | 61 | 21 |
| 7 | 20 | 76 | 56 | 200 | 332 | 228 | 188 | 176 | 475 | 98 | 86 | 21 |
| 8 | 20 | 68 | 53 | 156 | 296 | 370 | 178 | 168 | 339 | 89 | 94 | 21 |
| 9 | 18 | 63 | 51 | 136 | 286 | 306 | 180 | 164 | 282 | 88 | 77 | 22 |
| 10 | 19 | 60 | 48 | 84 | 308 | 272 | 190 | 154 | 382 | 134 | 68 | 22 |
| 11 | 20 | 58 | 47 | 102 | 270 | 254 | 170 | 140 | 592 | 124 | 57 | 22 |
| 12 | 21 | 56 | 46 | 95 | 252 | 252 | 160 | 130 | 570 | 114 | 80 | 22 |
| 13 | 21 | 51 | 50 | 90 | 240 | 246 | 150 | 124 | 4430 | 136 | 67 | 21 |
| 14 | 21 | 48 | 56 | 85 | 228 | 230 | 140 | 118 | 2220 | 130 | 54 | 23 |
| 15 | 21 | 48 | 140 | 84 | 206 | 218 | 135 | 112 | 822 | 112 | 57 | 61 |
| 16 | 24 | 47 | 216 | 78 | 196 | 234 | 130 | 104 | 550 | 98 | 67 | 27 |
| 17 | 21 | 46 | 156 | 76 | 404 | 282 | 132 | 96 | 406 | 88 | 77 | 20 |
| 18 | 21 | 47 | 168 | 76 | 1170 | 276 | 164 | 90 | 318 | 78 | 83 | 18 |
| 19 | 23 | 45 | 92 | 78 | 694 | 262 | 150 | 86 | 278 | 77 | 71 | 18 |
| 20 | 22 | 44 | 74 | 82 | 670 | 1050 | 140 | 94 | 248 | 83 | 53 | 19 |
| 21 | 21 | 44 | 98 | 110 | 505 | 1680 | 136 | 94 | 222 | 78 | 44 | 20 |
| 22 | 21 | 41 | 156 | 120 | 403 | 940 | 130 | 90 | 202 | 68 | 39 | 22 |
| 23 | 25 | 40 | 156 | 108 | 334 | 601 | 124 | 106 | 192 | 63 | 35 | 24 |
| 24 | 41 | 44 | 136 | 112 | 300 | 445 | 122 | 124 | 170 | 93 | 33 | 24 |
| 25 | 36 | 50 | 138 | 94 | 272 | 360 | 120 | 120 | 152 | 78 | 32 | 21 |
| 26 | 56 | 48 | 138 | 94 | 244 | 329 | 178 | 110 | 146 | 64 | 29 | 23 |
| 27 | 784 | 48 | 124 | 76 | 230 | 290 | 501 | 108 | 140 | 49 | 27 | 83 |
| 28 | 677 | 48 | 112 | 82 | 215 | 256 | 804 | 4930 | 132 | 43 | 29 | 44 |
| 29 | 260 | 46 | 134 | 84 | --- | 236 | 481 | 672 | 126 | 47 | 28 | 32 |
| 30 | 176 | 45 | 120 | 88 | --- | 222 | 348 | 1200 | 130 | 146 | 26 | 27 |
| 31 | 136 | --- | 86 | 150 | --- | 216 | --- | 604 | --- | 214 | 26 | --- |
| TOTAL | 2653 | 1751 | 3006 | 4032 | 13467 | 11243 | 6449 | 11320 | 17597 | 3086 | 1883 | 806 |
| MEAN | 85.6 | 58.4 | 97.0 | 130 | 481 | 363 | 215 | 365 | 587 | 99.5 | 60.7 | 26.9 |
| MAX | 784 | 112 | 216 | 290 | 1570 | 1680 | 804 | 4930 | 4430 | 214 | 162 | 83 |
| MIN | 18 | 40 | 46 | 76 | 196 | 182 | 120 | 86 | 126 | 43 | 26 | 18 |
| CFSM | .49 | .33 | .55 | .74 | 2.73 | 2.06 | 1.22 | 2.07 | 3.34 | .57 | .35 | .15 |
| IN. | .56 | .37 | .64 | .85 | 2.85 | 2.38 | 1.36 | 2.39 | 3.72 | .65 | .40 | .17 |

| | | | | | | | | | | | | |
|-------------|-------|-------|------|------|-----|------|-----|----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 33992 | MEAN | 93.1 | MAX | 1110 | MIN | 12 | CFSM | .53 | IN | 7.18 |
| WTR YR 1982 | TOTAL | 77293 | MEAN | 212 | MAX | 4930 | MIN | 18 | CFSM | 1.21 | IN | 16.34 |

02034000 RIVANNA RIVER AT PALMYRA, VA

LOCATION.--Lat 37°51'28", long 78°15'58", Fluvanna County, Hydrologic Unit 02080204, on left bank 10 ft (3 m) upstream from bridge on U.S. Highway 15 at Palmyra, 0.5 mi (0.8 km) upstream from Cunningham Creek, and 15 mi (24 km) upstream from mouth.

DRAINAGE AREA.--664 mi² (1,720 km²).

PERIOD OF RECORD.--October 1933 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1936(M). WSP 852: 1937. WSP 892: 1934-35. WSP 1303: 1945-46(M). WSP 1503: 1956. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 210.39 ft (64.127 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1942, water-stage recorder at site 200 ft (60 m) downstream at same datum. Oct. 24, 1942, to Dec. 18, 1947, nonrecording gage 10 ft (3 m) downstream at same datum.

REMARKS.--Records good. Some diurnal fluctuation at times mostly at low and medium flow by South Fork Rivanna River Reservoir. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--49 years, 716 ft³/s (20.28 m³/s), 14.64 in/yr (372 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,000 ft³/s (2,440 m³/s) Aug. 20, 1969, gage height, 39.85 ft (12.146 m), from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of contracted-opening measurement of peak flow and velocity-area study; minimum, 5.2 ft³/s (0.15 m³/s) Sept. 9-11, 1966, gage height, 2.13 ft (0.649 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 3 | 2200 | 12300 348 | 18.27 5.569 | May 28 | 2030 | 12300 348 | 18.31 5.581 |
| Mar. 21 | 0030 | 7170 203 | 13.07 3.984 | June 14 | 0600 | *13800 391 | 19.53 5.953 |

Minimum discharge, 57 ft³/s (1.61 m³/s) Oct. 11, gage height, 2.59 ft (0.789 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 85 | 350 | 189 | 1190 | 2250 | 604 | 623 | 810 | 1000 | 567 | 664 | 158 |
| 2 | 42 | 311 | 255 | 1010 | 2090 | 658 | 570 | 686 | 993 | 393 | 403 | 163 |
| 3 | 88 | 287 | 271 | 739 | 7120 | 795 | 549 | 599 | 702 | 320 | 299 | 190 |
| 4 | 77 | 264 | 252 | 1380 | 6800 | 724 | 738 | 526 | 1420 | 293 | 256 | 160 |
| 5 | 75 | 245 | 247 | 1290 | 2820 | 647 | 603 | 468 | 4260 | 328 | 228 | 137 |
| 6 | 78 | 301 | 248 | 843 | 1830 | 592 | 556 | 427 | 3230 | 375 | 449 | 127 |
| 7 | 75 | 284 | 225 | 716 | 1190 | 849 | 527 | 409 | 1670 | 299 | 367 | 124 |
| 8 | 69 | 275 | 221 | 598 | 945 | 1660 | 476 | 398 | 1080 | 258 | 663 | 121 |
| 9 | 66 | 264 | 229 | 505 | 840 | 1050 | 480 | 390 | 825 | 257 | 471 | 117 |
| 10 | 64 | 247 | 209 | 413 | 879 | 860 | 516 | 356 | 758 | 350 | 396 | 120 |
| 11 | 59 | 212 | 200 | 255 | 717 | 771 | 478 | 323 | 1730 | 543 | 336 | 123 |
| 12 | 66 | 205 | 195 | 440 | 636 | 755 | 440 | 309 | 1260 | 651 | 758 | 123 |
| 13 | 71 | 199 | 190 | 466 | 602 | 707 | 425 | 301 | 6620 | 382 | 497 | 115 |
| 14 | 73 | 193 | 188 | 467 | 592 | 639 | 412 | 288 | 10200 | 366 | 324 | 106 |
| 15 | 69 | 184 | 451 | 450 | 527 | 605 | 396 | 272 | 3210 | 464 | 517 | 108 |
| 16 | 68 | 182 | 918 | 389 | 500 | 710 | 384 | 259 | 2060 | 302 | 1080 | 143 |
| 17 | 70 | 181 | 655 | 340 | 1290 | 893 | 387 | 250 | 1470 | 262 | 840 | 108 |
| 18 | 70 | 180 | 487 | 300 | 4580 | 847 | 484 | 240 | 1200 | 238 | 876 | 96 |
| 19 | 66 | 177 | 433 | 277 | 2900 | 775 | 459 | 232 | 933 | 271 | 685 | 88 |
| 20 | 73 | 171 | 307 | 274 | 2480 | 3080 | 394 | 267 | 774 | 262 | 390 | 89 |
| 21 | 66 | 173 | 292 | 305 | 1830 | 5870 | 387 | 278 | 634 | 243 | 305 | 109 |
| 22 | 64 | 165 | 320 | 401 | 1320 | 3630 | 380 | 264 | 565 | 200 | 259 | 109 |
| 23 | 70 | 159 | 436 | 367 | 1010 | 2310 | 351 | 315 | 516 | 182 | 224 | 135 |
| 24 | 102 | 165 | 479 | 367 | 854 | 1560 | 335 | 371 | 461 | 1110 | 212 | 129 |
| 25 | 115 | 192 | 440 | 381 | 739 | 1180 | 329 | 341 | 413 | 403 | 203 | 113 |
| 26 | 159 | 196 | 465 | 334 | 616 | 1090 | 534 | 313 | 390 | 265 | 193 | 113 |
| 27 | 1500 | 189 | 410 | 367 | 580 | 901 | 1210 | 292 | 380 | 219 | 175 | 431 |
| 28 | 3100 | 194 | 373 | 320 | 624 | 758 | 2420 | 7850 | 366 | 199 | 176 | 328 |
| 29 | 959 | 187 | 336 | 289 | --- | 674 | 1430 | 3060 | 338 | 310 | 178 | 191 |
| 30 | 561 | 180 | 336 | 295 | --- | 618 | 1010 | 2180 | 365 | 360 | 163 | 146 |
| 31 | 417 | --- | 322 | 359 | --- | 596 | --- | 1420 | --- | 935 | 149 | --- |
| TOTAL | 8567 | 6512 | 10579 | 16127 | 49161 | 37408 | 18283 | 24494 | 49823 | 11607 | 12736 | 4320 |
| MEAN | 276 | 217 | 341 | 520 | 1756 | 1207 | 609 | 790 | 1661 | 374 | 411 | 144 |
| MAX | 3100 | 350 | 918 | 1380 | 7120 | 5870 | 2420 | 7850 | 10200 | 1110 | 1080 | 431 |
| MIN | 59 | 159 | 188 | 255 | 500 | 592 | 329 | 232 | 338 | 182 | 149 | 88 |
| CFSM | .42 | .33 | .51 | .78 | 2.65 | 1.82 | .92 | 1.19 | 2.50 | .56 | .62 | .22 |
| IN. | .48 | .36 | .59 | .90 | 2.75 | 2.10 | 1.02 | 1.37 | 2.79 | .65 | .71 | .24 |

CAL YR 1981 TOTAL 99790 MEAN 273 MAX 3100 MIN 38 CFSM .41 IN 5.59
WTR YR 1982 TOTAL 249617 MEAN 684 MAX 10200 MIN 59 CFSM 1.03 IN 13.98

02034500 WILLIS RIVER AT LAKESIDE VILLAGE, VA

LOCATION.--Lat 37°40'00", long 78°10'00", Cumberland County, Hydrologic Unit 02080205, on left bank 15 ft (5 m) upstream from bridge on State Highway 690, 0.4 mi (0.6 km) east of Lakeside Village, 6.9 mi (11.1 km) upstream from mouth, and 7.7 mi (12.4 km) downstream from Reynolds Creek.

DRAINAGE AREA.--262 mi² (679 km²).

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1978, published as Willis River at Flanagan Mills.

REVISED RECORDS.--WSP 872: 1936-37. WSP 892: 1928-29, 1932-34(M). WSP 972: 1937, 1940. WSP 1203: 1929. WSP 1303: 1928-30(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.98 ft (54.553 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 3, 1935, nonrecording gage at site 1,300 ft (396 m) upstream at same datum.

REMARKS.--Records good. Regulation of flow from Trice Lake 0.4 mi (0.6 km) upstream, total capacity, about 1,100 acre-ft (1.36 hm³), tributary to Willis River, slightly affects flow at gage. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 252 ft³/s (7.137 m³/s), 13.06 in/yr (332 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 24,000 ft³/s (680 m³/s) June 22, 1972; maximum gage height, 29.8 ft (9.08 m) June 22, 1972, from floodmarks (backwater from James River); minimum discharge, 1.5 ft³/s (0.042 m³/s) Sept. 13, 14, 1966, gage height, 2.26 ft (0.689 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft³/s (90.1 m³/s) at 0630 hours June 6, gage height, 15.57 ft (4.746 m), no other peak above base of 1,700 ft³/s (48 m³/s); minimum, 12 ft³/s (0.34 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|------|------|----------|----------|---------|----------|----------|-------|------|------|------|
| 1 | 12 | 186 | 68 | 449 | 682 | 242 | 189 | 194 | 154 | 87 | 64 | 54 |
| 2 | 14 | 148 | 74 | 569 | 701 | 305 | 186 | 175 | 128 | 80 | 61 | 51 |
| 3 | 14 | 126 | 91 | 477 | 957 | 500 | 187 | 157 | 132 | 73 | 60 | 49 |
| 4 | 14 | 108 | 107 | 709 | 1380 | 590 | 219 | 145 | 768 | 73 | 55 | 45 |
| 5 | 16 | 96 | 121 | 933 | 1540 | 583 | 202 | 133 | 2040 | 101 | 51 | 40 |
| 6 | 15 | 89 | 126 | 953 | 1540 | 553 | 194 | 123 | 2850 | 178 | 48 | 36 |
| 7 | 16 | 88 | 114 | 776 | 1110 | 622 | 191 | 116 | 1970 | 115 | 49 | 34 |
| 8 | 16 | 88 | 103 | 404 | 611 | 951 | 176 | 119 | 1460 | 91 | 88 | 33 |
| 9 | 16 | 81 | 93 | 259 | 389 | 934 | 179 | 123 | 842 | 83 | 90 | 33 |
| 10 | 17 | 88 | 83 | 206 | 317 | 743 | 203 | 110 | 488 | 81 | 136 | 33 |
| 11 | 18 | 91 | 77 | 156 | 261 | 449 | 198 | 97 | 487 | 96 | 195 | 34 |
| 12 | 17 | 88 | 72 | 180 | 221 | 323 | 185 | 87 | 460 | 510 | 456 | 34 |
| 13 | 19 | 86 | 68 | 150 | 204 | 266 | 178 | 82 | 447 | 250 | 400 | 33 |
| 14 | 26 | 79 | 68 | 142 | 212 | 235 | 167 | 80 | 830 | 130 | 197 | 32 |
| 15 | 23 | 77 | 234 | 140 | 208 | 224 | 156 | 77 | 916 | 140 | 133 | 32 |
| 16 | 20 | 62 | 762 | 135 | 201 | 337 | 149 | 73 | 488 | 108 | 147 | 31 |
| 17 | 20 | 68 | 766 | 132 | 450 | 603 | 148 | 71 | 283 | 92 | 173 | 30 |
| 18 | 21 | 70 | 675 | 130 | 1040 | 533 | 173 | 67 | 225 | 80 | 183 | 30 |
| 19 | 24 | 61 | 400 | 129 | 1040 | 397 | 195 | 65 | 195 | 69 | 153 | 28 |
| 20 | 25 | 63 | 233 | 128 | 942 | 559 | 185 | 231 | 169 | 64 | 129 | 27 |
| 21 | 25 | 64 | 157 | 132 | 578 | 803 | 171 | 155 | 148 | 60 | 103 | 27 |
| 22 | 24 | 62 | 182 | 148 | 388 | 784 | 162 | 127 | 131 | 63 | 81 | 41 |
| 23 | 24 | 54 | 189 | 157 | 285 | 556 | 151 | 121 | 120 | 60 | 67 | 56 |
| 24 | 31 | 49 | 207 | 161 | 238 | 366 | 140 | 173 | 109 | 91 | 59 | 53 |
| 25 | 40 | 62 | 275 | 158 | 214 | 280 | 132 | 223 | 99 | 161 | 55 | 43 |
| 26 | 76 | 81 | 513 | 146 | 192 | 275 | 148 | 205 | 94 | 111 | 49 | 47 |
| 27 | 436 | 86 | 487 | 134 | 184 | 279 | 300 | 174 | 107 | 82 | 48 | 99 |
| 28 | 850 | 84 | 351 | 128 | 195 | 241 | 383 | 146 | 118 | 69 | 96 | 115 |
| 29 | 815 | 79 | 239 | 120 | --- | 214 | 299 | 168 | 98 | 63 | 102 | 92 |
| 30 | 763 | 72 | 193 | 129 | --- | 199 | 229 | 204 | 88 | 58 | 77 | 73 |
| 31 | 357 | --- | 165 | 190 | --- | 191 | --- | 185 | --- | 60 | 60 | --- |
| TOTAL | 3804 | 2536 | 7293 | 8760 | 16280 | 14137 | 5775 | 4206 | 16444 | 3379 | 3665 | 1365 |
| MEAN | 123 | 84.5 | 235 | 283 | 581 | 456 | 193 | 136 | 548 | 109 | 118 | 45.5 |
| MAX | 850 | 186 | 766 | 953 | 1540 | 951 | 383 | 231 | 2850 | 510 | 456 | 115 |
| MIN | 12 | 49 | 68 | 120 | 184 | 191 | 132 | 65 | 88 | 58 | 48 | 27 |
| CFSM | .47 | .32 | .90 | 1.08 | 2.22 | 1.74 | .74 | .52 | 2.09 | .42 | .45 | .17 |
| IN. | .54 | .36 | 1.04 | 1.24 | 2.31 | 2.01 | .82 | .60 | 2.33 | .48 | .52 | .19 |
| CAL YR 1981 TOTAL | 37128.7 | | | MEAN 102 | MAX 850 | MIN 4.6 | CFSM .39 | IN 5.27 | | | | |
| WTR YR 1982 TOTAL | 87644.0 | | | MEAN 240 | MAX 2850 | MIN 12 | CFSM .92 | IN 12.44 | | | | |

02035000 JAMES RIVER AT CARTERSVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°40'15", long 78°05'10", Goochland County, Hydrologic Unit 02080205, on left bank 200 ft (61 m) downstream from bridge on State Highway 45 between Pemberton and Cartersville, 1.8 mi (2.9 km) downstream from Willis River, and at mile 156.4 (251.6 km).

DRAINAGE AREA.--6,257 mi² (16,206 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1203: 1901-2(M), 1923-25(M), 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 163.90 ft (49.957 m) National Geodetic Vertical Datum of 1929. Prior to June 4, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Moderate diurnal fluctuation caused by powerplants above station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 7,053 ft³/s (199.7 m³/s), 15.31 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362,000 ft³/s (10,300 m³/s) June 22, 1972, gage height, 37.87 ft (11.543 m), from floodmarks, from rating curve extended above 160,000 ft³/s (4,500 m³/s) on basis of slope-conveyance study; minimum, 316 ft³/s (8.95 m³/s) Sept. 13, 14, 1966, gage height, 0.02 ft (0.006 m); minimum daily, 330 ft³/s (9.35 m³/s) Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40,000 ft³/s (1,100 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Feb. 5 | 0230 | 55500 | 1570 | 17.27 | 5.264 | June 15 | 0300 | *76000 | 2150 | 20.91 | 6.373 |

Minimum discharge, 652 ft³/s (18.5 m³/s) Oct. 8; minimum gage height, 0.37 ft (0.113 m) Oct. 8, 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 1 | 996 | 4750 | 1540 | 6040 | 8430 | 7570 | 7290 | 11500 | 5740 | 4080 | 3710 | 2150 |
| 2 | 1050 | 3390 | 1580 | 8180 | 14700 | 7300 | 6810 | 9530 | 6460 | 4080 | 3050 | 1550 |
| 3 | 940 | 2890 | 1900 | 6580 | 32400 | 8460 | 6480 | 8130 | 6420 | 3540 | 2870 | 1740 |
| 4 | 796 | 2730 | 2040 | 8580 | 53700 | 9380 | 6690 | 7270 | 13500 | 3480 | 2710 | 1700 |
| 5 | 762 | 2380 | 2230 | 16000 | 50700 | 10400 | 6740 | 6380 | 25600 | 3520 | 2340 | 1810 |
| 6 | 714 | 2180 | 2290 | 21300 | 31000 | 10400 | 6550 | 5830 | 24600 | 6530 | 2630 | 1540 |
| 7 | 697 | 2280 | 2500 | 16800 | 21700 | 10500 | 6460 | 5230 | 13600 | 5050 | 2640 | 1280 |
| 8 | 672 | 2060 | 2230 | 11400 | 15600 | 16500 | 5970 | 4880 | 10400 | 4160 | 3480 | 1520 |
| 9 | 728 | 1980 | 2080 | 9240 | 12700 | 20400 | 5970 | 4410 | 8000 | 3940 | 3330 | 1510 |
| 10 | 723 | 1820 | 1830 | 7860 | 11600 | 18200 | 6380 | 3970 | 7130 | 4430 | 3850 | 1510 |
| 11 | 773 | 1720 | 2080 | 6070 | 9550 | 15000 | 5730 | 3980 | 16000 | 4180 | 4440 | 1500 |
| 12 | 771 | 1720 | 1620 | 5080 | 9610 | 12600 | 5820 | 3670 | 19600 | 5470 | 5820 | 1540 |
| 13 | 733 | 1560 | 1780 | 4510 | 8900 | 10600 | 5440 | 3430 | 20400 | 4250 | 5040 | 1450 |
| 14 | 856 | 1360 | 1450 | 3940 | 8840 | 9870 | 4960 | 3100 | 63700 | 4030 | 4220 | 1530 |
| 15 | 826 | 1510 | 2290 | 4680 | 8010 | 9330 | 4750 | 2950 | 67300 | 4190 | 2740 | 1360 |
| 16 | 1060 | 1510 | 7500 | 4390 | 7220 | 9500 | 4490 | 2730 | 32500 | 4040 | 3160 | 1520 |
| 17 | 1010 | 1470 | 7580 | 4250 | 8630 | 12700 | 4530 | 2590 | 21800 | 4020 | 3600 | 1550 |
| 18 | 977 | 1360 | 6040 | 3800 | 19200 | 17400 | 4850 | 2570 | 17900 | 3250 | 3610 | 1450 |
| 19 | 1130 | 1310 | 5240 | 3480 | 28400 | 17000 | 5200 | 2580 | 14000 | 2820 | 4560 | 1380 |
| 20 | 1050 | 1360 | 4170 | 3340 | 27100 | 18400 | 5240 | 2520 | 10600 | 2800 | 3270 | 1450 |
| 21 | 1060 | 1330 | 3290 | 3710 | 20700 | 26500 | 5640 | 2940 | 8520 | 3460 | 3120 | 1370 |
| 22 | 1220 | 1280 | 3120 | 4090 | 16400 | 31600 | 5420 | 2710 | 7440 | 3380 | 2330 | 1600 |
| 23 | 1130 | 1420 | 3460 | 4480 | 13300 | 25600 | 5220 | 2750 | 6490 | 3090 | 1940 | 1620 |
| 24 | 1090 | 1360 | 3910 | 6030 | 11500 | 19800 | 4790 | 3880 | 5880 | 4890 | 2080 | 1670 |
| 25 | 1300 | 1480 | 4610 | 6960 | 10200 | 16300 | 4430 | 2940 | 5260 | 6170 | 2280 | 1630 |
| 26 | 1740 | 1380 | 8310 | 6040 | 8760 | 13800 | 4250 | 3360 | 4860 | 3370 | 1660 | 1660 |
| 27 | 3610 | 1580 | 8150 | 5750 | 8090 | 11600 | 7490 | 3030 | 4790 | 3060 | 1810 | 2270 |
| 28 | 17300 | 1640 | 6390 | 5080 | 7840 | 10200 | 11500 | 9650 | 4310 | 3000 | 1810 | 3290 |
| 29 | 12900 | 1470 | 5310 | 4610 | --- | 8820 | 15100 | 13500 | 4420 | 2750 | 2040 | 3080 |
| 30 | 10800 | 1440 | 4700 | 4490 | --- | 8110 | 14900 | 6650 | 3810 | 2810 | 1810 | 2370 |
| 31 | 6760 | --- | 4100 | 4920 | --- | 7560 | --- | 6390 | --- | 2940 | 1630 | --- |
| TOTAL | 76174 | 55720 | 115320 | 211680 | 484780 | 431400 | 195090 | 155050 | 461030 | 120780 | 93580 | 51600 |
| MEAN | 2457 | 1857 | 3720 | 6828 | 17310 | 13920 | 6503 | 5002 | 15370 | 3896 | 3019 | 1720 |
| MAX | 17300 | 4750 | 8310 | 21300 | 53700 | 31600 | 15100 | 13500 | 67300 | 6530 | 5820 | 3290 |
| MIN | 672 | 1280 | 1450 | 3340 | 7220 | 7300 | 4250 | 2520 | 3810 | 2750 | 1630 | 1280 |
| CFSM | .39 | .30 | .60 | 1.09 | 2.77 | 2.23 | 1.04 | .80 | 2.46 | .62 | .48 | .28 |
| IN. | .45 | .33 | .69 | 1.26 | 2.88 | 2.56 | 1.16 | .92 | 2.74 | .72 | .56 | .31 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|-------|-----|-----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 1176857 | MEAN | 3224 | MAX | 26200 | MIN | 672 | CFSM | .52 | IN | 7.00 |
| WTR YR 1982 | TOTAL | 2452204 | MEAN | 6718 | MAX | 67300 | MIN | 672 | CFSM | 1.07 | IN | 14.58 |

JAMES RIVER BASIN

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1968 to January 1976, October 1980 to May 1981.

WATER TEMPERATURES: April 1968 to January 1976, October 1980 to May 1981.

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to May 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| OCT 07... | 1100 | 700 | 263 | 8.1 | 18.0 | .70 | 8.8 | 10 | K2800 | 77 | 23 | 4.6 |
| JAN 27... | 1230 | 5840 | 210 | 7.8 | .0 | 4.5 | 15.0 | 2100 | 74 | 76 | 23 | 4.6 |
| APR 01... | 0915 | 7130 | 136 | 7.5 | 12.5 | 5.4 | 10.3 | 15 | 15 | 51 | 15 | 3.3 |
| MAY 14... | 0830 | 3340 | 155 | 8.8 | 21.5 | 2.7 | 8.4 | 18 | 87 | 54 | 16 | 3.5 |
| JUL 13... | 0815 | 4460 | 121 | 7.3 | 27.0 | 31 | 7.4 | 540 | 920 | 42 | 12 | 3.0 |
| AUG 17... | 0915 | 3640 | 145 | 7.8 | 26.0 | 26 | 74.0 | K5 | 2800 | 49 | 14 | 3.3 |

K Result based on colony count outside optimal range.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| OCT 07... | 18 | 3.0 | 68 | 16 | 27 | .1 | 5.4 | 165 | 138 | .18 | .160 | .42 |
| JAN 27... | 9.5 | 2.0 | 61 | 16 | 14 | <.1 | 5.9 | 127 | 112 | .40 | .050 | <.10 |
| APR 01... | 5.1 | 1.4 | 44 | 12 | 5.2 | <.1 | 6.4 | 101 | 75 | .32 | .120 | .43 |
| MAY 14... | 5.9 | 1.4 | 51 | 9.0 | 6.1 | <.1 | 4.2 | 80 | 77 | <.10 | .020 | .44 |
| JUL 13... | 5.1 | 1.4 | 39 | 10 | 6.5 | <.1 | 6.7 | 81 | 68 | .35 | .030 | .50 |
| AUG 17... | 6.5 | 2.8 | 42 | 10 | 8.1 | .2 | 8.8 | -- | 79 | .48 | .020 | .80 |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

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02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|-----------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| OCT 07... | .090 | .050 | .050 | 1 | 2 | 100 | 40 | 3 | 3 | 20 | 10 |
| JAN 27... | .120 | .090 | .080 | 1 | 1 | 100 | 38 | 1 | <1 | <10 | <10 |
| APR 01... | .030 | .030 | .030 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 14... | .090 | .060 | .040 | 2 | 1 | <100 | 34 | 2 | <1 | 20 | 10 |
| JUL 13... | .120 | .030 | .040 | 1 | 1 | <100 | 36 | 1 | <1 | 10 | <10 |
| AUG 17... | .140 | .050 | .050 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PR) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-----------|---|--|---|--|---|--|---|--|---|--|---|
| OCT 07... | 2 | 2 | 9 | 2 | 230 | 53 | 2 | <1 | 20 | 11 | .3 |
| JAN 27... | <1 | <1 | 7 | 3 | 340 | 6 | <1 | <1 | 20 | 10 | .1 |
| APR 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 14... | <1 | <1 | 3 | 2 | 320 | 91 | 4 | 4 | 40 | 15 | .1 |
| JUL 13... | 13 | 3 | 15 | 9 | 2000 | 120 | 7 | 2 | 80 | 2 | .3 |
| AUG 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDE (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-----------|--|---|--|--|---|---|--|---|--|---|---|
| OCT 07... | .3 | 4 | 4 | <1 | <1 | <1 | <1 | 40 | <4 | 2 | 100 |
| JAN 27... | <.1 | <1 | <1 | <1 | <1 | <1 | <1 | 70 | 6 | 10 | 67 |
| APR 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11 | 89 |
| MAY 14... | .2 | 7 | 7 | <1 | <1 | <1 | <1 | 110 | <3 | 11 | 96 |
| JUL 13... | <.1 | 4 | 3 | <1 | <1 | <1 | <1 | 30 | <4 | 51 | 97 |
| AUG 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 57 | 96 |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02036500 FINE CREEK AT FINE CREEK MILLS, VA

LOCATION.--Lat 37°35'52", long 77°49'12", Powhatan County, Hydrologic Unit 02080205, on right bank 75 ft (23 m) downstream from bridge on State Highway 711 at Fine Creek Mills, 0.8 mi (1.3 km) upstream from mouth, and 6.7 mi (10.8 km) northeast of Powhatan.

DRAINAGE AREA.--22.1 mi² (57.2 km²).

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1203: 1948. WSP 1303: 1945(M). WSP 1383: 1954. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 156.59 ft (47.729 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1953, nonrecording gage and crest-stage gage at site 75 ft (23 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--38 years, 20.0 ft³/s (0.566 m³/s), 12.29 in/yr (312 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s (118 m³/s) Oct. 6, 1972, gage height, 9.02 ft (2.749 m), from rating curve extended above 2,600 ft³/s (74 m³/s); minimum daily, 0.08 ft³/s (0.002 m³/s) Oct. 1, 1968; minimum gage height, 1.53 ft (0.466 m) Sept. 30, Oct. 1, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 270 ft³/s (7.65 m³/s) at 2130 hours Mar. 20, gage height, 3.09 ft (0.942 m), no other peak above base of 200 ft³/s (5.7 m³/s); minimum, 0.60 ft³/s (0.017 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|
| 1 | 1.0 | 4.8 | 4.8 | 45 | 105 | 31 | 19 | 12 | 11 | 12 | 7.7 | 3.2 |
| 2 | .90 | 4.6 | 6.8 | 36 | 63 | 31 | 16 | 11 | 9.5 | 9.5 | 4.8 | 3.0 |
| 3 | .90 | 4.6 | 8.6 | 20 | 79 | 45 | 16 | 9.5 | 9.5 | 5.9 | 4.6 | 2.5 |
| 4 | 1.6 | 4.1 | 9.5 | 45 | 93 | 47 | 18 | 8.6 | 91 | 6.8 | 4.3 | 2.2 |
| 5 | 2.3 | 4.1 | 12 | 67 | 49 | 51 | 14 | 6.8 | 157 | 9.5 | 5.9 | 2.0 |
| 6 | 1.6 | 4.6 | 9.5 | 25 | 33 | 45 | 15 | 5.9 | 109 | 6.8 | 7.7 | 1.8 |
| 7 | 1.2 | 4.3 | 6.8 | 15 | 24 | 59 | 15 | 5.9 | 36 | 4.6 | 12 | 1.5 |
| 8 | .95 | 3.9 | 5.0 | 10 | 19 | 91 | 13 | 5.9 | 20 | 4.3 | 10 | 1.4 |
| 9 | .95 | 3.2 | 4.8 | 8.6 | 19 | 49 | 18 | 6.8 | 14 | 4.1 | 8.6 | 1.5 |
| 10 | .95 | 3.0 | 4.3 | 5.0 | 20 | 33 | 21 | 5.0 | 13 | 4.3 | 9.5 | 1.5 |
| 11 | .95 | 3.2 | 4.1 | 3.7 | 18 | 26 | 16 | 4.6 | 13 | 9.5 | 8.6 | 1.4 |
| 12 | .95 | 3.5 | 4.1 | 3.5 | 14 | 24 | 14 | 4.6 | 12 | 6.8 | 9.5 | 1.8 |
| 13 | .95 | 3.5 | 4.1 | 3.5 | 16 | 21 | 13 | 4.6 | 21 | 5.0 | 5.9 | 1.8 |
| 14 | .93 | 3.2 | 5.9 | 3.6 | 19 | 19 | 13 | 4.3 | 47 | 4.8 | 4.6 | 1.4 |
| 15 | .94 | 3.5 | 33 | 3.8 | 19 | 22 | 11 | 4.6 | 24 | 4.6 | 5.9 | 1.3 |
| 16 | .99 | 3.5 | 61 | 3.9 | 20 | 40 | 11 | 4.3 | 15 | 4.6 | 10 | 1.3 |
| 17 | .96 | 4.6 | 36 | 4.1 | 53 | 51 | 12 | 4.3 | 13 | 4.3 | 38 | 1.3 |
| 18 | 1.3 | 6.8 | 20 | 4.3 | 106 | 34 | 31 | 4.3 | 10 | 4.1 | 14 | 1.3 |
| 19 | 2.8 | 5.9 | 13 | 4.5 | 65 | 26 | 18 | 6.8 | 8.6 | 3.5 | 9.5 | 1.4 |
| 20 | 2.7 | 4.8 | 7.7 | 4.8 | 41 | 123 | 11 | 16 | 7.7 | 2.8 | 11 | 1.5 |
| 21 | 2.8 | 4.3 | 4.8 | 6.8 | 33 | 154 | 12 | 10 | 7.7 | 3.0 | 13 | 1.8 |
| 22 | 2.7 | 4.1 | 10 | 7.7 | 26 | 55 | 11 | 8.6 | 5.9 | 2.5 | 5.9 | 3.9 |
| 23 | 3.6 | 3.7 | 16 | 7.7 | 21 | 33 | 10 | 9.5 | 5.0 | 3.9 | 4.3 | 9.5 |
| 24 | 4.3 | 4.8 | 12 | 8.6 | 19 | 25 | 9.5 | 11 | 4.3 | 14 | 3.9 | 7.7 |
| 25 | 8.3 | 6.8 | 24 | 6.8 | 16 | 22 | 9.5 | 20 | 4.3 | 13 | 3.2 | 4.1 |
| 26 | 17 | 7.7 | 36 | 5.0 | 14 | 24 | 20 | 15 | 4.6 | 6.8 | 2.7 | 10 |
| 27 | 49 | 5.9 | 20 | 4.6 | 14 | 21 | 31 | 11 | 4.6 | 4.6 | 2.7 | 28 |
| 28 | 91 | 5.0 | 13 | 4.3 | 24 | 19 | 33 | 9.5 | 8.6 | 4.6 | 4.8 | 16 |
| 29 | 33 | 4.6 | 8.6 | 4.8 | --- | 16 | 22 | 9.5 | 7.7 | 14 | 6.8 | 6.8 |
| 30 | 13 | 4.6 | 6.8 | 6.8 | --- | 16 | 15 | 19 | 7.7 | 12 | 4.6 | 4.1 |
| 31 | 7.7 | --- | 7.7 | 18 | --- | 16 | --- | 16 | --- | 9.5 | 3.9 | --- |
| TOTAL | 258.27 | 135.2 | 419.9 | 397.4 | 1042 | 1269 | 488.0 | 274.9 | 701.7 | 205.7 | 247.9 | 127.0 |
| MEAN | 8.33 | 4.51 | 13.5 | 12.8 | 37.2 | 40.9 | 16.3 | 8.87 | 23.4 | 6.64 | 8.00 | 4.23 |
| MAX | 91 | 7.7 | 61 | 67 | 106 | 154 | 33 | 20 | 157 | 14 | 38 | 28 |
| MIN | .90 | 3.0 | 4.1 | 3.5 | 14 | 16 | 9.5 | 4.3 | 4.3 | 2.5 | 2.7 | 1.3 |
| CFSM | .38 | .20 | .61 | .58 | 1.68 | 1.85 | .74 | .40 | 1.06 | .30 | .36 | .19 |
| IN. | .43 | .23 | .71 | .67 | 1.75 | 2.14 | .82 | .46 | 1.18 | .35 | .42 | .21 |

CAL YR 1981 TOTAL 3177.92 MEAN 8.71 MAX 91 MIN .50 CFSM .39 IN 5.35
WTR YR 1982 TOTAL 5566.97 MEAN 15.3 MAX 157 MIN .90 CFSM .69 IN 9.37

JAMES RIVER BASIN

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02037000 JAMES RIVER AND KANAWHA CANAL NEAR RICHMOND, VA

LOCATION.--Lat 37°33'52", long 77°34'28", Henrico County, Hydrologic Unit 02080205, on left bank 75 ft (23 m) downstream from Canal Bridge, 400 ft (122 m) downstream from head gates, 1,200 ft (366 m) north of north end of Boshier Dam on James River, 1.6 mi (2.6 km) upstream from Huguenot Memorial Bridge, and 2.0 mi (3.2 km) west of city limits of Richmond.

PERIOD OF RECORD.--September 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 106.07 ft (32.330 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, at datum 3.06 ft (0.933 m) higher.

REMARKS.--Records good except those for period of no gage-height record, July 9 to Sept. 30, which are poor. Canal diverts from James River 1,200 ft (366 m) above Boshier Dam and discharges into river at several points below gaging station near Richmond. Above 2,540 ft³/s (71.9 m³/s), gage height, 14.5 ft (4.42 m), there is interchange of flow with James River; discharge above 2,540 ft³/s (71.9 m³/s) included in discharge for James River near Richmond (station 02037500). Figures given show flow in canal only. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 785 ft³/s (22.23 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 29.1 ft (8.87 m) June 23, 1972, from floodmarks, interchange of flow with James River makes maximum discharge indeterminate; no flow at times when head gates were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft³/s (50.4 m³/s) June 15, gage height, 12.20 ft (3.719 m); minimum daily, 0.60 ft³/s (0.017 m³/s) Aug. 23 to Sept. 30, result of seepage around closed head gates.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| 1 | 682 | 876 | 730 | 859 | 934 | 838 | 816 | 936 | 761 | 675 | 5.8 | .60 |
| 2 | 680 | 819 | 731 | 946 | 988 | 834 | 806 | 874 | 752 | 678 | 5.6 | .60 |
| 3 | 307 | 794 | 741 | 930 | 956 | 858 | 798 | 842 | 765 | 666 | 5.4 | .60 |
| 4 | 36 | 777 | 756 | 912 | 946 | 896 | 788 | 812 | 894 | 657 | 5.2 | .60 |
| 5 | 34 | 768 | 762 | 978 | 946 | 914 | 816 | 792 | 1170 | 648 | 5.0 | .60 |
| 6 | 33 | 643 | 768 | 978 | 901 | 923 | 786 | 756 | 1260 | 52 | 4.8 | .60 |
| 7 | 33 | 594 | 769 | 1030 | 914 | 888 | 774 | 743 | 1020 | 20 | 4.2 | .60 |
| 8 | 33 | 598 | 771 | 1030 | 905 | 912 | 770 | 721 | 912 | 27 | 4.0 | .60 |
| 9 | 32 | 594 | 762 | 1010 | 896 | 925 | 759 | 721 | 852 | 10 | 3.8 | .60 |
| 10 | 466 | 590 | 754 | 966 | 894 | 916 | 763 | 691 | 806 | 9.2 | 3.6 | .60 |
| 11 | 655 | 587 | 743 | 914 | 877 | 912 | 761 | 689 | 866 | 8.2 | 3.4 | .60 |
| 12 | 572 | 410 | 752 | 766 | 879 | 910 | 745 | 689 | 1040 | 8.2 | 3.0 | .60 |
| 13 | 603 | 130 | 737 | 809 | 872 | 907 | 738 | 685 | 1020 | 8.2 | 2.8 | .60 |
| 14 | 612 | 492 | 747 | 823 | 866 | 890 | 723 | 673 | 1390 | 8.0 | 2.6 | .60 |
| 15 | 599 | 492 | 760 | 815 | 852 | 877 | 707 | 662 | 1740 | 8.0 | 2.4 | .60 |
| 16 | 594 | 562 | 872 | 754 | 828 | 881 | 705 | 658 | 1520 | 8.0 | 2.2 | .60 |
| 17 | 596 | 731 | 964 | 773 | 858 | 918 | 693 | 646 | 1140 | 8.0 | 2.0 | .60 |
| 18 | 576 | 724 | 912 | 794 | 943 | 929 | 703 | 644 | 1050 | 8.0 | 1.5 | .60 |
| 19 | 580 | 716 | 872 | 792 | 947 | 925 | 72 | 649 | 976 | 8.0 | 1.0 | .60 |
| 20 | 594 | 716 | 842 | 790 | 940 | 923 | 30 | 651 | 905 | 8.0 | .80 | .60 |
| 21 | 592 | 716 | 796 | 804 | 936 | 936 | 29 | 653 | 826 | 7.9 | .80 | .60 |
| 22 | 596 | 715 | 792 | 834 | 934 | 945 | 29 | 666 | 765 | 7.8 | .80 | .60 |
| 23 | 599 | 715 | 796 | 840 | 923 | 929 | 33 | 657 | 748 | 7.7 | .60 | .60 |
| 24 | 592 | 722 | 807 | 861 | 914 | 934 | 188 | 675 | 752 | 7.6 | .60 | .60 |
| 25 | 576 | 722 | 842 | 946 | 912 | 932 | 705 | 698 | 734 | 7.4 | .60 | .60 |
| 26 | 670 | 728 | 904 | 906 | 870 | 929 | 705 | 684 | 712 | 7.2 | .60 | .60 |
| 27 | 766 | 728 | 954 | 889 | 846 | 914 | 748 | 676 | 711 | 7.0 | .60 | .60 |
| 28 | 986 | 735 | 912 | 862 | 844 | 910 | 858 | 694 | 694 | 6.8 | .60 | .60 |
| 29 | 1070 | 737 | 868 | 813 | --- | 874 | 965 | 976 | 693 | 6.4 | .60 | .60 |
| 30 | 1030 | 728 | 842 | 821 | --- | 844 | 1000 | 820 | 691 | 6.2 | .60 | .60 |
| 31 | 960 | --- | 823 | 849 | --- | 776 | --- | 780 | --- | 6.0 | .60 | --- |
| TOTAL | 16754 | 19859 | 25081 | 27094 | 25321 | 27899 | 19013 | 22513 | 28165 | 3600.8 | 76.10 | 18.00 |
| MEAN | 540 | 662 | 809 | 874 | 904 | 900 | 634 | 726 | 939 | 116 | 2.45 | .60 |
| MAX | 1070 | 876 | 964 | 1030 | 988 | 945 | 1000 | 976 | 1740 | 678 | 5.8 | .60 |
| MIN | 32 | 130 | 730 | 754 | 828 | 776 | 29 | 644 | 691 | 6.0 | .60 | .60 |

CAL YR 1981 TOTAL 223923.00 MEAN 613 MAX 1070 MIN 20
WTR YR 1982 TOTAL 215393.90 MEAN 590 MAX 1740 MIN .60

02037500 JAMES RIVER NEAR RICHMOND, VA

LOCATION.--Lat 37°33'47", long 77°32'50", Henrico County, Hydrologic Unit 02080205, on left bank 0.1 mi (0.2 km) upstream from Huguenot Memorial Bridge, 0.5 mi (0.8 km) west of city limits of Richmond, 1.7 mi (2.7 km) downstream from Boshier Dam, 3.3 mi (5.3 km) upstream from Powhite Creek, and at mile 116.60 (187.61 km).

DRAINAGE AREA.--6,758 mi² (17,503 km²).

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayo's Bridge, at mile 109.5 (176.2 km), 1876-1956, and at mile 108.7 (174.9 km) since 1957, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Control is Williams Island dams which divert flow for city of Richmond water supply. Datum of gage is 98.82 ft (30.120 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. City of Richmond takes from 40 ft³/s (1.13 m³/s) to 90 ft³/s (2.55 m³/s) for water supply from river below gage except during periods of low flow when supply is obtained from James River and Kanawha Canal. Flow regulated by powerplants above station. Above 18.2 ft (5.55 m) stage there is interchange of flow with James River and Kanawha Canal. Records of daily discharge include diversion by city of Richmond but do not include flow in James River and Kanawha Canal (station 02037000) which diverts around station. National Weather Service telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--48 years, 7,504 ft³/s (212.5 m³/s), 15.08 in/yr (383 mm/yr), includes flow in James River and Kanawha Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 313,000 ft³/s (8,860 m³/s), includes canal flow, June 23, 1972, gage height, 28.62 ft (8.723 m); minimum daily, about 10 ft³/s (0.28 m³/s) Sept. 8-15, 1966, Sept. 30, Oct. 5, 6, 1968, Oct. 8-10, 1970; minimum daily discharge of James River and James River and Kanawha Canal combined, 370 ft³/s (10.5 m³/s) Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Probable minimum daily discharge, since 1899, of James River and James River and Kanawha Canal combined, about 350 ft³/s (9.9 m³/s) in October 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50,000 ft³/s (1,400 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Feb. 5 | 1000 | 55200 1560 | 13.80 4.206 | June 15 | 1700 | *73400 2080 | 15.65 4.770 |

Minimum discharge, 166 ft³/s (4.70 m³/s) Oct. 12, gage height, 3.12 ft (0.951 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 1 | 228 | 5400 | 1220 | 5480 | 7750 | 8410 | 6990 | 11600 | 5860 | 3470 | 3310 | 2070 |
| 2 | 212 | 4300 | 1260 | 7690 | 12900 | 8210 | 6730 | 9350 | 5650 | 3550 | 3730 | 2350 |
| 3 | 415 | 3420 | 1290 | 7880 | 21000 | 8680 | 6570 | 8010 | 6210 | 3440 | 3160 | 1920 |
| 4 | 865 | 2980 | 1490 | 7140 | 50100 | 9840 | 6130 | 7050 | 10000 | 3080 | 3030 | 1860 |
| 5 | 815 | 2720 | 1720 | 13300 | 54400 | 10400 | 6570 | 6510 | 24400 | 3030 | 2870 | 1960 |
| 6 | 740 | 2430 | 1840 | 17300 | 37100 | 11000 | 6160 | 5810 | 28000 | 3890 | 2660 | 1940 |
| 7 | 715 | 2270 | 1940 | 18800 | 23500 | 11300 | 6000 | 5540 | 16300 | 6350 | 3390 | 1820 |
| 8 | 715 | 2170 | 2090 | 12400 | 17100 | 15000 | 5940 | 4870 | 10800 | 4430 | 3240 | 1440 |
| 9 | 715 | 2070 | 1940 | 9170 | 13600 | 18800 | 5970 | 4740 | 8610 | 3730 | 3860 | 1560 |
| 10 | 615 | 1960 | 1820 | 7690 | 12000 | 18900 | 5810 | 4220 | 6910 | 4430 | 3860 | 1640 |
| 11 | 212 | 1860 | 1620 | 6350 | 10400 | 15500 | 5860 | 4020 | 9340 | 4070 | 4430 | 1590 |
| 12 | 197 | 1760 | 1660 | 5160 | 9460 | 13400 | 5380 | 4040 | 18200 | 4670 | 5560 | 1540 |
| 13 | 228 | 1960 | 1460 | 4460 | 9250 | 11100 | 5430 | 3810 | 16900 | 5030 | 5920 | 1640 |
| 14 | 228 | 1790 | 1440 | 4120 | 9000 | 9910 | 5190 | 3500 | 44400 | 4200 | 5160 | 1460 |
| 15 | 244 | 1560 | 1540 | 4070 | 8820 | 9430 | 4930 | 3260 | 70400 | 4090 | 4250 | 1560 |
| 16 | 290 | 1460 | 3150 | 4120 | 8270 | 9610 | 4690 | 3130 | 45500 | 4330 | 4070 | 1420 |
| 17 | 440 | 1390 | 7260 | 5060 | 8750 | 10700 | 4480 | 2950 | 22400 | 4120 | 4820 | 1440 |
| 18 | 590 | 1340 | 6400 | 4740 | 14900 | 15300 | 4640 | 2850 | 17600 | 3860 | 4380 | 1520 |
| 19 | 590 | 1220 | 5320 | 3780 | 23400 | 16700 | 5210 | 2820 | 13900 | 3290 | 4380 | 1460 |
| 20 | 590 | 1140 | 4640 | 3570 | 28100 | 17000 | 5430 | 2950 | 10500 | 2920 | 4330 | 1360 |
| 21 | 615 | 1120 | 3830 | 3550 | 21800 | 25100 | 5840 | 2870 | 8340 | 3030 | 3600 | 1440 |
| 22 | 590 | 1090 | 3160 | 4070 | 17700 | 28400 | 5780 | 3160 | 7080 | 3390 | 3370 | 1420 |
| 23 | 690 | 1160 | 2980 | 4430 | 14600 | 27200 | 5560 | 3110 | 6290 | 3960 | 2690 | 1740 |
| 24 | 740 | 1060 | 3160 | 4740 | 12600 | 20500 | 5350 | 3160 | 5510 | 4150 | 2350 | 1660 |
| 25 | 765 | 1120 | 3760 | 7200 | 10500 | 16900 | 4380 | 4090 | 5030 | 6200 | 2380 | 1690 |
| 26 | 915 | 1140 | 6040 | 7290 | 8860 | 14100 | 4250 | 3470 | 4480 | 4540 | 2530 | 1690 |
| 27 | 1460 | 1160 | 8080 | 6910 | 7950 | 11900 | 4980 | 3550 | 4300 | 3390 | 2040 | 2200 |
| 28 | 7740 | 1220 | 6940 | 6210 | 8080 | 10000 | 8480 | 3730 | 3990 | 3130 | 2460 | 2640 |
| 29 | 12900 | 1290 | 5460 | 5970 | --- | 8890 | 12600 | 14100 | 3830 | 3260 | 2480 | 3390 |
| 30 | 10900 | 1260 | 4740 | 5920 | --- | 7820 | 14400 | 7660 | 3810 | 3000 | 2510 | 3110 |
| 31 | 7630 | --- | 4330 | 6080 | --- | 7440 | --- | 6510 | --- | 3050 | 2220 | --- |
| TOTAL | 54589 | 56820 | 103580 | 214650 | 481890 | 427440 | 185730 | 156440 | 444540 | 121080 | 109040 | 54530 |
| MEAN | 1761 | 1894 | 3341 | 6924 | 17210 | 13790 | 6191 | 5046 | 14820 | 3906 | 3517 | 1818 |
| MAX | 12900 | 5400 | 8080 | 18800 | 54400 | 28400 | 14400 | 14100 | 70400 | 6350 | 5920 | 3390 |
| MIN | 197 | 1060 | 1220 | 3550 | 7750 | 7440 | 4250 | 2820 | 3810 | 2920 | 2040 | 1360 |
| (*) | 540 | 662 | 809 | 874 | 904 | 900 | 634 | 726 | 939 | 116 | 2.45 | .60 |
| MEAN# | 2301 | 2556 | 4150 | 7798 | 18110 | 14690 | 6825 | 5772 | 15760 | 4022 | 3520 | 1819 |
| CFSM# | .34 | .38 | .61 | 1.15 | 2.68 | 2.17 | 1.01 | .85 | 2.33 | .60 | .52 | .27 |
| IN# | .39 | .42 | .71 | 1.33 | 2.79 | 2.51 | 1.13 | .98 | 2.60 | .69 | .60 | .30 |

| CAL YR 1981 | TOTAL | 1041460 | MEAN | 2853 | MAX | 20300 | MIN | 197 | MEAN# | 3467 | CFSM# | .51 | IN# | 6.97 |
|-------------|-------|---------|------|------|-----|-------|-----|-----|-------|------|-------|------|-----|-------|
| WTR YR 1982 | TOTAL | 2410329 | MEAN | 6604 | MAX | 70400 | MIN | 197 | MEAN# | 7194 | CFSM# | 1.06 | IN# | 14.45 |

* Diversion, in cubic feet per second, by James River and Kanawha Canal.

Adjusted for diversion.

LOCATION.--Lat 37°26'37", long 77°31'21", Chesterfield County, Hydrologic Unit 02080206, on left bank at upstream side of bridge on State Highway 651, 0.8 mi (1.3 km) downstream from Licking Creek, 2.8 mi (4.5 km) upstream from Pocoshook Creek, and 4.7 mi (7.6 km) northwest of Chesterfield.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s (168 m³/s) Oct. 1, 1979, gage height, 15.32 ft (4.670 m), from floodmarks, from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-conveyance study; minimum, 0.01 ft³/s (<0.001 m³/s) Sept. 20, Oct. 3, 1968.

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | | Date | Time | Discharge (ft ³ /s) (m ³ /s) | | Gage height (ft) (m) | |
|--------|------|---|------|-------------------------|-------|---------|------|---|------|-------------------------|-------|
| Mar. 7 | 2400 | *464 | 13.1 | 7.87 | 2.399 | Mar. 20 | 1915 | 257 | 7.28 | 6.51 | 1.984 |

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|---------|-------|-------|------|------|------|-------|-------|-------|-------|-------|
| 1 | 3.2 | 5.3 | 9.0 | 70 | 96 | 74 | 21 | 16 | 15 | 5.4 | 9.5 | 4.6 |
| 2 | 4.4 | 4.1 | 12 | 47 | 54 | 80 | 18 | 12 | 7.3 | 3.9 | 6.7 | 3.8 |
| 3 | 1.4 | 3.4 | 14 | 43 | 159 | 94 | 18 | 11 | 3.4 | 3.3 | 5.3 | 3.2 |
| 4 | .55 | 3.0 | 18 | 76 | 137 | 79 | 28 | 10 | 37 | 3.8 | 3.9 | 2.6 |
| 5 | .68 | 2.5 | 21 | 76 | 76 | 83 | 28 | 8.2 | 65 | 3.5 | 3.1 | 2.2 |
| 6 | .64 | 5.0 | 18 | 41 | 57 | 71 | 30 | 6.7 | 35 | 3.4 | 2.7 | 1.8 |
| 7 | .99 | 6.1 | 15 | 28 | 47 | 187 | 28 | 6.0 | 13 | 3.3 | 2.5 | 1.9 |
| 8 | 1.3 | 5.3 | 14 | 22 | 40 | 332 | 30 | 5.5 | 7.5 | 3.1 | 3.4 | 1.9 |
| 9 | 1.4 | 4.8 | 12 | 19 | 39 | 105 | 37 | 5.8 | 4.1 | 2.7 | 13 | 1.5 |
| 10 | 1.4 | 4.6 | 11 | 16 | 53 | 69 | 34 | 4.6 | 3.0 | 3.3 | 14 | 1.5 |
| 11 | 1.6 | 4.3 | 11 | 11 | 43 | 57 | 28 | 3.6 | 2.8 | 4.4 | 12 | 1.3 |
| 12 | 1.3 | 4.0 | 11 | 9.3 | 37 | 53 | 25 | 2.9 | 2.2 | 6.5 | 76 | 1.4 |
| 13 | 1.3 | 3.6 | 10 | 11 | 40 | 48 | 25 | 2.2 | 31 | 5.4 | 41 | 1.4 |
| 14 | 1.7 | 3.5 | 13 | 13 | 44 | 45 | 22 | 2.6 | 85 | 14 | 20 | 1.3 |
| 15 | 1.7 | 3.4 | 55 | 15 | 46 | 52 | 20 | 5.3 | 34 | 19 | 54 | 1.3 |
| 16 | 1.7 | 3.6 | 83 | 13 | 46 | 101 | 20 | 3.6 | 19 | 11 | 55 | 1.3 |
| 17 | 1.7 | 4.5 | 42 | 13 | 102 | 114 | 20 | 2.4 | 15 | 6.9 | 62 | 1.3 |
| 18 | 2.0 | 5.0 | 27 | 12 | 158 | 68 | 28 | 1.4 | 15 | 4.7 | 28 | 1.5 |
| 19 | 5.0 | 5.1 | 21 | 11 | 97 | 56 | 23 | 1.6 | 12 | 3.5 | 18 | 1.5 |
| 20 | 4.7 | 4.6 | 17 | 11 | 73 | 149 | 19 | 2.7 | 12 | 2.4 | 12 | 1.8 |
| 21 | 5.0 | 5.7 | 14 | 13 | 59 | 176 | 19 | 2.4 | 11 | 2.2 | 9.3 | 1.9 |
| 22 | 5.6 | 4.7 | 17 | 14 | 54 | 86 | 18 | 3.5 | 8.6 | 2.0 | 7.2 | 4.1 |
| 23 | 6.7 | 4.5 | 22 | 22 | 46 | 62 | 15 | 8.7 | 7.9 | 20 | 8.1 | 6.4 |
| 24 | 5.6 | 5.6 | 20 | 33 | 41 | 36 | 14 | 8.3 | 6.3 | 69 | 9.7 | 3.2 |
| 25 | 5.3 | 8.8 | 42 | 28 | 39 | 32 | 15 | 9.7 | 5.0 | 29 | 8.8 | 2.8 |
| 26 | 2.6 | 7.9 | 50 | 21 | 35 | 30 | 29 | 6.9 | 4.4 | 14 | 5.9 | 19 |
| 27 | 3.9 | 7.9 | 32 | 25 | 40 | 26 | 45 | 4.4 | 4.1 | 9.3 | 4.8 | 63 |
| 28 | 26 | 8.6 | 24 | 15 | 61 | 24 | 33 | 4.1 | 3.9 | 7.9 | 23 | 25 |
| 29 | 22 | 7.4 | 21 | 16 | --- | 23 | 24 | 3.1 | 3.2 | 25 | 16 | 13 |
| 30 | 12 | 8.3 | 18 | 20 | --- | 21 | 19 | 8.1 | 3.5 | 22 | 9.4 | 8.9 |
| 31 | 7.5 | --- | 18 | 41 | --- | 21 | --- | 10 | --- | 13 | 6.3 | --- |
| TOTAL | 140.86 | 155.1 | 712.0 | 805.3 | 1819 | 2454 | 733 | 183.3 | 476.2 | 326.9 | 550.6 | 186.4 |
| MEAN | 4.54 | 5.17 | 23.0 | 26.0 | 65.0 | 79.2 | 24.4 | 5.91 | 15.9 | 10.5 | 17.8 | 6.21 |
| MAX | 26 | 8.8 | 83 | 76 | 159 | 332 | 45 | 16 | 85 | 69 | 76 | 63 |
| MIN | .55 | 2.5 | 9.0 | 9.3 | 35 | 21 | 14 | 1.4 | 2.2 | 2.0 | 2.5 | 1.3 |
| CFSM | .14 | .16 | .70 | .79 | 1.98 | 2.42 | .74 | .18 | .49 | .32 | .54 | .19 |
| IN. | .16 | .18 | .81 | .91 | 2.06 | 2.78 | .83 | .21 | .54 | .37 | .62 | .21 |
| CAL YR 1981 | TOTAL | 5008.18 | MEAN | 13.7 | MAX | 140 | MIN | .55 | CFSM | .42 | IN | 5.68 |
| WTR YR 1982 | TOTAL | 8542.66 | MEAN | 23.4 | MAX | 332 | MIN | .55 | CFSM | .71 | IN | 9.69 |

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|--------------|------|---|---|---------------|-----------------------------|-------------------------------------|--|--|--|--|--|--|
| OCT 14... | 0915 | 1.0 | 40 | 7.2 | 7.0 | 12.0 | K10 | 330 | 12 | 2.9 | 1.1 | 2.5 |
| DEC 15... | 0945 | 11 | 36 | 7.2 | 2.5 | 14.2 | 370 | 1100 | 11 | 2.6 | 1.0 | 2.4 |
| MAR 02... | 1030 | 7.2 | 29 | 6.8 | 3.0 | 13.4 | 36 | 12 | 9 | 1.7 | 1.1 | 2.3 |
| MAY 04... | 0915 | 5.7 | 34 | 7.3 | 12.0 | 10.2 | 12 | 81 | 10 | 2.2 | 1.0 | 2.8 |
| JUN 29... | 1015 | 4.6 | 32 | 7.3 | 20.5 | 8.7 | 88 | 220 | 10 | 2.3 | 1.0 | 2.5 |
| AUG 31... | 0915 | 2.2 | 36 | 7.4 | 18.0 | 9.0 | 68 | 270 | 11 | 2.7 | 1.1 | 2.8 |

K Result based on colony count outside optimal range.

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|---|---|---|---|---|--|--|--|---|--|---|--|
| OCT 14... | .8 | 15 | 1.9 | 1.5 | 14 | 48 | 34 | .14 | .14 | .100 | .080 | .35 |
| DEC 15... | .7 | 13 | 4.0 | 1.8 | 12 | 40 | 32 | .10 | .08 | .040 | .010 | .28 |
| MAR 02... | .5 | 10 | 3.1 | 1.6 | 9.7 | 32 | 26 | .06 | .03 | .010 | .010 | <.10 |
| MAY 04... | .4 | 13 | 3.0 | 1.5 | 11 | 20 | 30 | <.10 | <.10 | .050 | .060 | .52 |
| JUN 29... | 1.6 | 14 | 2.0 | 2.0 | 13 | 32 | 33 | <.10 | <.10 | .020 | .010 | <.10 |
| AUG 31... | .2 | 15 | 3.0 | 1.1 | 14 | 36 | 34 | <.10 | <.10 | .020 | .030 | .20 |

< Actual value is known to be less than the value shown.

| DATE | NITRO- GEN+AM- MONIA + ORGANIC DIS. (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | BERYL- LIUM, DIS- SOLVED (UG/L AS BE) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|---|--|-------------------------------------|--|---|--|--|---|--|--|---|
| OCT 14... | .20 | .020 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 15... | .28 | .030 | .020 | 1 | <1 | <100 | 11 | <1 | 1 | <1 | 10 | <1 |
| MAR 02... | <.10 | <.010 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 04... | .12 | .020 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 29... | -- | .020 | <.010 | 1 | <1 | <100 | 20 | <1 | 1 | <1 | 10 | <1 |
| AUG 31... | -- | .020 | .010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | LITHIUM DIS- SOLVED (UG/L AS LI) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | MERCURY DIS- SOLVED (UG/L AS HG) |
|-----------|--|---|--|---|--|---|--|--|---|--|---|--|
| OCT 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DEC 15... | <3 | 5 | <10 | 720 | 270 | <1 | <10 | <4 | 30 | 15 | .1 | .1 |
| MAR 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 29... | <3 | 4 | <10 | 680 | 180 | <1 | <10 | <4 | 40 | 7 | .6 | .6 |
| AUG 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | STRON- TIUM, DIS- SOLVED (UG/L AS SR) | VANA- DIUM, DIS- SOLVED (UG/L AS V) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) | GROSS ALPHA, SUSP, TOTAL (UG/L AS U-NAT) | GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) |
|-----------|---|--|---|---|--|--|--|---|--|--|--|---|
| OCT 14... | -- | -- | -- | -- | -- | -- | -- | -- | -- | <.8 | <.4 | 1.5 |
| DEC 15... | 20 | <1 | <1 | <1 | <1 | 20 | <6.0 | 50 | 9 | -- | -- | -- |
| MAR 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 29... | <10 | <1 | <1 | <1 | <1 | 21 | <6.0 | 220 | <4 | -- | -- | -- |
| AUG 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) | GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) | GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) | RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) | URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) | CARBON, ORGANIC TOTAL (MG/L AS C) | CARBON, ORGANIC DIS- SOLVED (MG/L AS C) | CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) | CYANIDE TOTAL (MG/L AS CN) | SEDI- MENT, SUS- PENDE (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-----------|---|--|--|---|---|---|--|--|-------------------------------------|---|---|
| OCT 14... | <.4 | 1.4 | <.4 | .06 | <.01 | 3.6 | -- | -- | -- | 8 | 54 |
| DEC 15... | -- | -- | -- | -- | -- | -- | 9.4 | .5 | <.01 | 21 | 83 |
| MAR 02... | -- | -- | -- | -- | -- | 1.5 | -- | -- | -- | 1 | 100 |
| MAY 04... | -- | -- | -- | -- | -- | 2.3 | -- | -- | -- | 6 | 78 |
| JUN 29... | -- | -- | -- | -- | -- | -- | -- | -- | <.01 | 5 | 73 |
| AUG 31... | -- | -- | -- | -- | -- | -- | 2.8 | -- | -- | 3 | 79 |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

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02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | CHLOR- DANE, TOTAL (UG/L) | CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|------|-------------------------|--|--|----------------------------|---|------------------------------------|---|-------------------------|--|-------------------------|--|
| JUN 29... | 1015 | <.10 | <1 | <1.0 | <.01 | <.1 | <.10 | <1.0 | <.01 | <.1 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DI- AZINON, TOTAL (UG/L) | DI- ELDRIN, TOTAL (UG/L) | DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDO- SULFAN, TOTAL (UG/L) | ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ETHION, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|-------------------------|--|-----------------------------------|-----------------------------------|--|-------------------------------------|--|----------------------------|---|----------------------------|-------------------------------------|--|
| JUN 29... | <.01 | <.1 | <.01 | <.01 | .1 | <.01 | <.1 | <.01 | <.1 | <.01 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | HEPTA- CHLOR EPOXIDE TOTAL (UG/L) | HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | MALA- THION, TOTAL (UG/L) | METH- OXY- CHLOR, TOTAL (UG/L) | METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARA- THION, TOTAL (UG/L) | METHYL TRI- THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|---|---|----------------------------|---|------------------------------------|--|--|--|---|---------------------------|--|
| JUN 29... | <.01 | <.1 | <.01 | <.1 | <.01 | <.01 | <.1 | <.01 | <.01 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) | PARA- THION, TOTAL (UG/L) | PER- THANE TOTAL (UG/L) | PER- THANE IN BOTTOM MATERIL (UG/KG) | SILVEX, TOTAL (UG/L) | TOX- APHENE, TOTAL (UG/L) | TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | TOTAL TRI- THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2, 4-DP TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) |
|--------------|---|------------------------------------|----------------------------------|---|----------------------------|------------------------------------|---|----------------------------------|---------------------------|----------------------------|----------------------------|
| JUN 29... | <.10 | <.01 | <.10 | <1.00 | <.01 | <1 | <10 | <.01 | <.01 | <.01 | <.01 |

< Actual value is known to be less than the value shown.

02039000 BUFFALO CREEK NEAR HAMPDEN SYDNEY, VA

LOCATION.--Lat 37°15'25", long 78°29'12", Prince Edward County, Hydrologic Unit 02080207, on left bank 100 ft (30 m) upstream from bridge on State Highway 658, 0.8 mi (1.3 km) upstream from Locket Creek, 2.0 mi (3.2 km) northwest of Hampden Sydney, and 6.0 mi (9.7 km) southwest of Farmville.

DRAINAGE AREA.--69.7 mi² (180.5 km²).

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

REVISED RECORDS.--WSP 1303: 1948-50(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 339.19 ft (103.385 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 19, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 66.4 ft³/s (1.880 m³/s), 12.94 in/yr (329 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,160 ft³/s (259 m³/s) June 21, 1972, gage height, 12.38 ft (3.773 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of slope-area measurement at gage height 11.96 ft (3.645 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Oct. 7, 8, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 15 ft (4.6 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Oct. 28 | 0030 | 568 16.1 | 5.82 1.774 | May 29 | 0630 | 592 16.8 | 5.88 1.792 |
| Jan. 4 | 2100 | 832 23.6 | 6.32 1.926 | June 5 | 1230 | 592 16.8 | 5.88 1.792 |
| Feb. 3 | 2100 | *1200 34.0 | 6.93 2.112 | | | | |

Minimum discharge, 11 ft³/s (0.31 m³/s) Oct. 1, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 12 | 47 | 21 | 128 | 255 | 73 | 48 | 38 | 134 | 27 | 31 | 20 |
| 2 | 14 | 40 | 24 | 89 | 130 | 93 | 45 | 37 | 89 | 24 | 26 | 19 |
| 3 | 14 | 36 | 24 | 140 | 508 | 164 | 49 | 39 | 82 | 23 | 24 | 17 |
| 4 | 13 | 34 | 24 | 427 | 560 | 142 | 48 | 36 | 358 | 34 | 22 | 16 |
| 5 | 13 | 31 | 26 | 408 | 316 | 123 | 43 | 36 | 462 | 165 | 21 | 14 |
| 6 | 13 | 33 | 23 | 172 | 200 | 110 | 45 | 32 | 230 | 158 | 32 | 14 |
| 7 | 13 | 26 | 22 | 104 | 125 | 162 | 42 | 31 | 114 | 83 | 37 | 14 |
| 8 | 12 | 24 | 21 | 73 | 91 | 275 | 41 | 30 | 82 | 58 | 28 | 14 |
| 9 | 12 | 24 | 21 | 57 | 76 | 147 | 49 | 29 | 70 | 46 | 34 | 15 |
| 10 | 12 | 24 | 20 | 54 | 69 | 104 | 47 | 27 | 70 | 58 | 34 | 15 |
| 11 | 13 | 23 | 20 | 52 | 61 | 85 | 45 | 26 | 77 | 52 | 32 | 15 |
| 12 | 13 | 22 | 20 | 48 | 55 | 75 | 43 | 25 | 67 | 82 | 66 | 14 |
| 13 | 13 | 22 | 22 | 46 | 57 | 69 | 42 | 25 | 112 | 76 | 44 | 15 |
| 14 | 14 | 22 | 24 | 43 | 56 | 63 | 41 | 24 | 125 | 74 | 35 | 15 |
| 15 | 15 | 21 | 88 | 40 | 52 | 63 | 40 | 23 | 83 | 64 | 30 | 15 |
| 16 | 15 | 21 | 166 | 40 | 55 | 70 | 39 | 22 | 67 | 54 | 27 | 14 |
| 17 | 15 | 21 | 103 | 40 | 142 | 76 | 42 | 21 | 64 | 45 | 25 | 15 |
| 18 | 15 | 21 | 71 | 41 | 284 | 68 | 54 | 21 | 63 | 39 | 36 | 13 |
| 19 | 16 | 20 | 54 | 42 | 158 | 63 | 48 | 21 | 57 | 34 | 30 | 13 |
| 20 | 16 | 21 | 51 | 42 | 114 | 76 | 43 | 23 | 51 | 32 | 26 | 19 |
| 21 | 16 | 22 | 46 | 43 | 90 | 77 | 43 | 27 | 46 | 43 | 23 | 19 |
| 22 | 16 | 20 | 42 | 47 | 73 | 71 | 40 | 27 | 43 | 38 | 21 | 23 |
| 23 | 18 | 19 | 51 | 47 | 66 | 63 | 38 | 54 | 40 | 41 | 20 | 19 |
| 24 | 22 | 24 | 47 | 44 | 63 | 58 | 36 | 46 | 36 | 45 | 20 | 17 |
| 25 | 24 | 28 | 131 | 42 | 57 | 55 | 35 | 70 | 34 | 35 | 19 | 17 |
| 26 | 63 | 25 | 168 | 36 | 51 | 63 | 49 | 43 | 32 | 30 | 19 | 28 |
| 27 | 270 | 24 | 94 | 35 | 55 | 57 | 57 | 36 | 31 | 28 | 19 | 45 |
| 28 | 415 | 23 | 65 | 35 | 70 | 52 | 51 | 111 | 30 | 26 | 23 | 31 |
| 29 | 176 | 21 | 52 | 34 | --- | 49 | 45 | 432 | 29 | 24 | 20 | 27 |
| 30 | 88 | 21 | 45 | 36 | --- | 48 | 40 | 364 | 29 | 27 | 18 | 23 |
| 31 | 57 | --- | 42 | 81 | --- | 48 | --- | 209 | --- | 29 | 18 | --- |
| TOTAL | 1438 | 760 | 1628 | 2566 | 3889 | 2742 | 1328 | 1985 | 2807 | 1594 | 860 | 555 |
| MEAN | 46.4 | 25.3 | 52.5 | 82.8 | 139 | 88.5 | 44.3 | 64.0 | 93.6 | 51.4 | 27.7 | 18.5 |
| MAX | 415 | 47 | 168 | 427 | 560 | 275 | 57 | 432 | 462 | 165 | 66 | 45 |
| MIN | 12 | 19 | 20 | 34 | 51 | 48 | 35 | 21 | 29 | 23 | 18 | 13 |
| CFSM | .67 | .36 | .75 | 1.19 | 1.99 | 1.27 | .64 | .92 | 1.34 | .74 | .40 | .27 |
| IN. | .77 | .41 | .87 | 1.37 | 2.08 | 1.46 | .71 | 1.06 | 1.50 | .85 | .46 | .30 |
| CAL YR 1981 | TOTAL | 13386.0 | MEAN | 36.7 | MAX | 415 | MIN | 8.8 | CFSM | .53 | IN | 7.14 |
| WTR YR 1982 | TOTAL | 22152.0 | MEAN | 60.7 | MAX | 560 | MIN | 12 | CFSM | .87 | IN | 11.82 |

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LOCATION.--Lat 37°18'25", long 78°23'20", Cumberland County, Hydrologic Unit 02080207, on left bank at downstream side of bridge on State Highway 45 at north town limits of Farmville and 1.1 mi (1.8 km) downstream from Buffalo Creek.

| Date | Time | Discharge (ft ³ /s) | (m ³ /s) | Gage height (ft) | (m) | Date | Time | Discharge (ft ³ /s) | (m ³ /s) | Gage height (ft) | (m) |
|---------|------|-----------------------------------|---------------------|---------------------|-------|--------|------|-----------------------------------|---------------------|---------------------|-------|
| Oct. 28 | 1600 | 2700 | 76.5 | 13.58 | 4.139 | Feb. 4 | 1330 | *6770 | 192 | 17.52 | 5.340 |
| Jan. 5 | 1230 | 2450 | 69.4 | 13.10 | 3.993 | June 6 | 0330 | 4640 | 131 | 15.83 | 4.825 |

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|-------|-------|-------|------|------|-------|------|------|-------|
| 1 | 45 | 205 | 81 | 541 | 1050 | 301 | 213 | 160 | 371 | 104 | 105 | 79 |
| 2 | 43 | 176 | 93 | 553 | 770 | 379 | 202 | 150 | 256 | 84 | 93 | 81 |
| 3 | 43 | 152 | 103 | 553 | 1530 | 697 | 202 | 144 | 203 | 79 | 83 | 77 |
| 4 | 46 | 138 | 106 | 1540 | 5710 | 671 | 233 | 132 | 2200 | 98 | 75 | 71 |
| 5 | 44 | 130 | 113 | 2160 | 2040 | 525 | 204 | 120 | 3720 | 167 | 71 | 65 |
| 6 | 43 | 125 | 109 | 786 | 721 | 604 | 192 | 114 | 3530 | 352 | 193 | 63 |
| 7 | 41 | 116 | 99 | 409 | 480 | 703 | 191 | 109 | 694 | 228 | 464 | 62 |
| 8 | 40 | 92 | 93 | 288 | 355 | 1510 | 170 | 106 | 351 | 148 | 178 | 61 |
| 9 | 39 | 89 | 87 | 219 | 304 | 811 | 192 | 99 | 268 | 117 | 163 | 63 |
| 10 | 41 | 86 | 83 | 153 | 288 | 492 | 212 | 91 | 266 | 108 | 354 | 65 |
| 11 | 41 | 84 | 80 | 154 | 249 | 394 | 191 | 83 | 719 | 146 | 184 | 65 |
| 12 | 43 | 83 | 77 | 230 | 219 | 348 | 175 | 80 | 439 | 366 | 169 | 63 |
| 13 | 45 | 80 | 71 | 170 | 221 | 313 | 168 | 77 | 387 | 287 | 197 | 61 |
| 14 | 45 | 77 | 95 | 148 | 233 | 286 | 161 | 75 | 799 | 258 | 140 | 59 |
| 15 | 45 | 76 | 373 | 157 | 218 | 281 | 152 | 69 | 402 | 195 | 119 | 60 |
| 16 | 46 | 77 | 1050 | 140 | 224 | 365 | 146 | 64 | 264 | 153 | 109 | 60 |
| 17 | 47 | 78 | 579 | 144 | 559 | 473 | 153 | 59 | 225 | 131 | 105 | 72 |
| 18 | 47 | 77 | 352 | 135 | 1190 | 382 | 246 | 57 | 224 | 111 | 161 | 70 |
| 19 | 47 | 75 | 261 | 112 | 725 | 313 | 230 | 55 | 190 | 96 | 155 | 63 |
| 20 | 52 | 77 | 182 | 110 | 505 | 570 | 180 | 87 | 163 | 93 | 112 | 68 |
| 21 | 71 | 78 | 177 | 123 | 395 | 527 | 170 | 77 | 136 | 153 | 96 | 76 |
| 22 | 147 | 74 | 207 | 157 | 318 | 395 | 158 | 91 | 121 | 141 | 87 | 80 |
| 23 | 150 | 71 | 224 | 159 | 266 | 329 | 144 | 775 | 119 | 165 | 80 | 78 |
| 24 | 161 | 83 | 240 | 157 | 239 | 271 | 135 | 358 | 110 | 330 | 78 | 69 |
| 25 | 166 | 109 | 450 | 153 | 219 | 256 | 128 | 462 | 99 | 204 | 76 | 64 |
| 26 | 237 | 108 | 768 | 121 | 197 | 284 | 163 | 273 | 98 | 128 | 71 | 82 |
| 27 | 919 | 97 | 465 | 125 | 203 | 291 | 327 | 177 | 96 | 103 | 76 | 180 |
| 28 | 2270 | 92 | 304 | 145 | 263 | 244 | 287 | 318 | 99 | 94 | 142 | 157 |
| 29 | 808 | 85 | 240 | 150 | --- | 223 | 222 | 606 | 97 | 91 | 119 | 101 |
| 30 | 371 | 79 | 198 | 170 | --- | 212 | 179 | 792 | 93 | 90 | 85 | 86 |
| 31 | 258 | --- | 182 | 290 | --- | 209 | --- | 674 | --- | 95 | 78 | --- |
| TOTAL | 6441 | 2969 | 7542 | 10452 | 19691 | 13659 | 5726 | 6534 | 16739 | 4915 | 4218 | 2301 |
| MEAN | 208 | 99.0 | 243 | 337 | 703 | 441 | 191 | 211 | 558 | 159 | 136 | 76.7 |
| MAX | 2270 | 205 | 1050 | 2160 | 5710 | 1510 | 327 | 792 | 3720 | 366 | 464 | 180 |
| MIN | 39 | 71 | 71 | 110 | 197 | 209 | 128 | 55 | 93 | 79 | 71 | 59 |
| CFSM | .69 | .33 | .80 | 1.11 | 2.32 | 1.46 | .63 | .70 | 1.84 | .53 | .45 | .25 |
| IN. | .79 | .36 | .93 | 1.28 | 2.42 | 1.68 | .70 | .80 | 2.06 | .60 | .52 | .28 |
| CAL YR 1981 | TOTAL | 52911 | MEAN | 145 | MAX | 2270 | MIN | 33 | CFSM | .48 | IN | 6.50 |
| WTH YR 1982 | TOTAL | 101187 | MEAN | 277 | MAX | 5710 | MIN | 39 | CFSM | .91 | IN | 12.42 |

02040000 APPOMATTOX RIVER AT MATTOAX, VA

LOCATION.--Lat 37°25'17", long 77°51'33", Amelia County, Hydrologic Unit 02080207, on right bank 75 ft (23 m) upstream from Southern Railway bridge at Mattoax, 0.3 mi (0.5 km) upstream from Skinquarter Creek, and 3.7 mi (6.0 km) upstream from Flat Creek.

DRAINAGE AREA.--726 mi² (1,880 km²).

PERIOD OF RECORD.--August 1900 to December 1905, March 1926 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 972: 1928, 1932, 1934-38. WSP 1303: 1901(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 174.51 ft (53.191 m) National Geodetic Vertical Datum of 1929. August 1900 to December 1905, nonrecording gage at same site, different datum. March 1926 to October 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Appomattox Water Authority gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--61 years, 720 ft³/s (20.39 m³/s), 13.47 in/yr (342 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) Aug. 18, 1940, gage height, 35.3 ft (10.76 m), from floodmark in gage house, from rating curve extended above 20,000 ft³/s (570 m³/s) on basis of records for stations at Farmville and near Petersburg; minimum, 11 ft³/s (0.31 m³/s) Oct. 2, 1930, gage height, 3.52 ft (1.073 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (110 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Feb. 7 | 2400 | 4280 121 | 19.13 5.831 | June 8 | 0700 | *4720 134 | 20.15 6.142 |

Minimum discharge, 67 ft³/s (1.90 m³/s) Oct. 9-10, gage height, 5.81 ft (1.771 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 71 | 472 | 187 | 1030 | 2190 | 721 | 515 | 429 | 2140 | 268 | 213 | 168 |
| 2 | 74 | 376 | 191 | 1740 | 2880 | 913 | 508 | 388 | 952 | 265 | 224 | 160 |
| 3 | 78 | 320 | 203 | 1490 | 2930 | 1560 | 496 | 360 | 644 | 247 | 229 | 158 |
| 4 | 73 | 280 | 222 | 2110 | 3090 | 2270 | 496 | 344 | 2700 | 238 | 207 | 156 |
| 5 | 75 | 260 | 246 | 3120 | 3300 | 2130 | 498 | 328 | 3930 | 284 | 196 | 146 |
| 6 | 75 | 250 | 250 | 3300 | 3570 | 1670 | 496 | 306 | 4240 | 400 | 181 | 138 |
| 7 | 74 | 238 | 248 | 3540 | 4060 | 1700 | 448 | 286 | 4530 | 630 | 256 | 133 |
| 8 | 72 | 227 | 229 | 2260 | 2630 | 2790 | 429 | 288 | 4700 | 436 | 610 | 128 |
| 9 | 68 | 209 | 214 | 892 | 970 | 2960 | 429 | 370 | 3310 | 314 | 422 | 127 |
| 10 | 68 | 192 | 202 | 710 | 859 | 2660 | 467 | 298 | 826 | 265 | 386 | 128 |
| 11 | 68 | 187 | 195 | 498 | 775 | 1230 | 482 | 265 | 748 | 250 | 450 | 129 |
| 12 | 69 | 182 | 188 | 316 | 689 | 958 | 453 | 248 | 1150 | 277 | 713 | 130 |
| 13 | 69 | 180 | 181 | 496 | 644 | 832 | 405 | 236 | 928 | 477 | 573 | 126 |
| 14 | 72 | 176 | 186 | 450 | 662 | 748 | 384 | 234 | 1320 | 708 | 376 | 124 |
| 15 | 74 | 172 | 349 | 430 | 691 | 713 | 368 | 225 | 1950 | 566 | 300 | 121 |
| 16 | 76 | 170 | 1500 | 410 | 678 | 928 | 354 | 217 | 1000 | 467 | 1000 | 119 |
| 17 | 76 | 175 | 2150 | 400 | 950 | 1410 | 348 | 208 | 680 | 350 | 407 | 116 |
| 18 | 78 | 185 | 1540 | 380 | 2380 | 1230 | 400 | 199 | 597 | 280 | 276 | 114 |
| 19 | 86 | 181 | 811 | 360 | 2820 | 928 | 472 | 195 | 694 | 247 | 336 | 118 |
| 20 | 85 | 176 | 582 | 340 | 2300 | 1190 | 501 | 220 | 563 | 221 | 356 | 126 |
| 21 | 88 | 174 | 424 | 350 | 1360 | 2070 | 414 | 247 | 472 | 218 | 262 | 127 |
| 22 | 96 | 172 | 370 | 400 | 1040 | 1420 | 384 | 265 | 405 | 280 | 218 | 157 |
| 23 | 106 | 170 | 496 | 420 | 808 | 1000 | 366 | 258 | 370 | 397 | 199 | 181 |
| 24 | 160 | 170 | 556 | 410 | 694 | 793 | 344 | 976 | 340 | 1410 | 185 | 176 |
| 25 | 182 | 192 | 766 | 380 | 627 | 694 | 328 | 976 | 316 | 838 | 175 | 157 |
| 26 | 218 | 224 | 1700 | 360 | 570 | 672 | 368 | 982 | 290 | 482 | 168 | 158 |
| 27 | 556 | 236 | 1920 | 350 | 544 | 726 | 525 | 743 | 552 | 314 | 168 | 227 |
| 28 | 1860 | 221 | 1170 | 350 | 570 | 680 | 732 | 448 | 544 | 256 | 208 | 280 |
| 29 | 2260 | 205 | 705 | 360 | --- | 587 | 642 | 532 | 340 | 248 | 256 | 290 |
| 30 | 1990 | 195 | 563 | 450 | --- | 544 | 513 | 1630 | 298 | 218 | 235 | 231 |
| 31 | 697 | --- | 482 | 748 | --- | 520 | --- | 2390 | --- | 212 | 192 | --- |
| TOTAL | 9694 | 6567 | 19026 | 28850 | 45281 | 39247 | 13565 | 15091 | 41529 | 12063 | 9977 | 4649 |
| MEAN | 313 | 219 | 614 | 931 | 1617 | 1266 | 452 | 487 | 1384 | 389 | 322 | 155 |
| MAX | 2260 | 472 | 2150 | 3540 | 4060 | 2960 | 732 | 2390 | 4700 | 1410 | 1000 | 290 |
| MIN | 68 | 170 | 181 | 316 | 544 | 520 | 328 | 195 | 290 | 212 | 168 | 114 |
| CFSM | .43 | .30 | .85 | 1.28 | 2.23 | 1.74 | .62 | .67 | 1.91 | .54 | .44 | .21 |
| IN. | .50 | .34 | .97 | 1.48 | 2.32 | 2.01 | .70 | .77 | 2.13 | .62 | .51 | .24 |

| | | | | | | | |
|-------------|-------|--------|----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 118024 | MEAN 323 | MAX 2260 | MIN 68 | CFSM .45 | IN 6.05 |
| WTR YR 1982 | TOTAL | 245539 | MEAN 673 | MAX 4700 | MIN 68 | CFSM .93 | IN 12.58 |

JAMES RIVER BASIN

191

02041000 DEEP CREEK NEAR MANNBORO, VA

LOCATION.--Lat 37°16'59", long 77°52'12", Amelia County, Hydrologic Unit 02080207, on left bank 300 ft (91 m) upstream from bridge on State Highway 153, 0.9 mi (1.4 km) upstream from Sweathouse Creek, 3.4 mi (5.5 km) northwest of Mannboro, and 7.5 mi (12.1 km) southeast of Amelia.

DRAINAGE AREA.--158 mi² (409 km²).

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

REVISED RECORDS.--WSP 1203: 1948 (calendar year figures only). WSP 2104: Drainage area. WDR VA-79-1: 1973-76(P), 1978.

GAGE.--Water-stage recorder. Datum of gage is 177.20 ft (54.011 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 2, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, June 21 to Aug. 23, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 149 ft³/s (4.220 m³/s), 12.81 in/yr (325 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Oct. 6, 1972, gage height, 24.04 ft (7.327 m); from high-water mark, from rating curve extended above 3,900 ft³/s (110 m³/s); minimum, 0.03 ft³/s (<0.001 m³/s) Oct. 4, 5, 1968; minimum gage height, 0.29 ft (0.884 m) Aug. 9-12, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 14.8 ft (4.51 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s (33.1 m³/s) Mar. 8, gage height, 7.24 ft (2.207 m), no peak above base of 1,200 ft³/s (34 m³/s); minimum, 5.8 ft³/s (0.16 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 8.2 | 50 | 38 | 268 | 517 | 250 | 97 | 73 | 255 | 50 | 45 | 38 |
| 2 | 9.4 | 40 | 44 | 565 | 837 | 331 | 98 | 63 | 148 | 42 | 50 | 35 |
| 3 | 7.4 | 35 | 47 | 444 | 565 | 430 | 98 | 60 | 158 | 39 | 55 | 34 |
| 4 | 13 | 33 | 53 | 547 | 828 | 471 | 97 | 56 | 205 | 37 | 50 | 32 |
| 5 | 7.8 | 32 | 63 | 1050 | 804 | 302 | 91 | 52 | 484 | 40 | 45 | 30 |
| 6 | 7.8 | 34 | 56 | 748 | 333 | 236 | 88 | 47 | 729 | 54 | 37 | 29 |
| 7 | 9.4 | 35 | 54 | 264 | 204 | 334 | 82 | 43 | 484 | 80 | 50 | 28 |
| 8 | 11 | 34 | 50 | 168 | 160 | 855 | 78 | 44 | 169 | 140 | 142 | 28 |
| 9 | 12 | 33 | 44 | 134 | 141 | 851 | 88 | 43 | 113 | 110 | 110 | 27 |
| 10 | 11 | 32 | 40 | 102 | 143 | 336 | 99 | 40 | 95 | 47 | 80 | 27 |
| 11 | 10 | 30 | 37 | 98 | 136 | 214 | 98 | 36 | 109 | 50 | 90 | 27 |
| 12 | 15 | 29 | 35 | 80 | 122 | 180 | 88 | 33 | 105 | 54 | 170 | 26 |
| 13 | 12 | 29 | 33 | 67 | 121 | 159 | 83 | 32 | 145 | 88 | 140 | 26 |
| 14 | 12 | 27 | 35 | 66 | 143 | 143 | 77 | 34 | 458 | 170 | 90 | 26 |
| 15 | 11 | 27 | 108 | 65 | 156 | 142 | 75 | 33 | 677 | 124 | 60 | 26 |
| 16 | 13 | 29 | 339 | 64 | 152 | 185 | 70 | 30 | 281 | 100 | 230 | 27 |
| 17 | 13 | 33 | 517 | 63 | 197 | 240 | 70 | 28 | 136 | 80 | 120 | 31 |
| 18 | 14 | 55 | 246 | 62 | 428 | 209 | 87 | 26 | 148 | 70 | 55 | 29 |
| 19 | 15 | 55 | 132 | 61 | 598 | 163 | 95 | 24 | 176 | 60 | 65 | 29 |
| 20 | 20 | 50 | 93 | 60 | 334 | 215 | 85 | 26 | 136 | 50 | 87 | 29 |
| 21 | 23 | 42 | 98 | 64 | 236 | 476 | 77 | 30 | 112 | 42 | 80 | 29 |
| 22 | 23 | 36 | 78 | 78 | 183 | 396 | 74 | 35 | 87 | 60 | 70 | 40 |
| 23 | 23 | 33 | 98 | 110 | 150 | 214 | 69 | 56 | 68 | 90 | 58 | 55 |
| 24 | 29 | 35 | 109 | 100 | 133 | 166 | 65 | 150 | 61 | 350 | 57 | 57 |
| 25 | 39 | 48 | 154 | 85 | 120 | 144 | 62 | 430 | 45 | 200 | 50 | 46 |
| 26 | 71 | 53 | 317 | 74 | 110 | 133 | 73 | 600 | 53 | 130 | 47 | 44 |
| 27 | 97 | 55 | 365 | 68 | 108 | 120 | 116 | 364 | 89 | 80 | 45 | 94 |
| 28 | 167 | 50 | 189 | 65 | 144 | 111 | 135 | 138 | 100 | 66 | 74 | 117 |
| 29 | 197 | 44 | 138 | 68 | --- | 105 | 111 | 105 | 80 | 56 | 64 | 82 |
| 30 | 121 | 39 | 109 | 72 | --- | 100 | 86 | 146 | 61 | 48 | 48 | 49 |
| 31 | 73 | --- | 93 | 191 | --- | 97 | --- | 190 | --- | 42 | 41 | --- |
| TOTAL | 1095.0 | 1157 | 3812 | 5951 | 8103 | 8308 | 2612 | 3067 | 5967 | 2649 | 2405 | 1197 |
| MEAN | 35.3 | 38.6 | 123 | 192 | 289 | 268 | 87.1 | 98.9 | 199 | 85.5 | 77.6 | 39.9 |
| MAX | 197 | 55 | 517 | 1050 | 837 | 855 | 135 | 600 | 729 | 350 | 230 | 117 |
| MIN | 7.4 | 27 | 33 | 60 | 108 | 97 | 62 | 24 | 45 | 37 | 37 | 26 |
| CFSM | .22 | .24 | .78 | 1.22 | 1.83 | 1.70 | .55 | .63 | 1.26 | .54 | .49 | .25 |
| IN. | .26 | .27 | .90 | 1.40 | 1.91 | 1.96 | .61 | .72 | 1.40 | .62 | .57 | .28 |

CAL YR 1981 TOTAL 24774.4 MEAN 67.9 MAX 1280 MIN 7.4 CFSM .43 IN 5.83
WTR YR 1982 TOTAL 46323.0 MEAN 127 MAX 1050 MIN 7.4 CFSM .80 IN 10.91

JAMES RIVER BASIN

02041650 APPOMATTOX RIVER AT MATOACA, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°13'28", long 77°28'32", Chesterfield County, Hydrologic Unit 02080207, on left bank at upstream side of bridge on State Highway 600, 0.2 mi (0.3 km) south of Matoaca, 2.0 mi (3.2 km) upstream from Rohoic Creek, 2.8 mi (4.5 km) downstream from Lake Chesdin, 3.5 mi (5.6 km) west of Petersburg, and at mile 15.9 (25.6 km).

DRAINAGE AREA.--1,344 mi² (3,481 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 68.30 ft (20.818 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, May 30 to June 9, which are fair. Flow regulated by Appomattox Water Authority at Lake Chesdin, capacity, 36,500 acre-ft (45.0 hm³), 2.8 mi (4.5 km) upstream, from which an average of 12.4 ft³/s (0.35 m³/s) is diverted for industrial and municipal use. Records do not include flow of Upper Appomattox Canal of city of Petersburg which diverts around station. National Weather Service gage-height telemeter at station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 1,517 ft³/s (42.96 m³/s), 15.33 in/yr (389 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,800 ft³/s (1,160 m³/s) Oct. 7, 1972, gage height, 18.39 ft (5.605 m); minimum, 41 ft³/s (1.16 m³/s) Oct. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,380 ft³/s (181 m³/s) June 8, gage height, 7.86 ft (2.396 m), from high-water mark in well; minimum, 41 ft³/s (1.16 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 90 | 869 | 338 | 1380 | 2490 | 1310 | 808 | 749 | 3800 | 469 | 429 | 358 |
| 2 | 165 | 577 | 342 | 2600 | 4320 | 1790 | 731 | 645 | 3500 | 405 | 386 | 325 |
| 3 | 104 | 465 | 373 | 3350 | 5430 | 2300 | 783 | 581 | 1500 | 413 | 368 | 313 |
| 4 | 47 | 421 | 377 | 3560 | 5940 | 3070 | 859 | 549 | 1000 | 439 | 347 | 286 |
| 5 | 52 | 380 | 433 | 4700 | 5730 | 3440 | 608 | 511 | 2000 | 409 | 324 | 263 |
| 6 | 107 | 411 | 424 | 5340 | 5320 | 3080 | 871 | 478 | 4800 | 451 | 336 | 254 |
| 7 | 196 | 358 | 403 | 5110 | 4890 | 2980 | 604 | 464 | 5200 | 541 | 395 | 232 |
| 8 | 146 | 304 | 455 | 4570 | 4870 | 5320 | 579 | 471 | 5500 | 631 | 556 | 213 |
| 9 | 112 | 313 | 389 | 2630 | 3070 | 5760 | 711 | 481 | 6000 | 535 | 765 | 211 |
| 10 | 100 | 307 | 356 | 1290 | 1590 | 5080 | 672 | 481 | 4180 | 474 | 693 | 207 |
| 11 | 100 | 295 | 316 | 982 | 1280 | 3540 | 747 | 439 | 1400 | 480 | 629 | 208 |
| 12 | 99 | 289 | 312 | 880 | 1090 | 2080 | 701 | 414 | 963 | 493 | 1230 | 209 |
| 13 | 98 | 279 | 310 | 800 | 1060 | 1540 | 674 | 403 | 1280 | 470 | 1870 | 205 |
| 14 | 84 | 282 | 330 | 700 | 1020 | 1300 | 623 | 384 | 2030 | 665 | 1310 | 198 |
| 15 | 83 | 270 | 507 | 650 | 1110 | 1180 | 591 | 367 | 2610 | 1320 | 1140 | 194 |
| 16 | 100 | 258 | 1300 | 587 | 1150 | 1430 | 576 | 357 | 2670 | 872 | 2230 | 206 |
| 17 | 90 | 294 | 2780 | 590 | 1420 | 2340 | 576 | 353 | 1500 | 651 | 2380 | 210 |
| 18 | 84 | 306 | 3340 | 580 | 2960 | 2480 | 695 | 329 | 1200 | 510 | 1570 | 256 |
| 19 | 135 | 307 | 2120 | 580 | 4320 | 2000 | 665 | 340 | 1050 | 436 | 1170 | 212 |
| 20 | 91 | 346 | 1140 | 570 | 4500 | 1820 | 738 | 355 | 965 | 397 | 872 | 94 |
| 21 | 92 | 328 | 782 | 580 | 3170 | 2860 | 727 | 353 | 771 | 377 | 635 | 144 |
| 22 | 100 | 283 | 642 | 620 | 1960 | 3420 | 649 | 424 | 625 | 360 | 486 | 256 |
| 23 | 125 | 282 | 671 | 700 | 1300 | 2420 | 606 | 446 | 551 | 512 | 440 | 284 |
| 24 | 172 | 306 | 746 | 750 | 1060 | 1690 | 564 | 513 | 485 | 1420 | 369 | 298 |
| 25 | 266 | 323 | 1020 | 700 | 911 | 1280 | 530 | 1590 | 451 | 2550 | 352 | 270 |
| 26 | 301 | 318 | 1990 | 660 | 732 | 1190 | 589 | 1730 | 438 | 1620 | 331 | 350 |
| 27 | 359 | 360 | 2980 | 640 | 763 | 1070 | 816 | 1770 | 505 | 794 | 314 | 450 |
| 28 | 939 | 380 | 2830 | 650 | 931 | 1010 | 1030 | 1130 | 824 | 531 | 472 | 500 |
| 29 | 2330 | 369 | 1730 | 660 | --- | 935 | 1090 | 762 | 807 | 462 | 488 | 530 |
| 30 | 2920 | 341 | 1070 | 679 | --- | 846 | 933 | 820 | 574 | 416 | 448 | 500 |
| 31 | 1990 | --- | 852 | 850 | --- | 809 | --- | 2000 | --- | 432 | 411 | --- |
| TOTAL | 11677 | 10621 | 31658 | 48938 | 74387 | 71370 | 21346 | 20689 | 59179 | 20535 | 23746 | 8236 |
| MEAN | 377 | 354 | 1021 | 1579 | 2657 | 2302 | 712 | 667 | 1973 | 662 | 766 | 275 |
| MAX | 2920 | 869 | 3340 | 5340 | 5940 | 5760 | 1090 | 2000 | 6000 | 2550 | 2380 | 530 |
| MIN | 47 | 258 | 310 | 570 | 732 | 809 | 530 | 329 | 438 | 360 | 314 | 94 |
| CAL YR 1981 | TOTAL | 185372 | MEAN | 508 | MAX | 3410 | MIN | 47 | | | | |
| WTR YR 1982 | TOTAL | 402382 | MEAN | 1102 | MAX | 6000 | MIN | 47 | | | | |

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 05... | 1130 | 375 | 87 | 7.8 | 15.5 | 3.9 | 9.8 | K10 | 120 | 28 | 6.3 | 3.0 |
| DEC 15... | 0930 | 680 | 88 | 6.7 | 5.0 | 7.4 | 12.9 | 24 | 55 | 26 | 6.1 | 2.6 |
| MAR 17... | 1100 | 2360 | 62 | 6.9 | 12.0 | 34 | 12.0 | K20 | 49 | 18 | 4.1 | 1.9 |
| MAY 12... | 1200 | 424 | 87 | 8.7 | 23.0 | 2.2 | 10.1 | <3 | 470 | 26 | 5.9 | 2.7 |
| JUL 08... | 1115 | 655 | 81 | 8.3 | 28.0 | 3.9 | 8.4 | 47 | 460 | 29 | 6.8 | 3.0 |
| AUG 31... | 1330 | 411 | 70 | 6.3 | 25.0 | 4.4 | 8.0 | K21 | 120 | 20 | 4.5 | 2.1 |

< Actual value is known to be less than the value shown.

K Result based on colony count outside optimal range.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINEITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|--|---|---|--|---|--|--|---|---|--|
| NOV 05... | 5.9 | 2.4 | 31 | 5.3 | 4.9 | .1 | 15 | 68 | 62 | .08 | .030 | .29 |
| DEC 15... | 5.3 | 3.2 | 24 | 7.9 | 5.1 | <.1 | 15 | 70 | 60 | .15 | .110 | .40 |
| MAR 17... | 3.6 | 1.7 | 14 | 9.6 | 3.5 | <.1 | 11 | 56 | 44 | .18 | .040 | .41 |
| MAY 12... | 4.6 | 1.5 | 30 | 5.0 | 4.1 | .1 | 12 | 62 | 54 | <.10 | .020 | .31 |
| JUL 08... | 5.3 | 1.5 | 30 | 5.0 | 3.3 | <.1 | 18 | 71 | 61 | <.10 | .020 | .70 |
| AUG 31... | 3.5 | 2.1 | 23 | 4.0 | 3.6 | .1 | 13 | 64 | 47 | <.10 | .010 | .50 |

< Actual value is known to be less than the value shown.

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV 05... | .010 | .010 | <.010 | 1 | <1 | 100 | 23 | 2 | <1 | 10 | <10 |
| DEC 15... | .030 | .020 | <.010 | 1 | <1 | 100 | 24 | 1 | 1 | 20 | 10 |
| MAR 17... | .060 | .010 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 12... | .020 | .010 | <.010 | 2 | 1 | <100 | 26 | 2 | <1 | 20 | 10 |
| JUL 08... | .030 | .020 | <.010 | 1 | <1 | <100 | 30 | <1 | <1 | 10 | 10 |
| AUG 31... | .040 | .030 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

JAMES RIVER BASIN

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|--------------|---|--|---|--|---|--|---|--|---|--|---|
| NOV 05... | <1 | <1 | 6 | 1 | 330 | 63 | 3 | 1 | 60 | 7 | .3 |
| DEC 15... | <1 | <1 | 7 | 4 | 530 | 210 | 1 | <1 | 60 | 12 | <.1 |
| MAR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 12... | <1 | <1 | 3 | 3 | 250 | 130 | 2 | 2 | 60 | 12 | .3 |
| JUL 08... | <1 | 1 | 6 | 4 | 610 | 230 | <1 | 1 | 90 | 10 | <.1 |
| AUG 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|--|---|--|--|---|---|--|---|--|--|---|
| NOV 05... | .1 | 2 | 1 | <1 | <1 | <1 | <1 | 40 | <4 | 5 | 97 |
| DEC 15... | <.1 | 1 | 1 | <1 | <1 | <1 | <1 | 50 | <4 | 43 | 100 |
| MAR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 | 90 |
| MAY 12... | .2 | 5 | 5 | <1 | <1 | <1 | <1 | 40 | <3 | 4 | 93 |
| JUL 08... | <.1 | <1 | 1 | <1 | <1 | <1 | <1 | 20 | <4 | 6 | 98 |
| AUG 31... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8 | 95 |

< Actual value is known to be less than the value shown.

195

LOCATION.--Lat 37°26'10", long 77°03'40", New Kent County, Hydrologic Unit 02080206, on left bank 100 ft (30 m) downstream from bridge on State Highway 618, 1.1 mi (1.8 km) southwest of Providence Forge, and 1.7 mi (2.7 km) downstream from Schiminoe Creek.

WATER-DISCHARGE RECORDS

REMARKS. --Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,710 ft³/s (218 m³/s) Aug. 15, 1955, gage height, 11.67 ft (3.557 m); minimum, 0.70 ft³/s (0.020 m³/s) July 7, 1977; minimum gage height, 1.53 ft (0.466 m) Sept. 13, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,140 ft³/s (32.3 m³/s) Mar. 11, gage height, 8.44 ft (2.573 m); minimum, 4.5 ft³/s (0.13 m³/s) Oct. 11, gage height, 1.82 ft (0.555 m).

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-----------|----------|------|-------|---------|----------|---------|------|------|------|------|
| 1 | 10 | 68 | 37 | 276 | 316 | 434 | 282 | 226 | 178 | 34 | 235 | 211 |
| 2 | 7.4 | 83 | 43 | 294 | 343 | 438 | 265 | 283 | 408 | 28 | 204 | 175 |
| 3 | 6.9 | 93 | 50 | 317 | 420 | 435 | 247 | 293 | 359 | 23 | 178 | 153 |
| 4 | 6.5 | 96 | 59 | 363 | 517 | 421 | 232 | 250 | 270 | 20 | 156 | 157 |
| 5 | 7.2 | 95 | 65 | 395 | 628 | 437 | 216 | 206 | 270 | 17 | 138 | 182 |
| 6 | 6.3 | 100 | 68 | 467 | 736 | 454 | 222 | 171 | 254 | 14 | 132 | 188 |
| 7 | 6.2 | 89 | 68 | 484 | 795 | 528 | 226 | 143 | 224 | 13 | 169 | 167 |
| 8 | 5.8 | 73 | 67 | 433 | 736 | 679 | 223 | 118 | 202 | 12 | 183 | 138 |
| 9 | 5.5 | 65 | 66 | 390 | 624 | 864 | 233 | 100 | 199 | 11 | 232 | 111 |
| 10 | 6.0 | 55 | 60 | 350 | 537 | 1030 | 241 | 84 | 400 | 11 | 290 | 86 |
| 11 | 5.2 | 50 | 52 | 280 | 438 | 1130 | 236 | 70 | 533 | 18 | 341 | 63 |
| 12 | 6.5 | 46 | 42 | 230 | 372 | 1030 | 227 | 60 | 498 | 38 | 492 | 46 |
| 13 | 6.9 | 41 | 38 | 180 | 337 | 839 | 211 | 51 | 420 | 70 | 369 | 35 |
| 14 | 8.0 | 38 | 40 | 146 | 325 | 640 | 197 | 43 | 372 | 98 | 393 | 28 |
| 15 | 8.3 | 37 | 98 | 127 | 327 | 508 | 188 | 37 | 324 | 230 | 456 | 24 |
| 16 | 10 | 35 | 187 | 138 | 340 | 473 | 183 | 32 | 310 | 257 | 439 | 19 |
| 17 | 10 | 34 | 247 | 138 | 369 | 497 | 176 | 29 | 287 | 299 | 344 | 16 |
| 18 | 11 | 36 | 302 | 130 | 458 | 500 | 197 | 27 | 329 | 334 | 270 | 14 |
| 19 | 11 | 35 | 275 | 121 | 549 | 485 | 208 | 24 | 304 | 287 | 214 | 12 |
| 20 | 7.4 | 34 | 267 | 120 | 641 | 537 | 210 | 25 | 261 | 239 | 182 | 12 |
| 21 | 6.6 | 32 | 316 | 131 | 718 | 721 | 201 | 30 | 240 | 214 | 161 | 11 |
| 22 | 5.8 | 27 | 300 | 143 | 804 | 834 | 180 | 32 | 220 | 187 | 140 | 12 |
| 23 | 6.7 | 26 | 265 | 170 | 767 | 800 | 162 | 33 | 197 | 195 | 134 | 15 |
| 24 | 11 | 26 | 220 | 230 | 659 | 849 | 155 | 71 | 162 | 224 | 171 | 16 |
| 25 | 15 | 34 | 206 | 261 | 544 | 887 | 151 | 73 | 124 | 180 | 169 | 20 |
| 26 | 36 | 35 | 223 | 267 | 442 | 798 | 152 | 61 | 93 | 213 | 181 | 30 |
| 27 | 48 | 36 | 241 | 277 | 381 | 630 | 165 | 52 | 70 | 215 | 186 | 83 |
| 28 | 59 | 37 | 267 | 254 | 407 | 496 | 159 | 47 | 56 | 169 | 250 | 84 |
| 29 | 62 | 38 | 254 | 239 | --- | 397 | 162 | 46 | 45 | 168 | 255 | 89 |
| 30 | 61 | 40 | 250 | 251 | --- | 336 | 180 | 54 | 37 | 184 | 223 | 117 |
| 31 | 62 | --- | 249 | 256 | --- | 299 | --- | 74 | --- | 232 | 232 | --- |
| TOTAL | 525.2 | 1534 | 4922 | 7858 | 14530 | 19406 | 6087 | 2845 | 7646 | 4234 | 7519 | 2314 |
| MEAN | 16.9 | 51.1 | 159 | 253 | 519 | 626 | 203 | 91.8 | 255 | 137 | 243 | 77.1 |
| MAX | 62 | 100 | 316 | 484 | 804 | 1130 | 282 | 293 | 533 | 334 | 492 | 211 |
| MIN | 5.2 | 26 | 37 | 120 | 316 | 299 | 151 | 24 | 37 | 11 | 132 | 11 |
| CFSM | .07 | .21 | .64 | 1.02 | 2.09 | 2.52 | .82 | .37 | 1.03 | .55 | .98 | .31 |
| IN. | .08 | .23 | .74 | 1.18 | 2.18 | 2.91 | .91 | .43 | 1.15 | .64 | 1.13 | .35 |
| CAL YR 1981 | TOTAL | 36636.4 | MEAN 100 | MAX | 447 | MIN 5.1 | CFSM .40 | IN 5.50 | | | | |
| WTR YR 1982 | TOTAL | 79420.2</ | | | | | | | | | | |

JAMES RIVER BASIN

02042500 CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|--------------|------|---|---|---------------|-----------------------------|--|-------------------------------------|--|--|--|--|---|
| NOV 05... | 1130 | 96 | 135 | 6.1 | 14.5 | 35 | -- | 27 | 7.4 | 2.0 | 10 | 4.8 |
| DEC 16... | 1415 | 192 | 100 | 6.6 | 4.0 | 40 | -- | 22 | 6.3 | 1.6 | 7.5 | 3.8 |
| FEB 05... | 1330 | 631 | 280 | 5.6 | 4.0 | 10 | 13.4 | 32 | 9.0 | 2.2 | 38 | 2.7 |
| MAR 11... | 1340 | 1140 | 200 | 6.2 | 10.0 | 20 | 9.8 | 21 | 5.8 | 1.6 | 25 | 1.8 |
| APR 23... | 1150 | 161 | 128 | 6.8 | 13.0 | 55 | 8.7 | 28 | 7.9 | 2.0 | 12 | 1.7 |
| AUG 31... | 0830 | 234 | 90 | 5.8 | 23.5 | 50 | 7.5 | 23 | 7.0 | 1.4 | 8.7 | .1 |

| DATE | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|--------------|---|---|---|--|---|--|--|---|---|--|--|
| NOV 05... | 9.0 | 16 | 21 | .1 | 9.9 | 94 | 77 | .010 | .03 | .010 | 300 |
| DEC 16... | 12 | 14 | 13 | <.1 | 8.1 | 74 | 62 | <.010 | .08 | .020 | 490 |
| FEB 05... | 3.0 | 14 | 66 | .1 | 5.0 | 166 | 139 | <.010 | .10 | .010 | 120 |
| MAR 11... | 6.0 | 13 | 41 | <.1 | 2.4 | 126 | 94 | <.010 | .03 | <.010 | 140 |
| APR 23... | 26 | 4.0 | 17 | .1 | 3.0 | 81 | 64 | <.010 | <.10 | <.010 | 990 |
| AUG 31... | 24 | 2.0 | 11 | .2 | 9.1 | -- | 54 | <.010 | <.10 | <.010 | 280 |

< Actual value is known to be less than the value shown.

197

LOCATION.--Lat 36°35'42", long 76°26'23", Chesapeake City, Hydrologic Unit 03010205, on right bank in outlet canal, 200 ft (61 m) upstream from dam and gates, 0.5 mi (0.8 km) downstream from Lake Drummond, 3.1 mi (5.0 km) north of North Carolina State line, and 20 mi (32 km) southwest of Norfolk.

REVISID RECORDS.--WSP 1032: 1934-43.

GAGE.--Nonrecording gage. Datum of gage is 12.16 ft (3.706 m) National Geodetic Vertical Datum of 1929. Aug. 22, 1978, to Oct. 1, 1981, water-stage recorder at same site and datum.

REMARKS.--Mean daily gage heights are shown in table below.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.68 ft (2.036 m) Sept. 17, 1960; minimum, -0.67 ft (-0.204 m) Nov. 3, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.28 ft (1.609 m) July 10; minimum, 3.62 ft (1.103 m) Nov. 28, 29.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 4.60 | 3.87 | 3.65 | 5.10 | 4.66 | 4.45 | 4.73 | 4.58 | 4.93 | 5.00 | 5.12 | 4.88 |
| 2 | 4.67 | 3.86 | 3.77 | 5.11 | 4.59 | 4.41 | 4.74 | 4.59 | 5.00 | 4.96 | 4.98 | 4.90 |
| 3 | 4.49 | 3.82 | 3.78 | 5.16 | 4.60 | 4.48 | 4.57 | 4.56 | 4.97 | 4.96 | 5.04 | 4.90 |
| 4 | 4.46 | 3.82 | 3.75 | 5.10 | 4.61 | 4.52 | 4.76 | 4.54 | 5.02 | 5.00 | 5.08 | 4.90 |
| 5 | 4.46 | 3.80 | 3.86 | 5.04 | 4.62 | 4.46 | 4.58 | 4.51 | 5.03 | 5.04 | 5.10 | 4.90 |
| 6 | 4.43 | 3.88 | 3.90 | 4.98 | 4.67 | 4.37 | 4.70 | 4.57 | 4.93 | 5.00 | 5.10 | 4.90 |
| 7 | 4.39 | 3.84 | 3.81 | 4.89 | 4.63 | 4.41 | 4.60 | 4.61 | 4.97 | 5.00 | 5.10 | 4.91 |
| 8 | 4.35 | 3.81 | 3.91 | 4.83 | 4.60 | 4.36 | 4.52 | 4.59 | 4.90 | 5.00 | 5.20 | 4.88 |
| 9 | 4.29 | 3.77 | 3.82 | 4.78 | 4.50 | 4.37 | 4.60 | 4.60 | 4.98 | 5.00 | 5.25 | 4.84 |
| 10 | 4.27 | 3.76 | 3.80 | 4.78 | 4.53 | 4.43 | 4.56 | 4.60 | 4.99 | 5.28 | 5.20 | 4.90 |
| 11 | 4.24 | 3.75 | 3.84 | 4.55 | 4.51 | 4.43 | 4.53 | 4.60 | 4.98 | 5.20 | 5.07 | 4.86 |
| 12 | 4.16 | 3.74 | 3.85 | 4.55 | 4.50 | 4.45 | 4.54 | 4.60 | 4.97 | 5.17 | 5.18 | 4.80 |
| 13 | 4.18 | 3.72 | 3.82 | 4.69 | 4.60 | 4.45 | 4.55 | 4.61 | 4.98 | 5.20 | 5.13 | 4.80 |
| 14 | 4.11 | 3.70 | 3.78 | 4.75 | 4.52 | 4.44 | 4.56 | 4.60 | 5.02 | 4.86 | 5.14 | 4.84 |
| 15 | 4.11 | 3.69 | 3.95 | 4.75 | 4.47 | 4.40 | 4.54 | 4.66 | 5.01 | 4.87 | 5.12 | 4.79 |
| 16 | 4.08 | 3.68 | 3.98 | 4.73 | 4.44 | 4.43 | 4.55 | 4.66 | 4.98 | 5.02 | 4.97 | 4.76 |
| 17 | 4.04 | 3.73 | 4.01 | 4.68 | 4.50 | 4.44 | 4.56 | 4.65 | 5.00 | 4.99 | 4.84 | 4.76 |
| 18 | 4.00 | 3.75 | 4.07 | 4.64 | 4.52 | 4.52 | 4.59 | 4.63 | 5.00 | 4.98 | 4.70 | 4.66 |
| 19 | 4.07 | 3.74 | 4.12 | 4.60 | 4.59 | 4.53 | 4.60 | 4.65 | 5.00 | 5.00 | 4.64 | 4.76 |
| 20 | 4.01 | 3.70 | 4.17 | 4.56 | 4.61 | 4.56 | 4.57 | 4.56 | 5.02 | 5.10 | 4.68 | 4.76 |
| 21 | 3.98 | 3.75 | 4.20 | 4.57 | 4.67 | 4.58 | 4.56 | 4.62 | 5.04 | 5.12 | 4.78 | 4.86 |
| 22 | 3.90 | 3.69 | 4.19 | 4.53 | 4.61 | 4.60 | 4.55 | 4.62 | 5.00 | 4.97 | 4.81 | 4.78 |
| 23 | 3.87 | 3.70 | 4.33 | 4.53 | 4.61 | 4.56 | 4.56 | 4.73 | 5.00 | 4.98 | 4.90 | 4.81 |
| 24 | 3.87 | 3.69 | 4.34 | 4.54 | 4.57 | 4.57 | 4.58 | 4.73 | 4.96 | 5.06 | 4.98 | 4.76 |
| 25 | 3.95 | 3.69 | 4.47 | 4.44 | 4.60 | 4.56 | 4.61 | 4.80 | 4.92 | 4.98 | 5.04 | 4.80 |
| 26 | 3.95 | 3.69 | 4.58 | 4.47 | 4.48 | 4.58 | 4.66 | 4.84 | 4.95 | 5.00 | 5.06 | 4.80 |
| 27 | 4.00 | 3.66 | 4.65 | 4.45 | 4.41 | 4.55 | 4.70 | 4.91 | 4.96 | 5.00 | 4.98 | 4.93 |
| 28 | 3.99 | 3.63 | 4.67 | 4.50 | 4.49 | 4.50 | 4.80 | 4.91 | 4.96 | 5.04 | 4.97 | 4.76 |
| 29 | 3.98 | 3.63 | 4.75 | 4.50 | --- | 4.49 | 4.66 | 4.96 | 4.98 | 5.08 | 4.91 | 4.69 |
| 30 | 3.93 | 3.65 | 4.78 | 4.54 | --- | 4.60 | 4.64 | 4.90 | 4.99 | 5.04 | 4.94 | 4.75 |
| 31 | 3.91 | --- | 4.94 | 4.57 | --- | 4.64 | --- | 4.93 | --- | 5.06 | 4.88 | --- |
| MEAN | 4.15 | 3.74 | 4.11 | 4.71 | 4.56 | 4.49 | 4.61 | 4.67 | 4.98 | 5.03 | 5.00 | 4.82 |
| MAX | 4.67 | 3.88 | 4.94 | 5.16 | 4.67 | 4.64 | 4.80 | 4.96 | 5.04 | 5.28 | 5.25 | 4.93 |
| MIN | 3.87 | 3.63 | 3.65 | 4.44 | 4.41 | 4.36 | 4.52 | | | | | |

CHOWAN RIVER BASIN

02044000 NOTTOWAY RIVER NEAR BURKEVILLE, VA

LOCATION (REVISED).--Lat 37°04'40", long 78°11'52", Lunenburg County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 723, 4.0 mi (6.4 km) upstream from Modest Creek, 5.6 mi (9.0 km) north of Victoria, and 7.5 mi (12.1 km) south of Burkeville.

DRAINAGE AREA.--38.7 mi² (100.2 km²).

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

REVISED RECORDS.--WSP 1383: 1946-47, 1949. WSP 1433: 1948. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 354.58 ft (108.076 m) National Geodetic Vertical Datum of 1929. Prior to July 4, 1951, nonrecording gage at same site and datum. Prior to Oct. 29, 1981, on left bank at downstream side of bridge at same datum.

REMARKS.--Records good except those for period of no gage-height record, May 24 to July 15, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 38.5 ft³/s (1.090 m³/s), 13.51 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) Oct. 23, 1971, gage height, 22.33 ft (6.806 m), from rating curve extended above 3,200 ft³/s (91 m³/s) on basis of slope-area measurement of peak flow; no flow Aug. 29 to Oct. 14, 1954, Sept. 3-5, 12-15, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, 27.4 ft (8.35 m) in August 1940, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 678 ft³/s (19.2 m³/s) Jan. 4, gage height, 9.99 ft (3.045 m), no peak above base of 1,200 ft³/s (34 m³/s); minimum, 0.66 ft³/s (0.019 m³/s) Oct. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|-----------|----------|---------|----------|----------|--------|------|--------|-------|-------|
| 1 | .66 | 6.0 | 6.2 | 201 | 199 | 82 | 20 | 12 | 115 | 11 | 50 | 4.3 |
| 2 | .69 | 5.5 | 7.4 | 72 | 69 | 128 | 18 | 11 | 60 | 11 | 16 | 4.2 |
| 3 | .73 | 5.5 | 8.1 | 123 | 182 | 148 | 16 | 11 | 36 | 10 | 14 | 4.1 |
| 4 | .69 | 4.9 | 9.0 | 334 | 148 | 70 | 22 | 11 | 52 | 16 | 9.8 | 3.8 |
| 5 | .69 | 5.0 | 12 | 123 | 72 | 61 | 17 | 9.2 | 130 | 26 | 7.7 | 3.4 |
| 6 | .73 | 5.3 | 11 | 56 | 51 | 46 | 18 | 8.3 | 80 | 15 | 6.8 | 3.3 |
| 7 | .69 | 6.0 | 9.0 | 42 | 39 | 92 | 18 | 8.1 | 44 | 12 | 6.1 | 3.2 |
| 8 | .69 | 5.7 | 8.1 | 32 | 32 | 127 | 16 | 7.6 | 28 | 11 | 5.8 | 3.1 |
| 9 | .80 | 5.3 | 7.4 | 26 | 29 | 63 | 22 | 7.4 | 25 | 16 | 13 | 3.0 |
| 10 | .80 | 5.2 | 7.0 | 20 | 32 | 45 | 25 | 6.9 | 27 | 68 | 15 | 3.1 |
| 11 | .88 | 4.8 | 6.8 | 16 | 26 | 38 | 20 | 6.0 | 29 | 50 | 39 | 3.2 |
| 12 | .95 | 4.7 | 6.5 | 13 | 23 | 34 | 18 | 5.6 | 25 | 100 | 47 | 3.2 |
| 13 | 1.2 | 4.7 | 6.5 | 13 | 28 | 29 | 17 | 5.5 | 100 | 250 | 20 | 3.1 |
| 14 | 1.2 | 4.6 | 7.6 | 12 | 44 | 27 | 16 | 5.3 | 68 | 80 | 11 | 3.0 |
| 15 | 1.2 | 4.7 | 112 | 12 | 41 | 26 | 14 | 4.8 | 46 | 150 | 8.8 | 2.9 |
| 16 | 1.3 | 4.7 | 138 | 13 | 36 | 42 | 14 | 4.5 | 27 | 25 | 7.7 | 2.8 |
| 17 | 1.4 | 4.9 | 64 | 14 | 143 | 53 | 14 | 4.4 | 80 | 15 | 8.2 | 2.8 |
| 18 | 1.6 | 5.2 | 38 | 14 | 162 | 34 | 19 | 4.2 | 75 | 11 | 59 | 2.7 |
| 19 | 2.0 | 4.9 | 26 | 15 | 86 | 28 | 18 | 3.9 | 54 | 8.4 | 19 | 2.5 |
| 20 | 2.1 | 5.0 | 19 | 17 | 70 | 63 | 14 | 5.3 | 35 | 7.2 | 10 | 2.7 |
| 21 | 1.9 | 5.3 | 16 | 46 | 52 | 59 | 14 | 11 | 30 | 42 | 7.5 | 4.1 |
| 22 | 2.6 | 5.3 | 20 | 74 | 40 | 41 | 13 | 12 | 27 | 15 | 6.1 | 8.8 |
| 23 | 3.0 | 5.2 | 49 | 53 | 32 | 30 | 12 | 177 | 23 | 35 | 7.7 | 7.5 |
| 24 | 4.0 | 5.8 | 31 | 72 | 29 | 26 | 11 | 86 | 20 | 56 | 9.2 | 4.6 |
| 25 | 6.5 | 11 | 139 | 53 | 26 | 24 | 10 | 160 | 18 | 20 | 17 | 4.0 |
| 26 | 10 | 9.4 | 116 | 37 | 22 | 23 | 21 | 75 | 16 | 13 | 9.6 | 8.2 |
| 27 | 14 | 7.8 | 58 | 29 | 25 | 20 | 42 | 33 | 14 | 8.5 | 6.1 | 33 |
| 28 | 30 | 7.0 | 38 | 25 | 46 | 17 | 28 | 60 | 13 | 6.7 | 6.5 | 10 |
| 29 | 33 | 6.3 | 29 | 30 | --- | 16 | 18 | 150 | 12 | 6.2 | 6.3 | 6.1 |
| 30 | 9.6 | 6.0 | 23 | 40 | --- | 15 | 14 | 110 | 11 | 5.8 | 4.9 | 4.7 |
| 31 | 7.0 | --- | 23 | 139 | --- | 15 | --- | 92 | --- | 47 | 4.5 | --- |
| TOTAL | 142.60 | 171.7 | 1051.6 | 1766 | 1784 | 1522 | 539 | 1108.0 | 1320 | 1147.8 | 459.3 | 155.4 |
| MEAN | 4.60 | 5.72 | 33.9 | 57.0 | 63.7 | 49.1 | 18.0 | 35.7 | 44.0 | 37.0 | 14.8 | 5.18 |
| MAX | 33 | 11 | 139 | 334 | 199 | 148 | 42 | 177 | 130 | 250 | 59 | 33 |
| MIN | .66 | 4.6 | 6.2 | 12 | 22 | 15 | 10 | 3.9 | 11 | 5.8 | 4.5 | 2.5 |
| CFSM | .12 | .15 | .88 | 1.47 | 1.65 | 1.27 | .47 | .92 | 1.14 | .96 | .38 | .13 |
| IN. | .14 | .17 | 1.01 | 1.70 | 1.71 | 1.46 | .52 | 1.07 | 1.27 | 1.10 | .44 | .15 |
| CAL YR 1981 | TOTAL | 5985.39 | MEAN 16.4 | MAX 1450 | MIN .66 | CFSM .42 | IN 5.75 | | | | | |
| WTR YR 1982 | TOTAL | 11167.40 | MEAN 30.6 | MAX 334 | MIN .66 | CFSM .79 | IN 10.73 | | | | | |

CHOWAN RIVER BASIN

199

02044500 NOTTOWAY RIVER NEAR RAWLINGS, VA

LOCATION.--Lat 36°59'00", long 77°48'00", Brunswick County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 612 at Harpers Bridge, 0.1 mi (0.2 km) upstream from Beaver Pond Creek, and 2.6 mi (4.2 km) northwest of Rawlings.

DRAINAGE AREA.--309 mi² (800 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 184.88 ft (56.351 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 310 ft³/s (8.779 m³/s), 13.62 in/yr (346 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,900 ft³/s (847 m³/s) Oct. 6, 1972, gage height, 23.25 ft (7.087 m), from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.40 ft³/s (0.11 m³/s) Oct. 14, 15, 1954; minimum gage height, 1.83 ft (0.558 m) Oct. 15, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 20.8 ft (6.34 m), discharge, about 19,000 ft³/s (540 m³/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) Mar. 8, gage height, 6.09 ft (1.856 m), no peak above base of 2,500 ft³/s (71 m³/s); minimum, 15 ft³/s (0.42 m³/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|-------|-------|------|------|------|
| 1 | 18 | 91 | 74 | 597 | 799 | 698 | 214 | 179 | 787 | 121 | 272 | 118 |
| 2 | 18 | 82 | 80 | 1040 | 929 | 671 | 215 | 166 | 874 | 114 | 321 | 110 |
| 3 | 19 | 74 | 83 | 645 | 740 | 673 | 210 | 169 | 579 | 107 | 199 | 118 |
| 4 | 16 | 69 | 86 | 1160 | 1290 | 648 | 218 | 168 | 361 | 122 | 188 | 110 |
| 5 | 16 | 67 | 94 | 1540 | 1160 | 470 | 197 | 158 | 568 | 147 | 153 | 101 |
| 6 | 16 | 70 | 96 | 994 | 533 | 409 | 199 | 148 | 1000 | 176 | 126 | 91 |
| 7 | 16 | 71 | 93 | 521 | 395 | 516 | 193 | 141 | 540 | 183 | 115 | 86 |
| 8 | 19 | 67 | 89 | 404 | 316 | 1500 | 183 | 140 | 333 | 140 | 112 | 82 |
| 9 | 18 | 64 | 84 | 333 | 280 | 1150 | 209 | 141 | 262 | 118 | 167 | 81 |
| 10 | 18 | 62 | 80 | 281 | 281 | 569 | 227 | 133 | 233 | 109 | 360 | 81 |
| 11 | 18 | 62 | 100 | 202 | 262 | 439 | 221 | 124 | 268 | 124 | 335 | 81 |
| 12 | 20 | 63 | 79 | 175 | 237 | 376 | 205 | 119 | 253 | 383 | 1120 | 80 |
| 13 | 21 | 62 | 73 | 150 | 264 | 333 | 193 | 117 | 241 | 684 | 1240 | 77 |
| 14 | 23 | 63 | 74 | 140 | 323 | 305 | 184 | 115 | 653 | 846 | 422 | 76 |
| 15 | 24 | 63 | 126 | 138 | 338 | 282 | 181 | 113 | 735 | 627 | 261 | 75 |
| 16 | 27 | 63 | 548 | 140 | 323 | 301 | 173 | 110 | 353 | 383 | 212 | 75 |
| 17 | 31 | 69 | 668 | 150 | 435 | 361 | 175 | 108 | 265 | 301 | 515 | 77 |
| 18 | 31 | 84 | 349 | 160 | 1040 | 351 | 197 | 105 | 573 | 213 | 748 | 74 |
| 19 | 37 | 80 | 225 | 162 | 1020 | 302 | 211 | 106 | 517 | 165 | 1010 | 72 |
| 20 | 38 | 77 | 169 | 170 | 600 | 353 | 203 | 114 | 337 | 138 | 393 | 70 |
| 21 | 35 | 76 | 130 | 195 | 473 | 548 | 198 | 121 | 270 | 160 | 245 | 72 |
| 22 | 40 | 70 | 149 | 289 | 394 | 468 | 192 | 135 | 245 | 243 | 195 | 95 |
| 23 | 43 | 67 | 187 | 364 | 328 | 354 | 181 | 338 | 215 | 176 | 167 | 134 |
| 24 | 55 | 68 | 213 | 398 | 288 | 300 | 170 | 1060 | 190 | 188 | 159 | 118 |
| 25 | 71 | 83 | 253 | 423 | 263 | 274 | 164 | 768 | 170 | 288 | 154 | 96 |
| 26 | 99 | 87 | 647 | 357 | 237 | 259 | 187 | 1340 | 157 | 200 | 144 | 102 |
| 27 | 117 | 88 | 599 | 288 | 248 | 239 | 277 | 565 | 149 | 148 | 135 | 235 |
| 28 | 259 | 86 | 380 | 240 | 499 | 222 | 307 | 312 | 140 | 127 | 127 | 260 |
| 29 | 302 | 80 | 293 | 218 | --- | 213 | 248 | 638 | 133 | 117 | 137 | 161 |
| 30 | 165 | 76 | 240 | 233 | --- | 207 | 204 | 1260 | 130 | 113 | 137 | 114 |
| 31 | 112 | --- | 214 | 307 | --- | 205 | --- | 1060 | --- | 125 | 125 | --- |
| TOTAL | 1742 | 2184 | 6575 | 12414 | 14295 | 13996 | 6136 | 10271 | 11531 | 7086 | 9994 | 3122 |
| MEAN | 56.2 | 72.8 | 212 | 400 | 511 | 451 | 205 | 331 | 384 | 229 | 322 | 104 |
| MAX | 302 | 91 | 668 | 1540 | 1290 | 1500 | 307 | 1340 | 1000 | 846 | 1240 | 260 |
| MIN | 16 | 62 | 73 | 138 | 237 | 205 | 164 | 105 | 130 | 107 | 112 | 70 |
| CFSM | .18 | .24 | .69 | 1.29 | 1.65 | 1.46 | .66 | 1.07 | 1.24 | .74 | 1.04 | .34 |
| IN. | .21 | .26 | .79 | 1.49 | 1.72 | 1.68 | .74 | 1.24 | 1.39 | .85 | 1.20 | .38 |

CAL YR 1981 TOTAL 52742 MEAN 144 MAX 4680 MIN 16 CFSM .47 IN 6.35
WTR YR 1982 TOTAL 99346 MEAN 272 MAX 1540 MIN 16 CFSM .88 IN 11.96

CHOWAN RIVER BASIN

02045500 NOTTOWAY RIVER NEAR STONY CREEK, VA

LOCATION.--Lat 36°54'00", long 77°24'00", Sussex County, Hydrologic Unit 03010201, on left bank 15 ft (5 m) downstream from upstream bridge on U.S. Highway 301, 1.8 mi (2.9 km) upstream from Island Swamp, 3.3 mi (5.3 km) south of town of Stony Creek, and 4.4 mi (7.1 km) upstream from Stony Creek.

DRAINAGE AREA.--579 mi² (1,500 km²).

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1935(M). WSP 972: 1931(M), 1932, 1934-35, 1939. WSP 2104: Drainage area. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 58.42 ft (17.806 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 11, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by Baskerville Mill, 33 mi (53 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 560 ft³/s (15.86 m³/s), 13.13 in/yr (334 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft³/s (714 m³/s) Aug. 17, 1940, gage height, 23.66 ft (7.212 m), from rating curve extended above 13,000 ft³/s (370 m³/s); minimum, 3.4 ft³/s (0.096 m³/s) Aug. 15, 16, 1977; minimum gage height, 0.62 ft (0.189 m) Sept. 2, 5, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,980 ft³/s (113 m³/s) at 1700 hours July 15, gage height, 13.90 ft (4.237 m), no other peak above base of 3,500 ft³/s (99 m³/s); minimum, 6.3 ft³/s (0.18 m³/s) Oct. 19-20, gage height, 2.01 ft (0.613 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 23 | 131 | 82 | 909 | 1050 | 1900 | 396 | 328 | 1290 | 139 | 257 | 154 |
| 2 | 23 | 101 | 82 | 1520 | 1540 | 1480 | 394 | 280 | 1070 | 125 | 423 | 138 |
| 3 | 23 | 85 | 84 | 1380 | 1840 | 1180 | 391 | 256 | 1060 | 116 | 398 | 133 |
| 4 | 21 | 74 | 92 | 1660 | 2330 | 1110 | 389 | 251 | 695 | 124 | 259 | 131 |
| 5 | 19 | 66 | 99 | 2200 | 2330 | 955 | 371 | 237 | 777 | 137 | 229 | 126 |
| 6 | 20 | 66 | 106 | 1990 | 1430 | 804 | 348 | 219 | 1360 | 158 | 191 | 111 |
| 7 | 19 | 62 | 111 | 1030 | 856 | 1030 | 353 | 201 | 1230 | 189 | 153 | 100 |
| 8 | 17 | 65 | 108 | 648 | 659 | 2680 | 331 | 190 | 675 | 201 | 135 | 91 |
| 9 | 16 | 63 | 100 | 508 | 554 | 2740 | 353 | 188 | 462 | 160 | 160 | 86 |
| 10 | 15 | 59 | 94 | 416 | 558 | 1540 | 436 | 182 | 360 | 915 | 425 | 83 |
| 11 | 17 | 55 | 85 | 293 | 548 | 950 | 424 | 168 | 329 | 1380 | 711 | 81 |
| 12 | 35 | 55 | 92 | 292 | 480 | 779 | 394 | 154 | 367 | 1470 | 2380 | 80 |
| 13 | 25 | 54 | 97 | 291 | 572 | 677 | 362 | 146 | 358 | 1190 | 2380 | 79 |
| 14 | 17 | 54 | 79 | 308 | 920 | 609 | 335 | 139 | 553 | 1810 | 1440 | 76 |
| 15 | 12 | 55 | 113 | 277 | 810 | 557 | 315 | 134 | 1050 | 3530 | 798 | 73 |
| 16 | 11 | 54 | 501 | 397 | 750 | 597 | 286 | 130 | 784 | 2000 | 1230 | 71 |
| 17 | 9.9 | 58 | 1030 | 379 | 1380 | 703 | 269 | 124 | 459 | 973 | 926 | 69 |
| 18 | 8.2 | 62 | 803 | 353 | 2600 | 708 | 385 | 121 | 566 | 674 | 880 | 70 |
| 19 | 7.0 | 82 | 466 | 337 | 2440 | 617 | 438 | 116 | 997 | 424 | 1430 | 73 |
| 20 | 17 | 89 | 306 | 340 | 1560 | 768 | 374 | 112 | 729 | 322 | 1130 | 68 |
| 21 | 21 | 82 | 211 | 395 | 1050 | 1090 | 345 | 137 | 506 | 263 | 528 | 66 |
| 22 | 21 | 79 | 218 | 603 | 842 | 1010 | 329 | 141 | 514 | 242 | 353 | 70 |
| 23 | 27 | 73 | 253 | 717 | 709 | 762 | 306 | 214 | 409 | 377 | 271 | 81 |
| 24 | 26 | 68 | 311 | 1170 | 600 | 609 | 281 | 1030 | 325 | 769 | 227 | 138 |
| 25 | 37 | 68 | 423 | 973 | 529 | 544 | 255 | 1320 | 263 | 574 | 214 | 143 |
| 26 | 51 | 79 | 854 | 775 | 464 | 515 | 268 | 1180 | 222 | 488 | 198 | 136 |
| 27 | 76 | 96 | 1130 | 551 | 476 | 482 | 434 | 1430 | 196 | 329 | 183 | 219 |
| 28 | 101 | 98 | 805 | 488 | 1720 | 446 | 596 | 799 | 176 | 249 | 169 | 411 |
| 29 | 338 | 96 | 546 | 459 | --- | 410 | 524 | 646 | 161 | 212 | 159 | 379 |
| 30 | 357 | 88 | 413 | 472 | --- | 396 | 401 | 1280 | 147 | 199 | 163 | 244 |
| 31 | 199 | --- | 328 | 561 | --- | 387 | --- | 1700 | --- | 196 | 166 | --- |
| TOTAL | 1609.1 | 2217 | 10022 | 22692 | 31597 | 29035 | 11083 | 13553 | 18090 | 19935 | 18566 | 3780 |
| MEAN | 51.9 | 73.9 | 323 | 732 | 1128 | 937 | 369 | 437 | 603 | 643 | 599 | 126 |
| MAX | 357 | 131 | 1130 | 2200 | 2600 | 2740 | 596 | 1700 | 1360 | 3530 | 2380 | 411 |
| MIN | 7.0 | 54 | 79 | 277 | 464 | 387 | 255 | 112 | 147 | 116 | 135 | 66 |
| CFSM | .09 | .13 | .56 | 1.26 | 1.95 | 1.62 | .64 | .76 | 1.04 | 1.11 | 1.04 | .22 |
| IN. | .10 | .14 | .64 | 1.46 | 2.03 | 1.87 | .71 | .87 | 1.16 | 1.28 | 1.19 | .24 |

CAL YR 1981 TOTAL 76942.1 MEAN 211 MAX 4560 MIN 7.0 CFSM .36 IN 4.94
WTR YR 1982 TOTAL 182179.1 MEAN 499 MAX 3530 MIN 7.0 CFSM .86 IN 11.70

CHOWAN RIVER BASIN

201

02046000 STONY CREEK NEAR DINWIDDIE, VA

LOCATION.--Lat 37°04'01", long 77°36'10", Dinwiddie County, Hydrologic Unit 03010201, on right bank at upstream side of upstream bridge on U.S. Highway 1, 1.2 mi (1.9 km) southwest of Dinwiddie, 1.7 mi (2.7 km) downstream from Chamberlains Bed Creek, and 5.7 mi (9.2 km) downstream from confluence of White Oak and Butterwood Creeks.

DRAINAGE AREA.--112 mi² (290 km²).

PERIOD OF RECORD.--September 1946 to current year. Published as "at Dinwiddie" September 1946 to September 1947 and October 1949 to September 1950.

REVISED RECORDS.--WSP 1303: 1947(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 129.94 ft (39.606 m) National Geodetic Vertical Datum of 1929. Prior to June 12, 1957, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 112 ft³/s (3.172 m³/s), 13.58 in/yr (345 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/s (323 m³/s) Oct. 6, 1972, gage height, 20.84 ft (6.352 m), from rating curve extended above 5,800 ft³/s (160 m³/s) on basis of contracted-opening measurement of peak flow; no flow for part of Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s (36.8 m³/s) at 0330 hours Aug. 17, gage height, 8.51 ft (2.594 m), no other peak above base of 1,200 ft³/s (34 m³/s); minimum, 0.28 ft³/s (0.008 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|------|------|------|------|------|------|------|------|------|-------|
| 1 | .46 | 15 | 12 | 293 | 342 | 466 | 71 | 49 | 97 | 30 | 31 | 22 |
| 2 | 1.7 | 13 | 14 | 293 | 268 | 309 | 69 | 43 | 172 | 25 | 37 | 21 |
| 3 | 1.4 | 12 | 17 | 220 | 430 | 205 | 66 | 40 | 209 | 21 | 33 | 23 |
| 4 | 1.2 | 10 | 22 | 413 | 564 | 154 | 64 | 36 | 124 | 20 | 26 | 22 |
| 5 | .95 | 8.1 | 23 | 392 | 342 | 133 | 56 | 34 | 176 | 21 | 20 | 19 |
| 6 | .72 | 8.4 | 23 | 223 | 193 | 125 | 55 | 31 | 254 | 25 | 17 | 18 |
| 7 | 2.1 | 7.6 | 22 | 131 | 138 | 270 | 54 | 29 | 162 | 27 | 14 | 15 |
| 8 | 2.5 | 6.3 | 19 | 93 | 107 | 761 | 50 | 28 | 88 | 26 | 12 | 13 |
| 9 | 2.5 | 5.2 | 16 | 73 | 95 | 527 | 63 | 28 | 57 | 22 | 13 | 12 |
| 10 | 2.8 | 5.1 | 14 | 58 | 109 | 237 | 78 | 26 | 44 | 23 | 31 | 11 |
| 11 | 3.2 | 5.9 | 13 | 47 | 102 | 167 | 71 | 24 | 40 | 29 | 66 | 10 |
| 12 | 3.4 | 5.8 | 12 | 34 | 85 | 140 | 60 | 22 | 39 | 24 | 785 | 9.8 |
| 13 | 3.8 | 9.5 | 12 | 32 | 102 | 121 | 54 | 21 | 45 | 22 | 498 | 8.9 |
| 14 | 4.2 | 7.5 | 14 | 31 | 155 | 107 | 50 | 20 | 114 | 32 | 173 | 8.5 |
| 15 | 4.3 | 3.9 | 55 | 31 | 172 | 101 | 46 | 19 | 136 | 116 | 434 | 8.5 |
| 16 | 6.5 | 4.0 | 185 | 32 | 157 | 132 | 43 | 18 | 85 | 131 | 521 | 8.5 |
| 17 | 4.1 | 8.8 | 145 | 35 | 246 | 188 | 43 | 17 | 57 | 66 | 965 | 8.5 |
| 18 | 3.0 | 9.5 | 84 | 36 | 513 | 154 | 71 | 16 | 120 | 39 | 854 | 8.5 |
| 19 | 4.6 | 13 | 54 | 44 | 382 | 119 | 71 | 15 | 126 | 29 | 458 | 11 |
| 20 | 5.4 | 15 | 40 | 50 | 246 | 206 | 63 | 16 | 112 | 24 | 174 | 14 |
| 21 | 5.7 | 15 | 32 | 70 | 182 | 295 | 59 | 21 | 67 | 20 | 99 | 15 |
| 22 | 6.9 | 11 | 33 | 118 | 140 | 212 | 54 | 32 | 48 | 18 | 66 | 18 |
| 23 | 8.1 | 10 | 42 | 133 | 111 | 144 | 48 | 37 | 40 | 18 | 51 | 21 |
| 24 | 8.2 | 11 | 46 | 251 | 95 | 114 | 44 | 75 | 33 | 31 | 42 | 23 |
| 25 | 9.8 | 14 | 85 | 195 | 82 | 100 | 41 | 231 | 28 | 79 | 38 | 23 |
| 26 | 12 | 16 | 203 | 140 | 72 | 90 | 55 | 130 | 25 | 83 | 33 | 27 |
| 27 | 11 | 16 | 144 | 91 | 87 | 81 | 137 | 82 | 147 | 41 | 29 | 47 |
| 28 | 19 | 15 | 96 | 79 | 400 | 72 | 112 | 56 | 118 | 27 | 30 | 42 |
| 29 | 22 | 13 | 70 | 75 | --- | 66 | 78 | 48 | 57 | 21 | 28 | 30 |
| 30 | 21 | 13 | 53 | 86 | --- | 64 | 57 | 65 | 37 | 18 | 25 | 22 |
| 31 | 18 | --- | 46 | 148 | --- | 63 | --- | 86 | --- | 18 | 24 | --- |
| TOTAL | 200.53 | 307.6 | 1646 | 3947 | 5917 | 5923 | 1883 | 1395 | 2857 | 1126 | 5627 | 540.2 |
| MEAN | 6.47 | 10.3 | 53.1 | 127 | 211 | 191 | 62.8 | 45.0 | 95.2 | 36.3 | 182 | 18.0 |
| MAX | 22 | 16 | 203 | 413 | 564 | 761 | 137 | 231 | 254 | 131 | 965 | 47 |
| MIN | .46 | 3.9 | 12 | 31 | 72 | 63 | 41 | 15 | 25 | 18 | 12 | 8.5 |
| CFSM | .06 | .09 | .47 | 1.13 | 1.88 | 1.71 | .56 | .40 | .85 | .32 | 1.63 | .16 |
| IN. | .07 | .10 | .55 | 1.31 | 1.97 | 1.97 | .63 | .46 | .95 | .37 | 1.87 | .18 |
| CAL YR 1981 | TOTAL | 13083.87 | MEAN | 35.8 | MAX | 2230 | MIN | .46 | CFSM | .32 | IN | 4.35 |
| WTR YR 1982 | TOTAL | 31369.33 | MEAN | 85.9 | MAX | 965 | MIN | .46 | CFSM | .77 | IN | 10.42 |

CHOWAN RIVER BASIN

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°46'13", long 77°09'59", Southampton County, Hydrologic Unit 03010201, on right bank 1,000 ft (305 m) upstream from bridge on State Highway 653, 1 mi (2 km) downstream from Three Creek, 2.5 mi (4.0 km) southwest of Sebrell, and 5.5 mi (8.8 km) upstream from Assamoosick Swamp.

DRAINAGE AREA.--1,421 mi² (3,680 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1942, 1944, 1948-49. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.94 ft (1.811 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--41 years, 1,353 ft³/s (38.32 m³/s), 12.93 in/yr (328 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft³/s (736 m³/s) July 19, 1975, gage height, 24.43 ft (7.446 m); minimum, 4.0 ft³/s (0.11 m³/s) Oct. 25, 1981; minimum gage height, 2.82 ft (0.860 m) Oct. 24-25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 29.7 ft (9.05 m), from floodmarks, discharge, 48,000 ft³/s (1,360 m³/s), from rating curve extended above 25,000 ft³/s (710 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,950 ft³/s (168 m³/s) Feb. 21, gage height, 15.63 ft (4.764 m); minimum, 4.0 ft³/s (0.11 m³/s) Oct. 25; minimum gage height, 2.82 ft (0.860 m) Oct. 24-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 46 | 302 | 93 | 1080 | 2010 | 3080 | 1100 | 1380 | 2990 | 325 | 742 | 333 |
| 2 | 46 | 208 | 87 | 1530 | 2240 | 3820 | 1080 | 1200 | 2970 | 277 | 986 | 318 |
| 3 | 43 | 154 | 82 | 2290 | 2710 | 4460 | 1080 | 1000 | 2460 | 243 | 979 | 295 |
| 4 | 40 | 122 | 83 | 2820 | 3110 | 4850 | 1040 | 832 | 2060 | 220 | 875 | 276 |
| 5 | 37 | 102 | 86 | 3150 | 3500 | 4620 | 908 | 721 | 1770 | 206 | 686 | 257 |
| 6 | 34 | 93 | 94 | 3440 | 3930 | 3940 | 936 | 645 | 1680 | 199 | 528 | 246 |
| 7 | 32 | 81 | 105 | 3730 | 4440 | 3410 | 883 | 573 | 2020 | 212 | 432 | 226 |
| 8 | 29 | 73 | 114 | 3860 | 4620 | 3470 | 850 | 502 | 2160 | 233 | 354 | 204 |
| 9 | 27 | 67 | 113 | 3390 | 3900 | 3920 | 864 | 444 | 1690 | 264 | 315 | 189 |
| 10 | 25 | 65 | 106 | 2340 | 2850 | 4460 | 911 | 404 | 1120 | 357 | 381 | 175 |
| 11 | 23 | 62 | 95 | 1560 | 2190 | 5110 | 1020 | 374 | 845 | 834 | 795 | 167 |
| 12 | 22 | 56 | 86 | 1040 | 1950 | 5480 | 1070 | 344 | 691 | 1840 | 1620 | 160 |
| 13 | 20 | 49 | 75 | 897 | 1910 | 4900 | 1020 | 309 | 632 | 2560 | 2560 | 155 |
| 14 | 17 | 46 | 82 | 897 | 2220 | 3680 | 939 | 282 | 688 | 2830 | 3360 | 150 |
| 15 | 31 | 46 | 115 | 980 | 2670 | 2740 | 866 | 257 | 899 | 2740 | 4480 | 145 |
| 16 | 29 | 46 | 206 | 1060 | 2920 | 2320 | 813 | 238 | 1240 | 2950 | 4930 | 139 |
| 17 | 20 | 48 | 563 | 1160 | 3130 | 2320 | 757 | 219 | 1280 | 3530 | 4330 | 132 |
| 18 | 15 | 49 | 1210 | 1220 | 3650 | 2470 | 754 | 202 | 930 | 3990 | 3760 | 127 |
| 19 | 12 | 49 | 1390 | 1140 | 4480 | 2540 | 919 | 188 | 933 | 3700 | 3590 | 125 |
| 20 | 10 | 52 | 1060 | 1090 | 5200 | 2460 | 1160 | 178 | 1380 | 2330 | 3700 | 128 |
| 21 | 8.1 | 68 | 759 | 1180 | 5780 | 2510 | 1110 | 167 | 1390 | 1220 | 4020 | 125 |
| 22 | 6.7 | 92 | 586 | 1380 | 5850 | 2850 | 1040 | 167 | 1100 | 753 | 4080 | 118 |
| 23 | 5.8 | 79 | 541 | 1700 | 5120 | 3050 | 945 | 195 | 914 | 557 | 3140 | 114 |
| 24 | 4.7 | 77 | 560 | 2360 | 3890 | 2920 | 848 | 392 | 767 | 841 | 1590 | 115 |
| 25 | 17 | 72 | 665 | 2910 | 2870 | 2480 | 777 | 1250 | 622 | 1770 | 852 | 137 |
| 26 | 31 | 65 | 880 | 3280 | 2200 | 2070 | 739 | 1990 | 507 | 1740 | 664 | 207 |
| 27 | 34 | 63 | 1400 | 3330 | 1860 | 1780 | 902 | 2170 | 420 | 1230 | 543 | 303 |
| 28 | 52 | 74 | 1830 | 3300 | 2250 | 1570 | 1250 | 2440 | 361 | 872 | 464 | 479 |
| 29 | 84 | 92 | 1810 | 2950 | --- | 1400 | 1570 | 2400 | 363 | 717 | 407 | 701 |
| 30 | 164 | 94 | 1450 | 2040 | --- | 1250 | 1560 | 1970 | 392 | 778 | 371 | 773 |
| 31 | 367 | --- | 1150 | 1840 | --- | 1140 | --- | 2370 | --- | 672 | 345 | --- |
| TOTAL | 1332.3 | 2536 | 17476 | 64944 | 93450 | 97070 | 29711 | 25803 | 37274 | 40990 | 55879 | 7019 |
| MEAN | 43.0 | 84.5 | 564 | 2095 | 3338 | 3131 | 990 | 832 | 1242 | 1322 | 1803 | 234 |
| MAX | 367 | 302 | 1830 | 3860 | 5850 | 5480 | 1570 | 2440 | 2990 | 3990 | 4930 | 773 |
| MIN | 4.7 | 46 | 75 | 897 | 1860 | 1140 | 739 | 167 | 361 | 199 | 315 | 114 |
| CFSM | .03 | .06 | .40 | 1.47 | 2.35 | 2.20 | .70 | .59 | .87 | .93 | 1.27 | .17 |
| IN. | .03 | .07 | .46 | 1.70 | 2.45 | 2.54 | .78 | .68 | .98 | 1.07 | 1.46 | .18 |

CAL YR 1981 TOTAL 141143.3 MEAN 387 MAX 6520 MIN 4.7 CFSM .27 IN 3.69
WTR YR 1982 TOTAL 473484.3 MEAN 1297 MAX 5850 MIN 4.7 CFSM .91 IN 12.40

CHOWAN RIVER BASIN

203

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1978 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1946 to September 1947.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 04... | 1200 | 121 | 86 | 7.3 | 14.5 | 2.3 | 9.4 | 33 | 50 | 25 | 6.2 | 2.4 |
| DEC 16... | 0800 | 183 | 95 | 6.8 | 4.0 | 3.0 | 13.0 | 200 | 950 | 25 | 6.6 | 2.1 |
| MAR 16... | 1230 | 2300 | 60 | 6.5 | 11.0 | 6.1 | 8.9 | 59 | 130 | 16 | 4.2 | 1.4 |
| MAY 17... | 1245 | 218 | 91 | 7.5 | 22.0 | 3.9 | 7.0 | 23 | 720 | 27 | 6.7 | 2.4 |
| JUL 07... | 0930 | 212 | 87 | 7.1 | 24.5 | 11 | 64.0 | 30 | 47 | 30 | 7.4 | 2.8 |
| AUG 25... | 0930 | 886 | 68 | 6.5 | 24.0 | 8.6 | 5.9 | -- | -- | 20 | 5.3 | 1.7 |

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| NOV 04... | 7.0 | 2.4 | 26 | 5.2 | 6.6 | .1 | 13 | 67 | 59 | .02 | <.010 | .56 |
| DEC 16... | 6.7 | 2.5 | 20 | 11 | 7.4 | <.1 | 13 | 72 | 62 | .04 | <.010 | .29 |
| MAR 16... | 3.7 | 1.5 | 10 | 10 | 4.6 | <.1 | 7.5 | 58 | 39 | .12 | .040 | .44 |
| MAY 17... | 5.7 | 1.6 | 28 | 5.0 | 5.5 | .1 | 9.6 | 62 | 54 | .12 | .040 | .62 |
| JUL 07... | 6.8 | 1.3 | 29 | 6.0 | 5.1 | .1 | 17 | 72 | 65 | .23 | .040 | .30 |
| AUG 25... | 4.2 | 1.4 | 18 | 6.0 | 4.1 | <.1 | 14 | 66 | 48 | .15 | <.010 | 1.20 |

< Actual value is known to be less than the value shown.

CHOWAN RIVER BASIN

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV 04... | .030 | .020 | <.010 | 1 | <1 | 100 | 31 | 2 | 1 | 20 | 10 |
| DEC 16... | .030 | .010 | <.010 | 1 | <1 | <100 | 25 | 1 | <1 | 20 | 10 |
| MAR 16... | .020 | .020 | .010 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 17... | .060 | .030 | .020 | 1 | 1 | <100 | 37 | 2 | 2 | 20 | 10 |
| JUL 07... | .050 | .050 | .030 | 1 | 1 | <100 | 43 | <1 | <1 | 10 | 10 |
| AUG 25... | .080 | .040 | .020 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|--------------|---|--|---|--|---|--|---|--|---|--|---|
| NOV 04... | 1 | <1 | 5 | 1 | 360 | 210 | 2 | 1 | 70 | 37 | .2 |
| DEC 16... | <1 | <1 | 7 | 3 | 750 | 340 | 1 | <1 | 80 | 57 | .1 |
| MAR 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 17... | 2 | 1 | 4 | 4 | 1200 | 410 | 4 | 1 | 120 | 95 | 7.0 |
| JUL 07... | 4 | 1 | 4 | 3 | 1400 | 900 | 4 | 2 | 120 | 83 | .1 |
| AUG 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDE (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|--|---|--|--|---|---|--|---|--|---|---|
| NOV 04... | .2 | 1 | 1 | <1 | <1 | <1 | <1 | 30 | <4 | 2 | 100 |
| DEC 16... | .1 | 2 | 1 | <1 | <1 | <1 | <1 | 50 | 7 | 17 | 100 |
| MAR 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 | 80 |
| MAY 17... | .1 | 5 | 4 | <1 | <1 | <1 | <1 | 40 | 4 | 11 | 89 |
| JUL 07... | <.1 | 4 | 2 | <1 | <1 | <1 | <1 | 20 | <4 | 12 | 94 |
| AUG 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16 | 96 |

< Actual value is known to be less than the value shown.

CHOWAN RIVER BASIN

205

02047100 ASSAMOOSICK SWAMP NEAR SEBRELL, VA

LOCATION.--Lat 36°46'22", long 77°05'57", Southampton County, Hydrologic Unit 03010201, near center of span on upstream side of bridge on State Highway 35, 0.7 mi (1.1 km) upstream from Indian Branch, 1.7 mi (2.7 km) southeast of Sebrell, and 2.8 mi (4.5 km) upstream from mouth.

DRAINAGE AREA.--86.4 mi² (224 km²).

PERIOD OF RECORD.--March to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 885 ft³/s (25.1 m³/s) Aug. 14, gage height, 6.05 ft (1.844 m); no flow July 7-9, Sept. 8-25, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|------|---------|---------|---------|--------|------|
| 1 | | | | | | --- | 71 | 112 | 56 | .20 | 84 | .80 |
| 2 | | | | | | --- | 66 | 90 | 61 | .10 | 79 | .47 |
| 3 | | | | | | --- | 63 | 72 | 46 | .05 | 124 | .35 |
| 4 | | | | | | --- | 58 | 59 | 34 | .17 | 157 | .18 |
| 5 | | | | | | --- | 52 | 48 | 54 | .08 | 94 | .12 |
| 6 | | | | | | --- | 50 | 39 | 82 | .01 | 50 | .05 |
| 7 | | | | | | --- | 46 | 30 | 125 | .00 | 29 | .02 |
| 8 | | | | | | --- | 45 | 24 | 107 | .00 | 17 | .00 |
| 9 | | | | | | --- | 55 | 19 | 71 | .00 | 17 | .00 |
| 10 | | | | | | --- | 63 | 12 | 46 | 30 | 23 | .00 |
| 11 | | | | | | --- | 69 | 9.3 | 30 | 48 | 44 | .00 |
| 12 | | | | | | --- | 68 | 6.8 | 17 | 31 | 130 | .00 |
| 13 | | | | | | --- | 66 | 5.2 | 12 | 48 | 293 | .00 |
| 14 | | | | | | --- | 63 | 3.6 | 10 | 88 | 822 | .00 |
| 15 | | | | | | --- | 56 | 2.2 | 21 | 104 | 544 | .00 |
| 16 | | | | | | --- | 48 | 1.3 | 52 | 201 | 329 | .00 |
| 17 | | | | | | --- | 46 | .86 | 59 | 163 | 245 | .00 |
| 18 | | | | | | --- | 52 | .47 | 47 | 130 | 203 | .00 |
| 19 | | | | | | --- | 53 | .38 | 47 | 92 | 221 | .00 |
| 20 | | | | | | --- | 53 | .26 | 42 | 53 | 215 | .00 |
| 21 | | | | | | --- | 52 | .18 | 34 | 34 | 184 | .00 |
| 22 | | | | | | --- | 52 | .20 | 28 | 26 | 155 | .00 |
| 23 | | | | | | --- | 188 | .35 | 23 | 14 | 119 | .00 |
| 24 | | | | | | --- | 173 | 3.9 | 14 | 18 | 113 | .00 |
| 25 | | | | | | --- | 154 | 45 | 45 | 7.9 | 44 | .00 |
| 26 | | | | | | --- | 133 | 55 | 175 | 4.4 | 22 | .01 |
| 27 | | | | | | --- | 116 | 86 | 159 | 2.1 | 17 | .12 |
| 28 | | | | | | --- | 98 | 112 | 95 | 1.1 | 14 | .01 |
| 29 | | | | | | --- | 87 | 130 | 101 | .80 | 9.6 | .00 |
| 30 | | | | | | --- | 80 | 128 | 75 | .44 | 6.2 | 1.6 |
| 31 | | | | | | --- | 74 | --- | 76 | --- | 25 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | 1902 | 1266.00 | 1134.74 | 1195.41 | 4391.1 | 3.73 |
| MEAN | --- | --- | --- | --- | --- | --- | 63.4 | 40.8 | 37.8 | 38.6 | 142 | .12 |
| MAX | --- | --- | --- | --- | --- | --- | 130 | 175 | 125 | 201 | 822 | 1.6 |
| MIN | --- | --- | --- | --- | --- | --- | 45 | .18 | .44 | .00 | 1.1 | .00 |
| CFSM | --- | --- | --- | --- | --- | --- | .73 | .47 | .44 | .45 | 1.64 | .001 |
| IN. | --- | --- | --- | --- | --- | --- | .82 | .55 | .49 | .51 | 1.89 | .00 |

CHOWAN RIVER BASIN

02047500 BLACKWATER RIVER NEAR DENDRON, VA

LOCATION.--Lat 37°01'30", long 76°52'30", Surry County, Hydrologic Unit 03010202, on left bank 10 ft (3 m) upstream from Walls Bridge on State Highway 617, 1.2 mi (1.9 km) downstream from Cypress Swamp, and 3.5 mi (5.6 km) south-east of Dendron.

DRAINAGE AREA.--294 mi² (761 km²).

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.99 ft (9.446 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 13, 1980, at site 25 ft (8 m) upstream at same datum.

REMARKS.--Records good except those for period of doubtful gage-height record, Nov. 1 to Dec. 15, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--41 years, 311 ft³/s (8.808 m³/s), 14.37 in/yr (365 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,070 ft³/s (144 m³/s) June 5, 1963, gage height, 9.1 ft (2.77 m), from high-water mark in well; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.1 ft (3.99 m), from Corps of Engineers floodmarks, discharge, 10,000 ft³/s (283 m³/s), from rating curve extended above 4,800 ft³/s (140 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft³/s (75.0 m³/s) Aug. 13, gage height, 6.71 ft (2.045 m); no flow Oct. 12-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|----------|------|-------|-------|-------|------|--------|------|--------|-------|-------|
| 1 | .50 | 28 | 24 | 282 | 440 | 790 | 278 | 454 | 172 | 14 | 115 | 55 |
| 2 | .80 | 23 | 26 | 299 | 430 | 936 | 247 | 431 | 172 | 5.8 | 117 | 49 |
| 3 | 1.0 | 21 | 28 | 354 | 470 | 894 | 235 | 376 | 157 | 1.6 | 152 | 44 |
| 4 | .50 | 20 | 39 | 451 | 507 | 834 | 220 | 306 | 155 | 4.1 | 120 | 33 |
| 5 | .30 | 20 | 48 | 514 | 573 | 818 | 208 | 247 | 193 | 4.1 | 81 | 24 |
| 6 | .30 | 20 | 48 | 598 | 657 | 796 | 208 | 208 | 199 | 3.5 | 48 | 17 |
| 7 | 1.7 | 21 | 44 | 657 | 678 | 790 | 196 | 172 | 226 | 4.4 | 31 | 13 |
| 8 | 1.3 | 23 | 40 | 617 | 657 | 870 | 187 | 145 | 226 | 2.8 | 22 | 11 |
| 9 | .79 | 24 | 37 | 545 | 623 | 996 | 202 | 125 | 196 | 1.3 | 54 | 8.9 |
| 10 | .19 | 24 | 35 | 475 | 573 | 1040 | 208 | 102 | 152 | 12 | 145 | 7.7 |
| 11 | .03 | 23 | 31 | 372 | 496 | 924 | 211 | 85 | 130 | 56 | 384 | 7.4 |
| 12 | .00 | 22 | 29 | 312 | 417 | 823 | 214 | 67 | 112 | 112 | 1780 | 7.0 |
| 13 | .00 | 21 | 27 | 277 | 408 | 785 | 205 | 54 | 117 | 178 | 2600 | 5.5 |
| 14 | .00 | 19 | 27 | 250 | 417 | 715 | 196 | 44 | 181 | 166 | 2060 | 4.1 |
| 15 | .00 | 18 | 90 | 235 | 445 | 635 | 199 | 34 | 157 | 281 | 1320 | 3.2 |
| 16 | .00 | 18 | 173 | 230 | 496 | 595 | 199 | 26 | 169 | 299 | 852 | 2.5 |
| 17 | .00 | 17 | 199 | 220 | 556 | 585 | 187 | 20 | 157 | 193 | 650 | 1.6 |
| 18 | .00 | 19 | 239 | 215 | 692 | 585 | 184 | 14 | 132 | 115 | 720 | 1.2 |
| 19 | .00 | 18 | 240 | 210 | 932 | 595 | 175 | 9.8 | 127 | 76 | 829 | 1.6 |
| 20 | .00 | 17 | 203 | 223 | 1070 | 600 | 187 | 5.8 | 147 | 45 | 768 | 2.2 |
| 21 | .00 | 17 | 174 | 241 | 1040 | 590 | 220 | 3.5 | 137 | 32 | 700 | 3.8 |
| 22 | .00 | 17 | 173 | 270 | 966 | 610 | 238 | 8.1 | 112 | 44 | 670 | 7.7 |
| 23 | .00 | 16 | 181 | 320 | 840 | 620 | 250 | 64 | 112 | 61 | 595 | 9.4 |
| 24 | .00 | 16 | 185 | 496 | 785 | 590 | 257 | 316 | 127 | 76 | 557 | 8.1 |
| 25 | .91 | 17 | 229 | 611 | 685 | 544 | 250 | 476 | 130 | 100 | 368 | 6.6 |
| 26 | 14 | 19 | 268 | 769 | 595 | 503 | 253 | 340 | 112 | 88 | 260 | 15 |
| 27 | 23 | 22 | 288 | 783 | 544 | 467 | 348 | 271 | 86 | 66 | 172 | 59 |
| 28 | 29 | 24 | 300 | 734 | 650 | 418 | 392 | 214 | 58 | 74 | 108 | 74 |
| 29 | 32 | 25 | 293 | 595 | --- | 372 | 431 | 175 | 40 | 115 | 67 | 81 |
| 30 | 33 | 24 | 270 | 475 | --- | 328 | 454 | 184 | 24 | 104 | 58 | 64 |
| 31 | 33 | --- | 247 | 455 | --- | 306 | --- | 175 | --- | 106 | 64 | --- |
| TOTAL | 172.32 | 613 | 4235 | 13085 | 17642 | 20954 | 7239 | 5152.2 | 4215 | 2440.6 | 16467 | 627.5 |
| MEAN | 5.56 | 20.4 | 137 | 422 | 630 | 676 | 241 | 166 | 141 | 78.7 | 531 | 20.9 |
| MAX | 33 | 28 | 300 | 783 | 1070 | 1040 | 454 | 476 | 226 | 299 | 2600 | 81 |
| MIN | .00 | 16 | 24 | 210 | 408 | 306 | 175 | 3.5 | 24 | 1.3 | 22 | 1.2 |
| CFSM | .02 | .07 | .47 | 1.44 | 2.14 | 2.30 | .82 | .57 | .48 | .27 | 1.81 | .07 |
| IN. | .02 | .08 | .54 | 1.66 | 2.23 | 2.65 | .92 | .65 | .53 | .31 | 2.08 | .08 |
| CAL YR 1981 | TOTAL | 25934.48 | MEAN | 71.1 | MAX | 1370 | MIN | .00 | CFSM | .24 | IN | 3.28 |
| WTR YR 1982 | TOTAL | 92842.62 | MEAN | 254 | MAX | 2600 | MIN | .00 | CFSM | .86 | IN | 11.75 |

CHOWAN RIVER BASIN

207

02048000 BLACKWATER RIVER AT ZUNI, VA

LOCATION.--Lat 36°52'05", long 76°50'07", Isle of Wight County, Hydrologic Unit 03010202, on left bank at downstream side of bridge on U.S. Highway 460 at Zuni, 1.6 mi (2.6 km) downstream from Pope Swamp, and 4.2 mi (6.8 km) upstream from Antioch Swamp.

DRAINAGE AREA.--456 mi² (1,181 km²).

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8.56 ft (2.609 m) National Geodetic Vertical Datum of 1929. Prior to July 18, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 492 ft³/s (13.93 m³/s), 14.65 in/yr (372 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s (198 m³/s) Mar. 21, 1975; maximum gage height, 17.51 ft (5.337 m) June 5, 1963; no flow Sept. 10-18, 1944, Sept. 28 to Oct. 31, 1954, part of each day Sept. 1, 2, 1976, and Sept. 23, 24, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 23.2 ft (7.07 m), discharge, 16,000 ft³/s (453 m³/s), from rating curve extended above 5,500 ft³/s (160 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,000 ft³/s (85.0 m³/s) Aug. 15, gage height, 11.05 ft (3.368 m); minimum, 0.74 ft³/s (0.021 m³/s) Oct. 21, gage height, 1.82 ft (0.555 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|-------|-------|-------|------|-------|------|------|-------|-------|
| 1 | 3.0 | 47 | 40 | 553 | 716 | 1440 | 493 | 586 | 307 | 57 | 302 | 68 |
| 2 | 3.0 | 42 | 43 | 601 | 701 | 1640 | 447 | 576 | 291 | 41 | 265 | 55 |
| 3 | 2.9 | 38 | 55 | 642 | 768 | 1690 | 411 | 561 | 268 | 29 | 189 | 49 |
| 4 | 2.9 | 35 | 66 | 790 | 834 | 1650 | 376 | 531 | 243 | 22 | 148 | 44 |
| 5 | 2.7 | 33 | 77 | 1070 | 862 | 1520 | 345 | 473 | 289 | 25 | 145 | 36 |
| 6 | 2.6 | 37 | 80 | 1220 | 912 | 1440 | 319 | 400 | 388 | 26 | 136 | 29 |
| 7 | 2.4 | 39 | 76 | 1220 | 947 | 1560 | 297 | 331 | 448 | 22 | 103 | 23 |
| 8 | 2.3 | 40 | 70 | 1150 | 956 | 1840 | 286 | 271 | 454 | 19 | 77 | 18 |
| 9 | 1.9 | 41 | 65 | 1080 | 938 | 1980 | 296 | 221 | 393 | 16 | 149 | 12 |
| 10 | 1.6 | 39 | 60 | 983 | 912 | 2000 | 313 | 182 | 336 | 17 | 227 | 8.8 |
| 11 | 1.6 | 40 | 55 | 800 | 869 | 1970 | 320 | 147 | 285 | 43 | 257 | 6.0 |
| 12 | 1.5 | 38 | 51 | 633 | 803 | 1860 | 320 | 116 | 236 | 164 | 621 | 4.0 |
| 13 | 1.2 | 35 | 47 | 523 | 802 | 1660 | 311 | 95 | 191 | 254 | 1360 | 3.1 |
| 14 | .95 | 33 | 45 | 480 | 886 | 1480 | 298 | 79 | 177 | 735 | 2560 | 2.2 |
| 15 | .89 | 31 | 84 | 440 | 910 | 1350 | 283 | 66 | 221 | 1100 | 2960 | 2.1 |
| 16 | .86 | 30 | 233 | 400 | 907 | 1320 | 266 | 55 | 282 | 896 | 2620 | 2.1 |
| 17 | .83 | 29 | 326 | 380 | 1020 | 1300 | 253 | 45 | 275 | 680 | 2130 | 2.0 |
| 18 | .83 | 31 | 415 | 370 | 1330 | 1260 | 255 | 36 | 233 | 542 | 1610 | 2.7 |
| 19 | .83 | 30 | 470 | 360 | 1550 | 1210 | 262 | 30 | 212 | 381 | 1160 | 4.2 |
| 20 | .79 | 29 | 459 | 375 | 1680 | 1180 | 261 | 23 | 193 | 257 | 1010 | 4.3 |
| 21 | .77 | 28 | 407 | 401 | 1730 | 1180 | 250 | 18 | 173 | 167 | 1070 | 4.9 |
| 22 | .78 | 28 | 369 | 479 | 1700 | 1180 | 239 | 13 | 162 | 102 | 1060 | 6.3 |
| 23 | .82 | 27 | 358 | 555 | 1560 | 1160 | 243 | 12 | 156 | 68 | 980 | 6.2 |
| 24 | 1.3 | 27 | 348 | 883 | 1400 | 1120 | 260 | 169 | 138 | 67 | 902 | 5.8 |
| 25 | 6.6 | 29 | 371 | 1200 | 1230 | 1060 | 276 | 528 | 117 | 78 | 825 | 6.7 |
| 26 | 45 | 33 | 471 | 1380 | 1060 | 975 | 299 | 946 | 109 | 78 | 685 | 9.0 |
| 27 | 66 | 36 | 574 | 1290 | 945 | 873 | 360 | 1360 | 110 | 84 | 527 | 52 |
| 28 | 62 | 40 | 660 | 1180 | 1180 | 783 | 434 | 1190 | 106 | 84 | 383 | 89 |
| 29 | 62 | 42 | 660 | 1050 | --- | 700 | 525 | 810 | 93 | 75 | 268 | 81 |
| 30 | 62 | 41 | 589 | 880 | --- | 618 | 578 | 527 | 75 | 73 | 173 | 83 |
| 31 | 55 | --- | 519 | 774 | --- | 550 | --- | 381 | --- | 119 | 103 | --- |
| TOTAL | 397.85 | 1048 | 8143 | 24142 | 30108 | 41549 | 9876 | 10778 | 6961 | 6321 | 25005 | 719.4 |
| MEAN | 12.8 | 34.9 | 263 | 779 | 1075 | 1340 | 329 | 348 | 232 | 204 | 807 | 24.0 |
| MAX | 66 | 47 | 660 | 1380 | 1730 | 2000 | 578 | 1360 | 454 | 1100 | 2960 | 89 |
| MIN | .77 | 27 | 40 | 360 | 701 | 550 | 239 | 12 | 75 | 16 | 77 | 2.0 |
| CFSM | .03 | .08 | .58 | 1.71 | 2.36 | 2.94 | .72 | .76 | .51 | .45 | 1.77 | .05 |
| IN. | .03 | .09 | .66 | 1.97 | 2.46 | 3.39 | .81 | .88 | .57 | .52 | 2.04 | .06 |

CAL YR 1981 TOTAL 53703.11 MEAN 147 MAX 3110 MIN .40 CFSM .32 IN 4.38
WTR YR 1982 TOTAL 165048.25 MEAN 452 MAX 2960 MIN .77 CFSM .99 IN 13.46

CHOWAN RIVER BASIN

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°45'45", long 76°53'55", Southampton County, Hydrologic Unit 03010202, on right bank 0.4 mi (0.6 km) south of Burdette, 0.5 mi (0.8 km) upstream from Black Creek, 3.3 mi (5.3 km) downstream from Corrowaugh Swamp, and 6.0 mi (9.7 km) north of Franklin.

DRAINAGE AREA.--617 mi² (1,598 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.56 ft (0.475 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Low flow reversed by tide some years. Diversion above station by city of Norfolk for municipal supply most years.

AVERAGE DISCHARGE.--38 years, 641 ft³/s (18.15 m³/s), 14.11 in/yr (358 mm/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s (267 m³/s) Sept. 14, 1960, gage height, 17.14 ft (5.224 m), from floodmarks; minimum daily, 0.07 ft³/s (0.002 m³/s) Oct. 16, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 22 ft (6.7 m), discharge, 21,000 ft³/s (595 m³/s), from rating curve extended above 9,400 ft³/s (270 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,360 ft³/s (66.8 m³/s) Feb. 20, 21, gage height, 9.87 ft (3.008 m); minimum daily, 0.07 ft³/s (0.002 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|-----------|------|-------|----------|----------|---------|-----------|-----------|-----------|--------|---------|-------|
| 1 | 9.0 | 64 | 25 | 1110 | 1320 | 1920 | 674 | 683 | 528 | 59 | 196 | 97 |
| 2 | 10 | 52 | 33 | 1220 | 1250 | 2080 | 626 | 666 | 418 | 41 | 407 | 67 |
| 3 | 8.6 | 57 | 41 | 1250 | 1280 | 2110 | 580 | 633 | 354 | 27 | 310 | 47 |
| 4 | 12 | 47 | 53 | 1370 | 1400 | 2030 | 540 | 602 | 311 | 25 | 250 | 33 |
| 5 | 11 | 42 | 67 | 1650 | 1460 | 1910 | 497 | 568 | 360 | 18 | 200 | 21 |
| 6 | 8.8 | 38 | 82 | 1870 | 1520 | 1780 | 463 | 520 | 456 | 14 | 150 | 14 |
| 7 | 4.5 | 36 | 87 | 1880 | 1560 | 1840 | 433 | 457 | 471 | 11 | 75 | 8.9 |
| 8 | 1.5 | 41 | 86 | 1810 | 1540 | 2090 | 403 | 383 | 475 | 8.8 | 40 | 6.3 |
| 9 | .74 | 39 | 78 | 1690 | 1500 | 2260 | 409 | 313 | 459 | 6.8 | 9.2 | 5.6 |
| 10 | 1.3 | 37 | 74 | 1620 | 1480 | 2300 | 445 | 257 | 404 | 141 | 41 | 4.4 |
| 11 | 2.5 | 34 | 70 | 1460 | 1430 | 2220 | 461 | 204 | 336 | 431 | 210 | 4.2 |
| 12 | 3.0 | 32 | 61 | 1250 | 1360 | 2080 | 457 | 160 | 277 | 372 | 1000 | 2.8 |
| 13 | 2.8 | 28 | 50 | 1070 | 1380 | 1900 | 441 | 125 | 227 | 283 | 1700 | 1.8 |
| 14 | .87 | 25 | 44 | 1020 | 1550 | 1710 | 424 | 101 | 187 | 379 | 2050 | 3.0 |
| 15 | .11 | 28 | 72 | 997 | 1600 | 1610 | 401 | 86 | 158 | 654 | 1750 | 3.6 |
| 16 | .07 | 23 | 316 | 964 | 1580 | 1590 | 379 | 75 | 189 | 912 | 1160 | 3.9 |
| 17 | .08 | 25 | 531 | 950 | 1700 | 1600 | 357 | 64 | 248 | 799 | 790 | 3.2 |
| 18 | 2.6 | 23 | 614 | 910 | 2040 | 1580 | 341 | 53 | 251 | 619 | 840 | 2.4 |
| 19 | 6.4 | 27 | 697 | 845 | 2270 | 1530 | 338 | 44 | 235 | 496 | 910 | 4.6 |
| 20 | 2.3 | 31 | 740 | 832 | 2350 | 1490 | 348 | 37 | 221 | 373 | 920 | 8.2 |
| 21 | 3.8 | 23 | 705 | 892 | 2330 | 1480 | 353 | 30 | 194 | 279 | 870 | 15 |
| 22 | 2.8 | 20 | 663 | 1060 | 2260 | 1460 | 338 | 26 | 164 | 180 | 830 | 18 |
| 23 | 2.8 | 20 | 636 | 1210 | 2140 | 1420 | 320 | 25 | 143 | 109 | 770 | 16 |
| 24 | 3.3 | 18 | 614 | 1460 | 1980 | 1380 | 309 | 77 | 128 | 93 | 710 | 13 |
| 25 | 6.3 | 17 | 633 | 1820 | 1790 | 1310 | 316 | 283 | 111 | 84 | 692 | 18 |
| 26 | 46 | 18 | 783 | 2000 | 1660 | 1230 | 336 | 623 | 97 | 75 | 630 | 35 |
| 27 | 41 | 20 | 946 | 1990 | 1550 | 1120 | 407 | 920 | 89 | 69 | 560 | 57 |
| 28 | 112 | 23 | 1050 | 1860 | 1670 | 1010 | 493 | 1150 | 85 | 66 | 477 | 65 |
| 29 | 103 | 22 | 1120 | 1700 | --- | 896 | 582 | 1190 | 87 | 63 | 369 | 70 |
| 30 | 68 | 23 | 1120 | 1590 | --- | 799 | 658 | 934 | 76 | 55 | 260 | 76 |
| 31 | 74 | --- | 1040 | 1450 | --- | 725 | --- | 715 | --- | 52 | 167 | --- |
| TOTAL | 623.17 | 943 | 13131 | 42800 | 46950 | 50460 | 13129 | 12004 | 7739 | 6794.6 | 19343.2 | 724.9 |
| MEAN | 20.1 | 31.4 | 424 | 1381 | 1677 | 1628 | 438 | 387 | 258 | 219 | 624 | 24.2 |
| MAX | 112 | 64 | 1120 | 2000 | 2350 | 2300 | 674 | 1190 | 528 | 912 | 2050 | 97 |
| MIN | .07 | 17 | 25 | 832 | 1250 | 725 | 309 | 25 | 76 | 6.8 | 9.2 | 1.8 |
| (*) | 14.0 | 23.9 | 24.7 | 3.6 | 0 | 0 | 0 | 6.1 | 29.6 | 18.9 | 31.9 | 19.0 |
| MEAN* | 34.1 | 55.3 | 449 | 1385 | 1677 | 1628 | 438 | 393 | 288 | 238 | 656 | 43.2 |
| CFSM* | .06 | .09 | .73 | 2.24 | 2.72 | 2.64 | .71 | .64 | .47 | .39 | 1.06 | .07 |
| IN* | .07 | .10 | .84 | 2.58 | 2.83 | 3.04 | .79 | .74 | .52 | .45 | 1.22 | .08 |
| CAL YR 1981 TOTAL | 63191.97 | | | MEAN 173 | MAX 2870 | MIN .07 | MEAN* 198 | CFSM* .32 | IN* 4.37 | | | |
| WTR YR 1982 TOTAL | 214641.87 | | | MEAN 588 | MAX 2350 | MIN .07 | MEAN* 602 | CFSM* .98 | IN* 13.26 | | | |

* Diversion, in cubic feet per second, by City of Norfolk.

* Adjusted for diversion.

CHOWAN RIVER BASIN

209

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at bridge 2.0 mi (3.2 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1947, 1952, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 04... | 0915 | 48 | 126 | 6.6 | 14.5 | <1.0 | 4.4 | 180 | 85 | 45 | 14 | 2.4 |
| DEC 16... | 1130 | 298 | 120 | 6.6 | 4.5 | 10 | 10.6 | K2000 | M0 | 39 | 12 | 2.1 |
| MAR 16... | 0915 | 1590 | 79 | 6.4 | 11.0 | 5.8 | 8.2 | 330 | 92 | 25 | 7.8 | 1.4 |
| MAY 18... | 1030 | 62 | 110 | 7.2 | 24.0 | 4.3 | 5.0 | 15 | 49 | 40 | 13 | 1.7 |
| JUL 07... | 1215 | 10 | 110 | 7.1 | 28.0 | 3.9 | 3.4 | 14 | 92 | 45 | 15 | 1.8 |
| AUG 24... | 1030 | 751 | 76 | 6.4 | 22.0 | 4.8 | 5.4 | -- | -- | 28 | 9.4 | 1.2 |

< Actual value is known to be less than the value shown.

K Result based on colony count outside optimal range.

M0 All plates with colonies too numerous to count.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| NOV 04... | 5.4 | 2.6 | 19 | 20 | 12 | .1 | 11 | 116 | 80 | .05 | .020 | .93 |
| DEC 16... | 5.5 | 2.2 | 13 | 17 | 14 | <.1 | 10 | 98 | 71 | .23 | .040 | .87 |
| MAR 16... | 3.2 | 1.7 | 10 | 13 | 7.4 | <.1 | 2.3 | -- | 43 | .27 | .050 | .61 |
| MAY 18... | 4.4 | 1.7 | 29 | 6.0 | 9.1 | .1 | 3.9 | 86 | 59 | .15 | .090 | .85 |
| JUL 07... | 4.2 | 1.2 | 32 | 6.0 | 9.0 | <.1 | 11 | 108 | 69 | .10 | .030 | .80 |
| AUG 24... | 2.9 | 1.3 | 18 | 6.0 | 5.4 | <.1 | 8.2 | -- | 45 | .12 | <.010 | 1.30 |

< Actual value is known to be less than the value shown.

CHOWAN RIVER BASIN

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|-------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV | | | | | | | | | | | |
| 04... | .030 | .020 | <.010 | 1 | <1 | 100 | 68 | 2 | <1 | 10 | <10 |
| DEC | | | | | | | | | | | |
| 16... | .050 | .020 | <.010 | 1 | <1 | 100 | 46 | 1 | <1 | 20 | 10 |
| MAR | | | | | | | | | | | |
| 16... | .020 | .010 | .020 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | |
| 18... | .090 | .030 | .010 | 1 | 1 | 100 | 76 | 2 | 2 | 20 | 10 |
| JUL | | | | | | | | | | | |
| 07... | .080 | .020 | <.010 | 2 | 1 | <100 | 68 | 1 | <1 | 20 | 10 |
| AUG | | | | | | | | | | | |
| 24... | .080 | .030 | .010 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-------|---|--|---|--|---|--|---|--|---|--|---|
| NOV | | | | | | | | | | | |
| 04... | 2 | 1 | 5 | 1 | 1500 | 760 | 3 | 1 | 200 | 180 | .4 |
| DEC | | | | | | | | | | | |
| 16... | <1 | <1 | 6 | 5 | 1400 | 440 | 3 | <1 | 70 | 63 | <.1 |
| MAR | | | | | | | | | | | |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | |
| 18... | 4 | 2 | 4 | 3 | 2300 | 1700 | 3 | 3 | 320 | 300 | .2 |
| JUL | | | | | | | | | | | |
| 07... | 6 | 1 | 4 | 3 | 2400 | 1300 | 5 | 2 | 450 | 380 | .2 |
| AUG | | | | | | | | | | | |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|--|---|--|--|---|---|--|---|--|--|---|
| NOV | | | | | | | | | | | |
| 04... | .2 | 3 | 2 | <1 | <1 | <1 | <1 | 40 | 7 | 6 | 100 |
| DEC | | | | | | | | | | | |
| 16... | <.1 | 5 | 1 | <1 | <1 | <1 | <1 | 50 | 13 | 34 | 99 |
| MAR | | | | | | | | | | | |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7 | 100 |
| MAY | | | | | | | | | | | |
| 18... | <.1 | 6 | 3 | <1 | <1 | <1 | <1 | 10 | 13 | 4 | 97 |
| JUL | | | | | | | | | | | |
| 07... | <.1 | 5 | 2 | <1 | <1 | <1 | <1 | 30 | 11 | 8 | 95 |
| AUG | | | | | | | | | | | |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | PCB, TOTAL (UG/L) | PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ALDRIN, TOTAL (UG/L) | ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | CHLOR- DANE, TOTAL (UG/L) | CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDD, TOTAL (UG/L) | DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DDE, TOTAL (UG/L) | DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|------|-------------------------|--|--|----------------------------|---|------------------------------------|---|-------------------------|--|-------------------------|--|
| NOV 04... | 0915 | -- | <1 | <1.0 | -- | <.1 | -- | 6.0 | -- | 2.0 | -- | .5 |
| MAR 16... | 0915 | <.10 | -- | -- | <.01 | -- | <.10 | -- | <.01 | -- | <.01 | -- |
| MAY 18... | 1030 | <.10 | <1 | <1.0 | <.01 | <.1 | <.10 | 8.0 | <.01 | 8.1 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | DDT, TOTAL (UG/L) | DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | DI- AZINON, TOTAL (UG/L) | DI- ELDRIN TOTAL (UG/L) | DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDO- SULFAN, TOTAL (UG/L) | ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ENDRIN, TOTAL (UG/L) | ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | ETHION, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL (UG/L) | HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|-------------------------|--|-----------------------------------|----------------------------------|--|-------------------------------------|--|----------------------------|---|----------------------------|-------------------------------------|--|
| NOV 04... | -- | <.1 | -- | -- | .2 | -- | <.1 | -- | <.1 | -- | -- | <.1 |
| MAR 16... | <.01 | -- | <.01 | <.01 | -- | <.01 | -- | <.01 | -- | <.01 | <.01 | -- |
| MAY 18... | <.01 | .6 | <.01 | <.01 | .2 | <.01 | <.1 | <.01 | <.1 | <.01 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | HEPTA- CHLOR EPOXIDE TOTAL (UG/L) | HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) | LINDANE TOTAL (UG/L) | LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | MALA- THION, TOTAL (UG/L) | METH- OXY- CHLOR, TOTAL (UG/L) | METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) | METHYL PARA- THION, TOTAL (UG/L) | METHYL TRI- THION, TOTAL (UG/L) | MIREX, TOTAL (UG/L) | MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) |
|--------------|---|---|----------------------------|---|------------------------------------|--|--|--|---|---------------------------|--|
| NOV 04... | -- | <.1 | -- | <.1 | -- | -- | <.1 | -- | -- | -- | <.1 |
| MAR 16... | <.01 | -- | <.01 | -- | <.01 | <.01 | -- | <.01 | <.01 | <.01 | -- |
| MAY 18... | <.01 | <.1 | <.01 | <.1 | <.01 | <.01 | <.1 | <.01 | <.01 | <.01 | <.1 |

< Actual value is known to be less than the value shown.

| DATE | NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) | PARA- THION, TOTAL (UG/L) | PER- THANE TOTAL (UG/L) | PER- THANE IN BOTTOM MATERIAL (UG/KG) | SILVEX, TOTAL (UG/L) | TOX- APHENE, TOTAL (UG/L) | TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) | TOTAL TRI- THION (UG/L) | 2,4-D, TOTAL (UG/L) | 2, 4-DP TOTAL (UG/L) | 2,4,5-T TOTAL (UG/L) |
|--------------|---|------------------------------------|----------------------------------|--|----------------------------|------------------------------------|---|----------------------------------|---------------------------|----------------------------|----------------------------|
| NOV 04... | -- | -- | -- | <.10 | -- | -- | <1.0 | -- | -- | -- | -- |
| MAR 16... | <.10 | <.01 | <.01 | -- | <.01 | <1 | -- | <.01 | <.01 | <.01 | <.01 |
| MAY 18... | <.10 | <.01 | <.10 | <1.00 | -- | <1 | <10 | <.01 | -- | -- | -- |

< Actual value is known to be less than the value shown.

CHOWAN RIVER BASIN

02051500 MEHERRIN RIVER NEAR LAWRENCEVILLE, VA

LOCATION.--Lat 36°43'00", long 77°49'55", Brunswick County, Hydrologic Unit 03010204, on right bank 50 ft (15 m) upstream from Gholson Bridge on State Highway 715, 0.6 mi (1.0 km) upstream from Allen Creek, and 3.0 mi (4.8 km) southeast of Lawrenceville.

DRAINAGE AREA.--552 mi² (1,430 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1932(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.56 ft (41.623 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 496 ft³/s (14.05 m³/s), 12.20 in/yr (310 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s (1,080 m³/s) Aug. 17, 1940, gage height, 42.0 ft (12.80 m), from floodmark, from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of velocity-area studies and records for Nottoway River near Stony Creek; minimum, 4.2 ft³/s (0.12 m³/s) Oct. 7, 8, 1954; minimum gage height, 0.72 ft (0.219 m) Sept. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,650 ft³/s (132 m³/s) at 1130 hours May 26, gage height, 15.76 ft (4.804 m), no other peak above base of 4,500 ft³/s (130 m³/s); minimum, 24 ft³/s (0.68 m³/s) Oct. 10, gage height, 1.38 ft (0.421 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|
| 1 | 30 | 115 | 87 | 1810 | 1560 | 1700 | 273 | 258 | 753 | 214 | 214 | 140 |
| 2 | 33 | 102 | 88 | 2120 | 1290 | 1330 | 274 | 234 | 923 | 224 | 359 | 129 |
| 3 | 34 | 93 | 96 | 882 | 1310 | 1120 | 270 | 227 | 801 | 199 | 258 | 139 |
| 4 | 28 | 87 | 99 | 2700 | 3470 | 918 | 263 | 219 | 572 | 174 | 370 | 134 |
| 5 | 29 | 85 | 106 | 3070 | 1590 | 662 | 251 | 209 | 1650 | 240 | 250 | 120 |
| 6 | 35 | 90 | 109 | 1150 | 805 | 618 | 248 | 194 | 2120 | 863 | 217 | 111 |
| 7 | 31 | 90 | 108 | 643 | 604 | 780 | 244 | 184 | 741 | 412 | 179 | 108 |
| 8 | 27 | 85 | 104 | 499 | 487 | 3370 | 238 | 186 | 456 | 261 | 162 | 100 |
| 9 | 26 | 80 | 97 | 411 | 431 | 1690 | 260 | 186 | 370 | 209 | 183 | 97 |
| 10 | 25 | 80 | 90 | 343 | 451 | 865 | 307 | 173 | 443 | 185 | 1240 | 94 |
| 11 | 26 | 79 | 86 | 192 | 438 | 664 | 320 | 159 | 494 | 271 | 715 | 93 |
| 12 | 27 | 77 | 83 | 200 | 384 | 568 | 280 | 152 | 601 | 910 | 2830 | 92 |
| 13 | 29 | 75 | 77 | 318 | 446 | 509 | 258 | 147 | 422 | 2760 | 2640 | 89 |
| 14 | 30 | 74 | 81 | 269 | 680 | 462 | 248 | 142 | 1940 | 2040 | 680 | 86 |
| 15 | 30 | 74 | 151 | 268 | 661 | 426 | 239 | 137 | 1420 | 954 | 415 | 81 |
| 16 | 30 | 73 | 1350 | 314 | 553 | 417 | 230 | 135 | 577 | 914 | 424 | 80 |
| 17 | 31 | 77 | 1060 | 300 | 1200 | 452 | 231 | 132 | 435 | 734 | 329 | 88 |
| 18 | 31 | 85 | 496 | 270 | 2960 | 477 | 268 | 140 | 2100 | 374 | 397 | 97 |
| 19 | 30 | 83 | 321 | 270 | 1670 | 420 | 288 | 137 | 1360 | 278 | 1070 | 96 |
| 20 | 33 | 79 | 231 | 300 | 948 | 394 | 264 | 142 | 626 | 251 | 431 | 91 |
| 21 | 36 | 77 | 148 | 354 | 751 | 432 | 253 | 181 | 492 | 229 | 284 | 88 |
| 22 | 35 | 74 | 194 | 626 | 597 | 484 | 264 | 331 | 642 | 237 | 243 | 99 |
| 23 | 36 | 71 | 345 | 779 | 487 | 418 | 252 | 820 | 439 | 253 | 215 | 130 |
| 24 | 43 | 75 | 463 | 874 | 427 | 363 | 226 | 813 | 342 | 455 | 198 | 133 |
| 25 | 63 | 89 | 470 | 893 | 394 | 336 | 213 | 2240 | 280 | 587 | 182 | 138 |
| 26 | 98 | 100 | 1970 | 670 | 355 | 323 | 230 | 4030 | 265 | 295 | 171 | 155 |
| 27 | 123 | 106 | 1070 | 488 | 389 | 305 | 434 | 784 | 261 | 227 | 160 | 230 |
| 28 | 716 | 102 | 627 | 480 | 1250 | 285 | 529 | 468 | 237 | 195 | 152 | 222 |
| 29 | 586 | 95 | 469 | 476 | --- | 269 | 398 | 472 | 228 | 202 | 150 | 210 |
| 30 | 228 | 91 | 347 | 470 | --- | 262 | 304 | 737 | 224 | 223 | 164 | 190 |
| 31 | 144 | --- | 287 | 577 | --- | 264 | --- | 989 | --- | 195 | 163 | --- |
| TOTAL | 2703 | 2563 | 11310 | 23016 | 26588 | 21583 | 8357 | 15358 | 22214 | 15565 | 15445 | 3660 |
| MEAN | 87.2 | 85.4 | 365 | 742 | 950 | 696 | 279 | 495 | 740 | 502 | 498 | 122 |
| MAX | 716 | 115 | 1970 | 3070 | 3470 | 3370 | 529 | 4030 | 2120 | 2760 | 2830 | 230 |
| MIN | 25 | 71 | 77 | 192 | 355 | 262 | 213 | 132 | 224 | 174 | 150 | 80 |
| CFSM | .16 | .16 | .66 | 1.34 | 1.72 | 1.26 | .51 | .90 | 1.34 | .91 | .90 | .22 |
| IN. | .18 | .17 | .76 | 1.55 | 1.79 | 1.45 | .56 | 1.03 | 1.50 | 1.05 | 1.04 | .25 |

CAL YR 1981 TOTAL 78827 MEAN 216 MAX 4190 MIN 25 CFSM .39 IN 5.31
WTR YR 1982 TOTAL 168362 MEAN 461 MAX 4030 MIN 25 CFSM .84 IN 11.35

02051000 NORTH MEHERRIN RIVER NEAR LUNENBURG, VA

LOCATION (REVISED).--Lat 36°59'53", long 78°21'03", Lunenburg County, Hydrologic Unit 03010204, on right bank at upstream side of bridge on State Highway 40, 0.5 mi (0.8 km) downstream from Tusekiah Creek, 4.6 mi (7.4 km) upstream from Juniper Creek, and 5.2 mi (8.4 km) northwest of Lunenburg.

DRAINAGE AREA.--55.6 mi² (144.0 km²).

PERIOD OF RECORD.--August 1946 to September 1980, October 1981 to September 1982.

REVISED RECORDS.--WSP 1303: 1947(M), 1949(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 333.7 ft (101.71 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to July 5, 1951, nonrecording gage at same site and datum. July 5, 1951, to July 11, 1980, water-stage recorder at site 20 ft (6 m) downstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--35 years, 53.2 ft³/s (1.507 m³/s), 12.99 in/yr (330 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft³/s (408 m³/s) Oct. 23, 1971, gage height, 28.30 ft (8.626 m), from rating curve extended above 1,700 ft³/s (48 m³/s) on basis of slope-area measurement of peak flow; no flow Sept. 5-21, Oct. 8-14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 48 ft (14.6 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| May 24 | 2400 | 2330 | 66.0 | 13.82 | 4.212 | July 13 | 1500 | *2680 | 75.9 | 15.37 | 4.685 |

Minimum daily discharge, 2.7 ft³/s (0.076 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|------|------|------|------|------|------|------|------|-------|
| 1 | 3.0 | 11 | 8.1 | 162 | 214 | 137 | 31 | 22 | 76 | 14 | 72 | 13 |
| 2 | 3.0 | 10 | 9.5 | 71 | 73 | 190 | 29 | 20 | 51 | 12 | 26 | 12 |
| 3 | 2.9 | 9.8 | 10 | 109 | 403 | 167 | 29 | 23 | 30 | 11 | 29 | 11 |
| 4 | 2.8 | 9.5 | 11 | 165 | 188 | 85 | 30 | 20 | 28 | 17 | 19 | 10 |
| 5 | 2.7 | 9.5 | 13 | 119 | 92 | 77 | 24 | 18 | 170 | 28 | 17 | 9.3 |
| 6 | 3.0 | 9.8 | 13 | 102 | 67 | 60 | 26 | 18 | 63 | 21 | 15 | 9.0 |
| 7 | 3.2 | 9.0 | 11 | 50 | 51 | 196 | 24 | 18 | 33 | 14 | 14 | 8.7 |
| 8 | 3.5 | 9.0 | 10 | 39 | 42 | 190 | 22 | 17 | 26 | 12 | 14 | 8.5 |
| 9 | 3.3 | 7.6 | 9.8 | 32 | 40 | 85 | 30 | 17 | 24 | 78 | 24 | 8.7 |
| 10 | 3.1 | 7.8 | 9.2 | 24 | 42 | 63 | 30 | 16 | 25 | 147 | 21 | 8.7 |
| 11 | 3.1 | 7.8 | 9.0 | 20 | 35 | 54 | 26 | 15 | 32 | 117 | 127 | 8.5 |
| 12 | 3.0 | 7.6 | 8.7 | 16 | 31 | 49 | 24 | 15 | 27 | 358 | 200 | 8.2 |
| 13 | 3.0 | 7.3 | 9.0 | 13 | 44 | 43 | 22 | 15 | 296 | 655 | 42 | 7.6 |
| 14 | 3.1 | 7.3 | 9.5 | 13 | 67 | 39 | 22 | 14 | 163 | 132 | 25 | 7.4 |
| 15 | 3.3 | 7.3 | 127 | 12 | 52 | 40 | 22 | 14 | 54 | 254 | 19 | 7.4 |
| 16 | 3.3 | 7.6 | 140 | 13 | 49 | 58 | 21 | 13 | 34 | 81 | 17 | 7.1 |
| 17 | 3.3 | 7.6 | 69 | 14 | 303 | 70 | 22 | 13 | 194 | 40 | 194 | 7.4 |
| 18 | 3.5 | 7.6 | 39 | 14 | 214 | 48 | 25 | 13 | 144 | 28 | 342 | 6.3 |
| 19 | 3.9 | 7.3 | 26 | 15 | 115 | 41 | 22 | 12 | 59 | 21 | 60 | 6.1 |
| 20 | 3.6 | 7.3 | 18 | 16 | 90 | 62 | 21 | 15 | 35 | 20 | 32 | 8.5 |
| 21 | 3.5 | 7.3 | 15 | 48 | 67 | 65 | 22 | 29 | 31 | 52 | 22 | 10 |
| 22 | 3.9 | 6.9 | 23 | 67 | 51 | 48 | 20 | 17 | 24 | 21 | 19 | 19 |
| 23 | 5.0 | 6.9 | 52 | 51 | 42 | 39 | 20 | 38 | 24 | 327 | 20 | 13 |
| 24 | 7.0 | 7.8 | 32 | 67 | 38 | 35 | 18 | 413 | 19 | 123 | 19 | 9.0 |
| 25 | 9.5 | 12 | 106 | 54 | 34 | 33 | 18 | 541 | 17 | 46 | 28 | 8.2 |
| 26 | 14 | 11 | 116 | 37 | 30 | 32 | 45 | 67 | 17 | 28 | 18 | 19 |
| 27 | 22 | 9.5 | 60 | 29 | 36 | 30 | 65 | 38 | 16 | 22 | 15 | 40 |
| 28 | 82 | 9.0 | 39 | 26 | 80 | 26 | 44 | 132 | 15 | 18 | 16 | 14 |
| 29 | 23 | 8.7 | 30 | 30 | --- | 26 | 29 | 226 | 14 | 17 | 18 | 11 |
| 30 | 15 | 8.1 | 23 | 44 | --- | 26 | 24 | 213 | 14 | 17 | 14 | 9.6 |
| 31 | 13 | --- | 28 | 210 | --- | 26 | --- | 119 | --- | 77 | 13 | --- |
| TOTAL | 261.5 | 254.9 | 1083.8 | 1682 | 2590 | 2140 | 807 | 2161 | 1755 | 2808 | 1511 | 326.2 |
| MEAN | 8.44 | 8.50 | 35.0 | 54.3 | 92.5 | 69.0 | 26.9 | 69.7 | 58.5 | 90.6 | 48.7 | 10.9 |
| MAX | 82 | 12 | 140 | 210 | 403 | 196 | 65 | 541 | 296 | 655 | 342 | 40 |
| MIN | 2.7 | 6.9 | 8.1 | 12 | 30 | 26 | 18 | 12 | 14 | 11 | 13 | 6.1 |
| CFSM | .15 | .15 | .63 | .98 | 1.66 | 1.24 | .48 | 1.25 | 1.05 | 1.63 | .88 | .20 |
| IN. | .17 | .17 | .73 | 1.13 | 1.73 | 1.43 | .54 | 1.45 | 1.17 | 1.88 | 1.01 | .22 |

WTR YR 1982 TOTAL 17380.4 MEAN 47.6 MAX 655 MIN 2.7 CFSM .86 IN 11.63

CHOWAN RIVER BASIN

02051600 GREAT CREEK NEAR COCHRAN, VA

LOCATION.--Lat 36°48'46", long 77°55'19", Brunswick County, Hydrologic Unit 03010204, on left bank at upstream side of bridge on State Highway 618, 1.4 mi (2.3 km) southwest of Cochran, and 9.5 mi (15.3 km) upstream from Roses Creek.

DRAINAGE AREA.--30.7 mi² (79.5 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 215.72 ft (65.751 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--24 years, 30.1 ft³/s (0.852 m³/s), 13.31 in/yr (338 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,030 ft³/s (199 m³/s) Oct. 6, 1972, gage height, 16.65 ft (5.075 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of contracted-opening measurements at gage heights 12.08 ft (3.682 m), 14.57 ft (4.441 m), and 16.65 ft (5.075 m); minimum, 0.10 ft³/s (0.003 m³/s) Oct. 11, 12, 1965, Sept. 23, 1968; minimum gage height, 1.50 ft (0.457 m) Aug. 19, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.5 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Mar. 8 | 0700 | 307 8.69 | 6.29 1.917 | July 14 | 0330 | *414 11.7 | 7.04 2.146 |

Minimum discharge, 0.88 ft³/s (0.025 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|---------|-----------|---------|---------|----------|----------|-------|-------|-------|-------|-------|
| 1 | .94 | 6.6 | 6.6 | 164 | 96 | 103 | 20 | 15 | 11 | 6.0 | 14 | 6.8 |
| 2 | 1.5 | 6.2 | 8.2 | 69 | 51 | 63 | 19 | 14 | 16 | 5.0 | 10 | 6.8 |
| 3 | 1.9 | 6.0 | 8.5 | 78 | 145 | 47 | 19 | 13 | 14 | 5.4 | 10 | 7.0 |
| 4 | 2.0 | 5.6 | 8.5 | 127 | 120 | 41 | 20 | 12 | 10 | 12 | 9.0 | 7.0 |
| 5 | 2.0 | 5.8 | 10 | 86 | 61 | 38 | 17 | 12 | 53 | 11 | 7.4 | 6.0 |
| 6 | 1.9 | 7.6 | 9.5 | 46 | 46 | 36 | 20 | 11 | 28 | 13 | 7.2 | 5.2 |
| 7 | 1.9 | 7.2 | 8.2 | 35 | 36 | 90 | 18 | 10 | 14 | 8.2 | 6.8 | 4.8 |
| 8 | 2.0 | 6.4 | 7.8 | 30 | 30 | 212 | 17 | 10 | 11 | 6.6 | 7.0 | 4.4 |
| 9 | 1.6 | 5.8 | 7.2 | 25 | 31 | 74 | 27 | 10 | 9.2 | 5.6 | 33 | 4.6 |
| 10 | 1.7 | 5.8 | 6.8 | 22 | 37 | 54 | 26 | 9.2 | 10 | 21 | 155 | 4.6 |
| 11 | 1.9 | 5.8 | 6.6 | 18 | 28 | 46 | 21 | 8.5 | 15 | 12 | 57 | 4.6 |
| 12 | 2.4 | 6.2 | 6.4 | 16 | 25 | 40 | 20 | 7.6 | 12 | 48 | 149 | 4.2 |
| 13 | 3.0 | 6.0 | 6.4 | 14 | 48 | 36 | 18 | 7.6 | 14 | 66 | 64 | 4.0 |
| 14 | 3.3 | 5.8 | 7.2 | 14 | 55 | 32 | 17 | 7.2 | 39 | 210 | 34 | 3.9 |
| 15 | 4.0 | 5.6 | 37 | 14 | 40 | 30 | 16 | 6.8 | 18 | 47 | 23 | 3.9 |
| 16 | 5.0 | 5.6 | 64 | 14 | 46 | 34 | 16 | 6.4 | 12 | 45 | 20 | 3.9 |
| 17 | 6.0 | 7.4 | 28 | 16 | 131 | 42 | 16 | 6.2 | 19 | 25 | 52 | 3.9 |
| 18 | 6.6 | 10 | 19 | 17 | 163 | 32 | 26 | 6.0 | 117 | 17 | 33 | 3.6 |
| 19 | 8.0 | 7.8 | 14 | 18 | 73 | 28 | 20 | 6.0 | 46 | 13 | 25 | 4.4 |
| 20 | 9.0 | 7.0 | 13 | 23 | 55 | 34 | 17 | 8.5 | 23 | 11 | 18 | 5.6 |
| 21 | 8.2 | 6.6 | 12 | 38 | 45 | 36 | 19 | 12 | 36 | 13 | 14 | 5.0 |
| 22 | 9.0 | 6.2 | 17 | 42 | 40 | 31 | 17 | 9.2 | 30 | 15 | 13 | 8.5 |
| 23 | 10 | 6.0 | 24 | 42 | 33 | 27 | 16 | 12 | 20 | 14 | 12 | 9.8 |
| 24 | 12 | 7.2 | 18 | 58 | 30 | 24 | 15 | 23 | 14 | 14 | 11 | 7.0 |
| 25 | 13 | 11 | 55 | 42 | 26 | 24 | 14 | 28 | 11 | 10 | 10 | 5.8 |
| 26 | 14 | 8.8 | 71 | 32 | 24 | 23 | 30 | 15 | 10 | 8.2 | 9.0 | 13 |
| 27 | 16 | 7.6 | 41 | 28 | 39 | 21 | 48 | 11 | 9.0 | 7.2 | 8.0 | 30 |
| 28 | 30 | 7.4 | 30 | 24 | 127 | 20 | 26 | 11 | 7.8 | 8.0 | 8.2 | 12 |
| 29 | 12 | 6.8 | 24 | 22 | --- | 20 | 19 | 12 | 7.0 | 33 | 8.2 | 7.8 |
| 30 | 8.8 | 6.6 | 19 | 27 | --- | 20 | 16 | 16 | 6.8 | 15 | 7.4 | 6.4 |
| 31 | 7.2 | --- | 21 | 51 | --- | 20 | --- | 14 | --- | 14 | 7.0 | --- |
| TOTAL | 206.84 | 204.4 | 614.9 | 1252 | 1681 | 1378 | 610 | 350.2 | 642.8 | 739.2 | 842.2 | 204.5 |
| MEAN | 6.67 | 6.81 | 19.8 | 40.4 | 60.0 | 44.5 | 20.3 | 11.3 | 21.4 | 23.8 | 27.2 | 6.82 |
| MAX | 30 | 11 | 71 | 164 | 163 | 212 | 48 | 28 | 117 | 210 | 155 | 30 |
| MIN | .94 | 5.6 | 6.4 | 14 | 24 | 20 | 14 | 6.0 | 6.8 | 5.0 | 6.8 | 3.6 |
| CFSM | .22 | .22 | .65 | 1.32 | 1.95 | 1.45 | .66 | .37 | .70 | .78 | .89 | .22 |
| IN. | .25 | .25 | .75 | 1.52 | 2.04 | 1.67 | .74 | .42 | .78 | .90 | 1.02 | .25 |
| CAL YR 1981 | TOTAL | 5855.84 | MEAN 16.0 | MAX 322 | MIN .94 | CFSM .52 | IN 7.10 | | | | | |
| WTR YR 1982 | TOTAL | 8726.04 | MEAN 23.9 | MAX 212 | MIN .94 | CFSM .78 | IN 10.57 | | | | | |

02052000 MEHERRIN RIVER AT EMPORIA, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°41'24", long 77°32'27", Emporia City, Hydrologic Unit 03010204, on left bank at downstream side of bridge on U.S. Highway 301 and 1.2 mi (1.9 km) upstream from Falling Run.

DRAINAGE AREA.--747 mi² (1,935 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 67.17 ft (20.473 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Prior to November 1965, low and medium flow regulated by powerplant 0.8 mi (1.3 km) above station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 686 ft³/s (19.43 m³/s), 12.47 in/yr (317 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s (598 m³/s) Oct. 8, 1972, gage height, 27.38 ft (8.345 m); minimum, 5.0 ft³/s (0.14 m³/s) Nov. 11, 1954, gage height, 1.00 ft (0.305 m); minimum daily, 8.0 ft³/s (0.23 m³/s) Nov. 8-10, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 31.5 ft (9.60 m), from floodmarks, discharge, about 40,000 ft³/s (1,100 m³/s), from rating curve extended above 18,000 ft³/s (510 m³/s) on basis of record for station near Lawrenceville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,940 ft³/s (140 m³/s) May 26, gage height, 16.38 ft (4.993 m), no peak above base of 6,000 ft³/s (170 m³/s); minimum, 36 ft³/s (1.02 m³/s) Oct. 5, 6, 12-14.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1 | 41 | 150 | 113 | 1140 | 2500 | 2540 | 378 | 366 | 1040 | 199 | 247 | 164 |
| 2 | 41 | 131 | 118 | 3020 | 1900 | 2320 | 378 | 328 | 925 | 203 | 310 | 153 |
| 3 | 40 | 118 | 120 | 1630 | 2700 | 1740 | 378 | 312 | 1140 | 199 | 310 | 151 |
| 4 | 37 | 108 | 125 | 2170 | 4000 | 1470 | 370 | 298 | 690 | 190 | 330 | 158 |
| 5 | 36 | 107 | 134 | 3620 | 2000 | 1110 | 346 | 282 | 1410 | 252 | 300 | 150 |
| 6 | 36 | 111 | 135 | 2630 | 1200 | 970 | 346 | 266 | 3100 | 665 | 218 | 132 |
| 7 | 39 | 105 | 137 | 1060 | 880 | 1250 | 330 | 252 | 1480 | 651 | 187 | 121 |
| 8 | 42 | 105 | 138 | 721 | 650 | 3520 | 328 | 247 | 670 | 330 | 172 | 116 |
| 9 | 40 | 100 | 129 | 565 | 520 | 4080 | 354 | 245 | 468 | 242 | 190 | 109 |
| 10 | 39 | 96 | 121 | 450 | 540 | 1770 | 405 | 235 | 468 | 263 | 877 | 107 |
| 11 | 37 | 96 | 113 | 290 | 620 | 1150 | 430 | 221 | 485 | 226 | 1220 | 107 |
| 12 | 36 | 95 | 109 | 195 | 500 | 944 | 408 | 208 | 702 | 334 | 2460 | 107 |
| 13 | 36 | 94 | 103 | 185 | 460 | 822 | 366 | 199 | 550 | 2820 | 4010 | 107 |
| 14 | 36 | 92 | 108 | 200 | 660 | 725 | 344 | 191 | 1080 | 2660 | 1740 | 103 |
| 15 | 38 | 91 | 176 | 210 | 800 | 665 | 330 | 185 | 2630 | 2120 | 656 | 100 |
| 16 | 40 | 90 | 714 | 215 | 620 | 653 | 320 | 175 | 958 | 868 | 462 | 96 |
| 17 | 40 | 98 | 1790 | 225 | 1000 | 690 | 316 | 171 | 550 | 1230 | 514 | 99 |
| 18 | 42 | 102 | 827 | 260 | 3500 | 705 | 366 | 169 | 1620 | 552 | 434 | 107 |
| 19 | 45 | 105 | 445 | 300 | 3200 | 658 | 405 | 175 | 2700 | 350 | 1050 | 121 |
| 20 | 44 | 108 | 305 | 361 | 1700 | 598 | 386 | 169 | 1100 | 270 | 764 | 103 |
| 21 | 41 | 99 | 194 | 450 | 1200 | 603 | 356 | 188 | 627 | 235 | 370 | 100 |
| 22 | 44 | 92 | 199 | 740 | 900 | 675 | 348 | 310 | 752 | 240 | 270 | 104 |
| 23 | 50 | 92 | 279 | 1030 | 800 | 641 | 346 | 500 | 634 | 286 | 238 | 116 |
| 24 | 57 | 95 | 485 | 1390 | 692 | 545 | 318 | 1390 | 434 | 290 | 220 | 163 |
| 25 | 91 | 98 | 553 | 1350 | 617 | 492 | 294 | 1420 | 346 | 782 | 210 | 159 |
| 26 | 104 | 112 | 1550 | 1060 | 548 | 468 | 320 | 4180 | 296 | 425 | 198 | 169 |
| 27 | 142 | 126 | 1940 | 800 | 579 | 439 | 482 | 2950 | 261 | 280 | 190 | 185 |
| 28 | 273 | 129 | 1000 | 680 | 1930 | 410 | 755 | 873 | 244 | 221 | 185 | 265 |
| 29 | 916 | 124 | 673 | 560 | --- | 386 | 598 | 605 | 235 | 195 | 172 | 256 |
| 30 | 372 | 114 | 481 | 600 | --- | 378 | 452 | 880 | 215 | 266 | 175 | 190 |
| 31 | 196 | --- | 375 | 800 | --- | 374 | --- | 1140 | --- | 244 | 183 | --- |
| TOTAL | 3071 | 3183 | 13679 | 28907 | 37216 | 33791 | 11553 | 19130 | 27810 | 18088 | 18862 | 4118 |
| MEAN | 99.1 | 106 | 441 | 932 | 1329 | 1090 | 385 | 617 | 927 | 583 | 608 | 137 |
| MAX | 916 | 150 | 1940 | 3620 | 4000 | 4080 | 755 | 4180 | 3100 | 2820 | 4010 | 265 |
| MIN | 36 | 90 | 103 | 185 | 460 | 374 | 294 | 169 | 215 | 190 | 172 | 96 |
| CFSM | .13 | .14 | .59 | 1.25 | 1.78 | 1.46 | .52 | .83 | 1.24 | .78 | .81 | .18 |
| IN. | .15 | .16 | .68 | 1.44 | 1.85 | 1.68 | .58 | .95 | 1.38 | .90 | .94 | .21 |

CAL YR 1981 TOTAL 96525 MEAN 264 MAX 3550 MIN 36 CFSM .35 IN 4.81
WTR YR 1982 TOTAL 219408 MEAN 601 MAX 4180 MIN 36 CFSM .81 IN 10.93

CHOWAN RIVER BASIN

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1968 to September 1971, October 1972 to September 1978.

WATER TEMPERATURES: April 1968 to September 1971, October 1972 to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 05... | 0800 | 105 | 99 | 7.1 | 14.5 | 24 | 7.9 | 310 | 250 | 25 | 5.8 | 2.6 |
| DEC 15... | 1345 | 185 | 95 | 6.2 | 4.0 | 11 | 13.0 | 650 | 2400 | 24 | 5.9 | 2.3 |
| MAR 17... | 0830 | 680 | 68 | 7.1 | 10.5 | 15 | 10.9 | 55 | 75 | 18 | 4.2 | 1.9 |
| MAY 19... | 0830 | 175 | 91 | 7.4 | 23.0 | 6.0 | 6.1 | 12 | 110 | 27 | 6.2 | 2.7 |
| JUL 08... | 0830 | 356 | 78 | 7.4 | 24.5 | 52 | 7.7 | 81 | 180 | 26 | 6.0 | 2.7 |
| AUG 25... | 1230 | 215 | 73 | 6.2 | 24.0 | 27 | 6.6 | -- | -- | 23 | 5.4 | 2.4 |

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| NOV 05... | 9.3 | 2.4 | 27 | 5.9 | 10 | .1 | 15 | 82 | 68 | .06 | .090 | .64 |
| DEC 15... | 8.6 | 2.0 | 29 | 4.3 | 7.9 | <.1 | 16 | 68 | 65 | .08 | .030 | .32 |
| MAR 17... | 4.8 | 1.5 | 18 | 6.4 | 4.2 | <.1 | 15 | 57 | 49 | .29 | .210 | .58 |
| MAY 19... | 6.0 | 1.5 | 33 | 2.0 | 4.7 | .1 | 13 | 58 | 57 | <.10 | .050 | .75 |
| JUL 08... | 6.2 | 1.3 | 28 | 5.0 | 4.5 | <.1 | 16 | 68 | 59 | .10 | .090 | .70 |
| AUG 25... | 5.1 | 1.7 | 25 | 4.0 | 3.4 | .1 | 17 | 66 | 54 | <.10 | .040 | .70 |

< Actual value is known to be less than the value shown.

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV 05... | .050 | .050 | .020 | 1 | <1 | 100 | 31 | 2 | <1 | 10 | 10 |
| DEC 15... | .050 | .020 | <.010 | 1 | <1 | <100 | 16 | 2 | 3 | 20 | 10 |
| MAR 17... | .040 | .020 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 19... | .110 | .020 | <.010 | 1 | 1 | <100 | 31 | 2 | 1 | 20 | 10 |
| JUL 08... | .070 | .010 | .010 | 1 | <1 | <100 | 34 | <1 | <1 | 10 | 10 |
| AUG 25... | .090 | .020 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|--------------|---|--|---|--|---|--|---|--|---|--|---|
| NOV 05... | <1 | <1 | 6 | 2 | 1000 | 390 | 3 | 1 | 110 | 90 | .3 |
| DEC 15... | <1 | <1 | 8 | 3 | 1200 | 370 | 1 | <1 | 90 | 73 | <.1 |
| MAR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 19... | 4 | 1 | 10 | 10 | 1100 | 360 | 4 | 2 | 240 | 180 | .4 |
| JUL 08... | 1 | 2 | 4 | 3 | 1800 | 300 | <1 | 1 | 170 | 110 | .1 |
| AUG 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|--|---|--|--|---|---|--|---|--|--|---|
| NOV 05... | .2 | 2 | 1 | <1 | <1 | <1 | <1 | 30 | <4 | 15 | 100 |
| DEC 15... | <.1 | 2 | 1 | <1 | <1 | <1 | <1 | 50 | 4 | 12 | 99 |
| MAR 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16 | 87 |
| MAY 19... | <.1 | 4 | 4 | <1 | <1 | <1 | <1 | 20 | <3 | 15 | 96 |
| JUL 08... | <.1 | 3 | 1 | <1 | <1 | <1 | <1 | 30 | <4 | 47 | 99 |
| AUG 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35 | 94 |

< Actual value is known to be less than the value shown.

02052500 FOUNTAINS CREEK NEAR BRINK, VA

LOCATION.--Lat 36°36'55", long 77°42'00", Greenville County, Hydrologic Unit 03010204, on left bank 30 ft (9 m) upstream from bridge on State Highway 603, 0.3 mi (0.5 km) downstream from Quarrel Creek, 3.6 mi (5.8 km) west of Brink, and 10 mi (16 km) southwest of Emporia.

DRAINAGE AREA.--65.2 mi² (168.9 km²).

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1980, published as Fontaine Creek near Brink.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 152.59 ft (46.509 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of doubtful gage-height record, Sept. 1-30, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--29 years, 67.1 ft³/s (1.900 m³/s), 13.98 in/yr (355 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) Oct. 6, 1972, gage height, 24.14 ft (7.358 m), from floodmark, from rating curve extended above 3,000 ft³/s (85 m³/s); no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 575 ft³/s (16.3 m³/s) Feb. 18, gage height, 8.87 ft (2.704 m), no peak above base of 850 ft³/s (24 m³/s); no flow Oct. 1 to Nov. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|----------|------|------|------|------|------|--------|--------|--------|--------|-------|
| 1 | .00 | .00 | 18 | 221 | 71 | 366 | 27 | 17 | 157 | 2.3 | 8.0 | .37 |
| 2 | .00 | .00 | 20 | 169 | 66 | 198 | 25 | 14 | 45 | 2.0 | 8.8 | .42 |
| 3 | .00 | .00 | 23 | 100 | 291 | 115 | 25 | 20 | 42 | 2.2 | 6.4 | .50 |
| 4 | .00 | .00 | 25 | 149 | 398 | 89 | 32 | 16 | 82 | 3.8 | 4.8 | .46 |
| 5 | .00 | .00 | 26 | 165 | 283 | 81 | 25 | 10 | 275 | 11 | 2.9 | .38 |
| 6 | .00 | .00 | 26 | 88 | 139 | 91 | 23 | 8.8 | 337 | 20 | 1.8 | .35 |
| 7 | .00 | .00 | 27 | 54 | 87 | 251 | 20 | 7.7 | 171 | 18 | 1.1 | .33 |
| 8 | .00 | .00 | 27 | 39 | 65 | 519 | 21 | 7.0 | 53 | 12 | 5.1 | .30 |
| 9 | .00 | .04 | 26 | 31 | 55 | 359 | 36 | 6.4 | 37 | 7.7 | 22 | .30 |
| 10 | .00 | .08 | 26 | 24 | 63 | 160 | 43 | 5.1 | 32 | 10 | 31 | .27 |
| 11 | .00 | .18 | 26 | 18 | 61 | 103 | 35 | 3.6 | 31 | 12 | 24 | .26 |
| 12 | .00 | .40 | 25 | 13 | 51 | 86 | 29 | 3.1 | 29 | 7.4 | 31 | .24 |
| 13 | .00 | .73 | 24 | 15 | 135 | 74 | 24 | 3.1 | 25 | 5.1 | 20 | .23 |
| 14 | .00 | 1.1 | 26 | 16 | 212 | 64 | 22 | 2.6 | 27 | 4.1 | 12 | .22 |
| 15 | .00 | 1.9 | 54 | 16 | 142 | 60 | 20 | 6.4 | 22 | 4.6 | 8.0 | .21 |
| 16 | .00 | 2.7 | 96 | 18 | 124 | 80 | 19 | 12 | 18 | 5.4 | 11 | .20 |
| 17 | .00 | 5.9 | 66 | 20 | 350 | 95 | 19 | 4.6 | 18 | 4.3 | 21 | .20 |
| 18 | .00 | 11 | 43 | 25 | 539 | 77 | 31 | 4.6 | 83 | 2.3 | 31 | .21 |
| 19 | .00 | 13 | 31 | 32 | 377 | 61 | 32 | 4.8 | 138 | 1.6 | 18 | .23 |
| 20 | .00 | 13 | 22 | 70 | 203 | 63 | 24 | 7.4 | 67 | .90 | 11 | .25 |
| 21 | .00 | 13 | 18 | 90 | 125 | 71 | 24 | 12 | 32 | .75 | 6.1 | .30 |
| 22 | .00 | 13 | 21 | 170 | 96 | 66 | 23 | 12 | 19 | .75 | 4.3 | .33 |
| 23 | .00 | 13 | 25 | 190 | 78 | 53 | 19 | 12 | 14 | .75 | 3.6 | .29 |
| 24 | .00 | 14 | 27 | 338 | 64 | 44 | 16 | 29 | 8.8 | .83 | 3.4 | .26 |
| 25 | .00 | 15 | 74 | 251 | 55 | 40 | 14 | 36 | 6.1 | 1.4 | 2.2 | .24 |
| 26 | .00 | 15 | 132 | 144 | 46 | 38 | 29 | 27 | 4.3 | 5.4 | 1.4 | .45 |
| 27 | .00 | 16 | 96 | 81 | 98 | 33 | 60 | 27 | 2.6 | 2.4 | .90 | 1.7 |
| 28 | .00 | 16 | 64 | 69 | 475 | 30 | 46 | 75 | 2.6 | 1.1 | .58 | 4.3 |
| 29 | .00 | 16 | 48 | 55 | --- | 27 | 33 | 38 | 2.6 | 2.1 | .47 | 2.3 |
| 30 | .00 | 15 | 37 | 54 | --- | 26 | 23 | 314 | 2.9 | 4.3 | .34 | 1.8 |
| 31 | .00 | --- | 35 | 63 | --- | 27 | --- | 351 | --- | 4.1 | .36 | --- |
| TOTAL | .00 | 196.03 | 1234 | 2788 | 4749 | 3447 | 819 | 1097.2 | 1783.9 | 160.58 | 302.55 | 17.90 |
| MEAN | .000 | 6.53 | 39.8 | 89.9 | 170 | 111 | 27.3 | 35.4 | 59.5 | 5.18 | 9.76 | .60 |
| MAX | .00 | 16 | 132 | 338 | 539 | 519 | 60 | 351 | 337 | 20 | 31 | 4.3 |
| MIN | .00 | .00 | 18 | 13 | 46 | 26 | 14 | 2.6 | 2.6 | .75 | .34 | .20 |
| CFSM | .000 | .10 | .61 | 1.38 | 2.61 | 1.70 | .42 | .54 | .91 | .08 | .15 | .009 |
| IN. | .00 | .11 | .70 | 1.59 | 2.71 | 1.97 | .47 | .63 | 1.02 | .09 | .17 | .01 |
| CAL YR 1981 | TOTAL | 5090.38 | MEAN | 13.9 | MAX | 137 | MIN | .00 | CFSM | .21 | IN | 2.90 |
| WTR YR 1982 | TOTAL | 16595.16 | MEAN | 45.5 | MAX | 539 | MIN | .00 | CFSM | .70 | IN | 9.47 |

02053800 SOUTH FORK ROANOKE RIVER NEAR SHAWSVILLE, VA

LOCATION.--Lat 37°08'24", long 80°16'00", Montgomery County, Hydrologic Unit 03010101, on right bank 95 ft (29 m) downstream from bridge on State Highway 637, 0.3 mi (0.5 km) downstream from Georges Run, 1.3 mi (2.1 km) downstream from Elliott Creek, and 2.0 mi (3.2 km) southwest of Shawsville.

DRAINAGE AREA.--110 mi² (285 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,361.87 ft (415.098 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1974, water-stage recorder, and Aug. 26, 1974, to July 24, 1975, nonrecording gage at site 95 ft (29 m) upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 107 ft³/s (3.030 m³/s), 13.21 in/yr (336 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 21, 1972, gage height, 11.12 ft (3.389 m), from high-water mark in well, from rating curve extended above 3,700 ft³/s (100 m³/s) on basis of slope-area measurement of peak flow; minimum, 7.5 ft³/s (0.21 m³/s) July 27-29, 1966, gage height, 0.37 ft (0.113 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1959, reached a stage of 9.89 ft (3.014 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (23 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 3 | 1230 | 1070 30.3 | 3.58 1.091 | Mar. 20 | 0230 | 866 24.5 | 3.07 0.936 |
| Feb. 3 | 1600 | *1870 53.0 | 4.55 1.387 | June 10 | 1830 | 1090 30.9 | 3.42 1.042 |

Minimum discharge, 9.0 ft³/s (0.25 m³/s) Dec. 10, gage height, 0.64 ft (0.195 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 12 | 30 | 27 | 80 | 127 | 110 | 115 | 146 | 86 | 53 | 73 | 39 |
| 2 | 19 | 28 | 36 | 94 | 92 | 143 | 102 | 130 | 79 | 48 | 53 | 38 |
| 3 | 19 | 27 | 33 | 600 | 1040 | 231 | 102 | 117 | 70 | 49 | 46 | 35 |
| 4 | 18 | 26 | 32 | 683 | 724 | 219 | 93 | 106 | 84 | 62 | 44 | 31 |
| 5 | 18 | 25 | 33 | 377 | 371 | 216 | 86 | 97 | 141 | 53 | 41 | 29 |
| 6 | 17 | 26 | 29 | 210 | 250 | 247 | 91 | 91 | 110 | 51 | 58 | 28 |
| 7 | 18 | 24 | 28 | 145 | 186 | 391 | 80 | 86 | 91 | 46 | 84 | 28 |
| 8 | 18 | 23 | 28 | 108 | 150 | 404 | 82 | 84 | 77 | 62 | 115 | 27 |
| 9 | 17 | 23 | 27 | 89 | 165 | 311 | 93 | 79 | 80 | 75 | 327 | 27 |
| 10 | 18 | 23 | 21 | 58 | 150 | 247 | 82 | 75 | 351 | 148 | 143 | 27 |
| 11 | 18 | 23 | 20 | 50 | 132 | 213 | 77 | 70 | 367 | 79 | 108 | 28 |
| 12 | 18 | 22 | 21 | 45 | 121 | 192 | 73 | 66 | 186 | 62 | 137 | 27 |
| 13 | 18 | 22 | 21 | 42 | 115 | 171 | 71 | 65 | 426 | 71 | 93 | 26 |
| 14 | 19 | 22 | 30 | 40 | 104 | 148 | 71 | 62 | 379 | 99 | 77 | 28 |
| 15 | 19 | 22 | 65 | 39 | 102 | 168 | 70 | 60 | 228 | 71 | 66 | 29 |
| 16 | 19 | 22 | 74 | 39 | 137 | 168 | 66 | 59 | 162 | 71 | 62 | 28 |
| 17 | 20 | 23 | 57 | 40 | 295 | 171 | 80 | 60 | 137 | 80 | 71 | 27 |
| 18 | 20 | 23 | 49 | 45 | 431 | 156 | 106 | 56 | 115 | 88 | 68 | 25 |
| 19 | 23 | 22 | 34 | 50 | 323 | 168 | 88 | 59 | 102 | 102 | 59 | 25 |
| 20 | 23 | 24 | 33 | 54 | 264 | 580 | 84 | 77 | 88 | 71 | 52 | 26 |
| 21 | 23 | 23 | 33 | 113 | 225 | 371 | 84 | 82 | 79 | 60 | 48 | 27 |
| 22 | 23 | 21 | 41 | 135 | 192 | 283 | 79 | 80 | 79 | 55 | 44 | 46 |
| 23 | 27 | 21 | 120 | 108 | 153 | 225 | 75 | 84 | 75 | 56 | 42 | 35 |
| 24 | 31 | 26 | 119 | 100 | 139 | 189 | 73 | 95 | 66 | 108 | 39 | 29 |
| 25 | 29 | 29 | 85 | 90 | 124 | 165 | 73 | 84 | 65 | 68 | 39 | 28 |
| 26 | 41 | 28 | 68 | 70 | 108 | 180 | 117 | 70 | 62 | 58 | 38 | 42 |
| 27 | 288 | 27 | 59 | 60 | 100 | 148 | 210 | 77 | 62 | 51 | 36 | 66 |
| 28 | 80 | 28 | 53 | 58 | 108 | 137 | 331 | 113 | 63 | 48 | 36 | 41 |
| 29 | 48 | 26 | 51 | 60 | --- | 126 | 234 | 119 | 59 | 46 | 35 | 34 |
| 30 | 38 | 24 | 42 | 60 | --- | 119 | 177 | 104 | 58 | 46 | 32 | 31 |
| 31 | 33 | --- | 42 | 88 | --- | 115 | --- | 88 | --- | 84 | 36 | --- |
| TOTAL | 1032 | 733 | 1411 | 3830 | 6428 | 6712 | 3165 | 2641 | 4027 | 2121 | 2202 | 957 |
| MEAN | 33.3 | 24.4 | 45.5 | 124 | 230 | 217 | 106 | 85.2 | 134 | 68.4 | 71.0 | 31.9 |
| MAX | 288 | 30 | 120 | 683 | 1040 | 580 | 331 | 146 | 426 | 148 | 327 | 66 |
| MIN | 12 | 21 | 20 | 39 | 92 | 110 | 66 | 56 | 58 | 46 | 32 | 25 |
| CFSM | .30 | .22 | .41 | 1.13 | 2.09 | 1.97 | .96 | .78 | 1.22 | .62 | .65 | .29 |
| IN. | .35 | .25 | .48 | 1.30 | 2.17 | 2.27 | 1.07 | .89 | 1.36 | .72 | .74 | .32 |

| | | | | | | | |
|-------------|-------|-------|-----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 16628 | MEAN 45.6 | MAX 576 | MIN 11 | CFSM .42 | IN 5.62 |
| WTR YR 1982 | TOTAL | 35259 | MEAN 96.6 | MAX 1040 | MIN 12 | CFSM .88 | IN 11.92 |

ROANOKE RIVER BASIN

02054500 ROANOKE RIVER AT LAFAYETTE, VA

LOCATION.--Lat 37°14'11", long 80°12'34", Montgomery County, Hydrologic Unit 03010101, on right bank 120 ft (37 m) upstream from bridge on State Highway 603 at Lafayette, 0.4 mi (0.6 km) downstream from confluence of North and South Forks, and 1.1 mi (1.8 km) upstream from Cove Hollow.

DRAINAGE AREA.--257 mi² (666 km²).

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

REVISED RECORDS.--WSP 1333: 1944-47(M), 1948-49.

GAGE.--Water-stage recorder. Datum of gage is 1,174.47 ft (357.978 m) National Geodetic Vertical Datum of 1929. Prior to July 30, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 12 to Aug. 23, which are fair. Occasional diurnal fluctuation caused by meat-processing plant above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 240 ft³/s (6.797 m³/s), 12.68 in/yr (322 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s (694 m³/s) June 21, 1972, gage height, 15.60 ft (4.755 m), from floodmarks, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 10 ft³/s (0.28 m³/s) Jan. 14, 15, 18, 19, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 12.2 ft (3.72 m), from information by local residents, discharge, 19,000 ft³/s (538 m³/s), from rating curve extended above 12,000 ft³/s (340 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,510 ft³/s (128 m³/s) at 1630 hours Feb. 3, gage height, 7.27 ft (2.216 m), no other peak above base of 3,500 ft³/s (99 m³/s); minimum, 27 ft³/s (0.76 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|-------|-------|------|------|------|------|------|-------|
| 1 | 28 | 50 | 54 | 118 | 296 | 249 | 245 | 318 | 215 | 102 | 120 | 68 |
| 2 | 32 | 45 | 68 | 166 | 245 | 380 | 224 | 278 | 194 | 93 | 95 | 66 |
| 3 | 34 | 45 | 66 | 1250 | 2990 | 624 | 219 | 253 | 162 | 96 | 72 | 58 |
| 4 | 34 | 43 | 63 | 1920 | 1840 | 542 | 203 | 224 | 178 | 118 | 64 | 56 |
| 5 | 34 | 41 | 63 | 962 | 894 | 470 | 190 | 203 | 240 | 99 | 65 | 54 |
| 6 | 32 | 43 | 58 | 514 | 619 | 492 | 198 | 186 | 211 | 93 | 75 | 52 |
| 7 | 32 | 39 | 56 | 365 | 455 | 943 | 182 | 178 | 178 | 81 | 115 | 50 |
| 8 | 30 | 41 | 54 | 283 | 370 | 965 | 182 | 170 | 154 | 84 | 270 | 50 |
| 9 | 30 | 37 | 52 | 228 | 360 | 701 | 198 | 158 | 178 | 128 | 500 | 50 |
| 10 | 32 | 41 | 45 | 136 | 332 | 558 | 194 | 146 | 365 | 186 | 300 | 50 |
| 11 | 32 | 41 | 41 | 98 | 287 | 470 | 182 | 136 | 663 | 128 | 250 | 50 |
| 12 | 32 | 41 | 43 | 90 | 257 | 425 | 170 | 128 | 341 | 105 | 280 | 47 |
| 13 | 32 | 41 | 43 | 86 | 245 | 375 | 166 | 121 | 1610 | 235 | 190 | 47 |
| 14 | 32 | 41 | 58 | 83 | 219 | 332 | 166 | 118 | 960 | 170 | 150 | 45 |
| 15 | 32 | 41 | 128 | 81 | 215 | 390 | 162 | 111 | 525 | 135 | 130 | 47 |
| 16 | 32 | 41 | 211 | 80 | 266 | 445 | 154 | 108 | 370 | 115 | 110 | 45 |
| 17 | 34 | 43 | 132 | 76 | 795 | 450 | 158 | 108 | 300 | 105 | 120 | 41 |
| 18 | 34 | 43 | 108 | 81 | 1060 | 405 | 207 | 136 | 253 | 170 | 100 | 41 |
| 19 | 35 | 41 | 81 | 95 | 740 | 375 | 174 | 162 | 215 | 135 | 90 | 41 |
| 20 | 35 | 43 | 61 | 105 | 603 | 899 | 162 | 146 | 186 | 120 | 82 | 43 |
| 21 | 37 | 45 | 61 | 341 | 509 | 740 | 162 | 158 | 166 | 105 | 77 | 45 |
| 22 | 39 | 43 | 84 | 445 | 420 | 613 | 154 | 232 | 158 | 95 | 73 | 61 |
| 23 | 43 | 41 | 211 | 314 | 351 | 509 | 146 | 194 | 150 | 105 | 71 | 61 |
| 24 | 52 | 52 | 287 | 225 | 314 | 435 | 139 | 245 | 132 | 130 | 68 | 50 |
| 25 | 52 | 58 | 203 | 200 | 278 | 385 | 136 | 203 | 128 | 100 | 68 | 47 |
| 26 | 66 | 56 | 158 | 170 | 249 | 380 | 190 | 166 | 128 | 90 | 66 | 56 |
| 27 | 440 | 52 | 132 | 140 | 245 | 327 | 405 | 178 | 132 | 78 | 66 | 99 |
| 28 | 162 | 52 | 114 | 125 | 249 | 296 | 745 | 314 | 128 | 70 | 66 | 68 |
| 29 | 87 | 50 | 105 | 130 | --- | 274 | 514 | 346 | 118 | 70 | 61 | 56 |
| 30 | 63 | 47 | 90 | 143 | --- | 257 | 390 | 300 | 108 | 74 | 58 | 54 |
| 31 | 54 | --- | 84 | 170 | --- | 249 | --- | 240 | --- | 82 | 63 | --- |
| TOTAL | 1743 | 1337 | 3014 | 9220 | 15703 | 14955 | 6717 | 5964 | 8846 | 3497 | 3915 | 1598 |
| MEAN | 56.2 | 44.6 | 97.2 | 297 | 561 | 482 | 224 | 192 | 295 | 113 | 126 | 53.3 |
| MAX | 440 | 58 | 287 | 1920 | 2990 | 965 | 745 | 346 | 1610 | 235 | 500 | 99 |
| MIN | 28 | 37 | 41 | 76 | 215 | 249 | 136 | 108 | 108 | 70 | 58 | 41 |
| CFSM | .22 | .17 | .38 | 1.16 | 2.18 | 1.88 | .87 | .75 | 1.15 | .44 | .49 | .21 |
| IN. | .25 | .19 | .44 | 1.33 | 2.27 | 2.16 | .97 | .86 | 1.28 | .51 | .57 | .23 |
| CAL YR 1981 | TOTAL | 31463 | MEAN | 86.2 | MAX | 904 | MIN | 23 | CFSM | .34 | IN | 4.55 |
| WTR YR 1982 | TOTAL | 76509 | MEAN | 210 | MAX | 2990 | MIN | 28 | CFSM | .82 | IN | 11.07 |

02055000 ROANOKE RIVER AT ROANOKE, VA

LOCATION.--Lat 37°15'30", long 79°56'20", Roanoke City, Hydrologic Unit 03010101, on left bank 50 ft (15 m) downstream from Walnut Street Bridge, 3.2 mi (5.1 km) upstream from Tinker Creek, and at mile 360.6 (580.2 km).

DRAINAGE AREA.--395 mi² (1,023 km²).

PERIOD OF RECORD.--February 1899 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for July 1896 to January 1899 published in WSP 11, 15, and 27, and 20th Annual Report, Part 4, are unreliable, due to doubtful gage-height record, and should not be used.

REVISED RECORDS.--WSP 972: 1928, 1930, 1933. WSP 1433: 1899-1904, 1914-17(M), 1918-24, 1925-27(M), 1929-34(M), 1935, 1936-39(M). WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1940(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 906.84 ft (276.405 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage on downstream side of highway bridge 50 ft (15 m) upstream at same datum.

REMARKS.--Records good. Prior to 1949, diurnal fluctuation at low flow caused by powerplants above station. Appalachian Power Co. gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--83 years, 371 ft³/s (10.51 m³/s), 12.75 in/yr (324 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft³/s (716 m³/s) June 21, 1972, gage height, 19.61 ft (5.977 m), from floodmarks; practically no flow Dec. 23, 1909, Dec. 19, 1963, when flow was retarded by freezing, gage height, 0.0 ft (0.00 m); minimum daily discharge, 19 ft³/s (0.54 m³/s) Aug. 29, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (71 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1600 | 3310 93.7 | 5.28 1.609 | June 13 | 1730 | 4200 119 | 6.09 1.856 |
| Feb. 3 | 2100 | *6560 186 | 7.97 2.429 | | | | |

Minimum discharge, 11 ft³/s (0.31 m³/s) Dec. 11, gage height, 0.09 ft (0.027 m), result of freezeup; minimum daily, 30 ft³/s (0.85 m³/s) Oct. 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 40 | 81 | 67 | 191 | 419 | 440 | 319 | 442 | 315 | 144 | 144 | 91 |
| 2 | 50 | 74 | 67 | 219 | 406 | 641 | 293 | 380 | 289 | 132 | 116 | 79 |
| 3 | 43 | 69 | 72 | 1350 | 3960 | 889 | 289 | 338 | 247 | 142 | 97 | 70 |
| 4 | 50 | 64 | 69 | 2840 | 3420 | 806 | 272 | 300 | 590 | 163 | 87 | 67 |
| 5 | 48 | 62 | 65 | 1690 | 1640 | 692 | 251 | 272 | 739 | 149 | 86 | 62 |
| 6 | 39 | 59 | 64 | 864 | 1170 | 686 | 258 | 247 | 500 | 125 | 95 | 64 |
| 7 | 32 | 56 | 60 | 590 | 825 | 1230 | 240 | 230 | 346 | 114 | 147 | 53 |
| 8 | 31 | 53 | 57 | 447 | 652 | 1430 | 230 | 223 | 375 | 170 | 375 | 56 |
| 9 | 33 | 50 | 56 | 363 | 560 | 1040 | 244 | 209 | 669 | 144 | 669 | 54 |
| 10 | 33 | 51 | 51 | 258 | 450 | 819 | 244 | 188 | 607 | 188 | 397 | 54 |
| 11 | 38 | 51 | 39 | 152 | 400 | 686 | 223 | 174 | 967 | 184 | 338 | 56 |
| 12 | 39 | 50 | 51 | 240 | 380 | 624 | 212 | 160 | 601 | 139 | 272 | 54 |
| 13 | 38 | 50 | 51 | 226 | 350 | 546 | 205 | 152 | 2500 | 311 | 223 | 51 |
| 14 | 38 | 50 | 72 | 205 | 330 | 485 | 202 | 144 | 1950 | 216 | 174 | 53 |
| 15 | 38 | 50 | 147 | 188 | 310 | 552 | 198 | 136 | 974 | 167 | 149 | 54 |
| 16 | 39 | 50 | 268 | 150 | 400 | 652 | 195 | 132 | 658 | 157 | 132 | 54 |
| 17 | 39 | 50 | 202 | 120 | 1180 | 681 | 202 | 129 | 500 | 144 | 160 | 50 |
| 18 | 40 | 48 | 147 | 139 | 1850 | 630 | 233 | 144 | 410 | 233 | 136 | 50 |
| 19 | 43 | 46 | 121 | 155 | 1200 | 579 | 216 | 198 | 342 | 205 | 129 | 48 |
| 20 | 40 | 44 | 86 | 152 | 948 | 974 | 202 | 174 | 296 | 157 | 112 | 48 |
| 21 | 30 | 46 | 77 | 315 | 788 | 967 | 198 | 212 | 258 | 129 | 103 | 60 |
| 22 | 30 | 47 | 116 | 664 | 669 | 838 | 188 | 265 | 233 | 116 | 93 | 152 |
| 23 | 42 | 46 | 149 | 485 | 600 | 704 | 177 | 265 | 226 | 147 | 87 | 74 |
| 24 | 42 | 69 | 402 | 438 | 550 | 613 | 170 | 279 | 202 | 157 | 84 | 67 |
| 25 | 46 | 60 | 307 | 410 | 500 | 546 | 167 | 410 | 198 | 155 | 82 | 60 |
| 26 | 112 | 60 | 244 | 300 | 420 | 520 | 265 | 286 | 191 | 118 | 79 | 147 |
| 27 | 763 | 59 | 198 | 210 | 370 | 452 | 367 | 268 | 184 | 105 | 76 | 118 |
| 28 | 326 | 56 | 163 | 261 | 400 | 397 | 857 | 419 | 184 | 99 | 77 | 101 |
| 29 | 160 | 53 | 144 | 261 | --- | 363 | 721 | 531 | 167 | 91 | 72 | 79 |
| 30 | 112 | 50 | 127 | 226 | --- | 338 | 541 | 433 | 157 | 101 | 69 | 67 |
| 31 | 93 | --- | 125 | 240 | --- | 323 | --- | 350 | --- | 116 | 69 | --- |
| TOTAL | 2547 | 1654 | 3864 | 14349 | 25147 | 21143 | 8379 | 8090 | 15875 | 4718 | 4929 | 2093 |
| MEAN | 82.2 | 55.1 | 125 | 463 | 898 | 682 | 279 | 261 | 529 | 152 | 159 | 69.8 |
| MAX | 763 | 81 | 402 | 2840 | 3960 | 1430 | 857 | 531 | 2500 | 311 | 669 | 152 |
| MIN | 30 | 44 | 39 | 120 | 310 | 323 | 167 | 129 | 157 | 91 | 69 | 48 |
| CFSM | .21 | .14 | .32 | 1.17 | 2.27 | 1.73 | .71 | .66 | 1.34 | .39 | .40 | .18 |
| IN. | .24 | .16 | .36 | 1.35 | 2.37 | 1.99 | .79 | .76 | 1.50 | .44 | .46 | .20 |

| CAL YR 1981 | TOTAL | 41533 | MEAN 114 | MAX 1370 | MIN 19 | CFSM .29 | IN 3.91 |
|-------------|-------|--------|----------|----------|--------|----------|----------|
| WTR YR 1982 | TOTAL | 112788 | MEAN 309 | MAX 3960 | MIN 30 | CFSM .78 | IN 10.62 |

02056000 ROANOKE RIVER AT NIAGARA, VA

LOCATION.--Lat 37°15'18", long 79°52'18", Roanoke County, Hydrologic Unit 03010101, on right bank 200 ft (60 m) downstream from powerplant of Appalachian Power Co. at Niagara, 2 mi (3 km) downstream from Tinker Creek, 2.1 mi (3.4 km) southeast of Vinton, and at mile 355.3 (571.7 km).

DRAINAGE AREA.--512 mi² (1,326 km²).

PERIOD OF RECORD.--July 1926 to current year.

REVISED RECORDS.--WSP 972: 1927(M), 1929(M), 1934(M), 1937(M). WSP 1303: 1928, 1930, 1933-38, 1940. WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1930(M), 1933(M), 1935-36(M), 1938(M), 1940, 1944-45(M), 1948-49(M), 1951(M), 1955(M), 1960(M), 1967(M), 1969(M).

GAGE.--Water-stage recorder. Datum of gage is 820.15 ft (249.982 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for period of no gage-height record, Aug. 19 to Sept. 30, which are fair. Flow regulated by dam and powerplant 200 ft (60 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 509 ft³/s (14.41 m³/s), 13.50 in/yr (343 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,300 ft³/s (830 m³/s) Apr. 27, 1978, gage height, 19.12 ft (5.828 m), from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement at gage height 18.98 ft (5.785 m); minimum, 1.0 ft³/s (0.028 m³/s) Oct. 16, 20, 1956; minimum daily, 8 ft³/s (0.23 m³/s) Oct. 9, 1954; minimum gage height, 0.17 ft (0.052 m) Aug. 25, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Jan. 4 | 1015 | 4060 | 115 | 8.20 | 2.499 | June 13 | 1710 | 5250 | 149 | 9.17 | 2.795 |
| Feb. 3 | 1715 | *8340 | 236 | 11.17 | 3.405 | | | | | | |

Minimum discharge, 16 ft³/s (0.45 m³/s) Nov. 7, gage height, 0.55 ft (0.168 m); minimum daily, 34 ft³/s (0.96 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 34 | 158 | 134 | 337 | 559 | 542 | 430 | 580 | 418 | 229 | 219 | 150 |
| 2 | 161 | 224 | 144 | 316 | 528 | 587 | 408 | 501 | 391 | 218 | 241 | 130 |
| 3 | 93 | 117 | 138 | 1730 | 4830 | 1040 | 331 | 460 | 333 | 225 | 175 | 110 |
| 4 | 94 | 159 | 139 | 3280 | 4210 | 996 | 363 | 412 | 703 | 273 | 164 | 105 |
| 5 | 77 | 133 | 129 | 2040 | 1800 | 862 | 398 | 366 | 958 | 278 | 166 | 100 |
| 6 | 95 | 121 | 126 | 1070 | 1220 | 845 | 351 | 342 | 654 | 219 | 226 | 105 |
| 7 | 91 | 135 | 125 | 747 | 906 | 1430 | 333 | 314 | 505 | 206 | 358 | 85 |
| 8 | 90 | 123 | 122 | 569 | 718 | 1810 | 321 | 297 | 433 | 289 | 562 | 90 |
| 9 | 93 | 113 | 117 | 480 | 680 | 1310 | 322 | 296 | 870 | 237 | 889 | 86 |
| 10 | 91 | 105 | 185 | 365 | 648 | 1030 | 332 | 293 | 863 | 260 | 558 | 84 |
| 11 | 93 | 92 | 91 | 211 | 542 | 874 | 296 | 254 | 1190 | 292 | 438 | 90 |
| 12 | 94 | 107 | 95 | 292 | 521 | 790 | 283 | 253 | 811 | 267 | 402 | 86 |
| 13 | 93 | 189 | 136 | 307 | 479 | 699 | 284 | 251 | 3360 | 477 | 314 | 80 |
| 14 | 93 | 102 | 174 | 298 | 432 | 641 | 282 | 200 | 2670 | 336 | 279 | 85 |
| 15 | 93 | 96 | 238 | 279 | 387 | 720 | 280 | 247 | 1390 | 277 | 228 | 90 |
| 16 | 89 | 125 | 383 | 266 | 461 | 851 | 285 | 172 | 932 | 252 | 230 | 86 |
| 17 | 87 | 131 | 322 | 198 | 1250 | 894 | 253 | 259 | 703 | 241 | 243 | 76 |
| 18 | 85 | 95 | 240 | 227 | 2230 | 846 | 280 | 206 | 592 | 276 | 236 | 80 |
| 19 | 88 | 99 | 226 | 246 | 1510 | 769 | 292 | 299 | 471 | 375 | 210 | 78 |
| 20 | 87 | 151 | 139 | 248 | 1190 | 1130 | 278 | 298 | 422 | 268 | 180 | 75 |
| 21 | 116 | 95 | 149 | 528 | 991 | 1200 | 276 | 261 | 369 | 238 | 170 | 100 |
| 22 | 107 | 93 | 213 | 791 | 821 | 1040 | 265 | 322 | 339 | 193 | 150 | 250 |
| 23 | 105 | 98 | 230 | 612 | 693 | 886 | 297 | 351 | 328 | 217 | 140 | 120 |
| 24 | 86 | 205 | 486 | 579 | 618 | 773 | 256 | 361 | 298 | 303 | 135 | 110 |
| 25 | 129 | 103 | 402 | 523 | 571 | 683 | 253 | 540 | 292 | 243 | 130 | 95 |
| 26 | 222 | 147 | 315 | 468 | 420 | 697 | 393 | 363 | 287 | 200 | 130 | 230 |
| 27 | 1130 | 131 | 271 | 365 | 477 | 567 | 471 | 381 | 272 | 196 | 120 | 190 |
| 28 | 514 | 99 | 281 | 350 | 510 | 528 | 957 | 551 | 256 | 182 | 120 | 160 |
| 29 | 278 | 100 | 211 | 365 | --- | 545 | 832 | 659 | 259 | 171 | 115 | 130 |
| 30 | 209 | 92 | 220 | 346 | --- | 453 | 660 | 593 | 262 | 195 | 110 | 110 |
| 31 | 177 | --- | 196 | 276 | --- | 446 | --- | 470 | --- | 169 | 110 | --- |
| TOTAL | 4894 | 3738 | 6377 | 18709 | 30202 | 26484 | 11062 | 11152 | 21631 | 7802 | 7748 | 3366 |
| MEAN | 158 | 125 | 206 | 604 | 1079 | 854 | 369 | 360 | 721 | 252 | 250 | 112 |
| MAX | 1130 | 224 | 486 | 3280 | 4830 | 1810 | 957 | 659 | 3360 | 477 | 889 | 250 |
| MIN | 34 | 92 | 91 | 198 | 387 | 446 | 253 | 172 | 256 | 169 | 110 | 75 |
| CFSM | .31 | .24 | .40 | 1.18 | 2.11 | 1.67 | .72 | .70 | 1.41 | .49 | .49 | .22 |
| IN. | .36 | .27 | .46 | 1.36 | 2.19 | 1.92 | .80 | .81 | 1.57 | .57 | .56 | .24 |

| | | | | | | | | |
|-------------|-------|--------|----------|-----|------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 72389 | MEAN 198 | MAX | 1600 | MIN 34 | CFSM .39 | IN 5.26 |
| WTR YR 1982 | TOTAL | 153165 | MEAN 420 | MAX | 4830 | MIN 34 | CFSM .82 | IN 11.13 |

ROANOKE RIVER BASIN

02056650 BACK CREEK NEAR DUNDEE, VA

LOCATION.--Lat 37°13'40", long 79°52'06", Roanoke County, Hydrologic Unit 03010101, on right bank at upstream side of bridge on State Highway 660, 0.9 mi (1.4 km) upstream from Horseshoe Branch, 1.1 mi (1.8 km) southeast of Dundee, 2.8 mi (4.5 km) west of Hardy Post Office, and at mile 2.4 (3.9 km).

DRAINAGE AREA.--56.8 mi² (147.1 km²).

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 822.67 ft (250.750 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 4, 1975, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, June 28 to Aug. 10, which are fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 59.0 ft³/s (1.671 m³/s), 14.11 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s (212 m³/s) May 29, 1976, gage height, 15.00 ft (4.572 m), from floodmarks; minimum daily, 0.90 ft³/s (0.025 m³/s) Aug. 30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of May 30, 1971, and June 21, 1972, reached a stage of 17.5 ft (5.33 m) and 20.0 ft (6.10 m), respectively, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 3 | 1145 | 704 19.9 | 4.77 1.454 | June 10 | 2020 | *1130 32.0 | 5.97 1.820 |
| Feb. 3 | 1500 | 1040 29.5 | 5.73 1.747 | June 13 | 1315 | 733 20.8 | 4.86 1.481 |

Minimum discharge, 2.1 ft³/s (0.059 m³/s) Oct. 1, 2, gage height, 0.41 ft (0.125 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|----------|-------|------|------|------|------|------|------|------|-------|-------|
| 1 | 2.4 | 8.4 | 6.9 | 43 | 110 | 47 | 37 | 46 | 27 | 18 | 15 | 12 |
| 2 | 2.2 | 7.7 | 9.5 | 57 | 54 | 68 | 34 | 43 | 24 | 17 | 17 | 14 |
| 3 | 2.2 | 7.2 | 9.4 | 312 | 489 | 140 | 34 | 39 | 19 | 16 | 13 | 12 |
| 4 | 2.5 | 6.9 | 8.7 | 289 | 279 | 113 | 31 | 35 | 20 | 18 | 11 | 9.3 |
| 5 | 2.8 | 6.7 | 8.7 | 162 | 139 | 94 | 29 | 34 | 62 | 20 | 10 | 8.2 |
| 6 | 2.7 | 6.4 | 8.1 | 89 | 97 | 105 | 31 | 30 | 37 | 16 | 110 | 7.9 |
| 7 | 2.5 | 5.9 | 7.5 | 64 | 73 | 215 | 28 | 28 | 27 | 14 | 70 | 7.6 |
| 8 | 2.4 | 5.7 | 7.3 | 48 | 59 | 187 | 27 | 27 | 26 | 21 | 50 | 7.2 |
| 9 | 2.4 | 5.8 | 6.6 | 37 | 63 | 132 | 32 | 25 | 57 | 18 | 60 | 7.1 |
| 10 | 2.4 | 6.0 | 6.1 | 23 | 59 | 102 | 31 | 23 | 259 | 16 | 45 | 7.2 |
| 11 | 2.5 | 6.1 | 5.6 | 25 | 48 | 86 | 27 | 21 | 222 | 20 | 59 | 7.3 |
| 12 | 2.9 | 6.1 | 6.6 | 26 | 41 | 76 | 26 | 20 | 91 | 30 | 100 | 7.1 |
| 13 | 3.1 | 6.1 | 7.0 | 24 | 39 | 67 | 26 | 18 | 407 | 35 | 50 | 6.6 |
| 14 | 3.1 | 6.1 | 8.0 | 23 | 36 | 59 | 26 | 17 | 205 | 22 | 35 | 6.5 |
| 15 | 3.1 | 5.9 | 26 | 21 | 34 | 69 | 25 | 17 | 108 | 19 | 27 | 8.1 |
| 16 | 4.1 | 5.9 | 56 | 18 | 40 | 73 | 27 | 16 | 76 | 17 | 24 | 7.3 |
| 17 | 2.9 | 6.0 | 26 | 14 | 169 | 75 | 26 | 16 | 61 | 16 | 22 | 6.3 |
| 18 | 2.9 | 6.1 | 19 | 17 | 208 | 68 | 31 | 15 | 49 | 25 | 20 | 5.7 |
| 19 | 2.8 | 6.1 | 15 | 18 | 150 | 64 | 26 | 15 | 41 | 21 | 17 | 5.4 |
| 20 | 2.8 | 6.3 | 12 | 20 | 121 | 73 | 25 | 15 | 34 | 16 | 15 | 5.7 |
| 21 | 2.8 | 6.2 | 10 | 53 | 98 | 76 | 25 | 16 | 30 | 14 | 15 | 6.9 |
| 22 | 3.1 | 5.9 | 15 | 70 | 79 | 68 | 24 | 25 | 26 | 13 | 13 | 30 |
| 23 | 4.2 | 5.7 | 37 | 35 | 65 | 62 | 24 | 18 | 27 | 14 | 13 | 15 |
| 24 | 7.4 | 7.1 | 46 | 32 | 57 | 57 | 23 | 18 | 23 | 60 | 13 | 10 |
| 25 | 7.5 | 9.0 | 30 | 28 | 49 | 54 | 22 | 46 | 24 | 45 | 12 | 9.2 |
| 26 | 14 | 8.3 | 26 | 23 | 42 | 57 | 64 | 26 | 39 | 24 | 12 | 18 |
| 27 | 152 | 7.5 | 22 | 24 | 39 | 46 | 66 | 25 | 34 | 17 | 11 | 47 |
| 28 | 37 | 7.0 | 20 | 26 | 53 | 42 | 73 | 40 | 40 | 15 | 11 | 17 |
| 29 | 17 | 6.9 | 18 | 26 | --- | 40 | 61 | 39 | 25 | 14 | 11 | 13 |
| 30 | 13 | 6.5 | 15 | 24 | --- | 38 | 54 | 28 | 19 | 13 | 9.6 | 12 |
| 31 | 11 | --- | 14 | 44 | --- | 37 | --- | 25 | --- | 13 | 9.7 | --- |
| TOTAL | 323.7 | 197.5 | 513.0 | 1715 | 2790 | 2490 | 1015 | 806 | 2139 | 637 | 900.3 | 336.6 |
| MEAN | 10.4 | 6.58 | 16.5 | 55.3 | 99.6 | 80.3 | 33.8 | 26.0 | 71.3 | 20.5 | 29.0 | 11.2 |
| MAX | 152 | 9.0 | 56 | 312 | 489 | 215 | 73 | 46 | 407 | 60 | 110 | 47 |
| MIN | 2.2 | 5.7 | 5.6 | 14 | 34 | 37 | 22 | 15 | 19 | 13 | 9.6 | 5.4 |
| CFSM | .18 | .12 | .29 | .97 | 1.75 | 1.41 | .60 | .46 | 1.26 | .36 | .51 | .20 |
| IN. | .21 | .13 | .34 | 1.12 | 1.83 | 1.63 | .66 | .53 | 1.40 | .42 | .59 | .22 |
| CAL YR 1981 | TOTAL | 5448.95 | MEAN | 14.9 | MAX | 247 | MIN | .90 | CFSM | .26 | IN | 3.57 |
| WTR YR 1982 | TOTAL | 13863.10 | MEAN | 38.0 | MAX | 489 | MIN | 2.2 | CFSM | .67 | IN | 9.08 |

ROANOKE RIVER BASIN

225

02056900 BLACKWATER RIVER NEAR ROCKY MOUNT, VA

LOCATION.--Lat 37°02'42", long 79°50'40", Franklin County, Hydrologic Unit 03010101, on right bank 45 ft (14 m) downstream from bridge on State Highway 122, 3.0 mi (4.8 km) northeast of Rocky Mount, and 4.1 mi (6.6 km) upstream from Maggoodee Creek.

DRAINAGE AREA.--115 mi² (298 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.45 ft (267.142 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--6 years, 135 ft³/s (3.823 m³/s), 15.94 in/yr (405 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,130 ft³/s (230 m³/s) Sept. 22, 1979, gage height, 16.38 ft (4.993 m); minimum, 7.2 ft³/s (0.20 m³/s) Aug. 28, 1981, gage height, 1.16 ft (0.354 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| May 26 | 2300 | 1540 | 43.6 | 5.98 | 1.823 | June 13 | 0700 | *3060 | 86.7 | 8.68 | 2.646 |
| June 5 | 0730 | 2180 | 61.7 | 7.15 | 2.179 | | | | | | |

Minimum discharge, 12 ft³/s (0.34 m³/s) Oct. 1, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 12 | 38 | 30 | 114 | 130 | 114 | 108 | 105 | 233 | 93 | 130 | 46 |
| 2 | 13 | 36 | 37 | 136 | 117 | 128 | 98 | 98 | 166 | 86 | 67 | 45 |
| 3 | 13 | 34 | 38 | 480 | 586 | 204 | 100 | 93 | 135 | 83 | 57 | 43 |
| 4 | 13 | 33 | 35 | 556 | 538 | 186 | 99 | 86 | 176 | 87 | 52 | 36 |
| 5 | 14 | 32 | 34 | 264 | 254 | 162 | 88 | 82 | 922 | 88 | 50 | 34 |
| 6 | 14 | 31 | 33 | 162 | 196 | 188 | 93 | 78 | 272 | 87 | 74 | 33 |
| 7 | 14 | 29 | 31 | 125 | 154 | 300 | 87 | 74 | 192 | 82 | 66 | 33 |
| 8 | 13 | 28 | 30 | 104 | 135 | 320 | 86 | 72 | 162 | 77 | 82 | 33 |
| 9 | 13 | 27 | 29 | 90 | 131 | 229 | 96 | 69 | 148 | 83 | 318 | 33 |
| 10 | 13 | 27 | 27 | 52 | 150 | 194 | 98 | 66 | 200 | 98 | 111 | 33 |
| 11 | 14 | 27 | 28 | 45 | 123 | 172 | 90 | 62 | 438 | 146 | 106 | 33 |
| 12 | 17 | 27 | 32 | 42 | 114 | 158 | 86 | 60 | 202 | 233 | 108 | 32 |
| 13 | 19 | 27 | 35 | 40 | 111 | 147 | 82 | 57 | 1450 | 143 | 77 | 30 |
| 14 | 19 | 26 | 39 | 38 | 106 | 136 | 80 | 55 | 524 | 425 | 67 | 29 |
| 15 | 19 | 26 | 60 | 37 | 102 | 133 | 80 | 52 | 314 | 117 | 62 | 33 |
| 16 | 19 | 26 | 116 | 36 | 108 | 140 | 78 | 51 | 242 | 99 | 58 | 32 |
| 17 | 19 | 27 | 70 | 36 | 217 | 133 | 79 | 50 | 214 | 83 | 69 | 30 |
| 18 | 19 | 26 | 55 | 43 | 348 | 123 | 93 | 48 | 192 | 74 | 346 | 30 |
| 19 | 19 | 26 | 47 | 55 | 233 | 122 | 79 | 52 | 172 | 74 | 94 | 30 |
| 20 | 19 | 26 | 45 | 60 | 196 | 518 | 74 | 74 | 152 | 68 | 72 | 30 |
| 21 | 18 | 26 | 51 | 100 | 170 | 262 | 74 | 128 | 136 | 62 | 62 | 33 |
| 22 | 19 | 25 | 60 | 115 | 148 | 212 | 70 | 90 | 128 | 58 | 55 | 61 |
| 23 | 22 | 25 | 74 | 105 | 133 | 176 | 68 | 84 | 128 | 57 | 51 | 55 |
| 24 | 27 | 30 | 67 | 90 | 123 | 156 | 66 | 96 | 116 | 116 | 50 | 37 |
| 25 | 30 | 36 | 63 | 80 | 114 | 142 | 66 | 439 | 111 | 75 | 49 | 35 |
| 26 | 36 | 34 | 63 | 70 | 106 | 174 | 160 | 277 | 123 | 63 | 46 | 50 |
| 27 | 408 | 31 | 57 | 58 | 100 | 136 | 162 | 430 | 130 | 57 | 44 | 102 |
| 28 | 130 | 30 | 55 | 62 | 105 | 123 | 162 | 422 | 119 | 55 | 44 | 56 |
| 29 | 66 | 30 | 51 | 66 | --- | 117 | 131 | 307 | 105 | 52 | 42 | 44 |
| 30 | 50 | 28 | 46 | 70 | --- | 111 | 116 | 317 | 102 | 51 | 39 | 41 |
| 31 | 43 | --- | 48 | 90 | --- | 108 | --- | 210 | --- | 162 | 41 | --- |
| TOTAL | 1164 | 874 | 1486 | 3421 | 5048 | 5524 | 2849 | 4184 | 7704 | 3134 | 2589 | 1192 |
| MEAN | 37.5 | 29.1 | 47.9 | 110 | 180 | 178 | 95.0 | 135 | 257 | 101 | 83.5 | 39.7 |
| MAX | 408 | 38 | 116 | 556 | 586 | 518 | 162 | 439 | 1450 | 425 | 346 | 102 |
| MIN | 12 | 25 | 27 | 36 | 100 | 108 | 66 | 48 | 102 | 51 | 39 | 29 |
| CFSM | .33 | .25 | .42 | .96 | 1.57 | 1.55 | .83 | 1.17 | 2.24 | .88 | .73 | .35 |
| IN. | .38 | .28 | .48 | 1.11 | 1.63 | 1.79 | .92 | 1.35 | 2.49 | 1.01 | .84 | .39 |
| CAL YR 1981 | TOTAL | 15747.4 | MEAN | 43.1 | MAX | 408 | MIN | 7.4 | CFSM | .38 | IN | 5.09 |
| WTR YR 1982 | TOTAL | 39169.0 | MEAN | 107 | MAX | 1450 | MIN | 12 | CFSM | .93 | IN | 12.67 |

ROANOKE RIVER BASIN

02057400 SMITH MOUNTAIN LAKE NEAR PENHOOK, VA

LOCATION.--Lat 37°02'28", long 79°32'09", Pittsylvania County, Hydrologic Unit 03010101, at dam on Roanoke (Staunton) River 6.5 mi (10.5 km) northeast of Penhook and at mile 314.0 (505.2 km).

DRAINAGE AREA.--1,024 mi² (2,652 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 19, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Two ungated spillways, one near each end of dam, with crests at elevation 795 ft (242.3 m) are each 105 ft (32.0 m) long. Initial filling began in September 1963 during construction; water in reservoir first reached minimum power pool, elevation, 787 ft (239.9 m), in May 1965. Total capacity at maximum pool elevation, 811 ft (247.2 m), is 1,517,000 acre-ft (1.87 km³) of which 375,000 acre-ft (462 hm³) is above the spillway crest; 157,800 acre-ft (195 hm³) is normally used for power between elevation 787 ft (239.9 m), minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 601 ft (183.2 m), is 100 acre-ft (123,000 m³). Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (pumped storage) which is used for hydroelectric power, flood control, low-water regulation for pollution abatement and water supply, water releases for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,250,200 acre-ft (1.54 km³) Apr. 27, 1978, elevation, 799.8 ft (243.78 m); minimum (after first filling to minimum power pool), 995,400 acre-ft (1.23 km³) Jan. 23, 1970, elevation, 787.6 ft (240.06 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,142,000 acre-ft (1.41 km³) many days during year, elevation, 795.0 ft (242.32 m); minimum, 1,050,200 acre-ft (1.29 km³) Oct. 23, 24, elevation, 790.5 ft (240.94 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 792.7 | 1095100 | |
| Oct. 31..... | 792.2 | 1084900 | -10200 |
| Nov. 30..... | 792.2 | 1084900 | 0 |
| Dec. 31..... | 793.8 | 1117500 | +32600 |
| CAL YR 1981..... | | | +67300 |
| Jan. 31..... | 794.8 | 1137900 | +20400 |
| Feb. 28..... | 794.9 | 1140000 | +2100 |
| Mar. 31..... | 794.9 | 1140000 | 0 |
| Apr. 30..... | 794.5 | 1131800 | -8200 |
| May 31..... | 794.6 | 1133800 | +2000 |
| June 30..... | 793.8 | 1117500 | -16300 |
| July 31..... | 794.2 | 1125700 | +8200 |
| Aug. 31..... | 793.5 | 1111400 | -14300 |
| Sept. 30..... | 793.5 | 1111400 | 0 |
| WTR YR 1982..... | | | +16300 |

ROANOKE RIVER BASIN

227

02058400 PIGG RIVER NEAR SANDY LEVEL, VA

LOCATION.--Lat 36°56'45", long 79°31'30", Pittsylvania County, Hydrologic Unit 03010101, on left bank 300 ft (90 m) downstream from Harpen Creek, 0.5 mi (0.8 km) upstream from bridge on State Highway 40, and 1.1 mi (1.8 km) south of Sandy Level.

DRAINAGE AREA.--350 mi² (906 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 617.00 ft (188.062 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 18, 1963, nonrecording gage at same site and datum.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 363 ft³/s (10.28 m³/s), 14.08 in/yr (358 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft³/s (719 m³/s) Apr. 27, 1978, gage height, 25.56 ft (7.791 m), from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement of peak flow; minimum, 24 ft³/s (0.68 m³/s) Aug. 29, 30, 1981, gage height, 1.95 ft (0.594 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,920 ft³/s (139 m³/s) at 1530 hours June 13, gage height, 9.54 ft (2.908 m), no other peak above base of 4,000 ft³/s (110 m³/s); minimum, 48 ft³/s (1.36 m³/s) Oct. 8, 9, 10; minimum gage height, 2.12 ft (0.646 m) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|----------|----------|--------|----------|----------|------|-------|------|------|------|
| 1 | 54 | 121 | 101 | 599 | 569 | 314 | 221 | 241 | 935 | 168 | 291 | 97 |
| 2 | 62 | 115 | 128 | 633 | 434 | 368 | 211 | 224 | 495 | 152 | 181 | 106 |
| 3 | 60 | 111 | 143 | 1330 | 1260 | 854 | 226 | 213 | 307 | 144 | 128 | 100 |
| 4 | 59 | 106 | 129 | 2760 | 1740 | 656 | 265 | 200 | 392 | 150 | 111 | 88 |
| 5 | 58 | 106 | 126 | 1390 | 641 | 492 | 223 | 186 | 1110 | 180 | 104 | 82 |
| 6 | 57 | 113 | 116 | 545 | 427 | 554 | 222 | 180 | 858 | 170 | 168 | 78 |
| 7 | 54 | 117 | 113 | 380 | 335 | 1060 | 213 | 174 | 397 | 155 | 131 | 78 |
| 8 | 52 | 100 | 108 | 307 | 285 | 1410 | 202 | 172 | 296 | 143 | 108 | 76 |
| 9 | 51 | 93 | 103 | 261 | 269 | 634 | 230 | 172 | 322 | 146 | 197 | 76 |
| 10 | 51 | 95 | 97 | 191 | 281 | 453 | 241 | 162 | 463 | 158 | 284 | 78 |
| 11 | 54 | 97 | 91 | 140 | 253 | 375 | 221 | 153 | 967 | 189 | 185 | 78 |
| 12 | 55 | 95 | 94 | 201 | 228 | 337 | 209 | 148 | 396 | 218 | 161 | 78 |
| 13 | 59 | 96 | 86 | 208 | 232 | 308 | 203 | 143 | 3020 | 184 | 141 | 75 |
| 14 | 57 | 93 | 123 | 202 | 235 | 284 | 199 | 141 | 1870 | 458 | 124 | 73 |
| 15 | 57 | 94 | 320 | 199 | 220 | 275 | 201 | 137 | 640 | 242 | 115 | 78 |
| 16 | 57 | 93 | 776 | 203 | 234 | 291 | 202 | 168 | 425 | 169 | 114 | 82 |
| 17 | 53 | 96 | 373 | 177 | 451 | 281 | 205 | 147 | 364 | 149 | 114 | 75 |
| 18 | 52 | 94 | 241 | 172 | 1090 | 259 | 221 | 137 | 431 | 136 | 203 | 64 |
| 19 | 57 | 94 | 180 | 179 | 578 | 247 | 211 | 143 | 323 | 134 | 227 | 59 |
| 20 | 56 | 94 | 130 | 196 | 436 | 742 | 198 | 251 | 275 | 138 | 138 | 64 |
| 21 | 58 | 95 | 161 | 276 | 360 | 549 | 198 | 251 | 245 | 124 | 116 | 76 |
| 22 | 62 | 93 | 196 | 425 | 306 | 414 | 192 | 190 | 224 | 118 | 105 | 93 |
| 23 | 68 | 93 | 235 | 332 | 270 | 336 | 182 | 248 | 222 | 113 | 99 | 129 |
| 24 | 78 | 105 | 224 | 298 | 252 | 295 | 176 | 994 | 207 | 170 | 99 | 98 |
| 25 | 89 | 129 | 233 | 261 | 234 | 274 | 174 | 398 | 191 | 149 | 117 | 79 |
| 26 | 112 | 126 | 303 | 236 | 215 | 293 | 284 | 436 | 186 | 125 | 115 | 115 |
| 27 | 655 | 112 | 268 | 175 | 237 | 271 | 589 | 370 | 204 | 113 | 99 | 383 |
| 28 | 649 | 111 | 234 | 200 | 279 | 242 | 432 | 669 | 200 | 107 | 95 | 199 |
| 29 | 227 | 103 | 210 | 208 | --- | 230 | 339 | 678 | 191 | 103 | 91 | 125 |
| 30 | 156 | 96 | 188 | 206 | --- | 225 | 276 | 786 | 180 | 106 | 87 | 105 |
| 31 | 132 | --- | 178 | 246 | --- | 223 | --- | 478 | --- | 120 | 88 | --- |
| TOTAL | 3401 | 3086 | 6008 | 13136 | 12351 | 13546 | 7166 | 8990 | 16336 | 4931 | 4336 | 2987 |
| MEAN | 110 | 103 | 194 | 424 | 441 | 437 | 239 | 290 | 545 | 159 | 140 | 99.6 |
| MAX | 655 | 129 | 776 | 2760 | 1740 | 1410 | 589 | 994 | 3020 | 458 | 291 | 383 |
| MIN | 51 | 93 | 86 | 140 | 215 | 223 | 174 | 137 | 180 | 103 | 87 | 59 |
| CFSM | .31 | .29 | .55 | 1.21 | 1.26 | 1.25 | .68 | .83 | 1.56 | .45 | .40 | .29 |
| IN. | .36 | .33 | .64 | 1.40 | 1.31 | 1.44 | .76 | .96 | 1.74 | .52 | .46 | .32 |
| CAL YR 1981 | TOTAL | 53988 | MEAN 148 | MAX 776 | MIN 25 | CFSM .42 | IN 5.74 | | | | | |
| WTR YR 1982 | TOTAL | 96274 | MEAN 264 | MAX 3020 | MIN 51 | CFSM .75 | IN 10.23 | | | | | |

ROANOKE RIVER BASIN

02059400 LEESVILLE LAKE NEAR LEESVILLE, VA

LOCATION.--Lat 37°05'35", long 79°24'09", Campbell County, Hydrologic Unit 03010101, at Leesville Dam on Roanoke (Staunton) River, 2.0 mi (3.2 km) south of Leesville, 3.5 mi (5.6 km) upstream from Goose Creek, and at mile 296 (476 km).

DRAINAGE AREA.--1,505 mi² (3,898 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 6, 1963, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 578.0 ft (176.17 m), is equipped with 4 radial gates 35 ft (11 m) high by 50 ft (15 m) wide. Storage began on Sept. 29, 1962, during construction, and water in reservoir first reached minimum power pool, elevation, 600.0 ft (182.88 m), on Mar. 5, 1963. Total capacity at maximum pool elevation, 613 ft (186.8 m), is 94,960 acre-ft (117 hm³) of which 75,960 acre-ft (93.7 hm³) is above the spillway crest; 38,200 acre-ft (47.1 hm³) is normally used for power between elevations 600.0 ft (182.88 m), minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 579.75 ft (176.708 m), is 21,010 acre-ft (25.9 hm³). Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (see station 02057400).

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,180 acre-ft (121 hm³) Feb. 1, 1965, elevation, 614.0 ft (187.15 m); minimum (after first filling to minimum power pool), 39,880 acre-ft (49.2 hm³) Mar. 19, 1963, elevation, 592.0 ft (180.44 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 95,600 acre-ft (118 hm³) Dec. 9, 10, elevation, 613.2 ft (186.90 m); minimum, 57,200 acre-ft (70.5 hm³) many days during year, elevation, 600.0 ft (182.88 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 601.0 | 59880 | |
| Oct. 31..... | 605.0 | 70600 | +10720 |
| Nov. 30..... | 603.7 | 67120 | -3480 |
| Dec. 31..... | 601.2 | 60420 | -6700 |
| CAL YR 1981..... | | | +2680 |
| Jan. 31..... | 603.5 | 66580 | +6160 |
| Feb. 28..... | 604.0 | 67920 | +1340 |
| Mar. 31..... | 604.5 | 69260 | +1340 |
| Apr. 30..... | 608.7 | 81480 | +12220 |
| May 31..... | 608.4 | 80600 | -880 |
| June 30..... | 608.3 | 80300 | -300 |
| July 31..... | 604.9 | 70330 | -9970 |
| Aug. 31..... | 607.3 | 77360 | +7030 |
| Sept. 30..... | 602.1 | 62830 | -14530 |
| WTR YR 1982..... | | | +2950 |

02059500 GOOSE CREEK NEAR HUDDLESTON, VA

LOCATION.--Lat 37°10'23", long 79°31'14", Bedford County, Hydrologic Unit 03010101, on left bank 0.3 mi (0.5 km) upstream from Haden Bridge on State Highway 732, 0.4 mi (0.6 km) upstream from Rockcastle Creek, and 3.5 mi (5.6 km) northwest of Huddleston.

DRAINAGE AREA.--188 mi² (487 km²).

PERIOD OF RECORD.--March 1925 to August 1928 (gage heights only), September 1930 to current year.

REVISED RECORDS.--WSP 892: 1933, 1935(M), 1939. WSP 972: 1931-32(M), 1934(M), 1935-38, 1940, 1941(M). WSP 1082: 1940(P). WSP 1142: 1938-40(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 592.91 ft (180.719 m) National Geodetic Vertical Datum of 1929. Mar. 15, 1925, to Aug. 4, 1928, nonrecording gage at site 1,300 ft (396 m) downstream at different datum.

REMARKS.--Records good except those for periods of no gage-height record, Nov. 9 to Dec. 11 and Apr. 19 to May 24, which are fair. Prior to October 1954, diurnal fluctuation at low flow caused by mill above station. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--52 years, 175 ft³/s (4.956 m³/s), 12.64 in/yr (321 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s (575 m³/s) Oct. 19, 1937, gage height, 25.75 ft (7.849 m), from floodmarks, from rating curve extended above 11,000 ft³/s (310 m³/s) on basis of slope-area measurements at gage heights 19.25 ft (5.867 m), 24.1 ft (7.35 m), and 24.89 ft (7.586 m); minimum, 3 ft³/s (0.085 m³/s) Aug. 31, 1932, Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| June 13 | 1500 | *4250 | 120 | Aug. 8 | 2030 | 2920 | 83.0 |
| | | | 11.22 | | | | 8.57 |
| | | | 3.420 | | | | 2.612 |

Minimum discharge, 24 ft³/s (0.68 m³/s) Oct. 7-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 1 | 25 | 48 | 48 | 186 | 400 | 146 | 121 | 130 | 132 | 66 | 60 | 44 |
| 2 | 28 | 46 | 55 | 156 | 214 | 172 | 112 | 120 | 107 | 60 | 50 | 54 |
| 3 | 29 | 45 | 64 | 877 | 854 | 346 | 118 | 110 | 82 | 57 | 45 | 51 |
| 4 | 27 | 42 | 56 | 1230 | 953 | 316 | 118 | 105 | 90 | 76 | 43 | 41 |
| 5 | 26 | 42 | 52 | 509 | 472 | 271 | 104 | 100 | 294 | 126 | 41 | 39 |
| 6 | 26 | 62 | 50 | 270 | 325 | 271 | 112 | 95 | 187 | 78 | 221 | 39 |
| 7 | 25 | 42 | 47 | 178 | 232 | 602 | 99 | 90 | 129 | 64 | 115 | 38 |
| 8 | 24 | 39 | 45 | 131 | 178 | 672 | 99 | 88 | 99 | 58 | 857 | 37 |
| 9 | 24 | 41 | 42 | 106 | 190 | 412 | 115 | 84 | 104 | 60 | 810 | 38 |
| 10 | 26 | 43 | 40 | 79 | 190 | 301 | 112 | 82 | 275 | 58 | 259 | 39 |
| 11 | 28 | 44 | 42 | 69 | 149 | 244 | 104 | 80 | 220 | 66 | 152 | 39 |
| 12 | 29 | 43 | 45 | 64 | 132 | 217 | 97 | 79 | 143 | 132 | 118 | 37 |
| 13 | 30 | 40 | 48 | 60 | 132 | 193 | 97 | 76 | 1540 | 85 | 97 | 35 |
| 14 | 29 | 39 | 60 | 58 | 124 | 169 | 97 | 74 | 796 | 92 | 87 | 35 |
| 15 | 29 | 39 | 123 | 57 | 115 | 172 | 94 | 72 | 400 | 74 | 78 | 37 |
| 16 | 30 | 39 | 195 | 56 | 129 | 196 | 94 | 70 | 280 | 64 | 72 | 35 |
| 17 | 30 | 40 | 113 | 56 | 394 | 199 | 99 | 69 | 229 | 57 | 68 | 33 |
| 18 | 29 | 39 | 88 | 59 | 685 | 184 | 126 | 69 | 196 | 61 | 68 | 32 |
| 19 | 29 | 39 | 68 | 75 | 430 | 169 | 115 | 76 | 160 | 100 | 66 | 32 |
| 20 | 29 | 38 | 54 | 110 | 355 | 178 | 100 | 92 | 135 | 74 | 57 | 33 |
| 21 | 29 | 38 | 64 | 140 | 277 | 178 | 96 | 130 | 112 | 60 | 52 | 37 |
| 22 | 30 | 37 | 70 | 200 | 217 | 163 | 92 | 90 | 104 | 52 | 48 | 58 |
| 23 | 35 | 37 | 84 | 150 | 181 | 152 | 89 | 70 | 97 | 54 | 46 | 52 |
| 24 | 45 | 44 | 95 | 120 | 163 | 146 | 88 | 71 | 85 | 232 | 46 | 39 |
| 25 | 39 | 56 | 92 | 105 | 146 | 140 | 88 | 68 | 80 | 87 | 45 | 39 |
| 26 | 50 | 50 | 97 | 92 | 132 | 160 | 155 | 70 | 85 | 64 | 43 | 66 |
| 27 | 385 | 46 | 84 | 85 | 126 | 140 | 220 | 118 | 82 | 56 | 41 | 190 |
| 28 | 170 | 45 | 75 | 92 | 140 | 132 | 210 | 107 | 72 | 51 | 43 | 74 |
| 29 | 81 | 45 | 68 | 100 | --- | 126 | 170 | 104 | 70 | 48 | 41 | 54 |
| 30 | 59 | 43 | 65 | 120 | --- | 124 | 150 | 121 | 70 | 50 | 39 | 46 |
| 31 | 50 | --- | 68 | 150 | --- | 124 | --- | 132 | --- | 64 | 40 | --- |
| TOTAL | 1525 | 1291 | 2197 | 5740 | 8035 | 7015 | 3491 | 2842 | 6455 | 2326 | 3848 | 1423 |
| MEAN | 49.2 | 43.0 | 70.9 | 185 | 287 | 226 | 116 | 91.7 | 215 | 75.0 | 124 | 47.4 |
| MAX | 385 | 62 | 195 | 1230 | 953 | 672 | 220 | 132 | 1540 | 232 | 857 | 190 |
| MIN | 24 | 37 | 40 | 56 | 115 | 124 | 88 | 68 | 70 | 48 | 39 | 32 |
| CFSM | .26 | .23 | .38 | .98 | 1.53 | 1.20 | .62 | .49 | 1.14 | .40 | .66 | .25 |
| IN. | .30 | .26 | .43 | 1.14 | 1.59 | 1.39 | .69 | .56 | 1.28 | .46 | .76 | .28 |
| CAL YR 1981 | TOTAL | 23447 | MEAN | 64.2 | MAX | 693 | MIN | 23 | CFSM | .34 | IN | 4.64 |
| WTR YR 1982 | TOTAL | 46188 | MEAN | 127 | MAX | 1540 | MIN | 24 | CFSM | .68 | IN | 9.14 |

ROANOKE RIVER BASIN

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA

LOCATION.--Lat 37°06'16", long 79°17'44", Pittsylvania County, Hydrologic Unit 03010101, on right bank 12 ft (4 m) upstream from bridge on alternate U.S. Highway 29, 0.3 mi (0.5 km) south of Altavista, 0.3 mi (0.5 km) downstream from Sycamore Creek, 3.5 mi (5.6 km) upstream from Big Otter River, and at mile 286.5 (461.0 km).

DRAINAGE AREA.--1,789 mi² (4,634 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1930 to current year.

REVISED RECORDS.--WSP 892: 1938(M). WSP 972: 1931-33. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.10 ft (153.345 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1951, on left bank 50 ft (15 m) downstream at same datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 9.5 mi (15.3 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 27.5 mi (44.2 km) upstream. Gage-height and Corps of Engineers satellite telemeters at station. Appalachian Power Company gage-height telemeter at station.

AVERAGE DISCHARGE.--52 years, 1,786 ft³/s (50.58 m³/s), 13.56 in/yr (344 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft³/s (2,970 m³/s) Aug. 15, 1940, gage height, 40.08 ft (12.216 m), from floodmark, from rating curve extended above 52,000 ft³/s (1,500 m³/s) on basis of unit hydrograph and flood-routing studies by Corps of Engineers and records for other stations in Roanoke River basin; minimum, 13 ft³/s (0.37 m³/s) Jan. 30, 1966; minimum daily, 39 ft³/s (1.10 m³/s) July 10, 1966; minimum gage height, 1.53 ft (0.466 m) Jan. 2, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,100 ft³/s (428 m³/s) June 13, gage height, 16.02 ft (4.883 m); minimum, 68 ft³/s (1.93 m³/s) Jan. 10, gage height, 1.59 ft (0.485 m), result of freezeup; minimum daily, 221 ft³/s (6.26 m³/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 453 | 433 | 407 | 692 | 3180 | 2840 | 1810 | 1380 | 2820 | 1190 | 310 | 835 |
| 2 | 467 | 391 | 438 | 680 | 3130 | 1960 | 2770 | 1250 | 3020 | 965 | 959 | 840 |
| 3 | 464 | 429 | 413 | 1720 | 7370 | 3170 | 419 | 1310 | 4190 | 239 | 945 | 809 |
| 4 | 460 | 378 | 381 | 3800 | 12100 | 3430 | 242 | 1290 | 3350 | 256 | 988 | 323 |
| 5 | 404 | 386 | 341 | 10000 | 7180 | 3520 | 1830 | 1250 | 1410 | 390 | 899 | 252 |
| 6 | 410 | 371 | 342 | 4080 | 2450 | 3340 | 1500 | 1220 | 496 | 1040 | 717 | 284 |
| 7 | 407 | 446 | 345 | 2340 | 838 | 2680 | 846 | 1210 | 2860 | 792 | 286 | 1070 |
| 8 | 417 | 381 | 332 | 2990 | 3160 | 8990 | 824 | 1230 | 3810 | 837 | 739 | 994 |
| 9 | 405 | 371 | 355 | 870 | 3130 | 4220 | 1060 | 1230 | 3420 | 1950 | 2310 | 847 |
| 10 | 402 | 398 | 322 | 360 | 2050 | 3240 | 221 | 1260 | 3860 | 353 | 2560 | 908 |
| 11 | 409 | 384 | 334 | 240 | 713 | 3080 | 240 | 1260 | 3890 | 248 | 1680 | 422 |
| 12 | 405 | 376 | 365 | 266 | 376 | 2720 | 1010 | 1240 | 3370 | 899 | 1110 | 296 |
| 13 | 410 | 385 | 380 | 1400 | 289 | 424 | 1240 | 1200 | 7780 | 2190 | 822 | 806 |
| 14 | 398 | 374 | 354 | 1300 | 287 | 280 | 1040 | 1240 | 12200 | 2250 | 709 | 984 |
| 15 | 423 | 373 | 474 | 1160 | 855 | 5090 | 1390 | 1290 | 6980 | 1250 | 345 | 982 |
| 16 | 409 | 404 | 612 | 346 | 5620 | 3770 | 699 | 1310 | 5650 | 1050 | 1010 | 837 |
| 17 | 410 | 434 | 367 | 648 | 3860 | 1580 | 637 | 1280 | 1960 | 250 | 1050 | 733 |
| 18 | 414 | 340 | 440 | 1120 | 4490 | 787 | 637 | 1220 | 1560 | 222 | 894 | 285 |
| 19 | 359 | 470 | 406 | 765 | 4620 | 1530 | 876 | 1230 | 266 | 1020 | 840 | 272 |
| 20 | 350 | 358 | 445 | 754 | 2560 | 486 | 1230 | 1240 | 239 | 1000 | 836 | 1040 |
| 21 | 395 | 396 | 427 | 1020 | 1510 | 2380 | 1210 | 1230 | 2200 | 869 | 278 | 922 |
| 22 | 379 | 400 | 453 | 4040 | 3440 | 4410 | 1160 | 1250 | 1320 | 608 | 276 | 926 |
| 23 | 411 | 387 | 408 | 823 | 2310 | 1220 | 1210 | 1260 | 1240 | 1250 | 1020 | 892 |
| 24 | 340 | 412 | 354 | 252 | 1770 | 1090 | 1270 | 1270 | 1060 | 457 | 992 | 362 |
| 25 | 392 | 422 | 375 | 1890 | 1850 | 1310 | 1280 | 1180 | 1010 | 356 | 807 | 365 |
| 26 | 383 | 416 | 415 | 1960 | 1840 | 1560 | 1340 | 1210 | 259 | 1030 | 827 | 405 |
| 27 | 780 | 393 | 367 | 942 | 423 | 888 | 1370 | 1480 | 257 | 1070 | 729 | 541 |
| 28 | 825 | 393 | 343 | 297 | 301 | 249 | 1230 | 1250 | 1190 | 1060 | 261 | 834 |
| 29 | 519 | 393 | 304 | 338 | --- | 2560 | 1140 | 1310 | 2450 | 1060 | 303 | 858 |
| 30 | 455 | 391 | 287 | 364 | --- | 1440 | 1110 | 1300 | 2590 | 463 | 1000 | 1170 |
| 31 | 389 | --- | 292 | 420 | --- | 1450 | --- | 1390 | --- | 288 | 1010 | --- |
| TOTAL | 13544 | 11885 | 11878 | 47877 | 81702 | 75694 | 32841 | 39270 | 86707 | 26902 | 27512 | 21094 |
| MEAN | 437 | 396 | 383 | 1544 | 2918 | 2442 | 1095 | 1267 | 2890 | 868 | 887 | 703 |
| MAX | 825 | 470 | 612 | 10000 | 12100 | 8990 | 2770 | 1480 | 12200 | 2250 | 2560 | 1170 |
| MIN | 340 | 340 | 287 | 240 | 287 | 249 | 221 | 1180 | 239 | 222 | 261 | 252 |
| (*) | +8 | -58 | +421 | +432 | +62 | +22 | +67 | +19 | -279 | -29 | -119 | -244 |
| MEAN# | 445 | 338 | 804 | 1976 | 2980 | 2464 | 1162 | 1286 | 2611 | 839 | 768 | 459 |
| CFSM# | .25 | .19 | .45 | 1.10 | 1.67 | 1.38 | .65 | .72 | 1.46 | .47 | .43 | .26 |
| IN# | .29 | .21 | .52 | 1.27 | 1.74 | 1.59 | .72 | .83 | 1.63 | .54 | .50 | .29 |

CAL YR 1981 TOTAL 197734 MEAN 542 MAX 1560 MIN 128 MEAN# 639 CFSM# .36 IN# 4.85
WTR YR 1982 TOTAL 476906 MEAN 1307 MAX 12200 MIN 221 MEAN# 1334 CFSM# .75 IN# 10.12

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

Adjusted for change in contents.

ROANOKE RIVER BASIN

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02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.

WATER TEMPERATURES: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.

SUSPENDED-SEDIMENT DISCHARGE: February 1953 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 580 micromhos Jan. 17, 1969; minimum daily, 54 micromhos Aug. 18, 1955.

WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 10, 1951, Aug. 11, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 210 micromhos Jan. 6; minimum daily, 86 micromhos Feb. 18.

WATER TEMPERATURES: Maximum daily, 27.0°C July 19; minimum daily, 0.5°C Jan. 12, 13, 25, 26.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|--------------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| OCT 22... | 1115 | 369 | 184 | 7.9 | 15.0 | 4 | 68 | 16 | 6.8 | 11 | 1.9 |
| DEC 08... | 1225 | 313 | 160 | 8.1 | 8.5 | 4 | 61 | 15 | 5.8 | 5.4 | 2.2 |
| JAN 29... | 1140 | 313 | 151 | 7.6 | 2.5 | 43 | 42 | 10 | 4.1 | 11 | 2.0 |
| MAR 23... | 1425 | 3030 | 148 | 7.8 | 9.0 | 4 | 56 | 13 | 5.6 | 5.7 | 2.0 |
| MAY 11... | 1030 | 1160 | 171 | 7.8 | 14.0 | 3 | 60 | 14 | 6.2 | 8.2 | 2.1 |
| JUN 18... | 1130 | 338 | 137 | 7.6 | 20.5 | 18 | 43 | 10 | 4.3 | 9.7 | 2.1 |
| JUL 28... | 1130 | 268 | 184 | 7.7 | 23.0 | 15 | 62 | 15 | 6.0 | 11 | 2.1 |
| SEP 15... | 1050 | 206 | 180 | 7.4 | 21.5 | 7 | 69 | 17 | 6.4 | 6.3 | 2.2 |

| DATE | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (MG/L AS FE) |
|--------------|---|---|---|--|--|--|---|---|---|--|--|
| OCT 22... | 59 | 11 | 9.1 | .2 | 5.3 | 96 | 97 | .010 | .16 | <.010 | 17 |
| DEC 08... | 53 | 13 | 6.6 | .1 | 4.5 | 102 | 85 | <.010 | .11 | <.010 | 33 |
| JAN 29... | 43 | 12 | 9.3 | <.1 | 8.7 | 107 | 83 | .020 | .37 | <.010 | 72 |
| MAR 23... | 51 | 11 | 6.9 | .1 | 5.5 | 82 | 81 | <.010 | .26 | <.010 | 42 |
| MAY 11... | 57 | 13 | 8.5 | .1 | 5.1 | 86 | 91 | <.010 | .21 | .020 | <3 |
| JUN 18... | 41 | 11 | 7.7 | .1 | 13 | 91 | 83 | <.010 | .32 | .080 | 130 |
| JUL 28... | 58 | 13 | 11 | .2 | 7.4 | 111 | 101 | .010 | .27 | .130 | 29 |
| SEP 15... | 60 | 10 | 7.8 | .2 | 5.8 | 104 | 92 | <.010 | .16 | <.010 | 11 |

< Actual value is known to be less than the value shown.

ROANOKE RIVER BASIN

02060500 ROANOKE RIVER AT ALTAVISTA, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 175 | --- | 178 | 178 | 165 | 144 | 149 | 141 | 159 | 153 | 153 | 182 |
| 2 | 170 | --- | 170 | 165 | 138 | 154 | 142 | 144 | 160 | 134 | 153 | 176 |
| 3 | 165 | --- | 168 | 170 | 165 | 139 | 123 | 144 | 162 | 136 | 176 | 186 |
| 4 | 145 | --- | 170 | 125 | 180 | 115 | 128 | 149 | 162 | 111 | 182 | 189 |
| 5 | 165 | --- | 160 | 190 | 203 | 125 | 141 | 148 | --- | 111 | 163 | 157 |
| 6 | 167 | --- | 160 | 210 | 203 | 125 | 141 | 146 | --- | 137 | 185 | 157 |
| 7 | 160 | --- | 130 | 195 | 200 | 94 | 123 | 148 | 159 | 120 | 141 | 173 |
| 8 | 170 | --- | 153 | 180 | 160 | 138 | 141 | 148 | 158 | 129 | 187 | 172 |
| 9 | 160 | --- | 150 | 190 | 175 | 139 | 139 | 149 | 156 | 143 | --- | 189 |
| 10 | 160 | --- | 160 | --- | 180 | 108 | 108 | 147 | 156 | 132 | 163 | --- |
| 11 | 180 | --- | 160 | --- | 165 | 140 | --- | 147 | 143 | 133 | 177 | --- |
| 12 | 170 | --- | 180 | 190 | 124 | 137 | 108 | 147 | 126 | 132 | 156 | --- |
| 13 | 165 | --- | 160 | 200 | 126 | 137 | 141 | 151 | 139 | 141 | 158 | --- |
| 14 | 157 | --- | 160 | 195 | 139 | --- | 144 | 151 | 140 | 137 | 151 | --- |
| 15 | 160 | 158 | --- | 200 | 138 | 109 | 144 | 154 | 148 | 157 | 161 | --- |
| 16 | 150 | --- | --- | --- | 141 | 136 | 154 | --- | 143 | 166 | 165 | --- |
| 17 | 150 | --- | 150 | --- | 134 | 136 | 158 | 155 | 136 | 169 | 157 | --- |
| 18 | 165 | 175 | 143 | 158 | 86 | 137 | 124 | 155 | 135 | 137 | 157 | --- |
| 19 | 170 | 163 | 135 | 170 | 139 | 117 | 122 | 155 | 135 | 132 | 175 | --- |
| 20 | 173 | 170 | 160 | 200 | 140 | 133 | 142 | 154 | 115 | 134 | 178 | --- |
| 21 | --- | 160 | 160 | 160 | 115 | 136 | 140 | 157 | 115 | 170 | 179 | --- |
| 22 | --- | 150 | 110 | 150 | 115 | 137 | 144 | 156 | 136 | 163 | 163 | --- |
| 23 | --- | 165 | 145 | 180 | 141 | 139 | 144 | 148 | 125 | 170 | 173 | --- |
| 24 | --- | 175 | 130 | 140 | 134 | 143 | 145 | 147 | 149 | 170 | 176 | --- |
| 25 | --- | 130 | 130 | 160 | 144 | 139 | 142 | 160 | 133 | 147 | --- | --- |
| 26 | --- | 155 | --- | 160 | 146 | 140 | 141 | 161 | 132 | 138 | --- | --- |
| 27 | --- | 160 | 143 | 178 | 146 | 117 | 126 | 146 | 137 | 137 | --- | --- |
| 28 | --- | 155 | 135 | 190 | 142 | 116 | 140 | 147 | 135 | 170 | --- | --- |
| 29 | --- | 175 | 150 | 170 | --- | 116 | 141 | 147 | 134 | 167 | --- | --- |
| 30 | --- | 140 | 145 | 170 | --- | 143 | 141 | 148 | 135 | 165 | 171 | --- |
| 31 | --- | --- | 150 | 180 | --- | 143 | --- | 159 | --- | 166 | 182 | --- |
| MEAN | 164 | 159 | 152 | 176 | 149 | 131 | 137 | 150 | 142 | 145 | 167 | 176 |
| WTR YR 1982 | MEAN | 152 | MAX | 210 | MIN | 86 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 19.0 | --- | 8.0 | 3.0 | 3.0 | 5.5 | 10.5 | 14.5 | 18.0 | 23.0 | 22.5 | 23.5 |
| 2 | 18.5 | --- | 9.5 | 3.5 | 1.0 | 4.5 | 11.0 | 14.0 | 19.0 | 19.5 | 23.5 | 21.5 |
| 3 | 19.5 | --- | 9.0 | 4.0 | 3.0 | 5.0 | 14.0 | 13.0 | 18.0 | 20.0 | 20.5 | 24.5 |
| 4 | 20.0 | --- | 8.0 | 4.0 | 3.5 | 4.5 | 13.0 | 12.5 | 18.0 | 21.5 | 20.0 | 22.5 |
| 5 | 21.0 | --- | 8.5 | 5.0 | 3.5 | 5.0 | 10.0 | 12.5 | --- | 22.0 | 23.5 | 21.5 |
| 6 | 20.0 | --- | 8.0 | 4.5 | 4.0 | 6.5 | 10.0 | 13.5 | --- | 20.0 | 21.5 | 23.5 |
| 7 | 20.5 | --- | 7.0 | 5.0 | 3.0 | 6.0 | 6.0 | 14.5 | 17.0 | 24.5 | 26.0 | 20.5 |
| 8 | 20.0 | --- | 7.0 | 4.0 | 3.0 | 6.5 | 9.0 | 15.5 | 17.0 | 25.0 | 22.5 | 21.5 |
| 9 | 21.5 | --- | 6.5 | 3.0 | 4.0 | 6.0 | 10.0 | 14.0 | 18.0 | 22.0 | 21.5 | 20.0 |
| 10 | 20.0 | --- | 6.0 | --- | 3.0 | 6.0 | 12.0 | 13.0 | 19.0 | 24.5 | 22.0 | --- |
| 11 | 18.5 | --- | 7.0 | --- | 3.0 | 6.5 | --- | 13.0 | 18.0 | 24.0 | 21.5 | --- |
| 12 | 19.5 | --- | 6.5 | .5 | 4.0 | 7.0 | 11.0 | 14.0 | 19.0 | 25.0 | 21.0 | --- |
| 13 | 19.0 | --- | 6.0 | .5 | 3.5 | 7.0 | 11.5 | 17.5 | 18.0 | 19.5 | 20.0 | --- |
| 14 | 19.0 | --- | 5.0 | 2.5 | 4.0 | --- | 12.0 | 15.0 | 17.0 | 20.0 | 21.5 | --- |
| 15 | 20.0 | 6.0 | --- | 1.5 | 5.5 | 9.0 | 11.5 | 16.0 | 18.0 | 21.0 | 23.0 | --- |
| 16 | 19.0 | --- | 3.0 | --- | 6.0 | 6.5 | 11.5 | --- | 18.5 | 22.5 | 23.5 | --- |
| 17 | 15.5 | --- | 3.0 | --- | 6.0 | 8.5 | 12.5 | 16.0 | 19.5 | 24.0 | 21.0 | --- |
| 18 | 14.0 | 11.0 | 3.0 | 2.5 | 5.5 | 9.5 | 12.5 | 15.5 | 18.0 | 26.0 | 21.5 | --- |
| 19 | 19.0 | 11.0 | 3.0 | 1.5 | 5.0 | 10.0 | 13.0 | 17.0 | 17.5 | 27.0 | 22.0 | --- |
| 20 | 16.0 | 9.0 | 3.0 | 1.5 | 5.0 | 9.0 | 12.0 | 16.0 | 20.0 | 24.0 | 20.5 | --- |
| 21 | --- | 8.5 | 3.0 | 3.0 | 5.0 | 8.5 | 11.5 | 15.5 | 23.0 | 21.0 | 20.0 | --- |
| 22 | --- | 8.5 | 4.0 | 1.0 | 5.0 | 7.5 | 10.5 | 14.5 | 18.5 | 22.0 | 22.5 | --- |
| 23 | --- | 7.0 | 4.5 | 2.5 | 6.0 | 7.5 | 10.0 | 15.0 | 21.5 | 22.5 | 22.0 | --- |
| 24 | --- | 8.0 | 5.0 | 1.0 | 6.0 | 9.0 | 12.0 | 15.0 | 18.0 | 22.0 | 23.5 | --- |
| 25 | --- | 7.5 | --- | .5 | 6.0 | 10.0 | 13.5 | 14.5 | 20.0 | 24.0 | --- | --- |
| 26 | --- | 8.0 | --- | .5 | 4.5 | 9.0 | 13.0 | 16.0 | 19.0 | 26.5 | --- | --- |
| 27 | --- | 9.0 | 4.0 | 2.5 | 4.0 | 8.0 | 14.0 | 15.5 | 20.0 | 24.5 | --- | --- |
| 28 | --- | 9.5 | 4.5 | 2.0 | 4.5 | 7.0 | 15.0 | 16.0 | 19.5 | 23.0 | --- | --- |
| 29 | --- | 8.5 | 4.5 | 2.5 | --- | 6.5 | 14.0 | 17.5 | 20.0 | 21.0 | --- | --- |
| 30 | --- | 7.5 | 3.0 | 3.0 | --- | 7.5 | 15.0 | 17.0 | 20.0 | 23.5 | 19.5 | --- |
| 31 | --- | --- | 2.0 | 3.0 | --- | 10.0 | --- | 17.5 | --- | 21.5 | 21.5 | --- |
| MEAN | 19.0 | 8.5 | 5.5 | 2.5 | 4.5 | 7.5 | 12.0 | 15.0 | 19.0 | 23.0 | 22.0 | 22.0 |
| WTR YR 1982 | MEAN | 13.0 | MAX | 27.0 | MIN | .5 | | | | | | |

ROANOKE RIVER BASIN

233

02061500 BIG OTTER RIVER NEAR EVINGTON, VA

LOCATION.--Lat 37°12'30", long 79°18'14", Campbell County, Hydrologic Unit 03010101, on right bank 60 ft (18 m) upstream from bridge on State Highway 682, 2.0 mi (3.2 km) southwest of Evington, and 2.1 mi (3.4 km) upstream from Flat Creek.

DRAINAGE AREA.--320 mi² (829 km²).

PERIOD OF RECORD.--October 1936 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1965, published as Otter River near Evington.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1938-39(M). WSP 972: 1937-39. WSP 1032: 1940. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 544.02 ft (165.817 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of doubtful gage-height record, Aug. 14 to Sept. 19, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 328 ft³/s (9.289 m³/s), 13.92 in/yr (354 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s (779 m³/s) Oct. 19, 1937, Aug. 19, 1939, gage height, 23.1 ft (7.04 m), from rating curve extended above 7,000 ft³/s (200 m³/s) on basis of unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum, 7.5 ft³/s (0.21 m³/s) Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,130 ft³/s (259 m³/s) at 2030 hours June 13, gage height, 17.53 ft (5.343 m), no other peak above base of 4,000 ft³/s (110 m³/s); minimum, 41 ft³/s (1.16 m³/s) Oct. 8-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 51 | 141 | 94 | 554 | 600 | 300 | 262 | 252 | 452 | 211 | 136 | 85 |
| 2 | 51 | 130 | 120 | 401 | 533 | 347 | 249 | 244 | 389 | 191 | 136 | 92 |
| 3 | 55 | 122 | 120 | 1430 | 1810 | 600 | 257 | 241 | 308 | 186 | 130 | 90 |
| 4 | 51 | 116 | 110 | 2110 | 1590 | 551 | 267 | 219 | 407 | 216 | 124 | 80 |
| 5 | 45 | 110 | 108 | 1060 | 785 | 473 | 236 | 206 | 1500 | 455 | 120 | 74 |
| 6 | 46 | 120 | 102 | 572 | 557 | 521 | 249 | 196 | 729 | 262 | 116 | 73 |
| 7 | 43 | 118 | 96 | 422 | 431 | 945 | 229 | 191 | 449 | 184 | 181 | 72 |
| 8 | 41 | 102 | 94 | 329 | 359 | 1210 | 226 | 186 | 350 | 159 | 159 | 70 |
| 9 | 41 | 96 | 92 | 281 | 368 | 707 | 252 | 181 | 563 | 201 | 512 | 77 |
| 10 | 42 | 96 | 92 | 224 | 398 | 545 | 254 | 179 | 1570 | 159 | 199 | 78 |
| 11 | 46 | 94 | 93 | 180 | 311 | 473 | 234 | 179 | 1700 | 272 | 167 | 76 |
| 12 | 49 | 92 | 97 | 150 | 281 | 437 | 226 | 179 | 824 | 257 | 278 | 70 |
| 13 | 50 | 90 | 105 | 135 | 275 | 395 | 226 | 179 | 3850 | 186 | 167 | 68 |
| 14 | 51 | 90 | 112 | 128 | 267 | 362 | 224 | 174 | 2770 | 224 | 155 | 68 |
| 15 | 50 | 88 | 308 | 120 | 252 | 371 | 216 | 169 | 1180 | 186 | 145 | 73 |
| 16 | 51 | 88 | 700 | 120 | 283 | 425 | 211 | 162 | 844 | 174 | 135 | 70 |
| 17 | 51 | 88 | 306 | 115 | 569 | 443 | 219 | 157 | 673 | 159 | 125 | 69 |
| 18 | 51 | 86 | 214 | 125 | 1000 | 386 | 283 | 155 | 669 | 167 | 120 | 75 |
| 19 | 51 | 84 | 181 | 140 | 655 | 356 | 239 | 157 | 521 | 289 | 110 | 90 |
| 20 | 53 | 84 | 141 | 199 | 585 | 389 | 224 | 148 | 434 | 169 | 100 | 106 |
| 21 | 51 | 86 | 155 | 335 | 476 | 404 | 226 | 174 | 380 | 157 | 90 | 118 |
| 22 | 54 | 82 | 172 | 482 | 398 | 374 | 214 | 145 | 350 | 155 | 82 | 145 |
| 23 | 55 | 80 | 219 | 306 | 344 | 341 | 206 | 136 | 344 | 155 | 74 | 164 |
| 24 | 60 | 86 | 264 | 250 | 314 | 317 | 204 | 145 | 300 | 389 | 77 | 134 |
| 25 | 64 | 126 | 229 | 220 | 289 | 306 | 204 | 145 | 275 | 209 | 74 | 126 |
| 26 | 80 | 114 | 262 | 200 | 264 | 362 | 409 | 283 | 264 | 157 | 72 | 176 |
| 27 | 1020 | 106 | 224 | 167 | 270 | 314 | 539 | 1920 | 252 | 159 | 78 | 338 |
| 28 | 625 | 104 | 196 | 180 | 280 | 283 | 392 | 897 | 236 | 155 | 80 | 139 |
| 29 | 236 | 98 | 176 | 200 | --- | 275 | 303 | 942 | 229 | 148 | 80 | 100 |
| 30 | 174 | 92 | 159 | 220 | --- | 270 | 270 | 680 | 216 | 141 | 78 | 92 |
| 31 | 157 | --- | 181 | 250 | --- | 267 | --- | 491 | --- | 139 | 76 | --- |
| TOTAL | 3545 | 3009 | 5522 | 11605 | 14544 | 13749 | 7750 | 9712 | 23028 | 6271 | 4176 | 3088 |
| MEAN | 114 | 100 | 178 | 374 | 519 | 444 | 258 | 313 | 768 | 202 | 135 | 103 |
| MAX | 1020 | 141 | 700 | 2110 | 1810 | 1210 | 539 | 1920 | 3850 | 455 | 512 | 338 |
| MIN | 41 | 80 | 92 | 115 | 252 | 267 | 204 | 136 | 216 | 139 | 72 | 68 |
| CFSM | .36 | .31 | .56 | 1.17 | 1.62 | 1.39 | .81 | .98 | 2.40 | .63 | .42 | .32 |
| IN. | .41 | .35 | .64 | 1.35 | 1.69 | 1.60 | .90 | 1.13 | 2.68 | .73 | .49 | .36 |

CAL YR 1981 TOTAL 53297 MEAN 146 MAX 1720 MIN 35 CFSM .46 IN 6.20
WTR YR 1982 TOTAL 105999 MEAN 290 MAX 3850 MIN 41 CFSM .91 IN 12.32

ROANOKE RIVER BASIN

02062500 ROANOKE (STAUNTON) RIVER AT BROOKNEAL, VA

LOCATION.--Lat 37°02'28", long 78°57'02", Campbell County, Hydrologic Unit 03010102, on left bank 1,600 ft (490 m) upstream from bridge on U.S. Highway 501 at Brookneal, 2.9 mi (4.7 km) upstream from Falling River, and at mile 255.9 (411.7 km).

DRAINAGE AREA.--2,415 mi² (6,255 km²).

PERIOD OF RECORD.--April 1923 to current year.

REVISED RECORDS.--WSP 892: 1928(M). WSP 972: 1928-34. WSP 1303: 1924-27(M), 1929(M), 1941(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 351.96 ft (107.277 m) National Geodetic Vertical Datum of 1929. Apr. 30, 1923, to Aug. 29, 1929, nonrecording gage, Aug. 30, 1929, to Aug. 15, 1940, water-stage recorder, and Aug. 16 to Oct. 1, 1940, nonrecording gage at site 1,800 ft (550 m) downstream at same datum. Oct. 2, 1940, to Sept. 30, 1941, nonrecording gage at site 1,600 ft (490 m) downstream at same datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 40.1 mi (64.5 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 58.1 mi (93.5 km) upstream. Gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 2,379 ft³/s (67.37 m³/s), 13.38 in/yr (340 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) Aug. 15, 1940, gage height, 46.5 ft (14.17 m), at present site, from gage-height relation curve, from rating curve extended above 55,000 ft³/s (1,600 m³/s) on basis of slope-area measurement by Geological Survey, unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum daily, 140 ft³/s (3.96 m³/s) July 25, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,800 ft³/s (674 m³/s) June 14, gage height, 23.50 ft (7.163 m); minimum, 228 ft³/s (6.46 m³/s) Jan. 11, gage height, 5.49 ft (1.673 m), result of freezeup; minimum daily, 356 ft³/s (10.1 m³/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|-------|-------|-----------|-----------|---------|------------|-----------|-----------|-------|-------|-------|
| 1 | 522 | 606 | 541 | 1320 | 2570 | 1320 | 1840 | 1430 | 2970 | 2800 | 547 | 1140 |
| 2 | 538 | 631 | 582 | 1750 | 4650 | 3600 | 2460 | 1740 | 3030 | 1410 | 526 | 963 |
| 3 | 534 | 592 | 632 | 2900 | 11100 | 3550 | 2940 | 1570 | 4520 | 1290 | 1190 | 972 |
| 4 | 535 | 594 | 594 | 8820 | 18900 | 4830 | 679 | 1630 | 4310 | 557 | 1130 | 931 |
| 5 | 532 | 549 | 544 | 12000 | 9950 | 4470 | 898 | 1510 | 5710 | 932 | 1200 | 428 |
| 6 | 476 | 556 | 508 | 7080 | 6970 | 4980 | 2220 | 1450 | 2610 | 1200 | 1080 | 356 |
| 7 | 476 | 566 | 503 | 4340 | 2410 | 4120 | 1700 | 1420 | 1540 | 1490 | 1350 | 373 |
| 8 | 469 | 600 | 497 | 2770 | 1750 | 11000 | 1180 | 1390 | 4270 | 1150 | 676 | 1170 |
| 9 | 473 | 522 | 478 | 3190 | 3630 | 7680 | 1320 | 1400 | 5070 | 1190 | 2020 | 1100 |
| 10 | 467 | 518 | 496 | 1060 | 3830 | 4420 | 1310 | 1410 | 4840 | 2380 | 2290 | 934 |
| 11 | 470 | 541 | 465 | 457 | 2360 | 4080 | 612 | 1410 | 8910 | 594 | 3080 | 1100 |
| 12 | 479 | 522 | 468 | 430 | 998 | 3780 | 682 | 1370 | 5080 | 1110 | 1840 | 419 |
| 13 | 481 | 517 | 495 | 500 | 825 | 3030 | 1410 | 1340 | 8290 | 1420 | 1580 | 385 |
| 14 | 479 | 520 | 520 | 1600 | 814 | 938 | 1560 | 1300 | 21000 | 2920 | 1100 | 881 |
| 15 | 473 | 508 | 951 | 1500 | 805 | 1940 | 1410 | 1360 | 9520 | 2670 | 963 | 1080 |
| 16 | 497 | 517 | 2150 | 1400 | 2700 | 6060 | 1570 | 1400 | 7960 | 1620 | 491 | 1070 |
| 17 | 481 | 542 | 1400 | 644 | 6290 | 3840 | 1020 | 1420 | 4900 | 1400 | 1240 | 907 |
| 18 | 486 | 559 | 899 | 1370 | 5930 | 1800 | 994 | 1340 | 3190 | 537 | 1490 | 795 |
| 19 | 489 | 529 | 788 | 1350 | 5990 | 1240 | 1050 | 1370 | 2300 | 493 | 1180 | 362 |
| 20 | 435 | 548 | 669 | 1140 | 4830 | 2310 | 1400 | 1410 | 954 | 1460 | 1080 | 378 |
| 21 | 433 | 494 | 639 | 1360 | 2920 | 1080 | 1610 | 1360 | 898 | 1320 | 1030 | 1150 |
| 22 | 473 | 527 | 731 | 2190 | 2860 | 4670 | 1490 | 1410 | 2720 | 1150 | 436 | 1010 |
| 23 | 476 | 520 | 792 | 4780 | 4170 | 3720 | 1420 | 1400 | 1760 | 864 | 428 | 1020 |
| 24 | 520 | 550 | 818 | 911 | 2340 | 1540 | 1460 | 1500 | 1720 | 1780 | 1180 | 1000 |
| 25 | 482 | 604 | 1110 | 1170 | 2460 | 1530 | 1530 | 1360 | 1470 | 996 | 1170 | 448 |
| 26 | 685 | 611 | 1300 | 2440 | 2360 | 2140 | 1680 | 1280 | 1420 | 652 | 943 | 486 |
| 27 | 2590 | 594 | 979 | 2340 | 2320 | 2050 | 2140 | 2940 | 633 | 1340 | 983 | 799 |
| 28 | 3010 | 555 | 799 | 1120 | 846 | 1210 | 2060 | 2480 | 647 | 1340 | 822 | 784 |
| 29 | 1290 | 545 | 687 | 751 | --- | 1570 | 1680 | 3120 | 1680 | 1330 | 393 | 997 |
| 30 | 847 | 543 | 615 | 807 | --- | 2360 | 1500 | 2420 | 2930 | 1310 | 416 | 986 |
| 31 | 707 | --- | 580 | 936 | --- | 1990 | --- | 2220 | --- | 667 | 1130 | --- |
| TOTAL | 21305 | 16580 | 23230 | 74426 | 117578 | 102848 | 44825 | 50160 | 126852 | 41372 | 34984 | 24424 |
| MEAN | 687 | 553 | 749 | 2401 | 4199 | 3318 | 1494 | 1618 | 4228 | 1335 | 1129 | 814 |
| MAX | 3010 | 631 | 2150 | 12000 | 18900 | 11000 | 2940 | 3120 | 21000 | 2920 | 3080 | 1170 |
| MIN | 433 | 494 | 465 | 430 | 805 | 938 | 612 | 1280 | 633 | 493 | 393 | 356 |
| (*) | +8 | -58 | +421 | +432 | +62 | +22 | +67 | +19 | -279 | -29 | -119 | -244 |
| MEAN# | 695 | 495 | 1170 | 2833 | 4261 | 3340 | 1561 | 1637 | 3949 | 1306 | 1010 | 570 |
| CFSM# | .29 | .20 | .48 | 1.17 | 1.76 | 1.38 | .65 | .68 | 1.64 | .54 | .42 | .24 |
| IN# | .33 | .23 | .56 | 1.35 | 1.84 | 1.59 | .72 | .78 | 1.82 | .62 | .48 | .26 |
| CAL YR 1981 TOTAL | 283731 | | | 777 | 5390 | MIN 250 | MEAN# 874 | CFSM# .36 | IN# 4.91 | | | |
| WTR YR 1982 TOTAL | 678584 | | | MEAN 1859 | MAX 21000 | MIN 356 | MEAN# 1886 | CFSM# .78 | IN# 10.60 | | | |

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

* Adjusted for change in contents.

02064000 FALLING RIVER NEAR NARUNA, VA

LOCATION.--Lat 37°07'36", long 78°57'36", Campbell County, Hydrologic Unit 03010102, on left bank at upstream side of bridge on State Highway 643, 2.7 mi (4.3 km) northeast of Naruna, and 3.2 mi (5.1 km) upstream from Little Falling River.

DRAINAGE AREA.--173 mi² (448 km²).

PERIOD OF RECORD.--July 1929 to January 1935, September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1930, 1931-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 412.32 ft (125.675 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at times during low flow, cause unknown. Prior to 1958, diurnal fluctuation caused by gristmill at Spring Mills. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years (water years 1930-34, 1942-82), 147 ft³/s (4.163 m³/s), 11.54 in/yr (293 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,600 ft³/s (923 m³/s) June 22, 1972, gage height, 29.21 ft (8.903 m), from rating curve extended above 6,100 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 3.0 ft³/s (0.085 m³/s) Oct. 9, 1932, gage height, 2.18 ft (0.664 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 26.5 ft (8.08 m), from floodmarks, discharge, 22,000 ft³/s (620 m³/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Oct. 27 | 1500 | 3650 103 | 12.05 3.673 | Feb. 3 | 1530 | *4380 124 | 13.41 4.087 |
| Jan. 4 | 1500 | 2820 79.9 | 10.29 3.136 | July 5 | 1115 | 2890 81.8 | 10.43 3.179 |

Minimum discharge, 21 ft³/s (0.59 m³/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 25 | 79 | 49 | 404 | 521 | 165 | 110 | 115 | 144 | 113 | 77 | 50 |
| 2 | 26 | 72 | 60 | 211 | 337 | 213 | 103 | 110 | 107 | 80 | 68 | 50 |
| 3 | 26 | 66 | 61 | 815 | 3030 | 323 | 121 | 112 | 92 | 77 | 63 | 47 |
| 4 | 26 | 63 | 62 | 1630 | 1190 | 290 | 134 | 100 | 140 | 111 | 59 | 44 |
| 5 | 26 | 61 | 59 | 587 | 478 | 253 | 109 | 93 | 489 | 1130 | 64 | 40 |
| 6 | 26 | 62 | 55 | 293 | 276 | 316 | 118 | 90 | 198 | 218 | 71 | 40 |
| 7 | 24 | 55 | 52 | 199 | 211 | 650 | 109 | 88 | 124 | 132 | 185 | 39 |
| 8 | 22 | 71 | 51 | 160 | 180 | 626 | 106 | 85 | 115 | 110 | 111 | 39 |
| 9 | 22 | 77 | 47 | 138 | 178 | 291 | 128 | 84 | 201 | 130 | 127 | 41 |
| 10 | 24 | 76 | 46 | 103 | 182 | 216 | 128 | 78 | 389 | 156 | 101 | 41 |
| 11 | 25 | 75 | 45 | 100 | 154 | 186 | 114 | 74 | 437 | 214 | 81 | 41 |
| 12 | 27 | 74 | 45 | 90 | 139 | 169 | 108 | 73 | 207 | 618 | 170 | 39 |
| 13 | 27 | 70 | 46 | 85 | 149 | 154 | 105 | 70 | 597 | 201 | 98 | 37 |
| 14 | 25 | 69 | 54 | 82 | 154 | 142 | 102 | 69 | 405 | 245 | 74 | 36 |
| 15 | 26 | 51 | 323 | 81 | 139 | 146 | 99 | 67 | 202 | 154 | 69 | 36 |
| 16 | 27 | 48 | 517 | 84 | 160 | 171 | 99 | 62 | 152 | 125 | 65 | 37 |
| 17 | 26 | 48 | 219 | 86 | 342 | 190 | 112 | 67 | 152 | 109 | 64 | 35 |
| 18 | 26 | 47 | 152 | 87 | 392 | 154 | 170 | 63 | 135 | 97 | 143 | 33 |
| 19 | 27 | 46 | 114 | 86 | 263 | 140 | 123 | 91 | 119 | 88 | 80 | 32 |
| 20 | 26 | 47 | 91 | 98 | 230 | 173 | 114 | 77 | 103 | 83 | 65 | 38 |
| 21 | 26 | 45 | 105 | 110 | 196 | 180 | 115 | 99 | 91 | 82 | 62 | 36 |
| 22 | 27 | 44 | 120 | 117 | 167 | 160 | 107 | 77 | 87 | 78 | 60 | 38 |
| 23 | 33 | 43 | 120 | 120 | 149 | 133 | 101 | 74 | 87 | 76 | 56 | 38 |
| 24 | 48 | 56 | 140 | 122 | 139 | 123 | 97 | 88 | 79 | 83 | 55 | 35 |
| 25 | 41 | 70 | 359 | 112 | 126 | 117 | 95 | 107 | 78 | 80 | 53 | 34 |
| 26 | 185 | 58 | 328 | 103 | 115 | 165 | 166 | 83 | 79 | 74 | 48 | 48 |
| 27 | 2030 | 54 | 184 | 97 | 130 | 137 | 232 | 111 | 83 | 70 | 47 | 96 |
| 28 | 586 | 52 | 137 | 94 | 160 | 118 | 207 | 133 | 95 | 69 | 58 | 55 |
| 29 | 181 | 49 | 114 | 90 | --- | 112 | 147 | 258 | 77 | 69 | 53 | 44 |
| 30 | 114 | 47 | 113 | 100 | --- | 110 | 125 | 366 | 83 | 65 | 48 | 41 |
| 31 | 90 | --- | 121 | 150 | --- | 111 | --- | 167 | --- | 75 | 48 | --- |
| TOTAL | 3870 | 1775 | 3989 | 6634 | 9887 | 6434 | 3704 | 3231 | 5347 | 5012 | 2423 | 1260 |
| MEAN | 125 | 59.2 | 129 | 214 | 353 | 208 | 123 | 104 | 178 | 162 | 78.2 | 42.0 |
| MAX | 2030 | 79 | 517 | 1630 | 3030 | 650 | 232 | 366 | 597 | 1130 | 185 | 96 |
| MIN | 22 | 43 | 45 | 81 | 115 | 110 | 95 | 62 | 77 | 65 | 47 | 32 |
| CFSM | .72 | .34 | .75 | 1.24 | 2.04 | 1.20 | .71 | .60 | 1.03 | .94 | .45 | .24 |
| IN. | .83 | .38 | .86 | 1.43 | 2.13 | 1.38 | .80 | .69 | 1.15 | 1.08 | .52 | .27 |

| | | | | | | | | | | | | |
|-------------|-------|-------|------|------|-----|------|-----|----|------|-----|----|-------|
| CAL YR 1981 | TOTAL | 30083 | MEAN | 82.4 | MAX | 2030 | MIN | 16 | CFSM | .48 | IN | 6.47 |
| WTR YR 1982 | TOTAL | 53566 | MEAN | 147 | MAX | 3030 | MIN | 22 | CFSM | .85 | IN | 11.52 |

ROANOKE RIVER BASIN

02065500 CUB CREEK AT PHENIX, VA

LOCATION.--Lat 37°04'45", long 78°45'50", Charlotte County, Hydrologic Unit 03010102, on right bank 10 ft (3 m) upstream from bridge on State Highway 40, 0.9 mi (1.4 km) west of Phenix, 1.9 mi (3.1 km) downstream from Rough Creek, and 6.4 mi (10.3 km) upstream from Louse Creek.

DRAINAGE AREA.--98.0 mi² (253.8 km²).

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

REVISED RECORDS.--WSP 1333: 1947(M), 1948, 1949(M). WSP 2104: Drainage area. WDR VA-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 370.19 ft (112.834 m) National Geodetic Vertical Datum of 1929. Prior to July 14, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 96.5 ft³/s (2.733 m³/s), 13.37 in/yr (340 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,380 ft³/s (209 m³/s) June 22, 1972, gage height, 20.37 ft (6.209 m), from floodmark in gage house, from rating curve extended above 2,700 ft³/s (76 m³/s); minimum, 2.6 ft³/s (0.074 m³/s) Oct. 6, 1970, gage height, 0.74 ft (0.226 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 17.5 ft (5.33 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Oct. 28 | 0930 | 1840 52.1 | 9.24 2.816 | Feb. 4 | 0500 | *3430 97.1 | 11.72 3.572 |

Minimum discharge, 13 ft³/s (0.37 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 15 | 57 | 32 | 172 | 96 | 117 | 78 | 63 | 199 | 46 | 39 | 28 |
| 2 | 16 | 51 | 40 | 154 | 237 | 135 | 69 | 60 | 114 | 39 | 34 | 28 |
| 3 | 17 | 46 | 42 | 185 | 652 | 199 | 75 | 64 | 82 | 37 | 32 | 28 |
| 4 | 17 | 43 | 42 | 452 | 2230 | 197 | 87 | 58 | 122 | 64 | 30 | 25 |
| 5 | 17 | 41 | 44 | 723 | 503 | 160 | 71 | 53 | 370 | 167 | 29 | 23 |
| 6 | 18 | 41 | 41 | 295 | 206 | 178 | 73 | 51 | 631 | 170 | 46 | 23 |
| 7 | 16 | 38 | 37 | 145 | 149 | 192 | 72 | 51 | 162 | 65 | 76 | 23 |
| 8 | 16 | 34 | 36 | 115 | 125 | 386 | 68 | 50 | 97 | 50 | 44 | 23 |
| 9 | 16 | 33 | 33 | 99 | 115 | 272 | 82 | 49 | 106 | 46 | 59 | 23 |
| 10 | 16 | 33 | 31 | 83 | 113 | 149 | 87 | 46 | 110 | 79 | 72 | 24 |
| 11 | 18 | 33 | 31 | 74 | 96 | 125 | 76 | 43 | 190 | 60 | 54 | 24 |
| 12 | 20 | 33 | 31 | 60 | 87 | 114 | 71 | 43 | 128 | 201 | 107 | 23 |
| 13 | 20 | 32 | 30 | 55 | 93 | 104 | 69 | 42 | 181 | 122 | 71 | 22 |
| 14 | 19 | 32 | 35 | 52 | 97 | 97 | 66 | 41 | 322 | 132 | 44 | 22 |
| 15 | 20 | 32 | 123 | 51 | 87 | 94 | 65 | 39 | 150 | 79 | 38 | 22 |
| 16 | 20 | 32 | 302 | 53 | 93 | 113 | 64 | 38 | 96 | 61 | 36 | 23 |
| 17 | 20 | 32 | 236 | 54 | 198 | 115 | 69 | 38 | 110 | 53 | 35 | 23 |
| 18 | 20 | 32 | 116 | 54 | 313 | 99 | 125 | 37 | 135 | 47 | 48 | 22 |
| 19 | 20 | 31 | 87 | 55 | 199 | 89 | 90 | 42 | 90 | 41 | 42 | 21 |
| 20 | 20 | 32 | 66 | 60 | 152 | 106 | 73 | 93 | 72 | 38 | 34 | 26 |
| 21 | 20 | 33 | 75 | 68 | 127 | 114 | 72 | 59 | 63 | 50 | 31 | 31 |
| 22 | 21 | 31 | 76 | 70 | 108 | 101 | 66 | 49 | 58 | 43 | 30 | 28 |
| 23 | 24 | 29 | 90 | 71 | 94 | 87 | 61 | 69 | 57 | 38 | 30 | 27 |
| 24 | 33 | 38 | 88 | 71 | 89 | 82 | 58 | 79 | 50 | 52 | 29 | 25 |
| 25 | 33 | 54 | 143 | 70 | 83 | 79 | 57 | 260 | 47 | 47 | 36 | 23 |
| 26 | 114 | 43 | 262 | 62 | 75 | 101 | 87 | 113 | 46 | 38 | 28 | 28 |
| 27 | 419 | 37 | 142 | 60 | 83 | 96 | 132 | 68 | 45 | 35 | 26 | 72 |
| 28 | 1270 | 35 | 95 | 58 | 110 | 79 | 104 | 71 | 47 | 33 | 33 | 40 |
| 29 | 336 | 33 | 77 | 56 | --- | 75 | 79 | 257 | 44 | 34 | 33 | 30 |
| 30 | 94 | 33 | 64 | 65 | --- | 73 | 68 | 318 | 43 | 33 | 28 | 28 |
| 31 | 69 | --- | 62 | 75 | --- | 73 | --- | 257 | --- | 38 | 27 | --- |
| TOTAL | 2794 | 1104 | 2609 | 3717 | 6610 | 4001 | 2314 | 2601 | 3967 | 2038 | 1301 | 808 |
| MEAN | 90.1 | 36.8 | 84.2 | 120 | 236 | 129 | 77.1 | 83.9 | 132 | 65.7 | 42.0 | 26.9 |
| MAX | 1270 | 57 | 302 | 723 | 2230 | 386 | 132 | 318 | 631 | 201 | 107 | 72 |
| MIN | 15 | 29 | 30 | 51 | 75 | 73 | 57 | 37 | 43 | 33 | 26 | 21 |
| CFSM | .92 | .38 | .86 | 1.22 | 2.41 | 1.32 | .79 | .86 | 1.35 | .67 | .43 | .27 |
| IN. | 1.06 | .42 | .99 | 1.41 | 2.51 | 1.52 | .88 | .99 | 1.51 | .77 | .49 | .31 |

| | | | | | | | |
|-------------|-------|-------|-----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 19677 | MEAN 53.9 | MAX 1270 | MIN 10 | CFSM .55 | IN 7.47 |
| WTR YR 1982 | TOTAL | 33864 | MEAN 92.8 | MAX 2230 | MIN 15 | CFSM .95 | IN 12.85 |

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA

LOCATION.--Lat 36°54'54", long 78°44'28", Halifax County, Hydrologic Unit 03010102, on right bank 14 ft (4 m) downstream from bridge on State Highway 746, 2.8 mi (4.5 km) northwest of Randolph, 3.6 mi (5.8 km) upstream from Roanoke Creek, and at mile 227.3 (365.7 km).
DRAINAGE AREA.--2,977 mi² (7,710 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1900 to September 1906, October 1927 to September 1930, October 1950 to current year.
Monthly discharge only for some periods, published in WSP 1303. Prior to October 1902, published as Staunton River at Randolph. Gage heights collected since 1905 at this site or at former site are contained in reports of the National Weather Service.
REVISED RECORDS.--WSP 1203: 1928-30. WSP 1303: 1901-6. WSP 2104: Drainage area.
GAGE.--Water-stage recorder. Datum of gage is 307.59 ft (93.753 m) National Geodetic Vertical Datum of 1929.
Aug. 27, 1900, to Oct. 13, 1902, nonrecording gage at site 3.2 mi (5.1 km) downstream at datum about 5.9 ft (1.80 m) lower. Oct. 14, 1902, to Aug. 11, 1906, and Oct. 1, 1927, to Mar. 31, 1930, nonrecording gage at site of original gage at datum 3.93 ft (1.198 m) lower than present datum.
REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 68.7 mi (110.5 km) upstream and since 1963 by Smith Mountain Lake (station 02057400) 86.7 mi (139.5 km) upstream. Gage-height and Corps of Engineers satellite telemeters at station.
AVERAGE DISCHARGE.--41 years, 3,048 ft³/s (86.32 m³/s), 13.90 in/yr (353 mm/yr), unadjusted.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,000 ft³/s (2,750 m³/s) Dec. 31, 1901, gage height, 35.0 ft (10.67 m), from graph based on gage readings, site and datum then in use; minimum daily, 179 ft³/s (5.07 m³/s) Sept. 8, 1965, July 7, 1970.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 41.6 ft (12.68 m), present site and datum, discharge, 150,000 ft³/s (4,250 m³/s), from information by Corps of Engineers.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,100 ft³/s (683 m³/s) Feb. 4, gage height, 23.86 ft (7.273 m); minimum, 463 ft³/s (13.1 m³/s) Sept. 7, gage height, 4.72 ft (1.439 m); minimum daily, 480 ft³/s (13.6 m³/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | | |
|-------------|-------|--------|-------|-------|--------|--------|-------|-------|--------|-------|-------|-------|-----|-------|
| 1 | 621 | 1060 | 742 | 2020 | 2800 | 1460 | 2290 | 1910 | 3720 | 3340 | 967 | 1340 | | |
| 2 | 627 | 949 | 760 | 2890 | 5500 | 3850 | 2470 | 1840 | 4340 | 1990 | 796 | 1230 | | |
| 3 | 648 | 904 | 828 | 3080 | 9990 | 4220 | 3410 | 2130 | 4360 | 1550 | 997 | 1170 | | |
| 4 | 637 | 878 | 867 | 10100 | 21700 | 5280 | 1990 | 1970 | 5560 | 1120 | 1360 | 1130 | | |
| 5 | 641 | 833 | 827 | 14200 | 19800 | 5110 | 1010 | 2000 | 7610 | 1820 | 1390 | 898 | | |
| 6 | 631 | 800 | 768 | 12300 | 10200 | 5150 | 1990 | 1870 | 5330 | 3000 | 1400 | 562 | | |
| 7 | 571 | 780 | 731 | 5640 | 4030 | 5180 | 2330 | 1810 | 2980 | 2030 | 1420 | 480 | | |
| 8 | 575 | 796 | 709 | 3730 | 2430 | 8810 | 1680 | 1820 | 4110 | 1520 | 1560 | 866 | | |
| 9 | 578 | 809 | 703 | 4040 | 4080 | 10800 | 1470 | 1750 | 5580 | 1470 | 1330 | 1290 | | |
| 10 | 573 | 747 | 675 | 2130 | 4280 | 5700 | 1750 | 1750 | 5230 | 2650 | 3320 | 1180 | | |
| 11 | 569 | 745 | 693 | 932 | 3270 | 4670 | 1310 | 1750 | 8790 | 1490 | 3200 | 1110 | | |
| 12 | 580 | 770 | 669 | 750 | 1980 | 4320 | 890 | 1730 | 6940 | 2400 | 2700 | 1090 | | |
| 13 | 587 | 757 | 673 | 800 | 1390 | 3900 | 1260 | 1700 | 5840 | 2410 | 2110 | 545 | | |
| 14 | 590 | 747 | 705 | 1800 | 1300 | 1910 | 1800 | 1660 | 16200 | 3450 | 1440 | 661 | | |
| 15 | 580 | 741 | 1050 | 1700 | 1250 | 1370 | 1780 | 1660 | 16500 | 3480 | 1190 | 1180 | | |
| 16 | 583 | 709 | 3540 | 1600 | 1700 | 5510 | 1860 | 1710 | 8900 | 2180 | 1200 | 1250 | | |
| 17 | 609 | 714 | 3180 | 1000 | 6720 | 4790 | 1600 | 1800 | 6640 | 1830 | 1110 | 1160 | | |
| 18 | 599 | 736 | 1860 | 1500 | 6700 | 3010 | 1310 | 1780 | 5120 | 1140 | 1770 | 1000 | | |
| 19 | 623 | 756 | 1420 | 1600 | 6770 | 1960 | 1510 | 1670 | 3460 | 744 | 1810 | 838 | | |
| 20 | 608 | 750 | 1130 | 1400 | 6260 | 2340 | 1530 | 2180 | 1810 | 1280 | 1390 | 511 | | |
| 21 | 528 | 713 | 963 | 1700 | 4100 | 2010 | 1790 | 2730 | 1840 | 1570 | 1290 | 872 | | |
| 22 | 551 | 698 | 1130 | 2500 | 2980 | 3280 | 1930 | 1980 | 3070 | 1430 | 985 | 1270 | | |
| 23 | 594 | 714 | 1260 | 5600 | 4370 | 5220 | 1810 | 2080 | 2450 | 1190 | 617 | 1220 | | |
| 24 | 634 | 725 | 1340 | 1650 | 3440 | 2500 | 1750 | 2710 | 2130 | 1890 | 977 | 1170 | | |
| 25 | 695 | 838 | 1850 | 1380 | 2670 | 1980 | 1800 | 3110 | 1930 | 1490 | 1410 | 948 | | |
| 26 | 889 | 873 | 3230 | 2600 | 2740 | 2050 | 1890 | 2250 | 1800 | 1100 | 1230 | 624 | | |
| 27 | 4430 | 825 | 2190 | 2600 | 2730 | 2660 | 2220 | 2160 | 1240 | 1190 | 1140 | 800 | | |
| 28 | 8610 | 800 | 1560 | 1970 | 1830 | 2070 | 2790 | 4190 | 940 | 1580 | 1090 | 1240 | | |
| 29 | 4010 | 759 | 1280 | 1090 | --- | 1200 | 2570 | 3750 | 1620 | 1570 | 875 | 1220 | | |
| 30 | 2000 | 736 | 1090 | 1080 | --- | 2780 | 2130 | 4230 | 3000 | 1540 | 556 | 1190 | | |
| 31 | 1290 | --- | 1010 | 1320 | --- | 2270 | --- | 3470 | --- | 1200 | 885 | --- | | |
| TOTAL | 36261 | 23662 | 39433 | 96702 | 147010 | 117360 | 55920 | 69150 | 149040 | 56644 | 43515 | 30045 | | |
| MEAN | 1170 | 789 | 1272 | 3119 | 5250 | 3786 | 1864 | 2231 | 4968 | 1827 | 1404 | 1002 | | |
| MAX | 8610 | 1060 | 3540 | 14200 | 21700 | 10800 | 3410 | 4230 | 16500 | 3480 | 3320 | 1340 | | |
| MIN | 528 | 698 | 669 | 750 | 1250 | 1200 | 890 | 1660 | 940 | 744 | 556 | 480 | | |
| (*) | +8 | -58 | +421 | +432 | +62 | +22 | +67 | +19 | -279 | -28 | -119 | -244 | | |
| MEAN# | 1178 | 731 | 1693 | 3551 | 5312 | 3808 | 1931 | 2250 | 4689 | 1798 | 1285 | 758 | | |
| CFSM# | .40 | .25 | .57 | 1.19 | 1.78 | 1.28 | .65 | .76 | 1.58 | .60 | .43 | .25 | | |
| IN# | .46 | .27 | .66 | 1.38 | 1.86 | 1.48 | .72 | .87 | 1.76 | .70 | .50 | .28 | | |
| CAL YR 1981 | TOTAL | 406052 | MEAN | 1112 | MAX | 8610 | MIN | 345 | MEAN# | 1209 | CFSM# | .41 | IN# | 5.51 |
| WTR YR 1982 | TOTAL | 864742 | MEAN | 2369 | MAX | 21700 | MIN | 480 | MEAN# | 2396 | CFSM# | .80 | IN# | 10.93 |

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

Adjusted for change in contents.

ROANOKE RIVER BASIN

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1950 to September 1956, April 1968 to current year.

WATER TEMPERATURES: October 1950 to September 1956, April 1968 to current year.

SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 470 micromhos May 9, 1976; minimum daily, 26 micromhos Jan. 1, 1979.

WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 15, 1968; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 170 micromhos Jan. 25, 27; minimum daily, 71 micromhos May 29.

WATER TEMPERATURES: Maximum daily, 26.0°C July 22, 23; minimum daily, 1.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|--|--|--|--|--|---|
| DEC | | | | | | | | | | | |
| 07... | 1315 | 730 | 120 | 7.6 | 5.0 | 15 | 44 | 11 | 4.1 | 6.1 | 1.8 |
| FEB | | | | | | | | | | | |
| 02... | 1245 | 6910 | 85 | 7.3 | 2.0 | 80 | 30 | 7.2 | 2.8 | 4.2 | 1.8 |
| MAR | | | | | | | | | | | |
| 22... | 1130 | 3970 | 98 | 7.2 | 10.5 | 10 | 34 | 8.3 | 3.3 | 4.6 | 1.5 |
| MAY | | | | | | | | | | | |
| 10... | 1445 | 1820 | 138 | 7.7 | 19.5 | <1 | 51 | 12 | 5.0 | 6.5 | 1.9 |
| JUN | | | | | | | | | | | |
| 17... | 0715 | 7940 | 135 | 7.5 | 21.0 | 7 | 52 | 12 | 5.3 | 6.2 | 2.0 |
| JUL | | | | | | | | | | | |
| 26... | 1415 | 1040 | 137 | 7.6 | 27.5 | 15 | 49 | 12 | 4.6 | 5.9 | 1.9 |
| SEP | | | | | | | | | | | |
| 13... | 1430 | 531 | 162 | 7.8 | 24.5 | 10 | 57 | 14 | 5.4 | 6.9 | 2.1 |

< Actual value is known to be less than the value shown.

| DATE | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (MG/L AS FE) |
|-------|---|---|---|--|---|--|---|---|---|--|--|
| DEC | | | | | | | | | | | |
| 07... | 43 | 9.6 | 5.7 | .1 | 7.9 | 91 | 72 | <.010 | .19 | <.010 | 160 |
| FEB | | | | | | | | | | | |
| 02... | 25 | 10 | 4.8 | <.1 | 9.6 | 60 | 56 | <.010 | .56 | .030 | 170 |
| MAR | | | | | | | | | | | |
| 22... | 32 | 8.9 | 4.5 | <.1 | 10 | 62 | 60 | <.010 | .27 | <.010 | 130 |
| MAY | | | | | | | | | | | |
| 10... | 46 | 10 | 6.2 | .1 | 7.7 | 73 | 77 | .030 | .21 | <.010 | 47 |
| JUN | | | | | | | | | | | |
| 17... | 43 | 12 | 6.3 | .1 | 8.2 | 83 | 78 | <.010 | .41 | .010 | 110 |
| JUL | | | | | | | | | | | |
| 26... | 44 | 9.0 | 5.9 | .1 | 10 | 83 | 76 | <.010 | .29 | .020 | 85 |
| SEP | | | | | | | | | | | |
| 13... | 54 | 10 | 7.4 | .2 | 8.6 | 96 | 87 | <.010 | .22 | <.010 | 71 |

< Actual value is known to be less than the value shown.

02066000 ROANOKE RIVER AT RANDOLPH, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 153 | 116 | 140 | 160 | 100 | 109 | 117 | 113 | 95 | --- | --- | 143 |
| 2 | --- | 116 | 145 | 120 | 95 | 84 | 119 | 116 | 101 | --- | --- | 145 |
| 3 | 155 | 119 | 143 | 100 | 140 | 108 | 119 | 117 | 137 | --- | 125 | 125 |
| 4 | 157 | 119 | 153 | 100 | 155 | 99 | 120 | 116 | 138 | --- | 130 | 143 |
| 5 | 154 | 123 | 130 | 90 | 150 | 114 | 123 | 120 | 126 | --- | 130 | 140 |
| 6 | 163 | 134 | 135 | --- | 160 | 113 | 120 | 121 | 74 | 118 | 130 | 145 |
| 7 | 164 | 136 | 135 | --- | 138 | 82 | 120 | 122 | 72 | 82 | 137 | 150 |
| 8 | 166 | 139 | 140 | 163 | 140 | 83 | 118 | 123 | 75 | 82 | 137 | 133 |
| 9 | 155 | 139 | 130 | 160 | 160 | 116 | 101 | 123 | 125 | 83 | 137 | 140 |
| 10 | 155 | 155 | 123 | 158 | 115 | 120 | 99 | 122 | 92 | 83 | 139 | 150 |
| 11 | 150 | 150 | 125 | 143 | 163 | 114 | 104 | 128 | 90 | 84 | 139 | 155 |
| 12 | 155 | 150 | 125 | 155 | 109 | 116 | 104 | 125 | 83 | 87 | 139 | 153 |
| 13 | 156 | 148 | 125 | --- | 106 | 104 | 111 | 130 | 93 | 88 | 130 | 150 |
| 14 | 153 | 145 | 130 | --- | 104 | 106 | 114 | 135 | 93 | 88 | 135 | 140 |
| 15 | 152 | 150 | 120 | --- | 119 | 102 | 116 | 134 | 120 | 117 | 136 | 143 |
| 16 | 157 | 150 | 150 | --- | 115 | 82 | 109 | 136 | 121 | 115 | 136 | 155 |
| 17 | 151 | 150 | 130 | --- | 77 | 115 | 102 | 137 | 125 | 114 | 125 | 155 |
| 18 | 149 | 155 | 133 | --- | 104 | 117 | 103 | 130 | 96 | 118 | 120 | 143 |
| 19 | 149 | 150 | 110 | --- | 107 | 107 | 103 | 136 | --- | 117 | 120 | 140 |
| 20 | 156 | 155 | --- | --- | 109 | 100 | 103 | 138 | --- | 104 | 120 | 157 |
| 21 | 155 | 158 | 125 | --- | 108 | 99 | 103 | 88 | --- | 115 | 125 | 155 |
| 22 | 149 | 153 | 155 | --- | 109 | 98 | 118 | 83 | --- | 102 | 125 | 123 |
| 23 | 154 | 150 | 160 | --- | 109 | 118 | 118 | 83 | --- | 132 | 150 | --- |
| 24 | 154 | 143 | 160 | 155 | 119 | 109 | 119 | 84 | --- | 123 | 130 | 120 |
| 25 | 139 | 140 | 155 | 170 | 118 | 111 | 121 | --- | --- | 133 | 153 | 123 |
| 26 | 138 | 155 | 130 | 160 | 120 | 99 | 119 | 132 | --- | 120 | 135 | 120 |
| 27 | --- | 150 | 130 | 170 | 119 | 105 | --- | 135 | --- | 100 | 145 | 123 |
| 28 | 75 | 143 | 130 | 160 | 116 | 102 | 101 | 128 | --- | --- | 145 | 118 |
| 29 | 82 | 140 | 130 | 158 | --- | 102 | 100 | 71 | --- | --- | 150 | 127 |
| 30 | 96 | 140 | 130 | 155 | --- | 119 | 107 | 93 | --- | --- | 145 | 120 |
| 31 | 109 | --- | 155 | 123 | --- | 120 | --- | 96 | --- | --- | 150 | --- |
| MEAN | 145 | 142 | 136 | 144 | 121 | 106 | 111 | 117 | 103 | 105 | 135 | 139 |
| WTR YR 1982 | MEAN | 126 | MAX | 170 | MIN | 71 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 17.0 | 12.0 | 7.0 | 5.0 | 3.0 | 3.0 | 14.0 | 15.0 | 22.0 | --- | --- | --- |
| 2 | --- | 12.0 | 7.5 | 4.0 | 4.0 | 4.0 | 13.0 | 15.0 | 20.5 | --- | --- | --- |
| 3 | 15.0 | 13.0 | 7.0 | 5.0 | 6.5 | 5.0 | 12.0 | 15.0 | 21.0 | --- | --- | --- |
| 4 | 15.0 | 13.0 | 7.0 | 5.0 | 5.0 | 6.0 | 11.0 | 15.0 | 21.0 | --- | --- | --- |
| 5 | 14.0 | 13.5 | 7.0 | 7.0 | 5.0 | 4.0 | 10.0 | 17.0 | 19.0 | --- | --- | --- |
| 6 | 16.0 | 12.0 | 7.0 | --- | 6.5 | 3.0 | 10.0 | 17.5 | 19.0 | 24.0 | --- | --- |
| 7 | 14.0 | 11.5 | 7.0 | --- | 5.0 | 6.0 | 8.0 | 18.0 | 19.0 | 24.0 | 24.0 | --- |
| 8 | 13.0 | 8.0 | 9.0 | 7.0 | 5.0 | 6.0 | 9.0 | 15.0 | 20.0 | 24.0 | 23.0 | --- |
| 9 | 11.0 | 7.5 | 7.0 | 7.0 | 4.0 | 8.0 | 9.0 | 16.0 | 20.5 | 24.0 | 23.5 | --- |
| 10 | 11.0 | 8.0 | 7.5 | 1.0 | 4.0 | 7.5 | 11.0 | 17.0 | 19.5 | 25.0 | 24.0 | --- |
| 11 | 11.0 | 8.0 | 6.0 | 3.0 | 3.0 | 8.0 | 11.5 | 16.0 | 19.5 | 24.5 | 23.5 | --- |
| 12 | 10.0 | 8.0 | 6.0 | 1.0 | 3.0 | 12.0 | 11.5 | 16.0 | 19.0 | 25.0 | 22.0 | --- |
| 13 | 10.0 | 7.0 | 5.5 | --- | 5.0 | 9.0 | 14.0 | --- | 19.5 | 25.0 | 22.0 | --- |
| 14 | 10.0 | 6.5 | 5.0 | --- | 4.5 | 9.0 | 14.0 | 19.0 | 19.5 | 24.0 | 23.5 | 16.0 |
| 15 | 10.5 | 6.5 | 6.0 | --- | 5.0 | 10.0 | 15.0 | 19.0 | 20.0 | 25.0 | 23.5 | 16.0 |
| 16 | 12.5 | 6.5 | 5.0 | --- | 5.0 | 8.5 | 15.0 | 19.0 | 20.0 | 24.5 | 24.0 | --- |
| 17 | 12.0 | 10.0 | 5.0 | --- | 4.0 | 9.0 | 15.0 | 20.0 | 20.0 | 24.5 | 23.0 | 15.0 |
| 18 | 12.0 | 9.5 | 5.5 | --- | 4.0 | 11.0 | 15.0 | 19.5 | 20.0 | 25.5 | 23.0 | 15.0 |
| 19 | 10.5 | 9.0 | 4.0 | --- | 4.5 | 12.0 | 14.0 | 21.0 | --- | 25.5 | 23.0 | 16.0 |
| 20 | 8.0 | 8.5 | --- | --- | 5.0 | 10.0 | 14.0 | 20.5 | --- | 25.0 | 23.0 | 15.0 |
| 21 | 7.0 | 7.5 | 5.0 | --- | 7.0 | 10.0 | 15.0 | 19.5 | --- | 25.0 | 23.0 | 14.0 |
| 22 | 8.0 | 4.0 | 3.0 | --- | 8.0 | 10.0 | 18.0 | 21.0 | --- | 26.0 | 23.0 | 17.0 |
| 23 | 8.0 | 3.0 | 5.5 | --- | 7.0 | 10.0 | 13.0 | 21.0 | --- | 26.0 | 22.5 | --- |
| 24 | 11.0 | 7.0 | 3.0 | 1.0 | 8.0 | 10.0 | 15.0 | 21.0 | --- | 25.5 | 23.0 | 18.0 |
| 25 | 11.0 | 7.0 | 2.0 | 1.0 | 7.0 | 10.0 | 15.0 | --- | --- | 25.5 | 23.5 | 17.0 |
| 26 | 11.0 | 7.0 | 3.0 | 1.0 | 5.0 | 11.0 | 16.0 | 20.5 | --- | 25.5 | --- | 16.0 |
| 27 | --- | 9.0 | 5.0 | 3.0 | 4.0 | 10.0 | --- | 20.5 | --- | 25.5 | --- | 17.0 |
| 28 | 14.5 | 7.0 | 6.0 | 3.0 | 3.0 | 8.0 | 14.0 | 21.0 | --- | --- | --- | 18.0 |
| 29 | 17.0 | 6.0 | 6.0 | 4.0 | --- | 8.0 | 14.0 | 21.0 | --- | --- | --- | 17.0 |
| 30 | 13.0 | 6.0 | 4.0 | 1.0 | --- | 13.0 | 15.0 | 21.5 | --- | --- | --- | 17.5 |
| 31 | 13.0 | --- | 4.0 | 2.0 | --- | 13.0 | --- | 22.0 | --- | --- | --- | --- |
| MEAN | 12.0 | 8.5 | 5.5 | 3.5 | 5.0 | 8.5 | 13.0 | 18.5 | 20.0 | 25.0 | 23.0 | 16.5 |
| WTR YR 1982 | MEAN | 12.5 | MAX | 26.0 | | | | | | | | |

ROANOKE RIVER BASIN

02067800; 02067820 TALBOTT AND TOWNES RESERVOIRS NEAR KIBLER, VA

LOCATION.--Talbot Dam: Lat 36°40'39", long 80°23'52", Patrick County, Hydrologic Unit 03010103, on Dan River 4.5 mi (7.2 km) northeast of Kibler. Townes Dam: Lat 36°41'10", long 80°25'50", Patrick County, Hydrologic Unit 03010103, on Dan River about 4 mi (6 km) north of Kibler.

DRAINAGE AREA.--Talbot Dam, 20.2 mi² (52.3 km²); Townes Dam, 32.9 mi² (85.2 km²).

PERIOD OF RECORD.--February 1939 to December 1945, January 1948 to September 1960 (published in WSP 1723), and October 1960 to current year.

REMARKS.--The two reservoirs are operated as a unit for storage of water for Pinnacles hydroelectric plant. Total capacity of Talbot Reservoir, 8,035 acre-ft (9.91 hm³), and Townes Reservoir, 1,377 acre-ft (1.70 hm³). Storage began in Talbot Reservoir on Feb. 13, 1939, and in Townes Reservoir several months earlier.

COOPERATION.--Records furnished by city of Danville.

COMBINED MONTHEND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 5480 | |
| Oct. 31..... | 6160 | +680 |
| Nov. 30..... | 5730 | -430 |
| Dec. 31..... | 6200 | +470 |
| CAL YR 1981..... | | +870 |
| Jan. 31..... | 7690 | +1490 |
| Feb. 28..... | 7790 | +100 |
| Mar. 31..... | 7300 | -490 |
| Apr. 30..... | 7980 | +680 |
| May 31..... | 7760 | -220 |
| June 30..... | 7440 | -320 |
| July 31..... | 7080 | -360 |
| Aug. 31..... | 7320 | +240 |
| Sept. 30..... | 6880 | -440 |
| WTR YR 1982..... | | +1400 |

02068500 DAN RIVER NEAR FRANCISCO, NC

LOCATION.--Lat 36°30'53", long 80°18'11", Stokes County, Hydrologic Unit 03010103, on left bank 200 ft (61 m) upstream from bridge on State Highway 704, 700 ft (213 m) downstream from Georges Mill, 0.2 mi (0.3 km) downstream from Elk Creek, 3 mi (5 km) east of Francisco, and 7.9 mi (12.7 km) downstream from Little Dan River.

DRAINAGE AREA.--129 mi² (334 km²).

PERIOD OF RECORD.--August 1924 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1938-50 (monthly runoff). WSP 1433: 1925-26, 1928-29, 1931, 1942, 1948. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 831.99 ft (253.591 m) National Geodetic Vertical Datum of 1929.

Prior to Nov. 15, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good. Considerable diurnal fluctuation and regulation from mills and powerplants above station. Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) above Pinnacles hydroelectric plant in Virginia, 28 mi (45 km) above station, were completed in 1938. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 190 ft³/s (5.381 m³/s), 20.00 in/yr (508 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s (535 m³/s) Sept. 22, 1979, gage height, 18.11 ft (5.520 m), from rating curve extended above 8,400 ft³/s (238 m³/s) on basis of slope-area measurement of peak flow; minimum, 7.1 ft³/s (0.20 m³/s) Sept. 8, 1932, gage height, 0.43 ft (0.131 m); minimum daily, 27 ft³/s (0.76 m³/s) Aug. 24, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1916 reached a stage of about 15 ft (4.6 m), from information by local residents, discharge, 16,000 ft³/s (453 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 0530 | 2400 68.0 | 4.95 1.509 | May 28 | 0530 | 3320 94.0 | 5.86 1.786 |
| Feb. 3 | 1330 | 2240 63.4 | 4.79 1.460 | June 13 | 0630 | *6370 180 | 8.43 2.569 |
| Apr. 27 | 2100 | 2890 81.8 | 5.44 1.658 | | | | |

Minimum discharge, 37 ft³/s (1.05 m³/s) Oct. 9, gage height, 1.02 ft (0.311 m); minimum daily, 44 ft³/s (1.25 m³/s) Oct. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|-------|------|------|------|
| 1 | 47 | 82 | 99 | 278 | 225 | 227 | 149 | 353 | 247 | 191 | 119 | 115 |
| 2 | 112 | 79 | 107 | 160 | 161 | 276 | 148 | 315 | 229 | 136 | 107 | 112 |
| 3 | 50 | 85 | 67 | 176 | 1160 | 232 | 204 | 305 | 408 | 132 | 114 | 162 |
| 4 | 47 | 83 | 67 | 627 | 653 | 255 | 228 | 244 | 528 | 129 | 115 | 112 |
| 5 | 47 | 89 | 71 | 361 | 314 | 214 | 193 | 197 | 479 | 130 | 143 | 91 |
| 6 | 52 | 85 | 64 | 216 | 337 | 155 | 250 | 180 | 338 | 176 | 159 | 90 |
| 7 | 78 | 80 | 60 | 171 | 235 | 217 | 240 | 205 | 286 | 160 | 149 | 89 |
| 8 | 45 | 73 | 66 | 145 | 197 | 230 | 175 | 212 | 252 | 157 | 129 | 89 |
| 9 | 44 | 69 | 63 | 175 | 241 | 241 | 204 | 181 | 234 | 218 | 454 | 89 |
| 10 | 48 | 93 | 97 | 185 | 250 | 264 | 145 | 160 | 380 | 215 | 167 | 90 |
| 11 | 46 | 96 | 113 | 238 | 214 | 230 | 134 | 165 | 231 | 157 | 167 | 90 |
| 12 | 48 | 74 | 79 | 183 | 160 | 225 | 131 | 134 | 376 | 170 | 133 | 89 |
| 13 | 47 | 97 | 77 | 148 | 159 | 220 | 129 | 157 | 2220 | 169 | 117 | 88 |
| 14 | 48 | 90 | 67 | 140 | 152 | 216 | 149 | 188 | 632 | 153 | 112 | 94 |
| 15 | 48 | 55 | 196 | 135 | 169 | 217 | 206 | 195 | 436 | 165 | 109 | 103 |
| 16 | 48 | 55 | 206 | 138 | 252 | 214 | 176 | 142 | 394 | 223 | 106 | 128 |
| 17 | 45 | 78 | 143 | 112 | 270 | 187 | 163 | 126 | 384 | 201 | 114 | 108 |
| 18 | 47 | 74 | 105 | 138 | 270 | 181 | 192 | 215 | 372 | 197 | 104 | 85 |
| 19 | 47 | 71 | 112 | 144 | 225 | 173 | 139 | 179 | 335 | 142 | 109 | 84 |
| 20 | 50 | 70 | 134 | 124 | 182 | 203 | 181 | 125 | 316 | 172 | 101 | 91 |
| 21 | 66 | 71 | 136 | 150 | 172 | 217 | 167 | 164 | 313 | 156 | 107 | 89 |
| 22 | 57 | 88 | 145 | 150 | 162 | 172 | 162 | 149 | 214 | 162 | 97 | 120 |
| 23 | 55 | 73 | 94 | 138 | 156 | 176 | 157 | 178 | 158 | 141 | 97 | 93 |
| 24 | 63 | 103 | 106 | 123 | 161 | 153 | 154 | 215 | 188 | 226 | 99 | 89 |
| 25 | 54 | 108 | 129 | 127 | 189 | 155 | 155 | 143 | 171 | 151 | 136 | 89 |
| 26 | 106 | 63 | 120 | 122 | 194 | 195 | 373 | 163 | 236 | 132 | 135 | 104 |
| 27 | 910 | 59 | 108 | 141 | 234 | 160 | 876 | 166 | 210 | 181 | 100 | 110 |
| 28 | 226 | 56 | 101 | 157 | 194 | 153 | 1060 | 966 | 243 | 184 | 101 | 95 |
| 29 | 124 | 54 | 107 | 159 | --- | 158 | 467 | 581 | 282 | 164 | 95 | 91 |
| 30 | 97 | 54 | 101 | 130 | --- | 151 | 389 | 467 | 221 | 112 | 93 | 91 |
| 31 | 88 | --- | 122 | 113 | --- | 149 | --- | 287 | --- | 116 | 103 | --- |
| TOTAL | 2890 | 2307 | 3262 | 5504 | 7288 | 6216 | 7496 | 7457 | 11313 | 5118 | 3991 | 2970 |
| MEAN | 93.2 | 76.9 | 105 | 178 | 260 | 201 | 250 | 241 | 377 | 165 | 129 | 99.0 |
| MAX | 910 | 108 | 206 | 627 | 1160 | 276 | 1060 | 966 | 2220 | 226 | 454 | 162 |
| MIN | 44 | 54 | 60 | 112 | 152 | 149 | 129 | 125 | 158 | 112 | 93 | 84 |
| (*) | +11 | -7 | +8 | +24 | +2 | -8 | +11 | -4 | -5 | -6 | +4 | -7 |

CAL YR 1981 TOTAL 35749 MEAN 97.9 MAX 910 MIN 27
WTR YR 1982 TOTAL 65812 MEAN 180 MAX 2220 MIN 44

MEAN# 98.9 CFSM# .77 IN# 10.45
MEAN# 182 CFSM# 1.41 IN# 19.14

* Change in contents, equivalent in cubic feet per second, in Talbott and Townes Reservoirs; furnished by city of Danville, Va.

* Adjusted for change in contents.

02069700 SOUTH MAYO RIVER NEAR NETTLERIDGE, VA

LOCATION.--Lat 36°34'15", long 80°07'47", Patrick County, Hydrologic Unit 03010103, on right bank 60 ft (18 m) downstream from bridge on State Highway 700, 1.2 mi (1.9 km) southeast of Nettleridge, 1.4 mi (2.3 km) downstream from Russell Creek, and 3.6 mi (5.8 km) upstream from Spoon Creek.

DRAINAGE AREA.--84.6 mi² (219.1 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-74-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 871.60 ft (265.664 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 9, 1964, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--20 years, 125 ft³/s (3.540 m³/s), 20.07 in/yr (510 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) Sept. 22, 1979, gage height, 22.00 ft (6.706 m), from rating curve extended above 2,900 ft³/s (82 m³/s) on basis of contracted-opening measurements at gage heights 18.32 ft (5.584 m) and 22.00 ft (6.706 m); minimum, 20 ft³/s (0.57 m³/s) Aug. 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s (37 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Oct. 27 | 0700 | 1530 43.3 | 7.62 2.323 | Apr. 27 | 2330 | 2000 56.6 | 8.60 2.621 |
| Feb. 3 | 1600 | 1350 38.2 | 7.22 2.201 | June 13 | 0730 | *2120 60.0 | 8.83 2.691 |

Minimum discharge, 27 ft³/s (0.76 m³/s) Oct. 20, gage height, 2.97 ft (0.905 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 31 | 59 | 43 | 212 | 132 | 119 | 86 | 178 | 170 | 108 | 71 | 63 |
| 2 | 32 | 56 | 64 | 148 | 98 | 158 | 82 | 162 | 144 | 100 | 63 | 59 |
| 3 | 32 | 52 | 48 | 177 | 698 | 184 | 113 | 149 | 125 | 96 | 59 | 55 |
| 4 | 31 | 50 | 49 | 588 | 432 | 154 | 114 | 138 | 143 | 92 | 57 | 48 |
| 5 | 31 | 55 | 52 | 280 | 215 | 138 | 101 | 131 | 222 | 92 | 58 | 45 |
| 6 | 31 | 68 | 45 | 174 | 162 | 132 | 104 | 125 | 152 | 92 | 80 | 45 |
| 7 | 30 | 50 | 44 | 140 | 137 | 188 | 92 | 120 | 131 | 88 | 60 | 44 |
| 8 | 28 | 47 | 43 | 119 | 124 | 168 | 92 | 116 | 119 | 88 | 67 | 44 |
| 9 | 28 | 46 | 41 | 102 | 122 | 144 | 104 | 110 | 113 | 107 | 212 | 43 |
| 10 | 29 | 45 | 39 | 82 | 119 | 132 | 98 | 106 | 150 | 124 | 101 | 44 |
| 11 | 30 | 44 | 38 | 66 | 106 | 125 | 94 | 101 | 130 | 95 | 100 | 44 |
| 12 | 31 | 42 | 39 | 62 | 98 | 119 | 90 | 95 | 185 | 91 | 116 | 44 |
| 13 | 30 | 41 | 40 | 60 | 100 | 113 | 87 | 91 | 1250 | 110 | 78 | 42 |
| 14 | 30 | 41 | 48 | 60 | 94 | 107 | 96 | 88 | 492 | 107 | 70 | 44 |
| 15 | 30 | 41 | 156 | 61 | 92 | 107 | 120 | 85 | 268 | 95 | 66 | 51 |
| 16 | 30 | 40 | 183 | 63 | 107 | 102 | 101 | 82 | 205 | 106 | 62 | 44 |
| 17 | 28 | 40 | 100 | 67 | 182 | 100 | 102 | 86 | 258 | 88 | 59 | 40 |
| 18 | 28 | 39 | 78 | 70 | 176 | 94 | 110 | 88 | 232 | 82 | 59 | 39 |
| 19 | 29 | 38 | 65 | 77 | 150 | 94 | 98 | 85 | 168 | 80 | 57 | 38 |
| 20 | 28 | 40 | 58 | 82 | 134 | 102 | 96 | 82 | 149 | 82 | 55 | 44 |
| 21 | 28 | 39 | 64 | 118 | 124 | 116 | 94 | 106 | 142 | 75 | 53 | 44 |
| 22 | 30 | 38 | 72 | 119 | 114 | 100 | 87 | 102 | 131 | 74 | 51 | 70 |
| 23 | 34 | 38 | 87 | 101 | 106 | 91 | 85 | 88 | 126 | 76 | 51 | 50 |
| 24 | 44 | 49 | 78 | 100 | 101 | 90 | 82 | 106 | 119 | 110 | 52 | 45 |
| 25 | 34 | 51 | 100 | 88 | 95 | 91 | 81 | 143 | 114 | 82 | 71 | 45 |
| 26 | 75 | 43 | 98 | 83 | 88 | 119 | 338 | 120 | 114 | 75 | 58 | 60 |
| 27 | 720 | 41 | 92 | 73 | 104 | 95 | 654 | 131 | 131 | 69 | 54 | 70 |
| 28 | 137 | 41 | 87 | 70 | 110 | 90 | 878 | 289 | 130 | 68 | 55 | 54 |
| 29 | 87 | 38 | 83 | 67 | --- | 87 | 323 | 267 | 155 | 65 | 51 | 48 |
| 30 | 76 | 38 | 78 | 63 | --- | 86 | 222 | 208 | 122 | 65 | 48 | 47 |
| 31 | 66 | --- | 85 | 78 | --- | 86 | --- | 188 | --- | 68 | 53 | --- |
| TOTAL | 1928 | 1350 | 2197 | 3650 | 4320 | 3631 | 4824 | 3966 | 6090 | 2750 | 2147 | 1453 |
| MEAN | 62.2 | 45.0 | 70.9 | 118 | 154 | 117 | 161 | 128 | 203 | 88.7 | 69.3 | 48.4 |
| MAX | 720 | 68 | 183 | 588 | 698 | 188 | 878 | 289 | 1250 | 124 | 212 | 70 |
| MIN | 28 | 38 | 38 | 60 | 88 | 86 | 81 | 82 | 113 | 65 | 48 | 38 |
| CFSM | .74 | .53 | .84 | 1.40 | 1.82 | 1.38 | 1.90 | 1.51 | 2.40 | 1.05 | .82 | .57 |
| IN. | .85 | .59 | .97 | 1.60 | 1.90 | 1.60 | 2.12 | 1.74 | 2.68 | 1.21 | .94 | .64 |
| CAL YR 1981 | TOTAL | 21578 | MEAN | 59.1 | MAX | 720 | MIN | 21 | CFSM | .70 | IN | 9.49 |
| WTR YR 1982 | TOTAL | 38306 | MEAN | 105 | MAX | 1250 | MIN | 28 | CFSM | 1.24 | IN | 16.84 |

02070000 NORTH MAYO RIVER NEAR SPENCER, VA

LOCATION.--Lat 36°34'05", long 79°59'15", Henry County, Hydrologic Unit 03010103, on left bank 800 ft (244 m) downstream from bridge on State Highway 629 at Moores Mill, 2.1 mi (3.4 km) downstream from Horse Pasture Creek, and 3.8 mi (6.1 km) southeast of Spencer.

DRAINAGE AREA.--108 mi² (280 km²).

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1929-32(M), 1934(M).

GAGE.--Water-stage recorder. Datum of gage is 730.94 ft (222.791 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 23, 1936, nonrecording gage at site 800 ft (244 m) upstream at datum 1.50 ft (0.457 m) higher. July 25 to Sept. 27, 1936, nonrecording gage at present site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 126 ft³/s (3.568 m³/s), 15.84 in/yr (402 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s (487 m³/s) Oct. 9, 1947, gage height, 15.80 ft (4.816 m), from rating curve extended above 7,200 ft³/s (200 m³/s) on basis of slope-area measurement at gage height 13.41 ft (4.087 m) and velocity-area study; minimum, 14 ft³/s (0.40 m³/s) Aug. 11, 1956; minimum gage height, 1.08 ft (0.329 m) Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) Oct. 27, gage height, 4.30 ft (1.311 m), no peak above base of 1,400 ft³/s (40 m³/s); minimum, 28 ft³/s (0.79 m³/s) Sept. 17, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 34 | 61 | 48 | 270 | 142 | 124 | 88 | 137 | 218 | 96 | 54 | 48 |
| 2 | 32 | 58 | 71 | 202 | 113 | 202 | 87 | 126 | 156 | 78 | 48 | 46 |
| 3 | 33 | 54 | 60 | 208 | 525 | 318 | 102 | 117 | 117 | 74 | 43 | 43 |
| 4 | 32 | 53 | 57 | 624 | 455 | 218 | 113 | 107 | 119 | 74 | 42 | 38 |
| 5 | 34 | 55 | 61 | 308 | 218 | 171 | 96 | 100 | 206 | 74 | 44 | 36 |
| 6 | 34 | 64 | 55 | 156 | 159 | 162 | 100 | 96 | 145 | 74 | 72 | 35 |
| 7 | 34 | 54 | 53 | 119 | 132 | 286 | 90 | 94 | 115 | 69 | 50 | 35 |
| 8 | 32 | 49 | 52 | 98 | 119 | 315 | 90 | 92 | 100 | 68 | 46 | 34 |
| 9 | 32 | 49 | 49 | 85 | 115 | 192 | 102 | 90 | 92 | 68 | 112 | 34 |
| 10 | 34 | 49 | 48 | 78 | 113 | 154 | 100 | 85 | 102 | 69 | 74 | 35 |
| 11 | 35 | 49 | 47 | 72 | 100 | 137 | 92 | 83 | 102 | 68 | 63 | 36 |
| 12 | 36 | 49 | 48 | 70 | 94 | 128 | 90 | 79 | 96 | 68 | 89 | 35 |
| 13 | 36 | 48 | 50 | 69 | 96 | 119 | 87 | 78 | 503 | 74 | 61 | 34 |
| 14 | 35 | 48 | 55 | 69 | 94 | 113 | 96 | 76 | 280 | 104 | 54 | 34 |
| 15 | 36 | 48 | 222 | 70 | 92 | 109 | 145 | 74 | 159 | 74 | 52 | 35 |
| 16 | 36 | 48 | 318 | 73 | 102 | 109 | 107 | 72 | 130 | 68 | 49 | 32 |
| 17 | 35 | 48 | 134 | 75 | 209 | 107 | 100 | 78 | 132 | 63 | 46 | 30 |
| 18 | 36 | 46 | 98 | 82 | 294 | 100 | 109 | 71 | 224 | 58 | 55 | 29 |
| 19 | 36 | 46 | 81 | 92 | 192 | 98 | 94 | 69 | 134 | 55 | 49 | 29 |
| 20 | 35 | 46 | 100 | 128 | 154 | 111 | 90 | 69 | 115 | 57 | 45 | 32 |
| 21 | 34 | 46 | 73 | 156 | 132 | 119 | 90 | 71 | 105 | 55 | 43 | 40 |
| 22 | 37 | 45 | 80 | 145 | 117 | 107 | 87 | 98 | 98 | 54 | 42 | 55 |
| 23 | 40 | 45 | 92 | 117 | 107 | 98 | 85 | 128 | 98 | 54 | 41 | 45 |
| 24 | 45 | 54 | 81 | 126 | 100 | 96 | 81 | 94 | 88 | 60 | 41 | 38 |
| 25 | 43 | 61 | 115 | 111 | 96 | 96 | 81 | 388 | 87 | 57 | 53 | 38 |
| 26 | 55 | 52 | 148 | 98 | 90 | 126 | 256 | 165 | 87 | 52 | 49 | 48 |
| 27 | 580 | 50 | 130 | 78 | 100 | 105 | 446 | 132 | 87 | 49 | 44 | 79 |
| 28 | 186 | 49 | 111 | 72 | 121 | 96 | 416 | 134 | 96 | 49 | 44 | 52 |
| 29 | 96 | 48 | 98 | 70 | --- | 92 | 218 | 148 | 88 | 46 | 41 | 44 |
| 30 | 76 | 46 | 87 | 83 | --- | 90 | 159 | 156 | 83 | 48 | 38 | 42 |
| 31 | 66 | --- | 90 | 90 | --- | 90 | --- | 128 | --- | 50 | 41 | --- |
| TOTAL | 1945 | 1518 | 2812 | 4094 | 4381 | 4388 | 3897 | 3435 | 4162 | 2007 | 1625 | 1191 |
| MEAN | 62.7 | 50.6 | 90.7 | 132 | 156 | 142 | 130 | 111 | 139 | 64.7 | 52.4 | 39.7 |
| MAX | 580 | 64 | 318 | 624 | 525 | 318 | 446 | 388 | 503 | 104 | 112 | 79 |
| MIN | 32 | 45 | 47 | 69 | 90 | 90 | 81 | 69 | 83 | 46 | 38 | 29 |
| CFSM | .58 | .47 | .84 | 1.22 | 1.44 | 1.32 | 1.20 | 1.03 | 1.29 | .60 | .49 | .37 |
| IN. | .67 | .52 | .97 | 1.41 | 1.51 | 1.51 | 1.34 | 1.18 | 1.43 | .69 | .56 | .41 |

CAL YR 1981 TOTAL 24404 MEAN 66.9 MAX 580 MIN 19 CFSM .62 IN 8.41
WTR YR 1982 TOTAL 35455 MEAN 97.1 MAX 624 MIN 29 CFSM .90 IN 12.21

ROANOKE RIVER BASIN

02071900 PHILPOTT LAKE NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'52", long 80°01'40", Henry County, Hydrologic Unit 03010103, at Philpott Dam on Smith River, 1.5 mi (2.4 km) west of Philpott, 12.0 mi (19.3 km) upstream from Reed Creek, and at mile 44.3 (71.3 km).

DRAINAGE AREA.--216 mi² (559 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 985 ft (300.2 m), is ungated and 120 ft (40 m) long. Storage began in August 1950 during construction; initial filling started in December 1951; water in reservoir first reached rule-curve elevation in July 1953. Total capacity at maximum flood-control pool elevation, 998 ft (304.2 m), is 247,400 acre-ft (305 hm³) of which 47,000 acre-ft (58.0 hm³) is above the spillway crest; 34,200 acre-ft (42.2 hm³) is controlled flood storage between elevations 974 ft (296.9 m), maximum power pool, and 985 ft (300.2 m); 57,800 acre-ft (71.3 hm³) is available for power between elevations 951 ft (289.9 m), minimum power pool, and 974 ft (296.9 m); and 108,400 acre-ft (134 hm³) is inactive and dead storage below elevation 951 ft (289.9 m). Usable capacity is 92,000 acre-ft (113 hm³) between elevations 951 ft (289.9 m) and 985 ft (300.2 m). Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for pollution abatement and industrial water supply, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 191,700 acre-ft (236 hm³) June 22, 1972, elevation, 983.06 ft (299.637 m); minimum (after first filling to rule curve), 64,540 acre-ft (79.6 hm³) Sept. 26, 1956, elevation, 927.59 ft (282.729 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 173,360 acre-ft (214 hm³) June 15, elevation, 976.43 ft (297.616 m); minimum, 122,880 acre-ft (152 hm³) Dec. 11, elevation, 957.44 ft (291.828 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 961.69 | 133080 | |
| Oct. 31..... | 959.05 | 126670 | -6410 |
| Nov. 30..... | 957.67 | 123420 | -3250 |
| Dec. 31..... | 958.20 | 124660 | +1240 |
| CAL YR 1981..... | | | -31040 |
| Jan. 31..... | 962.55 | 135220 | +10560 |
| Feb. 28..... | 968.50 | 150740 | +15520 |
| Mar. 31..... | 973.01 | 163330 | +12590 |
| Apr. 30..... | 975.05 | 169260 | +5930 |
| May 31..... | 976.29 | 172940 | +3680 |
| June 30..... | 974.20 | 166770 | -6170 |
| July 31..... | 972.64 | 162270 | -4500 |
| Aug. 31..... | 971.46 | 158920 | -3350 |
| Sept. 30..... | 968.56 | 150900 | -8020 |
| WTR YR 1982..... | | | +17820 |

02072000 SMITH RIVER NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'50", long 80°01'30", Franklin County, Hydrologic Unit 03010103, on left bank 900 ft (270 m) downstream from Philpott Dam, 3.1 mi (5.0 km) west of Philpott, 11.6 mi (18.7 km) upstream from Reed Creek, and at mile 44.1 (71.0 km).

DRAINAGE AREA.--216 mi² (559 km²).

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

REVISED RECORDS.--WSP 1553: 1953(M), 1955-56(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 804.27 ft (245.141 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 8, 1952, at site 1.9 mi (3.1 km) downstream at different datum.

REMARKS.--Records good. Since August 1950, flow regulated by Philpott Lake (station 02071900) 0.2 mi (0.3 km) upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--36 years, 276 ft³/s (7.816 m³/s), 17.35 in/yr (441 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s (481 m³/s) June 29, 1949, gage height, 20.3 ft (6.19 m), site and datum then in use, from rating curve extended above 9,700 ft³/s (270 m³/s) on basis of slope-area measurements at gage heights 18.2 ft (5.55 m) and 20.3 ft (6.19 m); minimum, 4.0 ft³/s (0.11 m³/s) Aug. 12, 1953, gage height, 1.50 ft (0.457 m); minimum daily, 24 ft³/s (0.68 m³/s) Dec. 16, 17, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,480 ft³/s (41.9 m³/s) Dec. 9, Feb. 15, gage height, 5.17 ft (1.576 m); minimum, 9.8 ft³/s (0.28 m³/s) Oct. 30, gage height, 1.86 ft (0.567 m); minimum daily, 36 ft³/s (1.02 m³/s) several days in February and March.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 259 | 47 | 153 | 156 | 97 | 85 | 87 | 45 | 825 | 243 | 48 | 144 |
| 2 | 260 | 154 | 151 | 47 | 96 | 85 | 89 | 44 | 1290 | 243 | 298 | 145 |
| 3 | 52 | 157 | 151 | 99 | 98 | 82 | 46 | 532 | 1230 | 46 | 299 | 144 |
| 4 | 52 | 160 | 154 | 97 | 93 | 84 | 46 | 531 | 1230 | 46 | 300 | 47 |
| 5 | 210 | 159 | 46 | 149 | 96 | 82 | 192 | 540 | 46 | 293 | 301 | 48 |
| 6 | 202 | 152 | 47 | 148 | 45 | 37 | 190 | 522 | 44 | 275 | 297 | 244 |
| 7 | 215 | 49 | 162 | 147 | 46 | 37 | 194 | 536 | 645 | 292 | 49 | 250 |
| 8 | 191 | 49 | 161 | 45 | 93 | 83 | 188 | 45 | 641 | 297 | 49 | 260 |
| 9 | 210 | 159 | 159 | 45 | 95 | 82 | 183 | 45 | 613 | 294 | 305 | 253 |
| 10 | 52 | 158 | 154 | 46 | 86 | 82 | 46 | 334 | 634 | 46 | 308 | 258 |
| 11 | 52 | 157 | 152 | 151 | 90 | 83 | 46 | 339 | 653 | 46 | 298 | 47 |
| 12 | 377 | 162 | 46 | 147 | 89 | 82 | 188 | 334 | 45 | 293 | 303 | 47 |
| 13 | 372 | 160 | 47 | 94 | 37 | 36 | 188 | 337 | 48 | 293 | 300 | 250 |
| 14 | 371 | 44 | 153 | 94 | 37 | 36 | 188 | 330 | 628 | 290 | 48 | 249 |
| 15 | 358 | 44 | 152 | 88 | 90 | 81 | 190 | 46 | 633 | 289 | 49 | 251 |
| 16 | 362 | 157 | 150 | 46 | 84 | 81 | 189 | 46 | 632 | 289 | 153 | 257 |
| 17 | 47 | 157 | 149 | 46 | 89 | 86 | 45 | 189 | 640 | 46 | 144 | 259 |
| 18 | 47 | 157 | 159 | 117 | 84 | 84 | 44 | 189 | 637 | 47 | 147 | 47 |
| 19 | 340 | 153 | 49 | 100 | 86 | 80 | 189 | 189 | 632 | 300 | 149 | 47 |
| 20 | 340 | 153 | 49 | 96 | 36 | 36 | 190 | 189 | 44 | 299 | 148 | 259 |
| 21 | 332 | 47 | 154 | 98 | 36 | 36 | 188 | 189 | 642 | 297 | 49 | 253 |
| 22 | 329 | 47 | 153 | 95 | 85 | 82 | 189 | 45 | 642 | 298 | 49 | 244 |
| 23 | 335 | 155 | 150 | 46 | 88 | 82 | 187 | 46 | 645 | 300 | 145 | 249 |
| 24 | 42 | 152 | 151 | 45 | 83 | 82 | 45 | 191 | 639 | 47 | 145 | 253 |
| 25 | 42 | 156 | 156 | 95 | 84 | 82 | 45 | 188 | 632 | 47 | 152 | 47 |
| 26 | 345 | 152 | 46 | 98 | 87 | 81 | 286 | 436 | 42 | 297 | 147 | 48 |
| 27 | 344 | 151 | 46 | 97 | 37 | 36 | 284 | 441 | 44 | 293 | 152 | 256 |
| 28 | 332 | 47 | 153 | 96 | 37 | 36 | 286 | 451 | 244 | 289 | 51 | 265 |
| 29 | 157 | 47 | 155 | 97 | --- | 84 | 286 | 45 | 242 | 297 | 50 | 552 |
| 30 | 166 | 152 | 154 | 46 | --- | 81 | 284 | 44 | 244 | 298 | 151 | 450 |
| 31 | 47 | --- | 154 | 46 | --- | 81 | --- | 458 | --- | 48 | 147 | --- |
| TOTAL | 6840 | 3694 | 3916 | 2817 | 2104 | 2187 | 4798 | 7896 | 15806 | 6778 | 5231 | 6123 |
| MEAN | 221 | 123 | 126 | 90.9 | 75.1 | 70.5 | 160 | 255 | 527 | 219 | 169 | 204 |
| MAX | 377 | 162 | 162 | 156 | 98 | 86 | 286 | 540 | 1290 | 300 | 308 | 552 |
| MIN | 42 | 44 | 46 | 45 | 36 | 36 | 44 | 44 | 42 | 46 | 48 | 47 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |
| MEAN† | 117 | 68 | 146 | 262.9 | 354.1 | 275.5 | 260 | 315 | 423 | 146 | 115 | 69 |
| CFSM† | .54 | .31 | .68 | 1.22 | 1.64 | 1.28 | 1.20 | 1.46 | 1.96 | .68 | .53 | .32 |
| IN† | .62 | .35 | .78 | 1.40 | 1.71 | 1.47 | 1.34 | 1.68 | 2.19 | .78 | .61 | .36 |

CAL YR 1981 TOTAL 56236 MEAN 154 MAX 470 MIN 42 MEAN† 111 CFSM† .51 IN† 6.98
WTR YR 1982 TOTAL 68190 MEAN 187 MAX 1290 MIN 36 MEAN† 212 CFSM† .98 IN† 13.33

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
† Adjusted for change in contents.

ROANOKE RIVER BASIN

02072500 SMITH RIVER AT BASSETT, VA

LOCATION.--Lat 36°46'12", long 80°00'04", Henry County, Hydrologic Unit 03010103, on left bank 25 ft (8 m) upstream from bridge on State Highway 666 at north edge of North Bassett, 1.0 mi (1.6 km) northwest of Bassett, 3.0 mi (4.8 km) downstream from Town Creek, 5.6 mi (9.0 km) upstream from Reed Creek, 6.2 mi (10.0 km) downstream from Philpott Dam, and at mile 38.1 (61.3 km).

DRAINAGE AREA.--259 mi² (671 km²).

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 753.09 ft (229.542 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for period of no gage-height record, Oct. 7 to Dec. 8, which are fair, and those above 5,000 ft³/s (142 m³/s), which are poor. Since August 1950, flow regulated by Philpott Lake (station 02071900) 6.2 mi (10.0 km) upstream. Gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--43 years, 328 ft³/s (9.289 m³/s), 17.20 in/yr (437 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s (753 m³/s) Aug. 14, 1940, gage height, 18.28 ft (5.572 m); minimum, 19 ft³/s (0.54 m³/s) July 19, 1956; minimum daily, 44 ft³/s (1.25 m³/s) Aug. 23, 1964; minimum gage height, 1.06 ft (0.323 m) Sept. 18, 26, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 19, 1937, reached a stage of about 22.9 ft (6.98 m), from information by local residents, discharge, 38,000 ft³/s (1,100 m³/s), from rating curve extended above 23,000 ft³/s (650 m³/s) on basis of backwater studies and records for station at Martinsville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,200 ft³/s (317 m³/s) May 28, gage height, 11.87 ft (3.618 m); minimum, 44 ft³/s (1.25 m³/s) during period of no gage-height record, Oct. 21 to Dec. 8, and May 6, gage height, 1.39 ft (0.424 m); minimum daily, 54 ft³/s (1.53 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|-------|-------|------|------|------|
| 1 | 282 | 62 | 180 | 263 | 158 | 115 | 109 | 75 | 780 | 274 | 67 | 162 |
| 2 | 289 | 175 | 185 | 113 | 132 | 132 | 112 | 71 | 1400 | 274 | 319 | 161 |
| 3 | 69 | 178 | 175 | 311 | 337 | 169 | 78 | 563 | 1330 | 67 | 321 | 161 |
| 4 | 59 | 179 | 175 | 379 | 216 | 150 | 73 | 568 | 1370 | 68 | 322 | 57 |
| 5 | 232 | 180 | 62 | 242 | 151 | 136 | 222 | 579 | 300 | 322 | 337 | 56 |
| 6 | 211 | 185 | 60 | 202 | 84 | 103 | 222 | 561 | 74 | 308 | 332 | 260 |
| 7 | 234 | 62 | 175 | 187 | 76 | 185 | 223 | 569 | 680 | 321 | 63 | 269 |
| 8 | 215 | 58 | 180 | 75 | 121 | 197 | 216 | 76 | 675 | 331 | 91 | 283 |
| 9 | 225 | 175 | 177 | 72 | 124 | 144 | 216 | 65 | 680 | 323 | 353 | 270 |
| 10 | 65 | 180 | 172 | 64 | 116 | 128 | 70 | 351 | 675 | 68 | 354 | 276 |
| 11 | 63 | 170 | 171 | 187 | 114 | 123 | 68 | 364 | 690 | 64 | 338 | 59 |
| 12 | 295 | 180 | 58 | 186 | 111 | 120 | 215 | 362 | 73 | 320 | 335 | 56 |
| 13 | 390 | 170 | 58 | 114 | 63 | 67 | 215 | 365 | 770 | 324 | 327 | 267 |
| 14 | 385 | 58 | 179 | 116 | 61 | 65 | 215 | 360 | 780 | 320 | 64 | 266 |
| 15 | 380 | 57 | 252 | 109 | 112 | 116 | 220 | 71 | 750 | 320 | 62 | 264 |
| 16 | 370 | 165 | 241 | 65 | 114 | 116 | 215 | 62 | 700 | 321 | 167 | 271 |
| 17 | 58 | 175 | 192 | 65 | 185 | 113 | 70 | 212 | 720 | 65 | 163 | 272 |
| 18 | 55 | 180 | 192 | 142 | 188 | 113 | 71 | 212 | 730 | 62 | 168 | 56 |
| 19 | 310 | 175 | 68 | 118 | 144 | 111 | 217 | 215 | 755 | 326 | 165 | 54 |
| 20 | 355 | 170 | 65 | 118 | 78 | 65 | 217 | 221 | 87 | 326 | 163 | 275 |
| 21 | 350 | 64 | 175 | 142 | 71 | 65 | 214 | 226 | 690 | 323 | 60 | 270 |
| 22 | 355 | 62 | 184 | 139 | 119 | 112 | 215 | 74 | 706 | 322 | 59 | 270 |
| 23 | 365 | 175 | 187 | 78 | 116 | 111 | 213 | 66 | 705 | 326 | 158 | 266 |
| 24 | 64 | 185 | 180 | 75 | 113 | 110 | 64 | 240 | 697 | 71 | 161 | 268 |
| 25 | 60 | 182 | 194 | 122 | 112 | 110 | 65 | 390 | 690 | 62 | 176 | 57 |
| 26 | 430 | 165 | 77 | 120 | 112 | 111 | 413 | 494 | 81 | 318 | 168 | 69 |
| 27 | 600 | 175 | 76 | 76 | 83 | 59 | 374 | 485 | 71 | 314 | 174 | 289 |
| 28 | 460 | 67 | 163 | 117 | 88 | 58 | 356 | 2170 | 281 | 313 | 61 | 284 |
| 29 | 280 | 64 | 170 | 117 | --- | 106 | 335 | 245 | 277 | 322 | 59 | 477 |
| 30 | 205 | 170 | 183 | 65 | --- | 106 | 323 | 135 | 278 | 322 | 164 | 578 |
| 31 | 65 | --- | 188 | 71 | --- | 105 | --- | 540 | --- | 64 | 163 | --- |
| TOTAL | 7776 | 4243 | 4794 | 4250 | 3499 | 3521 | 5836 | 10987 | 18495 | 7561 | 5914 | 6623 |
| MEAN | 251 | 141 | 155 | 137 | 125 | 114 | 195 | 354 | 617 | 244 | 191 | 221 |
| MAX | 600 | 185 | 252 | 379 | 337 | 197 | 413 | 2170 | 1400 | 331 | 354 | 578 |
| MIN | 55 | 57 | 58 | 64 | 61 | 58 | 64 | 62 | 71 | 62 | 59 | 54 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |
| MEAN# | 147 | 86 | 175 | 309 | 404 | 319 | 295 | 414 | 513 | 171 | 137 | 86 |
| CFSM# | .57 | .33 | .68 | 1.19 | 1.56 | 1.23 | 1.14 | 1.60 | 1.98 | .66 | .53 | .33 |
| IN# | .65 | .37 | .78 | 1.38 | 1.62 | 1.42 | 1.27 | 1.84 | 2.21 | .76 | .61 | .37 |

CAL YR 1981 TOTAL 65426 MEAN 179 MAX 600 MIN 55 MEAN# 136 CFSM# .53 IN# 7.13
WTR YR 1982 TOTAL 83499 MEAN 229 MAX 2170 MIN 54 MEAN# 254 CFSM# .98 IN# 13.32

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

02073000 SMITH RIVER AT MARTINSVILLE, VA

LOCATION.--Lat 36°39'40", long 79°52'51", Henry County, Hydrologic Unit 03010103, on right bank at south edge of Martinsville, 800 ft (244 m) downstream from bridge on U.S. Highways 58 and 220, and 5.0 mi (8.0 km) downstream from Beaver Creek.

DRAINAGE AREA.--380 mi² (984 km²).

PERIOD OF RECORD.--August 1929 to current year.

REVISED RECORDS.--WSP 1032: 1933-35(M), 1936-39, 1940-41(P). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 657.22 ft (200.321 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 19.6 mi (31.5 km) upstream. Some additional regulation by powerplant 1,000 ft (305 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 452 ft³/s (12.80 m³/s), 16.15 in/yr (410 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s (1,100 m³/s) Oct. 19, 1937, gage height, 21.50 ft (6.553 m), from rating curve extended above 17,000 ft³/s (480 m³/s) on basis of computations of flow over dam at gage heights 16.76 ft (5.108 m) and 21.50 ft (6.553 m); minimum, 3.8 ft³/s (0.11 m³/s) Mar. 19, 1955; minimum daily, 19 ft³/s (0.54 m³/s) Oct. 6, 1935; minimum gage height, 0.69 ft (0.210 m) Sept. 8, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,740 ft³/s (163 m³/s) May 28, gage height, 6.93 ft (2.112 m); minimum, 6.2 ft³/s (0.18 m³/s) Jan. 7, Sept. 17, gage height, 0.83 ft (0.253 m); minimum daily, 51 ft³/s (1.44 m³/s) Dec. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|-------|-------|------|------|------|
| 1 | 336 | 82 | 236 | 565 | 341 | 298 | 181 | 214 | 909 | 349 | 106 | 221 |
| 2 | 324 | 195 | 259 | 333 | 270 | 341 | 212 | 180 | 1420 | 344 | 305 | 214 |
| 3 | 210 | 217 | 233 | 612 | 806 | 559 | 126 | 540 | 1420 | 157 | 373 | 247 |
| 4 | 88 | 227 | 242 | 1070 | 661 | 384 | 188 | 651 | 1480 | 149 | 370 | 96 |
| 5 | 260 | 239 | 178 | 540 | 361 | 333 | 380 | 653 | 749 | 289 | 425 | 111 |
| 6 | 260 | 245 | 95 | 403 | 160 | 287 | 321 | 648 | 272 | 387 | 444 | 198 |
| 7 | 265 | 150 | 250 | 306 | 193 | 527 | 293 | 649 | 680 | 384 | 194 | 333 |
| 8 | 242 | 116 | 234 | 218 | 279 | 612 | 292 | 260 | 777 | 394 | 265 | 323 |
| 9 | 255 | 186 | 209 | 86 | 213 | 351 | 339 | 148 | 760 | 393 | 497 | 329 |
| 10 | 94 | 224 | 218 | 132 | 235 | 262 | 97 | 451 | 856 | 199 | 547 | 326 |
| 11 | 80 | 148 | 271 | 256 | 204 | 242 | 160 | 440 | 841 | 128 | 491 | 188 |
| 12 | 302 | 305 | 51 | 238 | 219 | 295 | 301 | 437 | 320 | 316 | 421 | 96 |
| 13 | 436 | 230 | 85 | 188 | 98 | 100 | 343 | 433 | 1490 | 447 | 399 | 228 |
| 14 | 426 | 175 | 315 | 199 | 137 | 164 | 299 | 436 | 1040 | 408 | 202 | 318 |
| 15 | 423 | 72 | 536 | 202 | 251 | 275 | 310 | 119 | 881 | 392 | 117 | 326 |
| 16 | 425 | 170 | 564 | 108 | 210 | 208 | 331 | 136 | 820 | 396 | 175 | 265 |
| 17 | 233 | 220 | 308 | 136 | 449 | 208 | 92 | 271 | 1130 | 181 | 223 | 307 |
| 18 | 92 | 222 | 332 | 205 | 537 | 211 | 175 | 316 | 1020 | 122 | 459 | 187 |
| 19 | 343 | 217 | 68 | 250 | 373 | 243 | 340 | 267 | 795 | 298 | 236 | 72 |
| 20 | 397 | 216 | 129 | 225 | 161 | 105 | 300 | 323 | 406 | 386 | 266 | 301 |
| 21 | 360 | 154 | 247 | 286 | 199 | 187 | 288 | 327 | 612 | 382 | 99 | 348 |
| 22 | 397 | 106 | 307 | 322 | 272 | 245 | 293 | 136 | 793 | 379 | 121 | 377 |
| 23 | 404 | 177 | 265 | 134 | 218 | 203 | 316 | 122 | 798 | 385 | 171 | 332 |
| 24 | 190 | 246 | 240 | 201 | 205 | 197 | 77 | 330 | 778 | 186 | 209 | 324 |
| 25 | 95 | 233 | 350 | 277 | 212 | 177 | 129 | 869 | 768 | 132 | 259 | 138 |
| 26 | 380 | 152 | 230 | 212 | 221 | 285 | 576 | 571 | 335 | 295 | 215 | 223 |
| 27 | 1120 | 300 | 203 | 171 | 94 | 123 | 634 | 641 | 143 | 369 | 271 | 390 |
| 28 | 498 | 144 | 334 | 195 | 213 | 121 | 526 | 1990 | 330 | 363 | 104 | 329 |
| 29 | 339 | 112 | 286 | 235 | --- | 238 | 490 | 552 | 350 | 375 | 116 | 386 |
| 30 | 293 | 186 | 254 | 75 | --- | 177 | 440 | 527 | 367 | 379 | 161 | 879 |
| 31 | 112 | --- | 319 | 194 | --- | 204 | --- | 832 | --- | 195 | 215 | --- |
| TOTAL | 9679 | 5666 | 7848 | 8574 | 7792 | 8162 | 8849 | 14469 | 23340 | 9559 | 8456 | 8412 |
| MEAN | 312 | 189 | 253 | 277 | 278 | 263 | 295 | 467 | 778 | 308 | 273 | 280 |
| MAX | 1120 | 305 | 564 | 1070 | 806 | 612 | 634 | 1990 | 1490 | 447 | 547 | 879 |
| MIN | 80 | 72 | 51 | 75 | 94 | 100 | 77 | 119 | 143 | 122 | 99 | 72 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |
| MEAN# | 208 | 134 | 273 | 449 | 557 | 468 | 395 | 527 | 674 | 235 | 219 | 145 |
| CFSM# | .55 | .35 | .72 | 1.18 | 1.47 | 1.23 | 1.04 | 1.39 | 1.77 | .62 | .58 | .38 |
| IN# | .63 | .39 | .83 | 1.36 | 1.53 | 1.42 | 1.16 | 1.60 | 1.98 | .71 | .66 | .43 |

CAL YR 1981 TOTAL 92234 MEAN 253 MAX 1120 MIN 50 MEAN# 210 CFSM# .55 IN# 7.50
WTR YR 1982 TOTAL 120806 MEAN 331 MAX 1990 MIN 51 MEAN# 356 CFSM# .94 IN# 12.72

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

ROANOKE RIVER BASIN

02074000 SMITH RIVER AT EDEN, NC

LOCATION.--Lat 36°31'31", long 79°45'57", Rockingham County, Hydrologic Unit 03010103, on right bank at Eden, 0.3 mi (0.5 km) downstream from bridge on State Highway 14, 0.8 mi (1.3 km) upstream from bridge on Secondary Road 1714, 1.2 mi (1.9 km) south of Virginia-North Carolina State line, 1.3 mi (2.1 km) downstream from Stuart Creek, and 3.9 mi (6.3 km) upstream from mouth.

DRAINAGE AREA.--538 mi² (1,393 km²).

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970, published as "at Spray."

REVISED RECORDS.--WSP 1433: 1946.

GAGE.--Water-stage recorder. Datum of gage is 539.56 ft (164.458 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 40 mi (64 km) upstream, usable capacity, 6,325,000,000 ft³ (179.1 hm³). Some additional regulation by hydroelectric plant at Martinsville, Va., 18 mi (29 km) upstream. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--43 years, 617 ft³/s (17.47 m³/s), 15.57 in/yr (395 mm/yr), adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,600 ft³/s (1,290 m³/s) Aug. 15, 1940, gage height, 19.28 ft (5.877 m), from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of computation of peak flow over dam 1.5 mi (2.4 km) downstream; minimum, 38 ft³/s (1.08 m³/s) Aug. 7, 1967; minimum daily, 46 ft³/s (1.30 m³/s) Aug. 14, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,330 ft³/s (151 m³/s) May 28, gage height, 7.10 ft (2.164 m); minimum, 65 ft³/s (1.84 m³/s) Oct. 12, Sept. 19, gage height, 1.35 ft (0.411 m); minimum daily, 80 ft³/s (2.27 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 326 | 138 | 234 | 983 | 475 | 408 | 253 | 444 | 1020 | 404 | 143 | 236 |
| 2 | 315 | 176 | 288 | 606 | 411 | 577 | 263 | 226 | 1810 | 386 | 120 | 233 |
| 3 | 319 | 244 | 270 | 760 | 1400 | 1030 | 284 | 383 | 1790 | 399 | 376 | 221 |
| 4 | 108 | 238 | 267 | 2410 | 1610 | 723 | 295 | 753 | 1770 | 183 | 375 | 250 |
| 5 | 102 | 257 | 269 | 1250 | 721 | 547 | 313 | 753 | 1520 | 127 | 374 | 114 |
| 6 | 275 | 295 | 115 | 657 | 464 | 473 | 414 | 755 | 466 | 466 | 508 | 94 |
| 7 | 253 | 200 | 194 | 474 | 356 | 979 | 364 | 738 | 400 | 415 | 442 | 296 |
| 8 | 267 | 138 | 254 | 416 | 324 | 1310 | 377 | 669 | 940 | 423 | 118 | 307 |
| 9 | 247 | 180 | 246 | 240 | 337 | 656 | 407 | 200 | 920 | 446 | 557 | 326 |
| 10 | 253 | 241 | 237 | 216 | 333 | 484 | 355 | 268 | 988 | 411 | 515 | 315 |
| 11 | 100 | 190 | 233 | 329 | 294 | 421 | 240 | 500 | 1120 | 180 | 790 | 364 |
| 12 | 153 | 286 | 231 | 357 | 274 | 379 | 250 | 500 | 952 | 205 | 560 | 114 |
| 13 | 445 | 242 | 91 | 340 | 263 | 322 | 397 | 512 | 1510 | 471 | 457 | 88 |
| 14 | 429 | 231 | 229 | 284 | 224 | 271 | 382 | 495 | 1290 | 516 | 470 | 306 |
| 15 | 440 | 117 | 792 | 290 | 247 | 299 | 398 | 418 | 1160 | 447 | 150 | 316 |
| 16 | 438 | 149 | 1230 | 247 | 305 | 318 | 385 | 183 | 1050 | 436 | 117 | 313 |
| 17 | 377 | 238 | 573 | 207 | 634 | 307 | 336 | 186 | 1200 | 466 | 247 | 307 |
| 18 | 122 | 242 | 432 | 231 | 1150 | 296 | 240 | 299 | 1580 | 144 | 740 | 354 |
| 19 | 102 | 240 | 309 | 331 | 638 | 293 | 278 | 337 | 1130 | 138 | 326 | 80 |
| 20 | 421 | 244 | 169 | 337 | 457 | 320 | 378 | 342 | 1010 | 419 | 271 | 114 |
| 21 | 408 | 181 | 341 | 376 | 342 | 310 | 340 | 358 | 294 | 411 | 276 | 362 |
| 22 | 402 | 135 | 359 | 522 | 340 | 302 | 381 | 385 | 927 | 400 | 134 | 390 |
| 23 | 402 | 172 | 302 | 395 | 321 | 296 | 367 | 220 | 927 | 406 | 117 | 352 |
| 24 | 429 | 264 | 290 | 313 | 304 | 284 | 311 | 455 | 904 | 455 | 222 | 325 |
| 25 | 131 | 272 | 569 | 312 | 280 | 264 | 206 | 1220 | 885 | 148 | 266 | 327 |
| 26 | 161 | 195 | 456 | 293 | 269 | 384 | 450 | 703 | 895 | 127 | 258 | 157 |
| 27 | 1430 | 300 | 353 | 262 | 243 | 290 | 920 | 858 | 153 | 383 | 232 | 372 |
| 28 | 784 | 190 | 442 | 317 | 325 | 220 | 812 | 2390 | 241 | 378 | 268 | 445 |
| 29 | 517 | 144 | 360 | 272 | --- | 243 | 636 | 897 | 398 | 376 | 133 | 363 |
| 30 | 284 | 190 | 327 | 242 | --- | 263 | 561 | 985 | 409 | 390 | 95 | 1080 |
| 31 | 255 | --- | 451 | 211 | --- | 266 | --- | 794 | --- | 443 | 223 | --- |
| TOTAL | 10695 | 6329 | 10913 | 14480 | 13341 | 13535 | 11593 | 18226 | 29659 | 10999 | 9880 | 8921 |
| MEAN | 345 | 211 | 352 | 467 | 476 | 437 | 386 | 588 | 989 | 355 | 319 | 297 |
| MAX | 1430 | 300 | 1230 | 2410 | 1610 | 1310 | 920 | 2390 | 1810 | 516 | 790 | 1080 |
| MIN | 100 | 117 | 91 | 207 | 224 | 220 | 206 | 183 | 153 | 127 | 95 | 80 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |

CAL YR 1981 TOTAL 112463 MEAN 308 MAX 1430 MIN 57 MEAN# 265 CFSM# .49 IN# 6.65
WTR YR 1982 TOTAL 158571 MEAN 434 MAX 2410 MIN 80 MEAN# 459 CFSM# .85 IN# 11.54

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
* Adjusted for change in contents.

02074218 DAN RIVER NEAR MAYFIELD, NC

LOCATION.--Lat 36°32'29", long 79°36'21", Rockingham County, Hydrologic Unit 03010103, near right bank on downstream end of bridge pier on Secondary Road 1761, at North Carolina-Virginia State line, 2.2 mi (3.5 km) upstream from Whiteoak Creek, 3.0 mi (4.8 km) northwest of Mayfield, and at mile 81.0 (130.3 km).
DRAINAGE AREA.--1,778 mi² (4,605 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 458.4 ft (139.7 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those below 500 ft³/s (14 m³/s), which are fair. Diurnal fluctuation and regulation at low flow caused by mills and Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) on the Dan River and Philpott Lake (station 02074000) on the Smith River. Duke Power Company gage-height and temperature telemeters at station.

AVERAGE DISCHARGE.--6 years, 2,077 ft³/s (58.82 m³/s), 15.86 in/yr (403 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,300 ft³/s (1,060 m³/s) Sept. 23, 1979, gage height, 27.31 ft (8.324 m); minimum, 197 ft³/s (5.58 m³/s) Aug. 25, 1981, gage height, 1.39 ft (0.424 m); minimum daily, 271 ft³/s (7.67 m³/s) Aug. 24, 31, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a stage of 28.1 ft (8.56 m), from floodmarks, discharge, 40,000 ft³/s (1,130 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 13,000 ft³/s (370 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 5 | 0100 | *14700 416 | 17.10 5.212 | June 14 | 0530 | 13500 382 | 16.33 4.977 |
| Feb. 4 | 0830 | 13900 394 | 16.55 5.044 | | | | |

Minimum discharge, 351 ft³/s (9.94 m³/s) Oct. 13, gage height, 1.94 ft (0.591 m); minimum daily, 377 ft³/s (10.7 m³/s) Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1 | 629 | 745 | 629 | 4010 | 1710 | 2600 | 1210 | 2260 | 4950 | 1710 | 955 | 667 |
| 2 | 633 | 698 | 746 | 4170 | 2170 | 2800 | 1160 | 1750 | 3600 | 1430 | 960 | 737 |
| 3 | 649 | 750 | 897 | 3270 | 5430 | 4200 | 1160 | 1700 | 3050 | 1300 | 957 | 728 |
| 4 | 537 | 749 | 844 | 9500 | 11700 | 3700 | 1220 | 2040 | 4910 | 986 | 962 | 738 |
| 5 | 415 | 756 | 826 | 10600 | 4720 | 2900 | 1370 | 1900 | 8360 | 1170 | 925 | 564 |
| 6 | 526 | 823 | 740 | 4060 | 2980 | 2300 | 1440 | 1780 | 4340 | 1210 | 1050 | 525 |
| 7 | 574 | 890 | 662 | 2690 | 2310 | 3500 | 1510 | 1670 | 2290 | 1290 | 1180 | 590 |
| 8 | 564 | 673 | 759 | 2160 | 1830 | 5200 | 1370 | 1710 | 2340 | 1240 | 768 | 685 |
| 9 | 558 | 637 | 730 | 1670 | 1660 | 4300 | 1390 | 1130 | 2160 | 1210 | 1820 | 684 |
| 10 | 535 | 675 | 696 | 1310 | 1660 | 2500 | 1490 | 1110 | 3160 | 1290 | 3060 | 688 |
| 11 | 377 | 698 | 686 | 990 | 1580 | 2000 | 1170 | 1280 | 9000 | 1200 | 1970 | 716 |
| 12 | 402 | 680 | 741 | 910 | 1420 | 1800 | 1130 | 1280 | 3600 | 1120 | 1790 | 523 |
| 13 | 638 | 741 | 556 | 1240 | 1370 | 1600 | 1310 | 1220 | 4290 | 1260 | 1370 | 511 |
| 14 | 743 | 693 | 611 | 1160 | 1430 | 1550 | 1300 | 1190 | 10000 | 1560 | 1180 | 583 |
| 15 | 709 | 636 | 1600 | 1050 | 1320 | 1500 | 1350 | 1210 | 4260 | 1390 | 815 | 723 |
| 16 | 727 | 568 | 5870 | 1160 | 1650 | 2000 | 1490 | 898 | 3050 | 1270 | 760 | 723 |
| 17 | 724 | 627 | 3090 | 1020 | 4040 | 1700 | 1390 | 863 | 2630 | 1330 | 756 | 710 |
| 18 | 452 | 658 | 1820 | 877 | 6170 | 1420 | 1090 | 933 | 5160 | 953 | 1280 | 707 |
| 19 | 423 | 672 | 1430 | 1130 | 3900 | 1360 | 1250 | 1100 | 3590 | 930 | 1170 | 523 |
| 20 | 635 | 665 | 881 | 1240 | 2760 | 1480 | 1360 | 1080 | 2590 | 1050 | 880 | 441 |
| 21 | 694 | 651 | 851 | 1390 | 2080 | 1750 | 1480 | 1040 | 1730 | 1150 | 843 | 655 |
| 22 | 666 | 551 | 1060 | 2310 | 1760 | 2010 | 1340 | 1170 | 2170 | 1070 | 617 | 750 |
| 23 | 726 | 564 | 1300 | 1910 | 1630 | 1640 | 1210 | 1020 | 2070 | 1120 | 668 | 928 |
| 24 | 801 | 655 | 1220 | 1670 | 1480 | 1430 | 1200 | 2010 | 1900 | 1380 | 646 | 829 |
| 25 | 582 | 777 | 1860 | 1610 | 1370 | 1340 | 938 | 3240 | 1850 | 1000 | 699 | 740 |
| 26 | 668 | 788 | 3650 | 1490 | 1310 | 1370 | 1060 | 2330 | 1820 | 920 | 766 | 598 |
| 27 | 3190 | 733 | 2590 | 1200 | 1350 | 1650 | 3050 | 2300 | 1410 | 962 | 765 | 987 |
| 28 | 5200 | 733 | 2020 | 1030 | 1500 | 1300 | 7710 | 3830 | 1580 | 1020 | 763 | 1060 |
| 29 | 1930 | 573 | 1770 | 1170 | --- | 1180 | 4820 | 3380 | 1650 | 1300 | 588 | 863 |
| 30 | 1220 | 590 | 1530 | 1180 | --- | 1250 | 2810 | 4820 | 1870 | 1360 | 587 | 1190 |
| 31 | 1010 | --- | 1360 | 1080 | --- | 1200 | --- | 3070 | --- | 1150 | 578 | --- |
| TOTAL | 28137 | 20649 | 44025 | 70257 | 74290 | 66530 | 51778 | 56314 | 105380 | 37331 | 32128 | 21366 |
| MEAN | 908 | 688 | 1420 | 2266 | 2653 | 2146 | 1726 | 1817 | 3513 | 1204 | 1036 | 712 |
| MAX | 5200 | 890 | 5870 | 10600 | 11700 | 5200 | 7710 | 4820 | 10000 | 1710 | 3060 | 1190 |
| MIN | 377 | 551 | 556 | 877 | 1310 | 1180 | 938 | 863 | 1410 | 920 | 578 | 441 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |

CAL YR 1981 TOTAL 368767 MEAN 1010 MAX 5870 MIN 271 MEAN# 967 CFSM# .54 IN# 7.33
WTR YR 1982 TOTAL 608185 MEAN 1666 MAX 11700 MIN 377 MEAN# 1691 CFSM# .95 IN# 12.90

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

ROANOKE RIVER BASIN

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-70, 1972-73, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1982 (discontinued).

WATER TEMPERATURES: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder since October 1977. Water-quality monitor January 1981 to September 1982.

REMARKS.--Station is part of North Carolina district's Primary Accounting Network used to define stream-quality characteristics of the State's major streams. Water temperatures near left bank sometimes affected by heated releases from power plant located 8.4 mi (13.5 km) upstream. Releases from town of Eden's sewage treatment plant enter river on left bank approximately 10.2 mi (16.4 km) upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 282 micromhos Oct. 11, 1981; minimum daily, 37 micromhos Oct. 10, 1976.

WATER TEMPERATURES: Maximum, 33.5°C June 16, 1981; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 282 micromhos Oct. 11; minimum daily, 55 micromhos June 14.

WATER TEMPERATURES: Maximum, 31.5°C July 19; minimum, 0.0°C Dec. 21, Jan. 10, 11, 17, 18, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|-------|------|---|---|---------------|-----------------------------|--|-------------------------------------|--|--|--|--|--|
| DEC | | | | | | | | | | | | |
| 10... | 1145 | 6800 | 80 | 7.2 | 4.0 | 120 | 12.5 | 17 | 1 | 4.1 | 1.6 | 6.4 |
| JAN | | | | | | | | | | | | |
| 01... | 0830 | 3720 | 80 | 7.2 | 2.5 | 80 | -- | 18 | 2 | 4.5 | 1.7 | 5.8 |
| 02... | 0130 | 5530 | 85 | 7.1 | 3.5 | 80 | -- | 24 | 8 | 5.8 | 2.3 | 7.0 |
| 02... | 1625 | 3470 | 80 | 7.2 | 4.5 | 75 | -- | 18 | 0 | 4.6 | 1.7 | 4.9 |
| 04... | 0825 | 5970 | 90 | 7.2 | 4.5 | 140 | -- | 22 | 4 | 5.5 | 1.9 | 5.0 |
| 04... | 1100 | 10400 | 70 | 7.2 | 4.5 | 160 | -- | 16 | 1 | 3.8 | 1.5 | 3.7 |
| 05... | 0200 | 14700 | -- | -- | 5.2 | 250 | -- | 15 | -- | 3.6 | 1.4 | 3.2 |
| 05... | 1230 | 10200 | 65 | 7.4 | 5.5 | 200 | -- | 18 | 5 | 4.5 | 1.7 | 4.3 |
| 06... | 0830 | 4360 | -- | 7.4 | 5.0 | 110 | -- | 21 | 5 | 5.4 | 1.8 | 5.7 |
| MAR | | | | | | | | | | | | |
| 16... | 1300 | 1530 | 87 | 7.0 | 10.0 | 20 | 10.8 | 22 | 4 | 5.4 | 2.1 | 11 |
| APR | | | | | | | | | | | | |
| 28... | 0600 | 6650 | 70 | 6.9 | 15.0 | 200 | -- | 14 | 1 | 3.3 | 1.3 | 4.5 |
| 28... | 0940 | 7680 | 65 | 6.4 | 15.0 | 250 | -- | 14 | 3 | 3.4 | 1.4 | 5.0 |
| 28... | 1730 | 9880 | 50 | 6.2 | 15.0 | 210 | -- | 14 | 7 | 3.3 | 1.4 | 3.5 |
| 29... | 0530 | 5900 | 60 | 6.1 | 14.5 | 200 | -- | 16 | 3 | 3.8 | 1.5 | 5.5 |
| 29... | 1245 | 4240 | 65 | 6.2 | 15.0 | 190 | -- | 16 | 5 | 3.9 | 1.6 | 6.3 |
| JUN | | | | | | | | | | | | |
| 14... | 1030 | 12600 | 52 | 6.2 | 18.0 | 360 | 8.6 | 13 | 5 | 3.1 | 1.2 | 2.4 |
| SEP | | | | | | | | | | | | |
| 08... | 1040 | 710 | 220 | 7.8 | 21.0 | 20 | 8.4 | 27 | 0 | 6.7 | 2.5 | 35 |

ROANOKE RIVER BASIN

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02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PERCENT SODIUM | SODIUM AD- SORP- TION RATIO | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | BICAR- BONATE FET-FLD (MG/L AS HCO3) | CAR- BONATE FET-FLD (MG/L AS CO3) | ALKA- LINITY FIELD (MG/L AS CACO3) | CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) |
|-------|-------------------|---|---|---|---|---|---|---|---|--|---|--|
| DEC | | | | | | | | | | | | |
| 10... | 42 | .7 | 2.1 | 20 | 0 | 16 | 2.0 | 9.4 | 7.7 | <.1 | 9.4 | 66 |
| JAN | | | | | | | | | | | | |
| 01... | 38 | .6 | 1.7 | 20 | 0 | 16 | 2.2 | 8.8 | 6.0 | <.1 | 12 | 66 |
| 02... | 37 | .7 | 1.7 | 20 | 0 | 16 | 3.1 | 8.9 | 6.2 | <.1 | 12 | 57 |
| 02... | 34 | .5 | 1.7 | 22 | 0 | 18 | 1.8 | 9.6 | 5.0 | <.1 | 12 | 56 |
| 04... | 31 | .5 | 2.0 | 22 | 0 | 18 | 1.8 | 12 | 4.8 | <.1 | 11 | 58 |
| 04... | 31 | .4 | 1.8 | 18 | 0 | 15 | 2.2 | 10 | 4.0 | <.1 | 9.1 | 46 |
| 05... | 29 | .4 | 2.0 | -- | -- | -- | -- | 9.4 | 3.0 | <.1 | 10 | -- |
| 05... | 31 | .5 | 2.2 | 16 | 0 | 13 | .9 | 11 | 3.7 | <.1 | 12 | 68 |
| 06... | 34 | .6 | 2.1 | 20 | 0 | 16 | 1.3 | 14 | 6.0 | <.1 | 10 | 53 |
| MAR | | | | | | | | | | | | |
| 10... | 50 | 1.1 | 1.5 | 22 | 0 | 18 | 4.7 | 7.7 | 9.7 | <.1 | 15 | 69 |
| APR | | | | | | | | | | | | |
| 20... | 39 | .6 | 1.6 | 16 | 0 | 13 | 2.9 | 7.0 | 5.0 | <.1 | 9.4 | 50 |
| 20... | 40 | .6 | 1.8 | 13 | 0 | 11 | 9.3 | 7.0 | 4.6 | .1 | 9.7 | 44 |
| 20... | 32 | .4 | 1.6 | 9 | 0 | 7 | 12 | 10 | 3.2 | <.1 | 9.8 | 37 |
| 29... | 40 | .7 | 1.7 | 16 | 0 | 13 | 19 | 9.0 | 5.5 | <.1 | 10 | -- |
| 29... | 43 | .7 | 1.7 | 14 | 0 | 11 | 16 | 9.0 | 6.4 | <.1 | 10 | 50 |
| JUN | | | | | | | | | | | | |
| 14... | 25 | .3 | 2.2 | 10 | 0 | 8 | 11 | 8.0 | 2.1 | <.1 | 8.2 | 50 |
| SEP | | | | | | | | | | | | |
| 08... | 72 | 3.2 | 2.0 | 56 | 0 | 46 | 1.0 | 15 | 40 | .1 | 14 | 140 |

< Actual value is known to be less than the value shown.

| DATE | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | SOLIDS, DIS- SOLVED (TONS PER AC-FT) | SOLIDS, DIS- SOLVED (TONS PER DAY) | NITRO- GEN, NITRATE TOTAL (MG/L AS N) | NITRO- GEN, NITRITE TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) | NITRO- GEN, ORGANIC TOTAL (MG/L AS N) | NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) |
|-------|--|---|---|--|--|--|---|--|---|---|--|---|
| DEC | | | | | | | | | | | | |
| 10... | 52 | .09 | 1210 | .30 | .030 | .33 | .29 | .100 | .070 | .09 | -- | .60 |
| JAN | | | | | | | | | | | | |
| 01... | 51 | .09 | 663 | .28 | .080 | .36 | .43 | .080 | .050 | .06 | .54 | .52 |
| 02... | 56 | .06 | 851 | .27 | .020 | .29 | .27 | .050 | .030 | .04 | .62 | .39 |
| 02... | 49 | .08 | 525 | .28 | .010 | .29 | .25 | .040 | <.010 | .01 | .35 | -- |
| 04... | 51 | .08 | 935 | .39 | .070 | .46 | .37 | .170 | .090 | .12 | 1.3 | .38 |
| 04... | 45 | .06 | 1290 | .33 | .110 | .44 | .32 | .240 | .060 | .08 | .86 | .62 |
| 05... | 38 | -- | -- | .30 | .100 | .40 | .27 | .190 | .080 | .10 | .57 | .36 |
| 05... | 47 | .09 | 1870 | .33 | .070 | .40 | .27 | .140 | .060 | .08 | .53 | .58 |
| 06... | 55 | .07 | 624 | .31 | .030 | .34 | -- | .090 | .070 | .09 | .91 | .53 |
| MAR | | | | | | | | | | | | |
| 10... | 67 | .09 | 285 | -- | <.010 | .26 | .26 | .030 | .030 | .04 | .48 | .07 |
| APR | | | | | | | | | | | | |
| 20... | 39 | .07 | 898 | .35 | .100 | .45 | -- | -- | -- | -- | -- | -- |
| 20... | 40 | .06 | 912 | .31 | .090 | .40 | -- | -- | -- | -- | -- | -- |
| 20... | 39 | .05 | 987 | .32 | .090 | .41 | -- | -- | -- | -- | -- | -- |
| 29... | 44 | -- | -- | .30 | .050 | .35 | -- | -- | -- | -- | -- | -- |
| 29... | 47 | .07 | 572 | .29 | .050 | .34 | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | | | |
| 14... | 33 | .07 | 1700 | .41 | .190 | .60 | .26 | .400 | .030 | .04 | 1.5 | .27 |
| SEP | | | | | | | | | | | | |
| 08... | 135 | .19 | 268 | .66 | .040 | .70 | .64 | .100 | .070 | .09 | 4.0 | .83 |

< Actual value is known to be less than the value shown.

ROANOKE RIVER BASIN

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO- GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) | NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) | NITRO- GEN, TOTAL (MG/L AS N) | NITRO- GEN, TOTAL (MG/L AS NO3) | NITRO- GEN DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS TOTAL (MG/L AS P04) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTH0, TOTAL (MG/L AS P) | PHOS- PHORUS, ORTH0, DIS- SOLVED (MG/L AS P) | PHOS- PHATE, ORTH0, DIS- SOLVED (MG/L AS P04) |
|--------------|---|--|--|---|---|---|---|--|--|---|--|---|
| DEC 16... | -- | -- | .67 | -- | -- | .96 | .270 | .83 | .020 | .040 | <.010 | -- |
| JAN 01... | .62 | .05 | .57 | .98 | 4.3 | 1.0 | .230 | .71 | .060 | .070 | .040 | .12 |
| 02... | .67 | .25 | .42 | .96 | 4.3 | .69 | .170 | .52 | .020 | .060 | .030 | .09 |
| 02... | .39 | .14 | .25 | .68 | 3.0 | .50 | .050 | .15 | <.010 | .030 | .010 | .03 |
| 04... | 1.50 | 1.0 | .47 | 2.0 | 8.7 | .84 | .430 | 1.3 | .050 | .140 | .040 | .12 |
| 04... | 1.10 | .42 | .68 | 1.5 | 6.8 | 1.0 | .620 | 1.9 | .040 | .200 | .030 | .09 |
| 05... | .76 | .32 | .44 | 1.2 | 5.1 | .71 | .190 | .58 | .020 | .130 | .020 | .06 |
| 05... | .67 | .03 | .64 | 1.1 | 4.7 | .91 | .400 | 1.2 | .020 | .100 | <.010 | -- |
| 06... | 1.00 | .40 | .60 | 1.3 | 5.9 | -- | .180 | .55 | .050 | .070 | .050 | .15 |
| MAR 16... | .51 | .41 | .10 | .77 | 3.4 | .36 | .100 | .31 | .070 | .070 | .060 | .18 |
| APR 28... | 2.20 | -- | -- | 2.7 | 12 | -- | .630 | 1.9 | -- | .140 | -- | -- |
| 28... | .70 | -- | -- | 1.1 | 4.9 | -- | .320 | .93 | -- | .120 | -- | -- |
| 28... | 1.30 | -- | -- | 1.7 | 7.6 | -- | .610 | 1.9 | -- | .130 | -- | -- |
| 29... | .88 | -- | -- | 1.2 | 5.4 | -- | .210 | .64 | -- | .070 | -- | -- |
| 29... | 1.10 | -- | -- | 1.4 | 6.4 | -- | .390 | 1.2 | -- | .070 | -- | -- |
| JUN 14... | 1.90 | 1.6 | .30 | 2.5 | 11 | .56 | .640 | 2.0 | .030 | .310 | .020 | .06 |
| SEP 08... | 4.10 | 3.2 | .90 | 4.8 | 21 | 1.5 | .270 | .83 | .300 | .280 | .290 | .89 |

< Actual value is known to be less than the value shown.

| DATE | ARSENIC TOTAL (UG/L AS AS) | ARSENIC SUS- PENDE TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) |
|--------------|-------------------------------------|--|--|---|---|--|--|---|---|--|---|
| DEC 16... | 1 | 0 | 1 | <1 | -- | 2 | -- | -- | -- | -- | -- |
| JAN 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 1 | 0 | 1 | 1 | 0 | 1 | 40 | <1 | 17 | <1 | 39 |
| 05... | 1 | 1 | 0 | 1 | 0 | 3 | 20 | <1 | 12 | <1 | 21 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR 16... | 1 | -- | <1 | <1 | -- | <1 | -- | -- | -- | -- | -- |
| APR 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 14... | 1 | 0 | 1 | 1 | -- | <1 | 10 | <1 | 15 | <1 | 44 |
| SEP 08... | 1 | 0 | 1 | 1 | 0 | 1 | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

ROANOKE RIVER BASIN

253

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | COPPER, SUS- PENDE REC OV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL REC OV- ERABLE (UG/L AS FE) | IRON, SUS- PENDE REC OV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL REC OV- ERABLE (UG/L AS PB) | LEAD, SUS- PENDE REC OV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL REC OV- ERABLE (UG/L AS MN) | MANGA- NESE, SUS- PENDE REC OV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|-------|--|--|--|--|--|--|--|--|--|--|--|
| DEC | | | | | | | | | | | |
| 16... | -- | -- | -- | -- | -- | 17 | -- | <1 | -- | -- | -- |
| JAN | | | | | | | | | | | |
| 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 02... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 05... | 32 | 7 | 30000 | 29000 | 720 | 24 | -- | <1 | 900 | 840 | 63 |
| 05... | 12 | 9 | 18000 | 17000 | 790 | 22 | -- | <1 | 500 | 430 | 75 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 16... | -- | -- | -- | -- | -- | 2 | -- | <1 | -- | -- | -- |
| APR | | | | | | | | | | | |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 28... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | | |
| 14... | 39 | 5 | 44000 | 44000 | 420 | 26 | 23 | 3 | 800 | 790 | 12 |
| SEP | | | | | | | | | | | |
| 08... | -- | -- | -- | -- | -- | 4 | 2 | 2 | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY TOTAL REC OV- ERABLE (UG/L AS HG) | MERCURY SUS- PENDE REC OV- ERABLE (UG/L AS HG) | MERCURY DIS- SOLVED (UG/L AS HG) | SELE- NIUM, TOTAL REC OV- ERABLE (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | ZINC, TOTAL REC OV- ERABLE (UG/L AS ZN) | ZINC, SUS- PENDE REC OV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | CARBON, ORGANIC DIS- SOLVED (MG/L AS C) | CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) | METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L) |
|-------|--|--|--|---|---|--|--|--|--|--|--|
| DEC | | | | | | | | | | | |
| 16... | .1 | .0 | .1 | <1 | <1 | -- | -- | -- | 4.3 | 1.7 | .00 |
| JAN | | | | | | | | | | | |
| 05... | .2 | .0 | .2 | 1 | <1 | 80 | 70 | 10 | -- | -- | -- |
| 05... | .2 | .0 | .2 | 1 | <1 | 50 | 30 | 18 | -- | -- | -- |
| MAR | | | | | | | | | | | |
| 16... | .2 | .0 | .2 | <1 | <1 | -- | -- | -- | 1.7 | .2 | -- |
| JUN | | | | | | | | | | | |
| 14... | .2 | .0 | .2 | <1 | <1 | 90 | 80 | 10 | 15 | >7.0 | -- |
| SEP | | | | | | | | | | | |
| 08... | <.1 | -- | <.1 | <1 | <1 | -- | -- | -- | 2.4 | .1 | -- |

< Actual value is known to be less than the value shown.

> Actual value is known to be greater than the value shown.

ROANOKE RIVER BASIN

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 172 | 110 | 120 | 98 | 108 | 105 | 90 | 90 | 70 | 70 | 106 | 240 |
| 2 | 192 | 108 | 106 | 71 | 104 | 89 | 121 | 80 | 80 | 92 | 99 | 192 |
| 3 | 180 | 146 | 159 | 85 | 98 | 90 | 102 | 80 | 88 | 112 | 118 | 175 |
| 4 | 180 | 148 | 135 | 68 | 62 | 82 | 114 | 110 | 82 | 91 | 140 | 188 |
| 5 | 172 | 160 | 139 | 57 | 66 | 91 | 145 | 110 | 91 | 60 | 140 | 92 |
| 6 | 135 | 155 | 130 | 75 | 76 | 89 | 154 | 122 | 79 | 102 | 142 | 132 |
| 7 | 175 | 150 | 165 | 86 | 74 | 68 | 94 | 123 | 82 | 78 | 115 | 105 |
| 8 | 210 | 130 | 130 | 82 | 98 | 92 | 112 | 107 | 129 | 78 | 158 | 198 |
| 9 | 190 | 180 | 115 | 87 | 74 | 75 | 108 | 90 | 80 | 86 | 142 | 140 |
| 10 | 245 | 170 | 131 | 74 | 87 | 87 | 145 | 83 | 145 | 78 | 81 | 182 |
| 11 | 282 | 140 | 170 | 85 | 95 | 91 | 83 | 141 | 74 | 66 | 155 | 162 |
| 12 | 142 | 150 | 170 | 200 | 102 | 112 | 125 | 185 | 86 | 70 | 70 | 185 |
| 13 | 268 | 233 | 121 | 105 | 102 | 93 | 98 | 130 | 65 | 95 | 98 | 118 |
| 14 | 172 | 150 | 120 | 116 | 95 | 92 | 90 | 135 | 55 | 100 | 115 | 105 |
| 15 | 155 | 165 | 235 | 120 | 117 | 100 | 89 | 130 | 69 | 108 | 120 | 165 |
| 16 | 168 | 195 | 71 | 125 | 100 | 105 | 117 | 103 | 90 | 103 | 102 | 168 |
| 17 | 160 | 138 | 74 | 100 | 87 | 126 | 116 | 130 | 125 | 100 | 245 | 162 |
| 18 | 158 | 168 | 109 | 88 | 82 | 101 | 78 | 141 | 65 | 100 | 190 | 160 |
| 19 | 140 | 180 | 100 | 108 | 80 | 114 | 100 | 142 | 102 | 100 | 155 | 185 |
| 20 | 125 | 180 | 82 | 100 | 87 | 100 | 106 | 115 | 120 | 225 | 172 | 195 |
| 21 | 155 | 180 | 109 | 106 | 80 | 83 | 116 | 138 | 80 | 140 | 152 | 106 |
| 22 | 158 | 160 | 175 | 120 | 88 | 98 | 100 | 109 | 145 | 130 | 125 | 108 |
| 23 | 195 | 130 | 108 | 100 | 106 | 120 | 142 | 104 | 68 | 120 | 102 | 107 |
| 24 | 142 | 140 | 95 | 85 | 92 | 90 | 133 | 85 | 99 | 120 | 205 | 108 |
| 25 | 148 | 140 | 88 | 82 | 100 | 83 | 127 | 142 | 111 | 100 | 178 | 135 |
| 26 | 100 | 140 | 78 | 115 | 115 | 95 | 124 | 88 | 58 | 81 | 172 | 138 |
| 27 | 125 | 125 | 75 | 98 | 105 | 111 | 105 | 78 | 58 | 150 | 160 | 102 |
| 28 | 60 | 175 | 79 | 112 | 108 | 118 | 56 | 85 | 71 | 126 | 180 | 105 |
| 29 | 71 | 102 | 88 | 122 | --- | 87 | 67 | 73 | 170 | 140 | 148 | 122 |
| 30 | 80 | 132 | 95 | 109 | --- | 96 | 80 | 70 | 82 | 104 | 105 | 155 |
| 31 | 110 | --- | 101 | 103 | --- | 115 | --- | 80 | --- | 143 | 165 | --- |
| MEAN | 160 | 153 | 119 | 99 | 92 | 97 | 108 | 110 | 91 | 105 | 140 | 148 |
| WTR YR 1982 | MEAN | 119 | MAX | 282 | MIN | 55 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|---------|------|------|----------|------|------|----------|-----|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 21.5 | 18.0 | 19.5 | --- | --- | 14.0 | 8.5 | 7.0 | 8.0 | 3.5 | 2.5 | 3.0 |
| 2 | 21.5 | 18.0 | 20.0 | --- | --- | 16.0 | 9.0 | 7.5 | 8.0 | 4.0 | 3.5 | 4.0 |
| 3 | 18.0 | 15.0 | 16.5 | 16.5 | 15.5 | 16.0 | 9.0 | 7.5 | 8.5 | 5.0 | 4.0 | 4.5 |
| 4 | 17.0 | 14.5 | 16.0 | 16.5 | 15.0 | 16.0 | 8.5 | 8.0 | 8.0 | 5.0 | 4.0 | 4.5 |
| 5 | 19.0 | 15.0 | 16.5 | 17.0 | 15.5 | 16.0 | 8.5 | 7.0 | 7.5 | 5.5 | 5.0 | 5.5 |
| 6 | 20.5 | 18.5 | 19.5 | 17.0 | 14.5 | 16.0 | 7.0 | 5.5 | 6.0 | 5.5 | 5.5 | 5.5 |
| 7 | 20.5 | 18.5 | 20.0 | 14.5 | 12.5 | 13.5 | 7.0 | 5.0 | 6.0 | 6.5 | 5.0 | 5.5 |
| 8 | 19.5 | 17.0 | 18.0 | 12.5 | 10.5 | 11.5 | 7.0 | 6.0 | 6.5 | 6.5 | 5.5 | 6.0 |
| 9 | 18.5 | 17.0 | 17.5 | 14.5 | 10.5 | 12.0 | 7.0 | 5.5 | 6.5 | 5.5 | 3.5 | 5.0 |
| 10 | 17.0 | 15.0 | 15.5 | 14.5 | 11.5 | 13.0 | 5.5 | 4.0 | 5.0 | 3.5 | .0 | 1.5 |
| 11 | 16.5 | 15.0 | 16.0 | 12.5 | 11.0 | 11.5 | 4.5 | 3.5 | 4.0 | 3.0 | .0 | .5 |
| 12 | 17.0 | 15.0 | 16.0 | 12.0 | 11.0 | 11.5 | 4.5 | 2.5 | 3.5 | 4.5 | 2.0 | 3.0 |
| 13 | 17.0 | 14.5 | 15.5 | 11.0 | 9.0 | 10.0 | 5.0 | 3.0 | 4.0 | 2.0 | 1.0 | 1.5 |
| 14 | 17.5 | 14.0 | 15.0 | 10.0 | 8.5 | 9.5 | 6.0 | 3.5 | 4.0 | 2.0 | 1.0 | 1.5 |
| 15 | 18.0 | 15.5 | 16.0 | 9.0 | 7.5 | 8.5 | 6.0 | 3.0 | 4.5 | 3.0 | .5 | 1.5 |
| 16 | 18.0 | 15.5 | 16.5 | 10.0 | 7.5 | 8.5 | 4.5 | 3.5 | 4.0 | 2.5 | 1.5 | 2.0 |
| 17 | 17.5 | 15.0 | 16.0 | 11.5 | 9.5 | 10.0 | 5.0 | 4.0 | 4.5 | 1.5 | .0 | .5 |
| 18 | 17.0 | 15.5 | 16.0 | 12.5 | 11.0 | 11.5 | 4.5 | 4.0 | 4.5 | 4.0 | .0 | 2.0 |
| 19 | 16.0 | 14.5 | 15.5 | 12.5 | 10.0 | 11.0 | 4.0 | 3.5 | 3.5 | 3.5 | 1.0 | 1.5 |
| 20 | 15.5 | 13.0 | 14.0 | 13.5 | 11.5 | 12.5 | 3.5 | 3.5 | 3.5 | 2.0 | 1.0 | 1.5 |
| 21 | 14.5 | 11.5 | 13.0 | 11.5 | 8.5 | 10.5 | 3.5 | .0 | 2.5 | 2.0 | 1.0 | 1.5 |
| 22 | 15.0 | 12.5 | 14.0 | 8.5 | 6.5 | 7.5 | 3.0 | 1.0 | 1.5 | 3.0 | .0 | 1.5 |
| 23 | 15.5 | 14.5 | 15.0 | 9.0 | 5.5 | 7.0 | 2.0 | 1.0 | 1.5 | 3.0 | 1.0 | 1.5 |
| 24 | 14.5 | 12.5 | 13.5 | 9.0 | 7.0 | 8.0 | 4.0 | 2.0 | 3.0 | 2.5 | 1.0 | 1.5 |
| 25 | 12.5 | 11.5 | 12.0 | 8.5 | 6.5 | 7.5 | 4.0 | 3.5 | 4.0 | 3.0 | 1.5 | 2.0 |
| 26 | 14.0 | 11.5 | 12.5 | 8.0 | 5.5 | 6.5 | 4.5 | 3.5 | 4.0 | 2.5 | 1.0 | 1.5 |
| 27 | 14.5 | 13.0 | 14.0 | 8.0 | 6.0 | 8.0 | 4.5 | 4.0 | 4.5 | 2.5 | .5 | 1.5 |
| 28 | --- | --- | 13.5 | 9.0 | 8.0 | 8.5 | 6.0 | 4.5 | 5.0 | 3.0 | 1.0 | 2.0 |
| 29 | --- | --- | 14.0 | 8.5 | 7.0 | 8.0 | 6.0 | 5.5 | 5.5 | 3.0 | 1.0 | 2.0 |
| 30 | --- | --- | 15.5 | 8.5 | 6.0 | 7.0 | 5.5 | 4.5 | 5.0 | 2.5 | 1.0 | 2.0 |
| 31 | --- | --- | 14.0 | --- | --- | --- | 4.5 | 3.5 | 4.0 | 5.0 | 2.0 | 3.5 |
| MONTH | 21.5 | 11.5 | 15.5 | 17.0 | 5.5 | 11.0 | 9.0 | .0 | 5.0 | 6.5 | .0 | 2.5 |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|----------|------|------|-------|------|------|--------|------|------|-----------|------|------|
| | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 6.0 | 5.0 | 5.5 | 5.5 | 3.5 | 4.5 | 14.5 | 12.0 | 13.0 | 16.0 | 14.0 | 15.0 |
| 2 | 5.5 | 4.0 | 4.5 | 7.0 | 5.0 | 6.0 | 15.5 | 13.0 | 14.0 | 16.5 | 15.5 | 16.0 |
| 3 | 4.0 | 3.5 | 4.0 | 7.5 | 7.0 | 7.0 | 16.0 | 15.0 | 15.5 | 18.0 | 16.0 | 17.0 |
| 4 | 6.0 | 4.0 | 5.0 | 7.0 | 6.0 | 6.5 | 15.5 | 13.5 | 14.5 | 18.0 | 16.5 | 17.5 |
| 5 | 6.5 | 6.0 | 6.5 | 8.0 | 6.0 | 6.5 | --- | --- | 13.5 | 18.0 | 16.0 | 17.0 |
| 6 | 6.5 | 6.0 | 6.5 | 8.0 | 8.0 | 8.0 | --- | --- | 12.0 | 18.5 | 16.5 | 17.5 |
| 7 | 6.0 | 5.0 | 5.5 | 8.0 | 6.5 | 7.5 | --- | --- | 11.0 | 19.0 | 17.5 | 18.5 |
| 8 | 5.5 | 4.0 | 5.0 | 6.5 | 5.5 | 6.0 | 11.0 | 9.0 | 10.0 | 19.0 | 18.0 | 18.5 |
| 9 | 5.5 | 5.0 | 5.0 | 7.5 | 5.5 | 6.5 | 10.0 | 8.0 | 9.0 | 20.0 | 17.0 | 18.0 |
| 10 | 5.5 | 5.0 | 5.0 | 8.5 | 7.0 | 7.5 | 11.0 | 8.5 | 9.5 | 21.0 | 17.5 | 19.0 |
| 11 | 5.0 | 5.0 | 5.0 | 10.0 | 8.0 | 9.0 | 12.0 | 9.5 | 10.5 | 21.0 | 18.5 | 20.0 |
| 12 | 6.0 | 5.0 | 5.5 | 11.5 | 9.5 | 10.5 | 14.0 | 11.0 | 12.0 | 22.0 | 19.0 | 20.5 |
| 13 | 6.0 | 5.0 | 5.5 | 12.0 | 11.5 | 11.5 | 15.0 | 13.5 | 14.0 | 22.5 | 20.5 | 21.5 |
| 14 | 6.0 | 4.5 | 5.0 | 12.0 | 11.0 | 11.5 | 16.0 | 14.0 | 15.0 | 23.0 | 21.5 | 22.5 |
| 15 | 6.5 | 5.5 | 6.0 | 12.0 | 11.0 | 11.5 | 17.0 | 15.5 | 16.0 | 24.0 | 22.0 | 23.0 |
| 16 | 8.0 | 6.5 | 7.0 | 11.0 | 10.0 | 10.0 | 17.0 | 15.5 | 16.5 | 25.0 | 22.5 | 23.5 |
| 17 | 9.0 | 8.0 | 8.5 | 13.0 | 9.0 | 11.0 | 18.0 | 17.0 | 17.5 | 26.5 | 21.0 | 25.0 |
| 18 | 8.5 | 7.0 | 7.5 | 14.0 | 12.0 | 13.0 | 19.0 | 16.5 | 18.0 | 26.5 | 24.0 | 25.5 |
| 19 | 7.0 | 6.0 | 6.5 | 13.5 | 13.0 | 13.5 | 17.5 | 16.0 | 17.0 | 26.5 | 24.0 | 25.5 |
| 20 | 7.5 | 6.0 | 6.5 | 13.0 | 12.0 | 12.5 | 16.0 | 15.0 | 15.5 | 24.5 | 23.5 | 24.0 |
| 21 | 8.5 | 7.5 | 8.0 | 12.0 | 11.5 | 12.0 | 15.0 | 15.0 | 15.0 | 24.5 | 21.0 | 23.5 |
| 22 | 9.0 | 7.5 | 8.5 | 13.0 | 11.5 | 12.0 | 15.0 | 13.0 | 14.0 | 24.0 | 22.0 | 23.0 |
| 23 | 9.0 | 7.0 | 8.0 | 13.5 | 12.0 | 12.5 | 14.0 | 11.5 | 12.5 | 24.0 | 22.5 | 23.0 |
| 24 | 10.0 | 8.0 | 9.0 | 12.5 | 12.0 | 12.5 | 15.5 | 12.0 | 13.5 | 24.0 | 22.5 | 23.0 |
| 25 | 10.5 | 9.5 | 10.0 | 13.5 | 11.0 | 12.0 | 15.0 | 13.0 | 14.0 | 24.0 | 22.5 | 23.0 |
| 26 | 9.5 | 7.5 | 8.5 | 13.5 | 12.0 | 13.0 | 17.5 | 14.5 | 15.5 | 23.5 | 22.5 | 22.5 |
| 27 | 7.5 | 3.5 | 5.0 | 12.0 | 10.5 | 11.5 | 17.0 | 15.5 | 16.5 | 22.5 | 21.5 | 22.0 |
| 28 | 4.0 | 2.5 | 3.5 | 10.5 | 9.0 | 9.5 | 16.5 | 14.5 | 15.5 | 22.0 | 17.0 | 20.5 |
| 29 | --- | --- | --- | 10.5 | 8.0 | 9.0 | 15.5 | 14.5 | 15.0 | 21.0 | 20.5 | 21.0 |
| 30 | --- | --- | --- | 12.0 | 9.0 | 10.5 | 15.5 | 14.0 | 15.0 | 21.0 | 20.0 | 20.5 |
| 31 | --- | --- | --- | 13.0 | 11.5 | 12.5 | --- | --- | --- | 24.0 | 21.0 | 22.5 |
| MONTH | 10.5 | 2.5 | 6.5 | 14.0 | 3.5 | 10.0 | 19.0 | 8.0 | 14.0 | 26.5 | 14.0 | 21.0 |
| | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 24.0 | 22.0 | 23.0 | 26.0 | 24.5 | 25.5 | 26.0 | 23.0 | 24.5 | 23.0 | 22.0 | 22.5 |
| 2 | 22.5 | 20.0 | 21.0 | 26.0 | 24.0 | 25.0 | 28.5 | 25.0 | 26.0 | 26.5 | 22.5 | 24.0 |
| 3 | 20.0 | 18.0 | 18.5 | 26.0 | 25.0 | 25.5 | 28.5 | 27.5 | 28.0 | 28.0 | 26.0 | 27.0 |
| 4 | 19.5 | 16.5 | 18.0 | 27.0 | 25.0 | 26.0 | 28.5 | 26.5 | 27.5 | 27.5 | 25.0 | 26.5 |
| 5 | 20.0 | 19.0 | 19.5 | 27.0 | 24.5 | 25.5 | 29.0 | 27.5 | 28.0 | 25.0 | 22.0 | 23.0 |
| 6 | 20.5 | 20.0 | 20.0 | 26.5 | 25.5 | 26.0 | 27.5 | 26.0 | 26.5 | 24.0 | 20.5 | 22.0 |
| 7 | 21.5 | 19.0 | 20.0 | 27.5 | 26.0 | 27.0 | 26.5 | 25.5 | 26.0 | 24.0 | 20.5 | 22.5 |
| 8 | 22.5 | 21.0 | 21.5 | 27.5 | 25.5 | 26.5 | 28.0 | 25.5 | 26.5 | 23.0 | 21.0 | 22.0 |
| 9 | 22.5 | 20.5 | 21.5 | 27.0 | 26.0 | 26.5 | 28.0 | 25.5 | 27.0 | 23.0 | 21.0 | 22.0 |
| 10 | 22.0 | 21.0 | 21.5 | 27.0 | 26.0 | 26.5 | 26.0 | 24.5 | 25.0 | 22.5 | 21.0 | 21.5 |
| 11 | 21.0 | 19.5 | 20.0 | 27.0 | 26.5 | 26.5 | 26.0 | 24.0 | 25.0 | 21.5 | 20.0 | 21.0 |
| 12 | 20.0 | 19.5 | 19.5 | 29.0 | 25.5 | 27.0 | 24.5 | 23.5 | 24.0 | 23.0 | 19.5 | 21.0 |
| 13 | 20.5 | 19.5 | 20.0 | 29.0 | 27.5 | 28.0 | 24.5 | 23.0 | 23.5 | 24.5 | 21.5 | 22.5 |
| 14 | 20.0 | 19.5 | 19.5 | 27.5 | 26.0 | 26.5 | 24.0 | 22.5 | 23.5 | 25.0 | 24.5 | 25.0 |
| 15 | 21.0 | 20.0 | 20.5 | 27.0 | 26.0 | 26.5 | 26.0 | 22.5 | 24.0 | 26.0 | 24.5 | 25.0 |
| 16 | 22.0 | 20.5 | 21.0 | 27.5 | 26.0 | 27.0 | 27.5 | 24.5 | 26.0 | 27.0 | 25.0 | 25.5 |
| 17 | 22.0 | 21.5 | 22.0 | 27.5 | 26.0 | 27.0 | 27.5 | 26.5 | 27.0 | 26.0 | 25.0 | 25.5 |
| 18 | 22.0 | 19.5 | 20.5 | 30.0 | 26.5 | 28.0 | 27.0 | 24.5 | 25.5 | 25.0 | 23.0 | 24.0 |
| 19 | 21.0 | 19.5 | 20.5 | 31.5 | 28.5 | 29.5 | 26.0 | 23.5 | 24.5 | 23.0 | 22.0 | 22.5 |
| 20 | 22.0 | 20.5 | 21.5 | 31.0 | 29.0 | 29.5 | 27.0 | 24.5 | 26.0 | 23.0 | 22.0 | 22.5 |
| 21 | 25.0 | 22.0 | 23.0 | 30.0 | 27.5 | 29.0 | 27.0 | 25.0 | 26.0 | 22.5 | 20.5 | 21.0 |
| 22 | 25.0 | 22.5 | 23.5 | 30.0 | 27.5 | 28.5 | 25.5 | 23.0 | 24.5 | 20.5 | 19.5 | 20.0 |
| 23 | 22.5 | 20.5 | 21.5 | 28.0 | 27.5 | 28.0 | 27.0 | 23.5 | 25.0 | 19.5 | 17.5 | 18.5 |
| 24 | 22.0 | 20.5 | 21.0 | 27.5 | 26.0 | 26.5 | 28.0 | 26.5 | 27.0 | 18.5 | 16.5 | 17.5 |
| 25 | 21.0 | 20.0 | 20.5 | 28.0 | 25.5 | 26.5 | 29.5 | 28.0 | 28.5 | 18.5 | 16.5 | 17.5 |
| 26 | 22.0 | 20.5 | 21.0 | 31.0 | 27.0 | 28.5 | 29.0 | 26.0 | 27.0 | 18.0 | 17.0 | 17.5 |
| 27 | 24.5 | 21.5 | 23.0 | 31.0 | 29.0 | 29.5 | 27.0 | 25.0 | 26.0 | 18.0 | 16.5 | 17.0 |
| 28 | 25.5 | 23.5 | 24.5 | 30.0 | 28.0 | 29.0 | 26.0 | 24.5 | 25.5 | 19.0 | 17.5 | 18.0 |
| 29 | 26.0 | 24.5 | 25.5 | 30.0 | 27.0 | 28.5 | 26.0 | 23.0 | 24.0 | 19.0 | 18.0 | 18.5 |
| 30 | 26.5 | 25.0 | 26.0 | 27.0 | 26.0 | 26.5 | 23.5 | 21.0 | 22.0 | 18.5 | 17.0 | 18.0 |
| 31 | --- | --- | --- | 26.5 | 24.0 | 25.5 | 23.5 | 22.0 | 22.5 | --- | --- | --- |
| MONTH | 26.5 | 16.5 | 21.5 | 31.5 | 24.0 | 27.0 | 29.5 | 21.0 | 25.5 | 28.0 | 16.5 | 21.5 |
| YEAR | 31.5 | .0 | 15.0 | | | | | | | | | |

ROANOKE RIVER BASIN

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SEDI- MENT, SUS- PENDE (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|------|---|---|---|---|
| DEC 16... | 1145 | 6800 | 591 | 10900 | 49 |
| JUN 14... | 1030 | 12600 | 1840 | 62600 | 51 |
| SEP 08... | 1040 | 710 | 52 | 100 | -- |

PHYTOPLANKTON ANALYSIS, DECEMBER 1981

| | |
|---------------------|------------|
| DATE | DEC 16, 81 |
| TIME | 1145 |
| TOTAL CELLS/ML | 3800 |
| DIVERSITY: DIVISION | 0.2 |
| ..CLASS | 0.2 |
| ...ORDER | 1.9 |
| ...FAMILY | 2.3 |
|GENUS | 2.8 |

| ORGANISM | CELLS /ML | PER- CENT |
|---------------------------|--------------|--------------|
| BACILLARIOPHYTA (DIATOMS) | | |
| ..BACILLARIOPHYCEAE | | |
| ...BACILLARIALES | | |
|NITZSCHIA | 1000# | 26 |
| ...EUPODISCALES | | |
|COSCINODISCACEAE | | |
| ...CYCLOTELLA | 87 | 2 |
|MELOSIRA | 300 | 8 |
| ...FRAGILARIALES | | |
|FRAGILARIACEAE | | |
| ...DIATOMA | 43 | 1 |
| ...SYNEDRA | 560 | 15 |
| ...NAVICULALES | | |
| ...CYMBELLACEAE | | |
|CYMBELLA | 300 | 8 |
| ...GOMPHONEMACEAE | | |
| ...GOMPHONEMA | 87 | 2 |
| ...NAVICULACEAE | | |
|GYROSIGMA | 87 | 2 |
| ...NAVICULA | 1100# | 30 |
| ...PINNULARIA | 130 | 3 |
| EUGLENOPHYTA (EUGLENOIDS) | | |
| ..EUGLENOPHYCEAE | | |
| ...EUGLENALES | | |
| ...EUGLENACEAE | | |
|TRACHELOMONAS | 87 | 2 |

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15 PERCENT

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2 PERCENT

02074500 SANDY RIVER NEAR DANVILLE, VA

LOCATION.--Lat 36°37'10", long 79°30'16", Pittsylvania County, Hydrologic Unit 03010103, on right bank 200 ft (61 m) downstream from Hickory Forest Creek, 400 ft (122 m) upstream from bridge on State Highway 863 between Callahans Store and Mount Cross, 5.5 mi (8.8 km) northwest of western corporate limits of Danville, and 5.8 mi (9.3 km) upstream from mouth.

DRAINAGE AREA.--112 mi² (290 km²).

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1930-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 460.38 ft (140.324 m) National Geodetic Vertical Datum of 1929. Prior to June 26, 1942, at site 1,200 ft (366 m) downstream at datum 5.57 ft (1.698 m) lower.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by small mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 106 ft³/s (3.002 m³/s), 12.85 in/yr (326 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s (651 m³/s) Aug. 14, 1940, gage height, 14.8 ft (4.51 m), present datum, from floodmarks, from rating curve extended above 11,000 ft³/s (310 m³/s); minimum, 3 ft³/s (0.08 m³/s) Sept. 29, 1930, gage height, 0.40 ft (0.122 m), site and datum then in use; minimum daily, 8 ft³/s (0.23 m³/s) Aug. 29, 31, Sept. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1130 | *2200 62.3 | 5.14 1.567 | June 10 | 2100 | 1550 43.9 | 4.48 1.366 |
| Feb. 3 | 1200 | 1580 44.7 | 4.51 1.375 | | | | |

Minimum discharge, 22 ft³/s (0.62 m³/s) Dec. 13, gage height, 1.03 ft (0.314 m), result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|-----------|----------|--------|----------|----------|------|------|------|------|------|
| 1 | 25 | 37 | 36 | 245 | 167 | 131 | 74 | 63 | 276 | 53 | 40 | 35 |
| 2 | 26 | 37 | 43 | 156 | 116 | 196 | 72 | 61 | 172 | 50 | 36 | 33 |
| 3 | 25 | 36 | 39 | 198 | 981 | 316 | 78 | 61 | 186 | 48 | 34 | 31 |
| 4 | 25 | 36 | 40 | 1290 | 488 | 218 | 76 | 58 | 196 | 50 | 32 | 29 |
| 5 | 26 | 37 | 42 | 376 | 202 | 162 | 69 | 55 | 620 | 61 | 33 | 28 |
| 6 | 26 | 45 | 37 | 176 | 148 | 152 | 76 | 55 | 169 | 55 | 36 | 28 |
| 7 | 24 | 38 | 37 | 133 | 116 | 595 | 69 | 53 | 107 | 48 | 32 | 28 |
| 8 | 23 | 35 | 37 | 105 | 103 | 510 | 69 | 53 | 87 | 47 | 33 | 27 |
| 9 | 24 | 35 | 35 | 92 | 99 | 209 | 83 | 53 | 79 | 45 | 90 | 26 |
| 10 | 25 | 35 | 33 | 77 | 92 | 155 | 78 | 50 | 324 | 52 | 60 | 28 |
| 11 | 26 | 35 | 35 | 70 | 83 | 133 | 72 | 48 | 341 | 48 | 53 | 29 |
| 12 | 26 | 34 | 38 | 67 | 79 | 119 | 71 | 47 | 131 | 50 | 55 | 29 |
| 13 | 26 | 34 | 40 | 64 | 88 | 110 | 69 | 45 | 412 | 145 | 42 | 27 |
| 14 | 26 | 34 | 43 | 63 | 85 | 101 | 68 | 44 | 243 | 81 | 39 | 27 |
| 15 | 26 | 34 | 180 | 60 | 79 | 99 | 71 | 42 | 131 | 56 | 38 | 30 |
| 16 | 27 | 34 | 327 | 61 | 94 | 96 | 68 | 47 | 101 | 50 | 36 | 28 |
| 17 | 26 | 35 | 121 | 62 | 215 | 94 | 69 | 44 | 124 | 45 | 35 | 27 |
| 18 | 28 | 34 | 81 | 66 | 257 | 87 | 68 | 41 | 282 | 42 | 196 | 26 |
| 19 | 29 | 34 | 66 | 73 | 174 | 87 | 64 | 44 | 119 | 40 | 71 | 26 |
| 20 | 28 | 34 | 60 | 79 | 140 | 99 | 66 | 48 | 88 | 40 | 47 | 28 |
| 21 | 27 | 33 | 53 | 107 | 119 | 101 | 68 | 44 | 105 | 39 | 40 | 32 |
| 22 | 29 | 32 | 73 | 124 | 101 | 90 | 63 | 42 | 79 | 38 | 38 | 33 |
| 23 | 31 | 32 | 76 | 103 | 90 | 83 | 61 | 44 | 76 | 42 | 37 | 34 |
| 24 | 36 | 44 | 65 | 99 | 87 | 81 | 60 | 288 | 68 | 45 | 33 | 30 |
| 25 | 35 | 47 | 175 | 92 | 81 | 79 | 60 | 430 | 66 | 41 | 38 | 30 |
| 26 | 53 | 38 | 223 | 85 | 76 | 94 | 76 | 112 | 64 | 38 | 35 | 61 |
| 27 | 217 | 37 | 133 | 80 | 87 | 81 | 96 | 81 | 61 | 36 | 32 | 94 |
| 28 | 114 | 36 | 95 | 73 | 124 | 76 | 83 | 71 | 60 | 36 | 32 | 45 |
| 29 | 54 | 35 | 76 | 71 | --- | 76 | 69 | 68 | 60 | 45 | 30 | 37 |
| 30 | 44 | 34 | 65 | 77 | --- | 76 | 66 | 181 | 61 | 38 | 29 | 36 |
| 31 | 39 | --- | 79 | 87 | --- | 76 | --- | 376 | --- | 40 | 31 | --- |
| TOTAL | 1196 | 1081 | 2483 | 4511 | 4571 | 4582 | 2132 | 2749 | 4888 | 1544 | 1413 | 1002 |
| MEAN | 38.6 | 36.0 | 80.1 | 146 | 163 | 148 | 71.1 | 88.7 | 163 | 49.8 | 45.6 | 33.4 |
| MAX | 217 | 47 | 327 | 1290 | 981 | 595 | 96 | 430 | 620 | 145 | 196 | 94 |
| MIN | 23 | 32 | 33 | 60 | 76 | 76 | 60 | 41 | 60 | 36 | 29 | 26 |
| CFSM | .35 | .32 | .72 | 1.30 | 1.46 | 1.32 | .64 | .79 | 1.46 | .45 | .41 | .30 |
| IN. | .40 | .36 | .82 | 1.50 | 1.52 | 1.52 | .71 | .91 | 1.62 | .51 | .47 | .33 |
| CAL YR 1981 | TOTAL | 20537 | MEAN 56.3 | MAX 611 | MIN 12 | CFSM .50 | IN 6.82 | | | | | |
| WTR YR 1982 | TOTAL | 32152 | MEAN 88.1 | MAX 1290 | MIN 23 | CFSM .79 | IN 10.68 | | | | | |

ROANOKE RIVER BASIN

02075000 DAN RIVER AT DANVILLE, VA

LOCATION.--Lat 36°35'15", long 79°22'55", Danville City, Hydrologic Unit 03010104, on left bank 50 ft (20 m) downstream from Southern Railway bridge, 1,000 ft (300 m) upstream from Fall Creek, and at mile 62.7 (100.9 km).

DRAINAGE AREA.--2,050 mi² (5,310 km²), approximately.

PERIOD OF RECORD.--August 1934 to current year. Gage-height records collected in this vicinity 1890-1934, at same site 1934-49, and at Main Street Bridge, 0.25 mi (0.40 km) upstream 1949-68, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936.

GAGE.--Water-stage recorder. Datum of gage is 379.29 ft (115.608 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills above station. Since August 1950, flow regulated by Philpott Lake (station 02071900) 74.7 mi (120.2 km) upstream. Gage-height telemeters at station. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--48 years, 2,314 ft³/s (65.53 m³/s), 15.33 in/yr (389 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,000 ft³/s (2,120 m³/s) Aug. 15, 1940, gage height, 20.96 ft (6.389 m); maximum gage height, 21.34 ft (6.504 m) June 22, 1972, backwater from debris; minimum discharge, 11 ft³/s (0.31 m³/s) Sept. 5, 1966, gage height, 1.18 ft (0.360 m); minimum daily, 110 ft³/s (3.12 m³/s) Sept. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,400 ft³/s (408 m³/s) Jan. 5, gage height, 9.21 ft (2.807 m); minimum, 98 ft³/s (2.78 m³/s) Sept. 7, gage height, 1.51 ft (0.460 m); minimum daily, 342 ft³/s (9.69 m³/s) Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1 | 638 | 871 | 650 | 3790 | 1810 | 2980 | 1440 | 2580 | 5340 | 2080 | 1230 | 634 |
| 2 | 639 | 754 | 741 | 4500 | 2470 | 3900 | 1390 | 2080 | 4190 | 1730 | 1280 | 710 |
| 3 | 629 | 771 | 905 | 3570 | 5860 | 5210 | 1420 | 1900 | 3690 | 1510 | 927 | 727 |
| 4 | 613 | 798 | 918 | 9230 | 12600 | 4580 | 1340 | 2150 | 5070 | 1320 | 1170 | 667 |
| 5 | 462 | 789 | 874 | 11800 | 5980 | 3470 | 1620 | 2110 | 9480 | 1420 | 1050 | 659 |
| 6 | 468 | 816 | 818 | 4810 | 3690 | 2930 | 1620 | 1980 | 6100 | 1310 | 1150 | 634 |
| 7 | 553 | 930 | 695 | 3050 | 2690 | 4660 | 1670 | 1880 | 3110 | 1460 | 1320 | 342 |
| 8 | 547 | 771 | 752 | 2380 | 2260 | 7810 | 1630 | 1860 | 2630 | 1450 | 1110 | 659 |
| 9 | 545 | 693 | 748 | 1900 | 1960 | 4610 | 1650 | 1520 | 2730 | 1450 | 1620 | 650 |
| 10 | 541 | 693 | 712 | 1430 | 1890 | 3260 | 1740 | 1340 | 4210 | 1480 | 4230 | 659 |
| 11 | 480 | 727 | 703 | 1070 | 1840 | 2730 | 1470 | 1420 | 11100 | 1510 | 2830 | 659 |
| 12 | 376 | 684 | 728 | 1070 | 1660 | 2390 | 1380 | 1460 | 5030 | 1380 | 2760 | 650 |
| 13 | 488 | 798 | 642 | 1440 | 1630 | 2150 | 1470 | 1420 | 3950 | 1480 | 1550 | 496 |
| 14 | 691 | 727 | 626 | 1290 | 1650 | 1870 | 1490 | 1370 | 11400 | 1930 | 1230 | 440 |
| 15 | 663 | 701 | 1470 | 1150 | 1610 | 1820 | 1510 | 1380 | 5610 | 1610 | 991 | 693 |
| 16 | 674 | 626 | 5360 | 1210 | 1800 | 1840 | 1670 | 1160 | 4010 | 1480 | 798 | 693 |
| 17 | 671 | 642 | 3700 | 1140 | 4550 | 2210 | 1630 | 1080 | 3370 | 1470 | 718 | 676 |
| 18 | 563 | 701 | 2010 | 1150 | 6790 | 1720 | 1370 | 1060 | 5490 | 1300 | 1260 | 659 |
| 19 | 448 | 710 | 1520 | 1180 | 4870 | 1630 | 1440 | 1200 | 4970 | 1070 | 1480 | 659 |
| 20 | 436 | 710 | 1010 | 1340 | 3500 | 1750 | 1530 | 1300 | 3540 | 1060 | 930 | 419 |
| 21 | 635 | 693 | 808 | 1550 | 2580 | 1930 | 1650 | 1270 | 2830 | 1300 | 798 | 503 |
| 22 | 606 | 618 | 976 | 2470 | 2180 | 2370 | 1560 | 1310 | 2540 | 1220 | 701 | 718 |
| 23 | 669 | 610 | 1360 | 2240 | 1980 | 2000 | 1400 | 1450 | 2560 | 1240 | 650 | 871 |
| 24 | 725 | 693 | 1290 | 1960 | 1780 | 1710 | 1370 | 1980 | 2340 | 1580 | 594 | 871 |
| 25 | 697 | 807 | 2070 | 1900 | 1650 | 1610 | 1150 | 3850 | 2210 | 1320 | 676 | 718 |
| 26 | 750 | 844 | 3850 | 1720 | 1560 | 1620 | 1280 | 3130 | 2160 | 1110 | 727 | 754 |
| 27 | 2120 | 771 | 2900 | 1400 | 1640 | 1900 | 2880 | 2350 | 1760 | 975 | 771 | 1080 |
| 28 | 5790 | 807 | 2190 | 1160 | 2040 | 1580 | 6830 | 3780 | 1900 | 1240 | 754 | 1090 |
| 29 | 2320 | 650 | 1900 | 1310 | --- | 1470 | 5930 | 4020 | 1920 | 1470 | 659 | 981 |
| 30 | 1380 | 626 | 1610 | 1340 | --- | 1480 | 3350 | 4790 | 2100 | 1710 | 571 | 975 |
| 31 | 1080 | --- | 1510 | 1280 | --- | 1450 | --- | 4240 | --- | 1360 | 518 | --- |
| TOTAL | 27897 | 22031 | 46046 | 76830 | 86520 | 82640 | 57880 | 64420 | 127340 | 44025 | 37053 | 20946 |
| MEAN | 900 | 734 | 1485 | 2478 | 3090 | 2666 | 1929 | 2078 | 4245 | 1420 | 1195 | 698 |
| MAX | 5790 | 930 | 5360 | 11800 | 12600 | 7810 | 6830 | 4790 | 11400 | 2080 | 4230 | 1090 |
| MIN | 376 | 610 | 626 | 1070 | 1560 | 1450 | 1150 | 1060 | 1760 | 975 | 518 | 342 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |

CAL YR 1981 TOTAL 403219 MEAN 1105 MAX 5790 MIN 294 MEAN# 10.62 CFSM# .52 IN# 7.04
WTR YR 1982 TOTAL 693629 MEAN 1900 MAX 12600 MIN 342 MEAN# 19.25 CFSM# .94 IN# 12.75

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.

* Adjusted for change in contents.

ROANOKE RIVER BASIN

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02075500 DAN RIVER AT PACES, VA

LOCATION.--Lat 36°38'32", long 79°05'23", Halifax County, Hydrologic Unit 03010104, on right bank 100 ft (30 m) upstream from bridge on State Highway 658, 0.5 mi (0.8 km) southeast of Paces, 0.5 mi (0.8 km) upstream from Big Toby Creek, 2.7 mi (4.3 km) upstream from Birch Creek, and at mile 36.0 (57.9 km).

DRAINAGE AREA.--2,550 mi² (6,600 km²), approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 322.48 ft (98.292 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills at Danville. Since August 1950, flow regulated by Philpott Lake (station 02071900) 101.4 mi (163.2 km) upstream. Gage height telemeters at station.

AVERAGE DISCHARGE.--31 years (water years 1952-82), 2,699 ft³/s (76.44 m³/s), 14.37 in/yr (365 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,800 ft³/s (1,840 m³/s) June 23, 1972, gage height, 33.15 ft (10.104 m), from rating curve extended above 32,000 ft³/s (910 m³/s); minimum, 193 ft³/s (5.47 m³/s) Sept. 4, 1956, gage height, 1.71 ft (0.521 m); minimum daily, 244 ft³/s (6.91 m³/s) Sept. 4, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 32.3 ft (9.85 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,500 ft³/s (496 m³/s) Jan. 5, gage height, 19.36 ft (5.901 m); minimum, 273 ft³/s (7.73 m³/s) Sept. 7-8, gage height, 1.90 ft (0.579 m); minimum daily, 489 ft³/s (13.8 m³/s) Oct. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|--------|--------|-------|-------|--------|-------|-------|-------|
| 1 | 725 | 1290 | 773 | 4930 | 2440 | 4320 | 1750 | 3080 | 4770 | 2230 | 1410 | 706 |
| 2 | 743 | 1100 | 856 | 6950 | 3060 | 5290 | 1730 | 2580 | 5140 | 1910 | 1350 | 846 |
| 3 | 730 | 1020 | 1030 | 5520 | 8520 | 6450 | 1700 | 2180 | 3860 | 1670 | 1020 | 944 |
| 4 | 733 | 1060 | 1210 | 9850 | 15200 | 6130 | 1700 | 2240 | 5040 | 1580 | 1280 | 911 |
| 5 | 666 | 1050 | 1180 | 17000 | 13100 | 4600 | 1760 | 2430 | 8860 | 1430 | 963 | 902 |
| 6 | 538 | 1060 | 1120 | 11200 | 5480 | 3910 | 1880 | 2260 | 8700 | 1450 | 1240 | 844 |
| 7 | 598 | 1130 | 978 | 4760 | 3830 | 4800 | 1930 | 2170 | 4740 | 1480 | 1050 | 626 |
| 8 | 653 | 1160 | 874 | 3540 | 3180 | 9850 | 1980 | 2080 | 3010 | 1560 | 1330 | 582 |
| 9 | 643 | 912 | 975 | 2930 | 2660 | 7500 | 1950 | 2060 | 3320 | 1630 | 1520 | 800 |
| 10 | 644 | 882 | 933 | 2320 | 2520 | 4550 | 2030 | 1570 | 3260 | 1770 | 3940 | 810 |
| 11 | 636 | 917 | 877 | 1710 | 2450 | 3630 | 2010 | 1530 | 13800 | 1650 | 3570 | 834 |
| 12 | 529 | 936 | 860 | 1340 | 2250 | 3210 | 1700 | 1660 | 9860 | 2000 | 6110 | 876 |
| 13 | 489 | 910 | 901 | 1730 | 2210 | 2820 | 1630 | 1650 | 5470 | 2050 | 4950 | 699 |
| 14 | 693 | 974 | 753 | 1890 | 2250 | 2560 | 1790 | 1580 | 10800 | 2990 | 2260 | 612 |
| 15 | 830 | 915 | 1310 | 1790 | 2250 | 2360 | 1790 | 1550 | 8620 | 2080 | 1680 | 604 |
| 16 | 797 | 853 | 5520 | 1630 | 2350 | 2270 | 1880 | 1540 | 4640 | 1740 | 1180 | 883 |
| 17 | 810 | 787 | 6530 | 1690 | 5490 | 2550 | 1960 | 1300 | 3610 | 1560 | 1090 | 898 |
| 18 | 805 | 846 | 3400 | 1470 | 9190 | 2350 | 1970 | 1180 | 4580 | 1580 | 1320 | 846 |
| 19 | 601 | 866 | 2370 | 1480 | 7470 | 2080 | 1700 | 1270 | 5730 | 1180 | 1950 | 861 |
| 20 | 557 | 882 | 1850 | 1810 | 4900 | 2190 | 1780 | 1450 | 3840 | 1130 | 1420 | 718 |
| 21 | 672 | 858 | 1230 | 2100 | 3710 | 2380 | 1970 | 1550 | 3090 | 1230 | 1140 | 562 |
| 22 | 760 | 827 | 1190 | 3230 | 3010 | 2850 | 2040 | 1450 | 2300 | 1340 | 1070 | 711 |
| 23 | 840 | 712 | 1680 | 3580 | 2610 | 2680 | 1830 | 1750 | 2630 | 1590 | 843 | 905 |
| 24 | 920 | 789 | 1890 | 3150 | 2380 | 2250 | 1690 | 2300 | 2460 | 1690 | 844 | 1130 |
| 25 | 935 | 998 | 2970 | 3020 | 2200 | 2070 | 1640 | 3530 | 2280 | 1670 | 805 | 1010 |
| 26 | 1080 | 1060 | 5710 | 2620 | 2030 | 2040 | 1520 | 3630 | 2230 | 1250 | 902 | 956 |
| 27 | 1980 | 1030 | 5270 | 2180 | 2090 | 2130 | 2160 | 2480 | 2170 | 1080 | 974 | 1150 |
| 28 | 3700 | 973 | 3540 | 1800 | 2670 | 2140 | 5140 | 3110 | 1820 | 1180 | 1060 | 1420 |
| 29 | 7200 | 950 | 2840 | 1780 | --- | 1850 | 7610 | 4320 | 1900 | 1990 | 1020 | 1360 |
| 30 | 3300 | 759 | 2400 | 1900 | --- | 1750 | 4180 | 4200 | 2020 | 1880 | 795 | 1110 |
| 31 | 1650 | --- | 2210 | 1970 | --- | 1800 | --- | 5620 | --- | 1630 | 742 | --- |
| TOTAL | 36457 | 28506 | 65230 | 112870 | 121500 | 107360 | 66400 | 71300 | 144550 | 51200 | 50828 | 26116 |
| MEAN | 1176 | 950 | 2104 | 3641 | 4339 | 3463 | 2213 | 2300 | 4818 | 1652 | 1640 | 871 |
| MAX | 7200 | 1290 | 6530 | 17000 | 15200 | 9850 | 7610 | 5620 | 13800 | 2990 | 6110 | 1420 |
| MIN | 489 | 712 | 753 | 1340 | 2030 | 1750 | 1520 | 1180 | 1820 | 1080 | 742 | 562 |
| (*) | -104 | -55 | +20 | +172 | +279 | +205 | +100 | +60 | -104 | -73 | -54 | -135 |

CAL YR 1981 TOTAL 500267 MEAN 1371 MAX 7200 MIN 402 MEAN# 13.28 CFSM# .52 IN# 8.83
WTR YR 1982 TOTAL 882317 MEAN 2417 MAX 17000 MIN 489 MEAN# 24.42 CFSM# .96 IN# 13.0

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
Adjusted for change in contents.

ROANOKE RIVER BASIN

02075500 DAN RIVER AT PACES, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1954 to September 1956.

WATER TEMPERATURES: January 1954 to September 1956.

SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| DEC 04... | 1030 | 1210 | 143 | 7.2 | 7.5 | 3.0 | 10.7 | 900 | 500 | 25 | 5.8 | 2.5 |
| MAR 10... | 0830 | 4550 | 75 | 7.1 | 7.0 | 65 | 11.6 | 1200 | 1200 | 19 | 4.6 | 1.8 |
| JUN 09... | 0915 | 3620 | 95 | 7.2 | 23.0 | 120 | 7.5 | K3100 | 3200 | 20 | 5.2 | 1.8 |
| JUL 14... | 0900 | 2920 | 87 | 6.8 | 26.0 | 170 | 5.9 | K4400 | K13000 | 20 | 4.7 | 2.0 |
| SEP 01... | 1400 | 704 | 235 | 7.2 | 24.0 | 17 | 6.4 | 150 | 250 | 28 | 6.9 | 2.6 |

K Result based on colony count outside optimal range.

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|--|
| DEC 04... | 18 | 2.2 | 33 | 11 | 15 | .3 | 15 | 97 | 90 | .45 | .060 | .24 |
| MAR 10... | 6.6 | 1.6 | 16 | 10 | 4.9 | <.1 | 13 | 65 | 52 | .35 | .080 | .49 |
| JUN 09... | 10 | 1.8 | 22 | 13 | 8.9 | .2 | 14 | -- | 68 | .44 | .040 | .80 |
| JUL 14... | 8.6 | 1.5 | 23 | 8.0 | 6.5 | .1 | 12 | 70 | 58 | .51 | .050 | .60 |
| SEP 01... | 31 | 2.4 | 40 | 13 | 31 | .2 | 15 | 153 | 126 | .66 | .060 | .70 |

< Actual value is known to be less than the value shown.

ROANOKE RIVER BASIN

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02075500 DAN RIVER AT PACES, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|-----------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| DEC 04... | .160 | .140 | .130 | 1 | 1 | <100 | 27 | <1 | <1 | 20 | 20 |
| MAR 10... | .160 | .030 | .020 | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 09... | .230 | .070 | .050 | 1 | 1 | 100 | 120 | <1 | <1 | 10 | <10 |
| JUL 14... | .230 | .060 | .050 | 1 | 1 | 100 | 130 | 3 | 1 | 50 | <10 |
| SEP 01... | .250 | .200 | .160 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-----------|---|--|---|--|---|--|---|--|---|--|---|
| DEC 04... | 2 | <1 | 10 | 5 | 1100 | 270 | 3 | 1 | 50 | 16 | <.1 |
| MAR 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUN 09... | 3 | 1 | 13 | 2 | 8100 | 200 | 9 | 1 | 200 | 2 | <.1 |
| JUL 14... | 6 | 2 | 31 | 14 | 17000 | 190 | 20 | 1 | 420 | 9 | .2 |
| SEP 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-----------|--|---|--|--|---|---|--|---|--|--|---|
| DEC 04... | <.1 | 2 | 2 | <1 | <1 | <1 | <1 | 100 | 15 | 21 | 97 |
| MAR 10... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 111 | 57 |
| JUN 09... | <.1 | 12 | 1 | <1 | <1 | <1 | <1 | 20 | 17 | 244 | 98 |
| JUL 14... | <.1 | 12 | 4 | <1 | <1 | <1 | <1 | 70 | <4 | 446 | 93 |
| SEP 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 | 87 |

< Actual value is known to be less than the value shown.

ROANOKE RIVER BASIN

02076500 GEORGES CREEK NEAR GRETN, VA

LOCATION.--Lat 36°56'11", long 79°18'42", Pittsylvania County, Hydrologic Unit 03010105, on left bank 15 ft (5 m) downstream from bridge on State Highway 40, 2.8 mi (4.5 km) southeast of Gretna, and 5.8 mi (9.3 km) upstream from Whitethorn Creek.

DRAINAGE AREA.--9.24 mi² (23.93 km²).

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

REVISED RECORDS.--WSP 1703: 1950-52. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 629.54 ft (191.884 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional regulation at low flow from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 9.48 ft³/s (0.268 m³/s), 13.93 in/yr (354 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,480 ft³/s (41.9 m³/s) Sept. 22, 1979, gage height, 8.50 ft (2.591 m), from rating curve extended above 640 ft³/s (18 m³/s) on basis of slope-area measurements at gage heights 4.93 ft (1.503 m) and 6.22 ft (1.896 m) and contracted-opening measurements at gage heights 7.75 ft (2.362 m) and 8.50 ft (2.591 m); minimum daily, 1.0 ft³/s (0.028 m³/s) Mar. 12, Apr. 5, 1956, July 28, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s (4.2 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Jan. 4 | 1030 | *311 8.81 | 4.04 1.231 | May 23 | 2400 | 191 5.41 | 3.24 0.988 |
| Feb. 3 | 1200 | 298 8.44 | 3.95 1.204 | May 26 | 2330 | 250 7.08 | 3.63 1.106 |

Minimum discharge, 1.8 ft³/s (0.051 m³/s) Oct. 1, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 2.0 | 4.4 | 3.0 | 18 | 17 | 8.8 | 4.9 | 5.6 | 20 | 5.2 | 6.7 | 5.2 |
| 2 | 3.2 | 4.2 | 3.5 | 8.4 | 10 | 12 | 4.5 | 5.6 | 13 | 4.9 | 5.8 | 5.2 |
| 3 | 2.6 | 3.5 | 2.8 | 53 | 111 | 16 | 6.5 | 5.4 | 8.8 | 4.9 | 4.9 | 4.9 |
| 4 | 2.5 | 3.3 | 2.9 | 89 | 32 | 12 | 6.2 | 4.7 | 9.4 | 17 | 4.7 | 4.5 |
| 5 | 2.6 | 3.7 | 2.8 | 21 | 15 | 11 | 5.8 | 4.7 | 24 | 11 | 4.5 | 4.3 |
| 6 | 2.3 | 4.5 | 2.6 | 12 | 12 | 14 | 6.7 | 4.5 | 11 | 7.2 | 4.5 | 4.5 |
| 7 | 2.3 | 4.2 | 2.7 | 9.4 | 10 | 49 | 6.0 | 4.5 | 7.8 | 6.2 | 4.1 | 4.3 |
| 8 | 2.2 | 3.8 | 2.6 | 7.5 | 9.1 | 25 | 6.5 | 4.5 | 7.0 | 7.0 | 17 | 4.3 |
| 9 | 2.4 | 3.9 | 2.6 | 7.2 | 8.5 | 11 | 8.8 | 4.5 | 7.5 | 7.8 | 11 | 4.5 |
| 10 | 2.6 | 3.4 | 2.4 | 5.8 | 7.8 | 8.3 | 7.5 | 4.1 | 18 | 6.2 | 7.0 | 4.5 |
| 11 | 3.0 | 3.1 | 2.2 | 5.4 | 7.0 | 7.2 | 7.2 | 3.9 | 17 | 5.8 | 6.2 | 4.5 |
| 12 | 3.2 | 3.1 | 2.3 | 5.0 | 6.7 | 6.5 | 6.7 | 3.9 | 9.1 | 9.4 | 6.5 | 4.1 |
| 13 | 3.1 | 2.9 | 2.4 | 4.7 | 7.8 | 6.0 | 6.7 | 3.8 | 58 | 6.0 | 6.0 | 4.1 |
| 14 | 3.4 | 2.9 | 4.6 | 4.6 | 7.2 | 5.4 | 6.2 | 3.6 | 22 | 5.2 | 5.8 | 3.9 |
| 15 | 3.3 | 3.0 | 21 | 4.5 | 6.7 | 6.0 | 6.5 | 3.6 | 12 | 4.5 | 5.8 | 4.1 |
| 16 | 3.4 | 3.1 | 17 | 4.5 | 8.8 | 5.8 | 6.2 | 5.8 | 9.4 | 4.3 | 5.8 | 4.1 |
| 17 | 3.5 | 2.8 | 7.2 | 4.6 | 17 | 5.6 | 6.7 | 3.9 | 14 | 4.1 | 5.6 | 3.8 |
| 18 | 4.5 | 2.6 | 5.2 | 4.8 | 15 | 5.2 | 6.2 | 3.8 | 12 | 4.1 | 11 | 3.8 |
| 19 | 5.4 | 2.6 | 4.1 | 5.2 | 12 | 5.2 | 6.7 | 8.0 | 9.4 | 3.6 | 5.4 | 3.9 |
| 20 | 5.7 | 2.7 | 3.5 | 5.8 | 10 | 8.8 | 6.0 | 5.6 | 8.5 | 3.8 | 4.7 | 7.2 |
| 21 | 6.3 | 2.5 | 3.5 | 6.8 | 8.8 | 7.5 | 6.0 | 4.5 | 8.5 | 3.5 | 4.3 | 4.3 |
| 22 | 6.7 | 2.4 | 4.9 | 7.8 | 7.8 | 6.0 | 5.6 | 10 | 7.5 | 3.6 | 4.3 | 3.6 |
| 23 | 8.8 | 2.5 | 5.3 | 7.4 | 7.2 | 5.6 | 5.6 | 16 | 7.0 | 7.8 | 4.3 | 3.5 |
| 24 | 7.6 | 4.3 | 4.0 | 6.7 | 6.7 | 5.2 | 5.4 | 30 | 6.2 | 7.0 | 4.1 | 3.6 |
| 25 | 7.9 | 3.9 | 13 | 6.7 | 6.0 | 5.2 | 5.6 | 9.4 | 6.2 | 5.6 | 6.7 | 3.5 |
| 26 | 15 | 2.9 | 11 | 6.0 | 5.8 | 8.3 | 9.1 | 22 | 6.0 | 5.4 | 5.2 | 12 |
| 27 | 41 | 2.9 | 6.8 | 5.8 | 9.4 | 5.8 | 11 | 33 | 6.0 | 4.9 | 4.9 | 9.1 |
| 28 | 12 | 2.7 | 5.2 | 5.4 | 8.5 | 5.2 | 7.2 | 13 | 5.6 | 4.7 | 4.9 | 5.6 |
| 29 | 6.6 | 2.6 | 4.3 | 5.2 | --- | 4.9 | 6.0 | 10 | 5.4 | 5.4 | 4.7 | 4.9 |
| 30 | 5.3 | 2.6 | 3.6 | 6.2 | --- | 4.9 | 5.8 | 24 | 5.4 | 4.9 | 4.7 | 4.1 |
| 31 | 4.7 | --- | 5.6 | 10 | --- | 4.9 | --- | 14 | --- | 9.8 | 4.7 | --- |
| TOTAL | 185.1 | 97.0 | 164.6 | 354.4 | 390.8 | 292.3 | 195.8 | 279.9 | 361.7 | 190.8 | 185.8 | 143.9 |
| MEAN | 5.97 | 3.23 | 5.31 | 11.4 | 14.0 | 9.43 | 6.53 | 9.03 | 12.1 | 6.15 | 5.99 | 4.80 |
| MAX | 41 | 4.5 | 21 | 89 | 111 | 49 | 11 | 33 | 58 | 17 | 17 | 12 |
| MIN | 2.0 | 2.4 | 2.2 | 4.5 | 5.8 | 4.9 | 4.5 | 3.6 | 5.4 | 3.5 | 4.1 | 3.5 |
| CFSM | .65 | .35 | .58 | 1.23 | 1.52 | 1.02 | .71 | .98 | 1.31 | .67 | .65 | .52 |
| IN. | .75 | .39 | .66 | 1.43 | 1.57 | 1.18 | .79 | 1.13 | 1.46 | .77 | .75 | .58 |

| | | | | | | | |
|-------------|-------|--------|-----------|---------|---------|----------|----------|
| CAL YR 1981 | TOTAL | 1887.7 | MEAN 5.17 | MAX 41 | MIN 1.6 | CFSM .56 | IN 7.60 |
| WTR YR 1982 | TOTAL | 2842.1 | MEAN 7.79 | MAX 111 | MIN 2.0 | CFSM .84 | IN 11.44 |

02077000 BANISTER RIVER AT HALIFAX, VA

LOCATION.--Lat 36°46'35", long 78°54'58", Halifax County, Hydrologic Unit 03010105, on left bank 10 ft (3 m) downstream from bridge on U.S. Highway 360, 1,700 ft (520 m) downstream from Terrible Creek, 1 mi (1.6 km) northeast of Halifax, and 10 mi (16 km) upstream from mouth.

DRAINAGE AREA.--547 mi² (1,417 km²).

PERIOD OF RECORD.--September 1904 to December 1905, October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 892: 1929-30, 1932-35. WSP 972: 1938(M), 1940. WSP 1112: 1943(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 318.54 ft (97.091 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 28, 1904, to Dec. 31, 1905, nonrecording gage at site 400 ft (120 m) upstream at different datum. Dec. 9, 1928, to Sept. 20, 1950, water-stage recorder at site 400 ft (120 m) upstream at present datum.

REMARKS.--Records good. Low and medium flow regulated at times during year by a lake 0.5 mi (0.8 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 504 ft³/s (14.27 m³/s), 12.51 in/yr (318 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Sept. 20, 1944, gage height, 40.8 ft (12.44 m), from floodmarks, from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of slope-area measurement of peak flow and velocity-area study; minimum, 6.0 ft³/s (0.17 m³/s) on many days in August and September 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,820 ft³/s (165 m³/s) Feb. 4, gage height, 17.49 ft (5.331 m); minimum daily, 83 ft³/s (2.35 m³/s) Oct. 15-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|------|
| 1 | 119 | 270 | 160 | 1090 | 982 | 670 | 366 | 280 | 667 | 255 | 311 | 166 |
| 2 | 116 | 239 | 163 | 1420 | 1060 | 926 | 356 | 266 | 1040 | 225 | 286 | 165 |
| 3 | 110 | 221 | 170 | 1080 | 2840 | 1490 | 242 | 264 | 740 | 203 | 236 | 164 |
| 4 | 102 | 209 | 179 | 3030 | 5680 | 1490 | 258 | 250 | 1180 | 203 | 208 | 161 |
| 5 | 96 | 199 | 182 | 4330 | 3690 | 1060 | 329 | 234 | 2360 | 918 | 193 | 157 |
| 6 | 92 | 210 | 176 | 2700 | 1440 | 820 | 345 | 222 | 2710 | 732 | 188 | 153 |
| 7 | 90 | 260 | 170 | 1190 | 874 | 877 | 315 | 216 | 1160 | 224 | 180 | 150 |
| 8 | 88 | 218 | 168 | 767 | 694 | 2270 | 308 | 211 | 621 | 253 | 178 | 147 |
| 9 | 86 | 191 | 162 | 618 | 602 | 2040 | 343 | 205 | 1150 | 228 | 781 | 144 |
| 10 | 85 | 180 | 157 | 415 | 550 | 1130 | 369 | 197 | 1100 | 214 | 975 | 143 |
| 11 | 85 | 175 | 153 | 190 | 362 | 798 | 365 | 189 | 1330 | 282 | 673 | 141 |
| 12 | 85 | 171 | 150 | 236 | 423 | 686 | 328 | 181 | 1750 | 610 | 541 | 139 |
| 13 | 86 | 168 | 149 | 361 | 447 | 614 | 312 | 177 | 1540 | 501 | 297 | 138 |
| 14 | 85 | 164 | 152 | 348 | 483 | 550 | 302 | 171 | 2100 | 514 | 263 | 137 |
| 15 | 83 | 161 | 280 | 334 | 467 | 445 | 296 | 165 | 1570 | 511 | 246 | 137 |
| 16 | 83 | 159 | 1400 | 347 | 464 | 492 | 292 | 161 | 824 | 357 | 228 | 139 |
| 17 | 83 | 157 | 1420 | 336 | 806 | 506 | 296 | 199 | 587 | 276 | 254 | 142 |
| 18 | 84 | 155 | 780 | 296 | 1890 | 487 | 347 | 186 | 1040 | 241 | 583 | 142 |
| 19 | 89 | 153 | 458 | 330 | 1500 | 457 | 349 | 171 | 1340 | 220 | 748 | 141 |
| 20 | 92 | 152 | 245 | 336 | 1010 | 536 | 308 | 196 | 909 | 216 | 582 | 142 |
| 21 | 90 | 149 | 224 | 418 | 793 | 848 | 298 | 364 | 683 | 202 | 329 | 143 |
| 22 | 89 | 147 | 312 | 671 | 661 | 734 | 289 | 265 | 660 | 193 | 248 | 144 |
| 23 | 90 | 145 | 509 | 723 | 562 | 607 | 277 | 217 | 401 | 195 | 219 | 142 |
| 24 | 94 | 152 | 554 | 644 | 386 | 530 | 263 | 325 | 315 | 453 | 203 | 140 |
| 25 | 100 | 166 | 806 | 583 | 411 | 473 | 256 | 1090 | 327 | 690 | 195 | 138 |
| 26 | 178 | 166 | 1660 | 520 | 407 | 452 | 291 | 754 | 301 | 339 | 189 | 142 |
| 27 | 1430 | 169 | 1230 | 360 | 424 | 471 | 396 | 317 | 280 | 243 | 183 | 161 |
| 28 | 3360 | 169 | 750 | 310 | 526 | 448 | 444 | 485 | 266 | 217 | 177 | 168 |
| 29 | 1200 | 165 | 554 | 400 | --- | 402 | 377 | 405 | 249 | 343 | 173 | 171 |
| 30 | 451 | 162 | 315 | 415 | --- | 370 | 310 | 951 | 242 | 747 | 170 | 166 |
| 31 | 282 | --- | 350 | 504 | --- | 363 | --- | 900 | --- | 442 | 167 | --- |
| TOTAL | 9203 | 5402 | 14138 | 25302 | 30434 | 24042 | 9627 | 10214 | 29442 | 11247 | 10204 | 4463 |
| MEAN | 297 | 180 | 456 | 816 | 1087 | 776 | 321 | 329 | 981 | 363 | 329 | 149 |
| MAX | 3360 | 270 | 1660 | 4330 | 5680 | 2270 | 444 | 1090 | 2710 | 918 | 975 | 171 |
| MIN | 83 | 145 | 149 | 190 | 362 | 363 | 242 | 161 | 242 | 193 | 167 | 137 |
| CFSM | .54 | .33 | .83 | 1.49 | 1.99 | 1.42 | .59 | .60 | 1.79 | .66 | .60 | .27 |
| IN. | .63 | .37 | .96 | 1.72 | 2.07 | 1.64 | .65 | .69 | 2.00 | .76 | .69 | .30 |

CAL YR 1981 TOTAL 94194 MEAN 258 MAX 3360 MIN 83 CFSM .47 IN 6.41
WTR YR 1982 TOTAL 183718 MEAN 503 MAX 5680 MIN 83 CFSM .92 IN 12.49

ROANOKE RIVER BASIN

02077500 HYCO RIVER NEAR DENNISTON, VA

LOCATION.--Lat 36°35'16", long 78°53'56", Halifax County, Hydrologic Unit 03010104, on left bank 60 ft (18 m) upstream from bridge on U.S. Highway 501, 0.8 mi (1.3 km) upstream from Mayo Creek, 2.5 mi (4.0 km) northeast of Denniston, and 7.3 mi (11.7 km) south of South Boston.

DRAINAGE AREA.--289 mi² (749 km²).

PERIOD OF RECORD.--October 1928 to September 1934, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1383: Drainage area, 1930. WSP 1503: 1930(M). WDR VA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 315.24 ft (96.085 m) National Geodetic Vertical Datum of 1929. July 10, 1929, to Mar. 14, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, July 29 to Sept. 1, which are fair. Small diurnal fluctuation at low flow in some years caused by mill above station. Since 1964, flow regulated by Hyco Lake 15.7 mi (25.3 km) upstream, capacity 75,480 acre-ft (93.1 hm³), and since Apr. 26, 1974, by Roxboro Steam-Electric Generating Plant afterbay Reservoir, capacity 12,000 acre-ft (14.8 hm³). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--38 years, 250 ft³/s (7.080 m³/s), 11.75 in/yr (298 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s (306 m³/s) July 15, 1975, gage height, 24.27 ft (7.397 m), from rating curve extended above 8,200 ft³/s (230 m³/s); minimum, 0.004 ft³/s (<0.001 m³/s) Sept. 14, 1932, gage height, 3.58 ft (1.091 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in August 1928 and September 1945 reached stages of 26.4 ft (8.05 m) and 25.6 ft (7.80 m), respectively, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) Feb. 5, gage height, 16.55 ft (5.044 m); minimum, 10 ft³/s (0.28 m³/s) Oct. 13-14; minimum gage height, 4.59 ft (1.399 m) Sept. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|-------|-------|-------|------|------|-------|------|-------|-------|
| 1 | 16 | 29 | 22 | 944 | 394 | 848 | 171 | 47 | 50 | 167 | 560 | 44 |
| 2 | 16 | 27 | 24 | 927 | 272 | 1470 | 167 | 45 | 43 | 113 | 345 | 45 |
| 3 | 16 | 32 | 26 | 1010 | 760 | 1550 | 167 | 45 | 37 | 98 | 260 | 41 |
| 4 | 17 | 27 | 24 | 1290 | 1890 | 1120 | 167 | 47 | 87 | 94 | 230 | 37 |
| 5 | 15 | 26 | 24 | 2000 | 2950 | 692 | 163 | 42 | 150 | 663 | 210 | 28 |
| 6 | 14 | 26 | 24 | 2270 | 2340 | 312 | 170 | 41 | 694 | 381 | 180 | 24 |
| 7 | 15 | 25 | 22 | 1460 | 1210 | 590 | 167 | 41 | 746 | 145 | 52 | 23 |
| 8 | 15 | 24 | 22 | 955 | 490 | 999 | 164 | 40 | 767 | 116 | 47 | 23 |
| 9 | 14 | 23 | 22 | 232 | 464 | 1350 | 181 | 38 | 1480 | 127 | 45 | 23 |
| 10 | 12 | 22 | 22 | 152 | 469 | 1360 | 179 | 36 | 1410 | 94 | 119 | 22 |
| 11 | 12 | 23 | 22 | 133 | 390 | 425 | 166 | 36 | 1430 | 72 | 330 | 22 |
| 12 | 11 | 23 | 22 | 130 | 224 | 266 | 162 | 36 | 2110 | 66 | 990 | 21 |
| 13 | 11 | 23 | 22 | 131 | 232 | 244 | 161 | 36 | 2510 | 83 | 2300 | 19 |
| 14 | 11 | 23 | 22 | 132 | 250 | 230 | 160 | 29 | 1310 | 126 | 2350 | 18 |
| 15 | 12 | 22 | 105 | 129 | 231 | 224 | 84 | 26 | 637 | 86 | 1030 | 19 |
| 16 | 12 | 22 | 373 | 129 | 372 | 287 | 72 | 25 | 423 | 72 | 420 | 21 |
| 17 | 13 | 21 | 137 | 129 | 944 | 465 | 60 | 63 | 374 | 65 | 250 | 22 |
| 18 | 12 | 22 | 72 | 122 | 1610 | 217 | 61 | 43 | 682 | 59 | 205 | 20 |
| 19 | 11 | 22 | 50 | 132 | 1920 | 204 | 56 | 30 | 1080 | 54 | 198 | 19 |
| 20 | 11 | 23 | 42 | 157 | 1580 | 214 | 55 | 46 | 1170 | 53 | 193 | 19 |
| 21 | 11 | 22 | 60 | 208 | 442 | 230 | 63 | 64 | 753 | 52 | 190 | 20 |
| 22 | 12 | 22 | 84 | 310 | 563 | 266 | 58 | 47 | 240 | 50 | 183 | 21 |
| 23 | 13 | 21 | 114 | 238 | 665 | 432 | 53 | 40 | 210 | 50 | 181 | 21 |
| 24 | 14 | 22 | 121 | 405 | 438 | 402 | 49 | 135 | 197 | 62 | 181 | 20 |
| 25 | 18 | 29 | 473 | 649 | 399 | 200 | 49 | 116 | 188 | 54 | 183 | 19 |
| 26 | 22 | 27 | 917 | 902 | 260 | 189 | 53 | 54 | 146 | 50 | 184 | 20 |
| 27 | 345 | 24 | 1090 | 343 | 231 | 180 | 70 | 44 | 137 | 48 | 139 | 39 |
| 28 | 449 | 23 | 880 | 310 | 501 | 174 | 64 | 44 | 131 | 50 | 90 | 30 |
| 29 | 77 | 22 | 479 | 309 | --- | 169 | 54 | 46 | 102 | 119 | 60 | 24 |
| 30 | 42 | 22 | 383 | 315 | --- | 169 | 49 | 66 | 102 | 230 | 51 | 21 |
| 31 | 34 | --- | 360 | 359 | --- | 170 | --- | 57 | --- | 450 | 47 | --- |
| TOTAL | 1303 | 719 | 6060 | 16912 | 22491 | 15648 | 3295 | 1505 | 19396 | 3949 | 11803 | 745 |
| MEAN | 42.0 | 24.0 | 195 | 546 | 803 | 505 | 110 | 48.5 | 647 | 127 | 381 | 24.8 |
| MAX | 449 | 32 | 1090 | 2270 | 2950 | 1550 | 181 | 135 | 2510 | 663 | 2350 | 45 |
| MTN | 11 | 21 | 22 | 122 | 224 | 169 | 49 | 25 | 37 | 48 | 45 | 18 |
| CFSM | .15 | .08 | .68 | 1.89 | 2.78 | 1.75 | .38 | .17 | 2.24 | .44 | 1.32 | .09 |
| IN. | .17 | .09 | .78 | 2.18 | 2.90 | 2.01 | .42 | .19 | 2.50 | .51 | 1.52 | .10 |
| CAL YR 1981 | TOTAL | 17880 | MEAN | 49.0 | MAX | 1090 | MIN | 11 | CFSM | .17 | IN | 2.30 |
| WTR YR 1982 | TOTAL | 103826 | MEAN | 284 | MAX | 2950 | MIN | 11 | CFSM | .98 | IN | 13.36 |

ROANOKE RIVER BASIN

265

02079490 JOHN H. KERR RESERVOIR NEAR BOYDTON, VA

LOCATION.--Lat 36°35'56", long 78°18'06", Mecklenburg County, Hydrologic Unit 03010102, at John H. Kerr Dam on Roanoke River, 2.7 mi (4.3 km) upstream from Allen Creek, 6.7 mi (10.8 km) southeast of Boydton, 18 mi (29 km) upstream from the Virginia-North Carolina State line, and at mile 178.7 (287.5 km).

DRAINAGE AREA.--7,780 mi² (20,150 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam with earth embankments. Spillway, with crest at elevation 288.0 ft (87.78 m), is equipped with 22 radial gates 32 ft (9.8 m) high by 42 ft (13 m) wide. Storage began in September 1950 during construction; initial filling started June 30, 1952; water in reservoir first reached rule-curve elevation in March 1953. Total capacity at top of gates, elevation, 320 ft (97.5 m), is 2,770,000 acre-ft (3.42 km³) of which 1,281,400 acre-ft (1.58 km³) is controlled flood storage between elevations 300 ft (91.4 m), top of power pool, and 320 ft (97.5 m); 316,900 acre-ft (391 hm³) is available for power between elevations 293.0 ft (89.31 m), bottom of power pool, and 300 ft (91.4 m); 1,171,700 acre-ft (1.44 km³) is inactive and dead storage below elevation 293.0 ft (89.31 m). Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for navigation and pollution abatement, release of water for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,656,300 acre-ft (3.28 km³) Apr. 3, 1975, elevation, 318.85 ft (97.185 m); minimum (after first filling to rule curve), 724,700 acre-ft (894 hm³) Feb. 3, 1956, elevation, 280.23 ft (85.414 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,783,900 acre-ft (2.20 km³) June 18, elevation, 305.56 ft (93.135 m); minimum, 1,201,200 acre-ft (1.48 km³) Oct. 24, 26, elevation, 293.71 ft (89.523 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 295.10 | 1260300 | |
| Oct. 31..... | 296.20 | 1308940 | +48640 |
| Nov. 30..... | 295.28 | 1268220 | -40720 |
| Dec. 31..... | 298.14 | 1398390 | +130170 |
| CAL YR 1981..... | | | +118290 |
| Jan. 31..... | 296.27 | 1312100 | -86290 |
| Feb. 28..... | 299.41 | 1459630 | +147530 |
| Mar. 31..... | 301.44 | 1561800 | +102170 |
| Apr. 30..... | 302.70 | 1627660 | +65860 |
| May 31..... | 302.30 | 1606540 | -21120 |
| June 30..... | 300.69 | 1523440 | -83100 |
| July 31..... | 300.27 | 1502240 | -21200 |
| Aug. 31..... | 299.46 | 1462090 | -40150 |
| Sept. 30..... | 297.72 | 1378650 | -83440 |
| WTR YR 1982..... | | | +118350 |

ROANOKE RIVER BASIN

02079640 ALLEN CREEK NEAR BOYDTON, VA

LOCATION.--Lat 36°40'46", long 78°19'37", Mecklenburg County, Hydrologic Unit 03010106, on left bank at upstream side of bridge on U.S. Highway 58, 0.8 mi (1.3 km) upstream from Coleman Creek, 2.3 mi (3.7 km) downstream from Layton Creek, 3.7 mi (6.0 km) east of Boydton, and 11.8 mi (19.0 km) southwest of South Hill.

DRAINAGE AREA.--53.4 mi² (138.3 km²).

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

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.50 ft (65.989 m) National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 42.7 ft³/s (1.209 m³/s), 10.86 in/yr (276 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,620 ft³/s (159 m³/s) Oct. 23, 1971, gage height, 21.80 ft (6.645 m), from rating curve extended above 3,100 ft³/s (88 m³/s); no flow many days in August, September, and October 1968, September and October 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 1 | 0500 | 921 26.1 | 12.07 3.679 | June 18 | 0300 | 1030 29.2 | 12.76 3.889 |
| Feb. 3 | 1800 | 1020 28.9 | 12.69 3.868 | July 5 | 1100 | *2210 62.6 | 16.82 5.127 |
| Mar. 7 | 2130 | 1330 37.7 | 14.15 4.313 | Aug. 12 | 0030 | 1990 56.4 | 16.26 4.956 |
| June 5 | 1100 | 1100 31.2 | 13.18 4.017 | | | | |

Minimum discharge, 0.41 ft³/s (0.012 m³/s) Oct. 1, 2, 3, gage height, 1.17 ft (0.357 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|------|------|------|------|--------|------|--------|--------|-------|
| 1 | .44 | 4.0 | 4.8 | 460 | 143 | 211 | 20 | 19 | 261 | 18 | 16 | 8.5 |
| 2 | .44 | 3.8 | 5.4 | 82 | 63 | 105 | 19 | 17 | 98 | 14 | 11 | 8.3 |
| 3 | .41 | 3.6 | 5.8 | 234 | 487 | 68 | 18 | 17 | 61 | 12 | 8.8 | 8.5 |
| 4 | .57 | 3.6 | 5.9 | 322 | 238 | 58 | 18 | 15 | 123 | 14 | 8.0 | 8.0 |
| 5 | .57 | 3.6 | 6.4 | 135 | 90 | 55 | 16 | 13 | 667 | 1150 | 7.3 | 6.5 |
| 6 | .62 | 3.8 | 6.5 | 60 | 63 | 46 | 17 | 12 | 138 | 104 | 7.3 | 6.0 |
| 7 | .64 | 3.7 | 6.0 | 44 | 47 | 451 | 17 | 12 | 65 | 43 | 6.5 | 5.8 |
| 8 | .67 | 3.5 | 5.6 | 37 | 39 | 346 | 16 | 11 | 47 | 31 | 6.8 | 5.5 |
| 9 | .68 | 3.4 | 5.4 | 30 | 37 | 103 | 24 | 10 | 295 | 25 | 63 | 5.5 |
| 10 | .64 | 3.4 | 5.1 | 25 | 48 | 72 | 28 | 9.4 | 91 | 23 | 82 | 5.4 |
| 11 | .62 | 3.6 | 5.0 | 21 | 37 | 56 | 21 | 8.5 | 199 | 20 | 415 | 5.4 |
| 12 | .66 | 3.6 | 4.9 | 19 | 31 | 48 | 19 | 8.0 | 74 | 39 | 475 | 5.2 |
| 13 | .91 | 3.5 | 4.7 | 18 | 64 | 41 | 18 | 7.8 | 161 | 33 | 48 | 5.1 |
| 14 | .92 | 3.5 | 5.1 | 17 | 95 | 36 | 17 | 7.5 | 239 | 44 | 29 | 4.8 |
| 15 | 1.1 | 3.6 | 4.2 | 17 | 54 | 33 | 16 | 6.8 | 70 | 23 | 86 | 4.6 |
| 16 | 1.1 | 3.7 | 115 | 17 | 75 | 32 | 15 | 6.5 | 47 | 19 | 40 | 4.6 |
| 17 | 1.1 | 4.1 | 35 | 18 | 336 | 35 | 16 | 7.3 | 113 | 16 | 30 | 4.5 |
| 18 | 1.4 | 4.2 | 18 | 19 | 255 | 31 | 20 | 7.8 | 490 | 14 | 23 | 4.5 |
| 19 | 1.5 | 4.2 | 12 | 21 | 99 | 28 | 18 | 7.0 | 98 | 13 | 20 | 4.9 |
| 20 | 1.6 | 4.0 | 9.9 | 33 | 70 | 34 | 17 | 9.9 | 52 | 12 | 16 | 4.6 |
| 21 | 2.2 | 4.0 | 9.1 | 91 | 54 | 38 | 20 | 67 | 111 | 11 | 14 | 4.8 |
| 22 | 2.4 | 3.9 | 10 | 129 | 42 | 33 | 19 | 19 | 54 | 10 | 14 | 8.5 |
| 23 | 2.8 | 3.7 | 37 | 83 | 35 | 27 | 16 | 196 | 40 | 10 | 13 | 8.8 |
| 24 | 3.7 | 4.5 | 21 | 120 | 32 | 24 | 15 | 251 | 30 | 16 | 12 | 5.8 |
| 25 | 5.0 | 6.6 | 195 | 89 | 28 | 23 | 14 | 323 | 25 | 12 | 11 | 5.1 |
| 26 | 8.3 | 6.9 | 142 | 57 | 24 | 22 | 49 | 64 | 24 | 9.6 | 11 | 6.8 |
| 27 | 29 | 5.9 | 61 | 43 | 52 | 20 | 76 | 36 | 20 | 8.5 | 9.4 | 14 |
| 28 | 32 | 5.5 | 39 | 40 | 315 | 18 | 41 | 111 | 18 | 8.3 | 9.4 | 9.4 |
| 29 | 9.6 | 5.2 | 26 | 36 | --- | 18 | 26 | 47 | 17 | 14 | 16 | 6.5 |
| 30 | 6.1 | 4.8 | 19 | 47 | --- | 18 | 21 | 287 | 15 | 9.9 | 11 | 5.5 |
| 31 | 4.8 | --- | 33 | 93 | --- | 18 | --- | 110 | --- | 14 | 8.8 | --- |
| TOTAL | 122.49 | 125.4 | 900.6 | 2457 | 2953 | 2148 | 667 | 1723.5 | 3743 | 1790.3 | 1528.3 | 191.4 |
| MEAN | 3.95 | 4.18 | 29.1 | 79.3 | 105 | 69.3 | 22.2 | 55.6 | 125 | 57.8 | 49.3 | 6.38 |
| MAX | 32 | 6.9 | 195 | 460 | 487 | 451 | 76 | 323 | 667 | 1150 | 475 | 14 |
| MIN | .41 | 3.4 | 4.7 | 17 | 24 | 18 | 14 | 6.5 | 15 | 8.3 | 6.5 | 4.5 |
| CFSM | .07 | .08 | .55 | 1.49 | 1.97 | 1.30 | .42 | 1.04 | 2.34 | 1.08 | .92 | .12 |
| IN. | .09 | .09 | .63 | 1.71 | 2.06 | 1.50 | .46 | 1.20 | 2.61 | 1.25 | 1.06 | .13 |

CAL YR 1981 TOTAL 5798.01 MEAN 15.9 MAX 380 MIN .41 CFSM .30 IN 4.04
WTR YR 1982 TOTAL 18349.99 MEAN 50.3 MAX 1150 MIN .41 CFSM .94 IN 12.78

KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC

LOCATION.--Lat 36°23'35", long 81°24'26", Ashe County, Hydrologic Unit 05050001, on right bank 600 ft (183 m) upstream from bridge on State Highways 16 and 88, 0.2 mi (0.3 km) downstream from Bear Creek, and 4 mi (6.4 km) southeast of Jefferson.

DRAINAGE AREA.--205 mi² (531 km²).

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1925-26(M), 1928-30(M), 1931-32, 1933-35(M), 1941-42(m), 1944(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,657.04 ft (809.866 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1934, nonrecording gage on bridge 400 ft (122 m) downstream at same datum. Oct. 14, 1934, to Mar. 25, 1935, nonrecording gage at present site and datum.

REMARKS.--Records good. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 429 ft³/s (12.15 m³/s), 28.42 in/yr (722 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,800 ft³/s (1,500 m³/s) Aug. 14, 1940, gage height, 22.50 ft (6.858 m), from rating curve extended above 5,100 ft³/s (144 m³/s) on basis of slope-area measurement of peak flow; minimum, 52 ft³/s (1.47 m³/s) Dec. 24, 1943, result of freezeup; minimum daily, 65 ft³/s (1.84 m³/s) Sept. 9, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 15, 1916, reached a stage of 18.0 ft (5.49 m), from floodmarks witnessed by local resident, discharge, 35,200 ft³/s (997 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft³/s (78.4 m³/s) at 1400 hours Feb. 3, gage height, 5.48 ft (1.670 m), no other peak above base of 2,600 ft³/s (74 m³/s); minimum, 73 ft³/s (2.07 m³/s) Dec. 11, gage height, 1.40 ft (0.427 m), result of freezeup; minimum daily, 112 ft³/s (3.17 m³/s) Dec. 11, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|----------|---------|-----------|----------|-------|-------|-------|------|------|
| 1 | 120 | 149 | 146 | 684 | 790 | 352 | 319 | 450 | 537 | 250 | 754 | 495 |
| 2 | 126 | 145 | 206 | 522 | 520 | 403 | 302 | 407 | 409 | 240 | 427 | 511 |
| 3 | 135 | 140 | 194 | 366 | 2130 | 520 | 332 | 378 | 359 | 235 | 329 | 318 |
| 4 | 129 | 138 | 157 | 1560 | 1530 | 500 | 342 | 355 | 372 | 225 | 291 | 263 |
| 5 | 125 | 138 | 149 | 1030 | 900 | 493 | 304 | 333 | 623 | 237 | 270 | 241 |
| 6 | 124 | 144 | 153 | 537 | 692 | 496 | 365 | 319 | 444 | 238 | 263 | 229 |
| 7 | 121 | 146 | 135 | 427 | 565 | 630 | 333 | 308 | 356 | 233 | 250 | 220 |
| 8 | 116 | 134 | 143 | 425 | 486 | 764 | 317 | 310 | 326 | 228 | 250 | 213 |
| 9 | 115 | 129 | 137 | 329 | 457 | 572 | 350 | 299 | 313 | 322 | 537 | 210 |
| 10 | 114 | 131 | 115 | 210 | 462 | 499 | 358 | 280 | 382 | 403 | 416 | 206 |
| 11 | 117 | 133 | 112 | 350 | 399 | 456 | 326 | 268 | 507 | 377 | 311 | 206 |
| 12 | 119 | 130 | 143 | 400 | 367 | 425 | 308 | 263 | 395 | 348 | 277 | 206 |
| 13 | 118 | 129 | 170 | 433 | 363 | 399 | 300 | 255 | 713 | 337 | 283 | 203 |
| 14 | 117 | 127 | 190 | 489 | 343 | 395 | 304 | 249 | 518 | 442 | 273 | 206 |
| 15 | 116 | 125 | 249 | 466 | 343 | 377 | 295 | 247 | 398 | 383 | 258 | 239 |
| 16 | 118 | 127 | 300 | 430 | 439 | 389 | 287 | 260 | 357 | 354 | 248 | 251 |
| 17 | 117 | 139 | 217 | 365 | 650 | 556 | 315 | 272 | 333 | 373 | 275 | 204 |
| 18 | 116 | 142 | 205 | 368 | 777 | 610 | 339 | 338 | 322 | 353 | 271 | 194 |
| 19 | 114 | 131 | 173 | 428 | 615 | 465 | 307 | 488 | 309 | 639 | 352 | 191 |
| 20 | 113 | 140 | 148 | 651 | 533 | 429 | 293 | 345 | 289 | 423 | 331 | 196 |
| 21 | 113 | 142 | 190 | 591 | 476 | 466 | 286 | 361 | 272 | 315 | 257 | 201 |
| 22 | 115 | 133 | 254 | 509 | 437 | 420 | 275 | 408 | 266 | 317 | 233 | 249 |
| 23 | 123 | 126 | 359 | 429 | 396 | 378 | 264 | 375 | 268 | 309 | 228 | 235 |
| 24 | 138 | 137 | 338 | 506 | 370 | 359 | 256 | 517 | 255 | 391 | 226 | 198 |
| 25 | 148 | 147 | 254 | 405 | 358 | 351 | 262 | 542 | 249 | 330 | 230 | 191 |
| 26 | 208 | 147 | 267 | 320 | 338 | 504 | 616 | 758 | 268 | 285 | 221 | 203 |
| 27 | 469 | 140 | 232 | 260 | 360 | 402 | 933 | 774 | 346 | 260 | 213 | 244 |
| 28 | 326 | 140 | 220 | 250 | 369 | 348 | 1040 | 570 | 366 | 252 | 211 | 232 |
| 29 | 198 | 143 | 205 | 280 | --- | 335 | 662 | 519 | 323 | 245 | 210 | 196 |
| 30 | 169 | 133 | 281 | 293 | --- | 328 | 523 | 507 | 286 | 251 | 202 | 189 |
| 31 | 156 | --- | 285 | 354 | --- | 321 | --- | 526 | --- | 441 | 285 | --- |
| TOTAL | 4553 | 4105 | 6327 | 14667 | 16465 | 13942 | 11513 | 12281 | 11161 | 10036 | 9182 | 7140 |
| MEAN | 147 | 137 | 204 | 473 | 588 | 450 | 384 | 396 | 372 | 324 | 296 | 238 |
| MAX | 469 | 149 | 359 | 1560 | 2130 | 764 | 1040 | 774 | 713 | 639 | 754 | 511 |
| MIN | 113 | 125 | 112 | 210 | 338 | 321 | 256 | 247 | 249 | 225 | 202 | 189 |
| CFSM | .72 | .67 | 1.00 | 2.31 | 2.87 | 2.20 | 1.87 | 1.93 | 1.82 | 1.58 | 1.44 | 1.16 |
| IN. | .83 | .74 | 1.15 | 2.66 | 2.99 | 2.53 | 2.09 | 2.23 | 2.03 | 1.82 | 1.67 | 1.30 |
| CAL YR 1981 | TOTAL | 107656 | MEAN 295 | MAX 2310 | MIN 112 | CFSM 1.44 | IN 19.54 | | | | | |
| WTR YR 1982 | TOTAL | 121372 | MEAN 333 | MAX 2130 | MIN 112 | CFSM 1.62 | IN 22.02 | | | | | |

KANAWHA RIVER BASIN

03164000 NEW RIVER NEAR GALAX, VA

LOCATION.--Lat 36°38'50", long 80°58'45", Grayson County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 94, 500 ft (152 m) downstream from Meadow Creek, 1.2 mi (1.9 km) southwest of Old Town, 3.1 mi (5.0 km) southwest of Galax, and 3.6 mi (5.8 km) downstream from Elk Creek.

DRAINAGE AREA.--1,131 mi² (2,929 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 758: Drainage area, 1933(M). WSP 893: 1930(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 2,208.04 ft (673.011 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height transmitter at station, recorder at Roanoke.

AVERAGE DISCHARGE.--53 years, 1,895 ft³/s (53.67 m³/s), 22.75 in/yr (578 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 141,000 ft³/s (3,990 m³/s) Aug. 14, 1940, gage height, 25.7 ft (7.83 m), from floodmark, from rating curve extended above 32,000 ft³/s (910 m³/s) on basis of computation of peak flow over dam at Fries 6 mi (10 km) downstream and slope-area measurement of peak flow; minimum, 193 ft³/s (5.47 m³/s) Jan. 9, 1956, gage height, 0.52 ft (0.158 m), result of freezeup; minimum daily, 265 ft³/s (7.50 m³/s) Sept. 19, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (250 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Jan. 4 | 1730 | 12900 365 | 4.87 1.484 | Feb. 3 | 1700 | *17200 487 | 5.80 1.768 |

Minimum discharge, 373 ft³/s (10.6 m³/s) Oct. 10, gage height, 0.64 ft (0.195 m), but may have been less during period of ice effect; minimum daily, 400 ft³/s (11.3 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 537 | 677 | 664 | 2090 | 3000 | 1570 | 1380 | 2240 | 1860 | 1200 | 2190 | 1900 |
| 2 | 497 | 650 | 821 | 2620 | 3500 | 1740 | 1300 | 2020 | 1680 | 1070 | 2170 | 2240 |
| 3 | 523 | 621 | 917 | 2670 | 11000 | 2420 | 1320 | 1950 | 1400 | 996 | 1440 | 1860 |
| 4 | 635 | 592 | 821 | 8870 | 10600 | 2620 | 1420 | 1720 | 1260 | 967 | 1160 | 1280 |
| 5 | 523 | 592 | 747 | 8720 | 5300 | 2650 | 1260 | 1570 | 1740 | 980 | 1040 | 1030 |
| 6 | 537 | 578 | 677 | 4160 | 3600 | 3030 | 1400 | 1460 | 1980 | 1030 | 967 | 927 |
| 7 | 551 | 621 | 621 | 2910 | 2800 | 3600 | 1480 | 1400 | 1460 | 996 | 927 | 863 |
| 8 | 510 | 592 | 635 | 2690 | 2290 | 4760 | 1360 | 1380 | 1220 | 1010 | 914 | 810 |
| 9 | 484 | 551 | 635 | 2180 | 2070 | 3720 | 1440 | 1360 | 1160 | 1380 | 1120 | 771 |
| 10 | 484 | 537 | 592 | 1500 | 2190 | 2920 | 1610 | 1260 | 1860 | 1680 | 1630 | 745 |
| 11 | 497 | 523 | 540 | 900 | 1880 | 2470 | 1500 | 1180 | 2450 | 1610 | 1380 | 733 |
| 12 | 497 | 523 | 420 | 700 | 1630 | 2190 | 1400 | 1120 | 1830 | 1720 | 1090 | 720 |
| 13 | 523 | 497 | 400 | 650 | 1500 | 2000 | 1340 | 1070 | 2820 | 2140 | 967 | 707 |
| 14 | 510 | 510 | 600 | 580 | 1320 | 1900 | 1340 | 1040 | 2820 | 3050 | 940 | 771 |
| 15 | 497 | 471 | 1000 | 650 | 1300 | 1830 | 1340 | 1010 | 1950 | 2600 | 927 | 888 |
| 16 | 510 | 484 | 1800 | 750 | 1520 | 1950 | 1300 | 1010 | 1570 | 2020 | 901 | 1010 |
| 17 | 471 | 523 | 1480 | 900 | 2750 | 2020 | 1340 | 1070 | 1520 | 1740 | 940 | 837 |
| 18 | 510 | 537 | 1240 | 1200 | 5240 | 2570 | 1700 | 1070 | 1440 | 1460 | 967 | 745 |
| 19 | 523 | 551 | 800 | 1600 | 4180 | 2400 | 1550 | 1380 | 1320 | 1650 | 1060 | 680 |
| 20 | 484 | 551 | 600 | 2000 | 3300 | 2340 | 1420 | 1900 | 1220 | 1980 | 996 | 667 |
| 21 | 484 | 537 | 500 | 3500 | 2720 | 2600 | 1380 | 1880 | 1140 | 1500 | 940 | 680 |
| 22 | 497 | 564 | 450 | 3200 | 2340 | 2720 | 1300 | 1720 | 1090 | 1220 | 823 | 797 |
| 23 | 537 | 537 | 1300 | 3000 | 2100 | 2400 | 1240 | 1810 | 1180 | 1360 | 784 | 823 |
| 24 | 592 | 564 | 2200 | 2800 | 1860 | 2100 | 1180 | 1950 | 1090 | 1680 | 797 | 771 |
| 25 | 677 | 621 | 1860 | 2500 | 1700 | 1900 | 1160 | 2340 | 1030 | 1480 | 876 | 707 |
| 26 | 806 | 691 | 1620 | 1900 | 1570 | 1880 | 2120 | 2020 | 1140 | 1200 | 940 | 680 |
| 27 | 2070 | 650 | 1240 | 1400 | 1550 | 1930 | 4240 | 2450 | 1300 | 1030 | 888 | 823 |
| 28 | 1800 | 635 | 1120 | 1300 | 1630 | 1630 | 5110 | 2370 | 1440 | 996 | 784 | 888 |
| 29 | 1220 | 719 | 1050 | 1400 | --- | 1480 | 3630 | 1880 | 1500 | 954 | 758 | 771 |
| 30 | 869 | 650 | 950 | 1300 | --- | 1420 | 2720 | 1810 | 1320 | 954 | 733 | 693 |
| 31 | 733 | --- | 900 | 2000 | --- | 1380 | --- | 1700 | --- | 1200 | 837 | --- |
| TOTAL | 20588 | 17349 | 29200 | 72640 | 86440 | 72140 | 52280 | 50140 | 46790 | 44853 | 32886 | 27817 |
| MEAN | 664 | 578 | 942 | 2343 | 3087 | 2327 | 1743 | 1617 | 1560 | 1447 | 1061 | 927 |
| MAX | 2070 | 719 | 2200 | 8870 | 11000 | 4760 | 5110 | 2450 | 2820 | 3050 | 2190 | 2240 |
| MIN | 471 | 471 | 400 | 580 | 1300 | 1380 | 1160 | 1010 | 1030 | 954 | 733 | 667 |
| CFSM | .59 | .51 | .83 | 2.07 | 2.73 | 2.06 | 1.54 | 1.43 | 1.38 | 1.28 | .94 | .82 |
| IN. | .68 | .57 | .96 | 2.39 | 2.84 | 2.37 | 1.72 | 1.65 | 1.54 | 1.48 | 1.08 | .91 |

| CAL YR 1981 | TOTAL | 481762 | MEAN | 1320 | MAX | 16400 | MIN | 300 | CFSM | 1.17 | IN | 15.85 |
|-------------|-------|--------|------|------|-----|-------|-----|-----|------|------|----|-------|
| WTR YR 1982 | TOTAL | 553123 | MEAN | 1515 | MAX | 11000 | MIN | 400 | CFSM | 1.34 | IN | 18.19 |

KANAWHA RIVER BASIN

269

03164000 NEW RIVER NEAR GALAX, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1968 to current year.

WATER TEMPERATURES: October to December 1949, April 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 130 micromhos Nov. 3, 1981; minimum daily, 10 micromhos Nov. 20, 1975.

WATER TEMPERATURES (water years 1968-82): Maximum, 31.0°C July 17, 18, 1969; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 130 micromhos Nov. 3; minimum daily, 28 micromhos Apr. 6.

WATER TEMPERATURES: Maximum daily, 28.5°C Aug. 1, 8; minimum daily, 0.0°C Dec. 16, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|--|-------------------------------------|--|--|--|--|---|
| OCT | | | | | | | | | | | | |
| 01... | 1345 | 607 | 58 | 9.0 | 20.0 | 4 | 9.8 | 15 | 3.6 | 1.5 | 3.7 | 1.6 |
| NOV | | | | | | | | | | | | |
| 20... | 1130 | 564 | 53 | 7.4 | 8.0 | 5 | 11.0 | 15 | 3.8 | 1.3 | 3.7 | 1.2 |
| JAN | | | | | | | | | | | | |
| 19... | 1120 | 2540 | 59 | 7.2 | .0 | 3 | 13.4 | 15 | 3.8 | 1.4 | 4.2 | 1.5 |
| FEB | | | | | | | | | | | | |
| 22... | 1315 | 2470 | 46 | 6.4 | 5.5 | 16 | 11.6 | 13 | 3.1 | 1.2 | 2.4 | 1.1 |
| APR | | | | | | | | | | | | |
| 16... | 1130 | 1300 | 45 | 7.0 | 14.0 | 2 | 9.9 | 15 | 3.9 | 1.3 | 3.2 | 1.1 |
| JUN | | | | | | | | | | | | |
| 01... | 1330 | 1680 | 52 | 7.4 | 21.0 | 3 | 7.2 | 13 | 3.1 | 1.2 | 2.4 | 1.3 |
| JUL | | | | | | | | | | | | |
| 02... | 1245 | 1040 | 56 | 7.8 | 24.0 | 6 | 8.9 | 15 | 3.7 | 1.3 | 2.6 | 1.4 |
| AUG | | | | | | | | | | | | |
| 23... | 1320 | 784 | 52 | 9.0 | 24.0 | 16 | 9.2 | 16 | 3.8 | 1.5 | 3.1 | 1.1 |

| DATE | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|-------|---|---|---|--|---|--|---|---|---|--|--|
| OCT | | | | | | | | | | | |
| 01... | 22 | 3.3 | 1.8 | <.1 | 5.4 | 38 | 34 | <.010 | .09 | .040 | 130 |
| NOV | | | | | | | | | | | |
| 20... | 15 | 3.2 | 3.5 | <.1 | 5.2 | 42 | 31 | <.010 | .26 | <.010 | 110 |
| JAN | | | | | | | | | | | |
| 19... | 17 | 3.4 | 4.8 | <.1 | 12 | 46 | 41 | <.010 | .83 | .010 | 62 |
| FEB | | | | | | | | | | | |
| 22... | 10 | 3.3 | 3.1 | <.1 | 9.1 | 37 | 29 | <.010 | .76 | .010 | 50 |
| APR | | | | | | | | | | | |
| 16... | 17 | 3.0 | 4.2 | <.1 | 11 | 41 | 38 | <.010 | .36 | <.010 | 95 |
| JUN | | | | | | | | | | | |
| 01... | 14 | 2.0 | 2.5 | <.1 | 8.7 | 35 | 30 | <.010 | 1.0 | .030 | 42 |
| JUL | | | | | | | | | | | |
| 02... | 16 | 3.0 | 3.5 | <.1 | 9.6 | 48 | 35 | <.010 | .37 | .010 | 300 |
| AUG | | | | | | | | | | | |
| 23... | 19 | 4.0 | 3.0 | <.1 | 9.2 | 35 | 37 | .050 | <.10 | .040 | 130 |

< Actual value is known to be less than the value shown.

03164000 NEW RIVER NEAR GALAX, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 51 | 90 | 38 | 62 | --- | 51 | 45 | 47 | 52 | 44 | 42 | 44 |
| 2 | 49 | 118 | 65 | 63 | --- | 52 | 47 | 46 | 64 | 47 | 44 | 45 |
| 3 | 50 | 130 | 80 | 65 | 84 | 52 | 30 | 46 | 85 | 55 | 43 | --- |
| 4 | 50 | 110 | 50 | 66 | 87 | 52 | 30 | 46 | 63 | 47 | 43 | 44 |
| 5 | 50 | 110 | 54 | 84 | 73 | 52 | 30 | 46 | 62 | --- | 49 | 44 |
| 6 | 49 | 115 | 56 | 81 | 33 | 63 | 28 | 46 | 60 | --- | 51 | 45 |
| 7 | 50 | 100 | 56 | 81 | 34 | 61 | 30 | 46 | 59 | --- | 50 | 45 |
| 8 | 49 | 80 | 55 | 82 | 33 | 56 | 46 | 46 | 59 | --- | 45 | 44 |
| 9 | 51 | 83 | 63 | 53 | 33 | 47 | 31 | 46 | 60 | --- | 51 | 43 |
| 10 | 49 | 108 | --- | --- | 35 | 41 | 30 | 46 | 60 | --- | 50 | 43 |
| 11 | 56 | 90 | --- | --- | 46 | 47 | 30 | 46 | 60 | --- | 46 | 40 |
| 12 | 55 | 95 | --- | --- | 47 | 53 | 41 | 46 | 61 | 44 | --- | 41 |
| 13 | 55 | 90 | 39 | --- | 48 | 46 | 45 | 44 | 62 | 42 | 50 | 41 |
| 14 | 57 | 30 | 39 | --- | 48 | 41 | 40 | 44 | 50 | 56 | 44 | 41 |
| 15 | 54 | 80 | 38 | --- | 76 | 43 | 47 | 44 | 50 | --- | 51 | 38 |
| 16 | 58 | 70 | 40 | --- | 70 | 41 | 36 | 44 | 50 | 46 | 52 | 41 |
| 17 | 54 | 68 | --- | 53 | 70 | 40 | 43 | 44 | 50 | 46 | 51 | 43 |
| 18 | 55 | 80 | --- | --- | 68 | 54 | 43 | 44 | 51 | 48 | 48 | 40 |
| 19 | 62 | 75 | --- | --- | 67 | 43 | 47 | 49 | 46 | 46 | 48 | 41 |
| 20 | 62 | 65 | --- | --- | 45 | 40 | 45 | 84 | 50 | 57 | 52 | 38 |
| 21 | 64 | 75 | --- | --- | 45 | 47 | 38 | 85 | 53 | 46 | 47 | 62 |
| 22 | 64 | 80 | 43 | --- | 45 | 47 | 48 | 44 | 61 | 50 | 47 | 73 |
| 23 | 58 | 83 | 40 | --- | 46 | 45 | 44 | 44 | 51 | 42 | 47 | 59 |
| 24 | 63 | 80 | 41 | --- | 54 | 40 | 40 | 44 | 41 | 40 | 46 | 54 |
| 25 | 110 | 70 | 40 | --- | 52 | 41 | 41 | 44 | 67 | 43 | 47 | 63 |
| 26 | 105 | 80 | 41 | --- | 52 | 35 | 49 | 43 | 58 | 43 | 44 | 51 |
| 27 | 110 | 70 | 40 | --- | 54 | 41 | 49 | 55 | 55 | 46 | 45 | 51 |
| 28 | 105 | 85 | 45 | --- | 54 | 43 | 46 | 54 | 60 | 43 | 44 | 52 |
| 29 | 98 | 80 | 41 | --- | --- | 44 | 46 | 80 | 46 | 50 | 45 | 32 |
| 30 | 100 | 40 | 47 | --- | --- | 45 | 47 | 56 | 44 | 54 | --- | 58 |
| 31 | 60 | --- | 39 | --- | --- | 42 | --- | 55 | --- | 49 | 45 | --- |
| MEAN | 65 | 84 | 47 | 69 | 54 | 47 | 40 | 50 | 56 | 47 | 47 | 47 |
| WTR YR 1982 | MEAN | 54 | MAX | 130 | MIN | 28 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 19.5 | 14.0 | 4.0 | 3.0 | --- | 5.0 | 15.0 | 17.5 | 21.5 | 27.0 | 28.5 | 26.0 |
| 2 | 18.0 | 13.0 | 5.0 | 3.5 | --- | 7.0 | 15.5 | 19.0 | 21.0 | 26.5 | 28.0 | 26.5 |
| 3 | 17.5 | 17.0 | 8.0 | 6.0 | 2.0 | 5.5 | 14.0 | 18.0 | 19.5 | 27.0 | 27.5 | --- |
| 4 | 15.0 | 14.0 | 5.5 | 10.0 | 3.0 | 8.0 | 12.5 | 18.0 | 20.0 | 27.5 | 27.0 | 26.5 |
| 5 | 16.5 | 14.5 | 5.0 | 12.0 | 2.0 | 11.0 | 8.0 | 18.0 | 21.0 | --- | 28.0 | 27.5 |
| 6 | 16.0 | 13.0 | 7.0 | 10.5 | 3.5 | 10.0 | 7.0 | 19.0 | 21.5 | --- | 28.0 | 27.0 |
| 7 | 14.0 | 11.0 | 3.0 | 10.0 | 4.0 | 8.5 | 6.5 | 18.0 | 21.0 | --- | 27.0 | 25.0 |
| 8 | 15.0 | 12.0 | 2.0 | 6.0 | 4.5 | 9.0 | 5.5 | 20.0 | 20.0 | --- | 28.5 | 26.5 |
| 9 | 14.5 | 11.0 | 1.5 | 4.0 | 7.0 | 8.0 | 10.0 | 19.0 | 22.0 | --- | 27.5 | 25.0 |
| 10 | 13.0 | 12.0 | --- | --- | 6.5 | 9.5 | 9.5 | 21.5 | 19.5 | --- | 27.0 | 24.0 |
| 11 | 13.5 | 11.0 | --- | --- | 6.0 | 8.5 | 11.0 | 22.0 | 21.0 | --- | 27.0 | 23.0 |
| 12 | 14.0 | 9.5 | --- | --- | 4.5 | 11.0 | 14.5 | 21.5 | 21.5 | 28.0 | --- | 25.0 |
| 13 | 15.0 | 9.0 | 3.0 | --- | 5.0 | 8.0 | 15.5 | 20.0 | 20.0 | 27.0 | 26.5 | 24.5 |
| 14 | 16.5 | 11.0 | 4.0 | --- | 7.5 | 9.0 | 14.0 | 19.5 | 22.0 | 28.0 | 26.0 | 22.0 |
| 15 | 17.0 | 10.0 | 2.0 | --- | 6.0 | 6.0 | 16.0 | 20.0 | 23.5 | --- | 26.0 | 21.0 |
| 16 | 17.5 | 9.0 | .0 | --- | 4.5 | 7.5 | 16.5 | 18.5 | 21.5 | 26.5 | 25.0 | 21.0 |
| 17 | 17.0 | 10.0 | --- | --- | 5.0 | 10.0 | 14.0 | 18.5 | 22.0 | 27.0 | 26.0 | 23.5 |
| 18 | 16.5 | 10.5 | --- | --- | 4.0 | 11.0 | 15.0 | 19.0 | 23.0 | 26.0 | 27.0 | 21.0 |
| 19 | 13.5 | 12.0 | --- | --- | 5.0 | 13.0 | 14.5 | 19.0 | 24.0 | 27.0 | 26.0 | 20.5 |
| 20 | 15.0 | 9.0 | --- | --- | 8.0 | 11.0 | 16.0 | 18.0 | 24.5 | 26.5 | 27.0 | 19.0 |
| 21 | 15.5 | 8.0 | --- | --- | 7.5 | 10.0 | 14.0 | 16.5 | 26.0 | 26.0 | 26.5 | 20.0 |
| 22 | 15.0 | 7.0 | .0 | --- | 6.0 | 12.0 | 13.0 | 19.0 | 25.0 | 27.0 | 26.0 | 19.5 |
| 23 | 13.0 | 8.0 | 2.0 | --- | 9.0 | 11.0 | 16.0 | 20.0 | 26.0 | 25.5 | 25.5 | 19.0 |
| 24 | 14.0 | 8.5 | 1.0 | --- | 6.0 | 11.5 | 16.0 | 19.5 | 26.5 | 27.0 | 26.0 | 18.5 |
| 25 | 12.5 | 7.0 | 3.0 | --- | 4.5 | 10.0 | 15.5 | 21.5 | 27.0 | 27.0 | 27.0 | 19.0 |
| 26 | 12.0 | 7.5 | 3.0 | --- | 5.0 | 11.0 | 16.5 | 20.0 | 26.5 | 27.5 | 26.5 | 17.5 |
| 27 | 12.0 | 7.0 | 2.5 | --- | 4.0 | 9.5 | 15.0 | 19.0 | 26.0 | 27.0 | 27.5 | 18.0 |
| 28 | 14.0 | 6.0 | 4.0 | --- | 6.0 | 8.0 | 17.0 | 20.5 | 24.5 | 26.5 | 27.0 | 17.0 |
| 29 | 15.0 | 6.5 | 4.5 | --- | --- | 10.0 | 16.5 | 20.0 | 25.0 | 27.0 | 25.5 | 18.5 |
| 30 | 12.0 | 5.0 | 6.0 | --- | --- | 13.0 | 15.0 | 21.0 | 26.0 | 27.5 | --- | 18.5 |
| 31 | 12.5 | --- | 4.0 | --- | --- | 14.0 | --- | 19.5 | --- | 28.0 | 26.5 | --- |
| MEAN | 15.0 | 10.0 | 3.5 | 7.0 | 5.0 | 9.5 | 13.5 | 19.5 | 23.0 | 27.0 | 27.0 | 22.0 |
| WTR YR 1982 | MEAN | 16.0 | MAX | 28.5 | MIN | .0 | | | | | | |

03165000 CHESTNUT CREEK AT GALAX, VA

LOCATION.--Lat 36°38'45", long 80°55'10", Galax City, Hydrologic Unit 05050001, on right bank 200 ft (61 m) upstream from bridge on State Highway 89 and 1.7 mi (2.7 km) downstream from Wards Mill Branch.

DRAINAGE AREA.--39.4 mi² (102.0 km²).

PERIOD OF RECORD.--September 1944 to current year.

REVISED RECORDS.--WSP 1385: 1953.

GAGE.--Water-stage recorder. Concrete control since Aug. 30, 1979. Datum of gage is 2,344.17 ft (714.503 m) National Geodetic Vertical Datum of 1929. Prior to June 25, 1948, nonrecording gage, and June 25, 1948, to May 28, 1953, water-stage recorder, at site 200 ft (61 m) upstream at datum 0.86 ft (0.262 m) higher.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--38 years, 67.1 ft³/s (1.900 m³/s), 23.13 in/yr (588 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,980 ft³/s (198 m³/s) Oct. 17, 1947, gage height, 14.4 ft (4.39 m), from floodmark, site and datum then in use, from rating curve extended above 2,200 ft³/s (62 m³/s) on basis of two slope-area and one contracted-opening measurements at gage heights 9.5 ft (2.90 m), 14.4 ft (4.39 m), and 17.4 ft (5.30 m), respectively, site and datum then in use; minimum, 12 ft³/s (0.34 m³/s) part or all of each day Aug. 25-30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 14, 1940, reached a stage of 17.4 ft (5.30 m), at site and datum used 1944-53, discharge, 11,000 ft³/s (312 m³/s) by contracted-opening measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Feb. 3 | 0800 | 1240 35.1 | 4.01 1.222 | May 31 | 2015 | *1390 39.4 | 4.36 1.329 |

Minimum daily discharge, 14 ft³/s (0.40 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 15 | 31 | 29 | 35 | 70 | 55 | 50 | 64 | 176 | 48 | 56 | 41 |
| 2 | 15 | 30 | 36 | 60 | 77 | 71 | 48 | 63 | 91 | 44 | 42 | 35 |
| 3 | 15 | 29 | 30 | 122 | 799 | 85 | 60 | 67 | 72 | 44 | 39 | 32 |
| 4 | 15 | 28 | 28 | 379 | 175 | 82 | 49 | 56 | 73 | 43 | 38 | 31 |
| 5 | 15 | 28 | 28 | 123 | 104 | 77 | 44 | 52 | 145 | 43 | 37 | 30 |
| 6 | 15 | 29 | 26 | 76 | 83 | 80 | 50 | 51 | 81 | 42 | 36 | 30 |
| 7 | 15 | 27 | 27 | 68 | 67 | 141 | 44 | 50 | 68 | 41 | 35 | 29 |
| 8 | 15 | 27 | 26 | 58 | 61 | 99 | 45 | 52 | 64 | 41 | 35 | 28 |
| 9 | 15 | 27 | 23 | 47 | 67 | 79 | 51 | 49 | 71 | 42 | 46 | 28 |
| 10 | 15 | 27 | 17 | 35 | 61 | 69 | 48 | 46 | 171 | 42 | 38 | 28 |
| 11 | 16 | 27 | 16 | 25 | 55 | 63 | 45 | 44 | 93 | 41 | 49 | 28 |
| 12 | 16 | 27 | 15 | 22 | 51 | 60 | 44 | 43 | 139 | 43 | 46 | 27 |
| 13 | 16 | 26 | 14 | 20 | 52 | 59 | 43 | 43 | 326 | 91 | 37 | 27 |
| 14 | 16 | 26 | 20 | 19 | 50 | 56 | 58 | 42 | 131 | 95 | 36 | 33 |
| 15 | 16 | 26 | 65 | 21 | 52 | 59 | 60 | 41 | 93 | 91 | 35 | 33 |
| 16 | 16 | 26 | 50 | 25 | 70 | 58 | 48 | 42 | 79 | 94 | 34 | 28 |
| 17 | 16 | 28 | 37 | 30 | 138 | 56 | 95 | 42 | 75 | 60 | 34 | 27 |
| 18 | 16 | 27 | 30 | 36 | 117 | 52 | 88 | 42 | 68 | 56 | 37 | 26 |
| 19 | 16 | 26 | 20 | 43 | 87 | 57 | 57 | 51 | 63 | 50 | 35 | 26 |
| 20 | 16 | 30 | 17 | 60 | 73 | 60 | 52 | 57 | 58 | 45 | 33 | 27 |
| 21 | 16 | 26 | 16 | 110 | 64 | 65 | 49 | 54 | 54 | 43 | 32 | 28 |
| 22 | 16 | 25 | 20 | 64 | 59 | 56 | 45 | 46 | 56 | 42 | 31 | 31 |
| 23 | 21 | 25 | 82 | 54 | 56 | 52 | 44 | 49 | 54 | 58 | 31 | 27 |
| 24 | 24 | 28 | 46 | 55 | 54 | 52 | 43 | 55 | 52 | 123 | 33 | 27 |
| 25 | 24 | 31 | 42 | 49 | 52 | 52 | 44 | 53 | 50 | 53 | 35 | 27 |
| 26 | 66 | 28 | 37 | 44 | 49 | 59 | 175 | 100 | 91 | 46 | 33 | 33 |
| 27 | 255 | 27 | 35 | 40 | 46 | 51 | 221 | 107 | 64 | 42 | 32 | 35 |
| 28 | 51 | 26 | 33 | 37 | 60 | 49 | 205 | 133 | 60 | 46 | 32 | 29 |
| 29 | 38 | 25 | 31 | 40 | --- | 49 | 92 | 91 | 54 | 41 | 30 | 28 |
| 30 | 34 | 25 | 29 | 36 | --- | 49 | 73 | 91 | 52 | 43 | 30 | 27 |
| 31 | 32 | --- | 27 | 50 | --- | 50 | --- | 359 | --- | 54 | 40 | --- |
| TOTAL | 887 | 818 | 952 | 1883 | 2749 | 2002 | 2070 | 2135 | 2724 | 1687 | 1137 | 886 |
| MEAN | 28.6 | 27.3 | 30.7 | 60.7 | 98.2 | 64.6 | 69.0 | 68.9 | 90.8 | 54.4 | 36.7 | 29.5 |
| MAX | 255 | 31 | 82 | 379 | 799 | 141 | 221 | 359 | 326 | 123 | 56 | 41 |
| MIN | 15 | 25 | 14 | 19 | 46 | 49 | 43 | 41 | 50 | 41 | 30 | 26 |
| CFSM | .73 | .69 | .78 | 1.54 | 2.49 | 1.64 | 1.75 | 1.75 | 2.31 | 1.38 | .93 | .75 |
| IN. | .84 | .77 | .90 | 1.78 | 2.60 | 1.89 | 1.95 | 2.02 | 2.57 | 1.59 | 1.07 | .84 |

CAL YR 1981 TOTAL 12912 MEAN 35.4 MAX 519 MIN 12 CFSM .90 IN 12.19
WTR YR 1982 TOTAL 19930 MEAN 54.6 MAX 799 MIN 14 CFSM 1.39 IN 18.82

KANAWHA RIVER BASIN

03166800 GLADE CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°55'51", long 80°54'02", Wythe County, Hydrologic Unit 05050001, on right downstream abutment of bridge on State Highway 629, 1.0 mi (1.6 km) southwest of Grahams Forge, and at mile 0.4 (0.6 km).

DRAINAGE AREA.--7.15 mi² (18.52 km²).

PERIOD OF RECORD.--May 1976 to current year.

GAGE.--Water-stage recorder. Concrete control since June 1, 1979. Altitude of gage is 1,972 ft (600 m), from topographic map.

REMARKS.--Records fair except those for periods of doubtful or no gage-height record, Mar. 3 to Apr. 4 and July 9 to Aug. 26, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--6 years, 0.94 ft³/s (0.027 m³/s), 1.79 in/yr (45 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s (31.2 m³/s) June 16, 1976, gage height, 5.11 ft (1.558 m), from rating curve extended above 60 ft³/s (1.7 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.02 ft³/s (<0.001 m³/s) Sept. 14, 1981; minimum gage height, 1.36 ft (0.415 m) Sept. 7, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.8 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|---------|---|-------------------------|
| Feb. 3 | 0730 | 215 6.09 | 3.54 1.079 | July 9 | Unknown | *869 * 24.6 | 4.83 1.472 |

Minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Oct. 10-17, 19-22, Nov. 7-10, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|--------|-------|------|-------|------|--------|------|------|
| 1 | .13 | .09 | .12 | .32 | .54 | .55 | .42 | .35 | .29 | .27 | .40 | .16 |
| 2 | .21 | .09 | .09 | .37 | 3.2 | .70 | .38 | .35 | .25 | .23 | .25 | .14 |
| 3 | .12 | .09 | .06 | 2.9 | 64 | 1.2 | .37 | .33 | .23 | .16 | .22 | .11 |
| 4 | .09 | .09 | .10 | 15 | 5.2 | 1.3 | .36 | .30 | .29 | .20 | .20 | .09 |
| 5 | .09 | .09 | .10 | 1.5 | 2.5 | 1.2 | .35 | .29 | .33 | .16 | .19 | .09 |
| 6 | .09 | .08 | .06 | .84 | 1.6 | 1.1 | .35 | .27 | .25 | .16 | .18 | .09 |
| 7 | .09 | .04 | .05 | .64 | 1.1 | 1.6 | .33 | .27 | .22 | .16 | .18 | .09 |
| 8 | .09 | .04 | .09 | .48 | .85 | 7.0 | .31 | .27 | .21 | .75 | .20 | .09 |
| 9 | .07 | .04 | .09 | .40 | 1.0 | 2.0 | .36 | .25 | .22 | 35 | .30 | .09 |
| 10 | .04 | .04 | .09 | .30 | .74 | 1.0 | .30 | .22 | .29 | 75 | 1.5 | .09 |
| 11 | .04 | .06 | .08 | .23 | .64 | .80 | .28 | .20 | .23 | 2.0 | .36 | .09 |
| 12 | .04 | .09 | .07 | .15 | .59 | .72 | .27 | .19 | .22 | .35 | .33 | .09 |
| 13 | .04 | .09 | .07 | .14 | .57 | .65 | .27 | .19 | .86 | .23 | .30 | .16 |
| 14 | .04 | .09 | .09 | .13 | .54 | .60 | .27 | .18 | .31 | 3.0 | .25 | .25 |
| 15 | .04 | .09 | .33 | .14 | .52 | .75 | .27 | .18 | .27 | .90 | .23 | .19 |
| 16 | .04 | .09 | .22 | .15 | .84 | 1.1 | .27 | .20 | .28 | .60 | .21 | .16 |
| 17 | .04 | .09 | .14 | .17 | 9.8 | .85 | .30 | .22 | .28 | .45 | .20 | .13 |
| 18 | .05 | .06 | .12 | .20 | 5.8 | .80 | .26 | .20 | .22 | .35 | .19 | .11 |
| 19 | .04 | .04 | .10 | .35 | 4.5 | .75 | .23 | .29 | .19 | .80 | .25 | .09 |
| 20 | .04 | .12 | .09 | 1.8 | 2.2 | 1.1 | .23 | 1.1 | .16 | .40 | .18 | .10 |
| 21 | .04 | .09 | .08 | 7.5 | 1.4 | 2.5 | .23 | .40 | .15 | .33 | .13 | .14 |
| 22 | .04 | .09 | .10 | 1.4 | .93 | 1.3 | .23 | .29 | .28 | .28 | .08 | .23 |
| 23 | .10 | .09 | .59 | 1.9 | .74 | 1.0 | .22 | .28 | .21 | .30 | .06 | .12 |
| 24 | .12 | .14 | .25 | 1.1 | .65 | .80 | .20 | .46 | .20 | .60 | .05 | .12 |
| 25 | .10 | .13 | .20 | .95 | .59 | .72 | .24 | .47 | .20 | .30 | .05 | .12 |
| 26 | .39 | .12 | .18 | .65 | .57 | .65 | .49 | .28 | .65 | .25 | .05 | .22 |
| 27 | .77 | .12 | .16 | .62 | .57 | .55 | .81 | 2.9 | .30 | .23 | .09 | .20 |
| 28 | .17 | .12 | .14 | .55 | .49 | .50 | .52 | .57 | .57 | .22 | .09 | .15 |
| 29 | .14 | .12 | .14 | .49 | --- | .47 | .42 | .41 | .52 | .22 | .09 | .11 |
| 30 | .11 | .10 | .12 | .38 | --- | .45 | .37 | .35 | .30 | .23 | .09 | .09 |
| 31 | .09 | --- | .12 | .49 | --- | .43 | --- | .33 | --- | .27 | .17 | --- |
| TOTAL | 3.50 | 2.63 | 4.24 | 42.24 | 112.67 | 35.14 | 9.91 | 12.59 | 8.98 | 124.40 | 7.07 | 3.91 |
| MEAN | .11 | .088 | .14 | 1.36 | 4.02 | 1.13 | .33 | .41 | .30 | 4.01 | .23 | .13 |
| MAX | .77 | .14 | .59 | 15 | 64 | 7.0 | .81 | 2.9 | .86 | 75 | 1.5 | .25 |
| MIN | .04 | .04 | .05 | .13 | .49 | .43 | .20 | .18 | .15 | .16 | .05 | .09 |
| CFSM | .02 | .01 | .02 | .19 | .56 | .16 | .05 | .06 | .04 | .56 | .03 | .02 |
| IN. | .02 | .01 | .02 | .22 | .59 | .18 | .05 | .07 | .05 | .65 | .04 | .02 |

CAL YR 1981 TOTAL 179.87 MEAN .49 MAX 22 MIN .04 CFSM .07 IN .94
WTR YR 1982 TOTAL 367.28 MEAN 1.01 MAX 75 MIN .04 CFSM .14 IN 1.91

03167000 REED CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°56'22", long 80°53'13", Wythe County, Hydrologic Unit 05050001, on left bank 20 ft (6 m) downstream from bridge on State Highway 619 (revised) at Grahams Forge, 2.2 mi (3.5 km) downstream from Glade Creek, and at mile 7.3 (11.7 km).

DRAINAGE AREA.--247 mi² (640 km²).

PERIOD OF RECORD.--July 1908 to September 1916, January 1927 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1235: 1912-13, 1915-16. WSP 1275: 1911, 1927-28(M), 1930-34(M). WSP 1705: 1913(M), 1916(M), 1957 calendar year runoff. WSP 1725: 1915 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,924.65 ft (586.633 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1916, nonrecording gage at same site at datum 0.68 ft (0.207 m) lower. Feb. 3, 1927, to Oct. 28, 1934, and June 11, 1974, to July 22, 1975, nonrecording gage, at present site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--63 years, 267 ft³/s (7.561 m³/s), 14.68 in/yr (373 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s (496 m³/s) July 16, 1916, gage height, 11.4 ft (3.47 m), present datum, from floodmarks, from rating curve extended above 7,600 ft³/s (220 m³/s) on basis of velocity-area study and slope-area measurement at gage heights 11.4 ft (3.47 m) and 10.01 ft (3.051 m), respectively; minimum observed, about 5 ft³/s (0.1 m³/s) Dec. 22, 1909, gage height, 0.49 ft (0.149 m), present datum, result of freezeup; minimum daily, 22 ft³/s (0.62 m³/s) Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|---------|-----------------------------------|----------------------------------|---------------------|--------------------|--------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Jan. 4 | Unknown | 3000 | 85.0 | 4.54 | 1.384 | Feb. 3 | 2230 | *3840 | 109 | 5.09 | 1.551 |

Minimum discharge, 39 ft³/s (1.10 m³/s) Dec. 20, gage height, 1.27 ft (0.387 m), result of freezeup; minimum daily, 45 ft³/s (1.27 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| 1 | 60 | 73 | 71 | 112 | 281 | 300 | 267 | 286 | 211 | 139 | 196 | 104 |
| 2 | 70 | 70 | 75 | 137 | 286 | 384 | 249 | 262 | 178 | 119 | 170 | 107 |
| 3 | 70 | 69 | 81 | 400 | 2450 | 799 | 236 | 245 | 156 | 107 | 145 | 102 |
| 4 | 68 | 68 | 81 | 1400 | 2260 | 829 | 223 | 219 | 139 | 104 | 132 | 94 |
| 5 | 64 | 67 | 80 | 700 | 979 | 779 | 215 | 204 | 359 | 107 | 125 | 89 |
| 6 | 64 | 67 | 78 | 500 | 704 | 769 | 228 | 192 | 471 | 104 | 119 | 86 |
| 7 | 62 | 65 | 73 | 420 | 545 | 1040 | 219 | 185 | 267 | 99 | 119 | 84 |
| 8 | 60 | 64 | 72 | 371 | 437 | 1310 | 211 | 182 | 200 | 102 | 128 | 82 |
| 9 | 60 | 63 | 71 | 295 | 430 | 819 | 219 | 174 | 170 | 182 | 208 | 79 |
| 10 | 62 | 64 | 60 | 189 | 530 | 625 | 215 | 163 | 170 | 281 | 371 | 79 |
| 11 | 63 | 64 | 52 | 130 | 471 | 522 | 211 | 156 | 185 | 200 | 240 | 79 |
| 12 | 63 | 63 | 48 | 90 | 403 | 471 | 211 | 149 | 152 | 167 | 228 | 79 |
| 13 | 62 | 62 | 45 | 80 | 365 | 423 | 204 | 142 | 677 | 149 | 204 | 66 |
| 14 | 61 | 62 | 60 | 70 | 322 | 390 | 204 | 142 | 1040 | 1110 | 170 | 64 |
| 15 | 61 | 62 | 92 | 75 | 295 | 416 | 196 | 135 | 423 | 600 | 152 | 89 |
| 16 | 61 | 62 | 133 | 85 | 346 | 584 | 189 | 132 | 281 | 384 | 139 | 84 |
| 17 | 61 | 64 | 122 | 95 | 877 | 568 | 192 | 149 | 228 | 276 | 128 | 82 |
| 18 | 61 | 65 | 109 | 116 | 1690 | 507 | 223 | 152 | 192 | 223 | 128 | 79 |
| 19 | 61 | 66 | 84 | 163 | 1080 | 471 | 208 | 142 | 167 | 352 | 149 | 79 |
| 20 | 62 | 65 | 65 | 346 | 922 | 643 | 200 | 156 | 149 | 249 | 132 | 82 |
| 21 | 59 | 65 | 50 | 1170 | 722 | 979 | 196 | 170 | 132 | 219 | 116 | 89 |
| 22 | 61 | 65 | 60 | 1090 | 568 | 868 | 185 | 152 | 135 | 185 | 110 | 89 |
| 23 | 64 | 64 | 100 | 704 | 464 | 660 | 174 | 149 | 132 | 189 | 104 | 86 |
| 24 | 63 | 69 | 383 | 799 | 403 | 537 | 167 | 258 | 122 | 249 | 102 | 84 |
| 25 | 66 | 72 | 265 | 576 | 359 | 464 | 167 | 281 | 113 | 196 | 113 | 82 |
| 26 | 74 | 72 | 183 | 423 | 316 | 423 | 311 | 253 | 116 | 170 | 107 | 86 |
| 27 | 132 | 73 | 149 | 281 | 316 | 371 | 592 | 211 | 196 | 152 | 107 | 99 |
| 28 | 127 | 73 | 131 | 290 | 300 | 328 | 545 | 185 | 145 | 142 | 104 | 94 |
| 29 | 96 | 71 | 120 | 249 | --- | 300 | 423 | 163 | 185 | 145 | 99 | 89 |
| 30 | 82 | 69 | 109 | 223 | --- | 286 | 340 | 152 | 159 | 149 | 99 | 84 |
| 31 | 76 | --- | 102 | 219 | --- | 276 | --- | 236 | --- | 178 | 113 | --- |
| TOTAL | 2156 | 1998 | 3204 | 11798 | 19121 | 18141 | 7420 | 5777 | 7250 | 7028 | 4557 | 2571 |
| MEAN | 69.5 | 66.6 | 103 | 381 | 683 | 585 | 247 | 186 | 242 | 227 | 147 | 85.7 |
| MAX | 132 | 73 | 383 | 1400 | 2450 | 1310 | 592 | 286 | 1040 | 1110 | 371 | 107 |
| MIN | 59 | 62 | 45 | 70 | 281 | 276 | 167 | 132 | 113 | 99 | 99 | 64 |
| CFSM | .28 | .27 | .42 | 1.54 | 2.77 | 2.37 | 1.00 | .75 | .98 | .92 | .60 | .35 |
| IN. | .32 | .30 | .48 | 1.78 | 2.88 | 2.73 | 1.12 | .87 | 1.09 | 1.06 | .69 | .39 |

| | | | | | | | |
|-------------|-------|-------|----------|----------|--------|-----------|----------|
| CAL YR 1981 | TOTAL | 60907 | MEAN 167 | MAX 1760 | MIN 40 | CFSM .68 | IN 9.17 |
| WTR YR 1982 | TOTAL | 91021 | MEAN 249 | MAX 2450 | MIN 45 | CFSM 1.01 | IN 13.71 |

KANAWHA RIVER BASIN

03167500 BIG REED ISLAND CREEK NEAR ALLISONIA, VA

LOCATION.--Lat 36°53'20", long 80°43'40", Pulaski County, Hydrologic Unit 05050001, on left bank 700 ft (213 m) downstream from bridge on State Highway 693 (revised), 3.5 mi (5.6 km) southeast of Allisonia, 4 mi (6 km) upstream from Little Reed Island Creek, and at mile 4.5 (7.2 km).

DRAINAGE AREA.--278 mi² (720 km²).

PERIOD OF RECORD.--August 1908 to September 1916, April 1939 to current year.

REVISED RECORDS.--WSP 1033: 1939(P), 1940, 1941-43(P). WSP 1305: 1912(M). WSP 1625: 1940, 1945(M), 1947, 1951, 1952(M).

GAGE.--Water-stage recorder. Datum of gage is 1,902.74 ft (579.955 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1916, nonrecording gage at site 4 mi (6 km) downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, July 8 to Aug. 16, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 400 ft³/s (11.33 m³/s), 19.54 in/yr (496 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s (411 m³/s) Sept. 30, 1959, gage height, 12.54 ft (3.822 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; minimum, 63 ft³/s (1.78 m³/s) Jan. 20, 1971, gage height, 1.63 ft (0.497 m), result of freezeup; minimum daily, 75 ft³/s (2.12 m³/s) Jan. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|--------|------|---|-------------------------|
| Oct. 27 | 0930 | *5120 145 | 7.07 2.155 | Feb. 3 | 1530 | 4580 130 | 6.67 2.033 |

Minimum discharge, 70 ft³/s (1.98 m³/s) Dec. 10, gage height, 1.67 ft (0.509 m), result of freezeup; minimum daily, 80 ft³/s (2.27 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 100 | 195 | 141 | 450 | 300 | 392 | 349 | 526 | 537 | 324 | 400 | 224 |
| 2 | 122 | 183 | 199 | 650 | 474 | 446 | 331 | 484 | 448 | 268 | 350 | 238 |
| 3 | 122 | 173 | 184 | 1200 | 3070 | 622 | 367 | 453 | 405 | 258 | 300 | 197 |
| 4 | 108 | 166 | 160 | 2170 | 1560 | 604 | 516 | 424 | 564 | 257 | 280 | 175 |
| 5 | 106 | 162 | 158 | 1150 | 802 | 576 | 400 | 400 | 989 | 271 | 260 | 167 |
| 6 | 106 | 167 | 150 | 600 | 616 | 604 | 409 | 386 | 670 | 254 | 250 | 164 |
| 7 | 104 | 151 | 139 | 471 | 500 | 842 | 371 | 371 | 495 | 237 | 240 | 161 |
| 8 | 100 | 143 | 148 | 415 | 447 | 900 | 362 | 367 | 419 | 230 | 270 | 158 |
| 9 | 100 | 140 | 129 | 324 | 462 | 664 | 400 | 371 | 405 | 350 | 400 | 157 |
| 10 | 101 | 140 | 94 | 191 | 500 | 570 | 414 | 349 | 537 | 600 | 800 | 157 |
| 11 | 105 | 140 | 90 | 160 | 416 | 510 | 367 | 336 | 593 | 400 | 500 | 157 |
| 12 | 107 | 138 | 85 | 140 | 387 | 474 | 353 | 327 | 424 | 350 | 400 | 157 |
| 13 | 107 | 135 | 80 | 120 | 382 | 453 | 344 | 323 | 1660 | 300 | 300 | 157 |
| 14 | 106 | 133 | 110 | 100 | 352 | 433 | 349 | 310 | 1070 | 2000 | 250 | 166 |
| 15 | 104 | 132 | 200 | 110 | 377 | 443 | 386 | 306 | 560 | 1500 | 210 | 195 |
| 16 | 105 | 132 | 494 | 140 | 463 | 474 | 349 | 297 | 452 | 800 | 200 | 175 |
| 17 | 105 | 137 | 290 | 170 | 664 | 438 | 371 | 340 | 454 | 600 | 210 | 157 |
| 18 | 105 | 134 | 247 | 210 | 951 | 414 | 748 | 414 | 410 | 500 | 209 | 147 |
| 19 | 104 | 131 | 154 | 260 | 670 | 405 | 495 | 463 | 375 | 700 | 219 | 146 |
| 20 | 104 | 134 | 120 | 400 | 598 | 510 | 424 | 438 | 336 | 600 | 210 | 149 |
| 21 | 104 | 149 | 100 | 1130 | 516 | 628 | 400 | 521 | 313 | 450 | 194 | 155 |
| 22 | 105 | 132 | 90 | 990 | 455 | 598 | 362 | 458 | 320 | 400 | 184 | 160 |
| 23 | 116 | 123 | 250 | 549 | 417 | 489 | 344 | 474 | 320 | 380 | 180 | 165 |
| 24 | 180 | 144 | 519 | 481 | 397 | 438 | 336 | 453 | 289 | 500 | 224 | 153 |
| 25 | 152 | 167 | 334 | 404 | 405 | 414 | 331 | 576 | 282 | 400 | 219 | 149 |
| 26 | 222 | 169 | 273 | 347 | 411 | 453 | 610 | 428 | 313 | 350 | 214 | 173 |
| 27 | 2860 | 155 | 254 | 287 | 416 | 414 | 1300 | 516 | 415 | 320 | 190 | 252 |
| 28 | 694 | 148 | 220 | 270 | 417 | 376 | 1610 | 989 | 344 | 300 | 191 | 195 |
| 29 | 346 | 138 | 190 | 240 | --- | 362 | 817 | 794 | 382 | 310 | 184 | 168 |
| 30 | 255 | 133 | 180 | 230 | --- | 353 | 622 | 1010 | 321 | 320 | 173 | 161 |
| 31 | 216 | --- | 170 | 220 | --- | 349 | --- | 598 | --- | 350 | 189 | --- |
| TOTAL | 7371 | 4424 | 5952 | 14579 | 17425 | 15648 | 14837 | 14502 | 15102 | 14879 | 8400 | 5135 |
| MEAN | 238 | 147 | 192 | 470 | 622 | 505 | 495 | 468 | 503 | 480 | 271 | 171 |
| MAX | 2860 | 195 | 519 | 2170 | 3070 | 900 | 1610 | 1010 | 1660 | 2000 | 800 | 252 |
| MIN | 100 | 123 | 80 | 100 | 300 | 349 | 331 | 297 | 282 | 230 | 173 | 146 |
| CFSM | .86 | .53 | .69 | 1.69 | 2.24 | 1.82 | 1.78 | 1.68 | 1.81 | 1.73 | .98 | .62 |
| IN. | .99 | .59 | .80 | 1.95 | 2.33 | 2.09 | 1.99 | 1.94 | 2.02 | 1.99 | 1.12 | .69 |

CAL YR 1981 TOTAL 79110 MEAN 217 MAX 2860 MIN 75 CFSM .78 IN 10.59
WTR YR 1982 TOTAL 138254 MEAN 379 MAX 3070 MIN 80 CFSM 1.36 IN 18.50

KANAWHA RIVER BASIN

275

03168000 NEW RIVER AT ALLISONIA, VA

LOCATION.--Lat 36°56'15", long 80°44'45", Pulaski County, Hydrologic Unit 05050001, on left bank on State Highway 653, 0.2 mi (0.3 km) downstream from Big Reed Island Creek, and 0.5 mi (0.8 km) upstream from Allisonia.

DRAINAGE AREA.--2,202 mi² (5,703 km²).

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 783: Drainage area. WSP 823: 1936. WSP 1305: 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 1,848.36 ft (563.380 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, June 15 to Aug. 16, which are fair. Large diurnal fluctuation and some regulation by powerplant 25 mi (40 km) above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 3,198 ft³/s (90.57 m³/s), 19.72 in/yr (501 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 185,000 ft³/s (5,240 m³/s) Aug. 14, 1940, gage height, 23.42 ft (7.138 m), from rating curve extended above 52,000 ft³/s (1,500 m³/s) on basis of flood records for other stations on New River; minimum, 412 ft³/s (11.7 m³/s) Sept. 7, 1930, gage height, 0.47 ft (0.143 m); minimum daily, 453 ft³/s (12.8 m³/s) Sept. 6, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 17,500 ft³/s (500 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Jan. 5 | 0130 | 22500 637 | 6.30 1.920 | Feb. 3 | 1430 | *32800 929 | 7.90 2.408 |

Minimum daily discharge, 600 ft³/s (17.0 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 700 | 1170 | 1320 | 3500 | 4820 | 3470 | 2810 | 4330 | 4330 | 2500 | 3600 | 1780 |
| 2 | 900 | 1520 | 1270 | 5000 | 5020 | 3290 | 2650 | 3820 | 3160 | 1900 | 3800 | 3030 |
| 3 | 750 | 775 | 1320 | 5500 | 23600 | 4650 | 2280 | 3770 | 2720 | 1600 | 3000 | 2530 |
| 4 | 800 | 1080 | 1390 | 15000 | 19800 | 5370 | 2610 | 3400 | 2770 | 1700 | 2500 | 1790 |
| 5 | 950 | 1080 | 932 | 17000 | 10400 | 5650 | 2800 | 2910 | 3190 | 1500 | 1900 | 1660 |
| 6 | 880 | 1100 | 1080 | 8180 | 7190 | 5600 | 2500 | 2630 | 3830 | 2200 | 2000 | 1390 |
| 7 | 795 | 899 | 1340 | 5420 | 5450 | 6260 | 2600 | 2780 | 3280 | 1900 | 1800 | 1700 |
| 8 | 786 | 1190 | 996 | 4110 | 4360 | 9500 | 2520 | 2020 | 2370 | 1700 | 1500 | 1230 |
| 9 | 783 | 828 | 1080 | 3340 | 3930 | 8290 | 2630 | 2450 | 2500 | 2000 | 2000 | 1380 |
| 10 | 748 | 950 | 854 | 2090 | 3260 | 6350 | 2510 | 2730 | 3080 | 3000 | 2800 | 1200 |
| 11 | 772 | 1000 | 743 | 1320 | 3600 | 5250 | 2650 | 2250 | 4590 | 3100 | 2600 | 1020 |
| 12 | 803 | 1100 | 640 | 1200 | 3080 | 4570 | 2670 | 2070 | 3170 | 3200 | 2300 | 1170 |
| 13 | 863 | 700 | 600 | 1000 | 2800 | 4220 | 2460 | 1700 | 5820 | 4000 | 2000 | 1300 |
| 14 | 762 | 750 | 896 | 1100 | 2660 | 3370 | 2570 | 2050 | 7080 | 5000 | 1300 | 1270 |
| 15 | 839 | 800 | 1840 | 1200 | 2660 | 4020 | 2410 | 1850 | 4500 | 5200 | 1800 | 1510 |
| 16 | 798 | 1000 | 2360 | 1300 | 3050 | 3960 | 2430 | 1710 | 3500 | 4000 | 1700 | 1330 |
| 17 | 820 | 1040 | 2120 | 1500 | 4560 | 4040 | 2200 | 1990 | 2900 | 2500 | 1620 | 1620 |
| 18 | 774 | 819 | 1940 | 1820 | 9890 | 4070 | 3090 | 2100 | 3000 | 3300 | 1560 | 1070 |
| 19 | 796 | 985 | 1210 | 2500 | 8880 | 4210 | 2900 | 2590 | 2500 | 3000 | 1830 | 1110 |
| 20 | 776 | 923 | 795 | 2840 | 7140 | 4520 | 2690 | 2790 | 1900 | 3100 | 1660 | 1360 |
| 21 | 811 | 921 | 740 | 7070 | 5970 | 5680 | 2200 | 3520 | 2900 | 3200 | 1370 | 1170 |
| 22 | 803 | 948 | 650 | 6660 | 5150 | 6440 | 2400 | 3610 | 2300 | 2500 | 1600 | 1380 |
| 23 | 861 | 1130 | 2300 | 5510 | 4370 | 5730 | 2140 | 2730 | 2300 | 2400 | 1900 | 1350 |
| 24 | 929 | 1020 | 3440 | 5270 | 3650 | 4600 | 2060 | 3330 | 2100 | 2800 | 1300 | 1350 |
| 25 | 989 | 928 | 2990 | 4320 | 3390 | 3920 | 2040 | 4360 | 2000 | 2900 | 1390 | 1160 |
| 26 | 1660 | 997 | 2350 | 3380 | 3240 | 3900 | 3750 | 4200 | 2100 | 3000 | 1490 | 1030 |
| 27 | 6610 | 1170 | 2030 | 2400 | 2830 | 3460 | 8220 | 3750 | 2500 | 2300 | 1540 | 1770 |
| 28 | 2980 | 1010 | 1900 | 2290 | 3040 | 3400 | 10300 | 5330 | 2700 | 1800 | 1340 | 1470 |
| 29 | 1940 | 1030 | 1700 | 2450 | --- | 3240 | 7200 | 4310 | 3000 | 1900 | 1160 | 1360 |
| 30 | 1490 | 1160 | 1600 | 2310 | --- | 2730 | 5330 | 4340 | 2400 | 1800 | 1430 | 1210 |
| 31 | 979 | --- | 1400 | 2820 | --- | 2740 | --- | 3410 | --- | 2000 | 1300 | --- |
| TOTAL | 36147 | 30023 | 45826 | 129400 | 167790 | 146500 | 97620 | 94830 | 94490 | 83000 | 59090 | 43700 |
| MEAN | 1166 | 1001 | 1478 | 4174 | 5993 | 4726 | 3254 | 3059 | 3150 | 2677 | 1906 | 1457 |
| MAX | 6610 | 1520 | 3440 | 17000 | 23600 | 9500 | 10300 | 5330 | 7080 | 5200 | 3800 | 3030 |
| MIN | 700 | 700 | 600 | 1000 | 2660 | 2730 | 2040 | 1700 | 1900 | 1500 | 1160 | 1020 |
| CFSM | .53 | .46 | .67 | 1.90 | 2.72 | 2.15 | 1.48 | 1.39 | 1.43 | 1.22 | .87 | .66 |
| IN. | .61 | .51 | .77 | 2.19 | 2.83 | 2.47 | 1.65 | 1.60 | 1.60 | 1.40 | 1.00 | .74 |

| | | | | | | | | | | | | |
|-------------|-------|---------|------|------|-----|-------|-----|-----|------|------|----|-------|
| CAL YR 1981 | TOTAL | 768909 | MEAN | 2107 | MAX | 21100 | MIN | 500 | CFSM | .96 | IN | 12.99 |
| WTR YR 1982 | TOTAL | 1028416 | MEAN | 2818 | MAX | 23600 | MIN | 600 | CFSM | 1.28 | IN | 17.37 |

KANAWHA RIVER BASIN

03169000 CLAYTOR RESERVOIR NEAR RADFORD, VA

LOCATION.--Lat 37°04'28", long 80°35'05", Pulaski County, Hydrologic Unit 05050001, at Claytor Dam on New River, 0.5 mi (0.8 km) upstream from Little River, and 5.5 mi (8.8 km) upstream from Radford.

DRAINAGE AREA.--2,382 mi² (6,169 km²).

PERIOD OF RECORD.--May 1939 to current year (monthly figures only).

REVISED RECORDS.--WSP 2108: 1961-65 monthend contents and change in contents.

GAGE.--Water-stage recorder. Datum of gage is approximately National Geodetic Vertical Datum of 1929 (levels by Appalachian Power Co.). Prior to Sept. 11, 1943, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by gravity overflow concrete dam. Spillway with crest at elevation 1,818.5 ft (554.28 m) is equipped with 9 lift gates 30 ft (9.1 m) high by 50 ft (15.2 m) wide. Dam completed and storage began May 22, 1939; water in reservoir reached minimum pool elevation in January 1940. Total level-pool capacity at elevation 1,847.0 ft (562.97 m), 1.5 ft (0.46 m) below top of gates, is 230,100 acre-ft (284 hm³) of which about 100,000 acre-ft (123 hm³) is controlled storage above minimum pool elevation of 1,820.0 ft (554.74 m). Reservoir is used for hydroelectric power and recreation.

COOPERATION.--Records furnished by Appalachian Power Co.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 1844.81 | 220400 | |
| Oct. 31..... | 1845.00 | 221200 | +800 |
| Nov. 30..... | 1843.32 | 214000 | -7200 |
| Dec. 31..... | 1844.95 | 221000 | +7000 |
| CAL YR 1981..... | | | -2200 |
| Jan. 31..... | 1845.15 | 221900 | +900 |
| Feb. 28..... | 1844.50 | 219100 | -2800 |
| Mar. 31..... | 1844.50 | 219100 | 0 |
| Apr. 30..... | 1844.88 | 220700 | +1600 |
| May 31..... | 1845.54 | 223500 | +2800 |
| June 30..... | 1844.41 | 218700 | -4800 |
| July 31..... | 1844.68 | 219900 | +1200 |
| Aug. 31..... | 1845.33 | 222600 | +2700 |
| Sept. 30..... | 1844.85 | 220600 | -2000 |
| WTR YR 1982..... | | | +200 |

KANAWHA RIVER BASIN

277

03170000 LITTLE RIVER AT GRAYSONTON, VA

LOCATION.--Lat 37°02'15", long 80°33'25", Pulaski County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 693 (revised) at Snowville, 0.5 mi (0.8 km) southeast of Grayson, 7 mi (11 km) south of Radford, and at mile 8.6 (13.8 km).

DRAINAGE AREA.--300 mi² (777 km²).

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 823: 1929-36. WSP 1143: 1945. WSP 1305: 1929(M). WSP 1555: Drainage area (at site used 1928-41). WSP 1625: 1951(M). WSP 1725: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 1,816.04 ft (553.529 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 20, 1931, nonrecording gage at bridge 1.0 mi (1.6 km) downstream at datum 17.99 ft (5.483 m) lower. Nov. 20, 1931, to Nov. 12, 1941, water-stage recorder 1.2 mi (1.9 km) downstream at datum 20.58 ft (6.273 m) lower.

REMARKS.--Records good except those for periods of no gage-height record, Jan. 7 to Feb. 16 and July 8 to Aug. 16, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 363 ft³/s (10.28 m³/s), 16.43 in/yr (417 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s (646 m³/s) June 21, 1972, gage height, 13.40 ft (4.084 m), from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurements at gage heights 12.76 ft (3.889 m) and 13.40 ft (4.084 m); minimum, 21 ft³/s (0.59 m³/s) Feb. 22, 1942, result of freezeup; minimum daily, 50 ft³/s (1.42 m³/s) Sept. 21, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,080 ft³/s (144 m³/s) time unknown Feb. 3, gage height, 5.40 ft (1.646 m), no other peak above base of 3,000 ft³/s (85 m³/s); minimum daily, 66 ft³/s (1.87 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 74 | 168 | 134 | 389 | 220 | 420 | 300 | 419 | 464 | 247 | 300 | 159 |
| 2 | 85 | 155 | 170 | 593 | 400 | 424 | 290 | 384 | 414 | 228 | 250 | 162 |
| 3 | 97 | 148 | 183 | 1420 | 3000 | 617 | 320 | 357 | 356 | 213 | 230 | 150 |
| 4 | 92 | 141 | 155 | 2140 | 1700 | 634 | 450 | 328 | 399 | 217 | 200 | 135 |
| 5 | 84 | 138 | 154 | 1200 | 800 | 584 | 300 | 302 | 680 | 223 | 190 | 124 |
| 6 | 83 | 134 | 150 | 627 | 550 | 664 | 284 | 285 | 564 | 220 | 180 | 120 |
| 7 | 81 | 125 | 132 | 450 | 450 | 844 | 283 | 275 | 388 | 215 | 180 | 120 |
| 8 | 78 | 116 | 137 | 370 | 380 | 1030 | 263 | 267 | 324 | 205 | 200 | 116 |
| 9 | 75 | 115 | 125 | 300 | 400 | 702 | 287 | 263 | 301 | 200 | 250 | 115 |
| 10 | 76 | 116 | 75 | 170 | 450 | 574 | 315 | 250 | 352 | 450 | 600 | 115 |
| 11 | 79 | 118 | 72 | 130 | 370 | 510 | 292 | 240 | 833 | 300 | 400 | 116 |
| 12 | 83 | 116 | 68 | 110 | 340 | 475 | 270 | 230 | 428 | 260 | 300 | 117 |
| 13 | 84 | 114 | 66 | 95 | 330 | 447 | 260 | 220 | 957 | 230 | 230 | 113 |
| 14 | 84 | 113 | 90 | 85 | 300 | 422 | 256 | 212 | 902 | 1500 | 190 | 114 |
| 15 | 83 | 112 | 261 | 100 | 320 | 408 | 294 | 204 | 472 | 1100 | 180 | 121 |
| 16 | 83 | 113 | 435 | 120 | 380 | 455 | 296 | 195 | 369 | 600 | 170 | 126 |
| 17 | 82 | 115 | 300 | 150 | 607 | 447 | 287 | 193 | 346 | 450 | 192 | 120 |
| 18 | 82 | 115 | 220 | 180 | 964 | 409 | 427 | 216 | 326 | 350 | 219 | 110 |
| 19 | 83 | 113 | 150 | 220 | 708 | 403 | 367 | 227 | 291 | 500 | 228 | 105 |
| 20 | 82 | 115 | 100 | 350 | 612 | 527 | 315 | 309 | 267 | 450 | 181 | 110 |
| 21 | 83 | 124 | 90 | 1000 | 541 | 485 | 295 | 394 | 246 | 350 | 165 | 115 |
| 22 | 82 | 120 | 80 | 900 | 488 | 430 | 277 | 375 | 243 | 310 | 155 | 120 |
| 23 | 88 | 110 | 514 | 500 | 447 | 400 | 258 | 391 | 257 | 300 | 150 | 125 |
| 24 | 107 | 131 | 535 | 420 | 421 | 370 | 249 | 427 | 237 | 600 | 159 | 115 |
| 25 | 132 | 155 | 334 | 350 | 392 | 350 | 245 | 452 | 227 | 300 | 186 | 110 |
| 26 | 142 | 156 | 288 | 300 | 355 | 400 | 327 | 450 | 227 | 260 | 161 | 130 |
| 27 | 1270 | 144 | 247 | 250 | 339 | 360 | 708 | 395 | 314 | 250 | 148 | 180 |
| 28 | 654 | 136 | 210 | 230 | 339 | 330 | 1120 | 537 | 281 | 220 | 145 | 150 |
| 29 | 309 | 129 | 180 | 210 | --- | 310 | 679 | 500 | 267 | 230 | 143 | 130 |
| 30 | 221 | 121 | 160 | 200 | --- | 310 | 489 | 527 | 247 | 240 | 135 | 120 |
| 31 | 185 | --- | 138 | 190 | --- | 300 | --- | 486 | --- | 250 | 142 | --- |
| TOTAL | 4923 | 3826 | 5953 | 13749 | 16603 | 15041 | 10803 | 10310 | 11979 | 11468 | 6559 | 3763 |
| MEAN | 159 | 128 | 192 | 444 | 593 | 485 | 360 | 333 | 399 | 370 | 212 | 125 |
| MAX | 1270 | 168 | 535 | 2140 | 3000 | 1030 | 1120 | 537 | 957 | 1500 | 600 | 180 |
| MIN | 74 | 110 | 66 | 85 | 220 | 300 | 245 | 193 | 227 | 200 | 135 | 105 |
| CFSM | .53 | .43 | .64 | 1.48 | 1.98 | 1.62 | 1.20 | 1.11 | 1.33 | 1.23 | .71 | .42 |
| IN. | .61 | .47 | .74 | 1.70 | 2.06 | 1.87 | 1.34 | 1.28 | 1.49 | 1.42 | .81 | .47 |

CAL YR 1981 TOTAL 68549 MEAN 188 MAX 1740 MIN 54 CFSM .63 IN 8.50
WTR YR 1982 TOTAL 114977 MEAN 315 MAX 3000 MIN 66 CFSM 1.05 IN 14.26

KANAWHA RIVER BASIN

03171000 NEW RIVER AT RADFORD, VA

LOCATION.--Lat 37°08'30", long 80°34'10", Pulaski County, Hydrologic Unit 05050001, on left bank 2,000 ft (610 m) downstream from bridge on U.S. Highway 11 at Radford, 5 mi (8 km) downstream from Little River, and 5.5 mi (8.8 km) downstream from Claytor Dam.

DRAINAGE AREA.--2,748 mi² (7,117 km²).

PERIOD OF RECORD.--October 1907 to September 1915, August 1939 to current year. Records for August 1898 to September 1907, published in WSP 27, 36, 48, 65, 83, 98, 128, 169, 205, 243, and 536, are unreliable and should not be used. Gage-height records collected at same site since 1895 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 873: Drainage area. WSP 953: 1940-41. WSP 1305: 1908-12. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,712.16 ft (521.866 m) National Geodetic Vertical Datum of 1929.

Prior to Aug. 30, 1939, nonrecording gage at highway bridge 2,000 ft (610 m) upstream at datum 0.85 ft (0.259 m) lower.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000). Some additional regulation at low flow by dam and powerplant on Little River. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 3,848 ft³/s (109.0 m³/s), 19.02 in/yr (483 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 218,000 ft³/s (6,170 m³/s) Aug. 14, 1940, gage height, 35.96 ft (10.961 m), from rating curve extended above 76,000 ft³/s (2,200 m³/s) on basis of records for other stations on New River and flow over Claytor Dam, computed by Appalachian Power Company; minimum, 165 ft³/s (4.67 m³/s) Aug. 25, 27, 1944, gage height, 1.08 ft (0.329 m); minimum daily, 550 ft³/s (15.6 m³/s) Aug. 22, 1911.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 16, 1916, reached a stage of 35.7 ft (10.88 m), discharge, 200,000 ft³/s (5,660 m³/s), at site and datum used by Geological Survey 1907-15, from reports of the National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,100 ft³/s (1,140 m³/s) Feb. 3, gage height, 12.15 ft (3.703 m); minimum, 556 ft³/s (15.7 m³/s) Dec. 11, gage height, 1.57 ft (0.479 m); minimum daily, 811 ft³/s (23.0 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | | |
|-------------------|---------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-----|-------|
| 1 | 995 | 1020 | 1500 | 3480 | 4190 | 3650 | 3310 | 5480 | 5100 | 3400 | 1750 | 4570 | | |
| 2 | 989 | 1860 | 1430 | 4500 | 7440 | 3120 | 3540 | 3270 | 5610 | 2870 | 3850 | 4890 | | |
| 3 | 877 | 1060 | 1780 | 7010 | 17800 | 4740 | 1110 | 3990 | 3960 | 1180 | 3700 | 3320 | | |
| 4 | 884 | 1180 | 1550 | 14200 | 27700 | 6200 | 1030 | 4680 | 4370 | 1200 | 3620 | 910 | | |
| 5 | 1000 | 1210 | 1010 | 18900 | 12900 | 6280 | 3950 | 4340 | 2370 | 1220 | 2480 | 909 | | |
| 6 | 993 | 1250 | 850 | 10100 | 9390 | 7280 | 3600 | 3020 | 2810 | 2450 | 2950 | 909 | | |
| 7 | 874 | 856 | 1810 | 7880 | 8820 | 8600 | 2770 | 2240 | 5190 | 2200 | 1230 | 1720 | | |
| 8 | 978 | 973 | 1420 | 5740 | 6290 | 9540 | 4990 | 1030 | 3950 | 2420 | 976 | 1770 | | |
| 9 | 1010 | 1140 | 1460 | 4520 | 7370 | 9250 | 3190 | 2570 | 3480 | 3730 | 3940 | 1770 | | |
| 10 | 888 | 1350 | 1110 | 3510 | 4340 | 8480 | 1120 | 2900 | 4350 | 1710 | 3860 | 1710 | | |
| 11 | 889 | 1250 | 1060 | 2770 | 3370 | 7670 | 1780 | 3730 | 6610 | 2600 | 3460 | 1070 | | |
| 12 | 1020 | 1230 | 819 | 1870 | 3180 | 4170 | 3620 | 3500 | 3170 | 4240 | 2930 | 904 | | |
| 13 | 979 | 1250 | 811 | 1270 | 3240 | 4160 | 3350 | 2490 | 6980 | 4730 | 3470 | 1480 | | |
| 14 | 982 | 826 | 1470 | 1250 | 1990 | 3020 | 3270 | 2270 | 5370 | 6420 | 1180 | 1570 | | |
| 15 | 987 | 944 | 1960 | 1710 | 4550 | 7130 | 4960 | 1100 | 8280 | 7440 | 1100 | 1460 | | |
| 16 | 992 | 1160 | 2740 | 1640 | 6100 | 5490 | 3630 | 1060 | 4330 | 5770 | 2230 | 2030 | | |
| 17 | 886 | 1080 | 2570 | 1670 | 7800 | 3810 | 1080 | 2970 | 4320 | 2410 | 2190 | 2030 | | |
| 18 | 895 | 1130 | 2310 | 2570 | 9130 | 3840 | 1180 | 3160 | 3530 | 1360 | 1750 | 1040 | | |
| 19 | 1100 | 1160 | 1010 | 3180 | 8490 | 5240 | 3530 | 2920 | 1330 | 2980 | 2170 | 909 | | |
| 20 | 961 | 1220 | 1010 | 2690 | 8130 | 5480 | 3520 | 3390 | 1310 | 4060 | 1940 | 2050 | | |
| 21 | 958 | 848 | 1550 | 7070 | 6550 | 5970 | 3760 | 3880 | 3790 | 4470 | 1100 | 1430 | | |
| 22 | 953 | 975 | 1230 | 8690 | 5900 | 5420 | 3230 | 3940 | 3460 | 3930 | 934 | 1480 | | |
| 23 | 1000 | 1340 | 2680 | 8390 | 5080 | 8260 | 3360 | 2550 | 3510 | 3430 | 2190 | 1000 | | |
| 24 | 888 | 1800 | 3320 | 2100 | 4320 | 5930 | 1030 | 4350 | 3470 | 1130 | 2120 | 1380 | | |
| 25 | 909 | 1730 | 5020 | 4610 | 4360 | 4210 | 1910 | 5330 | 3600 | 1400 | 1790 | 1070 | | |
| 26 | 1150 | 829 | 2010 | 5020 | 4570 | 5370 | 5190 | 6030 | 1300 | 4200 | 1870 | 1640 | | |
| 27 | 6760 | 1790 | 2090 | 4300 | 5390 | 3180 | 6940 | 6220 | 1320 | 3680 | 2020 | 1840 | | |
| 28 | 5560 | 994 | 2470 | 2470 | 2750 | 2560 | 11600 | 6030 | 4000 | 3170 | 1010 | 2250 | | |
| 29 | 3660 | 826 | 2660 | 3000 | --- | 4940 | 9590 | 4730 | 2950 | 1680 | 1070 | 2110 | | |
| 30 | 2630 | 1520 | 2260 | 3340 | --- | 4540 | 7040 | 5070 | 3890 | 3840 | 1850 | 1860 | | |
| 31 | 1130 | --- | 2620 | 1640 | --- | 3720 | --- | 1700 | --- | 1180 | 1820 | --- | | |
| TOTAL | 44777 | 35801 | 57590 | 151090 | 201140 | 171250 | 112180 | 109940 | 117710 | 96500 | 68550 | 53081 | | |
| MEAN | 1444 | 1193 | 1858 | 4874 | 7184 | 5524 | 3739 | 3546 | 3924 | 3113 | 2211 | 1769 | | |
| MAX | 6760 | 1860 | 5020 | 18900 | 27700 | 9540 | 11600 | 6220 | 8280 | 7440 | 3940 | 4890 | | |
| MIN | 874 | 826 | 811 | 1250 | 1990 | 2560 | 1030 | 1030 | 1300 | 1130 | 934 | 904 | | |
| (*) | +13 | -121 | +114 | +14 | -50 | .00 | +27 | +46 | -81 | +19 | +45 | -35 | | |
| MEAN# | 1457 | 1072 | 1972 | 4888 | 7134 | 5524 | 3766 | 3592 | 3843 | 3132 | 2256 | 1734 | | |
| CFSM# | .53 | .39 | .72 | 1.78 | 2.60 | 2.01 | 1.37 | 1.31 | 1.40 | 1.14 | .82 | .63 | | |
| IN# | .61 | .44 | .83 | 2.05 | 2.70 | 2.32 | 1.53 | 1.51 | 1.56 | 1.31 | .95 | .70 | | |
| CAL YR 1981 TOTAL | 903500 | | MEAN | 2475 | MAX | 17800 | MIN | 803 | MEAN# | 2472 | CFSM# | .90 | IN# | 12.22 |
| WTR YR 1982 TOTAL | 1219609 | | MEAN | 3341 | MAX | 27700 | MIN | 811 | MEAN# | 3341 | CFSM# | 1.22 | IN# | 16.51 |

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.

Adjusted for change in contents.

03173000 WALKER CREEK AT BANE, VA

LOCATION.--Lat 37°16'05", long 80°42'35", Giles County, Hydrologic Unit 05050002, on left bank at Bane, 0.2 mi (0.3 km) downstream from bridge on State Highway 100, 0.2 mi (0.3 km) downstream from Sugar Run, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--305 mi² (790 km²).

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 1143: 1939(M), 1940, 1944, 1946. WSP 1305: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,665.92 ft (507.772 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 326 ft³/s (9.232 m³/s), 14.52 in/yr (369 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s (479 m³/s) Apr. 5, 1977, gage height, 16.69 ft (5.087 m), from rating curve extended above 7,200 ft³/s (200 m³/s) on basis of slope-area measurement at gage height 16.50 ft (5.029 m); minimum, 15 ft³/s (0.42 m³/s) Dec. 21, 1958, gage height, 2.42 ft (0.738 m), result of freezeup; minimum daily, 24 ft³/s (0.68 m³/s) Sept. 27, 28, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1878 reached a stage of about 23.5 ft (7.2 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (110 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1930 | 5210 148 | 10.03 3.057 | June 13 | 1930 | *6770 192 | 11.05 3.368 |
| Feb. 3 | 2300 | 5540 157 | 10.27 3.130 | | | | |

Minimum discharge, 39 ft³/s (1.10 m³/s) Oct. 17, 18, gage height, 2.81 ft (0.856 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 40 | 68 | 62 | 132 | 415 | 328 | 280 | 391 | 179 | 124 | 150 | 72 |
| 2 | 44 | 63 | 68 | 173 | 470 | 388 | 259 | 345 | 156 | 111 | 140 | 82 |
| 3 | 41 | 60 | 77 | 598 | 2600 | 857 | 248 | 321 | 137 | 104 | 120 | 77 |
| 4 | 43 | 58 | 79 | 3340 | 3550 | 888 | 239 | 284 | 125 | 104 | 100 | 70 |
| 5 | 45 | 57 | 74 | 2500 | 1490 | 775 | 224 | 254 | 240 | 102 | 92 | 63 |
| 6 | 44 | 57 | 72 | 1050 | 988 | 747 | 233 | 233 | 486 | 99 | 90 | 59 |
| 7 | 47 | 55 | 68 | 700 | 722 | 1110 | 237 | 218 | 296 | 93 | 110 | 57 |
| 8 | 42 | 56 | 66 | 653 | 569 | 1690 | 218 | 209 | 222 | 97 | 100 | 55 |
| 9 | 41 | 53 | 66 | 518 | 518 | 1060 | 221 | 203 | 187 | 138 | 150 | 54 |
| 10 | 45 | 52 | 62 | 360 | 528 | 799 | 221 | 186 | 182 | 120 | 300 | 52 |
| 11 | 42 | 52 | 51 | 210 | 466 | 656 | 213 | 171 | 291 | 103 | 250 | 51 |
| 12 | 43 | 51 | 48 | 150 | 417 | 580 | 207 | 160 | 275 | 120 | 150 | 50 |
| 13 | 43 | 50 | 45 | 100 | 393 | 514 | 205 | 151 | 2730 | 135 | 123 | 49 |
| 14 | 42 | 49 | 67 | 90 | 336 | 483 | 203 | 143 | 2630 | 230 | 108 | 49 |
| 15 | 41 | 49 | 86 | 110 | 330 | 528 | 198 | 136 | 974 | 338 | 98 | 52 |
| 16 | 41 | 49 | 164 | 120 | 372 | 981 | 189 | 129 | 605 | 199 | 91 | 53 |
| 17 | 41 | 51 | 155 | 140 | 1330 | 895 | 186 | 128 | 437 | 159 | 88 | 54 |
| 18 | 40 | 50 | 132 | 149 | 2210 | 763 | 212 | 139 | 349 | 130 | 89 | 51 |
| 19 | 41 | 55 | 80 | 184 | 1330 | 644 | 211 | 136 | 284 | 125 | 115 | 49 |
| 20 | 41 | 56 | 60 | 198 | 1030 | 721 | 201 | 135 | 239 | 120 | 98 | 50 |
| 21 | 43 | 53 | 50 | 474 | 855 | 1010 | 200 | 136 | 205 | 140 | 83 | 53 |
| 22 | 42 | 52 | 65 | 1250 | 688 | 1020 | 192 | 134 | 185 | 110 | 76 | 66 |
| 23 | 45 | 53 | 173 | 837 | 554 | 828 | 180 | 394 | 179 | 115 | 72 | 61 |
| 24 | 46 | 57 | 613 | 818 | 478 | 676 | 172 | 599 | 162 | 150 | 71 | 63 |
| 25 | 46 | 59 | 445 | 693 | 423 | 570 | 167 | 366 | 143 | 140 | 74 | 57 |
| 26 | 56 | 63 | 313 | 548 | 368 | 499 | 373 | 258 | 134 | 120 | 73 | 59 |
| 27 | 163 | 66 | 245 | 371 | 347 | 433 | 783 | 249 | 129 | 100 | 77 | 66 |
| 28 | 230 | 63 | 207 | 370 | 337 | 376 | 696 | 237 | 135 | 90 | 71 | 68 |
| 29 | 129 | 61 | 178 | 323 | --- | 334 | 556 | 204 | 132 | 110 | 65 | 68 |
| 30 | 92 | 60 | 154 | 278 | --- | 306 | 458 | 237 | 129 | 120 | 63 | 60 |
| 31 | 77 | --- | 133 | 262 | --- | 290 | --- | 206 | --- | 130 | 66 | --- |
| TOTAL | 1816 | 1678 | 4158 | 17699 | 24114 | 21749 | 8182 | 7092 | 12557 | 4076 | 3353 | 1770 |
| MEAN | 58.6 | 55.9 | 134 | 571 | 861 | 702 | 273 | 229 | 419 | 131 | 108 | 59.0 |
| MAX | 230 | 68 | 613 | 3340 | 3550 | 1690 | 783 | 599 | 2730 | 338 | 300 | 82 |
| MIN | 40 | 49 | 45 | 90 | 330 | 290 | 167 | 128 | 125 | 90 | 63 | 49 |
| CFSM | .19 | .18 | .44 | 1.87 | 2.82 | 2.30 | .90 | .75 | 1.37 | .43 | .35 | .19 |
| IN. | .22 | .20 | .51 | 2.16 | 2.94 | 2.65 | 1.00 | .86 | 1.53 | .50 | .41 | .22 |

| | | | | | | | |
|-------------|-------|--------|----------|----------|--------|----------|----------|
| CAL YR 1981 | TOTAL | 68152 | MEAN 187 | MAX 2800 | MIN 32 | CFSM .61 | IN 8.31 |
| WTR YR 1982 | TOTAL | 108244 | MEAN 297 | MAX 3550 | MIN 40 | CFSM .97 | IN 13.20 |

KANAWHA RIVER BASIN

03175500 WOLF CREEK NEAR NARROWS, VA

LOCATION.--Lat 37°18'20", long 80°51'00", Giles County, Hydrologic Unit 05050002, on right bank at downstream side of bridge on State Highway 724, 2.8 mi (4.5 km) southwest of Narrows, and at mile 3.5 (5.6 km).

DRAINAGE AREA.--223 mi² (578 km²).

PERIOD OF RECORD.--July 1908 to September 1916, March 1938 to current year.

REVISED RECORDS.--WSP 973: 1940-41(M). WSP 1235: 1912-13, 1915-16. WSP 1505: 1940, monthly and yearly runoff. WSP 1725: 1913(M), 1915-16(M), 1941 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,583.83 ft (482.751 m) National Geodetic Vertical Datum of 1929. July 22, 1908, to Sept. 30, 1916, and Mar. 31 to Nov. 7, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 300 ft³/s (8.496 m³/s), 18.27 in/yr (464 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s (365 m³/s) Jan. 29, 1957, gage height, 12.55 ft (3.825 m), from floodmark in gage well, 13.8 ft (4.21 m), from floodmark at downstream side of bridge, from rating curve extended above 5,700 ft³/s (160 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 8.8 ft³/s (0.25 m³/s) Dec. 25, 1953, gage height, 2.28 ft (0.695 m), result of freezeup; minimum daily, 16 ft³/s (0.45 m³/s) Sept. 17, 18, 26-28, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1730 | 4180 118 | 8.43 2.569 | Feb. 18 | 0100 | 2680 75.9 | 7.14 2.176 |
| Feb. 3 | 1730 | 4260 121 | 8.49 2.588 | June 13 | 1230 | *6240 177 | 9.77 2.978 |

Minimum discharge, 32 ft³/s (0.91 m³/s) Oct. 1, gage height, 2.47 ft (0.753 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 34 | 56 | 70 | 178 | 771 | 319 | 258 | 380 | 162 | 118 | 169 | 110 |
| 2 | 37 | 52 | 76 | 230 | 611 | 408 | 232 | 329 | 152 | 103 | 143 | 106 |
| 3 | 41 | 49 | 82 | 700 | 2740 | 651 | 223 | 301 | 134 | 96 | 122 | 95 |
| 4 | 42 | 47 | 78 | 2890 | 2310 | 660 | 215 | 255 | 120 | 99 | 108 | 79 |
| 5 | 40 | 46 | 80 | 1940 | 1200 | 635 | 198 | 225 | 861 | 98 | 95 | 72 |
| 6 | 38 | 49 | 76 | 950 | 859 | 635 | 223 | 204 | 643 | 96 | 99 | 67 |
| 7 | 40 | 49 | 66 | 738 | 653 | 1070 | 216 | 189 | 440 | 88 | 119 | 62 |
| 8 | 37 | 47 | 66 | 675 | 530 | 1230 | 203 | 184 | 320 | 102 | 106 | 60 |
| 9 | 37 | 45 | 71 | 558 | 523 | 902 | 214 | 176 | 285 | 138 | 217 | 57 |
| 10 | 36 | 43 | 68 | 375 | 587 | 731 | 212 | 158 | 725 | 104 | 310 | 54 |
| 11 | 36 | 42 | 49 | 251 | 515 | 626 | 200 | 145 | 744 | 146 | 224 | 52 |
| 12 | 36 | 41 | 47 | 150 | 452 | 562 | 197 | 135 | 620 | 122 | 176 | 52 |
| 13 | 36 | 41 | 45 | 100 | 418 | 524 | 192 | 127 | 4210 | 114 | 144 | 52 |
| 14 | 35 | 40 | 69 | 90 | 356 | 520 | 189 | 120 | 2180 | 543 | 126 | 52 |
| 15 | 34 | 39 | 104 | 110 | 339 | 708 | 180 | 114 | 1040 | 335 | 113 | 69 |
| 16 | 34 | 39 | 144 | 120 | 414 | 987 | 169 | 108 | 687 | 198 | 100 | 69 |
| 17 | 34 | 41 | 120 | 130 | 1230 | 927 | 166 | 136 | 507 | 154 | 168 | 57 |
| 18 | 35 | 46 | 100 | 140 | 2150 | 786 | 176 | 140 | 398 | 140 | 167 | 52 |
| 19 | 36 | 48 | 70 | 150 | 1310 | 674 | 163 | 129 | 312 | 139 | 166 | 48 |
| 20 | 35 | 49 | 60 | 378 | 1030 | 759 | 157 | 129 | 259 | 131 | 123 | 48 |
| 21 | 35 | 49 | 50 | 1060 | 841 | 934 | 159 | 130 | 220 | 153 | 106 | 52 |
| 22 | 35 | 50 | 90 | 1130 | 687 | 934 | 151 | 122 | 199 | 119 | 95 | 60 |
| 23 | 36 | 47 | 654 | 857 | 559 | 777 | 140 | 458 | 194 | 123 | 84 | 63 |
| 24 | 36 | 52 | 831 | 867 | 492 | 642 | 134 | 527 | 164 | 161 | 84 | 55 |
| 25 | 39 | 62 | 541 | 675 | 429 | 545 | 133 | 585 | 147 | 150 | 88 | 52 |
| 26 | 46 | 65 | 389 | 536 | 371 | 472 | 413 | 369 | 135 | 124 | 106 | 52 |
| 27 | 113 | 65 | 301 | 388 | 353 | 402 | 602 | 275 | 143 | 108 | 92 | 63 |
| 28 | 157 | 67 | 243 | 349 | 338 | 342 | 672 | 230 | 149 | 96 | 78 | 65 |
| 29 | 99 | 73 | 206 | 293 | --- | 302 | 555 | 220 | 134 | 127 | 74 | 57 |
| 30 | 75 | 72 | 173 | 262 | --- | 275 | 456 | 216 | 123 | 129 | 69 | 52 |
| 31 | 63 | --- | 159 | 261 | --- | 261 | --- | 182 | --- | 161 | 76 | --- |
| TOTAL | 1467 | 1511 | 5178 | 17531 | 23068 | 20200 | 7398 | 6998 | 16407 | 4515 | 3947 | 1884 |
| MEAN | 47.3 | 50.4 | 167 | 566 | 824 | 652 | 247 | 226 | 547 | 146 | 127 | 62.8 |
| MAX | 157 | 73 | 831 | 2890 | 2740 | 1230 | 672 | 585 | 4210 | 543 | 310 | 110 |
| MIN | 34 | 39 | 45 | 90 | 338 | 261 | 133 | 108 | 120 | 88 | 69 | 48 |
| CFSM | .21 | .23 | .75 | 2.54 | 3.70 | 2.92 | 1.11 | 1.01 | 2.45 | .66 | .57 | .28 |
| IN. | .24 | .25 | .86 | 2.92 | 3.85 | 3.37 | 1.23 | 1.17 | 2.74 | .75 | .66 | .31 |

CAL YR 1981 TOTAL 75707 MEAN 207 MAX 3040 MIN 25 CFSM .93 IN 12.63
WTR YR 1982 TOTAL 110104 MEAN 302 MAX 4210 MIN 34 CFSM 1.35 IN 18.37

03176500 NEW RIVER AT GLEN LYN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°22'22", long 80°51'39", Giles County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on U.S. Highway 460 at Glen Lyn, 0.3 mi (0.5 km) upstream from East River, and 6.3 mi (10.1 km) downstream from Wolf Creek.

DRAINAGE AREA.--3,768 mi² (9,759 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1927 to current year.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1305: 1928(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 1,490.24 ft (454.225 m) National Geodetic Vertical Datum of 1929. Aug. 11, 1927, to Oct. 16, 1934, on left bank just upstream from highway bridge at same datum, and Oct. 17, 1934, to June 16, 1939, on left bank 200 ft (61 m) upstream from highway bridge at same datum.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000) 55 mi (88 km) above station. Corps of Engineers satellite and gage-height telemeters at station.

AVERAGE DISCHARGE.--55 years, 4,986 ft³/s (141.2 m³/s), 17.97 in/yr (456 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 226,000 ft³/s (6,400 m³/s) Aug. 14, 1940, gage height, 27.50 ft (8.382 m), from rating curve extended above 89,000 ft³/s (2,500 m³/s) on basis of slope-area measurement of peak flow; minimum, 717 ft³/s (20.3 m³/s) Jan. 5, 1981, result of freezeup; minimum daily, 820 ft³/s (23.2 m³/s) Sept. 8, 1930; minimum gage height, 2.10 ft (0.640 m) Sept. 8, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50,400 ft³/s (1,430 m³/s) Feb. 4, gage height, 12.14 ft (3.700 m); minimum, 905 ft³/s (25.6 m³/s) Oct. 25, Dec. 11, gage height, 3.01 ft (0.917 m); minimum daily, 950 ft³/s (26.9 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|-------|--------|-----------|---------|------------|------------|-----------|--------|-------|-------|
| 1 | 1040 | 1430 | 1830 | 3500 | 3270 | 3730 | 4840 | 7510 | 3210 | 4180 | 1500 | 1960 |
| 2 | 1110 | 1170 | 1680 | 5000 | 7570 | 5180 | 4410 | 6570 | 5540 | 3620 | 2000 | 5460 |
| 3 | 1130 | 1900 | 1630 | 8000 | 19000 | 5750 | 4530 | 4570 | 5990 | 3180 | 3500 | 4420 |
| 4 | 1050 | 1190 | 1930 | 15000 | 40800 | 8670 | 2040 | 5190 | 4620 | 1600 | 4000 | 3570 |
| 5 | 1040 | 1280 | 1730 | 28000 | 21700 | 9550 | 1870 | 5670 | 6260 | 1490 | 3600 | 1240 |
| 6 | 1130 | 1310 | 1200 | 16100 | 13900 | 9400 | 5420 | 5360 | 3930 | 1420 | 2680 | 1170 |
| 7 | 1110 | 1310 | 1080 | 11100 | 11900 | 11600 | 3940 | 3890 | 3730 | 2480 | 3420 | 1160 |
| 8 | 1050 | 1040 | 1900 | 9470 | 9080 | 14800 | 3570 | 3070 | 6120 | 2310 | 1820 | 2130 |
| 9 | 1070 | 991 | 1500 | 6680 | 9870 | 13300 | 5960 | 1810 | 4790 | 2850 | 1720 | 1980 |
| 10 | 1130 | 1140 | 1500 | 5930 | 7130 | 11800 | 4060 | 3210 | 4810 | 4080 | 4770 | 1980 |
| 11 | 1070 | 1310 | 1300 | 4000 | 6180 | 10200 | 1950 | 3620 | 7030 | 2260 | 4450 | 1920 |
| 12 | 991 | 1200 | 1200 | 3000 | 4910 | 8810 | 2540 | 4380 | 7720 | 2610 | 4040 | 1300 |
| 13 | 1060 | 1190 | 950 | 1900 | 4730 | 6300 | 4410 | 4050 | 14500 | 4540 | 3660 | 1040 |
| 14 | 1060 | 1260 | 1400 | 1800 | 4620 | 6500 | 4190 | 3010 | 16100 | 6020 | 3910 | 1580 |
| 15 | 1050 | 1000 | 1900 | 2500 | 3340 | 5780 | 4090 | 2750 | 11500 | 8030 | 1590 | 1640 |
| 16 | 1050 | 1030 | 3000 | 2500 | 6170 | 11600 | 5770 | 1500 | 8490 | 7150 | 1300 | 1520 |
| 17 | 1110 | 1190 | 3500 | 2700 | 12700 | 8390 | 4410 | 1420 | 6150 | 5930 | 2390 | 2060 |
| 18 | 1060 | 1160 | 3200 | 3500 | 15800 | 6910 | 1960 | 3450 | 5870 | 2680 | 2410 | 2140 |
| 19 | 1010 | 1200 | 2500 | 4500 | 13500 | 6760 | 2160 | 3650 | 4600 | 1930 | 2000 | 1230 |
| 20 | 1130 | 1220 | 1300 | 3800 | 12600 | 8720 | 4060 | 3380 | 2260 | 3470 | 2420 | 1050 |
| 21 | 1040 | 1260 | 1100 | 8000 | 11100 | 8870 | 4210 | 4130 | 1960 | 4400 | 2260 | 2080 |
| 22 | 981 | 991 | 1600 | 12000 | 7440 | 9640 | 4470 | 4810 | 4340 | 4740 | 1390 | 1510 |
| 23 | 981 | 991 | 2300 | 11000 | 8280 | 10700 | 3890 | 5230 | 4010 | 4310 | 1240 | 1610 |
| 24 | 1040 | 1370 | 3500 | 3500 | 6780 | 8510 | 3960 | 3780 | 3960 | 3920 | 2360 | 1210 |
| 25 | 981 | 1800 | 6000 | 6000 | 5900 | 7710 | 1610 | 6870 | 3850 | 1650 | 2420 | 1420 |
| 26 | 962 | 1800 | 4500 | 7000 | 5710 | 6280 | 3480 | 6130 | 4020 | 1680 | 2130 | 1290 |
| 27 | 1750 | 1030 | 2600 | 6360 | 6140 | 6910 | 7680 | 7910 | 1770 | 4340 | 2170 | 1770 |
| 28 | 8080 | 1830 | 2700 | 5520 | 7090 | 4620 | 13400 | 7260 | 1730 | 3920 | 2320 | 2110 |
| 29 | 5990 | 1130 | 2900 | 3700 | --- | 4010 | 12900 | 7450 | 4280 | 3410 | 1370 | 2360 |
| 30 | 3830 | 1030 | 3100 | 4030 | --- | 5800 | 9580 | 4900 | 3670 | 1970 | 1290 | 2240 |
| 31 | 2860 | --- | 3300 | 4430 | --- | 5720 | --- | 6100 | --- | 4000 | 2230 | --- |
| TOTAL | 49946 | 37753 | 69830 | 210520 | 287210 | 252520 | 141360 | 142630 | 166810 | 110170 | 78360 | 58150 |
| MEAN | 1611 | 1258 | 2253 | 6791 | 10260 | 8146 | 4712 | 4601 | 5560 | 3554 | 2528 | 1938 |
| MAX | 8080 | 1900 | 6000 | 28000 | 40800 | 14800 | 13400 | 7910 | 16100 | 8030 | 4770 | 5460 |
| MIN | 962 | 991 | 950 | 1800 | 3270 | 3730 | 1610 | 1420 | 1730 | 1420 | 1240 | 1040 |
| (*) | +13 | -121 | +114 | +14 | -50 | .00 | +27 | +46 | -81 | +19 | +45 | -35 |
| MEAN± | 1624 | 1137 | 2367 | 6805 | 10210 | 8146 | 4739 | 4647 | 5479 | 3573 | 2573 | 1903 |
| CFSM± | .43 | .30 | .63 | 1.81 | 2.71 | 2.16 | 1.26 | 1.23 | 1.45 | .95 | .68 | .51 |
| IN± | .50 | .34 | .72 | 2.08 | 2.82 | 2.49 | 1.40 | 1.42 | 1.62 | 1.09 | .79 | .56 |
| CAL YR 1981 TOTAL | 1096549 | | | 3004 | MAX 25700 | MIN 871 | MEAN± 3001 | CFSM± .80 | IN± 10.81 | | | |
| WTR YR 1982 TOTAL | 1605259 | | | 4398 | MAX 40800 | MIN 950 | MEAN± 4398 | CFSM± 1.17 | IN± 15.85 | | | |

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.
* Adjusted for change in contents.

KANAWHA RIVER BASIN

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1955-56, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1968 to current year.

WATER TEMPERATURES: October 1964 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1968-71, 1973-82): Maximum, 350 micromhos Nov. 6, 1968; minimum, 70 micromhos Mar. 26, 27, 1979.

WATER TEMPERATURES (water years 1964-71, 1973-82): Maximum, 29.0°C July 10, 1973, July 14, 19, 21, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 285 micromhos Dec. 13; minimum daily, 102 micromhos June 14.

WATER TEMPERATURES: Maximum daily, 27.5°C July 22; minimum, 1.5°C Jan. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | OXYGEN, DIS- SOLVED (MG/L) | COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) | STREP- TOCOCCI KF AGAR (COLS. PER 100 ML) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------|------|---|---|---------------|-----------------------------|------------------------------|-------------------------------------|--|--|--|--|--|
| NOV 03... | 1000 | 3530 | 197 | 7.5 | 14.0 | 1.5 | 9.1 | 570 | 28 | 81 | 18 | 8.7 |
| JAN 26... | 1000 | 7670 | 140 | 7.4 | 1.0 | 4.0 | 12.9 | 57 | 510 | 53 | 13 | 4.9 |
| MAR 23... | 0920 | 10400 | 136 | 7.3 | 9.0 | 3.0 | 10.8 | 57 | 580 | 57 | 14 | 5.4 |
| MAY 12... | 1155 | 5560 | 135 | 8.3 | 19.0 | 1.6 | 9.6 | 24 | 160 | 54 | 13 | 5.2 |
| JUL 07... | 1145 | 3830 | 180 | 8.5 | 25.5 | 2.4 | 8.3 | 420 | 390 | 80 | 19 | 7.8 |
| SEP 01... | 0900 | 1930 | 190 | 8.1 | 22.0 | 2.0 | 5.4 | 68 | 2200 | 81 | 20 | 7.5 |

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) |
|--------------|--|---|---|---|---|--|---|--|---|---|---|---|
| NOV 03... | 4.6 | 2.4 | 61 | 21 | 5.3 | .1 | 5.8 | 105 | 103 | .72 | .050 | .47 |
| JAN 26... | 4.6 | 2.0 | 43 | 13 | 7.1 | .1 | 6.2 | 113 | 77 | .82 | .100 | .40 |
| MAR 23... | 3.1 | 1.4 | 51 | 11 | 4.4 | <.1 | 6.7 | 84 | 77 | .81 | .050 | .29 |
| MAY 12... | 4.4 | 1.2 | 48 | 10 | 4.0 | <.1 | 5.1 | 74 | 72 | .39 | .030 | .36 |
| JUL 07... | 3.5 | 1.3 | 63 | 16 | 4.0 | .1 | 5.3 | 88 | 95 | 1.1 | .150 | 1.20 |
| SEP 01... | 4.5 | 1.7 | 60 | 21 | 5.3 | .1 | 6.2 | 154 | 102 | 1.7 | .150 | .70 |

< Actual value is known to be less than the value shown.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | PHOS- PHORUS, TOTAL (MG/L AS P) | PHOS- PHORUS, DIS- SOLVED (MG/L AS P) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) |
|--------------|---|--|--|-------------------------------------|--|---|--|---|--|--|---|
| NOV 03... | .060 | .050 | .040 | 1 | 1 | 100 | 30 | <1 | <1 | <10 | <10 |
| JAN 26... | .060 | .030 | .020 | 1 | <1 | 100 | 26 | 2 | <1 | 10 | 10 |
| MAR 23... | .050 | .040 | <.010 | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 12... | .040 | .020 | .010 | 4 | 2 | <100 | 25 | 1 | <1 | 20 | 10 |
| JUL 07... | .060 | .060 | .020 | 4 | 3 | <100 | 41 | <1 | <1 | 20 | 10 |
| SEP 01... | .060 | .060 | .040 | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|--------------|---|--|---|--|---|--|---|--|---|--|---|
| NOV 03... | 1 | <1 | 6 | 2 | 190 | 29 | 2 | <1 | 20 | 12 | <.1 |
| JAN 26... | <1 | <1 | 13 | 5 | 330 | 52 | 9 | 3 | 50 | 5 | <.1 |
| MAR 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 12... | 1 | <1 | 6 | 5 | 150 | <3 | 2 | 2 | 30 | <3 | <.1 |
| JUL 07... | <1 | <1 | 6 | 4 | 210 | 23 | <1 | <1 | 30 | 6 | <.1 |
| SEP 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDE (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|--------------|--|---|--|--|---|---|--|---|--|---|---|
| NOV 03... | <.1 | 3 | 2 | <1 | <1 | <1 | <1 | 40 | 11 | 3 | 100 |
| JAN 26... | <.1 | <1 | <1 | <1 | <1 | <1 | <1 | 20 | 10 | 12 | 100 |
| MAR 23... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 | 89 |
| MAY 12... | <.1 | 7 | 5 | <1 | <1 | <1 | <1 | 160 | 6 | 6 | 94 |
| JUL 07... | <.1 | 1 | 2 | <1 | <1 | <1 | <1 | 50 | 10 | 5 | 91 |
| SEP 01... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8 | 58 |

< Actual value is known to be less than the value shown.

KANAWHA RIVER BASIN

03176500 NEW RIVER AT GLEN LYN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 216 | 178 | 258 | 220 | 190 | 135 | 143 | 128 | 124 | 125 | 155 | 185 |
| 2 | 216 | 193 | 250 | 205 | 200 | 143 | 143 | 126 | 132 | 125 | 163 | 150 |
| 3 | 208 | 188 | 225 | --- | --- | 142 | 157 | 124 | 119 | 137 | 120 | 135 |
| 4 | 208 | 198 | 240 | 205 | 148 | 123 | 157 | 132 | 120 | 135 | 115 | 148 |
| 5 | 211 | 198 | 240 | 180 | 145 | 124 | 173 | 124 | 130 | 154 | 145 | 157 |
| 6 | 228 | 189 | 240 | 163 | 165 | 122 | 176 | 120 | 105 | 154 | 145 | 165 |
| 7 | 221 | 195 | 258 | 170 | 170 | 121 | 139 | 124 | 119 | 172 | 145 | 167 |
| 8 | 218 | 208 | 250 | 173 | 165 | 117 | 140 | 139 | 117 | 144 | 140 | 171 |
| 9 | 218 | 218 | 248 | 175 | 160 | 117 | 139 | 150 | 109 | 147 | 160 | 172 |
| 10 | 214 | 217 | 240 | 180 | 160 | 119 | 135 | 165 | 122 | 138 | 163 | 156 |
| 11 | 208 | 218 | 245 | 195 | 170 | 125 | 159 | 157 | 124 | 138 | 145 | 153 |
| 12 | 218 | 216 | 263 | 205 | 165 | 133 | 160 | 130 | 120 | 132 | 140 | 157 |
| 13 | 218 | 217 | 285 | 200 | 190 | 137 | 149 | 127 | 118 | 120 | 155 | 173 |
| 14 | 218 | 203 | 280 | 203 | 139 | 142 | 134 | 130 | 102 | 113 | 155 | 180 |
| 15 | 218 | 203 | 265 | 200 | 140 | 140 | 137 | 157 | 117 | 106 | 160 | 173 |
| 16 | 218 | 218 | 280 | 223 | 138 | 126 | 142 | 158 | --- | 109 | 165 | 170 |
| 17 | --- | 220 | 240 | 240 | 119 | 125 | --- | 168 | 125 | 106 | 165 | 170 |
| 18 | 215 | 218 | 243 | 255 | 109 | 142 | 158 | 160 | 122 | 118 | 175 | 167 |
| 19 | 218 | 215 | 238 | 220 | 111 | 140 | 161 | --- | 130 | 130 | 163 | 156 |
| 20 | 223 | 198 | 220 | 190 | 116 | --- | 166 | 139 | --- | 136 | 138 | 176 |
| 21 | 216 | 200 | 250 | 150 | 116 | --- | 137 | 140 | 150 | 114 | 163 | 173 |
| 22 | 218 | 203 | 243 | 150 | 117 | 135 | 137 | 152 | --- | 114 | 170 | 171 |
| 23 | 214 | 221 | 205 | 160 | 127 | 136 | 138 | 122 | 131 | 137 | 168 | 173 |
| 24 | 203 | 221 | 200 | 158 | 122 | 124 | 139 | 157 | 131 | 137 | 197 | 171 |
| 25 | 216 | 197 | 190 | 165 | 126 | 137 | 162 | 120 | 121 | 139 | 178 | 184 |
| 26 | 234 | 194 | 183 | 157 | 132 | 138 | 166 | 115 | 141 | 156 | 163 | --- |
| 27 | 223 | 198 | 200 | 160 | 129 | 137 | 133 | 110 | 140 | 139 | 165 | 195 |
| 28 | 173 | 265 | 190 | 170 | 122 | 145 | 127 | 110 | 151 | 112 | 160 | 173 |
| 29 | 144 | 250 | 200 | 180 | --- | 159 | 116 | 118 | 146 | 140 | 165 | 166 |
| 30 | 141 | 265 | 220 | 195 | --- | 139 | 116 | 116 | 140 | 165 | 183 | 163 |
| 31 | 176 | --- | 225 | 200 | --- | 138 | --- | 120 | --- | 143 | 170 | --- |
| MEAN | 209 | 211 | 236 | 188 | 144 | 133 | 146 | 135 | 126 | 133 | 158 | 167 |
| WTR YR 1982 | MEAN | 166 | MAX | 285 | MIN | 102 | | | | | | |

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------|------|-----|------|-----|------|------|------|------|------|------|------|
| 1 | 18.0 | 13.5 | 7.5 | 5.0 | 6.5 | 6.0 | 13.0 | 14.5 | 21.0 | 23.0 | 23.5 | 22.5 |
| 2 | 18.0 | 14.0 | 8.5 | 5.0 | 5.5 | 7.5 | 14.0 | 14.5 | 21.0 | 23.0 | 23.5 | 23.0 |
| 3 | 16.0 | 14.5 | 8.0 | --- | --- | 8.0 | 13.0 | 14.0 | 22.0 | 23.5 | 25.0 | 23.0 |
| 4 | 14.5 | 15.0 | 8.5 | 5.5 | 5.0 | 8.0 | 11.5 | 14.5 | 22.5 | 23.5 | 26.0 | 22.5 |
| 5 | 15.0 | 15.0 | 7.5 | 6.5 | 5.0 | 7.5 | 11.0 | 16.0 | 20.0 | 23.0 | 26.0 | 22.0 |
| 6 | 16.0 | 14.5 | 6.5 | 6.0 | 4.5 | 7.5 | 10.5 | 16.5 | 22.5 | 23.5 | 26.5 | 21.5 |
| 7 | 16.0 | 11.5 | 6.0 | 7.5 | 4.0 | 7.0 | 8.5 | 16.5 | 17.0 | 25.0 | 26.0 | 21.0 |
| 8 | 14.5 | 9.5 | 7.5 | 5.5 | 4.0 | 5.0 | 8.0 | 17.0 | 20.5 | 25.5 | 26.0 | 21.5 |
| 9 | 14.5 | 10.0 | 6.0 | 4.0 | 5.0 | 6.0 | 8.5 | 16.0 | 21.0 | 25.0 | 25.5 | 21.5 |
| 10 | 14.5 | 10.0 | 4.0 | 2.0 | 5.0 | 7.5 | 8.5 | 15.5 | 21.5 | 25.0 | 25.0 | 21.5 |
| 11 | 14.0 | 10.0 | 3.5 | 1.5 | 5.0 | 8.0 | 9.0 | 16.5 | 22.0 | 25.5 | 24.0 | 21.5 |
| 12 | 15.0 | 10.0 | 4.0 | 2.0 | 4.5 | 9.0 | 10.0 | --- | 19.0 | 25.0 | 24.0 | 21.5 |
| 13 | 14.5 | 10.0 | 5.5 | 2.0 | 4.5 | 10.5 | 13.0 | 19.5 | 17.0 | 25.0 | 24.0 | 22.5 |
| 14 | 15.5 | 10.5 | 5.5 | 2.5 | 4.0 | 10.0 | 12.5 | 20.0 | 17.5 | 24.5 | 23.5 | 23.5 |
| 15 | 15.0 | 10.0 | 4.5 | 2.0 | 5.5 | 9.0 | 14.5 | 21.0 | 21.5 | 24.5 | 23.5 | 23.5 |
| 16 | 16.0 | 9.5 | 5.0 | 2.0 | 6.0 | 8.0 | 14.5 | 22.0 | --- | 24.5 | 24.0 | 23.0 |
| 17 | --- | 11.0 | 4.5 | 2.0 | 7.5 | 8.0 | --- | 20.5 | 22.0 | 25.0 | 26.5 | 22.0 |
| 18 | 16.0 | 11.0 | 6.0 | 2.0 | 7.0 | 9.5 | 13.5 | 22.0 | 20.5 | 25.5 | 25.0 | 22.5 |
| 19 | 14.0 | 10.0 | 4.0 | 3.0 | 6.0 | 10.5 | 14.0 | --- | 21.0 | 25.0 | 25.5 | 23.0 |
| 20 | 12.0 | 11.5 | 3.5 | 3.0 | 7.0 | --- | --- | 20.0 | --- | 25.5 | 26.5 | 21.5 |
| 21 | 11.5 | 8.5 | 2.0 | 4.5 | 6.5 | --- | 14.5 | 19.5 | 22.0 | 26.5 | 26.0 | 20.0 |
| 22 | 13.5 | 7.5 | 2.5 | 4.0 | 7.0 | 9.5 | 13.5 | 19.5 | --- | 27.5 | 22.5 | 19.0 |
| 23 | 15.0 | 6.0 | 3.5 | 4.5 | 5.5 | 9.5 | 12.5 | 20.5 | 22.0 | 26.0 | 23.5 | 17.5 |
| 24 | 13.0 | 6.0 | 6.0 | 4.0 | 8.0 | 10.0 | 12.0 | 19.0 | 22.0 | 25.5 | 23.5 | 17.5 |
| 25 | 11.5 | 8.0 | 6.0 | 3.0 | 8.5 | 10.5 | 13.0 | 19.0 | 23.5 | 25.5 | 24.5 | 18.5 |
| 26 | 12.5 | 8.5 | 6.0 | 3.0 | 7.0 | 11.0 | 14.5 | 21.0 | 23.0 | 25.5 | 23.0 | --- |
| 27 | 14.0 | 9.0 | 6.5 | 2.5 | 5.5 | 8.5 | 15.5 | 20.5 | 23.0 | 26.0 | 23.0 | 18.0 |
| 28 | 14.0 | 9.5 | 5.5 | 3.5 | 4.5 | 6.0 | 14.0 | 20.0 | 23.0 | 27.0 | 22.5 | 18.5 |
| 29 | 14.5 | 10.0 | 6.0 | 3.5 | --- | 7.5 | 14.0 | 20.0 | 25.0 | 25.5 | 21.5 | 18.5 |
| 30 | 14.5 | 7.5 | 4.5 | 4.5 | --- | 10.0 | 14.0 | 20.5 | 24.0 | 24.5 | 21.0 | 20.0 |
| 31 | 14.0 | --- | 4.5 | 6.0 | --- | 12.5 | --- | 21.5 | --- | 25.0 | 24.5 | --- |
| MEAN | 14.5 | 10.5 | 5.5 | 3.5 | 5.5 | 8.5 | 12.5 | 18.5 | 21.5 | 25.0 | 24.5 | 21.0 |
| WTR YR 1982 | MEAN | 14.5 | MAX | 27.5 | MIN | 1.5 | | | | | | |

03177710 BLUESTONE RIVER AT FALLS MILLS, VA

LOCATION.--Lat 37°16'17", long 81°18'18", Tazewell County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on State Highway 717, 0.3 mi (0.5 km) upstream from Brush Fork, and 0.4 mi (0.6 km) southeast of Falls Mills.

DRAINAGE AREA.--44.2 mi² (114.5 km²).

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,310.41 ft (704.213 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some diurnal fluctuation caused by discharge from sewage treatment plant 2.3 mi (3.7 km) upstream. About sixty-five percent of water discharged from the treatment plant was diverted from another drainage basin for municipal supply. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OCTOBER 1980 TO SEPTEMBER 1982.--Peak discharges above base of 450 ft³/s (13 m³/s) and maximums (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------------|------|---|-------------------------|---------------|------|---|-------------------------|
| Apr. 20, 1981 | 0630 | 498 14.1 | 4.40 1.341 | June 6, 1981 | 2130 | 461 13.1 | 4.12 1.256 |
| May 28, 1981 | 1900 | *667 18.9 | 5.68 1.731 | July 14, 1981 | 1000 | 462 13.1 | 4.13 1.259 |
| Jan. 4, 1982 | 0715 | 469 13.3 | 4.18 1.274 | June 10, 1982 | 0645 | *738 20.9 | 6.26 1.908 |
| Feb. 3, 1982 | 1030 | 668 18.9 | 5.69 1.734 | June 13, 1982 | 1530 | 727 20.6 | 6.17 1.881 |
| Feb. 17, 1982 | 2015 | 466 13.2 | 4.16 1.268 | | | | |

Water year 1981: Minimum discharge, 1.0 ft³/s (0.028 m³/s) Jan. 18, gage height, 0.92 ft (0.280 m), result of freezeup; minimum daily, 3.9 ft³/s (0.11 m³/s) Jan. 19.

Water year 1982: Minimum discharge, 4.4 ft³/s (0.12 m³/s) Sept. 21, gage height, 1.00 ft (0.305 m); minimum daily, 9.0 ft³/s (0.25 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|--------|------|------|------|------|------|------|------|
| 1 | 20 | 12 | 16 | 11 | 10 | 48 | 51 | 54 | 166 | 90 | 32 | 31 |
| 2 | 22 | 12 | 17 | 11 | 59 | 38 | 45 | 49 | 173 | 47 | 30 | 26 |
| 3 | 21 | 12 | 17 | 9.9 | 35 | 33 | 37 | 44 | 126 | 40 | 29 | 21 |
| 4 | 19 | 18 | 14 | 7.0 | 18 | 61 | 32 | 41 | 132 | 38 | 29 | 58 |
| 5 | 18 | 14 | 14 | 5.5 | 12 | 152 | 51 | 35 | 138 | 36 | 26 | 27 |
| 6 | 19 | 12 | 13 | 10 | 11 | 165 | 38 | 32 | 176 | 108 | 46 | 27 |
| 7 | 18 | 12 | 12 | 9.2 | 10 | 119 | 41 | 31 | 311 | 103 | 42 | 25 |
| 8 | 17 | 12 | 12 | 9.0 | 9.0 | 85 | 43 | 28 | 175 | 59 | 50 | 25 |
| 9 | 18 | 15 | 17 | 8.0 | 10 | 66 | 63 | 26 | 121 | 51 | 31 | 21 |
| 10 | 18 | 13 | 18 | 7.0 | 12 | 53 | 71 | 27 | 98 | 47 | 28 | 17 |
| 11 | 17 | 11 | 15 | 6.0 | 72 | 46 | 63 | 123 | 86 | 46 | 25 | 16 |
| 12 | 16 | 11 | 14 | 6.5 | 54 | 41 | 54 | 60 | 75 | 39 | 37 | 15 |
| 13 | 18 | 10 | 13 | 7.5 | 38 | 34 | 65 | 47 | 78 | 39 | 25 | 14 |
| 14 | 17 | 10 | 12 | 8.0 | 28 | 30 | 64 | 44 | 64 | 265 | 23 | 17 |
| 15 | 17 | 14 | 12 | 8.5 | 24 | 24 | 77 | 75 | 58 | 170 | 22 | 56 |
| 16 | 17 | 16 | 12 | 7.0 | 22 | 57 | 67 | 49 | 51 | 138 | 22 | 59 |
| 17 | 17 | 31 | 11 | 6.0 | 44 | 45 | 144 | 43 | 54 | 89 | 22 | 31 |
| 18 | 22 | 38 | 11 | 4.7 | 49 | 45 | 195 | 42 | 51 | 78 | 20 | 23 |
| 19 | 18 | 20 | 11 | 3.9 | 55 | 39 | 138 | 202 | 56 | 71 | 19 | 21 |
| 20 | 16 | 15 | 9.6 | 4.1 | 108 | 36 | 363 | 300 | 41 | 69 | 20 | 18 |
| 21 | 15 | 13 | 6.0 | 14 | 86 | 30 | 240 | 174 | 36 | 61 | 19 | 18 |
| 22 | 15 | 12 | 8.0 | 13 | 62 | 29 | 167 | 119 | 35 | 58 | 18 | 16 |
| 23 | 15 | 13 | 10 | 11 | 152 | 39 | 143 | 91 | 34 | 52 | 17 | 16 |
| 24 | 15 | 38 | 11 | 9.8 | 133 | 54 | 134 | 73 | 32 | 48 | 18 | 14 |
| 25 | 64 | 27 | 9.0 | 8.3 | 90 | 86 | 106 | 64 | 59 | 47 | 18 | 14 |
| 26 | 24 | 21 | 7.0 | 10 | 71 | 75 | 86 | 59 | 59 | 43 | 16 | 14 |
| 27 | 17 | 21 | 9.0 | 12 | 54 | 71 | 75 | 226 | 37 | 37 | 16 | 13 |
| 28 | 15 | 19 | 10 | 12 | 47 | 60 | 64 | 544 | 32 | 61 | 16 | 13 |
| 29 | 15 | 17 | 11 | 11 | --- | 52 | 61 | 507 | 30 | 60 | 15 | 13 |
| 30 | 15 | 16 | 15 | 10 | --- | 62 | 62 | 309 | 97 | 43 | 22 | 13 |
| 31 | 13 | --- | 12 | 7.0 | --- | 50 | --- | 219 | --- | 38 | 34 | --- |
| TOTAL | 588 | 505 | 378.6 | 267.9 | 1375.0 | 1825 | 2840 | 3737 | 2681 | 2171 | 787 | 692 |
| MEAN | 19.0 | 16.8 | 12.2 | 8.64 | 49.1 | 58.9 | 94.7 | 121 | 89.4 | 70.0 | 25.4 | 23.1 |
| MAX | 64 | 38 | 18 | 14 | 152 | 165 | 363 | 544 | 311 | 265 | 50 | 59 |
| MIN | 13 | 10 | 6.0 | 3.9 | 9.0 | 24 | 32 | 26 | 30 | 36 | 15 | 13 |
| (*) | 4.60 | 4.92 | 4.36 | 4.23 | 5.30 | 5.52 | 5.16 | 5.44 | 5.48 | 5.32 | 4.67 | 4.85 |

WTR YR 1981 TOTAL 17847.5 MEAN 48.9 MAX 544 MIN 3.9 * 4.99

* Discharge from Sewage Treatment plant, equivalent in cubic feet per second; furnished by the Sanitary Board of Bluefield.

KANAWHA RIVER BASIN

03177710 BLUESTONE RIVER AT FALLS MILLS, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|---------|-------|-----------|---------|---------|------|--------|------|------|------|------|------|
| 1 | 14 | 12 | 12 | 115 | 122 | 98 | 69 | 59 | 45 | 33 | 47 | 35 |
| 2 | 21 | 13 | 12 | 90 | 164 | 129 | 63 | 61 | 34 | 29 | 39 | 26 |
| 3 | 14 | 12 | 11 | 326 | 560 | 142 | 63 | 50 | 30 | 25 | 31 | 22 |
| 4 | 13 | 12 | 14 | 393 | 313 | 124 | 58 | 43 | 50 | 26 | 29 | 20 |
| 5 | 14 | 12 | 14 | 237 | 220 | 125 | 60 | 40 | 155 | 29 | 29 | 18 |
| 6 | 18 | 15 | 12 | 151 | 175 | 104 | 63 | 36 | 91 | 31 | 45 | 16 |
| 7 | 14 | 11 | 12 | 157 | 132 | 250 | 54 | 33 | 68 | 25 | 46 | 15 |
| 8 | 13 | 11 | 13 | 127 | 108 | 226 | 50 | 40 | 62 | 23 | 43 | 15 |
| 9 | 13 | 11 | 12 | 106 | 151 | 191 | 52 | 32 | 159 | 23 | 69 | 14 |
| 10 | 12 | 10 | 11 | 80 | 139 | 163 | 47 | 30 | 607 | 96 | 47 | 14 |
| 11 | 12 | 10 | 11 | 50 | 121 | 145 | 45 | 26 | 311 | 99 | 39 | 14 |
| 12 | 12 | 10 | 9.5 | 30 | 104 | 128 | 43 | 25 | 242 | 57 | 32 | 14 |
| 13 | 11 | 9.8 | 9.0 | 21 | 97 | 157 | 40 | 23 | 660 | 50 | 29 | 14 |
| 14 | 12 | 9.7 | 17 | 19 | 82 | 154 | 39 | 22 | 436 | 126 | 26 | 24 |
| 15 | 12 | 9.7 | 24 | 23 | 84 | 201 | 37 | 21 | 264 | 56 | 23 | 19 |
| 16 | 13 | 11 | 23 | 25 | 124 | 213 | 36 | 20 | 197 | 49 | 22 | 15 |
| 17 | 13 | 11 | 22 | 27 | 315 | 184 | 36 | 21 | 152 | 50 | 24 | 14 |
| 18 | 16 | 11 | 19 | 30 | 342 | 150 | 36 | 34 | 124 | 44 | 37 | 13 |
| 19 | 16 | 11 | 15 | 40 | 254 | 138 | 33 | 49 | 100 | 45 | 22 | 12 |
| 20 | 14 | 17 | 12 | 100 | 209 | 150 | 33 | 59 | 83 | 70 | 21 | 14 |
| 21 | 14 | 12 | 11 | 325 | 179 | 174 | 33 | 33 | 70 | 42 | 23 | 22 |
| 22 | 14 | 11 | 111 | 229 | 147 | 174 | 30 | 44 | 66 | 46 | 20 | 30 |
| 23 | 22 | 11 | 97 | 202 | 120 | 151 | 29 | 111 | 59 | 55 | 20 | 18 |
| 24 | 18 | 23 | 67 | 163 | 108 | 133 | 28 | 149 | 52 | 45 | 20 | 14 |
| 25 | 14 | 16 | 51 | 126 | 94 | 115 | 30 | 129 | 46 | 36 | 51 | 14 |
| 26 | 30 | 13 | 40 | 105 | 80 | 111 | 123 | 79 | 41 | 33 | 26 | 23 |
| 27 | 73 | 14 | 35 | 82 | 81 | 94 | 96 | 70 | 49 | 29 | 22 | 22 |
| 28 | 26 | 13 | 31 | 68 | 83 | 82 | 95 | 53 | 42 | 35 | 20 | 18 |
| 29 | 19 | 12 | 25 | 58 | --- | 77 | 77 | 58 | 36 | 38 | 18 | 17 |
| 30 | 15 | 12 | 21 | 52 | --- | 70 | 65 | 47 | 38 | 58 | 18 | 17 |
| 31 | 14 | --- | 28 | 106 | --- | 67 | --- | 38 | --- | 76 | 47 | --- |
| TOTAL | 536 | 366.2 | 801.5 | 3663 | 4708 | 4420 | 1563 | 1535 | 4369 | 1479 | 985 | 543 |
| MEAN | 17.3 | 12.2 | 25.9 | 118 | 168 | 143 | 52.1 | 49.5 | 146 | 47.7 | 31.8 | 18.1 |
| MAX | 73 | 23 | 111 | 393 | 560 | 250 | 123 | 149 | 660 | 126 | 69 | 35 |
| MIN | 11 | 9.7 | 9.0 | 19 | 80 | 67 | 28 | 20 | 30 | 23 | 18 | 12 |
| (*) | 4.40 | 4.13 | 4.52 | 5.50 | 5.60 | 6.25 | 5.97 | 5.97 | 6.28 | 6.28 | 6.12 | 5.34 |
| CAL YR 1981 TOTAL | 18079.6 | | MEAN 49.5 | MAX 544 | MIN 3.9 | | * 4.92 | | | | | |
| WTR YR 1982 TOTAL | 24968.7 | | MEAN 68.4 | MAX 660 | MIN 9.0 | | * 5.53 | | | | | |

* Discharge from Sewage Treatment plant, equivalent in cubic feet per second; furnished by the Sanitary Board of Bluefield.

BIG SANDY RIVER BASIN

287

03207800 LEVISA FORK AT BIG ROCK, VA

LOCATION.--Lat 37°21'13", long 82°11'45", Buchanan County, Hydrologic Unit 05070202, on left bank at Big Rock, 2,000 ft (610 m) downstream from Rocklick Creek, and 2,500 ft (762 m) downstream from bridge on State Highway 645.

DRAINAGE AREA.--297 mi² (769 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 866.37 ft (264.070 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers satellite and gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--15 years, 393 ft³/s (11.13 m³/s), 17.97 in/yr (456 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,000 ft³/s (1,590 m³/s) Apr. 4, 1977, gage height, 27.38 ft (8.345 m), from rating curve extended above 7,000 ft³/s (200 m³/s) on basis of slope-area measurement of peak flow; minimum, 5.0 ft³/s (0.14 m³/s) Oct. 1, 13, 14, 17, 18, 19, 20, 1969; minimum gage height, 3.63 ft (1.106 m) Oct. 14, 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 23.0 ft (7.0 m), information from local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,400 ft³/s (323 m³/s) at 0130 hours May 27, gage height, 12.48 ft (3.804 m), no other peak above base of 4,500 ft³/s (130 m³/s); minimum, 18 ft³/s (0.51 m³/s) Oct. 14, 15, gage height, 3.63 ft (1.106 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|----------|----------|--------|-----------|----------|-------|-------|------|------|------|
| 1 | 25 | 41 | 36 | 450 | 378 | 729 | 353 | 416 | 1310 | 240 | 158 | 301 |
| 2 | 47 | 40 | 38 | 350 | 388 | 676 | 315 | 368 | 785 | 170 | 100 | 233 |
| 3 | 41 | 34 | 39 | 1550 | 2270 | 590 | 319 | 416 | 523 | 152 | 81 | 146 |
| 4 | 32 | 33 | 42 | 1980 | 1620 | 486 | 296 | 348 | 517 | 170 | 68 | 109 |
| 5 | 30 | 34 | 53 | 1070 | 887 | 438 | 269 | 296 | 1170 | 257 | 68 | 85 |
| 6 | 30 | 51 | 51 | 556 | 655 | 378 | 291 | 257 | 813 | 155 | 68 | 72 |
| 7 | 36 | 46 | 45 | 432 | 467 | 977 | 248 | 237 | 556 | 155 | 67 | 62 |
| 8 | 32 | 38 | 40 | 363 | 383 | 1180 | 229 | 278 | 444 | 282 | 127 | 55 |
| 9 | 28 | 36 | 36 | 328 | 716 | 1040 | 233 | 248 | 640 | 221 | 278 | 49 |
| 10 | 25 | 31 | 35 | 196 | 1070 | 1010 | 229 | 208 | 2060 | 167 | 204 | 48 |
| 11 | 23 | 29 | 31 | 158 | 835 | 924 | 208 | 185 | 1300 | 179 | 113 | 44 |
| 12 | 26 | 30 | 29 | 220 | 640 | 828 | 196 | 170 | 785 | 269 | 87 | 43 |
| 13 | 23 | 27 | 27 | 210 | 563 | 850 | 185 | 158 | 1750 | 152 | 75 | 41 |
| 14 | 20 | 26 | 65 | 190 | 450 | 977 | 185 | 146 | 1200 | 127 | 65 | 932 |
| 15 | 20 | 27 | 124 | 170 | 416 | 1490 | 179 | 135 | 736 | 116 | 60 | 353 |
| 16 | 22 | 28 | 122 | 130 | 902 | 1720 | 173 | 141 | 511 | 100 | 58 | 161 |
| 17 | 22 | 29 | 108 | 90 | 2390 | 1450 | 170 | 237 | 444 | 89 | 74 | 111 |
| 18 | 40 | 27 | 133 | 100 | 1740 | 985 | 176 | 173 | 348 | 132 | 62 | 89 |
| 19 | 42 | 28 | 98 | 150 | 1180 | 880 | 158 | 648 | 287 | 122 | 50 | 79 |
| 20 | 30 | 33 | 89 | 895 | 895 | 1070 | 158 | 1270 | 257 | 109 | 47 | 72 |
| 21 | 24 | 39 | 81 | 2120 | 771 | 1280 | 161 | 1110 | 212 | 113 | 48 | 62 |
| 22 | 22 | 36 | 291 | 1470 | 626 | 1020 | 143 | 835 | 204 | 96 | 45 | 58 |
| 23 | 50 | 32 | 700 | 970 | 504 | 813 | 138 | 1790 | 182 | 127 | 43 | 55 |
| 24 | 78 | 40 | 500 | 750 | 444 | 662 | 132 | 1120 | 158 | 122 | 55 | 50 |
| 25 | 53 | 46 | 350 | 543 | 378 | 563 | 135 | 696 | 141 | 94 | 287 | 49 |
| 26 | 71 | 45 | 250 | 405 | 319 | 536 | 204 | 771 | 196 | 77 | 155 | 53 |
| 27 | 74 | 49 | 200 | 282 | 444 | 461 | 723 | 4900 | 498 | 68 | 87 | 79 |
| 28 | 87 | 50 | 160 | 287 | 750 | 405 | 1360 | 1310 | 570 | 75 | 68 | 65 |
| 29 | 68 | 45 | 120 | 233 | --- | 373 | 820 | 954 | 328 | 91 | 58 | 50 |
| 30 | 54 | 40 | 100 | 204 | --- | 348 | 550 | 689 | 257 | 113 | 53 | 47 |
| 31 | 45 | --- | 110 | 233 | --- | 358 | --- | 479 | --- | 138 | 373 | --- |
| TOTAL | 1220 | 1090 | 4103 | 17085 | 23081 | 25497 | 8936 | 20989 | 19182 | 4478 | 3182 | 3653 |
| MEAN | 39.4 | 36.3 | 132 | 551 | 824 | 822 | 298 | 677 | 639 | 144 | 103 | 122 |
| MAX | 87 | 51 | 700 | 2120 | 2390 | 1720 | 1360 | 4900 | 2060 | 282 | 373 | 932 |
| MIN | 20 | 26 | 27 | 90 | 319 | 348 | 132 | 135 | 141 | 68 | 43 | 41 |
| CFSM | .13 | .12 | .44 | 1.86 | 2.77 | 2.77 | 1.00 | 2.28 | 2.15 | .49 | .35 | .41 |
| IN. | .15 | .14 | .51 | 2.14 | 2.89 | 3.19 | 1.12 | 2.63 | 2.40 | .56 | .40 | .46 |
| CAL YR 1981 | TOTAL | 91949 | MEAN 252 | MAX 4120 | MIN 20 | CFSM .85 | IN 11.52 | | | | | |
| WTR YR 1982 | TOTAL | 132496 | MEAN 363 | MAX 4900 | MIN 20 | CFSM 1.22 | IN 16.60 | | | | | |

BIG SANDY RIVER BASIN

03208000 LEVISA FORK BELOW FISHTRAP DAM, NEAR MILLARD, KY

LOCATION.--Lat 37°25'33", long 82°24'45", Pike County, Hydrologic Unit 05070202, on right bank 0.4 mi (0.6 km) downstream from Fishtrap Dam, 1.1 mi (1.8 km) upstream from Lower Pompey Branch, 1.9 mi (3.1 km) northeast of Millard, 2.4 mi (3.9 km) upstream from confluence with Russell Fork, and at mile 129.6 (208.5 km).

DRAINAGE AREA.--392 mi² (1,015 km²).

PERIOD OF RECORD.--February 1938 to current year. Prior to April 1968, published as Levisa Fork at Fishtrap.

REVISED RECORDS.--WSP 953: Drainage area. WSP 1335: 1938(M), 1939, 1940(M), 1942-43, 1944-45(M), 1946, 1948.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft (182.880 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 19, 1968, nonrecording gage at site 3.7 mi (6.0 km) upstream at different datum. Apr. 19, 1968, to June 18, 1973, water-stage recorder at site 1.0 mi (1.6 km) downstream at datum 59.96 ft (18.276 m) higher.

REMARKS.--Records good. Flow regulated by Fishtrap Lake beginning October 1968. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 480 ft³/s (13.59 m³/s), 16.63 in/yr (422 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Jan. 29, 1957, gage height, 33.9 ft (10.33 m), from floodmark, site and datum then in use, from rating curve extended above 15,000 ft³/s (420 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 107.55 ft (32.781 m) Apr. 5, 1977, from floodmark, backwater from Russell Fork; no flow Apr. 5, 1977, all gates on Fishtrap Dam closed; minimum observed discharge prior to Fishtrap Lake, 0.1 ft³/s (0.003 m³/s) Nov. 8, 9, 1939, site then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,750 ft³/s (135 m³/s) May 23, gage height, 79.85 ft (24.338 m); minimum daily, 43 ft³/s (1.22 m³/s) Jan. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|------|-------|-------|-------|-------|-------|-------|------|------|-------|
| 1 | 218 | 217 | 138 | 86 | 214 | 765 | 94 | 58 | 1160 | 186 | 216 | 841 |
| 2 | 238 | 241 | 107 | 176 | 318 | 842 | 96 | 55 | 1030 | 183 | 222 | 478 |
| 3 | 262 | 241 | 86 | 804 | 759 | 677 | 94 | 57 | 501 | 104 | 144 | 257 |
| 4 | 262 | 243 | 113 | 329 | 2200 | 553 | 95 | 58 | 262 | 114 | 94 | 154 |
| 5 | 265 | 199 | 132 | 1070 | 2030 | 429 | 95 | 58 | 1120 | 295 | 96 | 103 |
| 6 | 266 | 177 | 131 | 2030 | 872 | 352 | 99 | 58 | 1150 | 229 | 93 | 89 |
| 7 | 275 | 178 | 127 | 1970 | 677 | 703 | 103 | 61 | 608 | 148 | 93 | 84 |
| 8 | 275 | 181 | 127 | 1250 | 562 | 1380 | 120 | 66 | 335 | 102 | 85 | 94 |
| 9 | 447 | 215 | 119 | 391 | 773 | 1400 | 107 | 66 | 657 | 440 | 285 | 83 |
| 10 | 455 | 241 | 114 | 96 | 1210 | 1280 | 125 | 66 | 1330 | 312 | 249 | 66 |
| 11 | 278 | 247 | 127 | 64 | 1360 | 1250 | 113 | 64 | 1930 | 131 | 51 | 50 |
| 12 | 166 | 224 | 125 | 43 | 965 | 986 | 110 | 63 | 927 | 315 | 59 | 57 |
| 13 | 173 | 181 | 127 | 236 | 655 | 819 | 103 | 69 | 1530 | 171 | 59 | 143 |
| 14 | 186 | 181 | 127 | 208 | 527 | 1090 | 94 | 66 | 1330 | 90 | 59 | 2130 |
| 15 | 199 | 180 | 127 | 131 | 449 | 1910 | 93 | 66 | 566 | 90 | 59 | 1810 |
| 16 | 315 | 186 | 129 | 112 | 722 | 2610 | 93 | 66 | 166 | 91 | 65 | 657 |
| 17 | 387 | 193 | 131 | 62 | 1800 | 2400 | 93 | 66 | 275 | 143 | 73 | 166 |
| 18 | 297 | 193 | 151 | 56 | 2780 | 1430 | 93 | 66 | 122 | 302 | 73 | 247 |
| 19 | 227 | 193 | 148 | 45 | 1930 | 1020 | 93 | 83 | 131 | 269 | 73 | 295 |
| 20 | 231 | 201 | 181 | 199 | 1070 | 1290 | 77 | 244 | 308 | 148 | 73 | 244 |
| 21 | 232 | 204 | 224 | 1610 | 984 | 1640 | 60 | 57 | 244 | 99 | 73 | 259 |
| 22 | 305 | 197 | 226 | 2350 | 851 | 1530 | 58 | 57 | 218 | 104 | 73 | 295 |
| 23 | 471 | 184 | 699 | 1470 | 678 | 1130 | 60 | 2740 | 218 | 106 | 73 | 312 |
| 24 | 361 | 183 | 686 | 924 | 471 | 830 | 62 | 3280 | 210 | 168 | 80 | 312 |
| 25 | 228 | 183 | 408 | 674 | 415 | 708 | 66 | 972 | 120 | 235 | 84 | 229 |
| 26 | 381 | 183 | 407 | 454 | 405 | 601 | 64 | 444 | 79 | 123 | 147 | 166 |
| 27 | 462 | 199 | 379 | 216 | 339 | 567 | 61 | 2160 | 481 | 60 | 209 | 229 |
| 28 | 400 | 212 | 224 | 226 | 716 | 593 | 58 | 3880 | 587 | 68 | 183 | 305 |
| 29 | 260 | 199 | 226 | 348 | --- | 489 | 63 | 1620 | 378 | 75 | 142 | 305 |
| 30 | 301 | 162 | 162 | 219 | --- | 349 | 63 | 562 | 196 | 78 | 96 | 250 |
| 31 | 265 | --- | 87 | 309 | --- | 185 | --- | 570 | --- | 159 | 755 | --- |
| TOTAL | 9088 | 6018 | 6295 | 18158 | 26732 | 31808 | 2605 | 17798 | 18169 | 5138 | 4136 | 10710 |
| MEAN | 293 | 201 | 203 | 586 | 955 | 1026 | 86.8 | 574 | 606 | 166 | 133 | 357 |
| MAX | 471 | 247 | 699 | 2350 | 2780 | 2610 | 125 | 3880 | 1930 | 440 | 755 | 2130 |
| MIN | 166 | 162 | 86 | 43 | 214 | 185 | 58 | 55 | 79 | 60 | 51 | 50 |
| (*) | -185 | -121 | +14 | -12 | +6 | +32 | +314 | +101 | +2 | +2 | -2 | -102 |
| MEAN# | 108 | 80 | 217 | 574 | 961 | 1058 | 400.8 | 675 | 608 | 168 | 131 | 255 |
| CFSM# | .28 | .20 | .55 | 1.46 | 2.45 | 2.70 | 1.02 | 1.72 | 1.55 | .43 | .34 | .65 |
| IN# | .32 | .23 | .64 | 1.69 | 2.55 | 3.11 | 1.14 | 1.99 | 1.73 | .49 | .39 | .73 |
| CAL YR 1981 TOTAL | 142772 | | | | | | | | | | | |
| WTR YR 1982 TOTAL | 156655 | | | | | | | | | | | |
| MEAN 391 | | | | | | | | | | | | |
| MAX 4280 | | | | | | | | | | | | |
| MIN 50 | | | | | | | | | | | | |
| MEAN# 392 | | | | | | | | | | | | |
| CFSM# 1.00 | | | | | | | | | | | | |
| IN# 13.58 | | | | | | | | | | | | |
| MEAN# 433 | | | | | | | | | | | | |
| CFSM# 1.11 | | | | | | | | | | | | |
| IN# 15.00 | | | | | | | | | | | | |

* Change in contents, equivalent in cubic feet per second, in Fishtrap Lake.

Adjusted for change in contents.

BIG SANDY RIVER BASIN

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03208034 GRISSOM CREEK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'43", long 82°02'25", Buchanan County, Hydrologic Unit 05070202, on right bank 150 ft (46 m) upstream from culvert on State Highway 620, 1.7 mi (2.7 km) east of Council, and 250 ft (76 m) upstream from mouth.

DRAINAGE AREA.--2.82 mi² (7.30 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,810 ft (552 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85 ft³/s (2.41 m³/s) Feb. 3, 1982, gage height, 3.02 ft (0.920 m) from rating curve extended above 61 ft³/s (1.7 m³/s); minimum, 0.004 ft³/s (0.0001 m³/s) Sept. 2, 1981, gage height, 1.00 ft (0.305 m).

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 45 ft³/s (1.3 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------------|------|---|-------------------------|----------------|------|---|-------------------------|
| Jan. 3, 1982 | 0645 | 53 1.50 | 2.85 0.869 | May 19, 1982 | 1530 | 70 1.98 | 2.95 0.899 |
| Jan. 4, 1982 | 0715 | 45 1.27 | 2.80 .853 | Sept. 14, 1982 | 1045 | 65 1.84 | 2.92 .890 |
| Feb. 3, 1982 | 0615 | *85 2.41 | 3.02 .920 | | | | |

July to September 1981: Minimum discharge, 0.004 ft³/s (0.0001 m³/s) Sept. 2, gage height, 1.00 ft (0.305 m).

Water year 1982: Minimum discharge, 0.03 ft³/s (<0.001 ft³/s) Oct. 14, 15, Aug. 23; minimum gage height, 1.09 ft (0.332 m) Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| 1 | | | | | | | | | | 1.5 | .07 | .01 |
| 2 | | | | | | | | | | .87 | .24 | .01 |
| 3 | | | | | | | | | | .39 | .16 | .02 |
| 4 | | | | | | | | | | .35 | .09 | .03 |
| 5 | | | | | | | | | | .27 | .07 | .02 |
| 6 | | | | | | | | | | .64 | .87 | .06 |
| 7 | | | | | | | | | | .42 | 2.1 | .07 |
| 8 | | | | | | | | | | .28 | 3.2 | .04 |
| 9 | | | | | | | | | | .21 | .82 | .06 |
| 10 | | | | | | | | | | .20 | .45 | .02 |
| 11 | | | | | | | | | | .18 | .30 | .01 |
| 12 | | | | | | | | | | .13 | .23 | .01 |
| 13 | | | | | | | | | | .12 | .17 | .01 |
| 14 | | | | | | | | | | .40 | .12 | .01 |
| 15 | | | | | | | | | | .30 | .12 | 5.4 |
| 16 | | | | | | | | | | .74 | .55 | 2.7 |
| 17 | | | | | | | | | | .41 | .20 | .79 |
| 18 | | | | | | | | | | .24 | .16 | .41 |
| 19 | | | | | | | | | | .19 | .18 | .28 |
| 20 | | | | | | | | | | .64 | .09 | .21 |
| 21 | | | | | | | | | | .40 | .06 | .17 |
| 22 | | | | | | | | | | .23 | .05 | .14 |
| 23 | | | | | | | | | | .14 | .04 | .11 |
| 24 | | | | | | | | | | .12 | .03 | .08 |
| 25 | | | | | | | | | | .12 | .02 | .07 |
| 26 | | | | | | | | | | .09 | .02 | .07 |
| 27 | | | | | | | | | | .07 | .01 | .06 |
| 28 | | | | | | | | | | .61 | .01 | .05 |
| 29 | | | | | | | | | | .52 | .01 | .04 |
| 30 | | | | | | | | | | .19 | .01 | .04 |
| 31 | | | | | | | | | | .11 | .01 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11.08 | 10.46 | 11.00 |
| MEAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | .36 | .34 | .37 |
| MAX | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.5 | 3.2 | 5.4 |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | .07 | .01 | .01 |
| CFSM | --- | --- | --- | --- | --- | --- | --- | --- | --- | .13 | .12 | .13 |
| IN. | --- | --- | --- | --- | --- | --- | --- | --- | --- | .15 | .14 | .15 |

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1 | .05 | .22 | .44 | 2.2 | 7.5 | 9.4 | 2.2 | 4.6 | 17 | 1.1 | .65 | 2.5 |
| 2 | .19 | .19 | .46 | 1.8 | 7.7 | 6.8 | 1.9 | 4.0 | 11 | .77 | .33 | 1.7 |
| 3 | .08 | .17 | .22 | 25 | 46 | 4.9 | 2.1 | 3.0 | 6.0 | .68 | .22 | .94 |
| 4 | .06 | .16 | .27 | 26 | 13 | 3.9 | 1.7 | 2.4 | 8.7 | .72 | .17 | .54 |
| 5 | .17 | .16 | .36 | 8.2 | 7.7 | 3.5 | 1.6 | 2.1 | 18 | .62 | .15 | .36 |
| 6 | .12 | .19 | .30 | 4.6 | 5.7 | 3.2 | 1.9 | 1.9 | 8.8 | .47 | .17 | .27 |
| 7 | .08 | .14 | .29 | 5.0 | 4.3 | 10 | 1.4 | 1.8 | 5.3 | .39 | .10 | .20 |
| 8 | .06 | .13 | .27 | 5.2 | 3.7 | 13 | 1.4 | 2.2 | 4.3 | .40 | .13 | .17 |
| 9 | .05 | .12 | .25 | 4.5 | 10 | 11 | 1.5 | 1.6 | 4.4 | .41 | .51 | .14 |
| 10 | .05 | .12 | .22 | 2.3 | 11 | 10 | 1.3 | 1.3 | 10 | .32 | .25 | .12 |
| 11 | .05 | .10 | .20 | 2.1 | 7.5 | 8.2 | 1.2 | 1.2 | 6.8 | .33 | .13 | .10 |
| 12 | .05 | .10 | .30 | 1.4 | 5.8 | 6.6 | 1.1 | 1.1 | 5.4 | .34 | .10 | .09 |
| 13 | .04 | .09 | .47 | 1.4 | 5.0 | 6.0 | 1.2 | .96 | 23 | .30 | .08 | .10 |
| 14 | .03 | .09 | .91 | 1.3 | 4.4 | 5.8 | 1.1 | .86 | 11 | .25 | .06 | 9.2 |
| 15 | .03 | .16 | .93 | 1.0 | 4.6 | 8.2 | 1.1 | .78 | 6.4 | .21 | .05 | 3.5 |
| 16 | .04 | .27 | .89 | .93 | 13 | 11 | .99 | .73 | 4.7 | .18 | .51 | 1.5 |
| 17 | .05 | .12 | .94 | .63 | 26 | 8.5 | 1.1 | .70 | 3.9 | .16 | .54 | .90 |
| 18 | .07 | .12 | .99 | .62 | 21 | 6.5 | 1.0 | 1.0 | 2.5 | .15 | .20 | .62 |
| 19 | .08 | .11 | .72 | 7.9 | 12 | 7.1 | .94 | 15 | 1.9 | .28 | .12 | .51 |
| 20 | .06 | .23 | .52 | 14 | 8.2 | 14 | 1.1 | 13 | 1.6 | .23 | .07 | .41 |
| 21 | .04 | .16 | .43 | 17 | 6.9 | 17 | 1.0 | 6.1 | 1.2 | .17 | .08 | .36 |
| 22 | .04 | .12 | 3.1 | 11 | 5.4 | 10 | .86 | 3.8 | 1.3 | .34 | .05 | .33 |
| 23 | .58 | .11 | 5.8 | 8.0 | 4.3 | 7.5 | .80 | 3.0 | .99 | .33 | .04 | .30 |
| 24 | .34 | .21 | 3.3 | 6.1 | 4.0 | 6.4 | .79 | 2.2 | .80 | .20 | .11 | .25 |
| 25 | .19 | .20 | 1.9 | 4.8 | 3.0 | 5.3 | .97 | 1.7 | .70 | .14 | 3.1 | .23 |
| 26 | .42 | .17 | 1.3 | 2.9 | 2.4 | 4.5 | 1.5 | 1.5 | 1.7 | .10 | .81 | .32 |
| 27 | .82 | .22 | 1.1 | 2.7 | 7.7 | 3.5 | 8.4 | 1.4 | 2.3 | .08 | .38 | .54 |
| 28 | .79 | .21 | .86 | 2.1 | 13 | 2.8 | 15 | 2.5 | 1.7 | .28 | .27 | .30 |
| 29 | .48 | .18 | .68 | 1.6 | --- | 2.5 | 8.2 | 3.2 | 1.4 | .61 | .18 | .23 |
| 30 | .34 | .17 | .48 | 1.6 | --- | 2.4 | 5.8 | 2.2 | 1.3 | .66 | .14 | .19 |
| 31 | .26 | --- | 1.4 | 4.2 | --- | 2.5 | --- | 4.9 | --- | 1.3 | 1.7 | --- |
| TOTAL | 5.71 | 4.74 | 30.30 | 178.08 | 270.8 | 222.0 | 71.15 | 92.73 | 174.09 | 12.52 | 11.40 | 26.92 |
| MEAN | .18 | .16 | .98 | 5.74 | 9.67 | 7.16 | 2.37 | 2.99 | 5.80 | .40 | .37 | .90 |
| MAX | .82 | .27 | 5.8 | 26 | 46 | 17 | 15 | 15 | 23 | 1.3 | 3.1 | 9.2 |
| MIN | .03 | .09 | .20 | .62 | 2.4 | 2.4 | .79 | .70 | .70 | .08 | .04 | .09 |
| CFSM | .06 | .06 | .35 | 2.04 | 3.43 | 2.54 | .84 | 1.06 | 2.06 | .14 | .13 | .32 |
| IN. | .08 | .06 | .40 | 2.35 | 3.57 | 2.93 | .94 | 1.22 | 2.30 | .17 | .15 | .35 |
| WTR YR 1982 | TOTAL | 1100.44 | MEAN | 3.01 | MAX | 46 | MIN | .03 | CFSM | 1.07 | IN | 14.51 |

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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORDS. --

INSTRUMENTATION.--Automatic pumping sampler since Aug. 14, 1981. Water-quality monitor since Dec. 9, 1981.

EXTREMES FOR DECEMBER 1981 TO SEPTEMBER 1982.--

WATER TEMPERATURES: Maximum recorded during period, 30.0°C July 22; minimum recorded, 0.0°C on several days during December and January.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

[illegible]

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | NITRO- GEN, N02+N03 TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC TOTAL (UG/L AS AS) |
|-------|---|---|---|---|--|---|--|--|---|---|-------------------------------------|
| FEB | | | | | | | | | | | |
| 25... | 1.5 | 16 | 12 | 2.4 | <.1 | 7.4 | 52 | .29 | .010 | 30 | -- |
| MAY | | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 06... | -- | 64 | 9.9 | -- | -- | -- | 92 | -- | -- | -- | -- |
| AUG | | | | | | | | | | | |
| 16... | 3.0 | 74 | 9.1 | 7.8 | -- | -- | 100 | -- | -- | -- | -- |
| 16... | 2.4 | 56 | 7.9 | 6.9 | -- | -- | 92 | -- | -- | -- | -- |
| 16... | 2.5 | 63 | 8.0 | 5.0 | -- | -- | 93 | -- | -- | -- | -- |
| 16... | 3.0 | 67 | 9.2 | 9.4 | -- | -- | 94 | -- | -- | -- | -- |
| 16... | 2.9 | 67 | 9.1 | 9.3 | -- | -- | 102 | -- | -- | -- | -- |
| 16... | 3.2 | 69 | 10 | 6.2 | -- | -- | 99 | -- | -- | -- | -- |
| 16... | 3.3 | 72 | 10 | 8.4 | -- | -- | 103 | -- | -- | -- | -- |
| 16... | 3.3 | 70 | 11 | 6.8 | -- | -- | 103 | -- | -- | -- | -- |
| 24... | 2.6 | 85 | 9.6 | 9.6 | <.1 | 4.3 | 120 | .17 | .020 | -- | 1 |
| 25... | 2.4 | 74 | 6.9 | 9.5 | -- | -- | 130 | -- | -- | 200 | -- |
| SEP | | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.2 | 57 | 8.6 | 5.6 | -- | -- | 94 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.2 | 65 | 8.6 | 13 | -- | -- | 114 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.6 | 65 | 10 | 22 | -- | -- | 132 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.8 | 58 | 11 | 12 | -- | -- | 105 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.8 | 59 | 11 | 8.8 | -- | -- | 105 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

[illegible]

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) |
|-------|--|---|--|--|---|--|--|---|--|---|---|
| FEB | | | | | | | | | | | |
| 25... | -- | 410 | 50 | -- | -- | <1 | -- | 20 | 4 | -- | -- |
| MAY | | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| JUL | | | | | | | | | | | |
| 06... | -- | 160 | 50 | -- | -- | -- | -- | 10 | 10 | -- | -- |
| AUG | | | | | | | | | | | |
| 16... | -- | 920 | 20 | -- | -- | -- | -- | 80 | <1 | -- | -- |
| 16... | -- | 390 | 40 | -- | -- | -- | -- | 30 | <1 | -- | -- |
| 16... | -- | 830 | 40 | -- | -- | -- | -- | 70 | <1 | -- | -- |
| 16... | -- | 630 | 40 | -- | -- | -- | -- | 50 | <1 | -- | -- |
| 16... | -- | 60 | 50 | -- | -- | -- | -- | <10 | <1 | -- | -- |
| 16... | -- | 900 | 30 | -- | -- | -- | -- | 50 | <1 | -- | -- |
| 16... | -- | 630 | 20 | -- | -- | -- | -- | 50 | <1 | -- | -- |
| 16... | -- | 860 | 30 | -- | -- | -- | -- | 50 | <1 | -- | -- |
| 24... | 9 | 230 | 10 | 10000 | 10 | -- | 20 | 60 | 40 | 320 | <.1 |
| 25... | -- | 260 | 20 | -- | -- | -- | -- | 70 | 60 | -- | -- |
| SEP | | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | 3100 | 40 | -- | -- | -- | -- | 130 | <10 | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | 2700 | 30 | -- | -- | -- | -- | 120 | <10 | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | 3600 | 40 | -- | -- | -- | -- | 200 | 10 | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | 5300 | 50 | -- | -- | -- | -- | 220 | <10 | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | 85000 | 40 | -- | -- | -- | -- | 2900 | 20 | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

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03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | STRON- TIUM, DIS- SOLVED (UG/L AS SR) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) | ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) | CYANIDE TOTAL (MG/L AS CN) | SEDI- MENT, SUS- PENDED (MG/L) |
|-------|--|--|---|---|--|---|--|--|-------------------------------------|--|
| FEB | | | | | | | | | | |
| 25... | -- | -- | -- | -- | 30 | -- | <4 | -- | -- | -- |
| MAY | | | | | | | | | | |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 91 |
| JUL | | | | | | | | | | |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2 |
| AUG | | | | | | | | | | |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 24... | .01 | <1 | <1 | <1 | -- | 10 | -- | 46 | <.01 | 5 |
| 25... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP | | | | | | | | | | |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 89 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 89 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 109 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 113 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 166 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 125 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 143 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 469 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1520 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2400 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2220 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 386 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 192 |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|-------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|
| OCT | | | | | | | | | | |
| 23... | 1400 | .97 | 219 | 7.8 | -- | -- | 84 | -- | 19 | 8.9 |
| 27... | 1505 | .97 | 186 | 8.0 | -- | -- | 73 | -- | 17 | 7.3 |
| 27... | 1800 | 1.7 | 189 | 7.9 | -- | -- | 73 | -- | 17 | 7.3 |
| 27... | 1925 | 1.3 | 194 | 7.9 | -- | -- | 77 | -- | 18 | 7.7 |
| DEC | | | | | | | | | | |
| 12... | 1600 | 1.5 | 169 | 7.9 | -- | -- | 60 | 8.0 | 14 | 6.0 |
| 12... | 1700 | 1.5 | 167 | 7.9 | -- | -- | 59 | 8.0 | 14 | 5.9 |
| 14... | 0555 | 1.5 | 163 | 7.9 | -- | -- | 63 | 8.0 | 15 | 6.1 |
| 14... | 0910 | 1.5 | 162 | 7.8 | -- | -- | 59 | 9.0 | 14 | 5.9 |
| 22... | 1505 | 3.7 | 116 | 7.7 | -- | -- | 43 | 16 | 9.9 | 4.5 |
| 24... | 0330 | 4.5 | 100 | 7.5 | -- | -- | 37 | 15 | 8.6 | 3.8 |
| 24... | 1930 | 2.8 | 101 | 7.5 | -- | -- | 38 | 13 | 8.9 | 3.9 |
| 26... | 0210 | 1.6 | 111 | 7.6 | -- | -- | 41 | 14 | 9.6 | 4.1 |
| 31... | 1320 | 1.5 | 107 | 7.5 | -- | -- | 41 | 13 | 8.8 | 4.7 |
| JAN | | | | | | | | | | |
| 03... | 0200 | 5.2 | 109 | 7.6 | -- | -- | 45 | 14 | 9.3 | 5.2 |
| 03... | 2345 | 19 | 78 | 7.3 | -- | -- | 28 | 7.0 | 6.3 | 2.9 |
| 04... | 0745 | 38 | 90 | 7.3 | -- | -- | 33 | 7.0 | 7.4 | 3.6 |
| 20... | 0045 | 18 | 90 | 7.3 | -- | -- | 30 | 12 | 6.7 | 3.1 |
| FEB | | | | | | | | | | |
| 03... | 0455 | 36 | 82 | 7.2 | -- | -- | 31 | 9.0 | 6.9 | 3.4 |
| 03... | 1220 | 67 | 60 | 7.0 | -- | -- | 21 | 5.0 | 4.7 | 2.3 |
| 03... | 1510 | 55 | 60 | 7.0 | 7.5 | 10.9 | 18 | 7.0 | 3.9 | 1.9 |
| 04... | 0225 | 20 | 48 | 6.9 | -- | -- | 20 | 6.0 | 4.5 | 2.2 |
| MAY | | | | | | | | | | |
| 31... | 1650 | 1.6 | 101 | 7.7 | -- | -- | 39 | 2.0 | 9.3 | 3.8 |
| 31... | 1958 | 2.9 | 79 | 7.2 | -- | -- | 29 | .00 | 6.9 | 2.9 |
| 31... | 2015 | 11 | 101 | 7.3 | -- | -- | 38 | 2.0 | 9.1 | 3.7 |
| 31... | 2050 | 20 | 97 | 7.4 | -- | -- | 35 | 3.0 | 8.3 | 3.5 |
| JUN | | | | | | | | | | |
| 01... | 0045 | 20 | 78 | 7.3 | -- | -- | 28 | 3.0 | 6.4 | 2.9 |
| 01... | 1150 | 17 | 74 | 7.6 | 16.0 | -- | 27 | 10 | 6.2 | 2.7 |
| 01... | 1330 | 16 | 75 | 7.3 | -- | -- | 27 | 5.0 | 6.2 | 2.8 |
| AUG | | | | | | | | | | |
| 09... | 1330 | .53 | 180 | 8.1 | 22.0 | -- | 72 | 6.0 | 17 | 7.2 |
| 24... | 1000 | .13 | 195 | 7.9 | 24.0 | 8.1 | 86 | 3.0 | 20 | 8.8 |
| SEP | | | | | | | | | | |
| 14... | 1921 | 8.0 | 111 | 7.2 | -- | -- | 39 | 6.0 | 9.4 | 3.8 |
| 15... | 0121 | 5.7 | 112 | 7.2 | -- | -- | 42 | 7.0 | 10 | 4.2 |
| 15... | 0921 | 3.9 | 144 | 7.5 | -- | -- | 46 | 6.0 | 11 | 4.4 |

BIG SANDY RIVER BASIN

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03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | PHOS- PHORUS, TOTAL (MG/L AS P) |
|-------|--|---|---|---|---|--|---|--|---|
| OCT | | | | | | | | | |
| 23... | 8.6 | 5.0 | 64 | 14 | 10 | -- | -- | 119 | -- |
| 27... | 6.5 | 3.5 | 61 | 13 | 8.5 | -- | -- | 102 | -- |
| 27... | 5.6 | 4.1 | 60 | 14 | 8.3 | -- | -- | 105 | -- |
| 27... | 5.9 | 3.9 | 63 | 14 | 7.3 | -- | -- | 109 | -- |
| DEC | | | | | | | | | |
| 12... | 8.0 | 1.9 | 52 | 13 | 9.5 | -- | -- | 88 | -- |
| 12... | 7.5 | 1.9 | 51 | 12 | 9.4 | -- | -- | 87 | -- |
| 14... | 5.8 | 1.9 | 55 | 12 | 6.4 | -- | -- | 83 | -- |
| 14... | 6.9 | 2.0 | 50 | 11 | 9.3 | -- | -- | 84 | -- |
| 22... | 3.7 | 2.7 | 27 | 14 | 5.8 | -- | -- | 73 | -- |
| 24... | 3.4 | 2.1 | 22 | 14 | 4.7 | -- | -- | 64 | -- |
| 24... | 3.4 | 1.9 | 25 | 13 | 3.8 | -- | -- | 64 | -- |
| 26... | 3.4 | 1.9 | 27 | 14 | 4.1 | -- | -- | 66 | -- |
| 31... | 4.1 | 2.2 | 28 | 10 | 6.4 | -- | -- | 62 | -- |
| JAN | | | | | | | | | |
| 03... | 3.0 | 2.2 | 31 | 12 | 5.1 | -- | -- | 63 | -- |
| 03... | 2.6 | 2.2 | 21 | 10 | 2.9 | -- | -- | 49 | -- |
| 04... | 3.3 | 2.2 | 26 | 12 | 3.7 | -- | -- | 58 | -- |
| 20... | 3.2 | 1.6 | 18 | 11 | 4.3 | -- | -- | 52 | -- |
| FEB | | | | | | | | | |
| 03... | 2.0 | 1.6 | 22 | 12 | 3.0 | -- | -- | 58 | -- |
| 03... | 1.8 | 1.5 | 16 | 12 | 2.1 | -- | -- | 45 | -- |
| 03... | 1.8 | 1.3 | 11 | 11 | 1.9 | <.1 | 6.3 | 42 | .080 |
| 04... | 2.2 | 6.3 | 14 | 12 | 3.4 | -- | -- | 47 | -- |
| MAY | | | | | | | | | |
| 31... | 1.6 | 1.9 | 33 | 8.0 | 2.0 | -- | -- | 50 | -- |
| 31... | 2.8 | 2.1 | 36 | 7.0 | 2.8 | -- | -- | 62 | -- |
| 31... | 2.0 | 2.2 | 32 | 11 | 3.1 | -- | -- | 61 | -- |
| 31... | 2.5 | 2.0 | 37 | 11 | 2.6 | -- | -- | 65 | -- |
| JUN | | | | | | | | | |
| 01... | 1.9 | 1.5 | 25 | 12 | 2.5 | -- | -- | 58 | -- |
| 01... | 2.2 | 1.5 | 17 | 12 | 2.1 | <.1 | 7.8 | 52 | .070 |
| 01... | 1.9 | 1.5 | 22 | 12 | 2.5 | -- | -- | 55 | -- |
| AUG | | | | | | | | | |
| 09... | 6.4 | 2.9 | 66 | 9.0 | 9.0 | <.1 | 5.8 | 99 | .050 |
| 24... | 8.5 | 2.9 | 83 | 10 | 9.9 | -- | 5.4 | 96 | -- |
| SEP | | | | | | | | | |
| 14... | 3.1 | 2.7 | 33 | 10 | 3.4 | -- | 7.2 | 78 | -- |
| 15... | 3.2 | 2.8 | 35 | 11 | 3.3 | -- | 7.8 | 79 | -- |
| 15... | 3.4 | 9.5 | 40 | 9.0 | 9.9 | -- | 7.8 | 93 | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC TOTAL (UG/L AS AS) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) |
|-------|---|-------------------------------------|---|--|--|--|---|--|---|
| OCT | | | | | | | | | |
| 23... | -- | -- | -- | -- | -- | -- | -- | -- | 1500 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | 1900 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | 1800 |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | 1100 |
| DEC | | | | | | | | | |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | 6000 |
| 12... | -- | -- | -- | -- | -- | -- | -- | -- | 440 |
| 14... | -- | -- | -- | -- | -- | -- | -- | -- | 420 |
| 14... | -- | -- | -- | -- | -- | -- | -- | -- | 250 |
| 22... | -- | -- | -- | -- | -- | -- | -- | -- | 960 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | 1100 |
| 24... | -- | -- | -- | -- | -- | -- | -- | -- | 440 |
| 26... | -- | -- | -- | -- | -- | -- | -- | -- | 450 |
| 31... | -- | -- | -- | -- | -- | 4 | -- | -- | 1200 |
| JAN | | | | | | | | | |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | 4400 |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | 1400 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | 5200 |
| 20... | -- | -- | -- | -- | -- | -- | -- | -- | 1300 |
| FEB | | | | | | | | | |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | 24000 |
| 03... | -- | -- | -- | -- | -- | -- | -- | -- | 3700 |
| 03... | -- | 1 | <1 | <1 | 20 | -- | 8 | 5 | 3600 |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | 1700 |
| MAY | | | | | | | | | |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | 9200 |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | 150000 |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | 11000 |
| 31... | -- | -- | -- | -- | -- | -- | -- | -- | 760 |
| JUN | | | | | | | | | |
| 01... | -- | -- | -- | -- | -- | -- | -- | -- | 3900 |
| 01... | -- | -- | -- | -- | -- | -- | -- | -- | 1900 |
| 01... | -- | -- | -- | -- | -- | -- | -- | -- | 2200 |
| AUG | | | | | | | | | |
| 09... | -- | -- | -- | -- | -- | -- | -- | -- | 1300 |
| 24... | 100 | -- | -- | -- | -- | -- | -- | -- | 290 |
| SEP | | | | | | | | | |
| 14... | <100 | -- | -- | -- | -- | -- | -- | -- | 2000 |
| 15... | <100 | -- | -- | -- | -- | -- | -- | -- | 1500 |
| 15... | 100 | -- | -- | -- | -- | -- | -- | -- | 680 |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

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03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | SELE- NIUM, TOTAL (UG/L AS SE) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|-------|--|---|--|---|--|---|--|---|--|
| OCT | | | | | | | | | |
| 23... | 33 | -- | -- | 80 | <1 | -- | -- | -- | -- |
| 27... | 67 | -- | -- | 120 | 2 | -- | -- | -- | -- |
| 27... | 74 | -- | -- | 110 | 2 | -- | -- | -- | -- |
| 27... | 80 | -- | -- | 80 | 2 | -- | -- | -- | -- |
| DEC | | | | | | | | | |
| 12... | 42 | -- | -- | 180 | 1 | -- | -- | -- | -- |
| 12... | 58 | -- | -- | <10 | 4 | -- | -- | -- | -- |
| 14... | 59 | -- | -- | 10 | 4 | -- | -- | -- | -- |
| 14... | 33 | -- | -- | 10 | 3 | -- | -- | -- | -- |
| 22... | 46 | -- | -- | 60 | <1 | -- | -- | -- | -- |
| 24... | 33 | -- | -- | 60 | <1 | -- | -- | -- | -- |
| 24... | 29 | -- | -- | 20 | <1 | -- | -- | -- | -- |
| 26... | 27 | -- | -- | 30 | <1 | -- | -- | -- | -- |
| 31... | 27 | -- | -- | 60 | <1 | -- | -- | -- | -- |
| JAN | | | | | | | | | |
| 03... | 15 | -- | -- | 200 | <1 | -- | -- | -- | -- |
| 03... | 50 | -- | -- | 70 | 1 | -- | -- | -- | -- |
| 04... | 23 | -- | -- | 150 | <1 | -- | -- | -- | -- |
| 20... | 76 | -- | -- | 50 | 2 | -- | -- | -- | -- |
| FEB | | | | | | | | | |
| 03... | 41 | -- | -- | 570 | 1 | -- | -- | -- | -- |
| 03... | 120 | -- | -- | 110 | 4 | -- | -- | -- | -- |
| 03... | 71 | 6 | 2 | 160 | 10 | <.1 | <1 | 50 | 12 |
| 04... | 43 | -- | -- | 70 | 2 | -- | -- | -- | -- |
| MAY | | | | | | | | | |
| 31... | 26 | -- | -- | 380 | 9 | -- | -- | -- | -- |
| 31... | 72 | -- | -- | 3800 | 2 | -- | -- | -- | -- |
| 31... | 62 | -- | -- | 350 | 1 | -- | -- | -- | -- |
| 31... | 48 | -- | -- | 40 | <1 | -- | -- | -- | -- |
| JUN | | | | | | | | | |
| 01... | 61 | -- | -- | 160 | 2 | -- | -- | -- | -- |
| 01... | 55 | -- | -- | 90 | 14 | -- | -- | -- | -- |
| 01... | 55 | -- | -- | 80 | 1 | -- | -- | -- | -- |
| AUG | | | | | | | | | |
| 09... | 64 | -- | -- | 60 | 18 | -- | -- | -- | -- |
| 24... | 32 | -- | -- | 30 | 15 | -- | -- | -- | -- |
| SEP | | | | | | | | | |
| 14... | 64 | -- | -- | 110 | 1 | -- | -- | -- | -- |
| 15... | 60 | -- | -- | 90 | <1 | -- | -- | -- | -- |
| 15... | 63 | -- | -- | 40 | 1 | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), DECEMBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|----------|-----|------|----------|------|------|----------|------|------|---------|------|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | | | | | | | --- | --- | --- | 5.5 | 3.5 | 4.5 |
| 2 | | | | | | | --- | --- | --- | 4.0 | 1.5 | 3.0 |
| 3 | | | | | | | --- | --- | --- | 7.5 | 3.5 | 6.0 |
| 4 | | | | | | | --- | --- | --- | 8.0 | 6.5 | 7.5 |
| 5 | | | | | | | --- | --- | --- | 6.0 | 4.5 | 5.5 |
| 6 | | | | | | | --- | --- | --- | | | |
| 7 | | | | | | | --- | --- | --- | 7.0 | 4.5 | 5.0 |
| 8 | | | | | | | --- | --- | --- | 7.0 | 3.5 | 6.0 |
| 9 | | | | | | | --- | --- | --- | 3.5 | 1.5 | 2.5 |
| 10 | | | | | | | --- | --- | --- | 1.5 | .0 | 1.0 |
| 11 | | | | | | | .5 | .0 | .0 | .0 | .0 | .0 |
| 12 | | | | | | | 1.0 | .0 | .0 | .0 | .0 | .0 |
| 13 | | | | | | | 1.5 | .0 | .0 | .0 | .0 | .0 |
| 14 | | | | | | | 1.0 | .0 | .5 | .0 | .0 | .0 |
| 15 | | | | | | | 1.5 | .5 | 1.0 | .5 | .0 | .0 |
| 16 | | | | | | | 1.5 | .0 | .5 | .5 | .0 | .5 |
| 17 | | | | | | | 2.0 | .0 | 1.0 | .0 | .0 | .0 |
| 18 | | | | | | | 1.5 | .0 | .5 | .0 | .0 | .0 |
| 19 | | | | | | | .0 | .0 | .0 | .0 | .0 | .0 |
| 20 | | | | | | | .0 | .0 | .0 | 5.5 | .0 | 4.0 |
| 21 | | | | | | | .0 | .0 | .0 | 6.5 | 5.5 | 6.0 |
| 22 | | | | | | | .5 | .0 | .0 | 6.0 | 5.5 | 5.5 |
| 23 | | | | | | | 5.0 | .5 | 4.0 | 7.5 | 4.0 | 6.0 |
| 24 | | | | | | | 4.5 | 3.5 | 4.0 | 3.5 | .5 | 2.0 |
| 25 | | | | | | | 3.5 | 1.5 | 3.0 | 3.0 | .5 | 2.0 |
| 26 | | | | | | | 4.0 | 1.5 | 3.0 | 1.0 | .0 | .0 |
| 27 | | | | | | | 4.5 | 2.5 | 3.5 | .5 | .0 | --- |
| 28 | | | | | | | 5.5 | 2.0 | 4.0 | 1.0 | .5 | .5 |
| 29 | | | | | | | 5.0 | 1.5 | 3.5 | 1.5 | .0 | .5 |
| 30 | | | | | | | 1.5 | .0 | .5 | 5.0 | 1.0 | 3.0 |
| 31 | | | | | | | 3.5 | .0 | 1.0 | 9.0 | 4.5 | 7.0 |
| MONTH | | | | | | | 5.5 | .0 | 1.5 | 9.0 | .0 | 2.5 |
| | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 6.0 | 3.5 | 4.5 | 9.0 | 7.5 | 8.5 | 16.0 | 8.0 | 11.5 | 15.0 | 8.0 | 11.5 |
| 2 | 5.5 | 3.0 | 4.5 | 9.5 | 7.0 | 8.0 | 16.0 | 8.0 | 12.0 | 14.0 | 9.5 | 11.5 |
| 3 | 8.0 | 6.0 | 7.0 | 9.0 | 8.0 | 8.5 | 18.0 | 11.5 | 14.5 | 18.5 | 9.0 | 13.0 |
| 4 | 7.5 | 5.5 | 6.5 | 11.0 | 8.5 | 9.5 | 16.0 | 8.5 | 12.0 | 19.5 | 8.5 | 13.5 |
| 5 | 7.5 | 5.0 | 6.0 | 10.5 | 9.0 | 9.5 | 13.5 | 8.5 | 11.0 | 20.5 | 9.5 | 14.5 |
| 6 | 6.5 | 2.5 | 4.5 | 9.5 | 8.0 | 8.5 | 11.5 | 6.0 | 8.5 | 21.0 | 11.0 | 15.5 |
| 7 | 3.5 | 1.0 | 2.0 | 9.0 | 7.5 | 8.0 | 11.5 | 5.0 | 7.0 | 18.0 | 12.5 | 15.5 |
| 8 | 4.5 | --- | --- | 8.0 | 7.0 | 7.5 | 7.0 | 4.0 | 5.5 | 16.0 | 12.0 | 14.0 |
| 9 | 6.0 | 4.5 | 5.0 | 9.5 | 7.0 | 8.0 | 8.0 | 4.5 | 6.0 | 18.5 | 9.5 | 13.5 |
| 10 | 5.5 | 4.0 | 4.5 | 10.0 | 7.5 | 8.5 | 12.5 | 3.5 | 6.5 | --- | --- | --- |
| 11 | 6.0 | 3.5 | 4.5 | 10.5 | 8.0 | 9.5 | 11.5 | 3.5 | 7.5 | --- | --- | --- |
| 12 | 5.5 | 3.0 | 4.0 | 12.0 | 9.5 | 10.5 | 16.5 | 5.5 | 10.5 | --- | --- | --- |
| 13 | 5.0 | 3.0 | 4.0 | 11.0 | 10.0 | 10.5 | 15.0 | 9.5 | 11.0 | --- | --- | --- |
| 14 | 5.5 | 2.0 | 3.5 | 10.0 | 8.5 | 9.5 | 17.0 | 9.0 | 12.5 | --- | --- | --- |
| 15 | 6.5 | 3.0 | 5.0 | 10.5 | 9.0 | 10.0 | 20.0 | 8.5 | 13.5 | --- | --- | --- |
| 16 | 7.5 | 6.5 | 7.0 | 10.5 | 9.0 | 10.0 | 19.0 | 12.5 | 15.0 | --- | --- | --- |
| 17 | 8.0 | 7.5 | 7.5 | 14.0 | 8.5 | 10.5 | 15.5 | 11.5 | 14.0 | --- | --- | --- |
| 18 | 8.0 | 7.0 | 7.5 | 14.0 | 7.0 | 10.5 | 19.0 | 8.0 | 12.5 | --- | --- | --- |
| 19 | 8.0 | 7.0 | 7.5 | 12.0 | 8.5 | 10.5 | 14.0 | 8.5 | 11.0 | --- | --- | --- |
| 20 | 8.5 | 6.5 | 7.5 | 11.5 | 9.5 | 10.5 | 15.0 | 9.5 | 12.0 | --- | --- | --- |
| 21 | 8.0 | 7.0 | 7.5 | 11.0 | 7.5 | 9.5 | 18.0 | 9.5 | 13.5 | --- | --- | --- |
| 22 | 7.0 | 6.0 | 6.5 | 11.5 | 7.0 | 8.5 | 17.0 | 7.5 | 10.0 | --- | --- | --- |
| 23 | 7.5 | 5.0 | 6.0 | 12.0 | 6.0 | 8.5 | 18.0 | 4.5 | 10.0 | --- | --- | --- |
| 24 | 9.5 | 6.5 | 8.0 | 11.5 | 5.5 | 8.5 | 17.5 | 5.0 | 10.5 | --- | --- | --- |
| 25 | 9.0 | 6.0 | 7.5 | 14.0 | 6.5 | 10.0 | 15.0 | 7.0 | 11.0 | --- | --- | --- |
| 26 | 6.0 | 4.5 | 5.5 | 9.5 | 5.5 | 7.5 | 19.5 | 10.5 | 14.0 | --- | --- | --- |
| 27 | 6.0 | 5.0 | 5.5 | 7.5 | 3.5 | 5.5 | 14.0 | 10.0 | 12.0 | 22.5 | 16.0 | 18.5 |
| 28 | 7.5 | 6.0 | 6.5 | 10.0 | 2.0 | 5.5 | 14.5 | 9.0 | 11.0 | 22.0 | 17.0 | 19.0 |
| 29 | --- | --- | --- | 12.5 | 3.5 | 7.5 | 15.0 | 7.5 | 10.5 | 22.5 | 15.5 | 18.5 |
| 30 | --- | --- | --- | 15.0 | 7.5 | 11.0 | 16.5 | 7.5 | 11.5 | 23.0 | 17.0 | 20.0 |
| 31 | --- | --- | --- | 15.0 | 10.5 | 12.0 | --- | --- | --- | 24.0 | 16.5 | 20.0 |
| MONTH | 9.5 | 1.0 | 6.0 | 15.0 | 2.0 | 9.0 | 20.0 | 3.5 | 11.0 | 24.0 | 8.0 | 15.5 |

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TEMPERATURE, WATER (DEG. C), DECEMBER 1981 TO SEPTEMBER 1982

[illegible]

BIG SANDY RIVER BASIN

03208036 BARTON FORK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'37", long 82°02'21", Buchanan County, Hydrologic Unit 05070202, on left bank on private road 200 ft (61 m) upstream from State Highway 620, 0.5 mi (0.8 km) downstream from Coon Flat Branch, 1.8 mi (2.9 km) east of Council, and 180 ft (55 m) upstream from mouth.

DRAINAGE AREA.--1.23 mi² (3.19 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,800 ft (549 m), from topographic map.

REMARKS.--Records good. Recording rain gage at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft³/s (1.39 m³/s) Sept. 14, 1982, gage height, 2.52 ft (0.768 m), from rating curve extended above 24 ft³/s (0.68 m³/s); minimum daily, 0.03 ft³/s (<0.001 m³/s) Sept. 14, 1981.

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------------|------|---|-------------------------|----------------|------|---|-------------------------|
| Jan. 4, 1982 | 0600 | 25 0.71 | 2.22 0.677 | May 31, 1982 | 2025 | 43 1.22 | 2.41 0.735 |
| Feb. 3, 1982 | 0530 | 34 .96 | 2.33 .710 | Sept. 14, 1982 | 1000 | *49 1.39 | 2.52 .768 |

July to September 1981: Minimum daily discharge, 0.03 ft³/s (<0.001 m³/s) Sept. 14.

Water year 1982: Minimum discharge, 0.04 ft³/s (0.001 m³/s) Oct. 15; minimum gage height, 0.72 ft (0.219 m) Oct. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| 1 | | | | | | | | | | .68 | .09 | .05 |
| 2 | | | | | | | | | | .40 | .13 | .04 |
| 3 | | | | | | | | | | .28 | .10 | .09 |
| 4 | | | | | | | | | | .23 | .09 | .11 |
| 5 | | | | | | | | | | .18 | .08 | .07 |
| 6 | | | | | | | | | | .29 | .89 | .14 |
| 7 | | | | | | | | | | .20 | 1.1 | .09 |
| 8 | | | | | | | | | | .16 | 1.5 | .10 |
| 9 | | | | | | | | | | .15 | .54 | .09 |
| 10 | | | | | | | | | | .14 | .29 | .07 |
| 11 | | | | | | | | | | .13 | .23 | .05 |
| 12 | | | | | | | | | | .11 | .20 | .04 |
| 13 | | | | | | | | | | .10 | .17 | .04 |
| 14 | | | | | | | | | | .17 | .15 | .03 |
| 15 | | | | | | | | | | .15 | .16 | 2.4 |
| 16 | | | | | | | | | | .37 | .46 | 1.2 |
| 17 | | | | | | | | | | .26 | .18 | .64 |
| 18 | | | | | | | | | | .18 | .14 | .44 |
| 19 | | | | | | | | | | .15 | .13 | .25 |
| 20 | | | | | | | | | | .29 | .12 | .22 |
| 21 | | | | | | | | | | .22 | .11 | .19 |
| 22 | | | | | | | | | | .15 | .10 | .17 |
| 23 | | | | | | | | | | .12 | .09 | .14 |
| 24 | | | | | | | | | | .15 | .08 | .13 |
| 25 | | | | | | | | | | .14 | .07 | .12 |
| 26 | | | | | | | | | | .11 | .06 | .10 |
| 27 | | | | | | | | | | .10 | .06 | .09 |
| 28 | | | | | | | | | | .25 | .05 | .09 |
| 29 | | | | | | | | | | .24 | .05 | .08 |
| 30 | | | | | | | | | | .15 | .04 | .08 |
| 31 | | | | | | | | | | .11 | .05 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.36 | 7.51 | 7.35 |
| MEAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | .21 | .24 | .25 |
| MAX | --- | --- | --- | --- | --- | --- | --- | --- | --- | .68 | 1.5 | 2.4 |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | .10 | .04 | .03 |
| CFSM | --- | --- | --- | --- | --- | --- | --- | --- | --- | .17 | .20 | .20 |
| IN. | --- | --- | --- | --- | --- | --- | --- | --- | --- | .19 | .23 | .22 |

BIG SANDY RIVER BASIN

303

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|------|-------|
| 1 | .09 | .13 | .17 | .86 | 3.1 | 4.0 | 1.0 | 1.7 | 16 | .54 | .76 | 1.3 |
| 2 | .09 | .12 | .17 | .69 | 4.1 | 3.1 | .91 | 1.5 | 8.0 | .44 | .47 | .74 |
| 3 | .08 | .11 | .15 | 12 | 22 | 2.4 | .89 | 1.2 | 3.6 | .40 | .36 | .46 |
| 4 | .07 | .10 | .18 | 16 | 7.2 | 1.9 | .76 | 1.1 | 5.3 | .40 | .29 | .32 |
| 5 | .16 | .11 | .20 | 5.7 | 3.1 | 2.0 | .71 | .92 | 12 | .36 | .27 | .25 |
| 6 | .11 | .14 | .17 | 3.0 | 2.0 | 1.9 | .76 | .85 | 4.9 | .32 | .25 | .22 |
| 7 | .10 | .12 | .16 | 3.3 | 1.7 | 6.9 | .61 | .79 | 3.0 | .28 | .21 | .19 |
| 8 | .08 | .11 | .15 | 2.3 | 1.4 | 6.4 | .70 | .96 | 3.3 | .34 | .25 | .16 |
| 9 | .07 | .10 | .13 | 1.7 | 3.6 | 5.1 | .79 | .75 | 9.0 | .36 | .46 | .15 |
| 10 | .07 | .10 | .11 | 1.1 | 5.1 | 4.8 | .70 | .66 | 14 | .30 | .31 | .13 |
| 11 | .06 | .09 | .09 | 1.0 | 3.8 | 4.1 | .65 | .61 | 5.0 | .31 | .23 | .12 |
| 12 | .06 | .08 | .08 | .76 | 2.7 | 3.4 | .62 | .56 | 4.0 | .32 | .20 | .11 |
| 13 | .06 | .08 | .10 | .55 | 2.2 | 3.3 | .61 | .48 | 17 | .27 | .18 | .10 |
| 14 | .06 | .08 | .27 | .52 | 1.5 | 3.1 | .60 | .44 | 9.0 | .25 | .16 | 5.3 |
| 15 | .04 | .11 | .50 | .44 | 1.2 | 5.0 | .55 | .42 | 4.0 | .22 | .14 | 1.3 |
| 16 | .05 | .14 | .41 | .40 | 3.8 | 5.3 | .51 | .40 | 2.4 | .19 | .22 | .63 |
| 17 | .06 | .09 | .66 | .29 | 15 | 4.1 | .56 | .36 | 1.7 | .18 | .23 | .43 |
| 18 | .07 | .07 | .62 | .30 | 13 | 2.9 | .54 | .85 | 1.4 | .17 | .16 | .35 |
| 19 | .07 | .07 | .36 | 4.7 | 6.0 | 4.0 | .51 | 1.2 | 1.1 | .43 | .13 | .30 |
| 20 | .05 | .13 | .33 | 7.7 | 3.6 | 5.9 | .55 | .69 | .91 | .39 | .11 | .27 |
| 21 | .05 | .09 | .38 | 9.5 | 2.4 | 7.9 | .52 | .58 | .74 | .26 | .11 | .24 |
| 22 | .05 | .08 | 1.6 | 6.9 | 1.6 | 5.9 | .47 | .53 | .89 | .53 | .10 | .22 |
| 23 | .29 | .08 | 2.8 | 4.5 | 1.4 | 4.0 | .45 | .85 | .67 | .40 | .11 | .19 |
| 24 | .16 | .23 | 1.5 | 2.7 | 1.3 | 2.9 | .44 | 1.2 | .56 | .28 | .12 | .17 |
| 25 | .13 | .18 | .92 | 2.0 | 1.2 | 2.4 | .55 | .79 | .51 | .22 | 1.8 | .16 |
| 26 | .34 | .16 | .68 | 1.4 | 1.0 | 2.1 | 1.2 | .84 | .79 | .19 | .48 | .26 |
| 27 | .36 | .16 | .55 | 1.2 | 3.3 | 1.6 | 4.0 | 1.1 | .91 | .17 | .30 | .44 |
| 28 | .27 | .15 | .44 | .98 | 6.3 | 1.3 | 5.8 | 1.2 | .79 | .48 | .24 | .39 |
| 29 | .21 | .13 | .36 | .83 | --- | 1.2 | 3.3 | 1.0 | .71 | .70 | .19 | .22 |
| 30 | .17 | .12 | .30 | .80 | --- | 1.1 | 2.3 | .80 | .66 | .68 | .17 | .15 |
| 31 | .15 | --- | .69 | 2.5 | --- | 1.1 | --- | 4.4 | --- | 1.4 | .87 | --- |
| TOTAL | 3.68 | 3.46 | 15.23 | 96.62 | 124.6 | 111.1 | 32.56 | 29.73 | 132.84 | 11.78 | 9.88 | 15.27 |
| MEAN | .12 | .12 | .49 | 3.12 | 4.45 | 3.58 | 1.09 | .96 | 4.43 | .38 | .32 | .51 |
| MAX | .36 | .23 | 2.8 | 16 | 22 | 7.9 | 5.8 | 4.4 | 17 | 1.4 | 1.8 | 5.3 |
| MIN | .04 | .07 | .08 | .29 | 1.0 | 1.1 | .44 | .36 | .51 | .17 | .10 | .10 |
| CFSM | .10 | .10 | .40 | 2.54 | 3.62 | 2.91 | .89 | .78 | 3.60 | .31 | .26 | .42 |
| IN. | .11 | .10 | .46 | 2.92 | 3.77 | 3.36 | .98 | .90 | 4.01 | .36 | .30 | .46 |

WTR YR 1982 TOTAL 586.75 MEAN 1.61 MAX 22 MIN .04 CFSM 1.31 IN 17.73

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year.

PERIOD OF DAILY RECORD. - -

SPECIFIC CONDUCTANCE: July 1981 to current year.

WATER TEMPERATURES: July 1981 to current year.

INSTRUMENTATION.--Water-quality monitor since July 17, 1981. Automatic pumping sampler since Aug. 14, 1981.

REMARKS.--Unpublished records of dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: July to September 1981: Maximum recorded during period, 367 micromhos July 24; minimum recorded, 163 micromhos July 28.

Water Year 1982: Maximum recorded, 393 micromhos Dec. 22; minimum recorded, 110 micromhos Sept. 14.

WATER TEMPERATURES: July to September 1981: Maximum recorded during period, 26.0°C Sept. 2; minimum recorded, 8.5°C Sept. 24.

Water year 1982: Maximum recorded, 25.5°C July 28; minimum recorded, 0.0°C on several days in December and January.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| | | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|-------|------|---|---|---------|-----------------------------|-------------------------------------|--|---|--|--|--|
| DATE | TIME | | | (UNITS) | | | | | | | |
| FEB | | | | | | | | | | | |
| 26... | 1000 | .86 | 280 | 7.7 | 4.0 | -- | 100 | -- | 24 | 9.8 | 9.1 |
| MAY | | | | | | | | | | | |
| 20... | 1443 | 6.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG | | | | | | | | | | | |
| 15... | 1845 | .40 | 293 | 7.9 | -- | -- | 120 | 65 | 29 | 11 | 11 |
| 16... | 0345 | .42 | 283 | 7.9 | -- | -- | 120 | 73 | 27 | 12 | 10 |
| 16... | 0400 | 1.0 | 298 | 8.0 | -- | -- | 120 | 67 | 30 | 12 | 11 |
| 16... | 0410 | 2.0 | 234 | 7.8 | -- | -- | 100 | 49 | 25 | 9.9 | 9.2 |
| 16... | 0415 | 2.9 | 192 | 7.5 | -- | -- | 78 | 25 | 19 | 7.4 | 6.2 |
| 16... | 0515 | 1.4 | 220 | 7.6 | -- | -- | 98 | 40 | 24 | 9.2 | 6.6 |
| 16... | 0700 | .63 | 227 | 7.7 | -- | -- | 96 | 46 | 23 | 9.4 | 6.7 |
| 25... | 1315 | .08 | 305 | 8.1 | 20.5 | 9.9 | 140 | 71 | 31 | 14 | 12 |
| SEP | | | | | | | | | | | |
| 03... | 1550 | .18 | 321 | 7.7 | -- | -- | 120 | 53 | 28 | 12 | 12 |
| 03... | 1555 | .34 | 327 | 7.6 | -- | -- | 120 | 58 | 29 | 12 | 11 |
| 03... | 1655 | .18 | 332 | 7.6 | -- | -- | 130 | 75 | 32 | 13 | 10 |
| 04... | 1005 | .12 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 1400 | .17 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 1430 | .32 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 1435 | .53 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 1555 | .53 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 1645 | .32 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | 2145 | .17 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0505 | .17 | 244 | 7.1 | -- | -- | 94 | 38 | 22 | 9.5 | 7.5 |
| 15... | 0545 | .32 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0600 | .53 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0610 | .82 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0615 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0700 | 1.2 | 229 | 7.4 | -- | -- | 84 | 37 | 20 | 8.2 | 6.8 |
| 15... | 0815 | 3.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0845 | 3.1 | 263 | 7.5 | -- | -- | 91 | 45 | 22 | 8.8 | 8.9 |
| 15... | 0855 | 2.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0915 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0920 | 1.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 0955 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1000 | .89 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1100 | .66 | 311 | 7.9 | -- | -- | 120 | 66 | 28 | 11 | 11 |
| 15... | 1105 | .69 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1135 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1150 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1155 | 2.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1210 | 2.9 | 260 | 7.6 | -- | -- | 98 | -- | 24 | 9.2 | 8.5 |
| 15... | 1215 | 3.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1220 | 3.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1225 | 5.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1230 | 7.0 | 224 | 7.4 | -- | -- | 81 | -- | 19 | 8.1 | 6.8 |
| 15... | 1255 | 15 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1315 | 15 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1400 | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1455 | 13 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1525 | 11 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1620 | 7.9 | 250 | 7.6 | -- | -- | 97 | -- | 23 | 9.6 | 6.7 |
| 15... | 1730 | 5.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 1755 | 5.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 2050 | 5.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | 0215 | 4.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | 0455 | 3.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | 0745 | 2.0 | 296 | 7.9 | -- | -- | 110 | -- | 26 | 11 | 8.6 |
| 16... | 1240 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- |

BIG SANDY RIVER BASIN

305

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) |
|--------------|---|---|---|---|--|---|--|--|---|---|
| FEB 26... | 2.0 | 28 | 69 | 14 | <.1 | 6.7 | 173 | .74 | <.010 | 10 |
| MAY 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| AUG 15... | 2.7 | 53 | 67 | 6.9 | -- | -- | 175 | -- | -- | -- |
| 16... | 2.9 | 53 | 68 | 5.3 | -- | -- | 182 | -- | -- | -- |
| 16... | 2.7 | 57 | 70 | 7.1 | -- | -- | 185 | -- | -- | -- |
| 16... | 2.6 | 54 | 57 | 6.0 | -- | -- | 147 | -- | -- | -- |
| 16... | 2.6 | 53 | 40 | 4.0 | -- | -- | 115 | -- | -- | -- |
| 16... | 2.9 | 58 | 38 | 3.4 | -- | -- | 138 | -- | -- | -- |
| 16... | 2.7 | 50 | 41 | 5.4 | -- | -- | 137 | -- | -- | -- |
| 25... | 2.1 | 64 | 75 | 8.2 | -- | -- | 225 | -- | -- | 200 |
| SEP 03... | 2.9 | 66 | 68 | 6.0 | -- | -- | 194 | -- | -- | -- |
| 03... | 3.1 | 64 | 70 | 5.9 | -- | -- | 197 | -- | -- | -- |
| 03... | 3.2 | 58 | 79 | 4.3 | -- | -- | 211 | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.4 | 56 | 51 | 4.6 | -- | -- | 151 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.3 | 47 | 44 | 5.5 | -- | -- | 147 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.1 | 46 | 52 | 10 | -- | -- | 158 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.0 | 54 | 68 | 11 | -- | -- | 183 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.4 | 50 | 52 | 9.0 | -- | -- | 153 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 2.9 | 54 | 35 | 7.4 | -- | -- | 125 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 3.0 | 42 | 57 | 6.2 | -- | -- | 151 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | 3.1 | 46 | 70 | 7.8 | -- | -- | 182 | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM DIS- SOLVED (UG/L AS CD) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | STRON- TIUM, DIS- SOLVED (UG/L AS SR) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDE (MG/L) |
|--------------|--|--|--|---|--|--|---|--|--|--|---|
| FEB 26... | 50 | 2 | <1 | 330 | 20 | <1 | 40 | 40 | 160 | 4 | -- |
| MAY 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 83 |
| AUG 15... | -- | -- | -- | 910 | 10 | -- | 110 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 4700 | 30 | -- | 250 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 1100 | 30 | -- | 80 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 30000 | 30 | -- | 1300 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 29000 | 60 | -- | 1400 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 24000 | 30 | -- | 2300 | <1 | -- | -- | -- |
| 16... | -- | -- | -- | 27000 | 60 | -- | 1800 | <1 | -- | -- | -- |
| 25... | -- | -- | -- | 350 | 20 | -- | 50 | 20 | -- | -- | -- |
| SEP 03... | -- | -- | -- | 4700 | 10 | -- | 200 | 10 | -- | -- | -- |
| 03... | -- | -- | -- | 3500 | 30 | -- | 260 | <10 | -- | -- | -- |
| 03... | -- | -- | -- | 12000 | 20 | -- | 380 | <10 | -- | -- | -- |
| 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 787 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 760 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 933 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 870 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1280 |
| 06... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 820 |
| 15... | -- | -- | -- | 11000 | 70 | -- | 330 | <10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 252 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 494 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 538 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 940 |
| 15... | -- | -- | -- | 19000 | 60 | -- | 640 | 10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 959 |
| 15... | -- | -- | -- | 27000 | 40 | -- | 1100 | <10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 549 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 378 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 362 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 208 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 166 |
| 15... | -- | -- | -- | 3600 | 30 | -- | 110 | <10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 168 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 180 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 256 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 282 |
| 15... | -- | -- | -- | 11000 | 60 | -- | 580 | 20 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 536 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 507 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1540 |
| 15... | -- | -- | -- | 43000 | 50 | -- | 2000 | 10 | -- | -- | 2070 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4170 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1940 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1060 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 562 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 368 |
| 15... | -- | -- | -- | 7900 | 70 | -- | 370 | <10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 196 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 274 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 83 |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 36 |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65 |
| 16... | -- | -- | -- | 1500 | 30 | -- | 80 | <10 | -- | -- | -- |
| 16... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

307

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|---|
| DEC | | | | | | | | | | | | |
| 22... | 1200 | 1.3 | 398 | 7.3 | -- | -- | 130 | 89 | 31 | 13 | 21 | 2.4 |
| 22... | 2315 | 2.6 | 348 | 7.5 | -- | -- | 110 | 80 | 26 | 12 | 20 | 2.3 |
| 23... | 1435 | 3.0 | 306 | 7.5 | -- | -- | 110 | 76 | 25 | 11 | 15 | 2.5 |
| 24... | 0915 | 1.6 | 308 | 7.6 | -- | -- | 110 | 77 | 25 | 12 | 16 | 2.1 |
| 24... | 1510 | 1.3 | 311 | 7.7 | -- | -- | 110 | 80 | 26 | 12 | 15 | 2.2 |
| 31... | 1440 | 1.3 | 283 | 7.6 | -- | -- | 110 | 62 | 24 | 11 | 11 | 3.7 |
| JAN | | | | | | | | | | | | |
| 03... | 0015 | 1.3 | 278 | 7.7 | -- | -- | 99 | 55 | 23 | 10 | 11 | 1.8 |
| 03... | 0310 | 4.5 | 284 | 7.6 | -- | -- | 95 | 48 | 20 | 11 | 16 | 1.6 |
| 03... | 0500 | 17 | 217 | 7.3 | -- | -- | 70 | 38 | 15 | 7.9 | 12 | 1.5 |
| 04... | 0315 | 8.7 | 232 | 7.4 | -- | -- | 81 | 50 | 18 | 8.8 | 11 | 2.4 |
| 04... | 0415 | 17 | 203 | 7.5 | -- | -- | 72 | 43 | 16 | 7.8 | 9.0 | 1.8 |
| 04... | 1315 | 20 | 207 | 7.3 | -- | -- | 70 | 40 | 16 | 7.4 | 8.8 | 1.7 |
| FEB | | | | | | | | | | | | |
| 03... | 0135 | 9.7 | 207 | 7.3 | -- | -- | 70 | 46 | 16 | 7.3 | 8.5 | 1.6 |
| 03... | 0605 | 30 | 187 | 7.1 | -- | -- | 65 | 39 | 14 | 7.3 | 6.1 | 2.1 |
| 03... | 1330 | 23 | 157 | 7.2 | 7.0 | 10.9 | 49 | 35 | 11 | 5.3 | 4.7 | 1.8 |
| 04... | 0620 | 9.1 | 180 | 7.3 | -- | -- | 63 | 41 | 14 | 6.7 | 5.9 | 1.9 |
| MAY | | | | | | | | | | | | |
| 31... | 2005 | 2.9 | 172 | 7.1 | -- | -- | 79 | .00 | 19 | 7.6 | 15 | 1.9 |
| 31... | 2008 | 4.9 | 205 | 7.2 | -- | -- | 79 | 18 | 19 | 7.6 | 15 | 1.0 |
| 31... | 2010 | 9.7 | 209 | 7.5 | -- | -- | 76 | .00 | 18 | 7.6 | 15 | .6 |
| JUN | | | | | | | | | | | | |
| 01... | 1410 | 20 | 195 | 7.6 | 15.5 | -- | 69 | 43 | 16 | 7.1 | 5.7 | 1.8 |
| 01... | 1525 | 9.7 | 193 | 7.5 | -- | -- | 65 | 38 | 15 | 6.8 | 5.1 | 2.0 |
| AUG | | | | | | | | | | | | |
| 09... | 1130 | .58 | 302 | 8.0 | 20.0 | -- | 120 | 58 | 28 | 12 | 9.7 | 2.6 |
| 24... | 1400 | .12 | 360 | 8.2 | 19.5 | 7.9 | 140 | 70 | 33 | 14 | 12 | 2.5 |
| SEP | | | | | | | | | | | | |
| 14... | 0755 | 1.6 | 232 | 7.1 | -- | -- | 95 | 37 | 23 | 9.1 | 8.0 | 3.8 |
| 14... | 0815 | 3.1 | 219 | 7.2 | -- | -- | 89 | 23 | 22 | 8.3 | 8.1 | 3.2 |
| 14... | 0832 | 4.3 | 206 | 7.4 | -- | -- | 80 | 12 | 20 | 7.3 | 5.8 | 4.3 |
| 14... | 0855 | 7.5 | 202 | 7.4 | -- | -- | 77 | 12 | 19 | 7.1 | 5.6 | 3.8 |
| 14... | 0915 | 9.2 | 202 | 7.4 | -- | -- | 75 | 15 | 19 | 6.7 | 5.3 | 2.6 |
| 14... | 0935 | 16 | 186 | 7.5 | -- | -- | 60 | 25 | 15 | 5.5 | 4.8 | 3.4 |
| 14... | 0950 | 34 | 150 | 7.4 | -- | -- | 51 | 19 | 13 | 4.5 | 3.3 | 2.0 |
| 14... | 1548 | 3.6 | 293 | 7.6 | -- | -- | 97 | 54 | 23 | 9.7 | 7.2 | 8.2 |
| 15... | 1016 | 1.3 | 290 | 7.7 | -- | -- | 120 | 66 | 28 | 11 | 8.1 | 2.6 |

BIG SANDY RIVER BASIN

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | PHOS- PHORUS, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC TOTAL (UG/L AS AS) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) |
|-------|---|---|---|--|---|--|---|---|-------------------------------------|---|--|--|
| DEC | | | | | | | | | | | | |
| 22... | 42 | 68 | 44 | -- | -- | 267 | -- | -- | -- | -- | -- | -- |
| 22... | 34 | 66 | 37 | -- | -- | 245 | -- | -- | -- | -- | -- | -- |
| 23... | 32 | 67 | 26 | -- | -- | 213 | -- | -- | -- | -- | -- | -- |
| 24... | 35 | 69 | 22 | -- | -- | 211 | -- | -- | -- | -- | -- | -- |
| 24... | 34 | 69 | 19 | -- | -- | 207 | -- | -- | -- | -- | -- | -- |
| 30... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 31... | 43 | 57 | 17 | -- | -- | 150 | -- | -- | -- | -- | -- | -- |
| JAN | | | | | | | | | | | | |
| 03... | 44 | 60 | 14 | -- | -- | 157 | -- | -- | -- | -- | -- | -- |
| 03... | 47 | 46 | 24 | -- | -- | 150 | -- | -- | -- | -- | -- | -- |
| 03... | 32 | 40 | 13 | -- | -- | 126 | -- | -- | -- | -- | -- | -- |
| 04... | 31 | 55 | 11 | -- | -- | 130 | -- | -- | -- | -- | -- | -- |
| 04... | 29 | 45 | 11 | -- | -- | 115 | -- | -- | -- | -- | -- | -- |
| 04... | 30 | 43 | 9.4 | -- | -- | 110 | -- | -- | -- | -- | -- | -- |
| FEB | | | | | | | | | | | | |
| 03... | 24 | 51 | 14 | -- | -- | 128 | -- | -- | -- | -- | -- | -- |
| 03... | 26 | 43 | 8.5 | -- | -- | 114 | -- | -- | -- | -- | -- | -- |
| 03... | 14 | 40 | 6.4 | <.1 | 5.8 | 99 | .070 | -- | 1 | 1 | 1 | 10 |
| 04... | 22 | 40 | 7.1 | -- | -- | 113 | -- | -- | -- | -- | -- | -- |
| MAY | | | | | | | | | | | | |
| 31... | 86 | 35 | 4.4 | -- | -- | 112 | -- | -- | -- | -- | -- | -- |
| 31... | 61 | 39 | 5.5 | -- | -- | 140 | -- | -- | -- | -- | -- | -- |
| 31... | 106 | 33 | 5.1 | -- | -- | 135 | -- | -- | -- | -- | -- | -- |
| JUN | | | | | | | | | | | | |
| 01... | 26 | 38 | 6.4 | <.1 | 7.3 | 121 | .060 | -- | -- | -- | -- | -- |
| 01... | 27 | 39 | 6.4 | -- | -- | 127 | -- | -- | -- | -- | -- | -- |
| AUG | | | | | | | | | | | | |
| 09... | 61 | 72 | 6.4 | <.1 | 6.6 | 200 | .080 | -- | -- | -- | -- | -- |
| 24... | 70 | 89 | 5.5 | -- | 8.0 | 214 | -- | 100 | -- | -- | -- | -- |
| SEP | | | | | | | | | | | | |
| 14... | 58 | 57 | 4.8 | -- | 5.0 | 164 | -- | <100 | -- | -- | -- | -- |
| 14... | 66 | 57 | 4.1 | -- | 3.8 | 135 | -- | 200 | -- | -- | -- | -- |
| 14... | 68 | 34 | 3.9 | -- | 3.5 | 106 | -- | 200 | -- | -- | -- | -- |
| 14... | 65 | 35 | 2.8 | -- | 3.5 | 117 | -- | 200 | -- | -- | -- | -- |
| 14... | 60 | 34 | 4.9 | -- | 3.7 | 124 | -- | 400 | -- | -- | -- | -- |
| 14... | 35 | 30 | 4.9 | -- | 3.5 | 96 | -- | 400 | -- | -- | -- | -- |
| 14... | 32 | 26 | 2.8 | -- | -- | 81 | -- | -- | -- | -- | -- | -- |
| 14... | 43 | 52 | 10 | -- | -- | 154 | -- | -- | -- | -- | -- | -- |
| 15... | 49 | 70 | 5.4 | -- | -- | 181 | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

309

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | SELE- NIUM, TOTAL (UG/L AS SE) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|-------|---|--|---|--|---|--|---|--|---|--|---|--|
| DEC | | | | | | | | | | | | |
| 22... | -- | -- | 6500 | 16 | -- | -- | 290 | 23 | -- | -- | -- | -- |
| 22... | -- | -- | 4600 | 20 | -- | -- | 250 | <1 | -- | -- | -- | -- |
| 23... | -- | -- | 1900 | 18 | -- | -- | 140 | <1 | -- | -- | -- | -- |
| 24... | -- | -- | 1700 | 8 | -- | -- | 130 | <1 | -- | -- | -- | -- |
| 24... | -- | -- | 660 | 16 | -- | -- | 50 | <1 | -- | -- | -- | -- |
| 30... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 31... | -- | -- | 2900 | 2800 | -- | -- | 700 | 430 | -- | -- | -- | -- |
| JAN | | | | | | | | | | | | |
| 03... | -- | -- | 38000 | 54 | -- | -- | 860 | 3 | -- | -- | -- | -- |
| 03... | -- | -- | 36000 | 88 | -- | -- | 1700 | 4 | -- | -- | -- | -- |
| 03... | -- | -- | 39000 | 110 | -- | -- | 2300 | 4 | -- | -- | -- | -- |
| 04... | -- | -- | 3900 | 21 | -- | -- | 230 | 5 | -- | -- | -- | -- |
| 04... | -- | -- | 25000 | 90 | -- | -- | 790 | 7 | -- | -- | -- | -- |
| 04... | -- | -- | 21000 | 75 | -- | -- | 1200 | 4 | -- | -- | -- | -- |
| FEB | | | | | | | | | | | | |
| 03... | -- | -- | 5300 | 64 | -- | -- | 130 | 4 | -- | -- | -- | -- |
| 03... | -- | -- | 51000 | 4300 | -- | -- | 2900 | 280 | -- | -- | -- | -- |
| 03... | 9 | 7 | 6300 | 75 | 5 | 2 | 340 | 14 | <.1 | <1 | 70 | 10 |
| 04... | -- | -- | 1100 | 35 | -- | -- | 90 | 5 | -- | -- | -- | -- |
| MAY | | | | | | | | | | | | |
| 31... | -- | -- | 260000 | 120 | -- | -- | 6700 | 1300 | -- | -- | -- | -- |
| 31... | -- | -- | 960000 | 420 | -- | -- | 31000 | 600 | -- | -- | -- | -- |
| 31... | -- | -- | 680000 | 180 | -- | -- | 15000 | 380 | -- | -- | -- | -- |
| JUN | | | | | | | | | | | | |
| 01... | -- | -- | 2500 | 31 | -- | -- | 120 | 20 | -- | -- | -- | -- |
| 01... | -- | -- | 4400 | 26 | -- | -- | 160 | 5 | -- | -- | -- | -- |
| AUG | | | | | | | | | | | | |
| 09... | -- | -- | 28000 | 54 | -- | -- | 490 | 42 | -- | -- | -- | -- |
| 24... | -- | -- | 360 | 23 | -- | -- | 30 | 19 | -- | -- | -- | -- |
| SEP | | | | | | | | | | | | |
| 14... | -- | -- | 25000 | 89 | -- | -- | 1100 | 3 | -- | -- | -- | -- |
| 14... | -- | -- | 56000 | 190 | -- | -- | 2100 | 7 | -- | -- | -- | -- |
| 14... | -- | -- | 59000 | 200 | -- | -- | 2600 | 9 | -- | -- | -- | -- |
| 14... | -- | -- | 86000 | 100 | -- | -- | 3300 | 13 | -- | -- | -- | -- |
| 14... | -- | -- | 100000 | 470 | -- | -- | 4200 | 22 | -- | -- | -- | -- |
| 14... | -- | -- | 110000 | 580 | -- | -- | 4600 | 52 | -- | -- | -- | -- |
| 14... | -- | -- | 170000 | 160 | -- | -- | 4600 | 92 | -- | -- | -- | -- |
| 14... | -- | -- | 1500 | 60 | -- | -- | 80 | 29 | -- | -- | -- | -- |
| 15... | -- | -- | 640 | 19 | -- | -- | 50 | 33 | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

[illegible]

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|----------|-----|------|----------|-----|------|----------|-----|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 339 | 322 | 332 | 337 | 334 | 336 | --- | --- | --- | 335 | 322 | 328 |
| 2 | 365 | 335 | 340 | 337 | 332 | 335 | --- | --- | --- | 322 | 315 | 319 |
| 3 | 335 | 330 | 340 | 339 | 334 | 336 | --- | --- | --- | 293 | 219 | 239 |
| 4 | 331 | 327 | 329 | 338 | 333 | 336 | --- | --- | --- | 257 | 222 | 245 |
| 5 | 345 | 271 | 324 | 337 | 311 | 332 | 331 | 319 | 327 | 285 | 244 | 251 |
| 6 | 338 | 325 | 335 | 336 | 332 | 335 | 338 | 326 | 329 | 258 | 247 | 252 |
| 7 | 337 | 333 | 335 | 335 | 324 | 328 | 343 | 323 | 326 | 270 | 248 | 262 |
| 8 | 335 | 331 | 333 | 326 | 323 | 325 | 324 | 322 | 323 | 264 | 257 | 260 |
| 9 | 334 | 330 | 332 | 358 | 325 | 329 | 321 | 313 | 318 | 258 | 255 | 257 |
| 10 | 335 | 332 | 334 | 346 | 327 | 330 | 319 | 310 | 315 | 271 | 256 | 265 |
| 11 | 336 | 333 | 335 | 330 | 325 | 328 | 319 | 311 | 316 | 272 | 266 | 270 |
| 12 | 335 | 332 | 334 | --- | --- | --- | 333 | 313 | 319 | 274 | 270 | 272 |
| 13 | 335 | 330 | 333 | --- | --- | --- | 342 | 313 | 324 | 276 | 271 | 274 |
| 14 | 334 | 328 | 331 | --- | --- | --- | 330 | 261 | 293 | 285 | 278 | 281 |
| 15 | 334 | 330 | 331 | --- | --- | --- | 352 | 332 | 340 | 288 | 284 | 286 |
| 16 | 335 | 332 | 334 | --- | --- | --- | 335 | 318 | 329 | 297 | 288 | 290 |
| 17 | 336 | 331 | 334 | --- | --- | --- | 342 | 282 | 318 | 309 | 298 | 303 |
| 18 | 335 | 324 | 332 | --- | --- | --- | 351 | 338 | 345 | 300 | 292 | 296 |
| 19 | 334 | 331 | 333 | --- | --- | --- | 348 | 333 | 337 | 295 | 222 | 253 |
| 20 | 331 | 326 | 329 | --- | --- | --- | 347 | 332 | 339 | 220 | 204 | 209 |
| 21 | 329 | 325 | 327 | --- | --- | --- | 343 | 227 | 319 | 219 | 205 | 209 |
| 22 | 329 | 326 | 327 | --- | --- | --- | 393 | 227 | 335 | 219 | 206 | 212 |
| 23 | 368 | 276 | 328 | --- | --- | --- | 345 | 303 | 316 | 230 | 219 | 226 |
| 24 | 354 | 336 | 343 | --- | --- | --- | 306 | 303 | 305 | 232 | 229 | 231 |
| 25 | 337 | 322 | 335 | --- | --- | --- | 308 | 304 | 306 | 236 | 232 | 234 |
| 26 | 357 | 294 | 338 | --- | --- | --- | 311 | 305 | 308 | 243 | 237 | 240 |
| 27 | 358 | 315 | 343 | --- | --- | --- | 313 | 310 | 311 | 252 | 242 | 246 |
| 28 | 351 | 344 | 345 | --- | --- | --- | 315 | 312 | 313 | 255 | 230 | 250 |
| 29 | 343 | 340 | 342 | --- | --- | --- | 318 | 315 | 317 | 262 | 257 | 258 |
| 30 | 341 | 338 | 339 | --- | --- | --- | 320 | 314 | 317 | 269 | 263 | 265 |
| 31 | 339 | 336 | 338 | --- | --- | --- | 334 | 255 | 310 | 273 | 235 | 265 |
| MONTH | 368 | 271 | 334 | 358 | 311 | 332 | 393 | 227 | 321 | 335 | 204 | 260 |
| | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | |
| 1 | 254 | 236 | 242 | 223 | 176 | 201 | 306 | 248 | 268 | 235 | 226 | 231 |
| 2 | 241 | 228 | 236 | 229 | 222 | 226 | 298 | 248 | 260 | 244 | 236 | 239 |
| 3 | 224 | 125 | 150 | 238 | 230 | 233 | 289 | 249 | 261 | 252 | 245 | 248 |
| 4 | 181 | 139 | 158 | 249 | 238 | 239 | 290 | 252 | 265 | 255 | 247 | 252 |
| 5 | 216 | 177 | 189 | 249 | 231 | 245 | 300 | 254 | 264 | 257 | 252 | 254 |
| 6 | 264 | 164 | 217 | 246 | 230 | 243 | 278 | 226 | 249 | 262 | 257 | 259 |
| 7 | 257 | 196 | 221 | 234 | 206 | 215 | 270 | 233 | 254 | 266 | 261 | 263 |
| 8 | 281 | 182 | 257 | 274 | 207 | 232 | 272 | 263 | 269 | 270 | 256 | 265 |
| 9 | 277 | 239 | 254 | 234 | 225 | 230 | 273 | 268 | 270 | 274 | 269 | 271 |
| 10 | 248 | 235 | 243 | 225 | 215 | 219 | 272 | 269 | 270 | 279 | 274 | 276 |
| 11 | 255 | 248 | 251 | 222 | 220 | 221 | 273 | 271 | 272 | 285 | 278 | 281 |
| 12 | 258 | 251 | 254 | 233 | 224 | 232 | 277 | 271 | 272 | 289 | 284 | 286 |
| 13 | 257 | 252 | 255 | 240 | 212 | 234 | 274 | 271 | 273 | 294 | 288 | 290 |
| 14 | 265 | 257 | 260 | 233 | 226 | 229 | 275 | 273 | 274 | 298 | 294 | 295 |
| 15 | 270 | 259 | 266 | 226 | 202 | 216 | 276 | 273 | 275 | 302 | 297 | 299 |
| 16 | 273 | 228 | 252 | 207 | 202 | 204 | 278 | 275 | 276 | 306 | 302 | 303 |
| 17 | 231 | 169 | 193 | 215 | 205 | 210 | 280 | 265 | 277 | 313 | 307 | 310 |
| 18 | 172 | 153 | 165 | 227 | 217 | 223 | 281 | 278 | 280 | 314 | 262 | 306 |
| 19 | 184 | 172 | 179 | 228 | 198 | 222 | 280 | 278 | 279 | 311 | 281 | 302 |
| 20 | 191 | 185 | 188 | 220 | 193 | 210 | 280 | 270 | 278 | 323 | 311 | 316 |
| 21 | 196 | 190 | 193 | 199 | 188 | 193 | 282 | 279 | 280 | 320 | 314 | 318 |
| 22 | 203 | 197 | 200 | 200 | 193 | 196 | 284 | 280 | 282 | 315 | 276 | 296 |
| 23 | 206 | 203 | 204 | 212 | 199 | 205 | 286 | 282 | 284 | 294 | 282 | 289 |
| 24 | 209 | 206 | 208 | 227 | 210 | 219 | 286 | 283 | 284 | 302 | 293 | 298 |
| 25 | 212 | 209 | 210 | 237 | 226 | 229 | 288 | 266 | 282 | 302 | 298 | 300 |
| 26 | 216 | 212 | 214 | 238 | 235 | 236 | 300 | 239 | 282 | 337 | 288 | 302 |
| 27 | 237 | 191 | 208 | 242 | 235 | 239 | 276 | 197 | 237 | 298 | 281 | 292 |
| 28 | 189 | 179 | 182 | 241 | 238 | 239 | 201 | 192 | 196 | 298 | 277 | 292 |
| 29 | --- | --- | --- | 240 | 238 | 239 | 212 | 196 | 204 | 291 | 288 | 289 |
| 30 | --- | --- | --- | 266 | 237 | 241 | 225 | 212 | 219 | 295 | 290 | 292 |
| 31 | --- | --- | --- | 289 | 241 | 259 | --- | --- | --- | 297 | --- | --- |
| MONTH | 281 | 125 | 216 | 289 | 176 | 225 | 306 | 192 | 265 | 337 | 226 | 284 |

BIG SANDY RIVER BASIN

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|----------|------|------|----------|------|------|---------|------|------|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | 20.0 | 12.0 | 15.5 | 13.5 | 7.5 | 10.0 | --- | --- | --- | 6.0 | 4.0 | 5.0 |
| 2 | 15.5 | 8.5 | 12.0 | 14.5 | 8.5 | 11.0 | --- | --- | --- | 4.5 | 2.5 | 3.5 |
| 3 | 14.5 | 8.5 | 10.0 | 14.5 | 9.0 | 11.5 | --- | --- | --- | 8.0 | 4.0 | 6.0 |
| 4 | 16.0 | 7.0 | 11.0 | 15.0 | 9.5 | 12.0 | --- | --- | --- | 8.5 | 5.5 | 7.5 |
| 5 | 14.5 | 9.0 | 11.0 | 14.5 | 10.5 | 12.0 | 4.0 | 1.5 | 3.0 | 5.5 | 4.5 | 5.0 |
| 6 | 16.5 | 11.0 | 13.5 | 12.5 | 7.5 | 10.0 | 2.0 | .0 | 1.0 | 6.5 | 4.5 | 5.5 |
| 7 | 14.5 | 9.0 | 11.5 | 8.5 | 4.0 | 6.5 | 5.0 | .5 | 3.0 | 8.0 | 5.0 | 6.5 |
| 8 | 14.0 | 7.0 | 9.5 | 9.0 | 3.0 | 5.5 | 5.0 | 2.0 | 4.0 | 4.5 | 3.0 | 3.5 |
| 9 | 14.0 | 6.5 | 10.0 | 11.0 | 4.5 | 7.5 | 1.5 | .0 | .5 | 3.0 | .0 | 2.0 |
| 10 | 12.0 | 9.5 | 11.0 | 11.5 | 6.0 | 8.0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 11 | 16.0 | 11.5 | 13.0 | 9.5 | 4.5 | 6.0 | .5 | .0 | .0 | .0 | .0 | .0 |
| 12 | 15.5 | 10.0 | 12.5 | --- | --- | --- | .5 | .0 | .0 | 1.0 | .0 | .5 |
| 13 | 16.0 | 8.0 | 11.0 | --- | --- | --- | .0 | .0 | .0 | 2.0 | 1.0 | 1.5 |
| 14 | 15.5 | 6.5 | 10.0 | --- | --- | --- | 4.0 | .0 | 1.5 | 2.0 | 1.0 | 1.5 |
| 15 | 14.0 | 9.0 | 11.5 | --- | --- | --- | 4.0 | 2.0 | 3.0 | 1.5 | 1.0 | 1.0 |
| 16 | 16.0 | 11.5 | 13.0 | --- | --- | --- | 2.5 | 1.0 | 1.5 | 2.0 | .0 | 1.5 |
| 17 | 17.5 | 9.5 | 13.0 | --- | --- | --- | 4.0 | 1.0 | 2.5 | .0 | .0 | .0 |
| 18 | 15.0 | 10.5 | 13.0 | --- | --- | --- | 3.0 | .0 | 1.5 | .5 | .0 | .0 |
| 19 | 12.0 | 6.0 | 9.0 | --- | --- | --- | .0 | .0 | .0 | 3.5 | .0 | 1.5 |
| 20 | 13.5 | 4.5 | 8.0 | --- | --- | --- | .0 | .0 | .0 | 5.5 | 3.5 | 5.0 |
| 21 | 14.5 | 5.0 | 9.0 | --- | --- | --- | .0 | .0 | .0 | 6.5 | 5.5 | 6.0 |
| 22 | 14.0 | 8.0 | 11.0 | --- | --- | --- | 4.5 | .0 | 1.5 | 6.5 | 5.5 | 6.0 |
| 23 | 12.0 | 8.0 | 10.5 | --- | --- | --- | 5.5 | 5.0 | 5.5 | 7.5 | 4.0 | 6.5 |
| 24 | 10.5 | 6.0 | 8.0 | --- | --- | --- | 5.0 | 4.5 | 4.5 | 4.0 | 2.0 | 2.5 |
| 25 | 11.5 | 6.5 | 9.0 | --- | --- | --- | 4.5 | 2.5 | 4.0 | 4.0 | 2.0 | 3.0 |
| 26 | 14.0 | 11.0 | 12.5 | --- | --- | --- | 5.5 | 2.5 | 4.0 | 1.5 | .0 | .5 |
| 27 | 14.0 | 11.5 | 12.5 | --- | --- | --- | 5.5 | 3.0 | 4.0 | 2.0 | .0 | .5 |
| 28 | 12.5 | 9.5 | 11.0 | --- | --- | --- | 7.0 | 2.5 | 4.5 | 3.5 | 1.5 | 2.5 |
| 29 | 14.0 | 8.5 | 10.5 | --- | --- | --- | 5.5 | 2.0 | 3.5 | 3.5 | .0 | 1.5 |
| 30 | 14.0 | 8.5 | 10.5 | --- | --- | --- | 1.5 | .0 | .5 | 6.0 | 2.5 | 4.0 |
| 31 | 13.5 | 8.0 | 10.0 | --- | --- | --- | 4.5 | .0 | 2.5 | 8.0 | 4.5 | 6.0 |
| MONTH | 20.0 | 4.5 | 11.0 | 15.0 | 3.0 | 9.0 | 7.0 | .0 | 2.0 | 8.5 | .0 | 3.0 |
| | | | | | | | | | | | | |
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | 5.0 | 3.5 | 4.0 | 8.5 | 5.5 | 6.5 | 14.0 | 6.5 | 9.5 | 14.5 | 9.0 | 11.5 |
| 2 | 5.5 | 3.5 | 4.5 | 9.0 | 5.0 | 6.5 | 14.5 | 6.0 | 10.0 | 14.5 | 10.0 | 11.5 |
| 3 | 7.5 | 5.5 | 6.5 | 7.5 | 6.5 | 7.0 | 15.0 | 7.0 | 11.5 | 17.0 | 9.5 | 12.5 |
| 4 | 7.0 | 5.5 | 6.0 | 11.5 | 6.5 | 8.5 | 12.5 | 6.0 | 8.5 | 18.0 | 9.0 | 13.0 |
| 5 | 7.5 | 5.0 | 6.0 | 8.5 | 6.5 | 7.5 | 12.0 | 6.0 | 8.5 | 18.5 | 10.0 | 13.5 |
| 6 | 6.5 | 2.5 | 4.5 | 8.5 | 6.0 | 7.0 | 9.0 | 3.0 | 5.5 | 19.0 | 11.0 | 14.5 |
| 7 | 4.0 | 1.0 | 2.5 | 7.0 | 4.5 | 5.5 | 10.0 | 2.5 | 5.5 | 16.5 | 12.0 | 14.5 |
| 8 | 5.0 | 1.0 | 3.0 | 6.5 | 4.0 | 5.0 | 8.0 | 4.5 | 6.0 | 15.0 | 11.5 | 13.5 |
| 9 | 6.0 | 4.0 | 5.0 | 8.5 | 5.0 | 6.0 | 7.0 | 5.0 | 6.0 | 17.5 | 10.0 | 13.0 |
| 10 | 4.5 | 3.0 | 3.5 | 9.5 | 5.5 | 7.0 | 11.5 | 4.5 | 7.0 | 18.0 | 10.0 | 14.0 |
| 11 | 5.5 | 3.0 | 4.0 | 10.0 | 6.0 | 8.0 | 10.0 | 4.0 | 7.0 | 19.0 | 11.0 | 14.5 |
| 12 | 5.0 | 2.5 | 4.0 | 11.5 | 7.5 | 9.5 | 15.0 | 5.5 | 10.0 | 19.5 | 11.5 | 15.0 |
| 13 | 4.0 | 2.0 | 3.5 | 10.5 | 7.0 | 9.0 | 15.0 | 9.0 | 11.0 | 19.5 | 12.5 | 15.5 |
| 14 | 5.5 | 1.5 | 3.0 | 9.0 | 6.0 | 7.5 | 15.5 | 9.0 | 11.5 | 20.0 | 13.0 | 16.0 |
| 15 | 6.5 | 3.0 | 5.0 | 10.0 | 7.5 | 8.5 | 18.0 | 8.0 | 13.0 | 19.0 | 13.0 | 16.0 |
| 16 | 7.5 | 5.5 | 6.5 | 11.0 | 8.0 | 9.5 | 17.0 | 11.5 | 14.0 | 19.0 | 13.5 | 16.0 |
| 17 | 8.0 | 6.5 | 7.5 | 13.5 | 9.0 | 10.5 | 15.0 | 10.5 | 13.0 | 20.0 | 14.0 | 16.5 |
| 18 | 8.0 | 6.5 | 7.0 | 13.5 | 7.5 | 10.0 | 17.0 | 8.0 | 11.5 | 19.5 | 14.0 | 16.5 |
| 19 | 7.0 | 5.0 | 6.5 | 12.0 | 9.0 | 10.5 | 14.0 | 8.5 | 11.0 | 18.0 | 15.0 | 16.5 |
| 20 | 8.5 | 5.0 | 6.5 | 12.0 | 10.0 | 11.0 | 15.5 | 9.5 | 12.0 | 18.5 | 14.0 | 16.0 |
| 21 | 7.5 | 5.0 | 6.5 | 11.5 | 9.0 | 10.5 | 15.5 | 9.0 | 12.5 | 19.5 | 15.0 | 17.0 |
| 22 | 6.0 | 4.0 | 5.0 | 11.0 | 7.5 | 9.0 | 14.5 | 7.5 | 10.0 | 20.5 | 15.0 | 17.5 |
| 23 | 8.5 | 3.5 | 5.5 | 11.5 | 7.0 | 8.5 | 16.0 | 5.0 | 10.0 | 20.5 | 16.0 | 18.0 |
| 24 | 11.0 | 6.0 | 8.0 | 12.0 | 6.5 | 9.0 | 16.5 | 5.5 | 10.5 | 18.5 | 16.0 | 17.0 |
| 25 | 7.0 | 4.0 | 5.0 | 13.5 | 7.5 | 10.0 | 14.0 | 7.5 | 10.5 | 21.0 | 15.0 | 17.5 |
| 26 | 6.0 | 3.0 | 4.0 | 8.0 | 5.5 | 7.0 | 18.0 | 10.5 | 13.5 | 19.0 | 15.5 | 17.0 |
| 27 | 6.0 | 3.5 | 5.0 | 7.0 | 3.5 | 5.0 | 13.5 | 10.5 | 12.0 | 20.0 | 15.5 | 17.0 |
| 28 | 7.5 | 5.0 | 6.0 | 10.0 | 2.5 | 5.5 | 13.5 | 10.0 | 11.0 | 19.0 | 16.0 | 17.0 |
| 29 | --- | --- | --- | 11.5 | 3.5 | 7.0 | 14.0 | 8.5 | 11.0 | 21.0 | 15.0 | 17.5 |
| 30 | --- | --- | --- | 13.5 | 6.5 | 10.0 | 16.0 | 8.5 | 11.5 | 21.5 | 17.0 | 18.5 |
| 31 | --- | --- | --- | 14.5 | 9.0 | 10.5 | --- | --- | --- | 22.0 | 16.5 | 18.5 |
| MONTH | 11.0 | 1.0 | 5.0 | 14.5 | 2.5 | 8.0 | 18.0 | 2.5 | 10.0 | 22.0 | 9.0 | 15.5 |

BIG SANDY RIVER BASIN

03208040 RUSSELL FORK AT COUNCIL, VA

LOCATION.--Lat 37°04'41", long 82°03'56", Buchanan County, Hydrologic Unit 05070202, on left bank 50 ft (15 m) upstream from bridge on State Highway 80, 750 ft (229 m) downstream from Ball Creek, 0.6 mi (1.0 km) southeast of Council, and 4.7 mi (7.6 km) upstream from Hurricane Creek.

DRAINAGE AREA.--10.2 mi² (26.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,680 ft (512 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260 ft³/s (7.36 m³/s) Sept. 14, 1982, gage height, 2.60 ft (0.792 m), from rating curve extended above 140 ft³/s (4.0 m³/s); minimum, 0.22 ft³/s (0.006 m³/s) Sept. 13-15, 1981; minimum gage height, 0.63 ft (0.192 m) Sept. 13-15, Oct. 1, 1981.

EXTREMES FOR PERIOD JUNE 1981 TO SEPTEMBER 1982.--Peak discharges above base of 150 ft³/s (4.2 m³/s) and maximums (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------------|------|---|-------------------------|----------------|------|---|-------------------------|
| Feb. 3, 1982 | 0900 | 231 6.54 | 2.47 0.753 | June 13, 1982 | 0500 | 161 4.56 | 2.10 0.640 |
| May 31, 1982 | 2130 | 157 4.45 | 2.09 .637 | Sept. 14, 1982 | 1030 | *260 7.36 | 2.60 .792 |

June to September 1981: Minimum discharge, 0.22 ft³/s (0.006 m³/s) Sept. 13-15, gage height, 0.63 ft (0.192 m).

Water year 1982: Minimum discharge, 0.27 ft³/s (0.008 m³/s) Oct. 1, 14, 15, 20-23; minimum gage height, 0.63 ft (0.192 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE TO SEPTEMBER 1981
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| 1 | | | | | | | | | --- | 6.7 | .80 | .34 |
| 2 | | | | | | | | | --- | 4.3 | 1.3 | .30 |
| 3 | | | | | | | | | --- | 2.4 | 1.2 | .30 |
| 4 | | | | | | | | | --- | 2.2 | .89 | .71 |
| 5 | | | | | | | | | --- | 1.9 | .79 | .49 |
| 6 | | | | | | | | | --- | 2.5 | 5.9 | .73 |
| 7 | | | | | | | | | --- | 2.0 | 7.9 | .64 |
| 8 | | | | | | | | | --- | 1.5 | 16 | .52 |
| 9 | | | | | | | | | --- | 1.3 | 5.1 | .64 |
| 10 | | | | | | | | | --- | 1.2 | 3.2 | .39 |
| 11 | | | | | | | | | --- | 1.2 | 2.5 | .28 |
| 12 | | | | | | | | | --- | 1.0 | 2.1 | .27 |
| 13 | | | | | | | | | --- | .92 | 1.6 | .27 |
| 14 | | | | | | | | | --- | 2.2 | 1.2 | .22 |
| 15 | | | | | | | | | --- | 1.7 | 1.2 | 12 |
| 16 | | | | | | | | | --- | 5.2 | 3.3 | 9.7 |
| 17 | | | | | | | | | --- | 2.8 | 1.6 | 3.3 |
| 18 | | | | | | | | | 3.9 | 1.8 | 1.2 | 2.1 |
| 19 | | | | | | | | | 3.7 | 1.4 | 1.1 | 2.0 |
| 20 | | | | | | | | | 3.5 | 2.4 | .92 | 1.5 |
| 21 | | | | | | | | | 3.4 | 2.1 | .80 | 1.1 |
| 22 | | | | | | | | | 2.9 | 1.5 | .77 | .83 |
| 23 | | | | | | | | | 2.4 | 1.2 | .69 | .75 |
| 24 | | | | | | | | | 2.1 | 1.2 | .62 | .60 |
| 25 | | | | | | | | | 2.7 | 1.2 | .55 | .50 |
| 26 | | | | | | | | | 2.5 | .92 | .49 | .46 |
| 27 | | | | | | | | | 1.8 | .78 | .49 | .42 |
| 28 | | | | | | | | | 1.5 | 2.4 | .47 | .38 |
| 29 | | | | | | | | | 1.3 | 2.6 | .40 | .35 |
| 30 | | | | | | | | | 1.3 | 1.3 | .34 | .32 |
| 31 | | | | | | | | | --- | .96 | .34 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | --- | --- | 62.78 | 65.76 | 42.41 |
| MEAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.03 | 2.12 | 1.41 |
| MAX | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.7 | 16 | 12 |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | .78 | .34 | .22 |
| CFSM | --- | --- | --- | --- | --- | --- | --- | --- | --- | .20 | .21 | .14 |
| IN. | --- | --- | --- | --- | --- | --- | --- | --- | --- | .23 | .24 | .15 |

BIG SANDY RIVER BASIN

317

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|-------|------|------|-------|-------|-------|------|-------|--------|
| 1 | .50 | 1.4 | 1.9 | 8.1 | 24 | 38 | 10 | 18 | 74 | 4.6 | 4.0 | 8.1 |
| 2 | .88 | 1.3 | 1.8 | 7.2 | 23 | 28 | 9.3 | 15 | 52 | 4.0 | 2.6 | 6.3 |
| 3 | .58 | 1.1 | 1.3 | 67 | 128 | 22 | 8.6 | 12 | 28 | 3.7 | 1.9 | 3.8 |
| 4 | .49 | .97 | 1.5 | 72 | 56 | 19 | 8.0 | 10 | 46 | 3.7 | 1.6 | 2.7 |
| 5 | 1.1 | .94 | 1.8 | 33 | 34 | 19 | 7.6 | 9.2 | 88 | 3.6 | 1.3 | 2.0 |
| 6 | .87 | 1.0 | 1.5 | 17 | 25 | 17 | 7.9 | 8.3 | 46 | 3.0 | 1.2 | 1.5 |
| 7 | .58 | .92 | 1.4 | 18 | 19 | 54 | 6.5 | 8.1 | 26 | 2.8 | 1.0 | 1.3 |
| 8 | .49 | .91 | 1.2 | 18 | 16 | 53 | 6.3 | 9.4 | 28 | 3.1 | 1.1 | 1.2 |
| 9 | .49 | .70 | 1.1 | 15 | 43 | 42 | 6.9 | 7.7 | 47 | 3.0 | 2.5 | 1.1 |
| 10 | .44 | .58 | 1.0 | 9.8 | 48 | 40 | 6.2 | 7.4 | 83 | 2.7 | 1.7 | .92 |
| 11 | .41 | .52 | .80 | 6.3 | 34 | 34 | 6.1 | 6.9 | 48 | 2.5 | 1.2 | .88 |
| 12 | .41 | .45 | .74 | 7.0 | 26 | 29 | 6.1 | 6.5 | 33 | 2.3 | 1.0 | .76 |
| 13 | .41 | .36 | 1.0 | 6.2 | 23 | 28 | 6.1 | 6.1 | 121 | 2.1 | .90 | .69 |
| 14 | .33 | .45 | 2.9 | 5.6 | 19 | 27 | 5.9 | 5.3 | 57 | 1.9 | .78 | 41 |
| 15 | .28 | .52 | 6.9 | 5.0 | 19 | 41 | 5.4 | 4.6 | 32 | 1.6 | .67 | 15 |
| 16 | .37 | .58 | 6.8 | 3.7 | 42 | 48 | 4.8 | 4.3 | 22 | 1.5 | 1.7 | 7.4 |
| 17 | .35 | .68 | 7.4 | 2.8 | 96 | 36 | 5.0 | 3.9 | 18 | 1.3 | 2.2 | 4.5 |
| 18 | .46 | .63 | 8.1 | 3.2 | 85 | 26 | 5.1 | 7.1 | 13 | 1.2 | 1.1 | 3.3 |
| 19 | .54 | .58 | 5.9 | 6.0 | 58 | 30 | 4.4 | 24 | 10 | 2.6 | .84 | 3.0 |
| 20 | .34 | 1.4 | 4.6 | 30 | 39 | 48 | 4.9 | 21 | 8.7 | 2.9 | .64 | 2.5 |
| 21 | .27 | .98 | 4.5 | 55 | 34 | 61 | 4.7 | 11 | 7.3 | 1.7 | .62 | 2.0 |
| 22 | .27 | .71 | 16 | 44 | 26 | 48 | 4.3 | 8.1 | 7.8 | 3.8 | .56 | 1.8 |
| 23 | 3.5 | .59 | 21 | 30 | 22 | 34 | 4.0 | 8.4 | 6.1 | 3.2 | .56 | 1.6 |
| 24 | 1.9 | 1.9 | 15 | 22 | 20 | 24 | 3.7 | 8.4 | 4.6 | 1.9 | .85 | 1.4 |
| 25 | 1.1 | 1.8 | 10 | 18 | 16 | 21 | 3.8 | 6.6 | 4.2 | 1.6 | 11 | 1.4 |
| 26 | 2.4 | 1.6 | 7.2 | 13 | 14 | 19 | 7.4 | 6.0 | 7.0 | 1.3 | 3.3 | 1.7 |
| 27 | 3.4 | 1.4 | 6.1 | 12 | 49 | 15 | 15 | 6.9 | 9.1 | 1.2 | 1.9 | 2.3 |
| 28 | 3.0 | 1.3 | 4.4 | 8.9 | 59 | 13 | 51 | 8.4 | 7.9 | 2.1 | 1.5 | 1.2 |
| 29 | 2.1 | 1.2 | 3.5 | 7.5 | --- | 12 | 36 | 9.1 | 6.2 | 3.7 | 1.2 | 1.1 |
| 30 | 1.7 | 1.1 | 2.8 | 7.1 | --- | 12 | 23 | 7.6 | 5.4 | 4.0 | 1.1 | .92 |
| 31 | 1.5 | --- | 5.8 | 14 | --- | 12 | --- | 24 | --- | 7.2 | 6.5 | --- |
| TOTAL | 31.46 | 28.57 | 155.94 | 572.4 | 1097 | 950 | 284.0 | 299.3 | 946.3 | 85.8 | 59.02 | 123.37 |
| MEAN | 1.01 | .95 | 5.03 | 18.5 | 39.2 | 30.6 | 9.47 | 9.65 | 31.5 | 2.77 | 1.90 | 4.11 |
| MAX | 3.5 | 1.9 | 21 | 72 | 128 | 61 | 51 | 24 | 121 | 7.2 | 11 | 41 |
| MIN | .27 | .36 | .74 | 2.8 | 14 | 12 | 3.7 | 3.9 | 4.2 | 1.2 | .56 | .69 |
| CFSM | .10 | .09 | .49 | 1.81 | 3.84 | 3.00 | .93 | .95 | 3.09 | .27 | .19 | .40 |
| IN. | .11 | .10 | .57 | 2.09 | 4.00 | 3.46 | 1.04 | 1.09 | 3.45 | .31 | .22 | .45 |

WTR YR 1982 TOTAL 4633.16 MEAN 12.7 MAX 128 MIN .27 CFSM 1.25 IN 16.90

BIG SANDY RIVER BASIN

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, February 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1981 to January 1983.

INSTRUMENTATION.--Water-quality monitor since June 18, 1981. Automatic pumping sampler since Aug. 14, 1981.

REMARKS.--Unpublished records of specific conductance and dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR JUNE 1981 TO JANUARY 1983.--

WATER TEMPERATURES: June to September 1981: Maximum recorded during period, 29.0°C July 11; minimum recorded, 10.5°C Sept. 24.

Water year 1982: Maximum recorded, 28.5°C Aug. 6; minimum recorded, 0.0°C on several days during January and February.

October 1982 to January 1983: Maximum recorded during period, 19.5°C Oct. 2; minimum recorded, 0.0°C Dec. 12-14, Jan. 4.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|-------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|
| FEB | | | | | | | | | | | |
| 26... | 1115 | 11 | 160 | 7.5 | 6.0 | -- | 54 | -- | 12 | 5.8 | 5.3 |
| AUG | | | | | | | | | | | |
| 15... | 1545 | 1.0 | 293 | 8.1 | -- | -- | 120 | 56 | 27 | 13 | 10 |
| 16... | 0400 | 3.1 | 232 | 7.8 | -- | -- | 96 | 39 | 22 | 10 | 8.0 |
| 16... | 0915 | 4.1 | 242 | 7.9 | -- | -- | 100 | 46 | 24 | 10 | 8.7 |
| 16... | 1545 | 2.6 | 242 | 8.1 | -- | -- | 100 | 46 | 24 | 10 | 9.3 |
| 17... | 1545 | 1.4 | 242 | 8.2 | -- | -- | 120 | 53 | 27 | 12 | 10 |
| 18... | 1545 | 1.0 | 273 | 8.4 | -- | -- | 120 | 54 | 27 | 12 | 10 |
| 21... | 1015 | .80 | 325 | 8.2 | -- | -- | 130 | 47 | 29 | 14 | 10 |
| 23... | 1015 | .69 | 332 | 8.3 | -- | -- | 130 | 47 | 31 | 13 | 11 |
| 24... | 1015 | .58 | 320 | 8.1 | 22.0 | 7.2 | 120 | 47 | 30 | 12 | 12 |
| 25... | 1015 | .58 | 339 | 8.3 | -- | -- | 140 | 60 | 32 | 15 | 12 |
| 27... | 1015 | .49 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 1015 | .41 | 352 | 8.2 | -- | -- | 150 | 66 | 35 | 16 | 13 |
| 31... | 1015 | .34 | 367 | 8.1 | -- | -- | 160 | 62 | 36 | 16 | 13 |
| SEP | | | | | | | | | | | |
| 04... | 1100 | .92 | 352 | 8.2 | -- | -- | 140 | -- | 34 | 14 | 12 |
| 06... | 1100 | .33 | 352 | 8.3 | -- | -- | 150 | -- | 35 | 14 | 12 |
| 09... | 1100 | .58 | 352 | 8.3 | -- | -- | 140 | -- | 33 | 14 | 12 |
| 15... | 1630 | 46 | 173 | 7.6 | -- | -- | 70 | 31 | 15 | 7.8 | 4.6 |
| 16... | 0645 | 12 | 236 | 8.0 | -- | -- | 94 | 41 | 21 | 10 | 6.8 |
| 21... | 1100 | 1.2 | 315 | 8.1 | -- | -- | 130 | 61 | 30 | 14 | 9.2 |

BIG SANDY RIVER BASIN

319

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1981

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | BARIUM, DIS- SOLVED (UG/L AS BA) |
|--------------|---|---|---|---|--|---|--|--|---|---|--|
| FEB 26... | 1.6 | 21 | 32 | 7.7 | <.1 | 6.8 | 98 | .91 | .030 | 20 | 40 |
| AUG 15... | 2.5 | 65 | 56 | 9.8 | -- | -- | 163 | -- | -- | -- | -- |
| 16... | 3.0 | 57 | 36 | 9.9 | -- | -- | 170 | -- | -- | -- | -- |
| 16... | 3.0 | 59 | 40 | 9.5 | -- | -- | 151 | -- | -- | -- | -- |
| 16... | 3.0 | 61 | 36 | 9.4 | -- | -- | 151 | -- | -- | -- | -- |
| 17... | 2.7 | 64 | 42 | 9.7 | -- | -- | 180 | -- | -- | -- | -- |
| 18... | 2.7 | 69 | 44 | 9.6 | -- | -- | 182 | -- | -- | -- | -- |
| 21... | 2.7 | 83 | 53 | 9.1 | -- | -- | 188 | -- | -- | -- | -- |
| 23... | 2.6 | 84 | 56 | 15 | -- | -- | 198 | -- | -- | -- | -- |
| 24... | 2.6 | 77 | 67 | 11 | -- | -- | 201 | -- | -- | 200 | -- |
| 25... | 2.7 | 82 | 57 | 11 | -- | -- | 188 | -- | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | 3.2 | 87 | 60 | 9.9 | -- | -- | 213 | -- | -- | -- | -- |
| 31... | 3.0 | 94 | 62 | 9.9 | -- | -- | 215 | -- | -- | -- | -- |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 04... | 3.9 | 83 | 69 | 11 | -- | -- | 213 | -- | -- | -- | -- |
| 06... | 2.9 | 87 | 64 | 10 | -- | -- | 208 | -- | -- | -- | -- |
| 09... | 2.9 | 86 | 61 | 10 | -- | -- | 210 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 15... | 2.7 | 39 | 30 | 5.3 | -- | -- | 108 | -- | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 16... | 2.5 | 53 | 40 | 7.9 | -- | -- | 135 | -- | -- | -- | -- |
| 21... | 2.1 | 71 | 55 | 8.9 | -- | -- | 179 | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | CADMIUM DIS- SOLVED (UG/L AS CD) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | STRON- TIUM, DIS- SOLVED (UG/L AS SR) | ZINC, DIS- SOLVED (UG/L AS ZN) | SEDI- MENT, SUS- PENDED (MG/L) |
|--------------|--|--|---|--|--|---|--|--|--|--|
| FEB 26... | <1 | 1 | 200 | 40 | <1 | 20 | 20 | 60 | 10 | -- |
| AUG 15... | -- | -- | 2100 | 40 | -- | 140 | 1 | -- | -- | -- |
| 16... | -- | -- | 1600 | 30 | -- | 160 | <1 | -- | -- | -- |
| 16... | -- | -- | 6100 | 30 | -- | 250 | <1 | -- | -- | -- |
| 16... | -- | -- | 970 | <10 | -- | 60 | <1 | -- | -- | -- |
| 17... | -- | -- | 410 | 60 | -- | 40 | <1 | -- | -- | -- |
| 18... | -- | -- | 280 | 70 | -- | 30 | 2 | -- | -- | -- |
| 21... | -- | -- | 750 | 30 | -- | 80 | 10 | -- | -- | -- |
| 23... | -- | -- | 720 | 40 | -- | 70 | 60 | -- | -- | -- |
| 24... | -- | -- | 420 | 70 | -- | 70 | 50 | -- | -- | -- |
| 25... | -- | -- | 840 | 30 | -- | 70 | 50 | -- | -- | -- |
| 27... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 29... | -- | -- | 790 | 30 | -- | 90 | <10 | -- | -- | -- |
| 31... | -- | -- | 1000 | 30 | -- | 100 | <10 | -- | -- | -- |
| SEP 04... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 34 |
| 04... | -- | -- | 650 | 30 | -- | 90 | 10 | -- | -- | -- |
| 06... | -- | -- | 710 | 40 | -- | 80 | <10 | -- | -- | -- |
| 09... | -- | -- | 1100 | 60 | -- | 120 | <10 | -- | -- | -- |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 252 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 338 |
| 15... | -- | -- | 19000 | 50 | -- | 680 | <10 | -- | -- | 689 |
| 15... | -- | -- | -- | -- | -- | -- | -- | -- | -- | 617 |
| 16... | -- | -- | 2800 | 30 | -- | 120 | <10 | -- | -- | -- |
| 21... | -- | -- | 480 | 70 | -- | 60 | 20 | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | HARD- NESS NONCAR- BONATE (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|-------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|
| OCT | | | | | | | | | | | |
| 01... | 1355 | .34 | 365 | 7.8 | -- | -- | 150 | 65 | 34 | 15 | 14 |
| 14... | 0915 | .41 | 362 | 8.2 | -- | -- | 140 | 56 | 34 | 14 | 14 |
| 20... | 1340 | .33 | 349 | 7.8 | -- | -- | 140 | 50 | 31 | 14 | 16 |
| 28... | 1510 | 2.6 | 263 | 8.1 | -- | -- | 110 | -- | 26 | 11 | 11 |
| NOV | | | | | | | | | | | |
| 09... | 1220 | .69 | 303 | 7.9 | 8.0 | -- | 120 | 41 | 27 | 12 | 14 |
| DEC | | | | | | | | | | | |
| 30... | 1330 | 3.4 | 227 | 7.4 | -- | -- | 85 | 45 | 19 | 9.0 | 11 |
| JAN | | | | | | | | | | | |
| 03... | 0400 | 52 | 188 | 7.4 | -- | -- | 64 | 16 | 15 | 6.4 | 8.9 |
| 03... | 0530 | 108 | 180 | 7.4 | -- | -- | 62 | 10 | 14 | 6.5 | 7.6 |
| 03... | 0635 | 125 | 148 | 7.4 | -- | -- | 54 | 25 | 12 | 5.8 | 5.4 |
| 03... | 0720 | 125 | 150 | 7.3 | -- | -- | 55 | 17 | 11 | 6.8 | 8.7 |
| 19... | 1300 | 46 | 166 | 7.3 | -- | -- | 47 | 27 | 11 | 4.7 | 10 |
| 19... | 1410 | 100 | 160 | 7.2 | -- | -- | 43 | 24 | 9.9 | 4.4 | 9.3 |
| 19... | 1510 | 107 | 164 | 7.3 | -- | -- | 48 | 25 | 11 | 4.9 | 9.1 |
| 19... | 1535 | 50 | 159 | 7.4 | -- | -- | 44 | 23 | 10 | 4.6 | 9.1 |
| FEB | | | | | | | | | | | |
| 03... | 0645 | 180 | 118 | 7.1 | -- | -- | 45 | 19 | 9.9 | 4.9 | 3.9 |
| 03... | 0850 | 227 | 105 | 7.1 | -- | -- | 38 | 14 | 8.3 | 4.1 | 3.2 |
| 03... | 1130 | 195 | 98 | 7.2 | -- | -- | 37 | 16 | 7.9 | 4.1 | 3.2 |
| JUN | | | | | | | | | | | |
| 01... | 1735 | 74 | 121 | 7.4 | -- | -- | 48 | 16 | 11 | 5.1 | 3.0 |
| AUG | | | | | | | | | | | |
| 25... | 1500 | 15 | 185 | 6.8 | 21.5 | 8.2 | 72 | 19 | 17 | 7.2 | 5.5 |
| SEP | | | | | | | | | | | |
| 14... | 0945 | 44 | 171 | 7.1 | -- | -- | 57 | .00 | 14 | 5.4 | 4.1 |
| 14... | 1005 | 124 | 123 | 7.1 | -- | -- | 45 | -- | 11 | 4.3 | 3.4 |
| 14... | 1035 | 231 | 127 | 7.3 | -- | -- | 49 | 15 | 12 | 4.5 | 3.2 |
| 14... | 1535 | 42 | 141 | 7.4 | -- | -- | 50 | 13 | 12 | 4.9 | 3.9 |

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|-------|---|---|---|---|---|--|---|---|--|---|--|
| OCT | | | | | | | | | | | |
| 01... | 2.9 | 82 | 72 | 11 | -- | 213 | -- | 1900 | 440 | 130 | 17 |
| 14... | 2.7 | 87 | 60 | 16 | -- | 202 | -- | 510 | 93 | 50 | 26 |
| 20... | 2.7 | 85 | 57 | 12 | -- | 212 | -- | 790 | 120 | 110 | 26 |
| 28... | 4.6 | -- | 30 | 13 | -- | 159 | -- | 460 | 83 | 50 | 4 |
| NOV | | | | | | | | | | | |
| 09... | 2.3 | 76 | 51 | 12 | -- | 163 | -- | 440 | 47 | 80 | 6 |
| DEC | | | | | | | | | | | |
| 30... | 2.2 | 40 | 40 | 12 | -- | 138 | -- | 430 | 28 | 50 | <1 |
| JAN | | | | | | | | | | | |
| 03... | 2.5 | 48 | 25 | 10 | -- | 104 | -- | 67000 | 120 | 2800 | 6 |
| 03... | 2.1 | 52 | 23 | 10 | -- | 99 | -- | 90000 | 140 | 3500 | 5 |
| 03... | 2.4 | 29 | 24 | 7.4 | -- | 88 | -- | 40000 | 110 | 1500 | 3 |
| 03... | 2.9 | 38 | 23 | 7.2 | -- | 82 | -- | 35000 | 100 | 1400 | 3 |
| 19... | 1.6 | 20 | 20 | 16 | -- | 91 | -- | 8300 | 68 | 640 | 3 |
| 19... | 1.8 | 19 | 20 | 15 | -- | 88 | -- | 6500 | 67 | 340 | 2 |
| 19... | 2.3 | 23 | 22 | 12 | -- | 92 | -- | 13000 | 72 | 710 | 2 |
| 19... | 1.6 | 21 | 21 | 11 | -- | 89 | -- | 7700 | 65 | 440 | 2 |
| FEB | | | | | | | | | | | |
| 03... | 1.6 | 26 | 23 | 5.2 | -- | 78 | -- | 47000 | 36 | 1800 | <1 |
| 03... | 2.0 | 24 | 22 | 4.7 | -- | 69 | -- | 38000 | 54 | 1400 | 2 |
| 03... | 2.5 | 21 | 23 | 4.8 | -- | 68 | -- | 9700 | 57 | 370 | 2 |
| JUN | | | | | | | | | | | |
| 01... | 1.8 | 32 | 27 | 3.3 | -- | 85 | -- | 8300 | 51 | 290 | 1 |
| AUG | | | | | | | | | | | |
| 25... | 3.1 | 53 | 30 | 6.2 | 5.6 | 119 | 200 | 21000 | 160 | 550 | 25 |
| SEP | | | | | | | | | | | |
| 14... | 7.3 | 62 | 24 | 8.3 | 2.8 | 101 | <100 | 65000 | 120 | 2700 | 4 |
| 14... | 2.7 | -- | 16 | 3.5 | 2.6 | 75 | <100 | 65000 | 140 | 3200 | 8 |
| 14... | 2.4 | 34 | 16 | 3.1 | 2.9 | 77 | 200 | 100000 | 170 | 5400 | 14 |
| 14... | 2.5 | 37 | 20 | 4.2 | 6.5 | 93 | <100 | 6200 | 54 | 300 | 1 |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|----------|------|------|----------|------|------|---------|------|------|------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | | |
| 1 | --- | --- | --- | 14.5 | 8.5 | 11.5 | --- | --- | --- | 6.5 | 3.5 | 5.0 |
| 2 | 17.0 | 10.0 | 13.0 | 15.5 | 9.5 | 12.0 | --- | --- | --- | 5.5 | 1.5 | 3.5 |
| 3 | 14.0 | 8.5 | 11.0 | 16.0 | 10.0 | 13.0 | --- | --- | --- | 8.5 | 4.0 | 7.0 |
| 4 | 15.0 | 8.5 | 11.5 | 16.0 | 11.0 | 13.5 | 5.0 | 4.0 | 4.5 | 9.0 | 5.5 | 8.0 |
| 5 | 17.0 | 11.0 | 13.5 | 14.5 | 12.0 | 13.0 | 4.0 | 2.0 | 3.5 | 6.0 | 4.0 | 5.0 |
| 6 | 17.0 | 12.5 | 14.5 | 13.5 | 9.0 | 11.5 | 3.5 | .5 | 1.5 | 6.5 | 4.0 | 6.0 |
| 7 | 16.5 | 13.0 | 14.5 | 10.5 | 6.5 | 8.5 | 6.0 | .5 | 3.0 | 7.5 | 4.0 | 6.5 |
| 8 | 15.5 | 9.5 | 12.5 | 11.0 | 4.0 | 7.5 | 6.0 | 2.5 | 5.0 | 4.0 | 2.0 | 3.0 |
| 9 | 14.0 | 9.5 | 12.0 | 11.0 | 6.0 | 8.5 | 3.0 | .5 | 1.5 | 2.0 | .0 | 1.0 |
| 10 | 13.0 | 12.0 | 12.5 | 12.5 | 7.5 | 9.5 | .5 | .5 | .5 | .0 | .0 | .0 |
| 11 | 15.5 | 13.0 | 13.5 | 10.5 | 6.0 | 8.0 | 2.5 | .5 | 1.0 | .0 | .0 | .0 |
| 12 | 14.5 | 12.0 | 13.5 | --- | --- | --- | 3.5 | .5 | 1.5 | .0 | .0 | .0 |
| 13 | 15.5 | 10.0 | 12.5 | --- | --- | --- | 2.5 | .5 | 1.0 | .0 | .0 | .0 |
| 14 | 15.0 | 9.0 | 12.0 | --- | --- | --- | 2.0 | 1.0 | 1.5 | .5 | .0 | .5 |
| 15 | 13.0 | 10.5 | 12.0 | --- | --- | --- | 3.0 | 1.0 | 2.0 | .5 | .0 | .5 |
| 16 | 14.5 | 12.5 | 13.5 | --- | --- | --- | 3.5 | .5 | 1.5 | .5 | .0 | .5 |
| 17 | 16.5 | 10.5 | 13.5 | --- | --- | --- | 3.5 | .5 | 2.0 | .0 | .0 | .0 |
| 18 | 15.0 | 12.0 | 14.0 | --- | --- | --- | 2.5 | .5 | 1.0 | .0 | .0 | .0 |
| 19 | 12.0 | 8.5 | 10.0 | --- | --- | --- | 1.0 | .5 | .5 | 1.5 | .0 | .5 |
| 20 | 12.5 | 6.0 | 9.0 | --- | --- | --- | 1.0 | .5 | .5 | 6.0 | 3.0 | 5.0 |
| 21 | 13.5 | 7.0 | 10.0 | --- | --- | --- | .5 | .5 | .5 | 7.0 | 6.0 | 6.5 |
| 22 | 13.0 | 10.0 | 11.5 | --- | --- | --- | 1.5 | .5 | .5 | 6.5 | 6.0 | 6.0 |
| 23 | 12.5 | 8.5 | 11.0 | --- | --- | --- | 6.0 | 1.5 | 5.0 | 8.0 | 4.5 | 6.5 |
| 24 | 12.5 | 6.5 | 9.0 | --- | --- | --- | 5.0 | 4.0 | 4.5 | 4.0 | 1.5 | 2.5 |
| 25 | 11.0 | 7.0 | 9.0 | --- | --- | --- | 4.5 | 2.0 | 3.5 | 4.0 | 1.0 | 2.5 |
| 26 | 14.5 | 11.0 | 13.0 | --- | --- | --- | 6.0 | 1.5 | 3.5 | 1.5 | .0 | .5 |
| 27 | 15.5 | 12.5 | 13.5 | --- | --- | --- | 7.0 | 2.5 | 4.5 | .5 | .0 | .0 |
| 28 | 13.0 | 10.0 | 11.5 | --- | --- | --- | 7.5 | 2.5 | 5.0 | 2.5 | .0 | 1.0 |
| 29 | 16.5 | 9.0 | 12.0 | --- | --- | --- | 6.0 | 1.5 | 4.0 | 3.5 | .0 | --- |
| 30 | 16.5 | 9.0 | 12.0 | --- | --- | --- | 2.5 | .5 | 1.0 | 6.5 | 1.5 | 3.5 |
| 31 | 15.5 | 8.5 | 11.5 | --- | --- | --- | 4.5 | 1.0 | 2.5 | 9.0 | 4.5 | 7.0 |
| MONTH | 17.0 | 6.0 | 12.0 | 16.0 | 4.0 | 10.5 | 7.5 | .5 | 2.5 | 9.0 | .0 | 3.0 |
| | | | | | | | | | | | | |
| FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | |
| 1 | 6.0 | 3.0 | 4.5 | --- | --- | --- | 17.0 | 7.0 | 11.5 | 16.0 | 9.0 | 12.5 |
| 2 | --- | --- | --- | --- | --- | --- | 16.5 | 6.5 | 11.5 | 15.5 | 11.0 | 12.5 |
| 3 | 8.0 | 6.0 | 7.0 | --- | --- | --- | 18.0 | 9.0 | 13.5 | 20.0 | 10.0 | 14.5 |
| 4 | 7.0 | 5.0 | 6.0 | --- | --- | --- | 15.5 | 6.5 | 10.5 | 21.0 | 9.5 | 15.0 |
| 5 | 8.0 | 5.0 | 6.5 | --- | --- | --- | 13.5 | 6.5 | 10.0 | 22.0 | 10.5 | 15.5 |
| 6 | 6.5 | .5 | --- | --- | --- | --- | 10.0 | 4.5 | 7.0 | 22.0 | 12.0 | 16.5 |
| 7 | 4.5 | .0 | 1.5 | --- | --- | --- | 13.0 | 3.0 | 7.0 | 19.0 | 13.5 | 16.0 |
| 8 | 5.5 | .0 | 3.0 | --- | --- | --- | 8.0 | 5.0 | 6.5 | 17.5 | 12.5 | 15.0 |
| 9 | 6.0 | 3.5 | 5.0 | --- | --- | --- | 8.5 | 5.5 | 7.0 | 19.5 | 10.0 | 14.5 |
| 10 | 5.5 | 2.5 | 3.5 | --- | --- | --- | 14.0 | 5.0 | 8.0 | 22.0 | 10.5 | 16.0 |
| 11 | --- | --- | --- | --- | --- | --- | 12.5 | 4.5 | 8.5 | 23.0 | 11.5 | 17.0 |
| 12 | --- | --- | --- | --- | --- | --- | 18.5 | 6.5 | 11.5 | 24.0 | 12.5 | 17.5 |
| 13 | --- | --- | --- | --- | --- | --- | 16.5 | 10.5 | 12.5 | 24.0 | 13.5 | 18.5 |
| 14 | --- | --- | --- | --- | --- | --- | 19.0 | 10.5 | 14.0 | 24.5 | 14.0 | 18.5 |
| 15 | 7.0 | 5.0 | 6.0 | --- | --- | --- | 22.0 | 9.5 | 15.0 | 22.5 | 14.5 | 18.5 |
| 16 | 8.0 | 7.0 | 7.5 | --- | --- | --- | 21.0 | 13.5 | 17.0 | 23.0 | 15.0 | 18.5 |
| 17 | --- | --- | --- | 15.0 | 9.0 | 11.0 | 17.0 | 13.0 | 15.5 | 24.0 | 15.0 | 19.5 |
| 18 | --- | --- | --- | 15.5 | 7.5 | 10.5 | 21.0 | 9.5 | 14.5 | 22.0 | 15.0 | 18.5 |
| 19 | --- | --- | --- | 13.0 | 9.0 | 10.5 | 15.5 | 10.0 | 12.5 | --- | --- | --- |
| 20 | --- | --- | --- | 12.0 | 10.0 | 11.0 | 17.0 | 11.0 | 13.5 | --- | --- | --- |
| 21 | --- | --- | --- | 12.0 | 9.0 | 10.5 | 19.0 | 11.5 | 15.0 | --- | --- | --- |
| 22 | --- | --- | --- | --- | --- | --- | 18.0 | 9.0 | 12.0 | --- | --- | --- |
| 23 | --- | --- | --- | --- | --- | --- | 19.0 | 6.5 | 12.0 | --- | --- | --- |
| 24 | --- | --- | --- | 12.5 | 6.0 | 9.0 | 19.0 | 7.0 | 12.5 | --- | --- | --- |
| 25 | --- | --- | --- | 15.5 | 7.0 | 11.0 | 16.0 | 9.0 | 12.5 | --- | --- | --- |
| 26 | --- | --- | --- | 9.5 | 5.5 | 7.5 | 20.5 | 11.5 | 15.5 | --- | --- | --- |
| 27 | --- | --- | --- | 8.5 | 3.5 | 5.0 | 15.0 | 11.0 | 13.5 | --- | --- | --- |
| 28 | --- | --- | --- | 12.0 | 1.5 | 6.0 | 16.0 | 10.0 | 12.0 | --- | --- | --- |
| 29 | --- | --- | --- | 14.0 | 3.0 | 8.0 | 16.5 | 8.5 | 12.0 | --- | --- | --- |
| 30 | --- | --- | --- | 16.0 | 7.0 | 11.0 | 18.5 | 8.5 | 13.0 | --- | --- | --- |
| 31 | --- | --- | --- | 16.0 | 10.0 | 12.0 | --- | --- | --- | --- | --- | --- |
| MONTH | 8.0 | .0 | 5.0 | 16.0 | 1.5 | 9.5 | 22.0 | 3.0 | 12.0 | 24.5 | 9.0 | 16.5 |

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

BIG SANDY RIVER BASIN

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|---------|------|------|----------|------|------|----------|------|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 18.0 | 13.0 | 15.5 | --- | --- | --- | 12.0 | 10.0 | 11.0 | 7.0 | 4.0 | 5.5 |
| 2 | 19.5 | 13.5 | 16.0 | --- | --- | --- | 13.5 | 10.5 | 11.5 | 7.0 | 5.0 | 6.0 |
| 3 | 18.5 | 14.5 | 16.5 | --- | --- | --- | 14.0 | 11.0 | 12.0 | 5.0 | 2.0 | 4.0 |
| 4 | 19.0 | 15.5 | 17.5 | --- | --- | --- | 14.5 | 11.0 | 12.0 | 4.5 | .0 | 2.0 |
| 5 | 19.0 | 16.5 | 17.5 | --- | --- | --- | 14.0 | 11.5 | 13.0 | --- | --- | --- |
| 6 | --- | --- | --- | 8.5 | 3.0 | 5.5 | 11.0 | 8.5 | 10.0 | --- | --- | --- |
| 7 | --- | --- | --- | 10.0 | 3.0 | 5.5 | 9.5 | 6.0 | 8.0 | --- | --- | --- |
| 8 | --- | --- | --- | 10.5 | 3.5 | 6.5 | 8.0 | 4.0 | 6.0 | --- | --- | --- |
| 9 | --- | --- | --- | 12.0 | 5.0 | 8.0 | 6.5 | 3.0 | 5.0 | --- | --- | --- |
| 10 | --- | --- | --- | 12.5 | 6.0 | 8.5 | 6.5 | 2.0 | 4.5 | --- | --- | --- |
| 11 | --- | --- | --- | 12.5 | 7.5 | 10.0 | 7.0 | 2.5 | 6.0 | --- | --- | --- |
| 12 | --- | --- | --- | 14.5 | 10.5 | 12.0 | 3.5 | .0 | 2.0 | --- | --- | --- |
| 13 | --- | --- | --- | 10.0 | 4.0 | 7.5 | 1.0 | .0 | .0 | --- | --- | --- |
| 14 | --- | --- | --- | 7.5 | 3.0 | 5.0 | 2.0 | .0 | 1.0 | --- | --- | --- |
| 15 | --- | --- | --- | 8.5 | 3.5 | 6.0 | 7.5 | 1.5 | 4.5 | --- | --- | --- |
| 16 | --- | --- | --- | 8.0 | 1.5 | 4.5 | 8.0 | 7.0 | 7.5 | --- | --- | --- |
| 17 | --- | --- | --- | 8.0 | 3.5 | 6.0 | 7.0 | 5.0 | 6.5 | --- | --- | --- |
| 18 | --- | --- | --- | 10.5 | 8.0 | 9.0 | 6.5 | 3.5 | 5.0 | --- | --- | --- |
| 19 | --- | --- | --- | 13.0 | 8.0 | 10.0 | 6.5 | 5.0 | 5.5 | --- | --- | --- |
| 20 | --- | --- | --- | 12.5 | 10.0 | 11.0 | 6.0 | 4.0 | 5.0 | --- | --- | --- |
| 21 | --- | --- | --- | 14.0 | 11.0 | 12.5 | 5.5 | 2.5 | 4.0 | --- | --- | --- |
| 22 | --- | --- | --- | 14.5 | 11.5 | 12.5 | 5.0 | 1.5 | 3.5 | --- | --- | --- |
| 23 | --- | --- | --- | 13.5 | 10.5 | 12.0 | 8.5 | 4.5 | 6.0 | --- | --- | --- |
| 24 | --- | --- | --- | 12.5 | 6.0 | 9.5 | 10.0 | 5.0 | 7.5 | --- | --- | --- |
| 25 | --- | --- | --- | 8.0 | 4.5 | 6.0 | 13.0 | 9.0 | 10.5 | --- | --- | --- |
| 26 | --- | --- | --- | 9.5 | 5.0 | 7.5 | 11.5 | 10.0 | 10.5 | --- | --- | --- |
| 27 | --- | --- | --- | 9.0 | 8.0 | 8.5 | 12.0 | 9.0 | 10.5 | --- | --- | --- |
| 28 | --- | --- | --- | 11.0 | 8.0 | 9.5 | 13.0 | 10.0 | 11.5 | --- | --- | --- |
| 29 | --- | --- | --- | 11.5 | 9.0 | 10.5 | 10.0 | 6.0 | 8.0 | --- | --- | --- |
| 30 | --- | --- | --- | 11.5 | 8.0 | 9.5 | 6.5 | 4.0 | 5.0 | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | 7.5 | 3.5 | 5.0 | --- | --- | --- |
| MONTH | 19.5 | 13.0 | 16.5 | 14.5 | 1.5 | 8.5 | 14.5 | .0 | 7.0 | 7.0 | .0 | 4.5 |

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA

LOCATION.--Lat 37°09'50", long 82°15'20", Dickenson County, Hydrologic Unit 05070202, on right bank 125 ft (38 m) upstream from bridge on State Highway 80, 150 ft (46 m) upstream from Fryingpan Creek, 1.3 mi (2.1 km) southeast of Birchleaf, and 3.5 mi (5.6 km) southeast of Haysi.

DRAINAGE AREA.--87.4 mi² (226.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good. Recording rain gage at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft³/s (98.3 m³/s) Sept. 14, 1982, gage height, 8.85 ft (2.697 m), from rating curve extended above 1,200 ft³/s (34 m³/s); minimum, 1.2 ft³/s (0.034 m³/s) Sept. 14, 15, 1981, gage height, 1.12 ft (0.341 m).

EXTREMES FOR PERIOD JULY 1981 TO SEPTEMBER 1982.--Peak discharges above base of 1,100 ft³/s (31 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------------|------|---|-------------------------|----------------|------|---|-------------------------|
| Jan. 3, 1982 | 0955 | 1300 36.8 | 5.81 1.771 | May 20, 1982 | 1610 | 1140 32.3 | 5.49 1.673 |
| Jan. 4, 1982 | 1020 | 1280 36.2 | 5.77 1.759 | Sept. 14, 1982 | 1425 | *3470 98.3 | 8.85 2.697 |
| Feb. 3, 1982 | 1210 | 1940 54.9 | 6.88 2.097 | | | | |

July to September 1981: Minimum discharge, 1.2 ft³/s (0.034 m³/s) Sept. 14, 15, gage height, 1.12 ft (0.341 m).

Water year 1982: Minimum discharge, 1.8 ft³/s (0.051 m³/s) Oct. 15; minimum gage height, 1.19 ft (0.363 m) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1981
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| 1 | | | | | | | | | | 18 | 3.7 | 3.0 |
| 2 | | | | | | | | | | 33 | 4.1 | 2.9 |
| 3 | | | | | | | | | | 23 | 5.8 | 2.9 |
| 4 | | | | | | | | | | 19 | 4.7 | 3.2 |
| 5 | | | | | | | | | | 16 | 3.5 | 2.6 |
| 6 | | | | | | | | | | 19 | 20 | 3.1 |
| 7 | | | | | | | | | | 22 | 30 | 14 |
| 8 | | | | | | | | | | 18 | 238 | 5.8 |
| 9 | | | | | | | | | | 15 | 43 | 4.9 |
| 10 | | | | | | | | | | 13 | 21 | 3.9 |
| 11 | | | | | | | | | | 11 | 15 | 3.0 |
| 12 | | | | | | | | | | 10 | 12 | 2.2 |
| 13 | | | | | | | | | | 9.6 | 9.9 | 1.9 |
| 14 | | | | | | | | | | 9.2 | 7.9 | 1.5 |
| 15 | | | | | | | | | | 11 | 7.3 | 91 |
| 16 | | | | | | | | | | 17 | 11 | 96 |
| 17 | | | | | | | | | | 25 | 13 | 30 |
| 18 | | | | | | | | | | 11 | 7.8 | 17 |
| 19 | | | | | | | | | | 8.9 | 6.7 | 12 |
| 20 | | | | | | | | | | 11 | 6.2 | 11 |
| 21 | | | | | | | | | | 17 | 5.2 | 9.2 |
| 22 | | | | | | | | | | 9.1 | 5.2 | 7.9 |
| 23 | | | | | | | | | | 6.1 | 5.2 | 6.6 |
| 24 | | | | | | | | | | 4.9 | 4.9 | 5.5 |
| 25 | | | | | | | | | | 4.4 | 4.3 | 4.5 |
| 26 | | | | | | | | | | 4.8 | 3.9 | 4.5 |
| 27 | | | | | | | | | | 3.9 | 3.7 | 3.8 |
| 28 | | | | | | | | | | 3.6 | 3.4 | 3.4 |
| 29 | | | | | | | | | | 12 | 2.9 | 2.9 |
| 30 | | | | | | | | | | 8.2 | 3.0 | 2.6 |
| 31 | | | | | | | | | | 5.0 | 3.1 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | --- | --- | 398.7 | 515.4 | 362.8 |
| MEAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | 12.9 | 16.6 | 12.1 |
| MAX | --- | --- | --- | --- | --- | --- | --- | --- | --- | 33 | 238 | 96 |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.6 | 2.9 | 1.5 |
| CFSM | --- | --- | --- | --- | --- | --- | --- | --- | --- | .15 | .19 | .14 |
| IN. | --- | --- | --- | --- | --- | --- | --- | --- | --- | .17 | .22 | .15 |

BIG SANDY RIVER BASIN

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|--------|
| 1 | 2.3 | 7.3 | 6.6 | 70 | 169 | 284 | 68 | 102 | 415 | 52 | 26 | 53 |
| 2 | 3.8 | 6.8 | 7.2 | 54 | 165 | 208 | 58 | 90 | 281 | 37 | 14 | 54 |
| 3 | 5.6 | 6.3 | 7.6 | 623 | 1050 | 164 | 61 | 88 | 152 | 30 | 10 | 31 |
| 4 | 3.8 | 6.0 | 7.1 | 752 | 500 | 133 | 56 | 72 | 110 | 28 | 8.4 | 19 |
| 5 | 3.2 | 6.2 | 8.1 | 273 | 252 | 123 | 50 | 62 | 245 | 23 | 8.2 | 13 |
| 6 | 2.9 | 7.3 | 8.6 | 133 | 176 | 106 | 54 | 55 | 166 | 18 | 9.1 | 9.6 |
| 7 | 3.5 | 6.9 | 8.3 | 114 | 126 | 404 | 47 | 51 | 109 | 16 | 7.6 | 7.8 |
| 8 | 3.8 | 5.3 | 8.5 | 117 | 103 | 419 | 43 | 62 | 77 | 21 | 5.7 | 6.6 |
| 9 | 3.2 | 4.5 | 8.0 | 105 | 203 | 346 | 45 | 52 | 105 | 18 | 14 | 6.3 |
| 10 | 3.4 | 4.5 | 7.6 | 80 | 322 | 322 | 44 | 45 | 262 | 16 | 13 | 5.7 |
| 11 | 3.3 | 4.5 | 6.9 | 54 | 233 | 270 | 40 | 40 | 203 | 15 | 8.4 | 5.2 |
| 12 | 2.7 | 3.7 | 6.2 | 60 | 172 | 220 | 38 | 36 | 124 | 15 | 6.5 | 4.8 |
| 13 | 2.3 | 2.9 | 5.4 | 54 | 151 | 209 | 37 | 33 | 484 | 12 | 5.5 | 4.4 |
| 14 | 2.1 | 3.7 | 7.8 | 49 | 120 | 229 | 37 | 29 | 313 | 11 | 4.8 | 939 |
| 15 | 2.0 | 4.6 | 17 | 44 | 116 | 362 | 34 | 26 | 162 | 10 | 4.2 | 220 |
| 16 | 2.7 | 5.2 | 22 | 34 | 354 | 423 | 32 | 24 | 104 | 9.0 | 9.0 | 82 |
| 17 | 2.5 | 5.9 | 21 | 23 | 873 | 357 | 31 | 24 | 97 | 8.6 | 40 | 45 |
| 18 | 4.5 | 6.0 | 30 | 26 | 628 | 234 | 34 | 42 | 71 | 10 | 14 | 30 |
| 19 | 6.8 | 5.3 | 24 | 37 | 361 | 226 | 29 | 186 | 54 | 16 | 8.5 | 24 |
| 20 | 5.6 | 6.2 | 22 | 250 | 246 | 443 | 30 | 455 | 46 | 20 | 6.0 | 19 |
| 21 | 4.8 | 6.1 | 19 | 594 | 201 | 554 | 32 | 257 | 35 | 12 | 5.3 | 16 |
| 22 | 4.5 | 5.9 | 84 | 420 | 160 | 329 | 27 | 132 | 33 | 9.2 | 4.8 | 15 |
| 23 | 8.2 | 5.3 | 170 | 260 | 128 | 232 | 25 | 154 | 31 | 9.1 | 5.1 | 13 |
| 24 | 22 | 4.9 | 92 | 200 | 117 | 175 | 24 | 146 | 24 | 9.6 | 7.2 | 11 |
| 25 | 9.2 | 6.6 | 56 | 146 | 100 | 139 | 26 | 111 | 21 | 8.1 | 63 | 11 |
| 26 | 7.8 | 7.5 | 40 | 105 | 84 | 126 | 47 | 92 | 27 | 7.1 | 40 | 11 |
| 27 | 13 | 8.0 | 31 | 95 | 184 | 100 | 207 | 246 | 119 | 6.3 | 17 | 15 |
| 28 | 21 | 8.4 | 25 | 96 | 416 | 83 | 301 | 134 | 182 | 9.8 | 12 | 13 |
| 29 | 13 | 7.3 | 19 | 55 | --- | 76 | 191 | 116 | 101 | 11 | 8.5 | 10 |
| 30 | 9.9 | 6.5 | 14 | 47 | --- | 73 | 131 | 84 | 72 | 23 | 6.9 | 9.1 |
| 31 | 8.6 | --- | 21 | 56 | --- | 72 | --- | 57 | --- | 31 | 39 | --- |
| TOTAL | 192.0 | 175.6 | 810.9 | 5026 | 7710 | 7441 | 1879 | 3103 | 4225 | 521.8 | 431.7 | 1703.5 |
| MEAN | 6.19 | 5.85 | 26.2 | 162 | 275 | 240 | 62.6 | 100 | 141 | 16.8 | 13.9 | 56.8 |
| MAX | 22 | 8.4 | 170 | 752 | 1050 | 554 | 301 | 455 | 484 | 52 | 63 | 939 |
| MIN | 2.0 | 2.9 | 5.4 | 23 | 84 | 72 | 24 | 24 | 21 | 6.3 | 4.2 | 4.4 |
| CFSM | .07 | .07 | .30 | 1.85 | 3.15 | 2.75 | .72 | 1.14 | 1.61 | .19 | .16 | .65 |
| IN. | .08 | .07 | .35 | 2.14 | 3.28 | 3.17 | .80 | 1.32 | 1.80 | .22 | .18 | .73 |

WTR YR 1982 TOTAL 33219.5 MEAN 91.0 MAX 1050 MIN 2.0 CFSM 1.04 IN 14.14

BIG SANDY RIVER BASIN

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03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, July 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1982 to January 1983.

WATER TEMPERATURES: April 1982 to January 1983.

INSTRUMENTATION.--Automatic pumping sampler since Aug. 13, 1981. Water-quality monitor since Apr. 14, 1982.

REMARKS.--Unpublished records of daily dissolved oxygen are available for some periods.

EXTREMES FOR APRIL 1982 TO JANUARY 1983.--

SPECIFIC CONDUCTANCE: April to September 1982: Maximum recorded during period, 603 micromhos July 30; minimum recorded, 72 micromhos May 20.

October 1982 to January 1983: Maximum recorded during period, 441 micromhos Oct. 4; minimum recorded, 82 micromhos Dec. 16.

WATER TEMPERATURES: April to September 1982: Maximum recorded during period, 30.5°C July 17, 25; minimum recorded, 9.5°C Apr. 23, 29.

October 1982 to January 1983: Maximum recorded during period, 22.5°C Oct. 6; minimum recorded, 0.0°C Dec. 13-15.

WATER QUALITY DATA, JULY TO SEPTEMBER 1981

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|--------------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|---|
| JUL 06... | 1445 | 18 | 390 | 8.2 | 24.0 | 7.6 | -- | -- | -- | -- | -- | -- |
| AUG 24... | 1400 | 4.7 | 435 | 8.7 | 26.0 | 8.4 | 140 | 40 | 31 | 15 | 35 | 2.8 |
| 26... | 1645 | 3.8 | 490 | 8.2 | 25.0 | 8.4 | 160 | 46 | 36 | 16 | 44 | 3.0 |
| SEP 24... | 1100 | 5.2 | 446 | 8.2 | -- | -- | 150 | 45 | 34 | 15 | 35 | 3.4 |

| DATE | ALKA- LITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | PHOS- PHORUS, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC IN BOT- TOM MA- TERIAL (UG/G AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) |
|--------------|---|---|---|--|---|--|--|---|---|-------------------------------------|--|---|
| JUL 06... | 90 | 72 | -- | -- | -- | 226 | -- | -- | -- | -- | -- | -- |
| AUG 24... | 99 | 100 | 9.5 | .1 | 2.8 | 279 | .04 | <.010 | -- | 2 | <1 | 100 |
| 26... | 110 | 110 | 10 | -- | -- | 324 | -- | -- | 200 | -- | -- | -- |
| SEP 24... | 102 | 98 | 9.5 | -- | -- | 268 | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1981

| DATE | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) | COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) |
|--------------|---|--|--|--|--|---|--|---|--|--|---|--|
| JUL 06... | -- | -- | -- | -- | -- | -- | -- | 2100 | 10 | -- | -- | -- |
| AUG 24... | 3 | <1 | 10 | 4 | <10 | 3 | 28 | 300 | 10 | 5900 | 11 | <10 |
| 26... | -- | -- | -- | -- | -- | -- | -- | 710 | 30 | -- | -- | -- |
| SEP 24... | -- | -- | -- | -- | -- | -- | -- | 720 | 15 | -- | -- | -- |

< Actual value is known to be less than the value shown.

| DATE | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) | SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) | SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) | CYANIDE TOTAL (MG/L AS CN) | SEDI- MENT, SUS- PENDED (MG/L) |
|--------------|---|--|---|---|--|--|---|---|---|--|-------------------------------------|--|
| JUL 06... | 50 | <10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 39 |
| AUG 24... | 30 | <10 | 230 | <.1 | <.01 | <1 | <1 | 1 | 10 | 20 | <.01 | 11 |
| 26... | 30 | <10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 24... | 50 | <10 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

< Actual value is known to be less than the value shown.

BIG SANDY RIVER BASIN

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03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|-------|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|
| OCT | | | | | | | | | | | |
| 01... | 1010 | 2.9 | 530 | 8.0 | -- | -- | 160 | 34 | 36 | 16 | 48 |
| 14... | 1100 | 2.1 | 592 | 8.2 | -- | -- | 137 | .00 | 30 | 15 | 71 |
| 20... | 0950 | 5.6 | 545 | 8.2 | -- | -- | 170 | 31 | 38 | 18 | 59 |
| 29... | 1110 | 12 | 479 | 8.3 | -- | -- | 150 | 40 | 34 | 16 | 39 |
| NOV | | | | | | | | | | | |
| 12... | 1115 | 3.8 | 556 | 8.3 | 5.5 | -- | 140 | .00 | 31 | 14 | 73 |
| DEC | | | | | | | | | | | |
| 22... | 1940 | 130 | 221 | 7.8 | -- | -- | 70 | 30 | 16 | 7.4 | 15 |
| 23... | 0510 | 210 | 195 | 7.8 | -- | -- | 65 | 30 | 15 | 6.7 | 11 |
| 23... | 0610 | 200 | 200 | 7.8 | -- | -- | 61 | 23 | 14 | 6.3 | 12 |
| 23... | 1140 | 165 | 200 | 7.7 | -- | -- | 58 | 21 | 13 | 6.2 | 13 |
| JAN | | | | | | | | | | | |
| 03... | 0355 | 99 | 182 | 7.5 | -- | -- | 65 | 28 | 15 | 6.8 | 11 |
| 03... | 0455 | 165 | 177 | 7.6 | -- | -- | 56 | 19 | 13 | 5.6 | 7.6 |
| 03... | 0535 | 246 | 178 | 7.8 | -- | -- | 64 | 24 | 15 | 6.5 | 8.7 |
| 03... | 0600 | 343 | 172 | 7.6 | -- | -- | 61 | 21 | 13 | 7.0 | 9.8 |
| 03... | 0625 | 460 | 160 | 7.6 | -- | -- | 52 | 19 | 12 | 5.4 | 5.4 |
| 03... | 0700 | 595 | 152 | 7.5 | -- | -- | 53 | 22 | 12 | 5.7 | 7.3 |
| 03... | 0705 | 667 | 152 | 7.4 | -- | -- | 57 | 23 | 12 | 6.6 | 9.0 |
| 06... | 1125 | 130 | 164 | 7.5 | -- | -- | 56 | 31 | 12 | 6.3 | 5.7 |
| 21... | 0600 | 393 | 121 | 7.3 | -- | -- | 40 | 21 | 8.9 | 4.3 | 4.0 |
| 21... | 0945 | 588 | 104 | 7.4 | -- | -- | 37 | 15 | 8.4 | 4.0 | 3.6 |
| 21... | 1410 | 734 | 114 | 7.2 | -- | -- | 42 | 25 | 9.2 | 4.5 | 3.9 |
| 22... | 0140 | 588 | 107 | 7.2 | -- | -- | 38 | 22 | 8.4 | 4.1 | 3.8 |
| 22... | 0400 | 520 | 116 | 7.3 | -- | -- | 37 | 18 | 8.1 | 4.0 | 3.9 |
| FER | | | | | | | | | | | |
| 03... | 0515 | 568 | 125 | 7.1 | -- | -- | 51 | 31 | 11 | 5.7 | 5.3 |
| 03... | 0605 | 709 | 120 | 7.2 | -- | -- | 45 | 21 | 10 | 4.9 | 4.1 |
| 03... | 0700 | 885 | 123 | 7.3 | -- | -- | 44 | 20 | 9.8 | 4.8 | 4.0 |
| 03... | 0755 | 1080 | 120 | 7.3 | -- | -- | 45 | 21 | 9.8 | 4.9 | 3.8 |
| 03... | 0900 | 1380 | 123 | 7.2 | -- | -- | 47 | 21 | 10 | 5.3 | 3.9 |
| JUN | | | | | | | | | | | |
| 01... | 1655 | 363 | 130 | 7.3 | -- | -- | 46 | 18 | 10 | 5.0 | 3.7 |
| AUG | | | | | | | | | | | |
| 26... | 0925 | 42 | 275 | 8.0 | 19.0 | 7.9 | 87 | 17 | 20 | 9.1 | 22 |
| SEP | | | | | | | | | | | |
| 14... | 0845 | 57 | 277 | 7.6 | -- | -- | 88 | 18 | 20 | 9.3 | 21 |
| 14... | 0937 | 109 | 342 | 7.7 | -- | -- | 100 | 18 | 23 | 11 | 31 |
| 14... | 1004 | 178 | 342 | 7.8 | -- | -- | 99 | 12 | 23 | 10 | 27 |
| 14... | 1008 | 262 | 284 | 7.6 | -- | -- | 92 | 12 | 22 | 8.9 | 24 |
| 14... | 1014 | 361 | 263 | 7.6 | -- | -- | 79 | 9.0 | 19 | 7.6 | 22 |
| 14... | 1022 | 482 | 281 | 7.7 | -- | -- | 78 | 3.0 | 18 | 8.1 | 26 |
| 14... | 1508 | 2890 | 130 | 7.3 | -- | -- | 44 | 16 | 10 | 4.5 | 5.0 |
| 14... | 1532 | 2570 | 118 | 7.2 | -- | -- | 44 | .00 | 10 | 4.5 | 3.5 |
| 14... | 1558 | 2280 | 118 | 7.3 | -- | -- | 42 | 16 | 9.8 | 4.3 | 3.3 |
| 14... | 1612 | 2000 | 118 | 7.3 | -- | -- | 42 | 15 | 9.9 | 4.3 | 4.2 |
| 14... | 1650 | 1740 | 119 | 7.3 | -- | -- | 48 | 7.0 | 12 | 4.4 | 3.1 |
| 14... | 1710 | 1500 | 119 | 7.3 | -- | -- | 47 | 10 | 11 | 4.8 | 3.9 |

BIG SANDY RIVER BASIN

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|-------|---|---|---|---|---|--|---|---|--|---|--|
| OCT | | | | | | | | | | | |
| 01... | 3.1 | 122 | 120 | 12 | -- | 306 | -- | 2400 | 12 | 40 | <1 |
| 14... | 3.5 | 146 | 130 | 17 | -- | 369 | -- | 970 | 20 | 50 | 10 |
| 20... | 3.5 | 138 | 130 | 12 | -- | 345 | -- | 340 | 14 | 30 | 4 |
| 29... | 3.3 | 110 | 95 | 11 | -- | 277 | -- | 470 | 33 | 20 | 9 |
| NOV | | | | | | | | | | | |
| 12... | 2.7 | 140 | 140 | 16 | -- | 314 | -- | 840 | 23 | 50 | 5 |
| DEC | | | | | | | | | | | |
| 22... | 3.5 | 40 | 43 | 11 | -- | 132 | -- | 2200 | 30 | 120 | 2 |
| 23... | 1.8 | 35 | 39 | 8.6 | -- | 113 | -- | 1500 | 33 | 130 | <1 |
| 23... | 1.9 | 38 | 37 | 7.9 | -- | 114 | -- | 3100 | 30 | 180 | <1 |
| 23... | 1.7 | 37 | 37 | 7.2 | -- | 124 | -- | 3800 | 25 | 180 | <1 |
| JAN | | | | | | | | | | | |
| 03... | 1.6 | 37 | 35 | 16 | -- | 107 | -- | 10000 | 70 | 300 | 2 |
| 03... | 1.7 | 37 | 27 | 4.4 | -- | 86 | -- | 9500 | 41 | 300 | <1 |
| 03... | 4.1 | 40 | 31 | 7.1 | -- | 105 | -- | 1500 | 140 | 420 | 5 |
| 03... | 1.8 | 40 | 31 | 4.4 | -- | 99 | -- | 24000 | 180 | 780 | 6 |
| 03... | 1.8 | 33 | 26 | 4.2 | -- | 87 | -- | 21000 | 61 | 750 | 3 |
| 03... | 1.6 | 31 | 30 | 3.9 | -- | 98 | -- | 2000 | 66 | 880 | 5 |
| 03... | 1.7 | 34 | 37 | 6.1 | -- | 91 | -- | 25000 | 61 | 1100 | 3 |
| 06... | 3.2 | 25 | 40 | 5.4 | -- | 101 | -- | 9100 | 19 | 630 | <1 |
| 21... | 1.4 | 19 | 25 | 2.8 | -- | 70 | -- | 2000 | 52 | 110 | 1 |
| 21... | 1.8 | 22 | 23 | 3.0 | -- | 68 | -- | 3700 | 62 | 200 | 2 |
| 21... | 1.7 | 17 | 24 | 3.1 | -- | 70 | -- | 4900 | 63 | 250 | 2 |
| 22... | 1.5 | 16 | 24 | 2.6 | -- | 69 | -- | 2500 | 57 | 130 | 3 |
| 22... | 3.4 | 19 | 25 | 4.8 | -- | 72 | -- | 1600 | 59 | 100 | 2 |
| FEB | | | | | | | | | | | |
| 03... | 1.4 | 20 | 32 | 3.6 | -- | 87 | -- | 10000 | 31 | 280 | 1 |
| 03... | 1.4 | 24 | 30 | 3.0 | -- | 82 | -- | 17000 | 53 | 330 | 2 |
| 03... | 1.5 | 24 | 28 | 3.3 | -- | 77 | -- | 22000 | 52 | 470 | 2 |
| 03... | 1.5 | 24 | 27 | 3.0 | -- | 78 | -- | 27000 | 87 | 620 | 3 |
| 03... | 1.5 | 26 | 28 | 3.2 | -- | 86 | -- | 26000 | 160 | 1400 | 6 |
| JUN | | | | | | | | | | | |
| 01... | 1.5 | 28 | 32 | 2.2 | -- | 85 | -- | 5900 | 43 | 240 | 2 |
| AUG | | | | | | | | | | | |
| 26... | 2.5 | 70 | 57 | 4.5 | 6.0 | 173 | 200 | 6700 | 74 | 170 | 9 |
| SEP | | | | | | | | | | | |
| 14... | 2.4 | 70 | 52 | 4.3 | 2.7 | 160 | <100 | 14000 | 14 | 670 | <1 |
| 14... | 2.6 | 85 | 75 | 5.6 | 2.7 | 214 | <100 | 12000 | 17 | 580 | <1 |
| 14... | 2.7 | 87 | 66 | 5.7 | 2.6 | 196 | <100 | 15000 | 53 | 760 | 2 |
| 14... | 2.7 | 80 | 53 | 6.2 | 2.6 | 171 | <100 | 47000 | 8 | 1400 | <1 |
| 14... | 2.6 | 70 | 39 | 5.0 | 2.8 | 157 | <100 | 39000 | 57 | 1600 | 1 |
| 14... | 2.5 | 75 | 59 | 4.8 | 3.1 | 172 | 300 | 38000 | 140 | 1500 | 6 |
| 14... | 2.5 | 28 | 21 | 2.2 | 5.0 | 73 | <100 | 53000 | 150 | 2200 | 5 |
| 14... | 2.4 | 47 | 20 | 2.2 | 5.3 | 70 | <100 | 51000 | 110 | 2400 | 7 |
| 14... | 2.2 | 26 | 20 | 1.7 | 5.2 | 70 | <100 | 52000 | 110 | 2300 | 5 |
| 14... | 2.4 | 27 | 20 | 1.7 | 5.3 | 73 | <100 | 44000 | 130 | 1900 | 5 |
| 14... | 2.0 | 41 | 20 | 1.7 | 5.4 | 70 | 200 | 44000 | 110 | 1900 | 5 |
| 14... | 2.3 | 37 | 21 | 1.7 | 6.0 | 71 | <100 | 37000 | 33 | 1700 | 3 |

< Actual value is known to be less than the value shown.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), APRIL TO SEPTEMBER 1982

YEAR

BIG SANDY RIVER BASIN

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO JANUARY 1983

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|---------|-----|------|----------|-----|------|----------|-----|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 406 | 390 | 396 | 299 | 296 | 297 | 122 | 110 | 118 | 179 | 170 | 176 |
| 2 | 421 | 397 | 407 | 302 | 298 | 300 | 109 | 100 | 103 | 185 | 177 | 180 |
| 3 | 439 | 409 | 418 | 301 | 283 | 295 | 130 | 110 | 119 | 191 | 185 | 187 |
| 4 | 441 | 409 | 425 | 285 | 242 | 265 | 140 | 130 | 135 | 203 | 191 | 196 |
| 5 | 424 | 418 | 421 | 236 | 162 | 190 | 148 | 139 | 144 | 214 | 203 | 208 |
| 6 | 418 | 414 | 416 | 161 | 155 | 157 | 157 | 146 | 152 | --- | --- | --- |
| 7 | 414 | 411 | 412 | 166 | 157 | 162 | 173 | 158 | 168 | --- | --- | --- |
| 8 | 415 | 412 | 413 | 172 | 166 | 169 | 176 | 169 | 173 | --- | --- | --- |
| 9 | 415 | 314 | 388 | 183 | 172 | 177 | 186 | 174 | 180 | --- | --- | --- |
| 10 | 412 | 215 | 260 | 195 | 183 | 187 | 195 | 186 | 190 | --- | --- | --- |
| 11 | 235 | 220 | 228 | 205 | 196 | 200 | 204 | 195 | 200 | --- | --- | --- |
| 12 | 240 | 236 | 238 | 209 | 205 | 206 | 194 | 183 | 187 | --- | --- | --- |
| 13 | 239 | 181 | 225 | 216 | 206 | 210 | 197 | 181 | 186 | --- | --- | --- |
| 14 | 175 | 152 | 156 | 220 | 203 | 212 | 219 | 187 | 205 | --- | --- | --- |
| 15 | 173 | 157 | 164 | 222 | 215 | 218 | 214 | 185 | 201 | --- | --- | --- |
| 16 | 190 | 174 | 182 | 223 | 213 | 218 | 181 | 82 | 110 | --- | --- | --- |
| 17 | 206 | 191 | 199 | 212 | 195 | 206 | 105 | 85 | 94 | --- | --- | --- |
| 18 | 224 | 207 | 214 | 205 | 201 | 203 | 120 | 106 | 114 | --- | --- | --- |
| 19 | 233 | 224 | 228 | 213 | 204 | 209 | 136 | 122 | 131 | --- | --- | --- |
| 20 | 240 | 234 | 238 | 210 | 200 | 204 | 145 | 136 | 142 | --- | --- | --- |
| 21 | 269 | 239 | 252 | 199 | 190 | 195 | 156 | 145 | 151 | --- | --- | --- |
| 22 | 275 | 251 | 260 | 188 | 110 | 143 | 167 | 155 | 162 | --- | --- | --- |
| 23 | 260 | 241 | 248 | 116 | 110 | 112 | 163 | 159 | 162 | --- | --- | --- |
| 24 | 268 | 248 | 256 | 138 | 116 | 127 | 172 | 162 | 167 | --- | --- | --- |
| 25 | 284 | 259 | 265 | 148 | 138 | 144 | 171 | 165 | 167 | --- | --- | --- |
| 26 | 295 | 268 | 281 | 152 | 146 | 148 | 171 | 153 | 163 | --- | --- | --- |
| 27 | 332 | 289 | 313 | 151 | 147 | 149 | 153 | 143 | 146 | --- | --- | --- |
| 28 | 332 | 324 | 327 | 149 | 139 | 145 | 154 | 147 | 151 | --- | --- | --- |
| 29 | 334 | 324 | 329 | 144 | 109 | 127 | 159 | 153 | 155 | --- | --- | --- |
| 30 | 323 | 305 | 315 | 121 | 107 | 112 | 162 | 157 | 160 | --- | --- | --- |
| 31 | 305 | 296 | 298 | --- | --- | --- | 170 | 162 | 165 | --- | --- | --- |
| MONTH | 441 | 152 | 296 | 302 | 107 | 190 | 219 | 82 | 155 | 214 | 170 | 189 |

TEMPERATURE, WATER (DEG. C), APRIL TO SEPTEMBER 1982

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|----------|------|------|------|-------|------|------|--------|------|------|-----------|------|------|
| FEBRUARY | | | | MARCH | | | APRIL | | | MAY | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | --- | --- | --- | 14.5 | 12.0 | 13.5 |
| 3 | | | | | | | --- | --- | --- | 14.5 | 12.5 | 13.5 |
| 4 | | | | | | | --- | --- | --- | 16.5 | 12.5 | 14.5 |
| 5 | | | | | | | --- | --- | --- | 18.0 | 13.0 | 15.5 |
| | | | | | | | --- | --- | --- | 19.0 | 14.0 | 16.5 |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | --- | --- | --- | 19.0 | 15.5 | 17.5 |
| 8 | | | | | | | --- | --- | --- | 18.5 | 16.5 | 17.5 |
| 9 | | | | | | | --- | --- | --- | 17.5 | 16.0 | 17.0 |
| 10 | | | | | | | --- | --- | --- | 18.0 | 14.0 | 16.0 |
| | | | | | | | --- | --- | --- | 19.5 | 15.0 | 17.5 |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | --- | --- | --- | 20.5 | 16.0 | 18.5 |
| 13 | | | | | | | --- | --- | --- | 21.5 | 17.0 | 19.0 |
| 14 | | | | | | | --- | --- | --- | 22.0 | 18.0 | 20.0 |
| 15 | | | | | | | --- | --- | --- | 22.0 | 18.5 | 20.5 |
| | | | | | | | 18.5 | 13.0 | 15.5 | 21.5 | 18.5 | 20.0 |
| 16 | | | | | | | 18.5 | 15.0 | 16.5 | 21.5 | 18.5 | 20.0 |
| 17 | | | | | | | 17.0 | 15.0 | 16.5 | 23.0 | 19.0 | 21.0 |
| 18 | | | | | | | 18.0 | 12.5 | 15.0 | 23.0 | 17.5 | 20.5 |
| 19 | | | | | | | 15.0 | 13.0 | 14.0 | 18.5 | 16.0 | 17.0 |
| 20 | | | | | | | 15.0 | 12.5 | 13.5 | 16.5 | 14.0 | 15.0 |
| | | | | | | | | | | | | |
| 21 | | | | | | | 17.5 | 13.0 | 15.0 | 17.5 | 14.0 | 15.5 |
| 22 | | | | | | | 16.5 | 12.0 | 13.5 | 19.0 | 16.0 | 17.5 |
| 23 | | | | | | | 16.5 | 9.5 | 13.0 | 19.5 | 16.0 | 17.5 |
| 24 | | | | | | | 17.0 | 10.0 | 13.5 | 18.0 | 16.0 | 17.0 |
| 25 | | | | | | | 15.0 | 11.5 | 13.5 | 20.0 | 16.0 | 18.0 |
| | | | | | | | | | | | | |
| 26 | | | | | | | 16.5 | 13.0 | 14.5 | 19.5 | 17.0 | 17.5 |
| 27 | | | | | | | 15.0 | 12.0 | 13.5 | 17.5 | 14.5 | 16.5 |
| 28 | | | | | | | 14.0 | 10.0 | 12.0 | 18.5 | 16.0 | 17.5 |
| 29 | | | | | | | 13.5 | 9.5 | 12.0 | 20.5 | 17.0 | 18.5 |
| 30 | | | | | | | 14.5 | 11.0 | 13.0 | 22.0 | 18.5 | 20.5 |
| 31 | | | | | | | --- | --- | --- | 23.5 | 20.5 | 22.0 |
| MONTH | | | | | | | 18.5 | 9.5 | 14.0 | 23.5 | 12.0 | 17.5 |
| | | | | | | | | | | | | |
| JUNE | | | | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 22.5 | 16.0 | 17.5 | 23.5 | 20.0 | 21.5 | 24.5 | 23.0 | 23.5 | 21.0 | 20.5 | 20.5 |
| 2 | 18.0 | 15.5 | 17.0 | 24.5 | 19.5 | 22.0 | 26.0 | 22.5 | 24.0 | 21.5 | 20.0 | 21.0 |
| 3 | 18.0 | 16.5 | 17.5 | 24.0 | 21.0 | 22.5 | 26.5 | 22.5 | 24.5 | 22.5 | 20.0 | 21.0 |
| 4 | 18.0 | 17.5 | 18.0 | 25.0 | 21.5 | 23.0 | 28.0 | 23.0 | 25.0 | 22.0 | 19.0 | 20.5 |
| 5 | 17.5 | 16.0 | 16.5 | 26.5 | 21.5 | 24.0 | 24.5 | 23.5 | 24.0 | 23.0 | 18.0 | 20.0 |
| | | | | | | | | | | | | |
| 6 | 16.5 | 15.0 | 16.0 | 27.5 | 22.5 | 24.5 | 29.5 | 23.0 | 25.5 | 24.0 | 18.5 | 20.5 |
| 7 | 19.5 | 16.0 | 17.5 | 27.0 | 23.0 | 25.0 | 28.5 | 24.0 | 26.0 | 24.0 | 18.5 | 20.5 |
| 8 | 20.5 | 18.0 | 19.0 | 25.5 | 23.0 | 24.5 | 29.5 | 24.0 | 26.0 | 24.0 | 19.0 | 21.0 |
| 9 | 20.5 | 18.0 | 19.5 | 25.5 | 22.5 | 24.0 | 25.5 | 24.0 | 24.5 | 25.0 | 19.5 | 22.0 |
| 10 | 19.5 | 17.0 | 18.0 | 27.5 | 23.0 | 24.5 | 28.0 | 23.0 | 25.0 | 25.0 | 19.0 | 21.5 |
| | | | | | | | | | | | | |
| 11 | 19.5 | 16.0 | 17.5 | 26.5 | 24.0 | 25.0 | 27.0 | 22.5 | 24.5 | 24.5 | 19.0 | 21.5 |
| 12 | 19.0 | 17.5 | 18.5 | 28.5 | 24.0 | 25.5 | 25.0 | 21.5 | 23.0 | 25.0 | 19.5 | 22.0 |
| 13 | 18.5 | 16.0 | 17.0 | 26.0 | 23.0 | 24.0 | 26.0 | 19.5 | 22.5 | 24.0 | 21.0 | 22.5 |
| 14 | 18.0 | 15.0 | 16.5 | 28.0 | 22.0 | 24.5 | 27.5 | 20.5 | 23.5 | 22.0 | 18.0 | 19.5 |
| 15 | 18.0 | 16.0 | 17.0 | 28.5 | 23.0 | 25.5 | 28.0 | 21.0 | 24.0 | 20.0 | 18.0 | 19.0 |
| | | | | | | | | | | | | |
| 16 | 20.5 | 18.0 | 19.0 | 29.5 | 23.5 | 26.5 | 24.5 | 21.5 | 23.0 | 21.0 | 19.5 | 20.0 |
| 17 | 20.0 | 19.0 | 19.5 | 30.5 | 24.0 | 27.0 | 23.5 | 21.0 | 22.0 | 22.0 | 19.0 | 20.0 |
| 18 | 22.0 | 18.0 | 20.0 | 26.5 | 24.0 | 25.5 | 25.5 | 21.5 | 23.0 | 20.5 | 19.0 | 19.5 |
| 19 | 23.0 | 20.5 | 21.5 | 26.5 | 23.0 | 24.5 | 27.5 | 20.5 | 23.5 | 20.0 | 19.0 | 19.5 |
| 20 | 23.5 | 20.5 | 22.0 | 25.5 | 23.5 | 24.5 | 27.5 | 21.0 | 23.5 | 19.0 | 17.5 | 18.5 |
| | | | | | | | | | | | | |
| 21 | 23.5 | 20.0 | 21.5 | 29.5 | 23.5 | 26.0 | 27.5 | 21.5 | 23.5 | 17.5 | 15.5 | 16.5 |
| 22 | 22.5 | 20.0 | 21.0 | 29.5 | 23.5 | 26.0 | 26.5 | 19.5 | 22.5 | 16.5 | 14.5 | 15.5 |
| 23 | 23.0 | 20.0 | 21.5 | 28.0 | 24.0 | 25.5 | 24.5 | 19.5 | 22.0 | 17.5 | 13.5 | 15.0 |
| 24 | 23.0 | 19.0 | 21.0 | 29.0 | 23.5 | 25.5 | 24.5 | 20.5 | 22.5 | 16.5 | 14.0 | 15.0 |
| 25 | 23.0 | 20.0 | 21.5 | 30.5 | 23.5 | 26.0 | 23.0 | 21.5 | 22.0 | 17.0 | 14.5 | 15.5 |
| | | | | | | | | | | | | |
| 26 | 24.0 | 21.0 | 22.5 | 30.0 | 24.0 | 26.5 | 23.0 | 20.0 | 21.5 | 16.0 | 15.0 | 15.5 |
| 27 | 23.0 | 19.0 | 20.5 | 29.5 | 24.0 | 26.5 | 22.5 | 20.0 | 21.0 | 16.0 | 15.0 | 15.5 |
| 28 | 20.5 | 17.5 | 19.0 | 29.0 | 24.5 | 26.0 | 24.5 | 20.5 | 22.0 | 18.5 | 14.5 | 16.0 |
| 29 | 20.5 | 18.5 | 19.5 | 26.5 | 24.5 | 25.5 | 25.0 | 19.5 | 22.0 | 20.0 | 15.0 | 17.0 |
| 30 | 22.5 | 20.0 | 21.0 | 26.5 | 24.0 | 25.0 | 23.0 | 20.0 | 21.5 | 20.0 | 15.5 | 17.0 |
| 31 | --- | --- | --- | 25.0 | 24.0 | 24.5 | 21.5 | 20.5 | 21.0 | --- | --- | --- |
| MONTH | 24.0 | 15.0 | 19.0 | 30.5 | 19.5 | 25.0 | 29.5 | 19.5 | 23.5 | 25.0 | 13.5 | 19.0 |
| YEAR | 30.5 | 9.5 | 20.0 | | | | | | | | | |

BIG SANDY RIVER BASIN

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|-------|---------|------|------|----------|------|------|----------|------|------|---------|-----|------|
| | OCTOBER | | | NOVEMBER | | | DECEMBER | | | JANUARY | | |
| 1 | 20.5 | 16.0 | 18.0 | 13.5 | 10.0 | 11.5 | 12.0 | 10.0 | 11.0 | 5.0 | 4.0 | 4.5 |
| 2 | 21.5 | 16.0 | 18.5 | 15.0 | 10.5 | 12.5 | 12.5 | 11.0 | 11.5 | 5.5 | 5.0 | 5.0 |
| 3 | 21.5 | 17.0 | 19.0 | 14.0 | 12.0 | 13.0 | 12.5 | 11.0 | 12.0 | 5.5 | 3.5 | 5.0 |
| 4 | 22.0 | 18.0 | 20.0 | 13.0 | 9.5 | 12.0 | 12.5 | 11.0 | 12.0 | 3.5 | 1.5 | 2.5 |
| 5 | 22.0 | 18.5 | 20.0 | 9.5 | 7.0 | 8.0 | 13.0 | 12.0 | 12.5 | 2.0 | .5 | 1.0 |
| 6 | 22.5 | 18.5 | 20.0 | 6.5 | 5.0 | 6.0 | 12.5 | 10.0 | 11.5 | --- | --- | --- |
| 7 | 20.5 | 18.5 | 19.5 | 6.0 | 4.5 | 5.0 | 10.0 | 7.5 | 8.5 | --- | --- | --- |
| 8 | 22.0 | 19.0 | 20.0 | 6.5 | 4.5 | 5.5 | 7.5 | 5.5 | 6.5 | --- | --- | --- |
| 9 | 19.5 | 18.5 | 19.0 | 7.5 | 5.0 | 6.5 | 5.5 | 4.0 | 5.0 | --- | --- | --- |
| 10 | 20.0 | 18.5 | 19.0 | 9.0 | 6.0 | 7.5 | 4.0 | 3.0 | 3.5 | --- | --- | --- |
| 11 | 19.5 | 18.0 | 19.0 | 9.5 | 7.5 | 8.5 | 5.5 | 4.0 | 5.0 | --- | --- | --- |
| 12 | 18.0 | 16.5 | 17.0 | 11.0 | 9.0 | 10.0 | 3.5 | 1.5 | 3.0 | --- | --- | --- |
| 13 | 16.5 | 14.5 | 15.5 | 10.5 | 6.5 | 9.0 | 1.5 | .0 | .5 | --- | --- | --- |
| 14 | 15.0 | 14.0 | 14.5 | 6.5 | 5.5 | 6.0 | 1.5 | .0 | .5 | --- | --- | --- |
| 15 | 15.0 | 13.0 | 14.0 | 6.5 | 4.5 | 5.5 | 1.0 | .0 | .5 | --- | --- | --- |
| 16 | 14.5 | 12.0 | 13.5 | 5.5 | 3.0 | 4.0 | 7.5 | 1.0 | 5.5 | --- | --- | --- |
| 17 | 12.5 | 10.5 | 11.5 | 5.5 | 3.5 | 4.5 | 7.0 | 5.5 | 6.0 | --- | --- | --- |
| 18 | 12.5 | 9.5 | 10.5 | 7.5 | 5.5 | 6.5 | 5.0 | 3.5 | 4.5 | --- | --- | --- |
| 19 | 13.0 | 10.0 | 11.0 | 10.0 | 7.5 | 8.5 | 5.0 | 4.0 | 4.5 | --- | --- | --- |
| 20 | 12.0 | 10.5 | 11.5 | 11.0 | 9.5 | 10.5 | 5.5 | 5.0 | 5.0 | --- | --- | --- |
| 21 | 12.5 | 11.5 | 12.0 | 12.0 | 11.0 | 11.5 | 5.0 | 3.5 | 4.5 | --- | --- | --- |
| 22 | 12.5 | 10.0 | 11.0 | 13.0 | 12.0 | 12.5 | 3.5 | 2.0 | 2.5 | --- | --- | --- |
| 23 | 11.0 | 9.0 | 10.0 | 12.5 | 11.5 | 12.0 | 5.5 | 3.5 | 4.5 | --- | --- | --- |
| 24 | 9.5 | 8.0 | 9.0 | 12.5 | 8.5 | 11.0 | 7.0 | 5.0 | 6.0 | --- | --- | --- |
| 25 | 9.5 | 8.5 | 9.0 | 8.5 | 6.0 | 7.0 | 10.5 | 7.0 | 8.5 | --- | --- | --- |
| 26 | 10.0 | 7.0 | 8.5 | 8.0 | 5.5 | 6.5 | 11.0 | 10.5 | 11.0 | --- | --- | --- |
| 27 | 10.0 | 6.5 | 8.0 | 8.5 | 8.0 | 8.0 | 11.5 | 10.5 | 11.0 | --- | --- | --- |
| 28 | 10.0 | 6.5 | 8.0 | 10.0 | 8.5 | 9.0 | 12.0 | 10.5 | 11.5 | --- | --- | --- |
| 29 | 10.5 | 6.5 | 8.5 | 11.0 | 10.0 | 10.5 | 11.5 | 8.0 | 10.0 | --- | --- | --- |
| 30 | 12.0 | 8.0 | 10.0 | 10.0 | 8.5 | 9.5 | 7.5 | 5.0 | 6.0 | --- | --- | --- |
| 31 | 13.0 | 9.0 | 10.5 | --- | --- | --- | 5.0 | 4.0 | 4.5 | --- | --- | --- |
| MONTH | 22.5 | 6.5 | 14.0 | 15.0 | 3.0 | 8.5 | 13.0 | .0 | 6.5 | 5.5 | .5 | 3.5 |

BIG SANDY RIVER BASIN

335

03208500 RUSSELL FORK AT HAYSI, VA

LOCATION.--Lat 37°12'25", long 82°17'45", Dickenson County, Hydrologic Unit 05070202, on right bank 180 ft (55 m) downstream from bridge on State Highway 63 (revised), at Haysi, and 700 ft (213 m) downstream from McClure River.

DRAINAGE AREA.--286 mi² (741 km²).

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1003: 1926-43. WSP 1385: 1928(M), 1929, 1933(M), 1935(M), 1937-38(M).

GAGE.--Water-stage recorder. Datum of gage is 1,237.61 ft (377.224 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1939, nonrecording gage at highway bridge 180 ft (55 m) upstream at same datum.

REMARKS.--Records good except those for period of doubtful or no gage-height record, Feb. 19 to May 28, which are fair. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 333 ft³/s (9.431 m³/s), 15.81 in/yr (402 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft³/s (1,670 m³/s) Apr. 4, 1977, gage height, 28.24 ft (8.608 m), from rating curve extended above 32,000 ft³/s (910 m³/s) on basis of slope-area measurement of peak flow; minimum observed, 0.2 ft³/s (0.006 m³/s) June 27, 28, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (130 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|----------|------|---|-------------------------|
| Jan. 4 | 1130 | 4800 136 | 6.94 2.115 | Sept. 14 | 1500 | *6220 176 | 7.88 2.402 |
| Feb. 3 | 1230 | 5170 146 | 7.19 2.192 | | | | |

Minimum discharge, 12 ft³/s (0.34 m³/s) Oct. 15, gage height, 1.64 ft (0.500 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|------|----------|----------|--------|-----------|----------|-------|------|------|------|
| 1 | 18 | 36 | 30 | 343 | 550 | 880 | 270 | 310 | 1060 | 194 | 121 | 644 |
| 2 | 24 | 32 | 32 | 270 | 540 | 700 | 230 | 300 | 861 | 133 | 71 | 584 |
| 3 | 29 | 30 | 33 | 2250 | 3250 | 560 | 230 | 330 | 509 | 108 | 52 | 202 |
| 4 | 23 | 29 | 33 | 2940 | 1490 | 460 | 210 | 280 | 380 | 102 | 44 | 114 |
| 5 | 22 | 29 | 38 | 1020 | 1000 | 420 | 190 | 230 | 788 | 90 | 45 | 78 |
| 6 | 20 | 34 | 37 | 580 | 650 | 350 | 210 | 200 | 601 | 76 | 45 | 61 |
| 7 | 22 | 33 | 32 | 480 | 450 | 1250 | 180 | 180 | 409 | 66 | 41 | 51 |
| 8 | 23 | 29 | 28 | 500 | 380 | 1400 | 160 | 220 | 296 | 70 | 33 | 44 |
| 9 | 20 | 26 | 27 | 420 | 700 | 1150 | 180 | 190 | 352 | 80 | 42 | 40 |
| 10 | 19 | 25 | 26 | 250 | 1150 | 1100 | 165 | 160 | 825 | 68 | 51 | 37 |
| 11 | 19 | 24 | 24 | 180 | 800 | 850 | 150 | 140 | 708 | 66 | 39 | 34 |
| 12 | 18 | 22 | 22 | 190 | 600 | 750 | 145 | 125 | 453 | 74 | 31 | 33 |
| 13 | 16 | 23 | 20 | 180 | 520 | 650 | 140 | 115 | 993 | 60 | 28 | 31 |
| 14 | 14 | 23 | 42 | 155 | 430 | 700 | 140 | 105 | 814 | 51 | 26 | 2330 |
| 15 | 13 | 23 | 77 | 140 | 400 | 1100 | 135 | 95 | 493 | 47 | 25 | 997 |
| 16 | 14 | 25 | 88 | 110 | 1200 | 1400 | 125 | 90 | 346 | 48 | 26 | 441 |
| 17 | 14 | 27 | 80 | 75 | 2580 | 1150 | 120 | 92 | 336 | 45 | 150 | 253 |
| 18 | 19 | 27 | 119 | 85 | 1680 | 820 | 130 | 120 | 257 | 47 | 71 | 170 |
| 19 | 29 | 25 | 90 | 120 | 1300 | 750 | 110 | 650 | 203 | 65 | 43 | 136 |
| 20 | 26 | 29 | 65 | 1100 | 800 | 1200 | 110 | 1150 | 180 | 65 | 33 | 110 |
| 21 | 20 | 31 | 60 | 1940 | 650 | 1600 | 120 | 900 | 140 | 52 | 30 | 93 |
| 22 | 18 | 29 | 150 | 1330 | 560 | 1100 | 110 | 600 | 135 | 40 | 28 | 84 |
| 23 | 30 | 25 | 573 | 1100 | 480 | 800 | 98 | 1200 | 129 | 42 | 26 | 74 |
| 24 | 68 | 28 | 406 | 800 | 400 | 650 | 92 | 680 | 102 | 66 | 41 | 65 |
| 25 | 47 | 31 | 248 | 600 | 350 | 500 | 100 | 660 | 90 | 44 | 254 | 61 |
| 26 | 51 | 31 | 174 | 450 | 300 | 450 | 170 | 560 | 94 | 36 | 156 | 60 |
| 27 | 86 | 32 | 138 | 280 | 450 | 380 | 600 | 1800 | 364 | 32 | 69 | 68 |
| 28 | 99 | 35 | 112 | 310 | 1150 | 330 | 750 | 600 | 546 | 42 | 50 | 62 |
| 29 | 67 | 33 | 92 | 240 | --- | 300 | 600 | 458 | 331 | 45 | 41 | 53 |
| 30 | 49 | 31 | 73 | 210 | --- | 290 | 380 | 331 | 242 | 76 | 36 | 48 |
| 31 | 41 | --- | 89 | 230 | --- | 280 | --- | 253 | --- | 159 | 151 | --- |
| TOTAL | 978 | 857 | 3058 | 18878 | 24810 | 24320 | 6350 | 13124 | 13037 | 2189 | 1899 | 7058 |
| MEAN | 31.5 | 28.6 | 98.6 | 609 | 886 | 785 | 212 | 423 | 435 | 70.6 | 61.3 | 235 |
| MAX | 99 | 36 | 573 | 2940 | 3250 | 1600 | 750 | 1800 | 1060 | 194 | 254 | 2330 |
| MIN | 13 | 22 | 20 | 75 | 300 | 280 | 92 | 90 | 90 | 32 | 25 | 31 |
| CFSM | .11 | .10 | .35 | 2.13 | 3.10 | 2.75 | .74 | 1.48 | 1.52 | .25 | .21 | .82 |
| IN. | .13 | .11 | .40 | 2.46 | 3.23 | 3.16 | .83 | 1.71 | 1.70 | .28 | .25 | .92 |
| CAL YR 1981 TOTAL | 69773 | | | MEAN 191 | MAX 3350 | MIN 11 | CFSM .67 | IN 9.08 | | | | |
| WTR YR 1982 TOTAL | 116558 | | | MEAN 319 | MAX 3250 | MIN 13 | CFSM 1.12 | IN 15.16 | | | | |

BIG SANDY RIVER BASIN

03208680 NORTH FORK POUND RIVER LAKE AT POUND, VA

LOCATION.--Lat 37°07'27", long 82°37'52", Wise County, Hydrologic Unit 05070202, in control tower of North Fork Pound Dam at Pound, 1,200 ft (366 m) upstream from Stacy Branch, and 1.2 mi (1.9 km) upstream from South Fork Pound River.

DRAINAGE AREA.--17.2 mi² (44.5 km²).

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 29, 1966, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by rockfill dam. Spillway with crest at elevation 1,644.0 ft (501.09 m) is in a saddle 350 ft (107 m) southeast of dam. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,556.5 ft (474.42 m). Storage began in September 1964 during construction with peak discharge affected thereafter; initial filling for regular operation started July 13, 1966. Total capacity at elevation 1,644.0 ft (501.09 m), top of spillway, is 11,290 acre-ft (13.9 hm³) of which 8,110 acre-ft (10.0 hm³) is flood-control storage for summer operations between elevations 1,611.0 ft (491.03 m) top of summer conservation pool, and 1,644.0 ft (501.09 m); an additional 1,290 acre-ft (1.59 hm³) is available for flood control during the period December to March between elevations 1,601.0 ft (487.98 m), top of winter conservation pool, and 1,611.0 ft (491.03 m); contents at established minimum pool, 1,601.0 ft (487.98 m), is 1,900 acre-ft (2.34 hm³); dead storage is 7 acre-ft (8,630 m³) below elevation 1,556.5 ft (474.42 m). Figures given herein represent total contents. Lake is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Capacity tables furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,920 acre-ft (8.53 hm³) Apr. 8, 1977, elevation, 1,629.41 ft (496.644 m); minimum (after initial filling for regular operation), 1,660 acre-ft (2.05 hm³) Jan. 23, 1969, elevation, 1,598.62 ft (487.259 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,430 acre-ft (6.70 hm³) Sept. 15, elevation, 1,623.11 ft (494.724 m); minimum, 1,980 acre-ft (2.44 hm³) Dec. 4, elevation, 1,601.77 ft (488.219 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 1611.71 | 3300 | |
| Oct. 31..... | 1606.68 | 2570 | -730 |
| Nov. 30..... | 1601.93 | 1990 | -580 |
| Dec. 31..... | 1602.32 | 2040 | +50 |
| CAL YR 1981..... | | | +10 |
| Jan. 31..... | 1602.29 | 2030 | -10 |
| Feb. 28..... | 1603.16 | 2130 | +100 |
| Mar. 31..... | 1602.14 | 2020 | -110 |
| Apr. 30..... | 1606.04 | 2480 | +460 |
| May 31..... | 1610.30 | 3080 | +600 |
| June 30..... | 1611.11 | 3200 | +120 |
| July 31..... | 1611.76 | 3300 | +100 |
| Aug. 31..... | 1611.33 | 3240 | -60 |
| Sept. 30..... | 1611.23 | 3220 | -20 |
| WTR YR 1982..... | | | -80 |

03208700 NORTH FORK POUND RIVER AT POUND, VA.

LOCATION.--Lat 37°07'32", long 82°37'36", Wise County, Hydrologic Unit 05070202, on right bank at Pound, 700 ft (213 m) downstream from Stacy Branch, 1,600 ft (488 m) downstream from North Fork Pound River Dam, and 0.9 mi (1.4 km) upstream from confluence with South Fork.

DRAINAGE AREA.--18.5 mi² (47.9 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,500.00 ft (457.200 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1965, on left bank at datum 44.88 ft (13.679 m) higher.

REMARKS.--Records fair. Flow regulated since August 1966 by North Fork Pound River Lake (station 03208680). Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--21 years, 29.3 ft³/s (0.830 m³/s), 21.51 in/yr (546 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,480 ft³/s (127 m³/s) Mar. 12, 1963, gage height, 61.58 ft (18.770 m), present datum, from rating curve extended above 650 ft³/s (18 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.02 ft³/s (<0.001 m³/s) Sept. 16, 1964, Aug. 11, 12, Oct. 28, Nov. 10, 1969; minimum daily, 0.04 ft³/s (0.001 m³/s) Sept. 15, 1964, Aug. 11, 1969; minimum gage height, 47.66 ft (14.527 m) Sept. 16, 1964, present datum. Maximum discharge since construction of North Fork Pound River Dam in 1966, 1,230 ft³/s (34.8 m³/s) Sept. 14, 1982, gage height, 55.79 ft (17.005 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 63.9 ft (19.5 m), present datum, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,230 ft³/s (34.8 m³/s) Sept. 14, gage height, 55.79 ft (17.005 m), from rating curve extended as explained above; minimum, 0.30 ft³/s (0.008 m³/s) Oct. 22, gage height, 47.95 ft (14.615 m); minimum daily, 2.7 ft³/s (0.076 m³/s) Dec. 2, 4-9, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|------|------|-------|-------|-------|-------|-------|--------|
| 1 | 24 | 19 | 3.5 | 14 | 34 | 33 | 11 | 5.1 | 5.8 | 3.4 | 4.4 | 31 |
| 2 | 25 | 17 | 2.7 | 14 | 61 | 51 | 3.4 | 5.1 | 45 | 3.3 | 4.3 | 116 |
| 3 | 25 | 15 | 2.9 | 45 | 99 | 50 | 3.5 | 4.9 | 64 | 3.3 | 5.0 | 79 |
| 4 | 22 | 12 | 2.7 | 134 | 120 | 49 | 3.5 | 4.8 | 38 | 3.3 | 4.8 | 12 |
| 5 | 18 | 15 | 2.7 | 203 | 34 | 35 | 3.6 | 4.7 | 30 | 3.3 | 4.8 | 11 |
| 6 | 18 | 14 | 2.7 | 168 | 27 | 17 | 3.8 | 4.6 | 30 | 3.3 | 4.8 | 11 |
| 7 | 18 | 12 | 2.7 | 132 | 27 | 23 | 3.7 | 4.7 | 17 | 3.3 | 4.8 | 11 |
| 8 | 18 | 12 | 2.7 | 103 | 29 | 123 | 3.7 | 4.9 | 7.7 | 3.3 | 4.5 | 11 |
| 9 | 18 | 13 | 2.7 | 52 | 65 | 133 | 3.8 | 4.6 | 8.0 | 3.4 | 4.8 | 6.2 |
| 10 | 18 | 15 | 2.9 | 45 | 93 | 104 | 3.6 | 4.5 | 9.9 | 3.4 | 4.8 | 4.0 |
| 11 | 18 | 15 | 2.7 | 34 | 91 | 78 | 3.4 | 4.5 | 11 | 3.6 | 4.5 | 4.0 |
| 12 | 18 | 15 | 2.9 | 30 | 42 | 57 | 3.4 | 4.5 | 11 | 3.5 | 4.5 | 3.9 |
| 13 | 18 | 12 | 2.9 | 16 | 40 | 59 | 3.3 | 4.4 | 11 | 3.4 | 4.5 | 4.0 |
| 14 | 18 | 9.5 | 3.1 | 7.3 | 39 | 60 | 12 | 4.2 | 12 | 3.3 | 4.5 | 298 |
| 15 | 18 | 9.5 | 3.3 | 7.3 | 40 | 84 | 4.1 | 4.2 | 13 | 3.3 | 4.5 | 275 |
| 16 | 16 | 8.4 | 3.1 | 7.1 | 86 | 129 | 4.0 | 4.2 | 13 | 3.3 | 4.6 | 295 |
| 17 | 14 | 12 | 3.1 | 6.9 | 183 | 101 | 4.2 | 4.2 | 12 | 3.3 | 4.7 | 305 |
| 18 | 14 | 13 | 4.8 | 8.0 | 149 | 72 | 4.1 | 4.3 | 12 | 4.7 | 4.8 | 193 |
| 19 | 12 | 15 | 5.9 | 69 | 69 | 56 | 4.1 | 4.3 | 11 | 3.8 | 4.7 | 176 |
| 20 | 6.2 | 14 | 5.9 | 169 | 42 | 45 | 4.2 | 4.4 | 12 | 3.5 | 4.6 | 142 |
| 21 | 6.2 | 12 | 7.3 | 206 | 41 | 70 | 4.2 | 4.4 | 10 | 3.3 | 4.7 | 64 |
| 22 | 6.4 | 12 | 57 | 114 | 77 | 73 | 4.2 | 4.3 | 10 | 3.8 | 4.6 | 28 |
| 23 | 11 | 12 | 99 | 93 | 60 | 60 | 4.2 | 5.5 | 6.6 | 5.0 | 4.4 | 25 |
| 24 | 13 | 12 | 61 | 65 | 33 | 38 | 4.2 | 5.0 | 4.8 | 3.7 | 4.9 | 25 |
| 25 | 13 | 12 | 29 | 33 | 27 | 27 | 4.3 | 4.6 | 4.8 | 3.3 | 24 | 25 |
| 26 | 13 | 9.5 | 25 | 32 | 18 | 27 | 5.1 | 5.1 | 4.8 | 3.2 | 38 | 25 |
| 27 | 15 | 8.0 | 19 | 32 | 10 | 27 | 7.2 | 5.7 | 4.8 | 3.8 | 29 | 17 |
| 28 | 23 | 8.0 | 19 | 31 | 11 | 27 | 6.5 | 5.3 | 3.5 | 4.2 | 17 | 13 |
| 29 | 25 | 6.9 | 19 | 15 | --- | 27 | 5.8 | 5.2 | 3.6 | 3.6 | 11 | 14 |
| 30 | 22 | 5.1 | 16 | 15 | --- | 27 | 5.2 | 4.8 | 3.7 | 6.9 | 3.9 | 8.8 |
| 31 | 19 | --- | 14 | 23 | --- | 27 | --- | 5.1 | --- | 5.7 | 7.7 | --- |
| TOTAL | 522.8 | 364.9 | 431.2 | 1923.6 | 1647 | 1789 | 141.3 | 146.1 | 430.0 | 115.5 | 242.1 | 2232.9 |
| MEAN | 16.9 | 12.2 | 13.9 | 62.1 | 58.8 | 57.7 | 4.71 | 4.71 | 14.3 | 3.73 | 7.81 | 74.4 |
| MAX | 25 | 19 | 99 | 206 | 183 | 133 | 12 | 5.7 | 64 | 6.9 | 38 | 305 |
| MIN | 6.2 | 5.1 | 2.7 | 6.9 | 10 | 17 | 3.3 | 4.2 | 3.5 | 3.2 | 3.9 | 3.9 |
| (*) | -12 | -10 | +1 | .00 | +2 | -2 | +8 | +10 | +2 | +2 | -1 | .00 |
| MEAN# | 4.86 | 2.16 | 14.9 | 62.1 | 60.8 | 55.7 | 12.7 | 14.7 | 16.3 | 5.73 | 6.81 | 74.4 |
| CFSM# | .26 | .12 | .81 | 3.36 | 3.29 | 3.01 | .69 | .79 | .88 | .31 | .37 | 4.02 |
| IN# | .30 | .13 | .93 | 3.87 | 3.42 | 3.47 | .77 | .92 | .99 | .36 | .42 | 4.49 |

CAL YR 1981 TOTAL 6921.1 MEAN 19.0 MAX 223 MIN 2.7 MEAN# 19.0 CFSM# 1.03 IN# 13.92
WTR YR 1982 TOTAL 9986.4 MEAN 27.4 MAX 305 MIN 2.7 MEAN# 27.4 CFSM# 1.48 IN# 20.08

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake; furnished by Corps of Engineers.

Adjusted for change in contents.

BIG SANDY RIVER BASIN

03208900 POUND RIVER NEAR GEORGES FORK, VA

LOCATION.--Lat 37°09'51", long 82°31'30", Dickenson County, Hydrologic Unit 05070202, on right bank 50 ft (15 m) upstream from bridge on State Highway 624, 150 ft (46 m) upstream from Camp Creek, and 2.6 mi (4.2 km) northwest of the community of Georges Fork.

DRAINAGE AREA.--82.5 mi² (213.7 km²).

PERIOD OF RECORD.--October 1963 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 1,470.39 ft (448.175 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since August 1966 by North Fork Pound River Lake (station 03208680) 13 mi (21 km) upstream. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 126 ft³/s (3.568 m³/s), 20.74 in/yr (527 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) May 18, 1975, gage height, 14.91 ft (4.545 m), from rating curve extended above 3,600 ft³/s (100 m³/s); minimum, 1.6 ft³/s (0.045 m³/s) Sept. 17, 18, 1964, gage height, 1.80 ft (0.549 m); minimum daily, 1.7 ft³/s (0.048 m³/s) Sept. 17, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Jan. 29, 1957, and Mar. 12, 1963, reached stages of 16.2 ft (4.94 m) and 14.4 ft (4.39 m), respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,480 ft³/s (212 m³/s) Sept. 14, gage height, 12.57 ft (3.831 m), from rating curve extended above 3,600 ft³/s (100 m³/s); minimum, 8.5 ft³/s (0.24 m³/s) Dec. 13, gage height, 2.29 ft (0.698 m); minimum daily, 11 ft³/s (0.31 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 23 | 36 | 20 | 74 | 153 | 190 | 89 | 64 | 98 | 40 | 100 | 451 |
| 2 | 39 | 34 | 19 | 66 | 136 | 197 | 67 | 60 | 112 | 29 | 60 | 412 |
| 3 | 36 | 29 | 16 | 698 | 504 | 170 | 70 | 56 | 131 | 24 | 44 | 253 |
| 4 | 34 | 27 | 14 | 964 | 425 | 149 | 67 | 52 | 112 | 26 | 35 | 80 |
| 5 | 28 | 25 | 19 | 465 | 281 | 140 | 62 | 47 | 144 | 32 | 31 | 56 |
| 6 | 30 | 31 | 18 | 303 | 155 | 100 | 67 | 44 | 102 | 22 | 29 | 45 |
| 7 | 31 | 27 | 16 | 282 | 120 | 326 | 57 | 42 | 83 | 18 | 24 | 38 |
| 8 | 27 | 24 | 16 | 263 | 109 | 355 | 56 | 52 | 54 | 24 | 27 | 34 |
| 9 | 26 | 23 | 15 | 167 | 268 | 417 | 63 | 45 | 58 | 31 | 31 | 32 |
| 10 | 26 | 25 | 14 | 132 | 359 | 344 | 58 | 39 | 86 | 35 | 33 | 23 |
| 11 | 26 | 25 | 13 | 131 | 279 | 295 | 55 | 36 | 72 | 116 | 23 | 21 |
| 12 | 26 | 25 | 12 | 121 | 211 | 224 | 55 | 34 | 56 | 51 | 20 | 20 |
| 13 | 26 | 25 | 11 | 104 | 156 | 230 | 54 | 33 | 62 | 33 | 19 | 19 |
| 14 | 26 | 20 | 17 | 82 | 131 | 248 | 56 | 31 | 52 | 25 | 17 | 3060 |
| 15 | 26 | 18 | 32 | 62 | 125 | 417 | 53 | 29 | 43 | 20 | 16 | 823 |
| 16 | 26 | 17 | 32 | 55 | 309 | 475 | 49 | 32 | 39 | 18 | 16 | 522 |
| 17 | 23 | 18 | 30 | 40 | 711 | 422 | 48 | 36 | 43 | 16 | 27 | 488 |
| 18 | 24 | 23 | 67 | 57 | 613 | 283 | 50 | 31 | 44 | 23 | 21 | 316 |
| 19 | 38 | 23 | 46 | 122 | 446 | 273 | 45 | 46 | 37 | 139 | 17 | 276 |
| 20 | 21 | 28 | 28 | 428 | 269 | 370 | 46 | 42 | 38 | 45 | 15 | 229 |
| 21 | 15 | 25 | 31 | 781 | 214 | 425 | 46 | 36 | 33 | 28 | 15 | 144 |
| 22 | 15 | 22 | 234 | 646 | 189 | 308 | 42 | 34 | 35 | 21 | 15 | 80 |
| 23 | 23 | 21 | 319 | 422 | 182 | 239 | 40 | 36 | 35 | 45 | 15 | 55 |
| 24 | 44 | 25 | 173 | 325 | 133 | 176 | 39 | 133 | 23 | 69 | 43 | 50 |
| 25 | 29 | 27 | 98 | 213 | 110 | 138 | 39 | 105 | 21 | 33 | 254 | 44 |
| 26 | 37 | 24 | 81 | 134 | 97 | 138 | 57 | 74 | 21 | 23 | 139 | 42 |
| 27 | 60 | 26 | 62 | 122 | 117 | 118 | 164 | 115 | 80 | 20 | 85 | 40 |
| 28 | 66 | 26 | 54 | 108 | 181 | 109 | 115 | 70 | 60 | 167 | 48 | 37 |
| 29 | 54 | 20 | 49 | 92 | --- | 103 | 89 | 102 | 54 | 56 | 38 | 34 |
| 30 | 48 | 19 | 44 | 74 | --- | 98 | 74 | 68 | 51 | 123 | 25 | 33 |
| 31 | 39 | --- | 43 | 86 | --- | 97 | --- | 56 | --- | 129 | 158 | --- |
| TOTAL | 992 | 738 | 1643 | 7619 | 6983 | 7574 | 1872 | 1680 | 1879 | 1481 | 1440 | 7757 |
| MEAN | 32.0 | 24.6 | 53.0 | 246 | 249 | 244 | 62.4 | 54.2 | 62.6 | 47.8 | 46.5 | 259 |
| MAX | 66 | 36 | 319 | 964 | 711 | 475 | 164 | 133 | 144 | 167 | 254 | 3060 |
| MIN | 15 | 17 | 11 | 40 | 97 | 97 | 39 | 29 | 21 | 16 | 15 | 19 |
| (*) | -12 | -10 | +1 | .00 | +2 | -2 | +8 | +10 | +2 | +2 | -1 | .00 |
| MEAN# | 20.0 | 14.6 | 54.0 | 246 | 251 | 242 | 70.4 | 64.2 | 64.6 | 49.8 | 45.5 | 259 |
| CFSM# | .24 | .18 | .65 | 2.98 | 3.04 | 2.93 | .85 | .78 | .78 | .60 | .55 | 3.14 |
| IN# | .28 | .20 | .75 | 3.44 | 3.17 | 3.39 | .95 | .90 | .87 | .70 | .64 | 3.50 |

CAL YR 1981 TOTAL 27305.0 MEAN 74.8 MAX 1110 MIN 6.0 MEAN# 74.8 CFSM# .91 IN# 12.31
WTR YR 1982 TOTAL 41658.0 MEAN 114 MAX 3060 MIN 11 MEAN# 114 CFSM# 1.38 IN# 18.78

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake; furnished by Corps of Engineers.

Adjusted for change in contents.

03208950 CRANES NEST RIVER NEAR CLINTWOOD, VA

LOCATION.--Lat 37°07'26", long 82°26'20", Dickenson County, Hydrologic Unit 05070202, on left bank on State Highway 649 (revised), 500 ft (152 m) downstream from Clinchfield Railway bridge, 1,000 ft (305 m) downstream from Rush Creek, and 2.1 mi (3.4 km) southeast of Clintwood.

DRAINAGE AREA.--66.5 mi² (172.2 km²).

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

REVISED RECORDS.--WDR VA-77-1: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 1,440.30 ft (439.003 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--19 years, 82.9 ft³/s (2.348 m³/s), 16.93 in/yr (430 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Apr. 4, 1977, gage height, 26.09 ft (7.952 m), from floodmark, from rating curve extended above 3,100 ft³/s (88 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.48 ft³/s (0.014 m³/s) Sept. 28, 1964, gage height, 0.91 ft (0.277 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 20.0 ft (6.1 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|----------|------|---|-------------------------|
| Jan. 3 | 1000 | 1390 39.4 | 7.98 2.432 | Sept. 1 | 1500 | 1650 46.7 | 8.75 2.667 |
| Jan. 4 | 0930 | 1630 46.2 | 8.69 2.649 | Sept. 14 | 1430 | *4040 114 | 14.03 4.276 |
| Jan. 19 | 2230 | 1100 31.2 | 7.04 2.146 | | | | |

Minimum discharge, 3.0 ft³/s (0.085 m³/s) Dec. 12, gage height, 1.19 ft (0.363 m), result of freezeup; minimum daily, 6.6 ft³/s (0.19 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|--------|------|------|------|------|------|------|------|-------|------|
| 1 | 13 | 15 | 10 | 116 | 184 | 195 | 65 | 50 | 175 | 62 | 38 | 446 |
| 2 | 19 | 15 | 14 | 77 | 155 | 179 | 60 | 48 | 104 | 39 | 22 | 201 |
| 3 | 11 | 15 | 10 | 675 | 652 | 150 | 63 | 44 | 57 | 31 | 17 | 89 |
| 4 | 10 | 14 | 9.2 | 878 | 347 | 124 | 57 | 38 | 62 | 28 | 16 | 52 |
| 5 | 8.9 | 14 | 12 | 308 | 214 | 120 | 53 | 36 | 117 | 26 | 14 | 37 |
| 6 | 10 | 17 | 13 | 176 | 165 | 103 | 59 | 32 | 67 | 21 | 15 | 27 |
| 7 | 11 | 12 | 13 | 233 | 123 | 397 | 50 | 30 | 46 | 19 | 14 | 23 |
| 8 | 12 | 13 | 13 | 215 | 104 | 316 | 48 | 37 | 36 | 22 | 13 | 21 |
| 9 | 9.6 | 12 | 12 | 160 | 272 | 269 | 55 | 30 | 44 | 20 | 13 | 20 |
| 10 | 13 | 11 | 11 | 95 | 285 | 238 | 48 | 26 | 103 | 34 | 15 | 18 |
| 11 | 12 | 10 | 8.3 | 55 | 202 | 200 | 46 | 24 | 67 | 27 | 12 | 16 |
| 12 | 8.9 | 9.2 | 7.2 | 58 | 158 | 178 | 44 | 23 | 46 | 21 | 11 | 16 |
| 13 | 8.5 | 9.1 | 6.6 | 56 | 144 | 179 | 43 | 22 | 90 | 17 | 11 | 14 |
| 14 | 12 | 9.8 | 12 | 50 | 117 | 172 | 42 | 20 | 60 | 14 | 10 | 1410 |
| 15 | 8.8 | 8.0 | 21 | 45 | 111 | 282 | 43 | 20 | 42 | 14 | 9.6 | 331 |
| 16 | 8.5 | 7.3 | 21 | 35 | 313 | 282 | 40 | 25 | 35 | 14 | 9.6 | 165 |
| 17 | 8.6 | 12 | 23 | 25 | 499 | 258 | 40 | 32 | 42 | 14 | 46 | 99 |
| 18 | 12 | 9.5 | 45 | 27 | 372 | 190 | 41 | 21 | 33 | 24 | 20 | 70 |
| 19 | 22 | 9.8 | 27 | 40 | 272 | 200 | 36 | 30 | 28 | 29 | 15 | 55 |
| 20 | 11 | 11 | 25 | 379 | 203 | 244 | 37 | 50 | 26 | 18 | 13 | 46 |
| 21 | 14 | 14 | 19 | 538 | 169 | 278 | 36 | 27 | 21 | 14 | 13 | 43 |
| 22 | 13 | 12 | 162 | 357 | 137 | 226 | 32 | 27 | 25 | 13 | 11 | 45 |
| 23 | 18 | 12 | 188 | 282 | 113 | 182 | 30 | 32 | 23 | 14 | 9.4 | 38 |
| 24 | 27 | 12 | 111 | 234 | 102 | 148 | 29 | 38 | 19 | 24 | 19 | 33 |
| 25 | 15 | 11 | 70 | 168 | 87 | 124 | 31 | 40 | 17 | 14 | 79 | 30 |
| 26 | 29 | 8.9 | 52 | 121 | 78 | 115 | 55 | 29 | 25 | 11 | 32 | 28 |
| 27 | 45 | 11 | 43 | 96 | 123 | 93 | 107 | 32 | 73 | 13 | 19 | 26 |
| 28 | 40 | 12 | 35 | 91 | 188 | 78 | 80 | 34 | 148 | 45 | 16 | 24 |
| 29 | 27 | 9.9 | 29 | 74 | --- | 73 | 65 | 50 | 100 | 17 | 13 | 24 |
| 30 | 22 | 9.5 | 23 | 67 | --- | 69 | 56 | 30 | 69 | 32 | 10 | 23 |
| 31 | 19 | --- | 50 | 99 | --- | 68 | --- | 64 | --- | 62 | 60 | --- |
| TOTAL | 498.8 | 346.0 | 1095.3 | 5830 | 5889 | 5730 | 1491 | 1041 | 1800 | 753 | 615.6 | 3470 |
| MEAN | 16.1 | 11.5 | 35.3 | 188 | 210 | 185 | 49.7 | 33.6 | 60.0 | 24.3 | 19.9 | 116 |
| MAX | 45 | 17 | 188 | 878 | 652 | 397 | 107 | 64 | 175 | 62 | 79 | 1410 |
| MIN | 8.5 | 7.3 | 6.6 | 25 | 78 | 68 | 29 | 20 | 17 | 11 | 9.4 | 14 |
| CFSM | .24 | .17 | .53 | 2.83 | 3.16 | 2.78 | .75 | .51 | .90 | .37 | .30 | 1.74 |
| IN. | .28 | .19 | .61 | 3.26 | 3.29 | 3.21 | .83 | .58 | 1.01 | .42 | .34 | 1.94 |

CAL YR 1981 TOTAL 15008.2 MEAN 41.1 MAX 620 MIN 2.4 CFSM .62 IN 8.40
WTR YR 1982 TOTAL 28559.7 MEAN 78.2 MAX 1410 MIN 6.6 CFSM 1.18 IN 15.98

BIG SANDY RIVER BASIN

03208990 JOHN W. FLANNAGAN RESERVOIR NEAR HAYSI, VA

LOCATION.--Lat 37°14'00", long 82°20'56", Dickenson County, Hydrologic Unit 05070202, in control tower of John W. Flannagan Dam on Pound River, 1.3 mi (2.1 km) upstream from Blacklog Branch, and 3.7 mi (6.0 km) northwest of Haysi.

DRAINAGE AREA.--221 mi² (572 km²).

PERIOD OF RECORD.--September 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Mar. 31, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by rockfill dam. Spillway with crest at elevation 1,410.0 ft (429.77 m) is in a saddle 0.3 mi (0.5 km) upstream from dam and is equipped with 6 radial gates 36 ft (11.0 m) high by 42 ft (12.8 m) wide. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,230.0 ft (374.90 m). Storage began in September 1961 during construction with peak discharge affected thereafter; initial filling for regular operations started in March 1965. Total capacity at elevation 1,446.0 ft (440.74 m), top of gates, is 145,700 acre-ft (180 hm³) of which 78,600 acre-ft (96.9 hm³) is controlled flood storage for summer operations between elevations 1,396.0 ft (425.50 m), top of summer conservation pool, and 1,446.0 ft (440.74 m); an additional 16,500 acre-ft (20.3 hm³) is available for flood control during the period December to March between elevations 1,380.0 ft (420.62 m), top of winter conservation pool, and 1,396.0 ft (425.50 m); contents at established minimum pool, 1,314.0 ft (400.51 m), is 12,000 acre-ft (14.8 hm³); dead storage is 300 acre-ft (370,000 m³) below elevation 1,230.0 ft (374.90 m). Figures given herein represent total contents. Reservoir is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 116,500 acre-ft (144 hm³) Apr. 7, 1977, elevation, 1,430.80 ft (436.108 m); minimum (after initial filling for regular operation), 11,800 acre-ft (14.5 hm³) Apr. 1, 1965, elevation, 1,313.42 ft (400.330 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,900 acre-ft (91.1 hm³) Sept. 15, elevation, 1,401.76 ft (427.256 m); minimum, 27,600 acre-ft (34.0 hm³) Jan. 23, elevation, 1,349.46 ft (411.315 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------|---------------------|-------------------------|-----------------------------------|
| Sept. 30..... | 1395.95 | 67000 | |
| Oct. 31..... | 1386.78 | 57100 | -9900 |
| Nov. 30..... | 1350.49 | 28200 | -28900 |
| Dec. 31..... | 1349.64 | 27700 | -500 |
| CAL YR 1981..... | | | -22300 |
| Jan. 31..... | 1349.76 | 27800 | +100 |
| Feb. 28..... | 1350.69 | 28300 | +500 |
| Mar. 31..... | 1380.44 | 51000 | +22700 |
| Apr. 30..... | 1387.01 | 57400 | +6400 |
| May 31..... | 1392.46 | 63100 | +5700 |
| June 30..... | 1396.48 | 67600 | +4500 |
| July 31..... | 1396.73 | 67900 | +300 |
| Aug. 31..... | 1396.80 | 68000 | +100 |
| Sept. 30..... | 1396.20 | 67300 | -700 |
| WTR YR 1982..... | | | +300 |

03209000 POUND RIVER BELOW FLANNAGAN DAM, NEAR HAYSI, VA

LOCATION.--Lat 37°14'13", long 82°20'36", Dickenson County, Hydrologic Unit 05070202, on right bank 1,100 ft (335 m) upstream from Blacklog Branch, 1,700 ft (518 m) downstream from John W. Flannagan Dam, 1.4 mi (2.3 km) upstream from mouth, and 3.4 mi (5.5 km) northwest of Haysi.

DRAINAGE AREA.--221 mi² (572 km²).

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1963, published as Pound River near Haysi.

REVISED RECORDS.--WSP 953: 1940-41. WSP 1003: 1942, 1943(P). WSP 1275: 1927-30, 1931(M), 1932-39.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1939, nonrecording gage at site 3.8 mi (6.1 km) upstream at different datum. Dec. 20, 1939, to Sept. 30, 1963, water-stage recorder at site 4.6 mi (7.4 km) upstream at datum 79.91 ft (24.357 m) higher.

REMARKS.--Records fair. Flow regulated since March 1965 by John W. Flannagan Reservoir (station 03208990) 1,700 ft (518 m) upstream and since August 1966 by North Fork Pound River Lake (station 03208680) 33 mi (53 km) upstream. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 277 ft³/s (7.845 m³/s), 17.02 in/yr (432 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 30,000 ft³/s (850 m³/s) Mar. 23, 1929, gage height, 16.5 ft (5.03 m), from floodmarks, site and datum then in use; minimum, less than 0.1 ft³/s (0.003 m³/s) on several days in September 1932. Maximum discharge since construction of John W. Flannagan Dam in 1965, 4,540 ft³/s (129 m³/s) Apr. 8, 1977, gage height, 8.20 ft (2.499 m); minimum, 1.2 ft³/s (0.034 m³/s) Feb. 16, 1968, gage height, 1.42 ft (0.433 m); minimum daily, 2.3 ft³/s (0.065 m³/s) June 26-29, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft³/s (93.5 m³/s) Sept. 15, gage height, 7.13 ft (2.173 m); minimum, 16 ft³/s (0.45 m³/s) Dec. 3, gage height, 1.87 ft (0.570 m); minimum daily, 31 ft³/s (0.88 m³/s) Mar. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|------|-------|-------|------|------|------|------|------|------|-------|
| 1 | 68 | 658 | 200 | 236 | 375 | 532 | 112 | 47 | 51 | 128 | 217 | 496 |
| 2 | 188 | 653 | 63 | 174 | 355 | 603 | 47 | 48 | 51 | 100 | 155 | 1020 |
| 3 | 194 | 653 | 37 | 1470 | 1420 | 565 | 47 | 47 | 51 | 63 | 88 | 559 |
| 4 | 79 | 718 | 49 | 2420 | 1270 | 371 | 47 | 46 | 51 | 63 | 71 | 222 |
| 5 | 117 | 752 | 48 | 1410 | 713 | 335 | 47 | 46 | 52 | 63 | 71 | 69 |
| 6 | 133 | 752 | 48 | 761 | 468 | 296 | 47 | 46 | 105 | 63 | 71 | 69 |
| 7 | 136 | 669 | 39 | 585 | 381 | 955 | 47 | 46 | 186 | 63 | 71 | 69 |
| 8 | 133 | 627 | 34 | 542 | 285 | 969 | 47 | 47 | 120 | 63 | 73 | 70 |
| 9 | 133 | 622 | 34 | 481 | 561 | 957 | 48 | 47 | 158 | 63 | 73 | 71 |
| 10 | 133 | 596 | 34 | 337 | 912 | 889 | 47 | 47 | 349 | 63 | 73 | 71 |
| 11 | 133 | 566 | 34 | 173 | 813 | 701 | 47 | 47 | 461 | 63 | 73 | 71 |
| 12 | 133 | 528 | 34 | 143 | 598 | 230 | 47 | 47 | 362 | 63 | 73 | 71 |
| 13 | 177 | 499 | 34 | 193 | 456 | 31 | 47 | 47 | 191 | 64 | 55 | 59 |
| 14 | 228 | 499 | 34 | 206 | 343 | 31 | 47 | 47 | 191 | 65 | 48 | 1200 |
| 15 | 244 | 495 | 73 | 141 | 304 | 32 | 47 | 47 | 191 | 65 | 49 | 2710 |
| 16 | 241 | 490 | 79 | 102 | 625 | 32 | 47 | 47 | 117 | 65 | 50 | 1930 |
| 17 | 241 | 490 | 59 | 102 | 1790 | 32 | 48 | 47 | 87 | 65 | 50 | 834 |
| 18 | 241 | 454 | 129 | 102 | 1700 | 32 | 47 | 46 | 87 | 65 | 49 | 748 |
| 19 | 209 | 433 | 87 | 150 | 1040 | 33 | 47 | 46 | 87 | 155 | 49 | 437 |
| 20 | 196 | 384 | 61 | 768 | 627 | 34 | 46 | 47 | 87 | 137 | 51 | 353 |
| 21 | 156 | 327 | 61 | 1860 | 571 | 34 | 46 | 47 | 87 | 82 | 51 | 272 |
| 22 | 126 | 327 | 380 | 1900 | 450 | 34 | 46 | 48 | 87 | 69 | 51 | 146 |
| 23 | 177 | 355 | 718 | 1090 | 404 | 34 | 46 | 49 | 87 | 69 | 51 | 100 |
| 24 | 197 | 376 | 509 | 808 | 372 | 34 | 46 | 47 | 87 | 69 | 60 | 100 |
| 25 | 172 | 400 | 264 | 530 | 281 | 34 | 46 | 48 | 87 | 69 | 178 | 99 |
| 26 | 188 | 424 | 183 | 350 | 234 | 126 | 47 | 49 | 87 | 71 | 260 | 99 |
| 27 | 221 | 420 | 161 | 234 | 312 | 253 | 47 | 49 | 87 | 71 | 156 | 67 |
| 28 | 234 | 420 | 89 | 254 | 502 | 254 | 47 | 49 | 272 | 71 | 155 | 47 |
| 29 | 228 | 416 | 85 | 255 | --- | 253 | 47 | 49 | 237 | 71 | 90 | 47 |
| 30 | 404 | 416 | 98 | 197 | --- | 253 | 47 | 49 | 155 | 71 | 57 | 47 |
| 31 | 664 | --- | 124 | 183 | --- | 254 | --- | 49 | --- | 164 | 252 | --- |
| TOTAL | 6124 | 15419 | 3882 | 18157 | 18162 | 9223 | 1471 | 1468 | 4308 | 2416 | 2871 | 12153 |
| MEAN | 198 | 514 | 125 | 586 | 649 | 298 | 49.0 | 47.4 | 144 | 77.9 | 92.6 | 405 |
| MAX | 664 | 752 | 718 | 2420 | 1790 | 969 | 112 | 49 | 461 | 164 | 260 | 2710 |
| MIN | 68 | 327 | 34 | 102 | 234 | 31 | 46 | 46 | 51 | 63 | 48 | 47 |
| (*) | -173 | -496 | -7 | +2 | +11 | +367 | +116 | +103 | +78 | +7 | +1 | -12 |
| MEAN# | 24.5 | 18.0 | 11.8 | 58.8 | 66.0 | 66.5 | 1.65 | 1.50 | 222 | 84.9 | 93.6 | 393 |
| CFSM# | .11 | .08 | .53 | 2.66 | 2.99 | 3.01 | .75 | .68 | 1.00 | .38 | .42 | 1.78 |
| IN# | .13 | .09 | .62 | 3.07 | 3.11 | 3.47 | .83 | .78 | 1.12 | .44 | .49 | 1.99 |

CAL YR 1981 TOTAL 72473 MEAN 199 MAX 1480 MIN 15 MEAN# 168 CFSM# .76 IN# 10.29
WTR YR 1982 TOTAL 95654 MEAN 262 MAX 2710 MIN 31 MEAN# 262 CFSM# 1.19 IN# 16.10

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake and John W. Flannagan Reservoirs; furnished by Corps of Engineers.

* Adjusted for change in contents.

BIG SANDY RIVER BASIN

03209200 RUSSELL FORK AT BARTLICK, VA

LOCATION.--Lat 37°14'45", long 82°19'25", Dickenson County, Hydrologic Unit 05070202, on left bank at Bartlick, just upstream from bridge on State Highway 611, 0.2 mi (0.3 km) downstream from Pound River, and 1.1 mi (1.8 km) upstream from Fall Branch.

DRAINAGE AREA.--526 mi² (1,362 km²).

PERIOD OF RECORD.--October 1962 to September 1982 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,165.00 ft (355.092 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of doubtful or no gage-height record, July 25 to Sept. 9 and Sept. 13-30, which are fair. Flow regulated since March 1965 by John W. Flannagan Reservoir (station 03208990) 1.9 mi (3.1 km) upstream and since August 1966 by North Fork Pound River Lake (station 03208680) 35 mi (56 km) upstream. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--20 years, 691 ft³/s (19.57 m³/s), 17.84 in/yr (453 mm/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Apr. 4, 1977, gage height, 27.55 ft (8.397 m), from rating curve extended above 11,000 ft³/s (310 m³/s) on basis of computation of peak flow over dam; minimum, 5.3 ft³/s (0.15 m³/s) Sept. 18, 1964, gage height, 5.03 ft (1.533 m); minimum daily, 5.5 ft³/s (0.16 m³/s) Sept. 17, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 30 ft (9.1 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,310 ft³/s (235 m³/s) Sept. 14, gage height, 13.43 ft (4.093 m); minimum, 51 ft³/s (1.44 m³/s) Dec. 13, gage height, 6.84 ft (2.085 m); minimum daily, 55 ft³/s (1.56 m³/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|----------|----------|--------|-----------|------------|-----------|-------|-------|------|------|-------|
| 1 | 91 | 722 | 253 | 597 | 1040 | 1620 | 439 | 417 | 1260 | 308 | 310 | 340 |
| 2 | 312 | 712 | 100 | 483 | 1010 | 1440 | 324 | 409 | 1040 | 233 | 320 | 1100 |
| 3 | 307 | 707 | 73 | 4160 | 4970 | 1240 | 324 | 438 | 610 | 169 | 240 | 1600 |
| 4 | 105 | 772 | 83 | 5890 | 3590 | 923 | 306 | 359 | 504 | 159 | 140 | 700 |
| 5 | 137 | 809 | 90 | 2990 | 1840 | 837 | 278 | 314 | 1030 | 149 | 110 | 350 |
| 6 | 164 | 816 | 90 | 1450 | 1250 | 726 | 300 | 282 | 807 | 135 | 115 | 150 |
| 7 | 163 | 731 | 75 | 1160 | 936 | 2450 | 263 | 258 | 650 | 124 | 115 | 130 |
| 8 | 163 | 680 | 65 | 1140 | 738 | 2650 | 243 | 303 | 453 | 127 | 110 | 120 |
| 9 | 161 | 673 | 64 | 994 | 1420 | 2330 | 264 | 266 | 537 | 137 | 100 | 110 |
| 10 | 161 | 649 | 62 | 667 | 2260 | 2190 | 246 | 231 | 1450 | 125 | 110 | 109 |
| 11 | 158 | 618 | 61 | 384 | 1810 | 1820 | 226 | 214 | 1330 | 127 | 120 | 105 |
| 12 | 157 | 571 | 58 | 375 | 1330 | 1130 | 219 | 197 | 889 | 131 | 110 | 102 |
| 13 | 204 | 550 | 55 | 411 | 1090 | 840 | 217 | 182 | 1300 | 122 | 100 | 100 |
| 14 | 260 | 547 | 76 | 420 | 850 | 884 | 217 | 171 | 1110 | 113 | 90 | 90 |
| 15 | 280 | 544 | 161 | 322 | 777 | 1410 | 211 | 159 | 724 | 108 | 74 | 3600 |
| 16 | 280 | 544 | 183 | 248 | 1830 | 1710 | 199 | 154 | 479 | 108 | 75 | 3800 |
| 17 | 278 | 544 | 152 | 193 | 5040 | 1420 | 197 | 157 | 417 | 106 | 76 | 2000 |
| 18 | 285 | 510 | 269 | 205 | 4090 | 1020 | 205 | 158 | 337 | 108 | 200 | 1100 |
| 19 | 259 | 484 | 202 | 328 | 2560 | 954 | 186 | 774 | 280 | 211 | 130 | 900 |
| 20 | 241 | 440 | 142 | 2240 | 1660 | 1530 | 184 | 1320 | 258 | 201 | 90 | 600 |
| 21 | 189 | 384 | 133 | 4460 | 1400 | 2030 | 191 | 1100 | 222 | 139 | 85 | 450 |
| 22 | 153 | 384 | 664 | 3890 | 1120 | 1360 | 174 | 750 | 215 | 110 | 80 | 340 |
| 23 | 224 | 406 | 1350 | 2320 | 933 | 998 | 164 | 1490 | 213 | 108 | 78 | 250 |
| 24 | 291 | 430 | 979 | 1780 | 857 | 778 | 161 | 823 | 187 | 138 | 76 | 180 |
| 25 | 242 | 455 | 558 | 1220 | 703 | 638 | 165 | 825 | 175 | 120 | 90 | 170 |
| 26 | 268 | 485 | 394 | 866 | 591 | 679 | 242 | 715 | 170 | 110 | 420 | 160 |
| 27 | 337 | 485 | 322 | 571 | 883 | 718 | 745 | 2180 | 389 | 105 | 400 | 160 |
| 28 | 370 | 485 | 214 | 622 | 1890 | 652 | 932 | 750 | 802 | 100 | 220 | 140 |
| 29 | 329 | 485 | 182 | 544 | --- | 622 | 670 | 592 | 575 | 110 | 200 | 110 |
| 30 | 478 | 480 | 178 | 456 | --- | 602 | 510 | 432 | 391 | 120 | 130 | 100 |
| 31 | 731 | --- | 218 | 461 | --- | 597 | --- | 324 | --- | 140 | 90 | --- |
| TOTAL | 7778 | 17102 | 7506 | 41847 | 48468 | 38798 | 9002 | 16744 | 18804 | 4301 | 4604 | 19166 |
| MEAN | 251 | 570 | 242 | 1350 | 1731 | 1252 | 300 | 540 | 627 | 139 | 149 | 639 |
| MAX | 731 | 816 | 1350 | 5890 | 5040 | 2650 | 932 | 2180 | 1450 | 308 | 420 | 3800 |
| MIN | 91 | 384 | 55 | 193 | 591 | 597 | 161 | 154 | 170 | 100 | 74 | 90 |
| (*) | -173 | -496 | -7 | +2 | +11 | +367 | +116 | +103 | +78 | +7 | +1 | -12 |
| MEAN# | 77.9 | 74.1 | 235 | 1352 | 1742 | 1619 | 416 | 643 | 705 | 146 | 150 | 627 |
| CFSM# | .15 | .14 | .45 | 2.57 | 3.31 | 3.08 | .79 | 1.22 | 1.34 | .28 | .29 | 1.19 |
| IN# | .17 | .16 | .52 | 2.96 | 3.45 | 3.55 | .88 | 1.41 | 1.50 | .32 | .33 | 1.33 |
| CAL YR 1981 TOTAL | 156951 | MEAN 430 | MAX 4020 | MIN 53 | MEAN# 399 | CFSM# .76 | IN# 10.30 | | | | | |
| WTR YR 1982 TOTAL | 234120 | MEAN 641 | MAX 5890 | MIN 55 | MEAN# 641 | CFSM# 1.22 | IN# 16.56 | | | | | |

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake and John W. Flannagan Reservoirs; furnished by Corps of Engineers.

Adjusted for change in contents.

BIG SANDY RIVER BASIN

343

03213577 KERSHAW BRANCH NEAR HURLEY, VA

LOCATION.--Lat 37°27'01", long 82°00'40", Buchanan County, Hydrologic Unit 05070201, on right bank 0.5 mi (0.8 km) upstream from Guess Fork and 2.1 mi (3.4 km) north of Hurley.

DRAINAGE AREA.--0.60 mi² (1.55 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,140 ft (347 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97 ft³/s (2.75 m³/s) June 6, 1981, gage height, 2.95 ft (0.899 m); minimum daily, 0.02 ft³/s (0.001 m³/s) Sept. 10-14, 29, 30, Nov. 18, 19, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Apr. 26 | 2340 | 29 0.82 | 2.23 0.680 | Aug. 31 | 0610 | 37 1.05 | 2.32 0.707 |
| Aug. 8 | 1700 | *39 1.10 | 2.35 .716 | | | | |

Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Nov. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| 1 | .06 | .06 | .07 | .34 | .42 | 1.1 | .37 | .17 | .34 | .08 | .06 | .49 |
| 2 | .06 | .06 | .07 | .22 | .42 | .88 | .34 | .13 | .30 | .07 | .06 | .09 |
| 3 | .04 | .06 | .07 | 3.3 | .78 | .70 | .38 | .12 | .19 | .38 | .05 | .04 |
| 4 | .03 | .06 | .08 | 1.9 | .61 | .55 | .43 | .10 | .70 | .30 | .04 | .04 |
| 5 | .04 | .06 | .09 | .93 | .47 | .44 | .34 | .09 | .61 | .18 | .06 | .06 |
| 6 | .04 | .07 | .08 | .94 | .42 | .44 | .27 | .09 | .30 | .08 | .05 | .08 |
| 7 | .04 | .06 | .08 | 1.0 | .38 | 1.9 | .21 | .08 | .27 | .07 | .05 | .07 |
| 8 | .04 | .05 | .08 | .93 | .40 | 1.8 | .20 | .12 | .36 | .12 | 2.1 | .07 |
| 9 | .04 | .05 | .07 | .83 | 3.7 | 1.8 | .27 | .09 | .22 | .09 | .65 | .07 |
| 10 | .03 | .05 | .07 | .66 | 1.8 | 2.1 | .24 | .07 | 1.3 | .09 | .07 | .07 |
| 11 | .03 | .04 | .07 | .50 | 1.1 | 1.5 | .19 | .07 | .44 | .13 | .04 | .07 |
| 12 | .03 | .04 | .08 | .36 | .80 | 1.3 | .18 | .06 | .64 | .10 | .06 | .07 |
| 13 | .03 | .03 | .08 | .27 | .64 | 1.6 | .19 | .07 | 1.6 | .06 | .06 | .07 |
| 14 | .03 | .03 | .42 | .27 | .52 | 1.9 | .20 | .08 | .47 | .06 | .05 | .08 |
| 15 | .03 | .03 | .48 | .27 | .58 | 7.8 | .16 | .07 | .22 | .06 | .05 | .10 |
| 16 | .03 | .03 | .28 | .27 | 1.3 | 3.5 | .14 | .07 | .24 | .06 | .06 | .07 |
| 17 | .03 | .03 | .45 | .22 | 2.2 | 1.9 | .15 | .06 | .24 | .08 | .05 | .06 |
| 18 | .09 | .02 | .91 | .24 | 1.7 | 1.2 | .13 | .09 | .18 | .10 | .04 | .05 |
| 19 | .08 | .02 | .80 | .28 | 1.6 | 1.2 | .15 | .12 | .15 | .08 | .04 | .05 |
| 20 | .06 | .05 | .64 | .52 | 1.5 | 2.1 | .15 | .09 | .12 | .09 | .04 | .04 |
| 21 | .06 | .04 | .62 | .70 | 1.2 | 3.5 | .15 | .09 | .11 | .08 | .04 | .04 |
| 22 | .06 | .04 | 2.1 | .47 | .74 | 3.2 | .12 | .07 | .11 | .12 | .03 | .04 |
| 23 | .13 | .04 | .78 | .44 | .58 | 2.1 | .11 | .09 | .10 | .08 | .03 | .04 |
| 24 | .10 | .09 | .36 | .38 | .49 | 1.7 | .11 | .06 | .09 | .06 | .04 | .04 |
| 25 | .08 | .08 | .22 | .34 | .38 | .93 | .12 | .06 | .09 | .04 | .09 | .04 |
| 26 | .20 | .07 | .17 | .34 | .42 | .70 | .55 | .18 | .10 | .04 | .04 | .06 |
| 27 | .14 | .08 | .14 | .36 | .99 | .58 | 1.2 | .24 | .09 | .04 | .04 | .10 |
| 28 | .11 | .07 | .12 | .42 | 1.5 | .52 | .24 | .27 | .09 | .15 | .04 | .09 |
| 29 | .09 | .07 | .10 | .42 | --- | .44 | .14 | .24 | .10 | .08 | .03 | .07 |
| 30 | .07 | .07 | .09 | .42 | --- | .38 | .16 | .15 | .09 | .14 | .06 | .06 |
| 31 | .07 | --- | .22 | .44 | --- | .45 | --- | .12 | --- | .08 | 4.0 | --- |
| TOTAL | 1.97 | 1.55 | 9.89 | 18.98 | 27.64 | 50.21 | 7.59 | 3.41 | 9.86 | 3.19 | 8.12 | 2.32 |
| MEAN | .064 | .052 | .32 | .61 | .99 | 1.62 | .25 | .11 | .33 | .10 | .26 | .077 |
| MAX | .20 | .09 | 2.1 | 3.3 | 3.7 | 7.8 | 1.2 | .27 | 1.6 | .38 | 4.0 | .49 |
| MIN | .03 | .02 | .07 | .22 | .38 | .38 | .11 | .06 | .09 | .04 | .03 | .04 |
| CFSM | .11 | .09 | .53 | 1.02 | 1.65 | 2.70 | .42 | .18 | .55 | .17 | .43 | .13 |
| IN. | .12 | .10 | .61 | 1.17 | 1.71 | 3.11 | .47 | .21 | .61 | .20 | .50 | .14 |

CAL YR 1981 TOTAL 189.89 MEAN .52 MAX 9.4 MIN .02 CFSM .87 IN 11.75
WTR YR 1982 TOTAL 144.73 MEAN .40 MAX 7.8 MIN .02 CFSM .67 IN 8.96

BIG SANDY RIVER BASIN

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1980 to September 1982 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to December 1981 (discontinued).

SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1982 (discontinued).

INSTRUMENTATION.--Sediment pumping sampler.

REMARKS.--Suspended-sediment discharge record is fair. Suspended-sediment data for the 1981 water year is also published below.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,000 mg/L July 8, 1982; minimum daily mean, 0 mg/L on many days throughout 1981.

SEDIMENT LOADS: Maximum daily, 43 tons (39 metric tons) Mar. 15, 1982; minimum daily, 0 tons (0 metric tons) on many days throughout each year.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | |
| 1 | .10 | 2 | .00 | .07 | 6 | .00 | .34 | 10 | .01 |
| 2 | .10 | 11 | .00 | .07 | 4 | .00 | .32 | --- | --- |
| 3 | .12 | 8 | .00 | .07 | 3 | .00 | .28 | 10 | .01 |
| 4 | .10 | 6 | .00 | .07 | 3 | .00 | .23 | 6 | .01 |
| 5 | .09 | 5 | .00 | .07 | 2 | .00 | .23 | 16 | .01 |
| 6 | .08 | 3 | .00 | .06 | 2 | .00 | .24 | 8 | .01 |
| 7 | .08 | 2 | .00 | .07 | 2 | .00 | .24 | 2 | .00 |
| 8 | .08 | 3 | .00 | .07 | 3 | .00 | .21 | 0 | .00 |
| 9 | .08 | 2 | .00 | .07 | 4 | .00 | .34 | 6 | .01 |
| 10 | .08 | 3 | .00 | .07 | 2 | .00 | .36 | 5 | .00 |
| 11 | .08 | 4 | .00 | .06 | 2 | .00 | .32 | 14 | .01 |
| 12 | .07 | 4 | .00 | .06 | 3 | .00 | .28 | 8 | .01 |
| 13 | .07 | 4 | .00 | .06 | 0 | .00 | .26 | 2 | .00 |
| 14 | .06 | 3 | .00 | .07 | 0 | .00 | .22 | 2 | .00 |
| 15 | .06 | 3 | .00 | .07 | 4 | .00 | .21 | 1 | .00 |
| 16 | .06 | 4 | .00 | .08 | 4 | .00 | .20 | 1 | .00 |
| 17 | .06 | 4 | .00 | .28 | --- | --- | .15 | 1 | .00 |
| 18 | .06 | 3 | .00 | .68 | --- | --- | .13 | 0 | .00 |
| 19 | .06 | 2 | .00 | .24 | 3 | .00 | .12 | 0 | .00 |
| 20 | .07 | 4 | .00 | .16 | 4 | .00 | .10 | 0 | .00 |
| 21 | .05 | 2 | .00 | .13 | 4 | .00 | .09 | 0 | .00 |
| 22 | .05 | 2 | .00 | .11 | 2 | .00 | .08 | 1 | .00 |
| 23 | .04 | 3 | .00 | .24 | 12 | .01 | .10 | 1 | .00 |
| 24 | .05 | 3 | .00 | 2.7 | 275 | 3.1 | .20 | --- | --- |
| 25 | .34 | --- | --- | .70 | 15 | .03 | .16 | 3 | .00 |
| 26 | .11 | 28 | .01 | .42 | 5 | .01 | .14 | 6 | .00 |
| 27 | .08 | 6 | .00 | .53 | 6 | .01 | .14 | 3 | .00 |
| 28 | .08 | 3 | .00 | .51 | 24 | .03 | .14 | 1 | .00 |
| 29 | .08 | 3 | .00 | .44 | 28 | .03 | .15 | 12 | .00 |
| 30 | .07 | 3 | .00 | .44 | 11 | .01 | .20 | 21 | .01 |
| 31 | .07 | 3 | .00 | --- | --- | --- | .18 | 27 | .01 |
| TOTAL | 2.58 | --- | 0.01 | 8.67 | --- | 3.23 | 6.36 | --- | 0.10 |

BIG SANDY RIVER BASIN

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03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| JANUARY | | | FEBRUARY | | | MARCH | | | |
| 1 | .21 | 8 | .00 | .25 | 23 | .02 | .79 | 19 | .04 |
| 2 | .21 | 3 | .00 | 1.1 | 145 | .66 | .70 | 16 | .03 |
| 3 | .20 | 8 | .00 | .34 | 25 | .02 | .59 | 14 | .02 |
| 4 | .18 | 3 | .00 | .38 | 14 | .01 | .86 | 124 | .41 |
| 5 | .14 | 1 | .00 | .54 | 10 | .01 | 3.7 | 541 | 5.8 |
| 6 | .13 | 1 | .00 | .36 | 19 | .02 | 2.3 | 138 | .86 |
| 7 | .12 | 0 | .00 | .39 | 31 | .03 | 1.5 | 34 | .14 |
| 8 | .12 | 1 | .00 | .49 | 14 | .02 | 1.1 | 24 | .07 |
| 9 | .11 | 1 | .00 | .45 | 13 | .02 | .75 | 16 | .03 |
| 10 | .11 | 0 | .00 | .41 | 40 | .04 | .56 | 16 | .02 |
| 11 | .11 | 1 | .00 | .90 | 105 | .24 | .50 | 20 | .03 |
| 12 | .10 | 1 | .00 | .79 | 17 | .04 | .42 | 30 | .03 |
| 13 | .10 | 1 | .00 | .65 | 28 | .05 | .39 | 12 | .01 |
| 14 | .13 | 7 | .00 | .54 | 23 | .03 | .31 | 26 | .02 |
| 15 | .11 | 3 | .00 | .46 | 24 | .03 | .27 | 23 | .02 |
| 16 | .10 | 2 | .00 | .50 | 30 | .04 | .70 | --- | --- |
| 17 | .09 | 4 | .00 | 1.7 | 436 | 1.7 | .52 | 18 | .03 |
| 18 | .10 | 2 | .00 | 1.7 | 98 | .45 | .38 | 14 | .01 |
| 19 | .09 | 2 | .00 | 1.2 | 84 | .27 | .28 | 28 | .02 |
| 20 | .10 | 8 | .00 | 1.7 | 106 | .49 | .24 | 15 | .01 |
| 21 | .33 | --- | --- | 1.2 | 70 | .23 | .20 | 11 | .01 |
| 22 | .47 | 48 | .06 | .88 | 44 | .10 | .22 | 23 | .02 |
| 23 | .47 | 38 | .05 | 2.3 | 170 | 1.1 | .42 | --- | --- |
| 24 | .38 | 19 | .02 | 2.1 | 40 | .23 | 3.5 | 309 | 4.7 |
| 25 | .30 | 7 | .01 | 1.2 | 34 | .11 | 3.2 | 104 | .90 |
| 26 | .30 | 5 | .00 | .84 | 30 | .07 | 2.1 | 37 | .21 |
| 27 | .32 | 13 | .01 | .60 | 27 | .04 | 1.4 | 25 | .09 |
| 28 | .22 | 10 | .01 | .63 | 25 | .04 | .88 | 25 | .06 |
| 29 | .18 | 8 | .00 | --- | --- | --- | .67 | 26 | .05 |
| 30 | .17 | 10 | .00 | --- | --- | --- | .61 | 30 | .05 |
| 31 | .17 | 15 | .01 | --- | --- | --- | .52 | 32 | .04 |
| TOTAL | 5.87 | --- | 0.17 | 24.60 | --- | 6.11 | 30.38 | --- | 13.73 |
| APRIL | | | MAY | | | JUNE | | | |
| 1 | .94 | 127 | .47 | .24 | 13 | .01 | 3.8 | 200 | 4.6 |
| 2 | 1.0 | 50 | .14 | .25 | 11 | .01 | 2.7 | 72 | .52 |
| 3 | .88 | 50 | .07 | .17 | 10 | .00 | 1.4 | 38 | .14 |
| 4 | .67 | 28 | .05 | .17 | 33 | .02 | 1.9 | 157 | 3.0 |
| 5 | 4.8 | 298 | 4.0 | .22 | --- | --- | 2.1 | 39 | .22 |
| 6 | 5.8 | 46 | .72 | .22 | 18 | .01 | 9.4 | --- | --- |
| 7 | 2.0 | 28 | .15 | .20 | 23 | .01 | .55 | --- | --- |
| 8 | 1.2 | 24 | .08 | .18 | 30 | .01 | .88 | --- | --- |
| 9 | 1.0 | 46 | .14 | .17 | 14 | .01 | 1.5 | --- | --- |
| 10 | 2.8 | 495 | 8.6 | .17 | 7 | .00 | .83 | --- | --- |
| 11 | 2.5 | 68 | .46 | .22 | 7 | .00 | .49 | --- | --- |
| 12 | 1.2 | 45 | .15 | .19 | 6 | .00 | .45 | 259 | .18 |
| 13 | 1.2 | 23 | .07 | .17 | 7 | .00 | .58 | 31 | .05 |
| 14 | .99 | 37 | .14 | .25 | --- | --- | .42 | 14 | .02 |
| 15 | .67 | 30 | .05 | .44 | --- | --- | .36 | 10 | .01 |
| 16 | .58 | 21 | .03 | .20 | 10 | .01 | .36 | 10 | .01 |
| 17 | 2.2 | 243 | 1.7 | .18 | 9 | .00 | .36 | 8 | .01 |
| 18 | 2.5 | 19 | .13 | .28 | --- | --- | .34 | 6 | .01 |
| 19 | 1.8 | 9 | .04 | 3.8 | --- | --- | .26 | 4 | .00 |
| 20 | 6.9 | --- | --- | 2.2 | --- | --- | .22 | 3 | .00 |
| 21 | 3.2 | 43 | .37 | .99 | 43 | .11 | .20 | 2 | .00 |
| 22 | 1.9 | 32 | .16 | .67 | 34 | .06 | .18 | 4 | .00 |
| 23 | 1.6 | 22 | .10 | .55 | --- | --- | .17 | 11 | .01 |
| 24 | 1.8 | 23 | .11 | .78 | --- | --- | .14 | 17 | .01 |
| 25 | 1.2 | 21 | .07 | .70 | --- | --- | .45 | --- | --- |
| 26 | .78 | 16 | .03 | .52 | 9 | .01 | .46 | --- | --- |
| 27 | .55 | 15 | .02 | .55 | 10 | .01 | .20 | 2 | .00 |
| 28 | .49 | 14 | .02 | .93 | 28 | .08 | .11 | 2 | .00 |
| 29 | .34 | 13 | .01 | .82 | 4 | .01 | .10 | 19 | .00 |
| 30 | .30 | 8 | .01 | 1.9 | 196 | 2.5 | .14 | --- | --- |
| 31 | --- | --- | --- | 2.7 | 35 | .26 | --- | --- | --- |
| TOTAL | 53.79 | --- | 18.09 | 21.03 | --- | 3.13 | 31.05 | --- | 8.79 |

BIG SANDY RIVER BASIN

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| JULY | | | | AUGUST | | | SEPTEMBER | | |
| 1 | .15 | --- | --- | .09 | 4 | .00 | .04 | 3 | .00 |
| 2 | .10 | 8 | .00 | .09 | 7 | .00 | .04 | 3 | .00 |
| 3 | .26 | --- | --- | .10 | --- | --- | .06 | 28 | .01 |
| 4 | .14 | --- | --- | .08 | 29 | .01 | .06 | 4 | .00 |
| 5 | .11 | 65 | .02 | .08 | 6 | .00 | .03 | 5 | .00 |
| 6 | .63 | 116 | .38 | .11 | --- | --- | .03 | 4 | .00 |
| 7 | .19 | 6 | .00 | .11 | --- | --- | .03 | 7 | .00 |
| 8 | .14 | 81 | .03 | .17 | --- | --- | .04 | 30 | .00 |
| 9 | .11 | 93 | .03 | .09 | 11 | .00 | .03 | 6 | .00 |
| 10 | .10 | 24 | .01 | .09 | 11 | .00 | .02 | 14 | .00 |
| 11 | .10 | 2 | .00 | .16 | 231 | .39 | .02 | 7 | .00 |
| 12 | .09 | 1 | .00 | .12 | 40 | .01 | .02 | 2 | .00 |
| 13 | .11 | --- | --- | .09 | 14 | .00 | .02 | 3 | .00 |
| 14 | .20 | --- | --- | .08 | 19 | .00 | .02 | 23 | .00 |
| 15 | .10 | 28 | .01 | .08 | 26 | .01 | .10 | --- | --- |
| 16 | .11 | 4 | .00 | .25 | 96 | .09 | .10 | 3 | .00 |
| 17 | .09 | 5 | .00 | .09 | 30 | .01 | .05 | 0 | .00 |
| 18 | .08 | 4 | .00 | .07 | 14 | .00 | .04 | 1 | .00 |
| 19 | .08 | 2 | .00 | .05 | 16 | .00 | .04 | 1 | .00 |
| 20 | .10 | --- | --- | .04 | 19 | .00 | .04 | 1 | .00 |
| 21 | .12 | --- | --- | .04 | 12 | .00 | .04 | 0 | .00 |
| 22 | .14 | --- | --- | .04 | 15 | .00 | .04 | 2 | .00 |
| 23 | .09 | 5 | .00 | .03 | 8 | .00 | .04 | 2 | .00 |
| 24 | .08 | 5 | .00 | .03 | 13 | .00 | .04 | 2 | .00 |
| 25 | .08 | 4 | .00 | .03 | 5 | .00 | .03 | 4 | .00 |
| 26 | .07 | 4 | .00 | .03 | 0 | .00 | .03 | 2 | .00 |
| 27 | .07 | 5 | .00 | .03 | 4 | .00 | .03 | 1 | .00 |
| 28 | .40 | 413 | 3.0 | .03 | 24 | .00 | .03 | 1 | .00 |
| 29 | 1.7 | --- | --- | .04 | 13 | .00 | .02 | 2 | .00 |
| 30 | .26 | 5 | .00 | .04 | 84 | .01 | .02 | 1 | .00 |
| 31 | .19 | 4 | .00 | .04 | 4 | .00 | --- | --- | --- |
| TOTAL YEAR | 6.19 194.09 | --- | 3.48 57.38 | 2.42 | --- | 0.53 | 1.15 | --- | 0.01 |

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | |
| 1 | .06 | --- | --- | .06 | 11 | .00 | .07 | 12 | .00 |
| 2 | .06 | 13 | .00 | .06 | 11 | .00 | .07 | 17 | .00 |
| 3 | .04 | 12 | .00 | .06 | 9 | .00 | .07 | 18 | .00 |
| 4 | .03 | 9 | .00 | .06 | 10 | .00 | .08 | 35 | .01 |
| 5 | .04 | --- | --- | .06 | --- | --- | .09 | 34 | .01 |
| 6 | .04 | 19 | .00 | .07 | 9 | .00 | .08 | 14 | .00 |
| 7 | .04 | 5 | .00 | .06 | 10 | .00 | .08 | 11 | .00 |
| 8 | .04 | 4 | .00 | .05 | 10 | .00 | .08 | 15 | .00 |
| 9 | .04 | 3 | .00 | .05 | 9 | .00 | .07 | 15 | .00 |
| 10 | .03 | --- | --- | .05 | 9 | .00 | .07 | 16 | .00 |
| 11 | .03 | 18 | .00 | .04 | 10 | .00 | .07 | 22 | .00 |
| 12 | .03 | 6 | .00 | .04 | 7 | .00 | .08 | 23 | .00 |
| 13 | .03 | 8 | .00 | .03 | 6 | .00 | .08 | 22 | .00 |
| 14 | .03 | 6 | .00 | .03 | 10 | .00 | .42 | --- | --- |
| 15 | .03 | 15 | .00 | .03 | 7 | .00 | .48 | --- | --- |
| 16 | .03 | 11 | .00 | .03 | 9 | .00 | .28 | --- | --- |
| 17 | .03 | 47 | .00 | .03 | 10 | .00 | .45 | --- | --- |
| 18 | .09 | 52 | .02 | .02 | 13 | .00 | .91 | --- | --- |
| 19 | .08 | 5 | .00 | .02 | 18 | .00 | .80 | --- | --- |
| 20 | .06 | 13 | .00 | .05 | 21 | .00 | .64 | --- | --- |
| 21 | .06 | 6 | .00 | .04 | 25 | .00 | .62 | --- | --- |
| 22 | .06 | 12 | .00 | .04 | 15 | .00 | 2.1 | --- | --- |
| 23 | .13 | --- | --- | .04 | 6 | .00 | .78 | --- | --- |
| 24 | .10 | 11 | .00 | .09 | --- | --- | .36 | --- | --- |
| 25 | .08 | --- | --- | .08 | 16 | .00 | .22 | --- | --- |
| 26 | .20 | --- | --- | .07 | 18 | .00 | .17 | --- | --- |
| 27 | .14 | 9 | .00 | .08 | 15 | .00 | .14 | --- | --- |
| 28 | .11 | 12 | .00 | .07 | 24 | .00 | .12 | --- | --- |
| 29 | .09 | 12 | .00 | .07 | 21 | .00 | .10 | --- | --- |
| 30 | .07 | 14 | .00 | .07 | 13 | .00 | .09 | --- | --- |
| 31 | .07 | 9 | .00 | --- | --- | --- | .22 | --- | --- |
| TOTAL | 1.97 | --- | 0.02 | 1.55 | --- | 0.00 | 9.89 | --- | 0.02 |
| JANUARY | | | FEBRUARY | | | MARCH | | | |
| 1 | .34 | | | .42 | --- | --- | 1.1 | 41 | .12 |
| 2 | .22 | | | .42 | --- | --- | .88 | 30 | .07 |
| 3 | 3.3 | | | .78 | --- | --- | .70 | 25 | .05 |
| 4 | 1.9 | | | .61 | --- | --- | .55 | 26 | .04 |
| 5 | .93 | | | .47 | --- | --- | .44 | 33 | .04 |
| 6 | .94 | | | .42 | --- | --- | .44 | --- | --- |
| 7 | 1.0 | | | .38 | --- | --- | 1.9 | --- | --- |
| 8 | .93 | | | .40 | --- | --- | 1.8 | --- | --- |
| 9 | .83 | | | 3.7 | --- | --- | 1.8 | 88 | .43 |
| 10 | .66 | | | 1.8 | --- | --- | 2.1 | 73 | .41 |
| 11 | .50 | | | 1.1 | 26 | .08 | 1.5 | 35 | .14 |
| 12 | .36 | | | .80 | 30 | .06 | 1.3 | 30 | .11 |
| 13 | .27 | | | .64 | 49 | .08 | 1.6 | --- | --- |
| 14 | .27 | | | .52 | 38 | .05 | 1.9 | 38 | .19 |
| 15 | .27 | | | .58 | --- | --- | 7.8 | 1540 | 43 |
| 16 | .27 | | | 1.3 | --- | --- | 3.5 | 160 | 1.5 |
| 17 | .22 | | | 2.2 | 185 | 1.1 | 1.9 | 65 | .33 |
| 18 | .24 | | | 1.7 | 37 | .17 | 1.2 | 39 | .13 |
| 19 | .28 | | | 1.6 | 49 | .21 | 1.2 | 64 | .30 |
| 20 | .52 | | | 1.5 | 51 | .21 | 2.1 | 71 | .40 |
| 21 | .70 | | | 1.2 | 42 | .14 | 3.5 | 66 | .62 |
| 22 | .47 | | | .74 | 35 | .07 | 3.2 | 54 | .47 |
| 23 | .44 | | | .58 | 49 | .08 | 2.1 | 41 | .23 |
| 24 | .38 | | | .49 | 45 | .06 | 1.7 | 32 | .15 |
| 25 | .34 | | | .38 | 23 | .02 | .93 | --- | --- |
| 26 | .34 | | | .42 | 21 | .02 | .70 | --- | --- |
| 27 | .36 | | | .99 | 235 | .63 | .58 | 16 | .03 |
| 28 | .42 | | | 1.5 | 51 | .21 | .52 | 23 | .03 |
| 29 | .42 | | | --- | --- | --- | .44 | 22 | .03 |
| 30 | .42 | | | --- | --- | --- | .38 | 31 | .03 |
| 31 | .44 | | | --- | --- | --- | .45 | 74 | .11 |
| TOTAL | 18.98 | | | 27.64 | --- | 3.19 | 50.21 | --- | 48.96 |

BIG SANDY RIVER BASIN

03213577 KERSHAW BRANCH NEAR HURLEY, VA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL | | | MAY | | | JUNE | | | |
| 1 | .37 | 20 | .02 | .17 | 37 | .02 | .34 | --- | --- |
| 2 | .34 | 20 | .02 | .13 | 40 | .01 | .30 | 34 | .03 |
| 3 | .38 | 22 | .02 | .12 | 31 | .01 | .19 | 36 | .02 |
| 4 | .43 | 21 | .02 | .10 | 27 | .01 | .70 | 993 | 3.8 |
| 5 | .34 | 20 | .02 | .09 | 80 | .02 | .61 | 38 | .06 |
| 6 | .27 | --- | --- | .09 | 16 | .00 | .30 | 30 | .02 |
| 7 | .21 | --- | --- | .08 | 29 | .01 | .27 | 19 | .01 |
| 8 | .20 | 15 | .01 | .12 | 16 | .01 | .36 | 69 | .23 |
| 9 | .27 | 15 | .01 | .09 | 27 | .01 | .22 | 31 | .02 |
| 10 | .24 | 21 | .01 | .07 | 82 | .02 | 1.3 | 505 | 3.3 |
| 11 | .19 | 21 | .01 | .07 | 107 | .02 | .44 | 20 | .02 |
| 12 | .18 | 20 | .01 | .06 | 34 | .01 | .64 | --- | --- |
| 13 | .19 | 15 | .01 | .07 | 20 | .00 | 1.6 | --- | --- |
| 14 | .20 | 12 | .01 | .08 | 15 | .00 | .47 | 40 | .05 |
| 15 | .16 | 13 | .01 | .07 | 11 | .00 | .22 | 22 | .01 |
| 16 | .14 | 13 | .00 | .07 | 18 | .00 | .24 | 19 | .01 |
| 17 | .15 | 13 | .01 | .06 | 16 | .00 | .24 | 49 | .04 |
| 18 | .13 | --- | --- | .09 | --- | --- | .18 | 32 | .02 |
| 19 | .15 | --- | --- | .12 | --- | --- | .15 | 34 | .01 |
| 20 | .15 | 10 | .00 | .09 | 33 | .01 | .12 | --- | --- |
| 21 | .15 | 10 | .00 | .09 | 14 | .00 | .11 | 15 | .00 |
| 22 | .12 | 12 | .00 | .07 | 19 | .00 | .11 | --- | --- |
| 23 | .11 | 12 | .00 | .09 | --- | --- | .10 | 148 | .04 |
| 24 | .11 | 10 | .00 | .06 | 13 | .00 | .09 | 26 | .01 |
| 25 | .12 | 10 | .00 | .06 | 12 | .00 | .09 | 8 | .00 |
| 26 | .55 | --- | --- | .18 | 55 | .10 | .10 | --- | --- |
| 27 | 1.2 | --- | --- | .24 | 77 | .08 | .09 | --- | --- |
| 28 | .24 | 56 | .04 | .27 | --- | --- | .09 | 15 | .00 |
| 29 | .14 | 42 | .02 | .24 | 53 | .03 | .10 | --- | --- |
| 30 | .16 | 33 | .01 | .15 | 28 | .01 | .09 | 20 | .00 |
| 31 | --- | --- | --- | .12 | --- | --- | --- | --- | --- |
| TOTAL | 7.59 | --- | 0.26 | 3.41 | --- | 0.38 | 9.86 | --- | 7.70 |
| JULY | | | AUGUST | | | SEPTEMBER | | | |
| 1 | .08 | 19 | .00 | .06 | 99 | .02 | .49 | --- | --- |
| 2 | .07 | 6 | .00 | .06 | 8 | .00 | .09 | --- | --- |
| 3 | .38 | 666 | .34 | .05 | 5 | .00 | .04 | 21 | .00 |
| 4 | .30 | 566 | .81 | .04 | 6 | .00 | .04 | 36 | .00 |
| 5 | .18 | 470 | .23 | .06 | 9 | .00 | .06 | 23 | .00 |
| 6 | .08 | 530 | .11 | .05 | 9 | .00 | .08 | 16 | .00 |
| 7 | .07 | 220 | .04 | .05 | 50 | .01 | .07 | 15 | .00 |
| 8 | .12 | 2000 | 1.1 | 2.1 | 1220 | 12 | .07 | 10 | .00 |
| 9 | .09 | 1220 | .30 | .65 | --- | --- | .07 | 8 | .00 |
| 10 | .09 | --- | --- | .07 | 44 | .01 | .07 | 7 | .00 |
| 11 | .13 | --- | --- | .04 | 28 | .00 | .07 | 12 | .00 |
| 12 | .10 | 197 | .05 | .06 | 14 | .00 | .07 | 8 | .00 |
| 13 | .06 | 71 | .01 | .06 | 9 | .00 | .07 | 21 | .00 |
| 14 | .06 | 40 | .01 | .05 | 12 | .00 | .08 | --- | --- |
| 15 | .06 | 53 | .01 | .05 | 22 | .00 | .10 | --- | --- |
| 16 | .06 | 27 | .01 | .06 | 17 | .00 | .07 | 11 | .00 |
| 17 | .08 | --- | --- | .05 | 9 | .00 | .06 | 10 | .00 |
| 18 | .10 | --- | --- | .04 | 10 | .00 | .05 | 14 | .00 |
| 19 | .08 | 64 | .01 | .04 | 11 | .00 | .05 | 24 | .00 |
| 20 | .09 | 30 | .01 | .04 | 10 | .00 | .04 | 20 | .00 |
| 21 | .08 | 34 | .01 | .04 | 10 | .00 | .04 | 14 | .00 |
| 22 | .12 | 1550 | 1.4 | .03 | 16 | .00 | .04 | 10 | .00 |
| 23 | .08 | 145 | .03 | .03 | 14 | .00 | .04 | 6 | .00 |
| 24 | .06 | 187 | .03 | .04 | --- | --- | .04 | 10 | .00 |
| 25 | .04 | 66 | .01 | .09 | --- | --- | .04 | 17 | .00 |
| 26 | .04 | 10 | .00 | .04 | 21 | .00 | .06 | --- | --- |
| 27 | .04 | 9 | .00 | .04 | 14 | .00 | .10 | --- | --- |
| 28 | .15 | --- | --- | .04 | 15 | .00 | .09 | 6 | .00 |
| 29 | .08 | --- | --- | .03 | 19 | .00 | .07 | 24 | .00 |
| 30 | .14 | --- | --- | .06 | --- | --- | .06 | 8 | .00 |
| 31 | .08 | 68 | .01 | 4.0 | --- | --- | --- | --- | --- |
| TOTAL YEAR | 3.19 144.73 | --- | 4.53 77.10 | 8.12 | --- | 12.04 | 2.32 | --- | 0.00 |

03471500 SOUTH FORK HOLSTON RIVER AT RIVERSIDE, NEAR CHILHOWIE, VA

LOCATION.--Lat 36°45'37", long 81°37'53", Smyth County, Hydrologic Unit 06010102, on right bank 400 ft (122 m) upstream from highway bridge at Riverside, 900 ft (274 m) upstream from Spring Branch, 3.2 mi (5.1 km) downstream from Redstone Branch, 4.0 mi (6.4 km) southeast of Chilhowie, and at mile 97.2 (156.4 km).

DRAINAGE AREA.--76.1 mi² (197.1 km²).

PERIOD OF RECORD.--October 1920 to December 1931, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1306. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909, at site 4.5 mi (7.2 km) downstream also published as "near Chilhowie"; records not equivalent.

REVISED RECORDS.--WSP 1033: 1943-44(m). WSP 1306: Drainage area, 1921-31(M).

GAGE.--Water-stage recorder. Datum of gage is 2,106.77 ft (642.143 m) National Geodetic Vertical Datum of 1929. Nov. 1, 1920, to Nov. 14, 1931, nonrecording gage at site 400 ft (122 m) downstream at same datum.

REMARKS.--Records good. Prior to August 1951, diurnal fluctuation at low flow caused by mill 500 ft (152 m) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 112 ft³/s (3.172 m³/s), 19.99 in/yr (508 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft³/s (272 m³/s) Nov. 6, 1977, gage height, 10.20 ft (3.109 m), from rating curve extended above 3,700 ft³/s (100 m³/s) on basis of slope-area measurement of peak flow; minimum recorded, 2 ft³/s (0.06 m³/s) Aug. 26, Oct. 15, 1943, Aug. 9, 11, 1944, Oct. 19, 1945, but may have been less in 1925 and 1926 before installation of water-stage recorder; minimum daily, 8 ft³/s (0.23 m³/s) July 19, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft³/s (18 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1200 | *2040 57.8 | 5.56 1.695 | Feb. 18 | 0630 | 672 19.0 | 3.42 1.042 |
| Jan. 21 | 1800 | 744 21.1 | 3.57 1.088 | Aug. 9 | 1230 | 763 21.6 | 3.61 1.100 |
| Feb. 3 | 1430 | 1560 44.2 | 4.95 1.509 | | | | |

Minimum daily discharge, 19 ft³/s (0.54 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|-------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 25 | 29 | 29 | 104 | 162 | 122 | 116 | 145 | 53 | 53 | 65 | 70 |
| 2 | 31 | 28 | 32 | 113 | 167 | 134 | 106 | 130 | 51 | 46 | 51 | 64 |
| 3 | 27 | 28 | 31 | 378 | 1050 | 198 | 102 | 126 | 45 | 44 | 45 | 59 |
| 4 | 23 | 27 | 31 | 1350 | 784 | 232 | 96 | 110 | 45 | 47 | 42 | 53 |
| 5 | 21 | 28 | 32 | 678 | 449 | 278 | 92 | 102 | 52 | 49 | 40 | 48 |
| 6 | 22 | 29 | 30 | 358 | 327 | 306 | 103 | 95 | 47 | 43 | 39 | 45 |
| 7 | 25 | 28 | 29 | 245 | 243 | 465 | 93 | 91 | 44 | 42 | 41 | 42 |
| 8 | 23 | 27 | 30 | 187 | 193 | 511 | 91 | 88 | 44 | 49 | 38 | 41 |
| 9 | 22 | 26 | 30 | 158 | 216 | 369 | 97 | 83 | 56 | 52 | 429 | 38 |
| 10 | 21 | 26 | 28 | 118 | 243 | 281 | 93 | 78 | 121 | 45 | 276 | 37 |
| 11 | 21 | 26 | 28 | 95 | 225 | 232 | 91 | 74 | 109 | 42 | 142 | 36 |
| 12 | 21 | 26 | 28 | 110 | 194 | 198 | 91 | 70 | 89 | 52 | 102 | 35 |
| 13 | 21 | 25 | 28 | 100 | 174 | 178 | 89 | 66 | 310 | 78 | 83 | 34 |
| 14 | 20 | 25 | 31 | 85 | 149 | 155 | 86 | 64 | 232 | 73 | 72 | 41 |
| 15 | 19 | 25 | 41 | 75 | 137 | 160 | 82 | 61 | 146 | 58 | 63 | 39 |
| 16 | 20 | 25 | 47 | 65 | 157 | 161 | 78 | 60 | 110 | 49 | 58 | 35 |
| 17 | 21 | 26 | 43 | 45 | 300 | 175 | 81 | 58 | 108 | 46 | 55 | 34 |
| 18 | 22 | 25 | 44 | 50 | 624 | 165 | 98 | 56 | 88 | 44 | 59 | 33 |
| 19 | 23 | 24 | 40 | 70 | 497 | 168 | 96 | 61 | 77 | 47 | 54 | 33 |
| 20 | 22 | 26 | 38 | 219 | 413 | 169 | 96 | 56 | 72 | 54 | 49 | 34 |
| 21 | 21 | 26 | 41 | 560 | 345 | 267 | 92 | 61 | 65 | 46 | 47 | 34 |
| 22 | 21 | 25 | 48 | 534 | 269 | 367 | 85 | 55 | 66 | 43 | 45 | 33 |
| 23 | 23 | 25 | 99 | 379 | 214 | 303 | 81 | 54 | 62 | 56 | 43 | 33 |
| 24 | 29 | 27 | 139 | 320 | 182 | 239 | 77 | 66 | 56 | 48 | 46 | 31 |
| 25 | 28 | 28 | 115 | 248 | 159 | 197 | 76 | 63 | 53 | 42 | 60 | 31 |
| 26 | 32 | 28 | 92 | 189 | 139 | 189 | 156 | 60 | 50 | 40 | 58 | 32 |
| 27 | 46 | 29 | 81 | 140 | 135 | 162 | 281 | 55 | 49 | 38 | 47 | 35 |
| 28 | 40 | 29 | 73 | 131 | 127 | 146 | 337 | 52 | 48 | 38 | 44 | 32 |
| 29 | 34 | 29 | 70 | 114 | --- | 135 | 239 | 51 | 54 | 38 | 41 | 31 |
| 30 | 31 | 28 | 67 | 102 | --- | 126 | 177 | 49 | 55 | 39 | 39 | 30 |
| 31 | 30 | --- | 73 | 106 | --- | 121 | --- | 47 | --- | 57 | 63 | --- |
| TOTAL | 785 | 803 | 1568 | 7426 | 8274 | 6909 | 3478 | 2287 | 2457 | 1498 | 2336 | 1173 |
| MEAN | 25.3 | 26.8 | 50.6 | 240 | 296 | 223 | 116 | 73.8 | 81.9 | 48.3 | 75.4 | 39.1 |
| MAX | 46 | 29 | 139 | 1350 | 1050 | 511 | 337 | 145 | 310 | 78 | 429 | 70 |
| MIN | 19 | 24 | 28 | 45 | 127 | 121 | 76 | 47 | 44 | 38 | 38 | 30 |
| CFSM | .33 | .35 | .67 | 3.15 | 3.89 | 2.93 | 1.52 | .97 | 1.08 | .64 | .99 | .51 |
| IN. | .38 | .39 | .77 | 3.63 | 4.04 | 3.38 | 1.70 | 1.12 | 1.20 | .73 | 1.14 | .57 |
| CAL YR 1981 | TOTAL | 31195 | MEAN | 85.5 | MAX | 995 | MIN | 15 | CFSM | 1.12 | IN | 15.25 |
| WTR YR 1982 | TOTAL | 38994 | MEAN | 107 | MAX | 1350 | MIN | 19 | CFSM | 1.41 | IN | 19.06 |

TENNESSEE RIVER BASIN

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA

LOCATION.--Lat 36°39'06", long 81°50'39", Washington County, Hydrologic Unit 06010102, on right bank 500 ft (152 m) upstream from bridge on U.S. Highway 58, 0.7 mi (1.1 km) downstream from Laurel Creek, 3.2 mi (5.1 km) northwest of Damascus, 4.9 mi (7.9 km) upstream from Middle Fork, and at mile 77.2 (124.2 km).

DRAINAGE AREA.--301 mi² (780 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306. Published as "at Vestal" prior to October 1978.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1932-33(M).

GAGE.--Water-stage recorder. Datum of gage is 1,792.30 ft (546.293 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Aug. 20 to Sept. 30, which are fair. Some diurnal fluctuation caused by powerplant above station. Tennessee Valley Authority gage-height radio transmitter at station, receiver and recorder at Kingsport, TN.

AVERAGE DISCHARGE.--51 years, 479 ft³/s (13.57 m³/s), 21.61 in/yr (549 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) Apr. 5, 1977, gage height, 17.11 ft (5.215 m), from rating curve extended above 10,000 ft³/s (280 m³/s) on basis of slope-area measurement of peak flow; minimum, 30 ft³/s (0.85 m³/s) Oct. 14, 1941, Dec. 24, 1943, gage height, 2.16 ft (0.658 m); minimum daily, 60 ft³/s (1.70 m³/s) Sept. 18, 1954, Sept. 26, 27, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Jan. 4 | 1130 | 5380 152 | 9.30 2.835 | Feb. 3 | 1300 | *5990 170 | 9.77 2.978 |

Minimum discharge, 95 ft³/s (2.69 m³/s) Oct. 1, 15, gage height, 2.40 ft (0.732 m); minimum daily, 97 ft³/s (2.75 m³/s) Oct. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|------|-------|------|-------|------|
| 1 | 98 | 149 | 197 | 822 | 604 | 688 | 514 | 602 | 260 | 259 | 1270 | 1500 |
| 2 | 147 | 142 | 208 | 723 | 663 | 764 | 477 | 522 | 276 | 215 | 674 | 520 |
| 3 | 122 | 135 | 192 | 1700 | 4200 | 880 | 430 | 530 | 223 | 201 | 468 | 350 |
| 4 | 106 | 129 | 192 | 4240 | 2870 | 922 | 384 | 467 | 233 | 210 | 359 | 300 |
| 5 | 105 | 133 | 197 | 2440 | 1670 | 1000 | 459 | 416 | 456 | 265 | 304 | 270 |
| 6 | 106 | 167 | 175 | 1380 | 1230 | 1030 | 395 | 381 | 354 | 206 | 282 | 240 |
| 7 | 115 | 140 | 170 | 1030 | 948 | 1630 | 388 | 361 | 280 | 216 | 262 | 230 |
| 8 | 106 | 129 | 184 | 829 | 783 | 2240 | 391 | 353 | 243 | 269 | 236 | 220 |
| 9 | 102 | 125 | 184 | 702 | 955 | 1580 | 463 | 337 | 256 | 481 | 1210 | 210 |
| 10 | 101 | 121 | 172 | 528 | 1180 | 1210 | 450 | 311 | 519 | 316 | 1090 | 200 |
| 11 | 101 | 118 | 166 | 416 | 1030 | 1000 | 440 | 288 | 542 | 266 | 684 | 190 |
| 12 | 101 | 115 | 169 | 472 | 871 | 873 | 425 | 268 | 414 | 414 | 505 | 180 |
| 13 | 99 | 113 | 157 | 453 | 787 | 767 | 406 | 253 | 1220 | 430 | 403 | 180 |
| 14 | 97 | 111 | 214 | 412 | 673 | 740 | 400 | 240 | 905 | 518 | 347 | 170 |
| 15 | 97 | 110 | 372 | 350 | 620 | 651 | 373 | 232 | 611 | 342 | 304 | 220 |
| 16 | 100 | 110 | 423 | 280 | 763 | 734 | 352 | 228 | 466 | 277 | 285 | 200 |
| 17 | 100 | 117 | 366 | 200 | 1300 | 904 | 338 | 219 | 626 | 245 | 317 | 185 |
| 18 | 103 | 116 | 340 | 220 | 2040 | 1190 | 417 | 266 | 609 | 271 | 334 | 180 |
| 19 | 110 | 109 | 276 | 300 | 1730 | 980 | 384 | 265 | 474 | 573 | 276 | 175 |
| 20 | 103 | 128 | 242 | 1030 | 1430 | 958 | 383 | 264 | 417 | 392 | 250 | 170 |
| 21 | 98 | 129 | 270 | 2060 | 1210 | 994 | 381 | 260 | 342 | 312 | 240 | 180 |
| 22 | 98 | 114 | 411 | 2050 | 984 | 1390 | 355 | 244 | 320 | 256 | 230 | 175 |
| 23 | 119 | 108 | 836 | 1490 | 814 | 1480 | 334 | 266 | 295 | 281 | 220 | 170 |
| 24 | 170 | 141 | 1010 | 1250 | 721 | 1200 | 317 | 297 | 259 | 299 | 210 | 165 |
| 25 | 128 | 161 | 760 | 1000 | 655 | 982 | 307 | 272 | 240 | 238 | 250 | 160 |
| 26 | 186 | 145 | 579 | 798 | 565 | 834 | 456 | 260 | 226 | 210 | 400 | 160 |
| 27 | 279 | 154 | 495 | 620 | 614 | 817 | 700 | 266 | 220 | 204 | 290 | 170 |
| 28 | 251 | 208 | 433 | 576 | 644 | 687 | 1040 | 264 | 228 | 293 | 240 | 180 |
| 29 | 202 | 199 | 416 | 488 | --- | 617 | 909 | 290 | 276 | 227 | 220 | 170 |
| 30 | 176 | 189 | 391 | 438 | --- | 570 | 725 | 248 | 262 | 218 | 210 | 160 |
| 31 | 160 | --- | 494 | 457 | --- | 526 | --- | 236 | --- | 813 | 200 | --- |
| TOTAL | 3986 | 4065 | 10691 | 29754 | 32554 | 30838 | 13793 | 9706 | 12052 | 9717 | 12570 | 7580 |
| MEAN | 129 | 136 | 345 | 960 | 1163 | 995 | 460 | 313 | 402 | 313 | 405 | 253 |
| MAX | 279 | 208 | 1010 | 4240 | 4200 | 2240 | 1040 | 602 | 1220 | 813 | 1270 | 1500 |
| MIN | 97 | 108 | 157 | 200 | 565 | 526 | 307 | 219 | 220 | 201 | 200 | 160 |
| CFSM | .43 | .45 | 1.15 | 3.19 | 3.86 | 3.31 | 1.53 | 1.04 | 1.34 | 1.04 | 1.35 | .84 |
| IN. | .49 | .50 | 1.32 | 3.68 | 4.02 | 3.81 | 1.70 | 1.20 | 1.49 | 1.20 | 1.55 | .94 |

CAL YR 1981 TOTAL 142038 MEAN 389 MAX 3620 MIN 65 CFSM 1.29 IN 17.55
WTR YR 1982 TOTAL 177306 MEAN 486 MAX 4240 MIN 97 CFSM 1.62 IN 21.91

TENNESSEE RIVER BASIN

351

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1949 to September 1950, October 1967 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | COLOR (PLAT- INUM- COBALT UNITS) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CAC03) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) |
|-----------|------|---|---|---------------|-----------------------------|--|-------------------------------------|--|--|--|--|---|
| OCT 08... | 1030 | 105 | 202 | 7.3 | 11.0 | 2 | 9.8 | 88 | 23 | 7.5 | 7.4 | 1.9 |
| NOV 19... | 1030 | 109 | 192 | 7.8 | 6.0 | 6 | 10.5 | 73 | 18 | 6.8 | 8.1 | 1.6 |
| JAN 07... | 1045 | 1050 | 96 | 7.5 | 8.0 | 2 | 9.8 | 37 | 9.6 | 3.1 | 2.8 | 1.5 |
| MAR 01... | 1300 | 665 | 121 | 7.4 | 8.0 | 16 | 11.2 | 57 | 15 | 4.8 | 2.1 | 3.7 |
| APR 09... | 1105 | 472 | 146 | 8.1 | 7.0 | 2 | 11.6 | 57 | 15 | 4.7 | 1.8 | 9.7 |
| MAY 28... | 0930 | 253 | 140 | 7.8 | 18.0 | 1 | 8.3 | 58 | 15 | 4.9 | 3.4 | 1.3 |
| JUL 01... | 0800 | 276 | 152 | 8.0 | 18.5 | 7 | 8.1 | 63 | 16 | 5.5 | 2.5 | 4.7 |
| AUG 20... | 0910 | 250 | 173 | 7.8 | 19.0 | 17 | 7.7 | 71 | 18 | 6.3 | 4.6 | 1.3 |

| DATE | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) | IRON, DIS- SOLVED (UG/L AS FE) |
|-----------|---|---|---|--|---|--|--|---|---|--|--|
| OCT 08... | 81 | 16 | 4.1 | <.1 | 6.1 | 128 | 115 | <.010 | .44 | .030 | 17 |
| NOV 19... | 68 | 21 | 4.8 | <.1 | 4.0 | 124 | 105 | <.010 | .35 | .020 | 26 |
| JAN 07... | 32 | 6.3 | 3.8 | <.1 | 5.7 | 59 | 52 | <.010 | .83 | <.010 | 8 |
| MAR 01... | 48 | 4.1 | 5.4 | <.1 | 5.3 | 80 | 69 | .010 | .74 | <.010 | 22 |
| APR 09... | 54 | 4.0 | 9.4 | <.1 | 4.8 | 96 | 82 | <.010 | .59 | <.010 | 23 |
| MAY 28... | 58 | 6.0 | 2.8 | <.1 | 5.5 | 76 | 74 | <.010 | .38 | .020 | 36 |
| JUL 01... | 62 | 5.0 | 5.9 | <.1 | 5.1 | 106 | 82 | <.010 | .51 | <.010 | 22 |
| AUG 20... | 70 | 7.0 | 3.1 | <.1 | 5.4 | 81 | 88 | <.010 | .52 | .020 | 35 |

< Actual value is known to be less than the value shown.

03475000 MIDDLE FORK HOLSTON RIVER NEAR MEADOWVIEW, VA

LOCATION.--Lat 36°42'47", long 81°49'08", Washington County, Hydrologic Unit 06010102, on left bank 48 ft (15 m) downstream from bridge on State Highway 803, 0.9 mi (1.4 km) upstream from Cedar Creek, 4.1 mi (6.6 km) southeast of Meadowview, and at mile 13.2 (21.2 km).

DRAINAGE AREA.--211 mi² (546 km²).

PERIOD OF RECORD.--October 1931 to September 1953, May 1976 to current year. Monthly discharge only for October 1931, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1276: 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,820.22 ft (554.803 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Prior to 1954, flow regulated by powerplant 0.9 mi (1.4 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--28 years, 242 ft³/s (6.853 m³/s), 15.58 in/yr (396 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Nov. 7, 1977, gage height, 13.41 ft (4.087 m); minimum, 6 ft³/s (0.17 m³/s) Nov. 10, 1933, Dec. 4, 1936, Jan. 21, 22, Feb. 1, 1940, Jan. 8, 1942, Oct. 15, 16, 31, 1943; minimum daily, 7 ft³/s (0.20 m³/s) Nov. 19, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of 11.8 ft (3.60 m), from floodmark, discharge, 10,000 ft³/s (283 m³/s), and flood of Dec. 10, 1972, reached a stage of 11.0 ft (3.35 m), from floodmark, discharge, 8,540 ft³/s (242 m³/s), from information by Tennessee Valley Authority. Flood of Mar. 30, 1975, reached a stage of 10.37 ft (3.161 m), discharge, 7,410 ft³/s (210 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (57 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|---------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1945 | 3100 87.8 | 7.03 2.143 | Feb. 18 | 0300 | 2420 68.5 | 6.20 1.890 |
| Jan. 21 | 2000 | 2160 61.2 | 5.85 1.783 | Mar. 7 | 2100 | 2020 57.2 | 5.66 1.725 |
| Feb. 3 | 1830 | *4100 116 | 8.01 2.441 | June 13 | 2000 | 3420 96.9 | 7.40 2.256 |

Minimum discharge, 58 ft³/s (1.64 m³/s) Oct. 21, 22, gage height, 1.92 ft (0.585 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 76 | 94 | 79 | 182 | 302 | 376 | 277 | 212 | 344 | 193 | 280 | 212 |
| 2 | 78 | 94 | 93 | 217 | 295 | 464 | 255 | 203 | 219 | 160 | 184 | 193 |
| 3 | 80 | 96 | 88 | 687 | 2560 | 551 | 245 | 212 | 155 | 141 | 146 | 160 |
| 4 | 80 | 91 | 84 | 2120 | 1870 | 500 | 242 | 190 | 149 | 146 | 130 | 138 |
| 5 | 80 | 92 | 85 | 1300 | 912 | 560 | 235 | 181 | 486 | 166 | 122 | 125 |
| 6 | 79 | 93 | 80 | 613 | 663 | 574 | 262 | 172 | 332 | 141 | 112 | 117 |
| 7 | 79 | 90 | 76 | 442 | 518 | 1190 | 317 | 163 | 212 | 125 | 107 | 112 |
| 8 | 78 | 87 | 76 | 360 | 434 | 1300 | 277 | 160 | 166 | 125 | 105 | 110 |
| 9 | 76 | 86 | 74 | 295 | 603 | 789 | 252 | 155 | 181 | 135 | 800 | 105 |
| 10 | 75 | 86 | 72 | 228 | 884 | 658 | 238 | 143 | 273 | 127 | 901 | 102 |
| 11 | 74 | 85 | 69 | 163 | 673 | 555 | 228 | 138 | 313 | 117 | 400 | 100 |
| 12 | 73 | 84 | 69 | 209 | 532 | 473 | 238 | 133 | 225 | 115 | 392 | 97 |
| 13 | 72 | 84 | 69 | 206 | 469 | 413 | 222 | 127 | 1960 | 120 | 287 | 93 |
| 14 | 70 | 81 | 80 | 193 | 400 | 400 | 215 | 122 | 1380 | 178 | 222 | 135 |
| 15 | 67 | 70 | 118 | 140 | 372 | 408 | 212 | 120 | 584 | 141 | 190 | 135 |
| 16 | 66 | 69 | 156 | 110 | 430 | 460 | 193 | 117 | 392 | 117 | 178 | 112 |
| 17 | 65 | 71 | 132 | 90 | 1050 | 460 | 187 | 115 | 317 | 115 | 166 | 102 |
| 18 | 66 | 70 | 119 | 100 | 1880 | 421 | 209 | 112 | 269 | 115 | 178 | 97 |
| 19 | 65 | 69 | 105 | 140 | 1130 | 425 | 209 | 133 | 228 | 112 | 163 | 122 |
| 20 | 62 | 72 | 82 | 603 | 924 | 434 | 193 | 122 | 206 | 138 | 143 | 110 |
| 21 | 59 | 73 | 82 | 1560 | 741 | 1370 | 190 | 146 | 187 | 143 | 138 | 102 |
| 22 | 59 | 70 | 132 | 1280 | 589 | 1220 | 187 | 138 | 178 | 117 | 127 | 100 |
| 23 | 63 | 68 | 339 | 789 | 491 | 795 | 172 | 122 | 175 | 138 | 122 | 97 |
| 24 | 69 | 76 | 561 | 736 | 434 | 628 | 163 | 120 | 157 | 152 | 125 | 93 |
| 25 | 73 | 85 | 307 | 546 | 388 | 546 | 166 | 135 | 146 | 122 | 181 | 93 |
| 26 | 78 | 80 | 224 | 430 | 360 | 477 | 245 | 127 | 138 | 107 | 166 | 93 |
| 27 | 119 | 80 | 195 | 325 | 344 | 404 | 291 | 120 | 152 | 115 | 135 | 100 |
| 28 | 153 | 84 | 176 | 298 | 336 | 336 | 295 | 115 | 155 | 130 | 122 | 97 |
| 29 | 113 | 80 | 165 | 262 | --- | 298 | 266 | 117 | 178 | 110 | 117 | 91 |
| 30 | 104 | 76 | 151 | 242 | --- | 284 | 235 | 115 | 199 | 122 | 110 | 88 |
| 31 | 98 | --- | 153 | 242 | --- | 295 | --- | 107 | --- | 212 | 169 | --- |
| TOTAL | 2449 | 2436 | 4291 | 15108 | 20584 | 18064 | 6916 | 4392 | 10056 | 4195 | 6718 | 3431 |
| MEAN | 79.0 | 81.2 | 138 | 487 | 735 | 583 | 231 | 142 | 335 | 135 | 217 | 114 |
| MAX | 153 | 96 | 561 | 2120 | 2560 | 1370 | 317 | 212 | 1960 | 212 | 901 | 212 |
| MIN | 59 | 68 | 69 | 90 | 295 | 284 | 163 | 107 | 138 | 107 | 105 | 88 |
| CFSM | .37 | .39 | .65 | 2.31 | 3.48 | 2.76 | 1.10 | .67 | 1.59 | .64 | 1.03 | .54 |
| IN. | .43 | .43 | .76 | 2.66 | 3.63 | 3.18 | 1.22 | .77 | 1.77 | .74 | 1.18 | .60 |

CAL YR 1981 TOTAL 74850 MEAN 205 MAX 2400 MIN 34 CFSM .97 IN 13.20
WTR YR 1982 TOTAL 98640 MEAN 270 MAX 2560 MIN 59 CFSM 1.28 IN 17.39

TENNESSEE RIVER BASIN

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03478400 BEAVER CREEK AT BRISTOL, VA

LOCATION.--Lat 36°37'54", long 82°08'02", Bristol City, Hydrologic Unit 06010102, on right bank 50 ft (15 m) upstream from bridge on State Highway 1405, 75 ft (23 m) downstream from Goose Creek, 0.9 mi (1.4 km) downstream from Clear Creek, 3.7 mi (6.0 km) northeast of Bristol, VA post office, and at mile 20.6 (33.1 km).

DRAINAGE AREA.--27.7 mi² (71.7 km²).

PERIOD OF RECORD.--July 1957 to current year. Published as "near Bristol" prior to October 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,780.98 ft (542.843 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Dec. 20 to Jan. 20, which are fair. Small diurnal fluctuation at low flow caused by withdrawal of water, which is returned to stream 600 ft (183 m) above station, for car-washing operation. Since September 1965, some regulation at high flow by flood-control reservoirs, capacity, 7,600 acre-ft (9.37 hm³). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--25 years, 35.8 ft³/s (1.014 m³/s), 17.55 in/yr (446 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft³/s (45.3 m³/s) Oct. 2, 1977, gage height, 9.94 ft (3.030 m), from rating curve extended above 390 ft³/s (11 m³/s) on basis of slope-area measurement of peak flow; minimum, 3.4 ft³/s (0.096 m³/s) Dec. 30, 1963; minimum daily, 7.4 ft³/s (0.21 m³/s) Sept. 28, 29, Oct. 5, 15, 18, 19, 23, 24, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1936 reached a stage of about 12 ft (3.7 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 376 ft³/s (10.6 m³/s) Aug. 9, gage height, 6.12 ft (1.865 m); minimum, 11 ft³/s (0.31 m³/s) Dec. 11-14; minimum gage height, 2.73 ft (0.832 m) Dec. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 22 | 15 | 14 | 35 | 57 | 72 | 59 | 33 | 42 | 41 | 118 | 135 |
| 2 | 23 | 15 | 14 | 40 | 67 | 69 | 57 | 33 | 31 | 37 | 85 | 67 |
| 3 | 21 | 15 | 13 | 50 | 183 | 66 | 57 | 33 | 27 | 38 | 72 | 54 |
| 4 | 21 | 15 | 13 | 200 | 120 | 63 | 54 | 32 | 94 | 38 | 64 | 47 |
| 5 | 21 | 15 | 13 | 100 | 90 | 66 | 54 | 31 | 95 | 35 | 60 | 44 |
| 6 | 21 | 15 | 12 | 60 | 81 | 62 | 58 | 31 | 52 | 33 | 56 | 41 |
| 7 | 21 | 14 | 12 | 45 | 72 | 90 | 53 | 30 | 43 | 34 | 51 | 40 |
| 8 | 21 | 14 | 12 | 38 | 67 | 81 | 53 | 31 | 39 | 68 | 56 | 39 |
| 9 | 20 | 14 | 12 | 34 | 108 | 73 | 51 | 30 | 37 | 68 | 244 | 37 |
| 10 | 19 | 14 | 12 | 32 | 97 | 70 | 48 | 29 | 71 | 44 | 135 | 36 |
| 11 | 19 | 14 | 11 | 30 | 84 | 66 | 46 | 28 | 47 | 53 | 83 | 36 |
| 12 | 18 | 14 | 11 | 37 | 77 | 63 | 45 | 28 | 62 | 56 | 71 | 34 |
| 13 | 18 | 14 | 11 | 36 | 76 | 63 | 44 | 28 | 169 | 42 | 63 | 34 |
| 14 | 17 | 14 | 17 | 35 | 69 | 60 | 43 | 27 | 97 | 38 | 57 | 148 |
| 15 | 17 | 14 | 22 | 30 | 67 | 63 | 42 | 28 | 72 | 36 | 53 | 79 |
| 16 | 17 | 14 | 21 | 22 | 77 | 64 | 41 | 28 | 62 | 35 | 51 | 57 |
| 17 | 17 | 16 | 21 | 19 | 92 | 77 | 41 | 27 | 61 | 45 | 51 | 48 |
| 18 | 17 | 14 | 21 | 20 | 97 | 66 | 40 | 28 | 53 | 42 | 52 | 45 |
| 19 | 16 | 14 | 20 | 30 | 90 | 67 | 39 | 29 | 48 | 36 | 46 | 43 |
| 20 | 15 | 17 | 17 | 150 | 83 | 94 | 38 | 27 | 47 | 34 | 44 | 43 |
| 21 | 15 | 14 | 16 | 100 | 78 | 121 | 38 | 27 | 45 | 34 | 46 | 40 |
| 22 | 15 | 13 | 24 | 77 | 72 | 105 | 37 | 27 | 44 | 33 | 43 | 39 |
| 23 | 21 | 13 | 50 | 75 | 68 | 90 | 36 | 25 | 42 | 32 | 43 | 38 |
| 24 | 17 | 15 | 110 | 71 | 66 | 83 | 34 | 26 | 41 | 31 | 44 | 37 |
| 25 | 16 | 13 | 70 | 64 | 62 | 79 | 37 | 25 | 41 | 31 | 59 | 37 |
| 26 | 23 | 13 | 50 | 61 | 59 | 76 | 48 | 26 | 41 | 30 | 45 | 36 |
| 27 | 23 | 13 | 40 | 57 | 68 | 71 | 40 | 26 | 40 | 49 | 41 | 35 |
| 28 | 18 | 13 | 36 | 53 | 72 | 66 | 36 | 29 | 44 | 81 | 39 | 34 |
| 29 | 16 | 13 | 34 | 51 | --- | 63 | 35 | 28 | 48 | 72 | 37 | 33 |
| 30 | 16 | 13 | 32 | 50 | --- | 62 | 34 | 25 | 45 | 102 | 36 | 32 |
| 31 | 15 | --- | 30 | 57 | --- | 61 | --- | 34 | --- | 226 | 56 | --- |
| TOTAL | 576 | 424 | 791 | 1759 | 2299 | 2272 | 1338 | 889 | 1680 | 1574 | 2001 | 1468 |
| MEAN | 18.6 | 14.1 | 25.5 | 56.7 | 82.1 | 73.3 | 44.6 | 28.7 | 56.0 | 50.8 | 64.5 | 48.9 |
| MAX | 23 | 17 | 110 | 200 | 183 | 121 | 59 | 34 | 169 | 226 | 244 | 148 |
| MIN | 15 | 13 | 11 | 19 | 57 | 60 | 34 | 25 | 27 | 30 | 36 | 32 |
| CFSM | .67 | .51 | .92 | 2.05 | 2.96 | 2.65 | 1.61 | 1.04 | 2.02 | 1.83 | 2.33 | 1.77 |
| IN. | .77 | .57 | 1.06 | 2.36 | 3.09 | 3.05 | 1.80 | 1.19 | 2.26 | 2.11 | 2.69 | 1.97 |

CAL YR 1981 TOTAL 9740.1 MEAN 26.7 MAX 159 MIN 8.0 CFSM .96 IN 13.08
WTR YR 1982 TOTAL 17071.0 MEAN 46.8 MAX 244 MIN 11 CFSM 1.69 IN 22.92

03488000 NORTH FORK HOLSTON RIVER NEAR SALTVILLE, VA

LOCATION.--Lat 36°53'48", long 81°44'47", Smyth County, Hydrologic Unit 06010101, on right bank 0.5 mi (0.8 km) upstream from Cedar Branch bridge, 1.5 mi (2.4 km) northeast of Saltville, 7.8 mi (12.6 km) downstream from Laurel Creek, and at mile 85.0 (136.8 km).

DRAINAGE AREA.--222 mi² (575 km²).

PERIOD OF RECORD.--June 1907 to December 1908 (published as "at Saltville"), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1113: 1944-47. WSP 1306: 1907(M), 1921-22(M), 1924-30(M), 1932-34(M), drainage area at site used 1907-8. WSP 1726: 1947, monthly and yearly runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,703.53 ft (519.236 m) National Geodetic Vertical Datum of 1929. June 11, 1907, to Nov. 12, 1908, nonrecording gage on highway bridge 2.1 mi (3.4 km) downstream at different datum. Nov. 2, 1920, to May 23, 1934, nonrecording gage on highway bridge 0.5 mi (0.8 km) downstream at datum 7.74 ft (2.359 m) lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--63 years, 302 ft³/s (8.553 m³/s), 18.47 in/yr (469 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s (467 m³/s) Jan. 29, 1957, gage height, 13.20 ft (4.023 m); maximum gage height, 13.57 ft (4.136 m) Nov. 6, 1977; minimum discharge, 1.0 ft³/s (0.028 m³/s) Oct. 15, 1947, gage height, 0.13 ft (0.040 m), flow retarded by mine cave-in; minimum daily, 2.0 ft³/s (0.057 m³/s) Oct. 15, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1730 | 5140 146 | 7.35 2.240 | Feb. 18 | 0030 | 3830 108 | 6.22 1.896 |
| Feb. 3 | 1630 | *6470 183 | 8.34 2.542 | June 13 | 1730 | 4040 114 | 6.41 1.954 |

Minimum discharge, 38 ft³/s (1.08 m³/s) Oct. 15, gage height, 0.51 ft (0.155 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|-------|------|------|------|
| 1 | 41 | 71 | 92 | 237 | 542 | 330 | 237 | 259 | 301 | 228 | 592 | 146 |
| 2 | 52 | 66 | 116 | 280 | 502 | 542 | 215 | 240 | 214 | 159 | 368 | 210 |
| 3 | 55 | 62 | 128 | 959 | 4000 | 840 | 210 | 227 | 155 | 124 | 245 | 152 |
| 4 | 54 | 58 | 113 | 3490 | 2570 | 780 | 202 | 199 | 151 | 120 | 184 | 116 |
| 5 | 48 | 56 | 107 | 1880 | 1100 | 820 | 186 | 180 | 1210 | 124 | 153 | 93 |
| 6 | 46 | 56 | 96 | 849 | 739 | 835 | 207 | 165 | 681 | 110 | 138 | 81 |
| 7 | 44 | 54 | 86 | 601 | 543 | 1710 | 199 | 155 | 397 | 94 | 117 | 74 |
| 8 | 42 | 54 | 81 | 500 | 432 | 1660 | 185 | 152 | 271 | 289 | 100 | 70 |
| 9 | 42 | 51 | 82 | 416 | 681 | 948 | 206 | 146 | 234 | 215 | 296 | 66 |
| 10 | 42 | 49 | 81 | 293 | 927 | 691 | 207 | 132 | 447 | 160 | 622 | 63 |
| 11 | 42 | 48 | 71 | 225 | 677 | 561 | 202 | 120 | 447 | 125 | 354 | 60 |
| 12 | 41 | 47 | 77 | 250 | 527 | 486 | 199 | 112 | 350 | 120 | 395 | 58 |
| 13 | 41 | 45 | 63 | 240 | 454 | 435 | 194 | 106 | 2630 | 117 | 249 | 56 |
| 14 | 40 | 45 | 88 | 230 | 370 | 411 | 192 | 99 | 1790 | 297 | 186 | 66 |
| 15 | 39 | 44 | 165 | 200 | 336 | 500 | 179 | 94 | 778 | 232 | 150 | 78 |
| 16 | 40 | 44 | 224 | 150 | 453 | 743 | 166 | 90 | 503 | 152 | 128 | 74 |
| 17 | 40 | 47 | 196 | 110 | 1780 | 659 | 160 | 87 | 367 | 119 | 135 | 62 |
| 18 | 43 | 49 | 176 | 120 | 2820 | 539 | 165 | 84 | 289 | 138 | 150 | 59 |
| 19 | 40 | 51 | 131 | 170 | 1430 | 495 | 153 | 98 | 229 | 134 | 160 | 58 |
| 20 | 40 | 54 | 123 | 898 | 1070 | 638 | 147 | 102 | 193 | 784 | 116 | 56 |
| 21 | 40 | 55 | 160 | 1850 | 827 | 1370 | 146 | 114 | 163 | 397 | 99 | 57 |
| 22 | 41 | 56 | 210 | 1480 | 629 | 1180 | 136 | 112 | 153 | 230 | 91 | 55 |
| 23 | 48 | 52 | 723 | 1010 | 489 | 814 | 127 | 94 | 166 | 268 | 83 | 55 |
| 24 | 54 | 58 | 1090 | 957 | 421 | 615 | 121 | 111 | 130 | 323 | 82 | 54 |
| 25 | 55 | 70 | 596 | 681 | 369 | 495 | 121 | 99 | 112 | 250 | 103 | 53 |
| 26 | 67 | 73 | 407 | 507 | 318 | 435 | 383 | 90 | 134 | 177 | 138 | 52 |
| 27 | 134 | 79 | 321 | 353 | 318 | 363 | 507 | 83 | 368 | 137 | 97 | 61 |
| 28 | 205 | 100 | 265 | 333 | 308 | 311 | 414 | 103 | 209 | 124 | 83 | 60 |
| 29 | 129 | 103 | 230 | 279 | --- | 281 | 345 | 109 | 183 | 152 | 76 | 56 |
| 30 | 96 | 95 | 198 | 245 | --- | 260 | 297 | 95 | 187 | 254 | 71 | 51 |
| 31 | 79 | --- | 185 | 252 | --- | 249 | --- | 89 | --- | 610 | 95 | --- |
| TOTAL | 1820 | 1792 | 6681 | 20045 | 25632 | 20996 | 6408 | 3946 | 13442 | 6763 | 5856 | 2252 |
| MEAN | 58.7 | 59.7 | 216 | 647 | 915 | 677 | 214 | 127 | 448 | 218 | 189 | 75.1 |
| MAX | 205 | 103 | 1090 | 3490 | 4000 | 1710 | 507 | 259 | 2630 | 784 | 622 | 210 |
| MIN | 39 | 44 | 63 | 110 | 308 | 249 | 121 | 83 | 112 | 94 | 71 | 51 |
| CFSM | .26 | .27 | .97 | 2.91 | 4.12 | 3.05 | .96 | .57 | 2.02 | .98 | .85 | .34 |
| IN. | .30 | .30 | 1.12 | 3.36 | 4.30 | 3.52 | 1.07 | .66 | 2.25 | 1.13 | .98 | .38 |

CAL YR 1981 TOTAL 78419 MEAN 215 MAX 4860 MIN 19 CFSM .97 IN 13.14
WTR YR 1982 TOTAL 115633 MEAN 317 MAX 4000 MIN 39 CFSM 1.43 IN 19.38

03521500 CLINCH RIVER AT RICHLANDS, VA

LOCATION.--Lat 37°05'10", long 81°46'52", Tazewell County, Hydrologic Unit 06010205, on right bank 1.0 mi (1.6 km) southeast of Richlands, 1.6 mi (2.6 km) downstream from Middle Creek, 2.2 mi (3.5 km) upstream from Big Creek, and at mile 321.0 (516.5 km).

DRAINAGE AREA.--137 mi² (355 km²).

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1306: 1946(M), 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,924.08 ft (586.460 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1950, nonrecording gage at bridge 1.1 mi (1.8 km) downstream at datum 6.53 ft (1.990 m) lower.

REMARKS.--Records good except those for period of no gage-height record, Jan. 30 to Feb. 19, which are fair. Prior to October 1970, diurnal fluctuation at low flow caused by mill 1.7 mi (2.7 km) above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--37 years, 194 ft³/s (5.494 m³/s), 19.23 in/yr (488 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s (273 m³/s) Jan. 29, 1957, gage height, 19.3 ft (5.88 m), from floodmark, from rating curve extended above 4,900 ft³/s (140 m³/s) on basis of contracted-opening measurement of peak flow; minimum, 3.2 ft³/s (0.091 m³/s) Sept. 8, 1955; minimum daily, 8.8 ft³/s (0.25 m³/s) July 6, Sept. 10, 16, 1964; minimum gage height, 0.45 ft (0.137 m) July 2, 3, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1901, reached a stage of 21.3 ft (6.49 m), present site and datum, from floodmark, discharge, 11,500 ft³/s (326 m³/s), from report by Tennessee Valley Authority. Flood of Feb. 18, 1944, reached a stage of 13.7 ft (4.18 m), present site and datum, from floodmark, discharge, 5,500 ft³/s (156 m³/s), from report by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s (45 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) | Date | Time | Discharge (ft ³ /s) | Discharge (m ³ /s) | Gage height (ft) | Gage height (m) |
|--------|---------|-----------------------------------|----------------------------------|---------------------|--------------------|---------|------|-----------------------------------|----------------------------------|---------------------|--------------------|
| Jan. 4 | Unknown | 1880 | 53.2 | 6.47 | 1.972 | June 13 | 1700 | 1630 | 46.2 | 5.96 | 1.817 |
| Feb. 3 | Unknown | *3150 | 89.2 | 9.05 | 2.758 | | | | | | |

Minimum discharge, 23 ft³/s (0.65 m³/s) Oct. 15, 16, Nov. 16, and, as result of freezeup, Dec. 13, gage height, 0.81 ft (0.247 m); minimum daily, 23 ft³/s (0.65 m³/s) Oct. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| 1 | 27 | 41 | 36 | 300 | 330 | 270 | 163 | 141 | 127 | 118 | 77 | 111 |
| 2 | 33 | 34 | 37 | 270 | 300 | 316 | 148 | 132 | 134 | 88 | 64 | 99 |
| 3 | 41 | 33 | 36 | 700 | 2300 | 302 | 144 | 129 | 88 | 77 | 55 | 68 |
| 4 | 32 | 31 | 36 | 1400 | 1400 | 266 | 135 | 112 | 91 | 78 | 52 | 53 |
| 5 | 29 | 31 | 40 | 900 | 700 | 261 | 125 | 101 | 349 | 86 | 52 | 46 |
| 6 | 30 | 33 | 39 | 445 | 450 | 244 | 138 | 94 | 227 | 70 | 60 | 39 |
| 7 | 31 | 33 | 36 | 409 | 350 | 552 | 122 | 90 | 149 | 102 | 75 | 35 |
| 8 | 31 | 30 | 36 | 373 | 270 | 638 | 113 | 91 | 163 | 133 | 66 | 33 |
| 9 | 28 | 29 | 37 | 291 | 450 | 511 | 118 | 88 | 281 | 94 | 107 | 30 |
| 10 | 26 | 27 | 34 | 130 | 600 | 422 | 110 | 80 | 461 | 77 | 108 | 28 |
| 11 | 26 | 26 | 32 | 150 | 500 | 357 | 102 | 75 | 415 | 68 | 78 | 27 |
| 12 | 26 | 26 | 32 | 140 | 350 | 319 | 98 | 69 | 341 | 65 | 64 | 25 |
| 13 | 26 | 25 | 34 | 130 | 300 | 301 | 95 | 65 | 1290 | 81 | 56 | 25 |
| 14 | 24 | 25 | 39 | 120 | 260 | 323 | 94 | 62 | 869 | 154 | 51 | 41 |
| 15 | 23 | 25 | 60 | 90 | 230 | 446 | 89 | 59 | 408 | 94 | 48 | 57 |
| 16 | 24 | 24 | 74 | 60 | 300 | 585 | 84 | 60 | 257 | 74 | 44 | 38 |
| 17 | 24 | 26 | 69 | 65 | 700 | 634 | 82 | 61 | 203 | 81 | 47 | 31 |
| 18 | 25 | 28 | 79 | 100 | 1100 | 448 | 87 | 55 | 159 | 111 | 50 | 28 |
| 19 | 26 | 27 | 68 | 400 | 800 | 411 | 81 | 74 | 129 | 76 | 48 | 28 |
| 20 | 27 | 30 | 58 | 786 | 602 | 683 | 79 | 92 | 116 | 656 | 41 | 28 |
| 21 | 25 | 33 | 200 | 1100 | 478 | 851 | 80 | 78 | 100 | 197 | 36 | 31 |
| 22 | 25 | 31 | 250 | 711 | 368 | 767 | 75 | 67 | 105 | 115 | 34 | 35 |
| 23 | 37 | 27 | 350 | 540 | 286 | 542 | 70 | 71 | 105 | 107 | 32 | 34 |
| 24 | 54 | 34 | 400 | 384 | 247 | 403 | 68 | 162 | 87 | 118 | 34 | 29 |
| 25 | 49 | 42 | 280 | 289 | 213 | 316 | 70 | 267 | 79 | 89 | 71 | 27 |
| 26 | 48 | 42 | 180 | 208 | 184 | 283 | 169 | 112 | 79 | 71 | 70 | 27 |
| 27 | 75 | 41 | 130 | 201 | 227 | 235 | 196 | 97 | 110 | 61 | 50 | 34 |
| 28 | 90 | 41 | 110 | 161 | 238 | 202 | 207 | 106 | 112 | 63 | 41 | 34 |
| 29 | 61 | 39 | 90 | 139 | --- | 183 | 190 | 90 | 94 | 76 | 36 | 29 |
| 30 | 51 | 37 | 75 | 130 | --- | 168 | 161 | 75 | 142 | 67 | 32 | 26 |
| 31 | 45 | --- | 110 | 150 | --- | 160 | --- | 71 | --- | 71 | 68 | --- |
| TOTAL | 1119 | 951 | 3087 | 11272 | 14533 | 12399 | 3493 | 2926 | 7270 | 3418 | 1747 | 1176 |
| MEAN | 36.1 | 31.7 | 99.6 | 364 | 519 | 400 | 116 | 94.4 | 242 | 110 | 56.4 | 39.2 |
| MAX | 90 | 42 | 400 | 1400 | 2300 | 851 | 207 | 267 | 1290 | 656 | 108 | 111 |
| MIN | 23 | 24 | 32 | 60 | 184 | 160 | 68 | 55 | 79 | 61 | 32 | 25 |
| CFSM | .26 | .23 | .73 | 2.66 | 3.79 | 2.92 | .85 | .69 | 1.77 | .80 | .41 | .29 |
| IN. | .30 | .26 | .84 | 3.06 | 3.95 | 3.37 | .95 | .79 | 1.97 | .93 | .47 | .32 |

| CAL YR 1981 | TOTAL | 50185 | MEAN 137 | MAX 1890 | MIN 12 | CFSM 1.00 | IN 13.63 |
|-------------|-------|-------|----------|----------|--------|-----------|----------|
| WTR YR 1982 | TOTAL | 63391 | MEAN 174 | MAX 2300 | MIN 23 | CFSM 1.27 | IN 17.21 |

TENNESSEE RIVER BASIN

03524000 CLINCH RIVER AT CLEVELAND, VA

LOCATION.--Lat 36°56'41", long 82°09'18", Russell County, Hydrologic Unit 06010205, on right bank 500 ft (152 m) upstream from highway bridge at Cleveland, 0.5 mi (0.8 km) downstream from Muddy Hollow, 2.3 mi (3.7 km) downstream from Weaver Creek, 4.4 mi (7.1 km) downstream from Thompson Creek, and at mile 271.6 (437.0 km).

DRAINAGE AREA.--528 mi² (1,368 km²).

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1921-23(M), 1926(M), 1929-31(M). WSP 1706: 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 1,500.24 ft (457.273 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1931, nonrecording gage on highway bridge 500 ft (152 m) downstream at datum 1.0 ft (0.30 m) lower.

REMARKS.--Records good. Tennessee Valley Authority gage-height Automatic Data Acquisition System at station, called at 6-hour intervals by computer at Knoxville, TN. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--62 years, 714 ft³/s (20.22 m³/s), 18.36 in/yr (466 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,500 ft³/s (977 m³/s) Apr. 5, 1977, gage height, 26.40 ft (8.047 m); minimum, 35 ft³/s (0.99 m³/s) Sept. 28, 1964; minimum gage height, 0.96 ft (0.293 m) Feb. 10, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|---------|------|---|-------------------------|
| Jan. 4 | 1230 | 6550 185 | 10.29 3.136 | Feb. 18 | 1000 | 5230 148 | 8.84 2.694 |
| Feb. 4 | 0015 | *8100 229 | 11.90 3.627 | June 13 | 1500 | 5860 166 | 9.55 2.911 |

Minimum discharge, 92 ft³/s (2.61 m³/s) Nov. 15, 16; minimum gage height, 1.45 ft (0.442 m) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------------|--------|------|----------|----------|--------|-----------|----------|-------|-------|-------|------|------|
| 1 | 119 | 144 | 136 | 1160 | 1390 | 1490 | 644 | 610 | 1340 | 512 | 507 | 525 |
| 2 | 139 | 131 | 137 | 1000 | 1250 | 1410 | 595 | 548 | 1360 | 422 | 460 | 710 |
| 3 | 134 | 123 | 141 | 2520 | 5430 | 1370 | 562 | 557 | 839 | 350 | 365 | 464 |
| 4 | 132 | 118 | 141 | 5450 | 6010 | 1250 | 530 | 490 | 862 | 331 | 309 | 323 |
| 5 | 128 | 115 | 142 | 4320 | 2740 | 1160 | 494 | 430 | 2640 | 369 | 274 | 253 |
| 6 | 123 | 117 | 143 | 2100 | 1890 | 1110 | 503 | 397 | 1910 | 357 | 257 | 215 |
| 7 | 120 | 116 | 137 | 1610 | 1420 | 1630 | 494 | 369 | 1120 | 291 | 250 | 192 |
| 8 | 116 | 111 | 131 | 1630 | 1130 | 2390 | 447 | 393 | 1170 | 335 | 267 | 177 |
| 9 | 113 | 108 | 130 | 1330 | 1750 | 2040 | 451 | 369 | 3210 | 619 | 294 | 166 |
| 10 | 111 | 104 | 131 | 1050 | 2600 | 1760 | 443 | 335 | 3800 | 439 | 365 | 156 |
| 11 | 109 | 100 | 127 | 500 | 1950 | 1550 | 410 | 309 | 2770 | 335 | 323 | 151 |
| 12 | 107 | 98 | 120 | 560 | 1520 | 1360 | 389 | 287 | 1650 | 350 | 267 | 143 |
| 13 | 107 | 96 | 116 | 520 | 1330 | 1240 | 373 | 274 | 5010 | 323 | 237 | 138 |
| 14 | 103 | 94 | 121 | 480 | 1130 | 1250 | 369 | 260 | 4270 | 694 | 212 | 834 |
| 15 | 101 | 92 | 209 | 450 | 991 | 1410 | 354 | 247 | 2230 | 741 | 192 | 845 |
| 16 | 101 | 93 | 302 | 350 | 1330 | 1980 | 338 | 240 | 1480 | 468 | 194 | 377 |
| 17 | 101 | 97 | 298 | 220 | 3030 | 1960 | 331 | 244 | 1130 | 369 | 267 | 270 |
| 18 | 103 | 98 | 353 | 250 | 4870 | 1690 | 350 | 244 | 890 | 323 | 209 | 218 |
| 19 | 105 | 98 | 314 | 350 | 3340 | 1490 | 331 | 439 | 720 | 354 | 189 | 280 |
| 20 | 103 | 105 | 350 | 3090 | 2340 | 1860 | 312 | 553 | 610 | 801 | 183 | 222 |
| 21 | 103 | 107 | 732 | 3370 | 1940 | 3050 | 316 | 464 | 530 | 1180 | 169 | 197 |
| 22 | 101 | 106 | 1000 | 3370 | 1570 | 2940 | 298 | 365 | 503 | 600 | 164 | 189 |
| 23 | 116 | 104 | 1330 | 2380 | 1270 | 2180 | 280 | 354 | 512 | 464 | 156 | 189 |
| 24 | 153 | 104 | 1570 | 2060 | 1080 | 1690 | 270 | 451 | 434 | 464 | 161 | 175 |
| 25 | 155 | 116 | 1020 | 1550 | 943 | 1370 | 267 | 499 | 373 | 567 | 225 | 164 |
| 26 | 155 | 132 | 695 | 1220 | 812 | 1210 | 512 | 472 | 338 | 414 | 385 | 158 |
| 27 | 193 | 140 | 530 | 908 | 1190 | 1030 | 839 | 434 | 544 | 338 | 274 | 172 |
| 28 | 278 | 144 | 424 | 823 | 1780 | 879 | 1020 | 439 | 503 | 294 | 206 | 180 |
| 29 | 268 | 145 | 350 | 700 | --- | 779 | 879 | 414 | 553 | 320 | 180 | 166 |
| 30 | 198 | 142 | 294 | 610 | --- | 715 | 720 | 357 | 521 | 365 | 164 | 156 |
| 31 | 164 | --- | 341 | 644 | --- | 669 | --- | 312 | --- | 439 | 222 | --- |
| TOTAL | 4159 | 3398 | 11965 | 46575 | 58026 | 47912 | 14121 | 12156 | 43822 | 14228 | 7927 | 8405 |
| MEAN | 134 | 113 | 386 | 1502 | 2072 | 1546 | 471 | 392 | 1461 | 459 | 256 | 280 |
| MAX | 278 | 145 | 1570 | 5450 | 6010 | 3050 | 1020 | 610 | 5010 | 1180 | 507 | 845 |
| MIN | 101 | 92 | 116 | 220 | 812 | 669 | 267 | 240 | 338 | 291 | 156 | 138 |
| CFSM | .25 | .21 | .73 | 2.85 | 3.92 | 2.93 | .89 | .74 | 2.77 | .87 | .49 | .53 |
| IN. | .29 | .24 | .84 | 3.28 | 4.09 | 3.38 | .99 | .86 | 3.09 | 1.00 | .56 | .59 |
| CAL YR 1981 TOTAL | 167338 | | MEAN 458 | MAX 4280 | MIN 40 | CFSM .87 | IN 11.79 | | | | | |
| WTR YR 1982 TOTAL | 272694 | | MEAN 747 | MAX 6010 | MIN 92 | CFSM 1.42 | IN 19.21 | | | | | |

03528000 CLINCH RIVER ABOVE TAZEWEILL, TN

LOCATION.--Lat 36°25'30", long 83°23'54", Claiborne County, Hydrologic Unit 06010205, on right bank 0.4 mi (0.6 km) upstream from Grissom Island, 4.6 mi (7.4 km) downstream from Big War Creek, 10 mi (16 km) east of Tazewell, and at mile 159.8 (257.1 km).

DRAINAGE AREA.--1,474 mi² (3,818 km²).

PERIOD OF RECORD.--October 1918 to current year. Prior to April 1919 monthly discharge only, published in WSP 1306. Published as "near Lone Mountain" October 1918 to September 1927, as "near Tazewell" August 1927 to December 1936, and as "above Tazewell" July 1935 to current year. Gage-height record "near Tazewell" January 1937 to July 1941.

REVISED RECORDS.--WSP 803: Drainage area at site "near Tazewell." WSP 1306: Drainage area at site "near Lone Mountain." WSP 1336: 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,060.7 ft (323.30 m) National Geodetic Vertical Datum of 1929. Apr. 1, 1919, to Sept. 30, 1927, nonrecording gage on railroad bridge 23.3 mi (37.5 km) downstream at datum 102.7 ft (31.30 m) lower. Aug. 8, 1927, to July 16, 1941, water-stage recorder at site 8.0 mi (12.9 km) downstream at datum 47.2 ft (14.39 m) lower. Water-stage recorder at present site and datum since July 29, 1935.

REMARKS.--Records good.

AVERAGE DISCHARGE.--64 years, 2,102 ft³/s (59.53 m³/s), 19.37 in/yr (492 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,100 ft³/s (2,780 m³/s) Apr. 5, 1977, gage height, 29.32 ft (8.937 m), from floodmarks; minimum, 108 ft³/s (3.06 m³/s) Sept. 11, 1925; minimum gage height at present site and datum, 0.33 ft (0.101 m) Sept. 20, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1862 reached a stage of about 24 ft (7.3 m), present site and datum, from information by local resident, discharge, about 66,000 ft³/s (1,870 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 14,000 ft³/s (396 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|--------|------|---|-------------------------|
| Jan. 5 | 0730 | *19400 549 | 11.85 3.612 | Feb. 4 | 1500 | 16900 479 | 10.91 3.325 |

Minimum discharge, 221 ft³/s (6.26 m³/s) Oct. 17, 18, gage height, 0.74 ft (0.226 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 294 | 644 | 719 | 2870 | 3270 | 5860 | 1820 | 1790 | 2310 | 1430 | 1790 | 4630 |
| 2 | 294 | 542 | 741 | 3550 | 4460 | 4710 | 1700 | 1560 | 3890 | 1080 | 1360 | 5550 |
| 3 | 303 | 479 | 688 | 6120 | 7950 | 4120 | 1580 | 1410 | 3120 | 936 | 1020 | 3750 |
| 4 | 284 | 435 | 630 | 16400 | 16000 | 3750 | 1530 | 1330 | 2200 | 834 | 825 | 2240 |
| 5 | 321 | 402 | 587 | 18200 | 13500 | 3450 | 1460 | 1240 | 1910 | 753 | 677 | 1470 |
| 6 | 329 | 373 | 557 | 10700 | 7240 | 3170 | 1480 | 1120 | 4040 | 688 | 591 | 1050 |
| 7 | 309 | 352 | 527 | 5590 | 4920 | 5330 | 1540 | 1010 | 3580 | 651 | 523 | 815 |
| 8 | 296 | 342 | 510 | 3990 | 3710 | 7900 | 1500 | 962 | 2320 | 652 | 477 | 680 |
| 9 | 277 | 335 | 488 | 3550 | 4740 | 6950 | 1620 | 935 | 1900 | 619 | 457 | 591 |
| 10 | 265 | 327 | 459 | 3000 | 8310 | 5520 | 1770 | 903 | 4800 | 616 | 626 | 527 |
| 11 | 257 | 315 | 437 | 2230 | 7740 | 4610 | 1710 | 854 | 4720 | 947 | 785 | 480 |
| 12 | 252 | 305 | 414 | 1650 | 5540 | 3980 | 1580 | 783 | 4530 | 883 | 667 | 442 |
| 13 | 246 | 291 | 393 | 1550 | 4470 | 3480 | 1450 | 730 | 3350 | 863 | 586 | 416 |
| 14 | 241 | 284 | 426 | 1700 | 3890 | 3120 | 1360 | 696 | 6520 | 739 | 496 | 515 |
| 15 | 234 | 275 | 598 | 1620 | 3360 | 3130 | 1270 | 659 | 6840 | 647 | 446 | 8420 |
| 16 | 226 | 274 | 865 | 1370 | 3900 | 4180 | 1200 | 638 | 3930 | 889 | 407 | 5590 |
| 17 | 224 | 287 | 1060 | 953 | 7850 | 5450 | 1150 | 617 | 2880 | 958 | 399 | 2300 |
| 18 | 239 | 289 | 1220 | 857 | 12400 | 5270 | 1130 | 601 | 2270 | 730 | 724 | 1490 |
| 19 | 257 | 287 | 1230 | 1030 | 12000 | 4360 | 1070 | 618 | 1790 | 665 | 748 | 1090 |
| 20 | 255 | 300 | 1140 | 1400 | 8780 | 3860 | 1040 | 774 | 1470 | 571 | 538 | 887 |
| 21 | 247 | 313 | 811 | 7130 | 6210 | 6740 | 991 | 967 | 1240 | 607 | 431 | 839 |
| 22 | 248 | 324 | 1100 | 11500 | 4900 | 8100 | 943 | 1080 | 1080 | 1160 | 385 | 732 |
| 23 | 292 | 327 | 3080 | 10400 | 3910 | 6690 | 885 | 994 | 952 | 1200 | 365 | 649 |
| 24 | 397 | 392 | 5850 | 8880 | 3230 | 5100 | 832 | 908 | 918 | 836 | 374 | 602 |
| 25 | 410 | 472 | 5220 | 6560 | 2820 | 4030 | 806 | 1280 | 872 | 702 | 454 | 566 |
| 26 | 754 | 461 | 3510 | 4580 | 2430 | 3400 | 994 | 1150 | 781 | 672 | 873 | 548 |
| 27 | 1220 | 520 | 2600 | 3380 | 2740 | 2950 | 1420 | 1140 | 716 | 748 | 1040 | 512 |
| 28 | 1290 | 678 | 2070 | 2650 | 5450 | 2570 | 2180 | 1140 | 922 | 630 | 827 | 482 |
| 29 | 1070 | 822 | 1680 | 2280 | --- | 2240 | 2280 | 1380 | 1110 | 615 | 636 | 465 |
| 30 | 921 | 747 | 1380 | 2000 | --- | 2030 | 2120 | 1160 | 1600 | 646 | 510 | 454 |
| 31 | 802 | --- | 1480 | 1970 | --- | 1880 | --- | 983 | --- | 1210 | 572 | --- |
| TOTAL | 13054 | 12194 | 42470 | 149660 | 175720 | 137930 | 42411 | 31412 | 78561 | 25177 | 20609 | 48782 |
| MEAN | 421 | 406 | 1370 | 4828 | 6276 | 4449 | 1414 | 1013 | 2619 | 812 | 665 | 1626 |
| MAX | 1290 | 822 | 5850 | 18200 | 16000 | 8100 | 2280 | 1790 | 6840 | 1430 | 1790 | 8420 |
| MIN | 224 | 274 | 393 | 857 | 2430 | 1880 | 806 | 601 | 716 | 571 | 365 | 416 |
| CFSM | .29 | .28 | .93 | 3.28 | 4.26 | 3.02 | .96 | .69 | 1.78 | .55 | .45 | 1.10 |
| IN. | .33 | .31 | 1.07 | 3.78 | 4.43 | 3.48 | 1.07 | .79 | 1.98 | .64 | .52 | 1.23 |
| CAL YR 1981 | TOTAL | 473934 | MEAN | 1298 | MAX | 9200 | MIN | 214 | CFSM | .88 | IN | 11.96 |
| WTR YR 1982 | TOTAL | 777980 | MEAN | 2131 | MAX | 18200 | MIN | 224 | CFSM | 1.45 | IN | 19.63 |

TENNESSEE RIVER BASIN

03531500 POWELL RIVER NEAR JONESVILLE, VA

LOCATION.--Lat 36°39'43", long 83°05'42", Lee County, Hydrologic Unit 06010206, on right bank 175 ft (53 m) downstream from highway bridge, 2 mi (3 km) southeast of Jonesville, 10 mi (16 km) upstream from Wallen Creek, and at mile 143.1 (230.2 km).

DRAINAGE AREA.--319 mi² (826 km²).

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1033: 1932-44. WSP 1436: 1946(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,259.08 ft (383.768 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--51 years, 541 ft³/s (15.32 m³/s), 23.03 in/yr (585 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s (1,610 m³/s) Apr. 5, 1977, gage height, 44.32 ft (13.509 m), from floodmark, from rating curve extended above 20,000 ft³/s (570 m³/s) on basis of slope-area measurement of peak flow; minimum, 17 ft³/s (0.48 m³/s) Sept. 19, 20, 1954, and as result of storage behind temporary dam Oct. 18, 1961; minimum gage height, 0.68 ft (0.207 m) Oct. 18, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (140 m³/s) and maximum (*):

| Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) | Date | Time | Discharge (ft ³ /s) (m ³ /s) | Gage height (ft) (m) |
|--------|------|---|-------------------------|----------|------|---|-------------------------|
| Jan. 3 | 1930 | 7380 209 | 13.74 4.188 | Sept. 14 | 2200 | *7720 219 | 14.30 4.359 |
| Jan. 4 | 1800 | 7480 212 | 13.90 4.237 | | | | |

Minimum discharge, 52 ft³/s (1.47 m³/s) Oct. 16, gage height, 1.29 ft (0.393 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|------|-------|------|------|-------|
| 1 | 56 | 135 | 130 | 946 | 1240 | 1150 | 431 | 403 | 873 | 550 | 584 | 1690 |
| 2 | 61 | 119 | 174 | 755 | 1010 | 1040 | 380 | 358 | 972 | 358 | 422 | 1690 |
| 3 | 62 | 106 | 154 | 4330 | 2750 | 942 | 385 | 337 | 601 | 277 | 277 | 1060 |
| 4 | 66 | 100 | 140 | 6260 | 3220 | 845 | 385 | 297 | 426 | 270 | 207 | 692 |
| 5 | 61 | 96 | 140 | 3310 | 1880 | 817 | 350 | 266 | 711 | 281 | 173 | 471 |
| 6 | 61 | 96 | 135 | 1630 | 1330 | 730 | 451 | 244 | 637 | 217 | 159 | 350 |
| 7 | 71 | 96 | 124 | 1260 | 1010 | 1790 | 451 | 227 | 456 | 179 | 143 | 277 |
| 8 | 65 | 89 | 119 | 1190 | 817 | 1960 | 426 | 241 | 354 | 293 | 126 | 230 |
| 9 | 61 | 82 | 113 | 984 | 1380 | 1420 | 539 | 230 | 394 | 354 | 316 | 198 |
| 10 | 57 | 78 | 106 | 790 | 2100 | 1150 | 567 | 201 | 354 | 277 | 756 | 173 |
| 11 | 57 | 76 | 98 | 496 | 1470 | 1010 | 528 | 182 | 316 | 300 | 329 | 157 |
| 12 | 57 | 73 | 90 | 561 | 1110 | 913 | 481 | 168 | 255 | 561 | 210 | 146 |
| 13 | 55 | 71 | 87 | 502 | 1040 | 823 | 436 | 157 | 389 | 362 | 165 | 141 |
| 14 | 55 | 69 | 106 | 461 | 879 | 806 | 408 | 148 | 461 | 255 | 141 | 2680 |
| 15 | 53 | 69 | 243 | 389 | 790 | 1100 | 385 | 141 | 329 | 204 | 123 | 3090 |
| 16 | 55 | 67 | 283 | 341 | 1430 | 1590 | 345 | 135 | 263 | 176 | 114 | 1080 |
| 17 | 55 | 68 | 250 | 200 | 3950 | 1730 | 333 | 201 | 376 | 159 | 224 | 679 |
| 18 | 62 | 71 | 321 | 220 | 3600 | 1270 | 350 | 162 | 304 | 148 | 244 | 491 |
| 19 | 104 | 70 | 294 | 300 | 2160 | 1040 | 316 | 217 | 234 | 165 | 146 | 398 |
| 20 | 117 | 68 | 215 | 925 | 1540 | 1060 | 304 | 263 | 201 | 195 | 118 | 333 |
| 21 | 74 | 70 | 250 | 3210 | 1220 | 1030 | 293 | 227 | 179 | 146 | 109 | 293 |
| 22 | 64 | 72 | 634 | 3140 | 1000 | 1010 | 270 | 241 | 165 | 126 | 112 | 270 |
| 23 | 76 | 66 | 2070 | 2660 | 812 | 862 | 255 | 312 | 191 | 168 | 99 | 248 |
| 24 | 166 | 73 | 2070 | 2530 | 698 | 763 | 244 | 408 | 159 | 270 | 146 | 214 |
| 25 | 154 | 92 | 1080 | 1590 | 613 | 667 | 248 | 341 | 133 | 210 | 517 | 198 |
| 26 | 215 | 90 | 724 | 1120 | 523 | 667 | 403 | 289 | 123 | 146 | 692 | 191 |
| 27 | 534 | 96 | 564 | 817 | 942 | 556 | 954 | 451 | 619 | 123 | 341 | 182 |
| 28 | 498 | 212 | 464 | 698 | 1530 | 486 | 839 | 385 | 422 | 293 | 230 | 165 |
| 29 | 313 | 177 | 383 | 578 | --- | 441 | 619 | 466 | 1140 | 312 | 179 | 154 |
| 30 | 215 | 140 | 315 | 496 | --- | 412 | 491 | 350 | 954 | 371 | 148 | 141 |
| 31 | 166 | --- | 344 | 528 | --- | 403 | --- | 312 | --- | 466 | 556 | --- |
| TOTAL | 3766 | 2787 | 12220 | 43217 | 42044 | 30483 | 12867 | 8360 | 12991 | 8212 | 8106 | 18082 |
| MEAN | 121 | 92.9 | 394 | 1394 | 1502 | 983 | 429 | 270 | 433 | 265 | 261 | 603 |
| MAX | 534 | 212 | 2070 | 6260 | 3950 | 1960 | 954 | 466 | 1140 | 561 | 756 | 3090 |
| MIN | 53 | 66 | 87 | 200 | 523 | 403 | 244 | 135 | 123 | 123 | 99 | 141 |
| CFSM | .38 | .29 | 1.24 | 4.37 | 4.71 | 3.08 | 1.35 | .85 | 1.36 | .83 | .82 | 1.89 |
| IN. | .44 | .33 | 1.43 | 5.04 | 4.90 | 3.55 | 1.50 | .97 | 1.51 | .96 | .95 | 2.11 |

CAL YR 1981 TOTAL 120925 MEAN 331 MAX 5010 MIN 30 CFSM 1.04 IN 14.10
WTR YR 1982 TOTAL 203135 MEAN 557 MAX 6260 MIN 53 CFSM 1.75 IN 23.69

TENNESSEE RIVER BASIN

359

03532000 POWELL RIVER NEAR ARTHUR, TN

LOCATION.--Lat 36°32'30", long 83°37'49", Claiborne County, Hydrologic Unit 06010206, on left bank 500 ft (150 m) upstream from bridge on U.S. Highway 25E, 2.3 mi (3.7 km) east of Arthur, 2.4 mi (3.9 km) downstream from Indian Creek, and at mile 65.4 (105.2 km).

DRAINAGE AREA.--685 mi² (1,774 km²).

PERIOD OF RECORD.--October 1919 to February 1982 (discontinued). Gage-height records collected at same site December 1892 to August 1893, September 1904 to March 1925 are in reports of the National Weather Service (published as "near Tazewell").

REVISED RECORDS.--WSP 1336: 1920, 1921(M), 1923.

GAGE.--Water-stage recorder. Datum of gage is 1,043.84 ft (318.162 m) Tennessee River Survey datum. Prior to July 23, 1927, nonrecording gage, and July 23, 1927, to Sept. 30, 1970, water-stage recorder, at same site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good.

AVERAGE DISCHARGE.--62 years (water years 1919-81), 1,145 ft³/s (32.43 m³/s), 22.70 in/yr (577 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,500 ft³/s (1,690 m³/s) Apr. 6, 1977, gage height, 38.96 ft (11.875 m), from floodmark; minimum, 47 ft³/s (1.33 m³/s) Jan. 6, 1940, result of freezeup; minimum daily, 60 ft³/s (1.70 m³/s) Sept. 23, 1955; minimum gage height, 1.32 ft (0.402 m) Sept. 6, 1975, result of dredging.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1826 reached a stage of 29.5 ft (8.99 m), present datum, discharge, 34,000 ft³/s (963 m³/s), and flood of Jan. 29, 1918, reached a stage of 29.2 ft (8.90 m), present datum, discharge, 33,000 ft³/s (935 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1981 to February 1982, 13,300 ft³/s (377 m³/s) at 1730 hours Jan. 4, gage height, 17.23 ft (5.252 m), no other peak above base of 9,000 ft³/s (255 m³/s); minimum, 136 ft³/s (3.85 m³/s) Oct. 18, gage height, 1.73 ft (0.527 m).

DISCHARGE, IN CUBIC FEET PER SECOND, OCTOBER 1981 TO FEBRUARY 1982
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|
| 1 | 168 | 452 | 511 | 1410 | 1540 | | | | | | | |
| 2 | 169 | 382 | 662 | 1720 | 2000 | | | | | | | |
| 3 | 161 | 338 | 586 | 4620 | 2650 | | | | | | | |
| 4 | 161 | 306 | 517 | 11100 | 4910 | | | | | | | |
| 5 | 176 | 284 | 449 | 11200 | 4760 | | | | | | | |
| 6 | 203 | 275 | 404 | 6140 | 3170 | | | | | | | |
| 7 | 187 | 254 | 381 | 3220 | 2360 | | | | | | | |
| 8 | 173 | 236 | 363 | 2340 | 1880 | | | | | | | |
| 9 | 166 | 230 | 333 | 2050 | 2350 | | | | | | | |
| 10 | 171 | 220 | 309 | 1700 | 3520 | | | | | | | |
| 11 | 162 | 207 | 293 | 1430 | 3660 | | | | | | | |
| 12 | 155 | 197 | 274 | 1100 | 2730 | | | | | | | |
| 13 | 148 | 190 | 256 | 1070 | 2370 | | | | | | | |
| 14 | 146 | 184 | 265 | 1040 | 2200 | | | | | | | |
| 15 | 143 | 179 | 338 | 962 | 1900 | | | | | | | |
| 16 | 141 | 176 | 441 | 870 | 2520 | | | | | | | |
| 17 | 139 | 181 | 578 | 781 | 5390 | | | | | | | |
| 18 | 163 | 179 | 616 | 633 | 7480 | | | | | | | |
| 19 | 191 | 171 | 623 | 722 | 7100 | | | | | | | |
| 20 | 193 | 170 | 631 | 846 | 5400 | | | | | | | |
| 21 | 196 | 170 | 538 | 3590 | 3600 | | | | | | | |
| 22 | 231 | 165 | 877 | 6480 | 2800 | | | | | | | |
| 23 | 238 | 161 | 2050 | 6690 | 2200 | | | | | | | |
| 24 | 305 | 190 | 3660 | 5950 | 1800 | | | | | | | |
| 25 | 304 | 229 | 3270 | 4500 | 1600 | | | | | | | |
| 26 | 833 | 243 | 2030 | 2980 | 1400 | | | | | | | |
| 27 | 1220 | 285 | 1500 | 2150 | 1200 | | | | | | | |
| 28 | 1280 | 424 | 1220 | 1670 | 1500 | | | | | | | |
| 29 | 1010 | 446 | 1030 | 1450 | --- | | | | | | | |
| 30 | 747 | 455 | 866 | 1270 | --- | | | | | | | |
| 31 | 573 | --- | 861 | 1190 | --- | | | | | | | |
| TOTAL | 10253 | 7579 | 26732 | 92874 | 85990 | --- | --- | --- | --- | --- | --- | --- |
| MEAN | 331 | 253 | 862 | 2996 | 3071 | --- | --- | --- | --- | --- | --- | --- |
| MAX | 1280 | 455 | 3660 | 11200 | 7480 | --- | --- | --- | --- | --- | --- | --- |
| MIN | 139 | 161 | 256 | 633 | 1200 | --- | --- | --- | --- | --- | --- | --- |
| CFSM | .48 | .37 | 1.26 | 4.37 | 4.48 | --- | --- | --- | --- | --- | --- | --- |
| IN. | .56 | .41 | 1.45 | 5.04 | 4.67 | --- | --- | --- | --- | --- | --- | --- |

CAL YR 1981 TOTAL 245026 MEAN 671 MAX 6720 MIN 107 CFSM .98 IN 13.31

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1982

| Annual Maximum discharge at Crest-stage partial-record stations during water year 1982 | | | | | Annual Maximum | | |
|--|--|---|----------------------------------|-------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| POTOMAC RIVER BASIN | | | | | | | |
| 01622400 | Buffalo Branch tributary near Christian, Va. | Lat 38°11'55", long 79°13'10", Augusta County, at culvert on State Highway 42, 1.3 mi north of Christian. Datum of gage is 1,622.53 ft National Geodetic Vertical Datum of 1929. | 0.49 | 1967-82 | 3-20-82 | 4.36 | 84 |
| 01629945 | Chub Run near Stanley, Va. | Lat 38°34'31", long 78°27'32", Page County, at culvert on State Highway 689, 2.2 mi east of Stanley. Datum of gage is 1,023.05 ft National Geodetic Vertical Datum of 1929. | 3.16 | a1959-69, 1970-82 | 6-13-82 | 1.52 | 110 |
| 01632970 | Crooked Run near Mt. Jackson, Va. | Lat 38°45'44", long 78°41'06", Shenandoah County, at culvert on State Highway 263, 2.3 mi west of Mt. Jackson. Datum of gage is 962.84 ft National Geodetic Vertical Datum of 1929. | 6.49 | 1972-82 | 2- 3-82 | 3.94 | 435 |
| 01633650 | Pughs Run near Woodstock, Va. | Lat 38°55'48", long 78°32'43", Shenandoah County, at culvert on State Highway 623, 4.0 mi northeast of Woodstock. Datum of gage is 1,027.27 ft National Geodetic Vertical Datum of 1929. | 3.66 | 1972-82 | 3-30-82 | 3.51 | 36 |
| 01653000 | Cameron Run at Alexandria, Va. | Lat 38°48'23", long 77°06'36", Fairfax County, at left downstream side of Southern Railway bridge, at Alexandria, and 800 ft downstream from confluence of Holmes Run and Backlick Run. Datum of gage is 31.07 ft National Geodetic Vertical Datum of 1929. | 33.7 | 1955-80*, 1981-82 | 5-30-82 | 5.95 | 3,720 |
| GREAT WICOMICO RIVER BASIN | | | | | | | |
| 01661600 | Great Wicomico River near Horse Head, Va. | Lat 37°53'15", long 76°27'00", Northumberland County, at culvert on State Highway 604, 1.7 mi west of Horse Head. | 6.98 | 1969-82 | 8- 7-82 | 4.98 | 696 |
| RAPPAHANNOCK RIVER BASIN | | | | | | | |
| 01665050 | Pony Mountain Branch near Culpeper, Va. | Lat 38°27'04", long 77°57'24", Culpeper County, at culvert on State Highway 3, 2.7 mi southeast of Culpeper. | .30 | a1958-69, 1970-82 | 6-13-82 | 3.74 | (*) |

* Discharge not determined.

* Operated as a continuous-record gaging station.

a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | | | |
|---|--|--|----------------------------------|-------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Annual Maximum | | |
| | | | | | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| RAPPAHANNOCK RIVER BASIN--Continued | | | | | | | |
| 01668300 | Farmers Hall Creek near Champlain, Va. | Lat 38°00'05", long 76°58'40", Essex County, at culvert on U.S. Highway 17, 1.2 mi south-east of Champlain. Datum of gage is 42.10 ft National Geodetic Vertical Datum of 1929. | 2.18 | 1966-82 | 8- 9-82 | 3.62 | 33 |
| PIANKATANK RIVER BASIN | | | | | | | |
| 01669800 | My Ladys Swamp near Saluda, Va. | Lat 37°34'34", long 76°31'30", Middlesex County, at culvert on State Highway 629, 4.4 mi southeast of Saluda. Datum of gage is 4.16 ft National Geodetic Vertical Datum of 1929. | 4.81 | 1969-82 | 8- 8-82 | 5.33 | 165 |
| YORK RIVER BASIN | | | | | | | |
| 01671615 | Foster Creek near Ferncliff, Va. | Lat 37°57'35", long 78°11'20", Louisa County, at culvert on U.S. Highway 250, 4.6 mi north-west of Ferncliff. Datum of gage is 424.22 ft National Geodetic Vertical Datum of 1929. | .61 | a1960-68, 1969-82 | 6-13-82 | 5.95 | (*) |
| 01671650 | Waldrop Creek near Louisa, Va. | Lat 38°00'08", long 78°04'22", Louisa County, at culvert on State Highway 632, 4.2 mi southwest of Louisa. Datum of gage is 361.41 ft National Geodetic Vertical Datum of 1929. | 2.85 | 1969-82 | 2- 3-82 | 5.00 | 170 |
| 01671750 | Harris Creek near Trevilians, Va. | Lat 38°01'02", long 78°03'06", Louisa County, at culvert on State Highway 632, 2.7 mi southeast of Trevilians. | 3.31 | 1969-82 | 2- 3-82 | 4.67 | 350 |
| 01674200 | Reedy Creek near Dawn, Va. | Lat 37°52'55", long 77°21'35", Caroline County, at bridge on U.S. Highway 301, 3.3 mi north of Dawn. | 16.8 | 1950-69, 1972-82 | 12- 5-81 | 3.93 | 121 |
| 01674700 | Aylett Creek at Aylett, Va. | Lat 37°47'05", long 77°06'23", King William County, at culvert on U.S. Highway 360 at Aylett. Datum of gage is 26.72 ft National Geodetic Vertical Datum of 1929. | 6.17 | 1969-82 | 8- 9-82 | 4.70 | (*) |
| JAMES RIVER BASIN | | | | | | | |
| 02012950 | Sweet Springs Creek tributary at Sweet Chalybeate, Va. | Lat 37°39'25", long 80°14'10", Allegheny County, at culvert on State Highway 311, 0.9 mi north of Sweet Chalybeate. Datum of gage is 1,926.94 ft National Geodetic Vertical Datum of 1929. | .66 | 1966-75, 1978-82 | - | <4.14 | (*) |
| 02015600 | Cowpasture River near Head Waters, Va. | Lat 38°19'30", long 79°26'14", Augusta County, at bridge on U.S. Highway 250, 1.2 mi west of Head Waters. Datum of gage is 1,985.65 ft National Geodetic Vertical Datum of 1929. | 11.3 | 1949-82 | 3-20-82 | 4.90 | 680 |
| 02017300 | Craig Creek at New Castle, Va. | Lat 37°30'06", long 80°06'18", Craig County, at bridge on State Highway 616, at New Castle. Datum of gage is 1,245.69 ft National Geodetic Vertical Datum of 1929. | 112 | 1967-82 | 6-13-82 | 10.09 | 3,190 |

* Discharge not determined.

< Less than.

a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | | | |
|---|---|---|----------------------------------|------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Annual Maximum | | |
| | | | | | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | | |
| 02017700 | Craig Creek tributary near New Castle, Va. | Lat 37°33'21", long 79°59'52", Craig County, at culvert on State Highway 606, 7.1 mi northeast of New Castle. | 2.05 | 1968-82 | 2- 3-82 | 3.40 | 50 |
| 02018800 | North Fork near Fincastle, Va. | Lat 37°32'07", long 79°56'03", Botetourt County, at culvert on State Highway 606, 3.9 mi northwest of Fincastle. Datum of gage is 1,248.65 ft National Geodetic Vertical Datum of 1929. | 4.17 | 1968-82 | 2- 3-82 | 4.20 | 168 |
| 02020100 | Renick Run near Buchanan, Va. | Lat 37°35'27", long 79°38'04", Botetourt County, at culvert on Frontage Road of Interstate Highway 81, 4.8 mi northeast of Buchanan. Datum of gage is 1,261.85 ft National Geodetic Vertical Datum of 1929. | 2.06 | 1967-82 | 6-13-82 | 4.78 | 311 |
| 02021700 | Cedar Grove Branch near Rockbridge Baths, Va. | Lat 37°53'00", long 79°23'10", Rockbridge County, at culvert on State Highway 39, 1.8 mi southeast of Rockbridge Baths. Datum of gage is 1,041.22 ft National Geodetic Vertical Datum of 1929. | 12.3 | 1967-82 | 6-13-82 | 7.50 | 420 |
| 02023300 | South River near Steeles Tavern, Va. | Lat 37°55'50", long 79°09'55", Augusta County, at bridge on State Highway 608, 3 mi east of Steeles Tavern. | 15.7 | 1951-82 | - | <3.67 | <685 |
| 02027700 | Buffalo River tributary near Amherst, Va. | Lat 37°33'45", long 78°57'35", Amherst County, at culvert on U.S. Highway 60, 5.2 mi southeast of Amherst. Datum of gage is 583.66 ft National Geodetic Vertical Datum of 1929. | .46 | 1966-82 | 6-13-82 | 3.17 | 25 |
| 02030800 | Stockton Creek near Afton, Va. | Lat 38°01'48", long 78°48'30", Albemarle County, at culvert on State Highway 6, 1.7 mi east of Afton. Datum of gage is 835.27 ft National Geodetic Vertical Datum of 1929. | 2.80 | 1967-82 | 6-13-82 | 4.74 | 90 |
| 02032200 | Doyles River near Whitehall, Va. | Lat 38°12'10", long 78°40'17", Albemarle County, at bridge on State Highway 810, 5.9 mi north of Whitehall. Datum of gage is 928.08 ft National Geodetic Vertical Datum of 1929. | 6.70 | 1967-82 | - | <10.10 | (*) |
| 02032300 | Muddy Run near Stanardsville, Va. | Lat 38°14'05", long 78°37'02", Albemarle County, at bridge on State Highway 810, 11 mi southwest of Stanardsville. Datum of gage is 756.79 ft National Geodetic Vertical Datum of 1929. | 3.36 | 1967-82 | 6-13-82 | 7.11 | (*) |
| 02032540 | Haneytown Creek near Stanardsville, Va. | Lat 38°16'48", long 78°30'50", Greene County, at bridge on State Highway 810, 4.5 mi west of Stanardsville. Datum of gage is 616.34 ft National Geodetic Vertical Datum of 1929. | 4.45 | 1967-82 | 6-13-82 | 12.61 | (*) |
| 02032550 | Lynch River at Nortonville, Va. | Lat 38°14'16", long 78°32'32", Albemarle County, at bridge on State Highway 810, 7 mi southwest of Stanardsville. Datum of gage is 591.70 ft National Geodetic Vertical Datum of 1929. | 13.6 | 1967-82 | 6-13-82 | 13.21 | (*) |

* Discharge not determined.
< Less than.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | Annual Maximum | | |
|---|---|--|----------------------------------|-------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | | |
| 02032700 | Schenks Branch at Charlottesville, Va. | Lat 38°02'32", long 78°28'30", Charlottesville City, at bridge just upstream from U.S. Highway 250 bypass. Datum of gage is 371.63 ft National Geodetic Vertical Datum of 1929. | 1.34 | 1950-77, 1979-82 | 5-28-82 | 6.27 | (*) |
| 02033300 | Moore's Creek near Charlottesville, Va. | Lat 38°00'25", long 78°34'25", Albemarle County, at culvert on access road, 150 ft north of U.S. Highway 29, and 4 mi southwest of Charlottesville. | 3.52 | 1967-77, 1979-82 | - | <13.81 | <185 |
| 02037800 | Falling Creek near Midlothian, Va. | Lat 37°27'15", long 77°35'20", Chesterfield County, at bridge on State Highway 653, 4 mi southeast of Midlothian. Datum of gage is 170.06 ft National Geodetic Vertical Datum of 1929. | 18.1 | 1951-82 | 3- 7-82 | 3.97 | 257 |
| 02040500 | Flat Creek near Amelia, Va. | Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia. | 73.0 | 1946-70, 1972-82 | 6- 5-82 | 7.42 | (*) |
| 02042250 | Bailey Branch tributary at Spring Grove, Va. | Lat 37°10'29", long 76°59'13", Surry County, at culvert on State Highway 10, 1.0 mi northwest of Spring Grove. Datum of gage is 61.39 ft National Geodetic Vertical Datum of 1929. | .71 | 1967-82 | - | <2.28 | <12 |
| 02042300 | Horsepen Branch at Richmond, Va. | Lat 37°35'45", long 77°30'40", Henrico County, at culvert on U.S. Highway 250 (Broad Street), at Richmond. | 1.35 | 1965-82 | 12-15-81 | 4.28 | 876 |
| 02042400 | Jordans Branch at Richmond, Va. | Lat 37°35'10", long 77°29'55", Henrico County, at bridge on U.S. Highway 250 (Broad Street), at Richmond. | 2.41 | 1965-82 | 7-12-82 | 10.88 | (*) |
| 02042780 | West Branch Long Hill Swamp near Lightfoot, Va. | Lat 37°18'50", long 77°46'01", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot. | 2.47 | 1970-76, 1978-82 | 8- 8-82 | 4.00 | 120 |
| CHOWAN RIVER BASIN | | | | | | | |
| 02044200 | Falls Creek tributary near Victoria, Va. | Lat 37°02'04", long 78°10'26", Lunenburg County, at culvert on State Highway 49, 3.6 mi northeast of Victoria. | .34 | 1962-82 | 5-24-82 | 4.42 | 73 |
| 02046500 | Anderson Branch at Sussex, Va. | Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex. Datum of gage is 58.00 ft National Geodetic Vertical Datum of 1929. | 5.35 | 1949-56*, 1967-82 | 7-17-82 | 6.64 | 298 |
| 02050050 | Blackwater River tributary near Holland, Va. | Lat 36°38'44", long 76°51'29", Nansemond County, at culvert on State Highway 189, 4.9 mi southwest of Holland. Datum of gage is 29.25 ft National Geodetic Vertical Datum of 1929. | 2.76 | 1967-82 | 10-25-81 | 5.33 | 133 |
| ROANOKE RIVER BASIN | | | | | | | |
| 02057700 | Powder Mill Creek at Rocky Mount, Va. | Lat 37°00'26", long 79°52'25", Franklin County, at culvert on U.S. Highway 220 bypass at Rocky Mount. | .64 | 1967-82 | 6-13-82 | 14.50 | 115 |

* Discharge not determined.

* Operated as a continuous-record gaging station.

< Less than.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | | | |
|---|--|---|----------------------------------|--------------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Annual Maximum | | |
| | | | | | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| ROANOKE RIVER BASIN--Continued | | | | | | | |
| 02065100 | Snake Creek near Brookneal, Va. | Lat 37°00'42", long 78°57'52", on U.S. Highway 501, 2.1 mi south of Brookneal. | 1.68 | 1967-82 | 10-27-81 | 7.77 | 447 |
| 02065300 | Right Hand Fork near Appomattox, Va. | Lat 37°16'12", long 78°49'14", Appomattox County, at culvert on State Highway 727, 5.2 mi south of Appomattox. | 2.08 | 1967-82 | 2- 3-82 | 6.02 | 171 |
| 02075350 | Powells Creek near Turbeville, Va. | Lat 36°34'50", long 79°11'20", Halifax County, at culvert on U.S. Highway 58, 8.8 mi southwest of Turbeville. Datum of gage is 383.95 ft National Geodetic Vertical Datum of 1929. | .28 | a1958-69, 1970-82 | 10-26-81 | 4.34 | 190 |
| 02076200 | Bearskin Creek near Chatham, Va. | Lat 36°50'30", long 79°29'05", Pittsylvania County, at culvert on State Highway 57, 4.5 mi west of Chatham. | 4.06 | 1967-82 | 5-26-82 | 4.10 | 212 |
| 02076700 | Blacks Creek near Mt. Airy, Va. | Lat 36°56'40", long 79°09'56", Pittsylvania County, at culvert on State Highway 40, 1.5 mi east of Mt. Airy. | 3.44 | 1966-82 | 1- 4-82 | 4.97 | 207 |
| KANAWHA RIVER BASIN | | | | | | | |
| 03165500 | New River at Ivanhoe, Va. | Lat 36°50'05", long 80°57'10", Wythe County, on left bank at Ivanhoe, 2.1 mi downstream from Big Branch, and 2.3 mi upstream from Cripple Creek. Datum of gage is 1,943.09 ft National Geodetic Vertical Datum of 1929. | 1,340 | 1927*, 1929-78*, 1979-82 | 2- 3-82 | 11.30 | 20,800 |
| 03165700 | Cripple Creek at Cedar Springs, Va. | Lat 36°49'31", long 81°16'45", Wythe County, at bridge on State Highway 749, 0.6 mi southeast of Cedar Springs. | 11.3 | 1967-82 | - | <13.9 | <360 |
| 03167300 | Mira Fork tributary near Dugspur, Va. | Lat 36°50'16", long 80°35'47", Carroll County, at culvert on U.S. Highway 221, 2.2 mi northeast of Dugspur. Datum of gage is 2,602.96 ft National Geodetic Vertical Datum of 1929. | .62 | 1967-82 | - | <2.8 | <45 |
| 03167700 | Beaverdam Creek at Hillsville, Va. | Lat 36°46'05", long 80°43'33", Carroll County, at culvert on State Highway 1009, 0.2 mi east of Hillsville corporate limits. Datum of gage is 2,373.04 ft National Geodetic Vertical Datum of 1929. | 4.75 | 1962-82 | 7-15-82 | 4.68 | 345 |
| 03168750 | Thorne Springs Branch near Dublin, Va. | Lat 37°05'30", long 80°44'34", Pulaski County, at pond dam just upstream from U.S. Highway 11, 3.3 mi southwest of Dublin. | 4.77 | a1957-69, 1970-82 | 2- 3-82 | 1.84 | 69 |
| 03171500 | New River at Eggleston, Va. | Lat 37°17'22", long 80°37'01", Giles County, on left bank 50 ft downstream from highway bridge at Eggleston. Datum of gage is 1,615.59 ft National Geodetic Vertical Datum of 1929. | 2,941 | 1915-76*, 1977-82 | 2- 4-82 | 14.56 | 38,900 |

* Operated as a continuous-record gaging station.

< Less than.

a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

365

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | | Annual Maximum | |
|---|---|---|----------------------------------|-------------------|---------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| BIG SANDY RIVER BASIN | | | | | | | |
| 03208800 | Pound River above Indian Creek at Pound, Va. | Lat 37°07'26", long 82°36'29", Wise County, on left bank at Pound, 1,600 ft downstream from confluence of North and South Fork, 0.5 mi upstream from U.S. Highway 23, and 0.7 mi above Indian Creek. Datum of gage is 1,535.64 ft National Geodetic Vertical Datum of 1929. | 36.7 | 1966-78*, 1979-82 | 9-14-82 | 18.83 | 3,310 |
| 03208850 | Pound River below Bold Camp Creek, at Pound, Va. | Lat 37°07'19", long 82°35'55", Wise County, on left bank at Pound, 1,000 ft upstream from State Highway 83, 0.3 mi below Bold Camp Creek, and 0.5 mi below Indian Creek. Datum of gage is 1,527.36 ft National Geodetic Vertical Datum of 1929. | 61.2 | 1966-78*, 1979-82 | 9-14-82 | 23.64 | 5,440 |
| 03213590 | Knox Creek at Kelsa, Va. | Lat 37°27'02", long 82°03'34", Buchanan County, on left bank at bridge on State Highway 697, 0.3 mi downstream from Pawpaw Creek, and 0.8 mi northeast of Kelsa. | 84.3 | 1980-81*, 1982 | 2- 3-82 | 7.24 | 1,720 |
| TENNESSEE RIVER BASIN | | | | | | | |
| 03471200 | South Fork Holston River at Teas, Va. | Lat 36°46'22", long 81°27'05", Smyth County, at bridge on State Highway 601, at Teas. Datum of gage is 2,496.98 ft National Geodetic Vertical Datum of 1929. | 31.1 | 1967-82 | 1- 4-82 | 11.49 | 365 |
| 03472500 | Beaverdam Creek at Damascus, Va. | Lat 36°37'40", long 81°47'28", Washington County, at Damascus, 0.6 mi upstream from mouth. Datum of gage is 1,946.66 ft National Geodetic Vertical Datum of 1929. | 56.0 | 1948-59*, 1960-82 | 2- 3-82 | 4.80 | 2,320 |
| 03473500 | Middle Fork Holston River at Groseclose, Va. | Lat 36°53'19", long 81°20'51", Smyth County, 10 ft downstream from bridge on State Highway 679, at Groseclose. Datum of gage is 2,442.86 ft National Geodetic Vertical Datum of 1929. | 7.39 | 1948-57*, 1958-82 | 2- 3-82 | 3.61 | 124 |
| 03474000 | Middle Fork Holston River at Seven Mile Ford, Va. | Lat 36°48'26", long 81°37'20", Smyth County, on right bank at downstream side of bridge on U.S. Highway 11, at Seven Mile Ford, and 0.3 mi upstream from Meade Creek. Datum of gage is 1,960.00 ft National Geodetic Vertical Datum of 1929. | 132 | 1942-81*, 1982 | 6-13-82 | 4.06 | 2,960 |
| 03474700 | Hutton Creek near Chilhowie, Va. | Lat 36°47'00", long 81°44'05", Washington County, at bridge on U.S. Highway 11, 3.3 mi southwest of Chilhowie. | 8.32 | 1967-82 | 2- 3-82 | 10.89 | 268 |
| 03474800 | Hall Creek near Glade Spring, Va. | Lat 36°45'47", long 81°48'15", Washington County, at bridge on U.S. Highway 11, 2.5 mi south of Glade Spring. | 7.90 | 1967-82 | 2- 3-82 | 10.17 | 408 |
| 03475600 | Cedar Creek near Meadowview, Va. | Lat 36°44'50", long 81°51'20", Washington County, at culvert on U.S. Highway 11, 1.2 mi south of Meadowview. Datum of gage is 2,034.66 ft National Geodetic Vertical Datum of 1929. | 3.38 | 1967-82 | 8- 9-82 | 6.40 | 47 |

* Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

| Annual Maximum Discharge at Crest Stage Partial Record Stations during Water Year 1982 | | | | | Annual Maximum | | |
|--|--|--|----------------------------------|-----------------------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| TENNESSEE RIVER BASIN--Continued | | | | | | | |
| 03475700 | Spring Creek near Abingdon, Va. | Lat 36°40'43", long 82°02'29", Washington County, at culvert on U.S. Highway 11, 3.8 mi southwest of Abingdon. Datum of gage is 1,977.54 ft National Geodetic Vertical Datum of 1929. | 2.99 | 1967-82 | 8- 9-82 | 5.34 | 296 |
| 03487800 | Lick Creek near Chatham Hill, Va. | Lat 36°57'44", long 81°28'21", Smyth County, 270 ft upstream from bridge on State Highway 42, 2.9 mi east of Chatham Hill. Datum of gage is 2,076.97 ft National Geodetic Vertical Datum of 1929. | 25.5 | 1966-68*, 1969-82 | 1- 4-82 | 5.52 | 1,170 |
| 03488450 | Brumley Creek at Brumley Gap, Va. | Lat 36°47'30", long 82°01'10", Washington County, on left bank 20 ft downstream from bridge on State Highway 611, 0.2 mi above mouth, and 0.8 mi southeast of Brumley Gap. Datum of gage is 1,489.16 ft National Geodetic Vertical Datum of 1929. | 21.1 | 1979-81*, 1982 | 6-13-82 | 4.94 | 693 |
| 03489800 | Cove Creek near Shelleys, Va. | Lat 36°39'13", long 82°21'16", Scott County, at bridge on U.S. Highway 58, 2 mi north of Shelleys. Datum of gage is 1,381.53 ft National Geodetic Vertical Datum of 1929. | 17.3 | 1951-82 | 2- 3-82 | 5.58 | 722 |
| 03489870 | Big Moccasin Creek at Collinwood, Va. | Lat 36°44'16", long 82°19'25", Russell County, at bridge on State Highway 612, at Collinwood. Datum of gage is 1,796.34 ft National Geodetic Vertical Datum of 1929. | 41.9 | 1967-68*, 1969-82 | 2- 3-82 | 4.94 | 2,050 |
| 03490000 | North Fork Holston River near Gate City, Va. | Lat 36°36'31", long 82°34'05", Scott County, on left bank 75 ft upstream from bridge on U.S. Highway 23, 1.6 mi downstream from Big Moccasin Creek, and 2.1 mi southeast of Gate City. Datum of gage is 1,197.56 ft National Geodetic Vertical Datum of 1929. | 672 | 1931-81*, 1982 | 2- 4-82 | 11.01 | 14,300 |
| 03524500 | Guest River at Coeburn, Va. | Lat 36°55'45", long 82°27'23", Wise County, on right bank 30 ft downstream from bridge on State Highway 72, 1.0 mi southeast of Coeburn, and 6.3 mi above mouth. Datum of gage is 1,925.80 ft National Geodetic Vertical Datum of 1929. | 87.3 | 1949-59*, 1959-78, 1979-81*, 1982 | 9-14-82 | 9.48 | 2,980 |
| 03524900 | Stony Creek at Ka, Va. | Lat 36°48'57", long 82°37'02", Scott County, on left bank along State Highway 619, at Ka, and 4.2 mi above mouth. | 30.9 | 1980-81*, 1982 | 9-14-82 | 7.23 | 7,620 |
| 03526000 | Copper Creek near Gate City, Va. | Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of highway bridge, 2.6 mi northeast of Gate City. Datum of gage is 1,301.95 ft National Geodetic Vertical Datum of 1929. | 106 | 1948-72*, 1973-82 | 2- 3-82 | 9.17 | 2,560 |
| 03527000 | Clinch River at Speers Ferry, Va. | Lat 36°38'55", long 82°45'02", 1,126 Scott County, on right bank 200 ft downstream from bridge on U.S. Highway 58, 0.5 mi downstream from Copper Creek, and 0.8 mi northwest of Speers Ferry. Datum of gage is 1,196.52 ft National Geodetic Vertical Datum of 1929. | | 1920-76*, 1977-78, 1979-81*, 1982 | 2-18-82 | 16.10 | 15,300 |

* Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued

| Annual maximum discharge at crest-stage partial-record stations during water year 1982--Continued | | | | | | | |
|---|--|---|----------------------------------|-----------------------------------|----------------|------------------|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Annual Maximum | | |
| | | | | | Date | Gage height (ft) | Dis-charge (ft ³ /s) |
| TENNESSEE RIVER BASIN--Continued | | | | | | | |
| 03529500 | Powell River at Big Stone Gap, Va. | Lat 36°52'08", long 82°46'32", Wise County, on right bank 10 ft upstream from bridge on U.S. Highway 23, at Big Stone Gap, and 1.0 mi upstream from South Fork Powell River. Datum of gage is 1,459.07 ft National Geodetic Vertical Datum of 1929. | 112 | 1945-59+, 1960-77, 1979-81+, 1982 | 9-14-82 | 7.83 | 5,950 |
| 03530500 | North Fork Powell River at Pennington Gap, Va. | Lat 36°46'26", long 83°01'59", Lee County, near right bank on downstream side of bridge on State Highway 621, 0.8 mi north of Pennington Gap, and 4.7 mi above mouth. Datum of gage is 1,363.02 ft National Geodetic Vertical Datum of 1929. | 71.4 | 1945-51+, 1952-77, 1979-81+, 1982 | 1-14-82 | 6.42 | 2,440 |

* Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Coal-monitoring partial-record stations in Southwest Virginia

The following table contains discharge measurements made at coal-monitoring partial-record stations. These measurements were made at the time water-quality samples were collected. The results of these samples are given in the table headed "Analyses of samples collected at partial-record, special study, and miscellaneous sites".

| Discharge measurements made at coal-monitoring partial-record stations during water year 1982 | | | | | | |
|---|---------------|---|----------------------------------|-----------------------------------|--------------|--------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| BIG SANDY RIVER BASIN | | | | | | |
| Russell Fork | Levisa Fork | Lat 37°04'38", long 82°03'47", Buchanan County, off State Highway 80, just above Ball Creek, and 0.5 mi southeast of Council. | 2.83 | 1981 | 8-25-82 | 0.52 |
| Ball Creek | Russell Fork | Lat 37°05'12", long 82°02'05", Buchanan County, above mouth of Nance White Branch, 2.0 mi northeast of Council. | .91 | 1981 | 6-28-82 | .86 |
| | | | | | 7-27-82 | .24 |
| | | | | | 8-24-82 | .28 |
| | | | | | 9-29-82 | .15 |
| Nance White Branch | Ball Creek | Lat 37°05'13", long 82°02'07", Buchanan County, at mouth, 2.0 mi northeast of Council. | 1.13 | 1981 | 6-28-82 | .57 |
| | | | | | 7-27-82 | .033 |
| | | | | | 8-24-82 | .031 |
| | | | | | 8-24-82 | .11 |
| 03208033 Unnamed tributary | Grissom Creek | Lat 37°06'18", long 82°03'00", Buchanan County, 0.1 mi above mouth, 2.1 mi northeast of Council. | .88 | - | 9-29-82 | .066 |
| | | | | | 8-24-82 | .11 |
| | | | | | | |
| | | | | | | |
| Grissom Creek | Ball Creek | Lat 37°06'12", long 82°03'02", Buchanan County, below unnamed tributary, 1.9 mi northeast of Council. | 1.44 | 1981 | 6-27-82 | .88 |
| | | | | | 7-27-82 | .047 |
| | | | | | 8-24-82 | .055 |
| | | | | | 8-24-82 | .095 |
| 03208034 Grissom Creek | Ball Creek | Lat 37°04'43", long 82°02'25", Buchanan County, near mouth, 1.7 mi east of Council. | 2.82 | 1981 | 9-29-82 | .14 |
| | | | | | 8-24-82 | .13 |
| | | | | | | |
| | | | | | | |
| 032080351 Barton Fork | Ball Creek | Lat 37°04'38", long 82°01'41", Buchanan County, above Jackson Fork, 2.3 mi east of Council. | .31 | 1981 | 8-25-81† | .022 |
| | | | | | 6-28-82 | .24 |
| | | | | | 7-27-82 | .060 |
| | | | | | 8-24-82 | .040 |
| 032080352 Jackson Fork | Barton Fork | Lat 37°04'35", long 82°01'41", Buchanan County, 100 ft above mouth, 2.3 mi east of Council. | .33 | 1981 | 9-28-82 | .055 |
| | | | | | 8-25-81† | .009 |
| | | | | | 6-28-82 | .20 |
| | | | | | 7-27-82 | .030 |
| 032080353 Coon Flat Branch | Barton Fork | Lat 37°04'41", long 82°01'49", Buchanan County, above mouth, 2.3 mi east of Council. | .22 | - | 8-24-82 | .010 |
| | | | | | | .026 |
| | | | | | | |
| | | | | | | |
| Jackson Fork | Barton Fork | Lat 37°04'38", long 82°01'43", Buchanan County, at mouth, 2.4 mi east of Council. | .64 | 1981 | 8-24-82 | .025 |
| | | | | | | .055 |
| | | | | | | |
| | | | | | | |
| Unnamed tributary | Barton Fork | Lat 37°04'34", long 82°02'10", Buchanan County, 0.1 mi above mouth, 1.9 mi east of Council. | .17 | 1981 | 6-28-82 | .090 |
| | | | | | 7-27-82 | .010 |
| | | | | | 8-24-82 | .0059 |
| | | | | | 9-29-82 | .011 |
| 03208036 Barton Fork | Ball Creek | Lat 37°04'37", long 82°02'21", Buchanan County, 200 ft above mouth, 1.7 mi east of Council. | 1.23 | 1981 | 8-24-82 | .24 |
| 03208039 Ball Creek | Russell Fork | Lat 37°04'40", long 82°03'45", Buchanan County, at mouth, 0.5 mi east of Council. | 7.26 | 1981 | 8-26-82 | 2.3 |
| 03208040 Russell Fork | Levisa Fork | Lat 37°04'40", long 82°03'57", Buchanan County, at State Highway 80, at Council. | 10.2 | 1978, 1981 | 8-25-82 | 18 |
| Big Branch | Russell Fork | Lat 37°05'04", long 82°05'01", Buchanan County, 0.1 mi above mouth, 0.8 mi west of Council. | .97 | 1981 | 6-29-82 | .36 |
| | | | | | 7-27-82 | .033 |
| | | | | | 8-25-82 | .98 |
| | | | | | 9-28-82 | .10 |

† Not previously published.

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| Discharge measurements made at local monitoring partial record stations during water year 1982 | | | | | Measured previously (water years) | Measurements | |
|--|---------------------------|--|----------------------------------|---------|-----------------------------------|--|--------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | | | Date | Discharge (ft ³ /s) |
| BIG SANDY RIVER BASIN--Continued | | | | | | | |
| Hurricane Creek | Russell Fork | Lat 37°07'58", long 82°04'25", Buchanan County, above Left Fork, 4.1 mi northeast of Davenport. | 1.76 | 1981 | | 6-28-82 7-27-82 8-25-82 9-28-82 | 6.3 .069 2.0 .25 |
| Left Fork | Hurricane Creek | Lat 37°08'01", long 82°04'31", Buchanan County, 200 ft above mouth, 4.0 mi northeast of Davenport. | .89 | 1980-81 | | 6-28-82 7-27-82 8-25-82 9-28-82 | 5.1 .058 4.5 .13 |
| Parett Fletcher Branch | Hurricane Creek | Lat 37°07'29", long 82°04'49", Buchanan County, at mouth, 3.5 mi northeast of Davenport. | .48 | 1981 | | 6-28-82 7-27-82 8-25-82 9-28-82 | .21 .019 1.3 .069 |
| Left Fork Hurricane Creek | Hurricane Creek | Lat 37°08'46", long 82°06'29", Buchanan County, above New Camp Branch, 3.3 mi northeast of Davenport. | 1.18 | 1981 | | 6-29-82 7-27-82 8-26-82 9-28-82 | 5.3 .18 .50 .25 |
| Boyd Branch | Left Fork Hurricane Creek | Lat 37°07'54", long 82°07'00", Buchanan County, 0.1 mi above mouth, 2.5 mi northeast of Davenport. | .68 | 1981 | | 6-29-82 7-27-82 8-26-82 9-28-82 | 2.0 .012 .092 .063 |
| Ivy Lick Branch | Left Fork Hurricane Creek | Lat 37°07'16", long 82°07'25", Buchanan County, at mouth 1.8 mi northeast of Davenport. | .74 | 1981 | | 6-29-82 7-27-82 8-26-82 9-28-82 | 1.1 .018 .12 .076 |
| 03208050 Hurricane Creek | Russell Fork | Lat 37°06'05", long 82°08'12", Buchanan County, at bridge on State Highway 80, 400 ft upstream from mouth, and at Davenport. | 16.3 | 1978 | | 8-25-82 | 13 |
| Little Indian Creek | Indian Creek | Lat 37°02'55", long 82°05'03", Buchanan County, at State Highway 602, at mouth, and 2.3 mi south of Council. | 1.01 | 1981 | | 6-27-82 7-27-82 8-24-82 9-29-82 | .48 .038 .076 .17 |
| Puncheon Camp Branch | Indian Creek | Lat 37°04'13", long 82°06'54", Buchanan County, at mouth, 2.6 mi southwest of Council. | .80 | 1981 | | 6-27-82 7-27-82 8-24-82 9-29-82 | .32 .067 .019 .063 |
| Unnamed tributary | Indian Creek | Lat 37°04'55", long 82°08'32", Buchanan County, at State Highway 602, near mouth, and 0.5 mi east of Duty. | .39 | 1981 | | 6-28-82 7-27-82 8-24-82 9-29-82 | .28 .11 .10 .23 |
| Cane Creek | Indian Creek | Lat 37°06'16", long 82°10'41", Dickenson County, above unnamed tributary, 2.4 mi southwest of Duty. | 1.73 | 1981 | | 6-28-82 7-27-82 8-25-82 9-29-82 | .74 0 1.3 .010 |
| Unnamed tributary | Cane Creek | Lat 37°03'16", long 82°10'41", Dickenson County, at mouth, 2.3 mi southwest of Duty. | .46 | 1981 | | 6-28-82 7-27-82 8-25-82 9-29-82 | .23 .00028 0 0 |
| Cane Creek | Indian Creek | Lat 37°04'08", long 82°09'37", Dickenson County, above Tiller Fork, 1.0 mi southwest of Duty. | 2.96 | 1981 | | 8-25-82 | 1.3 |
| Tiller Fork | Cane Creek | Lat 37°04'00", long 82°09'23", Dickenson County, above Left Fork, 1.0 mi south of Duty. | 1.73 | 1981 | | 6-28-82 7-27-82 8-24-82 9-29-82 | 2.1 .90 .29 .44 |
| Left Fork | Tiller Fork | Lat 37°04'01", long 82°09'20", Dickenson County, at mouth, 1.0 mi south of Duty. | 1.02 | 1981 | | 6-28-82 7-27-82 8-24-82 9-29-82 | 1.1 .14 .14 .20 |
| Unnamed tributary | Cane Creek | Lat 37°04'18", long 82°09'43", Dickenson County, at mouth, 0.8 mi south of Duty. | .64 | 1981 | | 6-28-82 7-27-82 8-24-82 9-29-82 | .37 .033 .020 .027 |

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

| Discharge measurements made at coal-monitoring partial-record stations during water year 1982--Continued | | | | | | |
|--|--------------|--|----------------------------------|-----------------------------------|---|-----------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| BIG SANDY RIVER BASIN--Continued | | | | | | |
| 03208070 Indian Creek | Russell Fork | Lat 37°06'35", long 82°09'30", Dickenson County, at mouth, 1.3 mi northwest of Davenport. | 21.1 | 1978, 1981 | 8-26-82 | 8.2 |
| Big Branch | Russell Fork | Lat 37°06'46", long 82°10'03", Dickenson County, at State Highway 80, 1.0 mi south of Murphy. | 1.10 | 1981 | 6-28-82 7-27-82 8-25-82 8-26-82 9-28-82 | .22 .024 .98 .57 .097 |
| Abner Branch | Russell Fork | Lat 37°06'54", long 82°10'20", Dickenson County, at mouth, at Bee, and 0.8 mi south of Murphy. | 2.01 | 1981 | 6-28-82 7-27-82 8-26-82 9-28-82 | .86 .042 .59 .14 |
| Fox Creek | Russell Fork | Lat 37°09'43", long 82°10'21", Buchanan County, above Left Fork, 2.5 mi north of Murphy. | 3.68 | 1981 | 6-29-82 7-26-82 8-25-82 9-29-82 | 9.1 .20 8.3 .29 |
| Left Fork | Fox Creek | Lat 37°09'46", long 82°10'23", Buchanan County, at mouth, 2.5 mi north of Murphy. | 1.69 | 1981 | 6-29-82 7-26-82 8-25-82 9-29-82 | 2.0 .033 3.7 .14 |
| Pawpaw Creek | Russell Fork | Lat 37°10'05", long 82°11'58", Buchanan County, above Hackney Hollow, 3.1 mi south of Prater. | 4.12 | 1981 | 6-29-82 7-26-82 8-25-82 9-29-82 | 0 .17 9.3 .34 |
| 03208088 Hackney Hollow tributary | Pawpaw Creek | Lat 37°10'06", long 82°12'02", Buchanan County, 0.1 mi above mouth, 2.6 mi northeast of Colley. | 1.44 | 1980-81 | 6-29-82 7-26-82 8-25-82 9-29-82 | 0 .0040 5.4 .11 |
| 03208089 Little Pawpaw Creek | Pawpaw Creek | Lat 37°10'00", long 82°12'17", Buchanan County, at culvert on State Highway 605, 200 ft upstream from mouth, and 2.4 mi northeast of Colley. | 1.36 | 1979-81 | 6-29-82 7-26-82 8-25-82 9-29-82 | 2.5 .045 2.4 .14 |
| Laurel Branch (North) | Russell Fork | Lat 37°10'19", long 82°14'11", Dickenson County, at State Highway 605, at mouth, at Viers, and 1.3 mi north of Colley. | 1.43 | 1981 | 6-29-82 7-26-82 8-25-82 9-29-82 | 1.3 .035 .91 .10 |
| 03208100 Russell Fork | Levisa Fork | Lat 37°09'49", long 82°15'20", Dickenson County, above Fryingpan Creek, 1.1 mi southeast of Birchleaf. | 87.4 | 1978, 1981 | 8-26-82 | 42 |

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream when continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

| Discharge measurements made at low-flow partial-record stations during water year 1982 | | | | | | |
|--|--|--|----------------------------------|---------------------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN | | | | | | |
| 01613570 | Back Creek at at Gainesboro, Va. | Lat 37°17'09", long 78°15'51", Frederick County, at bridge on State Highway 684, 0.25 mi above Winchester and Western Railroad, and 0.7 mi northwest of Gainesboro. | - | 1951-54 | 7-14-82 | 5.5 |
| 01621000 | Dry River at Rawley Springs, Va. | Lat 38°30'10", long 79°03'14", Rockingham County, at bridge on State Highway 847, at Rawley Springs, and 1.2 mi below Harrisonburg Reservoir. | 72.6 | 1946-48*, 1952-55, 1963 | 7-15-82 | 44 |
| 01622230 | Middle River at Trimbles Mill, near Swoope, Va. | Lat 38°08'10", long 79°13'06", Augusta County, at bridge on State Highway 707, at Trimbles Mill, and 1.7 mi southwest of Swoope. | - | - | 7-15-82 | 7.0 |
| 01631500 | North Fork Shenandoah River at Fulks Run, Va. | Lat 38°40'18", long 78°55'47", Rockingham County, at bridge on State Highway 917, 0.75 mi above Little Dry River, and 0.8 mi northwest of old site of Fulks Run. | - | 1952-54 | 7-15-82 | 5.2 |
| 01632840 | Smith Creek near Lacey Spring, Va. | Lat 38°32'18", long 78°45'03", Rockingham County, at low- water culvert on State Highway 717, 0.4 mi above Dry Fork, and 0.9 mi east of Lacey Spring. | - | - | 7-15-82 | 8.0 |
| 01633485 | Stony Creek near near Liberty Furnace, Va. | Lat 38°53'41", long 78°39'57", Shenandoah County, along State Highway 717, 0.15 mi above Little Stony Creek, and 2.4 mi northeast of Liberty Furnace. | 57.0 | 1968-69 | 7-14-82 | 10 |
| 01635250 | Passage Creek near Detrick, Va. | Lat 38°47'49", long 78°27'42", Shenandoah County, at bridge on State Highway 776, 0.4 mi above Buck Run, and 4.0 mi southwest of Detrick. | - | 1963 | 7-14-82 | 4.9 |
| 01636270 | Bordon Marsh Run near Boyce, Va. | Lat 39°00'09", long 78°05'51", Warren County, at culvert on State Highway 624, 1.1 mi above mouth, and 6.6 mi south- west of Boyce. | - | - | 7-14-82 | 3.4 |
| 01643643 | Goose Creek at Delaplane, Va. | Lat 38°54'51", long 77°55'19", Fauquier County, at bridge on U.S. Highway 17, just below Crooked Run, and at Delaplane. | 45.6 | 1952-54, 1969, 1981 | 10-22-81 7-28-82 | 1.4 7.3 |
| 01643800 | North Fork Goose Creek near Lincoln, Va. | Lat 39°04'38", long 77°41'52", Loudoun County, at bridge on State Highway 722, 0.6 mi above Crooked Run, and 2.5 mi south of Lincoln. | - | 1952-54, 1981 | 10-22-81 7-28-82 | 1.2 5.6 |
| 01653700 | Little Hunting Creek at Gum Springs, Va. | Lat 38°44'21", long 77°05'20", Fairfax County, 50 ft down- stream from U.S. Highway 1, at Gum Springs. | 1.78 | 1960, 1962-63, 1977, 1980-81 | 10- 1-81 8- 2-82 | .25 .42 |
| 01653800 | Dogue Creek near Accotink, Va. | Lat 38°43'08", long 77°07'44", Fairfax County, at bridge on U.S. Highway 1, 1.8 mi north- east of Accotink. | 10.6 | 1960-63, 1977, 1980-81 | 10- 1-81 8- 2-82 | .42 1.7 |

* Operated as a continuous-record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

| Discharge measurements made at low-flow partial-record stations during water year 1982--Continued | | | | | Measurements | |
|---|---|--|----------------------------------|------------------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN--Continued | | | | | | |
| 01656200 | Broad Run near Warrenton, Va. | Lat 38°48'25", long 77°48'47", Fauquier County, at culvert on U.S. Highway 17, 2.1 mi above Piney Branch, and 7.0 mi north of Warrenton. | 2.94 | 1953-54, 1956, 1959-61, 1976, 1981 | 10-22-81 7-28-82 | 0 .40 |
| 01657890 | Neabsco Creek tributary near Dale City, Va. | Lat 38°37'13", long 77°16'35", Prince William County, at bridge on State Highway 638, 0.5 mi above mouth, and 2.0 mi southeast of Dale City. | 3.33 | 1980-81 | 10- 1-81 8- 2-82 | 1.1 1.2 |
| 01660670 | Accokeek Creek near Brooke, Va. | Lat 38°22'38", long 77°21'26", Stafford County, 200 ft above bridge on State Highway 609, 1.3 mi southeast of Brooke, and 4.4 mi above mouth. | 18.0 | 1980-81 | 11-16-81 8- 2-82 | 2.7 1.6 |
| 01660765 | Upper Machodoc Creek near Dahlgren, Va. | Lat 38°18'57", long 77°05'20", King George County, at bridge on State Highway 616, 1.6 mi below Pepper Mill Creek, and 2.0 mi southwest of Dahlgren. | 26.2 | 1980-81 | 7-26-82 | 2.3 |
| 01660870 | Fox Hall Swamp near Potomac Mills, Va. | Lat 38°09'24", long 76°57'43", Westmoreland County, at bridge on State Highway 639, 0.2 mi above Bundys Swamp, and 1.2 mi southwest of Potomac Mills. | 2.28 | 1980-81 | 11-16-81 7-26-82 | .67 .30 |
| 01661160 | Nomini Creek near Neenah, Va. | Lat 38°02'28", long 76°10'22", Westmoreland County, at culvert on State Highway 600, 0.5 mi below Antioch Branch, and 1.0 mi southeast of Neenah. | 9.99 | 1980-81 | 11-17-81 7-28-82 | 5.9 4.0 |
| RAPPAHANNOCK RIVER BASIN | | | | | | |
| 01661840 | Rappahannock River near Flint Hill, Va. | Lat 38°45'32", long 78°01'42", Rappahannock and Fauquier Counties, at bridge on State Highway 647, 0.1 mi below Jordan River, and 4.0 mi east of Flint Hill. | - | 1943, 1950-54, 1963, 1976-77, 1981 | 10-21-81 7-28-82 | 3.5 15 |
| 01662110 | Hazel River near Woodville, Va. | Lat 38°36'27", long 78°14'15", Rappahannock County, at bridge on State Highway 231, 3.5 mi west of Woodville, and 8.0 mi above mouth. | 5.54 | 1950-54, 1961, 1963, 1981 | 10-21-81 7-27-82 | 1.8 4.6 |
| 01662500 | Rush River at Washington, Va. | Lat 38°42'50", long 78°09'05", Rappahannock County, at bridge on old U.S. Highway 211, 0.2 mi east of Washington, and 4.6 mi above mouth. | 14.7 | 1952, 1953-77*, 1978, 1981 | 10-21-81 7-28-82 | 1.2 2.9 |
| 01663000 | Thornton River near Laurel Mills, Va. | Lat 38°37'41", long 78°03'47", Rappahannock County, at bridge on State Highway 729, 2.0 mi southeast of Laurel Mills, and 2.9 mi below Battle Run. | 142 | 1942, 1944-56, 1978, 1981 | 10-21-81 7-28-82 | 8.5 31 |
| 01665220 | Deep Run near Goldvein, Va. | Lat 38°27'07", long 77°37'46", Fauquier and Stafford Counties, at bridge on State Highway 615, 1.5 mi east of Goldvein, and 3.3 mi above mouth. | - | 1963, 1981 | 10-22-81 8- 5-82 | 1.8 1.2 |
| 01665400 | Conway River near Stanardsville, Va. | Lat 38°19'58", long 78°23'53", Madison and Greene Counties, at bridge on State Highway 230, 2.2 mi above mouth, and 2.8 mi northeast of Stanardsville. | 25.8 | 1943, 1950-54, 1963, 1978, 1981 | 10-21-81 7-27-82 | 2.9 18 |
| 01665850 | Robinson River near Criglersville, Va. | Lat 38°26'54", long 78°16'44", Madison County, at bridge on State Highway 231, 0.7 mi above Leathers Run, and 1.4 mi southeast of Criglersville. | - | 1950-54, 1964, 1981 | 10-21-81 7-27-82 | 7.0 41 |

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements taken at low-flow partial-record stations during water year 1982 | | | | | Measurements | |
|---|--|---|----------------------------------|--|---------------------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| RAPPAHANNOCK RIVER BASIN--Continued | | | | | | |
| 01667848 | Black Walnut Run at Burr Hill, Va. | Lat 38°20'26", long 77°51'34", Orange County, 10 ft above mouth, at Burr Hill. | 11.9 | 1981 | 10-22-81 7-27-82 | 0.42 2.8 |
| 01667850 | Mine Run at Burr Hill, Va. | Lat 38°20'36", long 77°51'33", Orange County, at bridge on State Highway 692, just downstream from Black Walnut Run, and at Burr Hill. | | 1943, 1951, 1953, 1963, 1981 | 10-22-81 7-28-82 | .67 4.5 |
| 01668100 | White Oak Run near Passapatanzy, Va. | Lat 38°15'38", long 77°21'43", Stafford County, at culvert on State Highway 603, 1.0 mi above mouth, and 4.0 mi southwest of Passapatanzy. | 8.29 | 1980-81 | 11-16-81 8- 2-82 | .03 .05 |
| 01668200 | Gingoteague Run near Port Royal, Va. | Lat 38°12'38", long 77°09'08", King George County, at culvert on State Highway 623, 3.4 mi northeast of Port Royal, and 3.9 mi above mouth. | 2.82 | 1968-69, 1980-81 | 11-16-81 7-26-82 | .36 .03 |
| 01668305 | Farmers Hall Creek at Rt. 631, near Champlain, Va. | Lat 38°00'53", long 76°57'47", Essex County, at culvert on State Highway 631, 0.35 mi below Rouzie Swamp, and 1.6 mi east of Champlain. | 3.65 | 1980-81 | 11-16-81 7-26-82 | .22 .43 |
| 01669100 | Totuskey Creek near Emmerton, Va. | Lat 37°54'47", long 76°39'29", Richmond County, at bridge at State Highway 619, just below confluence with Mill Branch, and 1.5 mi northeast of Emmerton. | 28.4 | 1980-81 | 7-28-82 | 5.1 |
| 01669150 | Bellwood Swamp near Lancaster, Va. | Lat 37°46'47", long 76°29'47", Lancaster County, at culvert on State Highway 201, 1.5 mi above mouth, and 1.8 mi northwest of Lancaster. | 8.23 | 1980-81 | 11-17-81 7-28-82 | 3.3 2.0 |
| PIANKATANK RIVER BASIN | | | | | | |
| 01669400 | Timber Branch Swamp tributary at Dragonville, Va. | Lat 37°41'25", long 76°46'25", King and Queen County, at culvert on State Highway 610, 0.15 mi above mouth, and 0.5 mi southeast of Dragonville. | .61 | 1980-81 | 10- 1-81 11-13-81 8- 3-82 | .03 .14 .24 |
| 01669810 | Healys Pond tributary near Harmony Village, Va. | Lat 37°34'53", long 76°30'24", Middlesex County, at culvert on State Highway 620, 0.7 mi above Healys Pond, and 1.8 mi southwest of Harmony Village. | .72 | 1980-81 | 11-13-81 8- 3-82 | .40 .29 |
| CHESAPEAKE BAY | | | | | | |
| 01669850 | Queens Creek near Blakes, Va. | Lat 37°29'22", long 76°22'55", Mathews County, at culvert on State Highway 626, 1.0 mi southwest of Blakes. | 1.56 | 1980-81 | 11-17-81 7-28-82 | 0 0 |
| 01669885 | North River tributary near North, Va. | Lat 37°28'17", long 76°25'15", Mathews County, at culvert on State Highway 657, 0.1 mi above mouth, and 2.0 mi north of North. | 1.04 | 1980-81 | 11-17-81 7-28-82 | (a) .24 |
| WARE RIVER BASIN | | | | | | |
| 01670010 | Beaverdam Swamp tributary No. 2 at Ark, Va. | Lat 37°26'35", long 76°34'27", Gloucester County, at culvert on State Highway 606, 2.4 mi north of Ark, and 2.4 mi above mouth. | 1.29 | 1949-55, 1980-81 | 11-17-81 7-28-82 | .36 .13 |

a Ponded, no apparent flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low flow partial record stations during water year 1982 | | | | | Measurements | |
|--|---|--|----------------------------------|---------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| WARE RIVER BASIN--Continued | | | | | | |
| 01670020 | Beaverdam Swamp at Gloucester, Va. | Lat 37°25'34", long 76°31'48", Gloucester County, at bridge on State Highway 616, 0.7 mi northwest of Gloucester, and 3.0 mi above Cow Creek. | 22.1 | 1949-54, 1980-81 | 11-17-81 7-28-82 | 2.8 1.0 |
| YORK RIVER BASIN | | | | | | |
| 01670120 | Mountain Run near Gordonsville, Va. | Lat 38°09'39", long 78°05'36", Orange County, at bridge on State Highway 643, 0.8 mi above confluence with Negro Run, and 4.6 mi east of Gordonsville. | - | 1981 | 10-23-81 7-27-82 | .85 2.4 |
| 01670200 | Pamunkey Creek near Lahore, Va. | Lat 38°09'16", long 77°57'02", Orange County, at bridge on State Highway 651, 1.0 mi above Lake Anna, and 3.3 mi southeast of Lahore. | - | 1981 | 10-23-81 7-27-82 | 2.2 9.4 |
| 01671040 | Long Creek near Buckner, Va. | Lat 37°55'38", long 77°47'44", Louisa County, at bridge on State Highway 655, 0.9 mi above mouth, and 2.7 mi southwest of Buckner. | - | 1981 | 10-22-81 7-27-82 | .15 .67 |
| 01671680 | South Anna River near Louisa, Va. | Lat 37°58'50", long 78°02'54", Louisa County, at bridge on State Highway 208, 3.6 mi above Roundabout Creek, and 4.3 mi southwest of Louisa. | - | 1942, 1944, 1952-54, 1981 | 10-22-81 7-26-82 | 4.3 11 |
| 01671950 | Deep Creek near Apple Grove, Va. | Lat 37°51'57", long 77°54'53", Louisa County, at culvert on State Highway 640, 0.4 mi above mouth, and 2.0 mi southwest of Apple Grove. | - | 1981 | 10-22-81 7-26-82 | .13 .89 |
| 01672200 | Taylor's Creek near Montpelier, Va. | Lat 37°47'49", long 77°43'27", Hanover County, at culvert on State Highway 715, 2.7 mi southwest of Montpelier, and 6.8 mi above mouth. | - | 1981 | 10-22-81 7-26-82 | 1.7 2.1 |
| 01672800 | Newfound River near Ashland, Va. | Lat 37°50'35", long 77°32'30", Hanover County, at bridge on State Highway 685, 0.1 mi below Beaver Creek, 1.3 mi west of Hanover Academy, and 5.8 mi northwest of Ashland. | - | 1952-54, 1981 | 10-22-81 8- 5-82 | .99 2.2 |
| 01673500 | Totopotomy Creek near Atlee, Va. | Lat 37°40'09", long 77°22'58", Hanover County, at culvert on U.S. Highway 301, 0.7 mi above Opossum Creek, and 1.6 mi northeast of Atlee. | 5.89 | 1949-77*, 1981 | 10-23-81 8- 5-82 | .19 .65 |
| 01673600 | Matadequin Creek near Tunstall, Va. | Lat 37°37'02", long 77°08'17", Hanover and New Kent Counties, at bridge on State Highway 606, 1.3 mi above mouth, and 3.2 mi northwest of Tunstall. | 29.1 | 1963, 1980-81 | 11-18-81 8- 3-82 | 4.5 25 |
| 01673620 | Acquinton Creek near King William, Va. | Lat 37°41'04", long 77°02'44", King William County, at culvert on State Highway 629, 1.6 mi west of King William, and 3.9 mi above mouth. | 8.93 | 1980-81 | 11-13-81 8- 3-82 | (a) 3.1 |
| 01673700 | Catharpin Run near Brokenburg, Va. | Lat 38°13'22", long 77°43'30", Spotsylvania County, at bridge on State Highway 608, 0.1 mi above mouth, and 5.4 mi north of Brokenburg. | - | 1981 | 10-23-81 8- 5-82 | 0 14 |
| 01673900 | Poni River tributary No. 1 near Guinea, Va. | Lat 38°09'07", long 77°27'16", Caroline County, at bridge on State Highway 607, 0.7 mi above mouth, and 1.0 mi northwest of Guinea. | 6.15 | 1980-81 | 11-16-81 7-26-82 | .32 (a) |

* Operated as a continuous-record gaging station.
a Pounded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low-flow partial-record stations during water year 1982 | | | | | Measurements | |
|--|--|--|----------------------------------|---------------------------------|--|--|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Discharge (ft ³ /s) | |
| | | | | | Date | |
| YORK RIVER BASIN--Continued | | | | | | |
| 01673960 | Mat River near Marye, Va. | Lat 38°06'23", long 77°06'07", Spotsylvania County, at bridge on State Highway 647, 1.8 mi above confluence with Ta River, and 2.0 mi northwest of Marye. | - | 1943, 1952-54, 1963, 1978, 1981 | 10-23-81 8- 5-82 | 0.12 .75 |
| 01674172 | Polecat Creek near Ladysmith, Va. | Lat 37°58'13", long 77°29'13", Caroline County, at bridge on State Highway 652, 0.5 mi above Stevens Mill Run, and 3.3 mi southeast of Ladysmith. | - | 1981 | 10-23-81 8- 5-82 | .13 .24 |
| 01674200 | Reedy Creek near Dawn, Va. | Lat 37°52'25", long 77°21'35", Caroline County, at culvert on U.S. Highway 301, 4.3 mi above mouth, and 5.8 mi north of Dawn. | 16.8 | 1950, 1956, 1969, 1980-81 | 11-20-81 7-27-82 | 3.5 1.5 |
| 01674250 | Maracossic Creek at Sparta, Va. | Lat 37°59'23", long 77°14'30", Caroline County, at bridge on State Highway 721, 0.6 mi west of Sparta, and 0.9 mi above Jacks Creek. | 37.6 | 1952-54, 1980-81 | 11-18-81 7-27-82 | 10 4.4 |
| 01674300 | Maracossic Creek above Beverly Run, near Gether, Va. | Lat 37°55'15", long 77°11'29", Caroline County, at bridge on State Highway 646, 0.6 mi above Beverly Run, and 0.9 mi east of Gether. | 72.4 | 1963, 1980-81 | 7-27-82 | 17 |
| 01674350 | Beverly Run at Rt. 630, near Alps, Va. | Lat 37°59'29", long 77°09'10", Caroline County, at bridge on State Highway 630, 1.5 mi above King and Queen Swamp, and 1.5 mi east of Alps. | 26.5 | 1952-54, 1980-81 | 11-18-81 7-27-82 | 10 12 |
| 01674400 | Beverly Run at Rt. 721, near Alps, Va. | Lat 37°57'08", long 77°10'48", Caroline and King and Queen Counties, at bridge on Highway 721, 2.5 mi above mouth, and 2.8 mi south of Alps. | 46.9 | 1980-81 | 11-18-81 7-27-82 | 14 18 |
| 01674600 | Herring Creek near Aylett, Va. | Lat 37°50'12", long 77°10'03", King William County, 100 ft above bridge on State Highway 609, 0.4 mi above Fork Bridge Creek, 1.5 mi southeast of Beulahville, and 5.0 mi northwest of Aylett. | 28.9 | 1952-54, 1980-81 | 7-27-82 | 4.0 |
| 01674805 | Dickeys Swamp near Stevensville, Va. | Lat 37°44'03", long 76°57'56", King and Queen County, 60 ft below beaver dam, 100 ft below bridge on State Highway 620, 0.1 mi above Market Swamp, and 2.5 mi northwest of Stevensville. | 19.8 | 1980-81 | 11-13-81 8- 3-82 | 2.8 13 |
| 01675550 | Glebe Swamp near Shackleford, Va. | Lat 37°33'21", long 76°42'38", King and Queen County, at culvert on State Highway 608, 1.4 mi northeast of Shacklefords, and 1.4 mi above mouth. | 4.57 | 1981 | 11-13-81 8- 3-82 | .32 1.1 |
| 01677100 | France Swamp near Toana, Va. | Lat 37°25'15", long 76°47'06", James City County, at culvert on State Highway 606, 1.1 mi above mouth, and 3.0 mi north-east of Toana. | 6.29 | 1980 | 10- 1-81 11-19-81 3-18-82 7-29-82 8-27-82 9-21-82 | (a) 1.9 5.4 6.9 3.0 <.5 |
| POQUOSON RIVER BASIN | | | | | | |
| 01677900 | Moore's Creek near Poquoson, Va. | Lat 37°07'28", long 76°25'15", York County, at culvert on State Highway 171, 0.8 mi above mouth, and 0.8 mi west of Poquoson. | 1.03 | 1980-81 | 11-19-81 7-29-82 | .31 0 |

< Less than.

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low flow partial record stations during water year 1982 | | | | | Measurements | |
|--|---|--|----------------------------------|---------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN | | | | | | |
| 02002000 | Jackson River at Vanderpool, Va. | Lat 38°22'05", long 79°37'35", Highland County, at bridge on U.S. Highway 220, at Vanderpool, and 0.35 mi above North (East) Fork Jackson River. | - | - | 7-16-82 | 8.7 |
| 02015800 | Thompson Creek near Bath Alum, Va. | Lat 38°02'38", long 79°41'05", Bath County, at bridge on State Highway 39, 1.3 mi above mouth, and 1.3 mi east of Bath Alum. | - | 1963 | 7-16-82 | 5.0 |
| 02015930 | Pads Creek near Longdale Furnace, Va. | Lat 37°51'54", long 79°43'56", Allegheny County, 200 ft below footbridge, 0.2 mi above mouth, and 4.7 mi northwest of Longdale Furnace. | - | - | 7-16-82 | 1.1 |
| 02016600 | Craig Creek near McDonalds Mill, Va. | Lat 37°21'16", long 80°17'23", Craig County, at private road off State Highway 621, 0.1 mi above Muddy Branch, and 3.9 mi north of McDonalds Mill. | - | - | 7-20-82 | 5.9 |
| 02019100 | Spreading Springs Branch at Springwood, Va. | Lat 37°32'57", long 79°44'42", Botetourt County, at bridge on State Highway 632, at Springwood, and 0.1 mi above mouth. | - | - | 7-20-82 | 1.1 |
| 02020200 | Calfpasture River at West Augusta, Va. | Lat 38°16'24", long 79°18'02", Augusta County, at bridge on U.S. Highway 220, 0.15 mi above Barn Lick Branch, and 0.4 mi northeast of West Augusta. | 12.8 | 1942, 1953-54, 1956, 1963 | 7-15-82 | 4.9 |
| 02024240 | South Buffalo Creek near Lexington, Va. | Lat 37°44'14", long 79°34'18", Rockbridge County, at bridge on State Highway 611, 0.2 mi above junction with North Buffalo Creek, and 8.5 mi southwest of Lexington. | - | - | 7-20-82 | 7.6 |
| 02024760 | Reed Creek near Big Island, Va. | Lat 37°30'10", long 79°24'07", Bedford County, at bridge on State Highway 637, 0.3 mi above Meadow Creek, and 3.0 mi southwest of Big Island. | - | 1981 | 10-19-81 7-27-82 | 2.6 5.7 |
| 02024900 | Pedlar River near Buena Vista, Va. | Lat 37°44'48", long 79°16'09", Amherst County, at bridge on U.S. Highway 60, 0.3 mi below Davis Mill Creek, and 4.2 mi east of Buena Vista. | - | 1942, 1950-54, 1981 | 10-20-81 7-27-82 | 3.0 5.4 |
| 02025000 | Pedlar River near Pedlar Mills, Va. | Lat 37°32'35", long 79°15'10", Amherst County, at bridge on State Highway 635, 1.1 mi south of Pedlar Mills, and 3.6 mi above mouth. | 91.0 | 1942-56*, 1978, 1981 | 10-19-81 7-27-82 | 14 18 |
| 02025650 | Harris Creek near Monroe, Va. | Lat 37°29'35", long 79°09'10", Amherst County, at bridge on State Highway 675, 1.3 mi west of Monroe, and 1.6 mi above Graham Creek. | - | 1981 | 10-19-81 7-28-82 | 5.9 18 |
| 02025900 | Beaver Creek near Babcock, Va. | Lat 37°21'16", long 79°04'27", Campbell County, at bridge on State Highway 660, 2.3 mi east of Babcock, and 3.0 mi above Little Beaver Creek. | - | 1981 | 10-19-81 7-19-82 | 4.5 14 |
| 02026400 | South Fork Tye River at Nash, Va. | Lat 37°57'24", long 79°02'47", Nelson County, at private road bridge, 100 ft above confluence with North Fork, and at Nash. | - | 1981 | 10-20-81 7-27-82 | 3.6 6.4 |

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low flow partial-record stations during water year 1981 | | | | | Measurements | |
|--|---|---|----------------------------------|---------------------------------|--------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | |
| 02027600 | Buffalo River at Forks of Buffalo, Va. | Lat 37°40'47", long 79°13'20", Amherst County, at bridge on U.S. Highway 60, just below confluence of North and South Forks, and at Forks of Buffalo. | 15.9 | 1942, 1952-54, 1963, 1981 | 10-19-81 | 2.7 |
| | | | | | 7-27-82 | 4.4 |
| | | | | | | |
| | | | | | | |
| 02027670 | Buffalo River near Amherst, Va. | Lat 37°36'18", long 79°01'35", Amherst County, at bridge on U.S. Highway 29, 0.7 mi north-east of Amherst, and 1.2 mi below Tribulation Creek. | - | 1942, 1952-54, 1963, 1981 | 10-19-81 | 19 |
| | | | | | 7-28-82 | 35 |
| | | | | | | |
| | | | | | | |
| 02028450 | Sycamore Creek near Howardsville, Va. | Lat 37°40'43", long 78°39'55", Buckingham County, at bridge on State Highway 601, 0.2 mi above mouth, and 3.9 mi south of Howardsville. | - | 1981 | 10-19-81 | 2.3 |
| | | | | | 7-28-82 | 4.0 |
| | | | | | | |
| | | | | | | |
| 02028700 | Cove Creek near Covesville, Va. | Lat 37°52'06", long 78°43'32", Albemarle County, at culvert on U.S. Highway 29, 1.7 mi southwest of Covesville, and 3.0 mi above Hickory Creek. | 4.0 | 1942, 1944, 1950-54, 1981 | 10-20-81 | .80 |
| | | | | | 7-26-82 | 2.7 |
| | | | | | | |
| | | | | | | |
| 02029200 | North Fork Hardware River at Red Hill, Va. | Lat 37°58'03", long 78°37'04", Albemarle County, at bridge on U.S. Highway 29, 0.1 mi below Middle Branch, and 0.5 mi northwest of Red Hill. | 11.0 | 1942, 1950-54, 1956, 1963, 1981 | 10-20-81 | 2.0 |
| | | | | | 7-26-82 | 6.1 |
| | | | | | | |
| | | | | | | |
| 02030150 | Slate River at Buckingham, Va. | Lat 37°33'08", long 78°33'53", Buckingham County, at bridge on U.S. Highway 60, just below Horsepen Creek, and 0.3 mi west of Buckingham. | - | 1942, 1952-54, 1963, 1981 | 10-19-81 | 8.6 |
| | | | | | 7-28-82 | 23 |
| | | | | | | |
| | | | | | | |
| 02030300 | Slate River near Dillwyn, Va. | Lat 37°37'08", long 78°29'10", Buckingham County, at bridge on State Highway 20, 0.3 mi below Flat Creek, and 5.2 mi north of Dillwyn. | - | 1942, 1952-54, 1963, 1981 | 10-19-81 | 24 |
| | | | | | 7-28-82 | 61 |
| | | | | | | |
| | | | | | | |
| 02030850 | Stockton Creek near Crozet, Va. | Lat 38°02'37", long 78°41'54", Albemarle County, at bridge on State Highway 635, 1.5 mi south of Crozet, and 2.4 mi above mouth. | - | 1953-54, 1963, 1981 | 10-20-81 | 3.0 |
| | | | | | 7-26-82 | 4.0 |
| | | | | | | |
| | | | | | | |
| 02031500 | North Fork Moormans River near White Hall, Va. | Lat 38°08'25", long 78°45'05", Albemarle County, off State Highway 614, 0.2 mi above Charlottesville Reservoir, and 5.0 mi northwest of White Hall. | 11.4 | 1944-46, 1951-63*, 1969, 1981 | 10-20-81 | 1.1 |
| | | | | | 7-26-82 | 1.8 |
| | | | | | | |
| | | | | | | |
| 02033750 | Buck Island Creek below Houchins Creek near Simeon, Va. | Lat 37°57'13", long 78°24'15", Albemarle County, 100 ft below bridge on State Highway 729, just below Houchins Creek, and 3.5 mi southeast of Simeon. | - | 1981 | 10-20-81 | .77 |
| | | | | | 7-26-82 | 7.9 |
| | | | | | | |
| | | | | | | |
| 02034150 | Little Byrd Creek near Fife, Va. | Lat 37°45'50", long 78°05'24", Goochland County, at culvert on State Highway 667, 1.8 mi above mouth, and 1.9 mi northwest of Fife. | - | 1981 | 10-22-81 | .33 |
| | | | | | 7-26-82 | 2.6 |
| | | | | | | |
| | | | | | | |
| 02034300 | Little Willis River at Curdsville, Va. | Lat 37°24'38", long 78°27'35", Buckingham County, at bridge on U.S. Highway 15, 0.4 mi southwest of Curdsville, and 1.3 mi above Gills Creek. | 7.07 | 1952-54, 1957, 1963, 1981 | 10-21-81 | .84 |
| | | | | | 8- 3-82 | 1.4 |
| | | | | | | |
| | | | | | | |
| 02035075 | Maxey Mill Creek near Ballsville, Va. | Lat 37°31'07", long 78°07'31", Cumberland County, at bridge on State Highway 654, 1.0 mi above mouth, and 3.6 mi northwest of Ballsville. | - | 1981 | 10-19-81 | 1.2 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
|------------------------------|---|---|----------------------------------|-------------------------------|--------------|--------------------------------|
| | | | | | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | |
| 02035460 | Big Lickinghole Creek at Rt. 613, near Goochland, Va. | Lat 37°43'52", long 77°57'21", Goochland County, at culvert on State Highway 613, 3.3 mi above Little Lickinghole Creek, and 5.3 mi northwest of Goochland. | - | 1981 | 10-22-81 | 1.4 |
| | | | | | 7-26-82 | 3.4 |
| 02036700 | Bernards Creek near Manakin, Va. | Lat 37°33'25", long 77°40'33", Powhatan County, at bridge on State Highway 711, 1.6 mi above mouth, and 3.7 mi south-east of Manakin. | - | 1981 | 10-19-81 | 0 |
| | | | | | 7-26-82 | 4.8 |
| 02038730 | Fourmile Creek near Richmond Heights, Va. | Lat 37°27'16", long 77°19'55", Henrico County, at culvert on Doran Road, 3.9 mi east of Richmond Heights, and 4.9 mi above mouth. | 4.01 | 1980-81 | 11-20-81 | .60 |
| | | | | | 8- 4-82 | .79 |
| 02038780 | Johnson Creek near Rivermont, Va. | Lat 37°19'58", long 77°19'37", Chesterfield County, at culvert on State Highway 746, 1.4 mi northwest of Rivermont, and 2.4 mi above mouth. | 6.22 | 1980-81 | 11- 2-81 | .18 |
| | | | | | 8- 6-82 | .09 |
| 02039600 | Briery Creek near Rice, Va. | Lat 37°16'49", long 78°21'48", Prince Edward County, at bridge on U.S. Highway 460 (Bus), 0.9 mi above mouth, and 4.1 mi west of Rice. | - | 1944, 1952-54, 1963, 1981 | 10-20-81 | 4.6 |
| | | | | | 8- 3-82 | 9.0 |
| 02039700 | Sandy River near Rice, Va. | Lat 37°16'31", long 78°19'17", Prince Edward County, at bridge on U.S. Highway 460, 1.6 mi west of Rice, and 2.0 mi above confluence with Bush River. | - | 1944, 1952-54, 1963, 1981 | 10-20-81 | 4.0 |
| | | | | | 8- 3-82 | 7.4 |
| 02039800 | Angola Creek near Angola, Va. | Lat 37°22'16", long 78°17'15", Cumberland County, at bridge on State Highway 664, 3.2 mi above mouth, and 3.9 mi south-west of Angola. | - | 1981 | 10-20-81 | .95 |
| | | | | | | |
| 02040500 | Flat Creek near Amelia, Va. | Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia. | 73.0 | 1946-48*, 1952-54, 1963, 1981 | 10-19-81 | 5.1 |
| | | | | | | |
| 02040900 | Little Creek near Denaro, Va. | Lat 37°13'32", long 78°01'10", Nottoway County, at bridge on State Highway 611, 2.3 mi southwest of Denaro, and 3.5 mi above mouth. | - | 1981 | 10-20-81 | .73 |
| | | | | | | |
| 02041150 | Winterpock Creek near Winterpock, Va. | Lat 37°21'38", long 77°42'56", Chesterfield County, at culvert on State Highway 664, 1.2 mi north of Winterpock, and 4.1 mi above Surline Branch. | - | 1981 | 10-20-81 | .34 |
| | | | | | 8- 4-82 | .0032 |
| 02041400 | Whipponock Creek near Church Road, Va. | Lat 37°11'45", long 77°39'23", Dinwiddie County, at culvert on State Highway 627, 1.3 mi northwest of Church Road. | - | 1981 | 10-21-82 | .04 |
| | | | | | 8- 4-82 | .45 |
| 02042050 | Franks Branch at Rt. 626, near Colonial Heights, Va. | Lat 37°16'42", long 77°28'35", Chesterfield County, at bridge on State Highway 626, 1.0 mi above mouth, and 2.5 mi west of Colonial Heights. | - | 1981 | 10-21-81 | .16 |
| | | | | | 8- 4-82 | 4.3 |
| 02042140 | Powell Creek at Garysville, Va. | Lat 37°14'54", long 77°09'09", Prince George County, at bridge on State Highway 10, 4.7 mi above mouth, and at Garysville. | 14.6 | 1980-81 | 11- 2-81 | 1.8 |
| | | | | | 8- 6-82 | 3.4 |
| 02042160 | West Run at Barnetts, Va. | Lat 37°21'30", long 77°09'56", Charles City County, at culvert on State Highway 625, 1.0 mi above Harrison Lake, and 1.0 mi southwest of Barnetts. | 20.3 | 1968, 1980-81 | 11-20-81 | 3.1 |
| | | | | | 8- 4-82 | 2.3 |

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low-flow partial-record stations during water year 1982--Continued | | | | | Measurements | |
|---|--|---|----------------------------------|------------------------------|--|---------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | |
| 02042200 | Glebe Creek tributary near Charles City, Va. | Lat 37°22'05", long 77°04'15", Charles City County, at culvert on State Highway 155, 0.7 mi above mouth, and 1.6 mi north of Charles City. | 0.7 | 1948, 1953-55, 1980-81, | 11-19-81 8- 4-82 | 0 0 |
| 02042210 | Courthouse Creek at Charles City, Va. | Lat 37°20'37", long 77°04'14", Charles City County, at bridge on State Highway 5, 0.8 mi above Parrish Hill Creek, and at Charles City. | 9.79 | 1968, 1980-81 | 11-19-81 8- 4-82 | 2.0 3.2 |
| 02042450 | White Oak Swamp near White Oak Swamp, Va. | Lat 37°29'03", long 77°16'05", Henrico County, at culvert on Poplar Springs Road, 0.1 mi below White Oak Swamp Creek, and 2.0 mi southeast of White Oak Swamp. | 8.26 | 1980-81 | 8- 4-82 | 2.0 |
| 02042600 | Rumley Marsh near Providence Forge, Va. | Lat 37°28'32", long 77°02'49", New Kent County, at bridge on forest road, 2.3 mi north of Providence Forge, and 2.5 mi above U.S. Highway 60. | 11.9 | 1981 | 10- 1-81 11-20-81 8- 4-82 | 2.8 5.5 3.7 |
| 02042700 | Collins Run near Providence Forge, Va. | Lat 37°23'59", long 77°02'54", Charles City County, at culvert on State Highway 155, 2.5 mi above mouth, and 2.9 mi south of Providence Forge. | 2.84 | 1948, 1953-56, 1967, 1980-81 | 11-19-81 8- 4-82 | .64 .66 |
| 02042782 | Powhattan Creek at Five Forks, Va. | Lat 37°14'57", long 76°46'23", James City County, at bridge on State Highway 5, 2.7 mi north of Jamestown, and 4.3 mi above mouth on Sandy Bay. | 19.7 | 1980-81 | 7-29-82 | 1.3 |
| 02042784 | Grays Creek near Surry, Va. | Lat 37°10'06", long 76°51'25", Surry County, at bridge on State Highway 618, 2.0 mi northwest of Surry, and 5.4 mi above mouth. | 8.09 | 1980-81 | 9- 7-82 | 2.7 |
| 02042787 | Skiffes Creek near Lee Hall, Va. | Lat 37°12'48", long 76°36'50", James City County, at culvert on Plantation Road, 0.9 mi above Skiffes Creek Reservoir, and 3.2 mi northwest of Lee Hall. | 1.32 | 1980-81 | 11-19-81 3-18-82 7-29-82 8-26-82 9-20-82 | .11 1.6 .37 .40 .17 |
| 02042790 | Beaverdam Creek near Yorktown, Va. | Lat 37°12'09", long 76°31'16", York County, at bridge on Yorktown Tour Drive, 0.5 mi below confluence of Great Run and Baptist Run, and 2.2 mi south of Yorktown. | 5.46 | 1980-81 | 11-19-81 7-29-82 | .52 1.9 |
| 02042794 | Cypress Creek near Benns Church, Va. | Lat 36°55'22", long 76°36'15", Isle of Wight County, at bridge on State Highway 620, 1.5 mi southwest of Benns Church, and 5.3 mi above mouth. | - | 1980-81 | 11- 5-81 8- 5-82 | 1.6 1.8 |
| 02042830 | Shingle Creek at Suffolk, Va. | Lat 36°43'16", long 76°34'02", Suffolk City, at culvert on White Marsh Road, 0.4 mi south of Suffolk, and 3.3 mi above mouth. | - | 1979-80 | 11- 5-81 8- 9-82 | .53 .82 |
| 02042890 | Drum Point Creek at Boone, Va. | Lat 36°50'44", long 76°26'03", Chesapeake City, at culvert on Pughsville Road, 0.3 mi north of Boone, and 2.7 mi above mouth. | .61 | 1980-81 | 11- 5-81 8- 5-82 | (a) (a) |
| CHESAPEAKE BAY | | | | | | |
| 02042950 | Great Neck Creek tributary at Oceana, Va. | Lat 36°50'03", long 76°00'47", Virginia Beach City, at culvert on Oceana Blvd., 0.45 mi above mouth, and 2.0 mi east of London Bridge. | .90 | 1980-81 | 11- 5-81 8- 5-82 | .32 .64 |

a Ponded, no apparent flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low-flow partial-record stations during water year 1981 | | | | | Measurements | |
|--|---|---|----------------------------------|---------------------------------------|--------------------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| | | | | | | |
| CURRITUCK SOUND | | | | | | |
| 02043000 | Beggars Bridge Creek near Pleasant Ridge, Va. | Lat 36°40'57", long 76°00'37", Virginia Beach City, at culvert on Dawley Road, 1.0 mi southeast of Pleasant Ridge, and 2.2 mi above mouth. | 0.76 | 1980-81 | 11- 5-81 8- 5-82 | 0 .10 |
| 02043100 | Albemarle and Chesapeake Canal tributary near Great Bridge, Va. | Lat 36°41'07", long 76°13'17", Virginia Beach City, at culvert on Etheridge Road, 1.7 mi southeast of Great Bridge, and 2.4 mi above mouth. | 3.80 | 1980-81 | 11- 5-81 8- 5-82 | .52 4.0 |
| CHOWAN RIVER BASIN | | | | | | |
| 02044300 | Little Nottoway River near Blackstone, Va. | Lat 37°02'25", long 78°02'07", Nottoway County, at bridge on State Highway 40, 2.2 mi above mouth, and 2.4 mi southwest of Blackstone. | - | 1942, 1952-54, 1981 | 10-21-81 | 5.4 |
| 02045800 | White Oak Creek near Hebron, Va. | Lat 37°07'40", long 77°48'54", Dinwiddie County, at bridge on State Highway 620, 1.2 mi southwest of Hebron. | - | 1981 | 10-21-81 | .39 |
| 02046230 | Sappony Creek at Rt. 681, near Stony Creek, Va. | Lat 36°56'36", long 77°27'08", Sussex County, at bridge on State Highway 681, 1.5 mi above mouth, and 2.5 mi west of Stony Creek. | - | 1981 | 10-21-81 | (a) |
| 02046300 | Hatcher Run near Reams, Va. | Lat 37°07'23", long 77°28'45", Dinwiddie County, at bridge on State Highway 613, 2.1 mi above Arthur Swamp, and 4.3 mi northwest of Reams. | - | 1981 | 10-22-81 7-19-82 | .08 4.7 |
| 02046370 | Rowanty Creek near Stony Creek, Va. | Lat 36°58'57", long 77°22'53", Sussex County, at bridge on State Highway 602, 1.7 mi below Bolling Swamp, and 2.2 mi northeast of Stony Creek. | - | 1981 | 10-22-81 7-19-82 | (a) 30 |
| 02046480 | Hunting Quarter Swamp near Sussex, Va. | Lat 36°53'25", long 77°29'54", Sussex County, at culvert on State Highway 735, 1.9 mi south of Sussex. | 9.25 | 1980-81 | 11- 3-81 4-16-82 9- 9-82 | (a) 7.6 .90 |
| 02046500 | Anderson Branch at Sussex, Va. | Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex, and 1.7 mi above mouth. | 5.35 | 1949-56*, 1969, 1980-81 | 11- 3-81 9- 9-82 | 0 0 |
| 02046700 | Raccoon Creek near Sebrell, Va. | Lat 36°48'11", long 77°12'28", Southampton County, at bridge on State Highway 608, 3.2 mi above mouth, and 4.6 mi northwest of Sebrell. | 65.0 | 1942, 1952-54, 1978, 1980-81 | 4-16-82 9- 9-82 | 35 11 |
| 02046720 | Tryall Creek near Smoky Ordinary, Va. | Lat 36°47'03", long 77°39'55", Brunswick County, at bridge on State Highway 607, 1.6 mi above confluence with Cooks Branch, and 5.0 mi southeast of Smoky Ordinary. | - | 1981 | 10-22-81 7-22-82 | 0 .08 |
| 02046750 | Three Creek at Rt. 616, near Emporia, Va. | Lat 36°43'25", long 77°31'13", Greenville County, at bridge on State Highway 616, 1.5 mi below Maelins Creek, and 1.6 mi northeast of Emporia. | 67.2 | 1981 | 10-22-81 7-19-82 | 2.5 12 |
| 02046830 | Applewhite Swamp near Drewryville, Va. | Lat 36°43'36", long 77°21'03", Southampton County, at culvert on State Highway 612, 2.6 mi northwest of Drewryville. | 5.96 | 1980-81 | 11- 3-81 9- 9-82 | .40 .03 |

* Operated as a continuous-record gaging station.

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
|-------------------------------|---|--|----------------------------------|---|--------------------------------|--------------------------------|
| | | | | | Date | Discharge (ft ³ /s) |
| CHOWAN RIVER BASIN--Continued | | | | | | |
| 02047050 | Assamoosick Swamp near Homeville, Va. | Lat 36°58'30", long 77°09'11", Sussex County, at bridge on State Highway 40, 2.4 mi northeast of Homeville. | 22.0 | 1980-81 | 11- 3-81 9- 9-82 | b2.1 .27 |
| 02047100 | Assamoosick Swamp tributary near Sebrell, Va. | Lat 36°46'22", long 77°05'57", Southampton County, at bridge on State Highway 35, 0.7 mi above Indian Branch, and 1.5 mi southeast of Sebrell. | 86.4 | 1942-43, 1952-54, 1980-81 | 11- 3-81 9-10-82 | 5.8 0 |
| 02047300 | Nottoway Swamp near Story, Va. | Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 1.6 mi northeast of Story. | 12.2 | 1980-81 | 11- 4-81 9- 8-82 | .78 .05 |
| 02047360 | Mill Creek near Sunbeam, Va. | Lat 36°34'12", long 77°02'19", Southampton County, at bridge on State Highway 684, 1.2 mi southwest of Sunbeam, and 1.5 mi above Windbourne Mill-pond. | 23.7 | 1980-81 | 11- 4-81 9- 8-82 | 0 0 |
| 02047400 | Blackwater Swamp near Disputanta, Va. | Lat 37°08'02", long 77°12'30", Prince George County, at bridge on State Highway 625, 1.0 mi northeast of Disputanta. | 75.6 | 1942, 1952-53, 1980-81 | 11- 2-81 4-15-82 8- 6-82 | 0 2.4 17 |
| 02047420 | Warwick Swamp near Disputanta, Va. | Lat 37°05'34", long 77°09'08", Sussex County, at bridge on State Highway 613, 0.9 mi above mouth, and 4.5 mi south-east of Disputanta. | 38.2 | 1980-81 | 4-15-82 9- 7-82 | 4.9 1.9 |
| 02047440 | Otterdam Swamp near Waverly, Va. | Lat 37°04'57", long 77°03'19", Surry County, at culvert on State Highway 40, 1.2 mi above mouth, and 3.2 mi north-east of Waverly. | 22.4 | 1980-81 | 4-15-82 9- 7-82 | 7.2 6.1 |
| 02047460 | Pigeonroost Swamp near Elberon, Va. | Lat 37°06'35", long 76°53'42", Surry County, at culvert on State Highway 618, 2.5 mi north of Elberon. | 5.98 | 1980-81 | 11- 2-81 9- 7-82 | .51 .22 |
| 02047480 | Cypress Swamp near Dendron, Va. | Lat 37°03'18", long 76°55'15", Surry County, at bridge on State Highway 31, 0.2 mi northeast of Dendron, and 2.8 mi above mouth. | 54.4 | 1980-81 | 11- 2-81 4-15-82 9- 7-82 | (a) 75 23 |
| 02047520 | Rattlesnake Swamp at Raynor, Va. | Lat 36°57'30", long 76°46'25", Isle of Wight County, at bridge on State Highway 625, 0.9 mi above Mill Swamp, and 0.9 mi northeast of Raynor. | 40.3 | 1980-81 | 8- 9-82 | 40 |
| 02048460 | Round Hill Swamp near Berlin, Va. | Lat 36°51'02", long 76°56'21", Southampton County, at bridge on State Highway 614, 1.5 mi above mouth, and 2.2 mi east of Berlin. | 25.6 | 1980-81 | 9- 8-82 | 0 |
| 02048500 | Seacock Swamp at Unity, Va. | Lat 36°49'15", long 76°51'56", Southampton County, at bridge on State Highway 635, 0.7 mi northeast of Unity, and 1.8 mi above mouth. | 102 | 1942-49*, 1952, 1976, 1978, 1980-81 | 6- 3-82 9- 8-82 | 72 (a) |
| 02049700 | Cypress Swamp near Burdette, Va. | Lat 36°44'29", long 76°56'18", Southampton County, at culvert on State Highway 611, 1.8 mi above mouth, and 3.1 mi south-west of Burdette. | 8.55 | 1950-56, 1968, 1980-81 | 11- 4-81 9- 9-82 | .81 .14 |
| 02050115 | Chapel Swamp near Somerton, Va. | Lat 36°34'34", long 76°48'28", Suffolk City, at bridge on State Highway 759, 0.5 mi above mouth, and 3.2 mi west of Somerton. | 17.9 | 1980-81 | 9- 8-82 | (a) |

* Operated as a continuous-record gaging station.

a Pondered, no apparent flow.

b Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements taken at low-flow partial record stations during water year 1982 | | | | | Measurements | |
|---|--|--|----------------------------------|------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| CHOWAN RIVER BASIN--Continued | | | | | | |
| 02050130 | Beaverdam Creek near Cleopus, Va. | Lat 36°33'10", long 76°50'30", Suffolk City, at bridge on State Highway 668, 0.5 mi above mouth, and 2.8 mi south of Cleopus. | 8.77 | 1965-68, 1970, 1980-81 | 11- 4-81 9- 8-82 | 0 (a) |
| 02050150 | Quaker Swamp near Lummis, Va. | Lat 36°41'42", long 76°43'35", Suffolk City, at culvert on U.S. Highway 58, 1.4 mi west of Lummis. | 4.02 | 1980-81 | 8- 9-82 | (a) |
| 02051100 | South Meherrin River near Chase City, Va. | Lat 36°51'34", long 78°25'22", Lunenburg and Mecklenburg Counties, at bridge on State Highway 49, 4.0 mi northeast of Chase City. | - | 1944, 1952-54, 1981 | 10-20-81 7-21-82 | .86 8.8 |
| 02051175 | Meherrin River near Northview, Va. | Lat 36°48'03", long 78°10'04", Mecklenburg County, at bridge on State Highway 636, 1.2 mi above Crooked Creek, and 4.5 mi northeast of Northview. | - | - | 10-21-81 7-21-82 | 22 170 |
| 02051200 | Flat Rock Creek near Kenbridge, Va. | Lat 36°53'58", long 78°07'22", Lunenburg County, at bridge on State Highway 647, 2.5 mi southwest of Bishops Corner, and 4.3 mi south of Kenbridge. | - | 1952-54, 1981 | 10-21-81 7-22-82 | 2.0 15 |
| 02051300 | Evans Creek near Brodnax, Va. | Lat 36°44'07", long 77°57'34", Brunswick County, at bridge on State Highway 623, 0.9 mi above mouth, and 4.0 mi north-east of Brodnax. | - | 1981 | 10-21-81 7-22-82 | .42 4.0 |
| 02052100 | Rattlesnake Creek near Ankum, Va. | Lat 36°36'48", long 77°52'25", Brunswick County, 100 ft downstream from State Highway 46, 0.4 mi above Houses Creek, and 0.8 mi northeast of Ankum. | - | 1981 | 10-22-81 7-19-82 | .04 1.0 |
| 02053030 | Mill Swamp near Claesville, Va. | Lat 36°36'32", long 77°29'10", Greensville County, at bridge on State Highway 660, 2.2 mi southwest of Claesville, and 3.8 mi above Taylors Millpond. | - | 1981 | 10-22-81 7-19-82 | 0 (a) |
| 02053100 | Tarrara Creek at Boykins, Va. | Lat 36°35'20", long 77°12'03", Southampton County, at bridge on State Highway 35, 3.7 mi above mouth, and at Boykins. | 57.5 | 1980-81 | 9-10-82 | .09 |
| ROANOKE RIVER BASIN | | | | | | |
| 02054120 | North Fork Roanoke River below Lusters Gate, Va. | Lat 37°13'18", long 80°21'56", Montgomery County, at private road bridge off State Highway 723, 1.4 mi south of Lusters Gate, and 1.4 mi below Indian Run. | - | 1969 | 7-21-82 | 13 |
| 02056700 | Beaverdam Creek near Hardy, Va. | Lat 37°13'28", long 79°45'23", Bedford County, at culvert on State Highway 757, 1.1 mi below West Fork, and 3.0 mi east of Hardy. | - | 1981 | 10-22-81 7-22-82 | 2.2 5.9 |
| 02056850 | Maggodee Creek near Boones Mill, Va. | Lat 37°07'57", long 79°58'20", Franklin County, at bridge on private road, 0.5 mi south of Murray Gap, and 1.6 mi north-west of Boones Mill. | - | 1981 | 10-22-81 7-22-82 | .66 4.9 |
| 02057050 | Gills Creek at Rt. 122, near Burnt Chimney, Va. | Lat 37°07'31", long 79°46'58", Franklin County, at bridge on State Highway 122, 2.4 mi north-east of Burnt Chimney. | - | 1952-54, 1981 | 10-22-81 7-22-82 | 2.2 5.8 |
| 02057600 | Pigg River at Rt. 40, near Rocky Mount, Va. | Lat 36°58'34", long 79°55'32", Franklin County, at bridge on State Highway 40, 1.0 mi west of Rocky Mount, and 1.8 mi above Story Creek. | - | 1976, 1981 | 10-22-81 7-22-82 | 10 25 |

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low-flow partial-record stations during water year 1982--Continued | | | | | Measurements | |
|---|--|---|----------------------------------|------------------------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| ROANOKE RIVER BASIN--Continued | | | | | | |
| 02057750 | Little Chestnut Creek near Sydnorsville, Va. | Lat 36°54'07", long 79°50'55", Franklin County, at bridge on State Highway 724, 1.3 mi northeast of Sydnorsville, just below confluence of North and South Forks, and 1.6 mi above mouth. | - | 1981 | 10-22-81 7-20-82 | 2.0 3.9 |
| 02058100 | Turkeycock Creek at Sago, Va. | Lat 36°52'53", long 79°37'52", Pittsylvania County, at bridge on State Highway 969, 0.8 mi southeast of Sago, and 3.3 mi above mouth. | - | 1953-54, 1981 | 10-20-81 7-20-82 | 7.6 8.0 |
| 02059400 | North Fork Goose Creek near Montvale, Va. | Lat 37°22'14", long 79°41'55", Bedford County, at bridge on U.S. Highway 460, 0.1 mi above junction with South Fork Goose Creek, and 1.7 mi southeast of Montvale. | - | 1952-54 | 7-22-82 | 9.4 |
| 02059560 | Shockoe Creek near Irving, Va. | Lat 37°18'46", long 79°40'34", Bedford County, at culvert on State Highway 755, 1.0 mi above mouth, and 3.1 mi south of Irving. | - | 1981 | 10-23-81 7-23-82 | .19 .44 |
| 02060400 | Sycamore Creek at Sycamore, Va. | Lat 37°01'25", long 79°21'24", Pittsylvania County, at culvert on State Highway 643, at Sycamore, and 4.0 mi above Little Sycamore Creek. | - | 1981 | 10-19-81 7-19-82 | .91 1.7 |
| 02061000 | Big Otter River near Bedford, Va. | Lat 37°21'50", long 79°25'10", Bedford County, at bridge on U.S. Highway 221, 4.0 mi northeast of Bedford, and 8.9 mi above Little Otter River. | 116 | 1942, 1944-60*, 1981 | 7-23-82 | 52 |
| 02061200 | Little Otter River at Rt. 122, near Bedford, Va. | Lat 37°21'41", long 79°30'03", Bedford County, at bridge on State Highway 122, 0.4 mi north of Bedford. | - | 1942, 1952-54, 1978, 1981 | 7-23-82 | 6.6 |
| 02062300 | Seneca Creek near Long Island, Va. | Lat 37°06'23", long 79°07'22", Campbell County, at bridge on State Highway 633, at Marysville, 1.5 mi above mouth, and 2.6 mi northwest of Long Island. | - | 1981 | 10-19-81 7-19-82 | 6.4 14 |
| 02063400 | Reddy Creek near Spring Mills, Va. | Lat 37°16'54", long 78°54'14", Appomattox County, at bridge on State Highway 679, 100 ft above mouth, and 2.3 mi north of Spring Mills. | - | 1951-54, 1977, 1981 | 7-19-82 | 4.4 |
| 02065220 | Catawba Creek at Clarkton, Va. | Lat 36°58'30", long 78°53'45", Halifax County, at bridge on State Highway 626, 0.2 mi above mouth, and 0.8 mi southeast of Clarkton. | - | 1981 | 10-19-81 8- 4-82 | 9.9 13 |
| 02065400 | Big Cub Creek near Madisonville, Va. | Lat 37°12'13", long 78°44'05", Charlotte County, at bridge on State Highway 701, 0.1 mi below Little Cub Creek, and 2.7 mi northwest of Madisonville. | - | 1981 | 10-19-81 7-20-82 | 7.0 18 |
| 02066450 | Roanoke Creek near Charlotte Court House, Va. | Lat 37°03'27", long 78°35'03", Charlotte County, at bridge on State Highway 40, 0.1 mi below Dunnivant Creek, and 2.0 mi east of Charlotte Court House. | - | 1953-54, 1981 | 10-19-81 7-20-82 | b>.1 11 |
| 02066500 | Roanoke Creek at Saxe, Va. | Lat 36°55'49", long 78°39'56", Charlotte County, at bridge on State Highway 612, at Saxe, and 5.0 mi above mouth. | 135 | 1942-43, 1946-72*, 1981 | 10-20-81 7-21-82 | 13 20 |

* Operated as a continuous-record gaging station.

> Greater than.

b Estimated.

| Discharge measurements made at low-flow partial-record stations during water year 1982--Continued | | | | | | |
|---|--|--|----------------------------------|---|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| ROANOKE RIVER BASIN--Continued | | | | | | |
| 02067100 | Difficult Creek near Scottsburg, Va. | Lat 36°47'46", long 78°47'10", Halifax County, at bridge on U.S. Highway 360, 2.5 mi above Piney Creek, and 2.6 mi north of Scottsburg. | - | 1981 | 10-20-81 7-21-82 | 6.2 14 |
| 02069550 | North Fork South Mayo River at Stuart, Va. | Lat 36°39'03", long 80°17'08", Patrick County, at bridge on U.S. Highway 58, 0.5 mi northwest of Stuart, and 1.5 mi above mouth. | - | 1953-54, 1981 | 10-21-81 7-21-82 | 3.1 11 |
| 02069800 | Grassy Branch near Sanville, Va. | Lat 36°42'03", long 80°05'48", Patrick County, at culvert on State Highway 721, 0.3 mi above mouth, and 2.5 mi southwest of Sanville. | - | 1981 | 10-21-81 7-21-82 | .98 2.1 |
| 02071600 | Smith River near Charity, Va. | Lat 36°48'18", long 80°12'04", Patrick County, at bridge on State Highway 704, 0.9 mi above Joint Crack Creek, and 1.4 mi southeast of Charity. | - | 1981 | 10-21-81 7-21-82 | 27 76 |
| 02071800 | Nicholas Creek near Ferrum, Va. | Lat 36°52'11", long 80°03'10", Franklin County, at bridge on State Highway 605, 3.1 mi above Philpott Reservoir, and 4.1 mi southwest of Ferrum. | 12.2 | 1949, 1951, 1953, 1955-64, 1969, 1971, 1981 | 10-21-81 7-22-82 | 1.9 6.1 |
| 02072600 | Reed Creek near Collinsville, Va. | Lat 36°45'17", long 79°54'48", Henry County, at bridge on State Highway 669, 1.0 mi north of Collinsville, and 2.9 mi above mouth. | - | 1981 | 10-22-81 7-20-82 | 2.1 3.1 |
| 02073500 | Leatherwood Creek near Martinsville, Va. | Lat 36°38'10", long 79°47'30", Henry County, at bridge on State Highway 650, 1.7 mi above mouth, and 2.5 mi southeast of Martinsville. | 68 | 1926-34*, 1953-54, 1981 | 10-20-81 7-21-82 | 10 19 |
| 02074450 | Sandy River near Swansonville, Va. | Lat 36°44'23", long 79°36'54", Pittsylvania County, at bridge on State Highway 612, 0.1 mi below West Fork, and 2.0 mi west of Swansonville. | - | 1981 | 10-20-81 7-19-82 | 4.7 6.9 |
| 02075020 | Fall Creek near Danville, Va. | Lat 36°40'42", long 79°24'13", Pittsylvania County, at bridge on State Highway 744, 2.4 mi north of Danville, and 2.8 mi above Edward Creek. | - | 1981 | 10-20-81 7-20-82 | .27 .82 |
| 02075275 | Sandy Creek near Ringgold, Va. | Lat 36°34'50", long 79°13'31", Pittsylvania County, at bridge on U.S. Highway 58, 1.2 mi above mouth, and 4.6 mi southeast of Ringgold. | - | 1942, 1981 | 10-19-81 7-20-82 | 4.0 4.1 |
| 02075600 | Birch Creek near Birch, Va. | Lat 36°42'12", long 79°13'03", Pittsylvania County, at bridge on State Highway 729, 1.2 mi below Gunther Branch, and 3.0 mi southwest of Birch. | - | 1981 | 10-19-81 7-20-82 | 4.5 9.0 |
| 02075600 | Lawsons Creek near Turbeville, Va. | Lat 36°36'39", long 79°01'28", Halifax County, at culvert on State Highway 658, 0.7 mi below Long Branch, and 1.2 mi southeast of Turbeville. | 8.7 | 1950-64, 1968, 1970-71, 1981 | 10-19-81 7-20-82 | .62 2.8 |
| 02076300 | Banister River at U.S. Highway 29, near Chatham, Va. | Lat 36°46'41", long 79°23'33", Pittsylvania County, at bridge on U.S. Highway 29, 1.6 mi below White Oak Creek, and 1.8 mi south of Chatham. | - | 1942, 1953-54, 1981 | 10-19-81 | 13 |
| 02076650 | Banister River near Mount Airy, Va. | Lat 36°54'39", long 79°11'00", Pittsylvania County, at bridge on State Highway 640, 2.2 mi south of Mount Airy. | - | 1942, 1953-54, 1981 | 10-19-81 8-3-82 | 51 98 |

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low-flow partial-record stations during water year 1982--Continued | | | | | | |
|---|---|--|----------------------------------|---------------------|---------------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| ROANOKE RIVER BASIN--Continued | | | | | | |
| 02076770 | Sandy Creek at Meadville, Va. | Lat 36°49'32", long 79°01'39", Halifax County, at bridge on State Highway 832, 0.2 mi above mouth, and 0.7 mi south of Meadville. | - | 1953-54, 1981 | 10-20-81 8- 4-82 | 20 49 |
| 02078300 | Aarons Creek near Nelson, Va. | Lat 36°35'12", long 78°43'00", Halifax and Mecklenburg Counties, at bridge on State Highway 604, 1.7 mi northwest of Nelson. | - | 1981 | 10-20-81 7-21-82 | .04 5.3 |
| 02078400 | Bluestone Creek at Rt. 699, near Laconia, Va. | Lat 36°43'48", long 78°36'58", Mecklenburg County, at bridge on State Highway 699, 1.2 mi east of Laconia, and 3.4 mi south of Red Oak. | - | 1981 | 10-20-81 7-21-82 | .80 12 |
| 02079660 | Jolly Hollow Branch at Boydton, Va. | Lat 36°40'38", long 78°23'13", Mecklenburg County, at bridge on State Highway 92, 0.3 mi north of Boydton, and 0.4 mi above Whetstone Branch. | 3.60 | 1944-54, 1960, 1981 | 10-21-81 7-21-82 | .04 .74 |
| 02079665 | Cox Creek at Baskerville, Va. | Lat 36°40'58", long 78°16'15", Mecklenburg County, at bridge on State Highway 669, 0.5 mi southeast of Baskerville. | - | 1981 | 10-21-81 7-22-82 | (a) 3.7 |
| 02079740 | Great Creek near Marengo, Va. | Lat 36°36'22", long 78°05'05", Mecklenburg County, at bridge on State Highway 620, 0.7 mi above Hagood Creek, and 2.8 mi southeast of Marengo. | - | 1981 | 10-21-81 7-22-82 | .17 2.6 |
| YADKIN RIVER BASIN | | | | | | |
| 02113550 | Ararat River near Ararat, Va. | Lat 36°34'07", long 80°33'03", Patrick County, at bridge on State Highway 749, 1.6 mi upstream from VA-NC stateline, and 3.0 mi southwest of Ararat. | - | 1981 | 7- 4-82 | 24 |
| KANAWHA RIVER BASIN | | | | | | |
| 03163500 | Elk Creek at Mt. Carmel Church, near Galax, Va. | Lat 35°41'53", long 80°03'26", Grayson County, along State Highway 650, at Mt. Carmel Church, 2.9 mi above mouth, and 10 mi northwest of Galax. | - | - | 7-22-82 | 32 |
| 03165350 | Brush Creek near Ivanhoe, Va. | Lat 36°45'59", long 80°59'05", Carroll County, at bridge on State Highway 94, 3.2 mi above mouth, and 5.0 mi southwest of Ivanhoe. | - | - | 7-22-82 | 6.3 |
| 03167200 | Laurel Fork near Laurel Fork, Va. | Lat 36°44'34", long 80°31'49", Carroll County, at bridge on State Highway 638, 1.8 mi northwest of Laurel Fork, and 5.8 mi above mouth. | - | - | 7-21-82 | 21 |
| 03167700 | Beaverdam Creek at Hillsville, Va. | Lat 36°45'45", long 80°43'42", Carroll County, at culvert on U.S. Highway 58, at Hillsville, and 2.9 mi above mouth. | 4.13 | 1952-55 | 7-21-82 | 4.0 |
| 03168750 | Thorne Springs Branch near Dublin, Va. | Lat 37°05'30", long 80°44'34", Pulaski County, at culvert on U.S. Highway 11, 2.8 mi west of Dublin, and 3.7 mi above mouth. | 4.77 | 1957-70*, 1978 | 7-22-82 | .41 |
| 03169150 | Pine Creek near Floyd, Va. | Lat 37°57'03", long 80°17'03", Floyd County, at bridge on State Highway 682, 0.6 mi above mouth, and 2.8 mi north-east of Floyd. | - | - | 7-21-82 | 7.6 |

* Operated as a continuous-record gaging station.

a Ponded, no apparent flow.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1982--Continued

| Discharge measurements made at low flow partial record stations during water year 1982 | | | | | Measurements | |
|--|---------------------------------|--|----------------------------------|------------------|--------------|--------------------------------|
| Station No. | Station Name | Location | Drainage area (mi ²) | Period of record | Date | Discharge (ft ³ /s) |
| KANAWHA RIVER BASIN--Continued | | | | | | |
| 03169370 | Brush Creek near Riner, Va. | Lat 37°01'57", long 80°23'49", Montgomery County, at bridge on State Highway 616, 2.2 mi above mouth, and 3.3 mi south-east of Riner. | - | - | 7-21-82 | 7.0 |
| 03171400 | Neck Creek near Belspring, Va. | Lat 37°11'03", long 80°37'24", Pulaski County, at culvert on State Highway 617, 0.9 mi southwest of Belspring, and 1.5 mi above mouth. | - | - | 7-22-82 | 3.6 |
| 03171550 | Sinking Creek near Newport, Va. | Lat 37°18'40", long 80°30'55", Giles County, at bridge on State Highway 700, 1.6 mi northwest of Newport, and 6.9 mi above mouth. | - | 1942, 1952-55 | 7-20-82 | 41 |

Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the State. Data for miscellaneous sites furnished by the Virginia State Water Control Board are noted by an "a/". Data collected as part of a special study on the effects of acid rain in the Shenandoah National Park are noted by a "b/".

| Discharge measurements made at special study and miscellaneous sites during water year 1982 | | | | | | |
|---|-----------------------------|--|----------------------------------|-----------------------------------|---|--|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| NASSAWADOX CREEK BASIN | | | | | | |
| Nassawadox Creek <u>a/</u> | Chesapeake Bay | Lat 37°31'31", long 75°52'37", Northampton County, at culvert on State Highway 606, 2.7 mi upstream from Kelly Cove, and 3.5 mi north of Nassawadox. | c4.2 | 1968-81 | 11-11-81 2-24-82 5-27-82 8-25-82 | 0.96 6.85 1.78 3.05 |
| POTOMAC RIVER BASIN | | | | | | |
| Unnamed tributary | Middle River | Lat 38°09'57", long 79°13'52", Augusta County, at culvert on State Highway 705, 1.2 mi above mouth, and 1.3 mi north-west of Swoope. | .43 | - | 7-15-82 | 0 |
| Sixteenmile Branch | Jennings Branch | Lat 38°16'48", long 78°15'58", Augusta County, at culvert on U.S. Highway 250, 300 ft above mouth, and 2.0 mi northeast of West Augusta. | .44 | - | 7-15-82 | 0 |
| Spruce Lick Branch | Jennings Branch | Lat 38°16'57", long 78°15'20", Augusta County, at culvert on U.S. Highway 250, 0.1 mi above mouth, and 2.5 mi northeast of West Augusta. | 1.01 | - | 7-15-82 | 0 |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°03'42", long 78°53'08", Waynesboro City, 0.6 mi downstream from Wayne Avenue bridge, 0.6 mi upstream from Main Street bridge. | - | - | 9- 2-82 | *47.1 |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°04'30", long 78°53'05", Waynesboro City, 0.4 mi upstream from Bridge Street bridge, 0.5 mi downstream from Main Street bridge. | - | 1979 | 9- 2-82 | *60.5 |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°04'45", long 78°52'38", Waynesboro City, at Bridge Street bridge, 0.9 mi downstream from Main Street bridge. | - | 1979 | 9- 2-82 | *59.8 |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°06'15", long 78°51'58", Augusta County, at Doods, 0.3 mi upstream from bridge on State Highway 611, and 0.4 mi southwest of intersection with U.S. Highway 340. | - | - | 9- 2-82 | *67.7 |
| 01626900 Sawmill Run <u>b/</u> | South River | Lat 38°05'46", long 78°48'38", Augusta County, at bridge on State Highway 611, 2.7 mi southeast of Doods, and 3.3 mi above mouth. | 3.62 | 1981 | 1-28-82 3-18-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82 | 2.42 6.90 1.42 1.34 .12 .43 .066 |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°08'22", long 78°51'28", Augusta County, 1.3 mi southwest of Crimora, 2.2 mi upstream from bridge on State Highway 612. | - | - | 9- 2-82 | *71.4 |
| 01627000 Mine Branch <u>b/</u> | South River | Lat 38°08'36", long 78°48'54", Augusta County, at culvert on State Highway 612, 1.6 mi southeast of Crimora, and 2.5 mi above mouth. | 1.26 | 1981 | 1-27-82 3-16-82 5-20-82 6-24-82 | .30 1.18 .17 .34 |

* Base flow.

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

c Approximately.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | | |
|--|-----------------------------|--|----------------------------------|-----------------------------------|---|---|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN--Continued | | | | | | |
| South River <u>a/</u> | South Fork Shenandoah River | Lat 38°09'22", long 78°51'15", Augusta County, at Crimora, 200 ft upstream from bridge on State Highway 612, and 0.7 mi west of intersection with U.S. Highway 340. | - | 1979 | 9- 1-82 | *75.8 |
| 01627100 Meadow Run <u>b/</u> | South River | Lat 38°09'29", long 78°48'38", Augusta County, at side of Riprap Trail, 500 ft above Shenandoah National Park boundary, and 1.7 mi east of Crimora. | 3.45 | 1981 | 1-27-82 3-16-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82 | 1.56 8.33 1.71 2.33 .53 1.1 .27 |
| 01627400 Paine Run <u>b/</u> | South River | Lat 38°11'55", long 78°47'38", Augusta County, 100 ft below ford on State Highway 614, 2.5 mi southeast of Harrison, and 2.7 mi above mouth. | 4.92 | 1981 | 1-27-82 3-16-82 5-20-82 6-24-82 7-22-82 8-23-82 9-20-82 | 2.56 11.1 2.09 3.00 .72 .88 .26 |
| 01628050 Madison Run <u>b/</u> | South Fork Shenandoah River | Lat 38°15'05", long 78°44'50", Rockingham County, 250 ft south of Madison Run Road, 3.9 mi east of Grottoes, and 5.2 mi above mouth. | 2.00 | 1981 | 1-27-82 3-16-82 5-20-82 6-24-82 | 1.83 5.09 .70 .74 |
| 01628080 Madison Run <u>b/</u> | South Fork Shenandoah River | Lat 38°15'24", long 78°46'06", Rockingham County, at Shenandoah National Park boundary, 2.5 mi east of Grottoes, and 3.8 mi above mouth. | 5.78 | 1968, 1981 | 1-27-82 3-16-82 5-20-82 6-24-82 | 3.96 13.3 1.91 2.45 |
| 01628300 Lower Lewis Run <u>b/</u> | South Fork Shenandoah River | Lat 38°18'06", long 78°44'02", Rockingham County, at ford, 2.1 mi above mouth, and 2.2 mi east of Lynnwood. | 1.19 | 1981 | 3-16-82 5-20-82 6-24-82 | .66 .22 .30 |
| 01628320 Unnamed tributary <u>b/</u> | Lower Lewis Run | Lat 38°18'03", long 78°44'20", Rockingham County, 100 ft above culvert on fire road, 2.0 mi east of Lynnwood. | .18 | - | 3-16-82 5-20-82 6-10-82 6-24-82 | .24 .038 .031 .32 |
| 01628350 Upper Lewis Run <u>b/</u> | Lower Lewis Run | Lat 38°17'35", long 78°44'55", Rockingham County, at ford, 1.0 mi above mouth, and 1.7 mi southeast of Lynnwood. | 1.58 | 1981 | 5-20-82 6-24-82 | .35 .52 |
| 01628530 Hangman Run <u>b/</u> | South Fork Shenandoah River | Lat 38°18'42", long 78°43'02", Rockingham County, at culvert on fire road, 0.7 mi above mouth, and 2.5 mi southwest of Rocky Bar. | .44 | - | 6-10-82 6-25-82 | .19 .072 |
| 01628700 Twomile Run <u>b/</u> | South Fork Shenandoah River | Lat 38°20'04", long 78°40'20", Rockingham County, 200 ft downstream from Shenandoah National Park boundary, 2.1 mi above mouth, and 4.1 mi southeast of McGaheysville. | 2.17 | 1981 | 1-27-82 3-16-82 5-21-82 6-22-82 7-22-82 8-23-82 9-21-82 | .36 4.67 .92 1.59 .21 .11 0 |
| 01628750 Walls Run <u>b/</u> | Gap Run | Lat 38°21'23", long 78°39'47", Rockingham County, 1.0 mi above confluence with Gap Run, 2.2 mi northeast of Rocky Bar. | .60 | - | 6-10-82 6-22-82 | .16 .003 |
| 01628900 Unnamed tributary <u>b/</u> | Hawksbill Creek | Lat 38°20'47", long 78°34'35", Rockingham County, at side of State Highway 626, 1.5 mi south of Swift Run, and 2.0 mi above mouth. | 1.32 | 1981 | 1-25-82 3-15-82 5-17-82 6-22-82 7-22-82 8-24-82 9-21-82 | .60 1.74 .64 .75 .29 .16 .13 |

* Base flow.

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | | |
|--|-----------------------------|--|----------------------------------|-----------------------------------|---|---|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN--Continued | | | | | | |
| 01628910 West Swift Run <u>b</u> / | Elk Run | Lat 38°21'55", long 78°34'47", Rockingham County, at bridge on State Highway 628, 0.2 mi southeast of Swift Run, and 2.6 mi above mouth. | 0.96 | 1981 | 1-25-82 3-15-82 5-21-82 6-21-82 | 0.31 1.40 .44 1.06 |
| 01629120 East Branch Naked Creek <u>b</u> / | Naked Creek | Lat 38°28'07", long 78°29'50", Page County, at side of road, 1.6 mi east of Jollett, and 1.7 mi above mouth. | 4.58 | 1981 | 1-25-82 3-15-82 5-17-82 6-21-82 8-24-82 9-21-82 | 2.66 16.5 3.26 7.66 .99 .79 |
| 01629130 Big Creek <u>b</u> / | South Branch Naked Creek | Lat 38°27'37", long 78°29'35", Page County, at bridge on State Highway 759, 0.2 mi above Little Creek, and 1.8 mi east of Jollett. | 2.43 | 1981 | 3-15-82 5-17-82 6-21-82 | 9.21 1.71 4.84 |
| 01629150 South Branch Naked Creek <u>b</u> / | Naked Creek | Lat 38°25'34", long 78°32'51", Page County, at side of Big Ugly Run Trail, 0.2 mi below Big Ugly Run, and 1.6 mi southeast of Furnace. | 8.72 | 1981 | 1-25-82 3-15-82 5-17-82 6-21-82 | 4.04 20.6 4.93 9.06 |
| 01629920 Unnamed tributary <u>b</u> / | Little Hawksbill Creek | Lat 38°33'23", long 78°25'55", Page County, 200 ft above culvert on State Highway 611, 0.5 mi above mouth, and 2.0 mi south of Ida. | .78 | 1981 | 1-26-82 3-19-82 5-20-82 6-24-82 7-23-82 8-24-82 9-23-82 | .32 2.92 .44 .59 .43 .085 .091 |
| 01629950 East Hawksbill Creek <u>b</u> / | Hawksbill Creek | Lat 38°34'53", long 78°24'52", Page County, at side of State Highway 629, 0.7 mi southeast of Ida, and 7.2 mi above mouth. | 4.03 | 1981 | 1-26-82 3-19-82 5-20-82 6-24-82 | 1.54 15.8 2.07 3.08 |
| Yager Spring <u>a</u> / | Hawksbill Creek | Lat 38°40'55", long 78°27'33", Page County, 550 ft northeast of State Highway 652, 1.1 mi north of Luray, and 1.2 mi northeast of intersection with State Highway 675. | - | 1978 | 9-21-82 | 4.43 |
| Hawksbill Creek <u>a</u> / | South Fork Shenandoah River | Lat 38°41'12", long 78°27'21", Page County, 300 ft west of U.S. Highway 340, 0.5 mi south of intersection with State Highway 648, and 1.5 mi north of Luray. | - | 1978 | 9-21-82 | 17.6 |
| 01630100 South Fork Dry Run <u>b</u> / | Dry Run | Lat 38°37'37", long 78°23'23", Page County, at culvert on State Highway 696, 1.5 mi above mouth, and 2.8 mi southeast of Fairview. | 1.53 | 1981 | 1-26-82 3-16-82 5-20-82 6-24-82 | .39 4.43 .32 .68 |
| 01630200 North Fork Dry Run <u>b</u> / | Dry Run | Lat 38°38'41", long 78°22'09", Page County, at culvert on State Highway 669, 1.9 mi above mouth, and 2.8 mi southwest of Thornton Gap. | 2.15 | 1981 | 1-26-82 3-16-82 5-20-82 6-24-82 | .78 7.11 1.05 2.04 |
| Dry Run <u>a</u> / | Hawksbill Creek | Lat 38°41'13", long 78°27'19", Page County, 20 ft downstream from bridge on U.S. Highway 340, 1.5 mi north of Luray. | - | 1978 | 9-21-82 | .33 |
| Hawksbill Creek <u>a</u> / | South Fork Shenandoah River | Lat 38°42'29", long 78°27'24", Page County, at bridge on State Highway 648, 3.0 mi north of Luray. | - | 1978-79 | 9-21-82 | 19.2 |
| 01630542 Pass Run <u>b</u> / | South Fork Shenandoah River | Lat 38°39'05", long 78°21'14", Page County, at bridge on State Highway 669, 1.8 mi west of Thornton Gap, and 2.5 mi above Rocky Branch. | 2.00 | 1981 | 1-26-82 3-16-82 5-20-82 6-24-82 7-23-82 8-25-82 9-23-82 | .82 7.25 1.15 2.83 1.11 .80 .47 |

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | Measurements | |
|--|-----------------------------|--|----------------------------------|-----------------------------------|--------------|--------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN--Continued | | | | | | |
| 01630543 Rocky Branch <u>b/</u> | Pass Run | Lat 38°41'06", long 78°21'10", Page County, at culvert on State Highway 612, 2.2 mi above mouth, and 2.2 mi northwest of Thornton Gap. | 2.76 | 1981 | 1-26-82 | 0.63 |
| | | | | | 3-16-82 | 10.5 |
| | | | | | 5-19-82 | 1.11 |
| | | | | | 6-24-82 | 2.75 |
| 01630585 Jeremys Run <u>b/</u> | South Fork Shenandoah River | Lat 38°43'18", long 78°23'15", Page County, at bridge on State Highway 611, 1.6 mi southeast of Oak Hill, and 3.8 mi above mouth. | 9.72 | 1981 | 1-26-82 | 2.80 |
| | | | | | 3-19-82 | 40.4 |
| | | | | | 5-19-82 | 2.10 |
| | | | | | 6-23-82 | 7.15 |
| | | | | | 7-22-82 | 1.7 |
| | | | | | 8-24-82 | .006 |
| 01630620 Overall Run | South Fork Shenandoah River | Lat 38°48'18", long 78°20'34", Page County, 0.4 mi above mouth, 2.2 mi southwest of Bentonville. | - | - | 9-23-82 | <.01 |
| | | | | | 7-23-82 | .63 |
| | | | | | 8-25-82 | .086 |
| 01630649 Phils Arm Run <u>b/</u> | Gooney Run | Lat 38°47'34", long 78°14'29", Warren County, 1,200 ft above State Highway 631, 0.3 mi above mouth, and 1.3 mi south of Browntown. | .98 | 1981 | 9-23-82 | .038 |
| | | | | | 7-23-82 | .63 |
| | | | | | 8-25-82 | .086 |
| | | | | | 9-22-82 | .18 |
| | | | | | 1-27-82 | .72 |
| | | | | | 3-18-82 | 4.59 |
| | | | | | 5-19-82 | .52 |
| 01630650 Unnamed tributary <u>b/</u> | Phils Arm Run | Lat 38°47'33", long 78°14'26", Warren County, 50 ft above mouth, 1.3 mi south of Brown-town. | .38 | 1981 | 6-23-82 | .66 |
| | | | | | 7-23-82 | .81 |
| | | | | | 8-25-82 | .14 |
| | | | | | 9-22-82 | .18 |
| 01630660 Smith Creek <u>b/</u> | Gooney Run | Lat 38°48'23", long 78°11'55", Warren County, 150 ft above end of State Highway 634, 1.8 mi east of Browntown, and 2.4 mi above mouth. | .78 | 1981 | 1-27-82 | .30 |
| | | | | | 3-18-82 | 5.31 |
| | | | | | 5-19-82 | .79 |
| | | | | | 6-23-82 | 1.11 |
| 01630670 Greasy Run <u>b/</u> | Gooney Run | Lat 38°47'17", long 78°16'03", Warren County, at side of State Highway 631, 2.3 mi southwest of Browntown, and 3.4 mi above mouth. | 1.70 | 1981 | 1-27-82 | .56 |
| | | | | | 3-18-82 | 7.78 |
| | | | | | 5-19-82 | .79 |
| | | | | | 6-23-82 | 1.63 |
| 01630680 Lands Run <u>b/</u> | Gooney Run | Lat 38°49'20", long 78°12'22", Warren County, at Shenandoah National Park boundary, 1.6 mi northeast of Browntown, and 2.0 mi above mouth. | 1.38 | 1981 | 6-23-82 | 1.63 |
| | | | | | 7-23-82 | .56 |
| | | | | | 8-25-82 | .27 |
| | | | | | 9-23-82 | .20 |
| | | | | | 1-27-82 | .48 |
| | | | | | 3-18-82 | 7.97 |
| Unnamed tributary | North Fork Shenandoah River | Lat 38°37'22", long 78°48'48", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.8 mi west of Broadway. | .53 | - | 5-19-82 | .80 |
| | | | | | 6-23-82 | 1.27 |
| | | | | | 7-23-82 | .56 |
| | | | | | 8-25-82 | .27 |
| Unnamed tributary | North Fork Shenandoah River | Lat 38°37'20", long 78°48'40", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.7 mi west of Broadway. | .25 | - | 9-23-82 | .20 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| Unnamed tributary | North Fork Shenandoah River | Lat 38°37'10", long 78°48'12", Rockingham County, at culvert on State Highway 259, 0.1 mi above mouth, and 0.3 mi west of Broadway. | .14 | - | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| Unnamed tributary | Long Meadow Run | Lat 38°35'33", long 78°46'35", Rockingham County, at culvert on State Highway 259, 1.2 mi southeast of Broadway, and 2.0 mi above mouth. | .89 | - | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| Unnamed tributary | Long Meadow Run tributary | Lat 38°35'44", long 78°46'43", Rockingham County, at culvert on State Highway 259, 0.2 mi above mouth, and 1.0 mi south-east of Broadway. | .28 | - | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |
| | | | | | 7-15-82 | 0 |

< Less than.

b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
|--|-----------------------|---|--|--|---|---|
| | | | | | Date | Discharge (ft ³ /s) |
| POTOMAC RIVER BASIN--Continued | | | | | | |
| Unnamed tributary | Stony Creek | Lat 38°53'44", long 78°40'03", Shenandoah County, at mouth, 2.5 mi northeast of Liberty Furnace. | 0.79 | - | 7-14-82 | 0.076 |
| South Fork unnamed tributary | Passage Creek | Lat 38°31'47", long 78°29'33", Shenandoah County, at culvert on State Highway 678, 0.4 mi above mouth, and 6.0 mi south- west of Detrick. | .066 | - | 7-14-82 | 0 |
| North Fork unnamed tributary | Passage Creek | Lat 38°31'58", long 78°29'14", Shenandoah County, at culvert on State Highway 678, 0.4 mi above mouth, and 5.7 mi south- west of Detrick. | .056 | - | 7-14-82 | 0 |
| 01636202 Unnamed tributary <u>b/</u> | Happy Creek | Lat 38°51'17", long 78°10'49", Warren County, at culvert on State Highway 604, 800 ft above mouth, and 2.4 mi east of Glen Echo. | 1.51 | 1981 | 1-27-82 3-18-82 5-18-82 6-22-82 | .70 6.02 1.17 1.81 |
| 01636210 Happy Creek <u>b/</u> | Shenandoah River | Lat 38°54'20", long 78°11'10", Warren County, at bridge on Kerfoot Avenue, at Front Royal, 2.3 mi above Leach Run, and 2.9 mi above mouth. | 14.0 | 1948-77*, 1981 | 3-18-82 5-18-82 6- 2-82 6-23-82 7-20-82 8-25-82 9-21-82 | 48 4.0 10 12.0 4.1 1.0 .55 |
| Unnamed tributary | Shenandoah River | Lat 39°01'34", long 78°04'17", Clarke County, at culvert on State Highway 624, 0.8 mi above mouth, and 3.5 mi south- west of Millwood. | .094 | - | 7-14-82 | 0 |
| 01657000 Bull Run <u>a/</u> | Occoquan River | Lat 38°47'52", long 77°27'28", Fairfax County, at bridge on State Highway 616, 0.5 mi downstream from Cub Run, and 3.2 mi north of Manassas. | 148 | 1950-81* | 10- 7-81 | *.34 |
| RAPPAHANNOCK RIVER BASIN | | | | | | |
| 01662100 Hazel River <u>b/</u> | Rappahannock River | Lat 38°36'54", long 78°15'44", Rappahannock County, at Shenan- doah National Park boundary, 700 ft below Sams Run, and 3.2 mi north of Nethers. | 5.15 | 1981 | 1-28-82 3-17-82 5-18-82 6-22-82 7-20-82 8-27-82 9-22-82 | 3.10 13.1 6.39 14.6 5.3 2.4 2.1 |
| 01662150 Hughes River <u>b/</u> | Hazel River | Lat 38°34'27", long 78°17'49", Madison County, at Nicholson Hollow Trail, 500 ft above Brokenback Run, and 1.0 mi west of Nethers. | 9.92 | 1961, 1981 | 1-28-82 3-17-82 5-17-82 6-21-82 | 6.97 40.9 8.82 24.5 |
| 01662160 Brokenback Run <u>b/</u> | Hughes River | Lat 38°34'16", long 78°18'01", Madison County, at Shenandoah National Park boundary, 0.4 mi above mouth, and 1.1 mi west of Nethers. | 4.30 | 1981 | 1-28-82 3-17-82 5-17-82 6-21-82 7-21-82 8-26-82 9-22-82 | 2.40 16.9 3.89 10.4 1.8 .60 .92 |
| 01662170 Rocky Run <u>b/</u> | Hughes River | Lat 38°34'39", long 78°16'57", Rappahannock County, at ford on State Highway 707, 0.4 mi above mouth, and 0.5 mi north of Nethers. | 1.09 | 1981 | 1-28-82 3-17-82 5-18-82 6-21-82 | .24 2.77 .50 1.43 |
| 01662190 Ragged Run <u>b/</u> | Popham Run | Lat 38°31'56", long 78°17'44", Madison County, at side of State Highway 645, 1.7 mi above mouth, and 1.8 mi west of Etlan. | 1.14 | 1981 | 1-25-82 3-15-82 5-17-82 6-21-82 7-21-82 8-27-82 9-22-82 | .65 2.66 .98 2.32 .59 .18 .19 |

* Base flow.

* Operated as a continuous-record gaging station.

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | | |
|--|---------------------------|---|----------------------------------|-----------------------------------|---|---|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| RAPPAHANNOCK RIVER BASIN--Continued | | | | | | |
| 01662200 Unnamed tributary <u>b/</u> | Rosson Hollow Run | Lat 38°32'33", long 78°16'24", Madison County, at culvert on State Highway 646, 0.5 mi above mouth, and 1.3 mi north of Etlan. | 1.05 | 1981 | 1-28-82 3-17-82 5-17-82 6-21-82 | 0.27 2.46 .40 1.41 |
| 01662350 North Fork Thornton River <u>b/</u> | Thornton River | Lat 38°41'36", long 78°16'33", Rappahannock County, 400 ft above Shenandoah National Park boundary, 3.3 mi above Piney River, and 3.4 mi northwest of Sperryville. | 7.21 | 1981 | 1-29-82 3-17-82 5-18-82 6-22-82 7-20-82 8-26-82 9-21-82 | 2.10 37.6 4.00 10.7 2.1 .81 .56 |
| 01662370 Piney Thornton River <u>b/</u> | North Fork Thornton River | Lat 38°41'46", long 78°15'30", Rappahannock County, at culvert on fire road, 2.1 mi above mouth, and 3.0 mi northwest of Sperryville. | 5.58 | 1981 | 1-29-82 3-17-82 5-18-82 6-22-82 | 2.10 28.1 3.24 8.28 |
| 01662480 Rush River <u>b/</u> | Covington River | Lat 38°44'29", long 78°13'08", Rappahannock County, at bridge on State Highway 622, 3.5 mi northwest of Washington, and 4.7 mi upstream from U.S. Highways 211 and 522. | 2.34 | 1981 | 1-28-82 3-17-82 5-18-82 6-22-82 | 1.52 14.5 1.48 4.05 |
| 01665260 Rapidan River <u>b/</u> | Rappahannock River | Lat 38°26'38", long 78°22'11", Madison County, 300 ft west of Rapidan Road, 100 ft above Staunton River, and 1.4 mi north of Graves Mill. | 9.74 | 1981 | 1-26-82 3-18-82 5-18-82 6-22-82 | 10.1 20.6 11.6 29.5 |
| 01665270 Staunton River <u>b/</u> | Rapidan River | Lat 38°26'38", long 78°22'12", Madison County, 100 ft west of Rapidan Road, 100 ft above mouth, and 1.4 mi north of Graves Mill. | 4.21 | 1981 | 1-26-82 3-18-82 5-18-82 6-22-82 7-21-82 8-27-82 9-22-82 | 3.11 13.2 7.31 21.6 3.3 2.2 2.2 |
| 01665340 Conway River <u>b/</u> | Rapidan River | Lat 38°24'59", long 78°26'17", Greene and Madison Counties, at ford on State Highway 667, 1.1 mi downstream from Devils Ditch, and 3.3 mi north of Kinderhook. | 9.66 | 1981 | 1-26-82 3-18-82 5-18-82 6-22-82 | 6.72 26.8 9.28 28.4 |
| 01665343 Unnamed tributary <u>b/</u> | Conway River | Lat 38°24'16", long 78°26'22", Greene County, at culvert on State Highway 667, 30 ft above mouth, and 2.5 mi north of Kinderhook. | 3.62 | 1981 | 1-26-82 3-18-82 5-18-82 6-22-82 | 5.35 8.91 4.26 8.24 |
| 01665440 South River <u>b/</u> | Rapidan River | Lat 38°22'01", long 78°27'38", Greene County, at bridge on State Highway 642, 30 ft upstream from Entry Run, and 1.2 mi north of McMullen. | 4.94 | 1963, 1981 | 1-26-82 3-18-82 5-18-82 6-22-82 7-21-82 8-27-82 9-22-82 | 4.44 13.5 2.70 9.56 2.1 .89 .84 |
| 01665710 Unnamed tributary <u>b/</u> | Robinson River | Lat 38°32'23", long 78°20'53", Madison County, at culvert on White Oak Canyon Trail, 800 ft above mouth, 1.2 mi downstream from Negro Run, and 3.7 mi north of Syria. | 5.41 | 1981 | 1-25-82 5-17-82 7-21-82 8-27-82 9-22-82 | 3.30 3.16 1.3 .51 .61 |
| 01665720 Unnamed tributary <u>b/</u> | Robinson River | Lat 38°32'45", long 78°20'37", Madison County, 100 ft above ford on private road, 0.5 mi above mouth, and 3.9 mi southwest of Netters. | 1.01 | 1981 | 1-25-82 3-15-82 5-17-82 6-21-82 | .27 1.55 .66 1.77 |
| 01665730 Cedar Run <u>b/</u> | Robinson River | Lat 38°32'22", long 78°21'01", Madison County, 200 ft below Shenandoah National Park boundary, 0.2 mi above mouth, and 3.7 mi north of Syria. | 2.32 | 1981 | 1-25-82 5-17-82 | 2.20 1.43 |

b Effects of acid rain in the Shenandoah National Park.

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | | |
|--|------------------|--|----------------------------------|-----------------------------------|--------------|--------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| RAPPAHANNOCK RIVER BASIN--Continued | | | | | | |
| 01665800 Rose River <u>b/</u> | Robinson River | Lat 38°30'55", long 78°21'59", Madison County, at Shenandoah National Park boundary, 1.8 mi above Strother Run, and 2.8 mi northwest of Syria. | 9.15 | 1981 | 1-25-82 | 8.09 |
| | | | | | 3-15-82 | 34.9 |
| | | | | | 5-17-82 | 7.90 |
| | | | | | 6-21-82 | 22.5 |
| | | | | | 7-21-82 | 5.7 |
| | | | | | 8-27-82 | 2.0 |
| | | | | | 9-22-82 | 2.3 |
| YORK RIVER BASIN | | | | | | |
| Contrary Creek <u>a/</u> | North Anna River | Lat 38°02'07", long 77°54'10", Louisa County, 1.7 mi northeast of Mineral, 2.5 mi upstream from bridge on State Highway 522. | 1.90 | 1975-81 | 10- 1-81 | * <.01 |
| | | | | | 11-25-81 | *.32 |
| | | | | | 1-26-82 | *.64 |
| | | | | | 3-31-82 | 1.35 |
| | | | | | 5-11-82 | *.57 |
| | | | | | 6-29-82 | *.24 |
| | | | | | 9- 1-82 | *.02 |
| Contrary Creek <u>a/</u> | North Anna River | Lat 38°02'29", long 77°53'54", Louisa County, 2.0 mi upstream from bridge on State Highway 522, 2.2 mi northeast of Mineral. | 2.34 | 1975-81 | 10- 1-81 | * <.02 |
| | | | | | 11-25-81 | *.35 |
| | | | | | 1-26-82 | *.84 |
| | | | | | 3-31-82 | 1.55 |
| | | | | | 5-11-82 | *.66 |
| | | | | | 6-29-82 | *.24 |
| | | | | | 9- 1-82 | *.02 |
| Contrary Creek <u>a/</u> | North Anna River | Lat 38°02'52", long 77°53'31", Louisa County, 1.4 mi upstream from bridge on State Highway 522, 2.8 mi northeast of Mineral. | 3.72 | 1975-81 | 10- 1-81 | *.16 |
| | | | | | 11-25-81 | *.72 |
| | | | | | 1-26-82 | *.97 |
| | | | | | 2- 1-82 | 12.4 |
| | | | | | 3-31-82 | 2.89 |
| | | | | | 5-11-82 | *1.40 |
| | | | | | 6-29-82 | *.59 |
| 9- 1-82 | *.20 | | | | | |
| Contrary Creek <u>a/</u> | North Anna River | Lat 38°03'46", long 77°51'39", Louisa County, 1.1 mi down-stream from bridge on State Highway 522, 4.5 mi northeast of Mineral. | 6.76 | 1975-81 | 2-24-82 | 5.32 |
| | | | | | 3-22-82 | 17.4 |
| | | | | | 4-15-82 | *3.56 |
| | | | | | 5-10-82 | *2.66 |
| | | | | | 7-14-82 | *.99 |
| North Anna River <u>a/</u> | Pamunkey River | Lat 37°49'32", long 77°25'35", Caroline-Hanover County line, at confluence with Little River, 1.8 mi downstream from bridge on State Highway 30, and 3.0 mi southeast of Doswell. | - | 1979-81 | 10-13-81 | *55.8 |
| | | | | | 11-17-81 | *61.7 |
| | | | | | 2-25-82 | 252 |
| | | | | | 5-24-82 | 93.9 |
| | | | | | 7-12-82 | 77.2 |
| | | | | | 7-28-82 | 61.1 |
| | | | | | 8-25-82 | 69.7 |
| 9-28-82 | 115 | | | | | |
| Little River <u>a/</u> | North Anna River | Lat 37°49'31", long 77°25'35", Hanover County, at confluence with North Anna River, 2.4 mi downstream from bridge on Interstate Highway 95, and 3.0 mi southeast of Doswell. | - | - | 7-28-82 | 7.83 |
| North Anna River <u>a/</u> | Pamunkey River | Lat 37°48'34", long 77°25'22", Caroline-Hanover County line, 1.0 mi upstream from confluence with South Anna River, 4.1 mi southeast of Doswell. | - | - | 7-28-82 | 76.3 |
| North Anna River <u>a/</u> | Pamunkey River | Lat 37°48'14", long 77°24'32", Caroline-Hanover County line, at confluence with South Anna River, 4.7 mi northeast of Ashland, and 5.2 mi downstream from bridge on State Highway 30. | - | 1979-80 | 7-27-82 | 69.2 |
| | | | | | 7-28-82 | 74.7 |
| South Anna River <u>a/</u> | Pamunkey River | Lat 37°48'12", long 77°24'31", Hanover County, at mouth, 1.0 mi downstream from bridge on State Highway 738, and 4.7 mi northeast of Ashland. | - | 1979-80 | 7-27-82 | 47.4 |
| | | | | | 7-28-82 | 48.7 |

* Base flow.

< Less than.

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

| Discharge measurements made at special study and miscellaneous sites during water year 1982 | | | | Measured previously (water years) | | Measurements | |
|---|---------------------------|--|----------------------------------|-----------------------------------|-------------------------------|--------------------------------|--|
| Stream | Tributary to | Location | Drainage area (mi ²) | | Date | Discharge (ft ³ /s) | |
| YORK RIVER BASIN--Continued | | | | | | | |
| Pamunkey River <u>a</u> / | York River | Lat 37°46'47", long 77°24'12", Caroline-Hanover County line, 2.0 mi northwest of Hanover, 2.6 mi upstream from bridge on U.S. Highway 301. | - | - | 7-27-82 | 116 | |
| Pamunkey River <u>a</u> / | York River | Lat 37°47'02", long 77°22'18", Caroline-Hanover County line, 0.4 mi upstream from bridge on U.S. Highway 301, 1.2 mi north of Hanover. | - | - | 7-26-82 7-27-82 | 122 112 | |
| Pamunkey River <u>a</u> / | York River | Lat 37°46'03", long 77°19'55", Hanover-King William County line, 100 ft above bridge on State Highway 614, 2.0 mi east of Hanover. | - | - | 7-27-82 | 138 | |
| 01677200 Skimino Creek | York River | Lat 37°21'58", long 76°42'57", James City County, at bridge on State Highway 604, below Barlows Pond, 2.9 mi north-east of Lightfoot, and 4.4 mi above mouth. | - | - | 3-18-82 8-27-82 9-21-82 | 11 3.3 .84 | |
| BACK RIVER BASIN | | | | | | | |
| Unnamed tributary | Brick Kiln Creek | Lat 37°06'40", long 76°26'33", York County, at culvert on State Highway 134, 1.0 mi above Big Bethel Reservoir, and 1.0 mi southeast of Tabb. | 0.14 | 1980-81 | 8-22-82 | 0 | |
| JAMES RIVER BASIN | | | | | | | |
| Unnamed tributary | James River | Lat 37°31'37", long 79°43'00", Botetourt County, at culvert on State Highway 625, 0.4 mi above mouth, and 1.1 mi west of Buchanan. | .57 | - | 7-20-82 | 0 | |
| Unnamed tributary | Calfpasture River | Lat 38°15'37", long 79°19'02", Augusta County, at culvert on State Highway 629, 200 ft above mouth, and 0.7 mi south-west of West Augusta. | .36 | - | 7-15-82 | 0 | |
| Unnamed tributary | Spring Creek | Lat 37°56'46", long 79°11'42", Augusta County, at culvert on State Highway 620, 0.4 mi above mouth, and 1.3 mi north of Steeles Tavern. | .12 | - | 7-15-82 | 0 | |
| Unnamed tributary | South Buffalo Creek | Lat 37°43'43", long 79°34'30", Rockbridge County, at culvert on State Highway 11, 100 ft above mouth, and 8.9 mi south-west of Lexington. | .72 | - | 7-20-82 | 0 | |
| 02031400 North Fork Moormans River <u>b</u> / | Moormans River | Lat 38°11'42", long 78°43'57", Albemarle County, 200 ft above ford on Shenandoah National Park fire road, 0.9 mi above Little Gate Branch, and 3.3 mi west of Browns Cove. | 2.60 | 1981 | 3-17-82 5-19-82 6-23-82 | 9.43 1.42 3.25 | |
| 02031410 Unnamed tributary <u>b</u> / | North Fork Moormans River | Lat 38°12'23", long 78°44'52", Albemarle County, 70 ft below Skyline Drive, 1.5 mi above mouth, and 4.6 mi east of Harriston. | .21 | 1981 | 3-17-82 5-19-82 6-23-82 | .48 .17 .24 | |
| 02031420 Unnamed tributary <u>b</u> / | North Fork Moormans River | Lat 38°11'50", long 78°44'32", Albemarle County, at side of Shenandoah National Park fire road, 0.5 mi above mouth, and 3.8 mi west of Browns Cove. | .70 | 1981 | 3-17-82 5-19-82 6-23-82 | 2.77 .41 .47 | |

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued

| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
|--|--------------------------------|--|--|--|---|---|
| | | | | | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | |
| 02031430 North Fork Moormans River <u>b</u> / | Moormans River | Lat 38°10'12", long 78°44'30", Albemarle County, at side of Shenandoah National Park fire road, 0.4 mi above Big Branch, and 4.4 mi southwest of Browns Cove. | 6.19 | 1981 | 3-17-82 5-19-82 6-23-82 | 23.0 4.22 6.65 |
| 02031440 North Fork Moormans River <u>b</u> / | Moormans River | Lat 38°09'23", long 78°44'56", Albemarle County, at ford on Shenandoah National Park fire road, 0.7 mi below Big Branch, and 5.4 mi northwest of White Hall. | 9.12 | 1981 | 3-17-82 5-19-82 6-23-82 | 25.9 6.80 9.80 |
| 02031500 North Fork Moormans River <u>b</u> / | Moormans River | Lat 38°08'25", long 78°45'05", Albemarle County, 300 ft above State Highway 614, 0.5 mi above confluence with South Fork, and 5.1 mi west of White Hall. | 11.4 | 1944-46, 1952-63+, 1977, 1981 | 1-28-82 3-17-82 5-19-82 6-23-82 7-22-82 8-23-82 9-20-82 | 7.21 41.2 6.39 10.6 1.7 3.1 .38 |
| 02031800 South Fork Moormans River <u>b</u> / | Moormans River | Lat 38°08'13", long 78°44'59", Albemarle County, 450 ft above Charlottesville Reservoir, 1.7 mi below Turk Branch, and 4.6 mi west of White Hall. | 5.56 | 1981 | 1-28-82 3-17-82 5-19-82 6-23-82 | 2.85 18.2 2.66 5.85 |
| 02032100 Moormans River <u>b</u> / | South Fork Rivanna | Lat 38°07'45", long 78°43'27", Albemarle County, at bridge on State Highway 614, 1.0 mi below Charlottesville Reser- voir, and 3.4 mi west of White Hall. | 20.8 | 1981 | 1-28-82 3-17-82 5-19-82 6-23-82 | 5.85 57.5 2.12 12.7 |
| 02032110 Doyles River <u>b</u> / | Moormans River | Lat 38°12'28", long 78°40'30", Albemarle County, 200 ft above bridge on State High- way 629, 0.4 mi north of Browns Cove, and 6.2 mi above mouth. | 6.44 | 1981 | 1-26-82 3-19-82 5-18-82 6-25-82 | 4.17 23.1 2.92 5.39 |
| 02032310 Unnamed tributary <u>b</u> / | Muddy Run | Lat 38°14'02", long 78°37'08", Albemarle County, at bridge on State Highway 810, 800 ft above mouth, and 1.1 mi west of Boonesville. | 2.59 | 1981 | 1-26-82 3-19-82 5-18-82 6-25-82 | 2.19 8.50 1.36 2.21 |
| 02032545 Ivy Creek <u>b</u> / | Lynch River | Lat 38°16'07", long 78°36'45", Greene County, at bridge on State Highway 601, 1.0 mi below Shenandoah National Park boundary, and 2.5 mi north of Boonesville. | 6.11 | 1981 | 1-26-82 3-19-82 5-18-82 6-25-82 7-21-82 8-23-82 9-20-82 | 3.89 18.5 1.80 3.42 .92 .19 0 |
| Unnamed tribu- tary <u>a</u> / | South Fork Rivanna River | Lat 38°08'14", long 78°29'40", Albemarle County, 100 ft below Lake Faith dam, 1.1 mi upstream from mouth, and 1.4 mi south- west of Earlysville. | - | - | 12-28-81 12-29-81 3-30-82 | *.084 *.061 *.12 |
| Unnamed tribu- tary <u>a</u> / | South Fork Rivanna River | Lat 38°07'28", long 78°29'52", Albemarle County, 200 ft up- stream from mouth, 2.3 mi southwest of Earlysville. | - | - | 12-28-81 12-28-81 12-30-81 3-30-82 3-31-82 | *.52 *.51 .36 *.84 *.98 |
| 02032589 Swift Run <u>b</u> / | North Fork Rivanna | Lat 38°20'31", long 78°30'40", Greene County, at side of U.S. Highway 33 on Shenandoah National Park boundary, 1.4 mi northwest of Lydia. | 4.80 | 1981 | 1-25-82 3-18-82 5-21-82 6-25-82 | 4.10 14.8 4.21 6.13 |
| James River and Kanawha Canal <u>a</u> / | James River | Lat 32°33'56", long 77°32'50", Henrico County, at canal bridge just off Westham Station Road, 0.2 mi upstream from State High- way 147, and 0.5 mi west of city limits of Richmond. | - | - | 3- 2-82 | 840 |

* Base flow.

* Operated as a continuous-record gaging station.

a Furnished by Virginia State Water Control Board.

b Effects of acid rain in the Shenandoah National Park.

| Discharge measurements made at special study and miscellaneous sites during water year 1982--Continued | | | | | | |
|--|-----------------------|--|--|--|--------------|-----------------------------------|
| Stream | Tributary to | Location | Drainage area (mi ²) | Measured previously (water years) | Measurements | |
| | | | | | Date | Discharge (ft ³ /s) |
| JAMES RIVER BASIN--Continued | | | | | | |
| 02042752 Mill Creek | Diascund Creek | Lat 37°23'23", long 76°52'05", James City County, at culvert on State Highway 603, 0.4 mi south of Diascund, and 1.9 mi above mouth. | - | - | 3-18-82 | 10 |
| | | | | | 8-27-82 | 2.0 |
| | | | | | 9-21-82 | .85 |
| 02042754 Yarmouth Creek | Chickahominy River | Lat 37°20'48", long 76°48'56", James City County, at culvert on State Highway 632, below Cranstons Pond, and 2.4 mi south of Toano. | - | - | 3-18-82 | 7.0 |
| | | | | | 8-26-82 | 3.6 |
| | | | | | 9-21-82 | 2.1 |
| 02042756 Gordon Creek | Chickahominy River | Lat 37°17'48", long 76°49'10", James City County, at bridge on State Highway 633, below Jolly Pond, and 4.7 mi south- west of Lightfoot. | - | - | 3-18-82 | 9.8 |
| | | | | | 8-26-82 | >1.7 |
| | | | | | 9-20-82 | .14 |
| 02042765 Unnamed tributary | James River | Lat 37°15'18", long 76°48'46", James City County, at culvert on State Highway 5, 1.0 mi above mouth, and 2.6 mi west of Five Forks. | - | - | 3-18-82 | 1.4 |
| | | | | | 8-26-82 | .30 |
| | | | | | 9-20-82 | .18 |
| 02042780 West Branch Long Hill Swamp | Powhattan Creek | Lat 37°18'50", long 76°46'02", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot. | 2.47 | 1970-76*, 1978-81* | 3-18-82 | 6.7 |
| | | | | | 8-27-82 | 3.0 |
| | | | | | 9-20-82 | .67 |
| Great Run | Beaverdam Creek | Lat 37°13'23", long 76°31'16", York County, at culvert on State Highway 637, 1.0 mi southwest of Yorktown, and 1.1 mi above mouth. | 1.26 | 1981 | 7-29-82 | 0 |
| CHOWAN RIVER BASIN | | | | | | |
| Buckhorn Swamp <u>a/</u> | Nottoway River | Lat 36°43'17", long 77°09'35", Southampton County, at bridge on State Highway 652, 5.0 mi west of Courtland. | - | - | 9- 1-82 | 0.05 |
| Buckhorn Swamp <u>a/</u> | Nottoway River | Lat 36°45'00", long 77°09'33", Southampton County, at bridge on State Highway 651, 5.4 mi northwest of Courtland. | - | - | 9- 1-82 | (d) |
| Nottoway Swamp <u>a/</u> | Nottoway River | Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 2.4 mi northwest of Hunterdale. | - | - | 9- 2-82 | .36 |
| ROANOKE RIVER BASIN | | | | | | |
| Murray Run <u>a/</u> | Roanoke River | Lat 37°14'56", long 79°58'45", Roanoke City, at Fishburn Park just east of U.S. High- way 221, 1.7 mi above mouth. | - | - | 5-14-82 | .62 |
| Falling River | Roanoke River | Lat 37°16'55", long 78°54'13", Appomattox County, at bridge on State Highway 679, 100 ft upstream from Reddy Creek, and 2.8 mi north of Spring Mills. | - | 1953, 1977, 1981 | 10-19-81 | 4.6 |
| YADKIN RIVER BASIN | | | | | | |
| Clarks Creek | Ararat River | Lat 36°33'57", long 80°33'12", Patrick County, at bridge on State Highway 773, 200 ft above mouth, and 3.1 mi south- west of Ararat. | 10.1 | - | 10-21-81 | 1.2 |

> Greater than.

* Operated as a continuous-record gaging station.

a Furnished by Virginia State Water Control Board.

d Ponded, no apparent flow.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

Samples are collected at partial-record, special study, and miscellaneous sites to give better areal coverage. The results of these samples are given herein.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--|------|---|--|---------------|----------------------|-----------------------------|--|--|
| POTOMAC RIVER BASIN | | | | | | | | |
| 01626900 - SAWMILL RUN NR DOOMS, VA (LAT 38 05 46 LONG 078 48 38) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 0820 | 2.4 | 21 | 6.7 | 6.4 | 1.0 | 1.0 | .7 |
| MAR | | | | | | | | |
| 18... | 1700 | 6.9 | 20 | -- | 6.5 | 9.5 | 1.0 | .7 |
| MAY | | | | | | | | |
| 20... | 0815 | 1.4 | 22 | 6.5 | 6.5 | 14.0 | 1.2 | .8 |
| JUN | | | | | | | | |
| 24... | 0750 | 1.3 | 24 | 6.8 | 6.7 | 13.5 | 1.2 | .8 |
| 01627000 - MINE BRANCH NR CRIMORA, VA (LAT 38 08 36 LONG 078 48 54) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1440 | .30 | 15 | 5.8 | 5.8 | 1.5 | .4 | .4 |
| MAR | | | | | | | | |
| 16... | 1615 | 1.2 | 16 | -- | 5.6 | 7.0 | .4 | .5 |
| MAY | | | | | | | | |
| 20... | 0915 | .17 | 17 | 5.4 | 6.1 | 14.0 | .4 | .5 |
| JUN | | | | | | | | |
| 24... | 0850 | .34 | 17 | 6.2 | 6.2 | 13.0 | .4 | .5 |
| 01627100 - MEADOW RUN NR CRIMORA, VA (LAT 38 09 29 LONG 078 48 38) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1520 | 1.6 | 16 | 5.8 | 5.7 | 1.0 | .5 | .5 |
| MAR | | | | | | | | |
| 16... | 1530 | 8.3 | 19 | -- | 5.5 | 7.0 | .6 | .6 |
| MAY | | | | | | | | |
| 20... | 1000 | 1.7 | 17 | -- | 5.8 | 14.0 | .5 | .5 |
| JUN | | | | | | | | |
| 24... | 0940 | 2.3 | 18 | 5.6 | 5.6 | 13.5 | .5 | .5 |
| 01627400 - PAINE RUN NR HARRISTON, VA. (LAT 38 11 54 LONG 078 47 33) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1330 | 2.6 | 23 | 5.9 | 5.7 | 2.0 | .6 | .7 |
| MAR | | | | | | | | |
| 16... | 1410 | 11 | 23 | -- | 5.5 | 7.0 | .6 | .6 |
| MAY | | | | | | | | |
| 20... | 1125 | 2.1 | 22 | 5.3 | 6.0 | 15.0 | .5 | .6 |
| JUN | | | | | | | | |
| 24... | 1100 | 3.0 | 22 | 6.0 | 6.0 | 14.5 | .6 | .6 |
| 01628050 - MADISON RUN AB WHITE OAK RUN NR GROTTOS, VA (LAT 38 15 05 LONG 078 44 50) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1210 | 1.8 | 22 | 6.7 | 6.5 | 1.0 | 1.0 | .8 |
| MAR | | | | | | | | |
| 16... | 1140 | 5.1 | 19 | 6.0 | 6.4 | 7.0 | .9 | .8 |
| MAY | | | | | | | | |
| 20... | 1245 | .70 | 22 | 6.0 | 6.6 | 15.0 | 1.1 | 1.0 |
| JUN | | | | | | | | |
| 24... | 1215 | .74 | 20 | 6.6 | 6.6 | 15.0 | 1.1 | 1.0 |
| 01628080 - MADISON RUN NEAR GROTTOS VA (LAT 38 15 24 LONG 078 46 06) | | | | | | | | |
| JAN , 1982 | | | | | | | | |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINEITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|---|--|---|--|---|---|---|---|---|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01626900 - SAWMILL RUN NR DOOMS, VA (LAT 38 05 46 LONG 078 48 38) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | .9 | .8 | 2.3 | 3.9 | 1.0 | 4.8 | .03 | <.010 |
| MAR | | | | | | | | |
| 18... | .9 | .9 | 2.3 | 4.1 | 1.0 | 5.6 | .02 | <.010 |
| MAY | | | | | | | | |
| 20... | .9 | 1.1 | 4.0 | 3.7 | 1.0 | 6.0 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | 1.0 | 1.0 | 4.0 | 4.2 | 1.0 | 6.7 | .01 | <.010 |
| 01627000 - MINE BRANCH NR CRIMORA, VA (LAT 38 08 36 LONG 078 48 54) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | .5 | .8 | .50 | 3.1 | .9 | 4.5 | .01 | <.010 |
| MAR | | | | | | | | |
| 16... | .6 | 1.0 | .30 | 3.4 | 1.0 | 4.0 | .02 | <.010 |
| MAY | | | | | | | | |
| 20... | .5 | 1.0 | .50 | 2.9 | 1.0 | 4.3 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | .6 | 1.1 | .80 | 3.3 | .9 | 4.5 | .01 | <.010 |
| 01627100 - MEADOW RUN NR CRIMORA, VA (LAT 38 09 29 LONG 078 48 38) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | .5 | 1.0 | .30 | 3.5 | .8 | 4.8 | .01 | <.010 |
| MAR | | | | | | | | |
| 16... | .5 | 1.0 | .00 | 4.3 | .9 | 4.1 | .03 | <.010 |
| MAY | | | | | | | | |
| 20... | .5 | 1.0 | .00 | 3.8 | 1.0 | 4.2 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | .5 | 1.1 | .10 | 4.2 | .9 | 4.4 | .01 | .010 |
| 01627400 - PAINE RUN NR HARRISTON, VA. (LAT 38 11 54 LONG 078 47 33) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | .6 | 1.5 | .30 | 5.5 | .8 | 4.9 | .04 | <.010 |
| MAR | | | | | | | | |
| 16... | .6 | 1.6 | .10 | 5.3 | .9 | 4.7 | .08 | <.010 |
| MAY | | | | | | | | |
| 20... | .5 | 1.6 | .40 | 4.9 | 1.0 | 3.7 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | .6 | 1.8 | .40 | 5.0 | .9 | 4.7 | .01 | <.010 |
| 01628050 - MADISON RUN AB WHITE OAK RUN NR GROTTUES, VA (LAT 38 15 05 LONG 078 44 50) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | .9 | .7 | 3.3 | 3.6 | .9 | 6.1 | .02 | <.010 |
| MAR | | | | | | | | |
| 16... | .9 | .8 | 3.1 | 3.4 | .9 | 5.9 | .04 | <.010 |
| MAY | | | | | | | | |
| 20... | 1.0 | 1.1 | 5.5 | 3.1 | 1.0 | 7.2 | .01 | .010 |
| JUN | | | | | | | | |
| 24... | 1.0 | 1.1 | 6.5 | 3.2 | .9 | 7.4 | .02 | <.010 |
| 01628080 - MADISON RUN NEAR GROTTUES VA (LAT 38 15 24 LONG 078 46 06) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | .7 | 1.1 | 1.4 | 4.1 | .9 | 4.9 | <.01 | <.010 |
| MAR | | | | | | | | |
| 16... | .7 | 1.2 | 1.5 | 4.2 | .9 | 4.7 | .04 | <.010 |
| MAY | | | | | | | | |
| 20... | .7 | 1.4 | 2.1 | 4.2 | .9 | 4.9 | .01 | .010 |
| JUN | | | | | | | | |
| 24... | .7 | 1.5 | 3.4 | 4.4 | .9 | 5.5 | .01 | <.010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

POTOMAC RIVER BASIN--CONTINUED

01628300 - LOWER LEWIS RUN NR LYNWOOD, VA (LAT 38 18 06 LONG 078 44 02)

| | | | | | | | | |
|------------|----|-----|-----|-----|----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 16... | .6 | 1.6 | .10 | 5.1 | .8 | 4.7 | .13 | <.010 |
| MAY | | | | | | | | |
| 20... | .6 | 1.6 | .90 | 4.7 | .9 | 4.5 | .09 | .010 |
| JUN | | | | | | | | |
| 21... | .6 | 1.6 | .70 | 4.9 | .9 | 4.8 | .04 | <.010 |

01628320 - LOWER LEWIS RUN TRIB NR LYNWOOD VA (LAT 38 18 03 LONG 078 44 20)

| | | | | | | | | |
|------------|----|----|-----|-----|-----|-----|------|-------|
| MAR , 1982 | | | | | | | | |
| 16... | .6 | .5 | .00 | 2.9 | 1.0 | 3.8 | .02 | <.010 |
| MAY | | | | | | | | |
| 20... | .5 | .5 | .20 | 2.1 | 1.0 | 3.6 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | .5 | .5 | .00 | 2.5 | .9 | 3.8 | <.01 | .010 |

01628350 - UPPER LEWIS RUN NEAR LYNNWOOD, VA (LAT 38 17 35 LONG 078 44 55)

| | | | | | | | | |
|------------|----|-----|-----|-----|----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 29... | .6 | 1.7 | .30 | 5.8 | .9 | 5.6 | .01 | <.010 |
| MAY | | | | | | | | |
| 20... | .6 | 2.1 | .60 | 5.3 | .9 | 4.5 | .01 | .010 |
| JUN | | | | | | | | |
| 24... | .6 | 2.0 | .40 | 5.3 | .9 | 5.1 | .01 | <.010 |

01628530 - HANGMAN RUN NR ROCKY BAR VA (LAT 38 18 42 LONG 078 43 02)

| | | | | | | | | |
|------------|----|----|-----|-----|----|-----|------|-------|
| JUN , 1982 | | | | | | | | |
| 10... | .4 | .5 | .00 | 4.2 | .8 | 3.8 | <.01 | .010 |
| 25... | .5 | .5 | .00 | 4.2 | .9 | 4.1 | <.01 | <.010 |

01628700 - TWOMILE RUN NR MCGAHEYSVILLE, VA (LAT 38 20 04 LONG 078 40 20)

| | | | | | | | | |
|------------|----|-----|-----|-----|----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | .6 | 1.3 | .60 | 4.9 | .9 | 5.3 | .07 | <.010 |
| MAR | | | | | | | | |
| 16... | .6 | 1.4 | .40 | 4.6 | .8 | 4.7 | .11 | <.010 |
| MAY | | | | | | | | |
| 21... | .7 | 1.5 | .90 | 4.0 | .8 | 4.7 | .08 | .030 |
| JUN | | | | | | | | |
| 22... | .6 | 1.5 | .70 | 4.3 | .8 | 4.8 | .05 | <.010 |

01628750 - WALLS RUN NR ROCKY BAR VA (LAT 38 21 23 LONG 078 39 47)

| | | | | | | | | |
|------------|----|----|-----|-----|----|-----|------|-------|
| JUN , 1982 | | | | | | | | |
| 10... | .4 | .5 | .00 | 4.3 | .8 | 3.7 | .01 | .010 |
| 22... | .5 | .7 | .00 | 4.4 | .8 | 4.0 | <.01 | <.010 |

01628900 - HAWKSBILL CK TRIB NR SWIFT RUN, VA (LAT 38 20 47 LONG 078 34 35)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 2.1 | .3 | 12 | 4.2 | 1.2 | 12 | .39 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.7 | .3 | 8.7 | 4.6 | 1.2 | 11 | .39 | <.010 |
| MAY | | | | | | | | |
| 17... | 2.2 | .3 | 14 | 3.7 | 1.4 | 13 | .01 | .020 |
| JUN | | | | | | | | |
| 22... | 2.1 | .2 | 14 | 3.9 | 1.1 | 12 | .09 | .010 |

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|---|------|---|--|---------------|----------------------|-----------------------------|--|--|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01628300 - LOWER LEWIS RUN NR LYNWOOD, VA (LAT 38 18 06 LONG 078 44 02) | | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 16... | 0940 | .66 | 22 | 5.6 | 5.5 | 7.0 | .7 | .6 |
| MAY | | | | | | | | |
| 20... | 1515 | .22 | 23 | 4.9 | 5.5 | 15.0 | .6 | .6 |
| JUN | | | | | | | | |
| 21... | 1445 | .30 | 21 | 5.5 | 5.5 | 14.0 | .6 | .6 |
| 01628320 - LOWER LEWIS RUN TRIB NR LYNWOOD VA (LAT 38 18 03 LONG 078 44 20) | | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 16... | 1000 | .24 | 16 | 4.7 | 5.0 | 7.0 | .2 | .5 |
| MAY | | | | | | | | |
| 20... | 1445 | .04 | 17 | -- | 5.2 | 15.0 | .2 | .4 |
| JUN | | | | | | | | |
| 24... | 1425 | .32 | 15 | 5.0 | 5.1 | 14.0 | .1 | .4 |
| 01628350 - UPPER LEWIS RUN NEAR LYNNWOOD, VA (LAT 38 17 35 LONG 078 44 55) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 29... | 1730 | .30 | 22 | -- | 5.6 | 1.0 | .5 | .7 |
| MAY | | | | | | | | |
| 20... | 1410 | .35 | 22 | 4.9 | 5.5 | 16.0 | .5 | .6 |
| JUN | | | | | | | | |
| 24... | 1345 | .52 | 21 | 5.7 | 5.6 | 15.5 | .5 | .6 |
| 01628530 - HANGMAN RUN NR ROCKY BAR VA (LAT 38 18 42 LONG 078 43 02) | | | | | | | | |
| JUN , 1982 | | | | | | | | |
| 10... | 1230 | .19 | 19 | 4.8 | 5.0 | 16.0 | .4 | .5 |
| 25... | 0755 | .07 | 22 | 4.9 | 5.0 | 14.0 | .4 | .6 |
| 01628700 - TWOMILE RUN NR MCGAHEYSVILLE, VA (LAT 38 20 04 LONG 078 40 20) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 0930 | .36 | 22 | 5.9 | 5.8 | 2.0 | .7 | .6 |
| MAR | | | | | | | | |
| 16... | 0820 | 4.7 | 20 | 5.8 | 5.8 | 6.0 | .6 | .6 |
| MAY | | | | | | | | |
| 21... | 0845 | .92 | 20 | 6.0 | 6.0 | 14.5 | .5 | .6 |
| JUN | | | | | | | | |
| 22... | 1415 | 1.6 | 20 | 5.8 | 6.0 | 15.0 | .5 | .6 |
| 01628750 - WALLS RUN NR ROCKY BAR VA (LAT 38 21 23 LONG 078 39 47) | | | | | | | | |
| JUN , 1982 | | | | | | | | |
| 10... | 1320 | .16 | 19 | 4.8 | 5.0 | 17.0 | .6 | .5 |
| 22... | 1525 | <.01 | 23 | 4.7 | 5.0 | 15.0 | .6 | .6 |
| 01628900 - HAWKSBILL CK TRIB NR SWIFT RUN, VA (LAT 38 20 47 LONG 078 34 35) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1527 | .60 | 40 | 7.3 | 7.2 | 2.5 | 4.0 | 1.3 |
| MAR | | | | | | | | |
| 15... | 1540 | 1.7 | 36 | 6.6 | 7.0 | 6.0 | 3.3 | 1.2 |
| MAY | | | | | | | | |
| 17... | 1420 | .64 | 40 | 7.0 | 7.2 | 15.0 | 4.1 | 1.4 |
| JUN | | | | | | | | |
| 22... | 1305 | .75 | 37 | 7.0 | 7.2 | 15.0 | 3.8 | 1.3 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--|------|---|--|---------------|----------------------|-----------------------------|--|--|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01628910 - WEST SWIFT RUN AT SWIFT RUN, VA. (LAT 38 21 55 LONG 078 34 47) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1605 | .31 | 66 | 7.2 | 7.1 | 1.5 | 4.7 | 2.0 |
| MAR | | | | | | | | |
| 15... | 1625 | 1.4 | 63 | -- | 7.0 | 6.0 | 4.4 | 1.8 |
| MAY | | | | | | | | |
| 21... | 1015 | .44 | 45 | 7.0 | 7.1 | 14.0 | 3.9 | 1.7 |
| JUN | | | | | | | | |
| 21... | 1430 | 1.1 | 69 | 7.1 | 7.2 | 15.0 | 5.2 | 2.0 |
| 01629120 - E BR NAKED CREEK NEAR JOLLETT, VA (LAT 38 28 07 LONG 078 29 50) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 29... | 1700 | 4.9 | 28 | 6.8 | 6.8 | 1.0 | 2.1 | 1.0 |
| MAR | | | | | | | | |
| 15... | 1310 | 16 | 23 | -- | 6.8 | 1.5 | 2.2 | 1.1 |
| MAY | | | | | | | | |
| 17... | 1200 | 3.3 | 28 | 7.0 | 7.1 | 15.0 | 2.3 | 1.1 |
| JUN | | | | | | | | |
| 21... | 1320 | 7.7 | 25 | 7.0 | 7.1 | 15.0 | 2.2 | 1.1 |
| 01629130 - BIG CREEK NEAR JOLLETT, VA (LAT 38 27 37 LONG 078 29 35) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1222 | 2.7 | 29 | 7.4 | 7.1 | 1.5 | 2.7 | 1.1 |
| MAR | | | | | | | | |
| 15... | 1220 | 9.2 | 27 | 6.6 | 7.0 | 5.0 | 2.3 | 1.1 |
| MAY | | | | | | | | |
| 17... | 1245 | 1.7 | 33 | 7.2 | 7.4 | 14.0 | 3.3 | 1.4 |
| JUN | | | | | | | | |
| 21... | 1240 | 4.8 | 27 | 7.3 | 7.2 | 14.5 | 2.6 | 1.1 |
| 01629150 - S BR NAKED CK BL BIG UGLY BR NR FURNACE, VA (LAT 38 25 34 LONG 078 32 51) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1430 | 4.0 | 35 | 7.2 | 7.1 | 1.0 | 3.0 | 1.3 |
| MAR | | | | | | | | |
| 15... | 1420 | 21 | 31 | 6.6 | 7.0 | 1.0 | 2.6 | 1.2 |
| MAY | | | | | | | | |
| 17... | 1100 | 4.9 | 42 | 7.4 | 7.4 | 15.5 | 3.3 | 1.4 |
| JUN | | | | | | | | |
| 21... | 1120 | 9.1 | 32 | 7.5 | 7.4 | 14.5 | 3.1 | 1.3 |
| 01629920 - LITTLE HAWKSBILL CK TRIB NR IDA, VA. (LAT 38 33 23 LONG 078 25 55) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1040 | .32 | 25 | 6.2 | 6.5 | 1.0 | 1.9 | .6 |
| MAR | | | | | | | | |
| 19... | 1400 | 2.9 | 26 | 6.7 | 6.6 | 8.0 | 2.0 | .6 |
| MAY | | | | | | | | |
| 20... | 1240 | .44 | 27 | 6.8 | 6.8 | 14.0 | 2.1 | .6 |
| JUN | | | | | | | | |
| 24... | 1215 | .59 | 25 | 6.8 | 6.8 | 14.5 | 1.9 | .6 |
| 01629950 - EAST HAWKSBILL CREEK NEAR IDA, VA (LAT 38 34 53 LONG 078 24 52) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1230 | 1.5 | 30 | 6.1 | 6.5 | 3.0 | 2.4 | .7 |
| MAR | | | | | | | | |
| 18... | 1300 | 16 | 28 | 6.8 | 6.6 | 8.0 | 2.5 | .7 |
| MAY | | | | | | | | |
| 20... | 1330 | 2.1 | 30 | 6.4 | 6.7 | 14.0 | 2.5 | .7 |
| JUN | | | | | | | | |
| 24... | 1320 | 3.1 | 27 | 6.7 | 6.7 | 14.0 | 2.5 | .7 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

POTOMAC RIVER BASIN--CONTINUED

01628910 - WEST SWIFT RUN AT SWIFT RUN, VA. (LAT 38 21 55 LONG 078 34 47)

| | | | | | | | | |
|------------|-----|----|----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 5.0 | .4 | 16 | 2.7 | 7.8 | 14 | .27 | <.010 |
| MAR | | | | | | | | |
| 15... | 5.1 | .4 | 13 | 4.3 | 8.9 | 13 | .17 | <.010 |
| MAY | | | | | | | | |
| 21... | 2.8 | .3 | 16 | 2.1 | 2.8 | 15 | .14 | .010 |
| JUN | | | | | | | | |
| 21... | 5.5 | .4 | 17 | 2.8 | 9.5 | 15 | .13 | <.010 |

01629120 - E BR NAKED CREEK NEAR JOLLETT, VA (LAT 38 28 07 LONG 078 29 50)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 29... | 1.5 | .4 | 6.0 | 3.1 | 1.0 | 8.3 | .88 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.4 | .4 | 5.4 | 3.6 | .9 | 7.9 | .77 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.5 | .4 | 7.8 | 2.7 | 1.0 | 9.1 | .52 | .020 |
| JUN | | | | | | | | |
| 21... | 1.5 | .3 | 8.1 | 2.3 | .8 | 9.0 | .44 | <.010 |

01629130 - BIG CREEK NEAR JOLLETT, VA (LAT 38 27 37 LONG 078 29 35)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 1.4 | .3 | 7.8 | 4.0 | 1.0 | 8.3 | .42 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.3 | .3 | 6.1 | 4.3 | .9 | 7.8 | .36 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.5 | .3 | 12 | 3.4 | 1.1 | 9.1 | .26 | .010 |
| JUN | | | | | | | | |
| 21... | 1.5 | .3 | 9.2 | 3.1 | .9 | 9.0 | .18 | <.010 |

01629150 - S BR NAKED CK BL BIG UGLY BR NR FURNACE, VA (LAT 38 25 34 LONG 078 32 51)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 2.4 | .6 | 9.3 | 5.0 | 1.3 | 7.6 | .17 | .010 |
| MAR | | | | | | | | |
| 15... | 1.4 | .6 | 6.9 | 5.3 | 1.2 | 7.9 | .21 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.5 | .7 | 12 | 4.2 | 1.2 | 7.3 | .07 | .010 |
| JUN | | | | | | | | |
| 21... | 1.5 | .6 | 11 | 4.2 | 1.0 | 9.0 | .06 | <.010 |

01629920 - LITTLE HAWKSBILL CK TRIB NR IDA, VA. (LAT 38 33 23 LONG 078 25 55)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|------|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.4 | .2 | 3.1 | 4.0 | 1.1 | 9.1 | .32 | <.010 |
| MAR | | | | | | | | |
| 19... | 1.4 | .2 | 2.6 | 4.6 | 1.0 | 8.5 | .30 | <.010 |
| MAY | | | | | | | | |
| 20... | 1.6 | .2 | 5.5 | 3.5 | .9 | 11 | <.01 | .010 |
| JUN | | | | | | | | |
| 24... | 1.6 | .2 | 5.0 | 4.2 | .9 | 9.9 | .09 | <.010 |

01629950 - EAST HAWKSBILL CREEK NEAR IDA, VA (LAT 38 34 53 LONG 078 24 52)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.4 | .2 | 3.7 | 4.8 | 1.3 | 8.6 | .29 | <.010 |
| MAR | | | | | | | | |
| 18... | 1.3 | .2 | 2.8 | 5.9 | 1.2 | 6.4 | .39 | <.010 |
| MAY | | | | | | | | |
| 20... | 1.5 | .2 | 5.7 | 4.6 | 1.1 | 9.0 | .18 | .020 |
| JUN | | | | | | | | |
| 24... | 1.5 | .2 | 5.2 | 5.1 | 1.0 | 8.6 | .12 | .010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--------------------------------|--|---|--|---------------|----------------------|-----------------------------|--|--|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01630100 | - SOUTH FORK DRY RUN NR FAIRVIEW, VA (LAT 38 37 37 LONG 078 23 23) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1300 | .39 | 32 | -- | 6.4 | 2.0 | 2.5 | .8 |
| MAR | | | | | | | | |
| 16... | 1615 | 4.4 | 32 | 6.6 | 6.5 | 4.5 | 2.7 | .8 |
| MAY | | | | | | | | |
| 20... | 1430 | .32 | 30 | 6.8 | 6.6 | 13.5 | 2.7 | .8 |
| JUN | | | | | | | | |
| 24... | 1415 | .68 | 28 | 6.6 | 6.7 | 14.5 | 2.8 | .8 |
| 01630200 | - N FK DRY RUN NR THORNTON GAP, VA (LAT 38 38 41 LONG 078 22 09) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1400 | .78 | 30 | 6.4 | 6.7 | 1.0 | 2.2 | .8 |
| MAR | | | | | | | | |
| 16... | 1520 | 7.1 | 26 | 6.7 | 6.6 | 6.0 | 2.0 | .7 |
| MAY | | | | | | | | |
| 20... | 1615 | 1.0 | 32 | 6.9 | 6.9 | 20.5 | 2.1 | .7 |
| JUN | | | | | | | | |
| 24... | 1500 | 2.0 | 22 | 7.0 | 6.9 | 20.0 | 2.1 | .8 |
| 01630542 | - PASS RUN NR THORNTON GAP, VA (LAT 38 39 05 LONG 078 21 14) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1500 | .82 | 76 | 6.5 | 7.0 | 1.0 | 5.9 | 2.7 |
| MAR | | | | | | | | |
| 16... | 1430 | 7.2 | 70 | 7.0 | 6.9 | 5.0 | 4.5 | 1.9 |
| MAY | | | | | | | | |
| 20... | 1700 | 1.2 | 75 | 7.3 | 7.2 | 16.0 | 5.3 | 2.3 |
| JUN | | | | | | | | |
| 24... | 1530 | 2.8 | 81 | 7.3 | 7.3 | 15.5 | 5.6 | 2.4 |
| 01630543 | - ROCKY BR NR THORNTON GAP, VA (LAT 38 41 06 LONG 078 21 10) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1600 | .63 | 43 | 6.7 | 7.1 | 1.0 | 3.7 | 1.6 |
| MAR | | | | | | | | |
| 16... | 1710 | 10 | 39 | 7.2 | 7.0 | 5.5 | 2.9 | 1.5 |
| MAY | | | | | | | | |
| 19... | 1620 | 1.1 | 46 | 7.5 | 7.4 | 18.5 | 3.5 | 1.7 |
| JUN | | | | | | | | |
| 24... | 1630 | 2.8 | 41 | 7.3 | 7.3 | 17.5 | 3.3 | 1.6 |
| 01630585 | - JEREMYS RUN NR OAK HILL, VA (LAT 38 43 18 LONG 078 23 15) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1700 | 2.8 | 35 | -- | 6.9 | .5 | 2.4 | 1.4 |
| MAR | | | | | | | | |
| 19... | 1130 | 40 | 30 | 6.9 | 6.9 | 8.5 | 2.3 | 1.4 |
| MAY | | | | | | | | |
| 19... | 1700 | 2.1 | 40 | 6.7 | 7.0 | 17.5 | 3.0 | 1.7 |
| JUN | | | | | | | | |
| 23... | 1145 | 7.2 | 37 | 7.1 | 7.1 | 17.0 | 2.8 | 1.5 |
| 01630649 | - PHILS ARM RUN NR BROWNTOWN, VA (LAT 38 47 34 LONG 078 14 29) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1110 | .72 | 29 | 6.3 | 6.6 | .5 | 2.0 | .8 |
| MAR | | | | | | | | |
| 18... | 1510 | 4.6 | 29 | 6.8 | 6.6 | 9.0 | 2.0 | .8 |
| MAY | | | | | | | | |
| 19... | 1300 | .52 | 29 | 6.5 | 6.9 | 16.5 | 2.3 | .9 |
| JUN | | | | | | | | |
| 23... | 1520 | .66 | 28 | 7.0 | 6.9 | 17.0 | 2.2 | .8 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|---|--|---|---|---|---|---|---|---|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01630100 - SOUTH FORK DRY RUN NR FAIRVIEW, VA (LAT 38 37 37 LONG 078 23 23) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1.5 | .3 | 3.3 | 6.6 | 1.4 | 8.5 | .54 | <.010 |
| MAR | | | | | | | | |
| 16... | 1.6 | .3 | 2.9 | 6.6 | 1.1 | 8.4 | .55 | <.010 |
| MAY | | | | | | | | |
| 20... | 1.7 | .4 | 5.9 | 5.9 | 1.3 | 9.8 | .20 | .010 |
| JUN | | | | | | | | |
| 24... | 1.8 | .3 | 6.0 | 5.7 | 1.3 | 9.4 | .16 | <.010 |
| 01630200 - N FK DRY RUN NR THORNTON GAP, VA (LAT 38 38 41 LONG 078 22 09) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1.9 | .3 | 4.3 | 5.0 | 1.3 | 11 | .46 | .010 |
| MAR | | | | | | | | |
| 16... | 1.7 | .4 | 3.3 | 5.2 | 1.1 | 9.1 | .42 | <.010 |
| MAY | | | | | | | | |
| 20... | 1.8 | .4 | 5.3 | 4.8 | 1.1 | 10 | .27 | .010 |
| JUN | | | | | | | | |
| 24... | 1.8 | .4 | 5.3 | 4.5 | 1.1 | 10 | .18 | <.010 |
| 01630542 - PASS RUN NR THORNTON GAP, VA (LAT 38 39 05 LONG 078 21 14) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 5.5 | .4 | 11 | 3.2 | 15 | 13 | .32 | .010 |
| MAR | | | | | | | | |
| 16... | 4.9 | .4 | 7.9 | 3.5 | 12 | 10 | .37 | <.010 |
| MAY | | | | | | | | |
| 20... | 3.9 | .4 | 12 | 2.6 | 14 | 14 | .04 | .010 |
| JUN | | | | | | | | |
| 24... | 5.8 | .3 | 14 | 2.1 | 13 | 13 | .11 | .010 |
| 01630543 - ROCKY BR NR THORNTON GAP, VA (LAT 38 41 06 LONG 078 21 10) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 2.0 | .4 | 12 | 4.7 | 1.9 | 12 | .35 | .010 |
| MAR | | | | | | | | |
| 16... | 1.8 | .5 | 8.5 | 5.2 | 1.8 | 10 | .30 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.1 | .5 | 15 | 3.2 | 1.3 | 14 | <.01 | .020 |
| JUN | | | | | | | | |
| 24... | 2.0 | .4 | 14 | 2.4 | 1.2 | 13 | .09 | .010 |
| 01630585 - JEREMYS RUN NR OAK HILL, VA (LAT 38 43 18 LONG 078 23 15) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1.4 | .5 | 6.6 | 6.5 | 1.3 | 7.9 | .13 | <.010 |
| MAR | | | | | | | | |
| 19... | 1.4 | .7 | 5.3 | 7.2 | 1.2 | 8.3 | .21 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.7 | .8 | 11 | 5.7 | 1.4 | 10 | <.01 | .010 |
| JUN | | | | | | | | |
| 23... | 1.6 | .7 | 9.4 | 5.9 | 1.2 | 9.8 | .06 | <.010 |
| 01630649 - PHILS ARM RUN NR BROWNTOWN, VA (LAT 38 47 34 LONG 078 14 29) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 2.0 | .3 | 4.4 | 5.0 | 1.0 | 12 | .38 | .010 |
| MAR | | | | | | | | |
| 18... | 1.8 | .4 | 3.2 | 5.8 | 1.0 | 9.8 | .52 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.1 | .4 | 8.1 | 4.5 | 1.2 | 14 | .01 | .020 |
| JUN | | | | | | | | |
| 23... | 2.0 | .3 | 6.1 | 4.7 | 1.0 | 12 | .08 | <.010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--|------|---|--|---------------|----------------------|-----------------------------|--|--|
| POTOMAC RIVER BASIN--CONTINUED | | | | | | | | |
| 01630650 - PHILS ARM RUN TRIB NR BROWNTOWN, VA (LAT 38 47 33 LONG 078 14 26) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1100 | .18 | 28 | 6.3 | 6.7 | .5 | 1.8 | .7 |
| MAR | | | | | | | | |
| 18... | 1500 | 2.0 | 26 | 6.9 | 6.7 | 9.5 | 1.6 | .7 |
| MAY | | | | | | | | |
| 19... | 1245 | .28 | 28 | 6.5 | 7.0 | 17.5 | 2.1 | .8 |
| JUN | | | | | | | | |
| 23... | 1515 | .35 | 30 | 7.1 | 7.1 | 18.0 | 2.0 | .8 |
| 01630660 - SMITH CREEK NR BROWNTOWN, VA (LAT 38 48 23 LONG 078 11 55) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1200 | .30 | 29 | -- | 6.6 | 1.0 | 1.8 | .6 |
| MAR | | | | | | | | |
| 18... | 1620 | 5.3 | 31 | 6.7 | 6.5 | 8.0 | 2.1 | .7 |
| MAY | | | | | | | | |
| 19... | 1200 | .79 | 31 | 6.7 | 6.8 | 14.5 | 2.1 | .7 |
| JUN | | | | | | | | |
| 23... | 1630 | 1.1 | 29 | 6.9 | 6.8 | 15.0 | 2.1 | .7 |
| 01630670 - GREASY RUN NR BROWNTOWN, VA (LAT 38 47 17 LONG 078 16 03) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1000 | .56 | 42 | 6.6 | 6.9 | .0 | 3.5 | 1.3 |
| MAR | | | | | | | | |
| 18... | 1345 | 7.8 | 35 | 7.1 | 6.9 | 8.0 | 3.2 | 1.2 |
| MAY | | | | | | | | |
| 19... | 1400 | .79 | 40 | 7.3 | 7.3 | 18.5 | 3.8 | 1.4 |
| JUN | | | | | | | | |
| 23... | 1430 | 1.6 | 38 | 7.2 | 7.2 | 18.0 | 3.5 | 1.3 |
| 01630680 - LANDS RUN NR BROWNTOWN, VA (LAT 38 49 20 LONG 078 12 22) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1300 | .48 | 39 | -- | 6.8 | .5 | 2.7 | 1.0 |
| MAR | | | | | | | | |
| 18... | 1720 | 8.0 | 41 | 6.6 | 6.9 | 8.5 | 2.9 | 1.2 |
| MAY | | | | | | | | |
| 19... | 1115 | .80 | 38 | 7.1 | 7.1 | 16.5 | 2.7 | 1.1 |
| JUN | | | | | | | | |
| 23... | 1720 | 1.3 | 38 | 7.1 | 7.1 | 16.5 | 2.7 | 1.0 |
| 01636202 - HAPPY CK TRIB NR GLEN ECHO, VA (LAT 38 51 17 LONG 078 10 49) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 27... | 1600 | .70 | 34 | 6.9 | 6.9 | .0 | 2.7 | 1.0 |
| MAR | | | | | | | | |
| 18... | 1230 | 6.0 | 40 | 7.2 | 7.0 | 7.0 | 3.2 | 1.3 |
| MAY | | | | | | | | |
| 18... | 1730 | 1.2 | 37 | 7.3 | 7.3 | 16.0 | 3.0 | 1.1 |
| JUN | | | | | | | | |
| 22... | 1930 | 1.8 | 38 | 7.1 | 7.1 | 16.0 | 3.0 | 1.1 |
| RAPPAHANNOCK RIVER BASIN | | | | | | | | |
| 01662100 - HAZEL RIVER NR NETHERS, VA (LAT 38 36 54 LONG 078 15 44) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1700 | 3.1 | 20 | -- | 6.7 | 1.5 | 1.3 | .5 |
| MAR | | | | | | | | |
| 17... | 1500 | 18 | 18 | 6.5 | 6.6 | 8.5 | 1.2 | .5 |
| MAY | | | | | | | | |
| 18... | 1220 | 6.4 | 19 | 7.0 | 6.9 | 15.0 | 1.2 | .5 |
| JUN | | | | | | | | |
| 22... | 1200 | 15 | 17 | 6.9 | 6.9 | 16.0 | 1.1 | .5 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

POTOMAC RIVER BASIN--CONTINUED

01630650 - PHILS ARM RUN TRIB NR BROWNTOWN, VA (LAT 38 47 33 LONG 078 14 26)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | 2.4 | .4 | 6.1 | 5.0 | 1.1 | 15 | .06 | <.010 |
| MAR | | | | | | | | |
| 18... | 2.2 | .5 | 4.5 | 5.4 | 1.2 | 12 | .05 | .010 |
| MAY | | | | | | | | |
| 19... | 2.5 | .4 | 8.8 | 3.9 | 1.2 | 17 | .05 | .010 |
| JUN | | | | | | | | |
| 23... | 2.6 | .5 | 8.5 | 3.6 | 1.1 | 17 | .03 | <.010 |

01630660 - SMITH CREEK NR BROWNTOWN, VA (LAT 38 48 23 LONG 078 11 55)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | 2.1 | .3 | 3.5 | 4.9 | 1.1 | 12 | .44 | <.010 |
| MAR | | | | | | | | |
| 18... | 2.0 | .4 | 2.6 | 6.5 | 1.1 | 10 | .61 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.1 | .3 | 5.3 | 4.6 | 1.2 | 12 | .02 | .010 |
| JUN | | | | | | | | |
| 23... | 2.1 | .3 | 4.8 | 4.9 | 1.1 | 12 | .34 | <.010 |

01630670 - GREASY RUN NR BROWNTOWN, VA (LAT 38 47 17 LONG 078 16 03)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | 2.0 | .3 | 9.4 | 5.9 | 1.5 | 12 | .49 | .010 |
| MAR | | | | | | | | |
| 18... | 1.7 | .3 | 5.9 | 7.0 | 1.2 | 9.7 | .53 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.1 | .5 | 13 | 5.0 | 1.4 | 13 | .01 | .020 |
| JUN | | | | | | | | |
| 23... | 2.1 | .4 | 11 | 5.1 | 1.2 | 12 | .12 | .010 |

01630680 - LANDS RUN NR BROWNTOWN, VA (LAT 38 49 20 LONG 078 12 22)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | 2.4 | .4 | 6.5 | 6.3 | 1.4 | 13 | .47 | .010 |
| MAR | | | | | | | | |
| 18... | 2.4 | .5 | 5.3 | 8.0 | 1.3 | 12 | .50 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.6 | .5 | 7.7 | 5.9 | 1.3 | 14 | .01 | .020 |
| JUN | | | | | | | | |
| 23... | 2.5 | .4 | 7.8 | 6.0 | 1.2 | 13 | .20 | .010 |

01636202 - HAPPY CK TRIB NR GLEN ECHO, VA (LAT 38 51 17 LONG 078 10 49)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 27... | 2.2 | .5 | 8.6 | 3.7 | 1.4 | 15 | .59 | <.010 |
| MAR | | | | | | | | |
| 18... | 2.1 | .4 | 7.3 | 6.3 | 1.3 | 12 | .73 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.2 | .4 | 11 | 3.4 | 1.4 | 15 | .01 | .010 |
| JUN | | | | | | | | |
| 22... | 2.3 | .5 | 11 | 3.8 | 1.3 | 15 | .30 | .010 |

RAPPAHANNOCK RIVER BASIN--CONTINUED

01662100 - HAZEL RIVER NR NETHERS, VA (LAT 38 36 54 LONG 078 15 44)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.4 | .4 | 4.4 | 2.1 | 1.0 | 9.5 | .17 | .020 |
| MAR | | | | | | | | |
| 17... | 1.4 | .4 | 2.9 | 2.7 | .9 | 8.1 | .12 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.4 | .4 | 4.8 | 1.8 | 1.0 | 9.7 | .08 | .010 |
| JUN | | | | | | | | |
| 22... | 1.4 | .4 | 4.4 | 1.6 | .9 | 9.2 | .05 | <.010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|-------------------------------------|--|---|--|---------------|----------------------|-----------------------------|--|--|
| RAPPAHANNOCK RIVER BASIN--CONTINUED | | | | | | | | |
| 01662150 | - HUGHES RIVER NR NETHERS, VA (LAT 38 34 27 LONG 078 17 49) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1300 | 7.0 | 20 | -- | 6.7 | 1.5 | 1.4 | .5 |
| MAR | | | | | | | | |
| 17... | 1300 | 41 | 21 | 6.8 | 6.7 | 9.0 | 1.3 | .6 |
| MAY | | | | | | | | |
| 17... | 1750 | 8.8 | 22 | 7.0 | 6.9 | 16.0 | 1.4 | .6 |
| JUN | | | | | | | | |
| 21... | 1700 | 24 | 20 | 6.8 | 6.8 | 16.5 | 1.4 | .5 |
| 01662160 | - BROKENBACK RUN NR NETHERS, VA (LAT 38 34 16 LONG 078 18 01) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1230 | 2.4 | 18 | 6.2 | 6.6 | 1.0 | 1.1 | .4 |
| MAR | | | | | | | | |
| 17... | 1212 | 17 | 17 | 6.7 | 6.6 | 7.5 | 1.0 | .4 |
| MAY | | | | | | | | |
| 17... | 1700 | 3.9 | 18 | 6.8 | 6.8 | 15.0 | 1.2 | .4 |
| JUN | | | | | | | | |
| 21... | 1615 | 10 | 16 | 6.7 | 6.7 | 16.5 | 1.1 | .4 |
| 01662170 | - ROCKY RUN AT NETHERS, VA (LAT 38 34 39 LONG 078 16 57) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1400 | .24 | 23 | 5.7 | 6.5 | 1.0 | 1.1 | .5 |
| MAR | | | | | | | | |
| 17... | 1400 | 2.8 | 21 | 6.5 | 6.6 | 9.5 | 1.1 | .5 |
| MAY | | | | | | | | |
| 18... | 1115 | .50 | 24 | 6.8 | 6.8 | 15.5 | 1.3 | .6 |
| JUN | | | | | | | | |
| 21... | 1800 | 1.4 | 23 | 6.8 | 6.8 | 15.5 | 1.2 | .5 |
| 01662190 | - RAGGED RUN NR ETLAN, VA (LAT 38 31 56 LONG 078 17 44) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1700 | .65 | 19 | 6.4 | 6.6 | 3.0 | 1.1 | .4 |
| MAR | | | | | | | | |
| 15... | 1640 | 2.7 | 18 | 6.6 | 6.6 | 5.0 | .9 | .4 |
| MAY | | | | | | | | |
| 17... | 1500 | .98 | 21 | 6.8 | 6.8 | 17.5 | 1.2 | .5 |
| JUN | | | | | | | | |
| 21... | 1430 | 2.3 | 20 | 6.8 | 6.8 | 17.5 | 1.1 | .5 |
| 01662200 | - ROSSON HOLLOW RUN TRIB NR ETLAN, VA. (LAT 38 32 33 LONG 078 16 24) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1030 | .27 | 22 | 6.5 | 6.6 | 1.0 | 1.1 | .4 |
| MAR | | | | | | | | |
| 17... | 1110 | 2.5 | 20 | 6.7 | 6.6 | 8.5 | 1.0 | .4 |
| MAY | | | | | | | | |
| 17... | 1600 | .40 | 24 | 6.8 | 6.8 | 19.5 | 1.3 | .5 |
| JUN | | | | | | | | |
| 21... | 1530 | 1.4 | 21 | 6.8 | 6.8 | 19.5 | 1.2 | .5 |
| 01662350 | - NORTH FORK THORNTON RIVER NR SPERRYVILLE, VA (LAT 38 41 36 LONG 078 16 33) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 29... | 1400 | 2.1 | 36 | -- | 7.1 | 1.0 | 2.7 | 1.4 |
| MAR | | | | | | | | |
| 17... | 1620 | 38 | 37 | 7.3 | 7.1 | 9.0 | 2.9 | 1.6 |
| MAY | | | | | | | | |
| 18... | 1445 | 4.0 | 39 | 7.3 | 7.3 | 16.5 | 3.1 | 1.7 |
| JUN | | | | | | | | |
| 22... | 1520 | 11 | 38 | 7.3 | 7.3 | 15.5 | 3.0 | 1.7 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

RAPPAHANNOCK RIVER BASIN--CONTINUED

01662150 - HUGHES RIVER NR NETHERS, VA (LAT 38 34 27 LONG 078 17 49)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.4 | .3 | 4.1 | 2.5 | 1.1 | 8.8 | .23 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.4 | .3 | 3.5 | 3.0 | 1.2 | 8.2 | .17 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.5 | .3 | 5.0 | 2.3 | 1.2 | 9.1 | .17 | .010 |
| JUN | | | | | | | | |
| 21... | 1.5 | .3 | 4.8 | 2.0 | 1.0 | 8.8 | .11 | <.010 |

01662160 - BROKENBACK RUN NR NETHERS, VA (LAT 38 34 16 LONG 078 18 01)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.3 | .3 | 3.3 | 2.5 | .9 | 8.4 | .16 | .010 |
| MAR | | | | | | | | |
| 17... | 1.3 | .3 | 2.7 | 3.0 | .9 | 7.8 | .08 | .010 |
| MAY | | | | | | | | |
| 17... | 1.4 | .4 | 4.4 | 2.1 | 1.0 | 8.6 | .01 | .010 |
| JUN | | | | | | | | |
| 21... | 1.3 | .4 | 3.8 | 1.8 | .9 | 8.1 | .03 | <.010 |

01662170 - ROCKY RUN AT NETHERS, VA (LAT 38 34 39 LONG 078 16 57)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.9 | .5 | 3.8 | 3.5 | 1.1 | 10 | .09 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.8 | .5 | 3.0 | 3.8 | 1.0 | 9.3 | .04 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.3 | .5 | 5.3 | 3.0 | 1.1 | 11 | .05 | .010 |
| JUN | | | | | | | | |
| 21... | 2.0 | .6 | 5.2 | 3.1 | 1.0 | 11 | .01 | <.010 |

01662190 - RAGGED RUN NR ETLAN, VA (LAT 38 31 56 LONG 078 17 44)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 1.5 | .5 | 3.9 | 2.6 | 1.0 | 9.5 | .02 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.5 | .4 | 2.9 | 2.7 | .9 | 8.4 | .04 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.6 | .5 | 4.8 | 2.3 | 1.1 | 10 | .01 | .010 |
| JUN | | | | | | | | |
| 21... | 1.7 | .5 | 4.3 | 2.6 | 1.0 | 10 | .03 | <.010 |

01662200 - ROSSON HOLLOW RUN TRIB NR ETLAN, VA. (LAT 38 32 33 LONG 078 16 24)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.9 | .5 | 4.1 | 3.1 | 1.2 | 12 | .04 | .010 |
| MAR | | | | | | | | |
| 17... | 1.8 | .5 | 3.0 | 3.6 | 1.0 | 9.6 | .01 | <.010 |
| MAY | | | | | | | | |
| 17... | 2.1 | .6 | 5.7 | 2.8 | 1.2 | 12 | .01 | .010 |
| JUN | | | | | | | | |
| 21... | 2.0 | .6 | 5.3 | 2.7 | 1.1 | 12 | .02 | <.010 |

01662350 - NORTH FORK THORNTON RIVER NR SPERRYVILLE, VA (LAT 38 41 36 LONG 078 16 33)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 29... | 2.0 | .3 | 9.9 | 4.4 | 1.3 | 13 | .32 | <.010 |
| MAR | | | | | | | | |
| 17... | 2.0 | .4 | 8.5 | 5.8 | 1.2 | 12 | .43 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.3 | .4 | 12 | 3.7 | 1.3 | 15 | .01 | .020 |
| JUN | | | | | | | | |
| 22... | 2.2 | .4 | 13 | 3.7 | 1.1 | 15 | .20 | <.010 |

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|-------------------------------------|--|---|--|---------------|----------------------|-----------------------------|--|--|
| RAPPAHANNOCK RIVER BASIN--CONTINUED | | | | | | | | |
| 01662370 | - PINEY RIVER NEAR SPERRYVILLE, VA (LAT 38 41 46 LONG 078 15 30) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 29... | 1300 | 2.1 | 30 | 6.8 | 7.0 | 2.0 | 2.3 | 1.1 |
| MAR | | | | | | | | |
| 17... | 1710 | 28 | 31 | 7.0 | 6.9 | 8.0 | 2.4 | 1.2 |
| MAY | | | | | | | | |
| 18... | 1350 | 3.2 | 33 | 7.3 | 7.2 | 16.5 | 2.7 | 1.3 |
| JUN | | | | | | | | |
| 22... | 1430 | 8.3 | 32 | 7.2 | 7.3 | 16.0 | 2.7 | 1.3 |
| 01662480 | - RUSH RIVER AT RT 622 NR WASHINGTON, VA (LAT 38 44 29 LONG 078 13 08) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1630 | 1.5 | 41 | -- | 7.0 | 1.0 | 3.5 | 1.4 |
| MAR | | | | | | | | |
| 17... | 1815 | 14 | 43 | 7.1 | 7.0 | 8.0 | 3.7 | 1.5 |
| MAY | | | | | | | | |
| 18... | 1615 | 1.5 | 48 | 7.3 | 7.3 | 19.5 | 4.3 | 1.6 |
| JUN | | | | | | | | |
| 21... | 1815 | 4.0 | 46 | 7.2 | 7.2 | 17.5 | 4.2 | 1.7 |
| 01665260 | - RAPIDAN RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 11) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1000 | 10 | 20 | 7.3 | 6.7 | .5 | 1.4 | .5 |
| MAR | | | | | | | | |
| 18... | 1000 | 21 | 18 | 6.3 | 6.8 | 7.5 | 1.5 | .5 |
| MAY | | | | | | | | |
| 18... | 0815 | 12 | 20 | 6.7 | 7.0 | 14.0 | 1.6 | .5 |
| JUN | | | | | | | | |
| 22... | 0800 | 30 | 20 | 6.8 | 6.9 | 13.0 | 1.5 | .5 |
| 01665270 | - STAUNTON RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 12) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 0900 | 3.1 | 17 | 7.1 | 6.6 | 1.5 | 1.1 | .3 |
| MAR | | | | | | | | |
| 18... | 1035 | 13 | 16 | 6.1 | 6.6 | 7.5 | 1.1 | .3 |
| MAY | | | | | | | | |
| 18... | 0900 | 7.3 | 18 | 6.4 | 6.8 | 13.0 | 1.2 | .3 |
| JUN | | | | | | | | |
| 23... | 0840 | 22 | 17 | 6.7 | 6.7 | 13.0 | 1.1 | .3 |
| 01665340 | - CONWAY RIVER NR KINDERHOOK, VA (LAT 38 24 59 LONG 078 26 17) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1200 | 6.7 | 21 | 6.8 | 6.7 | 1.0 | 1.5 | .5 |
| MAR | | | | | | | | |
| 18... | 1240 | 27 | 21 | 6.0 | 6.7 | 9.0 | 1.6 | .6 |
| MAY | | | | | | | | |
| 18... | 1015 | 9.3 | 20 | 6.7 | 6.9 | 13.5 | 1.6 | .5 |
| JUN | | | | | | | | |
| 22... | 1005 | 28 | 21 | 6.7 | 6.9 | 13.0 | 1.6 | .6 |
| 01665343 | - CONWAY RIVER TRIB NEAR KINDERHOOK, VA (LAT 38 24 16 LONG 078 26 22) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1110 | 5.4 | 24 | 6.9 | 6.8 | 3.0 | 1.8 | .6 |
| MAR | | | | | | | | |
| 18... | 1330 | 8.9 | 23 | 6.4 | 6.9 | 8.0 | 1.9 | .6 |
| MAY | | | | | | | | |
| 18... | 1110 | 4.3 | 25 | 6.7 | 7.1 | 14.0 | 2.0 | .6 |
| JUN | | | | | | | | |
| 22... | 1100 | 8.2 | 26 | 6.9 | 7.0 | 13.5 | 2.0 | .6 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

RAPPAHANNOCK RIVER BASIN--CONTINUED

01662370 - PINEY RIVER NEAR SPERRYVILLE, VA (LAT 38 41 46 LONG 078 15 30)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 29... | 1.5 | .2 | 7.6 | 3.4 | 1.2 | 11 | .32 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.6 | .2 | 6.8 | 4.6 | 1.1 | 11 | .45 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.9 | .2 | 11 | 3.0 | 1.3 | 13 | .12 | .010 |
| JUN | | | | | | | | |
| 22... | 1.8 | .3 | 11 | 3.0 | 1.0 | 13 | .14 | <.010 |

01662480 - RUSH RIVER AT RT 622 NR WASHINGTON, VA (LAT 38 44 29 LONG 078 13 08)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.9 | .3 | 9.6 | 5.7 | 1.5 | 11 | .43 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.9 | .4 | 8.2 | 7.1 | 1.3 | 10 | .58 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.3 | .7 | 14 | 5.1 | 1.6 | 13 | .01 | .030 |
| JUN | | | | | | | | |
| 21... | 2.2 | .4 | 14 | 5.7 | 1.3 | 13 | .17 | .010 |

01665260 - RAPIDAN RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 11)

| | | | | | | | | |
|------------|-----|----|-----|-----|----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.2 | .2 | 4.8 | 1.7 | .8 | 8.0 | .22 | <.010 |
| MAR | | | | | | | | |
| 18... | 1.2 | .2 | 4.4 | 2.1 | .8 | 7.5 | .18 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.3 | .3 | 5.3 | 1.7 | .9 | 7.8 | .15 | .010 |
| JUN | | | | | | | | |
| 22... | 1.3 | .5 | 5.4 | 1.6 | .9 | 7.9 | .11 | <.010 |

01665270 - STAUNTON RIVER NR GRAVES MILL, VA (LAT 38 26 38 LONG 078 22 12)

| | | | | | | | | |
|------------|-----|----|-----|-----|----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.3 | .3 | 3.0 | 1.9 | .8 | 7.9 | .11 | <.010 |
| MAR | | | | | | | | |
| 18... | 1.3 | .3 | 2.8 | 2.1 | .8 | 7.4 | .11 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.3 | .3 | 3.6 | 1.8 | .9 | 7.7 | .13 | .010 |
| JUN | | | | | | | | |
| 23... | 1.4 | .3 | 3.6 | 1.6 | .8 | 7.5 | .09 | <.010 |

01665340 - CONWAY RIVER NR KINDERHOOK, VA (LAT 38 24 59 LONG 078 26 17)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.4 | .3 | 3.8 | 3.2 | .9 | 8.6 | .12 | .010 |
| MAR | | | | | | | | |
| 18... | 1.5 | .3 | 3.6 | 4.1 | .9 | 8.2 | .11 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.6 | .3 | 4.8 | 3.0 | 1.0 | 8.6 | .12 | .010 |
| JUN | | | | | | | | |
| 22... | 1.5 | .3 | 4.8 | 3.0 | .9 | 8.4 | .07 | <.010 |

01665343 - CONWAY RIVER TRIB NEAR KINDERHOOK, VA (LAT 38 24 16 LONG 078 26 22)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|------|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.6 | .2 | 5.0 | 3.3 | .9 | 9.5 | .18 | <.010 |
| MAR | | | | | | | | |
| 18... | 1.7 | .2 | 5.0 | 3.7 | .9 | 9.1 | .18 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.8 | .3 | 6.4 | 2.8 | 1.0 | 9.8 | <.01 | .010 |
| JUN | | | | | | | | |
| 22... | 1.8 | .3 | 6.7 | 3.1 | .9 | 9.4 | .09 | .010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|------|------|---|--|---------------|----------------------|-----------------------------|--|--|
|------|------|---|--|---------------|----------------------|-----------------------------|--|--|

RAPPAHANNOCK RIVER BASIN--CONTINUED

01665440 - SOUTH RIVER NR MCMULLEN, VA (LAT 38 22 01 LONG 078 27 38)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|-----|
| JAN , 1982 | | | | | | | | |
| 26... | 1320 | 4.4 | 29 | 7.0 | 6.9 | 2.5 | 2.3 | .9 |
| MAR | | | | | | | | |
| 18... | 1435 | 14 | 29 | 6.5 | 6.9 | 9.0 | 2.5 | 1.0 |
| MAY | | | | | | | | |
| 18... | 1200 | 2.7 | 24 | 6.7 | 7.1 | 14.0 | 2.6 | 1.0 |
| JUN | | | | | | | | |
| 22... | 1150 | 9.6 | 28 | 6.8 | 7.1 | 14.0 | 2.3 | 1.0 |

01665710 - WHITE OAK CANYON TRIB NR SYRIA, VA (LAT 38 32 23 LONG 078 20 53)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|-----|
| JAN , 1982 | | | | | | | | |
| 25... | 1400 | 3.3 | 24 | 6.9 | 6.8 | 2.0 | 1.8 | .8 |
| MAR | | | | | | | | |
| 15... | 1530 | 11 | 22 | 6.3 | 6.8 | 4.5 | 1.8 | .9 |
| MAY | | | | | | | | |
| 17... | 1230 | 3.2 | 27 | 7.1 | 7.1 | 16.0 | 2.1 | 1.0 |
| JUN | | | | | | | | |
| 21... | 1200 | 8.2 | 24 | 7.0 | 7.0 | 16.0 | 1.9 | .9 |

01665720 - BERRY HOLLOW TRIB NR NETHERS, VA (LAT 38 32 45 LONG 078 20 37)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|----|
| JAN , 1982 | | | | | | | | |
| 25... | 1530 | .27 | 23 | 6.3 | 6.7 | 2.0 | 1.4 | .4 |
| MAR | | | | | | | | |
| 15... | 1400 | 1.6 | 21 | 6.7 | 6.6 | 6.0 | 1.3 | .4 |
| MAY | | | | | | | | |
| 17... | 1320 | .66 | 23 | 6.9 | 6.8 | 14.0 | 1.3 | .5 |
| JUN | | | | | | | | |
| 21... | 1300 | 1.8 | 23 | 6.9 | 6.9 | 15.5 | 1.3 | .4 |

01665730 - CEDAR RUN NR SYRIA, VA (LAT 38 32 22 LONG 078 21 01)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|-----|
| JAN , 1982 | | | | | | | | |
| 25... | 1330 | 2.2 | 25 | 6.8 | 6.7 | 2.0 | 1.8 | .9 |
| MAR | | | | | | | | |
| 15... | 1450 | 18 | 24 | 6.2 | 6.8 | 5.0 | 1.9 | .9 |
| MAY | | | | | | | | |
| 17... | 1200 | 1.4 | 31 | 6.8 | 6.7 | 14.0 | 2.3 | 1.1 |
| JUN | | | | | | | | |
| 21... | 1130 | 8.3 | 27 | 6.8 | 6.8 | 15.5 | 2.0 | .9 |

01665800 - ROSE RIVER NR SYRIA, VA (LAT 38 30 55 LONG 078 21 59)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|----|
| JAN , 1982 | | | | | | | | |
| 25... | 1130 | 8.1 | 24 | 7.0 | 6.8 | .0 | 1.8 | .8 |
| MAR | | | | | | | | |
| 15... | 1140 | 35 | 23 | 7.0 | 6.9 | 5.0 | 1.8 | .9 |
| MAY | | | | | | | | |
| 17... | 1030 | 7.9 | 26 | 7.2 | 7.2 | 14.5 | 2.1 | .9 |
| JUN | | | | | | | | |
| 21... | 1020 | 22 | 23 | 7.1 | 7.1 | 14.5 | 2.0 | .9 |

JAMES RIVER BASIN

02031400 - N FK MOORMANS RIVER NR BROWNS COVE, VA (LAT 38 11 42 LONG 078 43 57)

| | | | | | | | | |
|------------|------|-----|----|-----|-----|------|-----|-----|
| MAR , 1982 | | | | | | | | |
| 17... | 1500 | 9.4 | 29 | 6.7 | 6.9 | 12.0 | 2.0 | 1.1 |
| MAY | | | | | | | | |
| 19... | 0945 | 1.4 | 32 | 7.0 | 7.1 | 14.5 | 2.3 | 1.3 |
| JUN | | | | | | | | |
| 23... | 1015 | 3.2 | 30 | 7.1 | 7.1 | 14.0 | 2.3 | 1.3 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINEITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | * CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|--|---|---|---|---|---|
|------|--|---|--|---|---|---|---|---|

RAPPAHANNOCK RIVER BASIN--CONTINUED

01665440 - SOUTH RIVER NR MCMULLEN, VA (LAT 38 22 01 LONG 078 27 38)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.3 | .2 | 6.3 | 3.5 | 1.0 | 8.8 | .46 | <.010 |
| MAR | | | | | | | | |
| 18... | 1.5 | .2 | 5.8 | 4.4 | 1.0 | 8.6 | .53 | <.010 |
| MAY | | | | | | | | |
| 18... | 1.6 | .2 | 9.0 | 2.8 | 1.1 | 9.8 | .22 | .010 |
| JUN | | | | | | | | |
| 22... | 1.2 | .1 | 8.4 | 2.9 | .8 | 9.5 | .23 | .020 |

01665710 - WHITE OAK CANYON TRIB NR SYRIA, VA (LAT 38 32 23 LONG 078 20 53)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 1.0 | .2 | 4.7 | 2.8 | 1.1 | 7.2 | .23 | .010 |
| MAR | | | | | | | | |
| 15... | 1.1 | .2 | 5.2 | 2.9 | 1.1 | 7.5 | .18 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.2 | .2 | 7.5 | 2.3 | 1.2 | 8.1 | .13 | .010 |
| JUN | | | | | | | | |
| 21... | 1.2 | .2 | 6.9 | 2.1 | 1.0 | 7.8 | .09 | <.010 |

01665720 - BERRY HOLLOW TRIB NR NETHERS, VA (LAT 38 32 45 LONG 078 20 37)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 2.1 | .6 | 4.5 | 3.5 | 1.0 | 11 | .05 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.9 | .6 | 4.1 | 3.5 | 1.0 | 9.6 | .07 | <.010 |
| MAY | | | | | | | | |
| 17... | 2.0 | .6 | 5.6 | 2.7 | 1.5 | 11 | .06 | .010 |
| JUN | | | | | | | | |
| 21... | 2.0 | .6 | 5.2 | 3.0 | 1.0 | 11 | .04 | <.010 |

01665730 - CEDAR RUN NR SYRIA, VA (LAT 38 32 22 LONG 078 21 01)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 1.1 | .1 | 4.6 | 3.0 | 1.2 | 7.7 | .26 | <.010 |
| MAR | | | | | | | | |
| 15... | 1.2 | .1 | 4.9 | 3.4 | 1.1 | 7.9 | .21 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.7 | .2 | 8.1 | 2.8 | 1.3 | 8.8 | .14 | .010 |
| JUN | | | | | | | | |
| 21... | 1.2 | .2 | 7.0 | 2.8 | 1.1 | 8.3 | .10 | .010 |

01665800 - ROSE RIVER NR SYRIA, VA (LAT 38 30 55 LONG 078 21 59)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 1.2 | .2 | 5.4 | 2.9 | 1.1 | 8.1 | .26 | .010 |
| MAR | | | | | | | | |
| 15... | 1.2 | .2 | 5.4 | 3.0 | 1.0 | 7.9 | .24 | <.010 |
| MAY | | | | | | | | |
| 17... | 1.3 | .2 | 7.7 | 2.5 | 1.1 | 8.8 | .13 | .020 |
| JUN | | | | | | | | |
| 21... | 1.3 | .2 | 7.3 | 2.3 | 1.0 | 8.9 | .10 | <.010 |

JAMES RIVER BASIN--CONTINUED

02031400 - N FK MOORMANS RIVER NR BROWNS COVE, VA (LAT 38 11 42 LONG 078 43 57)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 17... | 1.6 | .4 | 6.0 | 4.1 | 1.0 | 9.7 | .35 | <.010 |
| MAY | | | | | | | | |
| 19... | 2.2 | .5 | 9.9 | 2.9 | 1.0 | 10 | .17 | .010 |
| JUN | | | | | | | | |
| 23... | 1.7 | .4 | 9.4 | 2.6 | .8 | 11 | .18 | .010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|------------------------------|--|---|--|---------------|----------------------|-----------------------------|--|--|
| JAMES RIVER BASIN--CONTINUED | | | | | | | | |
| 02031410 | - N FK MOORMANS RIVER TRIB NR HARRISTON, VA (LAT 38 12 33 LONG 078 44 52) | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 17... | 1700 | .48 | 14 | 5.5 | 6.0 | 10.0 | .4 | .3 |
| MAY | | | | | | | | |
| 19... | 1110 | .17 | 13 | 6.6 | 6.2 | 12.0 | .6 | .3 |
| JUN | | | | | | | | |
| 23... | 1145 | .24 | 15 | 6.2 | 6.1 | 12.0 | .4 | .2 |
| 02031420 | - N FK MOORMANS RIVER TRIB NR BROWNS COVE, VA (LAT 38 11 50 LONG 078 44 32) | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 17... | 1540 | 2.8 | 15 | 6.3 | 6.2 | 11.0 | .5 | .4 |
| MAY | | | | | | | | |
| 19... | 1030 | .41 | 16 | 6.3 | 6.3 | 14.0 | .5 | .5 |
| JUN | | | | | | | | |
| 23... | 1100 | .47 | 16 | 6.2 | 6.1 | 13.0 | .4 | .4 |
| 02031430 | - N FK MOORMANS RIVER AB BIG BR NR BROWNS COVE, VA (LAT 38 10 12 LONG 078 44 30) | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 17... | 1450 | 23 | 26 | 6.9 | 6.9 | 11.0 | 1.6 | 1.0 |
| MAY | | | | | | | | |
| 19... | 1230 | 4.2 | 29 | 7.0 | 7.2 | 15.0 | 2.0 | 1.2 |
| JUN | | | | | | | | |
| 23... | 0900 | 6.6 | 28 | 7.1 | 7.2 | 14.0 | 2.0 | 1.1 |
| 02031440 | - N FK MOORMANS RIVER BL BIG BR NR WHITEHALL, VA (LAT 38 09 23 LONG 078 44 56) | | | | | | | |
| MAR , 1982 | | | | | | | | |
| 17... | 1245 | 26 | 26 | 6.8 | 6.9 | 11.0 | 1.6 | 1.0 |
| MAY | | | | | | | | |
| 19... | 0830 | 6.8 | 30 | 7.0 | 7.1 | 15.0 | 2.0 | 1.2 |
| JUN | | | | | | | | |
| 23... | 0745 | 9.8 | 28 | 6.9 | 7.1 | 14.0 | 1.9 | 1.1 |
| 02031500 | - NORTH FORK MOORMANS RIVER NR WHITEHALL VA (LAT 38 08 25 LONG 078 45 05) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1230 | 7.2 | 26 | 7.1 | 6.8 | 4.5 | 1.6 | 1.0 |
| MAR | | | | | | | | |
| 17... | 1000 | 41 | 24 | 6.6 | 6.8 | 8.0 | 1.7 | 1.0 |
| MAY | | | | | | | | |
| 19... | 1410 | 6.4 | 35 | 7.0 | 7.3 | 16.0 | 2.5 | 1.5 |
| JUN | | | | | | | | |
| 23... | 1420 | 11 | 28 | 7.2 | 7.2 | 16.0 | 1.8 | 1.1 |
| 02031800 | - S FK MOORMANS RIVER NR WHITEHALL, VA (LAT 38 08 13 LONG 078 44 59) | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1110 | 2.8 | 31 | 7.2 | 7.0 | 5.5 | 2.0 | 1.2 |
| MAR | | | | | | | | |
| 17... | 0945 | 18 | 30 | 6.9 | 7.0 | 10.0 | 2.0 | 1.2 |
| MAY | | | | | | | | |
| 19... | 1320 | 2.7 | 31 | 7.0 | 7.2 | 16.0 | 1.9 | 1.2 |
| JUN | | | | | | | | |
| 23... | 1345 | 5.8 | 34 | 7.3 | 7.3 | 15.0 | 2.4 | 1.3 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

JAMES RIVER BASIN--CONTINUED

02031410 - N FK MOORMANS RIVER TRIB NR HARRISTON, VA (LAT 38 12 33 LONG 078 44 52)

| | | | | | | | | |
|------------|----|-----|-----|-----|----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 17... | .5 | 1.3 | .70 | 2.6 | .6 | 4.0 | .05 | <.010 |
| MAY | | | | | | | | |
| 19... | .4 | 1.2 | 1.3 | 2.1 | .7 | 3.8 | .04 | .010 |
| JUN | | | | | | | | |
| 23... | .4 | 1.2 | 1.3 | 1.6 | .6 | 3.7 | .02 | <.010 |

02031420 - N FK MOORMANS RIVER TRIB NR BROWNS COVE, VA (LAT 38 11 50 LONG 078 44 32)

| | | | | | | | | |
|------------|----|-----|-----|-----|----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 17... | .5 | 1.1 | .90 | 3.1 | .7 | 4.4 | .02 | <.010 |
| MAY | | | | | | | | |
| 19... | .6 | 1.2 | 1.3 | 2.7 | .8 | 4.3 | .03 | .010 |
| JUN | | | | | | | | |
| 23... | .5 | 1.3 | 1.1 | 2.3 | .7 | 4.0 | .02 | <.010 |

02031430 - N FK MOORMANS RIVER AB BIG BR NR BROWNS COVE, VA (LAT 38 10 12 LONG 078 44 30)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 17... | 1.4 | .5 | 5.1 | 4.1 | .9 | 8.7 | .19 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.9 | .6 | 8.8 | 2.9 | 1.0 | 9.4 | .08 | .020 |
| JUN | | | | | | | | |
| 23... | 1.6 | .5 | 8.8 | 3.3 | .9 | 10 | .10 | <.010 |

02031440 - N FK MOORMANS RIVER BL BIG BR NR WHITEHALL, VA (LAT 38 09 23 LONG 078 44 56)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| MAR , 1982 | | | | | | | | |
| 17... | 1.3 | .6 | 4.6 | 4.2 | .9 | 8.3 | .15 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.5 | .6 | 8.5 | 2.9 | 1.0 | 8.8 | .09 | .010 |
| JUN | | | | | | | | |
| 23... | 1.6 | .6 | 8.3 | 2.7 | .9 | 10 | .08 | <.010 |

02031500 - NORTH FORK MOORMANS RIVER NR WHITEHALL VA (LAT 38 08 25 LONG 078 45 05)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.1 | .5 | 4.8 | 4.4 | 1.0 | 7.5 | .08 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.3 | .6 | 4.5 | 4.6 | 1.0 | 8.4 | .14 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.7 | .4 | 11 | 2.7 | 1.2 | 12 | .07 | .020 |
| JUN | | | | | | | | |
| 23... | 1.5 | .6 | 7.9 | 3.2 | .9 | 9.9 | .04 | .010 |

02031800 - S FK MOORMANS RIVER NR WHITEHALL, VA (LAT 38 08 13 LONG 078 44 59)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.4 | .4 | 7.3 | 4.0 | 1.2 | 9.4 | .05 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.4 | .4 | 7.0 | 4.4 | 1.2 | 10 | .09 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.5 | .6 | 8.0 | 3.2 | 1.0 | 8.7 | .07 | .010 |
| JUN | | | | | | | | |
| 23... | 1.8 | .4 | 11 | 2.9 | 1.1 | 13 | .05 | <.010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS) | PH (UNITS) | PH LAB (UNITS) | TEMPER- ATURE (DEG C) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) |
|--|------|---|--|---------------|----------------------|-----------------------------|--|--|
| JAMES RIVER BASIN--CONTINUED | | | | | | | | |
| 02032100 - MOORMANS RIVER AT RT 614 NR WHITEHALL, VA (LAT 38 07 45 LONG 078 43 27) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 28... | 1250 | 5.8 | 31 | 7.1 | 6.9 | 2.5 | 2.1 | 1.2 |
| MAR | | | | | | | | |
| 17... | 0810 | 58 | 29 | 6.9 | 6.9 | 8.5 | 2.0 | 1.1 |
| MAY | | | | | | | | |
| 19... | 1500 | 2.1 | 39 | 6.8 | 6.9 | 18.0 | 2.6 | 1.4 |
| JUN | | | | | | | | |
| 23... | 1500 | 13 | 33 | 7.1 | 7.1 | 19.5 | 2.4 | 1.3 |
| 02032110 - DOYLES RIVER NR BROWNS COVE, VA (LAT 38 12 28 LONG 078 40 30) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1615 | 4.2 | 34 | 7.2 | 7.0 | 2.0 | 2.3 | 1.3 |
| MAR | | | | | | | | |
| 19... | 0820 | 23 | 35 | 7.0 | 7.0 | 8.0 | 2.4 | 1.4 |
| MAY | | | | | | | | |
| 18... | 1405 | 2.9 | 38 | 7.0 | 7.2 | 17.0 | 2.6 | 1.4 |
| JUN | | | | | | | | |
| 25... | 1230 | 5.4 | 36 | 7.4 | 7.3 | 16.0 | 2.8 | 1.4 |
| 02032310 - MUDDY RUN TRIB NEAR BOONESVILLE, VA (LAT 38 14 02 LONG 078 37 08) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1530 | 2.2 | 35 | 7.1 | 6.9 | 3.0 | 2.4 | 1.3 |
| MAR | | | | | | | | |
| 19... | 0920 | 8.5 | 34 | 6.3 | 6.9 | 8.5 | 2.6 | 1.3 |
| MAY | | | | | | | | |
| 18... | 1320 | 1.4 | 38 | 7.0 | 7.3 | 18.0 | 2.9 | 1.4 |
| JUN | | | | | | | | |
| 25... | 1120 | 2.2 | 39 | 7.6 | 7.2 | 17.0 | 3.1 | 1.5 |
| 02032545 - IVY CREEK NR BOONESVILLE, VA (LAT 38 16 07 LONG 078 36 45) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 26... | 1450 | 3.9 | 35 | 7.0 | 6.8 | 2.5 | 2.4 | 1.3 |
| MAR | | | | | | | | |
| 19... | 1015 | 18 | 32 | 6.3 | 6.9 | 9.5 | 2.4 | 1.3 |
| MAY | | | | | | | | |
| 18... | 1500 | 1.8 | 37 | 7.1 | 7.2 | 18.0 | 2.7 | 1.4 |
| JUN | | | | | | | | |
| 25... | 1035 | 3.4 | 37 | 7.0 | 7.0 | 16.5 | 2.7 | 1.4 |
| 02032589 - SWIFT RUN AT LYDIA, VA (LAT 38 20 31 LONG 078 30 40) | | | | | | | | |
| JAN , 1982 | | | | | | | | |
| 25... | 1700 | 4.1 | 57 | 7.0 | 7.0 | 2.5 | 4.1 | 1.5 |
| MAR | | | | | | | | |
| 18... | 1530 | 15 | 47 | 6.6 | 7.0 | 9.0 | 3.3 | 1.2 |
| MAY | | | | | | | | |
| 21... | 1100 | 4.2 | 55 | 7.0 | 7.2 | 13.5 | 4.0 | 1.4 |
| JUN | | | | | | | | |
| 25... | 0910 | 6.1 | 49 | 7.3 | 7.2 | 13.5 | 3.7 | 1.3 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) |
|------|--|---|---|---|---|---|---|---|
|------|--|---|---|---|---|---|---|---|

JAMES RIVER BASIN--CONTINUED

02032100 - MOORMANS RIVER AT RT 614 NR WHITEHALL, VA (LAT 38 07 45 LONG 078 43 27)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|------|-------|
| JAN , 1982 | | | | | | | | |
| 28... | 1.4 | .4 | 6.9 | 4.5 | 1.2 | 8.2 | .06 | <.010 |
| MAR | | | | | | | | |
| 17... | 1.4 | .5 | 6.0 | 4.6 | 1.1 | 8.4 | .08 | <.010 |
| MAY | | | | | | | | |
| 19... | 1.8 | .6 | 11 | 3.9 | 1.2 | 10 | .02 | .010 |
| JUN | | | | | | | | |
| 23... | 1.6 | .5 | 9.7 | 3.9 | 1.1 | 10 | <.01 | <.010 |

02032110 - DOYLES RIVER NR BROWNS COVE, VA (LAT 38 12 28 LONG 078 40 30)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.8 | .3 | 7.5 | 4.7 | 1.2 | 9.7 | .37 | <.010 |
| MAR | | | | | | | | |
| 19... | 1.8 | .3 | 7.5 | 4.9 | 1.1 | 12 | .47 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.2 | .3 | 11 | 3.7 | 1.3 | 13 | .14 | .020 |
| JUN | | | | | | | | |
| 25... | 2.1 | .4 | 12 | 3.7 | 1.0 | 13 | .15 | <.010 |

02032310 - MUDDY RUN TRIB NEAR BOONESVILLE, VA (LAT 38 14 02 LONG 078 37 08)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 2.0 | .2 | 6.3 | 4.7 | 1.6 | 9.7 | .55 | <.010 |
| MAR | | | | | | | | |
| 19... | 1.8 | .2 | 6.3 | 5.3 | 1.1 | 10 | .59 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.0 | .3 | 11 | 4.4 | 1.2 | 12 | .09 | .020 |
| JUN | | | | | | | | |
| 25... | 2.1 | .3 | 11 | 4.2 | 1.2 | 12 | .21 | <.010 |

02032545 - IVY CREEK NR BOONESVILLE, VA (LAT 38 16 07 LONG 078 36 45)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 26... | 1.6 | .3 | 5.8 | 5.4 | 1.2 | 9.0 | .45 | <.010 |
| MAR | | | | | | | | |
| 19... | 1.6 | .4 | 6.0 | 5.7 | 1.1 | 9.7 | .41 | <.010 |
| MAY | | | | | | | | |
| 18... | 2.0 | .4 | 9.8 | 4.6 | 1.1 | 11 | .19 | .010 |
| JUN | | | | | | | | |
| 25... | 2.0 | .4 | 11 | 4.7 | 1.1 | 11 | .12 | <.010 |

02032589 - SWIFT RUN AT LYDIA, VA (LAT 38 20 31 LONG 078 30 40)

| | | | | | | | | |
|------------|-----|----|-----|-----|-----|-----|-----|-------|
| JAN , 1982 | | | | | | | | |
| 25... | 4.0 | .3 | 8.1 | 3.3 | 8.0 | 10 | .32 | <.010 |
| MAR | | | | | | | | |
| 18... | 3.5 | .3 | 7.1 | 4.0 | 5.8 | 9.7 | .34 | <.010 |
| MAY | | | | | | | | |
| 21... | 3.9 | .3 | 10 | 3.1 | 5.4 | 11 | .01 | .020 |
| JUN | | | | | | | | |
| 25... | 3.3 | .3 | 12 | 2.8 | 4.7 | 11 | .13 | <.010 |

< Actual value is known to be less than the value shown.

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES
WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | |
|--|-------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|-----|
| BIG SANDY RIVER BASIN | | | | | | | | | | | | |
| 370441082014801 - COON FLAT BRANCH NEAR COUNCIL, VA. (LAT 37 04 41 LONG 082 01 48) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1500 | .03 | 370 | 7.2 | 19.5 | 4.8 | 150 | 80 | 35 | 14 | 8.1 |
| 370438082034701 - RUSSELL FORK ABOVE BALL CREEK AT COUNCIL, VA. (LAT 37 04 38 LONG 082 03 47) | | | | | | | | | | | | |
| AUG , 1982 | 25... | 1430 | .52 | 132 | 6.9 | 20.5 | 8.5 | 48 | 8.0 | 12 | 4.3 | 7.2 |
| 370436082013901 - BARTON FORK ABOVE JACKSON FK NR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 39) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1530 | .04 | 434 | 7.1 | 20.5 | 5.9 | 190 | 120 | 45 | 19 | 17 |
| 370436082014101 - JACKSON FORK ABOVE BARTON FORK NEAR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 41) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1600 | .06 | 286 | 7.6 | 22.0 | 7.8 | 110 | 61 | 26 | 12 | 6.7 |
| 370615082030001 - GRISSOM CREEK TRIB NR COUNCIL, VA. (LAT 37 06 15 LONG 082 03 00) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1115 | .11 | 98 | 6.7 | 24.0 | 5.3 | 43 | 4.0 | 9.9 | 4.4 | 3.1 |
| 370434082021001 - BARTON FK TRIB NR COUNCIL, VA (LAT 37 04 34 LONG 082 02 10) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1430 | .01 | 423 | 7.9 | 17.5 | 7.9 | 150 | 35 | 36 | 14 | 27 |
| 03208039 - BALL CREEK NEAR COUNCIL, VA. (LAT 37 04 40 LONG 082 03 45) | | | | | | | | | | | | |
| AUG , 1982 | 26... | 1100 | 2.3 | 278 | 7.4 | 20.0 | 8.3 | 120 | 53 | 26 | 13 | 7.4 |
| 370512082020501 - BALL CK AB NANCE WHITE CK NR COUNCIL, VA (LAT 37 05 12 LONG 082 02 05) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1245 | .28 | 580 | 7.8 | 20.0 | 8.4 | 290 | 220 | 61 | 33 | 8.5 |
| 370513082020701 - NANCE WHITE BRANCH NR COUNCIL, VA (LAT 37 05 13 LONG 082 02 07) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1215 | .11 | 243 | 7.5 | 21.0 | 6.8 | 100 | 4.0 | 24 | 10 | 9.3 |
| 370612082030201 - GRISSOM CREEK AB VENIA NR COUNCIL, VA (LAT 37 06 12 LONG 082 03 02) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1145 | .10 | 225 | 7.5 | 20.0 | 10.7 | 110 | .00 | 27 | 10 | 8.2 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|------|---|---|--|--|---|--|--|--|---|--|---|
|------|---|---|--|--|---|--|--|--|---|--|---|

BIG SANDY RIVER BASIN--CONTINUED

370441082014801 - COON FLAT BRANCH NEAR COUNCIL, VA. (LAT 37 04 41 LONG 082 01 48)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|-----|-----|---|----|----|
| AUG , 1982 24... | 2.6 | 65 | 97 | 1.2 | 8.5 | 222 | 100 | 560 | 3 | 40 | 25 |
|---------------------|-----|----|----|-----|-----|-----|-----|-----|---|----|----|

370438082034701 - RUSSELL FORK ABOVE BALL CREEK AT COUNCIL, VA. (LAT 37 04 38 LONG 082 03 47)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|----|------|------|----|-----|----|
| AUG , 1982 25... | 2.0 | 40 | 14 | 8.9 | 5.9 | 88 | <100 | 1700 | 70 | 310 | 17 |
|---------------------|-----|----|----|-----|-----|----|------|------|----|-----|----|

370436082013901 - BARTON FORK ABOVE JACKSON FK NR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 39)

| | | | | | | | | | | | |
|---------------------|-----|----|-----|-----|-----|-----|------|------|-----|-----|-----|
| AUG , 1982 24... | 3.0 | 74 | 150 | 1.3 | 9.1 | 270 | <100 | 1200 | 440 | 590 | 520 |
|---------------------|-----|----|-----|-----|-----|-----|------|------|-----|-----|-----|

370436082014101 - JACKSON FORK ABOVE BARTON FORK NEAR COUNCIL, VA. (LAT 37 04 36 LONG 082 01 41)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|-----|-----|---|-----|----|
| AUG , 1982 24... | 2.5 | 53 | 71 | 5.1 | 7.7 | 155 | 100 | 390 | 3 | 100 | 52 |
|---------------------|-----|----|----|-----|-----|-----|-----|-----|---|-----|----|

370615082030001 - GRISSOM CREEK TRIB NR COUNCIL, VA. (LAT 37 06 15 LONG 082 03 00)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|----|------|-----|-----|----|----|
| AUG , 1982 24... | 2.5 | 39 | 10 | 2.5 | 7.9 | 52 | <100 | 270 | 260 | 80 | 66 |
|---------------------|-----|----|----|-----|-----|----|------|-----|-----|----|----|

370434082021001 - BARTON FK TRIB NR COUNCIL, VA (LAT 37 04 34 LONG 082 02 10)

| | | | | | | | | | | | |
|---------------------|-----|-----|----|----|-----|-----|------|-----|-----|----|---|
| AUG , 1982 24... | 2.8 | 113 | 32 | 37 | 6.8 | 252 | <100 | 350 | <10 | 10 | 1 |
|---------------------|-----|-----|----|----|-----|-----|------|-----|-----|----|---|

03208039 - BALL CREEK NEAR COUNCIL, VA. (LAT 37 04 40 LONG 082 03 45)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|------|-----|----|----|----|
| AUG , 1982 26... | 2.6 | 65 | 61 | 5.6 | 7.4 | 169 | <100 | 460 | 53 | 50 | 31 |
|---------------------|-----|----|----|-----|-----|-----|------|-----|----|----|----|

370512082020501 - BALL CK AB NANCE WHITE CK NR COUNCIL, VA (LAT 37 05 12 LONG 082 02 05)

| | | | | | | | | | | | |
|---------------------|-----|----|-----|-----|-----|-----|-----|-----|----|----|----|
| AUG , 1982 24... | 3.1 | 65 | 200 | 4.1 | 7.1 | 430 | 100 | 530 | 23 | 30 | 15 |
|---------------------|-----|----|-----|-----|-----|-----|-----|-----|----|----|----|

370513082020701 - NANCE WHITE BRANCH NR COUNCIL, VA (LAT 37 05 13 LONG 082 02 07)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|------|------|-----|-----|-----|
| AUG , 1982 24... | 2.5 | 97 | 15 | 9.0 | 7.5 | 138 | <100 | 1800 | 190 | 150 | 110 |
|---------------------|-----|----|----|-----|-----|-----|------|------|-----|-----|-----|

370612082030201 - GRISSON CREEK AB VENIA NR COUNCIL, VA (LAT 37 06 12 LONG 082 03 02)

| | | | | | | | | | | | |
|---------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|----|
| AUG , 1982 24... | 2.5 | 110 | 8.0 | 9.2 | 8.3 | 167 | <100 | 920 | 150 | 110 | 87 |
|---------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|----|

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES
WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|--|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|
| BIG SANDY RIVER BASIN--CONTINUED | | | | | | | | | | | |
| 370456082050301 - BIG BRANCH NEAR COUNCIL, VA. (LAT 37 04 56 LONG 082 05 03) | | | | | | | | | | | |
| AUG , 1982 25... | 1300 | .98 | 137 | 6.5 | 21.5 | 8.2 | 53 | 25 | 11 | 6.3 | 3.6 |
| 370758082042501 - HURRICANE CR ABOVE LEFT FORK NEAR DAVENPORT, VA. (LAT 37 07 58 LONG 082 04 25) | | | | | | | | | | | |
| AUG , 1982 25... | 1115 | 2.0 | 167 | 6.4 | 19.0 | 7.2 | 68 | 34 | 15 | 7.5 | 4.1 |
| 370801082043101 - LEFT FORK ABOVE HURRICANE CK NR DAVENPORT (LAT 37 08 01 LONG 082 04 31) | | | | | | | | | | | |
| AUG , 1982 25... | 1145 | 4.5 | 133 | 6.5 | 19.5 | 8.2 | 51 | 13 | 12 | 5.1 | 3.7 |
| 370729082044901 - PARETT FLETCHER BR NR DAVENPORT, VA (LAT 37 07 29 LONG 082 04 49) | | | | | | | | | | | |
| AUG , 1982 25... | 1045 | 1.3 | 349 | 6.4 | 19.5 | 8.0 | 150 | 120 | 33 | 17 | 6.3 |
| 370846082062901 - L FK HURRICANE CK AB NEW CAMP BR NR DAVENPORT VA (LAT 37 08 46 LONG 082 06 29) | | | | | | | | | | | |
| AUG , 1982 26... | 0915 | .50 | 465 | 7.1 | 17.5 | 9.0 | 220 | 150 | 47 | 24 | 5.7 |
| 370754082070001 - BOYD BR NR DAVENPORT, VA (LAT 37 07 54 LONG 082 07 00) | | | | | | | | | | | |
| AUG , 1982 26... | 1000 | .09 | 165 | 6.9 | 18.5 | 8.5 | 71 | .00 | 16 | 7.6 | 4.0 |
| 370716082072501 - IVY LICK BR NR DAVENPORT, VA (LAT 37 07 16 LONG 082 07 25) | | | | | | | | | | | |
| AUG , 1982 26... | 1030 | .12 | 88 | 6.5 | 18.5 | 8.4 | 34 | 1.0 | 7.7 | 3.6 | 3.8 |
| 03208050 - HURRICANE CREEK AT DAVENPORT, VA. (LAT 37 06 05 LONG 082 08 12) | | | | | | | | | | | |
| AUG , 1982 25... | 0915 | 13 | 175 | 6.7 | 20.0 | 7.8 | 72 | 18 | 17 | 7.1 | 5.6 |
| 370255082050301 - LITTLE INDIAN CK NR COUNCIL, VA (LAT 37 02 55 LONG 082 05 03) | | | | | | | | | | | |
| AUG , 1982 24... | 1200 | .80 | 172 | 7.9 | 19.0 | 7.5 | 70 | 1.0 | 18 | 6.2 | 3.9 |
| 370413082065401 - PUNCHEON CAMP BRANCH NEAR COUNCIL, VA. (LAT 37 04 13 LONG 082 06 54) | | | | | | | | | | | |
| AUG , 1982 24... | 1245 | .02 | 600 | 8.0 | 21.0 | 6.4 | 190 | 64 | 42 | 20 | 63 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SiO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|--|---|---|---|---|---|--|---|---|--|---|--|
| BIG SANDY RIVER BASIN--CONTINUED | | | | | | | | | | | |
| 370456082050301 - BIG BRANCH NEAR COUNCIL, VA. (LAT 37 04 56 LONG 082 05 03) | | | | | | | | | | | |
| AUG , 1982 25... | 3.9 | 28 | 35 | 2.9 | 7.5 | 99 | 100 | 3800 | 110 | 200 | 32 |
| 370758082042501 - HURRICANE CR ABOVE LEFT FORK NEAR DAVENPORT, VA. (LAT 37 07 58 LONG 082 04 25) | | | | | | | | | | | |
| AUG , 1982 25... | 1.9 | 34 | 40 | 3.1 | 7.9 | 100 | <100 | 2700 | 100 | 120 | 64 |
| 370801082043101 - LEFT FORK ABOVE HURRICANE CK NR DAVENPORT (LAT 37 08 01 LONG 082 04 31) | | | | | | | | | | | |
| AUG , 1982 25... | 2.5 | 38 | 19 | 3.8 | 7.0 | 96 | <100 | 4000 | 160 | 220 | 130 |
| 370729082044901 - PARETT FLETCHER BR NR DAVENPORT, VA (LAT 37 07 29 LONG 082 04 49) | | | | | | | | | | | |
| AUG , 1982 25... | 2.8 | 29 | 130 | 2.1 | 9.3 | 238 | 100 | 13000 | 44 | 360 | 34 |
| 370846082062901 - L FK HURRICANE CK AB NEW CAMP BR NR DAVENPORT VA (LAT 37 08 46 LONG 082 06 29) | | | | | | | | | | | |
| AUG , 1982 26... | 3.2 | 64 | 160 | 2.2 | 8.1 | 339 | <100 | 3300 | 30 | 200 | 26 |
| 370754082070001 - BOYD BR NR DAVENPORT, VA (LAT 37 07 54 LONG 082 07 00) | | | | | | | | | | | |
| AUG , 1982 26... | 2.7 | 72 | 10 | 3.6 | 8.1 | 103 | <100 | 1300 | 100 | 70 | 25 |
| 370716082072501 - IVY LICK BR NR DAVENPORT, VA (LAT 37 07 16 LONG 082 07 25) | | | | | | | | | | | |
| AUG , 1982 26... | 2.2 | 33 | 8.0 | 2.7 | 8.7 | 59 | 200 | 460 | 46 | 50 | 33 |
| 03208050 - HURRICANE CREEK AT DAVENPORT, VA. (LAT 37 06 05 LONG 082 08 12) | | | | | | | | | | | |
| AUG , 1982 25... | 2.7 | 54 | 29 | 5.1 | 4.7 | 111 | 200 | 22000 | 67 | 530 | 10 |
| 370255082050301 - LITTLE INDIAN CK NR COUNCIL, VA (LAT 37 02 55 LONG 082 05 03) | | | | | | | | | | | |
| AUG , 1982 24... | 2.2 | 69 | 6.0 | 5.8 | 8.7 | 94 | <100 | 1000 | 64 | 60 | 12 |
| 370413082065401 - PUNCHEON CAMP BRANCH NEAR COUNCIL, VA. (LAT 37 04 13 LONG 082 06 54) | | | | | | | | | | | |
| AUG , 1982 24... | 2.2 | 123 | 160 | 22 | 9.8 | 416 | <100 | 350 | 10 | 140 | 96 |

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ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | |
|---|-------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|-----|
| BIG SANDY RIVER BASIN--CONTINUED | | | | | | | | | | | | |
| 370455082083201 - INDIAN CK TRIB NO 2 NR DUTY, VA (LAT 37 04 55 LONG 082 08 32) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1355 | .10 | 1340 | 7.4 | 20.0 | 7.7 | 740 | 720 | 140 | 95 | 15 |
| 370409082093701 - CANE CR AB TILLER FK NR DUTY, VA (LAT 37 04 09 LONG 082 09 37) | | | | | | | | | | | | |
| AUG , 1982 | 25... | 0955 | 1.3 | 245 | 7.8 | 20.0 | 8.2 | 100 | .00 | 25 | 9.4 | 8.3 |
| 370400082092301 - TILLER FORK AB LEFT FK NR DUTY, VA (LAT 37 04 00 LONG 082 09 23) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1440 | .29 | 1230 | 8.4 | 22.0 | 7.6 | 250 | .00 | 53 | 29 | 170 |
| 370401082092001 - LEFT FORK ABV TILLER FORK NEAR DUTY, VA. (LAT 37 04 01 LONG 082 09 20) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1515 | .14 | 420 | 7.9 | 23.0 | 7.0 | 180 | 140 | 34 | 22 | 13 |
| 370418082094301 - CANE CR TRIB NO. 3 AT TILLER CEM NR DUTY, VA. (LAT 37 04 18 LONG 082 09 43) | | | | | | | | | | | | |
| AUG , 1982 | 24... | 1600 | .20 | 310 | 7.9 | 23.0 | 7.2 | 130 | 59 | 28 | 15 | 5.0 |
| 03208070 - INDIAN CREEK NEAR DAVENPORT, VA. (LAT 37 06 35 LONG 082 09 30) | | | | | | | | | | | | |
| AUG , 1982 | 26... | 1145 | 8.2 | 500 | 8.3 | 19.0 | 8.4 | 120 | 1.0 | 28 | 13 | 50 |
| 370646082100301 - BIG BRANCH NR MURPHY, VA (LAT 37 06 46 LONG 082 10 03) | | | | | | | | | | | | |
| AUG , 1982 | 26... | 1115 | .57 | 53 | 7.2 | 17.0 | 8.6 | 18 | 3.0 | 4.1 | 1.9 | 2.2 |
| 370654082102001 - ABNER BR AT MOUTH NR MURPHY, VA (LAT 37 06 54 LONG 082 10 20) | | | | | | | | | | | | |
| AUG , 1982 | 26... | 1050 | .59 | 128 | 7.4 | 18.0 | 7.8 | 46 | 2.0 | 11 | 4.6 | 5.0 |
| 370943082102101 - FOX CK AB LEFT FORT NR MURPHY, VA (LAT 37 09 43 LONG 082 10 21) | | | | | | | | | | | | |
| AUG , 1982 | 25... | 1140 | 8.3 | 270 | 7.6 | 20.5 | 8.4 | 110 | 69 | 26 | 12 | 3.5 |
| 370946082102301 - LF FK NR MURPHY, VA (LAT 37 09 46 LONG 082 10 23) | | | | | | | | | | | | |
| AUG , 1982 | 25... | 1215 | 3.7 | 101 | 7.0 | 19.0 | 8.4 | 38 | 21 | 7.8 | 4.4 | 2.8 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS S04) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SI02) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|---|---|---|---|---|---|--|---|---|--|---|--|
| BIG SANDY RIVER BASIN--CONTINUED | | | | | | | | | | | |
| 370455082083201 - INDIAN CK TRIB NO 2 NR DUTY, VA (LAT 37 04 55 LONG 082 08 32) | | | | | | | | | | | |
| AUG , 1982 24... | 5.2 | 18 | 770 | 1.3 | 16 | 1200 | <100 | 1400 | 34 | 1900 | 2000 |
| 370409082093701 - CANE CR AB TILLER FK NR DUTY, VA (LAT 37 04 09 LONG 082 09 37) | | | | | | | | | | | |
| AUG , 1982 25... | 2.1 | 102 | 33 | 1.9 | 5.9 | 139 | 200 | 73000 | 200 | 1600 | 22 |
| 370400082092301 - TILLER FORK AB LEFT FK NR DUTY, VA (LAT 37 04 00 LONG 082 09 23) | | | | | | | | | | | |
| AUG , 1982 24... | 3.4 | 280 | 350 | 15 | 7.0 | 842 | 200 | 390 | 11 | 110 | 110 |
| 370401082092001 - LEFT FORK ABV TILLER FORK NEAR DUTY, VA. (LAT 37 04 01 LONG 082 09 20) | | | | | | | | | | | |
| AUG , 1982 24... | 2.5 | 40 | 160 | 1.0 | 9.6 | 316 | 100 | 380 | 83 | 70 | 58 |
| 370418082094301 - CANE CR TRIB NO. 3 AT TILLER CEM NR DUTY, VA. (LAT 37 04 18 LONG 082 09 43) | | | | | | | | | | | |
| AUG , 1982 24... | 3.3 | 73 | 73 | 2.8 | 8.1 | 220 | 100 | 360 | 98 | 590 | 550 |
| 03208070 - INDIAN CREEK NEAR DAVENPORT, VA. (LAT 37 06 35 LONG 082 09 30) | | | | | | | | | | | |
| AUG , 1982 26... | 2.7 | 122 | 120 | 4.4 | 8.2 | 306 | 200 | 1400 | 56 | 80 | 32 |
| 370646082100301 - BIG BRANCH NR MURPHY, VA (LAT 37 06 46 LONG 082 10 03) | | | | | | | | | | | |
| AUG , 1982 26... | 1.3 | 15 | 8.0 | .8 | 9.1 | 34 | 100 | 1900 | 99 | 30 | 10 |
| 370654082102001 - ABNER BR AT MOUTH NR MURPHY, VA (LAT 37 06 54 LONG 082 10 20) | | | | | | | | | | | |
| AUG , 1982 26... | 2.1 | 44 | 12 | 4.3 | 8.7 | 92 | 100 | 1900 | 770 | 140 | 120 |
| 370943082102101 - FOX CK AB LEFT FORT NR MURPHY, VA (LAT 37 09 43 LONG 082 10 21) | | | | | | | | | | | |
| AUG , 1982 25... | 2.6 | 45 | 83 | 1.1 | 6.8 | 183 | 100 | 16000 | 220 | 450 | 53 |
| 370946082102301 - LF FK NR MURPHY, VA (LAT 37 09 46 LONG 082 10 23) | | | | | | | | | | | |
| AUG , 1982 25... | 1.8 | 17 | 26 | .7 | 8.5 | 69 | 100 | 3100 | 250 | 100 | 29 |

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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | TIME | STREAM- FLOW, INSTAN- TANEOUS (CFS) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | OXYGEN, DIS- SOLVED (MG/L) | HARD- NESS (MG/L AS CACO3) | HARD- NESS NONCAR- BONATE (MG/L AS CACO3) | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) |
|---|------|---|---|---------------|-----------------------------|-------------------------------------|--|---|--|--|--|
| BIG SANDY RIVER BASIN--CONTINUED | | | | | | | | | | | |
| 371005082115801 - PAWPAW CK AB HACKNEY HOLLOW NR PRATER, VA (LAT 37 10 05 LONG 082 11 58) | | | | | | | | | | | |
| AUG , 1982 25... | 1310 | 9.3 | 57 | 7.0 | 20.0 | 9.4 | 21 | 4.0 | 5.1 | 2.0 | 2.6 |
| 03208088 - PAWPAW CREEK TRIBUTARY NR COLLEY, VA. (LAT 37 10 06 LONG 082 12 02) | | | | | | | | | | | |
| AUG , 1982 25... | 1340 | 5.5 | 53 | 7.0 | 21.5 | 9.6 | 18 | 4.0 | 4.2 | 1.9 | 2.6 |
| 03208089 - LITTLE PAWPAW CREEK NEAR COLLEY, VA. (LAT 37 10 00 LONG 082 12 17) | | | | | | | | | | | |
| AUG , 1982 25... | 1410 | .10 | 228 | 7.8 | 23.0 | 7.4 | 96 | 46 | 22 | 10 | 5.4 |
| 371016082141201 - LAUREL BR (NORTH) AT VIERS NR COLLEY, VA (LAT 37 10 16 LONG 082 14 12) | | | | | | | | | | | |
| AUG , 1982 25... | 1450 | .91 | 205 | 8.0 | 23.0 | 7.6 | 85 | 28 | 22 | 7.3 | 5.5 |

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD, SPECIAL STUDY, AND MISCELLANEOUS SITES

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WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CAC03) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | SILICA, DIS- SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) | IRON, DIS- SOLVED (UG/L AS FE) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) |
|------|---|--|---|---|--|--|---|---|--|---|--|
|------|---|--|---|---|--|--|---|---|--|---|--|

BIG SANDY RIVER BASIN--CONTINUED

371005082115801 - PAWPAW CK AB HACKNEY HOLLOW NR PRATER, VA (LAT 37 10 05 LONG 082 11 58)

| | | | | | | | | | | | |
|---------------------|-----|----|-----|----|-----|----|-----|------|-----|-----|----|
| AUG , 1982 25... | 1.5 | 17 | 8.0 | .7 | 7.3 | -- | 200 | 6300 | 150 | 140 | 22 |
|---------------------|-----|----|-----|----|-----|----|-----|------|-----|-----|----|

03208088 - PAWPAW CREEK TRIBUTARY NR COLLEY, VA. (LAT 37 10 06 LONG 082 12 02)

| | | | | | | | | | | | |
|---------------------|-----|----|----|----|-----|----|-----|------|-----|----|----|
| AUG , 1982 25... | 1.4 | 14 | 10 | .9 | 8.4 | 58 | 200 | 2100 | 120 | 70 | 24 |
|---------------------|-----|----|----|----|-----|----|-----|------|-----|----|----|

03208089 - LITTLE PAWPAW CREEK NEAR COLLEY, VA. (LAT 37 10 00 LONG 082 12 17)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|------|------|----|-----|----|
| AUG , 1982 25... | 2.6 | 50 | 51 | 3.8 | 7.5 | 159 | <100 | 4500 | 96 | 130 | 31 |
|---------------------|-----|----|----|-----|-----|-----|------|------|----|-----|----|

371016082141201 - LAUREL BR (NORTH) AT VIERS NR COLLEY, VA (LAT 37 10 16 LONG 082 14 12)

| | | | | | | | | | | | |
|---------------------|-----|----|----|-----|-----|-----|-----|------|----|----|----|
| AUG , 1982 25... | 2.7 | 57 | 33 | 7.0 | 7.3 | 156 | 200 | 2700 | 62 | 60 | 16 |
|---------------------|-----|----|----|-----|-----|-----|-----|------|----|----|----|

< Actual value is known to be less than the value shown.

GROUND-WATER LEVELS

ACCOMACK COUNTY

375622075280101 (revised). Local number, 67M2.

LOCATION.--Lat 37°56'23", long 75°28'02", Hydrologic Unit 02060010, Wallops Flight Center well B31. Owner: National Aeronautics and Space Administration (formerly U.S. Naval Air Station, Wallops Island).

AQUIFER.--Columbia group sand of Pleistocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 60 ft (18.3 m), screen depth unknown.

DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 1.38 ft (0.42 m) above land-surface datum. Measuring point reported as 6.09 ft (1.86 m) above land-surface datum from 1963 to 1975.

REMARKS.--Records furnished by the National Aeronautics and Space Administration.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.82 ft (5.43 m) below land-surface datum, May 9, 1963; lowest measured, 25.22 ft (7.69 m) below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| OCT 1 | 24.82 | JAN 4 | 24.92 | APR 1 | 24.22 | JUL 1 | 24.12 |
| NOV 2 | 25.02 | FEB 1 | 25.02 | MAY 3 | 23.82 | AUG 3 | 24.02 |
| DEC 1 | 25.22 | MAR 1 | 24.92 | JUN 1 | 23.92 | SEP 1 | 24.32 |

ALBEMARLE COUNTY

380333078264801. Local number, 43N1.

LOCATION.--Lat 38°03'33", long 78°26'48", Hydrologic Unit 02080204, at Key West Subdivision, Charlottesville.

Owner: Key West Development Corporation.

AQUIFER.--Lynchburg formation of Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 409 ft (124.7 m), cased to 52 ft (15.8 m), open hole 52 to 409 ft (15.8 to 124.7 m).

DATUM.--Altitude of land-surface datum is 345 ft (105 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft (0.1 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 28. Manual measurements published from June 1974 to April 1981.

PERIOD OF RECORD.--February 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.58 ft (3.53 m) below land-surface datum, May 31, 1971; lowest measured, 22.10 ft (6.74 m) below land-surface datum, Nov. 30, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1980 TO APRIL 1981

MANUAL MEASUREMENTS

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 6 | 19.99 | JAN 9 | 20.95 | APR 10 | 20.68 | APR 30 | 20.93 |
| NOV 20 | 19.92 | FEB 23 | 20.43 | APR 21 | 21.11 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MAY TO SEPTEMBER 1981

LOWEST RECORDED VALUES

| DAY | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|
| 5 | 20.88 | 20.60 | 20.52 | 20.50 | 21.31 |
| 10 | 20.80 | 20.14 | 20.39 | 20.70 | 21.46 |
| 15 | 20.82 | 20.10 | 20.28 | 20.66 | 21.30 |
| 20 | 21.09 | 20.07 | 20.20 | 20.90 | 20.90 |
| 25 | 21.20 | 20.10 | 20.25 | 20.99 | 21.16 |
| EOM | 20.96 | 20.26 | 20.58 | 21.20 | 21.41 |

WTR YR 1981

HIGHEST MEASURED 19.92 NOV 20, 1980

LOWEST RECORDED 21.49 SEP 11, 12, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 21.51 | - | 21.80 | 20.85 | 17.90 | 17.70 | 16.42 | 16.66 | 16.00 | - | 16.39 | 16.45 |
| 10 | 21.72 | - | 21.83 | 20.20 | 18.14 | 17.40 | 16.64 | 16.90 | - | - | 16.41 | 16.56 |
| 15 | - | 21.72 | 21.97 | 20.00 | 18.42 | 17.35 | 16.80 | 17.20 | 13.23 | 16.16 | 16.45 | 16.60 |
| 20 | - | 21.80 | 21.75 | 19.99 | 17.22 | 17.34 | 16.79 | 17.42 | 14.32 | 16.18 | 16.39 | 16.71 |
| 25 | - | 21.96 | 21.71 | 19.68 | 17.62 | 15.78 | 16.78 | 17.26 | 15.65 | 16.22 | 16.30 | 16.80 |
| EOM | - | 22.10 | 21.70 | 19.61 | 17.74 | 16.40 | 16.65 | 15.51 | - | 16.28 | 16.45 | 16.71 |

WTR YR 1982 HIGHEST 13.13 JUN 15, 1982 LOWEST 22.10 NOV 30, 1981

GROUND-WATER LEVELS

427

APPOMATTOX COUNTY

372133078493701. Local number, 40G1.

LOCATION.--Lat 37°21'33", long 78°49'37", Hydrologic Unit 02080207, in the town of Appomattox. Owner: Town of Appomattox.

AQUIFER.--Metamorphic rock of uncertain age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 288 ft (87.8 m), cased to 40 ft (12.2 m), open hole 40 to 288 ft (12.2 to 87.8 m).

DATUM.--Altitude of land-surface datum is 860 ft (262 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 12.

PERIOD OF RECORD.--October 1967 to current year. Unpublished record available in May 1949.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.78 ft (10.60 m) below land-surface datum, June 13, 1973; lowest recorded, 58.21 ft (17.74 m) below land-surface datum, Nov. 17, 18, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | - | 46.63 | 47.52 | 49.37 | 50.16 | 50.10 | 50.25 | 52.71 | 53.25 | 52.89 | 55.30 | 56.42 |
| 10 | 45.80 | 47.00 | 47.52 | 49.63 | 50.04 | 50.32 | 54.38 | 52.18 | 53.20 | - | 55.80 | 56.29 |
| 15 | 46.03 | 47.00 | 47.52 | 50.17 | 49.85 | 50.17 | 52.95 | 52.79 | 53.23 | - | 55.84 | 56.20 |
| 20 | 46.03 | 47.32 | 47.87 | 49.67 | 49.94 | 50.43 | 52.22 | 52.73 | 53.18 | - | 56.34 | 56.00 |
| 25 | 45.80 | 47.38 | 47.75 | 49.57 | 50.20 | 50.80 | 52.42 | 52.47 | 53.43 | - | 56.23 | 56.42 |
| EOM | 46.56 | 47.40 | 48.47 | 50.39 | 50.14 | 50.48 | 52.62 | 52.58 | 53.47 | 56.50 | 56.10 | 56.30 |

WTR YR 1981 HIGHEST 45.23 OCT 11, 1980 LOWEST 56.61 AUG 27, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 56.80 | 56.78 | 57.33 | 56.72 | 56.45 | 55.72 | 55.15 | - | 53.64 | 53.11 | 52.77 | 53.03 |
| 10 | 57.40 | 57.51 | 57.24 | 56.50 | 56.57 | 55.50 | 55.54 | - | 53.67 | 53.22 | 52.60 | 53.23 |
| 15 | 57.30 | 58.12 | 57.06 | 56.92 | 56.20 | 55.30 | 55.34 | - | 53.60 | 53.08 | 52.73 | 53.30 |
| 20 | 57.23 | 58.20 | 56.88 | 56.80 | 56.12 | 55.16 | 55.10 | - | 53.20 | 52.98 | 52.89 | 52.91 |
| 25 | 56.97 | 57.43 | 56.56 | 56.42 | 56.04 | 55.85 | 55.08 | - | 53.48 | 52.68 | 52.90 | 53.30 |
| EOM | 56.92 | 57.15 | 56.52 | 56.37 | 55.63 | 55.30 | - | 53.68 | 53.68 | 52.91 | 53.10 | 53.49 |

WTR YR 1982 HIGHEST 51.50 AUG 9, 1982 LOWEST 58.21 NOV 17, 18, 1981

372514078394301. Local number, 41H2.

LOCATION.--Lat 37°25'14", long 78°39'43", Hydrologic Unit 02080207, 1 mi (1.6 km) south of intersection of State Highway 636 on the east side of State Highway 640. Owner: U.S. Geological Survey.

AQUIFER.--Candler formation of Paleozoic age.

WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 68 ft (20.7 m), 1.25 in (32 mm) 68 to 73 ft (20.7 to 22.3 m), depth 73 ft (22.3 m), screened 68 to 73 ft (20.7 to 22.3 m).

DATUM.--Altitude of land-surface datum is 640 ft (195 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 1.5 ft (0.5 m) above land-surface datum.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.99 ft (10.06 m) below land-surface datum, May 20, 1973; lowest measured, 49.41 ft (15.06 m) below land-surface datum, Mar. 30, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|-------|-------------|--------|-------------|
| OCT 22 | 48.87 | FEB 11 | 49.02 | JUN 2 | 46.63 | SEP 13 | 44.86 |
| DEC 8 | 49.36 | MAR 23 | 48.00 | JUL 8 | 45.53 | | |

ARLINGTON COUNTY

385346077073701. Local number, 53V1.

LOCATION.--Lat 38°53'46" (revised), long 77°07'37", Hydrologic Unit 02070010, at Langston School, 4854 Lee Highway, Arlington. Owner: Arlington County School Board.

AQUIFER.--Brandywine formation of Pleistocene age and Bryn Mawr (?) gravel of Pliocene (?) age, overlying the Sykesville formation of Precambrian age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 35 ft (10.7 m), terracotta casing.

DATUM.--Altitude of land-surface datum is 410 ft (125 m) National Geodetic Vertical Datum of 1929. Measuring point: Inner flange of manhole at land-surface datum.

PERIOD OF RECORD.--October 1931 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.74 ft (5.41 m) below land-surface datum, Apr. 20, 1935; lowest measured, 34.81 ft (10.61 m) below land-surface datum, Dec. 5, 1931.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|-------------|--------|-------------|--------|-------------|--------|-------------|
| NOV 3 | 30.76 | MAR 29 | 28.22 | JUL 29 | 25.60 | AUG 31 | 25.58 |

GROUND-WATER LEVELS

ARLINGTON COUNTY--Continued

385253077042301. Local number, 54V3.

LOCATION.--Lat 38°52'53", long 77°04'23", Hydrologic Unit 02070010, at Arlington National Cemetery. Owner: NPS National Capitol Parks.

AQUIFER.--Terrace gravels of Holocene age and sand of Early Cretaceous age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 48 in (1,200 mm), depth 50 ft (15.2 m).

DATUM.--Altitude of land-surface datum is 205 ft (62 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of brick and stone casing, 3 ft (0.9 m) above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.34 ft (12.30 m) below land-surface datum, June 26, 1978; lowest measured, 44.90 ft (13.69 m) below land-surface datum, Mar. 4, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|-------------|--------|-------------|--------|-------------|--------|-------------|
| NOV 3 | 44.07 | MAR 29 | 43.38 | JUL 29 | 41.93 | AUG 31 | 41.93 |

BUCKINGHAM COUNTY

372541078392101. Local number, 41H1.

LOCATION.--Lat 37°25'41", long 78°39'21", Hydrologic Unit 02080207, 0.45 mi (0.72 km) southeast of State Highway 636. Owner: U.S. Geological Survey.

AQUIFER.--Candler formation of Paleozoic age.

WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 83 ft (25.3 m), diameter 1.25 in (32 mm) 83 to 88 ft (25.3 to 26.8 m), depth 88 ft (26.8 m), screened 83 to 88 ft (25.3 to 26.8 m).

DATUM.--Altitude of land-surface datum is 660 ft (201 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft (0.37 m) above land-surface datum.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.95 ft (9.43 m) below land-surface datum, May 20, 1973; lowest measured, 50.41 ft (15.36 m) below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|-------|-------------|--------|-------------|
| OCT 22 | 50.01 | FEB 11 | 49.98 | JUN 2 | 46.22 | SEP 13 | 44.85 |
| DEC 8 | 50.41 | MAR 23 | 48.66 | JUL 8 | 45.05 | | |

372608078404601. Local number, 41H3.

LOCATION.--Lat 37°26'08", long 78°40'46", Hydrologic Unit 02080207, 0.85 mi (1.4 km) west of Ranger Headquarters on south side of dirt road off of State Highway 636. Owner: U.S. Geological Survey.

AQUIFER.--Candler formation of Paleozoic age.

WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 49 ft (14.9 m), diameter 1.25 in (32 mm) 49 to 54 ft (14.9 to 16.5 m), depth 54 ft (16.5 m), screened 49 to 54 ft (14.9 to 16.5 m).

DATUM.--Altitude of land-surface datum is 683.8 ft (208.4 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.3 ft (0.4 m) above land-surface datum.

REMARKS.--Prior to Oct. 1, 1981, well was reported as being located in Appomattox County.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.31 ft (2.23 m) below land-surface datum, Apr. 12, 1973; lowest measured, 28.30 ft (8.62 m) below land-surface datum, Oct. 17, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|-------|-------------|--------|-------------|
| OCT 22 | 27.90 | FEB 11 | 25.28 | JUN 2 | 21.02 | SEP 13 | 20.44 |
| DEC 8 | 27.84 | MAR 23 | 22.50 | JUL 8 | 19.33 | | |

372519078374001. Local number, 41H4.

LOCATION.--Lat 37°25'19", long 78°37'40", Hydrologic Unit 02080207, 0.65 mi (1.0 km) northeast of Holiday Creek and 0.85 mi (1.4 km) southeast of State Highway 636 on State Highway 614. Owner: U.S. Geological Survey.

AQUIFER.--Candler formation of Paleozoic age.

WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in (80 mm) to 72 ft (22 m), diameter 1.25 in (32 mm) 72 to 77 ft (22.0 to 23.5 m), depth 77 ft (23.5 m), screened 72 to 77 ft (22.0 to 23.5 m).

DATUM.--Altitude of land-surface datum is 647 ft (197 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.4 ft (0.43 m) above land-surface datum.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.45 ft (8.67 m) below land-surface datum, May 1, 1980; lowest measured, 44.29 ft (13.50 m) below land-surface datum, Oct. 20, 21, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|-------|-------------|--------|-------------|
| OCT 22 | 42.31 | FEB 11 | 40.93 | JUN 2 | 37.19 | SEP 13 | 38.75 |
| DEC 8 | 42.70 | MAR 23 | 39.15 | JUL 8 | 36.56 | | |

GROUND-WATER LEVELS

429

CITY OF COLONIAL HEIGHTS

371644077244601. Local number, 51G1.

LOCATION.--Lat 37°16'44", long 77°24'46", Hydrologic Unit 02080207, at Matoaka Manor, Colonial Heights. Owner: Kenneth Daul.

AQUIFER.--Petersburg granite of Late Paleozoic age.

WELL CHARACTERISTICS.--Drilled water well, diameter 6 in (150 mm), depth 100 ft (30.5 m), cased to 50 ft (15.2 m), open hole 50 to 100 ft (15.2 to 30.5 m).

DATUM.--Altitude of land-surface datum is 57.30 ft (17.47 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.

PERIOD OF RECORD.--October 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft (3.27 m) below land-surface datum, Jan. 26, 1978; lowest measured, 19.26 ft (5.87 m) below land-surface datum, Dec. 3, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 28 | 17.64 | DEC 29 | 18.03 | FEB 24 | 15.07 | APR 27 | 14.06 | JUN 28 | 15.20 | AUG 30 | 15.22 |
| NOV 24 | 17.96 | JAN 28 | 16.88 | MAR 30 | 13.33 | MAY 26 | 14.68 | JUL 29 | 15.44 | SEP 27 | 15.52 |

FAIRFAX COUNTY

384518077163501. Local number, 52U4.

LOCATION.--Lat 38°45'18", long 77°16'35", Hydrologic Unit 02070010, east of intersection of State Highways 641 and 643, Springfield. Owner: Sydenstricker Church.

AQUIFER.--Granite of undetermined age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 28 ft (8.5 m).

DATUM.--Altitude of land-surface datum is 340 ft (104 m) National Geodetic Vertical Datum of 1929. Measuring point: Hole in cement platform, 0.67 ft (0.20 m) above land-surface datum.

PERIOD OF RECORD.--May 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.54 ft (3.82 m) below land-surface datum, Apr. 30, 1973; lowest measured, 27.57 ft (8.40 m) below land-surface datum, Nov. 30, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 29 | 25.76 | JAN 28 | 26.14 | APR 27 | 21.60 | JUL 29 | 20.44 |
| NOV 27 | 26.05 | FEB 25 | 24.88 | MAY 28 | 21.31 | AUG 31 | 21.09 |
| DEC 29 | 26.29 | MAR 29 | 23.60 | JUN 28 | 20.19 | SEP 29 | 22.13 |

385638077220101. Local number, 52V2.

LOCATION.--Lat 38°56'58", long 77°22'01", Hydrologic Unit 02070008, at U.S. Geological Survey, National Center, Reston. Owner: U.S. Geological Survey.

AQUIFER.--Manassas sandstone of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 8 in (200 mm), depth 205 ft (62 m), cased to 35 ft (11 m), open hole 35 to 205 ft (11 to 62 m).

DATUM.--Altitude of land-surface datum is 390 ft (119 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.6 m) above land-surface datum.

PERIOD OF RECORD.--October 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.48 ft (2.28 m) below land-surface datum, Apr. 30, May 1, 1980; lowest recorded, 17.30 ft (5.27 m) below land-surface datum, Oct. 24, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-----|-------|
| 5 | 15.74 | 15.70 | 15.78 | 14.54 | 12.49 | 11.53 | 9.56 | - | 10.96 | 12.25 | - | 15.53 |
| 10 | 16.03 | 15.82 | 15.82 | 14.38 | 12.80 | - | 9.45 | - | 9.97 | - | - | 15.75 |
| 15 | 16.17 | 15.77 | 15.75 | - | 12.68 | - | 9.74 | 10.93 | 8.32 | - | - | 16.01 |
| 20 | 16.34 | 15.75 | 15.38 | - | 11.84 | - | 9.94 | 11.55 | 9.88 | - | - | 16.21 |
| 25 | 16.37 | 15.88 | 15.22 | - | 11.24 | 9.57 | - | 11.88 | 11.04 | - | - | 15.98 |
| EOM | 15.85 | 15.93 | 15.13 | - | 11.40 | 10.11 | - | 11.14 | 11.63 | - | - | 15.84 |

WTR YR 1982 HIGHEST 8.27 JUN 15, 1982 LOWEST 16.37 OCT 22, 24, 25, 1981

CITY OF FRANKLIN

364047076552401. Local number, 55B22.

LOCATION.--Lat 36°40'47", long 76°55'24", Hydrologic Unit 03010202, at 5th Avenue and Middle Street, Franklin. Owner: City of Franklin.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Jettied observation water well, diameter 4 in (100 mm), depth 354 ft (107.9 m), screened 335 to 354 ft (102.1 to 107.9 m).

DATUM.--Altitude of land-surface datum is 21.24 ft (6.47 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of manhole at land-surface datum.

REMARKS.--Water level affected by local pumpage.

PERIOD OF RECORD.--June 1942 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.50 ft (4.42 m) below land-surface datum, June 25, 1942; lowest measured, 190.01 ft (57.92 m) below land-surface datum, June 12, 1981.

GROUND-WATER LEVELS
CITY OF FRANKLIN--Continued

364047076552401--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 14 | 181.76 | FEB 19 | 177.11 | MAY 20 | 177.67 | SEP 16 | 178.86 |
| NOV 13 | 181.65 | MAR 19 | 176.82 | JUL 15 | 183.80 | | |
| DEC 14 | 180.30 | APR 22 | 179.06 | AUG 16 | 180.42 | | |

HALIFAX COUNTY

364550078562301. Local number, 39C1.

LOCATION.--Lat 36°45'50", long 78°56'23", Hydrologic Unit 03010105, in the town of Halifax. Owner: Town of Halifax.

AQUIFER.--Granite and gneiss of uncertain age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in (200 mm), depth 302 ft (92.0 m), cased to 52 ft (15.8 m), open hole 52 to 302 ft (15.8 to 92.0 m).

DATUM.--Altitude of land-surface datum is 380 ft (116 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft (0.37 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 11.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.28 ft (11.06 m) below land-surface datum, June 8, 1980; lowest recorded, 45.09 ft (13.74 m) below land-surface datum, Dec. 30, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 37.47 | 37.72 | 38.12 | 38.52 | 38.86 | 38.96 | 39.27 | 39.42 | 39.72 | 39.90 | 40.22 | 40.57 |
| 10 | 37.45 | 37.88 | 38.18 | 38.56 | 38.89 | 39.10 | 39.34 | 39.47 | 39.75 | 40.00 | 40.30 | 40.61 |
| 15 | 37.57 | 37.85 | 38.22 | 38.57 | 38.87 | 39.13 | 39.40 | 39.50 | 39.80 | 40.07 | 40.31 | 40.61 |
| 20 | 37.60 | 38.02 | 38.40 | 38.58 | 38.69 | 39.17 | 39.33 | 39.60 | 39.80 | 40.10 | 40.40 | 40.69 |
| 25 | 37.57 | 38.10 | 38.40 | 38.70 | 38.93 | 39.27 | 39.40 | 39.64 | 39.87 | 40.17 | 40.42 | 40.77 |
| EOM | 37.72 | 38.14 | 38.34 | 38.80 | 38.98 | 39.27 | 39.38 | 39.70 | 39.90 | 40.23 | 40.51 | 40.78 |

WTR YR 1981 HIGHEST 37.27 OCT 1, 2, 1980 LOWEST 40.80 SEP 29, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 40.81 | 41.00 | 41.29 | 41.53 | 41.63 | 41.48 | 41.18 | 40.92 | 40.81 | 40.80 | 40.48 | 40.40 |
| 10 | 40.84 | 41.10 | 41.28 | 41.53 | 41.59 | 41.50 | 41.15 | 40.90 | 40.82 | 40.73 | 40.45 | 40.37 |
| 15 | 40.84 | 41.02 | 41.21 | 41.50 | 41.58 | 41.40 | 41.09 | 40.87 | 40.83 | 40.68 | 40.40 | 40.30 |
| 20 | 40.99 | 41.11 | 41.39 | 41.56 | 41.47 | 41.27 | 41.00 | 40.82 | 40.80 | 40.60 | 40.37 | 40.31 |
| 25 | 40.99 | 41.20 | 41.40 | 41.50 | 41.67 | 41.21 | 40.97 | 40.80 | 40.81 | 40.60 | 40.40 | 40.31 |
| EOM | 41.03 | 41.21 | 41.47 | 41.50 | 41.52 | 41.20 | 40.99 | 40.81 | 40.79 | 40.50 | 40.40 | 40.40 |

WTR YR 1982 HIGHEST 40.24 SEP 26, 1982 LOWEST 41.70 FEB 1, 2, 1982

CITY OF HOPEWELL

371801077164201. Local number, 52G1.

LOCATION.--Lat 37°18'01", long 77°16'42", Hydrologic Unit 02080206, in the city of Hopewell. Owner: Virginia American Water Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 300 ft (91.4 m), screen depth unknown.

DATUM.--Altitude of land-surface datum is 50.26 ft (15.32 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.34 ft (0.10 m) above land-surface datum.

PERIOD OF RECORD.--May 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.56 ft (6.27 m) below land-surface datum, Sept. 7, 1979; lowest measured, 56.95 ft (17.36 m) below land-surface datum, Aug. 14, 1943.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|----------------|-------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 2 | 35.22 | DEC 4 | 35.15 | FEB 12 | 34.75 | APR 16 | 35.30 | JUN 18 | 35.11 | AUG 20 | 33.81 |
| 9 | 35.21 | 11 | 35.19 | 19 | 31.55 | 23 | 35.36 | 25 | 35.14 | 27 | 34.73 |
| 16 | 35.26 | 18 | 35.17 | 26 | 32.30 | 30 | 35.31 | JUL 2 | 35.19 | SEP 3 | 35.17 |
| 23 | 35.31 | 25 | 35.16 | MAR 5 | 32.75 | MAY 7 | 35.28 | 9 | 35.16 | 10 | 35.18 |
| 30 | 35.31 | JAN 1 | 34.84 | 12 | 33.22 | 14 | 35.19 | 16 | 35.20 | 17 | 35.19 |
| NOV 6 | 35.31 | 15 | 35.31 | 19 | 32.11 | 21 | 35.14 | 23 | 35.21 | 24 | 35.17 |
| 13 | 35.22 | 22 | 35.58 | 26 | 33.48 | 28 | 35.09 | 30 | 35.25 | | |
| 20 | 35.22 | 29 | 35.25 | APR 2 | 34.99 | JUN 4 | 35.05 | AUG 6 | 35.31 | | |
| 27 | 35.32 | FEB 5 | 32.86 | 9 | 35.26 | 11 | 35.08 | 13 | 35.26 | | |

GROUND-WATER LEVELS

431

ISLE OF WIGHT COUNTY

364059076544901. Local number, 55B16.

LOCATION.--Lat 36°40'59", long 76°54'49", Hydrologic Unit 03010202, at lumberyard well, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous aquifer.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 305 ft (93.0 m), screened 285 to 305 ft (86.9 to 93.0 m).

DATUM.--Altitude of land-surface datum is 25 ft (8 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.45 ft (0.10 m) above land-surface datum. Measuring point changed from top edge of recorder shelf, 3.50 ft (1.07 m) above land-surface datum Nov. 28, 1979.

REMARKS.--Water level affected by local pumpage.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 99.00 ft (30.18 m) below land-surface datum, Dec. 27, 1960; lowest recorded, 195.67 ft (59.64 m) below land-surface datum, June 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 5 | 190.70 | 190.98 | 185.28 | 184.13 | 186.11 | 185.23 | 186.50 | 186.97 | - | 186.63 | 187.67 | 187.96 |
| 10 | 190.66 | 189.86 | 185.75 | 183.55 | 185.78 | 185.18 | 185.02 | 188.82 | 186.75 | 189.69 | 187.98 | 184.81 |
| 15 | 189.38 | 189.18 | 187.67 | 185.46 | 185.94 | 185.93 | 187.49 | 185.51 | 187.13 | 190.47 | 187.79 | 185.66 |
| 20 | 189.04 | 187.65 | 187.15 | 187.50 | 185.90 | 185.05 | 186.06 | 185.11 | 187.30 | 187.40 | 186.83 | 186.16 |
| 25 | 191.07 | 187.77 | 183.35 | - | 186.25 | 186.17 | 188.99 | 184.84 | 187.27 | 188.56 | 186.41 | 186.91 |
| EOM | 191.97 | 187.63 | 181.60 | 186.41 | 185.60 | 185.41 | 189.82 | 185.14 | 187.14 | 186.24 | 187.39 | 188.15 |

WTR YR 1982 HIGHEST 176.55 DEC 28, 1981 LOWEST 192.20 NOV 3, 4, 1981

364116076545001. Local number, 55B35.

LOCATION.--Lat 36°41'16", long 76°54'50", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in (100 mm), depth 623 ft (189.9 m), screened 430 to 435 ft (131.1 to 132.6 m), 475 to 480 ft (144.8 to 146.3 m), 580 to 585 ft (176.8 to 178.3 m), 618 to 623 ft (188.3 to 189.9 m).

DATUM.--Altitude of land-surface datum is 32 ft (10 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 2.15 ft (0.66 m) above land-surface datum. Measuring point changed from top of casing, 2 ft (0.61 m) above land-surface datum on Oct. 26, 1979.

REMARKS.--Water level affected by local pumpage. Recorder removed Nov. 14, 1971; manual measurements thereafter.

PERIOD OF RECORD.--February 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 154.99 ft (47.24 m) below land-surface datum, Aug. 23, 1974; lowest measured, 214.15 ft (65.27 m) below land-surface datum, June 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 14 | 207.64 | FEB 19 | 202.96 | MAY 20 | 203.29 | AUG 16 | 206.87 |
| NOV 13 | 208.10 | MAR 19 | 202.75 | JUN 21 | 205.27 | SEP 16 | 205.20 |
| DEC 14 | 205.84 | APR 22 | 204.51 | JUL 15 | 209.65 | | |

364125076544801. Local number, 55B36.

LOCATION.--Lat 36°41'25", long 76°54'48", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in (100 mm), depth 860 ft (262.1 m), screened 720 to 725 ft (219.5 to 221.0 m), 800 to 805 ft (243.8 to 245.4 m), 855 to 860 ft (260.6 to 262.1 m).

DATUM.--Altitude of land-surface datum is 37 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.56 ft (1.39 m) above land-surface datum. Measuring point changed from 4.25 ft (1.30 m) above land-surface datum Oct. 25, 1979; published incorrectly as 4.25 ft (1.30 m) in 1980 and 1981.

REMARKS.--Water level affected by local pumpage.

PERIOD OF RECORD.--March 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 156.65 ft (47.75 m) below land-surface datum, Dec. 27, 1969; lowest measured, 219.29 ft (66.84 m) below land-surface datum, May 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 14 | 186.65 | JAN 18 | 180.58 | APR 22 | 183.44 | JUL 15 | 183.84 |
| NOV 13 | 184.19 | FEB 19 | 182.33 | MAY 20 | 183.38 | AUG 16 | 186.02 |
| DEC 14 | 183.07 | MAR 19 | 182.68 | JUN 21 | 183.24 | SEP 16 | 185.79 |

GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY--Continued

364425076532701. Local number, 55B45.

LOCATION.--Lat 36°44'25", long 76°53'27", Hydrologic Unit 03010202, near Maynards Crossroads. Owner: R. J. Goodrich.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 348 ft (106.1 m), screened 338 to 348 ft (103.0 to 106.1 m).

DATUM.--Altitude of land-surface datum is 37 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft (0.30 m) above land-surface datum. Measuring point changed from top edge of recorder shelf, 2.20 ft (0.67 m) above land-surface datum Apr. 13, 1981.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 33. Recorder removed Sept. 30, 1980; manual measurements thereafter.

PERIOD OF RECORD.--December 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 130.06 ft (39.64 m) below land-surface datum, Aug. 15, 1974; lowest measured, 167.00 ft (50.90 m) below land-surface datum, Aug. 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| NOV 19 | 161.43 | FEB 28 | 162.74 | MAY 19 | 161.30 | AUG 31 | 160.59 |
| DEC 27 | 156.06 | MAR 31 | 162.82 | JUL 28 | 160.52 | | |

JAMES CITY COUNTY

371311076463601. Local number, 56F1.

LOCATION.--Lat 37°13'11", long 76°46'36", Hydrologic Unit 02080206, Colonial Parkway near Jamestown. Owner: U.S. Department of Interior. Colonial National Historical Park.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 346 ft (105.5 m), screened 336 to 346 ft (102.4 to 105.5 m).

DATUM.--Altitude of land-surface datum is 10 ft (3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.15 ft (0.96 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 18. Recorder removed Sept. 30, 1980; manual measurements thereafter.

PERIOD OF RECORD.--May 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.29 ft (13.19 m) below land-surface datum, May 8, 1969; lowest measured, 74.54 ft (22.72 m) below land-surface datum, Sept. 23, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 73.31 | FEB 23 | 70.39 | JUN 8 | 72.10 | SEP 23 | 74.54 |
| NOV 23 | 72.32 | APR 28 | 70.40 | JUL 15 | 72.95 | | |
| DEC 14 | 71.18 | MAY 19 | 72.11 | AUG 17 | 73.96 | | |

KING AND QUEEN COUNTY

373126076454101. Local number, 56J11.

LOCATION.--Lat 37°31'26", long 76°45'41", Hydrologic Unit 02080105, at West Point airport. Owner: Chesapeake Corporation.

AQUIFER.--Sand gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 1,254 ft (382.2 m), screened 1,233 to 1,248 ft (375.8 to 380.4 m).

DATUM.--Altitude of land-surface datum is 15 ft (4.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft (0.2 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 73 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 3, 1975; manual measurements thereafter.

PERIOD OF RECORD.--October 1974 to current year. Unpublished records available in March 1962 and June 1972.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 73.08 ft (22.27 m) below land-surface datum, Apr. 25, 1975; lowest measured, 86.27 ft (26.30 m) below land-surface datum, Oct. 29, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 86.13 | DEC 14 | 86.03 | MAY 20 | 85.38 | AUG 28 | 85.99 |
| 29 | 86.27 | FEB 3 | 84.84 | JUN 3 | 84.86 | | |
| NOV 20 | 86.09 | MAR 22 | 84.95 | JUL 29 | 85.59 | | |
| DEC 1 | 86.03 | APR 19 | 85.36 | AUG 16 | 85.84 | | |

KING AND QUEEN COUNTY--Continued

373008076425601. Local number, 57J3.

LOCATION.--Lat 37°30'08", long 76°42'56", Hydrologic Unit 02080107, Gressitt observation well, near West Point. Owner: Chesapeake Corporation.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm) to 200 ft (61.0 m), diameter 4 in (100 mm) from 200 to 760 ft (61.0 to 231.6 m), depth 760 ft (231.6 m), screened 741 to 756 ft (225.9 to 230.4 m).

DATUM.--Altitude of land-surface datum is 51 ft (15.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft (0.06 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 74 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 10, 1976; manual measurements thereafter.

PERIOD OF RECORD.--November 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 109.90 ft (33.50 m) below land-surface datum, Jan. 26, 1975; lowest measured, 122.00 ft (37.19 m) below land-surface datum, Mar. 2, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 120.31 | DEC 14 | 119.90 | MAY 20 | 119.18 | AUG 28 | 120.42 |
| 29 | 120.05 | FEB 3 | 119.08 | JUN 3 | 119.56 | | |
| NOV 20 | 120.02 | MAR 22 | 119.46 | JUL 29 | 115.27 | | |
| DEC 1 | 119.87 | APR 19 | 119.71 | AUG 16 | 120.07 | | |

KING WILLIAM COUNTY

373238076481901. Local number, 56J1.

LOCATION.--Lat 37°32'38", long 76°48'19", Hydrologic Unit 02080106, in West Point, 0.1 mi (0.2 km) west of State Route 30. Owner: Chesapeake Corporation.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 4 in (100 mm), depth 851 ft (259.4 m), screened 390 to 400 ft (118.9 to 121.9 m), 547 to 557 ft (166.7 to 169.8 m), 640 to 650 ft (195.1 to 198.1 m), 692 to 702 ft (210.9 to 214.0 m), 737 to 747 ft (224.6 to 227.7 m), 768 to 778 ft (234.1 to 237.1 m), 820 to 830 ft (250.0 to 253.0 m).

DATUM.--Altitude of land-surface datum is 28 ft (8.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.65 ft (0.2 m) above land-surface datum.

REMARKS.--Water levels affected by local pumpage.

PERIOD OF RECORD.--January 1977 to February 1982. Unpublished records available November 1955 and March 1970.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured 80.0 ft (24.38 m) below land-surface datum, Nov. 10, 1955; lowest measured, 143.56 ft (43.76 m) below land-surface datum, July 22, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, JANUARY TO SEPTEMBER 1977

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| JAN 28 | 135.45 | APR 22 | 139.25 | JUL 15 | 135.35 |
| FEB 25 | 131.35 | MAY 19 | 138.55 | AUG 12 | 141.95 |
| MAR 25 | 138.95 | JUN 17 | 140.25 | SEP 9 | 142.85 |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 7 | 140.40 | APR 21 | 139.00 | AUG 14 | 141.75 |
| NOV 7 | 143.10 | MAY 19 | 137.02 | SEP 8 | 141.58 |
| DEC 2 | 142.75 | JUN 16 | 138.45 | 26 | 136.55 |
| JAN 3 | 140.05 | JUL 6 | 123.10 | 27 | 138.28 |
| 27 | 140.77 | 12 | 137.41 | 29 | 139.43 |
| FEB 24 | 134.81 | 14 | 138.84 | | |
| MAR 27 | 140.10 | 19 | 140.47 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|----------------|--------|----------------|--------|----------------|
| OCT 2 | 139.93 | DEC 29 | 126.97 | MAY 21 | 141.03 |
| 6 | 140.06 | JAN 26 | 138.85 | JUN 15 | 141.65 |
| NOV 3 | 140.25 | FEB 23 | 139.65 | JUL 13 | 140.13 |
| DEC 1 | 140.35 | MAR 23 | 139.75 | AUG 11 | 142.85 |
| 15 | 140.77 | APR 23 | 143.05 | SEP 7 | 142.49 |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 142.70 | JAN 25 | 140.79 | JUN 12 | 141.12 |
| NOV 2 | 142.99 | FEB 22 | 140.11 | JUL 22 | 143.56 |
| 30 | 142.74 | MAR 21 | 140.93 | SEP 30 | 141.98 |
| DEC 31 | 136.30 | APR 9 | 139.55 | | |

GROUND-WATER LEVELS
KING WILLIAM COUNTY--Continued

373238076481901--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|-------|----------------|--------|----------------|
| DEC 16 | 135.00 | APR 8 | 127.05 | AUG 13 | 134.03 |
| FEB 11 | 124.22 | JUN 5 | 135.05 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1981 TO FEBRUARY 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|-------|----------------|-------|----------------|
| OCT 29 | 134.50 | DEC 1 | 124.69 | FEB 3 | 125.25 |

373206076481201. Local number, 56J18.

LOCATION.--Lat 37°32'06", long 76°48'12", Hydrologic Unit 02080106, near State Route 33 at Chesapeake Corporation, northeast corner of 13th and A Streets in Brick pump house. Owner: Chesapeake Corporation of Virginia.

AQUIFER.--Sand and clay of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 18 in (450 mm) to 180 ft (54.9 m), diameter 8 in (200 mm) from 165 ft to 446 ft (50.3 to 136.0 m), depth 446 ft (136.0 m), screened 210 to 240 ft (64.0 to 73.2 m), 380 to 390 ft (115.8 to 118.9 m), 405 to 445 ft (123.4 to 135.6 m).

DATUM.--Altitude of land-surface datum is 5 ft (1.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.22 ft (0.37 m) above land-surface datum.

REMARKS.--Water levels affected by local pumpage.

PERIOD OF RECORD.--March 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 111.86 ft (34.04 m) below land-surface datum, Dec. 29, 1978; lowest measured, 173.08 ft (52.75 m) below land-surface datum, Feb. 23, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MARCH TO SEPTEMBER 1977

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| MAR 10 | 155.98 | MAY 20 | 157.88 | AUG 12 | 161.48 |
| 22 | 156.68 | JUN 17 | 158.58 | SEP 9 | 161.88 |
| MAY 2 | 155.37 | JUL 15 | 153.48 | | |
| 5 | 155.91 | AUG 10 | 160.78 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|----------------|--------|----------------|--------|----------------|
| OCT 7 | 157.78 | FEB 24 | 115.58 | JUL 14 | 160.38 |
| NOV 7 | 154.08 | MAR 23 | 159.98 | AUG 11 | 162.78 |
| DEC 2 | 161.18 | APR 21 | 156.78 | SEP 8 | 163.88 |
| JAN 3 | 158.48 | MAY 19 | 156.28 | | |
| 27 | 160.28 | JUN 16 | 159.58 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 6 | 160.68 | FEB 23 | 173.08 | JUL 13 | 162.98 |
| NOV 3 | 160.60 | MAR 27 | 164.98 | AUG 11 | 165.48 |
| DEC 1 | 160.48 | APR 20 | 167.35 | SEP 7 | 165.71 |
| 29 | 111.86 | MAY 18 | 161.88 | | |
| JAN 26 | 160.48 | JUN 15 | 160.48 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 166.33 | JAN 25 | 166.00 | JUN 12 | 162.47 |
| NOV 2 | 166.75 | FEB 22 | 163.76 | JUL 21 | 165.59 |
| 30 | 166.73 | MAR 21 | 163.60 | SEP 30 | 163.16 |
| DEC 31 | 157.93 | APR 9 | 161.87 | | |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|-------|----------------|--------|----------------|
| DEC 16 | 156.15 | APR 8 | 150.02 | AUG 13 | 153.87 |
| FEB 11 | 148.26 | JUN 5 | 156.06 | | |

GROUND-WATER LEVELS

435

KING WILLIAM COUNTY--Continued

373206076481201--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 29 | 151.30 | FEB 3 | 147.06 | AUG 16 | 150.67 |
| DEC 1 | 146.60 | APR 19 | 147.16 | | |

LOUDOUN COUNTY

391542077423801. Local number, 49Y1.

LOCATION.--Lat 39°15'42", long 77°42'38", Hydrologic Unit 02070008, near Harpers Ferry. Owner: American Telephone and Telegraph Company.

AQUIFER.--Bedrock of Precambrian or Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6.5 in (165 mm). Prior to 1974, diameter reported as 8 in (200 mm). Depth 516 ft (157.3 m), cased to 45 ft (13.7 m), open hole 45 to 516 ft (13.7 to 157.3 m).

DATUM.--Altitude of land-surface datum is 1,100 ft (335 m) National Geodetic Vertical Datum of 1929. Prior to 1974, altitude reported as 940 ft (287 m) above mean sea level. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 22. Recorder removed July 26, 1974; manual measurements thereafter.

PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 48.00 ft (14.63 m) below land-surface datum, June 22, 1972; lowest measured, 61.47 ft (18.74 m) below land-surface datum, Nov. 5, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 6 | 60.44 | JAN 5 | 61.00 | APR 14 | 57.98 | JUL 13 | 59.50 |
| NOV 17 | 61.00 | FEB 24 | 57.80 | MAY 25 | 58.98 | AUG 30 | 61.20 |

390623077314201. Local number, 50W4C.

LOCATION.--Lat 39°06'23", long 77°31'42", Hydrologic Unit 02070008, east of Highway 7 on east side of town of Leesburg, under water tower. Owner: Town of Leesburg.

AQUIFER.--Slightly metamorphosed Balls Bluff formation of Triassic age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 535 ft (163.00 m), cased to 6 ft (1.83 m), open hole 6 to 535 ft (1.83 to 163.00 m).

DATUM.--Altitude of land-surface datum is 400 ft (122 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum. Measuring point was land-surface datum for the following dates: Oct. 8, 1981, Nov. 18, 1981, and Mar. 23, 1982.

PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.96 ft (10.66 m) below land-surface datum, Apr. 2, 1980; lowest measured, 48.97 ft (14.93 m) below land-surface datum, Feb. 19, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 8 | *46.27 | MAR 23 | *47.94 | SEP 29 | 43.20 |
| NOV 18 | *48.28 | JUL 29 | 38.49 | | |

* See DATUM paragraph above.

LOUISA COUNTY

380217078133701. Local number, 45N1.

LOCATION.--Lat 38°02'17", long 78°13'43", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.

AQUIFER.--Wissahickon formation of Late Precambrian (?) age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 56 ft (17.1 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 500 ft (152 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 1.95 ft (0.59 m) above land-surface datum. Measuring point changed from 3.10 ft (0.94 m) above land-surface datum Mar. 14, 1973.

REMARKS.--Records furnished by the Virginia State Water Control Board. Well reported dry Nov. 30, 1981; cleaned out to a depth of 52 ft (15.8 m) on Dec. 2, 1981.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.97 ft (3.65 m) below land-surface datum, Apr. 30, 1973; lowest measured, 35.17 ft (10.72 m) below land-surface datum, Dec. 2, 1981.

GROUND-WATER LEVELS
LOUISA COUNTY--Continued

380217078133701--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| LOWEST RECORDED VALUES | | | | | | | | | | | | |
|------------------------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
| 5 | 34.27 | - | 35.00 | 34.93 | 33.00 | 30.80 | 28.58 | 27.25 | 26.90 | 26.46 | 26.99 | 27.12 |
| 10 | 34.32 | - | 35.07 | 34.67 | 32.58 | 30.55 | 28.25 | 27.10 | 26.80 | 26.35 | 27.15 | 27.09 |
| 15 | 34.41 | - | 35.11 | 34.40 | 32.26 | 30.20 | 28.00 | 27.01 | 26.70 | 26.42 | 27.24 | 27.15 |
| 20 | 34.49 | - | 35.12 | 34.15 | 31.79 | 29.78 | 27.75 | 26.94 | 26.53 | 26.46 | 27.19 | 27.38 |
| 25 | 34.55 | - | 35.14 | 33.90 | 31.40 | 29.30 | 27.55 | 26.92 | 26.46 | 26.63 | 27.10 | 27.60 |
| EOM | - | - | 35.13 | 33.66 | 31.20 | 28.82 | 27.43 | 26.92 | 26.40 | 26.75 | 27.07 | 27.85 |

MANUAL MEASUREMENTS

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|-------------|--------|-------------|--------|-------------|-------|-------------|
| NOV 1 | 34.65 | NOV 15 | 34.80 | NOV 27 | 35.11 | DEC 2 | 35.17 |
| 9 | 34.72 | 23 | 34.89 | 30 | *DRY | | |

* See REMARKS paragraph above.

WTR YR 1982 HIGHEST RECORDED 26.24 JUL 3, 1982 LOWEST MEASURED 35.17 DEC 2, 1981

380043078111301 (revised). Local number, 45N4.

LOCATION.--Lat 38°00'45", long 78°11'14", Hydrologic Unit 02080106, near Thelma, 4 mi (6.4 km) southeast of Boswells

Tavern east of U.S. Highway 15. Owner: Virginia Department of Correction.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 200 ft (61.0 m), cased to 42 ft

(12.8 m), open hole 42 to 200 ft (12.8 to 61.0 m).

DATUM.--Altitude of land-surface datum is 415 ft (127 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 2.30 ft (0.70 m) above land-surface datum.

PERIOD OF RECORD.--February 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.40 ft (2.86 m) below land-surface datum, Apr. 28, 1980; lowest measured, 14.43 ft (4.40 m) below land-surface datum, Aug. 26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 28 | 14.08 | JAN 27 | 12.96 | APR 28 | 11.68 | JUL 29 | 13.04 |
| NOV 25 | 13.91 | FEB 25 | 11.90 | MAY 26 | 12.24 | AUG 30 | 12.87 |
| DEC 22 | 13.23 | MAR 30 | 11.23 | JUN 28 | 12.30 | SEP 29 | 13.44 |

380231078132801. Local number, 45N5.

LOCATION.--Lat 38°02'31", long 78°13'28", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells

Tavern on Tyler property near State Highway 640. Owner: Tyler.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 14.15 ft (4.31 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 440 ft (134 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.35 ft (1.02 m) above land-surface datum.

PERIOD OF RECORD.--February 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft (0.09 m) below land-surface datum, Mar. 27, 1979; lowest measured, 6.81 ft (2.08 m) below land-surface datum, July 31, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 28 | 2.35 | JAN 27 | 1.88 | APR 28 | 0.47 | JUL 29 | 5.72 |
| NOV 25 | 5.96 | FEB 25 | 1.66 | MAY 26 | 2.05 | AUG 30 | 2.71 |
| DEC 22 | 1.88 | MAR 30 | 1.81 | JUN 28 | 3.07 | SEP 29 | 5.46 |

380236078132301. Local number, 45N6.

LOCATION.--Lat 38°02'36", long 78°13'23", Hydrologic Unit 02080106, near Thelma, 3 mi (5 km) southwest of Boswells

Tavern on Tyler property near State Highway 640. Owner: Tyler.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 11.75 ft (3.58 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 440 ft (134 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.20 ft (0.98 m) above land-surface datum.

PERIOD OF RECORD.--February 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.06 ft (0.63 m) below land-surface datum, July 31, 1978; lowest measured, 9.85 ft (3.00 m) below land-surface datum, Sept. 28, 1977.

GROUND-WATER LEVELS

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LOUISA COUNTY--Continued

380236078132301--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 28 | 8.30 | JAN 27 | 7.06 | APR 28 | 5.80 | JUL 29 | 7.66 |
| NOV 25 | 8.33 | FEB 25 | 5.18 | MAY 26 | 6.82 | AUG 30 | 6.86 |
| DEC 22 | 7.74 | MAR 30 | 4.85 | JUN 28 | 6.62 | SEP 29 | 7.57 |

380131078001001. Local number, 46N1.

LOCATION.--Lat 38°01'31", long 78°00'10", Hydrologic Unit 02080106, in the town of Louisa. Owner: Town of Louisa.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 132 ft (40.2 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 455 ft (139 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft (0.18 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 56. Recorder removed Apr. 30, 1979; manual measurements thereafter.

PERIOD OF RECORD.--March 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.27 ft (8.01 m) below land-surface datum, May 18, 1973; lowest measured, 34.78 ft (10.60 m) below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 6 | 34.30 | FEB 22 | 34.20 | MAY 18 | 32.38 | AUG 5 | 32.09 |
| NOV 21 | 34.63 | MAR 6 | 33.80 | JUN 11 | 32.25 | SEP 22 | 31.94 |
| DEC 8 | 34.78 | APR 2 | 33.49 | JUL 12 | 31.98 | | |

MONTGOMERY COUNTY

370812080261901. Local number, 27F2.

LOCATION.--Lat 37°08'12", long 80°26'19", Hydrologic Unit 05050001, in the town of Christiansburg. Owner: Town of Christiansburg.

AQUIFER.--Beekmantown formation of Early Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm), depth 450 ft (137.2 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 1,970 ft (600 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.60 ft (0.49 m) below land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 19.

PERIOD OF RECORD.--May 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.98 ft (0.60 m) below land-surface datum, Apr. 14, 1980; lowest recorded, 7.30 ft (2.23 m) below land-surface datum, Dec. 5, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 5 | 6.07 | 5.94 | 6.13 | 6.50 | - | 5.64 | 5.90 | - | 6.20 | 6.18 | 6.45 | 6.24 |
| 10 | 5.90 | 6.17 | 5.93 | 6.47 | - | 5.90 | - | - | 5.86 | 6.26 | 6.46 | 6.29 |
| 15 | 6.01 | 6.07 | 6.03 | 6.60 | - | 6.06 | - | 6.50 | 6.17 | 6.53 | 6.60 | 6.54 |
| 20 | 5.80 | 6.08 | 6.44 | 6.62 | 5.40 | 6.30 | - | - | 6.39 | 6.27 | 6.72 | 6.51 |
| 25 | 5.87 | 5.90 | 6.32 | 6.48 | 5.72 | 5.64 | - | - | 6.59 | 6.57 | 6.84 | 6.81 |
| EOM | 5.80 | 5.93 | 6.22 | 6.65 | 5.87 | 5.64 | - | - | 6.72 | 6.40 | 6.45 | 6.85 |

WTR YR 1981 HIGHEST 5.11 FEB 20, 1981 LOWEST 6.94 AUG 28, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 5 | 6.83 | 6.25 | 6.60 | 3.99 | 2.69 | 2.90 | 3.21 | 4.20 | 4.51 | 5.31 | 5.90 | 5.89 |
| 10 | 6.98 | 6.61 | 6.77 | 4.50 | 3.03 | 2.65 | - | 4.57 | 4.46 | 5.41 | 4.41 | 5.98 |
| 15 | 7.00 | 6.58 | 6.41 | 4.66 | 3.23 | 2.73 | 3.84 | 4.84 | 3.86 | 5.50 | 4.85 | 5.96 |
| 20 | 7.09 | 6.63 | 6.20 | 4.70 | 2.72 | 2.40 | 4.00 | 5.00 | 4.32 | 5.68 | 5.11 | 6.08 |
| 25 | 7.02 | 6.70 | 5.60 | 4.01 | 3.22 | 2.64 | 4.30 | 4.47 | 4.81 | 5.71 | 5.40 | 6.07 |
| EOM | 6.10 | 6.78 | 5.93 | 4.10 | 3.20 | 2.88 | 3.82 | 4.46 | 5.13 | 5.79 | 5.69 | 6.12 |

WTR YR 1982 HIGHEST 2.20 MAR 7, 1982 LOWEST 7.09 Oct. 20, 21, 1981

GROUND-WATER LEVELS

NELSON COUNTY

374224078555601. Local number, 39K1.

LOCATION.--Lat 37°42'24", long 78°55'56", Hydrologic Unit 02080203, near Colleen. Owner: P. D. Payne.

AQUIFER.--Lovingsston (or Marshall?) formation of Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 275 ft (83.8 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 770 ft (234.7 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 1 ft (0.3 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 6. Recorder removed

June 26, 1974; manual measurements thereafter.

PERIOD OF RECORD.--October 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.08 ft (8.25 m) below land-surface datum, June 29, 1973; lowest recorded, 35.66 ft (10.87 m) below land-surface datum, Mar. 7, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 8 | 34.28 | JAN 5 | 34.48 | APR 15 | 32.58 | JUL 14 | 32.18 |
| NOV 12 | 34.48 | FEB 25 | 33.48 | MAY 25 | 32.68 | AUG 17 | 32.26 |

NEW KENT COUNTY

372428076561501. Local number, 55H1.

LOCATION.--Lat 37°24'28", long 76°56'15", Hydrologic Unit 02080206, Walkers Dam, near Walkers. Owner: City of Newport News.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm) to 145 ft (44.2 m), diameter 4 in (100 mm) from 145 to 630 ft (44.2 to 192.0 m), depth 630 ft (192.0 m), screen (slotted casing) 252 to 257 ft (76.8 to 78.3 m), 339 to 344 ft (103.3 to 104.9 m), 439 to 444 ft (133.8 to 135.3 m), 615 to 625 ft (187.5 to 190.5 m).

DATUM.--Altitude of land-surface datum is 10 ft (3 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 0.8 ft (0.2 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 17. Recorder removed

Apr. 5, 1979; manual measurements thereafter.

PERIOD OF RECORD.--March 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 30.24 ft (9.22 m) below land-surface datum, Apr. 10, 1969; lowest measured, 57.43 ft (17.50 m) below land-surface datum, Aug. 30, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 1 | 52.08 | DEC 9 | 51.03 | MAR 29 | 51.88 | MAY 17 | 52.02 |
| NOV 20 | 51.95 | FEB 22 | 51.32 | APR 21 | 52.10 | AUG 30 | 57.43 |

CITY OF NORFOLK

365223076122101. Local number, 61C1.

LOCATION.--Lat 36°52'23", long 76°12'21", Hydrologic Unit 02080108, Moore's Bridge Filter Plant, Norfolk. Owner: City of Norfolk.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 970 ft (295.7 m), screened 900 to 960 ft (274.3 to 292.6 m).

DATUM.--Altitude of land-surface datum is 10.80 ft (3.29 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.15 ft (0.96 m) above land-surface datum. Measuring point changed from 4.0 ft (1.2 m) above land-surface datum Dec. 15, 1979.

REMARKS.--U.S. Geological Survey test well 1. Water level affected by pumping and recharge operations in nearby wells May 18, 1971, to Nov. 5, 1973. Recorder removed Dec. 15, 1978; manual measurements thereafter.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.70 ft (4.18 m) below land-surface datum, Feb. 17, 1968; lowest measured, 50.04 ft (15.25 m) below land-surface datum, May 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| NOV 16 | 49.88 | MAY 12 | 50.04 | SEP 20 | 49.74 |
| FEB 3 | 49.98 | JUN 15 | 49.94 | | |
| APR 6 | 49.80 | AUG 19 | 49.74 | | |

ORANGE COUNTY

381002078094201. Local number, 45P1.

LOCATION.--Lat 38°10'02", long 78°09'42", Hydrologic Unit 02080106, Gordonsville. Owner: M. L. Johnson.

AQUIFER.--Phyllite of Evinston group of Cambrian or Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 98 ft (29.9 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 480 ft (146 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft (0.1 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 30.

PERIOD OF RECORD.--February 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.83 ft (3.61 m) below land-surface datum, Apr. 10, 1973; lowest recorded, 35.90 ft (10.94 m) below land-surface datum, Jan. 31, 1966.

GROUND-WATER LEVELS

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ORANGE COUNTY--Continued

381002078094201--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | - | 31.97 | 33.16 | 34.06 | 34.68 | 30.40 | 31.59 | 32.12 | 32.50 | 33.31 | 34.40 | 35.02 |
| 10 | 30.65 | 32.23 | 33.29 | 34.10 | 34.74 | 30.77 | 31.96 | 32.17 | 32.57 | - | 34.60 | 35.00 |
| 15 | 30.93 | 32.37 | 33.42 | 34.23 | 34.07 | 30.91 | 32.10 | 32.19 | 32.77 | 33.70 | 34.68 | 35.00 |
| 20 | 31.20 | 32.70 | 33.70 | 34.33 | 33.71 | 31.08 | 31.93 | 32.30 | 32.86 | 33.82 | 34.80 | 35.10 |
| 25 | 31.36 | 32.83 | 33.78 | 34.41 | 31.20 | 31.38 | 31.99 | 32.27 | 33.01 | 34.07 | 34.96 | 35.20 |
| EOM | 31.69 | 32.97 | 33.87 | 34.58 | 30.63 | 31.53 | 32.03 | 32.41 | 33.28 | 34.34 | 35.00 | 35.23 |

WTR YR 1981 HIGHEST 30.20 MAR 5, 1981 LOWEST 35.25 SEP 29, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 35.30 | 34.98 | 35.70 | 29.60 | 25.10 | 21.97 | 20.34 | 19.69 | 23.22 | 21.78 | 24.50 | 25.89 |
| 10 | 35.42 | 35.20 | 35.80 | 28.27 | 24.31 | 21.31 | 20.90 | 20.48 | 20.23 | 22.27 | 24.11 | 26.13 |
| 15 | 35.49 | 35.23 | 35.79 | 27.98 | 24.04 | 20.98 | 21.40 | 21.40 | 18.70 | 22.90 | 24.20 | 26.40 |
| 20 | 35.60 | 35.39 | 34.83 | 28.10 | 22.53 | 20.79 | 21.70 | 22.10 | 18.67 | 23.30 | 24.42 | 26.80 |
| 25 | 35.66 | 35.58 | 33.90 | 27.90 | 22.69 | 18.94 | 22.10 | 22.73 | 19.77 | 23.95 | 24.80 | 27.22 |
| EOM | 35.10 | 35.64 | 32.46 | 27.83 | 22.57 | 19.48 | 20.30 | 23.19 | 20.69 | 24.21 | 25.44 | 27.72 |

WTR YR 1982 HIGHEST 18.61 JUN 21, 1982 LOWEST 35.86 DEC 13, 1981

PRINCE WILLIAM COUNTY

384931077420301 (revised). Local number, 49U1.

LOCATION.--Lat 38°49'30", long 77°42'08", Hydrologic Unit 02070010, north of State Highway 55 near Thoroughfare Gap, 3.7 mi (6.0 km) west of Haymarket. Owner: Virginia Department of Highways and Transportation.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in (175 mm), depth 345 ft (105.2 m), cased to 20 ft (6.1 m), open hole 20 to 345 ft (6.1 to 105.2 m).

DATUM.--Altitude of land-surface datum is 383 ft (117 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum.

REMARKS.--Recorder removed Feb. 9, 1980; manual measurements thereafter.

PERIOD OF RECORD.--June 1969 to current year. Unpublished records available October 1968 to May 1969.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.59 ft (0.79 m) below land-surface datum, Mar. 19, 1975; lowest recorded, 10.22 ft (3.12 m) below land-surface datum, Nov. 8, 9, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|
| OCT 27 | 7.59 | FEB 22 | 3.91 | JUL 13 | 6.77 |
| DEC 28 | 6.98 | MAY 11 | 4.84 | SEP 10 | 7.75 |

385607077381101. Local number, 49V1.

LOCATION.--Lat 38°56'07", long 77°38'11", Hydrologic Unit 02070010, north of Haymarket at intersection of State Highways 600 and 615. Owner: J. H. Hutchison.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in (175 mm), depth 165 ft (50.3 m), cased to 10 ft (3.0 m), open hole 10 to 165 ft (3.0 to 50.3 m).

DATUM.--Altitude of land-surface datum is 420 ft (128 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft (0.3 m) above land-surface datum. Readings from 1979 to 1981 should be 0.7 ft (0.21 m) lower than previously published.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.85 ft (2.09 m) below land-surface datum, Oct. 12, 1979; lowest recorded, 12.28 ft (3.74 m) below land-surface datum, July 12, 13, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 5 | - | 9.82 | 10.40 | 8.51 | 8.35 | 8.62 | 8.91 | 9.31 | 9.01 | 9.89 | 10.94 | 11.30 |
| 10 | 10.41 | 10.19 | 10.48 | 8.86 | 8.18 | 8.60 | 8.93 | 9.60 | 8.65 | 10.09 | 10.15 | 11.34 |
| 15 | 10.53 | 10.21 | 10.46 | 9.30 | 8.31 | 8.59 | 9.09 | 9.92 | 7.82 | 10.03 | 10.23 | 11.55 |
| 20 | 10.67 | 10.29 | 9.87 | 9.62 | 7.77 | 8.08 | 9.28 | 9.93 | 8.50 | 10.46 | 10.43 | 11.72 |
| 25 | 10.66 | 10.41 | 9.51 | 9.63 | 8.15 | 8.17 | 9.68 | 9.93 | 9.20 | 10.57 | 10.80 | 11.41 |
| EOM | 9.68 | 10.54 | 9.43 | 9.73 | 8.28 | 8.85 | 8.89 | 9.33 | 9.53 | 10.70 | 11.17 | 11.05 |

WTR YR 1982 HIGHEST 7.51 FEB 21, 1982 LOWEST 11.72 SEP 20, 1982

GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY--Continued

383423077245901. Local number, 51S7.

LOCATION.--Lat 38°34'23", long 77°24'59", Hydrologic Unit 02070011, 0.7 mi (1.1 km) southeast of Belfair Cross-roads and 700 ft (213.4 m) north of State Highway 619. Owner: National Park Service.

AQUIFER.--Wissahickan formation of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (150 mm), depth 490 ft (149.4 m), cased to 50 ft (15.2 m), open hole 50 to 490 ft (15.2 to 149.4 m).

DATUM.--Altitude of land-surface datum is 295 ft (90 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.61 m) above land-surface datum.

PERIOD OF RECORD.--December 1977 to current year. Unpublished records available September 1973 to November 1975.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.27 ft (0.08 m) below land-surface datum, Oct. 11, 1979; lowest measured, 10.95 ft (3.33 m) below land-surface datum, Feb. 9, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|-------|----------------|--------|----------------|
| DEC 29 | 10.80 | FEB 5 | 7.16 | JUN 21 | 2.99 |

PULASKI COUNTY

370516080411501. Local number, 25E2.

LOCATION.--Lat 37°05'16", long 80°41'15", Hydrologic Unit 05050001, in the town of Dublin. Owner: Town of Dublin.

AQUIFER.--Conococheague formation of Late Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm), depth 370 ft (112.8 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 2,170 ft (661 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum. Measuring point changed from top of recorder shelf, 2.23 ft (0.68 m) above land-surface datum July 21, 1974.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 59. Recorder removed July 21, 1974; manual measurements thereafter.

PERIOD OF RECORD.--April 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.00 ft (18.29 m) below land-surface datum, Mar. 18, 1973; lowest measured, 81.89 ft (24.96 m) below land-surface datum, Sept. 30, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 6 | 80.07 | JAN 5 | 65.60 | APR 13 | 77.64 | JUL 13 | 78.25 |
| NOV 9 | 79.89 | FEB 22 | 70.51 | MAY 25 | 75.60 | AUG 24 | 81.50 |

CITY OF ROANOKE

371653079552101. Local number, 31G1.

LOCATION.--Lat 37°16'53", long 79°55'21", Hydrologic Unit 03010101, in the city of Roanoke. Owner: Nelson-Roanoke Corporation.

AQUIFER.--Rome formation of Cambrian age. Prior to 1974, reported as Elbrook formation.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 48 ft (14.6 m), length of casing unknown.

DATUM.--Altitude of land-surface datum is 930 ft (283.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.9 ft (0.27 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 8. Recorder removed July 21, 1974; manual measurements thereafter.

PERIOD OF RECORD.--August 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.97 ft (4.56 m) below land-surface datum, June 22, 1972; lowest measured, 23.15 ft (7.06 m) below land-surface datum, May 23, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|-------|----------------|--------|----------------|--------|----------------|
| OCT 5 | 18.23 | JAN 4 | 17.09 | AUG 23 | 18.38 |
| NOV 9 | 16.11 | JUL 12 | 17.86 | | |

ROCKBRIDGE COUNTY

373758079271601. Local number, 35K1.

LOCATION.--Lat 37°37'58", long 79°27'16", Hydrologic Unit 02080202, in the town of Glasgow. Owner: Town of Glasgow.

AQUIFER.--Rome formation of Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in (150 mm), depth 700 ft (213.3 m), cased to 101 ft (30.8 m), open hole from 101 to 700 ft (30.8 to 213.3 m).

DATUM.--Altitude of land-surface datum is 745 ft (227 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft (0.6 m) above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 63.

PERIOD OF RECORD.--June 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.92 ft (4.85 m) below land-surface datum, July 8, 1972; lowest recorded, 29.13 ft (8.88 m) below land-surface datum, Dec. 13, 14, 1981.

ROCKBRIDGE COUNTY--Continued

373758079271601--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 26.78 | 27.40 | 27.72 | 28.20 | 28.60 | 27.70 | 28.16 | 28.31 | 27.90 | 28.14 | 27.77 | 28.01 |
| 10 | 26.87 | 27.51 | 27.77 | 28.27 | 28.63 | 27.77 | 28.21 | 28.38 | 27.92 | 27.90 | 27.56 | 28.14 |
| 15 | 27.02 | 27.58 | 27.84 | 28.35 | 28.11 | 27.83 | 28.23 | 28.49 | 28.05 | 27.52 | 27.57 | 28.22 |
| 20 | 27.12 | 27.64 | 28.03 | 28.41 | 28.03 | 27.97 | 28.11 | 28.49 | 28.17 | 27.50 | 27.69 | 28.31 |
| 25 | 27.20 | 27.67 | 28.02 | 28.46 | 27.70 | 28.10 | 28.12 | 28.47 | 28.29 | 27.67 | 27.81 | 28.48 |
| EOM | 27.30 | 27.61 | 28.06 | 28.58 | 27.67 | 28.15 | 28.22 | 28.18 | 28.35 | 27.73 | 27.98 | 28.53 |

WTR YR 1981 HIGHEST 26.57 OCT 1, 1980 LOWEST 28.63 FEB 9, 10, 1981

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 28.64 | 28.39 | 28.99 | 27.20 | 25.20 | 23.65 | 23.29 | 24.60 | 24.82 | 24.11 | 25.52 | 26.65 |
| 10 | 28.78 | - | 29.09 | 26.52 | 24.80 | 23.19 | 23.70 | 24.79 | 24.53 | 24.23 | 25.73 | 26.80 |
| 15 | 28.86 | - | 29.10 | 26.57 | 24.83 | 23.17 | 24.08 | 25.00 | 23.00 | 24.60 | 25.97 | 26.99 |
| 20 | 29.00 | 28.73 | 28.66 | 26.71 | 23.75 | 22.42 | 24.30 | 25.23 | 23.02 | 24.80 | 26.01 | 27.18 |
| 25 | 29.03 | 28.83 | 28.52 | 26.36 | 23.91 | 22.40 | 24.50 | 25.38 | 23.50 | 25.03 | 26.20 | 27.30 |
| EOM | 28.40 | 28.90 | 28.50 | 26.29 | 23.90 | 22.89 | 24.47 | 24.83 | 23.83 | 25.26 | 26.43 | 27.28 |

WTR YR 1982 HIGHEST 22.17 MAR 21, 1982 LOWEST 29.13 DEC 13, 14, 1981

ROCKINGHAM COUNTY

382150078424001. Local number, 41Q1.

LOCATION.--Lat 38°21'50", long 78°42'40", Hydrologic Unit 02070005, at Virginia Department of Highways and Transportation garage near McGaheysville. Owner: U.S. Geological Survey.

AQUIFER.--Conococheague limestone of Late Cambrian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 1/4 in (158 mm), depth 310 ft (94.5 m), cased to 131 ft (39.9 m), open hole 131 to 310 ft (39.9 to 94.5 m).

DATUM.--Altitude of land-surface datum is 1,105 ft (337 m) National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.50 ft (1.07 m) above land-surface datum.

PERIOD OF RECORD.--August 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.38 ft (18.40 m) below land-surface datum, Dec. 26, 1972; lowest recorded, 87.18 ft (26.57 m) below land-surface datum, Oct. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 72.55 | 74.42 | 75.67 | 76.51 | 71.61 | 67.68 | 66.24 | 66.59 | 67.46 | 66.95 | 68.12 | 69.77 |
| 10 | 73.22 | 74.33 | 76.04 | 75.13 | 70.39 | 67.39 | 66.43 | 66.74 | 67.30 | 67.21 | 68.12 | 70.30 |
| 15 | 73.88 | 74.37 | 76.45 | 74.03 | 69.77 | 67.23 | 66.64 | 66.97 | 65.80 | 67.45 | 68.25 | 70.91 |
| 20 | 74.59 | 74.59 | 76.78 | 73.71 | 68.26 | 66.99 | 66.75 | 67.22 | 65.93 | 67.68 | 68.47 | 71.58 |
| 25 | 75.24 | 74.96 | 76.98 | 73.56 | 67.78 | 65.73 | 66.91 | 67.41 | 66.25 | 67.84 | 68.80 | 72.25 |
| EOM | 74.76 | 75.32 | 76.84 | 73.24 | 67.76 | 66.05 | 66.50 | 67.45 | 66.59 | 67.95 | 69.31 | 72.76 |

WTR YR 1982 HIGHEST 65.65 MAR 25, 1982 LOWEST 76.99 DEC 24, 1981

SOUTHAMPTON COUNTY

364109077230701. Local number, 51B3.

LOCATION.--Lat 36°41'09", long 77°23'07", Hydrologic Unit 03010201, 150 ft (45.7 m) east of the intersection of State Highway 615 and U.S. 58, near Adams Grove. Owner: U.S. Geological Survey.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drill observation water well, diameter 4 in (100 mm), depth 253 ft (77.1 m), screened 165 to 175 ft (50.3 to 53.3 m), open hole from 175 to 253 ft (53.3 to 77.1 m).

DATUM.--Altitude of land-surface datum is 126 ft (38.4 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 3.20 ft (0.98 m) above land-surface datum.

PERIOD OF RECORD.--July 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 54.21 ft (16.52 m) below land-surface datum, Apr. 30, 1978; lowest recorded, 60.03 ft (18.30 m) below land-surface datum, Oct. 24, 25, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 59.70 | 59.73 | 59.52 | 58.11 | 57.10 | 56.11 | 56.04 | 56.15 | 56.16 | 56.66 | 57.07 | 57.59 |
| 10 | 59.86 | 59.69 | 59.45 | 57.95 | 56.90 | 56.03 | 56.13 | 56.24 | 56.16 | 56.92 | 57.25 | 57.83 |
| 15 | 59.90 | 59.71 | 59.44 | 57.81 | 56.79 | 56.00 | 56.13 | 56.57 | 56.26 | 56.80 | 57.18 | 57.97 |
| 20 | 59.99 | 59.64 | 59.10 | 57.73 | 56.37 | 56.00 | 56.13 | 56.70 | 56.33 | 56.66 | 57.02 | 58.11 |
| 25 | 60.03 | 59.64 | 58.87 | 57.50 | 56.38 | 55.95 | 56.19 | 56.66 | 56.45 | 56.87 | 57.12 | 58.20 |
| EOM | 59.79 | 59.62 | 58.55 | 57.31 | 56.33 | 56.02 | 56.12 | 56.12 | 56.52 | 57.08 | 57.32 | 57.94 |

WTR YR 1982 HIGHEST 55.94 MAR 26, 1982 LOWEST 60.03 OCT 24, 25, 1981

GROUND-WATER LEVELS

SOUTHAMPTON COUNTY--Continued

364706077072301. Local number, 54C1.

LOCATION.--Lat 36°47'06", long 77°07'23", Hydrologic Unit 03010201, in the town of Sebrell. Owner: Norfolk and Western Railway.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm), depth 344 ft (104.9 m), screen depth unknown.

DATUM.--Altitude of land-surface datum is 58.4 ft (17.8 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--1907, July 1938, April 1940 to December 1946, September 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.00 ft (4.57 m) below land-surface datum, 1907; lowest measured, 97.48 ft (29.71 m) below land-surface datum, Oct. 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| OCT 14 | 97.48 | FEB 19 | 95.96 | MAY 20 | 95.98 | SEP 16 | 95.82 |
| NOV 13 | 97.43 | MAR 19 | 95.87 | JUL 15 | 95.70 | | |
| DEC 14 | 97.32 | APR 22 | 95.86 | AUG 16 | 95.56 | | |

CITY OF SUFFOLK

363834076382301 (revised). Local number, 57B8.

LOCATION.--Lat 36°38'27", long 76°38'05", Hydrologic Unit 03010205, 0.3 mi (0.48 km) southwest of State Highway 664 and 0.8 mi (1.29 km) east of U.S. Highway 13. Owner: Soren F. Andresen.

AQUIFER.--Sand of Chesapeake group.

WELL CHARACTERISTICS.--Drilled flowing water well, diameter 2 in (50 mm), depth 65 ft (19.8 m), screened 50 to 65 ft (15.2 to 19.8 m).

DATUM.--Altitude of land-surface datum is 45 ft (13.7 m) National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.

REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 1.20 ft (0.37 m) higher than previously published.

PERIOD OF RECORD.--November 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.51 ft (1.98 m) above land-surface datum, Mar. 9, 1979; lowest measured, at land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|-------|-------------|-------|-------------|--------|-------------|
| NOV 16 | 3.56 | FEB 3 | 6.30 | APR 7 | 5.80 | AUG 19 | 5.85 |

NOTE.--Flowing well, readings given are above land-surface datum.

363810076381001. Local number, 57B9.

LOCATION.--Lat 36°38'36", long 76°38'10", Hydrologic Unit 03010205, 0.2 mi (0.32 km) southwest of State Highway 664, 0.7 mi (1.13 km) southeast of U.S. Highway 13, and 6.7 mi (10.8 km) southwest of Suffolk. Owner: Soren Andresen.

AQUIFER.--Sand of Chesapeake group.

WELL CHARACTERISTICS.--Drilled flowing unused water well, diameter 1.25 in (32 mm), depth 85 ft (25.9 m), screened 70 to 85 ft (2.13 to 25.9 m).

DATUM.--Altitude of land-surface datum is 45 ft (13 m) National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.

REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 0.78 ft (0.24 m) higher than previously published.

PERIOD OF RECORD.--November 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.63 ft (1.72 m) above land-surface datum, Mar. 9, 1979; lowest measured, 0.22 ft (0.07 m) below land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|-------|-------------|-------|-------------|--------|-------------|
| NOV 16 | 2.77 | FEB 3 | 5.60 | APR 7 | 4.64 | AUG 19 | 4.98 |

NOTE.--Flowing well, readings given are above land-surface datum.

363353076331701. Local number, 58A23.

LOCATION.--Lat 36°33'53", long 76°33'17", Hydrologic Unit 03010205, 200 ft (61.0 m) north of State Highway 678, 400 ft (121.9 m) west of State Highway 604, and 12.1 mi (19.5 km) south of Suffolk. Owner: Raymond R. Brinkley.

AQUIFER.--Sand of undifferentiated Paleocene age.

WELL CHARACTERISTICS.--Drilled used water well, diameter 4 in (100 mm) to 80 ft (24.4 m), 2 in (50 mm) from 80 to 420 ft (24.4 to 128.0 m), depth 420 ft (128.0 m), screened 410 to 420 ft (125.0 to 128.0 m).

DATUM.--Altitude of land-surface datum is 60 ft (18 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.67 ft (0.2 m) above land-surface datum.

REMARKS.--Water level affected by pumpage.

PERIOD OF RECORD.--November 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.56 ft (9.92 m) below land-surface datum, May 31, 1978; lowest measured, 46.66 ft (14.22 m) below land-surface datum, Nov. 6, 1981.

GROUND-WATER LEVELS

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CITY OF SUFFOLK--Continued

363353076331701--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|-------|----------------|
| NOV 6 | 46.66 | FEB 12 | 43.29 | JUL 6 | 43.27 |
| DEC 28 | 43.12 | MAR 9 | 43.92 | | |

363928076332901. Local number, 58B13.

LOCATION.--Lat 36°39'28", long 76°33'29", Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 15 ft (4.6 m).

DATUM.--Altitude of land-surface datum is 40 ft (12 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of recorder shelf, 1.90 ft (0.58 m) above land-surface datum.

PERIOD OF RECORD.--August 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.95 ft (0.90 m) below land-surface datum, May 25, 1979; lowest recorded, 13.44 ft (4.10 m) below land-surface datum, Jan. 23-26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|
| 5 | 12.45 | 12.83 | 13.01 | 11.21 | 8.67 | 5.89 | 6.99 | 8.12 | 8.92 | 9.52 | 9.66 | 9.62 |
| 10 | 12.52 | 12.86 | 13.03 | 10.26 | 8.16 | 5.22 | 7.28 | 8.36 | 8.62 | 9.65 | 9.91 | 9.84 |
| 15 | 12.60 | 12.89 | 13.06 | 10.07 | 7.40 | 5.89 | 7.66 | 8.68 | 8.90 | 9.60 | 8.73 | 10.07 |
| 20 | 12.67 | 12.92 | 13.00 | 9.89 | 5.79 | 5.84 | 7.87 | 8.95 | 8.88 | 9.65 | 8.69 | 10.26 |
| 25 | 12.74 | 12.96 | 12.79 | 9.08 | 6.46 | 5.99 | 8.13 | 8.98 | 9.08 | 9.81 | 8.92 | 10.24 |
| EOM | 12.79 | 12.98 | 12.29 | 8.62 | 5.76 | 6.54 | 8.03 | 8.87 | 9.25 | 9.96 | 9.35 | 9.41 |

WTR YR 1982 HIGHEST 4.78 MAR 7, 1982 LOWEST 13.06 DEC 15-18, 1981

363921076331601. Local number, 58B14.

LOCATION.--Lat 36°39'21", long 76°33'16", Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 9.30 ft (2.83 m).

DATUM.--Altitude of land-surface datum is 30 ft (9 m) National Geodetic Vertical Datum of 1929. Measuring point:

Inside edge of casing, 2.5 ft (0.8 m) above land-surface datum. Prior to 1978, measuring point reported as 2.7 ft (0.8 m) above land-surface datum.

PERIOD OF RECORD.--May 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft (0.09 m) below land-surface datum, Jan. 26, 1978; lowest measured, water level below bottom of casing, Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| NOV 20 | 5.17 | APR 12 | 3.74 | JUL 6 | 3.46 | SEP 28 | 2.81 |
| FEB 12 | 2.04 | MAY 3 | 1.29 | AUG 2 | 1.74 | | |
| MAR 9 | 1.09 | JUN 10 | 2.56 | AUG 30 | 3.69 | | |

363925076331701. Local number, 58B15.

LOCATION.--Lat 36°39'25", long 76°33'43" (revised), Hydrologic Unit 03010205, 4 mi (6.5 km) south of Suffolk off State Highway 642. Owner: Melvin Brinkley.

AQUIFER.--Sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in (550 mm), depth 6.6 ft (2.0 m), sounded Feb. 3, 1982,

DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point:

Inside edge of casing, 1.4 ft (0.4 m) above land-surface datum.

PERIOD OF RECORD.--May 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.98 ft (0.30 m) below land-surface datum, Jan. 26, 1978; lowest measured, below bottom of well at times each year.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|-------|----------------|--------|----------------|
| NOV 20 | 6.28 | JUL 6 | 3.01 | AUG 30 | 4.19 |
| DEC 28 | 3.58 | AUG 2 | 3.15 | SEP 28 | 4.09 |

GROUND-WATER LEVELS

CITY OF SUFFOLK--Continued

363902076331901. Local number, 58B48.

LOCATION.--Lat 36°39'02", long 76°33'19", Hydrologic Unit 03010205, 4 mi (6.4 km) south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.

AQUIFER.--Sand of Quaternary age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in (600 mm), depth 7 ft (2.1 m).

DATUM.--Altitude of land-surface datum is 35 ft (11 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of inside edge of casing, 1.40 ft (0.43 m) above land-surface datum.

PERIOD OF RECORD.--May 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft (0.06 m) below land-surface datum, May 31, 1978; lowest measured, below bottom of well Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|--------|-------------|--------|-------------|--------|-------------|
| NOV 20 | 6.27 | MAR 9 | 0.77 | JUN 10 | 3.04 | AUG 30 | 3.57 |
| DEC 28 | 2.40 | APR 12 | 2.44 | JUL 6 | 4.97 | SEP 28 | 3.37 |
| FEB 12 | 1.57 | MAY 3 | 3.60 | AUG 2 | 3.66 | | |

364301076314801. Local number, 58B114.

LOCATION.--Lat 36°43'30", long 76°31'48", Hydrologic Unit 03010205, at the intersection of Jericho Lane and Jericho Ditch in the Great Dismal Swamp. Owner: U.S. Fish and Wildlife.

AQUIFER.--Sand of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm) to 61.8 ft (18.8 m), 2 in (50 mm) from 61.8 to 569.9 ft (18.8 to 173.7 m), depth 569.9 ft (173.7 m), screened 559.9 to 569.9 ft (170.7 to 173.7 m).

DATUM.--Altitude of land-surface datum is 25 ft (7 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 0.7 ft (0.2 m) above land-surface datum.

PERIOD OF RECORD.--May 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 76.29 ft (23.25 m) below land-surface datum, May 21, 1976; lowest measured, 98.02 ft (29.88 m) below land-surface datum, July 16, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|-------|-------------|--------|-------------|--------|-------------|
| DEC 28 | 91.57 | MAR 9 | 89.22 | JUL 21 | 89.96 | AUG 30 | 89.48 |
| FEB 12 | 89.75 | JUN 4 | 89.62 | AUG 3 | 89.64 | SEP 28 | 89.23 |

364330076345101 (revised). Local number, 58B235.

LOCATION.--Lat 36°43'30" (revised), long 76°34'51", Hydrologic Unit 02080208, in the Planters Plant in the city of Suffolk. Owner: Planters Peanut Company.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in (250 mm) to 254 ft (77.4 m), 8 in (200 mm) from 254 to 422 ft (77.4 to 128.6 m), 6 in (150 mm) from 422 to 570.0 ft (128.6 to 173.7 m), depth 570 ft (173.7 m), screened 530 to 561.6 ft (161.5 to 171.2 m).

DATUM.--Altitude of land-surface datum is 53 ft (16 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 2.50 ft (0.76 m) above land-surface datum.

PERIOD OF RECORD.--November 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.25 ft (38.18 m) below land-surface datum, Apr. 2, 1980; lowest measured, 142.30 ft (43.37 m) below land-surface datum, July 2, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|-------------|-------|-------------|-------|-------------|--------|-------------|
| NOV 16 | 136.68 | FEB 3 | 127.52 | APR 7 | 126.19 | SEP 20 | 129.12 |

SURREY COUNTY

370408076460101. Local number, 56E1.

LOCATION.--Lat 37°04'08", long 76°40'01" (revised), Hydrologic Unit 03010202, on State Highway 617, 3.2 mi (5.1 km) southwest of Bacons Castle. Owner: Buster E. Cox.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 18 in (450 mm) to 360 ft (109.7 m), 8 in (200 mm) from 333.5 to 705 ft (101.7 to 214.9 m), depth 705 ft (214.9 m), screened 401 to 411 ft (122.2 to 125.3 m), 431 to 441 ft (131.4 to 134.4 m), 463 to 473 (141.1 to 144.2 m), 495 to 505 ft (150.9 to 153.9 m), 540 to 555 ft (164.6 to 169.2 m), 700 to 705 ft (213.4 to 214.9 m).

DATUM.--Altitude of land-surface datum is 93 ft (28 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top edge of recorder shelf, 3.6 ft (1.1 m) above land-surface datum.

PERIOD OF RECORD.--March 1942, April 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 73.52 ft (22.41 m) below land-surface datum, Mar. 10, 1942; lowest recorded, 148.48 ft (45.26 m) below land-surface datum, Nov. 12, 13, 1981.

GROUND-WATER LEVELS

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SURREY COUNTY--Continued

370408076460101--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|-----|-----|--------|--------|--------|--------|--------|--------|
| 5 | 148.20 | 148.40 | 148.21 | 147.83 | - | - | - | 147.15 | 146.91 | 147.49 | 147.90 | 148.24 |
| 10 | 148.33 | 148.45 | 148.17 | 147.80 | - | - | 147.20 | 147.13 | 147.00 | 147.57 | - | 148.30 |
| 15 | 148.41 | 148.36 | 148.11 | 147.74 | - | - | 147.23 | 147.16 | 147.01 | 147.57 | - | 148.35 |
| 20 | 148.43 | 148.23 | 148.11 | 147.79 | - | - | 147.19 | 147.13 | 147.09 | 147.64 | 147.91 | 148.35 |
| 25 | 148.46 | 148.34 | 148.06 | 147.68 | - | - | 147.21 | 146.89 | 147.23 | 147.76 | 147.99 | 148.35 |
| EOM | 148.44 | 148.31 | 148.03 | 147.71 | - | - | 147.16 | 146.92 | 147.31 | 147.81 | 148.17 | 148.28 |

WTR YR 1982 HIGHEST 146.84 MAY 25, 1982 LOWEST 148.48 NOV 12, 13, 1981

WESTMORELAND COUNTY

381110076550501. Local number, 55P5.

LOCATION.--Lat 38°11'10", long 76°55'05", Hydrologic Unit 02070011, behind craft shop at George Washington birthplace. Owner: National Park Service.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in (150 mm), depth 471 ft (143.6 m), screened 451 to 466 ft (137.5 to 142.0 m).

DATUM.--Altitude of land-surface datum is 24 ft (7 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of recorder shelf, 3.0 ft (0.9 m) above land-surface datum.

PERIOD OF RECORD.--June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.05 ft (7.63 m) below land-surface datum, June 24, 1974; lowest recorded, 36.00 ft (10.97 m) below land-surface datum, Sept. 11, 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|
| 5 | - | - | 35.00 | 34.99 | 35.30 | 34.94 | 35.22 | 35.21 | 35.04 | - | - | 35.84 |
| 10 | - | - | 35.33 | 35.50 | 35.35 | 35.15 | 35.43 | 35.24 | 34.95 | - | - | 35.99 |
| 15 | - | - | 34.90 | 35.07 | 35.21 | 35.10 | 35.30 | 35.13 | - | - | - | - |
| 20 | - | 34.67 | 35.37 | 35.42 | 34.86 | 34.90 | 35.18 | 35.32 | - | - | 35.69 | - |
| 25 | - | 34.95 | 35.14 | 35.24 | 35.17 | 34.83 | 35.28 | 35.44 | - | - | 35.60 | - |
| EOM | - | 35.14 | 35.11 | 35.31 | 35.20 | 35.19 | 35.12 | 35.16 | - | - | 35.75 | - |

WTR YR 1982 HIGHEST 34.25 NOV 27, 1981 LOWEST 36.00 SEP 11, 12, 1982

381132076551001. Local number, 55P9.

LOCATION.--Lat 38°11'32", long 76°55'10", Hydrologic Unit 02080104, 0.6 mi (0.97 km) north of the end of State Highway 204, off of State Highway 3 at George Washington Birthplace National Monument. Owner: National Park Service.

AQUIFER.--Sand of Quaternary age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 36 in (900 mm), depth 22.6 ft (6.9 m).

DATUM.--Altitude of land-surface datum is 17 ft (5.2 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of concrete lip on casing, 1.65 ft (0.50 m) above land-surface datum.

PERIOD OF RECORD.--July 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.11 ft (0.03 m) below land-surface datum, Oct. 11, 1979; lowest measured, 11.38 ft (3.47 m) below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|
| OCT 29 | 10.97 | FEB 3 | 4.21 | AUG 16 | 7.13 |
| DEC 1 | 11.38 | APR 19 | .65 | | |

380538076490801. Local number, 56N1.

LOCATION.--Lat 38°05'38", long 76°49'08", Hydrologic Unit 02080104, at Washington and Lee School near Montross. Owner: Westmoreland County Public Schools.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in (100 mm) to 189 ft (57.6 m), 2 in (50 mm) from 189 to 641 ft (57.6 to 195.4 m), depth 641 ft (195.4 m), screened 608 to 628 ft (185.3 to 191.4 m).

DATUM.--Altitude of land-surface datum is 149 ft (45 m) National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 1.2 ft (0.4 m) above land-surface datum. Top of casing previously reported as 1 ft (0.3 m).

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 16. Recorder removed

Mar. 31, 1979; manual measurements thereafter.

PERIOD OF RECORD.--August 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 133.47 ft (40.68 m) below land-surface datum, Aug. 28, 1967; lowest measured, 157.20 ft (47.91 m) below land-surface datum, Jan. 28, 1980.

GROUND-WATER LEVEL

WESTMORELAND COUNTY--Continued

380538076490801--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL | DATE | WATER LEVEL |
|--------|----------------|--------|----------------|--------|----------------|--------|----------------|
| OCT 24 | 154.01 | MAR 13 | 152.78 | MAY 20 | 153.20 | JUL 21 | 153.91 |
| NOV 19 | 153.31 | APR 6 | 152.69 | JUN 3 | 153.40 | | |

YORK COUNTY

371916076375901. Local number, 57G2.

LOCATION.--Lat 37°19'16", long 76°37'59", Hydrologic Unit 02080107, at Building 3101, Camp Peary, Williamsburg.

Owner: Camp Peary Naval Reservation.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 10 in (250 mm) to 352 ft (107.3 m), diameter 8 in (200 mm) from 352 to 387 ft (107.3 to 118.0 m), depth 387 ft (118.0 m).

DATUM.--Altitude of land-surface datum is 15 ft (4.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft (0.06 m) above land-surface datum. Prior to May 1981, measuring point at land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board from January 1968 to September 1975.

PERIOD OF RECORD.--January 1968 to September 1975, May 1981 to current year. Unpublished record available

January to August 1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.09 ft (13.13 m) below land-surface datum, Mar. 7, 1968; lowest recorded, 81.65 ft (24.89 m) below land-surface datum, Sept. 25, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, MAY TO SEPTEMBER 1981
LOWEST VALUES

| DAY | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|
| 5 | - | 77.54 | 78.89 | 80.29 | 80.66 |
| 10 | - | 77.43 | 79.04 | 80.38 | 81.12 |
| 15 | - | 77.73 | 79.33 | 80.81 | 81.51 |
| 20 | 76.66 | 78.08 | 78.89 | 80.19 | 81.53 |
| 25 | 76.65 | 78.50 | 80.05 | 80.84 | 81.65 |
| EOM | 77.21 | 78.78 | 80.39 | 80.82 | 81.43 |

| | | | |
|-----------------------|---------|-------|--------------|
| MAY TO SEPTEMBER 1981 | HIGHEST | 75.55 | MAY 19, 1981 |
| | LOWEST | 81.65 | SEP 25, 1981 |

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
LOWEST VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 5 | 81.34 | 81.14 | 80.09 | 79.33 | 78.51 | 77.88 | 76.96 | 77.96 | 78.59 | 79.03 | 80.74 | 80.94 |
| 10 | 81.29 | 81.22 | 80.16 | 79.32 | 78.27 | 78.01 | 76.94 | 78.09 | 78.50 | 79.27 | 81.20 | 80.97 |
| 15 | 81.26 | 80.34 | 79.70 | 78.79 | 78.14 | 77.52 | 77.03 | 78.30 | 78.74 | 79.52 | 81.06 | 80.86 |
| 20 | 81.42 | 80.39 | 79.99 | 78.88 | 77.60 | 76.89 | 77.38 | 78.87 | 78.79 | 79.78 | 81.15 | 80.69 |
| 25 | 81.11 | 80.13 | 79.52 | 78.88 | 77.84 | 76.88 | 77.97 | 78.76 | 79.09 | 79.88 | 80.87 | 80.68 |
| EOM | 80.79 | 80.26 | 79.21 | 78.51 | 78.02 | 76.99 | 77.78 | 78.72 | 78.89 | 80.35 | 81.02 | 80.41 |

| | | | | | | |
|-------------|---------|-------|--------------|--------|-------|-------------|
| WTR YR 1982 | HIGHEST | 75.59 | MAR 25, 1982 | LOWEST | 81.45 | OCT 1, 1981 |
|-------------|---------|-------|--------------|--------|-------|-------------|

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| LOCAL IDENT- I- FIER | STATION | NUMBER | GEO- LOGIC UNIT | DATE OF SAMPLE | DEPTH OF WELL, TOTAL (FEET) | SPE- CIFIC CON- DUCT- ANCE (UMHOS) | PH (UNITS) | TEMPER- ATURE (DEG C) | TUR- BID- ITY (NTU) | HARD- NESS (MG/L AS CACO3) | NESS NONCAR- BONATE (MG/L AS CACO3) |
|-------------------------------|-----------------|---------|-----------------------|----------------------|---|---|---------------|-----------------------------|------------------------------|--|--|
| BUCHANAN | | | | | | | | | | | |
| 14E 26 | 370527082022902 | 324NRTN | 81-10-14 | 104 | -- | 7.2 | 13.0 | -- | 490 | 100 | |
| 14E 37 | 370527082022903 | 324NRTN | 81-10-14 | 582 | 750 | 8.2 | 14.0 | -- | 8 | | .00 |
| 14E 39 | 370527082022905 | 324NRTN | 81-10-13 | 243 | 280 | 8.1 | 13.0 | -- | 100 | | .00 |
| 14E 40 | 370443082022301 | 324NRTN | 82-08-25 | 60 | 222 | 6.1 | 15.0 | -- | 75 | | .00 |
| 14E 41 | 370443082022302 | 324NRTN | 82-08-26 | 126 | 295 | 7.5 | 13.1 | -- | 82 | | .00 |
| 14E 43 | 370552082022101 | 324NRTN | 81-10-15 | -- | 190 | 6.9 | 14.5 | -- | 51 | | .00 |
| 14E 44 | 370443082022304 | 110QRNR | 82-08-26 | 5 | 205 | 6.6 | 22.5 | -- | 61 | | .00 |
| GLOUCESTER | | | | | | | | | | | |
| 58H 4 | 372331076312604 | 217PTXN | 82-08-25 | 1320 | 2900 | 7.4 | 20.5 | 22 | 23 | | .00 |

| LOCAL IDENT- I- FIER | DATE OF SAMPLE | SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) | NITRO- GEN, NITRITE TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) | PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) | PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC TOTAL (UG/L AS AS) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) |
|-------------------------------|----------------------|--|--|--|---|---|---|---|-------------------------------------|--|---|
| BUCHANAN | | | | | | | | | | | |
| 14E 26 | 81-10-14 | 622 | -- | .06 | -- | -- | -- | <100 | -- | -- | -- |
| 14E 37 | 81-10-14 | 458 | -- | .03 | -- | -- | -- | 50 | -- | -- | -- |
| 14E 39 | 81-10-13 | 160 | -- | 1.6 | -- | -- | -- | 20 | -- | -- | -- |
| 14E 40 | 82-08-25 | 133 | -- | -- | -- | -- | -- | <100 | -- | -- | -- |
| 14E 41 | 82-08-26 | 154 | -- | -- | -- | -- | -- | <100 | -- | -- | -- |
| 14E 43 | 81-10-15 | 109 | -- | .28 | -- | -- | -- | 1400 | -- | -- | -- |
| 14E 44 | 82-08-26 | 106 | -- | -- | -- | -- | -- | 200 | -- | -- | -- |
| GLOUCESTER | | | | | | | | | | | |
| 58H 4 | 82-08-25 | 1870 | <.010 | <.10 | 6.40 | .070 | .060 | 100 | 1 | 1 | 100 |

| LOCAL IDENT- I- FIER | DATE OF SAMPLE | IRON, DIS- SOLVED (UG/L AS FE) | LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) | LEAD, DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) | MANGA- NESE, DIS- SOLVED (UG/L AS MN) | MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) | MERCURY DIS- SOLVED (UG/L AS HG) | NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) | NICKEL, DIS- SOLVED (UG/L AS NI) |
|-------------------------------|----------------------|--|---|--|---|--|---|--|---|--|
| BUCHANAN | | | | | | | | | | |
| 14E 26 | 81-10-14 | 1900 | -- | -- | 1400 | 1300 | -- | -- | -- | -- |
| 14E 37 | 81-10-14 | 50 | -- | -- | 30 | 11 | -- | -- | -- | -- |
| 14E 39 | 81-10-13 | 9 | -- | -- | 20 | 19 | -- | -- | -- | -- |
| 14E 40 | 82-08-25 | 6600 | -- | -- | 330 | 330 | -- | -- | -- | -- |
| 14E 41 | 82-08-26 | 5700 | -- | -- | 180 | 150 | -- | -- | -- | -- |
| 14E 43 | 81-10-15 | 2400 | -- | -- | 260 | 270 | -- | -- | -- | -- |
| 14E 44 | 82-08-26 | 580 | -- | -- | 420 | 210 | -- | -- | -- | -- |
| GLOUCESTER | | | | | | | | | | |
| 58H 4 | 82-08-25 | 2700 | 3 | 3 | 40 | 40 | .2 | .2 | 2 | 1 |

GEOLOGIC UNIT (AQUIFER):

110QRNR - ALLUVIUM, QUATERNARY AGE
 217PTXN - POTOMAC GROUP, LOWER CRETACEOUS AGE
 324NRTN - NORTON FORMATION, PENNSYLVANIAN AGE

< Less than.

QUALITY OF GROUND WATER

449

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

| LOCAL IDENT- I- FIER | DATE OF SAMPLE | CALCIUM DIS- SOLVED (MG/L AS CA) | MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) | SODIUM, DIS- SOLVED (MG/L AS NA) | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | ALKA- LINITY LAB (MG/L AS CACO3) | SULFATE DIS- SOLVED (MG/L AS SO4) | CHLO- RIDE, DIS- SOLVED (MG/L AS CL) | FLUO- RIDE, DIS- SOLVED (MG/L AS F) | SILICA, DIS- SOLVED (MG/L AS SIO2) | SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) |
|-------------------------------|----------------------|--|--|--|---|---|---|---|--|---|--|
| BUCHANAN | | | | | | | | | | | |
| 14E 26 | 81-10-14 | 110 | 52 | 32 | 10 | 390 | 150 | 10 | .7 | 19 | 671 |
| 14E 37 | 81-10-14 | 2.2 | .7 | 170 | 1.5 | 220 | 110 | 10 | .6 | 11 | 442 |
| 14E 39 | 81-10-13 | 27 | 7.8 | 18 | 3.7 | 130 | 3.3 | .6 | .2 | 20 | 159 |
| 14E 40 | 82-08-25 | 20 | 6.2 | 12 | 1.1 | 75 | 21 | 4.8 | -- | 15 | 140 |
| 14E 41 | 82-08-26 | 23 | 6.0 | 18 | 6.9 | 112 | 12 | 9.0 | -- | 6.4 | 149 |
| 14E 43 | 81-10-15 | 13 | 4.4 | 15 | .8 | 73 | 7.7 | 1.3 | .2 | 18 | 97 |
| 14E 44 | 82-08-26 | 14 | 6.3 | 4.8 | 3.2 | 83 | 10 | 7.4 | -- | 7.7 | 117 |

GLOUCESTER

| | | | | | | | | | | | |
|-------|----------|-----|-----|-----|----|-----|----|-----|-----|----|------|
| 58H 4 | 82-08-25 | 6.0 | 2.0 | 720 | 12 | 449 | 85 | 750 | 1.8 | 22 | 1900 |
|-------|----------|-----|-----|-----|----|-----|----|-----|-----|----|------|

| LOCAL IDENT- I- FIER | DATE OF SAMPLE | BARIUM, DIS- SOLVED (UG/L AS BA) | CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) | CADMIUM DIS- SOLVED (UG/L AS CD) | CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) | CHRO- MIUM, DIS- SOLVED (UG/L AS CR) | COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) | COBALT, DIS- SOLVED (UG/L AS CO) | COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) | COPPER, DIS- SOLVED (UG/L AS CU) | IRON, TOTAL RECOV- ERABLE (UG/L AS FE) |
|-------------------------------|----------------------|--|---|--|--|---|---|--|---|--|---|
| BUCHANAN | | | | | | | | | | | |
| 14E 26 | 81-10-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3100 |
| 14E 37 | 81-10-14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2000 |
| 14E 39 | 81-10-13 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 380 |
| 14E 40 | 82-08-25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6500 |
| 14E 41 | 82-08-26 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14000 |
| 14E 43 | 81-10-15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3300 |
| 14E 44 | 82-08-26 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 38000 |

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|-------|----------|-----|---|----|----|----|---|----|---|---|------|
| 58H 4 | 82-08-25 | 100 | 2 | <1 | 10 | 10 | 1 | <1 | 8 | 3 | 5000 |
|-------|----------|-----|---|----|----|----|---|----|---|---|------|

| LOCAL IDENT- I- FIER | DATE OF SAMPLE | SELE- NIUM, TOTAL (UG/L AS SE) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) | SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) | SILVER, DIS- SOLVED (UG/L AS AG) | STRON- TIUM, DIS- SOLVED (UG/L AS SR) | ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|-------------------------------|----------------------|--|---|---|--|--|---|--|
| BUCHANAN | | | | | | | | |
| 14E 26 | 81-10-14 | -- | -- | -- | -- | 840 | -- | -- |
| 14E 37 | 81-10-14 | -- | -- | -- | -- | 95 | -- | -- |
| 14E 39 | 81-10-13 | -- | -- | -- | -- | 1200 | -- | -- |
| 14E 40 | 82-08-25 | -- | -- | -- | -- | -- | -- | -- |
| 14E 41 | 82-08-26 | -- | -- | -- | -- | -- | -- | -- |
| 14E 43 | 81-10-15 | -- | -- | -- | -- | 160 | -- | -- |
| 14E 44 | 82-08-26 | -- | -- | -- | -- | -- | -- | -- |

GLOUCESTER

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|-------|----------|----|----|----|----|----|-----|----|
| 58H 4 | 82-08-25 | <1 | <1 | <1 | <1 | -- | 120 | 40 |
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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

| Multiply inch-pound units | By | To obtain SI units |
|--|------------------------|--|
| <i>Length</i> | | |
| inches (in) | 2.54×10^1 | millimeters (mm) |
| | 2.54×10^{-2} | meters (m) |
| feet (ft) | 3.048×10^{-1} | meters (m) |
| miles (mi) | 1.609×10^0 | kilometers (km) |
| <i>Area</i> | | |
| acres | 4.047×10^3 | square meters (m ²) |
| | 4.047×10^{-1} | square hectometers (hm ²) |
| | 4.047×10^{-3} | square kilometers (km ²) |
| square miles (mi ²) | 2.590×10^0 | square kilometers (km ²) |
| <i>Volume</i> | | |
| gallons (gal) | 3.785×10^0 | liters (L) |
| | 3.785×10^0 | cubic decimeters (dm ³) |
| | 3.785×10^{-3} | cubic meters (m ³) |
| million gallons | 3.785×10^3 | cubic meters (m ³) |
| | 3.785×10^{-3} | cubic hectometers (hm ³) |
| cubic feet (ft ³) | 2.832×10^1 | cubic decimeters (dm ³) |
| | 2.832×10^{-2} | cubic meters (m ³) |
| cfs-days | 2.447×10^3 | cubic meters (m ³) |
| | 2.447×10^{-3} | cubic hectometers (hm ³) |
| acre-feet (acre-ft) | 1.233×10^3 | cubic meters (m ³) |
| | 1.233×10^{-3} | cubic hectometers (hm ³) |
| | 1.233×10^{-6} | cubic kilometers (km ³) |
| <i>Flow</i> | | |
| cubic feet per second (ft ³ /s) | 2.832×10^1 | liters per second (L/s) |
| | 2.832×10^1 | cubic decimeters per second (dm ³ /s) |
| | 2.832×10^{-2} | cubic meters per second (m ³ /s) |
| gallons per minute (gal/min) | 6.309×10^{-2} | liters per second (L/s) |
| | 6.309×10^{-2} | cubic decimeters per second (dm ³ /s) |
| | 6.309×10^{-5} | cubic meters per second (m ³ /s) |
| million gallons per day | 4.381×10^1 | cubic decimeters per second (dm ³ /s) |
| | 4.381×10^{-2} | cubic meters per second (m ³ /s) |
| <i>Mass</i> | | |
| tons (short) | 9.072×10^{-1} | megagrams (Mg) or metric tons |

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