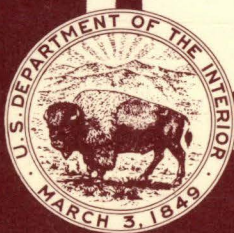


1963

Surface Water Records of Maryland and Delaware

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Prepared in cooperation with the States of Maryland
and Delaware and with other agencies

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United States Department of the Interior
Geological Survey - Water Resources Division

SURFACE WATER RECORDS
OF
MARYLAND AND DELAWARE
1963

*Recd 6-24-65
from L.W. Loufer
Chief, Hydrologic Data Section*

Prepared in cooperation with

Delaware Geological Survey
Delaware State Highway Department
Maryland Department of Geology, Mines and Water Resources
City of Baltimore
Corps of Engineers, U. S. Army
National Park Service, U. S. Department of the Interior
District of Columbia

Copies of this report may be obtained from
District Chief
Water Resources Division
U. S. Geological Survey
724 York Road
Towson, Maryland 21204

CALENDAR FOR WATER YEAR 1963

OCTOBER 1962

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
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NOVEMBER 1962

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DECEMBER 1962

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JANUARY 1963

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FEBRUARY 1963

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MARCH 1963

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31						

APRIL 1963

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JUNE 1963

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JULY 1963

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AUGUST 1963

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SEPTEMBER 1963

S	M	T	W	T	F	S
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15	16	17	18	19	20	21
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SURFACE WATER RECORDS OF MARYLAND AND DELAWARE, 1963

INTRODUCTION

The surface-water records for the 1963 water year for gaging stations, partial-record stations, and miscellaneous sites within the States of Maryland and Delaware are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey, under the direction of W. E. Forrest, district engineer, Surface Water Branch.

Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in Maryland and Delaware were contained in Parts 1B (North Atlantic Slope basins, New York to York River) and 3A (Ohio River basin except Cumberland and Tennessee River basins) of that series.

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and primarily for local needs. Records will be published in Geological Survey water-supply papers at 5-year intervals.

COOPERATION

Cooperative agreements between the U.S. Geological Survey and organizations of the State of Maryland for the systematic collection of streamflow records began in 1896, continued through 1909, and, after a lapse of 15 years, resumed in 1924. Similar agreements between the Survey and organizations of the State of Delaware began in 1943. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Delaware: Delaware Geological Survey, J. J. Groot, State geologist; State Highway Department, E. A. Davidson, chief engineer.

Maryland: Department of Geology, Mines and Water Resources, Ernst Cloos, acting director; city of Baltimore, L. V. Schuerholz, water engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 19 gaging stations published in this report.

Assistance was also furnished by the Weather Bureau, U.S. Department of Commerce, the National Park Service, U.S. Department of the Interior, and the District of Columbia.

The following organizations aided in collecting records:

Maryland: Upper Potomac River Commission; Washington Suburban Sanitary Commission; Baltimore County; municipalities of Bel Air, Cumberland, Frederick, and Salisbury; Celanese Fibers Co.; Congoleum-Nairn Inc.; W. J. Dickey and Sons, Inc.; Kelly-Springfield Tire Co.; Potomac Edison Co.; Potomac Electric Power Co.; and West Virginia Pulp and Paper Co.

DEFINITION OF TERMS AND ABBREVIATIONS

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

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

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

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

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

Runoff in inches (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.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

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

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

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.

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

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

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete number for each station, such as 1-6385.00, includes the part number "1" and a six digit station number. In this report, the part number and only the essential digits of the station number are shown. For example, the complete number 1-6385.00 would appear as 1-6385, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained from a water-stage recorder that gives a continuous chart of the fluctuations (for digital recorders, a tape punched at 15- or 30-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is in effect the shifting-control method.

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

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 the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1963 water year is shown on page II to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U.S. Coast and Geodetic Survey. Under "average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks."

Skeleton rating tables are published for all stations except those for which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables generally are not published for canals, ditches, or springs.

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

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

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Discharge for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In.").

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

Peak discharges and the times of their occurrence (expressed in 24-hour time) and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods for which discharge was computed or estimated by unusual or special methods because of no gage-height record, ice effect, or other conditions that reduce the degree of accuracy of the records. The footnotes are either reference footnotes, with corresponding symbols used in the table of daily discharge to indicate the days included, or general footnotes, introduced by the word "Note," in which the days included are stated. The methods used in computing data for such footnoted periods 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, contents, and change in contents.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

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

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and 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 when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

SUPPLEMENTAL DATA

Data collected at partial-record stations and at miscellaneous sites are given at the end of this report. Data for partial-record 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. Discharge measurements at miscellaneous sites are given in a third table. 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 given in special tables after the list of measurements at miscellaneous sites.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office, such as discharge measurements and recorder charts or nonrecording-gage readings. Most gaging-station records in the States through 1960 have been analyzed with an electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; (3) the highest mean discharge for selected numbers of consecutive days in each year; and (4) the lowest daily discharge not exceeded during selected numbers of consecutive days in each year. At many gaging stations water samples are collected from streams for the purpose of making chemical analyses; computing dissolved solids, suspended sediment loads, and particle-size distribution; or measuring water temperatures. For most of these samples the results are published in an annual series of U.S. Geological Survey water-supply papers entitled "Quality of Surface Waters of the United States." Information on the availability of electronic computer analyses, unpublished data, or quality of water records may generally be obtained from the district office.

GAGING-STATION RECORDS

DELAWARE RIVER BASIN

1-4780. Christina River at Coochs Bridge, Del.

Location.--Lat 39°38'16", long 75°43'46", on left bank at downstream side of highway bridge, 0.3 mile south of Coochs Bridge, New Castle County, 3.3 miles upstream from Muddy Run, and 3.5 miles south of Newark.

Drainage area.--20.5 sq mi.

Records available.--April 1943 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 25.6 ft above mean sea level, datum of 1929. Prior to Sept. 14, 1944, wire-weight gage and crest-stage gage on upstream side of bridge at same datum.

Average discharge.--20 years, 26.2 cfs.

Extremes.--Maximum discharge during year, 895 cfs Mar. 6 (gage height, 8.65 ft); minimum daily, 0.5 cfs Aug. 29, Sept. 1, 2.
1943-63: Maximum discharge, 2,620 cfs May 1, 1947 (gage height, 12.41 ft); minimum daily, 0.4 cfs July 26, 1944, Aug. 1, 1954.

Remarks.--Records good. Low and medium flow regulated by mill above station.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)

1.8	0.2	2.4	9.8	4.0	107
1.9	.6	2.7	23	5.0	199
2.0	1.3	3.0	38	6.0	325
2.1	2.6	3.5	69	7.0	487
2.2	4.3				

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.5	6.3	7.2	7.6	8.9	9.7	12	54	3.9	1.4	6.6	0.5
2	2.9	5.0	*7.9	4.7	13	46	13	17	3.6	3.3	7.8	.5
3	2.7	40	9.9	9.3	59	24	12	12	17	5.2	2.4	2.1
4	3.4	25	6.0	9.3	24	26	12	9.7	16	1.7	8.6	3.3
5	8.8	10	7.8	8.7	19	290	11	9.0	8.6	.7	7.2	3.0
6	4.7	7.5	173	8.7	45	388	8.9	9.8	6.3	3.3	.7	1.9
7	2.4	2.3	41	9.3	29	68	10	7.9	10	1.0	2.8	2.2
8	7.8	4.5	17	9.3	22	31	11	8.7	16	2.1	1.0	.6
9	18	6.6	14	9.4	11	25	11	7.8	7.1	4.4	*2.7	.6
10	17	261	13	10	11	24	11	9.6	23	.7	1.8	*3.0
11	9.7	21	9.6	17	14	21	10	5.7	26	3.3	.7	2.1
12	4.9	12	9.1	192	301	137	9.6	7.5	10	.8	.7	1.1
13	3.0	12	9.2	82	*36	46	8.7	11	6.1	2.4	8.2	.6
14	2.0	7.4	8.4	30	18	32	8.3	5.9	8.5	.9	11	1.8
15	7.0	7.2	8.2	15	14	24	9.8	11	*5.5	7.6	3.1	.6
16	4.0	6.8	11	12	11	25	8.0	6.7	6.7	5.2	1.9	8.7
17	3.7	5.8	8.5	11	9.5	142	8.1	8.3	4.1	1.2	1.5	9.5
18	4.6	53	11	13	10	42	11	23	4.6	2.7	.6	3.9
19	4.4	39	8.8	14	18	27	7.3	10	3.4	1.1	3.6	1.9
20	4.0	15	11	58	156	108	*7.3	9.2	5.2	2.2	25	1.0
21	1.3	17	7.1	29	39	30	6.4	6.5	5.9	.7	8.3	4.1
22	7.0	211	15	15	17	*21	8.3	8.0	4.0	2.8	2.4	.7
23	3.4	26	13	15	12	17	8.3	9.6	3.6	3.2	3.7	2.1
24	3.9	15	13	16	11	16	8.2	4.7	3.7	.7	2.9	.6
25	2.5	12	5.8	11	12	16	9.3	4.3	2.6	2.1	.9	1.9
26	8.1	11	11	12	11	17	6.2	4.9	1.7	.8	2.6	2.6
27	3.7	11	11	10	9.4	45	5.0	9.1	2.9	3.0	1.6	.6
28	2.9	8.6	*8.8	11	9.5	20	5.4	4.5	2.5	2.2	.6	3.2
29	7.6	10	7.7	9.0	-	16	7.9	7.6	3.6	4.2	.5	72
30	4.1	8.4	9.0	9.0	-----	14	49	5.4	.9	5.2	2.2	11
31	4.2	-----	9.9	9.2	-----	13	-----	7.4	-----	.8	1.5	-----
TOTAL	170.2	877.4	502.9	676.5	950.3	1,760.7	314.0	315.8	223.0	76.9	125.1	147.7
MEAN	5.49	29.2	16.2	21.8	33.9	56.8	10.5	10.2	7.43	2.48	4.04	4.92
CFSM	.268	1.42	.790	1.06	1.65	2.77	.512	.498	.362	.121	.197	.240
IN	.31	1.59	.91	1.23	1.72	3.19	.57	.57	.40	.14	.23	.27

CALENDAR YEAR 1962 MAX 563 MIN 1.3 MEAN 21.2 CFSM 1.03 INCHES 14.04
WATER YEAR 1962-63 MAX 388 MIN .5 MEAN 16.8 CFSM .820 INCHES 11.14

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement made on this day.

DELAWARE RIVER BASIN

9

1-4785. White Clay Creek above Newark, Del.

Location.--Lat 39°42'50", long 75°45'35", on right bank at downstream wingwall of abandoned bridge, 0.9 mile downstream from small tributary, 1.7 miles southeast of Delaware-Maryland-Pennsylvania State corner, 2.1 miles downstream from Pennsylvania-Delaware State line, and 2.2 miles north of Newark, New Castle County.

Drainage area.--66.7 sq mi.

Records available.--February 1952 to September 1959, July 1962 to September 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 78.6 ft above mean sea level, datum of 1929.

Average discharge.--8 years, 76.3 cfs.

Extremes.--Maximum discharge during year, 2,060 cfs Mar. 6 (gage height, 6.30 ft); minimum, 7.6 cfs Aug. 16; minimum gage height, 0.76 ft Aug. 11, 12; minimum daily discharge, 8.4 cfs Aug. 16.

1952-59, 1962-63: Maximum discharge, 4,050 cfs Aug. 18, 1955 (gage height, 9.21 ft), from rating curve extended above 1,800 cfs by logarithmic plotting; minimum, 4.6 cfs Dec. 7, 1954 (gage height, 0.55 ft), result of freezeup; minimum daily, that of Aug. 16, 1963.

Remarks.--Records good except those for periods of ice effect, which are fair. Records do not include a negligible diversion above station by plant of E. I. du Pont de Nemours & Co.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 30)

0.7	6.0	1.6	107
.8	10	2.0	212
.9	16	3.0	555
1.1	31	4.0	920
1.3	54	5.0	1,360

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	24	32	39	b 40	b 40	b 24	56	69	28	23	11	9.2
2	23	28	38	b 45	b 50	284	57	46	28	19	13	8.8
3	22	86	37	b 43	b 240	158	55	42	38	17	11	8.8
4	24	78	37	b 41	b 70	147	52	40	48	15	17	71
5	39	38	37	b 32	b 74	789	48	38	34	15	12	19
6	30	32	252	b 39	b 220	923	49	38	30	14	9.7	14
7	26	29	114	b 39	b 110	143	50	36	33	14	9.1	13
8	* 26	29	62	b 39	b 74	83	49	35	50	15	* 11	13
9	* 31	29	53	b 40	b 45	70	52	34	34	14	10	* 13
10	51	460	49	b 41	b 47	67	50	33	46	13	9.7	12
11	33	71	b 45	b 50	69	62	47	33	51	* 13	8.6	11
12	28	49	b 40	398	774	201	44	32	* 36	13	8.5	11
13	26	43	b 37	188	107	101	44	* 31	30	14	13	11
14	25	39	b 38	88	* 71	80	42	32	30	22	25	12
15	25	36	b 37	b 58	b 56	68	42	31	30	25	10	12
16	26	35	b 39	b 50	b 45	66	42	30	27	17	8.4	23
17	26	35	b 39	b 45	b 47	204	* 44	30	26	15	9.6	35
18	26	101	41	48	b 50	104	47	76	24	14	9.2	21
19	25	103	41	48	59	77	43	41	23	13	8.8	18
20	25	56	39	162	439	190	41	34	24	14	38	16
21	26	53	51	92	125	105	39	34	26	14	19	16
22	25	311	63	b 54	57	* 82	39	33	23	17	15	15
23	25	82	53	b 50	b 52	73	45	30	21	21	14	14
24	25	58	48	b 48	b 49	70	42	29	20	15	13	14
25	25	51	48	b 45	b 46	68	39	29	19	13	12	15
26	29	47	40	b 52	b 40	70	38	29	18	12	11	15
27	30	44	* b 38	b 56	b 34	125	37	30	18	12	11	14
28	28	43	b 38	b 43	b 38	73	37	30	17	12	11	14
29	27	* 41	b 37	b 41	-	64	36	33	19	16	10	130
30	27	40	b 34	b 40	-----	61	71	43	60	13	11	34
31	34	-----	b 34	b 40	-----	58	-----	30	-----	10	11	-----
TOTAL	862	2,179	1,598	2,102	3,128	4,700	1,377	1,131	911	474	390.6	632.8
MEAN	27.8	72.6	51.5	67.8	112	152	45.9	36.5	30.4	15.3	12.6	21.1
CFSM	.417	1.09	.772	1.02	1.68	2.28	.688	.547	.456	.229	.189	.316
IN	.48	1.21	.89	1.17	1.74	2.62	.77	.63	.51	.26	.22	.35

WATER YEAR 1962-63 MAX 923 MIN 8.4 MEAN 53.4 CFSM .801 INCHES 10.86

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1015	6.07	1,920	3-6	1445	6.30	2,060

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

DELAWARE RIVER BASIN

1-4790. White Clay Creek near Newark, Del.

Location.--Lat 39°42'00", long 75°41'10", on left bank 300 ft upstream from Baltimore & Ohio Railroad bridge, 0.4 mile downstream from Pike Creek, and 3.5 miles east of Newark, New Castle County.

Drainage area.--87.8 sq mi.

Records available.--October 1931 to September 1936, June 1943 to September 1957, October 1959 to September 1963.

Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder (digital). Datum of gage is 11.6 ft above mean sea level, datum of 1929. Nov. 17, 1931, to Sept. 30, 1936, at site 15 ft downstream at same datum.

Average discharge.--23 years, 108 cfs.

Extremes.--Maximum discharge during year, 2,160 cfs Mar. 6 (gage height, 10.93 ft); minimum, 8.2 cfs Sept. 3 (gage height, 3.84 ft); minimum daily, 9.4 cfs Sept. 3.

1931-36, 1943-57, 1959-63: Maximum discharge, 6,340 cfs Sept. 12, 1960 (gage height, 16.11 ft); minimum, that of Sept. 3, 1963; minimum gage height, 3.66 ft July 26, 1954; minimum daily discharge, that of Sept. 3, 1963.

Maximum stage known, 23 ft in July 1937 (probably affected by backwater from railroad bridge which has since been raised and widened), from information by Baltimore & Ohio Railroad.

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by mills above station. Records do not include a negligible diversion above station by plant of E. I. du Pont de Nemours & Co.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9)

3.8	7.0	5.0	155
3.9	10	6.0	355
4.1	19	7.0	600
4.3	38	8.0	900
4.5	65	9.0	1,300

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	31	42	49	b52	b54	b42	77	116	35	30	16	11
2	28	34	48	b56	b66	253	77	68	35	19	15	11
3	27	116	46	b54	b300	195	74	57	58	19	13	9.4
4	28	129	45	b52	b94	147	70	53	68	16	30	77
5	49	50	48	b50	b100	1,020	64	51	45	17	14	27
6	40	38	335	b50	b260	1,120	65	49	38	14	11	16
7	29	35	181	b50	b200	285	68	46	41	14	9.8	14
8	*27	34	93	b50	b100	179	65	44	73	16	*11	15
9	*35	35	78	b50	b50	133	68	44	46	*15	13	*14
10	67	591	b68	b52	b54	116	67	43	77	13	12	13
11	45	117	b58	b62	b78	103	61	43	84	14	11	13
12	34	72	b52	471	976	287	61	41	*47	14	10	12
13	33	60	b46	254	*163	159	58	39	37	15	18	11
14	31	52	b48	b110	87	124	57	*40	34	24	31	11
15	32	47	b46	b74	b70	105	54	39	35	31	14	13
16	33	45	b50	b64	b60	98	52	36	31	19	12	36
17	32	45	b50	b60	b60	273	*54	36	30	17	11	58
18	29	124	b52	b64	b62	155	58	103	25	16	12	26
19	28	171	50	67	91	118	52	61	25	14	11	21
20	30	81	50	210	558	255	50	46	28	13	69	17
21	32	77	60	132	b180	*145	47	45	29	14	26	16
22	30	410	b100	b72	b90	109	48	43	24	15	17	18
23	28	130	b64	b68	b70	94	58	38	22	24	16	15
24	27	82	b60	b66	b60	89	52	36	21	16	14	14
25	28	69	b52	b60	b56	85	47	36	20	14	14	15
26	35	63	b52	b66	b50	87	46	37	18	12	13	15
27	36	57	*b48	b72	b42	169	43	39	18	12	12	15
28	34	54	b48	b60	b47	109	42	39	17	13	12	15
29	33	*52	b46	b56	-	93	41	44	18	17	12	205
30	31	49	b43	b54	-----	85	114	60	58	15	12	68
31	38	-----	b42	b56	-----	82	-----	40	-----	12	14	-----
TOTAL	1,040	2,961	2,108	2,714	4,078	6,314	1,790	1,512	1,137	514	505.8	821.4
MEAN	33.5	98.7	68.0	87.5	146	204	59.7	48.8	37.9	16.6	16.3	27.4
CFSM	.382	1.12	.775	.997	1.66	2.32	.680	.556	.432	.189	.186	.312
IN	.44	1.25	.89	1.15	1.73	2.67	.76	.64	.48	.22	.21	.35

CALENDAR YEAR 1962 MAX 990 MIN 20 MEAN 83.0 CFSM .945 INCHES 12.83
WATER YEAR 1962-63 MAX 1,120 MIN 9.4 MEAN 69.9 CFSM .796 INCHES 10.80

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1115	10.78	2,080	3-6	1645	10.93	2,160

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

DELAWARE RIVER BASIN

11

1-4800. Red Clay Creek at Wooddale, Del.

Location.--Lat 39°45'52", long 75°38'08", on right bank 12 ft upstream from bridge on State Highway 48, 0.3 mile south of Wooddale, New Castle County, and 2.3 miles north of Marshallton.

Drainage area.--47.0 sq mi.

Records available.--April 1943 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 90 ft (from topographic map). Prior to Sept. 21, 1950, wire-weight gage and crest-stage gage at site 10 ft downstream at same datum.

Average discharge.--20 years, 63.1 cfs.

Extremes.--Maximum discharge during year, 1,560 cfs Feb. 12 (gage height, 5.26 ft); minimum, 6.8 cfs Sept. 13, 14; minimum daily, 8.0 cfs Aug. 11, Sept. 2.

1943-63: Maximum discharge, 6,000 cfs Sept. 12, 1960 (gage height, 9.93 ft), from rating curve extended above 1,600 cfs on basis of contracted-opening measurement of peak flow; minimum, 4.5 cfs Sept. 11, 1951, July 31, Aug. 1, 1955; minimum daily, 7.5 cfs July 25, Aug. 1, 1954.

Remarks.--Records good except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by mills above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	4.5	2.7	62
2.3	10	3.0	150
2.5	29	4.0	710

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	18	20	28	27	b 29	29	45	58	21	18	51	8.8
2	17	18	28	30	40	220	46	37	21	16	23	8.0
3	17	80	27	29	154	101	44	31	34	14	13	10
4	17	60	27	28	47	100	41	29	37	12	15	161
5	25	27	27	27	63	552	36	28	26	11	12	21
6	20	23	193	27	131	661	38	27	24	10	10	15
7	17	21	83	27	73	114	38	26	26	11	8.9	14
8	*17	21	48	27	53	71	36	25	36	*10	*10	13
9	20	21	41	27	31	61	40	25	25	12	9.8	*13
10	29	376	37	28	33	60	38	25	27	11	9.8	11
11	21	57	32	37	53	56	35	26	60	11	8.0	11
12	18	38	28	261	523	158	34	24	*31	11	8.3	10
13	17	32	b 25	120	82	80	34	*23	25	12	14	9.9
14	17	28	b 26	61	48	66	32	23	23	18	30	9.3
15	16	27	b 25	40	*37	56	*31	23	23	21	12	11
16	18	25	b 28	35	31	53	31	21	20	14	11	29
17	17	25	28	32	32	146	32	22	19	12	11	40
18	17	82	29	34	32	80	35	72	18	11	9.0	20
19	17	89	28	35	50	61	32	35	18	11	8.5	17
20	17	48	29	106	360	135	31	27	18	19	50	14
21	17	42	27	61	98	*76	28	27	20	18	19	13
22	17	251	38	37	39	60	29	27	15	14	19	13
23	17	69	34	37	b 33	53	37	24	15	15	20	11
24	17	48	30	37	34	50	32	23	14	12	14	12
25	16	41	29	31	b 32	48	29	22	15	11	12	11
26	18	38	29	35	32	49	28	23	13	10	12	12
27	19	35	28	41	b 28	107	28	24	13	8.8	10	11
28	17	32	27	31	29	62	27	23	12	10	11	11
29	17	30	b 25	b 30	-	53	26	27	17	10	11	149
30	18	*28	b 23	b 29	-----	50	64	32	46	10	12	34
31	20	-----	19	b 30	-----	48	-----	23	-----	8.5	11	-----
TOTAL	565	1,732	1,126	1,437	2,297	3,516	1,057	889	712	392.3	475.3	723.0
MEAN	18.2	57.7	36.3	46.4	82.0	113	35.2	28.7	23.7	12.7	15.3	24.1
CFSM	.387	1.23	.772	.987	1.74	2.40	.749	.611	.504	.270	.326	.513
IN	.45	1.37	.89	1.14	1.82	2.78	.84	.70	.56	.31	.38	.57

CALENDAR YEAR 1962	MAX 788	MIN 11	MEAN 49.7	CFSM 1.06	INCHES 14.35
WATER YEAR 1962-63	MAX 661	MIN 8.0	MEAN 40.9	CFSM .870	INCHES 11.81

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-12	1030	5.26	1,560	3-6	1045	5.13	1,460

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

DELAWARE RIVER BASIN

1-4815. Brandywine Creek at Wilmington, Del.

Location.--Lat 39°46'10", long 75°34'20", on right bank in Rockford Park, 0.2 mile downstream from Henry Clay Bridge, in Wilmington, New Castle County, and 4.2 miles upstream from mouth.

Drainage area.--314 sq mi.

Records available.--October 1946 to September 1963. Prior to December 1946, monthly discharge only, published in WSP 1302.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 68.23 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 456 cfs.

Extremes.--Maximum discharge during year, 7,990 cfs Mar. 7 (gage height, 8.45 ft); minimum, 56 cfs Aug. 19; minimum daily, 57 cfs Aug. 19.

1946-63: Maximum discharge, 17,800 cfs Aug. 19, 1955 (gage height, 13.89 ft); minimum, about 30 cfs Dec. 26, 1948, during period of ice effect; minimum daily, 56 cfs Aug. 23, 24, 1957.

Remarks.--Records good except those for periods of ice effect, which are fair. Some diurnal fluctuation at low flow caused by mills above station. No diversion just above station by plant of E. I. du Pont de Nemours & Co. since June 13, 1960.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.3	45	4.0	1,030
2.5	78	5.0	2,100
2.7	122	6.0	3,450
3.0	231	7.0	5,100
3.5	595		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	114	155	199	191	194	200	370	323	135	135	187	66
2	104	125	195	208	218	815	370	282	131	109	222	63
3	100	267	191	198	624	1,230	358	220	163	109	123	63
4	101	749	187	199	445	1,340	335	205	239	89	112	1,020
5	166	292	185	191	332	5,030	299	193	185	82	94	289
6	186	209	874	185	457	4,780	289	181	154	78	78	138
7	130	165	1,200	180	702	3,070	295	178	147	75	*72	105
8	*110	151	447	181	435	773	288	170	171	*78	72	94
9	112	148	331	179	b 250	606	294	164	158	84	74	*89
10	139	2,440	294	184	269	540	285	159	156	76	71	84
11	151	935	234	212	398	509	268	187	281	73	65	79
12	125	350	b 190	1,160	3,670	839	257	168	189	73	61	76
13	110	258	b 170	1,090	958	832	250	*160	145	73	67	77
14	103	218	b 190	587	446	615	243	158	137	105	102	68
15	105	196	176	b 300	318	525	232	156	155	130	76	75
16	100	176	209	b 240	b 230	458	220	150	143	99	65	116
17	98	176	198	b 220	b 250	867	226	149	129	87	60	245
18	98	308	205	b 230	253	802	244	323	123	82	58	143
19	100	620	205	239	410	586	235	297	116	76	57	116
20	100	365	203	585	1,140	*918	222	192	121	82	131	100
21	100	304	178	652	920	731	211	236	122	119	112	93
22	100	1,300	216	b 280	278	558	205	183	116	93	174	90
23	98	654	244	b 290	b 250	466	230	164	110	111	169	85
24	98	365	209	b 260	241	431	229	149	105	89	111	80
25	96	285	199	b 210	b 220	415	209	145	102	81	86	78
26	105	253	201	229	226	407	203	147	97	74	74	79
27	110	236	185	238	b 190	690	199	152	95	70	69	78
28	105	218	182	b 220	206	565	197	149	90	68	65	77
29	103	209	157	b 200	-	448	189	158	133	184	64	629
30	100	200	b 150	209	-----	410	305	172	316	106	71	406
31	115	-----	b 150	206	-----	393	-----	149	-----	77	72	-----
TOTAL	3,482	12,327	8,154	9,753	14,530	30,849	7,757	5,889	4,464	2,867	2,914	4,801
MEAN	112	411	263	315	519	995	259	190	149	92.5	94.0	160
CFSM	.357	1.31	.838	1.00	1.65	3.17	.825	.605	.475	.295	.299	.510
IN	.41	1.46	.97	1.16	1.72	3.65	.92	.70	.53	.34	.35	.57

CALENDAR YEAR 1962 MAX 5,000 MIN 82 MEAN 383 CFSM 1.22 INCHES 16.57
WATER YEAR 1962-63 MAX 5,030 MIN 57 MEAN 295 CFSM .940 INCHES 12.77

Peak discharge (base, 4,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	1630	6.85	4,840	3-7	0100	8.45	7,990
2-12	1330	7.17	5,410				

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

DELAWARE RIVER BASIN

13

1-4820. Shellpot Creek at Wilmington, Del.

Location.--Lat 39°45'39", long 75°31'10", on right bank 100 ft northeast of intersection of Forty-fourth and Pine Streets in Sellers Park, 700 ft downstream from highway bridge on North Market Street in Wilmington, New Castle County, and 0.2 mile downstream from Matson Run.

Drainage area.--7.46 sq mi.

Records available.--December 1945 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 25 ft (from topographic map).

Average discharge.--17 years (1946-63), 9.13 cfs.

Extremes.--Maximum discharge during year, 560 cfs Aug. 1 (gage height, 3.37 ft); minimum, 0.3 cfs July 10, 11, 12, Aug. 19, Sept. 14 (gage height, 1.22 ft).

1945-63: Maximum discharge, 4,080 cfs July 9, 1952 (gage height, 7.97 ft in gage well, 8.6 ft from floodmarks), from rating curve extended above 620 cfs on basis of computation of flow over dam at gage height 6.52 ft, and contracted-opening measurements at gage heights 6.52 and 7.97 ft; minimum, 0.1 cfs July 4, 1958, Oct. 25, 26, 1959; minimum gage height, 1.13 ft Oct. 25, 26, 1959.

Maximum stage known since at least 1940, that of July 9, 1952. Flood of Aug. 1, 1945, reached a stage of about 8.5 ft, from floodmarks.

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

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 11

Feb. 12 to Sept. 30

1.3	0.4	1.8	17	1.2	0.2	1.7	18
1.4	1.4	2.0	36	1.3	.8	1.8	28
1.5	3.1	2.2	70	1.4	1.8	1.9	41
1.6	6.0	2.5	150	1.5	4.7	2.1	80
1.7	10			1.6	10	2.3	130

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.9	1.6	0.6	1.5	b1.9	2.6	13	0.9	1.0	5.1	0.5
2	.5	.6	1.5	1.3	8.3	b20	2.9	2.9	.8	.9	*2.7	.5
3	.5	4.3	1.4	1.7	b13	14	2.9	1.8	11	.8	2.2	5.0
4	1.7	6.1	1.6	1.9	b4.4	15	2.9	1.5	1.9	.5	7.4	3.9
5	6.7	1.8	1.6	2.0	b4.4	62	2.6	1.4	1.1	.5	.7	.9
6	1.3	1.3	7.5	1.8	b9.0	126	2.6	1.4	1.1	.4	.5	.6
7	.6	.9	10	1.6	b7.0	17	2.6	1.4	4.6	.4	*.4	.7
8	*.5	.8	3.8	1.8	b4.1	8.6	2.9	1.3	3.6	*.5	.4	.7
9	3.8	1.7	2.9	1.8	2.1	6.2	3.8	1.2	1.1	.5	.9	*.7
10	5.8	7.5	2.5	2.9	2.3	5.7	2.6	1.3	8.2	.4	1.8	.5
11	1.2	4.1	1.5	4.4	3.1	4.2	2.0	1.3	*1.8	.4	.6	.5
12	.8	1.9	1.3	4.6	7.4	48	1.8	1.1	1.9	.4	.6	.5
13	.8	1.5	1.1	1.8	11	12	1.6	*1.0	1.1	1.3	6.2	.5
14	.7	1.2	1.1	6.4	5.2	7.4	1.6	1.0	1.0	7.8	2.8	.4
15	.5	1.0	1.0	3.1	*2.4	4.2	*1.6	1.0	1.0	1.8	.7	.7
16	.5	1.1	1.3	2.3	2.2	6.2	1.6	1.0	.8	.6	.6	2.4
17	.5	1.0	1.2	1.9	1.8	41	1.8	1.1	.8	.6	.5	3.1
18	.4	3.7	1.5	2.3	2.0	9.2	2.0	1.9	.7	.7	.4	1.1
19	.4	11	1.4	2.5	8.7	5.2	1.6	1.6	.7	.8	2.3	.9
20	.4	4.6	1.4	15	56	*59	1.5	1.2	12	7.9	1.9	.6
21	.5	8.7	1.0	6.7	9.7	*10	1.3	1.4	3.3	1.2	1.1	.6
22	.6	6.7	7.1	2.7	3.0	5.7	1.4	1.3	.9	.7	3.4	.5
23	.5	5.7	4.2	2.9	b2.6	3.9	4.0	1.0	.7	.6	2.1	.5
24	.5	2.7	2.2	2.3	2.0	3.5	1.8	.8	.7	.5	1.1	.5
25	.6	2.1	1.5	2.3	b2.2	3.2	1.5	.9	.6	.5	.8	.6
26	3.1	1.9	3.2	1.8	2.0	4.7	1.4	1.0	.7	.6	.6	.6
27	.9	1.8	2.8	3.3	b1.8	15	1.8	1.0	.7	.6	.5	.5
28	.5	1.6	2.6	2.3	1.6	3.8	1.4	1.3	.8	9.3	.5	.5
29	.6	1.6	1.4	1.6	-	2.6	1.2	2.5	7.4	2.8	.5	8.6
30	.9	*1.5	1.4	1.5	-----	2.6	3.1	1.4	2.6	.9	.5	1.9
31	1.2	-----	b.7	1.6	-----	2.4	-----	1.0	-----	.6	.5	-----
Total	38.0	291.1	141.8	148.3	247.4	530.2	92.3	70.1	90.7	46.5	143.9	173.6
Mean	1.23	9.70	4.57	4.78	8.84	17.1	3.08	2.26	3.02	1.50	4.64	5.79
Cfsm	0.165	1.30	0.613	0.641	1.19	2.29	0.413	0.303	0.405	0.201	0.622	0.776
In.	0.19	1.45	0.71	0.74	1.23	2.64	0.46	0.35	0.45	0.23	0.72	0.87

Calendar year 1962: Max 232 Min 0.3 Mean 7.16 Cfsm 0.960 In. 13.02
 Water year 1962-63: Max 126 Min 0.4 Mean 5.52 Cfsm 0.740 In. 10.04

Peak discharge (base, 550 cfs)

Date	Time	Gage height	Discharge
8-1	1330	3.37	560

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

DELAWARE RIVER BASIN

1-4832. Blackbird Creek at Blackbird, Del.

Location.--Lat 39°21'58", long 75°40'10", on right bank 15 ft downstream from highway bridge, 0.5 mile upstream from Barlow Branch, 0.6 mile southwest of Blackbird, New Castle County, and 5.6 miles northwest of Smyrna.

Drainage area.--3.85 sq mi.

Records available.--Annual maximum, water years 1951-56, and occasional low-flow measurements, water years 1952-53, 1955-56. October 1956 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map). Mar. 5, 1951, to Oct. 16, 1956, staff gage and crest-stage gage at site 15 ft upstream at same datum.

Average discharge.--7 years (1956-63), 4.98 cfs.

Extremes.--Maximum discharge during year, 70 cfs Mar. 6 (gage height, 1.62 ft); minimum, 0.1 cfs Oct. 1, 2, Sept. 13.

1951-63: Maximum discharge, 510 cfs Sept. 12, 1960 (gage height, 4.10 ft).

1956-63: Minimum discharge, 0.1 cfs Aug. 30, 31, Sept. 1, 2, 11, 12, Oct. 1, 2, 1962, Sept. 13, 1963; minimum gage height, 0.10 ft July 7, 8, 9, 10, 1959, July 6, 7, 9, 10, 13, 1960, Sept. 13, 1963.

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

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9)

Oct. 1 to Mar. 5

Mar. 6 to Sept. 30

0.16	0.2	0.5	4.3	0.9	15	0.1	0.1	0.5	5.2	1.0	24
.2	.3	.6	6.7	1.0	19	.2	.6	.6	7.8	1.2	36
.3	1.0	.7	9.3	1.1	24	.3	1.6	.7	11	1.4	51
.4	2.2	.8	12			.4	3.1	.8	15		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.-	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	1.0	1.6	b2.2	a1.9	2.7	4.1	4.8	1.3	1.2	1.5	0.3
2	.2	1.0	1.6	b2.0	a3.0	3.8	4.1	2.8	1.8	.8	1.3	.3
3	.2	3.6	1.6	b2.2	a8.0	3.4	4.1	2.3	2.6	.9	.6	.3
4	.6	4.5	1.6	2.3	a6.0	3.8	3.7	2.2	7.5	.6	.6	.3
5	1.6	1.6	1.6	2.2	a2.7	19	3.5	2.0	2.0	.5	.4	.3
6	1.2	1.3	7.5	2.0	a2.7	*42	3.5	2.0	1.6	.4	.3	.3
7	1.1	1.1	8.0	2.0	a3.0	23	3.5	1.9	1.3	.4	.3	.4
8	1.1	1.1	3.4	2.2	a2.8	7.8	3.5	1.8	1.6	.4	.7	.4
9	1.9	1.1	2.7	2.5	a2.5	6.2	4.1	1.6	1.4	.4	1.9	.3
10	*2.2	11	2.5	3.4	a3.5	6.0	3.5	1.5	1.3	.4	.6	*.3
11	1.1	6.5	2.0	4.8	a4.5	5.2	3.3	1.9	a1.6	*.5	.4	.2
12	.8	2.0	b1.6	12	a17	26	3.1	1.8	a1.3	.5	.3	.2
13	.7	1.8	b1.4	11	a13	13	2.9	1.6	*a1.1	.6	.7	.3
14	.6	1.6	b1.4	a5.0	b4.3	7.5	2.9	1.6	1.0	1.5	1.6	.4
15	.6	1.6	1.6	a2.7	b3.4	6.0	2.8	*1.6	.9	1.4	.6	.6
16	.6	1.6	2.0	a2.3	b2.5	6.0	2.8	1.5	.9	.8	.4	2.3
17	.6	1.6	2.0	a2.3	b2.3	15	3.3	1.5	.9	.6	.3	3.6
18	.6	2.7	2.0	a2.6	*2.7	9.3	3.5	5.3	.9	.5	.3	1.5
19	.6	4.5	2.2	a3.0	5.1	*6.5	*3.1	2.3	.8	.4	.3	1.3
20	.6	2.5	2.2	a7.0	14	11	2.9	1.9	1.8	2.1	4.8	.9
21	.7	3.3	b1.6	a6.0	11	7.3	2.8	2.8	3.9	4.4	1.8	.7
22	.7	20	b2.7	a3.5	b4.3	6.0	2.8	2.3	1.4	1.0	1.0	1.0
23	.7	9.4	b2.3	a2.5	b2.5	5.5	4.3	1.6	1.1	.8	.6	.7
24	.7	3.1	b2.2	a2.1	b2.9	5.2	3.5	1.5	1.0	.6	.6	.6
25	.7	2.5	2.2	a1.8	b3.4	5.0	2.9	1.5	.9	.6	.5	.6
26	1.1	2.2	*2.2	a1.8	b3.1	5.0	2.9	1.5	.8	.4	.4	.6
27	1.0	2.0	2.2	a2.2	b2.5	6.8	2.9	1.5	.7	.4	.4	.6
28	.9	*1.9	b1.9	a2.0	b2.2	5.0	2.8	1.6	.7	.4	.4	.6
29	.9	1.8	b2.2	a1.9	-	4.3	2.8	2.2	1.1	.4	*.3	6.8
30	.9	1.6	b3.8	a2.0	-	4.3	4.3	2.0	7.2	.3	.4	5.1
31	1.0	-	b2.5	a2.0	-	4.3	-	1.4	-	.2	.3	-
Total	26.4	101.5	76.3	103.5	136.8	281.9	100.2	63.8	59.4	24.4	24.6	31.8
Mean	0.85	3.38	2.46	3.34	4.89	9.09	3.34	2.06	1.98	0.79	0.79	1.06
Cfsm	0.221	0.878	0.639	0.868	1.27	2.36	0.868	0.535	0.514	0.205	0.205	0.275
In.	0.26	0.98	0.74	1.00	1.32	2.72	0.97	0.62	0.57	0.24	0.24	0.31

Calendar year 1962: Max 35 Min 0.2 Mean 3.70 Cfsm 0.961 In. 13.05
Water year 1962-63: Max 42 Min 0.2 Mean 2.82 Cfsm 0.732 In. 9.95

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge
3-6	2000	1.62	70

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

1-4837. St. Jones River at Dover, Del.

Location.--Lat 39°09'49", long 75°31'10", on left bank 150 ft upstream from Division Street Bridge in Dover, Kent County, and 1,950 ft downstream from Silver Lake.

Drainage area.--31.9 sq mi.

Records available.--January 1958 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 5 ft (from topographic map).

Average discharge.--5 years, 35.2 cfs.

Extremes.--Maximum discharge during year, 285 cfs Mar. 7, 13 (gage height, 4.29 ft); minimum, 0.3 cfs Sept. 26, 28 (gage height, 2.31 ft).

1958-63: Maximum discharge, 1,900 cfs Sept. 13, 1960 (gage height, 9.45 ft, from floodmark); no flow July 9, 1959, May 9, 10, 1961.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow affected by Silver Lake.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)

2.3	0.3	2.6	3.7	3.3	70
2.35	.5	2.7	6.6	3.5	111
2.4	.8	2.8	10	4.0	221
2.45	1.3	2.9	17	4.5	332
2.5	1.8	3.1	40		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	8.7	9.6	22	16	21	34	20	8.0	a 5.0	2.3	2.8
2	6.2	6.2	9.1	21	19	25	34	17	10	a 3.5	4.2	2.3
3	5.6	14	9.6	15	33	27	34	14	43	a 1.5	2.6	1.5
4	6.6	13	10	14	38	27	36	12	83	a 8.0	3.2	20
5	8.4	14	10	a 14	28	43	24	11	62	a 5.0	1.7	50
6	8.0	10	26	a 14	24	152	24	9.6	26	a 3.0	.9	48
7	6.8	8.0	40	a 14	26	261	25	9.6	11	a 2.6	1.0	47
8	3.9	7.6	47	a 14	27	195	25	8.7	9.1	a 2.2	1.8	44
9	12	6.9	28	a 15	20	113	26	9.1	9.6	a 1.8	1.7	43
10	13	25	16	*a 17	19	68	26	8.7	8.7	a 1.8	1.8	40
11	10	29	14	20	21	53	25	8.7	8.0	*2.0	1.6	38
12	7.6	26	11	38	46	159	20	7.6	6.9	2.0	1.2	34
13	5.9	15	9.1	60	80	*272	19	7.6	5.6	2.1	10	33
14	4.4	*10	9.1	51	65	195	19	8.4	5.3	7.6	20	29
15	4.4	8.0	9.1	32	38	115	17	8.7	6.2	9.6	13	26
16	4.7	7.2	9.1	21	21	76	16	7.6	4.7	6.6	7.6	25
17	4.7	7.2	9.6	17	17	133	16	*7.2	4.7	4.7	5.0	8.3
18	3.9	12	10	17	17	195	19	14	5.3	3.9	4.2	.6
19	2.8	12	11	19	30	151	17	14	4.4	3.5	2.8	.6
20	4.4	15	13	33	74	111	17	9.6	*4.7	12	19	.4
21	5.9	17	13	48	104	107	14	9.1	a 15	8.4	15	.8
22	5.0	53	19	44	56	87	*14	9.1	a 25	4.7	10	.6
23	6.2	83	21	32	33	64	15	8.0	a 10	4.2	7.6	.4
24	5.6	64	20	22	28	53	14	6.2	a 7.0	3.7	6.6	.4
25	3.9	33	16	16	27	46	13	6.2	a 5.8	2.8	a 4.4	.6
26	6.2	17	15	15	29	44	13	6.6	a 5.0	2.8	a 3.6	.4
27	3.9	13	14	21	22	51	12	6.6	a 4.5	2.8	3.0	.4
28	4.2	11	14	20	20	56	11	6.9	a 4.2	2.6	*2.5	.4
29	6.6	10	16	20	-	46	11	10	a 6.0	2.5	2.3	.5
30	5.9	10	24	16	-----	41	14	14	a 24	2.5	4.2	.4
31	6.9	-----	22	16	-----	38	-----	10	-----	2.1	3.9	-----
Total	190.8	565.8	504.3	738	978	3,025	604	305.8	432.7	217.5	168.7	498.4
Mean	6.15	18.9	16.3	23.8	34.9	97.6	20.1	9.86	14.4	7.02	5.44	16.6
Cfsm	0.193	0.592	0.511	0.746	1.09	3.06	0.630	0.309	0.451	0.220	0.171	0.520
In.	0.22	0.66	0.59	0.86	1.14	3.53	0.70	0.36	0.50	0.25	0.20	0.58

Calendar year 1962: Max 260 Min 1.4 Mean 27.9 Cfsm 0.875 In. 11.89
 Water year 1962-63: Max 272 Min 0.4 Mean 22.5 Cfsm 0.705 In. 9.59

* Discharge measurement made on this day.
 a No gage-height record.

MURDERKILL RIVER BASIN

1-4840. Murderkill River near Felton, Del.

Location.--Lat 38°58'33", long 75°34'03", on left bank 30 ft downstream from northbound lane of bridge on U. S. Highway 13, 400 ft downstream from Black Swamp Creek, 1.3 miles upstream from Killen Pond and 2.2 miles south of Felton, Kent County.

Drainage area.--13.6 sq mi (revised).

Records available.--July 1931 to October 1933. Monthly discharge only for July to September 1931, published in WSP 1302. Annual maximum, water years 1952-60, and occasional low-flow measurements, water years 1952-53, 1955-57, 1959-60, June 1960 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 23 ft (from topographic map). July 1931 to October 1933, staff gage read twice daily at bridge 200 ft upstream at datum 2.00 ft higher. March 1951 to May 1960, wire-weight gage and crest-stage gage at bridge 200 ft upstream at datum 2.00 ft higher.

Average discharge.--5 years, 17.5 cfs.

Extremes.--Maximum discharge during year, 370 cfs Mar. 12 (gage height, 5.70 ft); minimum, 1.6 cfs July 27, Aug. 10.

1931-33, 1951-63: Maximum discharge, 805 cfs Sept. 12, 1960 (gage height, 6.87 ft).

1931-33, 1960-63: Minimum discharge observed, 1.3 cfs several times in September and October 1932.

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

Rating tables, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 15 to Jan. 20, May 2-17, 19-28, 31, June 1)

Oct. 1 to Mar. 12

Mar. 13 to Sept. 30

1.9	1.6	4.0	75	1.9	1.6	3.5	30
2.0	3.4	4.5	125	2.0	3.4	4.0	72
2.5	14	5.0	205	2.5	13	4.5	125
3.0	28	5.5	320	3.0	22	5.0	205
3.5	46						

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	5.0	6.7	11	11	13	20	17	5.9	4.4	4.2	2.8
2	2.3	5.0	6.0	10	13	16	20	12	10	4.4	4.4	2.6
3	2.4	10	6.4	11	21	14	20	10	46	3.4	3.2	3.0
4	3.2	a7.0	6.9	11	14	14	19	8.9	25	3.0	2.6	3.4
5	4.0	a5.8	6.9	10	12	25	17	8.2	14	3.2	2.4	*3.4
6	3.2	a5.2	22	10	13	71	17	8.2	11	3.4	2.8	3.8
7	2.6	a4.6	17	*11	14	98	17	8.0	10	2.6	3.0	3.4
8	3.2	a4.6	11	11	13	40	17	7.6	10	3.4	3.0	3.0
9	3.0	a6.0	10	11	11	30	17	7.2	9.9	3.6	2.8	3.2
10	3.2	a25	9.8	11	11	26	16	7.4	8.9	3.4	2.3	3.4
11	*3.4	a10	9.0	12	12	26	15	7.0	8.7	3.2	2.1	3.0
12	3.6	a6.2	8.3	18	36	*254	15	6.6	8.2	3.2	2.3	3.0
13	3.0	a4.7	7.7	17	30	171	15	6.8	7.4	4.5	9.5	3.2
14	3.2	*a4.0	7.7	15	*20	76	14	7.2	7.4	8.8	3.4	3.2
15	3.6	4.2	7.1	13	16	39	14	7.2	6.6	*7.2	6.1	3.8
16	4.0	4.4	7.7	12	13	33	14	7.0	6.1	4.7	4.9	14
17	4.0	4.0	7.9	12	12	135	14	*7.0	6.2	4.4	3.8	11
18	3.8	6.8	7.7	12	13	90	14	13	6.1	4.2	3.2	7.6
19	4.0	8.6	7.5	12	18	*45	*14	8.3	5.7	3.8	3.8	6.6
20	3.6	5.6	7.7	24	27	76	13	7.4	*5.7	3.0	*25	5.5
21	3.4	7.2	8.3	25	20	49	12	8.3	9.7	3.2	10	5.5
22	4.6	32	18	17	15	33	12	8.3	7.0	4.2	10	8.3
23	4.2	14	12	15	13	28	16	7.2	5.9	4.4	6.8	5.7
24	4.4	8.8	10	14	14	26	13	6.8	5.7	3.4	5.1	5.3
25	4.6	7.5	9.2	12	15	24	12	7.0	5.5	3.4	4.4	5.3
26	5.0	7.5	9.8	11	15	24	11	6.2	4.9	3.2	4.4	5.1
27	4.4	7.3	10	15	12	28	11	6.2	4.7	2.4	4.4	5.3
28	4.2	7.1	9.4	14	12	24	10	6.4	4.7	5.7	4.0	4.9
29	4.4	6.9	12	11	-	22	10	11	4.0	4.2	4.0	12
30	4.4	6.9	28	11	-	21	13	12	4.2	3.8	4.4	6.6
31	5.0	-	15	11	-	20	-	7.2	-	3.2	3.4	-
Total	114.7	241.9	322.7	410	446	1591	442	258.6	275.1	122.9	186.3	156.9
Mean	3.70	8.06	10.4	13.2	15.9	51.3	14.7	8.34	9.17	3.96	6.01	5.23
Cfsm	0.272	0.593	0.765	0.971	1.17	3.77	1.08	0.613	0.674	0.291	0.442	0.385
In.	0.31	0.66	0.88	1.12	1.22	4.35	1.21	0.71	0.75	0.34	0.51	0.43

Calendar year 1962: Max 176 Min 2.3 Mean 16.5 Cfsm 1.21 In. 16.43
Water year 1962-63: Max 254 Min 2.1 Mean 12.5 Cfsm 0.919 In. 12.49

Peak discharge (base, 130 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-7	0015	4.65	146	3-17	1515	4.87	182
3-12	1245	5.70	370				

* Discharge measurement made on this day.
a No gage-height record.

MISPILLION RIVER BASIN

17

1-4841. Beaverdam Branch at Houston, Del.

Location.--Lat 38°54'20", long 75°30'49", on left bank 15 ft upstream from bridge on State Highway 384, 0.8 mile south of Houston, Kent County, 2,000 ft upstream from unnamed stream, and 1½ miles upstream from Blairs Pond.

Drainage area.--2.83 sq mi.

Records available.--May 1958 to September 1963.

Gage.--Water-stage recorder and timber control. Altitude of gage is 38 ft (from topographic map).

Average discharge.--5 years, 4.22 cfs.

Extremes.--Maximum discharge during year, 80 cfs Mar. 12 (gage height, 4.13 ft); minimum daily, 0.6 cfs Sept. 1-4, 9-14.
1958-1963: Maximum discharge, 176 cfs Sept. 12, 1960 (gage height, 5.55 ft); minimum daily, that of Sept. 1-4, 9-14, 1963.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	0.7	0.9	2.0	2.4	2.8	5.4	3.7	2.6	2.4	1.7	0.6
2	.9	.7	.9	1.8	2.5	3.0	5.4	3.6	3.0	2.4	1.7	.6
3	.8	.9	.9	1.8	3.0	2.8	5.4	3.4	6.2	2.2	1.6	.6
4	.9	.8	.9	*1.8	2.6	2.8	5.3	3.4	3.9	2.2	1.6	.6
5	.9	.8	.9	1.8	2.5	3.4	4.9	3.2	3.4	2.2	1.6	*.7
6	.8	.8	1.6	1.8	2.5	8.1	4.9	3.2	3.2	2.2	1.6	.7
7	.8	.7	1.3	1.8	2.5	4.8	4.9	3.2	3.1	2.2	1.5	.7
8	.8	.7	1.2	1.8	2.5	4.2	4.8	3.2	3.1	2.2	1.5	.7
9	.8	.7	1.2	1.8	2.5	4.2	4.6	3.1	3.1	2.2	1.4	.6
10	.8	1.3	1.2	1.8	2.5	4.0	4.6	3.1	3.0	2.2	1.4	.6
11	.8	.8	1.2	1.9	2.5	4.0	4.4	3.1	3.0	2.2	1.4	.6
12	.7	.8	1.2	2.2	4.6	*4.9	4.4	3.1	3.0	2.1	1.3	.6
13	.7	*.7	1.1	2.2	3.6	12	4.4	3.0	2.8	2.5	1.5	.6
14	.7	.7	1.1	2.1	*3.1	9.2	4.2	2.8	2.8	2.6	1.5	.6
15	*.7	.7	1.1	2.0	3.0	8.4	4.2	*2.6	2.6	*2.4	1.3	.7
16	.7	.7	1.1	2.0	3.0	8.6	4.2	2.6	2.6	2.0	1.2	1.3
17	.8	.7	1.1	2.0	2.8	22	4.0	2.6	2.6	2.0	1.2	1.0
18	.8	.8	1.1	2.0	2.8	10	*4.0	3.9	2.5	1.9	1.2	.8
19	.7	.8	1.1	2.0	3.1	*8.8	4.0	3.2	2.5	1.9	1.2	.8
20	.7	.8	1.1	3.2	3.2	13	4.0	3.0	3.0	1.9	1.9	.7
21	.7	.8	1.2	2.8	3.1	8.1	4.0	3.0	*3.7	1.9	1.2	.8
22	.8	1.8	1.7	2.4	3.0	7.2	4.0	3.0	2.8	1.8	1.0	.8
23	.8	1.1	1.5	2.4	2.8	6.8	4.0	2.8	2.6	1.8	1.0	.8
24	.8	.9	1.3	2.2	3.0	6.6	3.9	2.8	2.5	1.8	.9	.7
25	.8	.9	1.3	2.2	3.0	6.4	3.7	2.6	2.5	1.7	.8	.7
26	.7	.9	1.3	2.2	3.0	6.4	3.7	2.6	2.4	1.7	.8	.7
27	.8	.9	1.3	2.6	2.8	6.8	3.7	2.6	2.4	1.7	.8	.7
28	.8	.9	1.3	2.5	2.8	6.2	3.7	2.6	2.4	1.8	*.8	.7
29	.7	.9	1.6	2.2	-	5.8	3.6	3.0	2.2	1.8	.8	1.0
30	.7	.9	3.0	2.4	-----	5.8	3.7	3.0	2.4	1.8	.8	.8
31	.7	-----	2.0	2.4	-----	5.6	-----	2.6	-----	1.8	.7	-----
Total	24.0	25.6	39.7	66.1	80.7	256.8	130.0	93.6	87.9	63.5	38.9	21.8
Mean	0.77	0.85	1.28	2.13	2.88	8.28	4.33	3.02	2.93	2.05	1.25	0.73
Cfsm	0.272	0.300	0.452	0.753	1.02	2.93	1.53	1.07	1.04	0.724	0.442	0.258
In.	0.32	0.34	0.52	0.87	1.06	3.37	1.71	1.23	1.16	0.83	0.51	0.29

Calendar year 1962: Max 40 Min 0.7 Mean 3.69 Cfsm 1.30 In. 17.71
Water year 1962-63: Max 49 Min 0.6 Mean 2.54 Cfsm 0.898 In. 12.21

Peak discharge (base, 30 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	1230	4.13	80	3-17	0915	3.24	34

* Discharge measurement made on this day.
Note.--Backwater from aquatic vegetation
Oct. 1 to Mar. 6, Apr. 1 to Sept. 30.

BROADKILL RIVER BASIN

1-4843. Sowbridge Branch near Milton, Del.

Location.--Lat 38°48'51", long 75°19'39", on left bank at downstream side of highway bridge 1 mile downstream from Reynolds Pond, and 2½ miles north of Milton, Sussex County.

Drainage area.--7.08 sq mi.

Records available.--October 1956 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Average discharge.--7 years, 11.2 cfs.

Extremes.--Maximum discharge during year, 30 cfs Mar. 14 (gage height, 5.13 ft); minimum, 1.6 cfs Jan. 24, result of freezeup.

1956-63: Maximum discharge, 80 cfs Aug. 25, 1958 (gage height, 5.86 ft); minimum, 1.3 cfs Oct. 3, 4, 5, 6, 1957.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 1-30)

3.6	1.5	4.4	12
3.7	2.3	4.7	17
3.9	4.4	5.1	28
4.1	7.0		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	4.0	3.4	a7.1	6.8	11	16	10	5.6	5.2	5.0	2.4
2	5.4	4.1	3.4	a6.9	4.1	12	15	9.9	6.4	5.2	4.9	2.2
3	5.4	7.5	3.5	a5.7	5.0	12	15	9.2	9.8	4.9	4.8	2.3
4	5.4	5.4	3.5	3.6	5.2	12	15	7.3	16	4.3	4.6	2.3
5	5.4	5.2	3.6	3.8	5.9	13	14	7.3	14	4.2	4.5	2.3
6	5.1	5.1	5.6	4.3	6.2	15	13	7.6	6.4	4.3	4.5	2.4
7	4.9	4.9	12	*4.8	6.4	14	13	7.1	6.2	4.2	4.5	2.4
8	4.8	4.9	9.2	5.1	6.6	14	13	5.2	6.4	4.3	4.5	2.4
9	4.8	5.0	7.7	5.2	6.7	14	13	5.1	6.4	4.2	4.5	2.4
10	4.9	8.3	7.0	5.5	7.0	13	13	6.0	6.3	*4.0	4.4	*2.4
11	4.6	12	6.2	5.9	*7.1	13	13	7.3	6.6	4.1	4.4	2.5
12	4.4	8.4	6.0	6.6	9.0	22	12	7.3	6.3	4.1	*4.4	2.5
13	4.3	7.6	5.9	6.6	8.3	18	12	7.3	6.2	4.4	4.9	2.4
14	4.2	6.7	5.9	8.8	8.1	28	12	*7.4	6.3	5.4	4.8	2.5
15	4.1	6.0	5.9	14	b7.8	23	12	7.1	6.4	5.0	4.6	2.8
16	*4.2	4.9	5.2	10	b7.8	20	12	6.7	7.0	4.6	4.5	4.8
17	4.3	3.6	4.6	8.8	b7.7	22	*11	6.6	7.0	4.6	4.4	3.7
18	4.3	4.6	5.2	8.3	b8.3	20	12	8.7	6.7	4.8	4.4	3.3
19	4.2	4.3	4.6	8.0	12	*19	10	11	*6.3	4.8	4.4	3.2
20	4.2	*4.0	3.2	10	12	20	8.7	9.9	6.2	4.6	4.6	2.9
21	4.3	4.2	3.5	9.6	11	20	8.7	8.7	6.9	4.6	4.6	3.0
22	4.3	9.1	5.2	b8.4	b10	19	8.8	5.9	6.6	4.6	4.5	3.7
23	4.3	13	4.3	8.4	b9.0	18	9.8	5.4	6.3	4.5	4.4	3.2
24	4.2	9.6	6.5	b8.0	8.8	17	9.6	5.1	6.3	4.4	4.3	3.0
25	4.2	7.7	11	7.8	9.8	17	9.9	5.5	6.6	4.5	4.2	3.0
26	4.2	6.7	9.2	7.7	10	17	9.8	6.9	6.3	4.6	4.1	2.9
27	3.8	6.2	7.8	b7.0	11	18	9.6	8.3	5.4	4.6	4.1	2.9
28	3.7	5.9	7.0	b8.0	11	17	9.3	8.1	5.2	5.4	4.1	2.9
29	3.8	5.6	7.2	7.1	-	17	9.0	7.7	5.1	5.0	4.0	4.1
30	3.8	4.8	a9.2	7.3	-----	16	9.4	7.3	5.2	4.8	4.1	3.3
31	4.0	-----	a7.3	7.7	-----	16	-----	5.7	-----	4.6	4.1	-----
Total	139.0	189.3	189.8	226.0	228.6	527	348.6	228.6	208.4	142.8	138.1	86.1
Mean	4.48	6.31	6.12	7.29	8.16	17.0	11.6	7.37	6.95	4.61	4.45	2.87
Cfsm	0.633	0.891	0.864	1.03	1.15	2.40	1.64	1.04	0.982	0.651	0.629	0.405
In.	0.73	0.99	1.00	1.19	1.20	2.77	1.85	1.20	1.09	0.75	0.73	0.45

Calendar year 1962: Max 21 Min 3.2 Mean 9.57 Cfsm 1.35 In. 18.35
Water year 1962-63: Max 28 Min 2.2 Mean 7.27 Cfsm 1.03 In. 13.93

- * Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

INDIAN RIVER BASIN

19

1-4845. Stockley Branch at Stockley, Del.

Location.--Lat 38°38'19", long 75°20'31", on left bank at highway bridge in Stockley, Sussex County, 1.6 miles upstream from mouth and 4.4 miles southeast of Georgetown.

Drainage area.--5.24 sq mi.

Records available.--April 1943 to September 1963.

Gage.--Water-stage recorder and concrete control. Datum of gage is 24.54 ft above mean sea level, datum of 1929. Prior to Aug. 16, 1950, staff gage and crest-stage gage at same site and datum.

Average discharge.--20 years, 7.41 cfs.

Extremes.--Maximum discharge during year, 71 cfs Mar. 12 (gage height, 3.25 ft); minimum, 1.2 cfs Oct. 12, 13. 1943-63: Maximum discharge, 132 cfs June 4, 1948 (gage height, 5.0 ft, from graph based on gage readings), from rating curve extended above 50 cfs by logarithmic plotting; minimum observed, 0.13 cfs Sept. 1-11, 1944.

Remarks.--Records good.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)

1.8	1.1
1.9	2.6
2.0	5.2
2.5	22
3.0	52

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	1.4	2.0	3.8	5.5	6.4	10	10	5.2	4.8	3.3	1.9
2	1.6	1.4	2.0	3.8	6.1	8.9	10	8.5	8.9	4.6	3.0	1.7
3	1.6	3.0	2.0	3.8	7.0	7.6	9.8	7.9	19	4.2	2.6	1.7
4	1.6	1.9	2.0	3.8	6.1	7.3	9.8	7.6	15	4.0	2.6	1.7
5	1.6	1.7	2.0	3.8	6.1	7.9	9.2	7.0	11	3.8	2.4	1.7
6	1.6	1.9	3.8	3.8	6.1	12	8.9	7.0	9.8	3.8	2.4	1.7
7	1.6	1.6	3.3	* 3.8	6.1	11	8.9	6.7	9.8	3.8	2.4	1.7
8	1.4	1.4	3.0	3.8	5.8	9.5	8.5	6.7	10	3.8	2.4	1.7
9	1.6	1.4	2.8	3.8	5.5	9.2	8.5	6.4	9.5	3.8	2.4	1.6
10	1.4	4.2	2.8	3.8	5.5	8.9	8.2	6.4	8.9	* 3.8	2.4	* 1.6
11	1.3	1.9	2.8	3.8	* 5.5	8.9	8.2	6.1	8.5	3.8	2.4	1.6
12	1.3	1.7	2.8	4.0	7.6	4.9	7.9	6.1	7.9	3.8	* 2.4	1.6
13	1.3	1.6	2.6	4.0	7.3	31	7.6	6.1	7.6	4.8	2.8	1.4
14	1.3	1.6	2.6	4.0	6.7	21	7.6	* 6.1	7.3	5.8	2.6	1.4
15	1.3	1.4	2.6	3.8	6.4	17	7.3	5.8	7.0	4.8	2.6	1.9
16	* 1.3	1.4	2.6	3.8	5.8	16	7.3	5.5	7.0	4.0	2.4	5.3
17	1.3	1.4	2.6	3.8	5.5	44	* 7.0	a 5.2	6.7	3.8	2.4	4.3
18	1.3	2.0	2.6	3.8	5.8	32	7.6	a 11	6.4	3.5	2.4	2.6
19	1.4	2.2	2.6	4.0	7.3	23	7.3	a 9.0	* 6.4	3.3	2.4	2.4
20	1.4	* 1.7	2.6	7.3	7.9	* 3.4	7.0	a 7.4	6.4	3.3	2.4	2.2
21	1.4	1.9	2.8	6.4	7.3	28	6.7	a 6.4	6.4	3.5	2.4	2.0
22	1.4	3.8	5.5	5.5	6.7	21	6.7	6.1	5.8	3.3	2.8	2.2
23	1.4	2.4	3.8	5.5	6.1	18	7.6	6.1	5.5	3.3	2.4	2.0
24	1.4	2.2	3.3	5.5	6.4	16	7.3	5.8	5.2	3.3	2.2	1.9
25	1.4	2.2	3.3	5.2	6.7	15	6.7	5.5	4.8	3.0	2.4	1.9
26	1.6	2.2	3.5	5.2	6.7	14	6.7	5.5	4.8	3.0	2.2	1.9
27	1.6	2.0	3.5	7.3	6.1	16	6.7	5.5	4.6	3.0	2.0	1.9
28	1.4	2.0	3.5	6.1	6.1	14	6.7	5.2	4.6	3.0	2.0	1.9
29	1.4	2.0	4.0	5.2	-	12	6.4	7.3	4.6	3.3	2.0	3.0
30	1.4	2.0	5.8	5.5	-----	12	7.3	6.4	5.5	3.0	2.2	2.0
31	1.4	-----	4.0	5.5	-----	11	-----	5.8	-----	2.8	2.0	-----
Total	44.6	59.5	95.1	143.2	177.7	541.6	235.4	208.1	230.1	115.8	75.3	62.4
Mean	1.44	1.98	3.07	4.62	6.35	17.5	7.85	6.71	7.67	3.74	2.43	2.08
Cfsm	0.275	0.378	0.586	0.882	1.21	3.34	1.50	1.28	1.46	0.714	0.464	0.397
In.	0.32	0.42	0.67	1.02	1.26	3.84	1.67	1.48	1.63	0.82	0.53	0.44

Calendar year 1962: Max 68 Min 1.3 Mean 7.11 Cfsm 1.36 In. 18.42
 Water year 1962-63: Max 49 Min 1.3 Mean 5.45 Cfsm 1.04 In. 14.10

Peak discharge (base, 45 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	1300	3.25	71	3-17	1630	3.06	56

* Discharge measurement made on this day.
 a No gage-height record.

1-4850. Pocomoke River near Willards, Md.

Location.--Lat 38°23'20", long 75°19'30", on left bank 30 ft downstream from bridge on U. S. Highway 50, at Wicomico-Worcester County line, 0.6 mile upstream from Burnt Mill Branch, 1.3 miles east of Willards, Wicomico County, and 1.3 miles west of Whaleysville.

Drainage area.--60.5 sq mi.

Records available.--December 1949 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Average discharge.--13 years (1950-63), 69.8 cfs.

Extremes.--Maximum discharge during year, 690 cfs Mar. 13 (gage height, 10.82 ft); minimum, 3.0 cfs Sept. 13, 14, 15.

1949-63: Maximum discharge, 884 cfs Jan. 8, 1962; maximum gage height, 12.03 ft Mar. 21, 1958; minimum discharge, 2.2 cfs Aug. 18, 19, 1957 (gage height, 1.91 ft).

Remarks.--Records fair.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 7-30)

2.0	2.1	5.0	136
2.5	14	7.0	306
3.0	28	9.0	496
3.5	46	11.0	710
4.0	71		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	5.9	32	a110	68	84	a90	47	24	18	10	6.1
2	5.2	5.7	30	a80	72	245	a85	45	29	19	10	5.4
3	5.0	9.8	29	a68	114	201	a80	39	118	18	9.2	4.3
4	5.9	12	28	59	103	158	72	36	238	16	8.5	3.9
5	6.6	9.8	28	*54	90	164	64	32	169	16	*8.0	3.6
6	5.9	11	40	51	89	336	59	30	114	15	7.6	5.4
7	5.7	10	67	49	94	395	56	28	80	14	7.1	4.1
8	5.4	9.8	54	48	89	258	54	27	127	15	7.1	3.6
9	*5.7	9.8	49	47	70	179	50	25	109	*15	6.8	3.4
10	5.9	27	47	47	66	145	49	24	85	14	6.4	3.4
11	5.7	29	41	47	*64	125	45	23	77	14	6.1	3.2
12	5.4	23	37	54	107	*528	45	23	66	13	5.9	*3.2
13	5.4	21	33	62	137	*685	41	*22	53	12	7.8	3.2
14	5.2	19	32	68	110	595	40	22	46	14	7.6	3.0
15	5.2	18	30	58	91	407	38	23	41	14	6.8	4.3
16	5.2	18	30	51	72	263	37	21	37	13	6.4	2.3
17	5.4	17	29	47	63	535	*36	20	34	12	6.1	1.9
18	5.4	20	28	47	59	599	37	34	*32	11	5.9	1.1
19	5.4	38	27	54	67	446	35	38	30	11	5.7	8.5
20	5.4	*35	27	126	134	469	33	32	28	11	5.7	7.1
21	5.4	33	a30	154	127	386	32	31	33	12	5.7	6.4
22	5.4	79	a50	121	98	263	31	30	31	15	*5.7	6.8
23	5.4	91	a94	99	80	188	36	30	28	12	5.4	6.1
24	5.2	63	a90	88	76	153	36	28	25	10	5.2	*5.7
25	5.2	50	a72	70	87	*132	33	26	23	9.8	5.0	5.2
26	5.9	43	a68	62	91	119	32	25	22	10	5.2	4.8
27	5.7	39	a64	121	81	140	30	23	21	10	5.4	4.5
28	5.7	36	a64	114	78	a130	29	22	20	11	5.2	3.9
29	5.7	34	a68	87	-	a120	28	25	19	*10	5.4	9.8
30	5.7	32	a160	78	-----	a110	29	28	18	9.5	7.3	9.0
31	5.9	-----	a180	75	-----	a100	-----	27	-----	9.2	6.8	-----
Total	171.6	848.8	1,658	2,296	2,477	8,658	1,362	886	1,777	403.5	207.0	190.9
Mean	5.54	28.3	53.5	74.1	88.5	279	45.4	28.6	59.2	13.0	6.68	6.36
Cfsm	0.092	0.468	0.884	1.22	1.46	4.61	0.750	0.473	0.979	0.215	0.110	0.105
In.	0.11	0.52	1.02	1.41	1.52	5.32	0.84	0.54	1.09	0.25	0.13	0.12

Calendar year 1962: Max 844 Min 3.0 Mean 75.6 Cfsm 1.25 In. 16.97
Water year 1962-63: Max 685 Min 3.0 Mean 57.4 Cfsm 0.949 In. 12.87

Peak discharge (base, 500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-13	1100	10.82	690	3-17	2330	10.32	635

* Discharge measurement made on this day.
a No gage-height record.

POCOMOKE RIVER BASIN

21

1-4855. Nassawango Creek near Snow Hill, Md.

Location.--Lat 38°13'45", long 75°28'20", on right bank 15 ft downstream from bridge on State Highway 12, 0.5 mile upstream from Furnace Branch, 0.6 mile downstream from Millville Creek and 5.5 miles northwest of Snow Hill, Worcester County.

Drainage area.--44.9 sq mi.

Records available.--December 1949 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 10 ft (from topographic map).

Average discharge.--13 years (1950-63), 55.3 cfs.

Extremes.--Maximum discharge during year, 615 cfs Mar. 13 (gage height, 7.00 ft); minimum, 1.6 cfs Sept. 11, 12. 1949-63: Maximum discharge, 988 cfs Aug. 16, 1953 (gage height, 7.82 ft); minimum, 1.4 cfs Aug. 16, 1954, Aug. 6, 7, 1957.

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

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 3-20, 24, Feb. 8-12, 16-20, Feb. 24 to Mar. 1)

1.4	1.2	2.0	29	5.0	200
1.5	3.0	2.4	55	6.0	345
1.6	5.7	3.0	75	7.0	615
1.7	9.5	4.0	119		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.2	25	146	a 70	69	67	24	19	7.8	4.2	2.4
2	3.8	4.2	23	105	a 66	119	63	23	24	7.0	5.4	2.2
3	2.5	15	23	77	a 80	181	60	23	87	6.6	4.2	2.0
4	6.3	16	22	63	a 94	190	56	21	176	5.4	4.2	1.8
5	10	16	21	58	a 88	153	49	19	224	4.5	*3.5	1.8
6	8.2	21	35	53	a 84	200	43	18	177	4.0	3.0	2.0
7	6.3	14	46	50	a 82	345	40	17	110	3.8	2.8	2.0
8	5.1	10	44	*47	76	331	39	16	83	3.5	2.8	2.0
9	*12	9.5	49	46	62	235	37	14	69	*3.2	2.8	2.0
10	8.2	50	49	46	62	154	35	13	67	4.0	2.6	1.8
11	6.0	27	42	48	*55	115	35	*12	87	4.0	2.4	1.7
12	4.8	20	35	50	69	274	34	12	81	3.5	2.4	1.7
13	4.5	16	29	52	93	*559	33	12	64	3.2	2.2	*1.7
14	4.0	14	25	54	104	526	31	12	50	3.8	2.2	1.8
15	3.8	13	23	52	102	354	29	13	36	4.8	2.2	2.8
16	3.8	13	22	47	73	244	*25	13	29	4.5	2.0	4.9
17	3.8	13	21	44	65	317	24	12	25	4.0	2.0	3.8
18	4.0	31	21	44	52	489	25	52	*20	3.5	2.0	2.0
19	4.0	*46	22	47	54	419	26	49	18	3.2	2.0	1.6
20	4.0	31	23	69	85	336	24	43	16	3.0	2.0	1.2
21	4.0	31	23	92	108	302	23	38	19	3.0	1.8	9.0
22	4.0	62	54	113	106	259	21	32	18	3.0	2.0	7.8
23	4.2	64	64	107	92	189	21	29	15	3.0	2.0	6.6
24	4.2	64	69	85	72	135	21	26	12	3.0	2.0	5.7
25	4.2	62	70	a 70	69	*107	20	23	11	2.8	1.8	4.8
26	4.5	54	71	a 64	70	92	20	20	10	2.8	1.8	4.2
27	4.5	44	71	a 62	63	97	19	18	8.2	2.8	1.8	4.0
28	4.5	35	70	a 80	69	98	18	16	7.8	2.8	1.7	4.0
29	4.2	31	70	a 84	-	93	18	19	7.0	3.0	1.8	7.9
30	4.2	27	115	a 82	-	85	20	24	6.3	2.8	2.8	8.2
31	4.2	-	134	a 74	-	75	-	22	-	2.8	2.4	-
Total	157.0	857.9	1411	2111	2165	7142	976	685	1576.3	1191	788	226.9
Mean	5.06	28.6	45.5	68.1	77.3	230	32.5	22.1	52.5	3.84	2.54	7.56
Cfsm	0.113	0.637	1.01	1.52	1.72	5.12	0.724	0.492	1.17	0.086	0.057	0.168
In.	0.13	0.71	1.17	1.75	1.79	5.92	0.81	0.57	1.31	0.10	0.07	0.19

Calendar year 1962: Max 638 Min 2.2 Mean 58.8 Cfsm 1.31 In. 17.78
Water year 1962-63: Max 559 Min 1.7 Mean 48.0 Cfsm 1.07 In. 14.52

Peak discharge (base, 280 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-7	2130	6.11	365	3-18	1500	6.77	510
3-13	1930	7.00	615				

* Discharge measurement made on this day.
a No gage-height record.

1-4860. Manokin Branch near Princess Anne, Md.

Location.--Lat 38°12'50", long 75°40'18", on right bank 5 ft downstream from farm bridge, 1.4 miles northeast of Princess Anne, Somerset County, and 1.6 miles upstream from confluence with Loretto Branch.

Drainage area.--5.8 sq mi, approximately.

Records available.--Water-stage recorder. Altitude of gage is 15 ft (from topographic map).

Average discharge.--12 years, 4.37 cfs.

Extremes.--Maximum discharge during year, 224 cfs Mar. 12, from rating curve extended above 83 cfs by logarithmic plotting; maximum gage height, 5.34 ft Mar. 12 (backwater from unknown cause); no flow Aug. 23-29, Sept. 1, 2, 10-14.

1951-63: Maximum discharge, 237 cfs Aug. 13, 1955 (gage height, 6.63 ft), from rating curve extended above 120 cfs by logarithmic plotting; no flow Aug. 4, 8, 14, 1954, Aug. 23-29, Sept. 1, 2, 10-14, 1963.

Remarks.--Records fair.

Rating table, water year 1962-63, except period of backwater from unknown cause
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 10-21, Jan. 21 to Mar. 11)

0.8	0	2.0	14
.9	.4	2.5	30
1.0	1.0	3.0	53
1.2	2.5	4.0	121
1.6	7.0	5.0	201

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.5	1.9	6.4	5.2	6.2	3.9	2.1	0.8	0.6	0.4	0
2	.2	.5	1.7	4.9	6.6	28	3.9	1.6	1.4	.6	.4	0
3	.2	1.2	1.6	4.3	13	12	3.7	1.4	3.4	.5	.2	.1
4	.4	1.0	1.6	4.2	7.4	8.5	3.3	1.2	20	.4	.2	.1
5	.4	.9	1.6	3.9	6.3	8.5	2.9	1.1	9.2	.4	*.2	.1
6	.3	1.1	4.2	3.7	6.6	37	2.8	1.1	5.6	.4	.2	.1
7	.2	1.0	5.5	3.7	6.3	18	2.8	1.0	3.7	.4	.2	.1
8	.5	1.0	3.5	*3.6	5.2	10	2.6	1.0	4.4	.4	.2	.1
9	1.1	1.2	3.2	3.5	4.0	7.6	2.6	.9	4.2	*.4	.1	.1
10	*.4	2.8	3.1	3.4	3.9	6.3	2.4	.9	3.0	.4	.1	0
11	.2	1.4	2.8	3.5	3.8	5.8	2.2	*.8	5.4	.4	.1	0
12	.2	1.0	2.4	4.3	*13	*c132	2.2	.8	3.8	.4	.1	0
13	.2	.9	2.2	5.7	10	c57	2.1	.8	2.4	.5	.1	*0
14	.2	.8	2.1	5.7	7.0	26	2.0	.8	1.9	.4	.1	0
15	.2	.8	1.9	4.1	5.5	15	1.8	.8	1.6	.4	.1	.4
16	.2	.8	1.9	3.4	4.0	13	*1.7	.8	1.4	.4	.1	3.4
17	.2	.8	1.8	3.1	3.5	108	1.7	.7	*1.3	.3	.1	1.1
18	.2	2.1	1.7	3.6	3.3	37	1.8	9.5	1.2	.3	.1	.5
19	.2	*1.9	1.7	4.8	6.0	23	1.7	4.5	1.0	.2	.1	.4
20	.2	1.1	1.7	18	12	35	1.6	2.8	1.0	.2	.1	.3
21	.2	1.5	1.7	12	8.0	17	1.4	2.2	1.2	.3	.1	.3
22	.3	10	7.8	6.9	5.2	11	1.4	2.2	1.1	.2	*.1	.3
23	.3	6.2	9.2	5.9	4.1	82	1.4	1.9	1.0	.2	0	.2
24	.3	3.6	7.3	5.1	4.3	7.0	1.4	1.5	.8	.2	0	.2
25	.4	3.0	5.4	3.8	6.7	*6.0	1.3	1.4	.8	.2	0	.2
26	.4	2.6	6.2	3.6	6.4	5.6	1.3	1.2	.7	.2	0	.2
27	.4	2.3	7.6	12	5.0	11	1.2	1.1	.6	.2	0	.2
28	.4	2.2	7.0	7.8	4.6	7.3	1.2	1.0	.6	.2	0	.2
29	.4	2.1	8.4	4.8	-	5.9	1.1	1.0	.6	*.2	0	.5
30	.4	1.9	3.2	5.0	-----	4.9	1.4	1.2	.6	.2	.1	.2
31	.4	-----	11	6.3	-----	4.2	-----	1.0	-----	.2	.1	-----
Total	9.8	58.2	151.7	171.0	176.9	682.0	62.8	50.3	115.3	10.3	3.6	9.3
Mean	0.32	1.94	4.89	5.52	6.32	22.0	2.09	1.62	3.84	0.33	0.12	0.31
Cfsm	0.055	0.334	0.843	0.952	1.09	3.79	0.360	0.279	0.662	0.057	0.021	0.053
In.	0.06	0.37	0.97	1.10	1.13	4.37	0.40	0.32	0.74	0.07	0.02	0.06

Calendar year 1962: Max 126 Min 0.1 Mean 4.78 Cfsm 0.824 In. 11.20
Water year 1962-63: Max 132 Min 0 Mean 4.11 Cfsm 0.709 In. 9.61

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-30	0430	2.93	50	3-17	0930	4.93	195
3-6	1200	3.22	59	3-20	0145	2.93	50
3-12	0745	5.29	224	6-3	1400	3.23	66

* Discharge measurement made on this day.
c Backwater from unknown cause.

1-4865. Beaverdam Creek near Salisbury, Md.

Location.--Lat 38°21'05", long 75°34'11", on upstream side of Schumaker Dam between spillway and emergency flood-gate, three-quarters of a mile upstream from Beaglin Branch and 2 miles southeast of Salisbury, Wicomico County.

Drainage area.--19.5 sq mi.

Records available.--October 1929 to August 1933, May 1934 to September 1935, May 1936 to September 1963. Prior to October 1948, published as East Branch Wicomico River near Salisbury.

Gage.--Water-stage recorder and concrete spillway of dam for control. Datum of gage is 8.93 ft above mean sea level (city of Salisbury benchmark). Prior to Sept. 28, 1938, at site on left bank at datum 9.02 ft higher.

Average discharge.--28 years (1929-32, 1938-63), 23.8 cfs.

Extremes.--Maximum discharge during year, 239 cfs Mar. 13; maximum gage height, 11.61 ft Mar. 13; minimum daily discharge, 0.5 cfs Oct. 2 (leakage under dam following closing of spillway valve).

1929-63: Maximum discharge not determined, occurred Aug. 23, 1933, when dam was partly washed out; maximum gage height, 14.31 ft Aug. 4, 1948, from high-water mark in well; minimum daily discharge recorded, that of Oct. 2, 1962.

Remarks.--Records good except those for periods of no gage-height record or those below 1 cfs, which are poor. Records represent total flow and include flow over spillway, through spillway valve, and over floodgate, and leakage under dam. Occasional regulation at low and medium flow caused by mill above station.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e 1.3	5.2	11	a 27	a 29	28	34	31	8.1	13	20	5.2
2	e .5	5.2	11	a 24	a 31	51	33	31	14	13	25	4.8
3	e .6	12	11	a 22	a 32	51	32	20	51	12	12	5.2
4	e .6	11	a 11	21	a 30	51	30	20	65	11	10	5.2
5	e .7	9.0	a 11	20	a 30	51	30	20	56	10	9.4	5.5
6	e .7	11	a 16	19	a 28	71	28	19	45	9.8	* 8.5	5.5
7	e .7	8.5	a 25	18	a 28	88	28	18	30	9.8	* 8.5	5.5
8	e .7	7.3	a 20	* 18	28	76	27	17	75	10	8.5	5.5
9	* e .8	9.4	a 16	18	26	55	27	16	45	* 10	8.5	5.2
10	e .8	3.1	a 14	18	26	44	26	15	35	* 11	9.0	5.2
11	1.6	17	a 14	18	24	40	25	15	40	9.8	9.0	4.8
12	4.1	13	a 13	18	* 29	* 126	24	15	29	9.4	8.5	4.8
13	4.4	10	a 13	20	36	* 211	23	* 15	21	9.4	8.5	* 4.8
14	4.4	9.4	a 13	20	34	* 140	23	15	22	12	7.7	4.8
15	4.4	9.4	a 12	20	33	83	22	16	22	18	7.7	7.7
16	4.8	9.4	a 12	18	31	66	22	14	19	12	7.3	6.1
17	* 5.2	9.4	a 12	18	30	134	* 22	14	18	9.8	7.3	4.4
18	5.5	12	a 12	18	24	186	22	36	* 18	9.8	7.3	12
19	5.2	23	a 12	18	31	131	21	25	18	9.8	7.3	9.4
20	5.2	* 18	a 12	34	34	110	20	15	18	9.4	7.7	8.5
21	5.2	14	a 20	37	33	106	17	17	28	14	7.7	8.5
22	5.2	30	a 32	38	a 32	* 82	15	18	28	12	8.5	8.5
23	5.2	23	a 25	35	a 30	62	20	18	22	10	* 26	7.7
24	5.2	18	a 23	32	a 29	45	18	16	19	9.8	20	7.3
25	5.2	a 15	a 24	30	a 30	36	18	14	17	9.4	9.0	* 6.6
26	5.5	a 13	a 23	a 26	30	42	18	14	13	9.0	6.9	6.2
27	5.8	a 12	a 22	a 25	28	46	18	14	12	9.0	5.8	6.2
28	5.8	a 12	a 22	a 33	28	43	18	13	12	12	5.2	6.2
29	5.2	a 11	a 24	a 32	-	41	18	14	12	13	4.8	14
30	5.5	11	a 45	a 29	-----	38	21	16	12	* 13	6.9	11
31	5.2	-----	a 34	a 27	-----	35	-----	14	-----	11	5.8	-----
Total	122.9	399.2	565	751	834	2369	700	555	824.1	341.2	304.3	296.8
Mean	3.96	13.3	18.2	24.2	29.8	76.4	23.3	17.9	27.5	11.0	9.82	9.89
Cfsm	0.203	0.682	0.933	1.24	1.53	3.92	1.19	0.918	1.41	0.564	0.504	0.507
In.	0.23	0.76	1.08	1.43	1.59	4.52	1.34	1.06	1.57	0.65	0.58	0.57

Calendar year 1962: Max 338 Min 0.5 Mean 28.0 Cfsm 1.44 In. 19.49

Water year 1962-63: Max 211 Min 0.5 Mean 22.1 Cfsm 1.13 In. 15.38

* Discharge measurement made on this day.

a No gage-height record.

e Discharge computed on basis of flow through spillway valve and/or leakage under dam.

NANTICOKE RIVER BASIN

1-4870. Nanticoke River near Bridgeville, Del.

Location.--Lat 38°43'42", long 75°33'44", on left bank at highway bridge, 800 ft downstream from Gum Branch, and 2.5 miles southeast of Bridgeville, Sussex County.

Drainage area.--75.4 sq mi.

Records available.--April 1943 to September 1963. Prior to October 1955, published as Gravelly Fork near Bridgeville.

Gage.--Water-stage recorder. Timber control since Sept. 3, 1947. Datum of gage is 13.64 ft above mean sea level (levels by Soil Conservation Service). Prior to Apr. 19, 1947, staff gage and crest-stage gage at same site and datum.

Average discharge.--20 years, 93.2 cfs.

Extremes.--Maximum discharge during year, 867 cfs Mar. 12 (gage height, 7.04 ft); minimum, 21 cfs Nov. 16; minimum gage height, 2.36 ft Oct. 8, 9.

1943-63: Maximum discharge, 2,300 cfs Aug. 26, 1958 (gage height, 8.84 ft); minimum observed, 6.3 cfs Sept. 29, 1943.

Maximum stage known, about 11.0 ft in September 1935, from information by local residents.

Remarks.--Records fair.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	38	42	70	65	70	138	87	43	55	44	25
2	26	36	40	61	68	86	140	78	63	54	42	25
3	25	42	38	60	95	82	140	73	148	50	40	26
4	27	45	44	*58	83	77	132	70	178	45	37	26
5	26	41	43	56	76	91	120	68	118	44	36	26
6	24	43	73	56	75	164	114	65	96	44	36	26
7	23	42	82	54	76	204	112	63	89	43	37	28
8	23	42	65	56	73	155	108	63	93	42	38	26
9	24	42	59	53	67	128	106	62	88	41	36	25
10	26	69	56	52	65	118	104	61	82	39	36	25
11	26	47	54	52	65	113	98	59	80	*38	33	26
12	27	34	50	63	111	*642	94	56	77	36	30	26
13	26	*31	47	69	126	*584	92	57	74	40	30	25
14	24	31	46	61	105	411	91	57	72	54	31	24
15	*25	29	45	56	*93	312	89	*54	71	58	32	24
16	28	26	46	53	82	252	88	50	69	44	32	54
17	28	33	46	52	76	460	89	51	69	40	32	56
18	30	42	46	53	76	426	92	74	67	38	32	38
19	30	54	45	54	80	332	*87	63	66	38	32	*34
20	29	48	44	95	96	399	83	55	69	37	38	31
21	26	48	42	100	92	*360	78	*54	*136	37	32	30
22	28	99	75	83	80	282	78	54	90	38	27	40
23	31	77	74	74	74	232	85	51	76	37	27	32
24	32	60	62	72	75	200	83	48	69	37	28	31
25	33	52	58	62	78	183	78	46	67	36	28	32
26	34	48	58	60	80	173	76	45	65	38	*27	34
27	33	46	58	89	72	182	73	44	63	37	27	36
28	31	45	56	83	70	176	71	42	61	38	26	36
29	32	44	59	71	-	161	70	47	59	38	28	50
30	35	43	113	70	---	152	74	48	58	42	30	44
31	38	---	90	69	---	145	---	44	---	44	28	---
Total	876	1,377	1,756	2,017	2,274	7,352	2,883	1,789	2,456	1,302	1,012	961
Mean	28.3	45.9	56.6	65.1	81.2	237	96.1	57.7	81.9	42.0	32.6	32.0
Cfsm	0.375	0.609	0.751	0.863	1.08	3.14	1.27	0.765	1.09	0.557	0.432	0.424
In.	0.43	0.68	0.87	0.99	1.12	3.63	1.42	0.88	1.21	0.64	0.50	0.47

Calendar year 1962: Max 940 Min 20 Mean 94.1 Cfsm 1.25 In. 16.93
 Water year 1962-63: Max 642 Min 23 Mean 71.4 Cfsm 0.947 In. 12.84

Peak discharge (base, 360 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	1815	7.04	867	3-20	1630	6.04	432
3-17	1630	6.33	532				

* Discharge measurement made on this day.

NANTICOKE RIVER BASIN

25

1-4875. Trap Pond Outlet near Laurel, Del.

Location.--Lat 38°31'40", long 75°29'00", on left bank at downstream end of concrete spillway channel, 200 ft downstream from Trap Pond Dam and 5 miles southeast of Laurel, Sussex County.

Drainage area.--16.7 sq mi.

Records available.--June 1951 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (from topographic map).

Average discharge.--12 years, 17.3 cfs.

Extremes.--Maximum discharge during year, 192 cfs Mar. 12 (gage height, 2.71 ft); minimum, 0.1 cfs Sept. 14, 15, 1951-63: Maximum discharge, 462 cfs Jan. 7, 1962 (gage height, 3.55 ft); no flow Aug. 12-14, Sept. 6, 1957.

Remarks.--Records good. Flow regulated by Trap Pond.

Rating table, water year 1962-63 (gage height, in feet,
and discharge, in cubic feet per second)

0.55	0.2	1.4	21
.6	.4	1.7	40
.8	2.5	2.0	69
.9	4.1	2.3	110
1.1	9.1	2.5	146

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.3	4.5	14	14	17	22	21	9.1	4.3	2.0	0.5
2	.2	.3	4.5	12	15	34	23	19	16	3.9	1.8	.6
3	.2	.3	4.5	12	21	32	22	16	42	2.8	1.7	.8
4	.2	.3	4.3	12	20	28	18	13	76	2.2	1.6	.7
5	.2	.5	4.5	11	17	25	18	12	45	2.1	1.5	.4
6	.3	.8	12	11	16	39	18	10	27	2.1	1.6	.4
7	.3	.8	10	*11	16	61	17	9.4	21	2.2	1.6	.4
8	.4	.7	7.1	10	16	40	16	9.1	23	2.3	1.7	.4
9	.4	2.5	6.3	10	14	29	16	8.5	22	2.3	1.5	.4
10	*.4	13	6.1	10	13	23	15	8.3	18	2.5	1.8	.4
11	.4	4.4	5.6	10	13	24	14	7.4	19	2.4	2.1	.3
12	.4	3.0	5.4	12	22	108	14	7.4	14	2.5	2.0	*.2
13	.4	2.1	5.2	13	27	144	14	*7.4	12	2.5	2.0	.2
14	.4	2.0	5.2	13	23	82	13	8.3	11	4.1	1.7	.2
15	.4	2.0	5.0	12	17	55	12	8.8	9.4	5.0	1.7	.2
16	.4	2.2	5.4	11	16	44	*12	7.7	9.1	3.3	1.7	.3
17	.5	2.3	5.2	10	14	112	13	7.1	*8.5	2.8	1.5	.5
18	.6	6.4	5.2	12	13	129	14	27	8.0	2.8	1.5	.5
19	.4	7.4	5.2	12	17	79	13	21	7.4	2.7	1.5	.5
20	.4	4.3	5.2	23	24	96	11	13	6.9	2.5	1.4	.6
21	.4	5.1	7.0	25	24	*91	11	12	8.8	3.2	1.3	.5
22	.4	10	16	21	20	60	9.8	11	7.4	5.0	1.6	.5
23	.4	8.5	13	16	16	44	17	12	6.6	3.1	1.8	.4
24	.3	5.9	10	16	16	36	15	10	5.9	2.5	1.6	.4
25	.4	5.4	10	13	17	31	13	9.1	5.2	2.4	1.1	.4
26	.3	5.6	11	13	18	29	11	8.3	4.5	2.4	1.0	.4
27	.3	5.0	11	21	17	38	11	8.0	4.1	2.4	.9	.4
28	.2	4.8	10	20	16	39	10	7.7	3.9	2.3	.8	.4
29	.3	4.3	13	16	-	32	9.8	14	3.5	2.2	.6	.7
30	.4	4.5	24	15	-----	26	14	19	3.9	2.1	.5	.9
31	.4	-----	19	16	-----	24	-----	12	-----	2.0	.6	-----
Total	10.9	114.7	260.4	433	492	1,651	436.6	364.5	458.2	86.9	45.7	13.5
Mean	0.35	3.82	8.40	14.0	17.6	53.3	14.6	11.8	15.3	2.80	1.47	0.45
Cfsm	0.021	0.229	0.503	0.838	1.05	3.19	0.874	0.707	0.916	0.168	0.088	0.027
In.	0.02	0.26	0.58	0.96	1.10	3.68	0.97	0.81	1.02	0.19	0.10	0.03

Calendar year 1962: Max 355 Min 0.2 Mean 17.0 Cfsm 1.02 In. 13.85
Water year 1962-63: Max 144 Min 0.2 Mean 12.0 Cfsm 0.719 In. 9.72

Peak discharge (base, 100 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	2300	2.71	192	3-20	1900	2.33	115
3-17	2200	2.63	174				

1-4885. Marshy Hope Creek near Adamsville, Del.

Location.--Lat 38°51'00", long 75°40'29", on left bank 10 ft upstream from highway bridge 1.5 miles northeast of Adamsville, Kent County, 1.7 miles upstream from Saulsbury Creek, and 5.3 miles northwest of Greenwood.

Drainage area.--44.8 sq mi.

Records available.--April 1943 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 28.21 ft above mean sea level, datum of 1929. Prior to Nov. 24, 1953, wire-weight gage and crest-stage gage at site 10 ft downstream at same datum.

Average discharge.--20 years, 54.0 cfs.

Extremes.--Maximum discharge during year, 1,200 cfs Mar. 12 (gage height, 9.81 ft); minimum, 2.2 cfs Sept. 11. 1943-63: Maximum discharge, 2,270 cfs Aug. 26, 1958 (gage height, 11.55 ft); minimum, 2.0 cfs Sept. 13, 1961.

Maximum stage known, 14.5 ft in September 1935, from information by local residents.

Remarks.--Records fair.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 30, Sept. 17-30)

2.6	2.4	6.0	123
2.8	6.2	7.0	225
3.0	10	8.0	470
4.0	36	9.0	830
5.0	72	10.0	1,300

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	7.7	5.6	835	22	26	43	26	12	8.5	4.8	3.5
2	2.8	7.9	5.0	a25	24	33	42	26	16	8.3	4.8	3.1
3	2.8	9.4	4.4	22	49	34	41	23	53	7.9	4.6	2.9
4	3.3	10	4.2	*20	39	32	39	22	91	7.5	4.2	2.9
5	3.5	10	3.8	19	30	48	36	20	58	7.2	3.8	*2.9
6	3.5	10	9.2	18	28	147	33	20	37	7.2	3.7	3.3
7	3.5	9.6	22	18	29	272	33	18	28	7.0	3.7	3.5
8	3.5	9.6	15	18	30	222	32	18	25	6.8	3.7	3.3
9	3.5	9.0	11	18	27	125	30	17	23	6.8	3.7	2.9
10	3.5	16	8.7	18	24	92	29	16	21	6.6	3.3	2.8
11	3.5	13	6.8	18	24	75	28	16	20	6.6	3.1	2.4
12	*3.5	9.2	6.0	26	71	717	26	15	18	6.2	2.9	2.4
13	4.2	*6.8	5.2	41	113	*933	25	14	16	7.9	3.7	2.9
14	4.2	5.6	4.8	36	73	521	24	14	15	9.6	5.0	3.7
15	4.2	5.2	4.4	27	*54	302	24	*14	14	*11	5.6	3.8
16	4.2	4.8	4.4	24	41	172	23	14	14	8.3	5.8	12
17	5.0	4.6	4.2	22	34	358	23	13	13	7.2	4.4	14
18	5.8	5.2	3.8	21	31	440	*23	18	12	6.8	3.7	11
19	6.4	7.5	3.5	22	32	295	23	16	11	6.6	3.5	7.9
20	6.2	7.5	3.3	47	54	270	22	14	12	6.6	8.1	6.2
21	6.0	6.8	3.3	74	54	265	21	14	*28	6.6	14	5.4
22	6.2	30	9.2	54	42	*161	21	14	19	6.2	10	6.4
23	6.4	37	14	38	33	107	23	13	14	6.2	7.0	6.6
24	6.4	19	12	34	30	86	23	12	12	6.0	5.6	5.4
25	6.4	12	9.8	27	31	74	22	12	11	6.0	5.2	5.0
26	7.0	9.8	9.0	25	34	67	21	12	10	5.6	4.4	4.6
27	7.7	8.1	8.7	30	30	72	20	12	9.6	5.6	4.2	4.4
28	7.5	7.5	8.7	31	27	68	20	12	9.2	5.4	*3.8	4.2
29	7.5	6.4	10	27	-	58	20	12	8.7	5.2	3.7	7.5
30	7.5	5.8	6.9	24	---	51	21	14	8.7	4.8	4.2	9.4
31	7.7	---	a 50	24	---	47	---	12	---	4.6	3.8	---
Total	156.2	311.0	339.0	883	1,110	6,170	811	493	639.2	2,128	1,520	1,563
Mean	5.04	10.4	10.9	28.5	39.6	199	27.0	15.9	21.3	6.86	4.90	5.21
Cfs/m	0.112	0.232	0.243	0.636	0.884	4.44	0.603	0.355	0.475	0.153	0.109	0.116
In.	0.13	0.26	0.28	0.73	0.92	5.12	9.67	0.41	0.53	0.18	0.13	0.13

Calendar year 1962: Max 621 Min 2.4 Mean 45.5 Cfs/m 1.02 In. 13.79
Water year 1962-63: Max 933 Min 2.4 Mean 31.3 Cfs/m 0.699 In. 9.49

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	2245	9.81	1,200	3-18	0330	8.03	479

* Discharge measurement made on this day.
a No gage-height record.

NANTICOKE RIVER BASIN

27

1-4890. Faulkner Branch at Federalsburg, Md.

Location.--Lat 38°42'45", long 75°47'35", on right bank 25 ft downstream from highway bridge on Nichols Road, 0.9 mile upstream from mouth, and 1 mile northwest of Federalsburg, Caroline County.

Drainage area.--7.10 sq mi.

Records available.--July 1950 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (from topographic map).

Average discharge.--13 years, 9.27 cfs.

Extremes.--Maximum discharge during year, 283 cfs Mar. 12 (gage height, 3.65 ft); minimum, 0.6 cfs Aug. 28, Sept. 3, 10, 11, 12.

1950-63: Maximum discharge 672 cfs Sept. 12, 1960 (gage height, 4.73 ft) from rating curve extended above 210 cfs on basis of slope-area measurement at gage height 4.10 ft; no flow at times in 1954, 1955, 1957, 1959, 1960 (result of pumpage for irrigation).

Remarks.--Records good. Diversion for irrigation of about 100 acres above station during some years.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.5	1.7	21
1.2	1.6	2.0	44
1.3	3.4	2.5	93
1.4	6.1	3.0	150
1.5	9.8		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.6	2.4	b4.0	6.4	6.8	11	7.1	2.6	3.4	1.6	0.8
2	.8	1.6	2.2	b4.4	7.1	9.0	11	5.5	4.2	3.2	1.8	.8
3	.8	2.6	2.2	4.4	10	7.4	11	5.2	18	3.0	1.4	.8
4	1.1	1.9	2.2	4.4	7.1	7.4	10	5.0	13	2.6	1.2	.8
5	1.2	1.9	2.2	4.2	6.8	8.6	9.4	4.7	7.8	2.4	1.0	1.0
6	1.0	1.9	4.4	4.2	6.8	22	9.4	4.7	6.4	2.4	1.0	1.0
7	.8	1.4	4.2	*4.2	6.8	23	9.4	4.4	5.8	2.2	1.2	1.0
8	.8	1.4	3.7	4.2	6.4	15	9.0	4.2	5.5	2.2	1.2	.8
9	.8	1.6	3.4	4.2	5.8	13	9.0	4.2	5.2	2.2	1.1	*.8
10	.8	5.3	3.2	4.2	5.8	12	8.6	4.0	4.7	2.0	1.1	.8
11	.8	2.2	3.2	4.4	6.1	12	8.2	3.7	4.7	1.9	1.0	.8
12	.8	*1.6	3.0	6.1	13	14.8	7.8	3.4	4.2	1.9	1.0	.8
13	1.0	1.6	2.8	6.1	*12	47	7.4	3.4	4.0	2.0	1.2	.8
14	1.0	1.4	2.8	5.5	9.8	28	7.1	3.7	*3.7	3.7	1.1	.8
15	*1.0	1.3	2.8	5.2	8.6	21	7.1	3.4	3.4	*3.0	1.0	1.1
16	1.1	1.3	3.0	5.0	b 5.8	21	6.4	*3.0	3.4	2.4	1.0	16
17	1.1	1.3	3.0	5.0	b 5.8	85	7.1	2.8	3.2	2.2	1.0	6.8
18	1.1	1.9	2.8	5.2	b 7.0	38	7.4	10	3.0	1.9	1.0	3.0
19	1.2	2.2	2.8	5.5	8.6	25	*6.4	4.7	2.8	1.8	1.1	2.4
20	1.2	1.9	2.8	9.8	9.8	51	5.8	3.7	8.9	1.8	1.3	1.9
21	1.3	2.0	2.6	9.4	8.6	30	5.5	4.0	4.8	1.8	1.1	1.9
22	1.6	6.8	4.7	7.8	b 6.1	22	5.5	3.7	8.6	1.8	1.1	2.6
23	1.6	4.0	4.2	7.4	b 6.1	18	7.8	3.4	6.4	1.8	1.0	1.8
24	1.6	3.2	3.7	6.4	b 7.1	16	5.8	3.2	5.5	1.8	1.0	1.6
25	1.6	3.0	3.4	5.5	7.8	15	5.5	3.0	5.0	1.6	1.0	1.6
26	1.6	2.8	3.7	5.8	7.4	*15	5.5	3.0	4.4	1.6	.8	1.4
27	1.6	2.6	3.7	8.6	b 5.8	16	5.2	2.8	4.2	*1.4	.8	1.4
28	1.6	2.6	3.7	b 7.8	6.8	14	5.0	3.0	3.7	1.4	.7	1.3
29	1.6	2.4	4.4	b 7.4	-	13	5.0	3.4	3.4	1.4	*.8	3.7
30	1.6	2.4	8.6	b 7.1	-----	12	6.1	3.2	4.4	1.4	.8	2.2
31	1.6	-----	b4.4	6.8	-----	11	-----	2.6	-----	1.4	.8	-----
Total	36.5	69.7	106.2	180.2	211.2	782.2	225.4	126.1	208.1	65.6	33.2	62.5
Mean	1.18	2.32	3.43	5.81	7.54	25.2	7.51	4.07	6.94	2.12	1.07	2.08
Cfsm	0.166	0.327	0.483	0.818	1.06	3.55	1.06	0.573	0.977	0.299	0.151	0.293
In.	0.19	0.37	0.56	0.94	1.11	4.10	1.18	0.66	1.09	0.34	0.17	0.33

Calendar year 1962: Max 126 Min 0.8 Mean 8.22 Cfsm 1.16 In. 15.72
 Water year 1962-63: Max 148 Min 0.7 Mean 5.77 Cfsm 0.813 In. 11.04

Peak discharge (base, 60 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	0900	3.65	283	3-20	1030	2.26	68
3-17	1130	2.85	131	6-21	0400	2.71	115

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

TRANSQUAKING RIVER BASIN

1-4900. Chicamamico River near Salem, Md.

Location.--Lat 38°30'45", long 75°52'50", on left bank 30 ft downstream from Big Mill Pond dam, 1.6 miles east of Salem, Dorchester County, 3.5 miles northwest of Vienna, and 13 miles upstream from mouth.

Drainage area.--15.0 sq mi.

Records available.--April 1951 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).

Average discharge.--12 years, 17.7 cfs.

Extremes.--1962-63: Maximum discharge during year, 230 cfs Mar. 12 (gage height, 3.05 ft); minimum, 0.8 cfs June 13, result of regulation; minimum daily, 1.0 cfs June 13.
1951-63: Maximum discharge, 470 cfs Jan. 1, 1961 (gage height, 4.40 ft); minimum, that of June 13, 1963; minimum daily, that of June 13, 1963.

Remarks.--Records fair. Some regulation by Big Mill Pond.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6-17, 20-22, Nov. 10-13, Nov. 17 to Mar. 11, July 11, Aug. 30, Sept. 4, 7-13, 15, 21-28)

0.1	0.8	1.7	29
.3	2.2	2.1	44
.5	4.2	2.5	70
.9	9.5	3.0	130
1.3	18	3.5	220

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	5.3	8.0	8.9	10	11	23	22	7.6	6.7	4.6	2.4
2	4.2	5.2	8.0	8.9	11	20	24	19	8.13	5.8	4.2	2.3
3	3.8	8.3	7.9	8.9	17	15	22	15	8.40	5.4	3.7	2.3
4	4.2	13	8.0	9.4	12	12	21	13	8.43	4.5	3.5	2.2
5	5.2	10	8.0	9.4	11	13	19	12	8.21	4.3	3.0	2.2
6	4.9	12	14	9.4	11	32	19	11	8.15	4.3	*2.8	2.1
7	4.8	8.6	19	9.4	11	35	18	11	8.13	4.3	3.0	2.1
8	4.8	7.3	13	*9.5	11	20	18	10	8.14	4.3	3.6	2.0
9	5.1	6.9	9.7	9.7	10	15	18	9.7	14	*4.3	3.6	2.0
10	*4.4	24	8.9	10	10	14	18	8.8	19	4.5	5.1	1.9
11	4.3	13	8.3	10	10	14	16	8.4	11	4.3	3.9	1.9
12	4.3	8.8	8.2	12	*27	149	16	8.6	1.2	4.5	3.8	1.8
13	4.3	7.9	7.7	12	22	*111	15	8.6	1.0	4.3	6.0	*1.8
14	4.3	7.3	7.7	11	14	59	15	9.5	1.6	25	5.4	1.8
15	4.3	7.0	7.7	9.8	12	41	14	9.7	8.15	17	3.4	2.8
16	4.3	7.3	8.0	9.4	11	36	*13	8.6	8.17	2.4	3.2	4.9
17	4.3	8.0	8.0	9.4	10	132	14	8.6	*8.19	1.5	3.0	3.7
18	4.3	9.6	8.2	9.8	10	100	15	20	2.4	1.4	3.2	1.3
19	4.3	*11	8.2	10	11	59	14	17	2.6	1.2	3.2	7.4
20	4.3	9.2	8.2	22	15	104	14	11	2.4	2.0	3.7	5.7
21	4.3	9.2	8.3	18	13	76	12	9.8	3.6	7.3	4.0	4.5
22	4.3	20	11	12	11	50	12	9.8	5.3	6.3	*3.7	5.7
23	7.0	12	10	11	10	38	21	10	6.0	5.7	3.6	4.3
24	5.8	9.0	9.2	11	11	33	18	9.5	6.0	5.6	3.4	3.6
25	4.4	8.3	8.9	9.7	12	30	14	8.6	5.8	5.1	3.3	3.6
26	5.1	8.0	8.9	9.7	12	*30	13	8.3	5.6	4.4	3.1	3.6
27	5.0	8.0	9.0	15	11	42	12	8.0	5.3	4.0	3.1	3.6
28	4.8	8.2	9.0	11	10	36	12	7.9	5.3	4.0	2.9	3.6
29	5.1	8.3	9.8	9.8	-	29	12	9.0	5.7	*4.2	2.7	12
30	4.9	8.2	23	10	-----	27	17	10	8.0	4.2	2.6	11
31	5.2	-----	10	11	-----	25	-----	8.8	-----	3.8	2.5	-----
Total	145.5	288.9	301.8	337.2	346	1408	489	351.2	283.5	166.6	110.8	199.2
Mean	4.69	9.63	9.74	10.9	12.4	45.4	16.3	11.3	9.45	5.37	3.57	6.64
Cfsm	0.313	0.642	0.649	0.727	0.827	3.03	1.09	0.753	0.630	0.358	0.238	0.443
In.	0.36	0.72	0.75	0.84	0.86	3.49	1.21	0.87	0.70	0.41	0.27	0.49

Calendar year 1962: Max 294 Min 1.9 Mean 24.1 Cfsm 1.61 In. 21.77
Water year 1962-63: Max 149 Min 1.0 Mean 12.1 Cfsm 0.807 In. 10.97

* Discharge measurement made on this day.
a No gage-height record.

CHOPTANK RIVER BASIN

29

1-4910, Choptank River near Greensboro, Md.

Location.--Lat 38°59'50", long 75°47'10", on left bank at highway bridge, 0.1 mile upstream from Gravelly Branch and 2.0 miles northeast of Greensboro, Caroline County.

Drainage area.--113 sq mi.

Records available.--January 1948 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5 ft (from topographic map).

Average discharge.--15 years, 128 cfs.

Extremes.--Maximum discharge during year, 1,890 cfs Mar. 13 (gage height, 8.47 ft); minimum not determined, occurred during period of no gage-height record; minimum daily, 6.2 cfs Aug. 12.
1948-63: Maximum discharge, 5,040 cfs Sept. 13, 1960 (gage height, 12.45 ft, from high-water mark in well); minimum, 5.2 cfs Sept. 3-7, 1957 (gage height, 1.74 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation at low flow caused by mill above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	4.0	3.0	237
1.8	7.2	4.0	413
1.9	13	6.0	830
2.2	58	8.0	1,610
2.5	125	10.0	2,960

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	17	42	b72	89	a 80	122	74	28	* 24	9.2	14
2	8.8	17	36	66	80	a 90	118	66	33	21	10	12
3	8.4	21	28	64	96	102	100	58	75	20	11	12
4	8.0	28	28	62	a 120	98	74	53	138	14	10	12
5	9.2	23	28	60	a 112	80	66	53	162	13	8.8	12
6	12	19	42	58	98	287	64	52	108	12	8.0	10
7	12	17	80	58	98	863	120	52	66	12	7.2	11
8	10	17	108	58	100	670	108	52	42	12	7.6	11
9	12	19	66	* 60	b93	365	78	50	40	12	7.6	11
10	13	45	39	64	85	219	64	48	39	11	7.2	10
11	13	44	34	70	82	195	56	44	36	11	a 6.4	10
12	13	* 27	33	98	115	696	47	39	34	11	a 6.2	8.8
13	13	23	30	152	* 215	1,670	48	38	32	13	a 7.0	9.2
14	13	20	33	186	253	880	48	38	* 32	28	a 9.4	8.4
15	13	19	30	115	a 180	479	62	38	32	* 33	a 11	9.2
16	14	19	33	80	a 150	302	70	* 34	30	21	a 12	33
17	16	19	33	78	a 130	442	78	34	28	19	a 8.5	45
18	14	21	34	78	a 120	864	* 76	39	27	16	a 7.4	30
19	14	30	34	82	a 130	526	60	39	27	14	a 7.0	* 21
20	16	27	52	105	a 170	409	56	34	26	13	a 27	17
21	14	26	96	179	235	415	52	34	32	13	a 45	14
22	16	76	72	188	a 180	298	50	36	30	13	a 32	21
23	17	100	56	152	a 140	219	55	32	27	13	a 25	17
24	17	150	52	b 120	a 120	179	55	30	26	12	a 19	13
25	16	96	50	b 87	a 130	168	52	27	24	12	a 16	12
26	16	53	50	76	a 140	158	50	27	21	11	a 13	11
27	16	48	50	80	a 110	* 162	48	27	20	10	a 12	11
28	14	47	48	b 89	a 90	179	48	26	19	10	a 11	11
29	16	45	50	89	-	165	47	34	19	11	a 11	27
30	19	44	80	89	-	145	* 50	53	27	10	a 12	33
31	19	-	b 78	89	-	132	-	* 36	-	* 9.2	* a 16	-
Total	421.2	1,157	1,525	2,904	3,661	11,537	2,022	1,297	1,280	454.2	400.5	476.6
Mean	13.6	38.6	49.2	93.7	131	372	67.4	41.8	42.7	14.7	12.9	15.8
Cfsm	0.120	0.342	0.435	0.829	1.16	3.29	0.596	0.370	0.378	0.130	0.114	0.140
In.	0.14	0.38	0.50	0.96	1.20	3.80	0.67	0.43	0.42	0.15	0.13	0.16

Calendar year 1962: Max 1,400 Min 8.0 Mean 98.6 Cfsm 0.873 In. 11.84
Water year 1962-63: Max 1,670 Min 6.2 Mean 74.3 Cfsm 0.658 In. 8.94

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge
3-13	0830	8.47	1,890

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

CHOPTANK RIVER BASIN

1-4920. Beaverdam Branch at Matthews, Md.

Location.--Lat 38°48'40", long 75°58'15", on left bank 50 ft upstream from bridge on State Highway 328, 1 mile west of Matthews, Talbot County, 1.2 miles upstream from mouth, and 6 miles northeast of Easton.

Drainage area.--5.85 sq mi.

Records available.--July 1950 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 10 ft (from topographic map).

Average discharge.--13 years, 6.95 cfs.

Extremes.--Maximum discharge during year, 307 cfs Mar. 12 (gage height, 4.29 ft); no flow for part of each day Oct. 22, 23, Sept. 11-13.

1950-63: Maximum discharge, 2,200 cfs Sept. 12, 1960 (gage height, 10.24 ft, from high-water mark in gage shelter) from rating curve extended above 440 cfs on basis of contracted-opening measurement at gage height 7.15 ft; no flow for part of each day Aug. 14-16, Sept. 8, 9, 1950, Sept. 8-11, 13, 14, 1951, Aug. 3, 1957, Sept. 13-17, Oct. 22, 23, 1962, Sept. 11-13, 1963.

Remarks.--Records fair.

Rating table, water year 1962-63, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.04	0.1	1.5	9.0
1.1	.3	1.6	15
1.2	1.1	2.0	57
1.3	2.4	3.0	147
1.4	5.0	4.0	266

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.1	1.6	b2.8	3.0	4.0	5.8	3.5	1.0	1.1	1.0	0.1
2	.2	.1	1.6	b2.4	5.0	6.6	6.6	5.8	6.3	.5	1.5	.1
3	.2	.5	1.4	2.8	1.4	4.6	6.2	3.5	6.2	.4	.3	.1
4	.4	.4	1.4	3.0	5.4	4.6	4.6	2.6	1.6	.3	.2	.1
5	.4	.4	1.4	3.0	4.4	9.6	3.5	2.0	5.0	.2	.2	.1
6	.3	.6	1.3	2.8	5.4	5.4	3.5	1.7	2.8	.2	.2	.2
7	.3	.2	5.8	3.0	6.2	2.3	3.8	1.6	2.0	.2	.2	.2
8	.2	.2	2.8	*4.0	5.0	8.6	3.8	1.3	2.4	.1	.2	.1
9	.2	.2	2.3	5.0	3.5	7.0	3.8	1.1	2.3	.1	.2	*.1
10	.1	2.5	1.8	6.2	3.5	6.6	3.8	1.0	1.6	.1	.2	.1
11	*.1	4.0	1.7	6.2	4.6	10	3.2	1.0	2.0	.1	.2	.1
12	.2	*1.8	1.4	1.9	3.3	1.72	3.0	.9	1.4	.1	.2	.1
13	.2	1.3	1.2	10	*1.2	3.5	3.0	.9	1.0	.1	.3	.1
14	.1	1.0	1.2	6.2	7.0	1.5	3.0	1.1	*.2	.8	.3	.2
15	.1	1.0	1.2	3.8	4.4	1.1	2.8	1.2	.7	*.9	.2	.3
16	.1	1.0	1.3	3.2	3.2	1.7	2.8	*.9	.6	.3	.2	4.8
17	.1	.9	1.4	3.0	3.0	8.2	5.6	.8	.6	.2	.2	3.4
18	.1	2.4	1.4	4.0	3.2	2.3	7.8	3.7	.4	.2	.2	1.0
19	.1	3.8	1.4	4.6	9.9	2.0	*4.4	1.6	.4	.2	.1	.7
20	.1	2.1	1.4	1.8	1.4	5.5	3.2	1.0	1.6	.2	3.6	.4
21	.1	2.8	1.3	1.4	7.8	1.7	2.4	1.3	7.9	.2	.3	.3
22	.1	5.0	b3.5	5.8	4.4	1.2	2.3	1.4	1.4	.2	.1	.4
23	.1	8.6	b3.2	b4.6	3.5	9.0	5.0	1.0	.7	.2	.1	.4
24	.1	3.5	b2.3	b3.8	3.5	8.6	3.2	.8	.4	.2	.1	.3
25	.1	2.6	b2.0	b2.8	b5.0	8.2	2.6	.7	.3	.2	.1	.3
26	.1	2.1	2.6	2.6	b4.0	7.8	2.4	.7	.3	.2	.1	.3
27	.1	2.0	2.8	5.0	b3.0	*1.1	2.1	.6	.2	*.2	.1	.3
28	.1	1.8	b2.4	4.4	3.2	8.2	2.0	.7	.2	.2	.1	.3
29	.1	1.7	b7.8	2.4	-	6.6	1.8	9.8	1.1	.1	.1	6.4
30	.1	1.6	b2.8	2.8	-----	6.2	1.3	4.9	7.8	.1	.1	2.1
31	.1	-----	b5.4	3.0	-----	5.8	-----	1.6	-----	.1	.1	-----
Total	4.8	123.7	108.0	164.2	184.1	669.0	121.0	92.2	131.2	8.2	11.0	23.4
Mean	0.15	4.12	3.48	5.30	6.58	21.6	4.03	2.97	4.37	0.26	0.35	0.78
Cfsm	0.026	0.704	0.595	0.906	1.12	3.69	0.689	0.508	0.747	0.044	0.060	0.133
In.	0.03	0.79	0.69	1.04	1.17	4.25	0.77	0.59	0.83	0.05	0.07	0.15

Calendar year 1962: Max 106 Min 0.1 Mean 4.95 Cfsm 0.846 In. 11.50
Water year 1962-63: Max 172 Min 0.1 Mean 4.50 Cfsm 0.769 In. 10.43

Peak discharge (base, 120 cfs)

Date	Time	Gage height	Discharge
3-12	0830	4.29	307

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

CHESTER RIVER BASIN

31

1-4930. Unicorn Branch near Millington, Md.

Location.--Lat 39°15'00", long 75°51'40", on right bank 50 ft upstream from bridge on State Highway 313, 0.9 mile upstream from mouth and 1.4 miles southwest of Millington, Kent County.

Drainage area.--22.3 sq mi.

Records available.--January 1948 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (from topographic map).

Average discharge.--15 years, 24.6 cfs.

Extremes.--Maximum discharge during year, 840 cfs July 17 (gage height, 6.34 ft), caused by failure of Unicorn Lake dam $\frac{1}{4}$ mile upstream; minimum, 0.3 cfs Oct. 10, 11, caused by installation of new floodgates at Unicorn Lake dam.

1948-63: Maximum discharge, 1,060 cfs Sept. 12, 1960 (gage height, 7.17 ft); minimum, that of Oct. 10, 11, 1963 (gage height, 1.60 ft).

Remarks.--Records good. Occasional regulation at low flow by fish hatchery above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	0.3	2.2	33
1.7	1.7	2.4	51
1.8	4.4	2.7	71
1.9	8.4	3.0	100
2.0	14	3.4	157

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	8.4	11	b12	12	17	25	17	11	12	6.4	6.0
2	9.0	8.4	11	12	13	19	25	15	13	9.0	9.0	6.0
3	8.4	12	11	12	28	19	25	14	28	8.0	6.4	5.6
4	9.0	13	11	12	17	20	23	13	34	7.6	6.0	5.2
5	9.5	11	11	12	14	32	20	13	21	7.2	5.6	5.2
6	9.0	9.5	17	12	14	78	19	12	15	7.2	*5.6	*5.2
7	8.4	9.0	22	12	16	150	20	12	13	7.2	5.6	5.2
8	23	9.0	12	12	16	55	19	12	13	7.2	5.6	5.6
9	19	9.0	13	12	14	35	20	12	13	7.2	5.2	5.2
10	*5.0	23	12	13	13	30	19	12	12	7.2	5.2	5.6
11	3	14	11	16	13	29	19	11	12	6.8	5.2	5.2
12	5	11	11	29	35	115	18	12	11	*6.0	5.2	5.6
13	6	10	10	29	46	134	18	12	*10	6.8	9.6	5.2
14	3.7	9.5	10	20	24	63	18	12	10	8.4	16	5.6
15	7.6	8.4	10	15	b18	41	19	*12	10	11	7.6	6.4
16	8.0	8.4	10	13	b13	35	18	12	10	9.0	6.8	20
17	8.0	8.4	10	13	b13	67	17	12	10	106	6.4	17
18	8.4	9.5	10	13	*14	*88	*18	17	9.5	8.0	6.4	10
19	8.4	11	10	13	23	47	17	13	9.0	7.6	10	9.0
20	8.4	10	10	19	74	47	15	12	11	8.4	23	7.6
21	9.0	11	11	23	42	46	14	12	17	7.6	9.5	7.2
22	9.0	36	12	18	b25	35	14	12	11	6.8	8.0	7.6
23	8.4	29	12	15	b20	31	16	12	9.5	6.8	7.2	6.8
24	8.0	16	11	14	21	29	14	11	9.0	6.0	6.8	6.4
25	8.0	13	11	12	21	28	14	11	8.4	6.0	6.4	6.4
26	8.4	12	*11	12	21	28	14	11	8.4	6.0	6.4	6.4
27	8.4	12	11	15	b17	29	14	11	8.0	6.0	6.4	6.4
28	8.4	*12	11	b12	18	29	14	11	7.2	6.0	6.4	6.0
29	8.4	11	b11	b11	-	28	16	13	8.0	5.6	6.4	21
30	8.4	11	b11	12	-----	27	19	13	21	6.0	6.4	14
31	8.4	-----	b10	12	-----	26	-----	12	-----	4.8	6.0	-----
Total	256.5	375.5	359	457	615	1,457	541	386	383.0	325.4	232.7	234.6
Mean	8.27	12.5	11.6	14.7	22.0	47.0	18.0	12.5	12.8	10.5	7.51	7.82
Cfsm	0.371	0.561	0.520	0.659	0.987	2.11	0.807	0.561	0.574	0.471	0.337	0.351
In.	0.43	0.63	0.60	0.76	1.03	2.43	0.90	0.64	0.64	0.54	0.39	0.39
Calendar year 1962: Max	182	Min	0.3	Mean	20.7	Cfsm	0.928	In.	12.61			
Water year 1962-63: Max	150	Min	0.3	Mean	15.4	Cfsm	0.691	In.	9.38			

Peak discharge (base, 180 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-7	0230	3.68	206	7-17	0445	6.34	840
3-12	2015	3.73	216				

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

1-4935. Morgan Creek near Kennedyville, Md.

Location.--Lat 39°16'50", long 76°00'55", on right bank 200 ft upstream from highway bridge, 2 miles southwest of Kennedyville, Kent County, and 4½ miles upstream from mouth.

Drainage area.--10.5 sq mi.

Records available.--May 1951 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (from topographic map).

Average discharge.--12 years, 10.1 cfs.

Extremes.--Maximum discharge during year, 301 cfs Mar. 6 (gage height, 5.28 ft, from high-water mark in well); minimum, 1.6 cfs Aug. 12, 13.

1951-63: Maximum discharge, 1,530 cfs Sept. 12, 1960 (gage height, 8.88 ft), from rating curve extended above 440 cfs by logarithmic plotting; minimum, 1.3 cfs Aug. 2, 7, 17, 1957.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	1.4	2.0	34
1.3	2.8	3.0	66
1.4	5.0	4.0	125
1.5	9.5	5.0	245
1.7	22		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.5	4.2	b5.6	6.5	7.5	6.0	8.0	3.8	4.2	5.5	2.6
2	4.0	4.0	4.2	5.6	7.5	9.0	6.5	5.3	7.0	3.0	2.0	2.1
3	4.0	12	4.2	6.5	21	8.0	6.5	4.8	20	2.8	3.0	2.4
4	5.0	18	4.2	7.0	d17	7.0	5.6	4.8	21	2.6	2.3	2.4
5	7.0	6.0	4.2	6.5	d13	56	5.0	4.5	5.0	2.4	2.0	2.4
6	5.0	4.8	24	6.5	21	161	5.0	4.5	4.2	2.3	1.8	*2.2
7	4.5	4.5	22	6.5	21	65	5.3	4.2	3.8	2.3	1.8	2.2
8	4.0	4.2	7.5	6.5	d7.0	20	5.3	4.2	3.6	2.3	2.3	2.2
9	4.0	4.8	7.0	6.5	d5.0	9.5	6.0	4.2	3.6	2.3	2.0	2.2
10	*4.0	41	b5.6	7.5	d6.5	8.0	6.0	4.2	3.6	2.3	2.0	2.2
11	4.0	21	b4.8	11	8.0	7.0	5.3	4.0	3.6	2.3	1.7	2.0
12	3.8	5.6	b4.5	61	81	61	5.3	4.0	3.6	*2.3	1.7	2.0
13	3.8	4.8	4.2	51	48	33	5.0	4.0	*3.4	2.3	3.5	2.0
14	3.6	4.5	b4.2	24	16	12	5.0	4.0	3.6	3.0	4.5	2.0
15	3.8	4.5	b4.0	8.0	d6.0	7.5	4.8	*4.2	3.6	3.6	2.4	2.4
16	3.8	4.5	b4.8	6.0	d5.6	7.0	4.8	3.8	3.4	2.6	2.2	14
17	3.8	4.5	5.6	6.0	d5.1	28	5.0	4.0	3.4	2.4	2.2	17
18	3.8	7.0	6.5	8.0	*d5.6	*13	*5.6	8.0	3.4	2.3	2.0	4.2
19	3.8	13	6.5	8.5	14	8.0	5.3	4.8	3.2	2.3	2.3	3.4
20	4.0	6.0	7.0	20	65	13	4.8	4.0	11	4.2	3.3	3.0
21	4.0	8.4	5.3	16	44	8.5	4.5	5.3	29	3.4	11	2.8
22	4.0	42	7.5	6.5	b12	7.0	4.5	5.3	4.2	2.4	4.0	3.2
23	4.0	23	7.5	b6.0	b4.8	6.0	5.3	4.2	3.4	2.4	3.4	2.4
24	3.8	5.3	6.0	b5.3	b5.0	6.0	5.3	4.0	3.2	2.4	3.2	2.3
25	3.8	4.5	6.0	5.0	b6.0	6.0	5.0	4.0	3.0	2.3	3.2	2.4
26	4.5	4.2	*7.0	5.0	b6.5	7.5	5.0	4.0	3.0	2.2	2.6	2.4
27	4.2	4.2	6.5	6.5	8.0	14	5.0	3.8	2.8	2.2	2.6	2.4
28	4.0	*4.2	5.6	7.0	8.0	8.0	4.8	4.0	2.8	2.0	2.6	2.4
29	4.0	4.2	b5.6	7.0	-	7.0	4.8	4.5	12	2.0	2.6	27
30	4.0	4.2	b7.5	6.5	-----	6.5	7.5	4.8	35	2.0	2.8	20
31	4.5	-----	b7.5	6.0	-----	6.5	-----	4.0	-----	*1.8	2.8	-----
Total	128.7	283.4	211.2	345.0	474.1	623.5	159.8	141.4	216.2	78.9	139.0	142.5
Mean	4.15	9.45	6.81	11.1	16.9	20.1	5.33	4.56	7.21	2.55	4.48	4.75
Cfsm	0.395	0.900	0.649	1.06	1.61	1.91	0.508	0.434	0.687	0.243	0.427	0.452
In.	0.46	1.00	0.75	1.22	1.68	2.21	0.57	0.50	0.77	0.28	0.49	0.50

Calendar year 1962: Max 112

Min 3.6

Mean 9.49

Cfsm 0.904

In. 12.29

Water year 1962-63: Max 161

Min 1.7

Mean 8.06

Cfsm 0.768

In. 10.43

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge
3-6	About 1400	5.28	301

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record.

1-4950. Big Elk Creek at Elk Mills, Md.

Location.--Lat 39°39'26", long 75°49'20", on right bank 100 ft downstream from highway bridge at Elk Mills, Cecil County, 3½ miles north of Elkton, and 7 miles upstream from confluence with Little Elk Creek.

Drainage area.--52.6 sq mi.

Records available.--April 1932 to September 1963. Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder (digital). Datum of gage is 68.5 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1939, wire-weight gage and Oct. 7, 1939, to May 16, 1946, wire-weight gage and crest-stage gage at bridge 100 ft upstream at same datum.

Average discharge.--31 years, 69.7 cfs.

Extremes.--Maximum discharge during year, 1,620 cfs Mar. 6 (gage height, 5.93 ft); minimum, 5.7 cfs Aug. 12, 13, 19, Sept. 3; minimum daily, 6.0 cfs Aug. 12, Sept. 3.

1932-63: Maximum discharge, 10,600 cfs July 5, 1937 (gage height, 14.5 ft, from floodmarks), from rating curve extended above 1,700 cfs on basis of velocity-area and conveyance studies; minimum, 4.5 cfs Jan. 21, 1955 (result of freezeup); minimum daily, that of Aug. 12, Sept. 3, 1963; minimum gage height observed, 2.09 ft Sept. 19, 22-24, 1932.

Maximum stage known, about 19 ft in June 1884, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation caused by mills above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.2	4.5	2.8	47
2.3	6.5	3.0	83
2.4	10	3.5	210
2.5	15	4.0	380
2.6	24	5.0	890

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	19	27	32	b30	b35	36	43	64	19	18	7.4	6.6
2	18	22	31	b34	b70	216	44	39	19	13	8.4	6.1
3	18	63	30	b35	b230	173	42	34	29	12	7.5	6.0
4	20	89	30	b34	b140	140	40	32	42	10	14	26
5	40	33	30	b32	b120	682	36	30	26	9.9	9.6	14
6	28	27	176	b32	b220	765	37	29	21	9.7	7.1	8.9
7	22	24	110	b32	b130	140	38	28	20	9.6	6.5	8.3
8	22	23	55	b32	b70	73	37	27	37	11	7.3	8.2
9	*26	24	47	b30	b38	60	39	26	22	*9.9	*7.3	8.0
10	35	340	b40	b33	b35	55	39	25	*34	9.3	6.9	*7.6
11	28	68	b35	b40	b50	52	35	25	39	9.2	6.2	7.0
12	23	43	b31	b300	b540	189	34	24	23	8.9	6.0	6.8
13	21	36	b30	b180	b100	94	33	24	19	9.1	8.3	6.4
14	20	33	b32	94	*b50	71	32	*24	18	12	14	6.4
15	20	31	b30	b56	b40	58	31	24	19	17	8.2	6.9
16	21	30	b32	b50	b30	55	*31	22	16	11	7.0	14
17	21	29	b32	b40	b35	187	32	23	15	9.6	6.5	30
18	21	84	b35	b45	b38	94	35	48	14	8.9	6.3	15
19	20	104	b34	47	50	65	32	32	14	8.5	6.2	12
20	20	48	b34	183	352	161	30	24	14	8.3	24	10
21	21	47	b30	103	133	85	28	26	15	8.0	13	9.3
22	21	289	b42	b48	b38	*61	28	25	13	8.1	11	9.1
23	21	77	b40	b45	b33	54	33	22	12	9.1	11	8.5
24	20	51	b38	b43	b30	50	32	21	12	8.9	8.6	8.3
25	20	44	b36	b40	b33	48	29	20	11	8.0	8.2	8.5
26	22	41	b36	b45	b30	49	28	20	11	7.2	7.8	8.8
27	23	38	b35	b54	b30	97	27	21	10	6.7	7.5	9.0
28	22	*36	*b32	b35	b32	60	26	22	9.9	6.7	7.2	8.6
29	21	34	b30	b33	-	50	25	24	12	30	7.0	107
30	21	33	b29	b33	-----	47	60	33	76	10	7.4	36
31	27	-----	b28	b33	-----	45	-----	21	-----	7.5	7.5	-----
TOTAL	702	1,868	1,282	1,871	2,732	4,012	1,036	859	641.9	325.1	270.9	427.3
MEAN	22.6	62.3	41.4	60.4	97.6	129	34.5	27.7	21.4	10.5	8.74	14.2
CFSM	.430	1.18	.787	1.15	1.86	2.45	.656	.527	.407	.200	.166	.270
IN	.50	1.32	.91	1.32	1.93	2.84	.73	.61	.45	.23	.19	.30

CALENDAR YEAR 1962 MAX 935 MIN 13 MEAN 54.3 CFSM 1.03 INCHES 14.00
WATER YEAR 1962-63 MAX 765 MIN 6.0 MEAN 43.9 CFSM .835 INCHES 11.33

Peak discharge (base, 1,700 cfs).--No peak above base.

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

NORTHEAST RIVER BASIN

1-4960. Northeast Creek at Leslie, Md.

Location.--Lat 39°37'40", long 75°56'40", on left bank at downstream side of highway bridge, 0.7 miles northeast of Leslie, Cecil County, 1.5 miles southeast of Bay View, and 1.7 miles upstream from confluence with Little Northeast Creek.

Drainage area.--24.3 sq mi.

Records available.--October 1948 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 115.0 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 34.5 cfs.

Extremes.--Maximum discharge during year, 814 cfs Nov. 10 (gage height, 3.89 ft); minimum, 2.5 cfs July 22, Sept. 12, 13, 14, 15; minimum daily, 2.5 cfs Sept. 13, 14.

1948-63: Maximum discharge, 3,220 cfs July 27, 1958 (gage height, 6.92 ft), from rating curve extended above 640 cfs on basis of slope-area measurement at gage height 5.06 ft; minimum, 1.4 cfs Mar. 3, 1950, result of freezeup; minimum daily, 1.8 cfs Sept. 6, 1957.

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by powerplant above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19-28)

1.4	1.7	2.1	48
1.5	3.3	2.3	87
1.6	6.0	2.5	142
1.7	11	3.0	340
1.9	26	3.5	595

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.9	8.6	15	14	b15	15	18	48	8.8	7.2	6.0	3.3
2	4.7	7.0	14	16	39	53	19	20	8.2	6.0	8.8	3.1
3	4.7	43	14	16	b150	64	18	15	17	4.8	5.1	3.1
4	6.3	107	14	16	b64	49	17	14	32	4.5	12	4.2
5	19	18	14	15	b52	382	15	13	15	4.2	6.0	4.5
6	11	13	115	15	b140	347	14	12	12	4.2	3.9	*3.5
7	6.2	11	92	15	72	132	15	11	11	4.2	3.7	3.1
8	5.1	11	26	15	33	33	15	11	10	4.2	3.9	3.1
9	23	11	21	14	18	27	16	11	10	*4.8	3.9	3.1
10	17	398	18	16	16	26	17	10	16	4.5	3.9	2.9
11	9.9	58	b17	22	24	24	14	10	15	4.5	3.7	2.9
12	6.6	24	b16	233	294	130	14	9.4	12	4.2	3.3	2.7
13	5.7	18	b15	203	556	53	13	8.8	9.4	4.2	4.8	2.5
14	5.4	16	b15	55	b27	37	13	*9.4	8.2	6.0	11	2.5
15	5.4	14	b14	b25	b20	28	12	9.4	8.8	11	5.4	2.7
16	5.4	14	b15	b20	b16	26	*12	8.2	8.2	6.0	4.5	6.0
17	5.2	14	b15	b19	b17	125	13	8.2	8.2	5.1	3.9	12
18	5.6	64	b17	b22	18	47	14	27	7.7	4.8	3.9	7.7
19	5.5	91	b16	25	27	30	13	18	6.8	4.5	7.2	5.1
20	5.5	27	16	102	144	108	12	12	6.4	4.5	16	4.5
21	5.5	27	b14	48	120	41	11	12	7.7	4.2	8.2	3.9
22	5.6	267	20	b30	27	*28	11	12	6.4	3.9	5.1	3.7
23	5.6	46	b19	b18	14	23	14	10	6.0	5.1	5.7	3.5
24	5.7	23	b18	b22	b13	22	13	8.8	5.7	5.1	5.1	3.3
25	5.4	21	17	b25	b15	21	11	8.8	5.7	4.5	4.5	3.3
26	6.1	19	17	b20	b14	23	11	8.2	5.4	4.2	3.9	3.5
27	7.5	18	b17	b26	b14	56	11	8.8	5.1	3.9	3.7	3.5
28	6.3	*16	*b15	15	b14	29	10	8.8	5.1	4.5	3.5	3.5
29	*6.4	15	b14	b14	-	23	10	11	12	4.5	3.5	44
30	6.2	15	b14	b14	-----	21	33	18	9.4	4.5	3.5	22
31	7.6	-----	b13	b15	-----	20	-----	11	-----	3.9	3.7	-----
TOTAL	230.0	1,436.6	677	1,125	1,473	2,043	429	402.8	299.2	151.7	171.3	176.7
MEAN	7.42	47.9	21.8	36.3	52.6	65.9	14.3	13.0	9.97	4.89	5.53	5.89
CFSM	.305	1.97	.897	1.49	2.16	2.71	.589	.535	.410	.201	.228	.242
IN	.35	2.20	1.04	1.72	2.25	3.13	.66	.62	.46	.23	.26	.27

CALENDAR YEAR 1962 MAX 468 MIN 3.3 MEAN 27.6 CFSM 1.14 INCHES 15.44

WATER YEAR 1962-63 MAX 398 MIN 2.5 MEAN 23.6 CFSM .971 INCHES 13.19

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge
11-10	1715	3.89	814

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

SUSQUEHANNA RIVER BASIN

35

1-5800. Deer Creek at Rocks, Md.

Location.--Lat 39°37'49", long 76°24'13", on right bank a quarter of a mile downstream from Maryland & Pennsylvania Railroad bridge, three-quarters of a mile southeast of Rocks, Harford County, 1.2 miles upstream from Stirrup Run, and 7 miles northwest of Bel Air.

Drainage area.--94.4 sq mi.

Records available.--October 1926 to September 1963. Monthly discharge only for November and December 1926, published in WSP 1502.

Gage.--Water-stage recorder(digital). Concrete control since Sept. 7, 1938. Datum of gage is 250.40 ft above mean sea level (city of Baltimore bench mark).

Average discharge.--37 years, 122 cfs.

Extremes.--Maximum discharge during year, 2,130 cfs Mar. 6 (gage height, 6.71 ft); maximum gage height, 7.34 ft Feb. 6 (ice jam); minimum discharge, 15 cfs Sept. 13 (gage height, 1.68 ft).

1926-63: Maximum discharge, 13,600 cfs Aug. 23, 1933 (gage height, 17.7 ft, from floodmarks), from rating curve extended above 3,000 cfs on basis of slope-area measurements at gage heights 13.3 and 17.7 ft; minimum, 8 cfs Dec. 16, 1930, Jan. 26, 1939; minimum daily, 13 cfs Aug. 2, 1931.

Maximum stage known since at least 1888, that of Aug. 23, 1933.

Remarks.--Records good except those for periods of ice effect, which are fair. Some regulation at low flow by mills above station.

Rating table, water year 1962-63, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 9

Nov. 10 to Sept. 30

1.9	25	1.7	16	3.0	225
2.0	35	1.9	28	3.5	404
2.3	71	2.2	60	4.0	650
2.7	147	2.6	127	5.0	1,180

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	* 38	47	53	59	b 65	54	82	84	42	39	60	21
2	41	43	53	60	b 80	334	82	61	48	37	46	20
3	36	56	52	60	b 190	441	77	56	112	34	29	22
4	61	92	52	59	b 110	312	74	54	160	31	59	26
5	128	64	50	55	b 140	971	68	52	*76	29	34	27
6	52	55	146	56	b 200	1,100	68	52	99	29	26	22
7	43	*49	123	55	b 130	* 249	68	49	68	28	29	19
8	41	47	82	55	b 80	162	67	48	73	29	27	22
9	59	47	74	52	b 70	138	76	47	61	26	28	22
10	47	436	b 66	54	b 80	123	68	47	56	28	25	19
11	46	112	b 60	61	b 150	112	64	54	56	26	24	22
12	38	77	b 56	500	b 450	246	63	48	52	27	24	22
13	36	66	b 54	b 400	123	169	61	46	48	26	28	20
14	36	59	b 52	b 150	95	133	60	47	48	30	34	16
15	36	55	b 52	b 100	b 80	114	59	46	104	43	29	17
16	36	54	59	b 80	b 70	104	58	44	53	* 31	22	35
17	36	54	56	b 70	b 65	189	59	45	48	31	23	41
18	35	95	* 58	b 70	b 70	146	61	77	45	28	22	30
19	34	119	58	70	116	123	58	55	42	29	24	28
20	35	79	58	192	123	194	55	52	61	29	50	24
21	35	73	b 50	142	129	135	54	50	60	27	* 34	24
22	38	140	b 60	b 100	79	116	* 54	48	44	28	33	24
23	36	87	b 58	b 90	b 70	103	59	45	41	28	30	27
24	35	73	b 56	b 75	67	97	55	43	38	29	26	24
25	36	66	b 54	b 65	66	92	53	43	37	23	26	22
26	38	61	b 54	b 65	58	94	52	45	37	24	24	20
27	36	59	b 52	b 70	56	131	52	45	33	22	26	20
28	36	58	b 50	b 65	55	101	50	45	34	22	21	22
29	39	55	47	b 60	---	90	50	48	55	59	25	157
30	39	54	50	*b 60	---	87	88	56	41	59	24	56
31	59	---	44	b 65	---	84	---	46	---	31	22	---
TOTAL	1,341	2,432	1,889	3,116	3,067	6,544	1,895	1,578	1,772	1,032	934	871
MEAN	43.3	81.1	60.9	101	110	211	63.2	50.9	59.1	33.3	30.1	29.0
CFSM	.459	.859	.645	1.07	1.17	2.24	.670	.539	.626	.353	.319	.307
IN	.53	.96	.74	1.23	1.21	2.58	.75	.62	.70	.41	.37	.34

CALENDAR YEAR	1962	MAX	1,500	MIN	24	MEAN	97.0	CFSM	1.03	INCHES	13.94
WATER YEAR	1962-63	MAX	1,100	MIN	16	MEAN	72.5	CFSM	.768	INCHES	10.43

Peak discharge (base, 1,900 cfs)

Date	Time	Gage height	Discharge
3-6	1400	6.71	2,130

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

1-5615. Bynum Run at Bel Air, Md.

Location.--Lat 39°32'30", long 76°19'50", on right bank 30 ft downstream from bridge on State Highway 22 and 1.0 mile east of Bel Air, Harford County.

Drainage area.--8.52 sq mi.

Records available.--June 1944 to April 1951, July 1955 to September 1963. October 1950 to September 1955 at site 0.5 mile upstream, published as "near Bel Air"; records not equivalent.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 251.94 ft above mean sea level (Maryland State Roads Commission bench mark).

Average discharge.--14 years (1944-50, 1955-63), 10.7 cfs.

Extremes.--Maximum discharge during year, 734 cfs. Mar. 6 (gage height, 4.26 ft); minimum, 0.2 cfs Sept. 2, 3, 10-15.

1944-51, 1955-63: Maximum discharge, 3,620 cfs July 19, 1945 (gage height, 6.25 ft), from rating curve extended above 560 cfs on basis of contracted-opening measurement at gage height 6.18 ft; minimum, 0.2 cfs Sept. 5, 1957, Sept. 2, 3, 10-15, 1963.

Remarks.--Records good except those for periods of ice effect, which are fair. Prior to April 1955, small diversion above station for municipal supply of Bel Air; no diversion since April 1955, when pumping plant was put on standby basis.

Rating table, water year 1962-63, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.77	0.2	1.3	15
.8	.4	1.5	28
.9	1.5	1.7	46
1.0	3.3	2.0	93
1.1	6.1	2.5	185
1.2	9.8	3.0	305

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*0.8	1.4	2.9	b 2.9	3.1	3.1	4.9	8.6	1.8	1.5	8.4	0.4
2	.7	1.2	2.6	2.9	6.5	36	5.5	4.3	5.2	1.3	1.7	.3
3	.7	9.8	2.5	2.9	20	16	4.9	3.3	4.9	1.2	.8	.4
4	7.1	4.6	2.5	3.1	5.3	26	4.1	3.1	20	1.0	1.5	.6
5	5.2	2.0	2.5	3.0	14	85	3.6	2.7	*4.9	1.0	.7	1.2
6	1.6	1.8	7.1	3.0	23	247	3.8	2.7	3.8	1.0	.6	.9
7	1.1	*1.6	12	3.0	9.5	*16	4.1	2.5	6.1	1.0	.6	.5
8	1.1	1.4	5.8	3.0	b 5.5	9.4	3.8	2.3	9.8	.9	.6	.4
9	1.1	3.4	4.7	3.0	3.7	7.8	5.2	2.3	4.3	.8	.6	.4
10	1.1	7.5	3.8	3.4	4.2	7.5	4.3	2.5	3.1	.8	.5	.3
11	1.0	4.9	3.3	4.6	9.1	6.4	3.6	2.5	2.7	1.1	.5	.2
12	1.0	2.9	2.8	b 5.0	53	46	3.6	2.1	2.1	.9	.4	.2
13	.8	2.4	*b 2.5	35	10	15	3.3	2.1	2.1	.8	2.5	.2
14	.8	2.1	2.4	10	6.4	11	3.3	2.3	8.6	2.9	1.6	.2
15	1.0	2.0	2.3	5.5	b 4.0	7.8	3.1	2.1	8.6	1.8	.7	.4
16	1.0	2.0	2.8	4.3	b 3.0	8.2	3.1	2.0	3.0	*.6	.6	5.6
17	1.0	2.0	2.8	4.7	2.6	36	3.6	2.3	2.4	.6	.6	3.2
18	1.0	23	3.0	5.1	3.4	12	3.6	7.1	2.1	.6	.5	1.0
19	1.0	9.2	3.0	6.4	4.5	9.4	3.1	2.7	1.9	.6	1.2	.7
20	1.0	4.4	3.1	34	b 6.0	36	2.9	2.7	11	.9	7.8	.6
21	1.0	6.3	2.6	b 10	12	11	2.7	2.9	5.3	.6	*1.3	.8
22	1.0	55	3.6	b 5.0	b 4.5	7.8	*2.7	2.5	2.4	.6	1.1	.7
23	1.0	6.4	3.3	b 4.5	3.1	6.4	3.6	2.0	2.0	.6	.7	.6
24	.8	4.2	3.0	b 4.0	b 3.0	5.8	2.9	1.8	1.8	.6	.6	.6
25	1.0	3.5	2.9	b 3.6	b 3.0	5.5	2.7	1.8	1.6	.6	.6	.6
26	1.0	3.2	3.3	b 3.4	b 2.8	9.4	2.7	1.8	1.5	.6	.6	.6
27	1.0	3.0	3.1	b 3.5	2.6	21	2.7	1.8	1.5	.6	.6	.6
28	1.0	2.9	2.8	b 3.2	2.5	8.6	2.5	2.3	1.4	.7	.5	.6
29	1.1	2.8	2.8	b 3.0	-	6.4	3.1	2.9	2.3	1.0	.7	4.2
30	1.3	2.7	b 3.0	3.0	-----	5.8	22	5.5	1.7	.8	.6	2.6
31	2.3	-----	b 2.6	3.2	-----	5.2	-----	2.1	-----	.6	.5	-----
TOTAL	42.6	247.1	171.3	236.2	284.3	734.5	125.0	89.6	174.0	28.6	40.2	67.4
MEAN	1.37	8.24	5.53	7.62	10.2	23.7	4.17	2.89	5.80	.92	1.30	2.25
CFSM	.161	.967	.649	.894	1.20	2.78	.489	.339	.681	.108	.153	.264
IN	.19	1.08	.75	1.03	1.24	3.21	.55	.39	.76	.12	.18	.29

CALENDAR YEAR 1962 MAX 322 MIN .4 MEAN 9.30 CFSM 1.09 INCHES 14.82
WATER YEAR 1962-63 MAX 247 MIN .2 MEAN 6.14 CFSM .721 INCHES 9.78

Peak discharge (base, 440 cfs)

Date	Time	Gage height	Discharge
3-6	1215	4.26	734

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

GUNPOWDER RIVER BASIN

37

1-5820. Little Falls at Blue Mount, Md.

Location.--Lat 39°36'16", long 76°37'16", on left bank at downstream side of Pennsylvania Railroad bridge, 0.2 mile north of Blue Mount, Baltimore County, 0.6 mile upstream from mouth, 0.9 mile downstream from First Mine Branch, and 1.2 miles south of White Hall.

Drainage area.--52.9 sq mi.

Records available.--June 1944 to September 1963.

Gage.--Water-stage recorder (digital). Altitude of gage is 305 ft (from topographic map).

Average discharge.--19 years, 67.9 cfs.

Extremes.--Maximum discharge during year, 1,560 cfs Mar. 6 (gage height, 5.21 ft); minimum, 11 cfs Sept. 11. 1944-63: Maximum discharge 5,730 cfs Sept. 10, 1950 (gage height, 11.93 ft in gage well, 13.32 ft from floodmark), from rating curve extended above 1,300 cfs on basis of contracted-opening measurement of peak flow; minimum, 6.0 cfs Feb. 20, 1947; minimum daily, 12 cfs Aug. 3, 1955. Flood in August 1933 reached a stage of about 14 ft, from information by Pennsylvania Railroad.

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6, Sept. 30

Mar. 7 to Sept. 29

0.6	17	2.0	280	0.4	11	0.9	49
.8	37	3.0	600	.5	15	1.1	79
1.0	63	4.0	990	.7	28	1.5	155
1.5	155						

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	22	28	33	b 30	31	31	48	47	26	26	49	14
2	22	25	32	b 33	47	b205	48	37	33	22	29	14
3	22	56	32	b 33	b105	240	46	34	85	26	21	14
4	98	56	32	b 32	b 48	195	43	33	80	20	27	15
5	73	43	32	b 30	b 50	487	42	32	58	19	19	14
6	36	35	97	b 31	b100	643	42	31	* 51	19	17	15
7	30	31	63	b 30	b 70	*123	42	30	38	18	18	14
8	27	* 30	49	*b 30	b 45	91	40	29	38	18	19	14
9	26	29	45	29	b 40	75	46	29	35	17	17	14
10	25	259	38	30	42	70	41	28	32	17	16	14
11	23	63	b 35	43	115	62	39	31	38	17	15	13
12	22	46	b 33	146	b150	152	38	28	30	17	15	13
13	22	41	b 32	112	53	89	37	27	28	17	21	13
14	22	37	b 31	58	b 45	75	36	29	29	26	19	13
15	22	35	b 31	b 48	b 40	65	35	28	47	24	16	14
16	22	34	35	b 43	b 37	62	35	27	27	19	16	24
17	22	35	33	b 40	b 38	111	37	28	26	* 19	15	21
18	22	73	* 34	39	73	80	37	22	25	17	14	18
19	22	63	33	38	51	71	35	33	24	17	16	17
20	22	48	33	95	98	116	33	32	32	19	36	15
21	22	47	b 29	55	61	77	33	32	27	17	39	15
22	22	83	b 35	b 45	38	66	33	30	24	17	* 22	16
23	22	51	b 34	b 40	39	59	* 35	27	23	18	19	16
24	22	45	b 33	b 32	37	56	33	27	22	17	18	16
25	23	41	b 32	b 35	36	54	32	26	21	16	17	17
26	24	39	b 32	b 36	34	57	31	28	21	15	16	17
27	23	37	b 30	b 36	b 33	75	31	27	20	14	16	17
28	23	36	b 28	b 32	b 32	58	30	27	20	12	15	17
29	23	35	b 26	b 31	-	53	31	30	35	45	17	103
30	* 24	33	b 28	b 37	-----	50	63	37	29	25	17	26
31	43	-----	b 25	34	-----	49	-----	27	-----	19	15	-----
TOTAL	873	1,514	1,115	1,383	1,588	3,697	1,152	970	1,024	659	626	563
MEAN	28.2	50.5	36.0	44.6	56.7	119	38.4	31.3	34.1	21.3	20.2	18.8
CFSM	.533	.955	.681	.843	1.07	2.25	.726	.592	.645	.403	.382	.355
IN	.61	1.06	.78	.97	1.12	2.60	.81	.68	.72	.46	.44	.40

CALENDAR YEAR 1962	MAX	811	MIN	15	MEAN	55.6	CFSM	1.05	INCHES	14.26
WATER YEAR 1962-63	MAX	643	MIN	13	MEAN	41.5	CFSM	.785	INCHES	10.66

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge
3-6	0800	5.21	1,560

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

GUNPOWDER RIVER BASIN

1-5830, Slade Run near Glyndon, Md.

Location.--Lat 39°29'40", long 76°47'45", on left bank at downstream side of bridge on Longenecker Road, 1.1 miles upstream from mouth, 1.6 miles northeast of Glyndon, Baltimore County, and 2.6 miles northeast of Reisterstown.

Drainage area.--2.09 sq mi.

Records available.--September 1947 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 420 ft (from topographic map).

Average discharge.--16 years, 2.31 cfs.

Extremes.--Maximum discharge during year, 178 cfs Oct. 4 (gage height, 3.19 ft); minimum daily, 0.2 cfs Aug. 12, Sept. 11-14.

1947-63: Maximum discharge, 485 cfs July 21, 1956 (gage height, 4.68 ft), from rating curve extended above 92 cfs by logarithmic plotting; minimum, 0.02 cfs Aug. 18, 1954, caused by regulation from unknown source; minimum daily, that of Aug. 12, Sept. 11-14, 1963.

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

Rating table, water year 1962-63, except periods of ice effect (gage height in feet, and discharge, in cubic feet per second)

1.15	0.2	1.6	9.6
1.2	.4	1.7	15
1.3	1.2	1.9	30
1.4	2.8	2.1	48
1.5	5.5		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.8	1.3	a1.0	1.1	a1.0	1.7	1.6	0.9	0.8	0.8	0.3
2	.5	.8	1.2	a1.2	1.9	a 9	1.9	1.4	1.3	.7	.6	.3
3	.5	2.6	1.2	a1.2	2.9	6.6	1.9	1.3	6.2	.6	.5	.3
4	2.5	1.4	1.3	a1.2	b2.0	6.8	1.7	1.3	2.3	.6	.5	.3
5	2.0	1.2	1.3	1.1	b2.2	14	1.7	1.3	1.4	.6	.4	.3
6	1.2	1.0	4.0	1.1	a4.5	40	1.7	1.1	*1.2	.6	.4	.3
7	1.0	1.0	2.1	1.1	a2.5	a3.0	1.7	1.1	1.1	.6	.4	.3
8	1.0	*.9	1.7	1.1	a2.0	a 2.5	1.7	1.1	5.2	.6	.4	.3
9	1.0	1.2	1.6	1.1	a1.5	2.2	1.9	1.1	1.5	.5	.4	.3
10	.9	20	b1.4	1.2	a2.0	1.9	1.7	1.1	1.3	.5	.3	.3
11	.9	1.8	b1.3	1.4	a3.5	*1.9	1.7	1.1	*1.2	.5	.3	.2
12	.9	1.5	b1.2	4.4	7.2	6.2	1.7	1.1	1.1	.5	.2	.2
13	.8	1.3	*b1.1	3.1	b1.5	2.8	1.6	1.1	1.0	.5	.6	.2
14	.8	1.2	1.1	b2.0	b1.3	2.4	1.4	1.1	1.0	.9	.5	.2
15	.9	1.2	1.1	b1.7	a1.2	2.1	1.4	1.0	.9	.8	.4	.3
16	.9	1.2	1.1	b1.5	a1.1	2.2	1.4	1.0	.9	.6	.3	.7
17	.8	1.1	1.2	1.4	a1.1	3.2	1.4	1.2	.9	*.5	.3	.5
18	.8	2.6	1.2	1.4	a2.0	2.4	1.4	1.2	.8	.5	.3	.4
19	.8	1.8	1.2	1.4	a1.5	2.8	1.4	1.1	.8	.5	1.7	.4
20	.9	1.6	1.2	3.3	a3.5	5.1	1.3	1.1	2.0	.6	1.6	.4
21	.8	1.7	b1.1	b2.0	a2.5	2.6	1.3	1.1	1.1	.5	.6	.4
22	.8	2.5	1.3	b1.6	a1.3	2.2	1.3	1.1	.9	.5	*.5	.6
23	.7	1.6	1.2	b1.5	a1.3	2.1	1.4	1.0	.8	.5	.4	.5
24	.7	1.5	b1.1	b1.4	a1.3	2.1	*1.3	1.0	.8	.5	.4	.4
25	.7	1.3	1.1	a1.5	a1.2	2.1	1.3	1.0	.7	.4	.4	.4
26	.8	1.3	1.1	a1.5	a1.1	2.2	1.3	1.0	.7	.4	.4	.4
27	.8	1.3	1.1	a1.5	a1.0	2.4	1.3	1.0	.7	.3	.4	.4
28	.8	1.3	b1.0	a1.3	a1.0	2.2	1.3	1.1	.7	.6	.4	.3
29	.8	1.3	b.2	a1.1	-	2.1	1.4	1.1	.7	.6	.5	17
30	.8	1.2	b1.0	a1.2	-----	1.9	2.1	1.1	.9	.5	.4	.6
31	1.0	-----	a.9	a1.2	-----	1.7	-----	.9	-----	.4	.4	-----
TOTAL	50.8	61.2	40.6	48.7	57.2	141.7	46.3	35.5	41.1	17.2	15.7	27.5
MEAN	1.64	2.04	1.31	1.57	2.04	4.57	1.54	1.15	1.37	.56	.51	.92
CFSM	.785	.976	.627	.751	.976	2.19	.737	.550	.656	.266	.242	.439
IN	.90	1.09	.72	.87	1.02	2.52	.82	.63	.73	.31	.28	.49

CALENDAR YEAR 1962 MAX 30 MIN .3 MEAN 1.74 CFSM .833 INCHES 11.29
WATER YEAR 1962-63 MAX 40 MIN .2 MEAN 1.60 CFSM .766 INCHES 10.38

Peak discharge (base, 90 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1615	3.19	178	3-6	0600	2.84	129
11-10	0330	2.69	111	9-29	0845	2.65	106

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

1-5835. Western Run at Western Run, Md.

Location.--Lat 39°30'38", long 76°40'37", on right bank 100 ft downstream from bridge on Western Run Road, 0.3 mile southeast of Western Run, Baltimore County, 2.5 miles northwest of Cockeysville, and 3.2 miles upstream from Beavertown Run.

Drainage area.--59.8 sq mi.

Records available.--September 1944 to September 1963.

Gage.--Water-stage recorder (digital). Altitude of gage is 260 ft (from topographic map).

Average discharge.--19 years, 67.4 cfs.

Extremes.--Maximum discharge during year, 1,860 cfs Mar. 6 (gage height, 6.32 ft); minimum, 5.4 cfs Sept. 13, 14 (gage height, 0.53 ft).

1944-63: Maximum discharge, 5,590 cfs July 21, 1956 (gage height, 10.84 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurements at gage heights 8.55 and 9.88 ft; minimum, 3.4 cfs Jan. 31, Feb. 7, 11, 1962 (gage height, 0.41 ft), result of freezeup.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.5	4.0	1.7	140
.6	8.5	2.0	225
.8	20	3.0	575
1.1	44	4.0	890
1.4	82		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	16	26	33	b 29	b 34	24	48	44	26	23	37	11
2	16	24	32	b 33	b 45	223	48	37	33	20	34	10
3	16	52	31	b 33	b 100	170	46	35	87	19	16	9.9
4	232	51	31	b 32	b 45	125	43	33	77	18	16	11
5	93	34	31	b 30	b 60	353	41	33	42	17	13	9.2
6	38	30	83	b 31	b 120	744	41	32	* 39	17	12	11
7	33	27	62	b 30	57	121	41	31	104	17	12	10
8	31	* 26	48	b 30	43	86	41	31	136	17	14	10
9	29	26	45	b 29	33	72	46	30	54	16	12	9.9
10	28	329	39	*b 30	38	66	43	30	41	16	11	9.2
11	26	60	b 35	b 35	94	* 60	41	29	38	16	9.8	7.7
12	26	44	b 33	b 100	177	160	40	29	33	16	9.5	8.1
13	25	38	b 32	107	47	89	39	28	31	15	15	6.9
14	24	35	b 31	62	38	73	39	29	30	22	20	7.0
15	24	33	b 31	49	30	63	38	29	29	25	12	9.1
16	24	33	b 36	b 44	b 26	60	38	28	27	18	12	21
17	23	32	b 34	b 40	b 25	100	40	28	26	* 17	11	20
18	22	61	*b 33	b 38	b 60	75	42	53	25	15	9.7	15
19	22	63	33	38	43	70	38	33	24	15	12	14
20	23	46	33	96	100	137	36	30	35	17	41	12
21	22	42	b 28	68	65	81	34	33	33	15	19	11
22	21	74	b 36	b 43	b 29	68	35	31	25	14	* 18	13
23	21	48	b 33	b 42	31	61	* 39	28	23	14	15	11
24	19	42	b 31	b 35	31	57	36	28	22	14	14	11
25	21	39	b 30	b 39	29	54	35	27	22	13	13	11
26	23	38	b 30	b 37	26	55	34	28	21	12	12	12
27	21	35	b 29	b 37	b 25	71	34	28	20	11	12	12
28	22	34	b 28	b 35	b 24	56	33	28	20	12	12	11
29	23	33	b 26	b 33	-	51	34	30	21	25	14	104
30	24	33	b 27	*b 35	-----	49	51	36	48	23	15	26
31	34	-----	b 25	b 35	-----	48	-----	28	-----	14	12	-----
TOTAL	1,022	1,488	1,089	1,355	1,475	3,522	1,194	977	1,192	523	485.0	444.0
MEAN	33.0	49.6	35.1	43.7	52.7	114	39.8	31.5	39.7	16.9	15.6	14.8
CFSM	.552	.829	.587	.731	.881	1.91	.666	.527	.664	.283	.261	.248
IN	.64	.93	.68	.84	.92	2.19	.74	.61	.74	.33	.30	.28

CALENDAR YEAR 1962 MAX 853 MIN 11 MEAN 99.4 CFSM .826 INCHES 11.22
WATER YEAR 1962-63 MAX 744 MIN 6.9 MEAN 40.5 CFSM .677 INCHES 9.18

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	2045	5.33	1,400	3-6	1000	6.32	1,860
11-10	0715	4.98	1,260				

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

GUNPOWDER RIVER BASIN

1-5840. Gunpowder Falls near Carney, Md.

Location.--Lat 39°25'28" (revised), long 76°30'42" (revised), on left bank 1 mile downstream from Cowen Run, 2 miles north of Carney, Baltimore County, and 2½ miles downstream from Loch Raven Dam.

Drainage area.--314 sq mi.

Records available.--September 1949 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 135 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,520 cfs Mar. 6 (gage height, 6.77 ft); minimum, 3.2 cfs Aug. 19, 1949-63: Maximum discharge, 7,000 cfs July 9, 1952 (gage height, 9.50 ft), from rating curve extended above 2,800 cfs by logarithmic plotting; minimum, 1.2 cfs Sept. 7, 1954.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or twice-daily gage readings, which are fair. Figures of discharge do not include water diverted at Loch Raven Dam for municipal supply of Baltimore and occasional small diversions just below Loch Raven Dam to maintain Lake Montebello at capacity. Flow completely regulated by Prettyboy and Loch Raven Reservoirs (combined usable capacity, 43,270,000,000 gal; dead storage, 300,000,000 gal).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet and discharge, in cubic feet per second)

1.4	3.0	2.0	45	3.5	540
1.5	5.5	2.3	102	4.0	835
1.6	9.9	2.6	180	5.0	1,640
1.8	22	3.0	310	7.0	3,800

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	6.8	7.3	b 5	a 0	a 10	155	89	10	50	22	40
2	*4.0	5.5	7.3	b 6.5	a 25	a 180	144	84	18	4.8	10	40
3	3.8	10	6.4	b 6.5	a 80	a 420	136	63	104	4.8	4.8	40
4	13	8.6	6.4	b 6.5	a 100	a 680	136	47	253	4.5	4.2	4.5
5	12	6.4	6.4	b 6	a 90	*1,600	95	37	*258	40	3.5	4.5
6	5.9	*5.5	40	b 6	a 130	2,700	76	36	234	4.2	3.8	4.8
7	5.0	5.2	18	b 6	a 210	2,450	76	29	233	40	4.0	4.8
8	3.8	5.2	11	b 6	a 170	1,160	74	22	359	40	5.2	4.8
9	3.5	6.3	9.5	b 6	a 100	674	80	18	282	40	5.0	4.8
10	4.5	7.5	8.1	*b 7	a 75	455	95	14	192	40	4.2	4.8
11	5.0	12	7.3	12	a 100	350	87	16	136	40	4.0	4.8
12	4.5	8.6	*b 6.5	40	a 480	445	72	12	95	40	4.2	5.0
13	4.5	7.3	b 6	25	a 410	540	61	9.5	56	40	21	5.2
14	4.2	6.8	b 6	16	a 260	455	58	90	35	9.5	10	5.9
15	4.5	6.8	b 6	14	a 160	350	55	90	29	6.8	5.0	5.9
16	4.5	6.4	b 6.5	13	a 75	289	48	8.1	21	4.5	4.5	19
17	4.2	6.4	b 7	a 13	a 40	346	44	8.1	19	4.5	4.5	12
18	4.2	20	b 7	a 13	a 20	395	48	20	16	4.5	4.2	6.8
19	4.5	13	b 7	a 13	a 100	346	*45	16	12	*4.2	5.2	5.9
20	5.0	90	b 6	a 25	a 130	495	45	21	90	40	21	5.2
21	5.0	90	b 5	a 130	a 320	485	36	26	26	3.8	8.1	5.5
22	5.0	39	b 8	a 95	a 180	386	35	26	16	5.2	*5.5	5.9
23	5.0	13	b 7.5	a 90	a 95	289	41	22	12	5.2	4.8	5.2
24	5.0	9.5	b 7	a 60	a 65	237	42	16	90	4.8	4.0	5.2
25	5.5	8.6	b 7	a 15	a 40	213	30	12	7.3	4.2	4.0	5.2
26	6.4	8.1	b 7	a 10	a 20	201	25	11	5.9	40	3.8	5.2
27	5.5	8.1	b 7	a 15	a 15	244	20	9.9	5.5	40	3.8	5.2
28	5.9	7.7	b 6.5	a 10	a 10	237	16	9.5	50	3.8	3.8	5.0
29	6.4	7.7	b 6	a 9	-	207	15	9.9	5.5	4.8	5.0	76
30	90	7.3	b 5.5	a 9	-----	183	48	14	6.8	4.8	5.2	7.7
31	9.9	-----	b 5	a 9	-----	169	-----	11	-----	40	4.5	-----
Total	1740	348.8	257.2	697.5	3509	17191	1938	7350	2551.0	141.9	202.8	246.8
Mean	5.61	11.6	8.30	22.5	125	555	64.6	23.7	85.0	4.58	6.54	8.23
(†)	39,320	42,020	42,590	43,360	43,370	43,630	43,540	43,210	42,770	40,250	38,020	36,130
(*)	+164	+161	+167	+190	+190	+182	+167	+172	+184	+204	+207	+192

Calendar year 1962: Max 2,540 Min 2.6 Mean 131 † +175
 Water year 1962-63: Max 2,700 Min 3.5 Mean 76.7 † +181

* Discharge measurement made on this day.

† Combined month-end contents, in millions of gallons, in Prettyboy and Loch Raven Reservoirs (contents on Sept. 30, 1962, 39,410 million gallons); furnished by Baltimore Department of Public Works.

‡ Diversion, in cubic feet per second, above station from Loch Raven Reservoir, for municipal supply of Baltimore. Records furnished by Baltimore Department of Public Works.

a No gage-height record.

b Stage-discharge relation affected by ice.

Note.--Discharge computed from twice-daily staff gage readings Oct. 1 to Nov. 6.

1-5845. Little Gunpowder Falls at Laurel Brook, Md.

Location.--Lat 39°30'18", long 77°25'56", on right bank 700 ft upstream from Laurel Brook, 0.4 mile southwest of Laurel Brook railroad station, Harford County, 1 mile downstream from Maryland and Pennsylvania Railroad bridge, and 5 miles southwest of Bel Air.

Drainage area.--36.1 sq mi.

Records available.--October 1926 to September 1963. Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder. Datum of gage is 261.43 ft above mean sea level (city of Baltimore bench mark).

Average discharge.--37 years, 46.8 cfs.

Extremes.--Maximum discharge during year, 1,110 cfs Mar. 6 (gage height, 4.71 ft); minimum, 5.4 cfs Aug. 13 (gage height, 0.59 ft).

1926-63: Maximum discharge, 9,200 cfs Aug. 23, 1933 (gage height, 10.3 ft), from rating curve extended above 2,300 cfs on basis of slope-area measurements at gage heights 5.70, 6.15, and 10.3 ft; minimum, 3.1 cfs Feb. 15, 1931, Mar. 15, 1932, Feb. 20, 1947, result of freezeup; minimum gage height, 0.59 ft Feb. 20, 1947, Aug. 13, 1963.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.6	5.5	1.5	50
.7	7.0	2.0	105
.8	9.3	2.5	186
1.0	16	3.0	311
1.2	26	3.5	480

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 15	18	21	18	20	20	30	29	14	12	22	7.4
2	15	16	21	18	29	146	30	22	20	11	18	7.0
3	14	25	21	20	117	93	29	20	65	9.8	9.3	7.0
4	33	34	20	20	b 34	81	27	20	61	9.0	9.3	8.8
5	43	22	20	18	57	* 246	25	19	* 28	8.6	7.6	7.6
6	21	19	79	19	95	421	25	18	38	8.3	7.0	7.4
7	18	* 18	50	18	45	68	25	17	24	8.3	7.4	7.4
8	17	18	33	18	b 32	47	25	16	25	8.6	8.6	7.4
9	16	18	30	18	b 26	41	28	16	23	8.0	7.6	7.4
10	16	155	28	18	29	39	28	16	19	7.8	6.7	6.8
11	16	36	26	22	56	36	25	16	18	7.8	6.1	6.2
12	15	27	*b 24	211	b 160	101	24	16	16	7.8	6.0	6.1
13	15	24	b 22	152	47	58	24	16	15	7.6	11	6.0
14	14	22	20	53	35	48	24	15	15	11	15	6.1
15	14	21	18	b 38	b 28	40	23	15	15	11	8.0	6.7
16	15	20	20	b 29	b 26	38	22	14	14	* 9.8	7.4	16
17	15	20	20	27	22	76	24	15	14	9.0	7.2	19
18	15	45	21	28	24	53	25	26	13	8.3	6.2	12
19	15	46	21	28	27	44	23	18	12	7.8	6.6	10
20	15	30	20	118	140	91	19	16	42	9.0	3.9	9.3
21	15	28	15	60	68	50	20	18	33	8.3	* 13	9.0
22	15	69	25	b 34	b 26	42	* 20	17	15	7.4	11	9.0
23	15	33	22	30	b 26	37	22	15	14	7.6	10	8.0
24	14	28	21	b 26	22	35	21	14	13	7.8	9.3	7.6
25	14	25	20	22	22	34	20	14	12	7.2	8.8	7.8
26	14	24	21	22	21	34	19	14	12	6.7	8.0	8.0
27	14	23	20	23	20	51	19	14	11	6.2	7.8	7.8
28	14	23	19	20	20	38	18	15	11	9.0	7.8	7.6
29	15	22	17	19	-	33	18	16	14	2.2	8.6	6.2
30	15	22	20	20	---	32	33	22	12	14	9.6	18
31	21	---	15	20	---	30	---	15	---	11	8.3	---
Total	523	931	750	1,187	1,274	2,203	715	534	638	287.7	318.2	316.4
Mean	1.69	31.0	24.2	38.3	45.5	71.1	23.8	17.2	21.3	9.28	10.3	10.5
Cfsm	0.468	0.859	0.670	1.06	1.26	1.97	0.659	0.476	0.590	0.257	0.285	0.291
In.	0.54	0.96	0.77	1.22	1.31	2.27	0.74	0.55	0.66	0.30	0.33	0.33

Calendar year 1962: Max 586 Min 10 Mean 36.8 Cfsm 1.02 In. 13.83
 Water year 1962-63: Max 421 Min 6.0 Mean 26.5 Cfsm 0.734 In. 9.98

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge
3-6	0900	4.71	1,110

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

GUNPOWDER RIVER BASIN

1-5851. Whitemarsh Run at White Marsh, Md.

Location.--Lat 39°22'15", long 76°26'46", on left bank at upstream side of bridge on State Highway 7, 1 mile southwest of White Marsh, Baltimore County, and 1 3/4 miles upstream from Honeygo Run.

Drainage area.--7.61 sq mi.

Records available.--February 1959 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 40 ft (from topographic map).

Extremes.--Maximum and minimum discharges for the water years 1960-63 are contained in the following table.

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1960	Sept. 12, 1960	1,580	6.60	July 9, 1960	1.0	1.28
1961	Jan. 1, 1961	442	3.39	Sept. 28, 1961	1.1	1.28
1962	Feb. 26, 1962	526	3.63	*Sept. 21, 1962	+0.2	1.13
1963	Aug. 1, 1963	396	3.26	Dec. 11, 1962	+0.5	1.20

* Probably.

† Result of regulation from unknown cause. Minimum daily, 0.7 cfs Sept. 9-11.

* Result of freezeup. Minimum daily, 1.2 cfs many days July to Sept. 1963.

1959-1963: Maximum discharge, 1,580 cfs Sept. 12, 1960 (gage height 6.60 ft), from rating curve extended above 350 cfs on basis of computation of peak flow over broad-crested weir; minimum, 0.2 cfs probably Sept. 21, 1962, result of regulation from unknown cause; minimum daily, 0.7 cfs Sept. 9-11, 1962.

Remarks.--Records good except those above 350 cfs, which are fair, and those for periods of ice effect or doubtful or no gage-height record, which are poor. Low flow affected by operations of sand and gravel plant in vicinity of gage.

Rating table, Oct. 1, 1959, to Sept. 30, 1963, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	0.5	1.6	9.5	2.2	84
1.3	1.2	1.7	16	2.5	146
1.4	2.6	1.8	24	3.0	305
1.5	5.3	2.0	50	4.0	655

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	4.0	a 3.8	6.0	5.3	7.2	6.4	8.0	d 4.8	2.3	4.0	3.7
2	2.4	3.9	* 3.7	5.6	5.3	b 5.4	5.6	5.3	d 4.4	2.3	3.0	2.8
3	2.3	2.8	3.7	6.1	5.3	b 4.0	4.2	4.6	d 4.0	2.1	2.6	2.3
4	2.3	3.2	3.7	1.6	4.3	b 5.8	7.6	4.0	d 3.8	1.7	7.5	2.4
5	2.1	3.2	3.5	1.0	7.6	b 5.2	* 11.4	3.7	d 3.8	1.4	1.1	2.4
6	2.1	4.5	5.0	7.6	6.6	b 4.6	2.9	3.7	d 3.4	1.3	3.2	2.4
7	2.3	1.5	5.6	7.2	1.4	b 4.2	1.4	3.7	d 2.9	1.4	3.0	2.1
8	2.6	5.6	1.2	6.8	8.5	b 4.2	9.5	9.1	2.8	1.3	6.2	2.1
9	1.7	4.0	6.0	5.3	7.6	b 4.2	8.5	13.6	2.8	1.2	3.7	3.5
10	3.5	3.7	5.3	5.3	6.8	b 4.8	7.2	d 1.5	2.8	2.3	* 5.4	9.0
11	8.1	3.2	4.3	5.3	3.0	b 3.8	7.2	d 9.0	2.6	5.6	7.6	4.4
12	5.6	3.2	7.6	4.9	1.0	b 4.4	6.4	d 1.0	4.0	5.3	4.6	4.8
13	4.6	3.0	3.9	9.5	b 7.0	b 4.8	6.0	d 1.4	4.0	3.5	8.2	3.7
14	2.1	3.7	1.0	7.2	b 6.0	b 6.0	6.0	d 8.0	8.0	10.4	5.3	9.0
15	5.3	3.0	7.2	3.5	b 5.4	b 8.0	6.0	d 6.5	1.4	8.5	4.0	6.0
16	3.5	3.0	6.4	1.5	b 6.4	b 8.5	6.0	d 5.5	3.7	4.3	4.0	4.9
17	2.8	a 4.2	5.6	8.5	1.0	4.0	6.4	d 5.0	3.0	3.5	3.0	4.6
18	2.6	a 3.6	1.4	8.5	7.3	3.7	9.0	d 5.0	2.6	3.0	2.6	6.4
19	2.4	a 3.2	8.5	9.0	8.6	2.6	6.4	d 4.8	2.4	2.8	2.4	* 1.5
20	2.4	a 2.8	5.6	b 5.2	b 1.9	1.6	5.6	d 4.6	2.3	2.6	2.8	1.0
21	2.4	a 2.8	5.6	b 3.8	b 1.3	1.2	5.3	d 4.6	2.3	2.3	3.2	6.0
22	2.8	a 2.8	5.3	b 3.6	* 1.0	9.5	4.9	d 7.0	2.4	2.1	1.7	4.9
23	1.7	a 3.0	3.5	b 3.4	8.0	8.0	4.6	d 2.6	2.6	2.1	8.0	4.3
24	2.9	a 2.4	3.7	b 3.4	7.6	7.2	4.3	d 6.5	5.2	1.8	3.2	4.0
25	1.0	a 1.3	4.9	b 3.2	2.9	6.4	4.3	d 5.0	2.6	1.7	2.6	3.7
26	4.9	a 6.0	4.9	b 3.6	8.4	6.4	1.1	d 4.2	2.1	1.7	2.4	3.7
27	6.9	a 5.6	4.9	4.9	1.7	6.4	1.1	d 4.0	2.0	1.1	2.4	3.7
28	3.7	a 1.0	1.4	2.1	1.1	6.0	6.0	d 2.2	* 1.8	3.7	2.4	3.7
29	3.5	a 6.8	4.9	8.5	9.5	5.3	4.9	d 4.2	2.1	2.6	2.4	8.2
30	3.2	a 4.8	1.3	6.0	-----	6.0	4.6	d 9.5	2.1	6.4	6.7	5.6
31	4.0	-----	7.6	5.6	-----	1.3	-----	d 6.5	-----	8.5	1.5	-----
Total	185.8	161.6	395.7	305.9	572.6	290.3	438.1	484.7	107.3	312.3	208.0	705.4
Mean	5.99	5.39	12.8	9.87	19.7	9.36	14.6	15.7	3.58	10.1	6.71	23.5
Cfsm	0.787	0.708	1.68	1.30	2.59	1.23	1.92	2.06	0.470	1.33	0.882	3.09
In.	0.91	0.79	1.93	1.49	2.80	1.42	2.14	2.38	0.52	1.53	1.02	3.45

Calendar year 1959: Max - Min - Mean - Cfsm - In. -
 Water year 1959-60: Max 488 Min 1.2 Mean 11.4 Cfsm 1.50 In. 20.38

Peak discharge (base, 390 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
5-8	2330	4.11	694	9-12	1030	6.60	1,580

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record.

1-5851 Whitemarsh Run at Whitemarsh, Md.--Continued

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	<u>3.0</u>	3.7	<u>18.3</u>	a3.4	14	d3.4	8.3	3.5	2.6	1.8	2.1
2	3.7	8.5	b3.6	4.4	a3.2	13	d1.0	1.9	3.7	2.4	1.8	2.0
3	3.7	6.8	b3.4	2.1	d4.0	9.5	8.5	8.0	3.5	2.4	2.1	2.4
4	3.5	4.9	b3.4	b1.0	d1.2	9.0	7.6	6.4	3.5	2.3	2.3	2.4
5	3.7	4.6	3.7	b6.5	d2.6	1.0	6.8	6.0	3.2	2.3	2.3	2.0
6	3.7	5.6	3.7	b7.5	d1.1	*1.1	6.4	6.8	3.0	5.1	2.3	1.8
7	3.7	4.9	3.7	b8.5	d8.0	1.0	6.0	8.0	3.0	3.2	3.6	2.0
8	3.5	<u>4.0</u>	3.7	b1.0	d9.0	3.9	<u>5.6</u>	7.6	3.0	2.6	*2.0	2.1
9	3.7	4.3	b2.8	b6.0	d1.2	3.6	<u>5.6</u>	1.1	2.8	2.1	1.8	2.0
10	3.7	2.3	b2.6	b4.4	d2.0	1.2	d8.0	2.2	1.5	2.0	5.6	2.0
11	3.5	1.0	b2.6	b4.6	d5.0	9.0	1.4	1.8	4.0	<u>1.8</u>	2.3	2.0
12	<u>3.2</u>	6.0	a2.4	b4.8	d1.8	8.5	1.7	<u>3.1</u>	3.7	<u>2.0</u>	2.0	2.0
13	3.2	5.3	a2.4	b4.8	1.8	7.6	<u>16.6</u>	1.2	3.2	6.5	1.6	1.8
14	3.5	5.3	a2.6	7.2	d7.0	2.4	d2.2	1.1	8.5	2.8	1.6	*2.0
15	3.7	4.9	a4.0	2.6	d11.0	1.2	1.4	1.0	8.4	6.8	2.0	2.0
16	6.6	4.9	b5.5	1.9	3.3	9.0	2.2	9.0	3.2	3.5	2.0	1.6
17	5.6	4.3	b5.0	1.3	d3.2	b7.0	1.2	7.6	2.8	3.2	<u>1.4</u>	1.4
18	3.5	4.3	b3.8	1.1	7.7	b7.5	9.5	6.8	<u>2.4</u>	3.7	<u>1.4</u>	1.6
19	3.2	4.3	b3.2	b5.5	<u>11.5</u>	2.6	8.0	6.4	2.6	2.4	1.4	1.8
20	*4.6	4.3	b3.2	b5.0	4.2	1.1	*7.2	6.0	2.4	2.3	2.1	2.0
21	1.0	4.3	b1.2	b4.6	3.1	8.0	6.8	5.6	<u>4.5</u>	2.0	1.0	1.8
22	4.9	4.3	b8.0	b4.4	4.6	1.8	8.1	5.3	*1.0	1.8	2.8	1.4
23	4.6	5.3	b3.2	b4.4	7.4	d2.6	8.8	*4.6	4.6	1.8	<u>7.1</u>	1.4
24	4.0	4.3	b3.2	b5.5	2.9	d1.1	6.8	4.0	4.3	<u>4.1</u>	d2.2	1.3
25	3.5	4.3	b4.6	*b4.2	4.9	d9.0	7.2	<u>3.7</u>	4.5	<u>2.0</u>	d3.4	1.3
26	3.5	4.0	7.6	b4.0	2.6	d7.5	2.0	1.1	4.0	3.2	4.3	1.3
27	3.7	4.0	1.2	b4.0	1.8	d7.0	8.0	5.3	9.2	2.4	5.6	1.3
28	3.7	4.0	b6.0	b3.8	1.4	d6.5	1.5	4.0	*3.7	2.4	3.2	1.2
29	5.6	5.8	b6.5	a3.6	-	d7.0	1.5	4.3	3.0	2.3	3.9	1.2
30	3.7	4.9	9.5	a3.6	-----	d6.5	8.0	4.3	2.8	2.3	3.0	1.4
31	5.6	-----	2.4	a3.6	-----	d1.4	-----	3.7	-----	2.1	2.4	-----
Total	171.7	195.4	165.6	447.5	960.6	405.6	565.9	276.7	201.7	143.3	213.7	52.6
Mean	5.54	6.51	5.34	14.4	34.3	13.1	18.9	8.93	6.72	4.62	6.89	1.75
Cfs/m	0.728	0.855	0.702	1.89	4.51	1.72	2.48	1.17	0.883	0.607	0.905	0.230
In.	0.84	0.95	0.81	2.19	4.69	1.98	2.77	1.35	0.99	0.70	1.04	0.26

Calendar year 1960: Max 488 Min 1.2 Mean 10.8 Cfs/m 1.42 In. 19.35
 Water year 1960-61: Max 183 Min 1.2 Mean 10.4 Cfs/m 1.37 In. 18.57

Peak Discharge (base, 390 cfs)

Date	Time	Gage height	Discharge
1-1	0715	3.39	442

* Discharge measurement made on this day.
 a No gage-height record.
 b Stage-discharge relation affected by ice.
 d Doubtful gage-height record.

GUNPOWDER RIVER BASIN

1-5851. Whitemarsh Run at White Marsh, Md.--Continued

Discharge, in cubic feet per second, water year October 1961 to September 1962

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	2.4	3.5	3.6	b 2.6	d 10	d 110	5.6	2.6	1.6	1.6	a 1.0
2	2.1	2.4	3.5	3.2	b 2.6	b 8.0	d 16	5.3	2.3	1.3	1.6	a 1.1
3	2.1	2.6	3.2	3.2	b 3.2	b 7.0	d 10	5.3	2.1	2.0	1.6	a 1.3
4	2.1	2.6	* 3.5	3.6	b 4.0	b 6.0	d 8.0	4.3	2.3	1.7	1.4	a 1.4
5	1.8	2.6	b 3.4	4.3	* b 4.2	b 5.5	d 7.0	3.7	2.4	1.3	1.3	a 1.8
6	1.8	2.6	b 3.0	8.4	b 3.2	3.5	d 6.5	3.5	3.0	1.3	1.6	a 1.2
7	1.8	1.3	b 2.8	d 5.4	b 2.0	d 2.4	d 6.0	3.7	2.0	1.3	1.6	a .9
8	1.7	3.5	b 2.6	* d 11	b 2.2	b 2.0	2.0	3.5	1.8	1.2	1.3	a .8
9	1.6	3.0	b 2.2	6.4	b 2.2	b 1.8	1.3	3.7	1.8	1.2	1.4	a .7
10	1.4	2.8	b 5.0	b 4.0	b 2.0	4.2	9.5	3.5	1.6	.9	1.6	a .7
11	1.8	2.6	4.3	b 3.6	b 1.8	d 3.2	1.2	4.3	2.0	1.2	a 1.7	a .7
12	1.7	2.8	3.0	b 3.2	b 1.8	1.91	5.1	3.7	3.8	1.7	a 1.4	d .8
13	2.0	2.8	6.8	b 3.0	b 2.0	* d 2.6	d 6.5	3.5	3.7	2.0	a 1.3	d .9
14	1.0	7.1	b 4.4	b 3.0	b 3.0	1.4	1.6	3.5	2.6	1.2	a 1.2	d 1.0
15	3.6	4.9	b 3.6	b 1.9	b 5.5	1.0	1.1	3.5	2.4	1.2	a 1.1	d .8
16	* 2.1	4.6	b 3.2	b 8.5	b 4.4	9.0	* 9.0	3.2	2.0	1.2	a 1.0	d .8
17	* 2.1	4.0	1.5	b 5.0	b 8.0	7.6	7.6	3.2	1.7	1.6	a .9	d 5.0
18	2.1	3.0	6.3	b 4.0	b 8.0	6.8	7.2	2.8	1.7	1.0	a .9	d 1.7
19	2.3	2.8	1.2	b 3.2	b 5.5	6.8	6.8	2.6	d 1.3	3.0	a .9	a 1.1
20	2.1	7.4	7.6	b 3.4	d 1.6	7.6	1.1	2.4	d 2.0	1.6	a .9	a 1.0
21	4.2	4.0	5.6	b 3.2	d 9.0	6.7	7.6	* 2.8	d 2.2	3.0	a 1.3	a .9
22	1.3	3.2	4.6	b 3.4	4.8	d 2.8	6.4	2.0	3.2	3.5	a 1.1	d 1.1
23	3.5	3.2	b 4.6	b 3.6	d 1.8	1.4	6.0	2.6	4.3	1.4	a 1.0	d 1.7
24	2.6	5.5	b 6.0	b 3.2	d 2.2	1.0	5.2	3.6	6.4	2.2	a .9	d 1.6
25	2.6	6.8	b 5.0	b 3.0	d 8.0	d 7.5	4.9	3.7	* 2.6	3.2	a .9	d 1.4
26	2.8	4.6	b 4.4	b 4.6	1.39	d 6.5	4.6	2.8	2.3	3.5	a .9	a 1.8
27	2.6	4.3	b 4.8	b 4.8	d 4.8	d 5.5	4.6	3.7	1.8	2.6	a .9	a 1.0
28	2.6	3.7	b 8.5	b 3.4	d 2.2	d 5.0	4.3	3.5	1.7	1.3	a .8	* a 4.0
29	2.6	3.5	b 4.4	b 2.8	-	d 4.8	1.5	3.0	1.8	1.7	a .8	2.1
30	2.6	3.5	b 3.6	b 2.6	-----	d 4.6	8.0	3.0	2.0	2.4	a .8	1.8
31	2.6	-----	b 3.4	b 2.0	-----	d 1.1	-----	3.0	-----	* 1.8	a .8	-----
Total	127.1	171.3	237.5	269.8	447.7	650.2	523.2	140.9	122.9	97.5	36.5	51.1
Mean	4.10	5.71	7.66	8.70	16.0	21.0	17.4	4.55	4.10	3.15	1.18	1.70
Cfs/m	0.539	0.750	1.01	1.14	2.10	2.76	2.29	0.598	0.539	0.414	0.155	0.223
In.	0.62	0.84	1.16	1.32	2.19	3.18	2.56	0.69	0.60	0.48	0.18	0.25

Calendar year 1961: Max 183 Min 1.2 Mean 10.4 Cfs/m 1.37 In. 18.59
 Water year 1961-62 Max 191 Min 0.7 Mean 7.88 Cfs/m 1.04 In. 14.07

Peak discharge (base, 390 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-26	1500	3.63	526	3-12	1015	3.40	445

* Discharge measurement made on this day.
 a No gage-height record.
 b Stage-discharge relation affected by ice.
 d Doubtful gage-height record.

1-5851. Whitmarsh Run at White Marsh, Md.--Continued

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.8	2.6	b 1.5	b 2.2	3.5	6.0	1.0	1.8	2.3	6.2	1.2
2	1.6	2.3	2.6	b 1.8	b 4.5	1.4	5.3	4.0	1.3	2.2	1.3	1.3
3	1.8	2.1	2.8	b 2.3	2.0	7.2	5.3	3.2	1.3	6.0	3.0	2.0
4	4.9	5.6	2.8	b 3.0	5.3	* 1.0	4.0	3.0	* 3.5	2.0	2.3	1.6
5	1.6	* 4.3	2.8	b 3.5	1.0	4.9	3.7	2.8	7.2	2.0	1.8	1.4
6	3.5	2.8	8.5	b 3.5	1.4	* 1.43	4.0	3.0	5.3	1.4	1.6	1.4
7	2.6	2.1	1.4	b 3.5	9.0	2.2	4.0	2.4	1.3	1.4	1.8	1.6
8	2.8	2.1	6.0	b 3.5	4.9	1.2	4.0	2.4	1.2	1.7	1.8	1.4
9	2.6	6.5	4.6	b 4.0	4.0	9.5	6.0	2.3	4.6	1.3	1.7	1.7
10	2.3	7.0	2.8	b 5.6	4.6	8.5	4.6	2.4	3.7	1.4	1.3	1.3
11	2.1	7.2	* b 2.4	b 7.0	6.4	9.0	3.7	2.4	3.5	1.3	1.2	1.2
12	2.0	4.6	b 1.9	5.4	4.9	6.8	3.7	2.1	2.6	1.4	1.6	1.2
13	1.8	3.5	b 1.7	3.1	b 9.5	1.9	3.5	2.3	2.3	1.2	3.2	1.2
14	1.8	3.0	b 1.6	b 9.5	b 4.9	1.2	3.5	2.4	2.3	6.7	8.2	1.2
15	2.6	2.8	b 1.6	b 4.6	b 3.5	8.5	3.7	2.3	1.8	* 2.9	2.3	1.4
16	2.0	2.4	b 1.7	b 4.0	b 3.2	1.2	3.0	2.1	1.8	1.7	2.0	2.6
17	2.3	2.4	b 1.9	4.6	b 2.8	3.4	3.5	2.4	2.1	1.6	1.7	7.1
18	1.8	2.9	b 2.2	4.9	b 3.7	1.2	* 3.7	1.2	1.8	1.6	1.3	2.8
19	2.1	8.5	b 2.5	5.6	b 4.3	1.1	3.7	2.6	1.7	1.2	9.0	2.3
20	2.0	5.3	b 2.5	2.4	4.5	2.9	3.0	6.3	5.6	1.4	2.9	2.0
21	2.1	1.5	b 1.7	b 8.5	b 1.1	1.0	2.8	3.7	1.3	1.2	* 6.6	1.8
22	2.3	7.4	b 3.5	b 4.3	b 4.3	7.2	2.8	2.8	3.5	7.2	3.5	2.1
23	2.0	7.6	b 3.7	b 5.6	b 3.5	6.4	4.6	2.1	2.6	4.0	2.3	1.7
24	1.8	4.6	b 2.7	b 4.6	b 3.2	6.4	2.8	2.0	2.6	1.7	2.0	1.6
25	2.0	3.7	b 2.7	3.2	4.0	6.0	2.6	1.8	2.1	1.6	1.7	1.6
26	2.3	3.7	b 3.7	b 2.8	3.7	1.6	2.8	1.8	2.1	1.2	1.8	1.8
27	1.8	3.0	b 3.2	b 4.0	b 3.0	2.4	2.6	2.3	1.8	1.2	1.6	1.7
28	2.0	2.8	b 2.3	* b 3.5	b 3.0	8.5	2.6	2.1	1.8	2.8	1.4	1.6
29	2.4	3.2	b 1.8	b 2.4	-	6.8	2.9	3.0	5.1	2.1	2.6	10.6
30	2.4	2.6	b 1.6	b 2.2	-----	6.4	3.0	4.4	3.2	1.7	2.0	6.4
31	4.9	-----	b 1.5	b 2.2	-----	5.3	-----	2.6	-----	1.2	1.6	-----
Total	130.7	308.4	174.4	224.7	246.5	596.2	138.4	101.0	322.3	89.4	205.7	187.6
Mean	4.22	10.3	5.63	7.25	8.80	19.2	4.61	3.26	10.7	2.88	6.64	6.25
Cfsm	0.555	1.35	0.740	0.953	1.16	2.52	0.606	0.428	1.41	0.378	0.873	0.821
In.	0.64	1.51	0.85	1.10	1.20	2.91	0.68	0.49	1.58	0.44	1.01	0.92

Calendar year 1962: Max 191 Min 0.7 Mean 8.09 Cfsm 1.06 In. 14.45
 Water year 1962-63: Max 143 Min 1.2 Mean 7.47 Cfsm 0.982 In. 13.33

Peak discharge (base, 390 cfs)

Date	Time	Gage height	Discharge
8-1	2100	3.26	396

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

BACK RIVER BASIN

1-5852. West Branch Herring Run at Idlewylde, Md.

Location.--Lat 39°22'25", long 76°35'05", on left bank at downstream side of highway bridge on Regester Avenue, 0.1 mile north of Baltimore city limits, and 1.3 miles east of U. S. Highway 111 in Idlewylde, Baltimore County.

Drainage area.--2.13 sq mi.

Records available.--July 1957 to September 1963.

Average discharge.--6 years, 2.17 cfs.

Gage.--Water-stage recorder. Concrete control since July 30, 1958. Altitude of gage is 285 ft (from topographic map).

Extremes.--Maximum discharge during year, 535 cfs June 7 (gage height, 5.40 ft); minimum, 0.1 cfs July 23, 31, Aug. 10, 12; minimum gage height, 1.20 ft July 23, Aug. 12.
1957-63: Maximum discharge, 602 cfs July 6, 1958 (gage height, 5.78 ft), from rating curve extended above 110 cfs on basis of computation of peak flow through culvert; no flow Aug. 14-24, 1957.

Remarks.--Records fair. Slight diurnal fluctuation caused by ready-mixed concrete plant above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	0.1	1.6	4.2
1.3	.4	1.7	6.7
1.4	1.2	1.9	14
1.5	2.6	2.1	28

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.4	0.7	a 0.4	a 0.6	2.5	1.8	0.9	0.5	a 0.4	7.6	0.2
2	*.3	.4	.6	a.5	a1.8	5.9	1.7	.6	5.4	a.7	1.4	.2
3	.3	1.3	.6	a.7	b3.5	2.1	1.5	.6	21	a.4	1.4	.7
4	2.5	1.0	.6	a1.0	b1.1	4.7	1.4	.6	2.2	a.4	.9	.7
5	1.7	1.3	.6	1.2	2.7	*9.7	1.2	.5	1.9	a.4	.5	.3
6	.6	*.4	1.9	1.0	2.2	*2.3	1.2	.5	1.0	a.4	.2	.2
7	.4	.5	1.7	1.0	1.4	2.5	1.2	.5	19	a.4	.5	.2
8	.4	.5	1.1	.9	b1.0	1.8	1.2	.5	4.6	a.4	1.0	.2
9	.4	1.1	1.0	1.1	b.8	1.7	2.6	.6	2.0	a.4	1.1	.2
10	.4	2.2	.8	1.6	.9	1.5	1.0	.7	2.1	a.4	.5	.2
11	.4	2.0	.7	2.5	2.5	3.3	.9	.7	*1.1	a.4	.2	.2
12	.4	1.0	*.6	1.1	9.1	1.2	.9	.5	.8	a.4	.2	.2
13	.4	.9	a.6	4.6	b2.0	2.4	1.0	.4	.8	a.4	1.1	.2
14	.5	.8	a.6	1.7	b1.0	2.0	.9	.5	.8	a 7.0	.6	.2
15	.4	.7	a.6	b1.1	b1.0	1.7	.9	.7	.8	a.6	.5	2.0
16	.4	.7	a.6	b1.0	b.8	3.7	.9	.6	.7	a.4	.4	1.1
17	.4	.6	a.6	b.9	a.7	5.3	1.2	2.6	.7	a.4	.4	.9
18	.4	1.4	.6	.8	a.9	1.8	.8	5.2	.7	a.4	.5	.4
19	.4	1.5	.6	1.7	1.8	3.8	*.6	.7	.7	*.4	7.3	.4
20	.4	1.6	.6	4.3	1.2	4.9	.5	1.4	2.5	.8	5.8	.3
21	.4	7.6	b.6	b1.7	1.8	2.0	.6	1.0	2.9	.3	*.9	.9
22	.4	1.1	b1.2	b.9	b.9	1.7	.5	.6	a2.0	.4	1.2	.3
23	.4	1.5	b1.4	1.5	b.9	1.5	1.8	.6	a1.0	.4	.4	.2
24	.3	1.0	b.7	a.7	b1.2	1.5	.5	.6	a.7	.4	.4	.3
25	.7	.9	b.5	a.6	b1.4	1.5	.6	.5	a.5	.4	.3	.3
26	.3	.8	1.7	a.6	b.9	3.5	.5	.4	a.5	.4	.3	.3
27	.4	.8	b.7	a.6	b.8	2.2	.5	.5	a.4	.4	.3	.3
28	.4	.7	b.7	a.6	.8	1.4	.5	.6	a.4	.4	.3	.3
29	.4	.7	b.5	a.6	-	4.9	2.0	1.0	a3.0	2.6	2.0	2.7
30	1.6	.7	b.5	a.6	-----	2.8	5.9	1.5	a.6	1.3	.3	.8
31	1.6	-----	b.4	a.6	-----	1.7	-----	.5	-----	.8	.2	-----
Total	40.8	100.0	41.7	48.0	56.5	121.0	36.8	27.2	103.8	23.3	48.7	49.6
Mean	1.32	3.33	1.35	1.55	2.02	3.90	1.23	0.88	3.46	0.75	1.57	1.65
Cfs/m	0.620	1.56	0.634	0.728	0.948	1.83	0.577	0.413	1.62	0.352	0.737	0.775
In.	0.71	1.75	0.73	0.84	0.99	2.11	0.64	0.47	1.81	0.41	0.85	0.87

Calendar year 1962: Max 27 Min 0.2 Mean 2.01 Cfs/m 0.944 In. 12.83
Water year 1962-63: Max 27 Min 0.2 Mean 1.91 Cfs/m 0.897 In. 12.18

Peak discharge (base, 230 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1600	3.89	278	8-1	1730	3.67	241
6-7	1515	5.40	535	8-13	1700	3.96	290
6-20	1545	4.87	445				

* Discharge measurement made on this day.
a Doubtful or no gage-height record.
b Stage-discharge relation affected by ice.

1-5853. Stemmers Run at Rossville, Md.

Location.--Lat 39°20'20", long 76°29'15", on left bank at downstream side of bridge on State Highway 7 at Rossville, Baltimore County, 0.8 mile upstream from Brien Run, and 1 mile northwest of Stemmers Run.

Drainage area.--4.94 sq mi.

Records available.--December 1958 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (from topographic map).

Extremes.--Maximum discharge during year, 619 cfs June 20 (gage height 5.12 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum daily, 0.2 cfs Aug. 9, Sept. 14.
1959-63: Maximum discharge, 1,170 cfs Sept. 12, 1960 (gage height, 7.40 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum daily, 0.1 cfs many days in August and September 1962.

Remarks.--Records good except those for period of backwater from unknown cause, which are fair, or those for periods of ice effect or indefinite stage-discharge relation, which are poor.

Rating table, water year 1962-63, except periods of ice effect,
backwater from unknown cause, or indefinite stage-discharge relation
(gage height, in feet, and discharge, in cubic feet per second)

1.2	0.1	1.6	8.2
1.3	.6	1.8	20
1.4	2.2	2.0	38
1.5	4.6	2.5	101

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e 0.4	1.1	1.8	b 0.9	b 1.4	2.2	2.4	3.2	1.0	2.4	6.0	0.4
2	e .4	.8	1.8	b 1.1	b 4.0	7.8	2.4	1.7	7.4	8.6	2.9	.4
3	e .4	1.9	1.8	b 1.3	9.2	2.8	2.2	1.4	8.1	2.4	1.4	.5
4	5.4	3.5	1.8	b 1.7	2.4	* 7.2	2.0	1.2	* 1.1	1.1	1.0	.5
5	5.8	* 3.5	1.8	2.2	4.8	4.0	1.8	1.2	3.0	1.0	.6	.5
6	3.0	2.2	6.1	2.2	5.5	* 9.5	2.0	1.2	2.2	.8	.5	.5
7	1.2	1.0	6.9	2.2	4.0	1.1	2.0	1.1	1.3	1.0	.5	.4
8	1.1	1.0	2.8	2.2	2.6	5.2	2.0	1.1	9.4	1.0	.4	.4
9	1.2	1.1	2.4	2.6	2.0	4.0	3.0	1.1	4.6	.8	.2	.4
10	1.1	5.0	1.8	3.2	2.2	3.8	2.0	1.7	3.5	.8	.4	.4
11	1.1	5.7	* b 1.2	6.6	3.8	5.7	1.8	1.8	3.2	.6	.3	.3
12	1.0	3.5	b 1.1	4.4	3.3	5.6	1.8	1.2	2.8	.6	.4	.3
13	c .8	2.8	b 1.0	2.2	4.9	1.1	1.8	1.2	2.8	.6	2.8	.3
14	c 1.0	1.6	b 1.0	5.8	2.8	5.5	1.7	1.7	3.0	4.6	1.7	.2
15	c 1.1	1.4	b 1.0	2.6	2.2	3.8	1.7	1.6	3.0	* 1.2	1.0	1.1
16	c 1.1	1.4	b 1.1	2.2	b 1.9	8.9	1.6	1.4	2.8	.6	.8	2.4
17	c 1.1	1.4	b 1.2	2.6	b 1.7	2.9	1.8	1.9	2.6	.8	.6	2.4
18	c 1.0	2.5	b 1.3	2.6	2.0	7.3	* 1.6	7.0	1.4	2.2	.4	1.0
19	c .8	4.6	1.4	2.7	7.2	1.3	1.2	1.1	1.4	2.0	1.3	.6
20	.8	2.8	1.4	1.9	3.0	1.7	1.2	3.4	5.4	2.0	* 1.5	.6
21	1.0	1.7	1.1	8.8	4.9	4.6	1.2	3.2	5.8	1.7	3.3	.6
22	1.1	6.1	2.0	3.0	2.8	3.2	1.2	2.6	2.2	1.7	1.7	1.1
23	1.0	4.0	2.2	b 3.2	2.2	2.8	2.2	1.8	1.7	.6	.8	.6
24	.8	2.8	1.7	b 1.9	2.0	2.6	1.1	.8	1.4	.4	.6	.6
25	1.0	2.4	1.4	b 1.7	2.2	2.4	1.1	.8	1.2	.4	.6	.5
26	1.0	2.2	2.4	b 1.7	1.8	1.1	1.1	1.0	1.1	.3	.5	.6
27	.6	2.0	2.0	b 2.5	1.7	1.4	1.1	1.0	1.0	.3	.4	.6
28	.6	2.0	1.4	b 2.2	1.8	3.5	1.1	1.1	.8	.6	.5	.6
29	.6	2.0	b 1.1	b 1.6	-	2.6	1.5	3.5	2.8	.6	1.2	7.0
30	1.0	1.8	b 1.0	b 1.4	-----	2.4	1.4	4.5	2.8	.6	.8	1.8
31	2.9	-----	b .9	b 1.4	-----	2.2	-----	2.4	-----	.4	.5	-----
Total	90.0	240.5	112.8	159.1	147.0	387.5	63.6	59.9	233.9	42.7	140.0	112.2
Mean	2.90	8.02	3.64	5.13	5.25	12.5	2.12	1.93	7.80	1.38	4.52	3.74
Cfsm	0.587	1.62	0.737	1.04	1.06	2.53	0.429	0.391	1.58	0.279	0.915	0.757
In.	0.68	1.81	0.85	1.20	1.11	2.92	0.48	0.45	1.76	0.32	1.05	0.84

Calendar year 1962: Max 148 Min 0.1 Mean 5.62 Cfsm 1.14 In. 15.44
Water year 1962-63: Max 95 Min 0.2 Mean 4.90 Cfsm 0.992 In. 13.47

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-22	0200	4.11	405	6-20	1700	5.12	619
5-6	1200	4.18	420	8-1	1730	5.09	613

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
c Backwater from unknown cause.
e Indefinite stage-discharge relation.

BACK RIVER BASIN

1-5854. Brien Run at Stemmers Run, Md.

Location.--Lat 39°20'01", long 76°28'23", on right bank a quarter of a mile upstream from mouth and 0.3 mile north of Stemmers Run, Baltimore County.

Drainage area.--1.97 sq mi.

Records available.--May 1958 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 10 ft (from topographic map).

Average discharge.--5 years, 2.07 cfs.

Extremes.--Maximum discharge during year, 142 cfs Nov. 22 (gage height, 2.60 ft); minimum daily, 0.2 cfs Aug. 9-12, 16-18; minimum gage height, 0.93 ft Aug. 10-12, 18.

1958-63: Maximum discharge, 506 cfs Sept. 12, 1960 (gage height, 5.03 ft), from rating extended above 180 cfs on basis of logarithmic plotting and velocity-area study; no flow part of Sept. 6, 1958, June 20, 1961, and many days in August 1962; minimum daily, 0.2 cfs many days in August 1962 and August 1963.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Occasional small diversion for irrigation of truck garden in vicinity of station.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)

0.9	0.1	1.2	5.6
1.0	.7	1.3	10
1.1	2.2	1.6	32

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.5	0.7	0.6	0.5	0.5	0.7	1.8	a 0.4	0.5	9.8	0.3
2	.3	.5	.7	.5	1.1	a 1.8	.7	.9	a 4	.3	1.7	.3
3	.3	R.4	.7	.5	2.6	a 1.0	.8	.7	a 20	.3	.6	.3
4	16	1.2	.7	.5	.9	* 1.7	.7	6	* a 4	.3	.4	.3
5	1.3	* .8	.7	.5	1.5	15	.7	6	a 10	.3	.3	.3
6	.5	6	29	.5	1.8	* 26	6	6	a .8	.3	.3	.4
7	.4	6	2.5	.5	1.4	36	6	5	a 7	.3	.3	.4
8	.4	6	1.0	.5	.9	1.8	.7	.5	a 5	.3	.3	.4
9	.4	3.1	.8	.7	.7	1.3	.8	.5	a 20	.3	.2	.4
10	.4	15	.7	.9	.6	1.2	.7	6	a 1.4	.3	.2	.4
11	.4	1.3	* .6	1.4	1.1	1.5	.6	.7	a 1.4	.3	.2	.4
12	.4	.8	.6	17	17	25	.6	.5	a .8	.3	.2	.4
13	.3	.7	.5	6.8	1.8	36	.6	.5	a 6	.3	4.9	.4
14	.3	6	.5	1.3	.9	1.8	.6	.5	a 5	1.3	10	.4
15	.3	.6	.6	.7	.7	1.3	.6	.5	a 5	* .5	.3	.9
16	.3	.7	.6	.4	.5	2.3	.6	6	a 5	.5	.2	9.5
17	.3	.7	.6	.3	.5	12	a .5	6	a 4	.4	.2	1.8
18	.3	9.0	.7	.4	.4	2.0	* a .5	19	a 4	.3	.2	.9
19	.3	1.4	.7	.5	20	2.2	.4	6	a 4	.3	56	.6
20	.3	1.0	.7	66	12	5.5	.4	1.1	13	.4	* 11	.5
21	.3	8.5	.7	2.2	2.2	1.6	.4	.9	16	.5	16	.5
22	.4	30	.8	.7	.8	1.0	.4	6	6	.6	10	.5
23	.4	1.4	.9	.6	.5	.9	.7	.5	.4	.6	.6	.5
24	.4	.9	.8	a .5	.5	.9	.4	.4	.3	.5	.5	.4
25	.4	.7	.7	a .5	.6	.8	.4	.4	.3	.4	.4	.4
26	.5	.7	.9	a .5	.6	4.4	.4	.4	.3	.4	.3	.4
27	.5	.7	.9	a .5	.5	7.4	.4	.4	.3	.4	.3	.4
28	.5	.7	.7	* a .5	.5	1.4	.4	.4	.3	.7	.3	.4
29	.5	.7	.7	.5	-	.9	.6	1.2	1.4	.6	.4	23
30	.5	.7	.7	.4	-----	.8	7.7	a 16	10	.5	.4	12
31	.7	-----	.6	.4	-----	.7	-----	a 6	-----	.4	.3	-----
Total	28.6	93.1	52.0	48.4	55.1	131.9	24.2	22.2	70.6	13.4	44.0	47.0
Mean	0.92	3.10	1.68	1.56	1.97	4.25	0.81	0.72	2.35	0.43	1.42	1.57
Cfsm	0.467	1.57	0.853	0.792	1.00	2.16	0.411	0.365	1.19	0.218	0.721	0.797
In.	0.54	1.76	0.98	0.91	1.04	2.49	0.46	0.42	1.33	0.25	0.83	0.89

Calendar year 1962: Max 50 Min 0.2 Mean 2.15 Cfsm 1.09 In. 14.80
 Water year 1962-63: Max 30 Min 0.2 Mean 1.73 Cfsm 0.878 In. 11.90

Peak discharge (base, 120 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0230	2.49	129	6-20	1700	2.44	123
11-22	0300	2.60	142				

* Discharge measurement made on this day.
 a No gage-height record.

1-5855. Cranberry Branch near Westminster, Md.

Location.--Lat 39°35'35", long 76°58'05", on left bank 80 ft upstream from small wooden bridge, half a mile upstream from mouth, and 1.8 miles northeast of Westminster, Carroll County.

Drainage area.--3.29 sq mi.

Records available.--September 1949 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 670 ft (from topographic map).

Average discharge.--14 years, 3.78 cfs (adjusted for storage since August 1957).

Extremes.--Maximum discharge during year, 131 cfs Oct. 4 (gage height, 3.60 ft); minimum, 0.4 cfs Feb. 15, result of freezeup, but may have been less during period of no gage-height record; minimum daily, 0.8 cfs Sept. 30.

1949-63: Maximum discharge, 720 cfs July 4, 1951 (gage height, 5.14 ft, from high-water mark in well), from rating curve extended above 200 cfs; minimum, 0.4 cfs Jan. 20, 1955, Jan. 30, 1962, Feb. 15, 1963, result of freezeup, but may have been less during period of no gage-height record during Jan. to Feb. 1963; minimum daily, 0.7 cfs July 31 to Aug. 2, 1954.

Flood of July 12, 1949, reached a stage of 5.2 ft, from floodmarks (discharge, 750 cfs).

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Flow regulated by Cranberry Reservoir, 1 mile above station, since August 1957 (capacity, 113,700,000 gal).

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6				Mar. 7 to Sept. 30			
1.4	0.5	1.8	6.6	1.4	0.4	1.7	4.2
1.5	1.3	2.0	14	1.5	1.2	1.8	6.6
1.6	2.5	2.2	25	1.6	2.5	1.9	10
1.7	4.2	2.4	41				

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	1.6	2.0	b 1.6	a 1.0	a 2.0	1.4	2.8	1.4	1.2	1.5	1.0
2	1.1	1.5	2.0	b 1.8	a 1.6	1.4	1.6	2.5	2.1	1.3	1.1	1.0
3	1.1	3.1	2.0	2.1	b 3.6	1.6	2.9	2.3	4.5	1.2	1.0	1.1
4	2.5	3.1	2.0	2.1	b 2.5	* 1.2	2.8	2.2	2.3	1.0	1.0	1.3
5	3.1	2.5	6.8	2.1	2.5	2.5	2.6	2.0	2.2	1.0	1.0	1.2
6	2.1	2.0	3.8	2.1	5.1	* 4.0	2.6	2.0	1.9	1.0	1.1	1.1
7	1.7	1.7	3.1	2.0	b 4.2	5.8	2.6	1.9	3.0	1.0	1.2	1.0
8	1.6	1.7	2.8	2.1	b 3.0	4.0	2.6	1.9	4.8	1.0	1.1	1.0
9	* 1.6	1.9	2.5	2.1	2.2	2.5	3.1	1.8	2.5	1.0	1.0	1.1
10	1.6	1.5	2.2	2.1	2.7	2.3	2.8	1.8	2.0	1.0	1.2	1.2
11	1.5	3.1	2.1	4.2	6.4	2.0	* 2.5	1.9	2.2	* 1.0	1.3	1.2
12	1.5	2.5	2.0	1.1	4.6	7.0	2.5	1.8	1.8	1.0	1.1	1.2
13	1.5	2.2	b 2.0	8.5	3.0	2.9	2.5	1.8	1.7	1.0	1.7	1.2
14	1.4	2.0	2.0	4.2	2.5	2.2	2.3	2.0	1.8	1.6	1.0	1.4
15	1.4	2.0	1.9	3.1	b 2.0	1.4	2.3	1.9	1.8	1.3	1.3	1.2
16	1.5	2.0	2.0	2.8	a 1.9	1.5	2.3	1.8	1.6	1.2	1.4	1.2
17	1.4	2.0	2.1	2.7	a 1.9	4.6	2.5	2.0	1.4	1.1	1.3	1.0
18	1.5	6.2	2.2	2.8	* a 3.8	2.8	2.5	3.4	1.4	1.0	1.3	1.0
19	1.5	3.6	2.2	2.8	3.0	3.4	2.3	2.0	1.3	1.2	1.6	1.0
20	1.5	* 2.8	2.2	5.3	6.3	8.5	2.2	2.4	1.3	1.2	1.4	1.2
21	1.7	3.7	2.1	b 3.0	b 3.5	3.3	2.0	2.2	1.3	1.1	1.1	1.3
22	1.7	5.3	2.1	b 2.5	b 2.0	2.3	2.0	2.0	1.3	1.1	1.0	1.1
23	1.4	2.8	2.2	b 2.0	a 1.3	1.9	2.8	1.8	1.2	1.0	* 1.1	1.0
24	1.4	2.5	2.0	b 2.0	a 1.5	1.9	2.3	* 1.7	1.2	1.0	1.1	1.1
25	1.4	2.4	2.0	2.1	a 1.5	1.7	2.2	1.7	1.2	1.0	1.1	1.1
26	1.5	2.2	2.1	2.1	* a 1.4	2.7	2.2	1.7	1.1	1.0	1.1	1.1
27	1.4	2.1	2.0	b 2.0	a 1.2	3.7	2.2	1.7	1.1	1.2	1.1	1.1
28	1.4	2.1	b 1.8	b 1.8	a 1.2	2.0	2.0	1.7	1.1	1.0	1.2	1.0
29	1.4	2.1	b 1.5	a 1.0	-	1.4	2.3	2.0	1.2	1.0	1.6	3.8
30	1.8	2.0	b 1.5	a 1.0	-----	1.3	4.0	2.0	1.2	1.0	1.2	8
31	2.3	-----	b 1.5	a 1.0	-----	1.3	-----	1.6	-----	9	1.1	-----
Total	72.1	89.7	70.7	88.0	77.4	183.4	72.9	62.3	54.9	336	37.3	360
Mean	2.33	2.99	2.28	2.84	2.76	5.92	2.43	2.01	1.83	1.08	1.20	1.20
(†)	+0.12	0	0	0	+0.17	+2.77	+0.15	0	+0.19	-0.20	-0.80	-0.22
Mean*	2.45	2.99	2.28	2.84	2.93	8.69	2.58	2.01	2.02	0.88	0.40	0.98
Cfsm†	0.745	0.909	0.693	0.863	0.891	2.64	0.784	0.611	0.614	0.267	0.122	0.298
In.*	0.86	1.01	0.80	0.99	0.93	3.04	0.87	0.70	0.68	0.31	0.14	0.33

Calendar year 1963: Max 33 Min 1.0 Mean 2.98 Mean* 3.29 Cfsm† 1.00 In.* 13.53
 Water year 1962-63: Max 40 Min 0.8 Mean 2.41 Mean* 2.59 Cfsm† .787 In.* 10.66

Peak discharge (base, 80 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1630	3.60	131	3-6	0630	3.48	121

* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Cranberry Reservoir. Records furnished by Maryland Water Works Co.

* Adjusted for change in contents in Cranberry Reservoir.

a Doubtful or no gage-height record.

b Stage-discharge relation affected by ice.

PATAPSCO RIVER BASIN

1-5860. North Branch Patapsco River at Cedarhurst, Md.

Location.--Lat 39°30'00", long 76°53'00", on left bank at downstream side of private footbridge at Cedarhurst, Carroll County, 0.8 mile downstream from Roaring Run, and 8 miles southeast of Westminster.

Drainage area.--56.6 sq mi.

Records available.--September 1945 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 425 ft (from topographic map).

Average discharge.--18 years, 63.4 cfs.

Extremes.--Maximum discharge during year, 2,170 cfs Oct. 4 (gage height, 6.56 ft); minimum daily, 8.4 cfs Sept. 13.

1945-63: Maximum discharge, 4,130 cfs Aug. 13, 1955 (gage height, 10.38 ft), from rating curve extended above 1,700 cfs by logarithmic plotting; minimum, 2.8 cfs July 17, 1953 (gage height, 1.17 ft), result of filling pond above station; minimum daily, that of Sept. 13, 1963.

Remarks.--Records good. Slight diurnal fluctuation at low and medium flow caused by mill above station. Low flow affected slightly by Cranberry Reservoir since August 1957 (capacity, 113,700,000 gal). Records do not include a mean discharge of 1.4 cfs diverted above station for municipal supply of Westminster; sewage effluent discharged into Little Pipe Creek.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)

1.2	5.4	2.0	125
1.3	9.9	2.5	290
1.4	17	3.0	480
1.6	40	4.0	880

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	13	22	28	26	31	30	55	45	23	19	40	9.9
2	12	19	28	27	35	228	55	35	31	16	27	10
3	12	42	27	27	71	251	51	33	93	19	14	10
4	552	53	27	28	37	192	46	31	69	15	15	10
5	97	41	27	26	37	424	43	29	38	15	12	9.8
6	39	32	22	27	78	667	42	28	* 33	14	11	10
7	27	26	64	27	73	140	43	27	85	14	12	9.9
8	23	*25	49	27	52	104	41	26	149	13	13	9.9
9	21	24	43	27	33	88	48	26	57	13	12	9.6
10	20	282	36	28	40	81	42	25	44	13	11	9.1
11	19	58	31	42	80	* 73	39	26	43	13	10	8.7
12	18	40	28	120	140	200	38	25	34	13	9.9	8.7
13	17	34	28	130	52	111	38	24	31	12	18	8.4
14	17	31	*30	69	42	87	39	27	29	22	16	8.6
15	17	28	28	48	31	78	36	26	29	22	11	9.3
16	18	27	31	42	25	74	35	24	27	15	11	16
17	17	28	31	40	30	126	37	25	25	14	10	15
18	17	81	32	43	70	89	38	54	24	* 13	9.4	12
19	17	65	32	40	55	87	36	31	23	13	11	11
20	17	43	32	75	68	180	34	36	22	16	33	10
21	18	41	25	57	69	98	33	32	23	14	15	11
22	17	91	33	39	32	82	32	29	21	12	13	12
23	17	48	32	42	31	71	39	26	20	12	* 12	13
24	16	40	29	25	34	62	*34	25	19	12	12	11
25	16	37	28	30	34	61	32	24	18	11	12	10
26	18	34	30	34	30	61	31	25	17	10	11	9.9
27	17	32	28	35	26	91	30	25	17	9.9	11	9.6
28	17	31	26	30	28	63	30	25	16	33	11	9.1
29	18	29	22	27	--	53	30	27	18	29	13	99
30	18	29	20	31	-----	55	59	32	22	19	13	21
31	36	-----	20	32	-----	57	-----	24	-----	13	11	-----
TOTAL	1,199	1,413	1,018	1,301	1,364	4,064	1,186	897	1,100	478.9	440.3	411.5
MEAN	38.7	47.1	32.8	42.0	48.7	131	39.5	28.9	36.7	15.4	14.2	13.7
CFSM	.684	.832	.580	.742	.860	2.31	.698	.511	.648	.272	.251	.242
IN	.79	.93	.67	.85	.90	2.67	.78	.59	.72	.31	.29	.27

CALENDAR YEAR 1962 MAX 688 MIN 8.9 MEAN 46.6 CFSM .823 INCHES 11.17
WATER YEAR 1962-63 MAX 667 MIN 8.4 MEAN 40.7 CFSM .719 INCHES 9.77

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1900	6.56	2,170	3-6	0915	5.46	1,560

* Discharge measurement made on this day.

1-5875. South Branch Patapsco River at Henryton, Md.

Location.--Lat 39°21'05", long 76°54'50", on right bank at downstream side of bridge on State Highway 101 at Henryton, Carroll County, 1.3 miles upstream from Piney Run, 2.3 miles upstream from confluence with North Branch, and 3.2 miles southeast of Sykesville.

Drainage area.--64.4 sq mi.

Records available.--August 1948 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 289.15 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 69.0 cfs.

Extremes.--Maximum discharge during year, 1,800 cfs Mar. 6 (gage height, 5.84); minimum, 2.8 cfs Aug. 12, 13 (gage height, 1.30 ft).

1948-63: Maximum discharge, 12,100 cfs July 21, 1956 (gage height, 19.40 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement at gage height 7.88 ft and contracted-opening measurements at gage heights 10.12 and 19.40 ft; minimum, that of Aug. 12, 13, 1963.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	2.8	2.1	54
1.5	7.4	2.3	102
1.7	15	2.5	170
1.8	20	3.0	470
1.9	28	4.0	990

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	24	31	28	a 35	a 35	64	58	25	20	8.1	8.6
2	14	21	31	30	a 45	a 200	66	42	37	17	7.7	8.0
3	14	41	30	32	a 80	a 260	59	39	230	16	7.2	8.0
4	140	52	30	32	a 45	a 150	54	37	113	14	8.3	8.0
5	59	33	30	30	a 45	442	50	35	56	13	6.4	8.3
6	28	31	98	31	a 90	803	50	34	46	13	5.2	10.
7	24	27	69	32	a 85	183	50	33	* 45	13	5.6	9.3
8	22	26	50	32	a 60	122	49	32	48	12	5.8	9.0
9	21	27	45	31	a 40	104	55	31	40	11	5.6	8.6
10	20	252	39	32	a 45	92	51	30	35	11	4.2	7.7
11	19	56	35	41	a 110	85	47	29	35	12	3.3	6.9
12	19	39	32	b 150	b 160	310	45	28	31	12	3.1	6.6
13	18	* 34	30	b 160	b 70	* 188	44	28	29	11	12	6.4
14	18	32	32	b 100	b 50	123	43	32	28	18	23	5.9
15	19	30	30	b 70	b 40	97	42	32	28	22	8.0	6.6
16	19	29	33	b 50	a 32	89	41	28	26	15	6.7	16
17	19	30	34	b 45	a 35	165	43	30	25	13	7.2	15
18	18	71	35	b 45	a 80	113	46	49	24	12	7.0	11
19	18	71	* 35	b 45	a 70	112	42	33	23	11	7.2	9.6
20	18	45	35	126	a 80	267	39	30	81	12	5.9	8.6
21	19	42	30	b 90	a 70	135	37	30	35	11	21	8.0
22	18	103	38	b 55	a 45	106	37	30	25	* 10	14	8.3
23	18	52	35	b 50	a 35	89	48	27	23	10	11	8.0
24	17	43	33	b 35	a 35	82	40	26	21	10	9.3	7.4
25	17	38	33	a 38	a 35	76	38	26	20	9.6	9.3	7.4
26	18	36	34	a 40	a 32	75	* 37	26	19	9.1	* 9.0	6.9
27	18	35	33	a 40	a 30	112	35	26	19	8.0	8.6	6.9
28	18	34	30	a 35	a 32	78	35	26	17	7.9	8.6	6.4
29	19	33	b 26	a 32	-	70	35	28	19	9.5	11	11.6
30	19	32	b 24	a 35	---	65	54	39	19	13	14	28
31	28	---	b 24	a 36	---	62	---	27	---	9.2	10	---
Total	750	1,419.	1,124	1,628	1,611	4,890	1,376	1,001	1,222	385.3	326.4	381.4
Mean	24.2	47.3	36.3	52.5	57.5	158	45.9	32.3	40.7	12.4	10.5	12.7
Cfs/m	0.376	0.734	0.564	0.815	0.893	2.45	0.713	0.502	0.632	0.193	0.163	0.197
In.	0.43	0.82	0.65	0.94	0.93	2.82	0.79	0.58	0.71	0.22	0.19	0.22

Calendar year 1962: Max 599 Min 7.6 Mean 53.4 Cfs/m 0.829 In. 11.26
 Water year 1962-63: Max 803 Min 3.1 Mean 44.1 Cfs/m 0.685 In. 9.31

Peak discharge (base, 950 cfs)

Date	Time	Gage height	Discharge
3-6	0930	5.84	1,800

* Discharge measurement made on this day.
 a Doubtful or no gage-height record.
 b Stage-discharge relation affected by ice.

1-5890. Patapsco River at Hollofield, Md.

Location.--Lat 39°18'36", long 76°47'39", on right bank at downstream side of highway bridge at Hollofield, Howard County, 0.3 mile downstream from Dogwood Run, and 3.0 miles north of Ellicott City.

Drainage area.--285 sq mi.

Records available.--May 1944 to September 1963.

Gage.--Water-stage recorder (digital). Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,570 cfs Mar. 6 (gage height, 4.56 ft); minimum, 8.8 cfs Aug. 13 (gage height, 0.80 ft); minimum daily, 9.6 cfs Aug. 12.
1944-63: Maximum discharge, 19,000 cfs July 21, 1956 (gage height, 15.88 ft); minimum, 6 cfs Sept. 6, 1944 (gage height, 0.83 ft); minimum daily, that of Aug. 12, 1963.
Flood in August 1933 reached a stage of 19.5 ft, from information by Maryland State Roads Commission.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Liberty Reservoir beginning July 22, 1954 (usable capacity, 42,070,000,000 gal; dead storage, 1,260,000,000 gal). Diversion above station for municipal supply of Westminster (sewage effluent discharged into Little Pipe Creek) and from Liberty Reservoir beginning Feb. 26, 1953, for municipal supply of Baltimore.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6				Mar. 7 to Sept. 30			
1.1	22	2.0	216	0.86	9.6	1.6	103
1.2	31	2.5	457	1.0	16	2.0	216
1.4	59	3.0	830	1.2	32	2.5	457
1.7	127	3.5	1,310	1.4	60		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	26	57	54	b 50	65	59	113	118	42	37	15	15
2	25	45	53	60	69	155	121	82	64	32	15	14
3	26	79	52	65	b 175	356	108	72	357	29	14	22
4	337	122	51	62	b 90	239	101	68	227	28	15	24
5	192	65	52	56	b 85	704	92	66	111	26	13	24
6	58	59	168	57	b 130	1,310	92	62	67	25	12	27
7	42	48	153	57	b 200	283	92	58	* 68	25	12	27
8	38	44	100	57	b 110	175	92	57	82	24	13	26
9	38	47	88	54	b 75	150	98	55	68	22	12	26
10	36	541	b 65	57	b 80	135	98	54	58	22	12	22
11	35	128	b 60	67	b 110	128	89	50	58	22	9.9	20
12	36	80	b 55	b 250	b 400	440	85	49	54	22	9.6	20
13	36	* 65	b 55	b 300	b 130	* 302	82	49	47	22	38	20
14	35	57	54	b 180	b 100	200	80	52	46	34	58	20
15	38	52	51	b 120	b 80	161	76	56	46	47	20	20
16	40	50	55	b 95	b 70	150	76	49	44	29	14	40
17	40	49	58	b 90	b 60	262	78	50	42	28	13	37
18	39	113	58	94	75	194	87	94	40	25	12	23
19	39	164	* 60	88	140	172	78	64	38	23	13	20
20	39	90	60	207	189	380	74	58	118	23	103	17
21	41	85	b 55	b 200	b 200	213	70	57	106	* 22	43	16
22	41	219	b 60	b 105	b 100	172	70	54	49	* 20	26	16
23	41	114	68	b 100	b 80	150	89	47	42	20	20	22
24	40	85	60	b 80	b 70	142	80	44	39	20	17	27
25	40	73	57	b 70	b 70	131	72	43	36	19	16	24
26	43	67	59	b 75	b 60	128	* 68	44	34	17	* 15	25
27	42	62	58	b 75	b 50	175	66	44	32	17	22	23
28	42	60	b 55	b 65	b 55	136	64	44	31	15	31	25
29	44	57	b 50	b 60	-	123	64	49	31	16	31	231
30	45	55	b 45	66	-----	116	103	66	37	20	28	72
31	59	-----	b 45	68	-----	113	-----	49	-----	20	19	-----
TOTAL	1,673	2,832	2,014	3,030	3,118	7,565	2,560	1,306	2,134	751	691.5	945
MEAN	54.0	94.4	65.0	97.7	111	244	85.3	58.3	71.1	24.2	22.3	31.5
(†)	30,080	29,980	28,880	28,510	28,870	34,260	33,470	31,780	30,350	26,590	23,570	20,760
(‡)	+155	+149	+151	+155	+153	+151	+161	+169	+176	+201	+177	+158

CALENDAR YEAR 1962 MAX 1,340 MIN 15 MEAN 94.2 ‡ +163
WATER YEAR 1962-63 MAX 1,310 MIN 9.6 MEAN 79.8 ‡ +163

* Discharge measurement made on this day.

† Month-end total contents, in millions of gallons, in Liberty Reservoir (contents on Sept. 30, 1962, 31,250 million gallons); furnished by Baltimore Department of Public Works.

* Diversions, in cubic feet per second, above station for municipal supply of Westminster, and from Liberty Reservoir for municipal supply of Baltimore. Records furnished by Maryland Water Works Co. and Baltimore Department of Public Works, respectively.

b Stage-discharge relation affected by ice.

1-5893. Gwynns Falls at Villa Nova, Md.

Location--Lat 39°20'45", long 76°44'01", on right bank 300 ft downstream from bridge, on Essex Road, 300 ft north of State Highway 26 (Liberty Road), in Villa Nova, Baltimore County, and 1.1 miles west of Baltimore City limits.

Drainage area---32.5 sq mi.

Records available---February 1957 to September 1963.

Gage---Water-stage recorder. Datum of gage is 361.32 above mean sea level (Baltimore County bench mark). Prior to Aug. 27, 1963, water-stage recorder at site 300 ft upstream at same datum.

Extremes---Maximum discharge during year, 1,060 cfs Nov. 10 (gage height, 6.37); minimum daily, 4.2 cfs Aug. 11, 1962.

1957-63: Maximum discharge, 1,280 cfs Sept. 12, 1960 (gage height, 7.00 ft); minimum, 3.3 cfs Jan. 19, 1961, result of freezeup. Minimum daily, 3.6 cfs Sept. 18-28, Oct. 7, 1959. Maximum discharge known, 5,270 cfs July 21, 1956, by contracted-opening measurement.

Remarks---Records good except those for periods of ice effect, indefinite stage-discharge relation, or no gage-height record, which are poor. Slight diurnal fluctuation at times from unknown source. Small diversion for irrigation above station.

Rating tables, water year 1962-63, except periods of ice effect or indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Aug. 27				Aug. 28 to Sept. 30			
1.4	3.2	2.3	95	0.6	3.0	1.5	57
1.5	6.4	3.0	209	.7	4.7	2.0	115
1.6	12	4.0	414	.8	7.5	2.5	186
1.8	33			1.0	17		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.3	16	14	a 14	*a 25	a 12	26	36	9.4	10	6.4	5.5
2	8.3	14	14	a 16	b 45	b 60	28	20	28	8.3	6.8	5.3
3	8.8	70	14	a 18	b 80	56	25	16	261	7.8	5.2	5.3
4	270	38	14	b 18	37	49	23	15	9.3	6.8	5.6	5.3
5	81	23	14	b 18	56	182	20	14	32	6.4	4.8	* 5.0
6	21	19	125	b 18	b 100	372	21	13	26	6.8	* 4.4	5.3
7	16	15	53	b 18	b 75	a 100	21	13	18	6.8	4.8	5.0
8	14	16	35	b 18	b 45	a 60	20	12	23	6.4	6.0	5.0
9	13	37	30	*b 20	b 30	a 50	26	12	19	6.4	4.8	4.7
10	13	377	26	b 25	b 20	a 45	24	12	15	6.4	4.4	4.7
11	11	38	b 22	b 30	b 30	a 40	21	13	16	6.8	4.2	4.4
12	11	* 23	b 18	b 125	101	*a 200	20	11	* 13	6.8	4.2	4.7
13	11	19	b 16	100	41	64	19	11	12	6.8	* 19	4.4
14	11	15	b 15	46	b 30	45	19	14	11	22	15	4.5
15	11	14	b 15	35	b 20	36	18	14	11	13	e 6	5.4
16	12	14	b 18	b 28	a 15	40	18	12	9.4	7.8	e 5	29
17	12	14	*b 20	b 24	a 15	98	20	15	10	7.8	e 4.5	13
18	11	89	b 20	23	a 15	49	22	42	10	* 6.8	e 4.5	7.2
19	11	45	b 20	24	b 15	52	19	15	9.4	6.4	e 10	6.7
20	12	26	20	69	b 60	150	16	24	41	6.8	60	6.1
21	12	38	b 15	50	b 45	52	15	18	20	6.0	e 15	5.8
22	11	111	b 30	b 30	a 30	40	15	14	10	5.6	e 10	6.9
23	12	30	b 26	b 20	a 20	34	25	11	8.8	5.6	e 9	5.5
24	12	22	b 24	a 20	a 16	31	19	11	8.3	6.0	e 8	5.0
25	13	19	b 22	a 20	b 14	30	* 15	11	8.3	6.0	e 7	5.5
26	14	16	b 22	a 20	a 13	36	15	11	7.8	5.2	e 7	5.5
27	13	16	b 20	a 20	a 12	53	14	12	7.8	4.8	e 7	5.8
28	14	15	b 18	a 20	a 12	33	14	14	7.8	4.8	a 7	5.3
29	14	14	b 16	a 20	-	28	16	15	26	7.8	11	155
30	16	14	a 18	a 20	---	26	47	15	10	* 8.8	8.7	19
31	24	---	a 12	a 20	---	25	---	11	---	5.2	6.4	---
Total	720.4	1,217	746	947	1,017	2,148	621	477	782.0	229.7	281.7	355.8
Mean	23.2	40.6	24.1	30.5	36.3	69.3	20.7	15.4	26.1	7.41	9.09	11.9
Cfs/m	0.714	1.25	0.742	0.938	1.12	2.13	0.637	0.474	0.803	0.228	0.280	0.366
In.	0.82	1.39	0.85	1.08	1.16	2.46	0.71	0.55	0.89	0.26	0.32	0.41

Calendar year 1962: Max 674 Min 5.2 Mean 30.0 Cfs/m 0.923 In. 12.51
 Water year 1962-63: Max 377 Min 4.2 Mean 26.1 Cfs/m 0.803 In. 10.90

Peak discharge (base, 540 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1700	5.48	794	3-6	1130	5.45	786
11-10	0230	6.37	1,060	6-3	1700	4.53	542

* Discharge measurement made on this day.
 a No gage-height record.
 b Stage-discharge relation affected by ice.
 e Stage-discharge relation indefinite.

1-5900. North River near Annapolis, Md.

Location.--Lat 38°59'09", long 76°37'21", on left bank 500 ft downstream from bridge on State Highway 450, 0.8 mile upstream from confluence with Bacon Ridge Branch, and 7 miles west of Annapolis, Anne Arundel County.

Drainage area.--8.5 sq mi. approximately.

Records available.--December 1931 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 10 ft (from topographic map). Prior to Nov. 2, 1933, staff gage at same site and datum.

Average discharge.--31 years (1932-63), 10.6 cfs.

Extremes.--Maximum discharge during year, 131 cfs Aug. 21 (gage height, 2.48 ft, from floodmark); minimum, 2.0 cfs Aug. 6, 13 (gage height, 0.97 ft).
1931-63: Maximum discharge, 5,000 cfs Aug. 2, 1944 (gage height, 6.22 ft), from rating curve extended above 260 cfs on basis of velocity-area studies; minimum, 1.5 cfs Sept. 1, 2, 4, 1932.

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

Rating table, water year 1962-63 (gage height, in feet,
and discharge, in cubic feet per second)

0.9	1.4	1.5	22
1.0	2.4	1.9	52
1.1	4.0	2.3	98
1.2	7.1		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	4.5	5.3	5.3	5.0	6.3	9.8	8.4	4.5	9.4	2.7	a 7
2	3.4	4.2	5.3	5.0	5.6	6.7	10	6.7	11	4.7	3.4	a 6
3	3.4	1.2	5.3	5.3	6.7	6.3	9.8	6.0	4.9	4.0	2.8	a 5.5
4	2.5	1.5	5.3	5.6	5.0	6.7	9.3	6.0	3.4	3.6	2.8	a 5
5	2.3	1.1	5.3	5.3	5.0	1.2	8.0	5.6	1.4	3.3	2.3	a 5.5
6	7.1	9.3	1.7	5.3	6.3	2.8	8.0	5.6	2.1	3.1	2.1	a 5
7	4.7	6.0	1.4	5.3	6.7	1.8	8.4	5.6	1.1	3.1	2.4	a 4.5
8	4.2	5.3	8.0	5.3	6.3	1.1	8.0	5.3	8.0	3.1	2.7	a 4
9	4.0	5.8	6.7	5.3	4.7	9.3	8.0	5.3	8.0	3.0	2.4	*a 3.5
10	3.8	5.2	6.0	5.6	6.0	8.8	8.0	5.3	6.3	2.8	2.3	3.3
11	3.8	1.8	5.0	6.7	7.1	9.3	7.5	5.0	5.6	3.0	2.3	3.1
12	3.6	8.8	4.5	1.4	1.6	* 6.0	7.5	5.0	5.3	2.8	2.3	3.1
13	3.6	6.7	4.2	1.7	1.0	* 2.7	7.5	5.0	4.7	2.8	8.0	3.0
14	3.6	6.0	4.0	1.1	6.7	1.6	7.1	5.6	* 4.5	4.0	2.5	3.0
15	3.6	5.6	4.2	7.1	6.0	1.3	7.1	6.0	4.5	5.0	5.0	3.7
16	* 3.8	* 5.6	5.0	6.0	4.5	1.2	6.7	5.0	3.8	3.6	3.4	2.0
17	3.6	5.6	6.0	6.0	4.5	2.3	8.0	5.3	3.8	3.3	3.3	1.2
18	3.6	8.2	5.6	6.7	5.6	1.6	8.4	1.2	3.4	3.1	3.0	6.0
19	3.6	1.0	5.3	7.5	1.1	1.5	7.1	6.3	3.3	3.4	a 2.8	4.7
20	3.6	6.7	* 5.3	1.3	1.8	2.0	6.7	5.0	3.6	4.2	a 1.2	4.0
21	3.8	8.5	4.2	1.0	1.1	1.4	6.3	8.0	6.0	3.3	a 9.0	4.0
22	3.8	2.9	6.0	6.0	6.0	1.2	6.3	7.1	3.6	3.0	a 4.0	4.7
23	3.6	1.3	5.6	6.7	5.6	1.0	a 1.0	5.0	3.4	3.0	a 2.5	3.8
24	3.4	8.0	4.7	4.7	6.7	9.3	a 8	4.5	3.3	2.8	a 2.0	3.8
25	3.6	6.3	4.7	4.0	8.8	9.3	*a 6.5	4.5	3.3	2.8	a 1.5	3.8
26	3.8	6.0	5.6	4.2	* 8.0	1.1	6.3	4.5	3.3	2.7	a 1.2	3.8
27	3.6	5.6	5.3	5.6	5.6	2.3	6.0	4.5	3.1	2.5	a 1.0	3.8
28	3.8	5.6	5.0	* 5.0	6.0	1.4	6.0	4.7	3.1	2.5	a 8	3.8
29	4.0	5.3	4.7	4.2	-	1.1	6.0	5.0	8.4	3.1	a 7	2.5
30	4.0	5.3	9.3	4.5	-----	9.8	1.1	8.0	4.7	* 2.8	a 1.0	1.2
31	4.5	-----	6.0	5.0	-----	9.8	-----	5.0	-----	2.5	a 8	-----
Total	160.3	298.9	188.4	208.2	204.4	457.6	233.3	180.8	293.8	106.3	338.0	180.4
Mean	5.17	9.96	6.08	6.72	7.30	14.8	7.78	5.83	9.79	3.43	10.9	6.01
Cfsm	0.608	1.17	0.715	0.791	0.859	1.74	0.915	0.686	1.15	0.404	1.28	0.707
In.	0.70	1.31	0.82	0.91	0.89	2.00	1.02	0.79	1.29	0.47	1.48	0.79

Calendar year 1962: Max 52 Min 2.5 Mean 7.56 Cfsm 0.889 In. 12.09
Water year 1962-63: Max 90 Min 2.1 Mean 7.81 Cfsm 0.919 In. 12.47

Peak discharge (base, 75 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0600	2.26	92	6-30	0100	2.29	97
3-12	0730	2.33	103	8-21	Unknown	2.48	131
6-3	2000	2.19	83				

* Discharge measurement made on this day.
a No gage-height record.

PATUXENT RIVER BASIN

55

1-5910. Patuxent River near Unity, Md.

Location.--Lat 39°14'18", long 77°03'23", on right bank at downstream side of bridge on State Highway 97, 0.6 mile upstream from Cattail Creek, 0.8 mile upstream from Triadelphia Reservoir, and 1.1 miles northeast of Unity, Montgomery County.

Drainage area.--34.8 sq mi.

Records available.--July 1944 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 364.76 ft above mean sea level (Washington Suburban Sanitary Commission bench mark). Prior to Aug. 14, 1946, wire-weight gage and crest-stage gage at same site and datum.

Average discharge.--19 years, 36.5 cfs.

Extremes.--Maximum discharge during year, 920 cfs Mar. 6 (gage height, 5.90 ft); minimum, 2.7 cfs Aug. 13 (gage height, 1.72 ft).

1944-63: Maximum discharge, 10,700 cfs July 21, 1956 (gage height, 14.35 ft), from rating curve extended above 870 cfs on basis of slope-area measurement at gage height 13.58 ft; minimum, 2.1 cfs Aug. 25-28, 1944.

Remarks.--Records good except those for periods of ice effect or no gage-height record or those below 4.0 cfs, which are fair.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 12				Feb. 13 to Sept. 30			
1.9	5.2	2.5	46	1.7	2.3	2.5	52
2.0	8.6	3.0	105	1.8	4.2	3.0	111
2.2	20			1.9	6.6	3.5	187
				2.0	10	4.0	295
				2.1	15	4.5	425
				2.3	30		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.4	8.8	12	a 11	14	* 15	32	28	12	13	5.1	6.4
2	6.4	7.6	12	a 12	16	67	32	20	24	9.4	4.7	6.4
3	6.4	19	12	b 13	33	74	29	18	214	9.1	4.4	6.1
4	17	18	12	*b 13	19	45	26	17	88	8.4	4.7	6.1
5	15	12	12	13	27	156	23	16	47	7.6	3.8	6.6
6	8.1	11	42	13	b 40	390	23	16	38	7.6	3.4	6.6
7	7.2	8.9	29	13	b 30	74	24	15	27	7.6	3.6	6.4
8	6.8	8.6	21	13	b 22	52	22	14	23	7.2	3.8	6.1
9	6.8	9.8	19	b 14	b 20	43	25	14	22	6.9	3.4	6.1
10	6.8	85	b 15	b 16	18	38	22	14	19	6.7	3.1	* 5.4
11	6.5	19	b 14	18	34	36	21	13	18	7.0	2.9	4.4
12	6.4	14	b 13	b 60	87	131	20	13	16	7.0	2.9	4.4
13	6.3	12	b 12	83	b 35	95	20	12	15	6.6	40	4.4
14	6.3	11	b 12	b 40	b 25	66	20	14	14	9.8	20	4.2
15	6.4	11	b 12	b 30	b 20	52	19	14	16	11	6.6	4.4
16	* 6.7	11	14	b 25	b 17	49	18	13	14	8.5	5.4	8.0
17	6.6	11	14	b 22	b 17	93	20	13	13	8.4	4.9	7.6
18	6.4	30	14	21	b 20	62	22	26	12	7.2	4.7	6.4
19	6.4	28	b 14	20	25	62	20	15	11	6.5	4.7	6.1
20	6.6	17	b 13	54	45	90	18	14	114	7.6	42	5.6
21	7.1	18	b 10	38	48	63	17	14	23	7.0	21	4.9
22	6.8	48	b 15	b 25	b 20	53	17	13	14	6.4	9.0	5.2
23	6.8	21	b 15	b 20	b 18	45	26	12	13	* 6.3	7.6	4.7
24	6.4	17	b 13	b 18	b 16	40	20	11	11	5.9	7.0	4.2
25	6.6	15	13	b 17	b 16	38	18	11	11	5.3	6.6	4.4
26	6.8	* 14	14	b 16	b 13	38	* 18	11	10	4.8	6.4	4.4
27	6.8	13	14	b 16	b 12	54	17	11	9.4	4.5	6.4	4.4
28	6.9	13	13	b 15	b 13	38	16	11	9.0	4.3	6.4	4.0
29	7.1	12	b 13	*b 12	-	34	16	13	9.4	* 5.3	7.3	52
30	7.3	12	b 13	b 13	-----	32	27	31	9.8	10	7.6	12
31	11	-----	a 10	b 14	-----	30	-----	14	-----	5.7	6.6	-----
TOTAL	231.1	535.7	461	708	720	2,155	648	471	876.6	228.6	266.0	217.9
MEAN	7.46	17.9	14.9	22.8	25.7	69.5	21.6	15.2	29.2	7.37	8.58	7.26
CFSM	.214	.514	.428	.655	.739	2.00	.621	.437	.839	.212	.247	.209
IN	.25	.57	.49	.76	.77	2.30	.69	.50	.94	.24	.28	.23

CALENDAR YEAR 1962 MAX 422 MIN 3.7 MEAN 26.0 CFSM .747 INCHES 10.16
WATER YEAR 1962-63 MAX 390 MIN 2.9 MEAN 20.6 CFSM .592 INCHES 8.04

Peak discharge (base, 770 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-6	1230	5.90	920	6-20	1800	5.63	812

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

1-5925. Patuxent River near Laurel, Md.

Location.--Lat 39°06'56", long 76°52'27", on right bank at Rocky Gorge pumping station, 600 ft downstream from Rocky Gorge Dam, 0.7 mile upstream from Walker Branch, and 1.3 miles northwest of Laurel, Prince Georges County.

Drainage area.--132 sq mi.

Records available.-- Oct. 1944 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 160 ft (from topographic map). Prior to October 1, 1955, water-stage recorder and concrete control at site 0.3 mile downstream at different datum. Oct. 1, 1955, to Sept. 30, 1956, vertical staff gage at present site at datum 1.2 ft lower. Oct. 1, 1956, to Jan. 27, 1957, inclined staff gage at present site and datum.

Extremes.--Maximum discharge during year, 100 cfs Oct. 11 (gage height, 3.16 ft); minimum, 2.0 cfs Feb. 6 (gage height, 0.92 ft); minimum daily, 8.4 cfs Oct. 22, 1944-63; Maximum discharge, 11,800 cfs July 21, 1956 (gage height, 17.7 ft, from floodmarks, present site and datum); minimum, 0.2 cfs Mar. 3, 4, 1959; minimum daily, 1.1 cfs June 26, 1956.

Remarks.--Records fair. Records do not include diversion at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Flow regulated by Triadelphia Reservoir, and since March 1954, by Rocky Gorge Reservoir (combined usable capacity, 12,500,000 gal; dead storage, 80,000,000 gal).

Rating table, water year 1962-63, (gage height, in feet, and discharge, in cubic feet per second

1.3	7.8
1.5	11
2.0	23
2.5	42

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	12	11	12	13	12	13	12	13	14	14	11
2	10	12	11	12	13	12	13	12	13	14	14	11
3	9.9	12	11	12	13	12	13	12	14	14	14	11
4	10	12	11	12	13	12	13	12	14	14	14	11
5	10	12	11	12	13	12	13	12	15	13	13	11
6	9.5	12	11	12	10	12	13	12	15	13	11	11
7	9.5	12	11	12	9.9	12	13	12	14	13	11	11
8	9.5	12	11	12	9.9	12	13	12	14	13	11	11
9	11	12	11	12	9.2	12	13	12	14	13	11	11
10	11	12	11	12	9.2	12	13	12	14	13	11	11
11	30	12	11	12	9.2	12	13	12	14	13	11	11
12	11	12	11	12	8.6	12	13	12	14	13	11	11
13	10	11	11	12	9.2	12	13	12	14	13	11	11
14	10	11	11	12	10	12	13	12	13	13	11	11
15	10	11	11	12	12	12	13	12	13	13	11	11
16	11	12	11	11	12	12	13	12	13	13	11	11
17	11	12	11	10	12	12	13	12	13	13	11	11
18	11	12	11	10	12	12	13	12	13	14	11	11
19	11	12	11	10	12	12	13	12	13	14	11	11
20	10	12	11	10	12	12	12	12	14	14	11	11
21	9.9	12	11	10	13	13	12	12	14	14	11	11
22	8.4	12	11	10	13	13	12	12	14	14	11	11
23	10	11	11	10	13	12	12	12	14	14	11	11
24	12	11	11	11	13	12	12	13	14	14	11	11
25	13	11	11	11	13	13	* 12	13	14	14	11	11
26	12	11	11	11	13	13	12	13	14	14	11	11
27	12	11	17	11	13	13	12	13	14	14	11	11
28	12	11	18	11	12	13	12	13	14	14	11	11
29	11	11	12	11	-	13	12	13	14	* 14	11	11
30	11	11	12	11	-----	13	12	13	14	14	12	11
31	11	-----	12	12	-----	13	-----	13	-----	14	11	-----
Total	347.7	349	357	350	325.2	381	379	380	414	420	356	330
Mean	11.2	11.6	11.5	11.3	11.6	12.3	12.6	12.3	13.8	13.5	11.5	11.0
(†)	8,010	8,240	8,080	8,510	9,230	12,290	12,240	11,780	12,270	10,840	9,930	9,220
(*)	+78.4	+74.6	+74.1	+77.2	+70.3	+77.4	+77.4	+75.5	+82.7	+87.2	+70.6	+59.0

Calendar year 1962: Max 828 Min 8.4 Mean 37.7 * 79.9
 Water year 1962-63: Max 30 Min 8.4 Mean 12.0 * 75.4

* Discharge measurement made on this day.

† Combined month-end total contents, in millions of gallons, in Triadelphia and Rocky Gorge Reservoirs (contents on Sept. 30, 1962, 8,980 million gallons); furnished by Washington Suburban Sanitary Commission.

* Diversion, in cubic feet per second, above station at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Records furnished by Washington Suburban Sanitary commission.

1-5935. Little Patuxent River at Guilford, Md.

Location.--Lat 39°10'04", long 76°51'07", on left bank 75 ft upstream from bridge on State Highway 32, 1 mile west of Guilford, Howard County, 3 miles upstream from Middle Patuxent River, and 4 miles north of Laurel.

Drainage area.--38.0 sq mi.

Records available.--April 1932 to September 1963. Monthly discharge only for April 1932, published in WSP 1302.

Gage.--Water-stage recorder (digital). Concrete control since June 20, 1946. Altitude of gage is 260 ft (from topographic map). Prior to June 25, 1946, staff gage at same site and datum.

Average discharge.-- 31 years, 40.2 cfs.

Extremes.--Maximum discharge during year, 819 cfs Mar. 6 (gage height, 7.38 ft); minimum, 2.8 cfs Aug. 13 (gage height, 2.40 ft).

1932-63: Maximum discharge, 5,300 cfs Sept. 1, 1952 (gage height, 13.26 ft), from rating curve extended above 1,800 cfs on basis of contracted-opening measurement of peak flow; minimum recorded, 2.8 cfs Sept. 6, 1957, Aug. 13, 1963; minimum gage height, 1.38 ft Sept. 29, 1941.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.4	2.8	3.2	59
2.5	5.8	4.0	205
2.6	9.4	6.0	571
2.8	22		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	8.0	12	21	b 16	22	21	33	29	13	11	5.2	5.9
2	7.6	11	21	b 18	25	42	34	21	30	9.4	5.2	5.9
3	7.7	28	20	b 20	60	43	31	19	28.6	9.1	4.8	5.7
4	180	32	20	21	29	36	28	18	83	8.4	5.2	5.8
5	150	20	20	20	65	177	26	17	93	8.0	4.3	6.1
6	20	19	116	21	82	528	26	17	71	7.8	4.0	6.7
7	15	15	62	21	48	107	26	16	38	8.0	4.3	6.2
8	13	14	38	21	b 30	49	26	17	32	7.4	4.8	6.0
9	12	16	33	20	b 25	41	27	15	27	7.3	4.0	*5.6
10	11	340	28	22	28	39	26	15	22	7.4	3.6	5.0
11	11	48	b 25	27	35	37	24	14	22	7.3	3.5	4.6
12	10	28	b 20	157	187	285	23	14	18	7.3	3.5	4.5
13	10	23	b 19	155	b 65	106	22	14	16	7.1	20	4.3
14	9.9	20	19	b 65	b 50	69	22	15	16	12	42	4.5
15	10	* 19	18	b 50	b 30	50	22	15	16	13	7.4	5.2
16	11	18	20	b 40	b 25	48	22	14	14	8.5	6.5	16
17	* 10	17	22	35	23	140	22	15	14	7.8	6.0	14
18	9.9	56	22	32	b 23	73	24	28	13	7.4	5.6	7.9
19	9.8	55	21	33	b 25	67	22	17	12	6.9	5.6	7.0
20	9.9	30	21	126	215	103	21	16	29	8.1	34	6.4
21	10	38	b 15	86	122	61	19	18	56	7.0	19	6.1
22	10	237	b 25	b 45	b 35	45	20	16	17	6.6	9.9	6.6
23	9.8	49	b 25	b 30	27	39	27	14	14	6.6	8.0	5.8
24	9.4	34	b 20	b 25	b 24	38	22	13	13	6.6	7.1	5.7
25	9.6	28	19	b 25	b 24	35	* 20	13	12	6.2	6.8	5.8
26	10	27	23	23	*b 21	37	19	13	11	5.7	6.4	6.0
27	9.9	25	21	26	20	54	18	13	11	5.4	6.4	6.0
28	9.9	24	b 20	22	21	38	18	13	10	5.6	6.3	5.6
29	9.9	22	b 18	b 20	-	34	18	15	11	6.5	6.9	101
30	10	22	b 16	b 21	-----	33	34	22	15	* 6.2	7.8	20
31	13	-----	b 15	b 22	-----	32	-----	14	-----	5.3	6.5	-----
TOTAL	637.3	1,327	803	1,265	1,386	2,507	722	510	1,035	236.9	270.6	301.9
MEAN	20.6	44.2	25.9	40.8	49.5	80.9	24.1	16.5	34.5	7.64	8.73	10.1
CFSM	.542	1.16	.682	1.07	1.30	2.13	.634	.434	.908	.201	.230	.266
IN	.62	1.30	.79	1.24	1.36	2.45	.71	.50	1.01	.23	.26	.30

CALENDAR YEAR 1962 MAX 914
WATER YEAR 1962-63 MAX 528

MIN 5.2
MIN 3.5

MEAN 36.1
MEAN 30.1

CFSM .950
CFSM .792

INCHES 12.91
INCHES 10.77

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge
3-6	1600	7.38	819

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

PATUXENT RIVER BASIN

1-5945. Western Branch near Largo, Md.

Location.--Lat 38°52'34", long 76°47'54", on right bank 200 ft upstream from culvert on State Highway 202, 200 ft downstream from small tributary, 0.1 mile upstream from Southwest Branch, 2.3 miles southeast of Largo, Prince Georges County, and 4.8 miles northwest of Upper Marlboro.

Drainage area.--30.2 sq mi.

Records available.--October 1949 to September 1963. Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 46.50 ft above sea level (levels by private consultant engineers).

Average discharge.--14 years, 29.5 cfs.

Extremes.--Maximum discharge during year, 835 cfs Mar. 12 (gage height, 6.35 ft); minimum, 0.7 cfs Aug. 13 (gage height, 1.18 ft).

1949-63: Maximum discharge, 1,580 cfs Aug. 13, 1955 (gage height, 8.51 ft, from high-water mark in well); minimum, 0.6 cfs Sept. 16, 1962.

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

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 12

Mar. 13 to Sept. 30

1.2	1.0	1.8	23
1.3	2.0	2.0	41
1.4	3.2	3.0	160
1.5	5.7	4.0	328
1.6	9.9	5.0	510
1.7	16	6.0	735

1.2	0.8	1.4	3.1
1.3	1.8	1.5	5.7

Note.--Same as preceding table above 1.5 ft.

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.2	2.6	8.7	b 11	12	17	27	15	4.9	15	1.4	4.3
2	2.1	2.4	8.2	b 10	13	18	31	13	18	11	2.0	3.8
3	2.0	12	7.7	b 11	20	17	28	12	219	7.2	1.3	3.3
4	36	18	7.6	b 12	17	19	25	11	179	4.7	1.3	3.1
5	32	17	7.6	12	17	28	21	9.5	87	3.6	1.1	2.8
6	20	20	29	12	26	173	20	8.9	175	3.0	.9	* 2.8
7	11	15	35	12	27	143	20	8.4	85	2.7	1.0	2.5
8	6.4	11	30	13	23	66	19	7.7	44	2.4	1.0	2.4
9	4.2	9.3	21	13	20	44	19	7.3	28	2.1	.9	2.2
10	3.3	182	16	15	19	34	19	6.6	19	2.1	.9	2.1
11	2.8	69	12	21	20	33	17	6.0	14	2.1	.8	1.9
12	2.6	32	9.6	70	67	* 544	16	5.7	10	2.0	.8	1.8
13	2.3	18	b 8	119	63	* 251	16	5.5	8.4	1.9	4.9	1.6
14	2.1	13	b 7	75	47	* 95	15	6.2	* 7.6	3.2	12	1.6
15	2.1	10	b 7	48	30	60	14	6.6	8.8	4.0	5.1	2.4
16	2.1	* 8.6	8.3	31	25	54	14	5.7	7.0	2.9	3.8	12
17	* 2.1	7.7	8.2	22	17	122	15	5.9	6.6	2.5	2.5	14
18	2.1	11	8.2	20	16	90	16	11	5.7	2.2	1.8	12
19	2.0	17	* 8.0	20	62	93	15	7.6	5.0	2.0	1.7	8.7
20	2.0	16	8.5	33	81	151	14	6.5	12	2.0	127	6.4
21	2.0	25	7.1	34	60	91	13	9.0	40	1.6	453	4.9
22	2.1	126	9.6	a 25	b 30	57	13	8.7	20	1.5	129	5.4
23	2.0	66	8.7	a 20	b 20	42	23	7.1	11	1.5	44	3.8
24	1.9	36	8.1	a 11	22	36	* 18	6.2	7.0	1.4	25	3.3
25	1.9	22	8.3	a 9	25	31	15	5.7	5.3	1.3	15	3.0
26	2.0	16	8.9	a 11	24	31	14	5.4	4.2	1.3	10	2.9
27	2.1	13	8.9	a 14	18	63	13	5.1	3.4	1.1	7.3	2.8
28	2.1	12	8.3	a 13	17	51	12	5.1	3.1	1.1	5.7	2.5
29	2.2	10	9.5	10	-	40	12	5.6	22	1.3	5.2	47
30	2.2	9.4	23	11	-----	33	17	9.5	43	* 1.2	5.6	41
31	2.5	-----	17	12	-----	28	-----	6.2	-----	1.1	4.5	-----
TOTAL	164.4	827.0	373.0	750.0	838	2,555	531	239.7	1,103.0	93.0	876.5	208.3
MEAN	5.30	27.6	12.0	24.2	29.9	82.4	17.7	7.73	36.8	3.00	28.3	6.94
CFSM	.176	.914	.397	.801	.990	2.73	.586	.256	1.22	.099	.937	.230
IN	.20	1.02	.46	.92	1.03	3.15	.65	.30	1.36	.11	1.08	.26

CALENDAR YEAR 1962 MAX 359 MIN .6 MEAN 19.3 CFSM .639 INCHES 8.68
WATER YEAR 1962-63 MAX 544 MIN .8 MEAN 23.4 CFSM .775 INCHES 10.54

Peak discharge (base, 340 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0530	4.31	384	6-3	1600	4.64	443
3-6	1430	4.31	384	8-21	0230	5.60	635
3-12	0900	6.35	835				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

PATUXENT RIVER BASIN

59

1-5946. Cocktown Creek near Huntingtown, Md.

Location.--Lat 38°38'27", long 76°38'07", on right bank at downstream side of bridge on State Highway 510, 2 miles northwest of Huntingtown, Calvert County, 2½ miles southeast of Lower Marlboro, and about 3½ miles upstream from mouth.

Drainage area.--3.85 sq mi.

Records available.--December 1956 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 40 ft (from topographic map).

Average discharge.--6 years (1957-63), 4.88 cfs.

Extremes.--Maximum discharge during year, 273 cfs Mar. 12 (gage height, 6.24 ft); no flow Sept. 12, 13.
1956-63: Maximum discharge, 1,120 cfs June 14, 1960 (gage height, 7.96 ft), from rating curve extended above 150 cfs on basis of contracted-opening measurement of peak flow; no flow many days in July and August 1957, September 1963.

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

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	1.2	2.1	a 2.8	2.2	3.1	8.4	4.9	1.2	1.4	0.6	0.2
2	.4	1.0	2.1	a 2.4	3.5	3.3	8.4	3.1	1.1	1.2	.5	.1
3	.4	6.7	2.1	a 2.4	4.4	3.1	7.3	2.6	* 5.2	1.1	.4	.1
4	3.7	4.1	2.1	2.7	b 3.0	3.1	6.7	2.1	1.8	1.0	.3	.1
5	2.0	9.8	2.1	b 2.6	a 3.3	3.7	7.3	1.8	9.3	1.0	.2	.1
6	1.1	5.1	7.5	2.6	a 4.5	1.5	7.3	1.7	1.4	.9	.2	* .1
7	.4	3.6	2.8	2.7	a 3.4	6.5	6.9	1.6	1.1	.8	.2	.1
8	.9	3.2	2.3	2.7	3.1	5.1	6.3	1.5	7.8	.8	.3	.1
9	1.2	5.9	2.3	2.8	b 2.8	4.8	6.3	1.3	6.9	.8	.5	.1
10	* .5	2.3	2.0	3.1	b 2.8	4.5	5.7	1.1	5.5	.8	.6	.1
11	.4	2.8	a 1.8	4.7	3.3	8.7	5.3	1.1	4.9	.7	.3	.1
12	.2	2.2	a 1.6	9.1	1.0	7.7	4.9	1.0	* 3.9	.7	.2	0
13	.2	* 1.9	a 1.5	6.5	4.5	1.9	4.9	1.1	3.9	.7	.3	0
14	.2	1.7	a 1.5	4.4	b 3.5	1.2	4.8	1.3	6.8	1.8	.2	.1
15	.3	1.6	a 1.5	b 3.8	b 3.0	1.0	4.6	1.0	5.6	1.0	.2	.6
16	.3	1.6	a 1.6	b 3.6	b 2.5	1.3	4.4	1.0	4.2	.8	.2	4.2
17	.2	1.6	a 1.7	3.5	a 2.0	2.4	4.4	1.2	3.7	.7	.2	1.3
18	.2	3.2	a 1.7	3.9	a 1.9	1.3	4.2	5.8	3.1	.6	.2	.6
19	.2	2.3	* 1.8	3.8	3.6	1.9	3.9	1.4	2.8	.6	.2	.5
20	.2	2.1	1.8	5.1	a 4.0	2.2	3.1	1.0	3.5	1.2	.4	.3
21	.4	3.6	b 2.0	5.0	* a 3.0	* 1.6	3.1	1.1	4.7	1.5	.3	.4
22	.6	14.0	b 2.5	b 3.8	a 2.0	1.3	3.1	1.0	2.8	.6	.3	.6
23	.4	3.3	b 2.2	b 3.5	a 1.8	1.2	8.8	1.0	2.3	.6	.3	.4
24	.2	2.8	b 2.0	* a 2.5	a 2.5	1.2	* 4.1	.9	2.0	.5	.2	.3
25	.2	2.5	b 2.0	a 2.2	b 3.0	1.1	3.4	.9	1.8	.5	.2	.3
26	.4	2.4	b 2.2	a 2.5	b 2.6	1.1	3.0	.8	1.6	* .4	.2	.3
27	.4	2.3	2.2	a 4.0	b 2.5	1.2	2.8	.8	1.5	.4	.2	.3
28	.5	2.3	b 2.2	a 2.8	b 2.5	9.3	2.6	.9	1.3	.5	.2	.3
29	.6	2.2	a 8.4	a 2.3	-	8.4	2.7	7.1	1.3	.5	.2	6.2
30	.8	2.1	b 7.6	a 2.0	-	8.4	6.3	2.3	1.7	.4	.3	1.0
31	1.1	-	a 3.8	a 2.0	-	8.0	-	1.4	-	.6	.2	-
Total	19.0	122.1	81.0	107.5	91.2	391.0	155.0	55.8	200.1	24.5	8.8	18.9
Mean	0.61	4.07	2.61	3.47	3.26	12.6	5.17	1.80	6.67	0.79	0.28	0.63
Cfsm	0.158	1.06	0.678	0.901	0.847	3.27	1.34	0.468	1.73	0.205	0.073	0.164
In.	0.18	1.18	0.78	1.04	0.88	3.78	1.50	0.54	1.93	0.24	0.09	0.18

Calendar year 1962: Max 23 Min 0.1 Mean 3.54 Cfsm 0.919 In. 12.46
Water year 1962-63: Max 77 Min 0 Mean 3.49 Cfsm 0.906 In. 12.32

Peak discharge (base, 80 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0230	4.63	88	6-3	1315	5.33	135
3-12	0515	6.24	273				

* Discharge measurement made on this day.
a Doubtful or no gage-height record.
b Stage-discharge relation affected by ice.

1-5948. St. Leonard Creek near St. Leonard, Md.

Location.--Lat 38°26'57", long 76°29'43", on left bank at downstream side of highway bridge, 1 $\frac{3}{4}$ miles south of St. Leonard, Calvert County.

Drainage area.--6.73 sq mi.

Records available.--December 1956 to September 1963.

Gage.--Water-stage recorder. Timber control since June 13, 1958. Altitude of gage is 5 ft (from topographic map).

Average discharge.--6 years (1957-63), 9.44 cfs.

Extremes.--Maximum discharge during year, 130 cfs June 3 (gage height, 4.98 ft); no flow for part of each day Aug. 17-19, Sept. 1-4, 10-13.

1956-63: Maximum discharge, 288 cfs July 30, 1960 (gage height, 6.35 ft); minimum, that of Aug. 17-19, Sept. 1-4, 10-13, 1963.

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

Rating table, 1962-63 water year, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	0.2	3.0	10
2.6	0.9	3.2	20
2.7	1.8	3.5	32
2.8	3.5	4.0	54
2.9	6.2	4.5	87

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	3.5	5.5	a 8	a 6	5.8	9.3	12	4.1	2.6	1.6	0.6
2	2.4	3.3	5.2	a 7	a 7	6.9	9.8	7.2	2.3	2.4	1.5	.5
3	2.4	2.2	5.2	a 6	a 9	b 6	9.3	6.9	7.1	2.3	1.4	.4
4	5.6	1.8	5.2	a 6	a 6	5.8	8.4	6.2	2.3	2.1	1.1	.4
5	7.1	1.5	5.2	a 6	a 6	6.5	7.6	5.8	9.8	2.0	.9	.8
6	4.4	1.9	1.9	a 6	a 8.4	1.9	8.0	5.5	7.6	2.0	.9	* 1.0
7	3.5	6.2	7.6	a 6.5	7.2	10	8.0	5.5	6.5	1.8	1.1	.9
8	4.0	5.2	5.8	6.9	5.8	6.9	8.0	5.2	a 1.5	2.0	1.4	.8
9	1.3	6.1	5.8	6.9	a 5.5	6.2	8.0	4.9	a 6.5	1.8	1.1	.6
10	* 4.5	4.9	5.2	7.6	a 5.5	5.8	7.6	4.6	a 5.5	1.8	1.2	.5
11	3.7	9.8	a 5	10	5.8	7.8	7.2	4.4	a 5	1.8	1.1	.3
12	3.3	6.5	a 4.5	1.3	1.6	5.7	7.2	4.6	* a 4.5	1.7	1.0	.4
13	3.1	* 6.2	a 4.0	9.3	a 7	1.6	7.2	4.6	4.1	1.7	1.1	.4
14	3.1	5.8	a 4.0	a 7	a 6	11	7.2	5.2	6.7	3.9	1.0	1.0
15	3.1	5.5	a 4.0	a 6.5	a 5	9.3	6.9	4.9	7.6	3.5	.7	2.8
16	3.5	5.2	a 4.5	a 6.5	a 4.5	11	6.9	4.6	4.9	2.3	.8	1.4
17	3.3	5.2	a 4.5	a 7	a 4.5	30	7.2	4.8	4.6	2.0	.6	7.6
18	3.1	9.2	a 4.5	7.6	a 5.5	13	7.6	1.2	4.1	1.7	.5	3.5
19	2.9	10	* a 4.5	7.2	8.0	15	7.2	4.9	3.7	1.6	.6	2.6
20	2.9	6.5	a 4.5	1.2	8.9	23	6.5	4.1	6.5	1.8	2.3	2.0
21	3.1	7.1	a 5	8.9	* b 5.5	* 1.2	6.2	4.9	1.3	7.0	2.1	2.0
22	3.3	2.5	a 5.5	a 7	a 4.5	11	6.2	4.6	4.9	3.5	1.6	3.8
23	3.3	9.8	a 5.5	a 7	a 4.0	10	6.9	4.9	4.1	2.4	1.3	2.1
24	3.1	7.2	a 5	a 5	a 4.5	10	* 6.2	4.1	3.7	2.1	1.1	1.8
25	3.3	6.5	a 5	a 5	a 5.5	10	6.2	4.1	3.5	2.0	1.3	1.7
26	3.5	6.2	a 5	a 5	a 5	10	6.2	3.9	3.3	* 1.8	1.0	1.7
27	3.5	5.8	a 5.5	a 8	a 5	11	6.2	3.9	2.9	1.5	1.0	1.6
28	3.1	5.8	a 6	a 7	a 5	9.3	6.2	4.1	2.9	1.5	.8	1.6
29	3.1	5.5	8.0	a 6	-	8.9	6.4	1.2	2.7	2.4	.8	1.7
30	3.1	5.5	a 2.8	a 5	-----	9.3	1.2	6.9	2.6	2.6	1.4	4.9
31	3.5	-----	a 9	a 5	-----	9.3	-----	4.4	-----	1.7	1.0	-----
Total	117.4	301.6	201.2	221.9	176.6	382.8	223.8	175.7	267.3	71.3	35.3	79.3
Mean	3.79	10.1	6.49	7.16	6.31	12.3	7.46	5.67	8.91	2.30	1.14	2.64
Cfsm	0.563	1.50	0.964	1.06	0.938	1.83	1.11	0.842	1.32	0.342	0.169	0.392
In.	0.65	1.67	1.11	1.23	0.98	2.12	1.24	0.97	1.48	0.39	0.20	0.44

Calendar year 1962: Max .49 Min 1.4 Mean 7.08 Cfsm 1.05 In. 14.29
 Water year 1962-63: Max 71 Min 0.3 Mean 6.18 Cfsm 0.918 In. 12.48

Peak discharge (base, 100 cfs)

Date	Time	Gage height	Discharge
6-3	1730	4.98	130

* Discharge measurement made on this day.
 a Doubtful or no gage-height record.
 b Stage-discharge relation affected by ice.

1-5950. North Branch Potomac River at Steyer, Md.

Location.--Lat 39°18'07", long 79°18'26", on left bank 0.3 mile southeast of Steyer, Garrett County, 0.35 mile downstream from Steyer Run, and 2 miles northeast of Gorman.

Drainage area.--73.0 sq mi.

Records available.--July 1956 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 2,276.01 ft above mean sea level, datum of 1929, Parkersburg - Uniontown supplementary adjustment of 1944.

Average discharge.--7 years, 168 cfs.

Extremes.--Maximum discharge during year, 6,240 cfs Mar. 5 (gage height, 9.13 ft) from rating curve extended above 3,000 cfs by logarithmic plotting; minimum, 12 cfs Oct. 4 (gage height, 2.25 ft).

1956-63: Maximum discharge, that of Mar. 5, 1963; minimum, 3.0 cfs Aug. 31, 1957, Sept. 27, 28, 1959. Flood of Oct. 15, 1954, reached a stage of 13.0 ft, from floodmarks.

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

Rating table, water year 1962-63, except periods of ice effect (gage-height, in feet, and discharge, in cubic feet per second)

2.2	8.8	3.5	355
2.3	16	4.0	610
2.5	42	5.0	1,300
2.7	80	6.0	2,200
3.0	161	8.0	4,590

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	181	82	90	105	90	220	137	50	76	21	36
2	* 16	118	76	100	105	840	190	123	44	60	18	28
3	13	94	68	100	250	560	170	109	118	676	18	25
4	65	84	64	90	180	860	* 140	97	548	155	156	153
5	82	92	62	84	140	4,300	123	92	277	92	50	107
6	39	80	66	76	160	2,100	109	82	265	70	32	104
7	28	68	50	74	180	860	99	76	246	56	29	70
8	30	66	60	74	160	450	94	70	208	49	32	54
9	33	60	64	72	110	360	134	63	187	42	25	44
10	29	1,140	62	105	110	420	115	* 52	215	38	22	38
11	25	1,020	58	600	130	370	94	92	1,660	35	18	32
12	22	500	54	1,300	150	1,550	82	72	516	32	15	30
13	20	310	52	1,200	130	1,220	76	63	307	30	65	39
14	18	225	50	520	110	960	70	422	219	57	85	32
15	31	175	52	350	100	540	63	265	168	57	38	26
16	74	145	54	230	90	460	59	171	131	35	25	24
17	33	135	54	185	90	1,600	70	184	* 109	32	22	21
18	23	330	58	165	90	880	256	342	85	* 28	18	20
19	20	330	70	155	90	2,050	198	201	74	24	32	18
20	20	250	270	200	90	2,150	149	164	76	25	107	16
21	18	225	170	250	86	860	123	223	128	45	57	16
22	22	600	350	200	82	520	115	219	76	42	67	16
23	22	390	280	160	78	400	323	158	57	46	41	16
24	20	270	215	125	80	450	219	131	47	56	33	14
25	* 16	205	145	105	82	470	171	118	41	30	30	14
26	21	170	145	130	76	420	143	107	36	23	25	14
27	32	145	150	140	70	460	126	92	32	21	* 21	13
28	26	120	120	105	60	340	112	87	32	22	18	13
29	112	* 104	120	86	—	350	107	82	32	22	158	36
30	212	92	150	135	—	300	146	74	54	22	99	32
31	518	—	90	135	—	250	—	59	—	20	50	—
Total	1,664	7,724	3,361	7,341	3,184	27,440	4,096	4,234	6,038	2,018	1,427	1,101
Mean	53.7	257	108	237	114	885	137	137	201	65.1	46.0	36.7
Cfs/m	0.736	3.52	1.48	3.25	1.56	12.1	1.88	1.88	2.75	0.892	0.630	0.503
In.	0.85	3.94	1.71	3.74	1.62	13.98	2.09	2.16	3.08	1.03	0.73	0.56

Calendar year 1962: Max 1,480 Min 6.2 Mean 172 Cfs/m 2.36 In. 31.94
 Water year 1962-63: Max 4,300 Min 13 Mean 191 Cfs/m 2.62 In. 35.49

Peak discharge (base, 2,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	0500	9.13	6,240	6-11	0500	6.77	3,060
3-19	1800	7.43	3,860				

* Discharge measurement made on this day.
 Note.--Doubtful or no gage-height record Oct. 1, Nov. 4-29, Dec. 7 to Apr. 4 (stage-discharge relation affected by ice Dec. 6 to Mar. 5).

1-5955. North Branch Potomac River at Kitzmiller, Md.

Location.--Lat 39°23'38", long 79°10'55", on left bank 0.6 mile downstream from bridge on State Highway 38 in Kitzmiller, Garrett County, and 1.5 miles downstream from Wolfden Run.

Drainage area.--225 sq mi.

Records available.--October 1949 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 1,572.26 ft above mean sea level, datum of 1929, Parkersburg - Uniontown supplementary adjustment of 1944. Prior to Oct. 15, 1954, water-stage recorder at site 0.3 mile upstream at datum 7.58 ft higher. Oct. 15, 1954, to Nov. 20, 1955, wire-weight gage at bridge half a mile upstream at datum 21.51 ft higher.

Average discharge.--14 years, 437 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 10,300 cfs Mar. 5 (gage height, 9.40 ft); minimum, 27 cfs Oct. 4 (gage height 2.28 ft).

1949-63: Maximum discharge, 33,400 cfs Oct. 15, 1954 (gage height, 13.73 ft, from floodmarks, present site and datum); minimum, 4.6 cfs Oct. 3-7, 1953.

Remarks.--Records good except those for periods of ice effect, which are poor. Regulation at low flow by Stony River Reservoir, 30 miles above station (capacity, 1,948,000,000 gal, of which 1,681,000,000 gal is controlled storage above minimum pool).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 5-27, June 11, 12, July 3)

2.3	28	3.5	272	6.0	2,030
2.4	38	4.0	460	7.0	3,430
2.7	75	4.5	710	8.0	5,500
3.0	127	5.0	1,070	9.0	8,250

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	365	224	225	250	180	565	412	155	231	75	104
2	* 34	211	205	* 262	230	711	560	372	138	145	78	86
3	30	155	190	270	500	840	482	342	353	1,240	72	* 76
4	79	143	185	235	350	971	424	300	2,020	464	240	201
5	296	143	185	220	300	7,920	372	276	918	248	150	282
6	123	145	205	218	330	4,990	346	254	710	171	92	399
7	75	119	130	205	380	2,620	321	231	590	134	78	240
8	67	111	170	208	350	1,750	300	211	528	113	84	158
9	82	109	190	199	240	1,380	365	196	448	100	76	123
10	80	1,880	170	290	250	1,510	361	* 188	444	88	67	105
11	66	1,920	150	1,110	270	1,230	* 300	256	2,960	86	62	95
12	54	990	130	2,550	320	3,260	276	254	1,280	76	58	88
13	45	640	110	2,130	280	3,360	254	211	746	71	84	92
14	41	496	120	1,200	250	2,880	237	816	560	93	244	95
15	40	420	135	819	240	1,930	221	811	452	173	109	82
16	86	372	150	625	230	1,570	208	510	361	98	81	76
17	67	361	170	505	230	3,650	215	412	* 304	80	70	72
18	46	699	185	448	230	2,800	490	1,040	248	71	64	68
19	38	868	235	412	230	4,010	528	656	205	60	64	66
20	38	615	560	514	230	5,750	388	487	193	60	188	63
21	36	505	404	674	210	2,560	324	536	296	104	121	62
22	40	1,160	555	420	200	1,820	290	713	211	127	117	63
23	42	812	595	440	180	1,350	919	510	153	279	93	62
24	42	580	400	250	180	1,350	704	380	125	155	78	59
25	40	469	346	200	180	1,460	532	328	109	111	75	57
26	43	404	353	220	170	1,320	452	307	98	90	67	57
27	44	357	332	250	150	1,460	404	272	88	84	* 62	56
28	50	321	304	250	145	1,050	342	262	84	80	59	56
29	152	* 279	304	215	—	882	321	251	97	76	276	90
30	* 262	251	390	* 300	—	752	444	221	279	80	292	115
31	954	—	220	270	—	680	—	179	—	* 75	138	—
Total	3,135	15,900	9,002	16,134	7,105	67,996	11,945	12,194	15,153	5,063	3,414	3,248
Mean	101	530	258	520	254	2,193	398	393	505	163	110	108
(†)	961	1,241	1,283	1,241	1,256	1,316	1,169	1,089	1,741	1,594	1,195	876

Calendar year 1962: Max 3,470 Min 14 Mean 455 Cfsm 2.02 In. 27.43
Water year 1962-63: Max 7,920 Min 30 Mean 464 Cfsm 2.06 In. 27.98

Peak discharge (base, 3,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0930	7.09	3,590	3-19	2000	8.94	8,690
3-05	0500	9.40	10,300	6-11	0600	7.53	4,880
3-13	2000	7.30	4,390				

* Discharge measurement made on this day.
† Month-end contents, in millions of gallons, in Stony River Reservoir (contents on Sept. 30, 1962, 642 million gallons); furnished by West Virginia Pulp and Paper Co.
Note.--Stage-discharge relation affected by ice Dec. 7-20, Dec. 30 to Jan. 1, Jan. 3-5, Jan. 24 to Mar. 1.

POTOMAC RIVER BASIN

63

1-5965. Savage River near Barton, Md.

Location.--Lat 39°34'05", long 79°06'10", on right bank 0.9 mile upstream from Bear Pen Run, 1.5 miles downstream from Poplar Lick Run, and 5.4 miles northwest of Barton, Allegany County.

Drainage area.--49.1 sq mi.

Records available.--September 1948 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 1,605 ft (from topographic map).

Average discharge.--15 years, 74.1 cfs.

Extremes.--Maximum discharge during year, 1,480 cfs Mar. 20 (gage height, 4.09 ft); minimum, 0.9 cfs Sept. 24-29 (gage height, 0.82 ft).

1948-63: Maximum discharge, 7,510 cfs Oct. 15, 1954 (gage height 8.45 ft), from rating curve extended above 1,600 cfs on basis of slope-area measurement of peak flow; minimum, 0.6 cfs Sept. 2, 1953.

Remarks.--Records good except those for periods of ice effect, which are fair. City of Frostburg diverts about 0.5 cfs from headwaters of stream for municipal supply.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.82	0.9	1.7	55
.9	1.5	2.0	109
1.0	2.8	2.3	192
1.1	5.2	2.6	311
1.2	8.9	3.0	540
1.3	14	3.5	930
1.5	31	4.0	1,400

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	* 5.2	50	28	19	20	16	109	72	30	23	2.2	3.6
2	4.6	34	26	20	22	25	114	70	27	14	2.0	2.7
3	4.1	27	24	20	80	26	103	72	79	43	2.2	2.4
4	41	22	21	20	45	170	* 94	72	302	19	3.4	4.5
5	38	19	* 20	20	30	1,000	84	67	210	* 14	2.7	4.1
6	21	16	24	20	40	596	74	60	* 147	10	2.1	3.8
7	15	14	15	20	60	321	66	* 50	109	8.8	2.4	3.2
8	18	13	18	22	38	199	56	42	90	7.7	2.5	2.9
9	22	12	15	28	30	192	74	38	74	6.4	2.4	2.7
10	18	186	14	50	24	263	61	37	60	5.5	2.2	2.4
11	16	153	12	190	70	235	55	31	116	5.5	1.7	2.0
12	13	105	12	490	70	514	51	27	96	5.0	1.4	2.0
13	11	75	12	482	35	717	47	25	81	4.4	4.9	2.0
14	9.8	57	12	255	28	618	43	27	66	8.9	* 8.5	1.7
15	8.9	43	13	160	24	331	40	24	52	11	5.1	1.5
16	8.0	37	14	130	22	251	35	20	42	7.1	3.5	1.4
17	7.2	39	16	120	22	829	38	20	34	5.6	2.7	1.3
18	6.4	70	18	88	22	618	48	25	28	4.8	2.5	1.2
19	5.8	109	28	60	23	488	46	20	24	4.4	2.8	1.2
20	5.5	99	90	77	22	1,080	43	17	23	4.3	7.1	* 1.1
21	5.5	84	86	67	20	457	42	22	23	6.7	5.1	1.0
22	5.2	121	110	56	18	263	41	35	18	5.4	4.0	1.0
23	4.9	114	60	45	17	183	116	29	15	4.4	3.1	1.0
24	4.6	94	48	25	16	167	119	27	13	4.6	2.7	1.0
25	4.9	74	36	32	15	196	103	27	11	4.2	2.7	.9
26	5.5	61	30	28	15	227	86	27	10	3.4	2.3	.9
27	5.5	50	24	26	15	227	72	25	9.4	3.0	2.0	.9
28	5.5	42	26	23	15	183	60	41	8.9	3.0	* 1.7	.9
29	8.5	37	22	21	-	153	55	42	8.9	3.2	4.7	2.9
30	18	32	20	20	-----	131	70	39	21	3.0	5.0	2.9
31	* 84	-----	18	20	-----	114	-----	34	-----	2.5	5.2	-----
TOTAL	430.6	1,889	912	2,654	858	10,790	2,045	1,164	1,828.2	255.8	102.8	61.1
MEAN	13.9	63.0	29.4	85.6	30.6	348	68.2	37.5	60.9	8.25	3.32	2.04
CFSM	.283	1.28	.599	1.74	.623	7.09	1.39	.764	1.24	.168	.068	.042
IN	.33	1.43	.69	2.01	.65	8.17	1.55	.88	1.38	.19	.08	.05

CALENDAR YEAR 1962 MAX 976 MIN 1.0 MEAN 64.2 CFSM 1.31 INCHES 17.75
WATER YEAR 1962-63 MAX 1,080 MIN .9 MEAN 63.0 CFSM 1.28 INCHES 17.41

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	0700	3.89	1,290	3-17	2000	3.74	1,150
3-13	1900	3.70	1,110	3-20	0300	4.08	1,480

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Dec. 4, Dec. 8 to Jan. 12, Jan. 15-19, Jan. 22 to Feb. 28, Mar. 4, 5.

POTOMAC RIVER BASIN

1-5970. Crabtree Creek near Swanton, Md.

Location.--Lat 39°30'00", long 79°09'35", on left bank 0.9 mile upstream from Middle Fork, 1.0 mile downstream from Springlick Run, and 5.0 miles northeast of Swanton, Garrett County.

Drainage area.--16.7 sq mi.

Records available.--September 1948 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 1,529.06 ft above mean sea level (Corps of Engineers bench mark).

Average discharge.--15 years, 29.3 cfs.

Extremes.--Maximum discharge during year, 536 cfs Mar. 19 (gage height, 2.82 ft); minimum, 1.5 cfs Sept. 23-28 (gage height, 0.72 ft).

1948-63: Maximum discharge, 3,260 cfs July 12, 1949 (gage height, 5.01 ft), from rating curve extended above 210 cfs on basis of slope-area and contracted-opening measurements of peak flow; minimum, 0.1 cfs Dec. 3, 1953 (gage height, 0.56 ft); minimum daily, 0.8 cfs Nov. 6, 1953.

Remarks.--Records good except those for periods of ice effect, which are poor. Small diversion above station by Baltimore & Ohio Railroad.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 19				Mar. 20 to Sept. 30			
0.76	1.6	1.3	23	0.72	1.5	1.0	7.2
.8	2.1	1.5	48	.8	2.6	1.1	11
.9	3.7	1.7	90	.9	4.5	1.2	16
1.0	6.3	2.0	175				
1.1	10	2.5	370				
1.2	16	3.0	640				

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

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	* 1.9	8.8	9.6	6.8	7.0	6.0	41	27	12	7.5	2.5	3.2
2	1.7	6.0	8.8	7.2	8.0	7.0	* 38	27	11	6.3	2.5	2.8
3	1.6	4.9	8.0	7.0	29	8.0	38	26	28	20	2.7	2.8
4	6.0	4.4	7.6	7.0	18	45	35	26	100	8.8	3.7	4.5
5	5.4	3.9	* 7.3	7.0	12	450	30	23	95	6.9	* 2.4	3.5
6	2.8	3.5	8.4	7.0	13	309	27	20	66	5.8	2.2	3.2
7	2.3	3.0	4.9	6.9	15	189	25	* 19	49	5.2	2.4	3.0
8	2.5	3.0	6.6	8.4	12	125	23	17	39	4.8	2.4	2.5
9	2.9	3.0	5.6	9.6	10	108	26	14	34	4.3	2.2	2.4
10	3.1	4.9	5.0	17	8.4	133	22	11	32	4.1	2.1	2.4
11	2.4	45	4.4	83	17	131	20	10	160	4.1	1.9	2.1
12	2.1	30	4.4	228	17	253	19	9.2	122	3.9	1.8	2.4
13	2.0	21	4.4	221	12	293	18	8.8	66	3.5	7.2	2.4
14	1.9	16	4.4	128	10	238	17	19	46	6.3	5.5	2.1
15	1.9	12	4.6	88	8.6	148	16	16	36	5.2	3.0	1.9
16	1.9	10	5.0	60	8.0	113	15	9.9	28	3.9	2.5	1.9
17	1.9	11	5.4	50	8.0	269	16	11	22	3.5	2.4	1.8
18	1.7	20	6.3	35	8.0	228	* 20	23	* 17	3.2	2.4	1.8
19	1.6	32	11	18	8.0	269	20	18	15	3.0	4.8	1.7
20	1.6	29	33	30	8.0	395	20	21	14	3.9	7.5	1.7
21	1.9	26	26	28	6.4	203	20	28	13	4.3	3.9	1.7
22	1.9	38	25	22	6.0	128	20	26	11	3.3	3.2	1.8
23	1.7	36	22	16	5.8	90	62	25	9.2	* 5.2	2.7	1.7
24	1.9	30	17	9.0	5.6	80	66	25	8.1	3.3	2.4	1.5
25	1.9	24	13	12	5.4	88	51	23	7.8	3.0	2.4	1.5
26	2.1	19	10	10	5.4	93	39	20	7.2	2.7	2.1	1.5
27	1.9	16	8.4	9.0	5.4	88	33	18	6.6	2.7	2.1	1.5
28	2.0	14	9.0	8.0	5.4	71	26	19	6.6	2.5	* 1.9	1.5
29	2.8	12	8.0	7.4	-	51	25	16	6.6	2.4	12	3.9
30	7.3	11	7.0	7.0	-----	51	28	14	12	2.5	5.8	2.5
31	* 17	-----	6.4	7.0	-----	43	-----	13	-----	2.4	4.1	-----
TOTAL	91.5	541.5	306.5	1,160.3	282.4	4,703.0	856	582.9	1,080.1	148.5	106.7	69.2
MEAN	2.95	18.1	9.89	37.4	10.1	152	28.5	18.8	36.0	4.79	3.44	2.31
CFSM	.177	1.08	.592	2.24	.605	9.10	1.71	1.13	2.16	.287	.206	.138
IN	.20	1.21	.68	2.58	.63	10.47	1.91	1.30	2.41	.33	.24	.15

CALENDAR YEAR 1962 MAX 420 MIN 1.3 MEAN 31.5 CFSM 1.89 INCHES 25.63
WATER YEAR 1962-63 MAX 450 MIN 1.5 MEAN 27.2 CFSM 1.63 INCHES 22.11

Peak discharge (base, 330 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	Unknown	Unknown	Unknown	3-19	2330	2.82	536
3-13	1800	2.50	370				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 8-17, Dec. 25 to Jan. 6, Jan. 16 to Mar. 5 (no gage-height record Jan. 25 to Mar. 5).

1-5975. Savage River below Savage River Dam, near Bloomington, Md.

Location.--Lat 39°30'05", long 79°07'25", on left bank 0.7 mile downstream from Savage River Dam, 1.1 miles downstream from Crabtree Creek, and 3.2 miles northwest of Bloomington, Garrett County.

Drainage area.--106 sq mi.

Records available.--October 1948 to September 1963.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,276.40 ft above mean sea level (Corps of Engineers bench mark).

Average Discharge.--15 years, 164 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 3,560 cfs Jan. 15 (gage height, 5.92 ft); minimum, 1.5 cfs Jan. 10 (gage height, 0.69 ft); minimum daily, 7.5 cfs Feb. 28.

1948-63: Maximum discharge, 6,530 cfs Oct. 16, 1954 (gage height, 7.70 ft); minimum, 0.4 cfs Nov. 13, 1958 (gage height 0.58 ft); minimum daily, 0.6 cfs July 27-31, Aug. 5, 6, 9, 10, 1951.

Remarks.--Records good. Diversions above station by Baltimore & Ohio Railroad and by cities of Frostburg and Westernport for municipal supply. Flow regulated by Savage River Reservoir beginning December 1950 (capacity, 20,000 acre-ft).

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 6-9)

0.9	7.1	1.7	71	3.5	685
1.0	11	2.0	122	4.0	1,070
1.2	22	2.5	251	4.5	1,580
1.4	37	3.0	436	5.0	2,210

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	86	14	12	9.4	8.3	112	* 16	70	26	51	71
2	96	86	14	12	11	14	112	16	64	28	51	70
3	94	86	14	11	12	23	112	16	108	80	51	71
4	94	84	14	11	9.4	48	114	16	531	46	50	71
5	93	84	14	11	12	68	51	16	490	30	31	71
6	93	84	14	11	12	1.130	17	16	348	21	21	71
7	93	84	14	168	12	1.780	16	16	260	18	42	71
8	93	84	14	240	11	1.660	16	16	206	19	52	71
9	93	84	14	222	11	532	* 16	16	169	14	52	70
10	93	86	14	130	11	17	16	16	141	28	52	70
11	91	93	14	12	11	15	16	16	344	41	52	70
12	* 91	96	14	753	214	434	16	16	356	41	76	70
13	91	96	14	1,370	490	1,610	16	15	251	40	61	70
14	89	96	14	1,320	628	1,870	16	16	189	40	* 21	70
15	89	96	14	2,150	741	1,770	16	16	145	22	21	68
16	89	96	13	214	306	670	16	16	111	12	40	68
17	89	96	178	8.7	14	118	16	22	89	25	51	68
18	88	98	272	90	195	1,220	15	70	* 72	47	51	68
19	88	98	266	9.4	132	1,480	15	71	57	55	67	68
20	88	70	187	9.8	56	1,040	14	64	51	55	74	68
21	88	340	12	9.4	17	1,990	14	71	56	55	74	68
22	88	550	12	9.4	11	1,490	14	96	40	36	74	68
23	88	541	13	9.4	11	1,060	16	88	33	21	74	68
24	88	347	13	9.4	9.0	396	16	83	30	11	74	68
25	88	14	13	9.4	7.9	101	16	82	26	19	74	68
26	86	17	166	9.6	8.3	103	16	82	29	32	74	68
27	86	20	263	9.6	7.9	107	16	72	47	32	* 74	72
28	86	345	260	9.6	7.5	109	16	88	* 21	44	74	76
29	86	526	161	9.6	-	109	16	101	22	50	76	76
30	86	* 191	12	9.6	-----	109	16	96	19	50	67	74
31	86	-----	12	9.8	-----	111	-----	80	-----	50	71	-----
Total	2,789	4,674	2,063	5,788.7	2,977.4	21,192.3	894	1,421	4,375	1,088	1,773	2,101
Mean	90.0	156	66.5	219	106	684	29.8	45.8	146	35.1	57.2	70.0
(†)	8,470	5,350	4,630	2,830	630	9,700	17,020	20,060	19,980	18,750	15,580	11,560

Calendar year 1962: Max 2,550 Min 11 Mean 148 Cfsm 1.40 In. 18.98
Water year 1962-63: Max 2,150 Min 7.5 Mean 143 Cfsm 1.35 In. 18.29

* Discharge measurement made on this day.

† Month-end contents, in acre-ft, in Savage River Reservoir (contents on Sept. 30, 1962, 12,940 acre-ft).
Records furnished by Corps of Engineers.

1-5985. North Branch Potomac River at Luke, Md.

Location.--Lat 39°28'45", long 79°03'55", on right bank 0.2 mile downstream from Savage River and 0.5 mile northwest of Luke, Allegany County.

Drainage area.--404 sq mi.

Records available.--June 1899 to July 1906 (published as "at Piedmont, W.Va."), October 1949 to September 1963.

Gage.--Water-stage recorder and concrete control. Datum of gage is 946.25 ft above mean sea level, adjustment of 1912. June 27, 1899, to July 15, 1906, chain gage at bridge 1.1 miles downstream at datum about 35 feet lower.

Average discharge.--20 years (1899-1905, 1949-63), 696 cfs (adjusted for storage since 1949).

Extremes.--Maximum discharge during year, 16,800 cfs Mar. 5 (gage height, 11.83 ft); minimum, 99 cfs June 29 (gage height, 1.44 ft).
1899-1906, 1949-63: Maximum discharge, 39,400 cfs Oct. 15, 1954 (gage height, 17.15 ft); minimum daily, 6 cfs Sept. 4, 1904.

Remarks.--Records fair except those for periods of no gage-height record or ice effect, which are poor. Flow regulated since 1913 by Stony River Reservoir, 45 miles above station (see p. 62) and, since December 1950, by Savage River Reservoir, 5 miles above station (see preceding page). Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899-1906.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 1-17, June 4, 5, 11, 12)

Oct. 1 to July 3				July 4 to Sept. 30			
1.4	93	4.0	1,190	1.3	98	2.5	392
1.7	143	5.0	2,070	1.6	149	3.0	595
2.0	209	6.0	3,280	2.0	241	3.5	855
2.5	359	8.0	6,600				
3.0	560	10.0	11,200				

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	153	g 560	272	230	280	170	810	570	252	306	125	194
2	139	g 330	249	280	240	350	792	507	219	195	136	170
3	132	269	230	320	410	700	687	458	493	1,210	128	157
4	185	243	227	350	420	740	621	406	2,860	689	242	246
5	366	241	222	300	340	10,000	507	366	* 1,730	364	250	345
6	281	243	243	240	340	8,200	462	339	1,320	249	130	554
7	192	225	222	330	400	5,600	433	* 309	1,040	185	125	364
8	170	207	153	460	400	3,900	406	284	945	155	145	267
9	174	207	210	440	300	2,400	* 437	257	744	134	143	221
10	185	2,090	215	460	280	1,850	490	241	732	* 123	128	192
11	167	2,120	180	1,000	300	1,650	410	246	3,220	141	120	174
12	* 157	1,160	160	4,200	460	4,000	370	325	1,990	134	134	166
13	147	804	130	4,230	800	5,800	g 345	260	1,310	122	155	164
14	138	621	140	2,740	840	5,800	g 325	706	973	141	281	172
15	138	528	160	2,800	1,000	4,400	g 296	1,160	780	225	170	160
16	143	482	170	1,200	660	2,900	g 293	670	616	145	134	151
17	176	474	280	640	300	4,200	g 281	520	503	112	132	145
18	151	718	470	565	400	4,900	g 104	1,190	403	132	123	140
19	138	1,110	480	524	380	6,000	704	924	325	127	140	136
20	130	756	740	590	310	9,600	482	676	284	122	256	132
21	132	816	580	810	270	5,500	395	685	356	130	241	130
22	130	1,540	440	520	230	4,000	352	1,020	328	181	206	128
23	134	1,410	700	520	220	2,800	1,120	738	225	299	197	128
24	134	994	480	260	210	2,000	1,110	570	172	192	168	127
25	g 135	533	410	165	210	1,750	792	486	143	149	157	122
26	g 135	454	500	225	200	1,550	648	445	125	134	153	g 122
27	g 135	403	620	280	160	1,650	560	399	153	120	* 143	g 125
28	g 135	575	600	290	155	1,350	486	391	100	125	138	g 130
29	g 155	774	540	250	---	1,150	441	395	100	130	282	g 150
30	* g 290	445	420	300	---	1,000	600	356	288	132	501	g 220
31	g 840	---	290	310	---	920	---	293	---	132	257	---
Total	5,817	21,332	10,733	25,829	10,515	105,830	16,069	16,192	22,729	6,735	5,640	5,632
Mean	188	711	346	833	376	3,414	536	522	758	217	182	188

Calendar year 1962: Max 7,800 Min 96 Mean 729 Cfsm 1.80 In. 24.50
Water year 1962-63: Max 10,000 Min 100 Mean 693 Cfsm 1.72 In. 23.29

* Discharge measurement made on this day.
g Computed from twice-daily telemark readings.
Note.--Stage-discharge relation affected by ice Dec. 9 to Jan. 12, Jan. 22 to Mar. 4 (no gage-height record Dec. 13 to Jan. 10, Jan. 22 to Mar. 4). No gage-height record Jan. 15-17, Mar. 5-31.

1-5990. Georges Creek at Franklin, Md.

Location.--Lat 39°29'38", long 79°02'42", on right bank at Franklin, Allegany County, 1½ miles upstream from Westernport and mouth.

Drainage area.--72.4 sq mi.

Records available.--May 1905 to July 1906 (Published as "at Westernport"), October 1929 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 958.96 ft above mean sea level (West Virginia Pulp & Paper Co. bench mark). May 4, 1905, to July 15, 1906, chain gage at bridge three-quarters of a mile downstream at different datum. Oct. 16, 1929, to Oct. 1, 1937, water-stage recorder at site 95 ft downstream at present datum.

Average discharge.--34 years (1929-63), 78.0 cfs.

Extremes.--Maximum discharge during year, 1,760 cfs Mar. 20 (gage height, 7.26 ft); minimum, 4.6 cfs Aug. 3. 1905-6, 1929-63: Maximum discharge, 8,500 cfs Mar. 17, 1936 (gage height, 9.6 ft, site then in use), from rating curve extended above 2,000 cfs on basis of slope-area measurement of peak flow; minimum, 1.6 cfs Sept. 29 to Oct. 13, 1930.

Flood of Mar. 29, 1924, reached a stage of about 10 ft, from floodmarks, at site 95 ft downstream.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Records include about 0.5 cfs of sewage from city of Frostburg, which obtains its water supply from Big Piney Run (Monongahela River basin) and Savage River. A negligible discharge diverted above station by Frostburg Water Co. for municipal supplies of Eckhart and Welch Hill. An undetermined amount of water is diverted from the upper third of basin into the Wills Creek basin by the Hoffman drainage tunnel. Records include drainage from numerous active and abandoned coal mines.

Rating tables, water year, 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-3				Oct. 4 to Sept. 30			
3.1	6.4	3.07	4.9	3.5	34	4.5	260
3.2	11	3.2	11	3.7	58	5.0	475
		3.3	17	4.0	111	7.0	1,600

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	18	17	15	28	25	166	93	33	27	5.2	6.4
2	7.2	13	16	15	30	40	166	80	31	18	4.9	6.0
3	7.2	12	15	15	45	45	157	82	142	25	6.0	5.2
4	37	12	15	15	30	200	149	73	323	15	7.7	9.7
5	31	11	15	15	22	750	141	68	*212	13	6.0	10
6	14	11	23	15	27	786	123	68	163	12	6.0	12
7	12	9.7	12	18	36	462	111	*58	141	12	6.4	8.7
8	13	8.7	15	21	27	354	101	52	113	11	6.9	7.3
9	11	9.2	12	23	22	320	99	50	101	11	6.4	6.4
10	10	123	11	38	19	340	105	49	87	*9.7	5.6	6.4
11	9.2	90	10	139	40	340	*99	46	170	11	4.9	6.4
12	*8.7	60	10	410	40	610	91	44	101	10	4.9	5.6
13	8.2	40	10	390	28	860	84	44	82	9.7	20	6.0
14	7.7	28	10	215	25	760	78	46	70	25	*15	5.6
15	7.7	22	11	110	22	480	72	43	60	21	7.7	5.6
16	7.7	18	12	80	21	460	66	40	53	13	6.4	5.2
17	7.3	20	13	60	21	980	62	41	48	10	6.0	5.2
18	7.0	40	15	50	21	660	70	54	42	8.7	5.2	5.2
19	7.0	64	17	46	22	620	*68	43	37	8.2	7.4	4.9
20	7.0	58	43	60	21	1,400	58	36	36	9.2	13	4.9
21	7.0	52	26	56	20	780	54	49	41	11	9.7	4.9
22	7.0	80	31	48	20	500	58	58	32	8.7	7.3	4.9
23	7.0	74	34	38	20	310	113	46	27	8.2	6.4	5.6
24	7.0	60	22	30	20	240	87	42	24	7.7	6.0	5.2
25	7.0	50	19	46	20	280	78	41	21	7.3	6.0	5.2
26	7.2	40	17	40	20	350	77	42	19	7.3	5.6	5.2
27	7.2	31	16	36	20	340	73	38	18	10	*5.2	4.9
28	7.4	25	17	34	20	260	66	50	18	8.2	5.2	4.9
29	8.2	22	16	32	—	220	73	49	19	6.4	20	12
30	* 15	* 19	15	30	---	200	118	44	24	6.4	10	7.7
31	43	---	14	29	---	180	---	38	---	5.6	7.3	---
Total	350.5	1,120.6	529	2,169	707	14,152	2,863	1,607	2,288	366.3	240.3	193.2
Mean	11.3	37.4	17.1	70.0	25.2	457	95.4	51.8	76.3	11.8	7.75	6.44
Cfs/m	0.156	0.517	0.236	0.967	0.348	6.31	1.32	0.715	1.05	0.163	0.107	0.089
In.	0.18	0.58	0.27	1.11	0.36	7.27	1.47	0.83	1.18	0.19	0.12	0.10

Calendar year 1962: Max 1,240 Min 3.4 Mean 81.6 Cfs/m 1.13 In. 15.31
 Water year 1962-63: Max 1,400 Min 4.9 Mean 72.8 Cfs/m 1.01 In. 13.66

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-13	Unknown	6.42	1,250	3-20	Unknown	7.26	1,760
3-17	Unknown	6.42	1,250				

* Discharge measurement made on this day.
 Note.--Stage-discharge relation affected by ice Dec. 11, 24-30, Jan. 12. No gage-height record Oct. 9-11, 18-29, Nov. 11-30, Dec. 7-10, 12-17, Dec. 31 to Jan. 2, Jan. 14 to Mar. 5, Mar. 9-31 (stage-discharge relation affected by ice part of period).

1-6000. North Branch Potomac River at Pinto, Md.

Location.--Lat 39°33'59", long 78°50'25", on right bank at downstream side of Western Maryland Railway bridge at Pinto, Allegany County, 2.8 miles downstream from Mill Run.

Drainage area.--596 sq mi.

Records available.--October 1938 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 648.23 ft above mean sea level (Corps of Engineers bench mark). Prior to Dec. 10, 1938, wire-weight gage at highway bridge 250 ft downstream at same datum.

Average discharge.--25 years, 875 cfs (unadjusted).

Extremes.--Maximum discharge during year, 20,000 cfs Mar. 5 (gage height, 16.92 ft); minimum, 120 cfs Aug. 7 (gage height, 1.87 ft).

1938-63: Maximum discharge, 37,000 cfs Oct. 16, 1954 (gage height, 23.23 ft); minimum, 31 cfs Dec. 18, 19, 1943 (gage height, 1.37 ft), result of freezeup. Flood of Mar. 29, 1924, reached a stage of about 24 ft (discharge, about 55,000 cfs). Flood of Mar. 17, 1936, reached a stage of about 23.5 ft, from floodmarks (discharge, about 50,000 cfs).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Some regulation at low flow by Stony River Reservoir, 66 miles above station (see p. 62), and since December 1950, by Savage River Reservoir (see p. 65).

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 4-13)

Oct. 1 to July 23				July 24 to Sept. 30	
1.8	118	4.0	1,220	1.8	103
2.0	175	6.0	3,050	2.0	155
2.5	361	10.0	8,400	2.5	326
3.0	601	14.0	14,700	3.0	558

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	* 782	344	b 240	348	232	1,140	842	379	465	a135	234
2	160	461	311	b 300	283	291	1,140	752	336	336	a130	198
3	145	353	287	b 400	379	998	1,020	689	423	914	a140	182
4	* 175	299	268	b 450	544	1,320	932	639	3,230	979	a150	179
5	405	a 290	264	b 390	405	14,700	836	580	* 2,420	489	a310	355
6	410	a 270	299	287	387	11,600	694	* 544	1,700	332	*182	538
7	264	a 260	299	327	465	7,830	655	499	1,350	253	133	444
8	214	a 250	204	539	504	4,900	612	461	1,170	204	147	326
9	204	242	246	524	401	3,290	* 655	428	950	178	155	255
10	210	2,040	264	623	332	2,500	758	405	884	* 154	147	217
11	201	2,660	b 210	1,000	370	2,370	623	379	3,150	160	133	* 195
12	185	1,590	b 190	4,590	480	5,080	554	446	2,320	169	126	182
13	169	1,010	b 150	5,750	878	8,020	514	401	1,500	154	182	173
14	160	812	b 170	3,530	860	8,640	489	461	1,140	169	248	176
15	154	672	b 190	a 3,000	1,060	5,640	461	1,470	950	238	280	179
16	154	596	b 200	1,820	a 800	3,930	433	830	782	242	164	167
17	191	565	b 240	884	a 500	5,740	419	661	655	160	150	158
18	185	677	514	776	a 400	5,520	485	1,180	559	140	144	152
19	157	1,550	485	711	437	7,410	872	1,100	470	148	136	144
20	145	1,020	798	683	370	14,600	666	824	414	142	195	142
21	142	896	782	1,040	370	7,960	565	758	423	145	*18	142
22	140	1,630	499	655	a 300	5,180	514	1,090	480	175	237	142
23	140	1,870	932	b 660	a 270	3,490	1,110	890	357	244	227	* 136
24	142	1,390	639	b 320	a 260	2,810	1,470	729	287	265	195	139
25	145	735	494	b 230	a 260	2,290	1,040	617	238	188	173	136
26	145	606	504	299	a 260	2,100	896	580	204	152	167	131
27	142	509	705	344	204	2,200	794	529	214	139	158	128
28	148	554	666	a 360	191	1,910	711	509	175	131	152	133
29	148	926	623	a 300	-	1,580	639	534	166	133	230	164
30	283	768	456	a 310	-	1,390	842	489	224	139	548	188
31	991	-	b 350	a 360	-	1,280	-	442	-	142	343	-
Total	5,642	25,283	12,583	31,702	12,318	147,801	22,539	20,758	27,550	7,879	6,135	6,035
Mean	214	876	406	1,023	440	4,768	751	670	918	254	198	201

Calendar year 1962: Max 10,800 Min 106 Mean 926 Cfsm 1.55 In. 21.09
Water year 1962-63 Max 14,700 Min 126 Mean 899 Cfsm 1.51 In. 20.48

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

69

1-6010. Wills Creek below Hyndman, Pa.

Location.--Lat 39°48'43", long 78°43'00", on left bank 150 ft upstream from county highway bridge, 150 ft downstream from Pennsylvania Railroad bridge, 0.35 mile downstream from Little Wills Creek, and half a mile south of Hyndman, Bedford County.

Drainage area.--146 sq mi.

Records available.--June 1951 to September 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 891.37 ft above mean sea level (Pennsylvania Railroad bench mark).

Average discharge.--12 years, 190 cfs.

Extremes.--Maximum discharge during year, 4,070 cfs Mar. 5 (gage height, 6.74 ft); minimum, 1.7 cfs Sept. 24, 26-28, (gage height, 1.39 ft).
1951-63: Maximum discharge, 11,600 cfs Oct. 15, 1954 (gage height, 11.02 ft), from rating curve extended above 6,000 cfs by logarithmic plotting; minimum, 0.8 cfs Sept. 9, 1957 (gage height, 1.16 ft).

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	1.0	1.9	20	4.0	955
1.4	1.8	2.0	30	5.0	1,900
1.5	3.1	2.2	59	6.0	3,070
1.6	5.3	2.5	125		
1.7	8.6	3.0	320		
1.8	14	3.5	600		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	18	57	67	50	70	62	325	140	43	59	4.3	3.6
2	15	42	61	54	64	82	307	131	42	42	3.6	3.0
3	13	36	56	58	58	160	293	125	63	46	3.9	4.7
4	*39	56	53	56	62	960	275	123	*176	33	6.6	54
5	78	40	51	52	82	3,000	235	120	159	26	8.7	27
6	48	39	*65	52	94	2,600	210	118	155	22	4.8	17
7	39	33	43	54	94	*1,700	194	105	162	20	4.8	12
8	43	30	57	56	86	652	173	100	187	*20	*6.5	8.5
9	48	30	59	66	68	523	180	96	176	16	6.5	6.3
10	40	420	49	96	70	665	149	93	169	14	4.2	4.7
11	34	325	38	693	70	613	131	87	600	14	3.1	3.8
12	29	198	32	1,390	70	1,140	120	80	542	15	2.8	3.3
13	26	140	29	1,310	60	1,760	108	74	375	14	3.1	*3.1
14	23	105	36	700	60	1,620	103	72	275	20	3.8	2.9
15	21	82	43	448	54	978	96	67	198	39	4.7	2.8
16	19	70	48	316	50	749	89	61	152	23	3.7	2.8
17	17	70	43	253	46	1,450	93	61	123	16	2.9	2.7
18	16	110	43	206	94	1,420	108	87	100	13	2.4	2.5
19	14	146	42	173	112	1,180	96	70	82	11	2.6	2.4
20	13	146	58	190	120	2,540	89	59	76	9.9	8.2	2.2
21	13	146	70	176	110	1,420	82	59	89	11	17	2.1
22	13	218	72	149	76	835	80	67	65	12	10	2.0
23	13	198	90	155	64	587	*131	57	53	9.9	6.1	1.8
24	13	180	86	90	64	493	131	51	46	9.6	4.4	*1.8
25	13	149	76	96	68	499	134	49	39	7.2	3.6	1.8
26	*13	125	68	125	66	*561	131	51	35	5.9	3.1	1.8
27	12	105	62	140	64	594	128	49	33	5.7	2.9	1.7
28	11	93	66	100	60	505	123	63	31	7.0	2.6	1.8
29	13	82	58	58	-	420	118	67	39	7.8	3.1	4.8
30	19	74	54	68	-----	370	149	57	67	6.3	4.2	14
31	96	-----	46	76	-----	320	-----	49	-----	5.0	4.8	-----
TOTAL	822	3,525	1,721	7,506	2,056	30,458	4,581	2,488	4,352	559.3	153.0	202.9
MEAN	26.5	118	55.5	242	73.4	983	153	80.3	145	18.0	4.94	6.76
CFSM	.182	.808	.380	1.66	.503	6.73	1.05	.550	.993	.123	.034	.046
IN	.21	.90	.44	1.91	.52	7.76	1.17	.63	1.11	.14	.04	.05

CALENDAR YEAR 1962 MAX 3,040 MIN 1.8 MEAN 185 CFSM 1.27 INCHES 17.17
WATER YEAR 1962-63 MAX 3,000 MIN 1.7 MEAN 160 CFSM 1.10 INCHES 14.88

Peak discharge (base, 2,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	Unknown	6.74	4,070	3-20	0230	5.95	3,000
3-13	1830	5.63	2,620				

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 11 to Jan. 9. No gage-height record Jan. 24 to Mar. 7.

POTOMAC RIVER BASIN

1-6015. Wills Creek near Cumberland, Md.

Location.--Lat 39°40'07", long 78°47'18", on right bank at downstream side of Western Maryland Railway bridge, 2 miles upstream from Cumberland, Allegany County, and mouth.

Drainage area.--247 sq mi.

Records available.--May 1905 to July 1906 (published as "at Cumberland"), October 1929 to September 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 640.89 ft above mean sea level (Corps of Engineers bench mark). May 6, 1905, to July 14, 1906, chain gage at highway bridge 700 ft upstream at different datum. Oct. 18, 1929, to Mar. 17, 1936, water-stage recorder, and Apr. 1, 1936, to Mar. 19, 1937, tape gage, at site 200 ft upstream at present datum.

Average discharge.--34 years (1929-63), 315 cfs.

Extremes.--Maximum discharge during year, 6,100 cfs Mar. 5 (gage height 7.90 ft); minimum, 12 cfs Sept. 23, 24, 30.

1905-6, 1929-63: Maximum discharge, 38,100 cfs Mar. 17, 1936 (gage height, 20.2 ft, from floodmarks at present site), from rating curve extended above 6,500 cfs on basis of slope-area measurements at gage heights 13.45 and 20.2 ft; minimum, 9 cfs Oct. 14, 1930.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Records include drainage from numerous active and abandoned coal mines. An undetermined amount of water is diverted into basin from Georges Creek basin by Hoffman drainage tunnel. Slight diurnal fluctuation at low flow caused by quarry upstream.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 9	Nov. 10 to Aug. 11	Aug. 12 to Sept. 30
1.6 27	1.4 22	3.0 305
1.8 42	1.6 37	4.0 830
2.0 64	1.8 54	5.0 1,710
2.5 151	2.0 73	6.0 2,960
	2.5 130	8.0 6,290
		1.36 14
		1.4 16
		1.6 27
		1.8 42
		2.0 64

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	39	104	103	76	120	100	515	258	88	117	31	23
2	36	77	99	84	110	120	500	234	84	92	31	22
3	33	67	91	90	100	160	460	221	128	96	30	19
4	* 77	68	89	89	106	600	431	215	293	81	30	31
5	134	65	91	81	140	5,100	381	212	251	66	26	60
6	88	68	* 105	82	160	4,500	345	* 203	241	63	29	41
7	70	62	93	84	160	2,900	321	190	234	62	28	35
8	83	58	82	89	145	1,100	289	179	281	56	28	30
9	83	57	94	96	120	900	309	169	251	55	26	25
10	70	618	73	121	120	1,120	265	163	237	52	28	24
11	60	490	64	445	120	1,060	234	153	723	* 52	24	22
12	54	293	56	1,860	120	1,900	212	141	711	52	19	21
13	50	209	50	1,930	102	3,000	195	128	505	52	23	21
14	46	163	60	1,070	100	2,800	184	190	372	71	25	22
15	40	132	70	681	92	1,710	169	121	285	76	22	21
16	40	117	82	520	84	1,290	163	116	221	65	21	17
17	37	119	74	430	80	2,400	167	116	179	57	22	18
18	36	192	75	350	140	2,350	187	138	156	50	20	17
19	36	258	74	300	180	2,000	174	126	* 132	48	* 21	17
20	35	218	93	320	190	4,200	160	106	123	49	* 26	16
21	34	212	109	300	180	2,400	151	116	136	49	27	17
22	31	329	111	250	130	1,400	145	125	114	43	27	17
23	32	281	147	260	110	940	244	109	99	43	24	* 15
24	32	258	128	155	110	840	237	99	87	42	27	14
25	34	215	111	160	112	840	* 230	96	81	39	25	14
26	34	179	105	210	110	940	224	97	76	37	23	14
27	33	151	92	240	106	1,000	221	92	72	41	21	14
28	33	134	103	170	102	* 765	209	109	75	36	20	15
29	30	121	93	100	-	651	206	117	81	31	23	23
30	46	112	78	115	-----	574	277	108	125	35	23	17
31	138	-----	70	125	-----	510	-----	92	-----	32	25	-----
TOTAL	1,624	5,427	2,765	10,883	3,449	50,170	7,805	4,479	6,441	1,740	775	662
MEAN	52.4	181	89.2	351	123	1,618	260	144	215	56.1	25.0	22.1
CFSM	.212	.733	.361	1.42	.498	6.55	1.05	.583	.870	.227	.101	.090
IN	.24	.82	.42	1.64	.52	7.55	1.18	.67	.97	.26	.12	.10

CALENDAR YEAR 1962 MAX 5,000 MIN 26 MEAN 295
 WATER YEAR 1962-63 MAX 5,100 MIN 14 MEAN 264 CFSM 1.19 INCHES 16.22
 CFSM 1.07 INCHES 14.49

Peak discharge (base, 3,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3- 5	Unknown	7.90	6,100	3-20	Unknown	Unknown	Unknown
3-13	Unknown	Unknown	Unknown				

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 11-15, Dec. 30 to Jan. 3. No gage-height record Jan. 16 to Mar. 14, Mar. 17-27.

1-6030. North Branch Potomac River near Cumberland, Md.

Location.--Lat 39°37'16", long 78°46'24", on left bank at downstream side of Wiley Ford Bridge, 2 miles south of Cumberland, Allegany County, and 2.1 miles downstream from Wills Creek.

Drainage area.--875 sq mi.

Records available.--May 1929 to September 1963. Gage-height records collected at various sites about 2 miles upstream from September 1901 to December 1932, and thereafter at present site, are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 585.22 ft above mean sea level (Corps of Engineers bench mark). Prior to June 18, 1929, chain gage at same site and datum.

Average discharge.--34 years, 1,220 cfs (unadjusted).

Extremes.--Maximum discharge during year, 23,500 cfs Mar. 5 (gage height, 17.96 ft); minimum, 30 cfs Aug. 28, occurred during period of temporary regulation caused by construction work above station; minimum daily, 147 cfs Aug. 12, Sept. 27.

1929-63: Maximum discharge, 88,200 cfs Mar. 17, 1936 (gage height, 29.1 ft), from rating curve extended above 21,000 cfs on basis of slope-area measurement of peak flow; minimum (river only), 12 cfs Sept. 22, 1932 (gage height, 2.38 ft); minimum daily (including flow in canal), 38 cfs Sept. 24, 1932.

Maximum stage known, 29.2 ft June 1, 1889 (discharge, about 89,000 cfs). Flood of Mar. 29, 1924, reached a stage of 28.4 ft (discharge, about 82,000 cfs).

Remarks.--Records good. Regulation by Stony River Reservoir, about 79 miles above station (see p. 62), and since December 1950, by Savage River Reservoir (see p. 65). Prior to July 1957, small amount of inflow from industrial wastes and sewage from City of Cumberland from water diverted from Evitts Creek, mouth of which is below station. Diversion to Chesapeake and Ohio Canal prior to 1935.

Rating table, water year 1962-63 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-31, Nov. 2-10, Dec. 1-17, Aug. 20 to Sept. 30)

2.2	129	6.0	4,320
2.6	334	9.0	8,520
3.0	605	12.0	13,100
4.0	1,580	16.0	20,000

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	257	*1,070	495	317	467	334	1,680	1,120	488	545	166	289
2	220	560	415	396	428	365	1,630	1,030	441	474	157	236
3	195	434	384	509	447	977	1,510	959	516	650	166	180
4	*267	390	359	545	661	1,580	1,370	905	3,290	1,210	175	257
5	474	359	359	488	575	17,300	1,230	851	3,020	605	289	377
6	530	353	396	402	516	15,400	1,050	806	2,030	422	278	545
7	353	346	402	415	582	11,200	986	736	1,640	328	185	509
8	328	317	317	629	677	6,870	*923	677	1,480	273	157	377
9	300	306	312	661	560	5,080	959	629	1,230	236	185	295
10	284	2,120	346	710	467	3,730	1,030	598	1,130	*205	180	252
11	278	3,620	273	1,260	495	3,770	887	560	3,580	195	161	*225
12	246	2,260	252	5,370	598	6,490	806	582	*3,650	215	147	210
13	230	1,400	200	3,440	950	10,700	744	*568	2,140	205	195	200
14	210	1,040	225	5,520	977	12,100	702	545	1,560	246	267	195
15	200	860	252	4,250	1,140	8,040	661	1,440	1,250	295	334	205
16	190	736	267	3,450	995	5,970	621	995	1,010	328	215	200
17	200	702	312	1,460	552	7,540	621	815	851	241	170	180
18	230	842	530	1,140	434	9,280	669	1,100	736	190	166	180
19	210	1,860	590	1,020	629	9,600	986	1,310	621	190	166	175
20	185	1,370	753	977	575	12,700	869	959	545	190	205	170
21	180	1,150	1,030	1,370	575	11,500	744	878	545	185	*312	161
22	180	1,920	621	923	422	7,550	677	1,160	590	185	289	161
23	175	2,360	1,090	914	384	5,150	1,060	1,030	474	246	246	*157
24	180	1,770	869	530	371	4,210	1,820	860	390	365	241	157
25	185	1,070	645	360	377	3,260	1,310	736	328	246	210	157
26	190	806	598	502	365	3,090	1,130	694	289	205	195	152
27	180	669	770	605	323	3,260	1,020	653	*278	200	185	147
28	180	621	797	502	306	2,850	950	637	289	166	180	152
29	180	*1,030	753	415	—	2,350	*860	*677	262	161	200	215
30	246	977	582	428	—	2,000	1,050	629	306	170	509	220
31	986	—	441	495	—	1,820	—	552	—	175	441	—
Total	9,249	33,318	15,635	45,003	15,848	203,066	30,555	25,691	34,959	9,547	6,972	6,936
Mean	266	1,111	504	1,452	566	6,551	1,018	829	1,165	308	225	231

Calendar year 1962: Max 17,200 Min 148 Mean 1,307 Cfsm 1.49 In. 20.28
Water year 1963: Max 19,700 Min 147 Mean 1,194 Cfsm 1.36 In. 18.52

Peak discharge (base, 10,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	1600	17.96	23,500	3-18	0400	10.38	10,600
3-14	0700	12.45	13,900	3-20	0830	17.42	22,600

POTOMAC RIVER BASIN

1-6035. Evitts Creek near Centerville, Pa.

Location.--Lat 39°47'23", long 78°38'48", on left bank 2 miles upstream from Thomas W. Koon Dam, 3 miles south of Centerville, Bedford County, and 7 miles upstream from Rock Gully Creek.

Drainage area.--30.2 sq mi.

Records available.--September 1932 to September 1963. Prior to October 1952, published as "near Bedford Valley".

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 1,027.59 ft above mean sea level (city of Cumberland bench mark).

Average discharge.--31 years, 30.5 cfs.

Extremes.--Maximum discharge during year, 871 cfs Mar. 4 (gage height, 3.39 ft); minimum, 1.8 cfs Sept. 20, 23-29 (gage height, 0.99 ft).

1932-63: Maximum discharge, 5,240 cfs Mar. 17, 1936 (gage height, 7.13 ft), from rating curve extended above 400 cfs on basis of slope-area measurements at gage heights 4.64 and 7.13 ft; minimum, 0.7 cfs Dec. 17, 1958 (gage height, 0.79 ft), result of freezeup.

Maximum stage known, about 8 ft, from floodmark, date unknown.

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

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to Mar. 4

Mar. 5 to Sept. 30

1.0	2.1	1.4	11	2.0	85	1.0	1.8	1.4	11
1.1	3.1	1.5	16	2.2	137	1.1	2.9	Note.--Same as preceeding table above 1.4 ft.	
1.2	4.9	1.6	24	2.5	245	1.2	4.6		
1.3	7.4	1.8	48	2.9	470	1.3	7.2		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.1	6.3	a 9.4	b 8.4	b 9.0	13	54	19	7.5	7.2	2.9	2.1
2	2.9	4.4	a 8.6	b 12	b 10	14	49	17	7.2	19	2.6	2.0
3	2.9	4.1	a 8.2	12	b 11	21	45	15	14	15	2.9	2.5
4	* 14	4.9	a 7.4	11	b 7.8	b 112	41	15	* 32	6.9	3.8	7.8
5	13	4.9	a 7.0	9.8	11	358	37	15	21	5.5	2.7	4.6
6	5.5	4.6	*a 10	9.6	16	449	35	15	21	5.0	2.4	3.9
7	4.1	4.0	a 7.0	9.0	18	183	34	14	22	4.8	2.9	2.9
8	5.8	3.9	a 8.0	8.9	b 12	115	32	14	22	* 4.6	3.2	2.6
9	5.6	3.9	a 8.2	9.0	b 9.2	90	35	13	19	4.0	* 2.7	2.4
10	4.9	71	a 7.0	11	11	97	31	14	19	3.9	2.4	2.2
11	4.2	18	a 5.6	38	11	77	27	13	77	3.9	2.2	2.1
12	3.7	11	b 4.7	141	11	225	25	12	41	3.7	2.2	2.2
13	3.5	9.3	b 4.3	140	9.8	191	24	11	35	3.6	2.7	* 2.1
14	3.3	7.8	b 6.3	b 62	10	169	22	12	30	6.5	2.7	2.0
15	3.3	a 7.0	b 6.8	b 42	8.3	123	22	11	25	6.3	2.4	2.0
16	a 3.2	a 6.6	8.1	b 35	b 6.6	102	20	10	21	4.4	2.2	2.0
17	a 3.2	a 6.4	7.5	b 32	b 6.0	143	21	11	18	3.8	2.1	2.0
18	a 3.2	a 12	7.0	*b 29	b 16	112	22	17	16	3.4	2.0	1.9
19	a 3.1	a 30	6.6	26	23	150	20	13	14	3.3	2.5	1.9
20	a 3.1	a 27	11	31	22	340	19	11	14	3.2	5.0	1.8
21	a 3.1	a 25	7.3	b 28	24	176	17	12	17	3.9	3.7	1.9
22	a 3.1	a 35	9.4	b 25	15	129	17	13	12	3.4	2.7	1.9
23	a 3.0	a 31	9.0	19	12	99	* 25	10	9.7	3.3	2.4	1.8
24	a 3.0	a 26	7.7	b 12	12	83	21	8.9	8.9	3.3	2.3	* 1.8
25	a 3.0	a 22	7.1	b 14	11	71	17	8.9	7.8	2.9	2.3	1.8
26	*a 3.1	a 18	7.1	b 17	b 9.2	* 71	17	9.3	7.2	2.7	2.1	1.8
27	3.0	a 16	6.5	b 17	b 10	75	16	8.6	6.6	3.1	2.1	1.8
28	3.1	a 14	6.9	b 12	13	61	15	11	6.6	5.3	2.0	1.8
29	3.1	a 12	6.7	b 7.8	-	54	15	12	7.2	7.6	2.4	3.1
30	4.9	a 10	6.4	b 9.2	-----	51	20	9.7	9.3	4.3	2.7	2.8
31	13	-----	6.5	b 11	-----	48	-----	8.2	-----	* 3.1	2.4	-----
TOTAL	141.0	456.1	229.3	848.7	344.9	4,002	795	383.6	568.0	160.9	81.6	73.5
MEAN	4.55	15.2	7.40	27.4	12.3	129	26.5	12.4	18.9	5.19	2.63	2.45
CFSM	.151	.503	.245	.907	.407	4.27	.878	.411	.626	.172	.087	.081
IN	.17	.56	.28	1.05	.42	4.93	.98	.47	.70	.20	.10	.09

CALENDAR YEAR 1962	MAX 596	MIN 2.5	MEAN 28.9	CFSM .957	INCHES 12.98
WATER YEAR 1962-63	MAX 449	MIN 1.8	MEAN 22.2	CFSM .735	INCHES 9.96

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-4	2400	3.39	871	3-20	0745	2.92	484
3-12	1715	2.89	463				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

1-6100. Potomac River at Paw Paw, W. Va.

Location.--Lat 39°32'13", long 78°27'28", on left bank 250 ft upstream from bridge on Maryland State Highway 51 at Paw Paw, Morgan County, and 3.3 miles downstream from Little Cacapon River.

Drainage area.--3,109 sq mi.

Records available.--October 1938 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 487.88 ft above mean sea level (Corps of Engineers bench mark). Prior to Mar. 25, 1959, wire-weight gage at bridge 250 ft downstream at same datum.

Average discharge.--25 years, 3,120 cfs.

Extremes.--Maximum discharge during year, 75,000 cfs Mar. 20 (gage height, 31.48 ft); minimum, 264 cfs Sept. 27, 28 (gage height, 3.13 ft).

1938-63: Maximum discharge, 111,000 cfs Oct. 16, 1942 (gage height, 38.36 ft); minimum, 189 cfs Sept. 28, 29, 1959.

Maximum stage known, 54.0 ft Mar. 18, 1936 (discharge, 240,000 cfs, from rating curve extended above 85,000 cfs on basis of slope-area measurement of peak flow at site 5 miles upstream at Okonoko, W. Va.).

Remarks.--Records excellent except those for the periods of no gage-height record, which are good, and those for periods of ice effect, which are fair. Low flow affected by Stony River Reservoir (see p. 62) and, since December 1950, by Savage River Reservoir (see p. 65).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.1	250	8.0	4,850
3.5	440	10.0	7,870
4.0	735	15.0	18,700
5.0	1,490	20.0	33,100
6.0	2,440	27.0	57,500

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	506	1,570	1,630	b 1,020	b 1,140	1,040	4,430	2,560	1,050	1,070	395	574
2	462	1,260	1,240	b 1,040	b 1,140	1,180	4,240	2,450	947	1,220	395	441
3	420	1,020	1,140	1,300	b 1,140	2,970	3,880	2,240	940	1,010	375	400
4	420	863	1,060	1,490	b 1,500	5,410	3,530	2,090	3,950	1,870	375	380
5	658	735	1,020	1,420	b 1,400	29,900	3,160	1,960	6,220	1,650	365	473
6	940	722	1,080	1,260	b 1,300	44,900	2,830	1,860	4,400	1,140	490	742
7	863	696	1,160	1,230	b 1,250	36,500	2,620	1,760	3,560	898	500	891
8	735	683	1,160	1,220	1,410	18,200	*2,460	1,650	3,100	735	473	742
9	a 740	634	1,010	1,440	1,360	12,200	2,460	1,540	2,720	616	415	616
10	a 680	1,430	975	1,550	1,280	8,790	2,510	1,450	2,480	556	400	539
11	a 640	3,550	787	2,340	1,170	8,460	2,340	1,370	3,140	* 512	380	468
12	a 600	6,480	690	10,700	1,200	12,600	2,090	1,260	6,910	484	340	425
13	a 540	3,910	b 560	20,300	1,360	32,700	1,910	1,300	4,410	490	345	390
14	a 500	2,770	b 640	14,100	1,680	36,000	1,790	1,220	3,230	473	* 400	360
15	*446	2,180	b 720	8,860	1,650	21,300	1,660	1,670	2,570	544	435	345
16	430	1,800	b 820	7,280	1,530	14,200	1,580	2,100	2,140	574	490	345
17	430	1,600	870	4,390	1,240	14,200	1,510	1,690	1,760	586	365	340
18	430	1,650	905	3,500	940	20,800	1,560	1,620	1,530	506	318	336
19	484	3,770	1,200	3,040	1,180	17,700	1,710	2,500	1,330	446	313	326
20	441	4,930	1,140	2,760	1,360	57,500	2,000	2,240	1,170	425	336	313
21	420	3,600	1,550	2,800	b 1,300	45,100	1,700	1,900	1,100	415	415	300
22	400	3,470	1,580	2,650	b 1,200	20,000	1,560	1,940	1,220	390	506	295
23	390	5,070	1,650	2,270	b 1,040	12,900	1,910	2,140	1,090	415	435	282
24	385	4,790	1,960	b 1,800	b 1,040	9,900	3,690	1,760	926	495	490	277
25	380	3,650	1,750	b 1,060	b 1,060	7,960	3,450	1,530	794	550	562	272
26	390	2,640	1,510	b 1,140	b 1,000	7,360	2,940	1,380	690	495	484	272
27	385	2,180	1,440	b 1,300	b 960	7,440	2,590	1,300	634	506	420	268
28	380	1,870	1,670	b 1,200	b 900	7,180	2,340	1,240	604	473	390	264
29	385	1,850	1,570	b 1,080	—	6,090	2,140	1,240	652	440	375	308
30	390	1,940	1,490	b 1,100	—	5,350	2,240	1,260	664	420	495	375
31	670	—	1,100	b 1,140	—	4,820	—	1,160	—	420	780	—
Total	15,940	78,313	37,077	107,780	34,730	530,650	74,830	53,380	65,931	20,824	13,257	12,359
Mean	514	2,610	1,196	3,477	1,240	17,120	2,494	1,722	2,198	672	428	412

Calendar year 1962: Max 54,800 Min 277 Mean 3,300 Cfsm 1.06 In. 14.41
 Water year 1962-63: Max 57,500 Min 264 Mean 2,863 Cfsm 0.921 In. 12.50

Peak discharge (base, 20,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-13	1400	16.03	21,400	3-18	0800	16.42	22,500
3-6	0330	24.51	48,300	3-20	2200	31.48	75,000
3-14	1000	21.79	38,900				

* Discharge measurement made on this day.
 a No gage-height record.
 b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

1-6125. Little Tonoloway Creek near Hancock, Md.

Location.--Lat 39°42'45", long 78°13'55", on right bank at downstream side of highway bridge, 100 ft downstream from unnamed tributary and 2.8 miles northwest of Hancock, Washington County.

Drainage area.--16.9 sq mi.

Records available.--August 1947 to September 1963 (discontinued). Prior to October 1951, published as Tonoloway Creek near Hancock.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 457.51 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 15.3 cfs.

Extremes.--Maximum discharge during year, 389 cfs Mar. 20 (gage height, 3.94 ft); no flow many days during October, July, August, and September.

1947-63: Maximum discharge, 1,470 cfs Oct. 15, 1954 (gage height, 7.10 ft), from rating curve extended above 440 cfs on basis of slope-area measurement of peak flow; no flow at times.

Remarks.--Records fair except those for periods of ice effect and those for July, August, and September, which are poor. Occasional small diversions for irrigation of peach orchards above station.

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	1.1	2.6	6.2	2.6	5.5	14	10	1.3	0.2	0	0
2	0	.7	2.3	7.2	2.6	6.1	15	8.5	1.1	.5	0	1.0
3	* 0	.7	1.8	5.4	3.2	15	12	3.0	4.2	2.3	0	.1
4	1.7	1.2	1.6	3.6	2.4	72	10	7.5	5.6	.4	0	0
5	1.3	1.1	1.6	3.6	2.7	230	8.9	7.3	* 3.9	.2	0	.2
6	.7	.8	13	4.6	3.3	* 276	8.9	6.9	2.9	.1	0	.1
7	.4	.6	13	5.3	6.0	123	8.7	6.2	12	0	0	.1
8	.8	.6	9.9	6.2	4.4	* 83	6.0	5.6	11	0	0	0
9	.6	1.1	9.3	8.5	3.7	67	8.8	5.2	6.6	* 0	0	0
10	.4	6.9	6.2	15	4.0	64	7.3	4.6	5.0	.1	0	0
11	.3	17	4.0	30	4.2	54	6.5	4.0	13	.3	0	0
12	.3	8.3	2.6	86	4.2	80	5.9	3.5	* 8.1	0	0	0
13	.2	4.8	2.0	81	4.0	111	5.5	3.4	5.8	0	0	0
14	.2	3.3	2.0	48	3.6	116	5.2	3.5	4.2	.3	* 0	.2
15	.1	2.3	2.0	30	3.0	72	* 4.8	3.5	3.2	.2	0	0
16	.1	2.0	2.3	22	2.0	57	4.4	3.0	2.3	.1	0	0
17	.1	2.6	2.6	18	2.0	92	4.8	3.6	1.8	0	0	0
18	.1	15	3.0	14	3.5	80	5.4	6.0	1.4	0	0	.2
19	.1	20	3.6	13	6.0	90	4.7	3.6	1.0	0	0	* .1
20	.1	13	4.7	15	11	251	4.4	2.9	.9	0	0	.3
21	.1	10	4.0	11	14	101	3.9	3.1	2.6	0	0	.3
22	.1	17	4.8	6.4	10	* 59	3.7	3.4	1.2	* 0	0	1.2
23	.1	13	4.0	5.4	6.0	41	14	2.6	.7	0	0	* 1.2
24	.1	10	3.6	3.3	5.6	31	11	2.2	* .4	0	0	.1
25	.3	7.3	3.6	3.8	5.2	25	9.3	2.0	.3	0	0	0
26	* .5	* 5.8	3.6	4.6	4.0	25	8.7	2.0	.2	0	0	1.6
27	.2	4.8	3.0	4.6	4.0	26	8.1	2.0	.2	0	.1	.4
28	.1	4.0	3.3	3.5	5.4	20	7.4	2.2	.1	0	1.5	0
29	.1	3.3	3.0	2.4	-	* 16	7.6	2.6	.4	0	.9	.3
30	.5	3.0	3.3	2.8	-----	14	* 12	2.4	.2	0	* 0	* .1
31	2.4	-----	4.8	3.2	-----	12	-----	1.8	-----	0	0	-----
TOTAL	12.1	243.4	131.1	473.6	132.8	2,320.6	236.9	133.6	101.6	5.0	2.5	7.5
MEAN	.39	8.11	4.23	15.3	4.74	74.9	7.90	4.31	3.39	.16	.08	.25
CFSM	.023	.480	.250	.905	.281	4.43	.468	.255	.201	.0095	.0048	.015
IN	.03	.54	.29	1.04	.29	5.11	.52	.29	.22	.01	.01	.02

CALENDAR YEAR 1962 MAX 241 MIN 0 MEAN 12.9 CFSM .763 INCHES 10.40
 WATER YEAR 1962-63 MAX 276 MIN 0 MEAN 10.4 CFSM .615 INCHES 8.37

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-6	0700	3.86	370	3-20	0215	3.94	389

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

Note.--Stage-discharge relation affected by ice Dec. 10-18, Dec. 22 to Jan. 5, Jan. 15-18, Jan. 22 to Feb. 28, Mar. 3-6; no gage-height record Feb. 23-25.

1-6130. Potomac River at Hancock, Md.

Location.--Lat 39°41'49", long 78°10'39", on left bank 0.2 mile downstream from Little Tonoloway Creek, half a mile downstream from bridge on U. S. Highway 522 at Hancock, Washington County, and 1.1 miles upstream from Tonoloway Creek (formerly called Great or Big Tonoloway Creek).

Drainage area.--4,073 sq mi.

Records available.--October 1932 to September 1963. Gage-height records collected at same site since June 1925 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 383.46 ft above mean sea level, adjustment of 1912. Oct. 1, 1932, to Aug. 27, 1934, chain gage, and Aug. 28, 1934, to Jan. 5, 1935, Mar. 18, 1936, to Jan. 20, 1937, wire-weight gage, on former highway bridge just upstream at same datum. Jan. 6, 1935, to Mar. 18, 1936, water-stage recorder at present site and datum.

Average discharge.--31 years, 3,999 cfs.

Extremes.--Maximum discharge during year, 81,800 cfs Mar. 21 (gage height, 26.24 ft); minimum, 300 cfs Sept. 25, 26, 28 (gage height 2.32 ft).

1932-63: Maximum discharge, 340,000 cfs Mar. 18, 1936 (gage height, 47.6 ft), from rating curve extended above 120,000 cfs on basis of slope-area measurement of peak flow; minimum observed, 180 cfs Oct. 4, 1932 (gage height, 2.01 ft).

Maximum stage known prior to 1932, about 40 ft in May 1889 (discharge, about 220,000 cfs).

Remarks.--Records good except those for the periods of ice effect, which are fair. Slight regulation at low flow from power plants upstream. Low flow affected slightly by Stony River Reservoir (see p. 62) and since December 1950 by Savage River Reservoir (see p. 65).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.3	290	4.0	1,830	10.0	13,500
2.5	395	5.0	3,130	15.0	29,300
3.0	790	6.0	4,800	24.0	69,300

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	650	780	2,120	1,300	1,400	1,160	5,540	2,740	1,340	830	483	810
2	565	1,730	1,720	1,300	1,400	1,300	5,270	2,940	1,190	1,350	449	650
3	* 533	1,350	1,440	1,600	1,400	2,200	4,980	2,740	1,180	1,470	449	541
4	525	1,130	1,350	1,800	1,400	5,850	4,490	2,560	1,980	1,240	449	469
5	549	980	1,260	1,750	1,700	27,300	4,050	2,400	* 3,860	2,200	431	469
6	742	870	1,340	1,550	1,600	56,600	3,650	2,240	7,450	1,660	401	525
7	1,050	810	1,400	1,500	1,550	50,800	3,330	2,160	5,520	1,240	469	771
8	1,000	771	1,470	1,500	1,500	27,300	3,110	2,040	4,620	1,040	557	940
9	880	790	1,410	1,700	1,650	15,900	3,010	1,910	3,910	* 870	525	820
10	780	1,620	1,240	1,900	1,550	12,200	3,020	1,810	3,300	695	455	695
11	695	5,730	1,140	2,150	1,450	10,900	2,950	1,700	3,330	659	425	605
12	686	5,530	714	5,600	1,450	11,400	2,670	1,590	6,560	581	419	541
13	677	5,290	680	23,200	1,500	31,800	2,430	1,490	6,270	549	413	483
14	605	3,600	860	19,300	1,750	44,400	2,250	1,520	4,420	549	* 407	443
15	557	2,730	940	12,000	2,000	30,600	* 2,120	1,430	3,380	589	431	407
16	525	2,200	1,040	9,020	1,800	19,000	2,010	2,300	2,740	605	483	413
17	490	1,930	1,100	6,440	1,600	15,200	1,920	2,140	2,290	641	525	395
18	483	1,810	1,150	4,620	1,250	23,500	1,910	1,900	1,950	668	431	390
19	483	2,670	1,200	3,980	1,200	21,100	1,950	2,040	1,720	581	373	373
20	533	5,830	1,400	3,540	1,400	50,000	2,190	2,800	1,520	511	395	368
21	518	4,910	1,800	3,220	1,700	68,800	2,200	2,380	1,360	469	401	362
22	469	3,900	1,900	3,280	1,650	28,500	1,960	2,120	1,320	483	449	330
23	455	5,210	2,050	2,840	1,500	17,700	1,930	2,260	1,440	443	541	356
24	437	6,160	2,350	2,300	1,400	12,800	2,950	2,180	1,300	455	525	330
25	431	4,850	2,100	1,500	1,400	10,400	4,390	1,880	1,090	497	511	315
26	* 431	3,550	1,850	1,300	1,350	9,090	3,660	1,680	940	605	641	320
27	443	2,830	1,700	1,400	1,300	9,720	3,140	1,560	840	533	557	320
28	449	2,360	1,750	1,550	1,250	9,950	2,840	1,460	762	565	483	320
29	437	2,080	1,850	1,400	—	* 7,820	2,590	1,430	830	581	455	362
30	449	2,180	1,750	1,350	—	6,710	2,470	1,440	752	525	455	373
31	518	—	1,400	1,350	—	6,020	—	1,460	—	497	557	—
Total	18,045	90,181	45,474	129,240	42,100	647,020	90,980	62,300	84,164	24,181	14,545	14,496
Mean	582	3,006	1,467	4,137	1,504	20,870	3,033	2,010	2,805	780	469	483

Calendar year 1962: Max 61,000 Min 330 Mean 3,935 Cfsm 0.966 In. 13.11
 Water year 1962-63: Max 68,800 Min 315 Mean 3,457 Cfsm 0.849 In. 11.52

Peak discharge (base, 23,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-13	1700	14.06	26,000	3-18	1600	13.97	25,700
3-6	1500	22.06	59,400	3-21	0900	26.24	81,800
3-14	1530	19.13	45,800				

* Discharge measurement made on this day.
 Note.--Stage-discharge relation affected by ice Dec. 13 to Jan. 12, Jan. 24 to Mar. 3.

1-6145. Conococheague Creek at Fairview, Md.

Location.--Lat 39°42'57", long 77°49'28", on right bank 0.7 mile upstream from highway bridge in Fairview, Washington County, 2 miles upstream from Rockdale Run, and 6½ miles northwest of Hagerstown.

Drainage area.--494 sq mi.

Records available.--June 1928 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 391.77 ft above mean sea level, adjustment of 1912. Prior to Dec. 6, 1932, chain gage at highway bridge 0.7 mile downstream at datum 2.85 ft lower. Dec. 6, 1932, to Oct. 7, 1933, staff gage 150 ft downstream from former site at datum 4.84 ft lower than present datum.

Average discharge.--35 years, 561 cfs.

Extremes.--Maximum discharge during year, 8,890 cfs Mar. 6 (gage height, 10.91 ft); minimum, 35 cfs Sept. 23. 1928-63: Maximum discharge, 17,100 cfs Nov. 22, 1952 (gage height, 15.16 ft, from high-water mark in well); minimum, 22 cfs Dec. 16, 1930; minimum daily, 25 cfs Nov. 28, 1930. Maximum stage known, about 16.5 ft (present datum) sometime in 1889, from information by local residents (discharge, about 22,000 cfs).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Low flow partly regulated by small powerplants near Mercersburg, Pa.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	151	186	b 120	b 250	a 250	730	a 350	202	244	a 100	61
2	97	131	175	b 150	b 280	a 500	761	a 320	185	188	a 90	58
3	86	112	163	b 160	b 320	a 1,000	684	a 300	207	219	a 90	58
4	* 132	142	158	*b 160	b 280	a 2,500	635	a 280	399	191	a 90	61
5	784	156	156	b 150	*b 260	a 5,000	578	a 270	496	153	a 85	61
6	503	148	341	b 150	b 300	a 7,000	550	a 270	514	133	a 80	67
7	290	135	706	b 140	b 320	a 6,000	541	a 260	403	125	a 75	80
8	213	124	507	b 140	b 300	3,080	* 523	a 250	1,050	* 119	a 75	64
9	186	114	b 400	b 150	b 280	2,500	527	a 240	694	113	a 75	61
10	178	601	b 320	b 150	b 260	1,850	509	a 240	578	108	a 70	64
11	144	1,160	b 250	b 350	b 280	1,900	464	a 230	640	106	a 65	58
12	124	515	b 200	b 1,200	b 300	1,800	442	a 230	559	108	a 60	55
13	112	362	b 160	b 1,800	b 280	2,400	a 420	a 220	447	100	a 80	52
14	100	280	b 160	1,270	b 260	2,710	a 410	a 230	390	100	a 100	51
15	97	227	b 160	832	b 250	2,150	a 400	a 230	399	119	a 85	48
16	99	202	b 160	630	b 250	1,800	a 390	a 220	333	125	a 70	46
17	91	196	b 160	519	b 250	2,500	a 390	a 220	288	108	a 65	54
18	84	230	b 160	463	b 260	2,530	a 420	a 300	260	a 100	a 60	52
19	86	527	b 160	423	b 300	2,010	a 410	a 350	231	a 95	a 65	51
20	83	451	b 160	487	b 400	3,430	a 350	a 250	210	a 95	a 100	49
21	79	366	b 170	b 600	b 400	2,550	a 330	a 230	213	a 100	*a 130	52
22	81	566	b 170	b 450	b 350	1,820	a 330	a 240	202	a 95	100	46
23	81	586	b 170	b 350	b 300	1,470	a 360	a 230	175	a 90	92	40
24	78	447	b 160	b 280	b 270	1,260	a 340	a 220	165	a 90	72	47
25	72	354	b 150	b 300	*b 270	1,130	a 320	a 210	160	a 90	67	49
26	74	300	b 150	b 300	a 250	1,030	a 300	a 210	146	a 85	64	48
27	76	264	b 150	b 280	a 240	1,100	a 290	a 210	135	a 80	61	46
28	71	* 236	b 140	b 260	a 240	986	a 290	*a 210	141	a 75	64	46
29	72	216	b 140	a 250	-	854	a 300	225	226	a 80	56	64
30	81	196	b 130	a 250	-----	783	a 320	244	295	a 120	62	99
31	131	-----	b 100	a 250	-----	745	-----	225	-----	a 110	64	-----
Total	4,495	9,495	6,472	13,014	8,000	66,638	13,314	7,714	10,343	3,664	2,412	1,688
Mean	145	316	209	420	286	2,150	444	249	345	118	77.8	56.3
Cfsm	0.294	0.640	0.423	0.850	0.579	4.35	0.899	0.504	0.698	0.239	0.157	0.114
In.	0.34	0.72	0.49	0.98	0.60	5.02	1.00	0.58	0.78	0.28	0.18	0.13

Calendar year 1962: Max 4,740 Min 66 Mean 454 Cfsm 0.919 In. 12.50
 Water year 1962-63: Max 7,000 Min 40 Mean 403 Cfsm 0.816 In. 11.10

Peak discharge (base, 4,300 cfs)

Date	Time	Gage height	Discharge
3-6	unknown	10.91	8,890

* Discharge measurement made on this day.
 a No gage-height record.
 b Stage-discharge relation affected by ice.

1-6195. Antietam Creek near Sharpsburg, Md.

Location.--Lat 39°27'01", long 77°43'52", on left bank 400 ft downstream from Burnside Bridge, 1 mile southeast of Sharpsburg, Washington County, and 4 miles upstream from mouth.

Drainage area.--281 sq mi.

Records available.--June 1897 to September 1905. August 1928 to September 1963. Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder (digital). Concrete control since Mar. 29, 1934. Datum of gage is 311.00 ft above mean sea level, adjustment of 1912. June 24, 1897, to Aug. 25, 1905, staff gage a few hundred feet downstream from Middle Bridge, 1.2 miles upstream at datum about 12 ft higher. Aug. 21, 1928, to July 13, 1933, staff gage at Burnside Bridge at present datum.

Average discharge.--40 years (1897-1903, 1904-5, 1930-63), 265 cfs (adjusted for inflow since 1930).

Extremes.--Maximum discharge during year, about 2,330 cfs Mar. 6 (gage height, about 6.64 ft); minimum, 48 cfs Oct. 13, Dec. 31, but may have been less during period of ice effect.
1928-63: Maximum discharge, 12,600 cfs July 20, 1956 (gage height, 16.73 ft), from rating curve extended above 4,300 cfs on basis of contracted-opening measurement of peak flow; minimum, 9.4 cfs Nov. 22, 1957, result of regulation caused by construction work above station; minimum daily, 50 cfs Sept. 29, 1930, Feb. 1, Oct. 4, 1931.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair, or those for periods of no gage-height record, which are poor. Some diurnal fluctuation caused by power-plant above station.

Since 1928, records include pumpage from Potomac River for municipal supply of Hagerstown. This water later enters Antietam Creek above station as sewage.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	48	4.0	780
2.3	88	5.0	1,310
2.7	184	7.0	2,550
3.2	380		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	86	109	103	b 70	a 150	138	d 406	248	143	145	101	78
2	* 80	87	100	103	a 170	218	d 450	219	135	147	95	71
3	82	85	98	104	a 200	357	d 390	203	196	157	92	69
4	89	103	99	101	a 170	565	d 370	196	317	152	97	69
5	129	92	98	97	a 160	d 1,720	d 360	190	376	124	92	75
6	105	94	138	97	a 180	d 1,920	d 360	187	335	119	90	75
7	88	88	166	95	a 200	d 1,480	d 350	182	266	115	88	71
8	82	82	138	96	a 180	d 742	d 340	177	358	* 110	90	67
9	84	84	124	97	a 170	d 628	*d 330	174	290	110	90	63
10	85	378	116	99	a 160	d 562	317	172	246	108	90	65
11	86	400	b 105	a 150	a 170	d 547	295	168	274	108	80	63
12	81	157	b 100	a 500	a 180	d 603	284	163	346	110	75	61
13	77	126	b 100	a 200	a 170	d 699	275	159	212	108	86	52
14	78	112	103	a 600	a 160	d 640	269	164	203	110	110	59
15	73	104	103	a 400	a 150	d 600	262	162	212	126	90	59
16	75	100	102	a 300	a 150	d 560	257	157	190	122	84	61
17	76	107	102	a 250	a 150	d 661	255	158	173	112	80	63
18	75	123	104	a 220	a 160	d 679	259	191	165	108	75	67
19	75	180	105	a 200	a 180	d 609	251	197	157	103	75	67
20	75	145	104	a 220	a 250	d 863	241	165	152	106	115	65
21	74	126	108	a 250	a 230	d 820	231	158	160	108	* 160	63
22	72	171	109	a 220	177	d 692	227	161	150	106	97	63
23	73	176	109	a 200	151	d 616	249	154	140	101	90	61
24	72	141	b 100	a 170	157	d 574	232	149	135	103	80	63
25	70	126	101	a 180	* 148	d 549	221	147	135	101	78	63
26	72	117	100	a 180	144	d 545	215	145	128	97	73	65
27	73	114	100	a 170	136	d 600	209	145	126	92	73	65
28	70	111	95	a 160	134	d 520	205	* 145	126	92	73	65
29	69	* 108	b 95	a 150	-	d 461	201	145	162	97	80	119
30	78	105	b 90	a 150	-----	d 437	221	179	176	143	88	128
31	123	-----	b 60	a 150	-----	d 419	-----	165	-----	122	86	-----
TOTAL	2,527	4,052	3,275	6,679	4,737	21,024	8,532	5,325	6,184	3,562	2,773	2,082
MEAN	81.5	135	106	215	169	678	284	172	206	115	89.5	69.4
(†)	-10.4	-8.3	-7.5	-8.2	-7.4	-7.1	-6.8	-7.5	-7.6	-8.8	-10.1	-10.8
MEAN ‡	71.1	127	98.5	207	162	671	277	164	198	104	79.4	58.6
CFSM ‡	0.253	0.452	0.351	0.737	0.577	2.39	0.986	0.584	0.705	0.370	0.283	0.209
In. ‡	0.29	0.50	0.40	0.85	0.60	2.76	1.10	0.67	0.79	0.43	0.33	0.23

Calendar year 1962: Max 1,180 Min 60 Mean 222 Mean† 214 Cfsm† 0.762 In.† 10.31
Water year 1962-63: Max 1,920 Min 59 Mean 194 Mean† 186 Cfsm† 0.662 In.† 8.95

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge
3-6	About 2345	About 6.64	About 2,330

* Discharge measurement made on this day.
† Pumpage, in cubic feet per second, from Potomac River for municipal supply of Hagerstown; furnished by city of Hagerstown.
‡ Adjusted for pumpage.
a No gage-height record.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record.

POTOMAC RIVER BASIN

1-6365. Shenandoah River at Millville, W. Va.

Location.--Lat 39°16'55", long 77°47'22", on left bank 0.4 mile downstream from Cattail Run, 1 mile upstream from Millville, Jefferson County, and 5 miles upstream from Harpers Ferry and mouth.

Drainage area.--3,040 sq mi.

Records available.--April 1895 to March 1909, August 1928 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 293.00 ft above mean sea level, adjustment of 1912. April 15, 1895, to Mar. 31, 1909, staff gage at site three-quarters of a mile downstream at datum 0.32 ft higher.

Average discharge.--48 years (1895-1908, 1928-63), 2,677 cfs.

Extremes.--Maximum discharge during year, 35,200 cfs Mar. 21 (gage height, 12.85 ft); minimum, 264 cfs Sept. 16 (gage height, 1.02 ft); minimum daily, 330 cfs Aug. 29, Sept. 25.
1895-1909, 1928-63: Maximum discharge, 230,000 cfs Oct. 16, 1942 (gage height, 32.4 ft, from flood-marks); minimum, about 59 cfs Oct. 4, 1930 (gage height, 0.39 ft); minimum daily, 194 cfs July 24, 1930.
Flood in 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft (discharge, 151,000 cfs).

Remarks.--Records good except those for periods of ice effect, which are fair. Regulation by hydroelectric plants, particularly that of Potomac Light and Power Co., half a mile above station.

Rating table, water year 1962-63, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.1	300	4.0	3,380
1.5	515	6.0	7,600
2.0	900	8.0	13,500
3.0	1,920	12.0	30,500

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	548	554	1,170	b 750	b 1,400	1,580	1,450	1,480	900	794	428	390
2	522	608	1,040	b 750	b 1,400	1,510	3,240	1,510	936	738	438	390
3	528	560	1,030	b 800	b 1,400	2,420	3,070	1,610	1,480	754	450	380
4	541	601	972	b 800	b 1,400	4,860	2,900	1,520	2,710	754	444	390
5	587	608	936	b 850	b 1,400	5,170	2,700	1,450	3,240	754	450	406
6	658	622	1,030	b 850	b 1,400	6,730	2,520	1,410	3,160	794	433	461
7	650	587	1,310	b 850	b 1,400	9,970	2,390	1,380	2,350	810	433	515
8	650	587	1,450	b 850	b 1,400	9,710	2,320	1,360	1,960	730	422	541
9	682	601	1,360	b 900	b 1,400	7,330	2,270	1,290	1,730	* 682	390	528
10	643	1,520	1,310	b 1,000	1,370	5,630	2,160	1,230	1,550	601	395	515
11	594	3,290	1,160	1,290	1,240	4,670	2,100	1,260	1,540	567	400	444
12	497	3,920	972	2,660	1,330	4,670	2,020	1,150	1,310	548	400	438
13	522	2,810	770	7,020	1,330	15,200	1,950	1,070	1,240	567	406	422
14	509	1,870	900	11,700	1,320	28,700	1,880	1,130	1,070	554	428	385
15	503	1,500	882	8,220	1,400	18,700	* 1,840	1,080	1,080	522	365	461
16	491	1,350	936	5,690	1,250	11,200	1,740	1,070	972	554	365	340
17	491	1,150	990	4,270	1,120	8,740	1,730	1,090	891	594	375	355
18	491	1,000	954	3,450	1,130	8,980	1,640	1,170	909	587	380	385
19	473	1,250	900	2,940	1,260	8,840	1,630	1,130	855	548	355	355
20	461	1,550	927	2,630	1,310	22,500	1,600	1,140	778	554	* 422	390
21	479	1,450	945	2,450	1,670	29,900	1,570	1,260	1,070	534	461	400
22	479	2,050	810	2,320	2,080	15,700	1,510	1,140	981	515	433	370
23	473	2,250	786	2,410	2,230	10,400	1,500	1,040	837	485	416	411
24	467	2,150	b 750	2,080	1,820	7,930	1,440	936	754	438	433	355
25	455	2,000	b 750	b 1,700	1,680	6,580	1,510	972	882	509	594	330
26	461	1,800	b 700	b 1,600	1,510	5,710	1,510	945	769	485	643	365
27	461	1,700	b 700	b 1,500	1,550	5,130	1,500	918	582	479	534	340
28	467	1,450	b 700	b 1,450	1,490	4,860	1,390	900	706	491	455	340
29	455	1,300	b 700	b 1,400	-	4,570	1,390	900	650	461	330	455
30	479	* 1,200	b 700	b 1,400	-	4,040	1,390	936	674	534	406	461
31	534	-	b 700	b 1,400	-	3,690	-	927	-	491	400	-
Total	16,251	43,888	29,240	77,980	40,690	235,620	59,860	36,404	38,566	18,428	13,284	12,318
Mean	524	1,463	943	2,515	1,453	9,214	1,995	1,174	1,286	594	429	411
Cfs/m	0.172	0.481	0.310	0.827	0.478	3.03	0.656	0.386	0.423	0.195	0.141	0.135
In.	0.20	0.54	0.36	0.95	0.50	3.49	0.73	0.45	0.47	0.23	0.16	0.15

Calendar year 1962: Max 26,800 Min 440 Mean 2,602 Cfs/m 0.856 In. 11.63
Water year 1962-63: Max 29,900 Min 330 Mean 1,843 Cfs/m 0.606 In. 8.23

Peak discharge (base, 15,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-14	1000	12.02	30,600	3-21	0700	12.85	35,200

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

1-6375. Catoctin Creek near Middletown, Md.

Location.--Lat 39°25'35", long 77°33'25", on right bank 300 ft downstream from bridge on State Highway 17, 1.3 miles south of Middletown, Frederick County, and 2½ miles downstream from Little Catoctin Creek.

Drainage area.--66.9 sq mi.

Records available.--August 1947 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 385 ft (from topographic map).

Average discharge.--16 years, 71.5 cfs.

Extremes.--Maximum discharge during year, 925 cfs probably Mar. 6 (gage height, 3.47 ft); maximum gage height, 5.56 ft Mar. 4 (ice jam); minimum discharge, 0.1 cfs Sept. 15 (gage height, 0.60 ft).

1947-63: Maximum discharge, 7,760 cfs July 18, 1949 (gage height, 11.18 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurement of peak flow; minimum, that of Sept. 15, 1963.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.6	0.1	1.0	9.6	1.7	124
.7	.8	1.1	15	2.1	265
.8	2.8	1.2	24	2.5	440
.9	5.6	1.4	52	3.0	690
				3.5	940

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.9	16	13	b 15	b 30	27	78	61	17	70	5.9	3.2
2	3.2	9.1	12	b 18	b 35	b 100	78	39	18	31	4.3	2.7
3	2.8	10	12	b 20	b 60	b 200	66	34	112	39	4.0	2.1
4	* 5.1	15	11	b 20	b 45	b 600	61	32	161	25	4.2	1.9
5	9.1	14	11	b 20	* b 35	b 400	54	31	112	18	3.9	2.5
6	7.8	13	47	b 20	b 60	b 700	53	30	122	15	3.1	3.0
7	5.1	9.8	49	b 20	b 70	291	52	28	84	13	2.7	3.0
8	4.3	7.8	34	20	b 45	209	49	26	106	12	3.2	2.7
9	3.9	8.1	30	* 20	b 35	180	* 62	25	85	11	3.3	2.1
10	3.5	239	b 25	21	39	170	55	24	75	* 10	2.8	1.5
11	3.3	41	b 22	38	51	159	48	23	79	10	1.9	.9
12	3.0	23	b 20	b 200	b 50	294	45	21	59	9.7	1.3	.6
13	2.7	15	b 20	b 640	b 35	242	42	21	50	9.0	4.4	.4
14	2.8	12	b 20	b 300	b 32	221	40	24	44	15	9.4	.2
15	2.9	9.8	b 22	b 200	b 30	183	37	25	53	31	5.4	.2
16	3.0	8.6	b 22	b 130	b 30	163	36	21	38	15	3.3	1.2
17	3.0	8.1	22	b 90	b 30	256	37	24	33	12	2.4	1.5
18	3.0	17	22	b 70	b 35	197	40	89	30	9.5	1.7	1.2
19	3.1	39	22	b 60	b 45	199	36	40	27	8.0	3.4	1.5
20	3.3	26	25	b 70	b 130	404	33	29	26	11	33	1.4
21	3.4	21	b 20	b 80	b 100	254	31	27	28	12	19	1.1
22	3.5	58	b 21	b 70	b 40	197	31	* 29	24	9.2	8.4	1.8
23	3.5	50	b 23	b 50	b 35	160	42	24	21	9.2	5.4	1.2
24	3.7	36	21	b 40	b 32	135	37	22	19	7.5	4.2	.8
25	4.0	29	b 20	b 50	b 30	113	32	20	16	6.4	3.6	.8
26	4.6	24	b 20	b 50	b 26	104	30	20	15	5.4	* 3.0	1.0
27	4.5	20	b 18	b 40	25	122	29	20	14	4.6	2.5	1.1
28	4.6	18	b 15	b 35	25	93	27	20	13	4.2	2.1	.8
29	4.9	15	b 12	b 30	-	80	27	22	39	4.7	4.4	
30	6.9	* 14	b 12	b 30	-----	74	48	31	72	13	5.3	16
31	24	-----	b 12	b 30	-----	70	-----	22	-----	11	4.5	-----
TOTAL	146.4	826.3	655	2,497	1,235	6,597	1,336	904	1,592	461.4	166.3	72.4
MEAN	4.72	27.5	21.1	80.5	44.1	213	44.5	29.2	53.1	14.9	5.36	2.41
CFSM	.071	.411	.315	1.20	.659	3.18	.665	.437	.794	.223	.083	.036
IN	.08	.46	.36	1.39	.69	3.67	.74	.50	.88	.26	.09	.04

CALENDAR YEAR 1962 MAX 683 MIN .5 MEAN 59.7 CFSM .892 INCHES 12.12
 WATER YEAR 1962-63 MAX 700 MIN .2 MEAN 45.2 CFSM .676 INCHES 9.17

Peak discharge (base 1,200 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

1-6385. Potomac River at Point of Rocks, Md.

Location.--Lat 39°16'25", long 77°32'35", on left bank at downstream side of bridge on U. S. Highway 15 at Point of Rocks, Frederick County, a third of a mile downstream from Catoctin Creek (Virginia), and 6 miles upstream from Monocacy River.

Drainage area.--9,651 sq mi.

Records available.--February 1895 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 200.54 ft above mean sea level, adjustment of 1912. Prior to Sept. 2, 1902, wire-weight gage on downstream side of bridge at datum about 0.45 ft higher. Sept. 2, 1902, to Oct. 28, 1929, chain gage at same site at present datum.

Average discharge.--68 years, 9,215 cfs.

Extremes.--Maximum discharge during year, 125,000 cfs Mar. 21 (gage height, 20.47 ft); minimum, 770 cfs Sept. 28 (gage height, 0.48 ft).

1895-1963: Maximum discharge, 480,000 cfs Mar. 19, 1936 (gage height, 41.03 ft), from rating curve extended above 300,000 cfs on basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow; minimum, 540 cfs Sept. 10, 1914 (gage height, 0.38 ft). Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks (discharge about 460,000 cfs from rating curve extended as explained above).

Remarks.--Records good. Low flow affected slightly since 1913 by Stony River Reservoir (see p. 62) and since December 1950 by Savage River Reservoir (see p. 65).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 7

Mar. 8 to Sept. 30

0.7	1,110	4.0	12,400	0.5	800	4.0	12,400
1.0	1,720			1.0	1,820	7.0	27,000
1.5	2,920	Note.--Same as following		1.5	3,020	12.0	57,000
2.0	4,490	table above 4.0 ft.		2.0	4,610	20.0	121,000

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.370	1.450	4.080	b 2.800	b 3.800	3.950	13.000	5.750	3.160	2.540	1.570	1.260
2	1.510	1.530	4.020	b 3.000	b 4.000	4.470	12.300	6.000	3.130	2.440	1.440	1.220
3	1.570	1.860	3.660	b 3.200	b 4.200	5.650	11.800	6.290	3.730	2.490	1.400	1.140
4	1.510	2.580	* 3.200	b 3.500	b 4.200	9.120	11.100	6.180	5.790	2.810	1.380	1.420
5	1.570	2.480	2.920	b 3.500	b 4.500	18.500	10.100	5.680	7.770	2.920	1.340	1.420
6	1.680	2.240	3.260	b 3.200	b 4.500	71.900	9.360	5.360	15.900	2.840	1.300	1.420
7	1.960	2.080	3.720	b 3.200	b 4.500	96.100	8.800	5.100	13.500	3.330	1.260	1.400
8	2.060	1.920	5.050	b 3.200	b 4.500	69.700	8.320	4.890	11.400	2.810	1.220	1.380
9	2.120	1.870	4.770	b 3.200	4.420	41.600	8.050	4.640	10.300	2.440	1.200	1.500
10	2.120	2.780	4.350	b 3.200	4.290	29.800	7.790	4.400	8.480	2.130	1.160	1.650
11	2.010	7.640	3.850	b 3.500	4.050	23.800	7.560	4.230	7.480	2.020	1.220	1.690
12	1.810	14.300	3.030	b 6.000	4.080	22.400	7.290	3.920	7.140	1.910	1.260	1.610
13	1.620	14.300	2.120	b 22.000	4.180	33.000	6.840	3.660	9.700	1.800	1.320	1.460
14	1.570	9.610	2.290	b 40.000	3.850	76.100	6.400	3.600	9.810	1.760	1.300	1.300
15	1.510	6.780	2.440	33.600	3.920	73.300	6.080	3.600	7.750	1.740	1.240	1.300
16	1.490	5.400	2.870	22.000	4.120	47.000	* 5.750	3.450	6.260	1.530	1.180	1.280
17	1.450	4.520	2.740	16.800	b 5.000	35.100	5.540	3.820	5.280	1.610	1.120	1.120
18	1.370	3.920	2.820	13.100	b 4.500	36.300	5.460	4.920	4.580	1.630	1.060	1.100
19	1.270	4.320	2.790	10.400	3.950	41.400	5.280	4.500	4.020	* 1.630	1.100	1.060
20	1.230	6.290	2.660	9.160	* 3.980	53.400	5.250	4.640	3.510	1.630	1.550	1.000
21	1.190	9.410	2.760	8.600	4.390	116.000	5.320	5.280	3.480	1.630	1.460	1.060
22	1.210	9.400	2.890	8.160	5.330	82.000	5.430	5.030	3.300	1.630	1.420	1.000
23	1.270	9.080	2.760	7.640	6.300	44.000	5.180	4.440	2.970	1.550	1.300	960
24	1.290	10.300	3.720	7.010	5.680	30.000	5.070	4.060	2.810	1.400	1.340	980
25	1.230	10.500	4.020	4.940	5.050	24.600	5.750	4.230	2.890	1.420	1.280	920
26	1.170	8.720	3.920	4.980	4.520	20.600	7.560	3.890	2.760	1.420	1.630	940
27	1.130	6.980	b 3.400	4.390	4.250	18.900	6.990	3.570	2.390	1.380	1.420	960
28	1.150	5.680	b 3.400	3.950	4.080	18.300	6.360	3.300	2.220	1.360	1.420	880
29	1.130	4.940	3.500	b 4.000	-	17.500	5.900	3.240	2.220	1.320	1.340	1.240
30	1.110	4.350	3.140	b 3.800	-----	15.600	5.750	3.220	2.340	1.260	1.260	1.240
31	1.390	-----	b 2.800	b 3.800	-----	14.000	-----	3.240	-----	1.530	1.300	-----
Total	46.070	177.230	102.950	269.830	124.140	1.194.090	221.380	138.130	176.070	59.910	40.790	36.910
Mean	1.486	5.908	3.321	8.704	4.434	38.520	7.379	4.456	5.869	1.933	1.316	1.230
Cfsm	0.154	0.612	0.344	0.902	0.459	3.99	0.765	0.462	0.608	0.200	0.136	0.127
In.	0.18	0.68	0.40	1.04	0.48	4.60	0.85	0.53	0.68	0.23	0.16	0.14

Calendar year 1962: Max 112,000 Min 1,050 Mean 8,984 Cfsm 0.931 In. 12.64
 Water year 1962-63: Max 116,000 Min 880 Mean 7,089 Cfsm 0.735 In. 9.97

Peak discharge (base, 35,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-14	1230	10.40	46,900	3-14	1930	15.70	84,600
3-7	0900	17.60	99,800	3-21	1500	20.47	125,000

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

1-6390. Monocacy River at Bridgeport, Md.

Location.--Lat 39°40'43", long 77°14'06", on right bank 60 ft downstream from bridge on State Highway 97, at Bridgeport, Carroll County, 0.9 mile upstream from Cattail Branch, 3.4 miles northwest of Taneytown, and 4.8 miles downstream from confluence of Rock and Marsh Creeks at Pennsylvania-Maryland State line.

Drainage area.--173 sq mi.

Records available.--May 1942 to September 1963.

Gage.--Water-stage recorder (digital). Concrete control since Sept. 15, 1947. Datum of gage is 340.83 ft above mean sea level (Corps of Engineers bench mark). Prior to May 3, 1946, staff gage and crest-stage gages at site 0.3 mile downstream at datum 0.98 ft lower.

Average discharge.--21 years, 195 cfs.

Extremes.--Maximum discharge during year, 7,230 cfs Mar. 6 (gage height, 12.62 ft); minimum, 2.3 cfs Sept. 12, 13 (gage height, 1.73 ft).

1942-63: Maximum discharge, 15,000 cfs May 21, 1943 (gage height, 20.53 ft, former site and datum), from rating curve extended above 6,700 cfs on basis of logarithmic plotting and velocity-area studies; minimum, 0.1 cfs Aug. 27, 28, 1944.

Maximum stage known, about 25 ft, present site and datum, Aug. 24, 1933, from floodmarks; stage exceeded that of June 1889, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair. Occasional regulation at low flow from unknown source above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	1.8	2.3	18	4.0	425
1.8	3.5	2.5	34	5.0	950
1.9	5.5	2.8	68	7.0	2,300
2.0	7.7	3.2	148	9.0	3,800
2.1	10	3.6	268	12.0	6,550

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	10	65	57	b 23	51	39	126	125	28	55	7.5	8.9
2	7.5	32	53	b 25	49	76	158	69	24	35	7.8	5.9
3	6.0	27	50	32	70	482	128	50	45	39	10	6.0
4	11	271	49	35	111	b 1,400	105	43	203	24	8.8	4.9
5	*467	178	51	35	77	4,700	82	39	115	16	15	4.4
6	89	121	743	34	75	5,800	75	36	79	13	11	4.0
7	38	65	621	33	142	b 2,800	74	32	58	12	7.6	3.8
8	21	46	224	* 35	145	1,580	69	29	1,050	10	6.7	3.5
9	16	40	190	38	84	1,020	74	27	234	9.9	5.5	3.0
10	41	1,520	b 110	42	62	887	82	24	153	9.7	4.6	2.8
11	26	348	b 85	49	65	670	* 65	24	156	* 9.2	5.2	2.6
12	16	156	b 70	b 500	131	1,280	58	26	105	8.6	5.5	2.5
13	11	108	b 50	b 1,600	108	1,190	54	22	78	13	5.7	3.0
14	9.9	85	b 45	703	79	918	51	21	63	26	5.6	2.9
15	14	68	b 40	282	68	663	48	20	58	45	6.0	2.9
16	9.0	60	b 40	170	53	540	45	19	48	27	6.6	3.2
17	7.9	89	49	124	46	1,660	45	18	42	17	6.9	3.2
18	7.3	467	51	111	48	860	52	164	37	13	6.8	3.9
19	7.1	728	52	107	71	515	55	110	33	10	7.4	4.5
20	7.0	* 242	52	379	92	1,850	47	58	29	9.4	9.8	5.0
21	7.0	184	39	628	192	589	44	45	30	8.6	15	5.2
22	6.6	816	38	b 170	b 150	359	39	45	29	8.3	22	5.0
23	6.6	293	54	b 110	b 70	261	40	39	25	8.3	* 11	4.6
24	6.5	160	46	b 80	59	225	52	* 32	21	7.5	7.0	4.4
25	6.5	118	41	b 65	52	199	41	29	18	6.9	5.5	4.0
26	6.3	100	39	b 60	b 45	179	36	27	16	6.2	4.8	4.0
27	6.0	86	b 35	b 60	b 40	379	34	27	15	5.6	4.8	4.2
28	6.1	75	b 30	b 55	37	229	32	26	15	4.8	4.4	4.6
29	6.6	68	b 30	b 45	---	165	31	30	108	4.4	4.3	7.7
30	7.5	62	b 23	48	-----	140	56	73	106	4.7	4.3	32
31	51	-----	b 22	55	-----	134	-----	45	-----	4.0	7.5	-----
TOTAL	938.4	6,678	3,079	5,733	2,272	31,789	1,898	1,374	3,021	471.1	247.6	156.6
MEAN	30.3	223	99.3	185	81.1	1,025	63.2	44.3	101	15.2	7.99	5.22
CFSM	.175	1.29	.574	1.07	.469	5.92	.366	.256	.584	.088	.046	.030
IN	.20	1.44	.66	1.23	.49	6.83	.41	.30	.65	.10	.05	.03

CALENDAR YEAR 1962 MAX 3,760 MIN .8 MEAN 183 CFSM 1.06 INCHES 14.39
 WATER YEAR 1962-63 MAX 5,800 MIN 2.5 MEAN 158 CFSM .913 INCHES 12.39

Peak discharge (base 3,800 cfs)

Date	Time	Gage height	Discharge
3-6	2000	12.62	7,230

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

POTOMAC RIVER BASIN

1-6395. Big Pipe Creek at Bruceville, Md.

Location.--Lat 39°36'45", long 77°14'10", on left bank 300 ft downstream from bridge on State Highway 194, 800 ft downstream from Bruceville, Carroll County, and 3½ miles upstream from Detour and confluence with Little Pipe Creek.

Drainage area.--102 sq mi.

Records available.--October 1947 to September 1963. Prior to December 1947 monthly discharge only, published in WSP 1302.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 340 ft (from topographic map).

Average discharge.--16 years, 105 cfs.

Extremes.--Maximum discharge during year, 2,330 cfs Mar. 6 (gage height, 6.39 ft); maximum gage height, 7.29 ft Mar. 5 (ice jam); minimum discharge, 3.8 cfs Sept. 15; minimum daily, 5.4 cfs Sept. 13.
1947-63: Maximum discharge, 9,500 cfs July 12, 1949 (gage height, 11.92 ft), from rating curve extended above 2,300 cfs on basis of slope-area measurement at gage height 8.38 ft and slope-conveyance study; minimum, 2.4 cfs July 28, 1954; minimum daily, that of Sept. 13, 1963.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation caused by mills above station.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6

0.8	13	2.0	214
.9	19	3.0	520
1.0	28	4.0	970
1.2	50	6.0	2,100
1.5	98		

Mar. 7 to Sept. 30

0.6	4.0	1.5	105
.7	7.0	2.0	214
.8	12		
1.0	28		
1.2	54		

Note.--Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		39	45	a 28	b 55	b 70	107	92	33	30	10	12
2	19	30	44	a 32	b 60	b 420	109	60	34	24	35	10
3	20	45	42	a 36	b 110	b 1.100	98	53	105	29	18	9.5
4	17	94	42	a 38	b 80	b 640	90	51	131	21	13	10
5	188	73	42	b 40	b 70	b 1.400	80	48	65	20	14	9.0
6	301											
7	51	60	176	b 42	b 100	1.690	79	47	52	18	11	9.5
8	35	44	147	b 42	b 200	456	79	44	45	18	10	11
9	31	39	93	44	b 100	298	76	43	274	18	13	10
10	* 29	37	81	43	b 60	227	85	43	94	16	13	11
11	27	379	b 60	44	b 65	217	* 78	40	73	16	11	9.5
12	26	107	b 55	58	b 150	174	70	40	71	16	9.0	7.0
13	25	62	b 45	b 350	b 400	431	67	39	54	* 16	9.5	8.0
14	23	53	b 40	b 750	b 150	300	64	36	47	16	10	5.4
15	24	47	b 40	b 350	b 90	237	63	38	43	18	22	6.7
16	23	42	b 45	b 150	b 55	188	60	39	56	29	13	7.0
17	24	40	48	b 100	b 50	177	58	36	38	21	10	9.0
18	23	44	49	b 85	b 60	336	59	36	35	22	10	15
19	23	128	49	b 80	b 90	214	66	72	34	19	8.5	12
20	22	166	50	b 80	b 210	201	61	46	32	16	10	10
21	24	* 86	b 50	b 230	239	488	57	40	30	17	23	11
22	23	77	b 45	b 200	468	225	53	46	31	16	23	10
23	24	244	b 45	b 120	b 100	177	54	40	28	16	* 30	8.0
24	22	106	b 45	b 80	b 60	149	63	* 36	26	16	19	11
25	22	79	b 40	b 70	b 70	136	58	34	25	14	15	7.5
26	22	67	b 35	b 60	b 65	126	53	32	24	13	12	8.0
27	24	61	b 35	b 55	b 60	125	51	32	23	12	16	11
28	25	55	b 35	b 55	b 40	208	50	35	22	13	12	8.5
29	24	52	b 30	b 50	b 50	137	49	34	22	11	10	9.0
30	25	50	b 28	b 50	-	118	48	37	42	12	11	7.9
31	27	47	a 26	b 55	-----	111	78	79	26	13	13	4.5
32	63	-----	a 25	b 55	-----	108	-----	40	-----	13	12	-----
Total	1.256	2.453	1.632	3.472	3.307	10.894	2.063	1.388	1.615	549	446.0	389.6
Mean	40.5	81.8	52.6	112	118	351	68.8	53.8	53.8	17.7	14.4	13.0
Cfsm	0.397	0.802	0.516	1.10	1.16	3.44	0.675	0.439	0.528	0.174	0.141	0.128
In.	0.46	0.89	0.60	1.27	1.21	3.97	0.75	0.51	0.59	0.20	0.16	0.14

Calendar year 1962: Max 1,540 Min 13 Mean 96.8 Cfsm 0.949 In. 12.89
Water year 1962-63: Max 1,690 Min 5.4 Mean 80.7 Cfsm 0.791 In. 10.75

Peak discharge (base, 1,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-3	2130	5.26	1,660	3-6	1430	6.39	2,330

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

1-6405. Owens Creek at Lantz, Md.

Location.--Lat 39°40'36", long 77°27'50", on right bank half a mile west of Lantz Post Office (Deerfield station on Western Maryland Railway), Frederick County, 1½ miles south of Sabillasville, and 4½ miles northwest of Thurmont.

Drainage area.--5.93 sq mi.

Records available.--October 1931 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 965 ft (from topographic map).

Average discharge.--32 years, 8.83 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 255 cfs Nov. 10 (gage height, 3.44 ft); minimum, 0.1 cfs Sept. 26, 27, 28-29 (gage height, 0.95 ft); minimum gage height, 0.93 ft Oct. 2.
1931-63: Maximum discharge, 3,270 cfs Dec. 1, 1934 (gage height, 8.4 ft), from rating curve extended above 750 cfs on basis of slope-area measurements at gage heights 5.11 and 6.30 ft; minimum 0.06 cfs Oct. 8, 1941, Sept. 7, 1944, not including water diverted above gage; minimum daily, including water diverted above gage, 0.18 cfs Sept. 20, 1932, Sept. 30, Oct. 7, 8, 1941.

Remarks.--Records good except those for periods of ice effect, which are fair. A small diversion is occasionally made to Victor Cullen State Hospital at Cullen, half a mile above station.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 10

Nov. 11 to Sept. 30

1.0	0.3	0.9	0.1	1.4	1.8	2.0	17
1.1	.5	1.0	.2	1.5	2.7	2.2	31
		1.1	.5	1.6	4.1	2.5	67
		1.2	.8	1.7	6.2		
		1.3	1.2	1.8	9.0		

Note.--Same as following table above 1.1 ft.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	1.2	1.7	b 1.7	3.1	2.7	1.3	8.4	2.2	5.4	1.0	0.4
2	.3	.8	1.7	1.8	3.8	3.4	1.1	6.2	2.6	6.9	.8	.3
3	.3	1.0	1.6	1.8	b 5.5	3.7	1.1	5.8	3.2	7.8	.9	.3
4	1.8	1.6	1.6	1.8	b 3.5	8.1	9.7	5.6	2.8	3.1	1.0	.4
5	* 1.6	1.9	1.6	1.8	3.5	3.9	9.4	5.4	2.2	2.4	.7	.5
6	.8	1.4	2.0	1.8	4.3	6.0	8.7	4.9	1.5	2.3	.6	.7
7	.5	1.0	4.5	1.9	b 4.5	3.1	8.4	4.7	1.1	2.1	.8	.4
8	.5	.8	3.4	2.0	b 3.5	2.5	7.9	4.3	1.7	1.9	1.0	.4
9	.5	5.0	2.8	2.0	b 3.0	2.2	9.4	4.0	1.2	1.8	.7	.3
10	.5	5.6	b 2.5	2.4	3.4	2.6	* 7.9	3.8	1.3	1.8	.6	.2
11	.5	4.7	b 2.2	8.3	4.0	2.2	7.0	3.8	1.2	* 1.8	.5	.2
12	.4	2.6	b 2.0	2.1	4.5	3.2	6.5	3.7	9.4	1.6	.4	.2
13	.4	2.0	b 1.8	1.6	b 3.5	3.4	6.2	3.4	7.9	1.6	1.3	.2
14	.4	1.6	b 1.6	b 1.0	b 3.0	3.4	5.8	3.5	7.0	3.1	.9	.2
15	.5	1.5	b 1.5	b 8.0	b 3.0	2.8	5.6	3.3	6.2	2.4	.6	.2
16	.5	1.6	b 1.8	b 6.0	b 2.8	2.5	5.4	3.1	5.4	1.8	.6	.3
17	.5	2.3	1.9	b 5.0	b 2.8	4.3	5.6	4.3	4.9	1.6	.5	.3
18	.5	6.7	2.0	b 5.0	3.3	2.9	5.6	1.2	4.3	1.4	.4	.2
19	.5	* 5.2	2.2	4.7	3.5	2.6	5.2	4.5	4.0	1.4	.7	.2
20	.5	3.3	b 3.0	1.0	b 3.5	3.7	4.7	3.5	4.0	1.8	1.5	.2
21	.5	3.3	b 2.5	b 8.0	b 2.8	2.6	4.5	3.8	4.1	1.6	1.0	.2
22	.5	1.0	b 2.5	b 5.5	b 2.4	2.1	4.5	3.8	3.4	1.4	* .7	.2
23	.5	4.4	2.4	b 5.0	b 2.6	1.8	6.7	* 3.1	3.1	1.4	.6	.2
24	.5	3.1	b 2.0	b 4.5	2.8	1.7	4.9	3.0	2.7	1.3	.6	.2
25	.5	2.5	b 1.8	b 4.0	b 2.8	1.5	4.5	2.8	2.6	1.2	.6	.2
26	.5	2.3	b 2.0	b 4.0	b 2.6	1.5	4.3	2.7	2.4	1.0	.4	.2
27	.5	2.0	b 2.0	b 4.0	b 2.4	1.8	4.1	2.7	2.3	1.0	.4	.2
28	.5	1.8	b 2.0	b 3.8	2.6	1.3	4.0	2.8	4.4	1.0	.4	.4
29	.6	1.8	b 1.8	b 3.5	-	1.2	4.0	3.1	8.4	1.4	.6	.3
30	1.1	1.7	b 1.6	3.5	-----	1.2	9.9	3.3	1.1	2.0	.6	.7
31	3.9	-----	b 1.5	3.4	-----	1.1	-----	2.4	-----	1.0	.5	-----
Total	21.4	135.1	72.5	162.2	93.0	708.9	205.4	131.7	264.3	68.3	21.8	11.6
Mean	0.69	4.50	2.34	5.23	3.32	22.9	6.85	4.25	8.81	2.20	0.70	0.39
Cfsm	0.116	0.759	0.395	0.882	0.560	3.86	1.16	0.717	1.49	0.371	0.118	0.066
In.	0.13	0.85	0.45	1.02	0.58	4.45	1.29	0.83	1.66	0.43	0.14	0.07

Calendar year 1962: Max 89 Min 0.2 Mean 6.68 Cfsm 1.13 In. 15.28
Water year 1962-63: Max 60 Min 0.1 Mean 5.20 Cfsm 0.877 In. 11.90

Peak discharge (base, 120 cfs)

Date	Time	Gage height	Discharge
11-10	0400	3.44	255

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

1-6410. Hunting Creek at Jintown, Md.

Location.--Lat 39°35'40", long 77°23'50" on right bank just downstream from highway bridge, 0.4 mile southwest of Jintown, Frederick County, about 2 $\frac{1}{4}$ miles southeast of Thurmont, and 2 $\frac{1}{4}$ miles upstream from Little Hunting Creek.

Drainage area.--18.4 sq mi.

Records available.--October 1949 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 355 ft (from topographic map).

Average discharge.--14 years, 23.6 cfs.

Extremes.--Maximum discharge during year, 302 cfs Nov. 10 (gage height, 2.80 ft); minimum, 1.2 cfs Sept. 13 (gage height 1.24 ft).

1949-63: Maximum discharge, 1,170 cfs Sept. 1, 1952 (gage height, 4.94 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum, 1.0 cfs Aug. 1, 2, 1954, Sept. 5, 1957, Aug. 27, 1962.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Slight regulation at irregular intervals caused by pumpage at recreation camp near Foxville, and from occasional draining and refilling of pond near Thurmont by Maryland Game and Inland Fish Commission.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.25	1.4	1.6	26
1.3	2.7	1.8	54
1.4	7.4	2.0	89
1.5	16	2.5	213

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.0	4.8	4.5	b 5	a 9	b 7	32	25	7.8	17	2.6	2.0
2	1.9	3.3	4.2	b 5.5	a 10	18	30	18	11	11	2.7	1.7
3	2.0	5.3	4.2	b 5.5	15	22	28	16	66	19	2.7	1.7
4	9.1	6.8	4.2	5.2	a 10	26	25	15	62	6.9	2.9	1.7
5	* 6.7	6.2	4.1	5.0	a 9	a 90	23	14	49	7.2	2.4	2.1
6	3.6	5.2	36	4.9	9.8	a 190	23	13	40	6.5	2.2	2.3
7	2.9	4.1	20	5.2	12	a 90	22	13	35	6.0	2.5	2.6
8	3.1	3.8	13	5.6	b 9	66	21	12	77	5.6	3.0	1.8
9	2.9	5.5	9.9	5.5	b 8	57	24	11	42	5.0	2.6	1.8
10	2.9	87	b 8	5.7	8.1	59	* 22	11	38	* 4.8	2.3	1.4
11	4.0	14	b 6	15	10	52	20	10	36	4.7	2.1	1.5
12	1.8	7.4	b 5.5	48	b 10	91	19	9.3	27	4.5	2.0	1.5
13	2.0	5.7	b 5.5	44	b 9	76	18	8.9	24	4.3	3.7	1.5
14	1.9	4.9	b 5.5	b 25	b 9	70	18	9.8	21	12	3.7	1.4
15	2.6	4.4	b 5.5	b 20	b 8	58	17	9.2	20	9.1	2.3	1.7
16	2.9	4.4	b 5.5	b 15	a 7	54	16	8.3	17	5.9	2.2	2.0
17	3.0	5.8	5.5	b 13	a 8	89	17	12	16	5.2	2.1	2.0
18	2.9	18	5.7	b 12	a 10	61	18	51	14	4.5	2.0	1.9
19	2.5	* 16	5.6	12	a 12	64	16	20	13	4.4	2.7	1.8
20	2.8	9.0	6.7	24	b 12	99	15	15	13	6.1	4.2	1.6
21	3.1	11	5.4	b 16	b 10	61	14	15	13	5.1	3.4	1.9
22	3.1	27	6.8	b 14	b 7	51	14	16	11	4.5	* 2.8	1.3
23	2.9	12	b 6	b 12	a 8	43	18	* 12	9.7	4.0	2.3	1.8
24	3.0	8.1	b 5.5	b 10	a 9	39	15	11	6.8	3.7	2.2	1.9
25	3.2	6.7	b 5	b 10	a 9	36	13	10	8.0	3.6	2.1	2.1
26	3.4	6.0	b 5.5	a 10	a 7	36	13	10	7.6	3.4	2.1	2.3
27	3.4	5.6	b 5.5	a 10	a 6	43	12	9.8	7.2	3.0	2.0	2.3
28	3.5	5.2	b 5	a 10	b 6	34	12	10	9.5	3.0	3.3	2.1
29	3.9	4.7	b 5	a 9	—	33	12	11	26	3.7	2.6	13
30	6.1	4.7	b 4.5	a 9	-----	30	27	12	23	5.8	2.8	3.0
31	10	-----	b 4.5	a 9	-----	29	-----	8.6	-----	3.4	2.3	-----
TOTAL	109.1	312.6	223.8	400.1	256.9	1,774	574	426.9	752.6	194.9	81.0	67.8
MEAN	3.52	10.4	7.22	12.9	9.18	57.2	19.1	13.8	25.1	6.29	2.61	2.26
CFSM	.191	.565	.392	.701	.499	3.11	1.04	.750	1.36	.342	.142	.123
IN	.22	.63	.45	.81	.52	3.59	1.16	.86	1.52	.39	.16	.14
CALENDAR YEAR 1962	MAX 238	MIN 1.2	MEAN 19.4	CFSM 1.05	INCHES 14.32							
WATER YEAR 1962-63	MAX 190	MIN 1.4	MEAN 14.2	CFSM .772	INCHES 10.46							

Peak discharge (base 550 cfs).--No peak above base.

* Discharge measurement made on this day.

a Doubtful or no gage-height record.

b Stage-discharge relation affected by ice.

1-6415. Fishing Creek near Lewistown, Md.

Location.--Lat 39°31'35", long 77°28'00", on left bank immediately upstream from Fishing Creek Reservoir, 50 ft downstream from Little Fishing Creek, and 2.8 miles (revised) west of Lewistown, Frederick County.

Drainage area.--7.29 sq mi.

Records available.--October 1947 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 735 ft (from topographic map).

Average discharge.--16 years, 10.8 cfs.

Extremes.--Maximum discharge during year, 38 cfs June 3 (gage height, 1.87 ft); minimum, 0.9 cfs Oct. 18-25, 28-30, Sept. 28 (gage height 1.15 ft).

1947-63: Maximum discharge, 500 cfs July 12, 1949 (gage height, 3.73 ft); from rating curve extended above 100 cfs on basis of slope-area measurement of peak flow; minimum, 0.7 cfs Sept. 22, 1959.

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

Rating table, water year 1962-63, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.15	0.9	1.5	10
1.2	1.6	1.6	16
1.3	3.3	1.8	31
1.4	6.1	2.0	52

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.2	1.4	b 1.2	3.8	3.8	1.7	9.7	7.6	6.8	2.5	1.7
2	* 1.0	1.0	1.2	1.6	4.0	4.3	1.6	8.8	8.0	6.1	2.3	1.6
3	1.0	2.1	1.2	1.6	4.6	4.0	1.5	8.4	2.6	5.8	2.3	1.6
4	2.2	2.0	1.2	1.6	b 4.0	5.1	1.5	8.4	3.1	5.1	2.5	1.6
5	1.7	1.7	1.2	1.6	3.6	1.2	1.3	8.4	2.9	5.1	2.2	1.7
6	1.1	1.4	4.7	1.6	3.8	2.7	1.3	8.4	2.7	4.8	2.2	1.8
7	1.0	1.1	2.5	1.6	4.0	2.5	1.3	8.4	2.4	4.8	2.3	1.6
8	1.1	1.1	2.2	1.6	3.8	2.2	1.3	8.4	2.3	4.6	2.3	1.6
9	1.1	1.9	2.0	1.7	b 3.5	2.1	1.4	8.4	2.1	4.6	2.0	1.6
10	1.1	1.2	1.8	1.7	3.8	2.1	* 1.2	8.0	2.0	* 4.0	1.8	1.4
11	1.1	2.2	b 1.6	3.3	4.0	2.1	1.2	8.0	1.9	4.3	1.8	1.2
12	1.0	1.6	b 1.4	7.2	4.6	2.6	1.1	7.6	1.7	4.0	1.7	1.2
13	1.0	1.4	b 1.2	8.8	4.0	2.8	1.1	7.6	1.5	4.0	3.2	1.2
14	1.0	1.2	b 1.2	6.8	4.0	2.9	1.0	8.0	1.5	6.6	2.2	1.2
15	1.0	1.2	1.2	5.4	b 3.5	2.8	1.0	7.6	1.4	5.1	1.8	1.2
16	1.0	1.2	1.4	4.8	b 3.5	2.6	1.0	7.2	1.2	4.3	1.8	1.2
17	1.0	1.4	1.6	4.6	b 3.5	2.9	1.0	8.9	1.1	4.3	1.7	1.2
18	9	3.5	1.6	4.3	b 4.0	2.5	1.0	1.8	1.0	3.8	1.6	1.2
19	9	2.7	1.6	4.0	4.3	2.5	9.2	1.0	9.2	3.6	1.8	1.2
20	9	1.7	1.7	5.1	4.6	3.4	8.8	9.2	9.2	4.6	3.4	1.1
21	9	2.0	1.7	b 5.0	b 4.0	3.2	8.4	9.2	9.2	3.6	* 2.8	1.1
22	9	4.6	1.7	b 4.5	b 3.5	2.9	8.4	* 9.2	8.4	3.6	2.0	1.1
23	9	2.2	1.6	b 4.5	b 3.5	2.6	1.0	9.2	8.0	3.3	1.8	1.0
24	9	1.8	1.6	b 4.5	4.0	2.5	8.8	8.8	7.6	3.1	1.8	1.0
25	1.0	1.7	1.6	b 4.0	4.0	2.3	8.0	8.8	7.2	2.9	1.8	1.1
26	1.0	1.6	1.6	4.3	3.8	2.2	8.0	8.8	6.8	2.7	1.8	1.1
27	1.0	* 1.6	1.6	4.3	* b 3.5	2.2	7.6	8.8	6.4	2.7	1.7	1.0
28	9	1.4	1.6	b 3.8	3.8	2.0	7.6	8.8	6.4	2.5	1.7	9
29	9	1.4	b 1.4	b 3.5	-	1.8	7.6	9.2	8.0	2.5	2.4	6.0
30	1.6	1.4	b 1.2	b 3.8	-----	1.7	1.1	1.1	7.2	2.7	2.0	1.7
31	3.1	-----	b 1.0	3.8	-----	1.6	-----	8.0	-----	2.5	1.8	-----
Total	35.2	63.3	50.5	116.1	109.0	666.2	328.4	277.2	423.2	128.4	65.0	44.1
Mean	1.14	2.11	1.63	3.75	3.89	21.5	10.9	8.94	14.1	4.14	2.10	1.47
Cfsm	0.156	0.289	0.224	0.514	0.534	2.95	1.50	1.23	1.93	0.568	0.288	0.202
In.	0.18	0.32	0.26	0.59	0.56	3.40	1.68	1.41	2.16	0.66	0.33	0.22

Calendar year 1962: Max 87 Min 0.8 Mean 8.37 Cfsm 1.15 In. 15.59
Water year 1962-63: Max 34 Min 0.9 Mean 6.32 Cfsm 0.867 In. 11.77

Peak discharge (base, 100 cfs).--No peak above base.

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

POTOMAC RIVER BASIN

1-6425. Linganore Creek near Frederick, Md.

Location.--Lat 39°24'55", long 77°20'00", on left bank 2½ miles upstream from mouth and 4 miles east of Frederick, Frederick County.

Drainage area.--82.3 sq mi.

Records available.--November 1931 to March 1932, September 1934 to September 1963.

Gage.--Water-stage recorder (digital). Concrete control since Sept. 23, 1946. Altitude of gage is 270 ft (from topographic map). Nov. 27, 1931, to Mar. 26, 1932, staff gage at Frederick pumping station 1½ miles downstream at datum about 20 ft lower. Sept. 12, 1934, to Sept. 25, 1946, staff gage at present site and datum.

Average discharge.--29 years (1934-63), 81.8 cfs.

Extremes.--Maximum discharge during year, 1,960 cfs Mar. 6 (gage height, 7.22 ft); maximum gage height, 9.41 ft Mar. 2 (ice jam); minimum discharge, 4.8 cfs Sept. 14 (gage height, 1.30 ft).
1931-32, 1934-63: Maximum discharge 4,130 cfs Aug. 13, 1955 (gage height, 11.39 ft), from rating curve extended above 1,500 cfs on basis of slope area measurement at gage height 10.01 ft; maximum gage height, 12.22 ft June 2, 1946; minimum, that of Sept. 14, 1963.
Flood of Aug. 23 or 24, 1933, reached a stage of 10.5 ft, from floodmarks (discharge 2,920 cfs).

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

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 2

Mar. 3 to Sept. 30

1.5	8.9	2.0	28
1.6	12	2.2	38
1.8	18		

1.3	5.0	3.0	136
1.6	12	3.5	238
1.9	24	4.0	368
2.2	38	5.0	726
2.5	64	6.0	1,280

Note.--Same as following table above 2.2 ft.

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	12	18	20	b 17	a 35	a 40	a 78	60	23	34	12	8.1
2	11	14	20	b 20	b 40	b 350	a 80	42	34	19	11	7.6
3	*11	33	20	b 25	b 100	b 800	a 72	38	197	18	11	7.4
4	33	59	19	b 28	b 70	200	a 66	36	124	16	12	7.1
5	56	29	19	b 30	b 60	569	a 60	35	62	15	9.3	7.4
6	18	26	85	b 30	b 90	1,030	a 60	34	52	14	8.6	9.1
7	14	19	70	b 30	b 170	a 200	a 60	32	53	14	8.9	8.4
8	14	17	44	b 31	b 90	a 150	a 58	31	56	13	10	7.8
9	13	17	40	32	b 50	a 130	*a 66	30	41	* 12	9.2	7.6
10	13	156	b30	35	b 60	a 120	57	29	37	12	8.2	6.9
11	12	42	b25	b 50	b 130	a 100	51	28	36	13	7.2	6.3
12	12	28	b22	b 300	189	379	48	27	31	12	7.0	6.0
13	12	23	b20	b 400	72	a 200	47	26	28	12	12	5.6
14	11	20	b20	b 200	b 50	a 150	45	30	27	17	22	5.2
15	12	19	b22	b 100	b 40	a 120	43	32	28	23	9.5	5.4
16	12	18	27	b 70	b 30	a 110	42	27	25	15	9.0	8.1
17	12	19	27	b 55	b 30	254	45	29	23	14	8.5	10
18	12	72	28	b 50	b 60	a 150	48	60	22	12	7.7	8.4
19	12	77	28	b 50	b 150	a 120	43	33	21	12	14	7.6
20	12	38	27	218	b 200	484	40	29	21	14	46	6.9
21	12	35	b18	97	b 400	a 170	38	31	23	13	18	6.5
22	12	115	b20	b 55	a 90	a 130	38	* 29	20	11	12	7.1
23	12	48	b25	b 50	a 50	a 110	51	25	19	11	11	6.7
24	11	35	b22	b 45	a 45	a 100	41	24	18	11	9.9	6.0
25	11	29	b20	a 40	a 40	a 90	38	24	18	10	9.9	6.3
26	12	27	b20	a 35	a 30	a 90	37	24	17	9.5	* 9.0	6.7
27	12	*25	b20	a 35	a 25	a 150	36	24	17	8.8	8.8	6.7
28	12	23	b19	a 30	a 30	a 90	35	25	16	104	8.4	*6.3
29	12	22	b17	a 30	-	a 82	35	30	21	57	11	102
30	13	21	b16	a 35	-----	a 80	52	50	48	21	14	23
31	30	-----	b15	a 35	-----	a 78	-----	26	-----	14	9.3	-----
TOTAL	463	1,124	825	2,258	2,426	6,826	1,510	1,000	1,158	581.3	364.4	324.2
MEAN	14.9	37.5	26.6	72.8	86.6	220	50.3	32.3	38.6	18.8	11.8	10.8
CFSM	.181	.456	.323	.885	1.05	2.67	.611	.393	.469	.228	.143	.131
IN	.21	.51	.37	1.02	1.10	3.08	.68	.45	.52	.26	.16	.15

CALENDAR YEAR 1962	MAX	1,140	MIN	8.2	MEAN	63.0	CFSM	.766	INCHES	10.39
WATER YEAR 1962-63	MAX	1,030	MIN	5.2	MEAN	51.7	CFSM	.628	INCHES	8.52

Peak discharge (base, 1,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-21	0015	6.44	1,560	3- 6	1000	7.22	1,960

* Discharge measurement made on this day.
a Doubtful or no gage-height record.
b Stage-discharge relation affected by ice.

1-6430. Monocacy River at Jug Bridge near Frederick, Md.

Location.--Lat 39°24'13", long 77°21'58", on right bank a quarter of a mile upstream from Jug Bridge on U. S. Highway 40, 0.35 mile downstream from Linganore Creek, and 2½ miles east of Frederick, Frederick County.

Drainage area.--817 sq mi.

Records available.--October 1929 to September 1963. Monthly discharge only for October, November 1929, published in WSP 1302.

Gage.--Water-stage recorder. Datum of gage is 231.92 ft above mean sea level (Corps of Engineers bench mark).

Average discharge.--34 years, 886 cfs.

Extremes.--Maximum discharge during year, about 8,400 cfs March 6 or 7 (gage height, about 10.6 ft); minimum daily, 34 cfs Sept. 15, 16.

1929-63: Maximum discharge, 51,000 cfs Aug. 24, 1933 (gage height, 28.1 ft); minimum daily, that of Sept. 15, 16, 1963. Maximum stage known, 30 ft in June 1889, from floodmarks (discharge, 56,000 cfs).

Remarks.--Records good except those for periods of ice effect or backwater from aquatic vegetation, which are fair, and those for periods of no gage-height record, which are poor.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	137	290	263	b 150	a 250	a 400	* 804	*a 500	a 200	455	80	74
2	108	270	247	b 170	a 250	a 1,000	874	a 400	a 180	* 324	72	63
3	* 100	222	233	b 200	a 350	a 1,500	804	a 350	a 300	234	74	62
4	128	364	222	b 210	a 450	a 3,500	710	a 320	*a 1,500	238	84	72
5	986	699	216	b 220	a 350	a 7,000	620	a 300	1,090	174	70	74
6	694	495	584	b 220	a 350	a 8,000	575	a 280	814	152	* 63	72
7	278	378	2,470	220	a 700	a 6,000	560	a 260	640	138	62	62
8	183	263	1,060	220	a 600	a 4,500	545	a 240	2,420	135	72	60
9	142	222	770	* 220	a 400	a 3,500	555	a 220	1,660	132	63	60
10	126	1,720	b 550	226	a 300	a 3,000	580	a 200	926	128	62	56
11	118	2,540	b 350	266	*a 400	a 2,500	520	a 200	809	130	58	53
12	137	761	b 300	829	1,120	a 3,500	465	a 200	726	128	55	46
13	118	475	b 250	3,450	770	a 3,500	440	a 200	555	130	74	* 37
14	105	374	b 250	2,690	b 475	a 3,000	415	a 180	465	190	86	35
15	100	307	b 220	b 1,400	b 350	2,450	395	a 180	435	262	70	34
16	100	263	b 220	b 930	a 300	1,980	375	a 180	405	254	76	34
17	105	247	b 240	b 675	a 250	3,410	365	a 180	324	223	63	38
18	105	407	b 250	b 575	a 400	3,180	380	a 200	274	171	60	41
19	100	2,010	288	b 560	a 500	2,080	385	a 600	246	155	69	41
20	100	1,030	302	803	a 800	5,210	356	a 400	223	155	170	41
21	100	693	b 230	1,930	a 1,500	3,320	320	a 350	220	145	118	40
22	102	1,530	b 200	b 980	a 800	2,050	302	a 350	209	140	112	38
23	100	1,590	b 280	b 630	a 500	1,590	333	a 300	195	135	115	38
24	100	748	b 250	a 400	a 400	1,350	342	a 250	177	135	118	40
25	98	549	b 230	a 350	a 300	1,200	315	a 220	160	128	95	40
26	100	440	b 220	a 300	a 250	1,090	284	a 200	155	118	74	42
27	102	387	b 200	a 250	a 200	1,460	266	a 200	150	110	65	40
28	100	* 338	b 180	a 250	a 200	1,400	254	a 200	145	197	70	* 40
29	102	307	b 150	a 250	-	1,010	242	a 220	334	264	80	189
30	112	282	b 140	a 250	-----	880	310	a 350	540	128	82	236
31	186	-----	b 130	a 250	-----	832	-----	a 250	-----	95	72	-----
Total	5,172	20,201	11,495	20,074	13,515	85,392	13,691	9,180	16,477	5,503	2,484	1,798
Mean	167	673	371	648	483	2,755	456	296	549	178	80.1	59.9
Cfsm	0.204	0.824	0.454	0.793	0.591	3.37	0.558	0.362	0.672	0.218	0.098	0.073
In.	0.24	0.92	0.52	0.91	0.62	3.89	0.62	0.42	0.75	0.25	0.11	0.08

Calendar year 1962 Max 10,100 Min 65 Mean 765 Cfsm 0.936 In. 12.72
 Water year 1962-63 Max 8,000 Min 34 Mean 562 Cfsm 0.688 In. 9.33

Peak discharge (base, 8,800 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

Note.--Backwater from aquatic vegetation June 22 to Sept. 23.

1-6450. Seneca Creek at Dawsonville, Md.

Location.--Lat 39°07'41", long 77°20'13", on right bank 60 ft downstream from bridge on State Highway 28, 150 ft downstream from mouth of Great Seneca Creek, and half a mile east of Dawsonville, Montgomery County.

Drainage area.--101 sq mi.

Records available.--September 1930 to September 1963.

Gage.--Water-stage recorder. Concrete control since Mar. 3, 1934. Datum of gage is 214.15 ft above mean sea level, adjustment of 1912. Sept. 26 to Nov. 9, 1930, chain gage and Nov. 10, 1930, to Apr. 6, 1934, water-stage recorder, at highway bridge 60 ft upstream at same datum.

Average discharge.--33 years, 92.3 cfs.

Extremes.--Maximum discharge during year, 1,480 cfs Aug. 20 (gage height, 6.10 ft); minimum, 6.9 cfs Aug. 13 (gage height, 1.67 ft).

1930-63: Maximum discharge, 15,000 cfs July 21, 1956 (gage height, 12.17 ft), from rating curve extended above 2,700 cfs on basis of contracted-opening and flow-over-road measurement at gage height 9.78 ft; minimum observed, 1.7 cfs Sept. 28, 29, 1930 (gage height, 0.56 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. Small diversion at times for irrigation above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	5.6	2.5	166
1.7	11	3.0	372
1.9	29	4.0	770
2.0	43	5.0	1,100
2.2	82		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 20	* 27	36	b 30	42	43	* 84	* 54	29	* 28	* 14	18
2	20	23	36	b 35	45	109	24	47	42	27	17	17
3	20	42	33	b 40	82	120	82	43	332	26	12	17
4	32	61	33	b 40	52	84	78	42	* 175	24	14	19
5	50	33	33	b 35	63	313	69	40	317	23	11	20
6	26	32	115	b 40	99	840	69	40	310	23	9.0	22
7	24	27	96	b 40	87	202	69	39	147	21	9.6	20
8	23	26	63	b 40	b 60	120	67	37	94	21	11	19
9	23	27	56	40	45	99	67	37	78	20	10	18
10	23	279	b 45	40	54	94	65	36	67	20	9.0	17
11	22	57	b 40	56	63	88	59	33	61	20	7.9	16
12	21	39	b 35	b 270	b 240	392	57	33	52	19	7.4	15
13	21	35	b 35	b 350	b 90	320	56	33	47	19	15	15
14	20	32	b 35	b 140	b 70	184	54	35	68	31	39	14
15	21	30	b 35	b 90	b 55	137	52	36	71	22	13	15
16	22	30	b 35	b 70	b 45	128	52	32	47	24	12	22
17	20	30	b 35	b 65	b 45	308	54	33	43	22	10	23
18	20	66	b 35	b 65	b 55	173	61	57	39	19	9.6	19
19	20	94	b 35	67	65	199	56	37	36	19	21	17
20	20	50	b 35	151	b 200	299	50	36	114	20	366	15
21	21	52	b 30	b 135	b 225	173	47	40	137	20	319	15
22	21	177	b 35	b 75	b 60	134	47	36	50	19	37	15
23	21	69	b 35	b 65	b 50	114	69	32	42	19	26	15
24	18	52	b 35	b 55	52	106	57	30	37	16	23	15
25	18	45	b 35	b 45	50	99	50	30	33	15	22	14
26	19	42	b 35	b 45	b 40	99	48	29	32	14	20	15
27	19	39	b 30	b 45	b 35	131	47	29	29	13	20	15
28	19	37	b 30	b 40	*b 40	99	47	29	28	12	18	13
29	20	36	b 30	b 35	-	89	45	30	30	14	25	162
30	21	* 35	b 30	b 35	-----	82	57	61	36	38	* 26	40
31	30	-----	*b 30	*b 40	-----	80	-----	33	-----	15	20	-----
Total	695	1,624	1,256	2,319	2,109	5,458	1,809	1,159	2,623	660	1,173.5	677
Mean	22.4	54.1	40.5	74.8	75.3	176	60.3	37.4	87.4	21.3	37.9	22.6
Cfsm	0.222	0.536	0.401	0.741	0.746	1.74	0.597	0.370	0.865	0.211	0.375	0.224
In.	0.26	0.60	0.46	0.85	0.78	2.01	0.67	0.43	0.97	0.24	0.43	0.25

Calendar year 1962: Max 1,450 Min 15 Mean 75.2 Cfsm 0.745 In. 10.12
 Water year 1962-63: Max 840 Min 7.4 Mean 59.1 Cfsm 0.585 In. 7.95

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-6	1230	5.93	1,430	8-20	2100	6.10	1,480
6-5	2300	5.60	1,300				

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

1-6452. Watts Branch at Rockville, Md.

Location.--Lat 39°05'03", long 77°10'38", on left bank 0.2 mile south of State Highway 28 and 1.3 miles west of post office in Rockville, Montgomery County.

Drainage area.--3.70 sq mi.

Records available.--June 1957 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 330 ft (from topographic map).

Average discharge.--6 years, 3.22 cfs.

Extremes.--Maximum discharge during year, 1,280 cfs June 5 (gage height, 5.02 ft), from rating curve extended above 160 cfs as explained below; minimum, 0.3 cfs Aug. 8, 12-13 (gage height, 1.14 ft).
1957-63: Maximum discharge, 1,400 cfs July 13, 1960 (gage height, 5.10 ft), from rating curve extended above 160 cfs on basis of velocity-area studies; minimum, 0.1 cfs Aug. 17-19, 23-25, 1957 (gage height, 1.10 ft).

Remarks.--Records good except those for periods of ice effect or those above 160 cfs, which are fair.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.1	1.7	20
1.2	.8	2.0	41
1.3	2.2	2.5	68
1.4	4.6	3.0	99
1.5	8.4	3.5	140

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	* 0.4	* 0.6	1.3	b 1.0	b 1.4	1.7	3.0	2.2	1.0	1.4	0.8	0.6
2	.5	.6	1.1	b 1.1	b 1.7	2.7	3.1	2.0	2.4	1.2	.6	.6
3	.5	4.2	1.1	1.3	b 2.0	2.0	2.6	1.0	1.0	1.2	.5	.5
4	4.8	1.1	1.1	1.3	b 1.4	2.1	2.4	1.7	2.0	1.1	.5	.6
5	.9	1.4	1.1	1.2	3.6	11	2.6	1.7	9.3	1.0	.5	.9
6	.7	.9	3.0	1.3	2.9	3.0	2.6	1.7	5.4	1.0	.5	.7
7	.6	.8	2.6	1.4	b 1.8	4.0	2.5	1.6	2.9	1.0	.5	.6
8	.6	.8	1.9	1.3	b 1.5	3.0	2.4	1.6	2.4	.9	.5	.6
9	.6	4.8	1.8	1.4	b 1.4	2.9	3.7	1.6	2.1	.9	.5	.7
10	.6	17	1.6	1.6	1.7	2.7	2.4	1.6	2.0	.9	.6	* .7
11	.6	1.5	b 1.3	4.2	2.8	3.4	2.2	1.4	1.8	.9	.4	.5
12	.6	1.1	b 1.1	1.3	13	27	2.0	1.4	1.6	.8	.4	.5
13	.5	1.0	b 1.1	11	b 2.5	7.4	1.3	1.4	1.5	.8	2.9	.5
14	.5	.9	b 1.1	3.4	b 1.8	4.4	1.9	1.7	7.8	2.7	1.1	.5
15	.5	.9	1.2	2.4	b 1.5	3.4	1.8	1.6	2.3	.9	.7	1.0
16	.5	.9	1.3	b 1.9	b 1.4	5.3	1.8	1.4	1.7	.8	.7	1.5
17	.5	.9	1.3	b 1.8	b 1.4	12	1.0	1.8	1.6	.7	.7	.8
18	.5	6.3	1.3	b 2.0	b 1.7	4.2	1.9	2.0	1.5	.7	.6	.7
19	* .6	2.0	1.3	2.2	2.2	13	2.3	1.4	1.4	.6	2.7	.7
20	.5	1.6	1.3	5.8	21	10	1.7	2.4	1.5	.6	12.0	.7
21	.5	* 7.2	b 1.1	b 2.5	3.8	4.4	1.7	2.7	2.8	.6	5.8	.8
22	.5	10	b 1.2	b 2.0	b 1.7	3.6	1.7	2.0	1.8	.6	1.5	.6
23	.5	2.0	b 1.1	b 1.7	b 1.5	3.2	2.5	1.4	1.5	.6	1.0	.6
24	.5	1.6	b 1.0	b 1.5	b 1.7	3.0	1.8	1.3	1.6	.6	.9	.6
25	.5	1.5	b 1.0	b 1.5	b 1.7	2.9	1.8	1.3	1.3	.6	.8	.6
26	.5	1.4	b 1.1	b 1.5	b 1.4	3.7	* 1.8	1.4	1.3	.5	.8	.6
27	.5	1.3	b 1.2	b 1.5	b 1.3	3.0	1.7	1.3	1.2	.5	.8	.6
28	.6	1.3	b 1.1	b 1.3	*b 1.4	2.0	1.7	1.3	1.2	.6	.7	.6
29	.5	1.3	b 1.0	*b 1.2	---	2.7	1.8	1.6	3.4	* .5	1.3	1.6
30	.6	1.3	b 1.0	b 1.2	---	2.7	2.6	1.4	2.1	.6	.7	1.0
31	.7	---	b 1.0	b 1.4	---	2.7	---	1.1	---	.5	.6	---
TOTAL	21.2	78.2	45.8	82.9	83.2	187.9	65.7	52.0	187.3	26.3	157.4	36.0
MEAN	.68	2.61	1.48	2.67	2.97	6.06	2.19	1.68	6.24	.85	5.08	1.20
CFSM	.185	.705	.400	.722	.803	1.64	.592	.454	1.69	.229	1.27	.324
IN	.21	.79	.46	.83	.84	1.89	.66	.52	1.88	.26	1.58	.26

CALENDAR YEAR 1962 MAX 69 MIN .3 MEAN 2.78 CFSM .751 INCHES 10.18
WATER YEAR 1962-63 MAX 120 MIN .4 MEAN 2.81 CFSM .760 INCHES 10.29

Peak discharge (base, 130 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
6-5	1815	5.02	1,280	8-13	1745	3.97	238
6-20	1700	3.62	152	8-20	1915	5.01	1,260

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

1-6465. Potomac River near Washington, D. C.

Location.--Lat 38°57'36", long 77°08'33", on right bank 1 mile upstream from Little Falls Dam, 1½ miles north-east of Langley, Fairfax County, Va., 2 miles upstream from District of Columbia boundary line, and 2½ miles upstream from Chain Bridge.

Drainage area.--11,560 sq mi.

Records available.--March 1930 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 37.95 ft above mean sea level, datum of 1929. Prior to June 7, 1930, staff gage at same site and datum.

Average discharge.--33 years, 11,040 cfs (adjusted for diversions).

Extremes.--Maximum discharge during year, 128,000 cfs Mar. 21 (gage height, 13.91 ft); minimum daily, 706 cfs Sept. 25.

1930-63: Maximum discharge, 484,000 cfs Mar. 19, 1936 (gage height, 28.1 ft); minimum daily, 448 cfs Aug. 25, 1930 (does not include 334 cfs diverted at Great Falls for water supply).

Flood of June 2, 1889, was of approximately the same magnitude as that of March 19, 1936.

Remarks.--Records good except those for periods of ice effect, 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, and since April 1961, at Potomac Filtration Plant, for water supply of Washington Suburban Sanitary District. Low flow affected slightly by Stony River Reservoir (see p. 62) and since December 1950, by Savage River Reservoir (see p. 65).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	620	6.0	22,500
2.8	1,310	8.0	43,500
3.2	2,970	10.0	68,200
4.0	7,200	13.0	113,000

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.310	1.430	4.600	b 3.200	b 4.800	4.800	15.200	6.660	3.550	3.010	1.270	1.120
2	1.430	1.670	4.300	b 3.300	b 5.000	5.000	14.400	6.780	3.590	3.010	1.390	1.080
3	1.590	2.000	4.250	b 3.500	b 5.500	6.000	13.600	7.080	4.600	2.760	1.270	1.000
4	1.830	2.290	4.010	b 4.000	b 5.500	9.800	13.000	7.260	7.500	2.580	1.190	925
5	1.830	2.970	3.640	b 4.500	b 5.500	18.900	11.800	6.840	8.260	2.880	1.120	1.120
6	1.870	3.150	4.010	b 4.500	b 6.000	67.300	11.000	6.420	15.000	3.010	1.120	1.270
7	2.540	2.840	5.460	b 4.000	6.420	108.000	10.200	6.060	17.400	2.930	1.080	1.270
8	2.370	2.580	6.960	b 4.000	6.120	89.000	9.590	5.760	14.600	3.280	964	1.230
9	2.290	2.410	6.540	b 4.000	5.340	56.500	9.040	5.460	14.600	2.840	925	1.160
10	2.290	3.870	5.760	4.010	4.900	39.800	8.710	5.070	11.600	2.460	892	1.190
11	2.290	6.060	5.070	* 4.110	5.120	31.000	8.380	4.700	9.380	2.200	828	1.350
12	2.160	10.700	3.920	5.940	5.520	31.700	8.190	4.450	8.260	2.040	828	1.550
13	2.000	16.400	b 3.000	15.900	5.180	36.900	7.860	4.160	7.930	1.920	* 1.000	1.430
14	1.790	12.600	b 3.000	49.700	5.520	73.700	7.380	3.920	11.200	1.960	1.350	1.310
15	1.710	8.720	b 3.200	44.100	b 5.000	87.200	6.900	3.870	9.940	1.960	1.160	1.190
16	1.630	6.480	b 3.550	28.700	b 5.000	62.200	6.660	3.870	7.740	1.920	1.040	1.190
17	1.550	5.400	b 3.500	20.200	b 6.000	46.600	6.420	3.730	6.480	1.710	964	1.160
18	1.510	4.800	b 3.500	16.600	5.340	43.500	6.300	4.400	5.520	1.670	860	1.040
19	1.430	4.960	b 3.500	12.700	4.960	48.500	6.120	5.340	4.960	1.590	892	964
20	1.350	6.600	3.500	11.300	5.760	57.100	6.060	5.180	4.600	1.630	1.980	925
21	1.310	8.450	b 3.400	11.400	7.200	107.000	5.880	5.180	4.700	1.510	5.110	860
22	1.270	12.200	b 3.500	10.600	6.500	109.000	6.000	5.520	4.110	1.510	2.290	828
23	1.190	11.300	3.590	9.100	7.000	58.600	6.300	5.070	3.820	1.510	1.590	797
24	1.270	10.900	3.500	7.620	7.500	40.300	5.940	4.550	3.410	1.430	1.310	766
25	1.310	11.100	5.290	6.000	6.500	31.100	5.760	4.210	3.100	1.310	1.190	706
26	1.310	10.300	4.960	b 6.000	6.000	26.200	7.020	4.250	3.100	1.120	1.160	730
27	1.230	8.520	4.300	b 5.500	5.500	23.100	8.120	4.110	2.930	1.080	1.270	* 736
28	1.190	6.840	4.210	b 5.000	5.000	22.000	7.440	3.820	2.580	1.040	1.390	766
29	1.190	5.760	4.110	b 5.000	-	20.800	6.900	3.590	2.410	* 1.120	1.470	1.550
30	1.230	4.960	4.400	b 4.800	-----	18.700	* 6.780	3.550	3.590	1.310	1.350	1.470
31	1.270	-----	3.150	b 4.800	-----	16.600	-----	3.590	-----	1.390	1.120	-----
Total	50.540	198.260	129.680	324.080	159.680	1,396.900	252.950	154.450	210.460	61.690	41.373	32.689
Mean	1.630	6.609	4.183	10.450	5.703	45.060	8.432	4.982	7.015	1.990	1.335	1.090
(†)	331	352	364	369	376	368	377	367	346	400	390	363
Mean†	1.961	6.961	4.547	10.820	6.079	45.430	8.809	5.349	7.361	2.390	1.725	1.453
Cfsm†	0.170	0.602	0.393	0.936	0.526	3.93	0.762	0.463	0.637	0.207	0.149	0.126
In†	0.20	0.67	0.45	1.08	0.55	4.53	0.85	0.53	0.71	0.24	0.17	0.14

Calendar year 1962: Max 114,000 Min 1,050 Mean 10,580 Mean† 10,930 Cfsm† 0.946 In.† 12.83

Water year 1962-63: Max 109,000 Min 706 Mean 8,254 Mean† 8,621 Cfsm† 0.746 In.† 10.12

Peak discharge (base, 45,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-14	About 1600	About 8.80	53,100	3-15	0300	11.64	91,600
3- 7	About 1800	About 12.87	111,000	3-21	2300	13.91	128,000

* Discharge measurement made on this day.

† Diversion, in cubic feet per second, for municipal supply of Washington, D. C., Washington Suburban Sanitary District, and city of Rockville; records furnished by Corps of Engineers, Washington Suburban Sanitary Commission and city of Rockville.

* Adjusted for diversion.

b Stage-discharge relation affected by ice.

1-6470. Little Falls Branch near Bethesda, Md.

Note.--Records for the 1963 water year have been withheld pending better definition of the stage-discharge relation. They will be published in a subsequent annual report. The annual maximum discharge for the water years 1960-61 are contained in this report (see p. 108).

1-6480. Rock Creek at Sherrill Drive, Washington, D. C.

Location.--Lat 38°58'21", long 77°02'25", on left bank 125 ft downstream from new Sherrill Drive Bridge in Rock Creek Park in Washington and 7½ miles upstream from mouth.

Drainage area.--62.2 sq mi.

Records available.--October 1929 to September 1963.

Gage.--Water-stage recorder and concrete control. Datum of gage is 148.87 ft above mean sea level, datum of 1929.

Average discharge.--34 years, 55.9 cfs.

Extremes.--Maximum discharge during year, 1,430 cfs Aug. 21 (gage height, 6.38 ft); minimum, 4.2 cfs Aug. 10-13, Sept. 11 (gage height 1.15 ft).
1929-63: Maximum discharge, 7,220 cfs July 21, 1956 (gage height, 13.19 ft, from high-water mark in gage house), from rating curve extended above 4,400 cfs on basis of contracted-opening measurement of peak flow; minimum, 0.5 cfs Oct. 1-7, 1930 (gage height, 1.04 ft).

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

Rating table, water year, 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	2.1	1.6	58
1.2	7.1	2.0	157
1.3	15	3.0	461
1.4	26	4.0	735

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	13	19	b15	b25	26	42	56	26	22	36	12
2	7.7	28	18	b18	b30	36	51	31	74	17	26	11
3	7.7	106	18	b20	b64	37	40	30	426	16	8.4	12
4	9.7	50	18	25	b30	33	37	28	236	a15	8.4	13
5	55	47	18	23	40	160	31	27	54	a14	6.5	18
6	11	23	170	23	75	591	31	27	401	a14	6.5	18
7	7.7	14	*74	26	58	132	33	26	77	a13	*5.3	12
8	7.1	12	34	26	36	62	33	26	53	a13	5.3	11
9	7.1	35	28	26	25	51	33	27	40	a12	5.3	12
10	7.7	488	b20	31	31	47	34	26	36	a11	4.7	11
11	7.1	45	b18	b55	39	63	33	26	34	a11	4.7	* 9.1
12	7.1	23	b18	256	245	520	31	25	28	a11	4.2	7.1
13	7.1	20	b18	202	71	188	31	25	26	9.8	141	7.1
14	6.5	18	b18	b90	b40	91	30	31	71	71	123	7.1
15	6.5	17	18	b50	b30	64	30	28	90	30	11	14
16	7.1	16	20	b40	b25	79	30	23	27	13	7.7	72
17	7.1	16	21	b35	b25	213	30	22	25	11	6.5	25
18	7.1	99	21	b32	30	89	33	72	22	* 9.8	5.9	11
19	*8.4	75	21	34	60	150	34	26	22	9.8	32	9.8
20	7.7	31	20	103	177	232	31	23	34	11	427	9.8
21	8.4	91	15	b80	182	86	28	40	104	9.8	652	9.8
22	*8.4	344	b20	b36	b35	62	27	26	27	8.4	40	13
23	8.4	47	b20	*b35	b30	51	72	22	21	8.4	22	7.7
24	8.4	30	b18	b30	b30	47	33	21	20	8.4	18	7.7
25	8.4	25	b16	b25	b30	46	27	20	19	8.4	17	7.1
26	8.4	*23	b18	b25	b25	47	26	17	18	7.7	15	7.1
27	8.4	21	b22	b25	b20	79	26	27	17	7.1	14	7.1
28	9.1	21	b18	b25	b25	47	26	20	17	9.8	13	7.1
29	9.8	20	b15	b20	-	42	*26	27	17	9.8	110	396
30	11	20	b15	b20	-----	39	87	51	60	7.7	21	34
31	17	-----	b15	b20	-----	37	-----	26	-----	7.7	14	-----
Total	3931	1.7998	802	1.471	1.533	3.447	1.056	902	2.192	427.6	1.811.4	798.6
Mean	12.7	60.0	25.9	47.5	54.8	111	35.2	29.1	73.1	13.8	58.4	26.6
Cfsm	0.204	0.965	0.416	0.764	0.881	1.78	0.566	0.468	1.18	0.222	0.939	0.428
In.	0.24	1.08	0.48	0.88	0.92	2.06	0.63	0.54	1.31	0.26	1.08	0.48

Calendar year 1962: Max 978 Min 4.5 Mean 51.1 Cfsm 0.822 In. 11.16
Water year 1962-63: Max 652 Min 4.2 Mean 45.6 Cfsm 0.733 In. 9.96

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	0300	4.78	943	6-6	1000	4.68	915
3-6	1730	5.05	1,020	8-21	0500	6.38	1,430
3-12	0530	4.55	879	9-29	0900	4.78	943
6-3	1730	4.67	913				

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

1-6495. Northeast Branch Anacostia River at Riverdale, Md.

Location.--Lat 38°57'37", long 76°55'34", on right bank at downstream side of bridge on Riverdale Road in Riverdale, Prince Georges County, $\frac{1}{2}$ miles downstream from Indian Creek, and $\frac{1}{2}$ miles upstream from confluence with Northwest Branch.

Drainage area.--72.8 sq mi.

Records available.--August 1938 to September 1963.

Gage.--Water-stage recorder (digital). Datum of gage is 14.00 ft above mean sea level (Washington Suburban Sanitary Commission bench mark). Prior to June 12, 1942, wire-weight gage at same site and datum.

Average discharge.--25 years, 77.7 cfs.

Extremes.--Maximum discharge during year, 5,060 cfs Aug. 20 (gage height, 6.98 ft), from rating curve extended above 2,100 cfs by logarithmic plotting; minimum, 3.2 cfs Aug. 12.

1938-63: Maximum discharge, that of Aug. 20, 1963; maximum gage height, 12.93 ft Oct. 16, 1942; minimum discharge, 3.0 cfs Aug. 27, 28, 1962.

Maximum stage known, about 15.5 ft Aug. 23 or 24, 1933, from floodmarks (discharge, 10,500 cfs, from rating curve extended above 3,000 cfs on basis of velocity-area study).

Remarks.--Records good except those for periods of ice effect, doubtful or no gage-height record, or backwater from cofferdam, which are fair. Some regulation at low flow by sand and gravel plants above station.

Rating tables, water year 1962-63, except periods of ice effect or backwater from cofferdam (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Aug. 20

Aug. 21 to Sept. 28

Sept. 29-30

1.7	4.4	3.0	190	1.4	7.5	2.5	96	2.7	119
1.8	8.4	3.5	390	1.5	10	3.0	200	3.0	190
1.9	14	4.0	715	1.6	14	3.5	390	3.5	390
2.1	28	4.5	1,160	1.8	24	4.0	715	4.0	715
2.3	50	5.0	1,750	2.1	47	4.5	1,160		
2.5	80								

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	15	17	29	b 30	b 35	39	68	90	24	a 50	24	21
2	12	17	28	b 35	44	46	80	51	107	a 25	12	17
3	12	88	* 26	* 37	71	46	70	* 41	801	a 16	9.3	12
4	229	65	27	b 35	b 45	46	61	37	419	a 13	9.6	15
5	179	91	26	b 35	49	122	49	32	* 341	a 12	6.1	14
6	49	75	187	36	68	665	48	30	211	a 11	5.5	14
7	28	54	132	38	b 60	374	48	28	129	a 11	5.9	13
8	20	36	74	39	b 40	162	46	26	82	a 10	* 7.0	12
9	18	73	50	46	b 35	95	49	25	58	a 10	6.8	a 12
10	16	619	39	55	42	80	46	24	51	a 9	8.0	a 11
11	15	163	b 30	85	51	102	44	25	37	a 10	5.6	a 10
12	14	70	b 25	308	* 280	913	41	25	32	a 9	4.8	a 9.8
13	13	51	b 25	302	* 162	430	41	23	27	a 10	88	a 9.2
14	13	36	b 25	181	91	201	40	30	41	a 50	108	a 8.8
15	12	29	26	b 80	b 50	118	38	28	32	a 31	26	a 24
16	13	27	29	b 60	b 40	120	37	25	24	a 17	19	* 96
17	13	26	29	b 45	b 40	273	41	33	23	a 13	16	* 53
18	13	95	30	49	40	170	44	71	22	a 12	13	* 29
19	12	84	29	53	133	231	41	35	20	* 11	23	21
20	13	58	28	130	209	318	37	25	85	11	1,260	* 18
21	14	135	25	111	152	180	33	39	40	9.8	890	18
22	12	515	37	67	b 70	114	31	31	24	16	161	21
23	* 12	184	57	b 50	b 50	87	72	25	20	10	58	* 13
24	11	77	32	b 45	47	77	47	22	* 17	9.7	17	* c 14
25	12	49	27	b 40	b 50	* 69	39	21	16	8.9	a 15	c 14
26	13	39	36	b 35	b 45	84	36	20	15	8.4	a 15	c 15
27	14	36	33	b 35	b 40	150	34	19	14	7.8	a 15	c 14
28	14	33	b 30	b 35	39	116	32	20	14	16	a 15	c 14
29	13	31	b 30	b 35	-	85	34	28	26	11	63	433
30	13	30	b 30	b 35	-----	73	92	60	a 80	9.5	44	127
31	18	-----	b 30	b 35	-----	67	-----	32	-----	8.4	26	-----
TOTAL	925	2,903	1,241	2,202	2,078	5,653	1,419	1,021	2,832	456.5	2,976.6	1,102.8
MEAN	29.8	96.8	40.0	71.0	74.2	182	47.3	32.9	94.4	14.7	96.0	36.8
CFSM	.409	1.33	.550	.975	1.02	2.50	.650	.452	1.30	.202	1.32	.506
IN	.47	1.48	.63	1.12	1.06	2.89	.72	.52	1.45	.23	1.52	.56

CALENDAR YEAR 1962 MAX 1,450 MIN 4.6 MEAN 64.4 CFSM .885 INCHES 12.00
 WATER YEAR 1962-63 MAX 1,260 MIN 4.8 MEAN 68.0 CFSM .934 INCHES 12.67

Peak discharge (base, 1,250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-10	about 0215	4.63	about 1,300	6- 3	1545	4.74	1,430
3- 6	1130	4.59	1,260	8-20	2000	6.98	5,060
3-12	0345	5.00	1,750				

* Discharge measurement made on this day.
 a Doubtful or no gage-height record.
 b Stage-discharge relation affected by ice.
 c Backwater from cofferdam.

1-6505. Northwest Branch Anacostia River near Colesville, Md.

Location.--Lat 39°03'55", long 77°01'48", on right bank 400 ft upstream from bridge on State Highway 183, 1½ miles southwest of Colesville, Montgomery County, 3 miles upstream from Burnt Mills, and 10 miles upstream from Sligo Branch.

Drainage area.--21.3 sq mi.

Records available.--October 1923 to September 1963. Monthly discharge only for some periods, published in WSP 1302.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 264.85 ft above mean sea level, adjustment of 1912. Prior to April 22, 1932, staff gages in same general vicinity at different datums. April 22, 1932, to April 11, 1934, staff gage at present site and datum.

Average discharge.--40 years, 22.1 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,080 cfs June 5 (gage height, 7.83 ft); minimum, 0.5 cfs Aug. 12 (gage height 1.28 ft).

1924-63: Maximum discharge, 4,910 cfs Aug. 8, 1953 (gage height, 10.99 ft), from rating curve extended above 1,200 cfs on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 0.4 cfs Aug. 11, 12, 1930, Sept. 2, 1932, Aug. 18, 1957.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage height record, which are poor. Inflow pumped from Patuxent River to augment water supply for Washington Suburban Sanitary District August 1939 to August 1960. Diversions at low flow since 1962 for irrigation of golf courses above station.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 5

June 6 to Sept. 30

1.5	2.1	2.0	24	1.3	0.5	1.7	8.0
1.6	3.9	2.4	69	1.4	1.0	1.9	20
1.7	6.6	3.0	168	1.5	2.2	2.3	58
1.8	11	4.0	320	1.6	4.4	2.9	152

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.4	4.9	7.9	b 7	9.3	9.8	16	14	6.6	* 12	2.2	3.3
2	3.2	4.6	7.8	8.6	10	15	18	* 11	19	5.6	2.2	3.0
3	3.4	12	7.9	* 8.8	18	b 14	16	10	* 180	5.2	1.9	3.3
4	21	10	7.8	8.8	11	14	14	9.3	45	4.4	2.0	3.3
5	11	7.5	7.7	8.4	24	72	12	9.0	192	4.1	1.6	3.8
6	5.2	7.2	a 45	8.6	a 27	253	13	9.6	95	4.1	* 1.3	4.1
7	4.2	5.6	a 22	8.7	a 15	38	13	8.8	26	3.8	1.4	3.5
8	4.1	5.4	14	9.0	b 10	23	12	8.2	18	3.5	1.7	3.3
9	4.2	8.5	12	8.9	b 10	19	13	8.1	15	3.3	1.4	3.0
10	4.0	a 111	b 9.5	10	11	19	12	8.0	12	3.0	1.0	2.8
11	3.9	15	b 8	19	15	* 19	12	7.5	11	3.3	1.1	2.6
12	3.9	9.5	b 7	107	a 100	184	11	7.4	9.5	3.0	a 9	2.6
13	4.1	9.0	b 7	83	b 25	58	11	7.4	9.0	3.0	a 19	2.8
14	3.7	9.0	b 7	30	b 20	32	11	8.3	9.0	12	11	2.4
15	3.6	7.5	b 7	b 15	* 15	23	11	7.7	10	7.1	2.8	3.3
16	* 3.8	6.7	b 8	b 11	b 10	27	11	7.2	8.0	4.4	2.4	* 11
17	4.0	6.4	8.4	b 11	b 10	79	11	8.1	7.6	3.8	2.2	6.0
18	3.9	24	8.2	13	11	31	12	12	7.1	3.5	2.0	4.1
19	3.9	19	8.1	14	13	47	11	7.8	6.3	3.3	6.0	3.5
20	4.0	* 11	8.2	46	a 93	73	10	8.0	11	3.0	150	3.3
21	4.3	28	7.0	29	b 30	30	9.8	9.2	12	2.8	54	3.3
22	4.3	112	10	b 15	b 12	22	9.9	8.0	7.1	2.6	9.5	3.8
23	4.1	19	8.5	b 12	b 9	19	16	7.1	6.3	2.8	6.0	3.0
24	3.9	13	8.0	b 10	b 9	19	11	6.8	6.0	2.6	4.6	2.8
25	3.9	11	b 7	b 10	b 9	19	10	6.6	5.2	2.4	4.1	3.0
26	4.1	9.6	8.6	b 9	b 9	20	10	6.5	5.2	2.2	3.8	3.3
27	4.3	9.1	8.3	b 9	b 9	30	9.7	6.6	5.0	2.3	3.8	3.5
28	4.4	8.8	7.6	b 9	9.6	19	9.3	6.8	4.6	2.2	3.3	3.0
29	4.4	9.2	b 7	b 9	-	17	9.6	8.8	6.0	2.3	6.0	a 66
30	4.5	8.2	b 7	b 9	-----	16	16	16	17	2.2	4.6	9.5
31	5.1	-----	b 7	b 9	-----	16	-----	7.4	-----	1.9	3.8	-----
TOTAL	149.8	521.7	304.5	565.8	553.9	1,276.8	361.3	267.2	771.5	121.7	317.6	176.2
MEAN	4.83	17.4	9.82	18.3	19.8	41.2	12.0	8.62	25.7	3.93	10.2	5.87
CFSM	.227	.817	.461	.859	.930	1.93	.563	.405	1.21	.185	.479	.276
IN	.26	.91	.53	.99	.97	2.23	.63	.47	1.35	.21	.55	.31

CALENDAR YEAR 1962 MAX 458 MIN 1.6 MEAN 17.3 CFSM .812 INCHES 11.01
 WATER YEAR 1962-63 MAX 253 MIN .9 MEAN 14.8 CFSM .695 INCHES 9.41

Peak discharge (base, 600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-6	1130	6.01	642	8-20	1915	6.22	684
6-5	2330	7.83	1,080				

* Discharge measurement made on this day.

a Doubtful or no gage-height record.

b Stage-discharge relation affected by ice.

1-6510. Northwest Branch Anacostia River near Hyattsville, Md.

Location.--Lat 38°57'09", long 76°58'00", on right bank at downstream side of bridge on Queens Chapel Road (State Highway 500), 0.8 mile downstream from Sligo Branch and 1 mile west of Hyattsville, Prince Georges County.

Drainage area.--49.4 sq mi.

Records available.--July 1938 to September 1963. Monthly discharge only for July 1938 published in WSP 1302.

Gage.--Water-stage recorder (digital). Datum of gage is 17.30 ft above mean sea level, adjustment of 1912. Prior to Oct. 22, 1938, wire-weight gage, Oct. 22, 1938, to Sept. 17, 1951, water-stage recorder, Sept. 17, 1951, to Aug. 29, 1952, staff gage and crest-stage gage, at same site and datum.

Average discharge.--25 years, 39.5 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,200 cfs Aug. 20 (gage height, 11.00 ft); minimum, 2.0 cfs Aug. 12 (gage height, 2.83 ft).

1938-63: Maximum discharge, 4,170 cfs Aug. 8, 1959 (gage height, 12.12 ft); minimum, 0.8 cfs Oct. 3, 7, 1941, Aug. 26, 1943.

Maximum stage known, about 13.5 ft Aug. 24, 1933.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Prior to June 1961, low flow regulated by storage at Burnt Mills Dam, 7 miles above station. Inflow pumped from Patuxent River to augment water supply for Washington Suburban Sanitary District, August 1939 to August 1960.

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	5.4	13	16	b 15	b 20	19	35	45	13	23	46	7.1
2	5.2	10	16	b 20	b 25	26	* 37	24	107	19	12	6.6
3	5.1	104	* 15	* b 21	b 50	b 24	29	* 21	559	13	7.4	6.6
4	315	27	15	b 20	b 25	24	25	20	* 111	10	6.0	9.8
5	d 55	66	14	b 20	b 30	137	22	19	138	9.2	4.7	9.3
6	12	16	216	21	b 45	580	23	21	d 320	9.2	4.0	8.8
7	7.5	7.9	58	25	b 30	106	23	17	57	8.8	3.7	7.7
8	5.9	6.2	30	23	b 20	* 52	23	16	39	8.3	* 4.0	6.6
9	5.7	81	24	31	b 20	44	24	16	30	7.8	4.0	6.6
10	5.4	452	19	37	b 20	39	23	16	25	7.8	3.0	6.2
11	6.1	43	b 15	57	b 30	88	21	15	24	10	2.7	* 5.9
12	5.4	23	b 13	250	246	559	21	14	20	8.3	2.5	5.5
13	5.4	18	b 13	175	* b 55	117	21	14	19	7.8	179	5.5
14	5.1	19	b 13	70	b 35	* 65	20	27	69	81	58	5.5
15	5.0	17	13	37	b 25	48	20	17	25	* 20	9.2	39
16	5.3	15	15	32	b 20	73	19	14	18	9.7	6.0	95
17	5.4	14	16	29	b 20	158	24	41	16	7.8	5.3	19
18	5.2	109	15	27	b 20	62	23	72	16	7.8	4.7	9.3
19	5.3	54	14	29	* 113	149	21	17	14	* 6.9	104	7.7
20	5.6	29	14	100	165	* 151	20	16	81	6.5	* 744	7.1
21	6.0	154	13	65	88	64	18	36	28	6.0	d 200	9.3
22	* 6.6	322	26	32	b 30	47	18	17	16	8.3	d 33	9.8
23	6.6	48	33	b 25	b 25	38	68	14	14	6.0	* d 17	7.1
24	6.1	29	b 15	b 20	b 22	35	23	13	* 13	6.0	14	5.2
25	5.8	22	b 12	b 20	b 20	33	21	13	13	5.7	11	5.2
26	5.8	20	28	b 18	b 18	50	20	13	12	5.0	9.8	5.5
27	5.8	20	21	b 18	b 18	61	19	13	13	4.7	9.3	5.5
28	5.8	19	16	b 18	b 18	36	18	13	13	51	8.2	5.5
29	5.9	18	b 15	b 18	-	30	* 22	23	19	9.7	97	434
30	9.9	18	b 15	b 18	-----	28	105	42	60	6.5	14	25
31	17	-----	b 15	b 18	-----	27	-----	15	-----	5.0	8.8	-----
TOTAL	557.3	1,792.4	773	1,309	1,253	2,970	806	674	1,902	395.8	1,632.3	786.9
MEAN	18.0	59.7	24.9	42.2	44.8	95.8	26.9	21.7	63.4	12.8	52.7	26.2
CFSM	.364	1.21	.504	.854	.907	1.94	.545	.439	1.28	.259	1.07	.530
IN.	.42	1.35	.58	.99	.94	2.24	.61	.51	1.43	.30	1.23	.59

CALENDAR YEAR 1962 MAX 984 MIN 2.3 MEAN 42.4 CFSM .858 INCHES 11.65
 WATER YEAR 1962-63 MAX 744 MIN 2.5 MEAN 40.7 CFSM .824 INCHES 11.18

Peak discharge (base, 1,250 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1600	9.03	1,940	8-19	2330	9.39	2,130
11-10	0200	8.36	1,590	8-20	2030	11.00	3,200
3-6	1130	8.27	1,560	9-29	0530	7.67	1,320
3-12	0400	7.82	1,380				

* Discharge measurement made on this day.
 b Stage-discharge relation affected by ice.
 d Doubtful gage-height record.

1-6535. Henson Creek at Oxon Hill, Md.

Location.--Lat. 38°47'05", long 76°58'50", on left bank 100 ft downstream from bridge on Tucker Road, 1.0 mile south of Oxon Hill, Prince Georges County, and 1.4 miles upstream from Carey Branch.

Drainage area.--16.7 sq mi.

Records available.--June 1948 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 62 ft (from topographic map).

Average discharge.--15 years, 19.5 cfs.

Extremes.--Maximum discharge during year, 1,130 cfs Mar. 12 (gage height, 5.01 ft); no flow Aug. 10-11. 1948-63: Maximum discharge, 3,000 cfs Aug. 13, 1955 (gage height, 7.33 ft), from rating curve extended above 520 cfs on basis of slope-area measurements at gage heights 6.63 and 7.27 ft; no flow at times during July, August, September, and October 1954, July 1955, August 1957, Sept. 1962, and Aug. 1963.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Small diversion above station for irrigation of truck farm. Some regulation at low flow by sand and gravel plant above station.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 6				Dec. 7 to Sept. 30			
0.4	0.5	0.9	18	0.3	0	1.0	30
.5	1.7	1.1	38	.4	.5	1.2	55
.6	3.5	1.5	113	.5	1.9	1.5	113
.7	6.2	2.0	218	.6	4.3	2.0	218
.8	11	2.5	336	.7	8.0	3.0	456
				.8	14	4.0	740

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.8	3.1	7.3	12	10	13	20	11	3.2	11	0.6	2.1
2	1.6	2.7	7.0	11	13	15	21	9.0	25	6.3	.4	2.1
3	1.5	33	6.2	11	20	13	18	8.1	257	5.0	.2	1.9
4	101	14	6.6	11	13	14	16	8.9	32	4.0	1.1	*1.7
5	22	38	6.9	12	14	19	15	7.3	17	3.2	.7	2.2
6	9.4	16	43	13	20	146	15	6.3	12	2.8	.2	2.7
7	4.6	7.8	20	14	18	36	16	6.1	11	3.3	.1	1.8
8	3.4	5.4	14	15	15	24	14	5.7	9.9	2.6	.1	2.1
9	3.0	26	12	19	b 14	21	14	5.3	9.1	1.7	.2	1.9
10	2.8	a 220	9.2	27	13	20	13	5.2	6.6	1.5	a 0	1.5
11	2.6	a 22	8.8	35	15	36	13	5.4	* 5.8	1.6	a 0	1.0
12	2.4	a 11	b 7.5	66	62	* 463	12	5.0	5.3	1.2	a.1	1.0
13	2.3	a 7.6	6.9	45	24	48	12	4.5	4.5	1.4	3.1	.9
14	2.4	* a 7.2	7.2	26	b 18	29	12	5.2	25	11	2.1	.8
15	2.3	7.6	6.6	b 19	b 14	24	11	5.3	17	5.0	.6	7.8
16	2.2	7.3	7.8	b 18	b 12	40	11	4.7	7.9	2.7	.4	30
17	2.1	7.5	7.4	b 16	11	82	13	8.4	5.7	1.8	.3	9.7
18	* 2.0	30	* 6.9	16	12	29	13	14	4.8	1.4	.2	4.8
19	1.9	17	7.0	18	48	83	12	5.9	4.6	7.7	1.0	4.4
20	2.4	11	7.3	32	32	71	11	4.4	72	7.0	124	3.5
21	2.8	46	6.5	* 24	21	32	10	11	28	3.1	210	3.1
22	2.5	134	13	16	b 18	26	9.3	6.7	10	2.1	15	4.4
23	2.1	22	11	b 15	16	23	19	5.2	7.3	1.4	7.1	2.3
24	1.9	15	10	b 14	16	22	11	4.2	5.4	1.2	4.9	1.8
25	1.8	12	7.9	10	22	20	9.6	4.3	5.2	* 1.0	4.3	1.8
26	2.3	9.8	10	11	b 18	24	9.6	4.4	5.1	.8	3.1	2.0
27	2.1	9.1	9.6	14	b 14	37	9.9	3.9	3.9	.8	2.8	1.9
28	2.5	8.5	b 9.2	10	13	22	9.4	4.2	3.2	1.5	2.3	1.9
29	2.7	7.8	b 13	8.9	-	20	* 8.7	5.5	30	2.0	2.5	100
30	2.4	7.7	b 30	9.8	-----	19	15	7.9	55	1.1	3.2	11
31	2.9	-----	b 17	11	-----	18	-----	4.4	-----	.8	2.1	-----
TOTAL	199.7	766.1	342.8	579.7	536	1,489	393.5	197.4	688.5	98.0	392.7	214.1
MEAN	6.44	25.5	11.1	18.7	19.1	48.0	13.1	6.37	23.0	3.16	12.7	7.14
CFSM	.386	1.53	.665	1.12	1.14	2.87	.784	.381	1.38	.189	.761	.428
IN	.44	1.71	.76	1.29	1.19	3.32	.88	.44	1.53	.22	.87	.48

CALENDAR YEAR 1962 MAX 241 MIN 0 MEAN 16.1 CFSM .964 INCHES 13.07
WATER YEAR 1962-63 MAX 463 MIN 0 MEAN 16.2 CFSM .970 INCHES 13.13

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-4	1930	2.94	442	6-3	1600	3.48	580
11-10	0245	3.37	550	8-21	0300	4.40	880
3-12	0600	5.01	1,130				

* Discharge measurement made on this day.
a Doubtful or no gage-height record.
b Stage-discharge relation affected by ice.

POTOMAC RIVER BASIN

1-6580. Mattawoman Creek near Pomonkey, Md.

Location.--Lat 38°35'45", long 77°03'25", on left bank 50 ft downstream from bridge on State Highway 227, 80 ft downstream from Old Womans Run, and 1.2 miles southeast of Pomonkey, Charles County.

Drainage area.--57.7 sq mi.

Records available.--November 1949 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 40 ft (from topographic map).

Average discharge.--13 years (1950-63), 57.2 cfs.

Extremes.--Maximum discharge during year, 2,030 cfs Mar. 13 (gage height, 5.48 ft); no flow many days in October July, August and September.

1949-63: Maximum discharge, 9,300 cfs Aug. 13, 1955 (gage height 7.52 ft), from rating curve extended above 6,000 cfs; no flow at times each year.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.98	0	1.5	5.5	4.0	335
1.0	.2	1.6	12	4.5	565
1.1	.5	2.0	56	5.0	1,140
1.2	.9	2.5	97	5.5	2,070
1.3	1.5	3.0	144		
1.4	2.5	3.5	214		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	20	a 140	31	a 35	62	58	49	a 7		0
2		0	18	a 55	35	a 40	66	38	79	a 5		0
3		.3	17	a 50	54	a 35	62	29	175	a 4		0
4		1.0	17	a 50	b 42	32	52	24	301	a 3.5		0
5		12	16	a 55	42	52	41	20	333	a 3		* 0
6		23	51	a 55	52	170	38	18	98	a 2.5		0
7		14	108	a 55	b 62	* 309	38	17	105	a 2		0
8		7.9	77	a 60	b 52	* 263	37	14	94	a 1.5		0
9		8.2	50	a 65	b 40	123	37	14	59	a 1		0
10		121	32	81	38	91	35	10	35	a .5		0
11	(*)	134	22	129	44	84	30	7.9	* 26	a 0		0
12		68	20	287	121	768	29	6.7	23	a 0		0
13		34	a 16	366	166	* 1,400	29	6.1	18	a 0		0
14		* 20	a 15	301	b 105	456	29	6.7	14	a 0		0
15		16	a 16	160	b 70	219	28	7.3	15	a 0		0
16		14	a 18	b 90	a 50	136	26	6.1	12	a 0		0
17		14	a 18	b 75	a 35	307	26	5.5	a 11	a 0		0
18		16	* a 17	75	a 35	398	28	20	a 10	a 0		0
19		37	16	72	a 90	356	26	23	a 9	a 0		0
20		29	16	101	* a 120	382	23	14	a 8	a 0		0
21		28	14	127	91	394	20	12	a 15	a 0		0
22		126	19	107	b 50	234	20	14	a 10	a 0		0
23		164	23	b 80	a 40	124	* 28	12	a 8	a 0		0
24		109	22	b 60	a 45	97	32	8.5	a 6	a 0		0
25		66	20	a 40	a 54	85	25	6.7	a 5	* a 0		0
26		46	23	a 30	a 52	79	24	5.2	a 4.5	0		0
27		32	24	a 32	a 40	115	22	4.6	a 4	0		0
28		26	24	* a 35	a 35	106	20	4.6	a 3.5	0		0
29		23	33	a 30	-	82	20	5.2	a 5	0		.1
30		20	127	a 30	-----	70	26	10	a 10	0		.1
31		-----	a 190	a 32	-----	65	-----	9.1	-----	0		-----
Total	0	1,209.4	1,099	2,925	1,691	7,107	979	437.2	1,429.8	30.0	0	0.2
Mean	0	40.3	35.5	94.4	60.4	229	32.6	14.1	47.7	0.97	0	0.01
Cfsm	0	0.698	0.615	1.64	1.05	3.97	0.565	0.244	0.827	0.017	0	0.00017
In.	0	0.78	0.71	1.89	1.09	4.58	0.63	0.28	0.92	0.02	0	0.0001

Calendar year 1962: Max 818 Min 0 Mean 46.6 Cfsm 0.81 In. 10.98

Water year 1962-63: Max 1,400 Min 0 Mean 46.3 Cfsm 0.80 In. 10.90

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge
3-13	0415	5.48	2030
3-18	1700	4.22	419

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

a No gage-height record.

b Stage-discharge relation affected by ice.

1-6610. Chaptico Creek at Chaptico, Md.

Location.--Lat 38°22'45", long 76°46'50", on right bank at downstream side of highway culvert, 0.8 mile north of Chaptico, St. Marys County, and 0.8 mile upstream from Chaptico Bay.

Drainage area.--10.7 sq mi.

Records available.--June 1947 to September 1963.

Gage.--Water-stage recorder. Concrete control prior to Oct. 25, 1961. Altitude of gage is 15 ft (from topographic map).

Average discharge.--16 years, 10.7 cfs.

Extremes.--Maximum discharge during year, 424 cfs June 3 (gage height, 5.11 ft); no flow several days in August and September.

1947-63: Maximum discharge, 7,800 cfs Sept. 10, 1950 (gage height, 8.56 ft), from rating curve extended above 410 cfs on basis of slope-area measurement of peak flow; no flow at times in 1954, 1955, 1957, 1962, and 1963.

Remarks.--Records fair except those for periods of ice effect or doubtful or no gage-height record, which are poor. Occasional small diversion above station.

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.23	0	1.7	12	3.5	76
1.3	0.6	2.0	23	4.0	128
1.4	2.7	2.5	41	4.5	235
1.5	5.2	3.0	57		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	4.7	7.3	a 9	b 5.2	8.9	a 13	13	5.0	2.7	5.1	0.2
2	1.3	3.7	7.3	a 8	9.6	11	a 13	10	17	2.7	2.5	0
3	1.2	19	7.0	a 8	16	8.6	a 13	9.6	202	2.7	1.4	0
4	3.4	9.3	7.0	a 8.5	b 9	8.6	a 13	8.9	* 5.2	2.3	1.4	0
5	4.4	27	7.0	b 8.5	b 8	9.6	a 12	8.2	19	2.3	.4	* 0
6	4.2	23	22	b 8.5	b 9.5	38	a 12	7.9	13	2.1	.2	0
7	2.3	12	13	8.9	9.3	22	a 12	7.6	26	1.9	.3	0
8	2.2	8	8.9	9.6	b 7.5	15	a 12	7.3	23	1.9	1.0	0
9	4.6	12	8.2	11	b 7.5	13	a 12	6.7	15	1.6	.5	0
10	* 8.2	7.5	7.6	13	b 8.5	13	a 12	6.1	10	1.6	.3	0
11	4.4	17	b 6.5	18	8.9	17	a 11	5.8	8.2	1.9	.1	0
12	3.4	11	b 5.5	23	3.3	* 18.1	a 11	5.8	* 7.0	1.6	0	0
13	3.0	9.3	b 5	20	b 14	a 36	a 11	6.1	6.4	1.6	0	0
14	3.0	* 8.2	b 5	b 13	b 9	a 24	a 11	6.7	7.0	5.0	.4	0
15	3.0	7.9	b 5.5	b 9.5	b 7	a 19	a 11	6.4	8.2	4.4	.2	.9
16	3.0	7.6	b 7	b 9.5	b 7	a 23	a 11	6.1	6.4	2.7	0	14
17	3.0	7.3	b 7	b 9.5	b 8	a 52	a 11	6.8	6.4	2.1	0	5.2
18	3.0	15	* b 6.5	11	b 9	a 25	a 11	20	5.5	1.6	0	3.0
19	2.7	14	b 7	11	12	a 32	a 11	7.6	5.2	1.9	0	2.3
20	3.0	10	7.0	19	* 13	* a 44	a 11	6.4	9.2	1.4	0	1.6
21	3.2	13	5.8	b 15	b 8	a 22	a 10	7.0	15	3.4	1.9	1.4
22	3.7	52	11	b 10	b 7	a 19	a 10	6.7	5.8	1.9	1.4	2.7
23	3.2	19	10	b 9	b 7	a 17	* a 10	6.4	5.0	1.4	.6	1.9
24	3.0	13	b 7.4	* b 7	b 9	a 17	10	5.5	4.4	1.2	.2	1.0
25	3.0	11	b 7.4	b 7	b 12	a 16	10	5.5	4.2	* 1.0	.2	1.0
26	3.2	9.6	8.9	b 9	b 9.5	a 16	9.6	5.0	3.7	.6	.1	1.2
27	3.0	9.3	b 8.5	b 17	b 8.5	a 16	9.6	5.2	3.4	.4	0	1.2
28	3.2	8.9	b 8	b 10	b 8	a 15	9.6	5.8	3.2	.4	0	1.0
29	3.4	8.2	b 15	b 6	-	a 15	10	17	3.0	.5	0	17
30	3.4	7.6	a 3.3	b 5	-----	a 14	15	10	2.7	.5	1.0	4.2
31	4.4	-----	b 12	b 5	-----	a 14	-----	6.1	-----	5.1	.8	-----
Total	142.7	452.6	284.3	336.5	280.0	781.7	337.8	243.2	501.9	624	20.0	59.8
Mean	4.60	15.1	9.17	10.9	10.0	25.2	11.3	7.85	16.7	2.01	0.65	1.99
Cfs/m	0.430	1.41	0.857	1.02	0.935	2.36	1.06	0.734	1.56	0.188	0.061	0.186
In.	0.50	1.57	0.99	1.17	0.97	2.72	1.17	0.85	1.74	0.22	0.07	0.21

Calendar year 1962: Max 112 Min 0 Mean 9.07 Cfs/m 0.848 In. 11.47
 Water year 1962-63: Max 202 Min 0 Mean 9.60 Cfs/m 0.897 In. 12.18

Peak discharge (base, 160 cfs)

Date	Time	Gage height	Discharge
3-12	0900	4.99	382
6-3	1730	5.11	424

* Discharge measurement or observation of no flow made on this day.
 a Doubtful or no gage-height record.
 b Stage-discharge relation affected by ice.

1-6615. St. Marys River at Great Mills, Md.

Location.--Lat 38°14'36", long 76°30'13", on left bank at downstream side of bridge on State Highway 471 in Great Mills, St. Marys County, 0.3 mile downstream from Western Branch.

Drainage area.--24.0 sq mi.

Records available.--June 1946 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 10 ft (from topographic map).

Average discharge.--17 years, 25.0 cfs.

Extremes.--Maximum discharge during year, 1,440 cfs June 3 (gage height, 9.15 ft); minimum, 1.2 cfs Sept. 12 (gage height, 1.23 ft).

1946-63: Maximum discharge, 4,900 cfs July 30, 1960 (gage height 12.08 ft), from rating curve extended above 1,500 cfs on basis of contracted-opening measurement of peak flow; minimum 1.2 cfs Aug. 2, 1954, July 24, Aug. 7 1955, Sept. 12, 1963.

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

Rating tables, water year 1962-63, (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 3

June 4 to Sept. 30

1.3	2.5	2.2	74	1.2	0.9	1.4	4.6
1.4	4.7	2.5	106	1.3	2.1	1.5	8.4
1.5	8.4	3.0	151				
1.7	20	5.0	343				
1.9	38	7.0	580				

Note.--Same as preceding table above 1.5 ft.

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.4	5.0	12	31	19	18	20	31	6.7	4.1	2.6	1.5
2	4.4	4.7	12	22	a 25	31	21	15	22	4.7	2.5	1.5
3	4.2	37	12	19	a 35	21	20	12	524	4.2	2.2	1.6
4	18	28	11	19	a 25	19	19	11	269	3.6	2.1	1.5
5	23	62	11	a 19	a 25	20	16	9.9	61	3.4	1.9	* 2.0
6	18	57	33	a 20	a 30	77	16	9.6	30	3.3	1.8	1.9
7	8.4	19	24	a 20	a 35	73	17	9.2	28	3.2	1.9	1.8
8	6.7	12	16	a 20	a 30	38	17	8.6	50	3.3	2.2	1.7
9	16	15	15	a 25	a 25	26	17	3.0	28	3.3	2.2	1.8
10	8.4	214	12	a 35	a 25	22	17	7.4	18	3.4	2.0	1.6
11	5.6	58	11	a 60	a 30	30	15	6.9	15	3.2	2.0	1.6
12	5.0	24	11	a 110	a 70	324	15	7.0	* 13	3.1	2.0	1.5
13	4.4	* 17	9.5	a 30	a 30	130	15	7.1	9.6	3.0	2.2	1.4
14	4.2	14	9.8	a 45	a 20	68	14	7.6	9.3	6.9	5.7	1.6
15	4.7	12	9.2	a 35	a 16	43	14	8.2	17	8.4	2.9	3.7
16	4.7	11	11	a 30	a 15	60	14	7.1	9.6	4.6	2.3	1.6
17	4.7	11	11	a 25	a 14	198	14	7.9	8.9	3.5	2.1	10
18	4.4	32	10	a 25	a 15	92	15	34	7.8	3.2	1.9	5.4
19	3.9	38	* 10	a 30	a 25	a 140	14	13	6.9	2.9	1.9	3.8
20	3.9	22	10	a 55	* a 30	a 150	13	8.3	6.5	3.1	2.5	3.0
21	4.2	25	9.8	a 40	20	* 84	11	8.9	12	6.7	3.2	2.9
22	4.2	118	16	a 30	12	54	12	9.6	9.0	4.2	3.1	3.8
23	4.2	65	19	a 25	11	39	* 12	11	6.5	3.5	2.4	3.2
24	3.9	30	16	* a 21	16	32	11	8.4	5.7	3.2	2.0	2.6
25	3.9	21	14	16	21	28	11	7.4	5.2	3.1	1.8	2.5
26	4.4	17	15	16	17	28	11	6.8	4.9	* 2.6	1.8	2.7
27	4.2	15	16	34	15	32	10	6.7	4.6	2.5	1.8	2.7
28	4.2	14	16	25	16	26	10	6.8	4.4	2.3	1.8	2.4
29	4.2	13	33	15	-	23	10	13	4.3	2.4	1.6	14
30	4.2	13	137	18	-----	22	24	14	4.0	2.8	1.8	7.9
31	4.7	-----	52	20	-----	21	-----	8.3	-----	2.5	1.8	-----
TOTAL	203.3	1,023.7	604.3	985	667	1,979	445	329.7	1,200.9	114.2	70.0	109.6
MEAN	6.56	34.1	19.5	31.8	23.8	63.8	14.8	10.6	40.0	3.68	2.26	3.65
CFSM	.273	1.42	.813	1.33	.992	2.66	.617	.442	1.67	.153	.094	.152
IN	.32	1.59	.94	1.53	1.03	3.07	.69	.51	1.66	.18	.11	.17

CALENDAR YEAR 1962	MAX 410	MIN 2.3	MEAN 25.4	CFSM 1.06	INCHES 14.35
WATER YEAR 1962-63	MAX 524	MIN 1.4	MEAN 21.2	CFSM .883	INCHES 11.98

Peak discharge (base, 400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-12	1315	5.98	451	6-3	2030	9.15	1,440

* Discharge measurement made on this day.
a No gage-height record.

3-755. Youghiogheny River near Oakland, Md.

Location.--Lat 39°25'19", long 79°25'32", on left bank 200 ft downstream from Baltimore & Ohio Railroad bridge, 250 ft downstream from Little Youghiogheny River, 1½ miles northwest of Oakland, Garrett County, and 1½ miles upstream from Dunkard Lick Run.

Drainage area.--134 sq mi.

Records available.--August 1941 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 2,353.11 ft above mean sea level, unadjusted. Prior to Aug. 1, 1946, wire-weight gage at bridge 200 ft upstream at same datum.

Average discharge.--22 years, 290 cfs.

Extremes.--Maximum discharge during year, 9,930 cfs Mar. 5 (gage height, 11.13 ft); minimum, 19 cfs Oct. 3, Sept. 27, 28; minimum gage height, 1.97 ft Sept. 27, 28.
1941-63: Maximum discharge, 11,800 cfs Oct. 16, 1954 (gage height, 12.16 ft); minimum daily, 2.5 cfs Oct. 4, 1953.

Flood in March 1936 reached a stage of 15.3 ft, from floodmarks.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	13	2.7	198	6.0	2,520
2.0	24	3.0	330	8.0	4,970
2.2	57	4.0	900	10.0	8,000
2.4	103	5.0	1,620		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	39	469	134	b 185	109	111	326	294	99	131	24	112
2	26	267	120	b 175	163	1,010	309	271	88	117	33	83
3	19	193	109	b 180	845	812	257	243	140	1,330	26	69
4	30	160	103	159	414	1,050	228	214	660	425	191	323
5	* 114	152	101	140	286	7,900	195	194	549	222	103	196
6	79	131	114	134	311	3,900	172	175	447	150	60	149
7	55	108	75	128	347	1,750	158	152	380	114	46	115
8	68	98	b 102	128	296	865	143	134	372	93	50	92
9	89	93	b 110	125	210	686	191	120	356	78	40	75
10	61	840	103	184	198	800	172	* 112	416	66	32	64
11	50	1,440	98	722	463	710	138	109	2,030	59	25	55
12	46	918	91	1,990	425	2,560	125	101	1,160	67	21	50
13	39	568	86	2,140	260	2,030	114	92	* 674	52	79	81
14	35	393	84	1,020	210	1,770	107	544	479	83	213	68
15	31	291	86	b 640	162	1,020	101	555	363	119	82	46
16	35	237	89	b 460	173	797	92	338	265	65	56	39
17	35	242	89	b 350	153	1,930	108	285	207	56	42	35
18	35	445	89	301	156	1,580	271	783	164	* 48	35	34
19	29	634	117	264	153	1,810	283	521	135	38	53	30
20	27	506	491	507	150	4,390	220	385	136	36	308	28
21	28	437	360	b 520	131	1,730	177	431	197	57	154	26
22	34	949	698	b 380	114	930	160	443	120	60	105	26
23	34	820	704	301	103	685	638	321	91	84	80	25
24	31	560	441	b 185	103	716	544	266	75	99	62	24
25	* 32	404	330	b 220	101	828	398	225	64	56	55	* 22
26	34	309	311	b 180	98	727	* 318	198	57	38	* 44	21
27	35	* 242	278	175	91	* 770	259	169	52	32	35	a 19
28	37	202	230	154	93	617	214	178	49	29	30	a 19
29	130	176	247	133	-	510	194	174	48	28	412	a 44
30	233	153	b 370	127	-----	426	301	148	62	28	337	a 29
31	1,040	-----	b 240	122	-----	391	-----	117	-----	27	159	-----
TOTAL	2,610	12,437	6,600	12,429	6,318	45,781	6,913	8,292	9,935	3,887	2,992	1,999
MEAN	84.2	415	213	401	226	1,477	230	267	331	125	96.5	66.6
CFSM	.628	3.10	1.59	2.99	1.69	11.0	1.72	1.99	2.47	.933	.720	.497
IN	.72	3.45	1.83	3.45	1.75	12.71	1.92	2.30	2.76	1.08	.83	.55

CALENDAR YEAR 1962 MAX 3,160 MIN 7.6 MEAN 296 CFSM 2.21 INCHES 29.96
WATER YEAR 1962-63 MAX 7,900 MIN 19 MEAN 329 CFSM 2.46 INCHES 33.36

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-13	0315	6.07	2,590	3-20	0745	8.27	5,350
3-5	1000	11.13	9,930	6-11	1215	5.96	2,480
3-12	1630	6.37	2,920	7-3	0845	5.59	2,120
3-17	1800	5.74	2,260				

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

Reservoirs in Monongahela River Basin

3-760.--Deep Creek Reservoir.--Lat 39°30'34", long 79°23'28", on Deep Creek at dam, 1.8 miles upstream from mouth and 7 miles north of Oakland, Garrett County, Md. Drainage area, 64.7 sq mi. Records available, July 1925 to September 1963 (prior to October 1950, month-end contents published in WSP 1305, and October 1950 to September 1955, month-end contents published in WSP 1385). Gage, water-stage recorder at right end of spillway. Datum of gage is at mean sea level (unadjusted). Maximum contents during year, 90,700 acre-ft June 13 (elevation, 2,461.40 ft); minimum, 55,000 acre-ft Jan. 9 (elevation, 2,451.10 ft). Maximum contents since storage began, 93,258 acre-ft July 24, 25, 1949 (elevation, 2,462.075 ft); minimum observed, 11,763 acre-ft Sept. 30, 1925 (elevation, 2,433.45 ft).

Reservoir is formed by an earthfill dam completed January 1925. Usable capacity, 92,975 acre-ft between elevations 2,425 ft (top of intake to outlet tunnel) and 2,462 ft (crest of spillway). Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power. Records furnished by Pennsylvania Electric Co.

Month-end elevation and contents, water year October 1962 to September 1963			
Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre-feet)
Sept. 30	2,457.00	74,700	-
Oct. 31	2,455.40	69,100	- 5,600
Nov. 30	2,454.00	64,300	- 4,800
Dec. 31	2,451.50	56,300	- 8,000
Calendar year 1962	-	-	- 4,400
Jan. 31	2,453.60	63,000	+ 6,700
Feb. 28	2,454.40	65,700	+ 2,700
Mar. 31	2,460.60	87,800	+22,100
Apr. 30	2,460.60	87,800	0
May 31	2,460.30	86,700	- 1,100
June 30	2,460.90	88,900	+ 2,200
July 31	2,459.80	84,800	- 4,100
Aug. 31	2,458.20	78,900	- 5,900
Sept. 30	2,456.70	73,600	- 5,300
Water year 1962-63	-	-	- 1,100

† Elevation at 2400.

3-765. Youghiogheny River at Friendsville, Md.

Location.--Lat 39°39'13", long 79°24'31", on left bank 0.7 mile upstream from bridge on State Highway 42 at Friendsville, Garrett County, and 1½ miles upstream from Bear Creek.

Drainage area.--295 sq mi.

Records available.--August 1898 to December 1904 and October 1940 to September 1963 in reports of Geological Survey. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

Gage.--Water-stage recorder (digital). Datum of gage is 1,487.33 ft above mean sea level, datum of 1929. Aug. 17, 1898, to Dec. 31, 1904, and Sept. 1, 1922, to Sept. 30, 1926, wire-weight and chain gages at bridge 0.6 mile downstream at datum 16.24 ft and 16.29 ft lower, respectively.

Average discharge.--29 years (1898-1904, 1940-1963), 645 cfs (adjusted for storage since 1940).

Extremes.--Maximum discharge during year, 11,600 cfs Mar. 5 (gage height, 8.48 ft); minimum, 33 cfs Sept. 28 (gage height, 1.91 ft); minimum daily, 48 cfs Oct. 21.

1898-1904, 1940-63: Maximum discharge, 13,000 cfs Oct. 16, 1954 (gage height, 8.99 ft), from rating curve extended above 5,800 cfs on basis of slope-area measurement of peak flow; minimum daily, 10 cfs Sept. 8, 1957.

Maximum stage known, 14.2 ft Mar. 29, 1924, from floodmarks, site and datum then in use, or 10.2 ft, present site and datum (discharge, about 15,600 cfs, from rating curve extended on basis of slope-area measurement for peak of Oct. 16, 1954).

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Low and medium flow regulated since 1925 by Deep Creek Reservoir (see preceding page).

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	43	2.8	270	5.0	3,310
2.2	69	3.0	400	6.0	5,550
2.4	108	3.5	870	8.0	10,400
2.6	174	4.0	1,570		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	205	1,070	275	b 300	260	220	787	582	192	410	134	179
2	217	691	248	b 370	240	1,400	732	548	168	338	144	134
3	203	357	442	b 360	1,350	1,450	651	516	230	2,430	68	265
4	212	284	478	b 360	810	1,440	610	355	868	902	85	386
5	* 286	457	472	b 260	560	9,220	550	322	912	607	382	379
6	170	433	525	260	600	6,560	401	417	691	300	261	365
7	98	394	b 420	340	660	3,520	370	387	607	230	234	163
8	188	373	b 195	326	580	1,840	430	356	549	346	225	131
9	269	364	b 180	323	370	1,350	527	336	474	316	225	265
10	285	841	b 450	364	340	1,540	540	321	616	292	64	250
11	255	2,130	b 460	908	660	1,470	475	200	2,890	236	50	170
12	231	1,760	b 440	2,870	860	3,770	321	185	2,250	274	187	152
13	113	1,130	b 440	3,420	520	3,760	260	282	* 1,280	138	223	167
14	61	801	b 430	2,050	450	3,360	245	490	963	148	454	120
15	165	712	b 230	1,260	350	2,170	335	* 1,000	628	406	330	86
16	182	633	b 165	b 900	310	1,640	366	596	465	313	254	215
17	156	425	b 430	b 700	270	3,600	338	494	540	* 266	79	220
18	160	542	b 430	630	340	3,280	465	806	468	242	63	215
19	147	1,250	480	498	310	3,050	623	731	417	230	208	211
20	89	1,030	861	677	300	6,980	415	633	421	96	420	206
21	48	925	966	1,090	245	3,690	327	594	453	124	401	59
22	156	1,340	819	b 720	235	2,410	388	726	259	185	337	58
23	252	1,660	1,120	658	175	1,870	875	528	184	242	322	163
24	149	934	838	460	170	1,840	1,030	455	308	296	105	122
25	226	681	b 550	520	205	2,100	748	352	284	229	84	99
26	275	769	604	360	205	1,730	642	337	272	178	* 228	137
27	119	* 673	b 600	330	190	* 1,790	429	333	262	83	217	192
28	56	598	516	340	195	1,540	365	356	275	70	209	86
29	344	545	408	290	-	1,230	438	387	98	138	295	53
30	449	513	b 620	280	-----	931	558	283	109	145	793	197
31	1,780	-----	b 520	270	-----	801	-----	293	-----	139	266	-----
TOTAL	7,546	24,315	15,612	22,494	11,760	81,552	15,241	14,201	18,133	10,349	7,347	5,445
MEAN	243	811	504	726	420	2,631	508	458	604	334	237	182
(†)	-91.1	-80.7	-130	+109	+48.6	+359	0	-17.9	+37.0	-66.7	-96.0	-89.1
MEAN†	152	750	374	835	469	2,990	508	440	641	287	141	92.9
CFSM#	0.515	2.47	1.27	2.33	1.59	10.1	1.72	1.49	2.17	0.905	0.478	0.315
IN. ‡	0.60	2.76	1.46	3.26	1.65	11.69	1.92	1.72	2.43	1.04	0.55	0.35
CALENDAR YEAR 1962	MAX	5,180	MIN	20	MEAN	604	MEAN#	598	CFSM#	2.03	IN. ‡	27.51
WATER YEAR 1962-63	MAX	9,220	MIN	48	MEAN	641	MEAN#	639	CFSM#	2.17	IN. ‡	29.43

* Discharge measurement made on this day.

† Change in contents, equivalent in cubic feet per second, in Deep Creek Reservoir; furnished by Pennsylvania Electric Co.

* Adjusted for change in contents.

‡ Stage-discharge relation affected by ice.

Note.--Doubtful or no gage-height record Jan. 24 to Mar. 2.

3-780. Casselman River at Grantsville, Md.

Location.--Lat 39°42'08", long 79°08'12", on left bank at downstream side of highway bridge, 0.3 mile upstream from Slaubough Run, 0.7 mile downstream from U. S. Highway 40, and 1.0 mile northeast of Grantsville, Garrett County.

Drainage area.--62.5 sq mi.

Records available.--July 1947 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 2,090 ft (from topographic map).

Average discharge.--16 years, 116 cfs.

Extremes.--Maximum discharge during year, 2,370 cfs Mar. 20 (gage height, 5.36 ft); maximum gage height, 6.45 ft Mar. 5 (ice jam); minimum discharge, 1.1 cfs Sept. 21, result of regulation from unknown source; minimum daily, 2.0 cfs Sept. 27, 28.

1947-63: Maximum discharge, 8,400 cfs Oct. 15, 1954 (gage height, 10.70 ft), from rating curve extended above 1,600 cfs on basis of contracted-opening measurement at gage height 8.13 ft and logarithmic plotting; no flow Aug. 31, 1962, result of regulation from unknown source.

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

Rating table, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	2.0	2.0	139
1.1	5.7	2.5	325
1.2	11	3.0	585
1.3	18	4.0	1,230
1.5	38	5.0	2,050
1.7	69		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	11	117	59	48	46	40	207	105	31	34	4.0	12
2	8.1	64	52	52	50	120	230	98	27	21	3.2	8.1
3	7.2	47	50	50	200	200	176	89	61	179	3.2	7.2
4	66	41	46	50	120	230	154	73	218	61	7.6	20
5	* 89	39	46	50	80	1,500	128	67	120	* 29	8.1	16
6	37	34	48	50	90	992	110	62	91	21	5.3	12
7	22	28	32	50	100	536	101	56	73	16	4.4	9.8
8	28	26	42	54	80	352	89	51	67	14	4.8	8.1
9	43	26	35	70	70	330	157	48	66	12	4.4	7.2
10	37	316	32	150	60	448	128	50	66	11	3.6	6.2
11	26	308	30	380	120	* 339	98	46	295	10	2.9	5.3
12	19	179	30	780	120	694	85	41	169	10	2.6	5.3
13	16	115	30	736	84	1,030	77	39	107	9.8	7.6	5.3
14	14	87	30	357	70	950	71	46	83	16	27	4.8
15	12	71	32	241	60	530	64	* 44	67	26	12	4.0
16	11	64	36	185	54	453	58	39	56	* 16	7.6	4.0
17	10	87	42	170	52	1,530	64	36	48	12	5.7	3.6
18	10	189	50	150	54	1,040	120	43	41	10	4.4	3.6
19	9.8	207	70	115	50	879	105	41	35	8.6	5.3	3.2
20	9.2	148	130	200	45	1,650	98	35	37	7.6	18	3.2
21	9.2	131	125	190	42	700	77	36	48	24	29	2.6
22	9.8	325	180	140	40	448	69	64	37	19	33	2.6
23	8.1	226	150	100	39	348	299	48	29	12	12	2.6
24	8.6	154	110	56	39	370	189	37	24	12	8.6	2.3
25	8.6	120	80	80	38	437	139	34	21	8.6	7.2	2.3
26	10	98	70	70	37	426	115	36	19	7.2	* 5.7	2.9
27	10	85	60	64	36	436	98	34	16	5.3	5.3	2.0
28	14	* 77	64	56	35	* 321	87	48	16	4.4	4.4	2.0
29	* 47	69	54	52	--	266	81	59	16	4.0	17	5.7
30	87	64	48	50	----	230	105	46	16	4.4	23	8.1
31	361	-----	45	48	-----	207	-----	36	-----	4.4	16	-----
TOTAL	1,058.6	3,542	1,908	4,844	1,911	18,032	3,579	1,587	2,000	629.3	302.9	182.0
MEAN	34.1	118	61.5	156	68.3	582	119	51.2	66.7	20.3	9.77	6.07
CFSM	.546	1.89	.984	2.50	1.09	9.31	1.90	.819	1.07	.325	.156	.097
IN	.63	2.11	1.14	2.88	1.14	10.73	2.13	.94	1.19	.37	.18	.11
CALENDAR YEAR 1962	MAX	1,140	MIN	0	MEAN	117	CFSM	1.87	INCHES	25.44		
WATER YEAR 1962-63	MAX	1,650	MIN	2.0	MEAN	108	CFSM	1.73	INCHES	23.55		

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-13	0100	3.69	1,010	3-17	2000	4.97	2,020
3-5	1230	4.71	1,790	3-20	0400	5.36	2,370
3-13	2200	4.50	1,620				

* Discharge measurement made on this day.
 Note.--Stage-discharge relation affected by ice Dec. 2-4, Dec. 7 to Jan. 12, Jan. 16-19, Jan. 21 to Mar. 5 (no gage-height record Jan. 26 to Feb. 2, Feb. 8-11, 13-20).

3-785. Big Piney Run near Salisbury, Pa.

Location.--Lat 39°43'32", long 79°02'57", on left bank an eighth of a mile upstream from Little Piney Run, a quarter of a mile north of Maryland-Pennsylvania State line, and 2½ miles southeast of Salisbury, Somerset County.

Drainage area.--24.5 sq mi.

Records available.--June 1932 to September 1963.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 2,240 ft (from topographic map).

Average discharge.--31 years, 37.9 cfs (unadjusted).

Extremes.--Maximum discharge during year, 813 cfs Mar. 5 (gage height, 4.26 ft); maximum gage height, 5.98 ft Mar. 4 (ice jam); minimum discharge, 0.1 cfs Sept. 25-26.

1932-63: Maximum discharge, 6,850 cfs Oct. 15, 1954 (gage height, 8.56 ft), from rating curve extended above 500 cfs on basis of slope-area measurements at gage heights 7.5 and 8.56 ft; maximum gage height, 8.87 ft Feb. 22, 1944 (ice jam); minimum discharge, 0.08 cfs Sept. 1, 2, 3, 4, 1953, Sept. 6, 7, 8, 1957.

Remarks.--Records good except those below 6.0 cfs, which are fair, and those for periods of ice effect, which are poor. Infrequent regulation at low flow by Frostburg Reservoir. Records do not include a small amount of water diverted 3 miles above station through pumps to city of Frostburg, Md., and from spring 700 ft above station by gravity to city of Salisbury, Pa.

Rating tables, water year 1962-63, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-3				Oct. 4 to Sept. 30			
1.1	1.0	1.0	0.1	1.5	7.4	3.0	231
1.2	2.3	1.1	.6	1.7	16	3.5	425
		1.2	1.4	2.0	40	4.0	671
		1.3	2.7	2.3	73		
		1.4	4.6	2.6	125		

Discharge, in cubic feet per second, water year October 1962 to September 1963

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.0	25	13	7.4	7.0	5.6	75	33	7.1	3.9	0.4	0.7
2	1.5	18	11	8.0	9.0	9.0	72	31	6.2	3.0	.3	.6
3	1.3	14	10	7.6	20	9.0	64	28	29	5.1	.3	.6
4	24	12	8.6	7.6	10	35	58	25	*85	3.2	.5	1.6
5	*19	12	9.9	7.4	9.0	520	48	24	63	*2.2	.5	1.1
6	7.8	9.0	12	7.4	15	257	41	23	50	1.9	.4	1.0
7	5.4	6.8	4.6	7.4	18	130	36	20	41	1.6	.4	.8
8	12	6.2	6.6	7.8	11	85	32	19	44	1.5	.5	.8
9	11	6.8	6.0	8.2	9.0	88	37	17	34	1.1	.4	.7
10	8.6	187	5.4	14	9.6	109	30	16	34	1.0	.3	.5
11	5.9	103	5.0	50	20	*81	26	15	93	1.1	.4	.4
12	4.6	68	5.0	215	25	204	23	13	69	1.0	.2	.4
13	3.9	49	5.0	216	20	342	21	11	53	1.0	.7	.4
14	3.2	37	5.0	106	14	247	19	13	41	2.5	1.3	.3
15	2.4	29	5.4	80	11	139	18	11	32	4.1	.8	.2
16	2.4	24	6.0	58	8.0	109	16	9.5	25	*2.5	.5	.3
17	2.1	27	7.0	44	6.6	359	17	9.0	21	1.7	.4	.3
18	1.7	46	8.0	37	7.0	274	22	12	17	1.3	.4	.2
19	1.6	50	9.0	29	6.6	200	18	8.2	14	1.1	1.0	.2
20	1.4	49	22	43	6.6	437	20	7.4	13	1.1	3.2	.2
21	1.4	47	21	43	6.6	213	16	9.9	15	1.6	1.2	.2
22	1.4	73	43	34	6.0	125	15	17	9.9	1.4	.9	.2
23	1.1	65	34	29	5.4	91	* 58	10	7.8	1.0	.7	.2
24	1.2	61	23	15	5.0	90	53	8.2	5.9	.9	.6	.2
25	1.4	48	17	22	4.8	105	49	7.4	5.4	.8	.5	*.1
26	2.0	39	14	17	4.6	127	42	7.8	4.6	.6	*.5	.1
27	1.7	29	10	13	4.6	125	37	7.1	3.9	.5	.5	.1
28	1.9	*24	11	10	4.8	*103	32	14	3.9	1.1	.4	.1
29	* 5.9	20	9.0	7.0	-	91	29	13	3.5	.6	.9	.5
30	18	16	7.4	8.0	-----	79	38	11	3.7	.6	1.0	.6
31	56	-----	7.0	7.4	-----	69	-----	8.2	-----	.5	.8	-----
Total	213.8	1,200.8	360.9	1,166.2	284.2	4,857.6	1,062	458.7	834.9	51.5	20.9	13.6
Mean	6.90	40.0	11.6	37.6	10.2	157	35.4	14.8	27.8	1.66	.67	.45

Calendar year 1962: Max 497 Min 0.2 Mean 35.0 Cfsm 1.43 In. 19.41
 Water year 1962-63: Max 520 Min 0.1 Mean 28.8 Cfsm 1.18 In. 15.98

Peak discharge (base, 450 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-5	0315	4.26	813	3-17	1900	3.76	549
3-13	1900	3.93	635	3-20	0430	3.74	540

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27 to Dec. 4, Dec. 7-21, Dec. 24 to Jan. 5, Jan. 11, 12, 14-19, 22, Jan. 24 to Mar. 5.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 partial-record 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. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

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 where continuous records are available, will give a picture of the low-flow potentiality of the 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 1963,
in North Atlantic Slope basins

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Delaware River basin						
4774	South Branch Naaman Creek near Claymont, Del.	Lat 39°49'00", long 75°29'40", at dam, 800 ft above bridge on Marsh Road, 2.2 miles west of Claymont, New Castle County.	3.83	1955-63	4-12-63 5- 6-63 7-17-63	0.59 .34 .61
4795	Mill Creek at Stanton, Del.	Lat 39°42'50', long 75°40'00", at highway bridge, 1.2 miles west of Stanton, New Castle County.	12.4	1931-34 1955-63	4-12-63 5- 6-63 7-17-63	9.09 7.27 2.00
4814.4	Wilson Run at Rockland, Del.	Lat 39°48'04", long 75°35'01", at bridge on private road, 200 ft north of State Highway 232, 0.5 mile northwest of Rockland, New Castle County.	3.05	1957-63	4-12-63 5- 6-63	2.41 2.67
4823	Red Lion Creek at Red Lion, Del.	Lat 39°36'20", long 75°39'55", at bridge on State Highway 7, 0.2 mile south of Red Lion, New Castle County.	3.20	1955-60 1962-63	5- 6-63 7-17-63	1.02 .25
4831.5	Wiggins Millpond Outlet at Townsend, Del.	Lat 39°24'12", long 75°42'16", at bridge on State Highway 446, 0.8 mile northwest of Townsend, New Castle County.	3.82	1957-60 1962-63	4-12-63 5- 6-63 7-17-63	3.65 3.25 2.13
Smyrna River basin						
4833	Providence Creek at Clayton, Del.	Lat 39°18'05", long 75°38'28", at highway bridge, 0.8 mile north of Clayton, Kent County.	11.8	1955-60 1962-63	4-12-63 5- 6-63 7-17-63	10.4 7.33 4.40
4833.5	Mill Creek at Smyrna, Del.	Lat 39°17'09", long 75°36'45", at old dam, 500 ft above highway bridge, 1 mile south of Smyrna, Kent County.	4.77	1955-57 1959-60 1962-63	4-12-63	3.16
St. Jones River basin						
4836.5	Fork Branch at Dupont, Del.	Lat 39°11'56", long 75°34'40", at highway bridge, 0.8 mile northwest of Dupont, Kent County.	7.50	1955-57 1959-60 1962-63	4-12-63 5- 7-63 7-17-63	4.48 1.47 .38
4836.8	Maidstone Branch at Dupont, Del.	Lat 39°11'18", long 75°34'04", at highway bridge, 0.4 mile southwest of Dupont, Kent County.	17.3	1955-57 1959-60 1962-63	4-12-63 5- 7-63 7-17-63	12.8 6.37 1.67
Murderkill River basin						
4840.2	Browns Branch near Houston, Del.	Lat 38°57'31", long 75°30'33", at highway bridge, 2.9 miles north of Houston, Kent County.	12.4	1955-63	4-15-63 5- 7-63 7-18-63	16.3 12.0 7.93
4840.5	Pratt Branch near Felton, Del.	Lat 39°00'37", long 75°31'46", at highway bridge, 2.6 miles east of Felton, Kent County.	3.29	1955-57 1959-60 1962-63	4-15-63 5- 7-63 7-19-63	2.90 2.16 1.18
4840.6	Double Run near Magnolia, Del.	Lat 39°03'16", long 75°29'43", at highway bridge, 1.5 miles southwest of Magnolia, Kent County.	5.68	1955-57 1959-60 1962-63	4-15-63 5- 7-63 7-19-63	5.54 3.98 2.20
Cedar Creek basin						
4842	Cedar Creek near Lincoln, Del.	Lat 38°51'03", long 75°25'05", at highway bridge, 1.2 miles south of Lincoln, Sussex County.	7.21	1955-60 1962-63	4-15-63	16.6

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1963,
in North Atlantic Slope basins--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Broadkill River basin						
4843.7	Pemberton Branch near Milton, Del.	Lat 38°46'26", long 75°20'29", at highway bridge, 1.5 miles west of Milton, Sussex County.	6.68	1955-63	4-11-63 7-17-63	10.9 3.75
4844	Beaverdam Creek near Milton, Del.	Lat 38°45'41", long 75°16'03", at highway bridge, 2.5 miles east of Milton, Sussex County.	6.10	1955-63	4-11-63 5- 7-63 7-17-63	14.6 9.88 7.86
Indian River basin						
*4845.5	Pepper Creek at Dagsboro, Del.	Lat 38°32'50", long 75°14'40", at bridge on State Highway 26, at Dagsboro, Sussex County.	8.78	1955-63	4-11-63 5- 6-63 7-17-63	5.57 3.48 1.38
Nanticoke River basin						
4871	Deep Creek at Old Furnace, Del.	Lat 38°40'01", long 75°31'02", at highway bridge, at Old Furnace, 5.6 miles northeast of Seaford, Sussex County.	33.0	1955-60 1962-63	4-11-63 5- 6-63 7-17-63	42.0 26.6 7.60
4871.2	Tyndall Branch near Hardscrabble, Del.	Lat 38°37'54", long 75°29'30", at highway bridge, 1.4 miles northeast of Hardscrabble, and 6.5 miles east of Seaford, Sussex County.	12.7	1955-63	4-11-63 5- 6-63 7-17-63	16.3 12.9 4.09
4873	Butler Mill Branch near Woodland, Del.	Lat 38°37'56", long 75°39'35", at highway bridge, 2.2 miles north of Woodland, Sussex County.	6.96	1955-63	4-11-63 5-26-63 7-17-63	8.96 5.60 2.64
4877	Chipman Pond Branch near Laurel, Del. a/	Lat 38°34'39", long 75°31'42", at highway bridge, 2.9 miles northeast of Laurel, Sussex County.	8.55	1955-63	4-11-63 5- 6-63 7-17-63	13.3 9.90 5.60
Susquehanna River basin						
5779.5	Broad Creek at Pylesville, Md.	Lat 39°41'16", long 76°22'24", 400 ft below bridge on old State Highway 165, at Pylesville, Harford County.	11.3	1956-59 1962-63	7-26-63	1.36
Swan Creek basin						
5807	Swan Creek at Swan Creek, Md.	Lat 39°31'21", long 76°08'33", at bridge on U. S. Highway 40, at Swan Creek, Harford County.	13.2	1956-59 1962-63	7-25-63	1.46
Bush River basin						
5809	Grays Run at Stepney, Md.	Lat 39°29'18", long 76°12'52", at bridge on State Highway 7, 0.9 mile west of Stepney, Harford County.	5.35	1956-59 1962-63	7-26-63	0.07
5816	Bynum Run at Bush, Md.	Lat 39°28'19", long 76°16'01", at bridge on State Highway 7, 0.2 mile southwest of Bush, Harford County.	22.5	1956-59 1962-63	7-26-63	2.77
5816.5	James Run at Bush, Md.	Lat 39°28'35", long 76°15'38", at bridge on State Highway 7, 0.2 mile northeast of Bush, Harford County.	11.1	1956-59 1962-63	7-26-63	.41
5817.5	Winters Run near Bel Air, Md.	Lat 39°30'55", long 76°22'10", at bridge on U. S. Highway 1, 1½ miles southwest of Bel Air, Harford County.	37.0	1954-59 1962-63	7-26-63	b6.14
Gunpowder River basin						
5832	Blackrock Run at Coopersville, Md.	Lat 39°32'36", long 76°44'00", at bridge on State Highway 401, ½ mile southeast of Coopersville, Baltimore County.	9.38	1956-59 1962-63	9-26-63	2.10
5836	Beaverdam Run at Cockeyville, Md.	Lat 39°29'08", long 76°38'45", at bridge on State Highway 45, at Cockeyville, Baltimore County.	20.8	1955-59 1962-63	3-26-63 9-26-63	20.8 6.20
5842	Little Gunpowder Falls at Hess, Md.	Lat 39°32'37", long 76°31'53", at bridge on State Highway 146, ¼ mile south of Hess, Baltimore County.	16.5	1956-59 1962-63	9-26-63	3.45
Patapsco River basin						
5862	Beaver Run at Finksburg, Md.	Lat 39°29'44", long 76°54'09", at highway bridge, 0.7 mile northwest of Finksburg, Carroll County.	12.7	1957-59 1961-63	7-31-63 9-25-63	2.86 1.91

* Also a crest-stage partial-record station.

a Prior to 1958 published as "Elliot Pond Branch".

b Includes 1.10 cfs diverted 125 ft upstream.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1963,
in North Atlantic Slope basins--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Patapsco River basin--Continued						
5866	Morgan Run near Gamber, Md.	Lat 39°27'58", long 76°58'16", at bridge on Klees Mill Road, 1.9 miles west of Gamber, Carroll County.	26.0	1957-59 1961-63	7-31-63 9-25-63	4.30 3.47
Patuxent River basin						
5912	Cattail Creek tributary at Carrs Mill, Md.	Lat 39°18'57", long 77°03'41", at bridge on State Highway 96, 0.5 mile west of Carrs Mill, Howard County.	3.93	1956-59 1961-63	7-23-63 9-28-63	0.65 .48
5932	Little Patuxent River at Pine Orchard, Md.	Lat 39°16'42", long 76°51'11", at bridge on U. S. Highway 40, 0.4 mile east of Pine Orchard, Howard County.	7.03	1956-59 1961-63	7-23-63	1.30
5936	Middle Patuxent River near West Friendship, Md.	Lat 39°17'14", long 76°57'33", at bridge on State Highway 32, 1.1 miles south of West Friendship, Howard County.	11.4	1956-59 1961-63	7-23-63 9-25-63	2.53 1.79
5941	Hammond Branch at Scaggsville, Md.	Lat 39°09'13", long 76°53'35", at bridge on U. S. Highway 29, 0.7 mile north- east of Scaggsville, Howard County.	3.01	1956-59 1962-63	7-23-63 9-25-63	.61 .71
Potomac River basin						
6391	Piney Creek at Taneytown, Md.	Lat 39°39'56", long 77°10'04", 50 ft northwest of culvert under State High- way 194, 0.6 mile northeast of Taney- town, Carroll County.	22.9	1956-59 1961-63	7-30-63 9-27-63	0.06 0
6394	Big Pipe Creek at Bachman Mills, Md.	Lat 39°39'39", long 76°56'54", at bridge on State Highway 496, at Bachman Mills, Carroll County.	9.39	1956-59 1961-63	7-30-63	2.83
6394.5	Big Pipe Creek near Mayberry, Md. c/	Lat 39°40'01", long 77°06'23", below Silver Run, 1,000 ft west of Pipe Creek Mill, 1.8 miles north of May- berry, Carroll County.	51.6	1956-59 1962-63	7-30-63 9-27-63	8.94 5.63
6394.7	Meadow Branch near Uniontown, Md.	Lat 39°36'32", long 77°06'52", at bridge on State Highway 84, 1.1 miles north of Uniontown, Carroll County.	12.6	1956-59 1961-63	7-30-63 9-25-63	2.60 1.70
6401	Wolfpit Branch at Linwood, Md.	Lat 39°33'57", long 77°08'44", at bridge on State Highway 75, 1 mile northwest of Linwood, Carroll County.	2.01	1956-59 1961-63	7-31-63 9-27-63	.54 .43
6401.5	Little Pipe Creek at Union Bridge, Md.	Lat 39°34'20", long 77°10'35", at bridge on State Highway 75, 0.1 mile north of Union Bridge, Carroll County.	40.4	1956-59 1962	9-27-63	d6.97

c Formerly published as "at Pipe Creek, Md".

d This and all previous measurements may be affected by pumpage from Patapsco River basin, for municipal supply of Westminster, which is discharged as sewage into Little Pipe Creek above station (about 1 cfs).

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 1963,
in North Atlantic Slope basins

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Leipsic River basin							
4835	Leipsic River near Cheswold, Del.	Lat 39°13'58", long 75°37'57", at bridge, 1.9 miles east of Kenton and 2.6 miles northwest of Cheswold, Kent County.	9.35	1931-33* 1943-57* 1958-63	3-12-63	3.45	167
Indian River basin							
*4845.5	Pepper Creek at Dagsboro, Del.	See previous table.	8.78	1960-63	3-12-63	4.06	(+)
Nanticoke River basin							
4880	Holly Ditch near Laurel, Del.	Lat 38°32'20", long 75°35'55", 10 ft above culvert, 1½ miles southwest of Laurel, Sussex County.	2.19	1951-56* 1959-63	3-12-63	1.87	(+)
Choptank River basin							
4904.7	Tappahanna Ditch near Hartly, Del.	Lat 39°08'07", long 75°41'30", 100 ft below bridge on State Highway 103, 2.7 miles southeast of Hartly, Kent County.	5.93	1952-63	3-12-63	6.41	(+)
4905	Culbreth Marsh Ditch near Chapel-town, Del. <u>a/</u>	Lat 39°04'45", long 75°41'05", 40 ft below bridge on State Highway 223, 1.6 miles south of Chapeltown, Kent County.	11.6	1951-56* 1957-63	3-12-63	6.33	(+)
Wye River basin							
4925	Sallie Harris Creek near Carmichael, Md.	Lat 38°57'55", long 76°06'30", 50 ft above bridge on U. S. Highway 50, 2.0 miles northeast of Carmichael, Queen Annes County, and 2.2 miles northwest of Wye Mills.	8.09	1952-56* 1957-63	2-18-61 3- 7-62 3-12-63	3.89 3.73 4.73	b154 b135 286
Chester River basin							
4940	Southeast Creek at Church Hill, Md.	Lat 39°07'57", long 75°58'51" at bridge on private road, 0.7 mile south of Church Hill, Queen Annes County.	12.5	1952-56* 1957-63	2-18-61 3-12-62 3-12-63	7.35 6.10 6.45	b620 b372 428
Susquehanna River basin							
5785	Octoraro Creek near Rising Sun, Md.	Lat 39°41'27", long 76°07'38" at Porter Bridge, 3½ miles west of Rising Sun, Cecil County.	193	1932-58* 1963	3- 6-63	9.80	7,370
Patapsco River basin							
5880	Piney Run near Sykesville, Md.	Lat 39°22'55", long 76°58'00", 75 ft below bridge on State Highway 32, 1¼ miles north of Sykesville, Carroll County, and 5¼ miles above mouth.	11.4	1932-58* 1959-63	3- 6-63	4.79	521
5892.2	Gwynns Falls at Owings Mills, Md.	Lat 39°25'14", long 76°46'56", at bridge on U. S. Highway 140, at Owings Mills, Baltimore County.	9.12	1958-63	1963	c<3.98	(+)
5892.4	Gwynns Falls at McDonogh, Md.	Lat 39°23'28", long 76°45'56", at bridge on McDonogh Road, at McDonogh, Baltimore County.	19.3	1958-63	11-10-62	6.05	(+)
5894	Jones Falls at Brooklandville, Md.	Lat 39°24'51", long 76°40'04", at bridge on State Highway 25, at Brooklandville, Baltimore County.	19.7	1958-63	1963	c<3.11	(+)

* Also a low-flow partial-record station.

† Discharge not determined.

* Operated as a continuous-record gaging station.

a Prior to 1956 published as "Shades Branch".

b Not previously published.

c Peak stage did not reach bottom of gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1963,
in North Atlantic Slope basins--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Patapsco River basin--Continued							
5894.4	Jones Falls at Sorrento, Md.	Lat 39°23'30", long 76°39'42", 50 ft east of State Highway 25, 0.4 mile below Slaughterhouse Branch and Sorrento, Baltimore County.	25.2	1958-63	11-10-62	d10.6	(†)
Patuxent River basin							
5940	Little Patuxent River at Savage, Md.	Lat 39°08'00", long 76°48'58", 200 ft below northbound lane of bridge on U. S. Highway 1, $\frac{1}{2}$ mile southeast of Savage, Howard County, and 1 mile below Middle Patuxent River.	98.4	1940-58† 1959-63	3- 6-63	8.16	3,230
5944	Dorsey Run near Jessup, Md.	Lat 39°07'15", long 76°47'00", at bridge on State Highway 32, 0.6 mile southeast of Fort George G. Meade Junction, 1.0 mile above mouth, and 2 miles south of Jessup, Anne Arundel County.	11.6	1948-58† 1959-63	1963	c < 5.67	< 372
Potomac River basin							
6095	Sawpit Run near Oldtown, Md.	Lat 39°32'50", long 78°33'20", 900 ft above bridge on State Highway 51, 1.0 mile above mouth, and 3.0 miles east of Oldtown, Allegany County.	e5.08	1948-58† 1963	3- 4-63	f3.15	210
6180	Potomac River at Shepherdstown, W. Va.	Lat 39°26'04", long 77°48'07", 0.1 mile below Rumsey Bridge, at Shepherdstown, Jefferson County.	5,936	1929-53† 1954-63	3-21-63	21.10	91,400
6370	Little Catoclin Creek at Harmony, Md.	Lat 39°28'54", long 77°32'17" (revised), at county highway bridge, 0.9 mile southwest of Harmony, Frederick County, and 2.8 miles above mouth.	e8.83	1947-58† 1959-63	11-10-62	2.71	88
6400	Little Pipe Creek at Avondale, Md.	Lat 39°33'40", long 77°02'38", at private bridge, 0.1 mile below Copps Branch, $\frac{1}{2}$ mile northwest of Avondale, Carroll County, and 3 miles southwest of Westminster.	8.10	1948-56† 1959-63	1963	c < 2.86	< 134
6435	Bennett Creek at Park Mills, Md.	Lat 39°17'40", long 77°24'30", 75 ft below highway bridge, 0.2 mile south of Park Mills, Frederick County, 1.8 miles above mouth, and 3.7 miles southwest of Urbana.	62.8	1948-58† 1967-63	6- 3-63	4.58	1,170
6470	Little Falls Branch near Bethesda, Md.	Lat 38°57'27", long 77°06'31", at bridge on Massachusetts Avenue, 2.0 miles southwest of Bethesda, Montgomery County.	d4.1	1944-59† 1960-61	8- 4-60 8-26-61	5.92 3.94	2,120 (†)

† Discharge not determined.

* Operated as a continuous-record gaging station.

c Peak stage did not reach bottom of gage.

d Approximately.

e Revised.

f May have been higher Mar. 20.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. All measurements in this table were made during periods of base flow, except as otherwise noted.

Discharge measurements made at miscellaneous sites during water year 1963,
in North Atlantic Slope basins

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
St. Jones River basin						
Maidstone Branch	Fork Branch	Lat 39°10'37", long 75°34'55", at bridge, 0.4 mile above Cahoon Branch, 0.7 mile northwest of Chestnut Grove, Kent County, Del.	9.01	-	5- 7-63	3.22
Wicomico River basin						
Leonard Pond Run	North Prong Wicomico River	Lat 38°25'24", long 75°33'56", at Leonard Pond dam, 0.6 mile above Wood Creek, 2.4 miles southeast of Delmar, Wicomico County, Md.	13.4	1950-51 1962	6-19-63 6-26-63 7- 8-63 8- 6-63 8-28-63 9-25-63	13.3 9.00 6.21 3.45 2.90 2.98
North Prong Wicomico River	Wicomico River	Lat 38°24'32", long 75°35'42", at bridge on Nailers Pond Road, 0.1 mile below confluence of Leonard Pond Run and Little Burnt Branch, and 1.9 miles north of Salisbury, Wicomico County, Md.	24.8	-	8- 6-63 8-28-63 9-11-63 9-25-63	22.6 18.5 19.3 17.8
North Prong Wicomico River	Wicomico River	Lat 38°22'18", long 75°36'11", at Isabella Street bridge, in Salisbury, Wicomico County, Md.	a37.1	1962	6-19-63 6-26-63 7- 8-63 8- 6-63 8-28-63 9-11-63 9-25-63	48.2 44.8 40.1 32.2 28.0 27.4 30.6
Tonytank Creek	Wicomico River	Lat 38°19'52", long 75°35'54", at dam, at Fooks Pond outlet, 1.0 mile northwest of Fruitland, and 1.1 miles south of Salisbury, Wicomico County, Md.	b5.0	1950-51 1953, 1962	6-19-63 6-26-63 7- 8-63 8- 6-63 8-28-63 9-25-63	6.50 5.74 4.49 4.03 3.53 3.14
Passerdyke Creek	Wicomico Creek	Lat 38°17'35", long 75°40'52", at unimproved road bridge 175 ft south of State Highway 529, 0.5 mile northeast of Allen, Wicomico County, Md.	7.88	-	6-18-63 6-26-63 7- 8-63 8- 6-63 9-25-63	1.94 .82 .33 .34 .59
Nanticoke River basin						
Quantico Creek	Nanticoke River	Lat 38°22'12", long 75°44'23", at bridge on State Highway 347, at Quantico, Wicomico County, Md.	all.3	1950-53	6-18-63 7- 8-63 8- 6-63 9-25-63	5.00 .60 .49 1.26
Chester River basin						
Southeast Creek	Chester River	Lat 39°07'57", long 75°58'51", at bridge on private road, 0.7 mile south of Church Hill, Queen Annes County, Md.	12.5	1952-56*	9-27-63	2.85
Sassafras River basin						
Jacobs Creek	Sassafras River	Lat 39°21'50", long 75°49'13", at bridge on State Highway 290, 1.2 miles southwest of Sassafras, Kent County, Md.	5.39	1951-56*	9-27-63	2.43
Elk River basin						
Little Elk Creek	Big Elk Creek	Lat 39°38'30", long 75°52'00", at bridge on State Highway 545, 0.2 mile southeast of Childs, Cecil County, Md.	26.8	1949-58*	9-27-63	c4.76

* Operated as a continuous-record station.

a Revised.

b Approximately.

c May be affected by regulation from paper mills.

Discharge measurements made at miscellaneous sites during water year 1963,
in North Atlantic Slope basins--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Susquehanna River basin						
Octoraro Creek	Susquehanna River	Lat 39°41'27", long 76°07'38" at Porter Bridge, 300 ft below Love Run, and 3½ miles west of Rising Sun, Cecil County, Md.	193	1932-58†	9-27-63	d29.5
Basin Run	Octoraro Creek	Lat 39°39'30", long 76°06'10", 100 ft above highway bridge, 0.9 mile east of Liberty Grove, Cecil County, Md.	5.31	1949-59†	9-27-63	e.89
Gunpowder River basin						
Gunpowder Falls	Gunpowder River	Lat 39°42'53", long 76°49'48", 150 ft above bridge on Old York Road, 0.4 mile below South Branch Gunpowder Falls, and 0.8 mile southeast of Lineboro, Carroll County, Md.	15.3	-	10-24-62 3-26-63	5.29 22.0
Beaverdam Run	Western Run	Lat 39°27'24", long 76-41-33, at bridge on State Highway 25, 1.6 miles northeast of Carroll Chapel, Baltimore County, Md.	5.17	-	4-11-63	3.87
Goodwin Run	Beaverdam Run	Lat 39°27'22", long 76°38'25", 120 ft below bridge on Padonia Road, 300 ft below Pennsylvania Railroad culvert, and 0.6 mile south of Texas, Baltimore County, Md.	1.67	1949	3-26-63	1.17
Goodwin Run	Beaverdam Run	Lat 39°28'24", long 76°39'26", at highway bridge, 0.3 mile above mouth, 1.0 mile southwest of Cockeysville, Baltimore County, Md.	4.16	-	3-26-63	3.41
Overshot Run	Loch Raven Reservoir	Lat 39°29'46", long 76°34'10", at bridge on State Highway 146, 0.6 mile south of Sunnysbrook, Baltimore County, Md., and 1.4 miles above mouth.	1.66	-	10-24-62	.47
Dulaney Valley Branch	Loch Raven Reservoir	Lat 39°27'58", long 76°32'45", at bridge on Loch Raven Road, 0.1 mile above mouth, 1.1 miles northwest of Manor View, Baltimore County, Md.	3.25	1931, 1954-55	3-26-63	2.58
Long Green Creek	Gunpowder Falls	Lat 39°28'09", long 76°29'28", at bridge on Long Green Pike, at Gittings, 1.7 miles east of Long Green, Baltimore County, Md., and 3.2 miles above mouth.	8.01	-	4-11-63	6.32
Gunpowder Falls	Gunpowder River	Lat 39°25'01", long 76°24'41", at bridge on Interstate Highway 95, 1.2 miles west of Gunpowder, Baltimore County, Md.	346	-	10-24-62	f12.3
Patapsco River basin						
Piney Run	South Branch Patapsco River	Lat 39°22'55", long 76°58'00", 75 ft below bridge on State Highway 32, 1¼ miles north of Sykesville, Carroll County, Md., and 5½ miles above mouth.	11.4	1932-58†	9-25-63	1.63
Sawmill Creek	Furnace Creek	Lat 39°10'12", long 76°37'51", 300 ft above bridge on State Highway 648, 0.5 mile northwest of Glen Burnie, Anne Arundel County, Md.	a4.97	1944-52†	9-25-63	2.92
South River basin						
Bacon Ridge Branch	South River	Lat 39°00'07", long 76°36'53", at highway bridge, 0.5 mile east of Chesterfield, Anne Arundel County, Md., and 1.4 miles above confluence with North River.	6.92	1943-52†	9-25-63	g2.89
Patuxent River basin						
Cattail Creek	Patuxent River	Lat 39°15'26", long 77°03'09", 500 ft above bridge on State Highway 97, 2½ miles southwest of Glenwood, Howard County, Md.	22.7	-	9-26-63	2.91
Little Patuxent River	Patuxent River	Lat 39°08'00", long 76°48'58", 200 ft below bridge on U. S. Highway 1, ½ mile southeast of Savage, Howard County, Md., and 1 mile below Middle Patuxent River.	98.4	1940-58†	9-25-63	15.8

* Operated as a continuous-record station.

a Revised.

d May be affected by diversion for public water supply.

e May be affected by diversion for irrigation.

f Base flow from the 43 square miles below Loch Raven Reservoir.

g May be affected by sewage effluent from Crownsville State Hospital which obtains its water supply from deep wells.

Discharge measurements made at miscellaneous sites during water year 1963,
in North Atlantic Slope basins--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Patuxent River basin--Continued						
Dorsey Run	Little Patuxent River	Lat 39°07'15", long 76°47'00", at bridge on State Highway 32, 1.0 mile above mouth, and 2 miles south of Jessup, Anne Arundel County, Md.	11.6	1948-58†	9-25-63	3.00
Potomac River basin						
Potomac Blue Spring	North Branch Potomac River	Lat 39°34'26", long 78°43'50", 200 ft below abandoned C & O Canal lock, 1.1 miles northwest of Spring Gap, Allegany County, Md.	-	1958-62	9-10-63	7.82
Murley Branch Spring	Murley Branch	Lat 39°39'38", long 78°37'08", below dam at spring house of farm on Williams Road, 4.0 miles southwest of Flintstone, Allegany County, Md.	-	1958-62	9-10-63	.63
Town Creek	Potomac River	Lat 39°33'12", long 78°33'19", at Oldtown Road bridge, 2.2 miles above Sawpit Run, 3.1 miles northeast of Oldtown, Allegany County, Md., and 4 miles above mouth.	148	1928-35†	9-24-63	2.65
Sawpit Run	Town Creek	Lat 39°32'50", long 78°33'20", 900 ft above bridge on State Highway 51, 3.0 miles east of Oldtown, Allegany County, Md.	a5.08	1948-58† 1962	9-10-63	.003
Little Catoclin Creek	Catoclin Creek	Lat 39°28'55", long 77°32'20", at county highway bridge, 0.9 mile southwest of Harmony, Frederick County, Md., and 2.8 miles above mouth.	a8.83	1947-58†	9-26-63	.40
Little Pipe Creek	Double Pipe Creek	Lat 39°33'40", long 77°02'38", at private road bridge, 0.1 mile below Copps Branch, and ½ mile northwest of Avondale, Carroll County, Md.	8.10	1947-56†	9-26-63	h2.59
Hunting Creek	Monocacy River	Lat 39°37'13", long 77°25'57", 0.6 mile above bridge on State Highway 77, 1.1 mile west of Thurmont, Frederick County, Md.	9.44	1944	11-21-62 5-10-63 7-19-63 9-11-63	4.54 7.17 3.02 .75
Bennett Creek	Monocacy River	Lat 39°17'40", long 77°24'30", 75 ft below highway bridge, 0.2 mile south of Park Mills, Frederick County, Md., and 1.8 miles above mouth.	62.8	1948-58†	9-26-63	5.16
Great Seneca Creek	Seneca Creek	Lat 39°10'01", long 77°13'37", at bridge on State Highway 355, 0.1 mile below Whetstone Run and 2 miles northwest of Gaithersburg, Montgomery County, Md.	41.0	1925-31†	9-26-63	5.97
Rock Creek	Potomac River	Lat 38°57'37", long 77°02'33", at bridge on Military Road, in Washington, D. C., and 6½ miles above mouth.	64.1	-	10-19-62	7.27
Northeast Branch Anacostia River	Anacostia River	Lat 38°56'57", long 76°56'05", at bridge on Decatur Street, at Edmonston, Prince Georges County, Md., and 0.7 mile above confluence with Northwest Branch Anacostia River.	74.1	-	3-25-63	67.6

* Operated as a continuous-record station.

a Revised.

h May be affected by sewage effluent from Westminster which obtains its water supply from the Patapsco River basin.

Discharge measurements made at miscellaneous sites during water year 1963,
in Ohio River basin

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Monongahela River basin						
South Branch Bear Creek	Bear Creek	Lat 39°39'11", long 79°23'06", at mouth, 1.3 miles southeast of Friendsville, Garrett County, Md.	16.8	-	9-25-63	0.96
Bear Creek	Youghiogheny River	Lat 39°39'21", long 79°23'28" at bridge, 0.4 mile below South Branch Bear Creek, and 0.9 mile southeast of Friendsville, Garrett County, Md.	48.7	-	9-25-63	3.41

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