1967

Water Resources Data for Maryland and Delaware

Part 2. Water Quality Records

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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

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

WATER RESOURCES DATA FOR MARYLAND AND DELAWARE

1967

Part 2. Water Quality Records

Prepared in cooperation with

Delaware Geological Survey
Maryland Geological Survey
Maryland National Capital Park and Planning Commission
District of Columbia Department of Sanitary Engineering
Washington Suburban Sanitary Commission

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

Streamflow records for most of the water quality stations in this report are contained in:

Water Resources Data for Maryland and Delaware, 1967

Part 1. Surface Water Records

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[*Symbols after station name designate type of data: c, chemical; t, water temperature; s, sediment*]

ILLUSTRATION

WATER RESOURCES DATA FOR MARYLAND AND DELAWARE, 1966

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INTRODUCTION

Water-resources investigations of the U.S. Geological Survey include the collection of water quality data on the chemical and physical characteristics of surface- and ground-water supplies of the Nation. These data for the 1967 water year for the quality of surface waters in Maryland and Delaware are presented in this report. The data were collected by the Water Resources Division of the U.S. Geological Survey under the direction of W. F. White, district chief, Towson, Md., and N. H. Beamer, district chief, Harrisburg, Pa.

Water quality information is presented for chemical quality, fluvial sediment, and water temperatures. The chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, specific conductance, and pH. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle size distribution of suspended sediment. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimums and maximums are obtained.

The Geological Survey has published the annual series of water-supply papers, "Quality of Surface Waters of the United States," from 1941 through 1965 which contained the chemical quality, temperature, and suspended-sediment data of the water. Each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records for Maryland and Delaware are contained in Parts 1 and 3 of the water-supply paper series. (See table, p. 10.) These publications are available in most public libraries. Beginning with the 1964 water year, water quality records for surface water obtained by the Geological Survey were published in

a new series of annual releases on a state boundary basis. This report is primarily for local and immediate use, and its distribution is limited. These data will be published later in Geological Survey water-supply papers.

COOPERATION

The work was done under cooperative agreements between the U.S. Geological Survey and the following organizations:

Delaware: Delaware Geological Survey, J. J. Groot, State geologist.

Maryland: Maryland Geological Survey, Kenneth N. Weaver, director; Maryland National Capital Park and Planning Commission, John S. Hewins, director of planning; Washington Suburban Sanitary Commission, Robert J. McLeod, acting general manager and chief engineer.

District of Columbia: Department of Sanitary Engineering, Roy L. Orndorff, director.

Several stations were operated from funds appropriated directly to the Geological Survey.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms and abbreviations of water-quality and hydrologic data, as used in the text and tabular data of this report, are as follows:

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It equals 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons.

Cubic feet per second (cfs) is a unit expressing rates of discharge. One cubic foot per second is equal to the discharge of a stream of rectangular cross section, 1 foot wide and 1 foot deep, flowing water at an average velocity of 1 foot per second.

Discharge, in its simplest concept, means outflow; therefore, the use of this term is not restricted as to course or location. In this report it represents the total fluids measured in the stream.

Daily mean discharge is the mean discharge for one day.

Mean daily discharge is the arithmetic mean discharge for the same day during a specific period of years.

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

Instantaneous discharge (at time of sampling). If the discharge at the time of sampling is reported instead of the daily mean, the heading of the discharge column is "Discharge (cfs)."

Drainage area is that area, in a specified location, measured in a horizontal plane, which is enclosed by a drainage divide.

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

Equivalents per million (epm) is a unit for expressing the concentration of chemical constituents in solution in terms of the interreacting values of the electrically charged particles, or ions. One equivalent per million of a positively charged ion will react with one equivalent per million of a negatively charged ion. Parts per million is converted to equivalents per million by multiplying by the reciprocal of the combining weight of the ion. (See table, p. 4.)

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

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

Conversion factors: Parts per million to equivalents per million

Ion	Multiply by
Aluminum (Al^{+3})	0.11119
Ammonia as NH_4^{+1}	.05544
Barium (Ba^{+2})	.01456
Bicarbonate (HCO_3^{-1})	.01639
Bromide (Br^{-1})	.01251
Calcium (Ca^{+2})	.04990
Carbonate (CO_3^{-2})	.03333
Chloride (Cl^{-1})	.02821
Chromium (Cr^{+6})	.11539
Cobalt (Co^{+2})	.03394
Copper (Cu^{+2})	.03148
Cyanide (CN^{-1})	.03844
Fluoride (F^{-1})	.05264
Hydrogen (H^{+1})	.99209
Hydroxide (OH^{-1})	.05880
Iodide (I^{-1})	.00788
Iron (Fe^{+3})	.05372
Lead (Pb^{+2})	.00965
Lithium (Li^{+1})	.14411
Magnesium (Mg^{+2})	.08226
Manganese (Mn^{+2})	.03640
Nickel (Ni^{+2})	.03406
Nitrate (NO_3^{-1})	.01613
Nitrite (NO_2^{-1})	.02174
Phosphate (PO_4^{-3})	.03159
Potassium (K^{+1})	.02557
Sodium (Na^{+1})	.04350
Strontium (Sr^{+2})	.02283
Sulfate (SO_4^{-2})	.02082
Zinc (Zn^{+2})	.03060

Hardness of water is the property of water attributable to the presence of alkaline earths and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hardness is a physical-chemical characteristic, not a substance.

Particle size is the diameter, in millimeters (mm) of suspended sediment or bed material determined by sieve and sedimentation methods.

Particle-size classification agrees closely with recommendations made by the American Geophysical Union Subcommittee on sediment terminology (Lane and others, 1947, p. 937). The classification is as follows:

Clay:	Smaller than 0.004 mm.
Silt:	Between 0.004 and 0.062 mm.
Sand:	Betwen 0.062 and 2.0 mm.
Gravel:	Between 2.0 and 64.0 mm.

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Parts per million (ppm) is a unit for expressing the concentration of chemical constituents by weight, usually as grams of constituents per million grams of solution. In the laboratory the results are expressed in weights of solutes in a given volume of water. To express the results in parts per million, the data must be converted. For most waters, this conversion is made by assuming that a liter of water weighs 1 kilogram; thus milligrams per liter is equivalent to parts per million. Parts per million, for suspended sediment, is computed as 1 million times the ratio of the weight of sediment to the weight of the mixture of water and sediment.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced

by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Sediment discharge is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.

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

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25°C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. The following general relations are applicable:

Specific conductance x (0.65±0.05)=ppm dissolved solids;

$$\frac{\text{Specific conductance}}{100} = \frac{\text{total epm}}{2}$$

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

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

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph.

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

Water year in Geological Survey reports dealing with surface water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1967, is called the "1967 water year."

STATION NUMBERS

A station number has been assigned as an added means of identification for each stream location where regular measurements of streamflow and determinations of water quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of 2 digits followed by a hyphen and a 6-digit number. The notation to the left of the hyphen identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The number to the right of the hyphen represents the position of the location in the standard downstream order listing the stations within each of the parts. The assigned numbers are in numerical order but are not consecutive. They are so selected from the complete 6-digit-number scale that intervening numbers will be available for future assignments to new locations. The identification number for each station in this report is printed to the left of the station name and contains only the essential digits. For example, the number is printed as 1-4821 whose complete identification number is 01-4821.00.

COLLECTION AND EXAMINATION OF SAMPLES

Water samples for analyses usually are collected at or near points on streams where gaging stations are maintained by the U.S. Geological Survey for measurement of water discharge. Discharge records for streams in Maryland and Delaware have been released in the report "Water Resources Data for Maryland and Delaware, 1967, Part 1. Surface Water Records." Most of these records are used in conjunction with the computations

of the chemical constituents and sediment loads in this report.

Data on the quality of surface water were collected daily at some sites and less frequently at other sites; the locations of the sites are shown on the map on page 83.

Solutes

The methods of collecting and compositing water samples for determining the kinds and concentrations of solutes are described by Rainwater and Thatcher (1960). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals across the channel to determine accurately the solute load.

The daily chemical-quality data in this report, were collected by continuous recorders of selected water-quality parameters--specific conductance and dissolved oxygen. At sites where chemical quality data were collected less frequently than daily, the data represent the conditions only at the time of sampling.

Temperature

Water temperatures were measured at most of the water-quality stations. For daily stations, the water temperatures were taken at about the same time each day in order that the data would not reflect normal variations in water temperature. Most large streams have a small diurnal variation in water temperature; small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining the water temperature were accurate to plus or minus 0.5°F.

At stations where thermographs are located, the records consist of maximum and minimum temperatures for each day and the monthly averages of maximum daily and minimum daily temperatures.

Sediment

At some stations, suspended-sediment samples were collected daily with depth-integrating cable-suspended samplers from a fixed sampling point at one vertical in the cross section. A hand sampler was used at many stations during periods of low flow. Depth-integrated samples were collected periodically at many verticals in the cross section to determine the ratio of the cross sectional distribution of the concentration of suspended sediment to the daily sampling verticals. During periods of high or rapidly changing flow, samples were taken twice or more often throughout the day at most stations. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

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

WATER SUPPLY PAPERS

The table below shows the annual series of Water-Supply Papers that give information on quality of surface waters in Maryland and Delaware. Data for North Atlantic slope basins are given in part 1, and for Ohio River basin in part 3.

•Water-supply paper numbers and parts, water years 1941-65

Year	Parts 1-14	Parts 1-4	Year	Parts 1-4	Parts 1-2	Parts 3-4
1941	942	----	1954	1350	----	----
1942	950	----	1955	1400	----	----
1943	970	----	1956	1450	----	----
1944	1022	----	1957	1520	----	----
1945	1030	----	1958	1571	----	----
1946	1050	----	1959	----	1641	1642
1947	1102	----	1960	----	1741	1742
1948	----	1132	1961	----	1881	1882
1949	----	1162	1962	----	1941	1942
1950	----	1186	1963	----	1947	1948
1951	----	1197	1964	----	1954	1955
1952	----	1250	1965	----	A1961	A1962
1953	1290	----	----	----	----	----

A In preparation.

SELECTED REFERENCES

American Society for Testing Materials, 1954, Manual on industrial water: Am. Soc. for Testing Mat., Philadelphia, Pa., p. 356.

Benedict, P. C., 1948, Determination of the suspended sediment discharge of streams, in Federal Interagency Sedimentation Conference, 1st, Denver, Colo., May 6-8, 1947, Proc.: Washington, D.C., U.S. Bur. Reclamation, p. 55-67.

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Hem, J. D., 1959, Study and interpretation of the chemical characteristics of natural water: U.S. Geol. Survey Water-Supply Paper 1473, 269 p.

Lane, E. W. and others, 1947, Report of subcommittee on sediment terminology: Am. Geophys. Union Trans., v. 28, no. 6, p. 936-938.

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U.S. Inter-agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

_____ 1957, The development and calibration of visual accumulation tube: Rept. 11.

_____ 1957, Some fundamentals of particle size analysis: Rept. 12.

_____ 1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

1961, The single stage samples for suspended sediment: Rept. 13.

U.S. Inter-agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

_____ 1963, Determinations of fluvial sediment discharge: Rept. 14.

_____ 1963, A summary of the work of the Inter-agency sedimentation project: Rept. S.

1-4785. WHITE CLAY CREEK ABOVE NEWARK, DEL.

LOCATION.--Lat 39°42'50", long 75°45'35", gaging station 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 Delaware State line, and 2.2 miles north of Newark, New Castle County. Sediment samples collected at bridge, 0.8 mile upstream from gaging station.
DRAINAGE AREA.--66.7 square miles.
RECORDS AVAILABLE.--Sediment records: October 1964 to September 1967 (periodic).
REMARKS.--Flow affected by ice Dec. 24-29, Jan. 19-21, Feb. 7-9, 13, 14, 26, 27, and Mar. 1, 2.

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 3, 1966				40	35	3.8												
Oct. 10				22	10	.6												
Oct. 14				21	4	.2												
Oct. 17				21	4	.2												
Oct. 24				35	15	1.4												
Oct. 28				27	2	.1												
Oct. 31				25	2	.1												
Nov. 3				36	1	.1												
Nov. 7				26	1	.1												
Nov. 11				31	2	.2												
Nov. 18				25	1	.1												
Nov. 21				24	2	.1												
Nov. 25				25	3	.2												
Dec. 2				27	1	.1												
Dec. 12				26	1	.1												
Dec. 16				53	1	.1												
Dec. 19				46	3	.4												
Dec. 23				44	11	1.3												
Jan. 2, 1967				71	17	3.2												
Jan. 6				50	1	.1												
Jan. 7				48	4	.5												
Jan. 8				126	20	6.8												
Jan. 9				180	9	4.4												
Jan. 14				80	7	1.5												
Jan 15				94	6	1.5												
Jan. 24				80	77	1.7												
Jan. 25				71	33	6.3												
Feb. 15				64	8	1.4												
Feb. 16				185	10	5.0												
Feb. 17				112	6	1.8												
Feb. 21				87	380	A 89												
Feb. 22				77	350	A 73												
Feb. 27				52	21	2.9												
Mar. 3				50	6	.8												
Mar. 6				174	270	130												
Mar. 7				1750	340	A 1610												

A Computed from partly estimated-concentration graph.

1-4785. WHITE CLAY CREEK ABOVE NEWARK, DEL.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1966 to September 1967--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 10, 1967				140	49	18												
Mar. 13				112	43	13												
Mar. 15				129	142	49												
Mar. 16				136	130	48												
Mar. 17				118	40	13												
Mar. 20				77	6	1.2												
Mar. 24				118	1	.3												
Mar. 27				80	3	.6												
Mar. 30				90	4	1.0												
Mar. 31				77	5	1.0												
Apr. 3				71	3	.6												
Apr. 6				68	5	.9												
Apr. 7				156	32	13												
Apr. 18				108	100	29												
Apr. 24				74	6	1.2												
Apr. 26				74	29	5.8												
Apr. 27				223	47	28												
Apr. 28				101	28	7.6												
May 1				65	4	.7												
May 7				215	62	36												
May 22				80	5	1.1												
June 5				44	2	.2												
June 16				35	3	.3												
June 19				87	38	8.9												
June 20				47	46	5.8												
June 21				36	46	4.5												
June 23				102	53	14												
June 24				77	47	9.8												
July 22				44	19	2.2												
July 23				42	7	.8												
July 28				40	14	1.5												
Aug. 1				46	8	1.0												
Aug. 14				94	5	1.3												
Aug. 18				71	3	.6												
Aug. 21				90	4	1.0												
Sept. 1				100	4	1.1												
Sept. 4				78	3	.6												
Sept. 8				66	3	.5												
Sept. 11				67	4	.7												
Sept. 15				52	15	2.1												
Sept. 24,				64	3	.5												

1-4800. RED CLAY CREEK AT WOODDALE, DEL.

LOCATION.--Lat 39°45'52", long 75°38'08", temperature recorder at gaging station on right bank 12 feet 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 square miles.
RECORDS AVAILABLE.--Water temperatures: April 1953 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 80°F June 17; minimum, 33°F on several days in December and February.
EXTREMES, 1953-67.--Water temperatures: Maximum, 87°F July 17, Aug. 2, 6, 1955, July 19, 1963; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1966 to September 1967

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER																																
MAXIMUM	61	57	55	59	61	58	56	57	60	62	58	57	57	60	60	63	59	55	52	53	53	52	55	56	55	55	54	53	53	51	49	56
MINIMUM	57	54	52	54	58	54	52	52	55	58	55	55	53	54	58	59	55	52	52	52	50	49	51	55	55	52	51	49	50	47	45	53
NOVEMBER																																
MAXIMUM	52	56	57	53	47	50	48	51	54	57	59	57	53	47	45	45	48	50	50	46	42	41	41	43	46	49	43	50	50	46	--	49
MINIMUM	47	51	53	46	44	47	45	47	50	53	57	53	47	44	43	42	44	48	46	41	40	38	38	39	42	46	45	46	46	43	--	45
DECEMBER																																
MAXIMUM	43	42	40	35	36	41	44	48	50	52	52	49	42	40	40	40	40	42	42	39	37	36	36	36	33	33	33	34	33	34	34	39
MINIMUM	41	40	35	34	34	36	41	44	47	49	49	42	37	37	39	38	38	39	39	34	34	35	35	33	33	33	33	33	33	33	33	37
JANUARY																																
MAXIMUM	36	37	37	39	39	38	38	40	41	39	39	38	40	42	43	42	40	41	38	37	39	41	44	47	49	50	50	47	42	40	40	41
MINIMUM	34	36	36	37	38	36	36	38	39	38	37	37	37	40	42	40	38	38	36	36	37	39	41	44	47	48	47	42	40	37	37	38
FEBRUARY																																
MAXIMUM	43	47	46	41	41	41	39	35	35	34	37	37	36	36	41	43	41	37	38	38	40	39	41	40	37	34	34	38	--	--	--	38
MINIMUM	39	43	41	40	40	39	35	34	34	34	34	35	35	35	36	41	37	35	34	36	37	36	39	37	34	33	33	34	--	--	--	36
MARCH																																
MAXIMUM	37	37	43	43	42	40	40	40	44	47	50	50	48	50	50	45	43	40	39	40	39	42	41	44	47	50	50	49	50	52	53	44
MINIMUM	34	34	37	42	40	40	35	36	40	41	44	48	44	45	45	42	40	37	34	37	39	39	41	41	41	44	45	47	46	46	47	41
APRIL																																
MAXIMUM	55	60	60	56	53	53	53	53	53	55	54	52	51	56	62	62	60	54	53	57	58	60	59	57	54	52	51	54	56	56	--	55
MINIMUM	48	52	55	50	49	51	50	48	50	50	49	47	47	49	54	58	53	52	50	50	52	56	54	51	48	49	47	46	49	50	--	50
MAY																																
MAXIMUM	60	65	64	61	62	62	55	53	55	55	54	59	58	57	55	58	58	62	65	67	65	58	61	60	57	59	63	67	66	64	64	60
MINIMUM	53	59	60	56	55	55	49	49	52	52	52	53	53	55	54	54	53	53	58	62	58	55	56	57	55	55	56	62	59	58	60	55
JUNE																																
MAXIMUM	65	67	69	70	70	71	72	72	74	75	76	77	77	75	72	77	80	78	75	71	74	75	75	76	76	74	72	71	70	68	--	73
MINIMUM	60	62	64	65	66	66	67	68	68	70	72	71	73	71	70	71	75	75	69	67	68	73	73	71	73	70	69	68	67	66	--	68
JULY																																
MAXIMUM	69	72	72	71	69	68	70	70	72	73	72	74	74	73	73	73	72	72	72	74	74	74	76	79	78	79	78	78	76	75	75	73
MINIMUM	66	68	69	69	66	65	68	68	70	71	71	71	72	72	72	70	69	70	69	71	72	71	72	75	76	76	75	76	74	72	72	70
AUGUST																																
MAXIMUM	77	76	77	75	73	74	73	73	74	74	73	71	70	70	71	72	72	74	75	75	73	72	72	70	68	68	70	71	71	71	71	72
MINIMUM	73	74	75	73	71	71	71	72	71	72	71	68	68	66	67	69	69	71	73	73	71	71	70	68	66	67	68	69	69	68	69	70
SEPTEMBER																																
MAXIMUM	70	67	65	66	67	68	69	69	69	69	69	65	63	62	63	65	66	69	68	70	70	70	69	67	62	59	60	64	66	68	67	--	66
MINIMUM	66	64	61	63	65	65	66	67	67	65	62	60	59	60	62	65	66	66	67	68	69	67	62	59	57	57	60	64	66	63	--	63

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.

LOCATION.--Lat 39°52'10", long 75°35'35", at gaging station located on left bank 27 feet upstream from Pennsylvania Railroad bridge at Chadds Ford, Delaware County, and 1,200 feet downstream from highway bridge on U.S. Highway 1. Sediment samples collected at U.S. Highway 1 Bridge.
DRAINAGE AREA.--287 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1964 to September 1967.
Sediment records: July 1963 to September 1967.
EXTREMES, 1966-67.--Specific conductance: Maximum daily, 270 micromhos Oct. 14; minimum daily, 122 micromhos Aug. 10.
Water temperatures: Maximum, 80°F June 15; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 990 ppm Mar. 7; minimum daily, 1 ppm on many days in November, December and January.
Sediment loads: Maximum daily, 14,000 tons Mar. 7; minimum daily, less than 0.50 ton Nov. 17, 20-25, 27, and Dec. 8-10.
EXTREMES, 1963-67.--Specific conductance (June 1966-67): Maximum daily, 285 micromhos Sept. 2 and Sept. 5, 1966; minimum daily, 122 micromhos Aug. 10, 1967.
Water temperatures (1964-67): Maximum, 84°F Aug. 9, 17, 1965; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 2,000 (estimated) ppm Feb. 8, 1965; minimum daily, 1 ppm on many days in 1964 and 1967.
Sediment loads: Maximum daily, 20,000 (estimated) tons Feb. 8, 1965; minimum daily, less than 0.50 ton on many days in 1966-67.
REMARKS.--Records of specific conductance, pH, and temperature of sediment samples available in the WRD office at Harrisburg, Pa. Flow affected by ice Jan. 19-22, Feb. 7-14, Feb. 23 to Mar. 3.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
Feb. 14, 1967..	290	13		0.00	0.00	19	6.0	10	2.3	49	24	15	0.1	9.0	133	72	32		201	7.5	1
Mar. 8.....	1630	8.4		.10	.00	12	4.6	6.5	3.4	24	24	11	.2	8.5	101	49	30		147	7.4	7
May 10.....	496	--		--	--	--	--	A10	--	44	25	12	--	6.1	--	62	--		174	6.7	3
June 15.....	132	12		.00	.00	17	7.0	10	2.5	61	22	12	.1	6.6	131	72	22		194	7.8	5
July 17.....	220	12		.02	.01	17	6.8	7.5	3.1	57	21	13	.0	7.4	125	71	24		190	7.5	6
Aug. 15.....	265	12		.00	.00	18	7.0	9.5	2.8	59	22	12	.2	7.1	125	74	26		195	7.5	7
Sept. 15.....	187	11		.02	.00	18	6.9	11	2.6	60	23	13	.3	7.6	134	74	25		211	7.4	4

A Calculated Na plus K, reported as Na.

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.--Continued

Specific conductance (micromhos at 25°C), water year October 1966 to September 1967

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	219	238	210	208	198	208	193	191	205	209	215	220
2.....	200	239	215	209	199	209	192	190	203	198	217	222
3.....	199	240	233	208	203	208	191	190	205	162	180	220
4.....	228	240	229	206	200	206	190	189	207	156	149	223
5.....	225	240	226	213	200	191	192	195	203	165	130	225
6.....	254	236	222	215	192	197	200	192	206	189	170	210
7.....	260	236	220	221	211	124	191	174	207	196	189	217
8.....	262	236	210	229	210	168	198	160	199	200	200	221
9.....	262	236	230	176	198	186	196	180	200	191	208	220
10.....	259	237	229	196	200	190	193	182	205	192	122	212
11.....	259	234	228	204	205	192	200	182	207	147	163	210
12.....	266	237	225	208	212	200	200	186	204	170	191	220
13.....	265	234	230	210	--	192	203	181	203	187	199	222
14.....	270	233	230	210	219	198	196	179	208	200	203	220
15.....	264	242	212	217	205	196	192	192	209	202	209	222
16.....	262	241	208	193	191	197	191	197	205	204	210	192
17.....	260	238	218	199	188	215	192	198	209	200	210	210
18.....	260	239	--	209	222	225	190	199	181	200	209	220
19.....	198	240	--	218	210	211	191	195	204	214	184	226
20.....	190	240	--	230	202	203	200	190	210	212	--	218
21.....	220	231	--	218	206	202	201	191	177	211	--	211
22.....	244	230	--	214	210	220	197	190	168	210	--	175
23.....	240	236	--	205	209	221	191	194	200	212	--	227
24.....	240	235	--	200	211	209	192	200	189	210	--	215
25.....	243	228	--	194	215	211	190	199	195	221	--	210
26.....	240	220	215	194	206	193	192	197	200	220	--	218
27.....	239	229	200	198	205	200	189	197	208	210	--	210
28.....	238	231	--	157	204	194	170	192	209	199	--	218
29.....	235	176	--	180	--	190	178	192	216	200	172	216
30.....	234	191	--	190	--	195	190	193	211	195	194	210
31.....	237	--	--	196	--	200	--	190	--	210	212	--
Average	241	232	--	204	204	198	192	189	201	196	--	215

DELAWARE RIVER BASIN--Continued

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.--Continued

Temperature (°F) of water, water year October 1966 to September 1967

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER..	--	--	--	--	--	60	60	60	60	67	61	59	59	59	58	58	56	55	54	56	54	54	53	54	53	55	54	54	54	53	53	56
NOVEMBER.	53	52	52	52	51	50	50	51	49	49	51	55	53	53	51	50	50	58	48	47	46	46	47	48	47	49	48	48	47	45	--	49
DECEMBER.	44	39	36	32	33	32	32	32	32	32	--	--	--	32	32	32	--	--	--	--	--	--	--	--	--	--	32	32	32	--	--	--
JANUARY..	39	39	38	38	39	37	35	40	38	38	36	37	37	39	42	40	38	38	32	34	35	33	41	45	48	50	47	43	37	33	35	38
FEBRUARY.	--	41	41	42	40	38	34	34	33	34	35	33	32	38	40	38	34	38	37	35	36	38	38	35	32	32	32	34	--	--	--	36
MARCH....	33	34	38	40	38	40	35	36	42	42	43	44	45	47	42	42	43	42	41	39	38	39	39	40	47	47	48	50	52	52	53	42
APRIL....	58	60	60	61	59	59	56	56	55	56	54	54	54	58	58	58	56	54	52	--	--	--	--	--	--	52	48	51	50	56	--	--
MAY.....	--	--	53	54	53	52	50	52	54	52	52	53	54	52	55	56	56	54	55	58	57	58	60	60	56	58	58	64	63	64	64	56
JUNE.....	--	66	66	68	68	70	71	73	74	76	76	77	79	78	80	76	76	78	77	--	75	--	74	76	77	76	74	--	78	75	--	74
JULY.....	70	70	75	71	70	70	71	72	--	71	73	74	74	75	--	75	--	74	75	--	76	--	--	79	--	--	79	--	74	74	--	--
AUGUST...	72	--	--	--	75	--	73	--	73	73	--	--	71	71	72	72	73	73	--	--	--	--	--	--	--	--	--	--	72	72	--	--
SEPTEMBER	68	68	67	68	68	65	69	69	--	--	70	70	70	--	71	--	--	70	70	--	70	70	65	66	--	68	67	67	66	--	--	--

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.--Continued

Suspended sediment, water year October 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)
1	208	8	4	110	2	1	216	10	6
2	425	18	21	138	3	1	185	8	4
3	216	15	9	208	4	2	166	6	3
4	163	14	6	174	3	1	142	4	2
5	144	14	5	148	3	1	152	2	1
6	130	8	3	148	3	1	161	2	1
7	120	6	2	141	2	1	164	2	1
8	116	4	1	141	2	1	164	1	T
9	113	4	1	138	2	1	158	1	T
10	113	4	1	141	4	2	155	1	T
11	107	6	2	163	6	3	190	5	2
12	107	5	1	163	6	3	181	4	2
13	107	8	2	152	4	2	166	3	1
14	103	6	2	141	4	2	238	5	3
15	103	6	2	134	3	1	249	6	4
16	116	7	2	130	2	1	217	3	2
17	116	7	2	130	1	T	203	1	1
18	110	10	3	134	2	1	214	2	1
19	1040	230	S 780	134	2	1	237	3	2
20	796	84	S 230	130	1	T	221	3	2
21	312	15	13	124	1	T	222	3	2
22	180	7	3	124	1	T	202	3	2
23	140	5	2	120	1	T	189	3	2
24	120	5	2	124	1	T	176	2	1
25	130	7	2	127	1	T	154	2	1
26	120	6	2	152	2	1	264	5	4
27	120	6	2	144	1	T	241	3	2
28	120	4	1	282	20	S 30	251	4	3
29	120	4	1	766	78	S 190	637	--	100
30	110	3	1	304	17	14	705	--	100
31	110	2	1	--	--	--	431	6	7
TOTAL	6035	--	1109	5165	--	264	7251	--	263

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)
1	348	4	4	402	10	11	180	5	2
2	323	2	2	404	8	9	180	3	1
3	313	1	1	430	9	10	230	4	2
4	298	1	1	375	5	5	311	3	2
5	293	3	2	368	3	3	375	3	3
6	260	2	1	346	3	3	796	20	S 49
7	249	3	2	200	3	2	5170	990	S 14000
8	548	--	30	240	4	2	1630	140	S 740
9	937	--	200	280	4	3	905	27	66
10	485	10	13	290	3	2	740	18	36
11	365	7	7	290	3	2	666	16	29
12	316	5	4	280	3	2	607	13	21
13	297	4	3	250	2	1	549	C 9	13
14	329	5	4	290	2	2	539	C 9	13
15	436	17	20	347	4	4	622	C 9	15
16	475	14	18	684	24	44	695	12	22
17	360	--	10	515	15	21	617	10	17
18	336	7	6	389	6	6	515	8	11
19	210	6	3	346	6	6	457	C 5	6
20	190	4	2	347	6	6	462	C 5	6
21	200	2	1	379	7	7	496	C 7	9
22	250	4	3	350	6	6	563	C 7	11
23	324	6	5	330	6	5	592	C 7	11
24	421	8	9	280	4	3	583	C 13	20
25	419	10	11	140	2	1	622	C 13	22
26	374	8	8	180	6	3	525	C 13	18
27	880	--	200	190	6	3	467	C 6	8
28	1490	370	B 1500	190	6	3	443	C 6	7
29	645	65	110	--	--	--	568	8	12
30	463	17	21	--	--	--	515	8	11
31	410	12	13	--	--	--	438	8	9
TOTAL	13244	--	2214	9112	--	175	22058	--	15192

S Computed by subdividing day.
T Less than 0.50 ton.
B Computed from estimated-concentration graph.
C Composite period.

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued
(Where no daily concentrations are reported, loads are estimated)

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)
1	414	8	9	340	10	9	265	7	5
2	405	C 11	12	349	10	9	248	C 6	4
3	391	C 11	12	438	12	14	240	C 6	4
4	363	C 11	11	372	8	8	228	C 6	4
5	367	16	16	335	8	7	224	C 6	4
6	377	19	19	367	12	12	217	6	4
7	617	22	37	880	84	S 320	213	6	3
8	481	8	10	1020	120	S 360	205	6	3
9	400	C 2	2	661	33	59	201	6	3
10	386	C 2	2	496	8	11	197	5	3
11	358	C 2	2	544	C 12	18	194	5	3
12	335	C 2	2	690	C 12	22	187	4	2
13	331	C 2	2	472	C 12	15	179	4	2
14	340	C 2	2	438	C 12	14	179	3	1
15	335	C 2	2	486	21	28	187	5	2
16	322	C 2	2	563	25	38	187	6	3
17	335	4	4	424	12	14	176	5	2
18	448	8	10	386	10	10	176	5	2
19	358	C 3	3	381	10	10	286	12	9
20	317	C 3	2	410	12	13	217	10	6
21	304	C 3	2	349	10	9	183	10	5
22	326	C 3	3	349	C 10	9	190	13	7
23	313	C 3	2	335	C 10	9	840	--	100
24	331	C 2	2	317	8	7	300	23	19
25	335	C 2	2	308	C 6	5	217	10	6
26	313	7	6	300	C 6	5	187	30	15
27	950	76	S 220	286	C 6	5	169	26	12
28	725	41	S 88	278	C 6	4	162	14	6
29	429	10	12	326	C 6	5	158	18	8
30	367	10	10	405	10	11	291	33	26
31	--	--	--	300	8	6	--	--	--
TOTAL	12073	--	508	13605	--	1066	6903	--	273

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (PPM)	SEDIMENT LOAD (TONS PER DAY)
1	253	26	18	228	10	6	265	14	10
2	201	6	3	197	8	4	248	13	9
3	845	--	100	274	12	9	240	13	8
4	313	--	50	1430	--	2000	236	12	8
5	248	50	33	1610	--	3000	228	12	7
6	201	28	15	617	34	57	220	12	7
7	187	25	13	367	30	30	217	11	6
8	179	25	12	322	27	23	213	11	6
9	187	30	15	391	50	53	209	10	6
10	429	--	50	1400	--	1000	232	12	8
11	1020	670	S 2200	477	--	60	217	11	6
12	549	180	270	344	27	25	201	10	5
13	278	65	49	304	23	19	197	10	5
14	236	50	32	291	20	16	194	10	5
15	253	30	20	265	18	13	187	10	5
16	265	32	23	248	18	12	190	10	5
17	220	30	18	240	16	10	197	10	5
18	201	20	11	236	14	9	190	10	5
19	201	20	11	228	12	7	187	10	5
20	190	20	10	313	--	20	179	10	5
21	209	27	15	261	16	11	232	--	20
22	220	12	7	248	13	9	568	--	100
23	190	10	5	228	10	6	217	20	B 12
24	176	10	5	248	12	8	205	10	6
25	217	18	10	720	--	200	205	9	5
26	190	16	8	433	--	30	187	8	4
27	165	14	6	795	--	300	183	8	4
28	165	14	6	830	--	300	194	8	4
29	187	28	14	429	18	21	377	--	30
30	1080	--	2000	331	18	16	253	9	6
31	291	14	11	295	16	13	--	--	--
TOTAL	9546	--	5040	14600	--	7287	6868	--	317

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)..... 126460
TOTAL LOAD FOR YEAR (TONS)..... 33708

S Computed by subdividing day.
C Composite period.

1-4810. BRANDYWINE CREEK AT CHADDS FORD, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 7, 1967.....	1725	35		7260	690			54	70	83	86	89	90	94	99	99	100	SCPW
July 3.....	1300	75		1380	276			40	62	84	90	97	100	--				SCPW
July 11.....	0620	73		1820	646			43	64	83	90	96	99	100				SCPW

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.

LOCATION.--Lat 39°46'10", long 75°34'20", at gaging station on right bank 0.2 mile downstream from Henry Clay Bridge, in Wilmington, New Castle County, and 4.2 miles upstream from mouth. Sediment samples are collected at the Henry Clay Bridge.
DRAINAGE AREA.--314 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1950, November 1951 to September 1952, October 1956 to September 1967.
Water temperatures: November 1956 to September 1961.
Sediment records: December 1946 to September 1961, July 1962 to September 1967.
EXTREMES,1966-67.--Sediment concentrations: Maximum daily, 1,110 ppm Mar. 7; minimum daily, 2 ppm Nov. 22-24.
Sediment loads: Maximum daily, 19,000 tons Mar. 7; minimum daily, 1 ton Nov. 18-25, 27.
EXTREMES, 1946-61, 1962-67.--Water temperatures (1956-61): Maximum, 86°F June 17, 1957; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,700 ppm Feb. 14, 1966; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 33,000 tons Feb. 14, 1966; minimum daily, less than 0.50 ton on many days.
REMARKS.--The stage discharge relation was affected by ice Dec. 24, 29. Published and unpublished chemical-quality data and specific conductance, pH, and temperature of sediment samples available in the WRD district office at Towson, Md. Streamflow records for water year October 1966 to September 1967 available in the WRD subdistrict office at Dover, Del.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 26, 1966..	193	13		0.00	0.00	20	6.5	11	3.4	60	29	13	0.3	7.8	144	77	28		213	7.4	9
Nov. 30.....	356	--		--	--	--	--	A12	--	46	29	12	--	7.2	141	64	27		192	6.8	2
Jan. 5, 1967...	354	18		.00	.00	19	6.5	12	2.5	56	26	15	.2	5.0	151	74	28		209	7.6	2
Jan. 30.....	527	13		.00	.00	16	6.0	8.0	2.8	40	26	12	.1	9.0	118	65	32		176	7.4	7
Feb. 27.....	301	14		.01	.00	19	7.5	11	2.3	59	27	15	.2	10	141	79	30		213	7.4	3
Mar. 29.....	613	9.1		.00	.00	16	5.2	8.2	2.0	42	24	11	.2	7.6	111	62	27		174	6.9	2
Apr. 24.....	399	6.2		.00	.00	16	6.5	7.0	2.0	47	22	12	.2	7.2	118	67	28		176	7.1	3
June 26.....	22	16		.00	.00	18	6.0	11	3.2	58	24	12	.3	7.5	154	70	22		186	6.7	7
July 27.....	183	13		.00	.00	18	6.7	12	2.7	66	23	12	.3	6.1	134	73	19		205	7.0	6
Aug. 29.....	B 560	15		.02	.00	16	5.6	7.8	3.5	54	19	9.5	.2	5.7	112	63	19		198	6.7	15
Sept. 25.....	B 200	14		.13	.00	17	6.5	10	3.8	58	23	12	.3	7.6	125	69	22		201	7.6	7
Sept. 27.....	163	12		.01	.00	19	6.5	11	2.9	61	24	13	.1	7.6	144	74	24		208	6.5	1

A Calculated Na plus K, reported as Na.
B Daily mean discharge.

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN SEDIMENT CONCENTRATION (PPM)		OCTOBER SEDIMENT LOAD (TONS PER DAY)		NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN SEDIMENT CONCENTRATION (PPM)		NOVEMBER SEDIMENT LOAD (TONS PER DAY)		DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN SEDIMENT CONCENTRATION (PPM)		DECEMBER SEDIMENT LOAD (TONS PER DAY)	
1	241	--		10		136	7		2		260	30		21	
2	485	--		50		134	7		2		217	19		11	
3	276	--		20		101	10		5		191	12		6	
4	191	14		7		160	7		3		156	10		4	
5	169	11		5		138	6		2		170	10		4	
6	149	9		4		135	5		2		178	10		5	
7	135	9		3		133	5		2		183	10		5	
8	130	9		3		130	5		2		183	10		5	
9	127	9		3		130	5		2		178	10		5	
10	128	9		3		133	5		2		170	10		4	
11	125	9		3		150	7		3		208	12		7	
12	120	8		3		153	7		3		208	12		7	
13	119	7		2		144	7		3		187	11		6	
14	117	7		2		133	6		2		265	12		8	
15	117	7		2		129	5		2		304	10		8	
16	126	7		2		124	5		2		260	9		6	
17	129	7		2		123	5		2		233	9		6	
18	126	7		2		122	4		1		244	8		5	
19	1610	170	S	900		123	4		1		272	8		6	
20	1050	140	S	480		121	3		1		265	7		5	
21	411	22		24		120	3		1		260	7		5	
22	280	14		10		118	2		1		249	7		5	
23	225	10		6		119	2		1		223	7		4	
24	205	10		6		118	2		1		183	6		3	
25	197	9		5		119	3		1		136	5		2	
26	191	8		4		135	5		2		272	5		4	
27	180	7		3		134	4		1		298	5		4	
28	170	7		3		225	7	B	4		238	4		2	
29	166	7		3		785	80	A	170		580	--		90	
30	158	7		3		382	37		38		766	--		200	
31	152	7		3		--	--		--		487	--		50	
TOTAL	8005	--		1576		4987	--		264		8024	--		503	

DAY	JANUARY MEAN DISCHARGE (CFS)	JANUARY MEAN SEDIMENT CONCENTRATION (PPM)		JANUARY SEDIMENT LOAD (TONS PER DAY)		FEBRUARY MEAN DISCHARGE (CFS)	FEBRUARY MEAN SEDIMENT CONCENTRATION (PPM)		FEBRUARY SEDIMENT LOAD (TONS PER DAY)		MARCH MEAN DISCHARGE (CFS)	MARCH MEAN SEDIMENT CONCENTRATION (PPM)		MARCH SEDIMENT LOAD (TONS PER DAY)	
1	440	12	B	14		476	10		13		317	5		4	
2	409	10	B	11		471	9		11		304	5		4	
3	394	10	B	11		499	9		12		343	5		5	
4	374	10	B	10		457	8		10		362	6		6	
5	367	10		10		445	8		10		434	10		12	
6	329	12		11		424	8		9		725	20	B	39	
7	312	12		10		334	7		6		6110	1100	S	19000	
8	585	50	B	79		353	18	A	17		2660	250	S	2500	
9	1000	100	A	270		425	23	A	26		1080	75		220	
10	583	18		28		444	8		10		926	24		60	
11	457	12		15		428	7		8		814	23		50	
12	399	8		9		444	6		7		732	20		40	
13	371	7		7		350	4		4		659	18		32	
14	403	7		8		377	4		4		645	16		28	
15	492	8		11		435	6		7		723	20		39	
16	546	8		12		679	21		38		802	30		65	
17	448	6		7		602	13		21		714	13		25	
18	416	6		7		475	8		10		621	10		17	
19	330	6		5		486	7		8		559	10		15	
20	333	6		5		430	7		8		568	10		15	
21	349	6		6		462	7		9		587	10		16	
22	343	6		6		438	7		8		667	10		18	
23	385	7		7		441	8		10		686	10		18	
24	481	23		30		416	6		7		677	10		18	
25	494	8		11		301	4		3		702	12		23	
26	458	3		4		310	--		4		620	10		17	
27	906	320	B	780		356	--		7		571	10		15	
28	1740	750	S	4000		356	6		6		546	10		15	
29	702	90		170		--	--		--		640	13		22	
30	537	16		23		--	--		--		628	12		20	
31	482	12		16		--	--		--		542	8		12	
TOTAL	15870	--		5593		12054	--		293		26964	--		22370	

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued
(Where no daily concentrations are reported, loads are estimated)

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN SEDIMENT CONCENTRATION (PPM)		APRIL SEDIMENT LOAD (TONS PER DAY)		MAY MEAN DISCHARGE (CFS)	MAY MEAN SEDIMENT CONCENTRATION (PPM)		MAY SEDIMENT LOAD (TONS PER DAY)		JUNE MEAN DISCHARGE (CFS)	JUNE MEAN SEDIMENT CONCENTRATION (PPM)		JUNE SEDIMENT LOAD (TONS PER DAY)	
1	515	8		11		425	7		8		343	13		12	
2	507	8		11		426	7		8		321	12		10	
3	496	8		11		507	11		15		305	10		8	
4	464	8		10		459	10		12		289	9		7	
5	466	8		10		411	8		9		279	9		7	
6	482	8		10		420	8		9		268	9		6	
7	703	110	S	220		935	60	S	220		261	10		7	
8	579	45		70		1370	110	S	410		249	12		8	
9	490	34		45		789	29		62		243	12		8	
10	469	30		38		598	18		29		235	12		8	
11	444	26		31		594	14		22		223	10		6	
12	415	16		18		782	23		48		210	9		5	
13	407	12		13		560	15		23		201	9		5	
14	414	10		11		516	11		15		195	10		5	
15	417	8		9		538	11		16		204	11		6	
16	404	6		6		640	17		29		207	11		6	
17	402	7		8		510	16		22		192	11		6	
18	534	10		14		466	16		20		190	10		5	
19	452	8		10		452	15		18		359	--		20	
20	401	6		6		484	15		20		272	18		13	
21	381	5		5		423	14		16		211	15		8	
22	399	6		6		417	13		15		210	12		7	
23	400	6		6		415	13		14		813	50	A	110	
24	407	6		6		388	14		15		417	36		40	
25	429	6		7		377	15		15		261	25		18	
26	396	6		6		371	14		14		224	21		13	
27	1010	36	S	120		361	13		13		192	18		9	
28	891	46	S	120		350	13		12		182	17		8	
29	531	11		16		379	14		14		178	16		8	
30	460	8		10		502	16		22		312	35	A	29	
31	--	--		--		392	14		15		--	--		--	
TOTAL	14765	--		864		16257	--		1180		8046	--		408	

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN SEDIMENT CONCENTRATION (PPM)		JULY SEDIMENT LOAD (TONS PER DAY)		AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN SEDIMENT CONCENTRATION (PPM)		AUGUST SEDIMENT LOAD (TONS PER DAY)		SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN SEDIMENT CONCENTRATION (PPM)		SEPTEMBER SEDIMENT LOAD (TONS PER DAY)	
1	336	33	A	30		306	45		37		370	16		16	
2	243	22		14		251	35		24		350	14		13	
3	857	180	S	470		332	30		27		330	12		11	
4	416	70		79		1570	210	S	940		320	12		10	
5	306	42		35		1980	550	S	3800		307	10		8	
6	236	32		20		752	60		120		296	10		8	
7	211	25		14		477	40		52		286	9		7	
8	202	22		12		405	32		35		284	9		7	
9	201	22		12		650	--		100		280	9		7	
10	489	--		80		2630	--		4000		292	9		7	
11	1450	300	S	1200		922	60		150		298	10		8	
12	721	210	S	430		577	32		50		264	9		6	
13	369	58		58		471	26		33		258	9		6	
14	293	39		31		419	21		24		251	9		6	
15	302	35		28		372	18		18		243	8		5	
16	326	37		32		339	15		14		241	8		5	
17	275	32		24		317	14		12		257	8		6	
18	233	27		17		306	13		11		249	8		5	
19	226	25		15		297	12		10		238	8		5	
20	218	25		15		383	14		14		231	8		5	
21	213	--		10		349	12		11		331	--		30	
22	274	--		20		345	14		13		760	--		100	
23	219	17		10		299	13		10		226	22		13	
24	196	15		8		302	14		11		193	15		8	
25	230	18		11		939	53	S	140		200	12		6	
26	215	16		9		786	--		100		177	15		7	
27	178	13		6		1700	--		1000		169	12		5	
28	173	12		6		1250	--		400		176	--		7	
29	200	--		8		560	43		65		432	--		40	
30	1150	--		500		450	21		26		277	--		20	
31	410	130		140		400	18		19		--	--		--	
TOTAL	11368	--		3344		21136	--		11266		8586	--		387	

TOTAL DISCHARGE FOR YEAR (CFS-DAYS).....156062
TOTAL LOAD FOR YEAR (TONS).....48048

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Particle-size analyses of suspended sediment, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 28, 1967.....	0730	42		2070	944		--	54	72	87	95	99	100	--	--			SCPW
Mar. 7.....	1030	32		5980	1460		--	35	50	66	79	90	95	97	100			SCPW
July 11.....	1230	77		1600	399		38	54	72	86	92	99	100	--	--			SCPW
Aug. 4.....	0945	74		1960	273		34	47	65	84	93	98	99	99	100			SCPW

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, NEAR WILMINGTON, DEL.

LOCATION (revised).--Lat 39°41'18", long 75°31'06", at center of the navigational channel at bridge between Pigeon Point, Del. and Deepwater Point, N.J. Water-quality recorder (39°41'21"N, 75°31'19") at tidal-gaging station located on channel side of west tower of south bridge.
DRAINAGE AREA.--11,030 square miles.
RECORDS AVAILABLE.--Chemical analyses: July 1955 to September 1967.
Water temperatures: October 1956 to September 1967.
EXTREMES, 1966-67.--Specific conductance: Maximum, 11,000 micromhos Oct. 16; minimum, 150 micromhos Apr. 2, 3.
Dissolved oxygen: Maximum, 13.3 ppm Mar. 2; minimum, 0.0 ppm Aug. 6.
Water temperatures: Maximum, 84°F Aug. 3, 4; minimum, 33°F Feb. 27, 28, and Mar. 2.
EXTREMES, 1955-67.--Specific conductance: Maximum, 14,600 micromhos Oct. 6, 1957; minimum, 100 micromhos on several days during the spring of most years.
Dissolved oxygen (1962-67): Maximum, 13.3 ppm Mar. 2, 1967; minimum, 0.0 ppm on many days during summer months.
Water temperatures (1956-67): Maximum, 84°F on several days during 1961, 1966, and 1967; minimum, freezing point on many days during winter months.
REMARKS.--Samples collected approximately 3 feet from surface. Records of discharge are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Temperature (°F)
																			Calcium, magnesium	Noncarbonate					
Dec. 8, 1966.	6030	6.5	0.3		0.52	42	52	410	24		5	0	214	740	0.5	11		1680	319	315		2720	5.3	7	46

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, NEAR WILMINGTON, DEL.--Continued

Specific conductance (micromhos at 25°C), dissolved oxygen, in parts per million, and temperature (°F) of water, water year October 1966 to September 1967

Day	OCTOBER									NOVEMBER								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	10000	4000	6944	6.0	2.9	4.6	65	64	65	--	--	--	5.8	1.4	--	59	57	--
2	9750	4000	6768	6.2	3.3	--	65	63	64	--	--	--	6.4	1.3	--	59	58	58
3	9500	3800	6253	5.7	2.6	--	65	63	64	--	--	--	6.7	1.9	--	59	58	58
4	9100	3650	6237	5.8	2.2	4.1	65	63	65	--	--	--	5.8	2.1	3.7	58	56	57
5	8750	3000	5845	5.5	1.8	3.9	65	64	65	--	--	--	4.6	2.1	--	57	55	56
6	7200	2930	4808	5.8	2.1	3.8	65	63	64	--	--	--	6.0	2.6	--	56	55	--
7	9450	3220	5485	7.1	2.8	--	64	62	63	3600	1180	--	7.0	2.4	4.4	56	54	55
8	9300	3000	5277	5.1	2.4	--	65	62	--	3840	1250	2340	6.4	2.4	4.5	56	54	55
9	9100	3180	5672	--	--	--	--	--	--	3580	980	2013	5.6	1.4	3.6	56	54	55
10	9100	3400	5979	--	--	--	--	--	--	3530	1000	1996	5.9	1.2	3.3	57	55	56
11	9500	3550	6421	7.1	3.0	--	63	63	--	3050	788	1835	4.6	0.6	2.6	57	56	56
12	8700	3450	--	7.0	2.8	4.9	63	62	63	3340	850	1775	4.9	0.4	2.3	57	56	56
13	9900	3350	--	6.7	2.3	4.6	63	62	63	4070	850	1909	4.5	0.4	--	57	55	56
14	10000	3540	6425	6.6	2.0	4.4	63	62	63	3950	960	1997	6.5	1.4	--	55	54	55
15	10200	3750	6675	6.5	2.1	--	63	62	63	3170	900	1907	6.0	1.3	3.4	55	53	--
16	11000	3720	6953	--	--	--	64	63	63	3800	950	1970	5.9	1.6	3.5	54	53	--
17	10300	3800	6484	7.7	2.3	--	63	62	62	3050	900	1872	5.0	0.8	3.2	55	53	54
18	9980	3930	6518	6.1	2.7	--	62	61	61	3290	970	1742	4.9	1.0	2.7	55	54	54
19	9300	3200	6398	7.5	2.8	5.3	61	60	61	2520	780	1580	4.9	1.6	3.2	55	53	54
20	6000	3050	--	5.1	1.1	3.3	61	60	60	3000	900	1768	6.7	2.3	4.4	54	51	52
21	--	--	--	4.7	1.5	2.8	61	60	60	3300	1060	1916	6.5	2.9	4.6	53	51	--
22	--	--	--	1.8	1.5	--	60	60	--	3380	1040	1972	6.4	2.7	4.4	52	50	--
23	--	--	--	--	--	--	--	--	--	3700	1110	2145	6.4	2.6	4.4	52	50	51
24	--	--	--	--	--	--	--	--	--	3960	1210	2291	6.0	2.6	4.3	52	50	51
25	--	--	--	--	--	--	--	--	--	3950	1350	2413	6.0	2.3	4.0	52	50	51
26	--	--	--	--	--	--	--	--	--	4900	1480	2694	5.6	2.3	3.9	52	51	52
27	--	--	--	--	--	--	--	--	--	6040	1900	3505	6.2	2.4	4.1	52	50	51
28	--	--	--	--	--	--	--	--	--	8500	2850	5181	8.7	2.8	5.6	52	51	51
29	--	--	--	--	--	--	--	--	--	7030	2160	4331	8.8	4.3	6.5	52	50	51
30	--	--	--	--	--	--	--	--	--	6300	1500	3718	8.3	3.8	5.9	52	50	51
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Day	DECEMBER									JANUARY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	--	--	--	8.0	3.5	5.6	51	49	50	3070	510	1499	9.8	6.6	7.8	39	37	38
2	--	--	--	6.9	3.3	5.2	51	49	51	3050	490	1536	8.8	6.2	7.5	39	37	38
3	--	--	--	7.4	4.0	--	49	47	--	3370	450	1675	8.7	6.0	7.2	39	38	38
4	--	--	--	9.0	4.5	6.8	48	44	46	3350	570	1900	8.5	5.5	6.9	39	38	38
5	--	--	--	8.6	5.0	6.9	46	44	45	3450	590	1763	8.2	5.2	6.5	40	38	39
6	--	--	--	7.9	4.2	6.2	47	44	45	2860	440	1450	7.7	4.9	6.3	39	38	38
7	--	--	--	7.8	3.8	5.8	47	45	46	3230	500	1500	--	--	--	39	37	38
8	5200	1550	--	7.3	3.1	5.3	48	45	46	3300	500	1475	--	--	--	40	38	39
9	5150	1520	3218	7.4	3.3	5.3	48	46	47	2900	430	1322	--	--	--	39	38	39
10	5150	1500	--	7.3	2.9	--	49	47	--	2930	400	1286	--	--	--	39	38	39
11	5010	1420	3120	7.6	2.7	5.4	49	47	48	2600	360	1139	--	--	--	39	38	39
12	5300	1250	2877	7.5	2.6	5.1	49	46	48	2430	370	1068	6.8	4.4	--	39	38	38
13	5100	1500	3148	8.1	3.2	5.8	48	45	46	2070	340	1024	6.2	4.1	4.9	39	38	39
14	5400	1530	3272	8.4	4.4	6.4	47	45	46	2400	440	1158	6.1	4.0	4.9	39	38	39
15	4500	1200	2685	7.8	3.2	5.8	47	45	46	2060	410	1170	5.7	3.8	4.6	40	39	39
16	5200	1500	3050	8.6	4.4	6.4	46	44	45	1640	350	932	5.3	3.9	4.6	40	39	39
17	4800	1140	2712	7.4	3.6	5.7	46	44	45	1570	350	936	5.5	4.0	4.8	40	38	39
18	4300	1230	2432	6.7	3.5	5.2	47	45	46	1170	310	645	5.2	4.0	4.6	40	38	39
19	4330	1100	2588	8.0	3.3	5.7	46	43	45	1220	340	763	6.2	4.4	5.4	39	37	38
20	4940	1580	3242	8.2	4.7	6.5	44	42	43	1490	350	880	6.4	4.5	5.4	39	37	38
21	5000	1270	2879	8.4	4.4	6.6	44	42	43	1620	380	890	6.7	4.9	5.7	39	37	38
22	4990	1370	3047	8.3	4.5	6.4	44	42	43	1750	350	870	6.5	4.8	5.6	40	38	39
23	4540	920	2561	7.4	3.5	5.7	44	42	43	2200	430	1111	6.9	4.9	5.7	40	38	39
24	4460	1010	2152	7.7	3.7	5.8	43	40	42	2860	410	1219	7.4	4.7	5.7	41	39	40
25	4880	770	2074	9.3	4.8	7.0	41	39	40	3670	420	1374	6.6	4.5	--	41	40	40
26	2640	380	1368	8.7	5.0	--	41	39	40	3210	430	1458	6.3	4.4	--	42	39	41
27	4360	580	1901	10.8	6.8	--	40	37	39	3530	370	1567	8.0	4.6	6.1	42	40	41
28	5000	910	2419	11.4	6.9	8.9	39	36	38	2850	240	991	7.7	5.1	6.4	43	41	42
29	4630	930	2828	11.3	6.9	9.2	39	37	38	670	260	335	7.3	6.0	6.7	43	42	42
30	3170	370	1567	9.7	6.2	8.0	39	37	38	410	260	302	8.2	6.4	7.2	42	41	41
31	2660	440	1233	9.4	6.5	7.7	39	37	38	680	260	370	7.6	6.2	6.8	42	40	41

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, NEAR WILMINGTON, DEL.--Continued

Specific conductance (micromhos at 25°C), dissolved oxygen, in parts per million, and temperature (°F) of water, water year October 1966 to September 1967--Continued

Day	FEBRUARY									MARCH								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	650	250	374	7.3	6.1	6.6	43	41	42	1150	320	595	12.0	9.4	10.9	36	34	35
2	630	250	377	7.0	5.9	6.3	43	41	42	2470	430	1151	13.3	9.8	11.4	35	33	34
3	420	230	297	7.1	6.5	6.8	42	41	42	2600	400	1153	11.9	9.5	10.6	37	35	36
4	850	240	405	7.6	6.4	6.7	42	41	41	2430	450	--	11.7	9.4	--	37	35	--
5	720	220	380	7.0	6.2	6.5	42	41	42	2900	500	1470	11.6	9.1	10.3	37	35	36
6	640	220	348	7.5	6.3	6.7	42	40	41	4100	500	1602	11.1	8.7	10.0	37	36	37
7	1050	230	408	9.2	7.4	8.4	40	38	39	2250	250	824	10.9	7.6	9.3	39	37	38
8	990	240	452	9.2	8.0	8.7	39	37	38	310	240	262	8.5	6.8	7.6	41	38	39
9	900	230	416	8.9	7.4	8.2	38	37	38	270	230	252	7.6	6.6	7.0	41	39	40
10	1690	220	595	9.2	7.4	8.2	38	37	37	280	220	250	7.0	6.3	6.6	41	40	41
11	1350	220	663	9.2	7.4	8.2	38	37	38	290	200	242	7.3	6.0	6.4	43	41	42
12	650	210	358	8.7	7.5	8.1	38	37	38	300	200	239	7.5	5.9	--	43	42	42
13	870	240	430	9.4	8.0	--	37	36	37	350	200	245	7.5	5.9	--	42	42	42
14	830	240	473	9.3	7.5	8.3	38	36	37	270	180	218	7.3	5.9	6.6	44	42	43
15	800	250	484	8.8	7.1	8.0	38	37	38	240	180	206	7.5	6.5	7.1	44	43	43
16	850	210	393	8.8	7.3	7.9	39	38	38	240	190	222	8.2	7.4	7.7	44	42	44
17	370	220	288	8.9	7.1	8.1	39	37	38	200	180	185	8.4	7.6	8.0	44	43	43
18	670	230	430	10.2	7.5	8.9	38	36	37	180	160	173	8.6	7.8	8.3	43	42	42
19	850	250	449	9.9	7.3	8.5	38	36	37	210	170	179	8.9	7.7	8.3	43	41	42
20	1000	250	489	9.1	7.0	8.0	38	37	38	750	170	233	8.8	7.5	8.0	44	41	42
21	1610	250	531	9.2	6.9	7.8	39	37	38	1000	170	276	8.2	7.4	7.6	43	41	42
22	1190	250	483	9.1	6.9	8.0	38	37	38	1150	180	389	8.1	7.3	7.7	43	41	42
23	1900	260	748	10.4	6.9	8.3	38	37	38	1850	190	519	8.4	7.2	7.6	43	41	42
24	1130	270	--	9.9	7.1	8.4	38	37	37	970	170	355	7.6	7.1	7.3	43	42	42
25	550	280	--	9.8	7.1	8.6	37	36	36	1400	180	386	7.5	6.8	7.2	44	42	43
26	1010	270	--	11.8	8.5	9.8	36	34	35	1600	180	456	7.6	6.6	6.9	45	43	44
27	2020	310	1070	13.0	9.3	11.1	36	33	34	1750	180	500	7.4	6.4	6.8	45	43	44
28	2060	320	1038	12.1	9.6	11.0	36	33	34	1400	180	453	7.5	6.3	6.6	45	44	44
29	--	--	--	--	--	--	--	--	--	750	180	326	6.6	6.1	6.3	46	44	45
30	--	--	--	--	--	--	--	--	--	530	170	255	9.3	5.6	6.1	47	45	46
31	--	--	--	--	--	--	--	--	--	290	170	203	6.6	5.6	5.9	48	45	46

Day	APRIL									MAY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	210	160	182	6.4	5.5	5.9	49	46	47	815	255	562	6.6	2.2	4.3	57	52	55
2	190	150	166	6.6	5.6	6.0	52	47	49	1050	255	541	6.6	4.2	5.6	58	56	57
3	231	150	200	6.6	5.5	--	52	49	50	575	250	400	6.0	3.8	5.0	59	58	59
4	259	210	226	7.4	6.8	7.1	52	49	51	815	265	456	6.6	4.0	5.3	60	58	59
5	258	199	221	7.4	6.9	7.1	52	49	51	815	265	457	6.2	3.6	5.2	60	58	59
6	225	182	209	7.5	6.6	6.9	53	51	52	820	265	438	6.4	3.2	4.9	61	59	60
7	245	189	211	7.2	6.6	6.9	52	51	51	1130	280	571	6.8	4.2	5.7	60	58	59
8	238	175	204	7.2	6.6	6.9	53	51	52	780	250	415	6.4	3.6	5.1	59	58	59
9	227	170	196	7.5	6.3	6.8	53	51	52	535	245	321	5.8	3.0	4.4	59	58	59
10	218	160	187	7.4	6.3	6.8	54	52	53	395	245	274	5.6	2.8	4.2	59	58	58
11	198	160	174	7.5	6.0	6.8	53	51	52	550	250	320	6.0	2.2	3.9	59	58	58
12	191	164	173	7.7	5.9	--	53	51	--	560	235	283	5.6	1.0	2.4	59	58	58
13	270	161	194	7.8	6.0	--	53	52	--	320	235	263	2.8	1.0	2.0	59	58	59
14	245	170	192	7.8	5.4	6.6	54	51	53	300	230	263	2.6	1.2	2.2	60	59	59
15	230	170	191	7.0	5.2	6.0	54	52	53	295	220	244	4.0	2.2	2.9	60	58	59
16	260	170	200	7.2	2.8	5.8	55	53	54	300	215	239	4.0	2.8	3.4	60	59	59
17	285	175	218	6.0	2.8	4.4	56	53	54	250	215	232	4.0	0.4	2.5	60	58	59
18	310	185	211	3.8	1.0	2.3	53	52	53	260	210	231	3.0	0.8	1.5	60	58	59
19	190	170	185	4.6	2.4	3.5	53	53	53	290	210	235	4.1	3.2	--	61	59	60
20	325	180	222	7.6	2.2	4.8	53	51	52	275	205	225	4.4	3.2	3.6	62	60	60
21	745	185	304	6.8	1.6	3.5	53	51	53	300	205	231	4.2	3.1	3.7	62	61	61
22	1230	195	414	3.8	1.2	2.4	54	52	53	410	215	252	4.2	2.8	3.5	62	60	61
23	870	205	341	4.4	1.8	2.9	55	53	54	515	220	269	4.7	2.7	3.6	62	60	61
24	1760	215	450	7.2	2.6	4.7	55	54	54	525	220	299	5.2	1.7	4.1	62	61	61
25	1055	220	450	7.6	2.6	3.8	54	53	54	560	225	314	5.6	1.2	2.5	61	60	60
26	1630	250	706	3.6	2.6	3.2	54	53	54	645	225	340	4.8	1.1	3.7	60	59	60
27	1805	595	809	4.2	3.2	3.6	54	53	53	815	225	404	5.0	1.5	4.1	60	58	59
28	605	500	594	7.2	2.4	5.2	53	52	52	960	210	394	4.6	4.0	4.3	62	59	60
29	1045	535	684	3.4	2.0	2.4	53	52	52	680	195	347	4.7	3.5	4.3	62	61	62
30	670	640	659	3.0	2.0	2.6	54	52	53	580	195	333	5.0	3.4	4.4	62	61	61
31	--	--	--	--	--	--	--	--	--	535	190	333	4.7	3.2	4.1	63	61	62

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, NEAR WILMINGTON, DEL.--Continued

Specific conductance (micromhos at 25°C), dissolved oxygen, in parts per million, and temperature (°F) of water, water year October 1966 to September 1967--Continued

Day	JUNE									JULY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	545	195	344	4.2	2.8	3.8	63	61	62	1900	550	1233	2.8	0.4	1.6	77	75	76
2	590	205	344	3.9	2.5	3.4	64	62	63	2225	570	1238	3.9	0.7	1.9	76	75	76
3	725	205	374	3.9	2.6	3.2	65	63	64	1900	420	1148	3.5	1.0	2.2	77	75	76
4	900	210	424	3.7	2.3	3.0	66	64	65	2025	500	1086	3.6	0.9	2.2	77	76	77
5	1030	220	469	3.9	2.3	2.9	67	65	66	2245	445	1006	3.7	1.1	2.3	78	75	76
6	1165	235	508	3.5	2.1	2.7	69	65	67	2635	505	1101	3.6	1.3	2.4	77	74	76
7	1300	245	592	3.8	2.0	2.7	68	66	68	2295	515	1135	4.1	1.2	2.3	76	75	76
8	1605	260	666	3.7	2.0	2.6	69	68	68	2525	550	1222	4.1	1.3	2.3	77	75	76
9	1560	290	742	3.8	2.0	2.6	70	68	69	2475	560	1284	3.8	1.1	2.0	76	74	76
10	1640	295	797	3.2	2.2	2.5	70	69	70	2700	605	--	3.2	0.9	--	76	76	--
11	1595	335	843	2.8	2.0	2.3	72	70	71	--	--	--	--	--	--	--	--	--
12	1660	390	928	3.2	1.0	2.1	73	71	72	2215	540	--	--	--	--	80	78	--
13	1920	325	1005	3.8	0.9	2.0	74	72	73	2220	510	1294	--	--	--	80	79	79
14	1980	420	1157	5.4	1.0	2.4	74	73	73	2345	545	1331	--	--	--	80	79	80
15	2145	455	1203	6.8	0.8	2.7	74	72	73	2085	505	1236	--	--	--	80	79	80
16	2155	475	1213	5.2	2.2	3.7	74	72	73	2175	450	1105	--	--	--	81	79	80
17	2325	505	1265	6.3	1.6	3.0	75	73	74	2720	475	1121	--	--	--	81	79	80
18	2220	550	1281	5.6	0.9	2.6	76	74	75	2725	485	1212	--	--	--	82	80	81
19	2200	530	1219	4.9	0.8	2.5	76	74	75	2795	510	1226	--	--	--	82	80	81
20	3245	580	1363	4.7	1.4	2.9	75	73	74	2745	530	1261	--	--	--	82	80	81
21	2445	550	1360	3.8	1.1	2.3	74	73	74	3070	585	1414	--	--	--	82	80	81
22	3440	560	1366	4.2	2.8	--	76	74	74	2810	560	1337	--	--	--	82	80	81
23	2795	515	1206	--	--	--	76	74	75	2365	565	1335	2.5	1.4	--	81	80	81
24	2595	510	1203	--	--	--	76	74	75	2880	550	1375	2.6	1.2	1.9	82	81	81
25	2460	490	1206	--	--	--	77	75	76	2695	615	1440	3.4	1.4	2.3	82	80	82
26	1715	515	1070	2.6	0.7	--	77	76	77	2350	535	1368	3.2	1.3	2.2	82	82	82
27	2300	510	1152	3.0	0.4	1.4	77	76	76	2325	640	1418	2.9	1.0	2.0	83	82	82
28	1980	535	1205	2.8	0.4	1.5	77	76	77	2245	645	1418	3.0	0.9	1.9	83	82	83
29	2010	550	1268	3.0	0.6	1.7	77	76	76	2220	630	1368	2.9	0.7	1.8	83	82	83
30	2100	640	1331	3.2	0.5	1.7	77	76	76	2110	480	1217	2.7	0.6	1.6	83	82	82
31	--	--	--	--	--	--	--	--	--	2055	515	1129	3.6	0.8	1.9	83	82	82

Day	AUGUST									SEPTEMBER								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	1365	540	--	2.7	1.1	--	83	82	--	2210	255	458	4.4	1.1	2.4	79	76	77
2	2205	555	--	4.9	1.7	--	83	82	--	2068	265	589	3.2	1.4	2.2	77	75	76
3	2005	500	1138	4.3	1.4	2.9	84	82	83	2060	280	753	3.0	1.1	--	77	75	76
4	1570	280	752	4.0	0.4	1.9	84	82	83	1970	280	813	--	--	--	76	74	75
5	1065	255	490	3.7	0.5	1.9	83	81	82	2825	340	1152	--	--	--	76	75	76
6	810	270	415	3.2	0.0	1.5	82	81	82	2945	350	1279	--	--	--	77	75	76
7	755	270	423	3.0	0.1	1.5	83	81	82	3425	465	1556	--	--	--	77	75	76
8	910	260	445	3.1	0.6	1.6	83	81	82	3280	525	1700	--	--	--	77	76	76
9	985	305	509	3.7	0.4	1.9	83	81	82	3425	560	1821	--	--	--	77	76	77
10	610	255	365	3.5	1.6	2.4	82	80	81	2855	605	1728	--	--	--	77	76	77
11	380	205	293	4.8	1.2	2.5	82	80	81	4210	730	2187	--	--	--	77	74	75
12	430	255	300	4.8	1.0	2.5	81	79	80	4150	1165	2476	--	--	--	75	74	--
13	405	255	300	4.2	0.8	2.2	80	78	79	4130	940	2326	--	--	--	--	--	--
14	485	255	323	4.4	0.7	2.0	79	78	78	4275	1045	2333	--	--	--	--	--	--
15	515	255	341	4.0	0.4	1.6	79	78	79	4765	1150	2641	--	--	--	--	--	--
16	610	245	351	3.9	0.2	1.5	80	79	79	4560	1660	2893	6.6	5.4	--	74	73	--
17	710	245	370	3.7	0.2	1.4	80	79	80	5000	1140	2821	6.6	4.8	5.9	74	73	73
18	790	245	394	4.1	0.4	1.7	80	79	80	4720	1300	--	6.4	4.4	5.5	74	73	73
19	825	260	435	3.8	0.8	2.1	80	80	80	--	--	--	6.0	3.6	5.0	74	73	74
20	950	270	490	4.0	1.0	2.2	81	80	80	--	--	--	5.8	3.4	4.8	75	73	74
21	945	275	504	4.1	1.0	2.2	80	80	80	--	--	--	6.0	3.4	4.8	75	74	75
22	945	270	521	3.4	0.6	1.8	80	80	80	--	--	--	5.6	2.8	4.4	76	74	75
23	825	300	542	3.0	0.4	1.7	80	80	80	--	--	--	6.0	3.2	--	75	74	--
24	950	310	606	3.5	1.4	2.4	80	78	79	--	--	--	6.2	3.2	4.6	74	72	74
25	1015	285	617	3.7	1.6	2.6	78	77	78	--	--	--	5.8	2.6	4.3	74	72	73
26	795	275	521	2.6	1.1	1.8	78	77	78	--	--	--	7.0	3.4	4.9	73	71	72
27	715	240	462	2.5	0.8	1.6	78	77	77	--	--	--	7.0	3.6	5.2	72	68	70
28	415	235	305	2.3	0.5	1.4	78	77	78	--	--	--	8.2	3.6	5.7	70	69	69
29	370	240	276	2.1	0.5	1.2	78	77	77	--	--	--	6.8	3.8	5.5	70	69	69
30	465	235	289	2.5	0.4	1.2	78	77	78	--	--	--	6.6	2.8	4.7	71	69	70
31	365	240	290	2.2	0.5	1.2	78	78	78	--	--	--	--	--	--	--	--	--

1-4828. DELAWARE RIVER AT REEDY ISLAND JETTY, DEL.

LOCATION (revised).--Lat 39°30'03", long 75°34'07", water-quality recorder located on platform about 0.4 mile downstream from Reedy Island near Port Penn, Del.
DRAINAGE AREA.--11,222 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1963 to September 1967.
EXTREMES, 1966-67.--Specific conductance: Maximum, 20,100 micromhos Oct. 7; minimum, 600 micromhos Mar. 16, Apr. 10-12.
EXTREMES, 1963-67.--Specific conductance: Maximum, 35,400 micromhos Nov. 7, 1963; minimum, 300 micromhos Mar. 18, 19, 1964.
REMARKS.--Records of discharge are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Temperature (°F)
Dec. 15, 1966	8460	4.9				95	208	1700	92		18	0	517	2980	0.6	2.3		5950	1090	1080		9440	6.0	5	
Jan. 11, 1967	7800	5.6				88	208	1650	87		32	0	504	3000	.5	3.2		6110	1080	1050		9570	6.2	2	
Feb. 15.....	7030	6.7				41	69	530	26		14	0	206	940	.5	5.6		1950	387	375		3290	5.8	5	
Mar. 10.....	14700	7.6				48	82	700	40		8	0	257	1280	.3	6.3		2480	458	451		3980	5.5	5	
Apr. 4.....	37800	6.5	0.1			24	24	225	12		12	0	102	370	.3	7.4		838	159	149		1380	5.9	3	
May 3.....	9600	4.7				45	115	875	41		14	0	269	1600	.4	2.7		3320	586	575		5250	6.7	5	
May 17.....	22800	4.4				25	25	160	4.4		13	0	102	300	.4	6.4		698	166	155		1190	6.3	4	
June 9.....	5070	4.5				41	72	572	26		16	0	183	1000	.4	3.2		2130	399	386		3380	6.3	8	
July 11.....	6300	2.2				47	100	720	33		16	0	240	1320	.4	4.6	0.09	2500	529	516		4560	6.2	6	
Aug. 8.....	11400	1.1				36	44	300	18		24	0	142	555	.5	3.9		1240	271	252		2060	6.5	16	
Sept. 7.....	4150	3.8				90	160	1230	61		33	0	343	2300	.3	1.7		4530	883	856		7350	6.4	3	
Sept. 18.....	5260	2.5				110	277	1990	85		65	0	547	3950	.4	.8		7670	1420	1360		12100	6.5	4	

1-4828. DELAWARE RIVER AT REEDY ISLAND JETTY, DEL.--Continued

Specific conductance (micromhos at 25°C), water year October 1966 to September 1967

Day	OCTOBER									NOVEMBER								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	17800	13500	15667							16600	10200	12883						
2	19500	13100	16313							16800	10800	12925						
3	19200	12900	15546							16500	10400	13721						
4	19400	13000	15608							13400	8600	10708						
5	18600	12800	15258							14400	8360	10585						
6	17600	12200	13863							13800	8620	10662						
7	20100	12500	15746							16000	8500	11746						
8	19100	11600	14779							14900	9580	12066						
9	20000	11800	15338							14330	9200	11486						
10	19400	12300	15875							15060	9620	12077						
11	19100	12880	15954							13200	8780	11150						
12	18900	12600	15488							16180	9070	11459						
13	18400	12600	14892							14980	9020	11388						
14	18900	12700	15154							16130	9570	11938						
15	18700	12900	15246							15400	9500	11790						
16	19200	12600	15371							15520	9460	11621						
17	18400	12400	14663							14750	8680	11240						
18	18400	12480	14371							14700	9200	10895						
19	17300	12000	14513							14100	8770	10611						
20	14800	10500	12283							15850	8710	11935						
21	15000	8910	10991							17110	10310	13089						
22	16300	8720	11500							17260	10380	13748						
23	15500	8900	11853							18130	11130	14260						
24	16700	9400	12365							17700	11480	14433						
25	16100	9800	12656							18500	11250	14508						
26	16700	10300	12963							18160	11340	14367						
27	15600	10300	12713							18690	11870	14621						
28	15600	10300	12996							19480	13560	16256						
29	16500	10600	12754							17850	10960	14366						
30	15400	9900	12050							16350	9850	13104						
31	17300	11100	13279							---	---	---						

Day	DECEMBER									JANUARY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	14910	9280	11643							14200	6300	9158						
2	11930	8130	10279							12600	6600	9325						
3	13410	7990	9820							14400	6000	9521						
4	14850	8360	--							13800	6600	10338						
5	14970	11080	--							14600	7400	10229						
6	14330	8760	11249							13500	6400	9188						
7	14520	8330	11412							13400	6400	8967						
8	15360	8630	11547							12900	5800	8496						
9	14840	8930	11327							12800	5300	8263						
10	16040	9030	11461							13200	5800	8167						
11	14200	8210	11048							11700	5300	7908						
12	14060	8430	10335							12100	5100	7388						
13	14860	9100	11123							11800	4900	6971						
14	17110	9330	12249							11500	5100	7700						
15	14540	8180	10990							10800	4900	7700						
16	16750	8680	12044							9900	4500	6892						
17	15040	8380	11128							10800	4700	7346						
18	14550	8450	10667							9500	4400	6321						
19	14760	8250	11076							12600	4000	7563						
20	15700	9350	12674							12300	5400	9100						
21	17300	9300	13027							12900	5200	8908						
22	17680	9870	13911							11800	4500	7888						
23	17170	9040	12641							13900	5500	8913						
24	15140	9470	11858							13400	4000	8871						
25	17250	9130	12735							14400	6200	9283						
26	13230	7020	9872							13600	6200	8938						
27	15330	7030	10820							13400	6400	8917						
28	18200	8270	12626							12100	4500	8042						
29	18210	9870	13614							6500	2500	4675						
30	12870	6340	9683							5300	2300	3408						
31	11770	6070	8024							6800	2100	3663						

1-4828. DELAWARE RIVER AT REEDY ISLAND JETTY, DEL.--Continued

Specific conductance (micromhos at 25°C), water year October 1966 to September 1967--Continued

Day	FEBRUARY									MARCH								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	7100	2100	3688							9400	4200	6213						
2	8000	1900	4000							14000	4700	9067						
3	6100	1900	3175							12900	4900	8600						
4	10600	2000	5425							14300	5600	9267						
5	10500	2600	5579							15100	6200	9929						
6	9700	2700	4858							14800	6400	10050						
7	9800	3300	5863							12800	3100	8350						
8	11700	3800	6767							6900	1600	4000						
9	9400	3400	5642							6400	1400	3017						
10	11200	3900	6346							5300	1400	2488						
11	10500	4000	6717							4900	900	2275						
12	7100	3000	4354							6000	1400	2696						
13	7100	2900	4196							5900	1400	2708						
14	7400	2900	4525							4200	1000	2017						
15	7100	3000	4425							2200	1000	1488						
16	8600	2200	4691							5600	600	1675						
17	4600	2100	3088							4600	800	1692						
18	8200	2800	5675							4800	1100	2550						
19	11600	4000	7717							9800	1500	4825						
20	10700	4100	7579							8300	2700	5996						
21	13500	4500	7867							9400	3100	6400						
22	11000	3400	6392							11000	4200	7546						
23	12400	4200	7363							13300	4400	8171						
24	9600	3700	5771							9600	4200	6629						
25	5800	2100	3933							9300	3500	5658						
26	10200	2200	4279							8800	3200	5425						
27	13200	3400	8408							8700	3200	5450						
28	13900	5800	9313							8700	2700	4779						
29	--	--	--							7100	2400	3783						
30	--	--	--							6400	1900	3179						
31	--	--	--							3900	1600	2321						

Day	APRIL									MAY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	2600	1200	1754							9500	4100	6456						
2	2100	1000	1338							8900	4100	6196						
3	2700	900	1350							8500	3800	5467						
4	4400	700	1883							9000	3500	5619						
5	4600	800	1900							8750	3300	5458						
6	3300	700	1358							9000	3100	4810						
7	3900	800	1546							10000	3650	6517						
8	4800	700	1883							9250	2900	5335						
9	3100	700	1571							6750	2450	3946						
10	2200	600	1121							6900	1800	3092						
11	1800	600	804							7000	1900	3194						
12	1400	600	783							6250	1500	2383						
13	4700	700	1546							4900	1200	2183						
14	4200	700	1396							5200	1100	1867						
15	3200	800	1513							4600	1200	2090						
16	5700	1100	2521							3700	900	1601						
17	6800	1300	3079							4650	900	2141						
18	6200	1500	3121							6300	800	--						
19	6000	1000	2692							5300	950	2473						
20	11400	1900	6725							5250	850	1963						
21	11200	2900	6708							4850	800	1802						
22	10700	3700	6767							5500	900	1938						
23	9400	3200	5479							5700	1050	2181						
24	7400	2800	4933							6800	1200	2725						
25	8500	2800	4850							7200	1650	3433						
26	11100	3200	5733							8600	2200	4540						
27	10700	3600	5596							10400	2200	4902						
28	12000	4400	7067							9500	2300	4402						
29	12400	4100	8046							7500	2350	4115						
30	12200	3800	7608							7600	2150	4285						
31	--	--	--							7250	2100	4429						

1-4828. DELAWARE RIVER AT REEDY ISLAND JETTY, DEL.--Continued

Specific conductance (micromhos at 25°C), water year October 1966 to September 1967--Continued

Day	JUNE									JULY								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	8300	2450	4888							9500	4600	6496						
2	8750	2700	5098							10300	4600	6602						
3	10000	3000	5306							10100	4350	6390						
4	10200	2800	5404							11000	3950	6119						
5	9900	3200	5398							10800	3700	6073						
6	10300	3000	5496							11600	3700	6150						
7	10800	3400	5756							10500	4200	6200						
8	10200	3700	5738							11100	4400	6185						
9	10200	3500	5483							10700	4250	6410						
10	10000	3800	5665							10700	4250	6244						
11	9400	3500	5373							10000	4500	6685						
12	9600	3600	5600							10600	4500	6900						
13	9250	3500	5698							10600	4600	6621						
14	10400	3900	6458							11000	4550	6958						
15	9050	4100	6117							9750	4600	6508						
16	7550	3850	5444							9800	3800	5733						
17	9650	3900	5663							10600	4000	5927						
18	9450	4000	5750							10500	4100	6033						
19	10000	3800	5731							11000	4100	6098						
20	11900	4300	7015							11300	4300	6325						
21	11500	4600	6838							10700	4400	6385						
22	10000	4600	6410							10000	4400	6252						
23	10000	4100	5798							11100	4500	6510						
24	9350	3900	5483							10000	4450	6290						
25	10100	4100	5677							9750	4450	6156						
26	7500	3600	5248							9100	4050	5856						
27	10400	3700	5996							9750	4000	6275						
28	10300	3900	6281							9000	4600	6510						
29	9150	4300	6477							10500	4300	6302						
30	9600	4850	6783							10100	4200	6492						
31	--	--	--							11400	4100	6710						

Day	AUGUST									SEPTEMBER								
	Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)			Specific conductance (micromhos at 25°C)			Dissolved oxygen (ppm)			Temperature (°F)		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
1	11800	3900	6575							14200	2850	7256						
2	12800	3800	7217							13300	4500	8115						
3	11200	4600	7156							11500	5000	7840						
4	8250	3400	5788							11900	4500	7019						
5	7750	2650	4317							11700	4800	7458						
6	7500	2200	3746							11500	5100	7619						
7	8000	2100	3644							12000	5400	8038						
8	7500	2050	3698							11800	5500	8140						
9	7600	2200	4010							12100	5700	8090						
10	5700	1800	3008							9400	5650	7329						
11	3900	1300	2183							13400	5500	8808						
12	4000	1100	2100							14000	7300	9938						
13	4900	1150	2133							14000	7200	9615						
14	6000	1100	2485							14600	6800	9598						
15	7500	1150	2621							14700	7100	10092						
16	8000	1300	3040							15800	9350	11763						
17	9000	1500	3527							15200	8350	11579						
18	8750	1800	3844							14300	8450	11256						
19	9100	2000	4031							13300	8350	10863						
20	7300	2200	4073							14600	8750	10944						
21	8100	2200	4010							15200	9250	11390						
22	8250	2300	4098							13100	7900	10175						
23	6300	2400	3838							14200	7900	10394						
24	7000	2850	4479							14700	8250	11006						
25	7300	2750	4769							13600	7300	9983						
26	6350	2500	4054							15500	7300	11360						
27	6850	2550	4065							14400	7900	10448						
28	5250	1900	2990							15100	7750	11127						
29	7000	1400	3171							13800	8400	10710						
30	9200	1400	4631							13000	7500	9684						
31	9400	1750	5540							--	--	--						

WICOMICO RIVER BASIN

1-4865. BEAVERDAM CREEK NEAR SALISBURY, MD.

LOCATION.--Lat 38°21'05", long 75°34'11", at gaging station 0.8 mile upstream from Beaglin Branch and 2 miles southeast of Salisbury, Wicomico County.
DRAINAGE AREA.--19.5 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 13, 1966..	61	--		--	--	--	--	--	--	24	3.3	7.5	--	1.4	--	16	0		73	6.8	2
Nov. 18.....	48	--		--	--	--	--	--	--	23	3.5	8.0	--	3.4	59	16	0		75	6.5	3
Dec. 19.....	47	--		--	--	--	--	--	--	27	5.4	8.0	3.4	--	73	18	0		83	6.7	5
Jan. 27, 1967..	127	23		0.02	0.00	5.5	2.0	10	1.9	21	11	10	.1	3.8	84	22	5		101	6.8	7
Mar. 4.....	282	15		.04	.00	5.8	2.0	9.3	2.2	12	14	12	.1	6.1	81	23	13		103	6.8	8
Apr. 5.....	17	17		.03	--	5.5	1.3	8.2	1.9	17	8.2	10	.2	4.0	68	19	5		84	6.3	15
May 10.....	38	13		.09	.00	4.5	1.8	8.4	2.0	14	12	9.0	.0	3.5	77	19	7		84	6.1	45
June 30.....	8	13		.07	.01	5.8	1.4	8.1	2.0	26	5.7	8.0	.0	2.4	71	20	0		80	7.2	32

NANTICOKE RIVER BASIN

1-4870. NANTICOKE RIVER NEAR BRIDGEVILLE, DEL.

LOCATION.--Lat 38°43'42", long 75°33'44", at gaging station, 800 feet downstream from Gum Branch, and 2.5 miles southeast of Bridgeville, Sussex County.
DRAINAGE AREA.--75.4 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 17, 1966..	27	--		--	--	--	--	A15	--	38	5.4	14	--	1.0	--	24	0		140	6.5	2
Nov. 18.....	34	--		--	--	--	--	A25	--	63	4.3	10	--	5.5	111	20	0		156	6.5	--
Dec. 22.....	32	--		--	--	--	--	A11	--	19	7.8	10	--	12	87	23	8		111	6.6	--
Jan. 30, 1967..	57	21		0.12	0.00	4.7	2.0	7.9	1.9	14	10	9.3	0.0	7.8	82	20	8		90	6.9	6
Mar. 1.....	116	17		.00	.00	4.0	1.7	7.0	1.9	7	11	7.0	.2	7.8	74	17	12		84	6.2	3
Mar. 31.....	81	18		.05	.00	5.6	1.3	6.8	1.9	13	8.4	7.4	.0	7.2	66	20	9		78	6.3	6
May 18.....	6.4	21		.10	.00	5.0	1.6	9.2	1.9	15	12	7.5	.1	9.2	80	19	7		86	7.1	2
June 2.....	69	21		.13	.01	6.0	2.0	8.1	2.1	16	11	8.0	.0	9.6	80	23	10		90	7.2	8
July 3.....	17	23		.11	.00	6.0	1.4	7.4	2.7	21	10	4.5	.0	6.9	88	21	4		88	7.1	40
Aug. 1.....	96	16		--	--	5.3	2.2	11	3.2	26	8.9	8.3	.2	9.8	86	22	1		108	6.2	15
Sept. 3.....	176	19		.10	.00	5.3	2.0	7.3	2.4	12	9.5	8.2	.2	9.0	78	21	11		94	6.0	20

A Calculated Na plus K, reported as Na.

1-4910. CHOPTANK RIVER NEAR GREENSBORO, MD.

LOCATION.--Lat 38°59'50", long 75°47'10", at gaging station, 0.1 mile upstream from Gravelly Branch and 2.0 miles northeast of Greensboro, Caroline County.
DRAINAGE AREA.--113 square miles.
RECORDS AVAILABLE.--Chemical analyses: February 1965 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 27, 1966..	A 99	--		--	--	--	--	--	--	12	30	10	--	1.5	--	42	32		130	6.3	5
Nov. 28.....	58	--		--	--	--	--	--	--	19	22	11	--	3.3	85	37	21		125	6.5	12
Dec. 29.....	142	16		0.00	0.00	10	3.0	5.5	1.8	16	24	9.5	0.2	2.5	95	37	24		118	7.0	2
Jan. 31, 1967..	119	17		.00	.00	9.0	2.7	5.5	1.8	11	24	8.5	.3	1.2	90	34	25		110	6.9	8
Feb. 27.....	210	15		.00	.00	9.0	3.8	5.5	1.6	16	24	8.4	.3	4.0	91	38	25		107	6.9	25
Mar. 30.....	137	15		.17	.00	8.5	2.5	7.0	1.6	13	21	9.1	.3	3.3	90	32	21		103	6.3	25
Apr. 27.....	74	14		.78	.00	10	2.3	6.0	1.6	22	16	8.0	.0	2.6	91	34	16		104	6.7	45
May 8.....	433	12		.37	.01	6.5	1.8	5.0	2.3	12	16	6.0	.0	3.9	83	24	14		84	6.1	55
May 17.....	A 132	--		--	--	--	--	--	--	--	--	9.0	--	--	--	--	--		89	--	--
June 29.....	A 30	--		--	--	--	--	--	--	--	--	11	--	--	--	--	--		117	--	--

A Daily mean discharge

PATAPSCO RIVER BASIN

1-5875. SOUTH BRANCH PATAPSCO RIVER AT HENRYTON, MD.

LOCATION.--Lat 39°21'05", long 76°54'50", at gaging station at 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 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1965 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 19, 1966..	292	6.3		0.02	0.01	8.7	2.7	4.3	4.3	25	11	6.6	0.1	5.8	70	32	12		104	6.4	5
Dec. 16.....	28	6.1		.01	.00	7.0	2.5	5.0	1.7	23	7.2	8.0	.1	3.8	60	28	9		90	6.6	1
Jan. 5, 1967...	48	7.2		.01	.02	7.2	2.6	5.0	2.3	21	9.2	8.3	.1	7.0	64	29	12		97	6.5	0
Feb. 14.....	36	8.0		--	--	7.1	3.0	4.1	1.2	21	8.8	6.7	.0	6.9	59	30	13		87	6.5	1
July 17.....	26	7.3		--	--	8.9	2.7	4.3	2.1	32	5.4	5.8	.1	4.7	60	33	7		96	7.4	2

1-5947. PATUXENT RIVER AT BENEDICT, MD.

LOCATION.--Lat 38°30'46", long 76°40'10", on bridge at State Highway 231 at Benedict, Charles County, about 2 miles downstream from Swanson Creek.
DRAINAGE AREA.--742 square miles.
RECORDS AVAILABLE.--Chemical analyses: June 1963 to April 1964.
Water temperatures: October 1963 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 89°F July 27; minimum, 33°F Dec. 25, Feb. 25-28, Mar. 1.
EXTREMES, 1963-67.--Water temperatures: Maximum, 90°F June 28, 29 and July 13, 14, 1965; minimum, freezing point on several days during winter months.

Temperature (°F) of water, water year October 1966 to September 1967
(Recorder with temperature sensor attachment, thermocouple probe at river surface)

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER																																
MAXIMUM	68	66	66	67	67	66	66	67	68	67	67	67	67	67	67	67	66	64	62	61	60	60	63	62	61	62	61	61	61	59	58	64
MINIMUM	65	62	63	64	65	63	62	63	65	65	65	64	63	64	65	66	63	61	61	58	57	56	60	61	60	59	58	58	58	56	54	61
NOVEMBER																																
MAXIMUM	59	60	60	58	55	55	55	56	57	59	60	59	57	55	--	54	55	56	56	53	52	52	52	--	53	56	53	52	51	49	--	55
MINIMUM	57	58	57	52	52	52	52	53	54	56	58	57	55	52	53	--	54	53	53	50	50	50	49	--	51	52	51	51	49	47	--	52
DECEMBER																																
MAXIMUM	48	47	46	41	42	43	44	47	49	51	52	50	47	45	45	43	44	45	43	43	43	43	43	41	38	36	37	--	--	37	--	44
MINIMUM	45	46	41	38	39	41	42	44	47	47	49	47	45	44	42	41	41	43	42	42	41	40	41	37	33	35	34	--	--	--	--	41
JANUARY																																
MAXIMUM	37	39	40	39	40	39	40	41	41	41	40	39	40	40	42	42	40	41	--	37	38	42	43	46	46	46	46	46	44	42	41	41
MINIMUM	36	35	37	38	37	36	36	38	39	38	38	36	36	38	39	39	37	37	35	--	35	37	39	41	41	42	42	43	40	39	37	38
FEBRUARY																																
MAXIMUM	43	43	44	42	43	43	41	38	37	38	39	39	37	39	42	45	44	39	40	40	41	40	41	40	39	34	33	37	--	--	--	40
MINIMUM	39	40	41	40	41	40	36	35	35	36	36	36	34	36	38	40	38	37	36	38	39	37	39	38	33	33	33	33	--	--	--	37
MARCH																																
MAXIMUM	38	--	41	42	43	43	42	44	46	47	49	48	48	49	49	48	45	44	43	42	42	43	42	44	47	48	48	49	50	52	53	45
MINIMUM	33	--	35	38	39	39	39	39	39	42	44	45	44	44	46	43	44	40	38	39	41	41	41	41	42	44	45	46	47	48	49	41
APRIL																																
MAXIMUM	57	59	59	58	54	57	58	57	55	56	56	56	55	59	--	63	60	61	59	--	--	--	--	--	--	--	57	56	55	58	60	--	--
MINIMUM	50	53	53	52	50	52	54	52	52	53	53	52	52	52	--	56	57	57	56	--	--	--	--	--	--	--	--	55	52	53	55	--	--
MAY																																
MAXIMUM	64	65	65	63	66	63	61	61	60	61	61	64	62	61	62	64	64	67	67	70	67	64	64	63	--	--	--	--	--	70	70	69	64
MINIMUM	57	60	62	60	60	61	59	58	58	57	58	59	60	59	59	60	60	60	61	64	62	62	61	61	59	--	--	--	--	65	65	60
JUNE																																
MAXIMUM	70	72	74	74	77	76	78	78	78	80	81	83	85	--	82	83	83	83	81	80	81	81	83	85	84	83	84	82	81	79	--	80
MINIMUM	65	66	67	69	70	72	72	73	73	74	75	76	77	77	--	77	79	79	77	76	76	77	76	80	80	78	78	78	--	77	--	74
JULY																																
MAXIMUM	82	82	84	82	81	79	79	79	81	83	84	85	83	82	81	84	84	82	85	84	84	85	85	85	87	87	89	86	--	--	86	83
MINIMUM	77	79	80	79	78	76	76	76	76	78	80	79	80	79	79	78	79	80	79	81	80	80	81	82	82	82	82	83	--	--	--	79
AUGUST																																
MAXIMUM	87	87	85	85	84	86	84	85	84	84	83	80	78	80	--	83	83	83	84	83	82	82	81	79	80	82	83	82	82	81	83	82
MINIMUM	82	83	83	83	82	81	82	82	82	82	80	78	77	76	--	--	79	80	81	81	80	79	77	76	76	78	79	79	79	79	79	79
SEPTEMBER																																
MAXIMUM	79	76	77	78	79	78	80	80	79	78	75	73	74	73	74	74	72	75	76	76	76	76	74	71	70	69	70	71	73	72	--	74
MINIMUM	75	73	73	74	74	75	75	76	76	75	72	71	71	71	71	72	71	71	73	72	74	74	71	69	67	66	68	69	70	69	--	71

1-5955. NORTH BRANCH POTOMAC RIVER AT KITZMILLER, MD.

LOCATION.--Lat 39°23'38", long 79°10'55", temperature recorder at gaging station 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 square miles.
RECORDS AVAILABLE.--Water temperatures: August 1961 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 85°F June 16; minimum, freezing point on many days during winter months.
EXTREMES, 1961-67.--Water temperatures: Maximum, 89°F Aug. 15, 16, 18, 1965; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder.

Temperature (°F) of water, water year October 1966 to September 1967

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER																																
MAXIMUM	51	51	51	52	52	50	50	53	55	57	53	52	53	55	57	57	50	45	45	47	47	49	49	49	50	51	50	50	48	46	44	50
MINIMUM	48	48	48	48	50	48	44	47	50	53	49	47	47	48	51	50	45	43	43	45	41	42	46	47	48	48	45	44	45	42	40	46
NOVEMBER																																
MAXIMUM	48	50	50	42	40	44	42	45	49	51	51	50	45	41	41	39	41	47	47	39	38	37	37	38	42	45	44	44	38	36	--	43
MINIMUM	44	48	42	38	38	40	39	40	45	49	50	45	41	38	38	37	39	41	39	36	35	34	34	34	38	42	42	38	36	35	--	39
DECEMBER																																
MAXIMUM	36	36	34	34	34	34	40	43	45	45	45	40	36	35	35	34	36	39	39	37	35	35	35	32	32	32	32	32	32	32	32	36
MINIMUM	35	34	34	34	34	34	34	40	42	43	40	36	33	33	33	33	34	36	37	33	35	33	32	32	32	32	32	32	32	32	32	34
JANUARY																																
MAXIMUM	32	32	32	32	32	32	32	32	33	32	32	32	32	34	34	34	32	32	32	32	32	32	34	38	43	46	48	47	43	36	34	34
MINIMUM	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	32	32	32	32	32	32	32	33	38	40	44	43	36	34	34	34	33
FEBRUARY																																
MAXIMUM	39	42	42	37	37	37	34	32	32	34	36	33	32	37	37	37	35	33	34	33	33	32	32	32	32	32	32	32	--	--	--	34
MINIMUM	34	39	37	35	37	34	32	32	32	32	33	32	32	32	35	35	32	32	32	33	32	32	32	32	32	32	32	32	--	--	--	33
MARCH																																
MAXIMUM	32	33	35	36	40	42	42	40	41	42	45	45	46	48	49	45	41	37	38	37	37	38	39	41	46	48	48	48	52	50	52	42
MINIMUM	32	32	33	35	36	40	40	38	39	38	42	43	42	46	45	39	37	34	33	37	37	37	37	38	40	43	46	47	48	46	46	39
APRIL																																
MAXIMUM	55	58	56	52	50	58	58	54	52	57	53	52	50	60	61	61	57	53	49	55	53	59	55	53	49	47	46	49	51	56	--	53
MINIMUM	49	51	50	45	48	50	54	50	50	52	48	44	47	48	55	55	53	49	46	44	50	52	49	47	43	46	45	42	44	46	--	48
MAY																																
MAXIMUM	56	57	58	53	60	58	52	50	50	52	52	54	54	53	56	54	53	58	58	59	57	57	58	60	62	64	66	70	67	59	59	57
MINIMUM	53	54	52	49	50	51	48	47	48	48	50	51	53	52	52	51	49	50	55	55	52	51	53	52	52	54	55	62	59	56	54	52
JUNE																																
MAXIMUM	60	63	65	67	70	67	69	70	75	72	78	79	80	81	82	85	81	75	70	75	77	77	75	78	76	75	75	74	71	76	--	73
MINIMUM	55	55	56	57	59	60	59	61	63	67	66	67	66	69	71	71	73	70	68	67	68	71	71	69	70	65	64	66	69	69	--	65
JULY																																
MAXIMUM	81	75	75	71	70	71	74	74	78	75	73	72	73	71	68	71	71	72	72	70	70	74	77	74	78	74	75	73	68	72	70	72
MINIMUM	68	71	68	64	61	63	66	69	70	71	68	67	70	67	66	66	66	66	67	64	63	66	69	70	71	70	67	68	66	66	68	67
AUGUST																																
MAXIMUM	74	76	76	74	74	72	73	76	73	73	71	71	72	73	75	74	74	72	71	72	70	75	70	64	72	69	67	65	71	71	67	71
MINIMUM	67	68	70	68	70	65	65	67	67	69	65	63	61	62	62	63	66	66	67	67	62	64	64	62	62	66	64	61	62	61	60	64
SEPTEMBER																																
MAXIMUM	67	65	68	70	72	70	71	71	68	67	66	64	64	65	69	66	70	73	73	73	71	65	61	61	61	65	63	62	58	55	--	66
MINIMUM	57	56	56	58	59	60	60	61	64	62	56	54	55	53	53	55	63	61	64	66	65	59	54	53	49	50	55	58	53	50	--	57

1-5985. NORTH BRANCH POTOMAC RIVER AT LUKE, MD.

LOCATION.--Lat 39°28'45", long 79°03'55", temperature recorder at gaging station on right bank, 0.2 mile downstream from Savage River and 0.5 mile northwest of Luke, Allegany County.
DRAINAGE AREA.--404 square miles.
RECORDS AVAILABLE.--Water temperatures: December 1961 to December 1962, July to September 1963, December 1963 to September 1966, December 1966 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 80°F June 24, July 8, 25, Aug. 7; minimum, freezing point on many days during winter months.
EXTREMES, 1961-67.--Water temperatures: Maximum, 91°F July 3, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder. No temperature record Oct. 1 to Dec. 2, June 11-18, 21, 22, June 25 to July 6. No range in temperature available.

Temperature (°F) of water, December 1966 to September 1967

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
DECEMBER																																
MAXIMUM	--	--	33	32	32	32	35	40	43	43	42	40	36	33	33	33	34	36	36	35	34	34	34	33	32	32	32	32	32	32	32	34
MINIMUM	--	--	32	32	32	32	32	35	40	42	40	36	33	33	33	32	32	34	35	33	33	33	33	32	32	32	32	32	32	32	32	33
JANUARY																																
MAXIMUM	32	32	32	32	32	32	32	32	32	32	32	32	32	34	34	34	32	32	32	32	32	32	36	39	42	44	46	46	45	37	35	35	34
MINIMUM	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	32	32	32	32	32	32	32	36	38	42	44	44	37	35	35	35	33
FEBRUARY																																
MAXIMUM	39	41	41	39	39	38	35	32	32	32	34	34	32	35	38	38	36	33	34	34	34	32	32	32	32	32	32	32	--	--	--	34
MINIMUM	35	39	39	36	36	35	32	32	32	32	32	32	32	32	35	36	32	32	32	33	32	32	32	32	32	32	32	32	--	--	--	33
MARCH																																
MAXIMUM	32	32	35	37	40	42	43	42	44	45	47	47	46	52	52	49	43	40	40	39	39	41	42	43	45	48	48	48	53	51	54	43
MINIMUM	32	32	32	35	37	40	41	40	42	42	44	46	44	46	49	43	40	37	36	39	39	39	40	41	41	45	47	47	47	47	48	41
APRIL																																
MAXIMUM	56	61	60	54	53	61	61	58	56	58	56	54	53	60	64	64	62	56	52	56	56	62	60	57	52	52	50	52	54	58	--	56
MINIMUM	50	53	54	49	51	53	58	53	52	53	51	48	50	50	59	60	56	52	50	48	54	54	53	52	48	49	48	46	48	53	--	51
MAY																																
MAXIMUM	58	58	60	56	60	60	54	53	52	54	54	57	56	54	56	56	54	58	60	62	60	59	61	62	64	66	69	72	70	64	60	59
MINIMUM	56	52	54	52	52	54	50	49	50	50	52	53	54	52	52	52	50	50	56	58	55	54	55	56	56	58	59	67	64	60	58	54
JUNE																																
MAXIMUM	61	64	65	68	69	69	72	72	73	76	--	--	--	--	--	--	--	--	76	76	--	--	77	80	--	--	--	--	--	--	--	--
MINIMUM	56	56	58	60	62	62	62	65	68	70	--	--	--	--	--	--	--	--	71	70	--	--	74	72	--	--	--	--	--	--	--	--
JULY																																
MAXIMUM	--	--	--	--	--	--	76	76	80	78	76	73	74	73	69	72	72	72	74	72	69	74	77	77	80	76	76	75	71	72	72	--
MINIMUM	--	--	--	--	--	--	70	71	72	72	70	68	70	69	68	68	68	68	70	69	65	68	71	72	72	73	70	71	68	68	70	--
AUGUST																																
MAXIMUM	74	75	76	75	75	75	75	80	77	77	75	75	72	77	78	78	78	76	74	77	74	77	71	67	70	70	70	68	72	73	70	74
MINIMUM	68	70	72	71	71	70	71	73	73	74	71	69	66	67	67	69	70	70	70	71	69	67	67	65	65	69	68	65	65	66	64	68
SEPTEMBER																																
MAXIMUM	69	68	70	70	74	72	73	73	70	68	68	66	65	66	68	66	68	72	70	70	69	66	62	61	61	63	63	63	61	56	--	67
MINIMUM	61	60	60	61	62	62	64	64	66	64	60	58	58	57	58	58	64	63	64	66	66	61	58	56	52	53	56	61	56	53	--	60

1-6030. NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD.

LOCATION.--Lat 39°37'16", long 78°46'24", at Wiley Ford Bridge, 2 miles south of Cumberland, Allegany County, and 2.1 miles downstream from Wills Creek.
DRAINAGE AREA.--875 square miles.
RECORDS AVAILABLE.--Chemical analyses: December 1964 to September 1967.
Water temperatures: October 1964 to September 1967.
Sediment records: October 1964 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 88°F June 16; minimum, freezing point Feb. 24 to Mar. 1.
Sediment concentrations: Maximum daily, 1,400 ppm Mar. 6; minimum daily, 5 ppm Apr. 20.
Sediment loads: Maximum daily, 61,000 tons Mar. 6; minimum daily, 3 tons Aug. 16.
EXTREMES, 1964-67.--Water temperatures: Maximum, 91°F July 13, 14, 1966; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,600 ppm Feb. 13, 1966; minimum daily, 5 ppm Apr. 20, 1967.
Sediment loads: Maximum daily, 61,000 tons Mar. 6, 1967; minimum daily, 3 tons Aug. 16, 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 1, 1966...	648	2.7		0.02	0.01	45	9.4	17	2.1	32	116	25	0.2	0.8	250	150	124		393	6.5	2
Dec. 1.....	968	5.4		--	--	22	5.3	6.7	1.6	23	53	11	.0	1.8	142	77	58		207	6.2	2
Jan. 2, 1967...	478	5.3		--	--	43	8.6	19	1.7	24	102	41	.2	1.5	272	143	124		407	6.5	7
Feb. 1.....	1240	5.0		--	--	21	5.0	8.3	1.4	20	51	14	.3	2.3	129	73	57		204	6.6	1
Mar. 1.....	743	8.3		--	--	36	5.8	16	1.3	25	85	25	.0	1.9	214	114	94		316	6.5	3
Mar. 5.....	7220	4.5		.00	.00	42	4.4	5.6	1.8	88	44	9.1	.2	6.9	170	123	51		270	7.7	6
Apr. 4.....	1020	5.6		--	--	36	8.5	10	1.4	21	98	17	.1	.8	223	125	108		315	6.7	3
May 1.....	1150	1.0		--	--	24	5.9	5.7	1.2	19	63	12	.2	.2	132	85	69		209	6.6	0
June 1.....	1590	5.8		--	--	28	6.9	6.8	1.3	16	82	14	.2	.2	162	99	86		255	6.2	0
July 1.....	238	6.6		--	--	70	18	29	2.3	49	188	54	.4	1.9	396	249	209		629	7.2	--
Aug. 4.....	734	6.2		--	--	52	11	22	1.9	18	138	46	.3	1.1	289	175	160		472	6.8	2
Sept. 1.....	300	5.6		.00	.00	58	12	25	2.2	16	159	51	.3	1.1	330	194	181		522	6.9	5

1-6030. NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD.--Continued

Temperature (°F) of water, water year October 1966 to September 1967
(Once-daily measurement at approximately 1800)

MONTH	DAY																													AVER-AGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER..	58	58	60	64	64	64	64	64	68	68	64	64	64	68	68	60	58	58	56	56	56	60	60	60	60	60	60	62	58	56	56	61
NOVEMBER.	60	60	--	50	50	50	50	52	58	60	62	60	58	55	54	50	53	56	50	48	48	50	48	50	50	56	56	50	42	41	--	52
DECEMBER.	40	40	36	35	34	40	48	50	50	50	48	43	40	40	38	38	40	44	44	40	40	43	40	38	36	34	38	35	33	36	36	40
JANUARY..	38	40	40	40	40	40	40	42	44	40	38	40	42	40	40	40	40	36	38	40	40	44	50	56	55	56	50	42	38	38	--	42
FEBRUARY.	42	44	42	40	42	40	36	36	38	40	40	36	40	44	46	55	40	37	40	38	36	38	36	32	32	32	32	32	--	--	--	38
MARCH....	32	40	46	40	38	42	40	40	48	48	50	50	50	54	50	44	40	36	40	38	36	42	42	43	44	50	52	50	54	54	56	44
APRIL....	62	64	60	60	54	62	62	60	58	56	50	58	54	62	70	68	66	56	54	60	58	60	60	54	62	--	62	54	58	60	--	59
MAY.....	58	62	60	60	64	56	50	--	52	58	58	56	52	52	52	58	52	56	60	63	56	60	60	60	64	65	66	70	66	64	64	59
JUNE.....	64	68	70	70	74	74	75	76	78	76	82	82	82	84	86	88	84	78	80	80	80	80	80	80	80	80	82	80	78	82	--	78
JULY.....	84	78	82	74	76	80	80	78	80	84	80	76	78	75	75	74	74	76	76	76	75	76	80	82	82	84	84	80	76	74	76	78
AUGUST...	--	82	82	84	80	78	78	80	80	80	80	80	78	82	80	84	83	84	80	80	78	82	75	74	75	76	76	72	76	76	74	78
SEPTEMBER	74	76	74	75	60	80	80	80	76	70	74	74	74	74	76	74	74	80	82	78	76	72	70	66	68	68	72	70	60	62	--	73

1-6030. NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD.--Continued

Suspended sediment, water year October 1966 to September 1967

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	635	51	87	272	34	25	977	35	92
2..	2,850	320	S 2,600	289	35	27	824	43	96
3..	1,400	70	S 280	503	43	S 73	680	40	73
4..	878	31	73	896	44	110	528	22	31
5..	648	47	82	592	33	53	492	29	38
6..	513	41	57	506	30	41	576	39	61
7..	436	25	29	464	36	45	779	42	88
8..	457	24	30	409	35	39	1,320	58	210
9..	409	27	30	402	38	41	1,240	39	130
10..	396	34	36	389	36	38	1,070	35	100
11..	436	42	49	340	31	28	1,040	33	93
12..	402	34	37	358	39	38	1,060	30	86
13..	316	23	20	352	37	35	1,280	34	120
14..	272	21	15	316	34	29	900	31	75
15..	262	30	21	289	26	20	800	30	65
16..	253	27	18	257	30	21	680	26	48
17..	233	24	15	233	32	20	600	24	39
18..	267	27	19	229	40	25	560	26	39
19..	322	27	23	219	44	26	584	26	41
20..	443	29	35	214	39	23	552	26	39
21..	450	26	32	201	39	21	624	26	44
22..	396	20	21	214	41	24	568	38	58
23..	376	18	18	262	40	28	632	34	58
24..	364	27	27	257	40	28	499	36	49
25..	352	25	24	257	38	26	423	39	45
26..	346	24	22	253	37	25	370	29	29
27..	334	33	30	262	34	24	358	28	27
28..	284	28	21	634	180	S 420	364	21	21
29..	311	41	34	1,890	190	S 920	409	41	45
30..	284	39	30	1,690	70	320	806	95	210
31..	272	31	23	--	--	--	492	47	62
Total	15,597	--	3,838	13,449	--	2,593	22,087	--	2,212

Day	JANUARY			FEBRUARY			MARCH		
1..	443	34	41	1,240	32	110	752	40	82
2..	478	26	34	1,680	40	180	689	33	61
3..	584	31	49	1,880	38	190	963	40	100
4..	552	31	46	2,020	37	200	2,700	360	S 2,800
5..	536	44	64	1,760	28	130	5,840	920	S 16,000
6..	485	26	34	1,270	19	65	17,500	1,400	S 61,000
7..	423	25	29	1,120	31	94	22,400	730	S 45,000
8..	436	40	47	932	29	73	13,200	260	S 9,300
9..	725	70	140	905	54	130	7,960	260	5,600
10..	664	40	72	950	43	110	7,300	110	2,200
11..	632	39	67	959	33	85	5,020	57	770
12..	560	34	51	1,260	31	110	4,010	38	410
13..	584	32	50	743	31	62	3,620	36	350
14..	576	40	62	752	28	57	3,770	53	540
15..	616	41	68	896	28	68	6,460	210	S 4,400
16..	616	42	70	1,520	53	S 230	7,950	170	3,600
17..	536	35	51	2,080	100	560	6,200	110	1,800
18..	485	37	48	1,440	35	140	4,180	51	580
19..	346	40	37	1,560	24	100	3,470	26	240
20..	322	37	32	1,210	24	78	2,920	25	200
21..	430	38	44	1,180	24	77	2,370	30	190
22..	485	41	54	1,170	30	95	3,300	49	440
23..	552	33	49	1,130	21	64	3,200	46	400
24..	608	29	48	1,270	23	79	2,800	32	240
25..	734	37	S 81	716	19	37	3,200	44	380
26..	592	26	42	698	21	40	3,100	29	240
27..	725	110	S 280	689	30	56	3,300	43	380
28..	2,210	220	S 1,200	716	40	77	3,100	29	240
29..	2,140	57	330	--	--	--	3,200	30	260
30..	1,340	30	110	--	--	--	2,900	25	200
31..	1,050	27	77	--	--	--	2,220	20	120
Total	21,465	--	3,407	33,746	--	3,297	159,594	--	158,123

S Computed by subdividing day.

1-6030. NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	1,460	14	55	1,160	11	34	1,540	15	62
2..	1,270	7	24	1,110	15	45	1,320	14	50
3..	1,150	8	25	1,120	20	60	1,090	14	41
4..	1,040	12	34	1,010	17	46	932	7	18
5..	995	10	27	851	12	28	833	14	31
6..	1,300	97	340	788	15	32	752	14	28
7..	1,440	26	100	5,140	300	S 7,100	672	11	20
8..	1,440	8	31	11,400	500	15,000	616	8	13
9..	1,270	10	34	7,810	200	4,200	584	16	25
10..	1,300	14	49	6,280	100	1,700	624	34	57
11..	1,270	19	65	5,920	180	2,900	528	13	19
12..	1,120	15	45	7,890	190	4,000	464	6	8
13..	1,020	9	25	5,500	66	980	409	9	10
14..	950	10	26	4,010	54	590	358	10	10
15..	923	9	22	4,120	62	690	322	16	14
16..	833	6	13	4,700	110	1,400	311	6	5
17..	905	49	120	3,930	40	420	300	10	8
18..	1,440	40	160	3,790	25	260	364	45	44
19..	1,300	16	56	2,930	36	280	761	68	140
20..	1,160	5	16	2,510	25	170	680	34	62
21..	1,060	29	83	1,990	25	130	471	20	25
22..	1,070	44	130	1,760	23	110	416	28	31
23..	1,120	14	42	1,540	16	67	536	38	55
24..	1,000	8	22	1,360	13	48	552	35	52
25..	1,060	15	43	1,200	11	36	423	26	30
26..	1,010	12	33	1,070	14	40	352	23	22
27..	1,320	11	39	968	10	26	316	24	20
28..	1,390	18	68	905	9	22	284	27	21
29..	1,330	17	61	1,110	41	120	253	25	17
30..	1,240	12	40	2,250	72	440	243	20	13
31..	--	--	--	1,740	12	56	--	--	--
Total	35,186	--	1,828	97,862	--	41,030	17,306	--	951

	JULY			AUGUST			SEPTEMBER		
1..	238	20	13	630	15	26	289	10	8
2..	238	15	10	530	15	21	272	10	7
3..	243	18	12	460	11	14	253	11	8
4..	316	31	26	770	16	33	238	8	5
5..	284	24	18	740	15	30	229	8	5
6..	238	16	10	570	10	15	214	9	5
7..	205	16	9	460	14	17	214	11	6
8..	196	13	7	380	12	12	205	13	7
9..	205	15	8	320	10	9	205	12	7
10..	344	14	13	320	9	8	210	18	10
11..	1,180	180	S 1,100	320	9	8	214	19	11
12..	2,740	160	S 600	270	20	15	210	15	9
13..	1,290	30	100	225	14	9	201	19	10
14..	914	29	72	205	9	5	196	20	11
15..	905	38	93	185	13	6	196	16	8
16..	833	25	56	170	7	3	187	19	10
17..	640	11	19	155	15	6	191	20	10
18..	592	17	27	190	10	5	191	19	10
19..	513	15	21	205	15	8	187	19	10
20..	478	24	31	225	17	10	201	14	8
21..	1,070	160	S 580	245	19	13	210	19	11
22..	815	91	S 220	220	20	12	210	19	11
23..	552	20	30	200	16	9	196	19	10
24..	471	17	22	205	23	13	196	17	9
25..	478	27	35	253	23	16	196	15	8
26..	430	34	39	322	21	18	187	17	9
27..	761	35	72	568	25	38	187	18	9
28..	513	15	21	568	20	31	743	72	S 360
29..	1,080	47	140	544	19	28	887	110	S 330
30..	1,080	20	58	389	8	8	464	41	51
31..	779	20	42	316	13	11	--	--	--
Total	20,621	--	3,504	11,160	--	457	7,779	--	973

Total discharge for year (cfs-days)..... 455852
Total load for year (tons)..... 222213

S Computed by subdividing day.

1-6030. NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD.--Continued

Particle-size analyses of suspended sediment, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 5, 1967.....	1700	38		7680	1058		20	33	44	55	67	74	83	90	98	99	100	SBWC
Mar. 7.....	1450	40		25380	792			38	52	66	74	82	88	95	99	100	100	SPWC
Mar. 15.....	1730	50		8815	369			30	40	47	52	57	62	78	93	97	100	SPWC

1-6130. POTOMAC RIVER AT HANCOCK, MD.

LOCATION.--Lat 39°40'49", long 78°10'39", temperature recorder at gaging station 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 square miles.
RECORDS AVAILABLE.--Water temperatures: July 1952 to February 1964, July 1966 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 86°F June 17; minimum, freezing point on many days during winter months.
EXTREMES, 1952-64, 1966-67.--Water temperatures: Maximum, 93°F July 22, 1952; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder.

Temperature (°F) of water, water year October 1966 to September 1967

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	62	59	58	59	60	60	60	60	62	65	63	63	62	64	65	64	61	57	55	55	56	56	57	57	56	58	57	57	56	54	52	59
MINIMUM	59	56	57	56	59	58	57	58	59	62	60	59	59	59	61	61	57	55	54	53	51	53	54	55	55	54	53	53	53	51	49	56
NOVEMBER																																
MAXIMUM	54	55	55	49	47	48	47	47	50	53	55	54	52	50	49	47	48	48	48	45	43	42	42	42	43	46	46	46	44	44	--	47
MINIMUM	51	52	49	46	46	47	45	45	47	50	52	52	50	48	47	45	45	46	45	42	41	40	39	40	41	42	43	43	43	43	--	45
DECEMBER																																
MAXIMUM	43	42	40	38	36	36	37	39	42	44	45	44	43	40	40	39	37	39	38	37	37	37	37	37	35	32	32	32	32	32	32	37
MINIMUM	42	40	38	36	34	35	36	37	39	42	44	43	40	40	39	37	36	37	37	36	36	36	37	35	32	32	32	32	32	32	32	36
JANUARY																																
MAXIMUM	32	33	33	33	33	33	33	34	34	34	35	34	34	35	36	36	35	35	32	32	32	38	40	43	45	47	47	46	42	41	39	36
MINIMUM	32	32	32	33	32	32	33	33	33	33	34	34	33	34	35	35	34	32	32	32	32	32	38	40	42	45	46	42	41	39	37	35
FEBRUARY																																
MAXIMUM	38	39	39	40	41	41	40	36	35	36	37	37	36	37	39	40	40	39	39	39	38	37	38	37	35	34	33	34	--	--	--	37
MINIMUM	36	38	39	39	40	40	36	34	34	34	35	35	34	34	37	39	39	39	38	38	37	36	37	35	34	33	33	33	--	--	--	36
MARCH																																
MAXIMUM	34	34	36	36	38	38	40	40	41	43	45	46	46	49	50	50	47	43	41	40	40	40	42	43	45	47	49	49	52	53	54	43
MINIMUM	33	33	34	36	36	37	38	40	40	41	43	45	46	46	49	47	42	41	40	40	39	40	40	42	42	44	47	48	49	50	51	41
APRIL																																
MAXIMUM	56	60	61	59	57	59	59	59	59	60	59	57	57	60	63	64	64	58	57	57	57	61	59	59	57	56	53	54	55	56	--	58
MINIMUM	53	55	59	56	55	55	58	56	57	58	56	54	55	54	59	62	58	56	54	53	56	57	56	56	54	53	51	50	51	54	--	55
MAY																																
MAXIMUM	60	62	62	59	61	60	56	51	51	52	53	54	54	54	53	54	54	55	57	60	60	60	61	62	63	65	67	70	70	67	67	59
MINIMUM	57	60	58	57	56	56	50	50	50	51	52	52	53	53	52	52	53	52	53	56	58	58	58	59	59	61	62	66	64	64	65	56
JUNE																																
MAXIMUM	66	67	68	70	71	72	74	75	76	78	81	82	83	81	82	85	86	83	77	80	79	79	78	79	80	78	77	76	75	76	--	77
MINIMUM	64	64	65	66	68	69	70	71	72	75	75	76	77	77	75	79	81	77	76	74	75	77	76	76	77	74	72	72	72	74	--	73
JULY																																
MAXIMUM	81	79	80	78	73	74	75	75	78	83	80	81	80	78	75	76	76	76	76	76	77	76	77	78	78	80	82	80	77	76	76	77
MINIMUM	73	76	74	72	70	71	72	73	72	76	74	77	77	75	73	72	73	74	73	75	74	73	74	74	74	76	76	77	73	72	74	73
AUGUST																																
MAXIMUM	78	79	75	79	80	78	77	78	78	80	78	78	75	77	79	81	80	81	79	79	76	79	76	72	70	71	71	71	72	74	74	76
MINIMUM	74	71	72	73	77	75	74	74	76	76	74	73	72	71	72	73	74	74	75	75	73	72	72	68	68	69	70	70	70	71	72	72
SEPTEMBER																																
MAXIMUM	72	72	72	74	76	76	77	76	74	72	71	71	70	72	74	71	74	77	77	76	74	72	69	66	66	68	69	68	64	64	--	71
MINIMUM	69	69	69	69	70	70	71	72	72	69	65	64	64	65	66	68	70	70	72	72	72	69	65	62	59	60	63	64	63	62	--	67

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.

LOCATION.--Lat 39°42'29", long 77°50'00", at bridge on State Highway 494 in Fairview, Washington County, 0.7 mile downstream from gaging station, 1.3 miles upstream from Rockdale Run.
DRAINAGE AREA.--495 square miles, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1967.
Water temperatures: November 1966 to September 1967.
Sediment records: October 1966 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 70°F July 16, 19, 20, 26, Aug. 1, 10, 16, 19; minimum, 35°F Jan. 21, Feb. 28.
Sediment concentrations: Maximum daily, 660 ppm July 11; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 11,000 tons Mar. 7; minimum daily, less than 0.5 ton on many days.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 19, 1966..	96	1.4		0.01	0.01	57	12	11	3.6	193	31	15	0.1	7.1	238	192	34		400	7.2	5
Dec. 7.....	221	7.3		--	--	44	9.4	7.8	2.3	133	29	11	.1	15	208	149	40		328	7.4	3
Jan. 18, 1967..	310	3.3		--	--	41	8.5	7.6	2.2	124	28	10	.1	8.8	200	138	36		304	6.7	3
Mar. 1.....	270	3.8		--	--	49	9.1	6.6	1.5	140	28	11	.2	14	212	160	39		329	8.3	4
Mar. 7.....	8,070	6.9		.0	.0	23	4.0	4.2	2.7	54	22	7.5	.2	13	123	74	30		180	7.5	7
Apr. 25.....	464	3.6		--	--	37	7.7	4.9	1.6	121	20	10	.1	6.7	150	124	25		270	7.2	0
June 7.....	282	2.3		--	--	48	10	5.5	1.9	154	21	11	.1	9.0	187	161	35		327	8.2	0
July 18.....	324	.6		--	--	33	10	5.3	2.2	112	23	10	.2	7.2	147	124	32		266	7.6	5
Aug. 20.....	155	.6		--	--	60	13	8.4	2.3	193	28	14	.2	11	244	203	37		430	8.4	5
Sept. 30.....	386	5.7		.18	.00	49	13	13	4.0	173	29	21	.2	8.6	230	176	34		391	8.0	10

POTOMAC RIVER BASIN--Continued

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.--Continued

Temperature (°F) of water, November 1966 to September 1967
(Once-daily measurement at approximately 1030)

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	--	--	--	--	--	--	--	--	55	67	66	59	52	45	44	44	46	49	48	--	45	40	38	49	50	54	46	40	39	44	--	--
DECEMBER.	45	42	39	38	37	39	41	43	45	47	50	45	43	41	40	40	39	42	39	39	38	38	39	38	39	39	39	38	38	37	36	40
JANUARY..	36	40	40	41	39	38	40	42	39	39	37	40	39	40	37	37	40	37	38	37	35	39	40	44	45	49	50	42	43	40	39	40
FEBRUARY.	39	39	38	42	44	43	45	39	37	40	39	37	37	40	44	45	40	39	40	38	40	39	36	40	39	38	39	35	--	--	--	39
MARCH....	38	40	44	42	42	42	40	41	50	48	55	55	51	57	55	44	40	41	48	44	42	39	52	52	53	54	50	49	56	52	53	47
APRIL....	59	58	60	53	55	64	66	56	50	55	57	57	55	56	56	55	57	52	51	52	57	55	56	54	52	51	50	50	49	50	--	54
MAY.....	55	57	52	54	54	56	54	54	52	52	52	52	52	54	54	53	58	54	51	51	51	51	51	50	55	57	59	57	54	56	56	53
JUNE.....	55	56	59	51	59	59	58	60	61	59	60	61	61	61	60	60	59	57	--	61	62	61	61	61	61	61	60	61	62	62	--	59
JULY.....	61	61	60	61	59	61	61	60	59	61	59	60	67	69	69	70	67	69	70	70	68	67	69	69	69	70	69	69	68	68	69	65
AUGUST...	70	68	69	69	69	67	67	67	69	70	69	69	67	68	--	70	69	69	70	69	68	68	69	60	61	57	66	59	69	67	67	67
SEPTEMBER	67	65	67	67	66	64	64	63	64	64	62	59	60	61	66	66	67	67	69	68	66	66	65	60	61	61	60	65	65	65	--	64

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.--Continued

Suspended sediment, water year October 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	196		2	66	--	T	597	18	29
2..	712		20	70	--	T	442	14	17
3..	502		10	79	--	T	327	10	9
4..	322		6	68	--	T	248	9	6
5..	234		4	71	--	T	253	6	4
6..	180		3	73	--	T	236	C 3	2
7..	146		2	67	--	T	225	C 3	2
8..	131		2	68	--	T	225	C 3	2
9..	121		2	67	C 2	T	228	C 3	2
10..	109		1	73	C 2	T	207	C 3	2
11..	102		1	92	C 2	T	389	20	S 23
12..	92		1	107	C 2	1	464	18	S 23
13..	83		T	94	C 2	1	382	C 7	7
14..	81		T	91	C 1	T	344	C 7	7
15..	78		T	83	C 1	T	327	C 3	3
16..	80		T	73	C 1	T	277	C 3	2
17..	81		T	72	C 1	T	251	C 3	2
18..	80		T	70	C 1	T	263	C 3	2
19..	100		1	68	C 1	T	265	C 3	2
20..	130		1	66	C 1	T	260	C 2	1
21..	117		1	66	C 1	T	249	C 2	1
22..	108		1	66	C 1	T	242	C 2	1
23..	94		T	63	C 1	T	223	C 2	1
24..	86		T	62	C 1	T	207	C 2	1
25..	82		T	65	C 1	T	198	C 5	3
26..	77		T	62	C 1	T	190	C 5	3
27..	77		T	62	C 1	T	190	C 5	3
28..	75		T	350	57	S 130	198	C 5	3
29..	67		T	1,620	190	S 820	227	2	1
30..	65		T	946	40	100	331	6	5
31..	63		T	--	--	--	295	4	3
Total	4,471		62	4,880	--	1,058	8,760	--	172

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	228	C 1	1	770	14	29	280	2	2
2..	228	C 1	1	740	11	22	272	2	1
3..	227	C 1	1	854	22	51	275	C 2	1
4..	243	C 1	1	712	12	23	297	C 2	2
5..	240	C 1	1	646	9	16	770	16	S 52
6..	221	1	1	592	7	11	3,870	500	A 5,800
7..	239	1	1	478	5	6	7,440	580	A11,000
8..	283	4	3	460	9	11	5,040	160	S 2,400
9..	353	4	4	522	11	16	2,870	85	660
10..	375	4	4	488	10	13	2,270	51	310
11..	347	C 1	1	469	7	9	1,970	42	220
12..	296	C 1	1	498	7	9	1,720	43	200
13..	281	C 1	1	408	6	7	1,480	32	130
14..	294	C 1	1	395	5	5	1,340	22	80
15..	359	C 1	1	451	5	6	1,380	24	90
16..	420	C 6	7	619	14	23	1,670	45	200
17..	396	C 2	2	570	7	11	1,530	28	120
18..	338	C 2	2	493	6	8	1,290	16	56
19..	254	C 1	1	455	4	5	1,100	C 12	36
20..	244	C 1	1	433	3	4	1,020	C 12	33
21..	292	C 1	1	442	3	4	1,010	10	27
22..	284	C 1	1	403	3	3	1,020	10	28
23..	322	C 1	1	386	5	5	1,270	14	48
24..	345	4	4	361	2	2	1,290	13	45
25..	337	1	1	277	1	1	1,430	C 15	58
26..	306	4	3	290	4	3	1,300	C 15	53
27..	511	110	S 240	300	6	5	1,180	17	54
28..	2,650	470	S 3,400	290	6	5	1,090	13	38
29..	1,740	100	470	--	--	--	1,060	12	34
30..	1,150	32	99	--	--	--	966	9	23
31..	878	23	55	--	--	--	836	C 5	11
Total	14,681	--	4,311	13,802	--	313	50,336	--	21,812

S Computed by subdividing day.
T Less than 0.5 ton.
A Computed from partly estimated concentration graph.
C Composite period.

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	770	C 5	10	614	26	43	425	6	7
2..	724	C 8	16	603	230	S 400	386	4	4
3..	691	C 8	15	946	140	S 340	361	3	3
4..	636	C 8	14	806	25	54	337	3	3
5..	614	C 9	15	663	20	36	318	3	3
6..	614	C 9	15	625	55	93	299	4	3
7..	824	30	B 70	1,820	270	A 1,900	284	5	4
8..	848	25	57	2,770	170	A 1,300	270	3	2
9..	658	13	23	1,980	65	350	260	5	4
10..	630	8	14	1,530	55	230	250	7	5
11..	592	5	8	1,600	150	A 750	250	7	5
12..	533	C 6	9	1,920	70	A 380	237	5	3
13..	502	C 6	8	1,440	25	97	219	3	2
14..	488	6	8	1,250	24	81	204	4	2
15..	464	7	9	1,260	19	65	202	4	2
16..	438	7	8	1,440	23	90	196	3	2
17..	460	13	16	1,170	25	79	240	40	A 42
18..	752	20	A 40	1,030	24	67	213	80	B 44
19..	592	5	8	946	21	54	543	140	B 220
20..	502	43	58	979	20	53	333	110	99
21..	464	39	49	788	9	19	240	68	44
22..	507	21	29	718	11	21	231	400	A 250
23..	575	25	39	663	9	16	390	120	A 130
24..	488	7	9	603	13	21	314	80	68
25..	455	10	12	554	7	10	234	52	33
26..	433	22	26	512	8	11	202	43	23
27..	812	38	S 84	478	8	10	185	40	20
28..	959	21	54	464	9	11	168	54	24
29..	746	27	54	512	12	17	163	50	22
30..	669	12	22	641	18	31	257	75	A 55
31..	--	--	--	498	8	11	--	--	--
Total	18,440	--	799	31,823	--	6,640	8,211	--	1,128

	JULY			AUGUST			SEPTEMBER		
1..	295	38	A 28	409	35	39	147	96	38
2..	222	43	26	324	35	31	138	47	17
3..	333	58	52	299	38	31	128	9	3
4..	292	62	49	896	380	B 1,100	123	9	3
5..	302	92	75	1,360	480	B 1,900	120	26	8
6..	244	55	B 36	707	100	B 190	117	6	2
7..	204	24	13	483	60	78	116	1	T
8..	199	24	13	390	42	44	103	3	1
9..	231	32	20	330	35	31	108	7	2
10..	295	25	20	298	26	21	98	3	1
11..	1,840	660	A 3,400	271	21	15	102	C 2	1
12..	1,530	310	S 1,400	237	20	13	102	C 2	1
13..	718	120	230	211	13	7	98	C 2	1
14..	478	74	96	200	13	7	94	8	2
15..	549	85	A 120	189	7	4	93	4	1
16..	619	87	150	174	8	4	87	2	T
17..	425	73	84	166	8	4	87	5	1
18..	330	58	52	160	7	3	88	3	1
19..	287	59	46	158	6	3	87	3	1
20..	255	63	43	153	6	2	85	3	1
21..	281	51	39	154	6	2	98	15	4
22..	304	38	31	156	9	4	105	1	T
23..	239	32	21	146	7	3	98	2	1
24..	209	28	16	155	22	9	94	2	1
25..	221	22	13	327	25	22	91	4	1
26..	239	26	17	279	18	14	88	4	1
27..	244	19	13	255	18	12	87	2	T
28..	210	19	11	246	15	10	110	8	2
29..	630	310	S 1,100	225	26	16	522	87	S 130
30..	1,310	380	S 1,600	185	38	19	394	60	64
31..	597	75	120	161	96	42	--	--	--
Total	14,132	--	8,934	9,704	--	3,680	3,808	--	291

Total discharge for year (cfs-days)..... 183048
Total load for year (tons)..... 49200

S Computed by subdividing day.
T Less than 0.5 ton.
A Computed from partly estimated contration graph.
B Computed from estimated concentration graph.
C Composite period.

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.--Continued

Particle-size analyses of suspended sediment, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters											Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 28, 1967.....	0825	42		2930	631		--	66	81	90	97	100	100	100				SPWC
Mar. 7.....	1115	40		8020	558		9	19	35	57	90	97	100	--				SBN
Mar. 7.....	1115	40		8020	558		37	58	77	91	97	99	100	100	100			SBWC

1-6195. ANTIETAM CREEK NEAR SHARPSBURG, MD.

LOCATION.--Lat 39°27'01", long 77°43'52", temperature recorder at gaging station 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 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1965 to September 1967.
Water temperatures: October 1962 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 80°F June 17; minimum, 35°F Feb. 25-27.
EXTREMES, 1962-67.--Water temperatures: Maximum, 83°F June 28, July 1-3, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Records poor, probably because of friction in recorder.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 18, 1966..	109	5.1		0.02	0.01	69	16	11	3.8	248	30	16	0.3	0.3	280	236	33		482	7.2	6
Dec. 6.....	135	7.6		.02	.00	62	13	8.1	3.5	206	31	14	.3	14	293	208	39		442	7.1	0
Jan. 18, 1967..	197	5.3		.01	.00	57	13	7.9	3.0	192	29	12	.3	15	260	196	38		414	7.3	0
Mar. 2.....	219	3.5		--	--	62	14	8.0	2.5	190	29	13	.1	17	271	212	47		413	8.4	1
June 6.....	200	1.8		--	--	60	12	5.9	2.9	188	25	12	.2	9.1	230	199	39		388	8.4	0
July 17.....	251	.6		--	--	48	13	6.4	3.0	154	31	12	.3	9.1	193	174	48		354	7.4	3
Aug. 22.....	162	5.5		.00	.00	74	15	6.7	3.1	224	29	14	.3	14	273	246	51		458	8.4	5

1-6195. ANTIETAM CREEK NEAR SHARPSBURG, MD.--Continued

Temperature (°F) of water, water year October 1966 to September 1967
(Continuous ethyl alcohol-actuated thermograph)

MONTH	DAY																													AVERAGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER																																
MAXIMUM	59	56	56	58	60	59	57	56	59	60	60	57	56	57	59	60	59	55	52	52	52	52	54	54	54	54	54	53	53	53	51	55
MINIMUM	56	55	55	56	58	57	56	55	56	58	57	56	55	55	57	59	55	52	52	52	51	50	52	54	54	54	53	52	52	51	49	54
NOVEMBER																																
MAXIMUM	53	56	56	53	48	48	48	49	54	58	58	58	55	50	48	47	49	51	51	49	45	43	43	44	48	49	49	49	49	45	--	50
MINIMUM	49	53	53	48	47	47	47	47	49	54	58	55	50	48	47	46	47	49	49	45	43	42	42	42	44	48	48	48	49	47	--	48
DECEMBER																																
MAXIMUM	47	46	43	39	38	40	43	46	50	53	53	50	45	41	41	40	40	43	43	42	40	40	40	40	38	37	37	37	36	37	37	42
MINIMUM	46	43	39	38	38	38	40	43	46	50	50	45	41	41	40	39	39	40	42	40	40	40	40	38	37	37	37	36	36	36	37	40
JANUARY																																
MAXIMUM	39	41	41	41	41	40	39	41	41	41	41	40	40	42	42	42	41	40	39	37	39	42	45	49	51	53	53	52	45	41	40	42
MINIMUM	37	39	41	41	40	39	39	39	41	41	40	40	40	40	42	41	40	39	37	37	37	39	42	45	49	51	52	45	41	40	40	41
FEBRUARY																																
MAXIMUM	43	45	45	45	43	43	43	37	36	39	41	41	40	40	44	45	45	43	43	41	41	41	40	40	38	35	36	38	--	--	--	41
MINIMUM	40	43	45	43	43	43	37	36	36	36	39	40	39	39	40	44	43	43	41	41	41	39	40	38	35	35	35	36	--	--	--	39
MARCH																																
MAXIMUM	38	38	44	45	45	45	46	45	48	51	53	53	53	54	54	54	51	47	44	44	44	47	47	47	49	52	52	52	53	53	54	48
MINIMUM	37	37	38	44	45	45	43	43	45	48	51	53	52	52	54	51	47	44	43	44	44	44	47	47	47	49	52	52	52	52	53	46
APRIL																																
MAXIMUM	56	59	59	59	55	57	59	59	58	56	56	55	52	55	60	60	60	57	56	55	56	59	59	58	55	54	53	53	54	56	--	56
MINIMUM	54	56	59	55	54	54	57	58	56	56	55	52	52	52	55	60	57	56	53	52	55	56	58	55	53	53	52	52	53	54	--	54
MAY																																
MAXIMUM	60	63	63	62	59	59	57	54	52	54	54	56	57	56	56	56	56	60	61	63	63	59	60	61	61	62	64	67	67	65	64	59
MINIMUM	56	60	62	59	57	57	54	52	52	52	54	54	56	56	56	56	56	55	59	61	59	58	59	60	59	61	62	64	64	64	63	57
JUNE																																
MAXIMUM	63	66	67	69	70	70	70	71	73	75	75	76	76	76	76	78	80	79	77	75	73	74	74	75	75	75	72	72	72	71	--	73
MINIMUM	63	63	66	67	69	69	68	69	70	72	74	73	74	73	72	75	77	77	75	72	72	73	73	74	75	72	71	71	70	70	--	71
JULY																																
MAXIMUM	74	74	73	73	70	69	72	72	74	77	74	73	73	73	72	70	70	71	72	72	72	71	71	72	72	74	74	75	74	73	72	72
MINIMUM	71	72	72	70	68	68	69	72	72	74	73	72	72	72	70	69	70	70	70	72	71	70	71	71	72	72	74	74	73	72	70	71
AUGUST																																
MAXIMUM	72	73	75	75	74	73	72	71	72	72	72	71	70	69	70	71	72	73	73	73	73	72	72	70	68	68	68	68	69	70	70	71
MINIMUM	70	72	73	74	73	72	69	69	71	72	71	70	68	68	69	70	71	72	73	73	71	70	70	68	68	68	68	68	68	69	69	70
SEPTEMBER																																
MAXIMUM	69	67	66	67	68	68	69	70	70	70	68	64	64	65	66	66	68	70	71	71	71	71	68	63	62	61	64	67	67	66	--	67
MINIMUM	67	66	65	65	67	67	68	68	70	68	64	63	62	63	64	65	66	68	70	70	71	68	63	62	60	60	61	64	66	63	--	65

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.

LOCATION.--Lat 39°16'25", long 77°32'35", at gaging station at bridge on U.S. Highway 15 at Point of Rocks, Frederick County, 0.3 mile downstream from Catoctin Creek (Virginia), and 6 miles upstream from Monocacy River.
DRAINAGE AREA.--9,651 square miles.
RECORDS AVAILABLE.--Chemical analyses: December 1964 to September 1967.
Water temperatures: October 1960 to September 1967.
Sediment records: October 1960 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 82°F June 17; minimum, freezing point on several days during winter months.
Sediment concentrations: Maximum daily, 950 ppm Mar. 8; minimum daily, 1 ppm on several days during November to January.
Sediment loads: Maximum daily, 340,000 tons Mar. 8; minimum daily, 6 tons Nov. 24-27.
EXTREMES, 1960-67.--Water temperatures: Maximum, 92°F Aug. 24, 1964; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,180 ppm Feb. 20, 1961; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 340,000 tons Mar. 8, 1967; minimum daily, 2 tons on several days during September 1964 and July to September 1966.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 3, 1966...	15570	7.0		0.01	0.01	37	6.6	7.2	2.4	96	36	10	0.2	5.4	167	120	42		272	6.8	5
Nov. 1.....	2540	.6		.01	.01	44	10	14	2.4	121	50	18	.2	.9	207	151	52		355	7.4	6
Dec. 2.....	14030	5.4		--	--	28	5.6	8.3	2.2	65	39	13	.1	1.1	162	93	40		236	7.0	5
Jan. 5, 1967...	6580	5.3		--	--	31	6.4	7.2	1.9	81	33	11	.1	3.8	160	104	38		246	6.9	2
Feb. 3.....	9960	7.9		--	--	25	5.2	4.8	1.7	62	28	7.8	.2	5.2	126	84	33		200	6.8	0
Mar. 1.....	5820	2.5		--	--	31	6.2	7.6	1.4	84	35	11	.2	2.2	160	103	34		247	6.9	2
Mar. 8.....	143800	9.1		.00	.00	24	3.6	3.0	2.3	58	24	4.7	.1	7.4	118	75	27		166	7.2	6
Apr. 8.....	9000	3.9		--	--	34	6.8	4.9	1.7	86	34	7.5	.0	5.0	154	113	43		240	7.3	3
May 2.....	7140	2.6		--	--	30	5.7	5.6	1.6	72	37	8.5	.1	1.9	126	99	40		224	7.8	0
June 10.....	4160	2.3		--	--	29	6.1	5.4	1.6	76	35	8.0	.1	1.7	--	98	35		224	7.8	--
July 12.....	7670	4.6		--	--	37	7.0	6.4	2.9	106	32	12	.2	3.5	160	122	35		274	7.9	3
Aug. 3.....	3510	4.7		--	--	37	7.3	6.0	2.8	103	33	10	.2	5.5	157	123	38		269	7.3	5
Sept. 4.....	3480	4.5		.00	.00	37	7.6	8.0	2.7	106	36	14	.2	4.0	169	124	37		280	7.2	5

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Temperature (°F) of water, water year October 1966 to September 1967
(Once-daily measurement at approximately 0830)

MONTH	DAY																													AVER-AGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER..	--	59	52	56	59	55	54	52	65	61	59	59	56	62	60	65	52	42	44	--	49	50	60	55	55	62	51	51	56	52	47	55
NOVEMBER.	50	--	54	45	44	49	45	46	50	55	55	53	50	45	45	44	45	49	47	45	40	40	39	46	44	48	45	44	42	42	--	46
DECEMBER.	42	40	33	37	33	32	37	39	40	45	45	--	39	38	37	35	35	46	37	37	35	35	36	34	35	33	30	32	32	32	32	36
JANUARY..	34	35	34	35	33	33	--	36	35	34	34	34	34	37	36	34	34	34	33	32	33	40	37	40	42	43	45	39	41	39	36	36
FEBRUARY.	38	39	37	37	40	39	33	32	32	34	36	33	32	32	35	39	35	35	36	35	36	34	36	34	--	32	32	35	--	--	--	35
MARCH....	32	32	35	38	38	38	37	36	40	42	45	45	44	47	49	45	42	42	41	39	38	39	40	40	42	48	45	46	49	50	50	41
APRIL....	53	63	59	52	52	56	60	57	56	57	53	50	52	55	60	63	52	59	54	55	58	59	59	55	52	52	53	51	54	57	--	55
MAY.....	53	60	52	52	58	60	56	55	51	51	51	55	53	54	55	54	54	55	57	57	58	--	56	58	58	60	63	69	65	60	65	56
JUNE.....	63	64	67	70	69	70	70	71	74	72	80	72	78	72	75	80	82	81	79	75	72	80	79	81	75	--	75	74	72	72	--	73
JULY.....	76	74	76	75	70	74	74	75	80	80	79	73	77	75	73	75	74	75	75	77	--	70	80	79	79	80	78	80	79	79	79	76
AUGUST...	69	77	79	78	78	80	75	75	75	79	75	74	73	71	74	75	75	72	81	72	75	74	75	68	68	71	72	70	70	71	72	73
SEPTEMBER	67	66	72	70	69	70	70	71	72	70	65	63	64	65	62	71	72	70	72	72	73	70	65	64	60	60	65	68	66	62	--	67

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Suspended sediment, water year October 1966 to September 1967

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	6,240	27	450	2,500	C 5	34	17,600	57	2,700
2.....	10,700	32	920	2,300	C 5	31	13,400	51	1,800
3.....	19,400	55	2,900	2,430	C 5	33	10,300	25	700
4.....	23,900	85	5,500	2,640	C 5	36	8,490	16	370
5.....	15,800	56	2,400	2,880	C 5	39	7,030	14	A 270
6.....	11,100	37	1,100	5,010	11	150	6,140	11	180
7.....	8,480	29	660	6,380	19	330	5,700	7	110
8.....	6,870	25	460	5,310	12	170	5,320	C 5	72
9.....	5,590	18	270	4,470	9	110	5,240	C 5	71
10.....	4,800	24	310	3,990	7	75	5,860	6	95
11.....	4,320	15	170	3,780	C 5	51	6,560	10	180
12.....	3,680	11	110	3,440	C 5	46	6,430	6	100
13.....	3,300	12	110	3,420	C 5	46	6,230	C 15	250
14.....	3,070	12	99	3,190	C 5	43	6,710	C 15	270
15.....	2,910	11	86	3,260	C 5	44	6,750	C 15	270
16.....	2,730	7	52	3,330	C 5	45	6,570	C 15	270
17.....	2,460	C 5	33	3,190	C 5	43	6,090	C 4	66
18.....	2,410	C 5	33	3,060	C 5	43	5,850	C 4	63
19.....	2,680	C 5	36	2,970	C 5	40	5,870	C 4	63
20.....	2,880	C 3	23	2,980	C 1	8	6,100	C 4	66
21.....	3,150	C 3	26	2,690	C 1	7	6,440	C 4	70
22.....	3,930	4	42	2,580	C 1	7	6,750	C 4	73
23.....	4,300	6	70	2,450	C 1	7	6,700	C 4	72
24.....	4,090	10	110	2,330	C 1	6	6,580	C 4	71
25.....	3,700	5	50	2,240	C 1	6	6,220	C 3	50
26.....	3,450	6	56	2,270	C 1	6	5,790	C 3	47
27.....	3,220	7	61	2,260	C 1	6	5,400	C 3	44
28.....	2,970	5	40	2,740	C 1	7	4,850	C 3	39
29.....	2,840	C 4	31	5,440	A 13	190	4,950	C 3	40
30.....	2,660	C 4	29	15,400	69	2,900	5,360	1	14
31.....	2,460	C 4	27	--	--	--	5,780	1	16
Total.	180,090	--	16,264	110,930	--	4,559	213,060	--	8,502

	JANUARY			FEBRUARY			MARCH		
1.....	5,840	C 1	26	11,600	19	600	6,210	6	100
2.....	6,780	C 1	18	10,300	15	420	6,350	8	140
3.....	6,370	C 1	17	9,970	12	320	6,370	6	100
4.....	6,290	C 2	34	10,300	9	250	6,590	7	120
5.....	6,690	C 2	36	10,000	17	460	6,760	6	110
6.....	7,070	C 2	38	9,750	7	180	13,000	18	630
7.....	7,140	C 2	39	9,260	7	180	65,100	740	S 150,000
8.....	7,230	C 2	39	8,170	4	88	132,000	950	340,000
9.....	7,400	2	40	7,250	6	120	118,000	830	260,000
10.....	7,940	2	43	6,880	9	170	54,400	310	46,000
11.....	10,200	7	190	7,070	3	57	37,700	140	14,000
12.....	10,900	6	180	7,120	3	58	29,700	90	7,200
13.....	9,680	5	130	7,600	2	41	24,000	62	4,000
14.....	8,720	C 3	71	8,230	3	67	20,300	54	3,000
15.....	8,170	C 3	66	8,000	14	300	21,000	60	3,400
16.....	7,820	C 3	63	8,850	9	220	48,600	180	24,000
17.....	7,430	C 3	60	9,930	14	380	66,500	260	47,000
18.....	7,010	C 3	57	11,200	23	700	44,100	200	24,000
19.....	6,340	C 3	51	11,500	17	530	31,400	72	6,100
20.....	5,440	C 3	44	10,500	18	510	23,900	42	2,700
21.....	4,930	C 3	40	10,200	14	390	20,000	27	1,500
22.....	4,920	C 3	40	9,890	10	270	19,500	22	1,200
23.....	5,210	C 3	42	9,740	10	260	22,000	22	1,300
24.....	5,270	C 6	85	9,720	10	260	23,900	26	1,700
25.....	5,070	C 6	82	9,030	8	200	22,400	31	1,900
26.....	5,170	C 6	84	8,120	16	350	20,400	32	1,800
27.....	6,460	20	350	6,700	6	110	19,000	33	1,700
28.....	9,630	130	3,400	6,350	6	100	17,500	31	1,500
29.....	14,900	63	2,500	--	--	--	16,600	29	1,300
30.....	16,300	58	2,600	--	--	--	15,600	27	1,100
31.....	14,100	26	900	--	--	--	14,800	23	920
Total.	242,420	--	11,445	253,230	--	7,591	973,680	--	948,520

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
C Composite period.

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	13,000	22	770	7,510	10	200	9,180	21	520
2	11,700	23	730	7,020	10	190	8,330	14	310
3	10,500	22	620	6,910	12	220	7,670	11	230
4	9,690	21	550	7,840	14	300	7,160	13	250
5	9,120	20	490	7,350	14	280	6,550	12	210
6	8,670	21	490	6,800	13	240	5,950	14	220
7	8,660	21	490	7,350	18	360	5,420	11	160
8	9,110	22	540	20,500	62	S 4,200	4,910	10	120
9	9,350	31	780	42,700	210	24,000	4,480	10	120
10	8,890	21	500	35,500	140	S 14,000	4,200	13	150
11	8,250	16	360	26,900	64	4,600	4,010	14	150
12	7,980	16	340	23,500	49	3,100	3,770	12	120
13	7,650	18	370	26,800	59	4,300	3,560	13	120
14	7,260	14	270	23,200	55	3,400	3,360	14	130
15	6,920	14	260	19,700	41	2,200	3,140	17	140
16	6,620	16	290	19,700	35	1,900	2,930	16	130
17	6,500	16	280	23,900	40	2,600	2,790	16	120
18	6,770	18	330	22,800	41	2,500	2,580	18	130
19	7,410	17	340	19,500	35	1,800	2,640	21	150
20	7,840	18	380	17,100	28	1,300	3,100	23	190
21	7,580	14	290	14,800	25	1,000	3,000	24	190
22	7,120	12	230	13,100	22	780	4,160	34	380
23	6,790	10	180	11,400	18	550	4,480	30	360
24	6,680	13	230	10,300	14	390	4,200	22	250
25	6,550	10	180	9,430	14	360	4,660	25	310
26	6,240	9	150	8,450	11	250	4,910	24	320
27	6,420	10	170	7,670	10	190	3,890	20	210
28	6,970	8	150	7,080	10	190	3,170	18	150
29	8,030	12	260	6,750	11	200	2,680	15	110
30	7,980	12	260	7,260	13	250	2,540	13	89
31	--	--	--	8,140	19	420	--	--	--
Total	242,250	--	11,280	476,960	--	76,290	133,420	--	6,039

Day	JULY			AUGUST			SEPTEMBER		
1	2,570	12	83	4,610	29	360	6,280	20	340
2	2,690	25	180	4,020	24	260	4,950	12	160
3	3,180	25	210	3,470	23	220	4,300	12	140
4	3,910	26	270	5,680	44	670	3,640	12	120
5	4,570	32	390	6,510	47	830	3,410	C 11	100
6	4,760	30	390	6,200	39	650	3,150	C 11	94
7	4,190	26	290	6,180	39	650	2,790	C 11	83
8	3,330	18	160	6,400	46	800	2,580	C 11	77
9	2,980	16	130	5,310	42	600	2,440	C 7	46
10	2,640	16	110	4,380	24	280	2,370	C 7	45
11	4,160	45	510	3,640	18	180	2,340	C 7	44
12	7,650	95	2,000	3,090	15	130	2,200	C 7	42
13	7,300	68	1,300	2,810	11	83	1,940	C 7	37
14	7,790	71	1,500	2,510	11	75	2,020	C 8	44
15	5,920	61	980	2,430	12	79	1,970	C 8	43
16	5,070	34	470	2,250	13	79	1,930	C 8	42
17	5,040	24	330	2,050	12	66	1,830	C 8	40
18	4,480	21	250	1,860	10	50	1,820	C 12	59
19	4,040	15	160	1,840	7	35	1,780	C 12	58
20	3,820	15	150	1,940	5	26	1,770	C 12	57
21	3,520	15	140	1,960	12	64	1,640	C 12	53
22	3,670	17	170	1,920	14	73	1,800	6	29
23	5,240	17	240	1,750	14	66	1,920	6	31
24	5,960	20	320	2,060	18	100	1,990	4	21
25	4,930	19	250	6,220	71	1,200	1,920	C 7	36
26	4,440	18	220	12,900	130	4,500	1,980	C 7	37
27	3,690	14	140	13,800	160	6,000	1,830	C 7	35
28	3,130	14	120	13,900	63	2,400	1,700	C 7	32
29	2,830	8	61	13,400	43	1,600	2,000	8	43
30	3,170	16	140	10,300	32	890	6,690	48	S 950
31	5,110	39	540	8,160	23	510	--	--	--
Total	135,780	--	12,204	163,550	--	23,526	78,980	--	2,938

Total discharge for year (cfs-days)	3204350
Total load for year (tons)	1129158

S Computed by subdividing day.
C Composite period.

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 8, 1967.....	2250	40		14400	940	2060	33	50	65	80	89	93	97	99	100			SBWC
Mar. 8.....	2250	40		14400	940	1690	9	21	37	50	93	93	97	99	100			SBN
Mar. 17.....	0815	42		71500	271	1140	42	50	66	80	89	94	98	99	100			SBWC
May 9.....	0810	51		43500	246	1060	35	45	61	75	90	99	100	--	--			SBWC

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.

LOCATION.--Lat 39°23'16", long 77°22'40" at Reich's Ford Bridge, 1 mile downstream from U.S. Highway 40, 1.2 miles downstream from gaging station, and 2 miles southeast of Frederick, Frederick County.
DRAINAGE AREA.--817 square miles upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: December 1964 to September 1967.
Water temperatures: October 1960 to September 1967.
Sediment records: October 1960 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 84°F June 16; minimum, freezing point Dec. 25.
Sediment concentrations: Maximum daily, 1,300 ppm July 22; minimum daily, 1 ppm Oct. 12, Nov. 21-27.
Sediment loads: Maximum daily, 45,000 tons Mar. 7; minimum daily, 1 ton Oct. 12, Nov. 21-27.
EXTREMES, 1960-67.--Water temperatures: Maximum, 87°F July 2, 12-13, 26, Aug. 27, 1966; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,300 ppm July 22, 1967; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 45,000 tons Mar. 7, 1967; minimum daily, less than 0.50 ton on many days.
REMARKS.--No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^+	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 2, 1966...	2130	9.1		0.02	0.00	25	6.3	5.9	3.6	60	33	9.9	0.2	11	149	89	40		228	6.6	20
Nov. 2.....	168	2.0		.01	.02	30	5.0	5.4	2.0	90	16	9.9	.1	5.2	122	96	22		217	7.2	6
Dec. 4.....	292	9.8		.01	.00	25	6.0	5.3	2.0	64	26	8.3	.2	10	142	87	35		209	6.7	1
Jan. 2, 1967...	932	8.6		--	--	24	6.1	6.4	1.9	55	28	12	.2	12	142	85	40		217	6.8	1
Feb. 3.....	1630	9.0		--	--	16	2.4	2.1	.7	40	14	3.5	.2	4.9	76	50	17		117	6.8	0
Mar. 2.....	450	7.1		--	--	27	5.0	5.6	1.3	69	20	9.2	.0	12	128	88	32		204	7.9	5
Apr. 2.....	823	4.9		--	--	23	5.2	4.7	1.3	65	19	8.0	.0	9.0	113	79	26		180	7.9	3
June 6.....	296	1.6		--	--	26	4.5	5.6	1.8	80	14	9.0	.1	3.2	104	84	18		191	7.0	2
July 6.....	328	.9		--	--	26	4.5	7.0	3.9	81	17	13	.1	2.6	116	84	17		208	7.3	7
Aug. 2.....	296	7.3		--	--	26	5.4	6.7	4.0	80	20	10	.3	7.7	132	87	22		223	6.8	3
Sept. 4.....	260	3.9		.00	.00	32	6.5	6.0	2.8	97	19	9.6	.2	8.6	138	107	27		239	7.8	5

POTOMAC RIVER BASIN--Continued

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.--Continued

Temperature (°F) of water, water year October 1966 to September 1967
(Once-daily measurement at approximately 1730)

MONTH	DAY																													AVER-AGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER..	52	57	--	59	60	59	59	59	61	63	61	61	58	62	61	62	55	53	50	51	52	52	53	55	54	55	55	55	54	50	50	56
NOVEMBER.	52	56	51	47	47	47	46	49	53	57	56	54	--	--	--	46	48	52	42	43	42	41	41	46	48	46	48	47	44	41	--	47
DECEMBER.	43	38	--	33	34	34	39	47	50	55	50	45	40	40	39	38	39	42	40	38	37	35	38	--	32	34	33	34	34	37	35	39
JANUARY..	35	36	37	38	35	36	37	38	38	38	--	36	40	56	40	39	39	34	33	35	36	41	44	48	51	51	--	50	34	38	37	39
FEBRUARY.	41	44	41	41	41	37	--	--	34	35	39	--	34	39	41	39	37	37	37	37	37	39	38	34	32	33	33	33	--	--	--	37
MARCH....	34	38	43	43	38	38	37	39	43	47	52	44	47	53	50	45	40	37	39	40	39	43	42	42	47	50	51	51	54	55	57	44
APRIL....	59	63	--	--	--	60	58	58	58	58	56	55	51	61	66	66	--	57	--	59	60	64	63	56	56	--	51	54	57	60	--	--
MAY.....	65	66	64	62	64	--	52	53	54	57	57	58	--	55	56	58	62	56	64	66	62	62	62	63	61	64	67	--	--	64	65	60
JUNE.....	68	68	--	76	73	74	77	77	79	--	81	81	79	78	80	84	81	81	76	79	80	76	80	81	77	77	75	77	--	75	--	77
JULY.....	77	78	--	75	73	75	75	72	79	79	72	77	79	77	74	74	76	--	78	79	78	71	77	81	82	81	81	--	76	74	73	76
AUGUST...	83	79	82	81	76	79	77	75	76	73	74	69	66	66	70	71	72	74	--	71	69	72	68	63	68	70	70	70	72	71	71	72
SEPTEMBER	70	72	70	70	72	71	75	74	--	--	64	67	65	67	70	69	--	74	74	75	72	68	67	--	62	64	67	67	68	62	--	69

1-6430. MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD.--Continued

Suspended sediment, water year October 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	901	30	S 83	223	--	3	850	11	25
2..	2730	110	S 840	223	--	3	655	--	10
3..	1240	25	84	238	16	10	525	--	4
4..	792	14	30	242	--	4	324	--	20
5..	650	15	26	230	--	3	302	--	30
6..	535	10	14	223	C 5	3	375	--	20
7..	435	10	12	209	C 5	3	370	C 11	11
8..	390	4	4	209	C 5	3	500	C 11	15
9..	370	2	2	209	C 5	3	530	C 11	16
10..	338	6	5	223	C 5	3	400	--	10
11..	315	3	3	279	--	6	650	--	20
12..	288	1	1	365	--	10	860	20	46
13..	258	5	3	320	C 3	3	530	--	10
14..	250	9	6	270	C 3	2	510	--	10
15..	242	6	4	242	C 3	2	560	C 7	11
16..	250	5	3	226	--	5	560	C 7	11
17..	254	5	3	220	--	6	505	C 7	10
18..	246	6	4	216	C 18	10	615	7	12
19..	473	27	34	212	C 18	10	1140	20	62
20..	776	26	54	212	C 18	10	856	15	35
21..	548	16	24	206	C 1	1	721	12	23
22..	380	10	10	198	C 1	1	700	9	17
23..	333	7	6	198	C 1	1	645	C 4	7
24..	302	5	4	198	C 1	1	605	C 4	7
25..	292	2	2	198	C 1	1	500	C 4	5
26..	315	2	2	198	1	1	450	C 4	5
27..	310	2	2	202	1	1	410	C 4	4
28..	284	2	2	630	140	S 500	380	C 4	4
29..	258	3	2	3880	300	S 3200	850	34	78
30..	242	3	2	1360	44	160	2200	46	270
31..	226	3	2	--	--	--	1630	23	100
Total	15223	--	1273	12059	--	3969	20714	--	908

Day	JANUARY			FEBRUARY			MARCH		
1..	1100	10	30	1060	10	29	475	4	5
2..	938	9	23	1070	9	26	455	4	5
3..	1000	10	27	1470	20	79	505	6	8
4..	1050	11	31	1140	31	95	515	7	10
5..	1070	--	30	932	10	25	761	13	27
6..	844	7	16	850	8	18	2740	200	S 1900
7..	726	6	12	680	--	20	15700	1100	S 45000
8..	1670	34	S 190	505	16	22	11800	300	S 12000
9..	2760	66	S 510	600	16	26	3520	86	820
10..	1640	31	140	650	7	12	2550	39	270
11..	1270	15	51	700	13	25	2080	29	160
12..	964	--	30	720	--	20	1820	28	140
13..	838	--	20	660	--	20	1540	21	87
14..	906	C 8	20	620	--	7	1440	19	74
15..	1440	C 8	31	782	8	17	2270	120	S 800
16..	1400	C 8	30	2050	88	490	3060	90	740
17..	990	C 7	19	1640	49	220	2140	32	180
18..	850	C 7	16	1060	14	40	1630	16	70
19..	620	C 7	12	932	7	18	1270	11	38
20..	480	C 7	9	880	5	12	1200	11	36
21..	560	C 7	11	945	7	18	1260	9	31
22..	645	C 9	16	912	20	49	1550	14	59
23..	680	C 9	17	804	10	22	2620	120	850
24..	826	C 9	20	748	4	8	2080	42	240
25..	814	C 9	20	555	12	18	1830	19	94
26..	705	C 9	17	520	38	53	1450	19	74
27..	1680	140	S 1300	500	43	58	1250	14	47
28..	7020	1100	S 22000	500	14	19	1120	11	33
29..	2300	140	S 1000	--	--	--	1140	9	28
30..	1480	33	130	--	--	--	1170	8	25
31..	1170	14	44	--	--	--	966	9	23
Total	40436	--	25822	24555	--	1466	73907	--	63874

S Computed by subdividing day.
C Composite period.

1-6430. MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	872	10	24	575	9	14	449	16	19
2..	828	8	18	545	--	10	396	13	14
3..	801	15	32	570	18	28	364	11	11
4..	730	15	30	696	50	94	340	9	8
5..	680	7	13	545	39	57	320	C 8	7
6..	696	8	15	503	24	33	302	C 8	7
7..	827	17	38	954	75	S 260	296	C 8	6
8..	1160	84	S 270	2920	190	S 1700	282	C 8	6
9..	746	33	66	1610	50	220	268	12	9
10..	670	16	29	1190	30	96	264	13	9
11..	640	12	21	1040	39	110	282	11	8
12..	575	11	17	2170	91	530	257	1	1
13..	535	C 14	20	1220	30	99	240	1	1
14..	521	C 14	20	990	21	56	210	8	5
15..	530	C 15	21	1160	26	81	210	10	6
16..	508	C 15	21	1350	31	110	230	10	6
17..	516	--	30	1090	24	71	200	12	6
18..	828	28	63	912	22	54	400	20	22
19..	740	--	40	834	20	45	900	19	46
20..	575	13	20	801	27	58	600	19	31
21..	521	C 14	20	696	16	30	300	23	19
22..	521	C 14	20	630	11	19	280	12	9
23..	535	C 14	20	605	10	16	1500	20	81
24..	521	C 14	20	555	C 10	15	800	30	65
25..	494	C 14	19	512	C 10	14	350	23	22
26..	476	--	20	472	C 10	13	250	20	14
27..	680	28	51	440	C 10	12	160	12	5
28..	1220	--	300	420	--	10	166	12	5
29..	740	--	60	432	--	10	160	12	5
30..	615	13	22	702	--	20	210	21	12
31..	--	--	--	595	18	29	--	--	--
Total	20301	--	1360	27734	--	3914	10986	--	465

	JULY			AUGUST			SEPTEMBER		
1..	250	27	18	380	130	130	364	29	29
2..	307	45	S 40	296	80	64	313	20	17
3..	446	200	S 280	250	70	47	282	--	10
4..	526	210	300	350	120	110	260	16	11
5..	352	110	100	1190	400	1300	244	13	9
6..	376	76	77	696	210	390	232	9	6
7..	244	52	34	380	100	100	220	12	7
8..	208	48	27	554	130	S 620	211	13	7
9..	192	43	22	1700	540	S 2800	211	26	15
10..	199	28	15	3780	770	S 8600	220	53	31
11..	3480	1200	S 15000	1150	250	S 960	235	37	23
12..	1040	310	S 930	535	77	110	220	19	11
13..	526	110	160	384	56	58	193	18	9
14..	372	84	84	320	45	39	184	24	12
15..	302	62	51	282	30	23	178	26	12
16..	316	40	34	247	12	8	166	16	7
17..	292	46	36	229	14	9	163	15	7
18..	250	34	B 23	211	11	6	163	16	7
19..	226	18	11	199	9	5	160	17	7
20..	211	25	14	199	8	4	166	18	8
21..	223	74	45	223	10	6	175	22	10
22..	674	1300	S 2800	211	20	11	192	27	14
23..	260	370	260	187	10	5	220	25	15
24..	226	130	79	272	18	S 15	190	22	11
25..	217	82	48	2930	310	S 2900	175	20	9
26..	342	70	65	1650	130	580	166	26	12
27..	467	140	180	1900	200	1100	155	21	9
28..	306	120	99	1270	99	340	148	14	6
29..	264	130	93	913	66	160	354	120	S 130
30..	1860	1400	S 8700	560	42	64	439	76	S 93
31..	732	520	S 1200	436	32	38	--	--	--
Total	15686	--	30825	23884	--	20602	6599	--	554

Total discharge for year (cfs-days)..... 292084
Total load for year (tons)..... 155032

S Computed by subdividing day.
B Computed from estimated-concentration graph.
C Composite period.

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1966 to September 1967
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 2, 1966.....	1510	57		2950	100	412	30	49	64	79	91	98	99	99	100			BSW
Jan. 28, 1967.....	1150	50		8990	1100	2780	47	65	83	94	97	99	99	100	--			BSW
Mar. 7.....	1330	37		18000	1310	4030	--	51	69	86	95	97	98	99	100			SPW
July 11.....	2200	72		2280	646	2240	--	74	91	97	100	--	--	--	--			SPW
Aug. 10.....	1900	73		4690	726	2580	--	64	80	94	99	100	--	--	--			SPW
Aug. 25.....	1015	68		4270	369	--	40	54	72	87	98	99	99	100	--			BSW

1-6450. SENECA CREEK AT DAWSONVILLE, MD.

LOCATION.--Lat 39°07'41", long 77°20'13", at gaging station 60 feet downstream from bridge on State Highway 28, 150 feet downstream from mouth of Great Seneca Creek and 0.5 mile east of Dawsonville, Montgomery County.
DRAINAGE AREA.--101 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1965 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 2, 1966...	123	10		0.01	0.00	13	3.8	5.1	2.9	33	18	8.5	0.2	5.8	93	48	22		129	6.8	5
Dec. 5.....	43	9.6		.02	.00	8.6	3.0	3.9	1.6	31	8.0	5.5	.1	3.5	66	34	9		95	6.8	0
Jan. 11, 1967..	100	8.5		--	--	9.3	3.3	4.4	1.7	24	14	6.4	.1	7.4	79	37	17		106	6.9	0
Jan. 30.....	74	6.6		--	--	9.0	3.3	4.3	1.6	24	12	6.1	.1	7.9	85	36	17		102	6.7	0
Feb. 24.....	87	9.1		--	--	8.5	4.1	4.3	1.2	22	12	7.1	.1	7.9	68	38	20		100	7.4	3
Apr. 3.....	89	6.9		--	--	7.7	2.8	3.7	1.4	25	8.8	5.2	.0	6.2	54	31	10		87	6.7	5
May 1.....	67	7.4		--	--	6.8	3.4	3.4	1.0	27	6.0	5.2	.0	4.4	52	31	9		82	6.8	4
May 30.....	72	8.3		--	--	7.8	2.8	4.1	1.3	29	6.4	5.7	.0	5.6	57	31	7		87	6.9	7
July 31.....	54	8.9		--	--	9.2	3.0	4.3	2.2	35	6.0	6.9	.2	3.3	61	36	7		101	6.7	0
Sept. 7.....	57	6.2		.00	.00	9.2	3.1	4.3	1.6	32	8.4	5.2	.1	4.1	59	36	10		97	6.5	3

1-6452. WATTS BRANCH AT ROCKVILLE, MD.

LOCATION.--Lat 39°05'03", long 77°10'38", temperature recorder at gaging station 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 square miles.
RECORDS AVAILABLE.--Water temperatures: September 1957 to June 1967 (discontinued).
EXTREMES, 1966-67.--Water temperatures: Minimum, 33°F December 13.
EXTREMES, 1957-67.--Water temperatures: Maximum, 88°F June 29, 30, 1959; minimum, freezing point on many days during winter months.

Temperature (°F) of water October 1966 to June 1967

MONTH	DAY																													AVER-AGE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
OCTOBER																																
MAXIMUM	59	58	59	62	60	57	56	58	60	62	58	58	57	60	61	63	55	51	51	52	53	54	56	55	53	55	53	53	54	51	50	56
MINIMUM	55	53	52	54	55	52	50	50	54	55	52	51	51	53	56	55	51	48	50	49	47	48	50	52	52	50	48	46	47	46	44	50
NOVEMBER																																
MAXIMUM	54	56	56	48	48	49	47	50	54	56	56	52	49	47	47	46	49	49	49	44	43	43	44	45	49	50	47	49	44	42	--	48
MINIMUM	47	52	46	43	42	45	42	44	49	52	52	48	44	41	42	40	44	46	43	39	39	38	38	39	44	45	43	44	42	41	--	43
DECEMBER																																
MAXIMUM	43	41	38	36	37	41	44	49	52	54	53	44	39	40	40	40	40	43	41	39	41	42	40	39	35	36	36	35	36	37	38	40
MINIMUM	40	38	35	34	34	37	40	44	46	48	44	39	33	35	39	36	36	40	39	37	37	38	38	34	34	35	34	34	34	35	35	37
JANUARY																																
MAXIMUM	40	41	42	42	40	39	42	41	41	42	39	39	41	42	42	40	40	37	35	36	40	44	48	50	52	51	48	45	40	40	40	41
MINIMUM	37	38	38	39	36	36	37	39	38	37	36	36	35	39	40	36	35	34	34	34	35	37	39	43	45	44	45	38	36	35	35	37
FEBRUARY																																
MAXIMUM	43	47	43	42	42	41	37	35	35	36	40	39	37	41	41	46	41	40	42	41	40	42	43	40	36	36	36	42	--	--	--	40
MINIMUM	37	41	38	36	38	36	35	35	35	35	35	35	35	35	38	41	37	36	36	38	36	35	38	36	35	35	35	36	--	--	--	36
MARCH																																
MAXIMUM	38	42	50	45	42	42	42	46	49	50	54	50	45	58	53	47	43	43	44	42	41	46	43	48	51	52	49	49	53	54	55	47
MINIMUM	34	34	39	41	40	40	36	37	39	40	44	45	43	45	43	39	37	35	35	38	38	39	41	41	39	41	43	44	46	42	43	40
APRIL																																
MAXIMUM	57	62	59	55	47	56	58	59	54	58	56	56	49	63	65	62	55	61	53	67	59	65	61	53	59	51	49	58	60	61	--	57
MINIMUM	44	48	49	44	45	48	51	47	46	49	45	42	44	47	53	53	51	50	47	45	49	54	49	48	45	47	47	44	45	50	--	47
MAY																																
MAXIMUM	64	67	64	57	64	56	51	54	58	60	59	65	56	55	60	61	57	66	66	67	59	56	61	63	65	66	68	71	62	63	63	61
MINIMUM	53	56	54	59	50	51	49	48	47	50	52	54	53	52	54	52	50	50	55	57	54	54	53	52	51	53	53	58	58	56	56	53
JUNE																																
MAXIMUM	65	69	70	71	71	70	73	72	74	75	76	76	77	71	73	77	78	71	71	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	53	55	56	57	58	68	58	59	60	63	63	63	64	65	64	65	66	67	66	--	--	--	--	--	--	--	--	--	--	--	--	--

1-6476.85. WILLIAMSBURG RUN NEAR OLNEY, MD.

LOCATION.--Lat 39°08'32", long 77°05'48", at gaging station 0.2 mile downstream from Cashell Road, 0.5 mile upstream from mouth, and 1.8 miles southwest of Olney, Montgomery County.
DRAINAGE AREA.--2.25 square miles.
RECORDS AVAILABLE.--Sediment records: December 1966 to September 1967.
EXTREMES, December 1966 to September 1967.--Sediment concentrations: Maximum daily, 2,320 ppm Aug. 4; minimum daily, not determined.
Sediment loads: Maximum daily, 331 tons Mar. 7; minimum daily, less than 0.05 ton on many days during period.

Suspended sediment, December 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER			
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)		Tons per day
1							1.1	---		T
2							1.1	---		T
3							.95	---		T
4							.91	---		T
5							.96	---		T
6							1.0	---		T
7							1.1	---		T
8							1.0	---		T
9							.94	---		T
10							.99	---		T
11							1.9	---		0.1
12							1.1	---		T
13							1.1	---		T
14							1.3	---		T
15							1.6	---		T
16							1.2	---		T
17							1.3	---		T
18							2.8	20	B	.2
19							2.0	---		.1
20							1.5	---		T
21							1.4	---		T
22							1.4	---		T
23							1.3	---		T
24							1.5	---		T
25							1.2	---		T
26							1.3	---		T
27							1.2	---		T
28							1.3	---		T
29							5.7	90	B	1.4
30							2.9	---		.1
31							1.8	---		.1
Total							46.85	---		2.7

T Less than 0.05 ton.
B Computed from estimated-concentration graph.

1-6476.85. WILLIAMSBURG RUN NEAR OLNEY, MD.--Continued

Suspended sediment, December 1966 to September 1967--Continued

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1.7	---	T	1.6	---	T	1.3	---	T
2	2.0	---	T	2.3	---	0.1	1.4	---	T
3	2.4	---	0.1	2.0	---	.1	1.7	5	T
4	2.7	10	.1	1.6	---	T	1.9	---	T
5	2.3	---	T	1.6	---	T	2.4	---	T
6	1.7	---	T	1.5	---	T	7.3	142 S	6.5
7	2.1	---	T	1.3	---	T	49	1220 A	391
8	8.5	226 A	7.2	1.0	---	T	3.6	15	.1
9	3.2	15	.1	1.3	---	T	2.8	---	.1
10	2.3	---	.1	1.5	---	T	2.5	---	.1
11	1.9	---	.1	1.7	---	T	2.5	---	.1
12	1.7	---	T	1.7	---	T	2.4	---	.1
13	1.8	---	T	1.4	---	T	2.1	---	.1
14	2.3	---	.1	2.1	---	.1	2.4	10	.1
15	2.1	---	.1	6.6	207 A	6.3	11	459 A	19
16	1.7	---	T	4.7	60	.8	3.6	30	.3
17	1.6	---	T	2.1	---	.1	2.6	---	.1
18	1.4	---	T	2.1	---	.1	2.2	---	.1
19	1.2	---	T	2.1	---	T	2.1	---	.1
20	1.1	4	T	2.2	5	T	2.2	---	.1
21	1.2	---	T	4.2	40 B	.5	2.7	---	.1
22	1.2	---	T	2.4	---	.1	4.8	50 B	.6
23	1.4	---	T	2.4	---	.1	3.1	---	.3
24	2.0	---	T	1.8	---	T	2.6	---	.2
25	1.5	---	T	1.3	---	T	2.5	---	.1
26	1.4	---	T	1.2	---	T	2.3	---	.1
27	12	2000 S	197	1.2	---	T	2.1	---	.1
28	3.0	50	.4	1.6	---	T	2.1	15	.1
29	2.0	---	.1	---	---	---	2.6	16	.1
30	1.6	---	.1	---	---	---	2.1	---	.1
31	1.5	---	T	---	---	---	2.0	---	.1
Total	74.5	---	206.1	58.5	---	8.9	135.9	---	359.9

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	2.0	---	0.1	1.2	4	T	0.96	---	T
2	2.0	---	T	1.2	---	T	.93	8	T
3	2.0	---	T	1.7	10	T	.91	---	T
4	1.7	---	T	1.2	---	T	.89	---	T
5	1.7	8	T	1.2	---	T	.89	---	T
6	2.4	---	.1	1.3	---	T	.87	---	T
7	3.3	50 B	.4	16	904 S	80	.84	---	T
8	2.1	---	.1	3.0	20	.2	.81	---	T
9	2.1	---	T	2.2	---	.1	.77	---	T
10	2.0	---	T	1.7	---	.1	.74	---	T
11	1.7	---	T	1.9	---	.1	.72	---	T
12	1.7	2	T	1.7	---	T	.71	35	0.1
13	1.7	---	T	1.4	---	T	.69	---	.1
14	1.7	---	T	1.7	---	T	.69	---	.1
15	1.7	---	T	2.2	---	.1	.71	---	T
16	1.7	---	T	1.9	---	.1	.68	---	T
17	1.9	20	.1	1.4	---	T	.65	---	T
18	1.9	---	.1	1.3	---	T	.64	---	T
19	1.7	---	.1	1.6	---	T	.67	18	T
20	1.7	---	T	1.5	---	T	.64	---	T
21	1.5	9	T	1.2	---	T	.61	---	T
22	1.6	---	T	1.6	---	T	2.1	923 S	19
23	1.3	---	T	1.3	---	T	.80	50	.1
24	1.3	---	T	1.2	---	T	.70	---	.1
25	1.2	---	T	1.1	---	T	.65	---	.1
26	1.5	3	T	1.1	7	T	.62	31	.1
27	2.3	13	.1	1.0	---	T	.61	---	T
28	1.5	---	T	.99	---	T	.60	---	T
29	1.3	---	T	1.2	---	T	.60	---	T
30	1.2	---	T	1.1	---	T	.85	200 A	.5
31	---	---	---	1.0	---	T	---	---	---
Total	53.4	---	1.7	60.9	---	81.4	23.57	---	20.7

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6476.85. WILLIAMSBURG RUN NEAR OLNEY, MD.--Continued

Suspended sediment, December 1966 to September 1967--Continued

Day	JULY				AUGUST				SEPTEMBER			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	0.70	---		0.1	0.61	---		T	0.89	---		T
2	1.2	300	B	1.0	.59	---		T	.81	---		T
3	2.2	200	B	1.2	2.8	1030	A	88	.81	---		T
4	1.1	50	B	.1	14	2320	A	259	.79	---		T
5	.80	100	A	.2	2.9	150		1.2	.78	---		T
6	.70	---		.1	.91	---		.1	.77	---		T
7	.69	---		.1	.77	---		T	.76	---		T
8	.72	---		.1	.75	---		T	.75	6		T
9	.73	---		T	.72	11		T	.75	---		T
10	.68	19		T	.73	27		.1	.76	---		T
11	.68	---		T	.69	---		T	.73	---		T
12	.67	---		T	.66	---		T	.71	---		T
13	.68	---		T	.65	---		T	.70	---		T
14	.85	---		T	.66	12		T	.69	---		T
15	.91	---		.1	.64	---		T	.67	---		T
16	.70	---		T	.61	---		T	.67	---		T
17	.67	23		T	.60	---		T	.68	---		T
18	.68	---		T	.60	---		T	.67	---		T
19	.65	---		T	.94	200	B	.5	.66	---		T
20	2.4	400	B	2.6	2.6	500	B	3.5	.65	5		T
21	1.1	70	A	.2	.87	100	A	.2	.75	---		0.1
22	.71	---		.1	.69	---		.1	.70	---		.1
23	.66	---		T	.68	20		T	.65	---		T
24	.64	---		T	10	804	S	60	.65	---		T
25	.62	---		T	43	340	S	180	.62	---		T
26	.63	12		T	1.8	50	B	.2	.62	9		T
27	.61	---		T	4.3	200	B	2.3	.64	---		T
28	.61	---		T	1.5	---		.1	.63	---		T
29	.67	---		T	1.1	---		T	.64	---		T
30	.84	---		.2	.98	9		T	.60	---		T
31	.65	43		.1	.93	---		T	---	---		---
Total	26.15	---		6.7	99.28	---		595.7	21.20	---		0.6

Total discharge for period (cfs-days)..... 599.44
Total load for period (tons)..... 1284.4

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6477.2. NORTH BRANCH ROCK CREEK NEAR NORBECK, MD.

LOCATION.--Lat 39°06'59", long 77°06'09", at gaging station, 550 feet downstream from bridge on Muncaster Mill Road (State Highway 115), 0.7 mile upstream from Manor Run, 1.5 miles northwest of Norbeck, Montgomery County, and 2 miles upstream from mouth.
DRAINAGE AREA.--9.73 square miles.
RECORDS AVAILABLE.--Sediment records (periodic): November 1966 to September 1967.

Periodic daily suspended sediment, November 1966 to September 1967

Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)	Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)
Nov. 28, 1966.	22	243	S	26	Mar. 23, 1967.	16	20	B	0.9
Nov. 29.....	11	30		.9	May 7.....	73	727	S	238
Dec. 29.....	23	96	A	6.2	June 22.....	8.9	289	A	17
Jan. 27, 1967.	40	1050	S	317	June 23.....	4.6	160		2.0
Jan. 28.....	15	70		2.8	Aug. 3.....	2.6	46	S	2.2
Feb. 15.....	22	79	A	6.5	Aug. 4.....	58	3130	S	1200
Feb. 16.....	21	20	A	1.1	Aug. 5.....	31	219	S	48
Mar. 6.....	23	53	B	5.5	Aug. 24.....	24	555	S	146
Mar. 7.....	263	1590	A	2020	Aug. 25.....	194	1450	A	2040
Mar. 15.....	45	281	S	50	Aug. 27.....	42	2410	A	598
Mar. 16.....	20	30		1.6	Aug. 28.....	12	200	B	7.4
Mar. 22.....	23	68	B	5.3					

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6477.25. MANOR RUN NEAR NORBECK, MD.

LOCATION.--Lat 39°06'36", long 77°06'00", at gaging station, 100 feet downstream from ford on Farm Lane, 0.5 mile upstream from mouth, and 1.2 miles west of Norbeck, Montgomery County.
DRAINAGE AREA.--1.01 square miles.
RECORDS AVAILABLE.--Sediment records (periodic): November 1966 to September 1967.

Periodic daily suspended sediment, November 1966 to September 1967

Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)	Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)
Nov. 28, 1966.	4.4	519	A	13	May 7, 1967.	14	3670	S	265
Jan. 27, 1967.	6.0	2180	S	213	May 8.....	1.9	140		.7
Jan. 28.....	1.5	50		.2	June 22.....	4.2	1410	S	122
Mar. 6.....	3.4	552	A	9.3	June 23.....	.42	80		.1
Mar. 7.....	42	1640	S	459	Aug. 3.....	2.0	1030	S	61
Mar. 8.....	1.5	70		.3	Aug. 4.....	5.7	3700	S	372
Mar. 15.....	6.6	795	A	26	Aug. 5.....	.98	490	S	4.0
Mar. 16.....	1.8	50		.2	Aug. 24.....	14	3950	S	968
Apr. 17.....	1.5	326	S	3.5	Aug. 25.....	27	1270		640

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.

1-6500.5. NORTHWEST BRANCH ANACOSTIA RIVER AT NORWOOD, MD.

LOCATION.--Lat 39°07'36",long 77°01'15", at gaging station, 20 feet downstream from bridge on Ednor Road, 0.2 mile downstream from tributary, 0.4 mile east of Norwood, Montgomery County, 1.6 miles south of Sandy Spring, and 19 miles upstream from mouth.
DRAINAGE AREA.--2.45 square miles.
RECORDS AVAILABLE.--Sediment records (periodic): March to September 1967.

Periodic daily suspended sediment, March to September 1967

Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)	Date	Mean discharge (cfs)	Mean concentration (ppm)		Load (tons)
Mar. 15, 1967.	14	234	A	13	June 23, 1967.	0.76	50		0.1
May 7.....	19	1380	A	188	Aug. 4.....	12	583	S	229
June 22.....	2.9	676	S	22	Aug. 5.....	2.4	60		.4

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.

1-6500.85. NURSERY RUN AT CLOVERLY, MD.

LOCATION.--Lat 39°07'05", long 77°00'24", at gaging station 300 feet upstream from culvert on Bryants Nursery Road, 350 feet upstream from mouth, 0.8 mile northwest of Cloverly, Montgomery County, and 2.4 miles southeast of Sandy Spring.
DRAINAGE AREA.--0.35 square miles.
RECORDS AVAILABLE.--Sediment records: December 1966 to September 1967.
EXTREMES, 1966-67.--Sediment concentrations: Maximum daily, 264 ppm Aug. 24; minimum daily, not determined.
Sediment loads: Maximum daily, 24 tons Aug. 25; minimum daily, less than 0.05 ton on many days during period.

Suspended sediment, December 1966 to September 1967

	OCTOBER			NOVEMBER			DECEMBER			
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)		LOAD (TONS)
1							0.26	2		T
2							.25	2		T
3							.22	2		T
4							.22	2		T
5							.22	2		T
6							.22	2		T
7							.22	2		T
8							.22	2		T
9							.22	2		T
10							.25	3		T
11							.42	15	B	T
12							.26	3		T
13							.27	3		T
14							.36	10		T
15							.33	3		T
16							.29	3		T
17							.29	3		T
18							.41	10		T
19							.35	3		T
20							.31	3		T
21							.33	5		T
22							.30	3		T
23							.29	3		T
24							.31	10		T
25							.28	3		T
26							.28	3		T
27							.25	3		T
28							.26	3		T
29							.69	10		T
30							.46	3		T
31							.37	3		T
TOTAL							9.41	--		0.1

T Less than 0.05 ton.
B Computed from estimated-concentration graph.

1-6500.85. NURSERY RUN AT CLOVERLY, MD.--Continued

Suspended sediment, December 1966 to September 1967--Continued

DAY	JANUARY MEAN DISCHARGE (CFS)	JANUARY MEAN CONCEN-TRATION (PPM)	JANUARY LOAD (TONS)	FEBRUARY MEAN DISCHARGE (CFS)	FEBRUARY MEAN CONCEN-TRATION (PPM)	FEBRUARY LOAD (TONS)	MARCH MEAN DISCHARGE (CFS)	MARCH MEAN CONCEN-TRATION (PPM)	MARCH LOAD (TONS)
1	0.35	3	T	0.30	6	T	0.28	2	T
2	.37	3	T	.33	6	T	.29	2	T
3	.40	3	T	.34	6	T	.33	2	T
4	.41	3	T	.30	6	T	.34	2	T
5	.37	3	T	.30	6	T	.37	2	T
6	.33	3	T	.28	6	T	.74	15	A T
7	.33	3	T	.25	6	T	6.4	201	A 9.2
8	.84	12	T	.24	6	T	.68	8	T
9	.54	7	T	.26	6	T	.54	4	T
10	.42	3	T	.31	6	T	.48	3	T
11	.37	3	T	.33	6	T	.47	3	T
12	.35	3	T	.32	6	T	.44	3	T
13	.34	3	T	.29	6	T	.41	3	T
14	.40	8	T	.35	6	T	.43	3	T
15	.39	3	T	.67	20	A T	1.1	32	A .1
16	.35	3	T	.67	75	A 0.1	.61	4	T
17	.32	3	T	.43	8	T	.50	3	T
18	.31	3	T	.41	6	T	.43	3	T
19	.29	3	T	.37	6	T	.42	3	T
20	.27	10	T	.40	6	T	.43	3	T
21	.27	3	T	.54	6	T	.51	10	T
22	.27	3	T	.42	6	T	.69	30	.1
23	.27	3	T	.40	5	T	.55	3	T
24	.30	3	T	.37	5	T	.50	3	T
25	.28	3	T	.30	4	T	.44	3	T
26	.28	3	T	.28	4	T	.43	3	T
27	.78	129	A 0.6	.26	3	T	.43	3	T
28	.46	10	T	.29	3	T	.44	3	T
29	.33	6	T	--	--	--	.59	20	T
30	.31	6	T	--	--	--	.47	3	T
31	.30	6	T	--	--	--	.43	3	T
TOTAL	11.59	--	0.7	10.01	--	0.4	21.17	--	9.5

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (PPM)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (PPM)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (PPM)	JUNE LOAD (TONS)
1	0.43	3	T	0.33	2	T	0.27	5	T
2	.43	3	T	.34	2	T	.27	5	T
3	.43	3	T	.52	2	T	.24	5	T
4	.43	3	T	.34	2	T	.23	5	T
5	.43	3	T	.34	2	T	.22	5	T
6	.48	3	T	.41	5	T	.21	5	T
7	.85	29	B 0.1	2.8	69	A 1.0	.21	5	T
8	.45	4	T	.70	10	T	.20	5	T
9	.43	3	T	.53	5	T	.20	5	T
10	.43	3	T	.44	5	T	.19	5	T
11	.39	3	T	.49	5	T	.19	5	T
12	.39	3	T	.42	5	T	.18	5	T
13	.39	3	T	.39	5	T	.17	5	T
14	.39	3	T	.46	5	T	.17	5	T
15	.39	3	T	.50	5	T	.19	4	T
16	.38	3	T	.40	5	T	.17	4	T
17	.66	10	A T	.38	5	T	.16	3	T
18	.48	4	T	.37	5	T	.17	3	T
19	.40	3	T	.45	5	T	.19	3	T
20	.39	2	T	.37	5	T	.18	3	T
21	.39	2	T	.34	5	T	.15	3	T
22	.42	2	T	.43	5	T	1.1	97	B 1.1
23	.37	2	T	.37	5	T	.31	10	T
24	.37	2	T	.34	5	T	.22	5	T
25	.35	3	T	.30	5	T	.18	4	T
26	.47	3	T	.30	5	T	.16	4	T
27	.53	3	T	.28	5	T	.16	4	T
28	.41	3	T	.27	5	T	.15	4	T
29	.37	3	T	.35	5	T	.16	4	T
30	.34	3	T	.32	5	T	.30	4	T
31	--	--	--	.30	5	T	--	--	--
TOTAL	13.12	--	0.2	14.58	--	1.2	6.90	--	1.2

T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6500.85. NURSERY RUN AT CLOVERY, MD.--Continued

Suspended sediment, December 1966 to September 1967--Continued

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCEN-TRATION (PPM)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCEN-TRATION (PPM)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCEN-TRATION (PPM)	SEPTEMBER LOAD (TONS)
1	0.21	4	T	0.18	4	T	0.24	5	T
2	.92	40	B 0.2	.16	4	T	.21	5	T
3	.85	20	B T	1.0	112	A 5.2	.21	4	T
4	.30	10	T	3.0	230	S 9.8	.21	4	T
5	.25	7	T	.91	10	T	.20	4	T
6	.20	3	T	.35	5	T	.19	4	T
7	.19	3	T	.26	4	T	.19	4	T
8	.19	3	T	.25	3	T	.19	4	T
9	.21	3	T	.22	3	T	.19	4	T
10	.18	3	T	.20	3	T	.19	3	T
11	.18	3	T	.18	3	T	.17	3	T
12	.16	3	T	.17	3	T	.17	2	T
13	.16	3	T	.17	2	T	.17	2	T
14	.34	5	T	.16	2	T	.16	2	T
15	.28	3	T	.15	2	T	.16	2	T
16	.18	2	T	.15	2	T	.16	2	T
17	.17	2	T	.15	2	T	.17	2	T
18	.17	2	T	.14	2	T	.17	2	T
19	.16	2	T	.27	2	T	.15	2	T
20	.38	10	T	.50	5	T	.15	2	T
21	.27	8	T	.30	7	T	.23	7	T
22	.19	3	T	.23	5	T	.18	2	T
23	.16	2	T	.25	5	T	.15	2	T
24	.15	2	T	3.7	264	S 11	.15	2	T
25	.15	2	T	7.0	262	S 24	.15	1	T
26	.15	2	T	.61	10	T	.14	1	T
27	.14	2	T	.86	5	T	.14	1	T
28	.14	2	T	.56	5	T	.16	1	T
29	1.4	208	S 9.5	.29	5	T	.16	1	T
30	.54	70	S .2	.27	5	T	.15	1	T
31	.22	4	T	.26	5	T	--	--	--
TOTAL	9.1	--	10.0	22.90	--	50.1	5.26	--	

Total discharge for period (cfs-days)..... 124.12
Total load for period (tons)..... 70.5

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6504.5. BEL PRE CREEK AT LAYHILL, MD.

LOCATION.--Lat 39°05'27", long 77°03'11", at gaging station, 130 feet upstream from bridge on Bel Pre Road, 0.5 mile west of Layhill, Montgomery County, 1.2 miles upstream from Lutes Run, 1.8 miles southeast of Norbeck, and 2.9 miles upstream from mouth.
DRAINAGE AREA.--1.69 square miles.
RECORDS AVAILABLE.--Sediment records (periodic): October 1966 to September 1967.

Periodic daily suspended sediment, water year October 1966 to September 1967

Date	Mean discharge (cfs)	Mean concentration (ppm)	Load (tons)	Date	Mean discharge (cfs)	Mean concentration (ppm)	Load (tons)
Oct. 18, 1966.	1.3	141	S 7.7	May 7, 1967.	31	1280	S 165
Oct. 19.....	34	855	S 117	June 22.....	10	524	S 124
Nov. 28.....	12	538	S 54	July 20.....	6.1	455	S 57
Jan. 27, 1967.	8.0	986	S 96	Aug. 3.....	5.6	1320	S 298
Mar. 6.....	8.6	434	B 31	Aug. 4.....	16	1780	S 216
Mar. 7.....	57	1350	A 421	Aug. 5.....	4.0	223	S 5.0
Mar. 15.....	15	732	A 57	Aug. 24.....	55	2930	A 504
Apr. 17.....	2.6	509	A 11	Aug. 25.....	42	69	B 30

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.

LOCATION.--Lat 39°03'55", long 77°01'48", at gaging station 400 feet upstream from bridge on State Highway 183, 1.5 miles southwest of Colesville, Montgomery County, 3 miles upstream from Burnt Mills, 10 miles upstream from Sligo Branch, and 12.5 miles upstream from mouth.
DRAINAGE AREA.--21.1 square miles.
RECORDS AVAILABLE.--Sediment records: October 1962 to September 1967.
EXTREMES, 1966-67.--Sediment concentrations: Maximum daily, 2,220 ppm Oct. 19; minimum daily, not determined.
Sediment loads: Maximum daily, 2,810 tons Mar. 7; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1962-67.--Sediment concentrations: Maximum daily, 4,340 ppm Aug. 25, 1965; minimum daily, no flow on several days during August and September 1966.
Sediment loads: Maximum daily, 4,670 tons Mar. 5, 1965; minimum daily, 0 tons on several days during August and September 1966.

Suspended sediment, water year October 1966 to September 1967
(Where no daily concentrations are reported, loads are estimated)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)
1	47	459	S 110	0.8	--	0.1	10	--	0.4
2	23	51	S 4	8.1	10	B .2	9.6	--	.3
3	11	--	.6	11	20	B .6	8.2	--	.2
4	9.2	--	.2	7.8	--	.2	7.6	--	.2
5	9.1	10	B .2	7.5	--	.2	7.2	--	.2
6	7.2	--	.2	7.7	--	.1	8.6	--	.2
7	6.5	--	.1	7.9	--	.1	8.6	--	.2
8	5.8	--	.1	8.2	--	.1	8.3	8	.2
9	5.4	--	.1	7.9	--	.1	8.3	--	.1
10	5.2	--	.1	8.9	17	B .4	8.7	10	A .3
11	5.1	--	.1	9.4	--	.3	16	36	A 2
12	5.0	--	.1	8.6	--	.2	9.5	--	.3
13	4.9	--	T	7.9	--	.1	10	--	.2
14	5.0	3	T	7.6	--	.1	16	--	.4
15	5.3	--	T	7.5	--	.1	16	--	.3
16	7.6	10	B .2	7.6	--	.1	12	--	.2
17	5.6	--	.1	7.8	--	.1	12	--	.2
18	7.3	--	.4	7.7	2	T	22	90	S 8
19	265	2220	B 1980	7.6	--	T	19	24	S 1
20	30	40	B 3	7.3	--	T	14	--	.3
21	15	--	1	7.3	--	T	14	--	.3
22	12	--	.6	7.2	--	T	14	--	.3
23	11	--	.3	6.8	--	T	12	--	.2
24	9.6	--	.2	6.9	--	T	12	--	.2
25	9.0	--	.1	6.9	--	T	14	--	.2
26	8.9	--	.1	7.2	--	T	12	--	.1
27	8.4	--	.1	6.9	--	T	12	--	.1
28	8.1	--	.1	56	518	S 165	12	--	.1
29	8.4	10	B .2	25	45	S 4	66	201	A 41
30	7.7	--	.2	13	--	.5	32	25	2
31	7.7	--	.1	--	--	--	20	--	.5
TOTAL	576.0	--	2102.6	305.0	--	173.0	451.6	--	60.2

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued
(Where no daily concentrations are reported, loads are estimated)

DAY	JANUARY MEAN DISCHARGE (CFS)	JANUARY MEAN CONCEN-TRATION (PPM)	JANUARY LOAD (TONS)	FEBRUARY MEAN DISCHARGE (CFS)	FEBRUARY MEAN CONCEN-TRATION (PPM)	FEBRUARY LOAD (TONS)	MARCH MEAN DISCHARGE (CFS)	MARCH MEAN CONCEN-TRATION (PPM)	MARCH LOAD (TONS)
1	16	--	0.4	13	--	0.7	10	--	0.2
2	17	--	.5	14	--	.8	12	--	.2
3	19	9	.5	15	--	.6	13	5	.2
4	22	15	.9	13	--	.4	14	--	.2
5	20	--	.5	13	--	.4	16	--	.2
6	15	5	.2	12	--	.3	38	187	B 42
7	16	--	.2	9.5	--	.2	535	1680	A 2810
8	77	249	A 69	10	--	.2	43	80	9
9	33	40	4	12	--	.2	27	--	6
10	21	--	2	14	--	.4	22	90	5
11	17	32	2	15	--	.8	21	--	3
12	15	7	.3	15	--	.8	20	--	2
13	15	--	.2	14	--	.4	18	--	1
14	18	--	1	16	40	B 2	18	--	.7
15	17	--	.9	57	648	A 137	90	850	S 234
16	15	--	.7	47	344	B 47	39	50	5
17	13	--	.6	22	110	6	25	--	2
18	12	--	.5	20	--	3	20	--	1
19	11	--	.4	17	--	.9	18	--	.7
20	11	14	.4	18	10	.5	18	--	.5
21	11	--	.4	40	30	B 3	22	--	.6
22	11	--	.3	23	--	.6	37	116	A 15
23	13	8	.3	21	--	.3	32	25	B 2
24	12	--	.2	17	4	.2	24	--	1
25	12	--	.2	12	--	.1	20	--	.9
26	12	--	.2	11	--	.2	19	--	.8
27	56	1650	S 503	12	7	.2	18	--	.7
28	27	171	S 15	12	--	.2	17	13	.6
29	16	55	2	--	--	--	24	48	B 3
30	13	44	2	--	--	--	19	--	.4
31	12	--	1	--	--	--	17	4	.2
TOTAL	595	--	609.8	514.5	--	207.4	1266	--	3148.1

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (PPM)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (PPM)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (PPM)	JUNE LOAD (TONS)
1	17	--	0.2	13	--	0.2	10	--	0.7
2	18	--	.3	12	--	.2	9.6	23	.6
3	16	7	.3	19	50	B 3	9.0	--	.5
4	14	--	.3	13	--	.3	8.5	--	.4
5	15	10	.4	12	--	.2	8.3	--	.4
6	16	14	.6	14	--	.2	8.2	--	.3
7	28	89	A 8	197	1460	S 1110	8.0	--	.3
8	17	--	.4	43	90	10	7.5	12	.2
9	16	--	.3	24	60	A 4	6.9	--	.2
10	16	5	.2	18	--	.2	6.7	--	.2
11	14	--	.2	20	40	B 2	12	--	.2
12	13	--	.4	17	--	.9	11	--	.2
13	14	15	.6	15	--	.4	14	--	.2
14	14	--	.5	18	50	A 2.	14	--	.2
15	14	--	.4	21	40	B 2.	16	--	.2
16	13	--	.3	17	--	1.	15	--	.2
17	20	58	A 5	15	20	.8	10	--	.2
18	19	30	2	14	--	.6	5.7	--	.1
19	15	--	.6	16	50	B 2	6.4	8	.1
20	14	--	.4	16	40	B 2	5.4	--	.1
21	14	9	.3	12	--	.6	5.1	--	.1
22	15	--	.6	16	--	1	50	1360	S 670
23	13	--	.4	14	14	.5	14	481	S 25
24	13	20	A .7	13	--	.4	7.1	--	.6
25	12	--	.2	12	30	A 1	5.9	--	.2
26	15	15	A .6	11	--	.6	5.1	212	A 3
27	23	20	A 1	11	--	.4	4.8	--	.1
28	15	--	.4	10	--	.3	4.4	--	.1
29	13	--	.2	13	50	B 2	4.3	--	.1
30	13	--	.2	12	--	1	9.2	100	A 2
31	--	--	--	11	--	.9	--	--	--
TOTAL	467	--	26.0	669	--	1152.5	302.1	--	706.7

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.--Continued

Suspended sediment, water year October 1966 to September 1967--Continued
(Where no daily concentrations are reported, loads are estimated)

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (PPM)	LOAD (TONS)
1	5.7	--	0.3	5.0	--	0.4	0.7	--	0.8
2	22	712	S 152	4.4	--	.2	7.3	--	.7
3	49	1030	S 303	12	263	A 103	6.8	--	.6
4	9.1	303	B 10	149	1390	A 1240	6.6	--	.5
5	9.0	110	A 3	75	564	A 210	6.3	--	.4
6	6.4	--	.7	13	--	1	6.0	--	.3
7	5.9	--	.5	8.6	--	.5	5.7	16	.2
8	6.7	40	B .7	7.8	--	.3	6.0	--	.2
9	7.1	--	.5	6.8	9	.2	6.0	--	.2
10	5.8	17	.3	7.3	20	A .4	6.4	--	.3
11	6.0	20	A .3	5.5	--	.1	5.7	--	.2
12	5.6	--	.2	5.5	--	.1	5.5	--	.2
13	4.8	--	.1	4.9	--	.1	5.2	14	.2
14	9.5	201	A 13	4.8	--	.1	4.8	--	.2
15	12	60	B 2	4.3	--	.1	4.4	--	.2
16	6.0	--	.4	4.4	--	.1	4.5	--	.2
17	5.2	--	.3	4.1	--	.1	5.0	--	.2
18	5.4	--	.2	4.0	--	.1	4.7	--	.2
19	4.9	--	.1	12	241	S 58	5.2	--	.2
20	32	1050	S 427	22	1380	A 131	4.1	--	.1
21	17	371	S 26	11	100	A 3	7.6	118	B 4
22	6.6	--	.4	6.5	--	.5	5.0	--	.2
23	5.4	--	.2	6.2	50	B .8	4.3	--	.1
24	4.8	21	.3	144	2000	S 1550	4.3	--	.1
25	4.6	19	.2	491	779	S 2140	4.2	--	T
26	4.6	16	.2	24	--	2	3.9	2	T
27	4.2	--	.2	23	330	B 32	3.9	--	T
28	3.8	--	.1	25	622	B 65	4.6	--	.4
29	7.1	261	S 70	12	--	2	5.3	--	.7
30	27	1240	S 255	10	--	1	4.1	--	.2
31	6.2	50	.8	8.9	42	1	--	--	--
TOTAL	309.4	--	1268.0	1122.0	--	5543.1	161.1	--	11.9

TOTAL DISCHARGE FOR YEAR (CFS-DAYS).....6738.7
TOTAL LOAD FOR YEAR (TONS).....15009.3

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
DELAWARE RIVER BASIN																					
1-4790. WHITE CLAY CREEK NEAR NEWARK, DEL. (lat 39°42'00", long 75°41'10")																					
Sept. 25, 1967.	A73	15		0.00	0.00	19	4.4	6.0	4.2	60	17	11	0.0	8.9	121	66	17		190	7.5	7
1-4823. RED LION CREEK AT RED LION, DEL. (lat 39°36'20", long 75°39'55")																					
Sept. 13, 1966.	0.03							6.7		16	5.9	13		6.3		28	15		94	6.6	2
May 2, 1967....	.2	10		0.14	0.01	6.0	3.4	5.1	2.4	11	20	8.0	0.1	4.1	77	29	20		99	6.8	12
ST. JONES RIVER BASIN																					
1-4837. ST. JONES RIVER AT DOVER, DEL. (lat 39°09'49", long 75°31'10")																					
Oct. 14, 1966..	1.7	--		--	--	--	--	B32	--	2	64	50	--	9.5	--	76	75	0.1	347	4.4	2
Nov. 14.....	12	--		--	--	--	--	B17	--	3	67	27	--	8.4	195	80	78		275	5.1	2
Dec. 9.....	11	--		--	--	--	--	B25	--	29	69	34	--	11	242	98	74		333	6.5	--
Jan. 13, 1967..	37	22		0.00	0.00	16	2.8	12	2.1	9	39	19	0.3	7.2	146	52	44		184	6.6	15
Jan. 30.....	33	29		.01	.00	19	3.7	22	2.6	50	34	24	.2	6.5	172	63	22		245	7.4	5
Mar. 1.....	34	16		.07	.00	12	2.2	12	1.9	12	28	15	.3	8.7	125	39	29		156	6.0	15
Mar. 8.....	217	13	0.1	.05	.00	11	2.5	7.5	1.8	6	26	14	.3	8.7	110	38	33		139	5.7	25
Mar. 31.....	34	17		.06	.00	15	2.5	12	2.1	24	25	16	.0	8.8	127	48	29		167	6.8	22
Apr. 28.....	6.4	4.4		.24	.00	13	2.6	14	2.3	19	24	24	.0	6.1	116	43	28		166	6.2	10
June 6.....	1.0	19		.47	.00	11	2.8	13	2.5	16	21	22	.0	10	128	39	26		163	6.9	90
July 3.....	1.6	15		.03	.00	13	2.8	15	2.8	15	26	27	.0	7.6	130	44	32		188	6.9	35
Aug. 1.....	10	21		.04	.00	17	3.2	22	3.3	42	22	30	.2	8.9	167	56	21		239	6.5	20
Sept. 5.....	13	16		.46	.00	11	2.3	8.6	2.7	25	16	9.7	.2	8.4	114	37	17		125	6.2	50
MURDERKILL RIVER BASIN																					
1-4840.2. BROWN BRANCH NEAR HOUSTON, DEL. (lat 38°57'31", long 75°30'33")																					
May 2, 1967....	1.2	22		0.03	0.00	9.5	2.5	9.1	1.5	25	15	10	0.0	9.9	100	34	14		125	6.5	7
1-4840.5. PRATT BRANCH NEAR FELTON, DEL. (lat 39°00'37", long 75°31'46")																					
May 2, 1967....	0.2	17		0.00	0.01	5.8	3.4	7.2	10	19	17	12	0.0	7.9	99	29	13		106	6.7	20
1-4840.6. DOUBLE RUN NEAR MAGNOLIA, DEL. (lat 39°03'16", long 75°29'43")																					
May 2, 1967....	0.4	15		0.09	0.01	4.5	2.5	7.2	1.9	13	9.2	9.5	0.0	7.1	76	22	11		86	6.2	30
WICOMICO RIVER BASIN																					
WICOMICO RIVER AT U.S. HIGHWAY 50, AT SALISBURY, MD. (lat 38°21'54", long 75°36'16")																					
Feb. 23, 1967..		15	0.1			5.1	1.4	13	1.8	19	7.6	18	0.1	2.9	83	18	3		116	6.1	2
June 27.....												20							133		
Aug. 2.....												16							122		
WICOMICO RIVER AT UPPER FERRY, MD. (lat 38°20'30", long 75°41'52")																					
Feb. 23, 1967..		9.8		0.01	0.01	23	33	200	11	11	77	366	0.6	16	819	193	184		1400	6.0	2
June 27.....												816							2760		
Aug. 2.....												245							960		

A Daily mean discharge.
B Calculated Na plus K, reported as Na.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
WICOMICO RIVER BASIN--Continued																					
WICOMICO RIVER AT WHITEHAVEN, MD. (lat 38°16'01", long 75°47'21")																					
Sept. 26, 1963.												4900			9640				14100		
Feb. 24, 1967..		4.1		0.01	0.00	139	412	3320	120	60	829	5940	1.0	3.7	11700	2040	1990		17000	6.8	39
June 27.....												6020			--				16200		
Aug. 2.....												4220			--				12800		
NANTICOKE RIVER BASIN																					
NANTICOKE RIVER AT SHARPTOWN, MD. (lat 38°32'41", long 75°43'15")																					
Feb. 16, 1967..		11				12	4.2	26	2.9	14	32	44	0.1	4.5	160	48	36		257	6.1	1
MARSHYHOPE CREEK NEAR HURLOCK, MD. (lat 38°37'50", long 75°49'10")																					
Feb. 16, 1967..		15				4.7	1.9	7.4	1.8	10	10	12	0.0	5.0	65	20	12		91	6.0	1
MARSHYHOPE CREEK AT BROOKVIEW, MD. (lat 38°34'35", long 75°47'41")																					
Feb. 16, 1967..		15				4.8	2.1	9.5	1.9	10	12	13	0.2	6.1	75	21	13			6.1	2
NANTICOKE RIVER AT VIENNA, MD. (lat 38°29'00", long 75°49'17")																					
Feb. 16, 1967..		14		0.00	0.00	15	16	121	6.6	15	50	211	0.1	0.0	475	104	91		843	6.3	0
Aug. 2.....												622							2260		
QUANTICO CREEK AT QUANTICO, MD. (lat 38°22'12", long 75°44'23")																					
Sept. 25, 1963.	1.3	27		0.70		4.8	1.0	8.8	1.7	17	8.0	11	0.0	0.6	86	16	2		83	6.4	
Feb. 16, 1967..		16				3.5	1.8	6.9	1.5	3	17	8.2	.1	1.4	68	16	14		80	5.5	25
POTOMAC RIVER BASIN																					
1-5958. NORTH BRANCH POTOMAC RIVER AT BARNUM, W. VA. (lat 39°26'44", long 79°06'39")																					
Apr. 26, 1967..	436	5.5				14	4.8	1.5	0.8	0	75	2.7	0.2	0.3	104	55	55	0.5	229	3.7	0
July 24.....	205	6.0				20	8.3	1.3	.7	0	135	1.7	.3	1.1	163	84	84	1.2	448	3.3	0
Sept. 6.....	62	6.0		0.62	0.15	28	10	1.9	1.1	0	166	2.1	.3	1.0	216	111	111	1.2	482	3.3	0
1-5985. NORTH BRANCH POTOMAC RIVER AT LUKE, MD. (lat 39°28'45", long 79°03'55")																					
Sept. 6, 1967..	155	7.3	6.1	0.02	1.4	28	8.7	2.0	1.1	0	157	2.0	0.3	1.0	219	106	106	1.2	478	3.4	5
Sept. 20.....	138	9.3	7.9	.01	1.6	34	11	2.4	1.2	0	190	2.2	.4	.9	266	130	130	1.4	513	3.4	0
1-5990. GEORGES CREEK AT FRANKLIN, MD. (lat 39°29'38", long 79°02'42")																					
Oct. 4, 1966...	21	--		9.2	--	--	--	--	--	--	--	8.8	--	--	777	416	416	1.6	992	3.6	--
May 8, 1967....	512	--		--	--	--	--	--	--	--	123	3.5	--	--	--	134	--	.3	310	4.4	--
May 9.....	525	6.0		.01	1.1	31	13	3.0	1.2	0	133	4.4	0.2	1.4	222	131	131	.2	325	4.4	0
May 11.....	725	--		--	--	--	--	--	--	--	175	3.0	--	--	--	--	--	.5	410	4.1	--
May 15.....	328	--		--	--	--	--	--	--	1	181	4.4	--	--	--	191	--	--	420	4.7	--
May 19.....	210	7.6		.00	1.6	52	22	3.3	1.3	2	216	4.0	.4	.3	348	220	219	--	470	4.9	0
July 26.....	21	11	4.6	.14	3.5	121	43	6.2	2.5	0	476	6.1	.8	.7	732	479	479	.6	911	4.2	3

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1966 to September 1967--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
POTOMAC RIVER BASIN--Continued																					
1-6000. NORTH BRANCH POTOMAC RIVER AT PINTO, MD. (lat 39°33'59", long 78°50'25")																					
Sept. 6, 1967..	164	6.1		0.00	0.00	46	10	11	1.7	24	124	18	0.5	1.2	239	156	137		364	7.1	5
Sept. 20.....	140	6.7		.36	.00	65	7.7	43	3.0	40	144	75	.4	1.7	381	194	161		608	6.9	30
HOFFMAN TUNNEL NEAR CLARYSVILLE, MD. (lat 39°38', long 78°54')																					
May 9, 1967....		11		0.01	2.5	112	43	4.0	1.5	39	403	6.1	0.6	0.1	694	457	425		830	6.6	0
May 11.....		--		--	--	--	--	--	--	40	390	6.1	--	--	--	460	--		810	6.3	--
May 15.....		--		--	--	--	--	--	--	44	388	6.6	--	--	--	470	--		810	6.9	--
May 19.....		11		.00	2.3	108	42	4.2	1.4	41	383	6.5	.6	.0	650	442	409		805	6.5	0
Sept. 6.....		13	0.1	.01	2.7	124	47	4.2	1.5	32	462	5.4	.7	.3	703	503	477		880	6.0	5
Sept. 20.....	10.5	12	.0	.00	2.7	126	48	4.2	1.5	35	454	5.4	.7	.3	708	512	484		884	7.0	3
1-6610. CHAPTICO CREEK AT CHAPTICO, MD. (lat 38°22'45", long 76°46'50")																					
Oct. 3, 1966...	5.2	13		0.05	0.01	14	2.5	3.6	2.1	16	34	7.4	0.1	1.3	94	44	36		128	6.1	2
Oct. 20.....	23	9.6		.01	.01	10	1.8	2.8	2.1	7	24	6.7	.1	1.8	75	32	27		99	5.8	6
Jan. 23, 1967..	7.6	9.2		--	--	7.6	1.9	2.9	1.3	17	14	4.9	.2	.7	50	27	13		78	6.4	0
Feb. 27.....	12	9.4		--	--	7.2	1.9	2.7	1.2	14	13	4.9	.1	1.7	53	26	15		77	6.5	2
May 16.....	11	7.1		--	--	8.6	1.9	2.7	1.1	24	10	4.2	.2	.3	51	30	10		75	6.6	5
July 3.....	1.4	12		--	--	9.5	2.5	3.1	1.4	34	7.2	5.2	.2	.2	66	34	6		88	6.4	8
Sept. 15.....	.6	9.3		1.1	.03	8.9	2.3	3.4	1.6	32	6.0	5.5	.1	.1	60	32	6		84	6.5	10

3-0765. YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD.

LOCATION.--Lat 39°39'13", long 79°24'31", temperature recorder at gaging station on left bank 0.7 mile upstream from bridge on State Highway 42 at Friendsville, Garrett County, and 1.5 miles upstream from Bear Creek.
DRAINAGE AREA.--295 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1967.
EXTREMES, 1966-67.--Water temperatures: Maximum, 80°F July 10; minimum, freezing point on many days during winter months.
EXTREMES, 1962-67.--Water temperatures: Maximum, 83°F July 22, 27, 28, 1964, July 4, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder.

Temperature (°F) of water, water year October 1966 to September 1967

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	56	53	56	57	57	54	54	56	58	61	56	55	55	57	60	58	53	48	49	49	49	50	50	49	51	50	50	50	47	45	46	52
MINIMUM	52	50	50	52	54	51	49	50	52	56	53	51	51	53	54	53	48	46	48	47	44	46	48	46	47	48	46	46	44	42	39	48
NOVEMBER																																
MAXIMUM	48	50	50	42	42	40	43	45	48	50	50	48	45	42	42	43	46	47	46	40	39	39	40	41	44	45	45	44	40	38	--	44
MINIMUM	45	47	42	39	39	38	38	42	45	48	48	45	42	40	40	40	42	43	40	36	36	37	37	39	41	43	42	40	38	36	--	40
DECEMBER																																
MAXIMUM	38	37	34	33	33	37	38	43	46	45	45	42	38	36	36	36	37	38	38	37	36	36	36	34	32	32	32	32	32	32	32	36
MINIMUM	36	34	33	33	33	33	36	38	43	43	42	38	36	36	35	34	35	37	37	36	36	35	34	32	32	32	32	32	32	32	32	35
JANUARY																																
MAXIMUM	35	35	34	34	32	32	34	34	33	33	33	32	35	36	36	36	33	33	32	32	32	32	36	36	41	44	45	45	42	36	34	33	35
MINIMUM	32	32	32	32	32	32	32	33	32	32	32	32	32	35	36	32	32	32	32	32	32	32	36	36	39	43	42	36	34	33	33	33
FEBRUARY																																
MAXIMUM	37	40	39	38	38	38	36	33	33	35	35	35	34	36	38	38	37	35	36	36	36	35	34	33	33	33	33	32	--	--	--	35
MINIMUM	33	37	38	36	38	36	33	33	33	33	35	33	33	33	36	37	34	33	33	34	33	33	33	33	33	33	33	32	--	--	--	34
MARCH																																
MAXIMUM	32	32	36	35	40	41	41	40	42	43	46	46	48	50	50	46	42	37	39	38	39	39	39	41	44	48	48	48	50	50	52	42
MINIMUM	32	32	32	34	35	40	39	39	40	41	42	45	45	45	46	42	37	36	34	37	38	38	39	39	40	43	46	45	46	45	45	39
APRIL																																
MAXIMUM	54	57	56	50	50	54	53	53	52	54	51	50	49	56	59	59	58	54	49	52	52	57	55	54	49	49	48	50	51	55	--	53
MINIMUM	46	51	48	44	46	48	51	48	49	50	46	44	47	49	51	55	54	49	46	46	49	52	50	47	45	46	46	44	45	50	--	48
MAY																																
MAXIMUM	55	56	54	52	55	54	51	48	48	50	50	53	51	51	53	51	49	53	54	57	55	55	57	59	60	61	65	67	67	60	60	55
MINIMUM	52	52	50	49	50	51	47	46	48	47	50	50	51	49	50	49	48	48	51	52	52	50	50	52	53	53	55	63	60	58	57	51
JUNE																																
MAXIMUM	60	62	63	66	67	66	67	68	70	71	71	76	74	74	75	74	73	75	72	71	74	70	70	72	73	73	70	72	68	74	--	70
MINIMUM	55	56	57	60	62	61	61	61	62	64	68	68	64	65	67	65	63	67	65	64	65	67	65	64	68	65	63	64	66	66	--	63
JULY																																
MAXIMUM	76	72	76	69	71	70	72	76	79	80	72	73	73	69	69	69	71	69	70	68	70	71	75	74	74	73	72	70	68	70	70	71
MINIMUM	66	69	69	65	63	63	65	68	71	72	69	69	68	65	64	67	66	65	63	64	64	64	70	68	67	68	67	67	67	66	66	66
AUGUST																																
MAXIMUM	71	72	72	73	72	71	70	72	72	68	67	68	68	68	69	71	70	68	66	68	65	67	65	62	67	68	67	64	66	66	65	68
MINIMUM	65	66	67	65	68	67	67	65	67	65	62	61	61	62	61	63	64	64	62	63	62	62	62	60	60	65	64	62	60	60	59	63
SEPTEMBER																																
MAXIMUM	63	62	64	65	66	66	66	66	65	63	61	60	60	61	63	62	63	66	67	66	64	62	57	54	55	58	61	58	56	52	--	61
MINIMUM	56	56	55	56	58	59	59	60	61	58	55	54	55	55	56	56	58	58	61	61	61	57	53	51	48	52	55	56	52	50	--	56

MONONGAHELA RIVER BASIN--Continued

3-0780. CASSELMAN RIVER AT GRANTSVILLE, MD.

LOCATION.--Lat 39°42'08", long 79°08'12", at gaging station 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 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1965 to September 1967.

Chemical analyses, in parts per million, water year October 1966 to September 1967

Date of collection	Discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 18, 1966..	10	4.4		0.05	0.01	22	6.6	5.9	1.8	18	57	15	0.1	0.3	136	82	66		214	6.4	4
Nov. 22.....	11	4.4		.27	.17	20	6.6	8.6	6.2	83	11	17	.1	.2	123	96	21		234	6.4	7
Dec. 27.....	61	4.0		--	--	12	3.4	6.1	1.1	9	29	14	.3	1.3	89	44	37		136	6.1	2
Jan. 24, 1967..	83	3.3		--	--	9.1	2.6	4.5	1.0	7	21	9.6	.2	2.4	72	33	28		106	6.8	0
Mar. 3.....	213	3.5		.03	.00	11	2.5	9.3	1.4	10	21	19	.2	3.9	99	43	33		140	6.1	0
May 4.....	86	4.3		--	--	9.2	2.6	4.5	.9	8	22	11	.1	.9	60	34	27		102	6.6	0
July 21.....	42	1.4		--	--	18	3.8	11	1.5	16	35	24	.2	1.4	107	61	48		195	7.0	5

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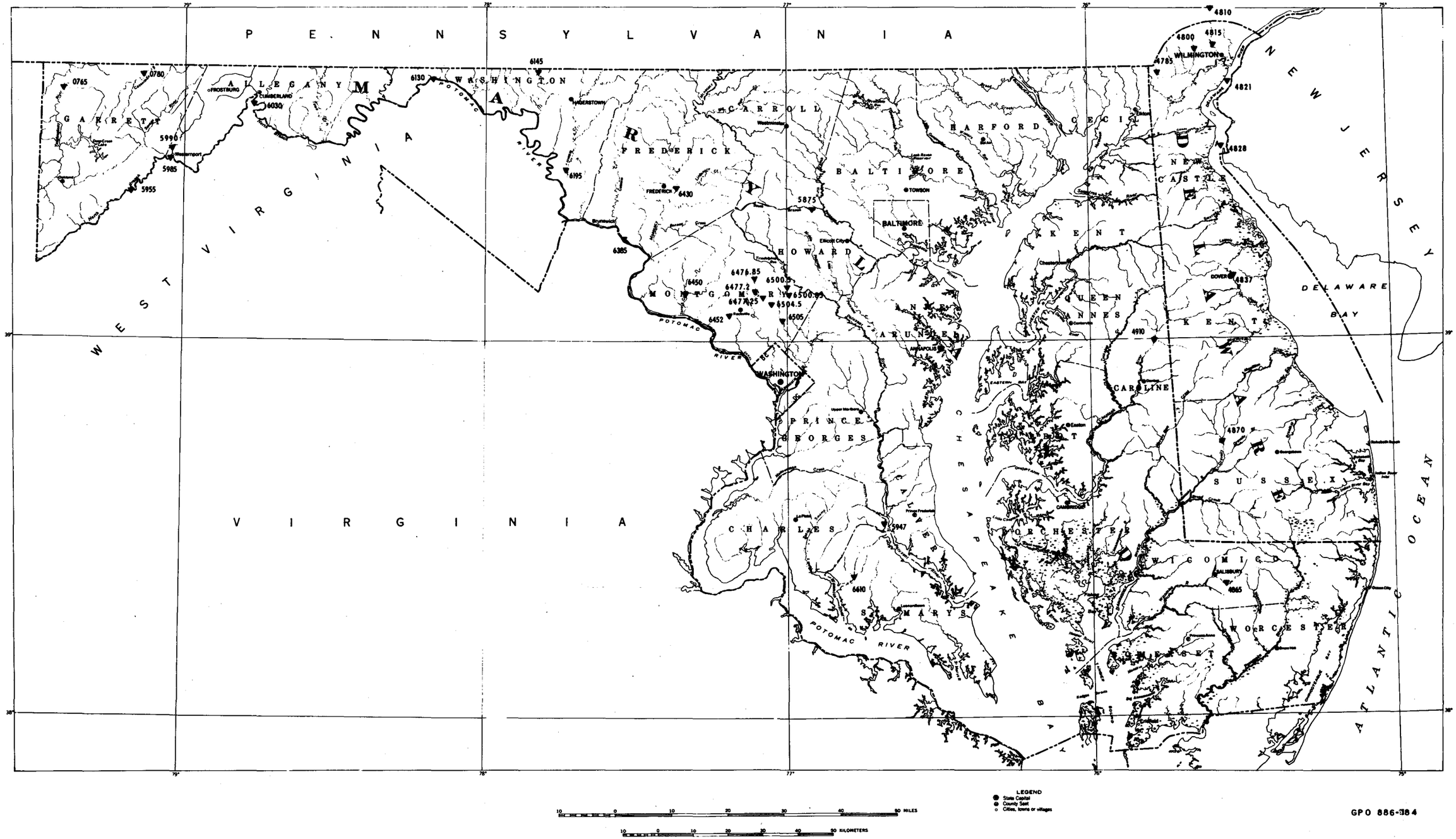

Plate 1. — Map showing location of quality of water stations.