1968

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

1968

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
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Parkville, Maryland 21234

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

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

ILLUSTRATION

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WATER RESOURCES DATA FOR MARYLAND AND DELAWARE, 1968

Part 2. Water Quality Records

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 1968 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, water temperatures, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, specific conductance, and pH. 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. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle size distribution of suspended sediment.

The Geological Survey, from 1941 through 1967, published an annual series of water-supply papers, "Quality of Surface Waters of the United States," 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 and ground water have been released by the Geological Survey on a state boundary basis. This report

is primarily for local and immediate use, and its distribution is limited. These records will be published later in Geological Survey water-supply papers.

Prior to the 1968 water year, data for chemical constituents and concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967 the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperatures in degrees Fahrenheit to degrees Celsius, subtract 32° and divide by 1.8. (See section "Definition of Terms and Abbreviations" for further information.)

COOPERATION

Compilation of this report 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 defined below:

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

Cubic foot per second (cfs) is the rate of discharge through a cross-sectional area of 1 square foot of a stream 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.

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

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

Drainage area of a stream above a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point.

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.

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.

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.

Milligrams per liter (mg/l) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of the constituent) per liter by multiplying by the factors in table 1, page 5. Concentration of suspended sediment expressed in milligrams per liter is based on the weight of sediment in a liter of water-sediment mixture. Sediment concentrations that are expressed in parts per million may be converted to milligrams per liter by using the factors in table 2, page 5.

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

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

Particle size classification, used in this report 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:	Between 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.

Table 1.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})....	0.11119	Iodide (I^{-1}).....	0.00788
Ammonia as NH_4^{+1}...	.05544	Iron (Fe^{+3}).....	.05372
Barium (Ba^{+2}).....	.01456	Lead (Pb^{+2}).....	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})....	.14411
Bromide (Br^{-1}).....	.01251	Magnesium (Mg^{+2})..	.08226
Calcium (Ca^{+2}).....	.04990	Manganese (Mn^{+2})..	.03640
Carbonate (CO_3^{-2})..	.03333	Nickel (Ni^{+2}).....	.03406
Chloride (Cl^{-1})....	.02821	Nitrate (NO_3^{-1})...	.01613
Chromium (Cr^{+6})....	.11539	Nitrite (NO_2^{-1})...	.02174
Cobalt (Co^{+2}).....	.03394	Phosphate (PO_4^{-3}).	.03159
Copper (Cu^{+2}).....	.03148	Potassium (K^{+1})...	.02557
Cyanide (CN^{-1}).....	.03844	Sodium (Na^{+1}).....	.04350
Fluoride (F^{-1}).....	.05264	Strontium (Sr^{+2})..	.02283
Hydrogen (H^{+1}).....	.99209	Sulfate (SO_4^{-2})...	.02082
Hydroxide (OH^{-1})...	.05880	Zinc (Zn^{+2}).....	.03060

Table 2.--Factors for conversion of sediment concentration in parts per million to milligrams per liter* (All values calculated to three significant figures)

Range of concentration (ppm)	Multiply by	Range of concentration (ppm)	Multiply by
0 - 15,900	1.00	322,000 - 341,000	1.26
16,000 - 46,800	1.02	342,000 - 361,000	1.28
46,900 - 76,500	1.04	362,000 - 380,000	1.30
76,600 - 105,000	1.06	381,000 - 399,000	1.32
106,000 - 133,000	1.08	400,000 - 416,000	1.34
134,000 - 159,000	1.10	417,000 - 434,000	1.36
160,000 - 185,000	1.12	435,000 - 451,000	1.38
186,000 - 210,000	1.14	452,000 - 467,000	1.40
211,000 - 233,000	1.16	468,000 - 483,000	1.42
234,000 - 256,000	1.18	484,000 - 498,000	1.44
257,000 - 279,000	1.20	499,000 - 514,000	1.46
280,000 - 300,000	1.22	515,000 - 528,000	1.48
301,000 - 321,000	1.24	529,000 - 542,000	1.50

*Based on water density of 1.000 g/ml and sediment density of 2.65 g/cc.

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 that 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. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

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, 1968, is called the "1968 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 determination 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 for a station 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, 1968, 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 analyzing 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 the 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 diurnal variations in water temperature. Most large streams have a small diurnal temperature change; small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature.

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

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 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

Table 3 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.

Table 3.--Water-supply paper numbers and parts, water years, 1947-67

Year	Parts 1-14	Parts 1-4	Year	Parts 1-4	Parts 1-2	Parts 3-4
1941	942	----	1955	1400	----	----
1942	950	----	1956	1450	----	----
1943	970	----	1957	1520	----	----
1944	1022	----	1958	1571	----	----
1945	1030	----	1959	----	1641	1642
1946	1050	----	1960	----	1741	1742
1947	1102	----	1961	----	1881	1882
1948	----	1132	1962	----	1941	1942
1949	----	1162	1963	----	1947	1948
1950	----	1186	1964	----	1954	1955
1951	----	1197	1965	----	1961	1962
1952	----	1250	1966	----	A1991	A1992
1953	1290	----	1967	----	A2011	A2012
1954	1350	----				

A In press.

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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.

Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurement of sediment discharge: U.S. Geol. Survey Bull. 1181-A, 47 p.

Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geol. Survey Water-Supply Paper 1593, 17 p.

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.

Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geol. Survey Water-Supply Paper 1541-A, 29 p.

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.

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.

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

_____ 1963, Determination 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 sq mi.
RECORDS AVAILABLE.--Sediment records: October 1964 to September 1968 (periodic).
REMARKS.--Specific conductance, pH, and temperature of sediment samples are on file at the WRD district office in Parkville, Md. Flow affected by ice Dec. 1, 2, Jan. 2, 5-14, 17, 18, 26.

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
OCT 2, 1967..	52	2	.28	JAN 2, 1968..	80	3	.65
OCT 9.....	49	2	.26	JAN 12.....	56	5	.76
OCT 13.....	50	2	.27	JAN 14.....	700	115	217
OCT 16.....	49	1	.13	JAN 16.....	126	10	3.4
OCT 20.....	54	2	.29	JAN 19.....	93	2	.50
OCT 21.....	50	2	.27	JAN 22.....	94	3	.76
OCT 22.....	48	2	.26	JAN 26.....	76	7	1.4
OCT 23.....	48	2	.26	FEB 1.....	86	3	.70
OCT 27.....	60	34	5.5	FEB 2.....	142	70	27
OCT 30.....	49	3	.40	FEB 5.....	85	3	.69
OCT 31.....	49	3	.40	FEB 9.....	72	9	1.7
NOV 1.....	48	2	.26	FEB 12.....	66	9	1.6
NOV 2.....	83	55	12	FEB 16.....	66	12	2.1
NOV 3.....	153	125	52	FEB 19.....	56	8	1.2
NOV 6.....	53	1	.14	FEB 23.....	56	10	1.5
NOV 7.....	52	1	.14	FEB 26.....	56	1	.15
NOV 8.....	50	1	.14	MAR 1.....	74	40	8.0
NOV 9.....	49	1	.13	MAR 2.....	63	10	1.7
NOV 13.....	48	2	.26	MAR 5.....	59	16	2.5
NOV 19.....	49	8	1.1	MAR 8.....	56	15	2.3
DEC 15.....	98	1	.26	MAR 11.....	67	19	3.4
DEC 18.....	80	1	.22	MAR 12.....	179	76	37
DEC 21.....	71	2	.38	MAR 17.....	558	60	90
DEC 24.....	77	1	.21	MAR 22.....	145	8	3.1
DEC 31.....	94	1	.25	MAR 26.....	120	3	.97

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

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
MAR 29.....	92	3	.75	JUN 21.....	54	31	4.5
MAR 30.....	90	3	.73	JUN 24.....	53	37	5.3
MAR 31.....	88	2	.48	JUN 30.....	49	16	2.1
APR 1.....	94	2	.51	JUL 1.....	46	1	.12
APR 8.....	88	24	5.7	JUL 5.....	47	1	.13
APR 12.....	80	50	11	JUL 8.....	41	2	.22
APR 15.....	76	42	8.6	JUL 15.....	69	240	45
APR 19.....	73	42	8.3	JUL 16.....	49	40	5.3
APR 26.....	89	117	28	JUL 17.....	39	10	1.1
MAY 1.....	77	129	27	JUL 20.....	98	160	42
MAY 6.....	67	5	.90	JUL 21.....	46	25	3.1
MAY 10.....	57	19	2.9	JUL 26.....	44	10	1.2
MAY 12.....	73	18	3.5	JUL 27.....	38	3	.31
MAY 13.....	65	15	2.6	AUG 8.....	34	13	1.2
MAY 17.....	69	17	3.2	AUG 16.....	29	20	1.6
MAY 23.....	54	5	.73	AUG 23.....	25	6	.41
MAY 24.....	110	34	10	SEP 2.....	24	3	.19
MAY 28.....	527	1020	1450	SEP 5.....	23	10	.62
JUN 2.....	106	15	4.3	SEP 12.....	33	10	.89
JUN 6.....	68	16	2.9	SEP 16.....	25	3	.20
JUN 10.....	60	4	.65	SEP 19.....	24	2	.13
JUN 12.....	408	220	242	SEP 23.....	23	1	.06
JUN 14.....	76	5	1.0	SEP 26.....	21	1	.06
JUN 17.....	95	7	1.8	SEP 30.....	21	3	.17

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED											METHOD OF ANALYSIS
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
OCT 26, 1967	1415	10	338	477	435	54	71	88	97	98	99	99	100	--	--	--	SCPW
DEC 3.....	1200	06	1080	815	2380	36	53	68	80	84	89	91	95	98	100	--	SCPW
JAN 14, 1968	1200	03	314	175	148	30	41	50	62	75	87	96	99	100	--	--	SCBW
MAR 12.....	1200	04	1160	315	985	24	39	56	73	85	93	95	99	100	--	--	SCBW
APR 24.....	1200	12	450	93	113	21	31	44	60	76	87	96	99	100	--	--	SCBW
MAY 28.....	1200	12	820	1440	3190	0	53	73	89	96	99	100	--	--	--	--	SCPW
JUN 12.....	1200	19	860	392	911	18	27	37	50	66	80	96	100	--	--	--	SCBW

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, 2.3 miles north of Marshallton, and 4.9 miles upstream from mouth.
DRAINAGE AREA.--47.0 sq mi.
RECORDS AVAILABLE.--Water Temperatures: April 1953 to September 1968.
EXTREMES, 1967-68.--Water Temperatures: Maximum, 27°C July 2, 18, 19, 24, Aug. 7-10, 21, 23, 25; minimum, 1°C on many days in January and February, and March 4.
EXTREMES, April 1953 to September 1968.--Water Temperatures: Maximum, 31°C July 17, Aug. 2, 6, 1955, July 19, 1963; minimum, freezing point on many days during winter months.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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	17	16	17	18	18	19	17	16	17	17	16	14	13	13	14	16	17	17	16	13	12	12	11	12	13	13	11	11	10	8	9	14
MINIMUM	16	14	14	16	18	17	16	15	16	17	14	13	12	12	12	14	15	16	13	11	11	10	9	10	12	11	9	10	8	7	7	13
NOVEMBER																																
MAXIMUM	11	13	13	12	11	8	6	6	6	8	9	11	10	9	7	4	4	6	6	6	6	7	8	7	7	7	7	6	4	4	--	8
MINIMUM	8	11	12	11	8	6	6	4	4	6	7	9	9	7	4	3	3	4	6	5	5	6	7	5	6	5	6	4	3	2	--	6
DECEMBER																																
MAXIMUM	3	2	4	4	6	6	7	8	8	7	7	8	8	8	8	6	6	7	8	8	7	8	8	4	3	4	3	4	4	3	2	6
MINIMUM	2	2	2	4	4	6	6	7	6	7	6	7	7	7	6	5	5	6	7	7	6	8	4	3	2	3	3	3	3	2	2	5
JANUARY																																
MAXIMUM	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	3	2	3	4	4	4	4	5	4	3	2	3	4	6	7	7	3
MINIMUM	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	4	4	4	3	2	1	2	3	4	6	7		2
FEBRUARY																																
MAXIMUM	7	7	7	6	5	5	4	4	4	4	2	2	2	2	2	3	3	3	2	3	3	2	3	3	3	3	4	4	4	--	--	4
MINIMUM	6	6	6	5	3	3	3	4	3	2	1	1	1	1	1	2	3	1	1	1	1	1	1	2	1	1	2	3	4	--	--	2
MARCH																																
MAXIMUM	4	4	4	3	6	6	6	7	7	7	8	8	3	4	7	8	8	7	9	11	11	12	12	8	9	10	12	13	15	16	14	8
MINIMUM	3	3	2	1	3	5	4	4	6	6	6	3	3	2	3	6	7	6	7	8	9	10	8	7	6	7	8	10	11	13	11	6
APRIL																																
MAXIMUM	14	13	12	14	15	13	13	12	14	14	14	14	16	17	16	14	15	16	18	18	17	14	15	14	13	14	14	15	14	14	--	15
MINIMUM	12	10	9	12	13	10	9	10	11	12	11	11	11	12	13	11	11	12	14	14	14	13	13	13	12	10	12	11	11	12	--	12
MAY																																
MAXIMUM	14	16	18	18	17	16	16	16	17	18	18	16	16	16	16	16	19	18	18	18	16	17	17	15	17	17	17	14	15	16	16	17
MINIMUM	11	12	13	16	15	13	12	12	13	16	16	15	15	13	14	15	15	17	16	16	14	14	15	14	13	14	14	12	12	14	15	14
JUNE																																
MAXIMUM	18	18	18	18	20	22	22	23	23	23	22	21	21	21	22	23	22	21	21	21	19	22	24	23	24	25	24	20	22	24	--	22
MINIMUM	14	17	16	16	16	18	19	20	22	21	20	20	19	18	18	21	20	18	19	19	17	18	21	21	22	23	20	19	18	21	--	19
JULY																																
MAXIMUM	26	27	26	23	22	22	22	22	22	24	23	23	24	24	24	26	26	27	27	25	24	23	26	27	26	25	24	25	24	22	23	24
MINIMUM	23	24	23	22	20	20	19	19	21	22	22	21	22	23	24	23	24	25	25	23	21	22	23	24	24	23	22	23	21	20	21	22
AUGUST																																
MAXIMUM	26	25	26	26	26	25	27	27	27	27	26	23	21	23	24	22	24	25	24	25	27	26	27	26	27	26	22	20	21	20	20	25
MINIMUM	22	23	23	24	25	24	24	24	24	25	23	20	19	21	22	21	22	23	23	22	24	23	25	25	24	22	19	18	17	17	17	22
SEPTEMBER																																
MAXIMUM	19	21	22	22	21	21	22	21	21	21	21	21	19	19	19	19	19	20	19	19	20	21	22	22	22	22	21	19	18	17	--	20
MINIMUM	17	18	19	19	20	21	20	19	19	20	20	18	17	17	17	17	17	17	17	17	17	18	19	19	19	21	19	17	16	14	--	18

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 sq mi.
RECORDS AVAILABLE.--Specific conductance: June 1966 to Sept. 1968.
Water temperatures: October 1964 to September 1968.
Sediment records: July 1963 to September 1968.
EXTREMES, 1967-68.--Specific conductance: Maximum daily, 254 micromhos Aug. 30; minimum daily, 124 micromhos June 12.
Water temperatures: Maximum, 28°C Aug. 8 and 9; minimum, freezing point on many days during December.
Sediment concentrations: Maximum daily, 750 mg/l June 12; minimum daily, 1 mg/l Oct. 7 and 8.
Sediment loads: Maximum daily, 7,600 tons June 12; minimum daily 0 tons Oct. 7 and 8.
EXTREMES, 1963-68.--Specific conductance (June 1966-68): Maximum daily, 285 micromhos Sept. 2 and Sept. 5, 1966; minimum daily, 122 micromhos Aug. 10, 1967.
Water temperatures (1964-68): Maximum 29°C Aug. 9 and 17, 1965; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 2,000 (estimated) mg/l Feb. 8, 1965; minimum daily, 1 mg/l on several days 1964 and 1966 to 1968.
Sediment loads: Maximum daily, 20,000 (estimated) tons Feb. 8, 1965; minimum daily, 0 tons Oct. 7 and 8, 1967.
REMARKS.--Records of specific conductance, pH, and temperature of sediment samples available in the WRD office at Harrisburg, Pa. Flow affected by ice Jan. 6-12, and Feb. 13, 14.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DAILY MEAN DISCHARGE	SILICA (SIO2)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT. 16...	176	14	.00	18	6.9	9.6	3.0	59	0	20	12
NOV. 17...	187	12	.00	17	6.7	11	2.9	55	0	24	14
JAN. 20...	486	12	.00	15	5.9	1.1	2.5	43	0	23	16
FEB. 15...	358	12	.00	15	6.0	10	.0	45	0	22	12
MAR. 15...	525	--	--	15	6.2	--	--	40	0	29	16
APR. 19...	300	3.1	--	15	3.5	9.2	1.9	44	0	22	12
MAY 17...	583	8.3	--	16	6.0	7.7	2.0	52	0	20	12
JUNE 27...	453	9.6	--	19	4.8	9.5	3.3	51	0	22	12
JULY 20...	291	9.9	--	19	5.8	12	4.2	57	0	23	16
AUG. 19...	165	2.5	--	19	.4	11	3.9	0	20	22	14
SEPT. 18...	131	--	--	21	7.1	--	--	65	0	25	17

DATE	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT. 16...	.2	8.1	--	123	121	74	25	203	7.6	4
NOV. 17...	.2	11	.78	129	126	70	25	209	7.8	3
JAN. 20...	.1	10	.42	120	117	62	27	196	7.5	1
FEB. 15...	.1	12	.50	117	113	62	25	187	7.5	--
MAR. 15...	--	8.7	--	--	--	63	30	191	7.1	2
APR. 19...	.1	.0	--	102	85	52	16	166	7.8	2
MAY 17...	.1	5.6	--	121	95	65	22	176	7.4	5
JUNE 27...	.2	6.1	--	120	112	67	25	149	7.7	5
JULY 20...	.2	9.5	--	133	128	72	25	210	7.4	10
AUG. 19...	.4	.7	--	96	94	49	46	189	1.0	15
SEPT. 18...	--	10	--	--	--	82	28	232	7.6	10

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

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	--	208	206	164	210	180	199	--	--	222	--
2	197	--	204	194	190	229	183	200	185	190	196	--
3	228	193	188	200	197	211	188	198	192	--	--	--
4	230	208	170	202	190	201	190	198	191	--	--	227
5	224	203	193	200	192	200	187	195	--	--	--	230
6	220	209	210	210	194	191	190	190	186	--	--	240
7	228	211	212	212	197	193	182	189	190	--	--	246
8	210	212	147	198	192	203	181	200	190	--	197	246
9	212	218	140	200	190	192	193	--	193	189	209	213
10	220	228	200	197	188	190	197	210	187	--	216	221
11	224	224	162	--	--	183	180	209	189	--	--	167
12	222	227	164	218	192	--	200	205	124	--	222	177
13	228	218	203	200	190	188	200	198	160	--	213	185
14	220	228	198	--	202	185	205	205	188	--	217	229
15	216	220	192	--	190	192	190	--	193	200	--	232
16	210	211	--	202	188	193	200	205	168	--	224	236
17	222	218	--	198	190	--	198	188	168	--	228	236
18	225	220	--	193	188	154	201	185	183	--	232	232
19	172	212	--	200	184	169	205	199	190	--	220	237
20	213	230	--	195	190	176	--	200	190	209	218	243
21	212	232	--	202	192	188	208	200	193	--	227	243
22	217	221	--	200	184	190	205	--	193	--	223	248
23	212	222	--	192	192	183	202	203	196	--	228	239
24	220	220	--	197	173	188	--	192	189	--	235	238
25	212	210	--	203	208	183	161	190	--	183	--	239
26	207	215	200	192	192	180	188	--	--	194	--	240
27	210	217	202	200	192	--	200	200	185	--	--	245
28	193	212	170	204	194	188	200	190	186	--	228	253
29	198	209	172	138	196	190	192	158	--	219	250	--
30	--	206	200	140	--	188	201	178	189	--	254	251
31	--	--	207	142	--	182	--	--	--	222	--	--
AVG.	214	216	--	194	190	190	193	196	184	--	--	230

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	205	14	8.0	187	2	1.0	183	--	2.0
2	187	14	7.0	269	--	3.0	183	--	2.0
3	183	14	7.0	790	--	100	1520	450	2800
4	179	12	6.0	349	10	9.0	1080	110	400
5	172	8	4.0	291	8	6.0	491	17	22
6	165	2	1.0	244	7	5.0	377	4	4.0
7	162	1	0	228	7	4.0	340	12	11
8	165	1	0	217	7	4.0	326	8	7.0
9	169	2	1.0	209	6	3.0	300	3	2.0
10	197	8	4.0	209	6	3.0	282	4	3.0
11	354	--	8.0	201	19	10	860	100	230
12	217	3	2.0	205	8	4.0	1460	85	340
13	190	2	1.0	209	3	2.0	885	24	57
14	179	2	1.0	201	4	2.0	539	7	10
15	183	3	1.0	194	6	3.0	453	8	10
16	176	4	2.0	183	7	3.0	405	7	8.0
17	172	4	2.0	187	7	4.0	377	7	7.0
18	244	--	4.0	201	7	4.0	358	6	6.0
19	477	--	20	205	4	2.0	349	5	5.0
20	244	15	10	190	4	2.0	331	4	4.0
21	205	6	3.0	183	5	2.0	317	4	3.0
22	187	4	2.0	190	6	3.0	381	--	10
23	179	4	2.0	217	5	3.0	481	--	30
24	176	5	2.0	209	4	2.0	354	4	4.0
25	261	--	5.0	220	4	2.0	326	4	4.0
26	597	--	40	217	4	2.0	363	4	4.0
27	278	4	3.0	197	4	2.0	322	3	3.0
28	228	4	2.0	190	5	2.0	400	--	10
29	205	4	2.0	179	--	2.0	1390	--	600
30	194	3	2.0	183	--	2.0	597	17	27
31	190	3	2.0	--	--	--	453	3	4.0
TOTAL	6920	--	154.0	6954	--	196.0	16483	--	4629.0

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	433	3	4.0	486	4	5.0	396	24	26
2	340	3	3.0	539	--	30	335	12	11
3	410	3	3.0	1100	--	400	322	10	9.0
4	396	2	2.0	588	40	64	291	6	5.0
5	335	--	4.0	481	29	38	313	7	6.0
6	350	12	11	448	18	22	313	6	5.0
7	370	6	6.0	429	9	10	300	5	4.0
8	280	--	3.0	419	6	7.0	286	22	17
9	330	--	5.0	405	5	5.0	300	12	10
10	350	6	6.0	386	4	4.0	326	16	14
11	320	5	4.0	326	4	4.0	335	24	22
12	270	4	3.0	377	8	8.0	448	72	87
13	320	5	4.0	350	10	9.0	1570	400	2100
14	1300	--	800	330	10	9.0	725	48	94
15	1700	--	2000	358	8	8.0	525	16	23
16	661	--	40	331	5	4.0	457	11	14
17	510	12	16	335	4	4.0	1610	--	2000
18	448	7	8.0	304	7	6.0	2890	580	4500
19	453	2	2.0	308	12	10	1390	160	650
20	486	3	4.0	317	11	9.0	905	38	93
21	515	11	15	295	8	6.0	750	27	55
22	588	16	25	304	14	11	695	26	49
23	520	10	14	335	21	19	725	27	53
24	501	10	14	291	11	9.0	755	28	57
25	405	10	11	286	6	5.0	573	13	20
26	367	12	12	282	6	4.0	529	11	16
27	377	10	10	282	6	4.0	505	11	15
28	377	8	8.0	291	9	7.0	486	11	14
29	405	7	8.0	313	12	10	472	10	13
30	457	4	5.0	--	--	--	448	10	12
31	568	6	9.0	--	--	--	429	10	12
TOTAL	15142	--	3059.0	11296	--	731.0	20404	--	10006.0

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	462	14	17	386	14	14	602	--	50
2	438	10	12	363	22	22	510	23	32
3	410	10	11	344	20	18	549	--	40
4	400	12	13	363	16	16	462	25	31
5	472	14	18	340	14	13	405	22	24
6	396	7	7.0	496	18	24	372	18	18
7	377	5	5.0	367	15	15	344	13	12
8	381	6	6.0	322	12	10	331	12	11
9	381	9	9.0	304	10	8.0	326	12	10
10	354	6	6.0	300	10	8.0	313	12	10
11	344	6	6.0	300	11	9.0	308	15	12
12	335	7	6.0	424	19	22	2490	750	7600
13	326	10	9.0	340	16	15	3500	420	6100
14	322	11	10	304	15	12	965	70	180
15	322	10	9.0	291	14	11	710	40	77
16	326	8	7.0	313	14	12	641	32	55
17	308	8	7.0	583	48	79	1010	--	300
18	304	8	6.0	372	26	26	686	65	120
19	300	10	8.0	304	20	16	553	37	55
20	295	9	7.0	300	18	14	534	35	50
21	295	9	7.0	269	16	12	462	30	37
22	300	6	5.0	253	13	9.0	433	23	27
23	300	8	6.0	269	15	11	491	22	29
24	496	--	20	651	73	130	433	--	20
25	1490	310	1600	424	24	27	438	--	20
26	563	24	36	313	22	18	433	--	20
27	424	12	14	269	20	14	453	50	61
28	381	10	10	1160	390	3100	453	46	56
29	358	8	8.0	3010	360	3300	405	42	46
30	358	8	8.0	1080	71	220	363	38	37
31	--	--	--	840	--	100	--	--	--
TOTAL	12218	--	1893.0	15654	--	7305.0	19975	--	15140

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	335	34	31	248	--	10	121	--	5.0
2	322	31	27	308	--	20	131	--	5.0
3	344	32	30	228	--	10	151	--	7.0
4	331	30	27	209	20	11	138	14	5.0
5	322	28	24	197	19	10	128	16	6.0
6	304	26	21	197	18	10	176	18	8.0
7	295	24	19	244	18	12	286	23	18
8	282	22	17	201	18	10	169	16	7.0
9	278	21	16	183	17	8.0	145	16	6.0
10	278	20	15	183	17	8.0	169	24	11
11	278	20	15	179	19	9.0	985	300	1000
12	282	19	14	162	21	9.0	291	39	31
13	269	18	13	158	16	7.0	187	29	15
14	265	18	13	162	16	7.0	158	19	8.0
15	269	--	10	162	15	6.0	141	15	6.0
16	322	--	20	155	14	6.0	134	15	5.0
17	248	18	12	179	10	5.0	138	15	6.0
18	236	18	11	194	10	5.0	131	15	5.0
19	240	18	12	165	13	6.0	128	14	5.0
20	291	18	14	165	12	5.0	125	13	4.0
21	228	16	10	158	13	6.0	125	11	4.0
22	217	14	8.0	141	12	4.0	125	9	3.0
23	209	12	7.0	138	15	6.0	125	8	3.0
24	213	10	6.0	141	16	6.0	121	9	3.0
25	617	--	100	248	--	10	115	8	2.0
26	300	22	18	176	--	8.0	112	9	3.0
27	240	20	13	141	16	6.0	112	8	2.0
28	220	18	11	131	15	5.0	109	7	2.0
29	205	16	9.0	131	14	5.0	109	8	2.0
30	197	16	8.0	125	16	5.0	105	9	2.0
31	194	16	8.0	121	14	4.0	--	--	--
TOTAL	8631	--	559.0	5530	--	239.0	5190	--	1189.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 144397
TOTAL LOAD FOR YEAR (TONS) 45100.0

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

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
MAR 13, 1968	1200	--	1670	391	1760	25	38	55	74	88	97	99	100	--	--	--	SCBW
MAR 18.....	0900	05	2990	697	5630	0	34	46	61	79	88	95	98	99	100	--	SCPW
APR 25.....	0910	13	1720	348	1620	30	42	58	75	88	97	99	100	--	--	--	SCBW
MAY 29.....	0800	12	3310	285	2540	30	41	55	70	81	89	92	96	98	100	--	SCBW
JUN 12.....	1615	21	4060	1700	18700	0	58	75	86	91	94	97	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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1950, November 1951 to September 1952, October 1956 to September 1968.
Water temperatures: November 1956 to September 1961.
Sediment records: December 1946 to September 1961, July 1962 to September 1968.
EXTREMES, 1967-68.--Sediment concentrations: Maximum daily, 564 mg/l June 13; minimum daily, 4 mg/l on several days.
Sediment loads: Maximum daily, 8,150 tons June 13; minimum daily, 1.4 tons Sept. 29.
EXTREMES, 1946-61, 1962-68.--Water temperatures (1956-61): Maximum, 30.0°C June 17, 1957; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,700 mg/l Feb. 14, 1966; minimum daily, 1 mg/l on many days.
Sediment loads: Maximum daily, 33,000 tons Feb. 14, 1966; minimum daily, less than 0.50 ton on many days.
REMARKS.--Published and unpublished chemical-quality data and specific conductance, pH, and temperature of sediment samples available in WRD district at Parkville, Md. Streamflow records for water year October 1967 to September 1968 available in WRD subdistrict office at Dover, Del.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
OCT.										
26...	857	14	.00	16	6.0	9.8	4.8	55	0	23
NOV.										
27...	160	16	.00	18	6.5	11	2.8	62	0	23
DEC.										
27...	291	14	.00	16	6.4	8.4	2.3	46	0	23
JAN.										
30...	522	17	.00	16	6.4	9.4	2.2	46	0	22
FEB.										
23...	460	12	.00	15	6.4	9.0	2.0	47	0	23
MAR.										
26...	616	11	.00	15	6.1	8.8	2.4	40	0	24
APR.										
09...	451	7.6	.00	14	6.0	8.2	2.0	45	0	21
25...	1960	10	.00	12	4.7	5.8	3.1	30	0	21
MAY										
27...	346	11	--	16	6.0	8.0	2.1	52	0	22
JUNE										
24...	469	11	--	18	6.2	9.1	2.5	53	0	27
JULY										
22...	239	11	--	16	6.4	11	3.5	59	0	23
AUG.										
26...	194	10	--	19	7.5	13	3.5	74	0	26
SEPT.										
23...	114	7.0	--	18	7.0	14	3.5	69	0	26

DATE	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
26...	12	--	5.5	132	118	65	20	196	7.2	5
NOV.										
27...	12	.1	6.5	140	126	72	21	214	6.9	4
DEC.										
27...	12	.2	8.0	121	113	67	29	186	7.4	5
JAN.										
30...	12	.1	8.0	127	116	67	29	189	7.6	5
FEB.										
23...	14	--	11	127	116	64	26	193	7.5	2
MAR.										
26...	12	.0	8.0	125	107	63	30	178	7.3	3
APR.										
09...	11	.1	7.0	103	99	60	23	176	7.4	10
25...	10	.0	9.9	112	91	50	25	156	7.1	10
MAY										
27...	12	.1	6.8	125	110	65	22	186	7.1	10
JUNE										
24...	13	.2	7.7	129	121	71	27	201	7.0	4
JULY										
22...	14	.2	7.0	140	121	67	18	207	8.0	5
AUG.										
26...	16	.2	6.4	151	138	79	18	228	8.2	10
SEPT.										
23...	16	.4	6.3	142	132	74	18	224	8.1	7

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	198	15	8.0	214	6	3.5	217	5	2.9
2	181	14	6.8	304	25	21	208	4	2.2
3	171	13	6.0	858	110	269	1940	332	2410
4	165	12	5.3	437	30	35	1510	218	1040
5	159	10	4.3	344	18	17	642	30	52
6	150	10	4.1	279	12	9.0	558	20	30
7	145	10	3.9	249	8	5.4	421	10	11
8	146	10	3.9	232	7	4.4	324	5	4.4
9	152	10	4.1	223	7	4.2	233	4	2.5
10	180	14	6.8	220	7	4.2	212	4	2.3
11	348	22	21	213	7	4.0	1520	64	263
12	221	15	9.0	211	7	4.0	2040	100	590
13	179	12	5.8	216	7	4.1	1270	43	147
14	165	11	4.9	207	7	3.9	663	16	29
15	167	11	5.0	204	5	2.8	523	14	20
16	163	8	3.5	189	4	2.0	530	14	20
17	158	5	2.1	185	4	2.0	428	13	15
18	183	14	6.9	207	6	3.4	414	12	13
19	576	33	51	218	7	4.1	388	10	10
20	308	20	17	204	6	3.3	388	10	10
21	245	17	11	197	5	2.7	376	8	8.1
22	219	16	9.5	200	5	2.7	454	10	12
23	204	16	8.8	249	6	4.0	946	35	89
24	203	16	8.8	239	6	3.9	726	28	55
25	280	21	16	247	6	4.0	586	19	30
26	704	78	150	247	6	4.0	481	15	19
27	374	18	18	204	6	3.3	408	11	12
28	282	12	9.1	223	6	3.6	558	60	90
29	248	10	6.7	212	5	2.9	1650	199	971
30	230	8	5.0	212	4	2.3	758	73	149
31	219	7	4.1	--	--	--	565	49	75
TOTAL	7323	--	426.4	7644	--	439.7	21937	--	6184.4

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	538	15	22	575	15	23	492	7	9.3
2	426	7	8.1	640	18	31	417	7	7.9
3	508	12	16	1300	122	428	399	6	6.5
4	492	6	8.0	733	26	51	339	6	5.5
5	400	5	5.4	601	17	28	391	6	6.3
6	411	6	6.7	555	9	13	378	5	5.1
7	461	8	10	527	8	11	364	4	3.9
8	330	4	3.6	516	7	9.8	344	4	3.7
9	400	5	5.4	497	7	9.4	359	4	3.9
10	431	6	7.0	480	6	7.8	393	4	4.2
11	390	5	5.3	385	5	5.2	410	7	7.7
12	330	4	3.6	418	6	6.8	588	19	30
13	392	5	5.3	403	6	6.5	2140	687	4090
14	1500	143	579	382	6	6.2	978	80	211
15	2240	287	1890	430	6	7.0	663	20	36
16	833	40	90	416	6	6.7	576	17	26
17	600	15	24	410	6	6.6	1740	400	1880
18	500	10	14	359	6	5.8	3870	517	5490
19	500	10	14	369	7	7.0	1770	190	908
20	540	12	17	399	7	7.5	978	50	132
21	570	14	22	351	5	4.7	875	30	71
22	654	12	21	317	4	3.4	829	25	56
23	596	11	18	376	5	5.1	827	25	56
24	588	10	16	350	5	4.7	860	27	63
25	490	9	12	346	5	4.7	678	19	35
26	427	9	10	344	5	4.6	621	16	27
27	453	9	11	339	5	4.6	589	16	25
28	449	9	11	353	5	4.8	563	16	24
29	468	9	11	377	5	5.1	545	16	24
30	524	10	14	--	--	--	518	16	22
31	628	18	31	--	--	--	496	14	19
TOTAL	18069	--	2911.4	13548	--	719.0	24990	--	13289.0

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	515	12	17	480	12	16	664	36	65
2	507	11	15	453	12	15	584	38	60
3	475	9	12	425	11	13	593	36	58
4	470	8	10	440	12	14	535	39	56
5	526	12	17	419	11	12	481	40	52
6	470	10	13	546	27	40	444	40	48
7	445	9	11	457	16	20	410	18	20
8	443	8	9.6	394	11	12	390	13	14
9	451	7	8.5	376	9	9.1	385	12	12
10	417	7	7.9	371	9	9.0	367	8	7.9
11	408	10	11	373	9	9.1	353	7	6.7
12	402	8	8.7	516	14	20	2190	511	5550
13	391	7	7.4	452	11	13	4490	564	8150
14	388	6	6.3	398	10	11	1060	100	286
15	384	6	6.2	379	9	9.2	699	40	75
16	396	7	7.5	398	9	9.7	612	30	50
17	372	6	6.0	621	36	60	1000	100	270
18	366	4	4.0	501	22	30	685	80	148
19	364	4	3.9	415	14	16	558	50	75
20	358	4	3.9	395	12	13	537	35	51
21	358	4	3.9	362	12	12	488	30	40
22	356	4	3.8	333	11	9.9	467	24	30
23	357	15	14	339	11	10	507	36	49
24	469	40	51	696	48	90	471	28	36
25	1780	296	1600	555	20	30	479	26	34
26	670	45	81	429	15	17	462	15	19
27	534	28	40	356	12	12	472	22	28
28	486	23	30	1150	128	752	470	22	28
29	451	16	19	3890	364	4100	442	20	24
30	450	12	15	1330	68	244	417	10	11
31	--	--	--	951	30	77	--	--	--
TOTAL	14459	--	2043.6	19200	--	5705.0	21712	--	15353.6

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	380	8	8.2	234	19	12	117	11	3.5
2	358	4	3.9	434	50	59	133	12	4.3
3	395	17	18	277	25	19	153	13	5.4
4	370	18	18	235	12	7.6	143	13	5.0
5	364	13	13	213	8	4.6	124	11	3.7
6	341	13	12	204	6	3.3	152	12	4.9
7	336	13	12	269	25	18	368	20	20
8	313	12	10	228	9	5.5	185	16	8.0
9	311	12	10	193	7	3.6	159	12	5.2
10	311	11	9.2	190	6	3.1	162	14	6.1
11	307	10	8.3	178	5	2.4	1040	176	556
12	315	12	10	169	5	2.3	415	86	96
13	301	11	8.9	154	4	1.7	220	20	12
14	296	11	8.8	166	16	7.2	171	15	6.9
15	290	11	8.6	164	14	6.2	144	8	3.1
16	349	14	13	157	14	5.9	148	8	3.2
17	285	13	10	173	16	7.5	142	8	3.1
18	270	13	9.5	199	18	9.7	139	9	3.4
19	266	11	7.9	174	16	7.5	135	10	3.6
20	334	20	18	165	13	5.8	132	9	3.2
21	261	18	13	158	13	5.5	131	9	3.2
22	245	17	11	143	13	5.0	122	8	2.6
23	236	16	10	134	13	4.7	132	8	2.9
24	234	15	9.5	138	13	4.8	127	8	2.7
25	662	40	77	244	21	14	122	7	2.3
26	411	30	33	202	18	9.8	118	6	1.9
27	292	22	17	142	11	4.2	116	6	1.9
28	257	20	14	135	10	3.6	112	6	1.8
29	232	20	13	127	11	3.8	106	5	1.4
30	209	20	11	131	11	3.9	115	6	1.9
31	205	17	9.4	123	11	3.7	--	--	--
TOTAL	9736	--	435.2	5853	--	254.9	5583	--	779.2

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 170054
TOTAL LOAD FOR YEAR (TONS) 48541.4

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

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED											METHOD OF ANALYSIS
						.002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	
MAR 18, 1968	1000	06	4220	512	5840	22	32	45	60	76	88	96	99	100	--	--	SCBW
MAY 29.....	1030	12	4470	493	5950	0	37	53	67	79	88	96	99	100	--	--	SCPW
JUN 13.....	1130	17	5100	779	10700	0	45	72	84	89	95	98	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", 75°31'19") at tidal-gaging station located on channel side of west tower of south bridge.
DRAINAGE AREA.--11,030 sq mi.
RECORDS AVAILABLE.--Chemical analyses: July 1955 to September 1968.
Water temperatures: October 1956 to September 1968.
EXTREMES, 1967-68.--Specific conductance: Maximum daily, 9,100 micromhos Sept. 27; minimum daily, 100 micromhos Apr. 12-14.
Dissolved oxygen: Maximum daily, 11.0 mg/l Jan. 17; minimum daily, 0.0 mg/l Nov. 4, 6, Apr. 29-30.
Water temperatures: Maximum, 31°C Aug. 9; minimum, freezing point Feb. 22.
EXTREMES, 1955-68.--Specific conductance: Maximum daily, 14,600 micromhos Oct. 6, 1957; minimum daily, 100 micromhos on several days during the spring of most years.
Dissolved oxygen (1962-68): Maximum daily, 13.3 ppm Mar. 2, 1967; minimum daily, 0.0 ppm on many days during summer months.
Water temperatures (1956-68): Maximum, 31°C Aug. 9, 1968; minimum, freezing point on many days during winter months.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	--	--	--	3840	1100	2308	--	--	--	960	520	694	2020	370	1143	4980	530	2306
2	--	--	--	4360	1060	2305	--	--	--	720	240	343	1800	340	994	3600	700	2030
3	--	--	--	3820	980	2152	--	--	--	940	240	412	1250	260	658	3500	420	1549
4	--	--	--	3940	900	1998	--	--	--	820	260	439	570	250	350	3520	860	1968
5	--	--	--	2740	720	1638	--	--	--	360	260	285	470	250	339	4060	880	2220
6	4960	1480	--	2440	680	1363	--	--	--	640	280	405	440	300	348	4500	1200	2753
7	5700	1740	3525	2020	640	1213	--	--	--	580	280	343	420	320	347	4980	1220	3008
8	5780	1860	3617	1620	580	1020	--	--	--	340	280	306	580	320	393	4710	1420	2995
9	5740	2040	3615	1640	620	1076	--	--	--	525	300	350	2280	320	914	4850	1470	--
10	5660	1940	3518	1340	500	908	--	--	--	1840	310	804	560	300	402	4960	2150	--
11	4860	1800	3285	1740	560	993	--	--	--	2440	350	1140	920	300	450	6280	1960	--
12	4840	1780	3163	1460	520	948	--	--	--	3060	370	1391	2660	320	810	7400	1860	4678
13	5380	1680	3216	1100	440	773	--	--	--	4500	500	2067	2140	340	824	6940	2100	--
14	5240	1920	3428	2040	520	908	--	--	--	4900	1570	--	2060	340	853	--	--	--
15	5160	1940	3385	1420	400	704	--	--	--	4940	350	2149	2580	380	1097	--	--	--
16	4900	1900	3338	1160	420	689	--	--	--	2570	320	672	2340	400	1048	--	--	--
17	5140	1820	3291	2280	500	1011	--	--	--	2380	430	836	2460	400	1217	--	--	--
18	5260	1980	3625	2300	500	1058	--	--	--	2020	295	939	1640	440	928	1420	340	--
19	4840	1420	3029	1360	440	788	--	--	--	2030	300	901	1500	380	859	1300	320	550
20	4140	1480	2807	1040	480	710	360	260	--	1860	320	919	1830	330	852	540	300	363
21	3960	1560	2891	1640	520	842	420	240	293	2020	330	953	1250	330	782	400	300	335
22	3780	1640	2743	2040	540	1067	400	240	311	1950	310	945	1850	370	887	360	280	316
23	4260	1640	2742	1800	440	1041	300	260	277	1900	340	971	1620	320	799	400	280	313
24	4080	1600	2665	1680	480	962	320	260	283	1550	310	790	2280	380	1125	320	240	279
25	4600	1600	2970	1600	500	925	440	260	312	2300	360	1058	3100	460	1441	280	220	252
26	3680	1320	2374	1600	520	978	420	260	323	2100	350	1023	3520	510	1763	300	240	263
27	3740	1220	2327	1520	480	--	480	240	303	1820	320	856	3980	620	2074	280	240	250
28	3040	1200	2025	--	--	--	1060	260	358	2350	330	945	3940	700	2192	240	160	206
29	3400	1060	1973	--	--	--	680	280	380	1860	330	963	5000	890	2619	200	160	173
30	3040	1060	1959	--	--	--	720	240	336	2550	370	1118	--	--	--	200	140	168
31	3580	1120	2213	--	--	--	760	240	333	2630	370	1169	--	--	--	180	160	168

	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	200	160	168	420	280	--	--	--	--	400	250	325	2760	640	1748	6640	2820	4404
2	180	160	165	--	--	--	--	--	--	450	300	344	3000	600	1607	7380	3020	4609
3	180	160	168	--	--	--	--	--	--	500	300	356	3620	640	1648	7140	2820	4569
4	240	140	182	--	--	--	--	--	--	500	300	375	3080	620	1568	7260	2900	4649
5	220	160	177	--	--	--	--	--	--	1000	300	417	3180	660	1623	7740	2920	4761
6	--	--	--	340	280	--	--	--	--	1200	300	458	4680	800	2156	7380	3280	5118
7	--	--	--	420	300	338	--	--	--	1400	300	494	4460	1260	2488	6900	3020	4690
8	--	--	--	580	300	--	--	--	--	750	200	362	4300	1360	2535	6820	1960	4593
9	--	--	--	--	--	--	--	--	--	800	200	420	4760	1260	2750	7400	3180	5098
10	360	120	--	--	--	--	300	200	--	580	480	519	4600	1420	2912	8200	3450	5521
11	480	140	208	--	--	--	520	200	286	600	480	530	4380	1440	2834	7800	3450	5388
12	560	100	238	--	--	--	540	200	295	580	480	518	4220	1640	2889	6350	2950	4740
13	620	100	246	--	--	--	320	200	230	560	460	514	4600	1700	3143	6400	2600	4271
14	700	100	313	1520	260	--	240	140	190	580	480	522	4340	1680	3026	6500	2500	4060
15	860	120	453	1900	220	726	200	180	183	1080	500	671	4200	1740	3012	6000	2450	3992
16	960	220	458	1760	240	750	200	160	185	1380	440	874	4640	1840	3060	5700	1720	3900
17	1020	260	--	1720	240	717	280	160	181	1480	380	858	4220	1880	2968	6240	2680	4143
18	--	--	--	1520	240	708	180	160	168	1680	400	996	4800	1780	2994	6900	2720	4338
19	--	--	--	1460	240	718	180	160	166	1640	440	961	5120	2000	3129	7360	2680	4443
20	--	--	--	1060	220	520	180	160	169	1480	360	846	4520	1800	2996	7140	2680	4478
21	--	--	--	900	240	491	180	160	166	2500	420	948	4600	1720	3020	7180	2780	4569
22	1340	380	--	980	260	491	180	160	168	2020	440	991	5540	1700	3283	7500	2800	4874
23	1400	340	799	1080	260	528	180	160	172	2360	380	1007	6080	1820	3515	7140	2850	4837
24	1540	360	886	1180	220	512	500	250	331	2180	460	--	5320	1960	3649	8400	3000	5438
25	1180	300	627	960	240	463	650	250	323	2280	380	999	5400	1980	3644	8800	3350	5656
26	860	260	472	1080	240	439	800	250	348	2340	420	1094	5000	1920	--	8300	3250	5510
27	700	280	380	1000	280	576	950	250	425	2500	460	1248	5360	2040	3728	9100	3200	5610
28	440	280	323	1220	280	572	950	250	419	2820	460	1355	5640	2180	3849	9005	2003	5414
29	380	280	320	1320	240	--	1000	250	398	2520	540	1378	5880	2300	4091	8600	3550	5602
30	400	280	332	--	--	--	500	250	333	2440	520	1514	6140	2440	4221	7240	3500	5451
31	--	--	--	--	--	--	--	--	--	2880	600	1708	6960	2620	4363	--	--	--

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

DISSOLVED OXYGEN, IN MILLIGRAMS PER LITER, OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.2	1.4	4.3	5.0	0.8	2.6	9.2	5.3	7.1	8.5	7.8	8.2	6.8	4.9	5.9	9.0	7.5	8.4
2	6.8	1.8	3.9	5.0	.6	2.3	8.9	5.1	6.9	8.4	6.9	—	6.3	4.7	5.5	9.2	7.9	8.6
3	6.2	1.6	4.1	4.2	.2	1.8	7.9	4.6	6.6	10.4	7.2	8.5	5.9	4.5	5.2	9.1	7.4	8.4
4	6.0	1.0	3.5	4.0	.0	1.4	7.1	4.0	—	10.1	7.5	8.6	5.3	4.7	5.0	10.7	8.4	—
5	5.8	.8	2.7	3.2	.4	1.5	—	—	—	9.4	7.2	8.3	5.3	4.8	5.0	10.8	9.4	10.2
6	5.8	1.0	3.0	2.8	.0	1.2	—	—	—	10.3	7.7	9.2	5.2	4.7	4.9	10.7	9.4	10.1
7	7.0	2.2	4.5	2.8	.4	1.4	—	—	—	10.2	7.7	8.8	5.1	4.7	4.9	10.5	9.2	10.0
8	6.4	3.6	4.6	3.4	.8	2.0	—	—	—	9.7	7.7	—	5.9	4.9	5.4	10.3	9.0	9.8
9	5.8	2.4	4.2	3.4	1.6	2.6	—	—	—	—	—	—	6.6	5.2	5.7	10.2	8.7	9.5
10	5.4	1.8	3.7	2.8	1.4	2.2	—	—	—	—	—	—	6.8	5.3	6.0	10.0	8.4	9.3
11	5.4	1.6	3.6	3.8	1.6	2.4	—	—	—	—	—	—	6.8	6.4	6.6	10.0	8.2	9.2
12	5.2	1.6	3.4	3.6	2.2	2.7	—	—	—	—	—	—	7.8	6.6	7.0	10.1	8.9	9.2
13	5.6	1.4	3.3	4.2	2.2	3.1	—	—	—	—	—	—	7.9	6.9	7.4	9.8	6.0	8.5
14	5.0	1.4	3.2	5.8	2.8	4.0	—	—	—	—	—	—	8.4	7.4	7.8	8.8	5.2	7.2
15	4.6	.4	2.7	5.3	3.3	4.4	—	—	—	—	—	—	8.9	7.6	8.1	8.4	5.3	6.9
16	4.4	.8	2.6	7.3	4.4	5.7	—	—	—	10.3	8.8	—	8.7	7.6	8.1	8.1	4.8	6.6
17	4.4	.8	2.5	8.4	5.4	6.6	—	—	—	11.0	8.9	9.9	8.8	7.7	8.2	8.0	4.5	6.3
18	5.2	.6	3.0	8.1	4.5	6.2	—	—	—	10.3	8.4	—	8.7	7.8	8.2	8.1	4.8	6.6
19	5.8	2.0	3.8	7.4	4.6	6.0	—	—	—	—	—	—	8.7	7.8	8.3	7.6	5.0	6.0
20	5.8	2.4	4.0	7.4	5.2	6.3	6.5	6.3	—	—	—	—	9.1	8.0	8.6	6.5	5.1	5.6
21	6.2	2.8	4.4	8.7	5.9	6.8	7.3	6.1	6.7	—	—	—	9.0	8.0	8.5	6.7	5.1	5.8
22	6.0	2.4	4.1	8.2	4.9	6.8	7.1	6.0	6.7	—	—	—	9.2	8.1	8.7	6.7	5.3	5.9
23	6.4	2.2	4.0	7.1	4.9	6.2	7.3	6.3	6.8	—	—	—	9.3	8.1	8.6	7.0	5.6	6.3
24	5.8	1.6	3.5	8.0	4.9	6.6	8.1	6.8	7.4	7.9	6.5	—	9.4	8.2	8.8	8.3	7.0	7.8
25	7.2	2.0	4.3	7.2	4.8	6.1	8.0	6.5	7.4	8.9	6.5	7.7	9.3	8.1	8.7	8.6	8.0	8.2
26	6.0	1.6	3.5	7.6	5.0	6.1	8.1	6.6	7.3	8.5	6.2	7.4	9.2	8.0	8.7	8.2	7.8	8.0
27	6.8	1.4	3.7	7.1	4.2	5.7	8.0	6.5	7.1	7.9	5.8	6.9	9.1	7.8	8.5	8.5	7.5	7.9
28	5.2	1.4	3.2	6.9	4.0	5.6	8.4	6.4	7.2	7.8	5.6	6.6	8.9	7.5	8.3	8.4	7.0	7.7
29	5.2	1.2	2.9	7.5	4.1	5.9	9.0	7.2	8.1	7.6	5.4	6.3	8.8	7.2	8.2	7.2	6.7	7.0
30	4.6	1.2	2.8	8.4	4.7	6.6	9.0	6.9	7.9	7.2	5.0	6.1	—	—	—	6.9	6.4	6.7
31	5.2	1.0	2.9	—	—	—	8.8	6.6	7.6	7.3	5.1	6.1	—	—	—	6.8	6.3	6.5

	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.2	6.7	—	2.9	0.1	—	—	—	—	3.0	1.5	2.5	5.3	2.0	3.4	4.5	2.3	3.3
2	7.7	6.3	6.9	—	—	—	—	—	—	2.6	1.1	2.1	5.3	1.5	3.2	4.6	2.3	3.3
3	7.4	5.9	6.8	—	—	—	—	—	—	2.4	.7	1.8	5.7	1.9	3.3	3.8	1.8	2.8
4	8.1	5.9	6.9	—	—	—	—	—	—	1.5	.5	1.1	5.5	1.6	3.3	3.7	1.3	2.5
5	7.7	6.3	6.9	—	—	—	—	—	—	1.1	.5	.8	5.9	2.0	3.6	3.6	1.2	2.4
6	—	—	—	3.7	1.5	—	—	—	—	1.1	.4	.7	5.8	2.1	3.9	3.8	1.8	2.9
7	—	—	—	4.1	1.6	2.9	—	—	—	1.2	.2	.6	5.2	1.4	3.3	3.5	1.4	2.5
8	—	—	—	4.4	1.7	—	—	—	—	2.1	.4	.9	5.1	1.5	3.4	3.3	1.3	2.3
9	—	—	—	—	—	—	—	—	—	2.7	.6	1.1	5.1	1.9	3.6	3.0	1.2	—
10	7.2	5.0	—	—	—	—	2.6	1.6	—	2.9	.6	1.3	5.2	1.6	3.7	—	—	—
11	7.1	4.3	5.8	—	—	—	3.1	1.5	2.2	2.5	.4	.9	5.8	1.6	3.9	—	—	—
12	6.9	3.7	5.5	—	—	—	2.7	1.6	2.0	2.5	.3	.8	6.1	2.2	4.1	—	—	—
13	7.0	2.8	4.9	—	—	—	2.7	1.4	2.1	2.3	.2	.8	5.8	1.9	4.1	—	—	—
14	6.5	3.5	4.7	2.8	1.5	—	3.6	1.0	2.2	2.2	.3	1.0	4.9	1.6	3.6	—	—	—
15	6.5	2.1	4.6	3.1	.7	1.7	3.0	.6	1.7	2.0	.4	1.0	5.2	1.5	3.3	—	—	—
16	6.5	2.4	4.8	2.3	.4	1.3	1.9	.4	1.2	2.1	.3	1.0	4.8	1.3	3.0	4.8	2.5	—
17	6.9	3.2	—	1.9	.3	1.1	1.4	.2	1.0	2.1	.3	.9	4.7	1.3	2.9	4.5	2.2	3.3
18	—	—	—	1.8	.4	1.0	1.5	.1	.9	3.1	.2	1.2	5.3	1.3	2.9	4.4	1.9	3.1
19	—	—	—	1.6	.3	1.0	2.9	.2	1.2	3.5	.7	1.8	3.6	1.3	2.6	4.3	1.8	3.0
20	—	—	—	2.4	.6	1.3	3.6	.7	1.8	4.1	.6	2.0	3.9	1.2	2.3	4.1	1.6	2.7
21	—	—	—	3.0	1.3	2.1	3.5	.9	2.1	5.1	.9	2.4	3.3	1.3	2.3	3.5	1.4	2.5
22	5.5	2.1	—	3.1	1.2	2.0	4.0	.8	2.3	5.6	1.0	2.6	3.4	1.4	2.4	3.7	1.3	—
23	5.7	1.9	4.2	2.9	1.0	1.8	3.8	.8	2.2	5.5	1.2	2.9	3.3	1.5	2.5	—	—	—
24	6.3	3.2	4.5	2.6	.9	1.5	3.7	1.0	2.3	5.0	.8	—	2.7	1.5	2.2	3.5	1.1	—
25	5.8	2.1	4.1	2.1	.7	1.3	3.3	.7	1.9	3.9	.9	2.1	2.9	1.3	2.3	2.3	.8	1.6
26	5.6	1.5	3.7	1.8	.5	1.0	3.5	.6	2.0	4.5	.6	2.5	3.5	1.3	—	1.8	.7	1.3
27	5.5	1.4	3.0	3.6	1.6	2.5	4.5	2.3	3.3	5.0	.8	2.7	3.7	1.8	2.7	1.6	.2	.7
28	4.1	.5	2.2	4.9	3.4	4.3	4.9	2.2	3.4	5.3	1.0	3.1	4.0	2.1	3.1	3.0	1.0	1.7
29	3.3	.0	1.6	5.7	4.1	—	4.1	2.0	3.2	5.0	1.2	2.7	4.4	2.2	3.3	3.3	1.5	2.2
30	2.8	.0	1.3	—	—	—	3.5	1.7	2.8	3.9	1.2	2.7	4.4	2.3	3.4	3.3	1.7	—
31	—	—	—	—	—	—	—	—	—	5.3	1.7	3.2	4.7	2.2	3.4	—	—	—

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

pH OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1										--	--	--	6.2	6.0	6.1	6.3	6.2	6.2
2										--	--	--	6.1	6.0	6.1	6.3	6.2	6.2
3										--	--	--	6.3	6.0	6.1	6.3	6.2	6.3
4										--	--	--	6.5	6.1	6.3	6.5	6.1	6.3
5										--	--	--	6.4	6.1	6.2	6.6	6.1	6.3
6										--	--	--	6.2	6.1	6.2	6.5	6.1	6.3
7										--	--	--	6.4	6.2	6.2	6.5	6.2	6.4
8										--	--	--	6.2	6.1	6.2	6.3	6.3	6.3
9										--	--	--	6.3	6.2	6.2	6.3	6.2	6.3
10										--	--	--	6.5	6.1	6.4	6.3	6.2	6.2
11										--	--	--	6.5	6.3	6.4	6.3	6.1	6.2
12										--	--	--	6.5	6.3	6.5	6.4	6.0	6.2
13										--	--	--	6.5	6.4	6.5	6.3	6.0	6.2
14										--	--	--	6.6	6.3	6.5	6.4	6.1	6.3
15										--	--	--	6.6	6.2	6.4	6.4	6.1	--
16										--	--	--	6.5	6.1	6.3	--	--	--
17										--	--	--	6.5	6.0	6.3	--	--	--
18										--	--	--	6.4	6.1	6.3	6.3	6.2	--
19										--	--	--	6.4	6.1	6.3	6.4	6.2	6.3
20										--	--	--	6.5	6.1	6.4	6.6	6.2	6.4
21										--	--	--	6.5	6.1	6.3	6.5	6.3	6.3
22										--	--	--	6.6	6.0	6.3	6.4	6.3	6.3
23										--	--	--	6.4	6.0	6.3	6.5	6.2	6.3
24										6.3	6.1	--	6.4	6.2	6.3	6.6	6.2	6.4
25										6.4	6.2	6.3	6.2	6.2	6.2	6.6	6.3	6.5
26										6.4	6.2	6.3	6.4	6.2	6.3	6.6	6.1	6.4
27										6.2	6.2	6.2	6.5	6.3	6.4	6.5	6.2	6.3
28										6.2	6.0	6.2	6.5	6.2	6.3	6.4	6.1	6.2
29										6.2	6.1	6.1	6.3	6.2	6.3	6.3	6.0	6.2
30										6.2	6.0	6.1	--	--	--	6.3	6.1	6.2
31										6.3	6.0	6.2	--	--	--	6.3	6.1	6.2

	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.3	6.0	6.2	6.5	6.3	--	--	--	--	6.4	6.0	6.3				6.9	6.1	6.4
2	6.4	6.0	6.2	--	--	--	--	--	--	6.6	6.0	6.4				7.1	6.3	6.7
3	6.3	6.0	6.2	--	--	--	--	--	--	6.6	6.3	6.5				7.6	6.2	7.0
4	6.2	6.0	6.1	--	--	--	--	--	--	6.4	6.3	6.3				7.5	6.8	7.1
5	6.3	5.9	6.1	--	--	--	--	--	--	6.4	6.2	6.3				7.5	6.7	--
6	--	--	--	6.6	6.5	--	--	--	--	6.4	6.1	6.3				--	--	--
7	--	--	--	6.6	6.4	6.6	--	--	--	6.4	6.2	6.3				--	--	--
8	--	--	--	6.5	6.4	--	--	--	--	6.4	6.1	6.2				--	--	--
9	--	--	--	--	--	--	--	--	--	6.3	6.1	6.2				--	--	--
10	6.5	6.2	--	--	--	--	6.0	5.8	--	6.3	6.1	6.2				--	--	--
11	6.5	6.2	6.4	--	--	--	6.1	5.5	5.8	6.3	6.1	6.2				--	--	--
12	6.6	6.3	6.4	--	--	--	6.2	5.5	5.9	6.2	6.1	6.2				--	--	--
13	6.6	6.4	6.5	--	--	--	6.2	5.8	6.0	6.2	5.9	6.1				--	--	--
14	6.5	6.3	6.4	6.4	6.2	--	6.4	6.0	6.2	6.2	5.8	6.0				--	--	--
15	6.5	6.3	6.4	6.3	6.1	6.2	6.4	5.9	6.2	6.2	5.9	6.0				--	--	--
16	6.6	6.3	6.5	6.2	5.9	6.1	6.3	5.9	6.1	6.2	6.0	6.1				--	--	--
17	6.7	6.4	--	6.2	5.9	6.0	6.2	5.7	6.0	6.3	6.0	6.2				--	--	--
18	--	--	--	6.2	6.0	6.1	6.3	6.0	6.1	6.3	6.0	6.2				6.3	5.8	--
19	--	--	--	6.2	6.0	6.1	6.2	6.0	6.1	6.3	6.0	6.2				6.3	5.7	--
20	--	--	--	6.3	6.0	6.2	6.3	5.8	6.1	6.4	6.1	6.2				--	--	--
21	--	--	--	6.6	6.2	6.4	6.3	6.1	6.2	--	--	--				--	--	--
22	6.5	6.3	--	6.7	6.3	6.5	6.3	6.2	6.2	--	--	--				--	--	--
23	6.6	6.3	6.5	6.7	6.3	6.5	6.3	5.8	6.1	--	--	--				--	--	--
24	6.6	6.2	6.4	6.7	6.2	6.4	6.2	5.8	6.0	--	--	--				--	--	--
25	6.4	6.1	--	6.7	6.2	6.5	6.2	5.7	6.0	--	--	--				--	--	--
26	6.8	6.3	6.6	6.7	6.2	6.5	6.2	5.7	6.1	--	--	--				--	--	--
27	6.7	6.4	6.5	6.6	6.1	6.4	6.3	6.0	6.1	--	--	--				--	--	--
28	6.8	6.4	6.6	6.7	6.1	6.4	6.2	6.0	6.1	--	--	--				--	--	--
29	6.8	6.3	6.5	6.4	6.1	--	6.4	6.1	6.2	--	--	--				--	--	--
30	6.5	6.3	6.4	--	--	--	6.5	6.1	6.3	--	--	--				--	--	--
31	--	--	--	--	--	--	--	--	--	--	--	--				--	--	--

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	21	20	21	16	15	16	8	6	7	4	3	3	3	2	2	2	1	2
2	21	19	20	16	15	16	7	6	6	6	4	---	3	2	2	4	1	2
3	21	19	20	17	15	16	7	6	6	5	3	4	3	2	3	4	2	3
4	21	19	20	17	16	16	7	6	---	5	4	4	3	2	3	2	1	2
5	21	20	20	17	16	16	---	---	---	5	4	4	3	3	3	4	1	3
6	22	20	21	17	15	16	---	---	---	5	2	4	3	3	3	4	2	2
7	21	20	21	16	14	15	---	---	---	4	3	4	3	3	3	3	2	2
8	21	19	20	16	14	14	---	---	---	5	4	---	3	3	3	3	2	3
9	20	19	20	14	13	14	---	---	---	---	---	---	4	2	3	3	3	3
10	20	20	20	14	13	13	---	---	---	---	---	---	4	3	4	4	3	3
11	21	19	20	14	13	13	---	---	---	---	---	---	4	3	3	4	3	4
12	20	19	19	13	13	13	---	---	---	---	---	---	3	2	3	4	3	4
13	20	19	19	14	13	13	---	---	---	---	---	---	3	2	3	4	3	4
14	19	18	19	13	12	13	---	---	---	---	---	---	2	1	2	4	4	4
15	19	18	18	13	12	13	---	---	---	---	---	---	2	1	2	5	4	4
16	19	18	18	13	11	12	---	---	---	1	1	---	2	1	2	6	4	5
17	19	18	18	12	9	11	---	---	---	1	1	1	2	1	2	6	4	5
18	19	18	19	12	9	10	---	---	---	1	1	---	2	1	2	7	5	6
19	19	18	19	11	10	11	---	---	---	---	---	---	2	1	2	7	6	7
20	19	17	18	11	8	10	7	5	---	---	---	---	2	1	2	8	7	7
21	18	17	18	9	8	---	8	6	7	---	---	---	2	1	1	8	7	8
22	18	17	17	---	---	---	8	6	---	---	---	---	1	0	1	8	8	8
23	18	16	17	---	---	---	---	---	---	---	---	---	2	1	1	8	8	8
24	18	16	17	---	---	---	---	---	---	2	1	---	1	1	1	8	8	8
25	18	16	17	---	---	---	---	---	---	1	1	1	1	1	1	8	7	8
26	18	16	17	---	---	---	5	5	---	2	1	1	1	1	1	8	8	8
27	18	16	17	8	8	---	6	4	5	2	1	1	2	1	1	8	8	8
28	17	16	17	9	8	8	6	4	5	2	1	1	2	1	2	9	8	8
29	17	16	16	8	7	8	5	4	4	2	1	2	2	1	2	9	9	9
30	17	16	16	8	7	7	6	4	4	2	1	2	---	---	---	10	9	9
31	17	15	16	---	---	---	5	4	4	2	2	2	---	---	---	11	10	10

	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	11	11	11	17	16	---	---	---	---	26	24	25	29	27	28	26	25	26
2	11	11	11	---	---	---	---	---	---	26	25	26	29	28	28	26	24	25
3	11	11	11	---	---	---	---	---	---	26	26	26	29	28	28	26	25	26
4	12	11	11	---	---	---	---	---	---	26	26	26	29	28	29	26	25	26
5	12	12	12	---	---	---	---	---	---	26	25	26	29	28	29	26	25	26
6	---	---	---	17	16	---	---	---	---	26	26	26	29	28	29	26	25	25
7	---	---	---	16	16	16	---	---	---	26	25	26	29	29	29	26	25	25
8	---	---	---	16	16	---	---	---	---	26	26	26	30	29	29	26	25	25
9	---	---	---	---	---	---	---	---	---	26	26	26	31	29	29	26	24	---
10	14	13	---	---	---	---	22	21	---	26	26	26	30	29	29	---	---	---
11	14	13	14	---	---	---	22	21	21	26	26	26	29	28	29	---	---	---
12	14	13	13	---	---	---	22	21	21	26	26	26	29	28	28	---	---	---
13	14	13	13	---	---	---	22	21	21	27	26	26	28	28	28	---	---	---
14	14	14	14	17	17	---	22	21	22	27	26	27	28	27	28	---	---	---
15	14	14	14	18	17	17	22	21	22	27	26	27	28	27	28	---	---	---
16	14	14	14	18	17	17	23	22	23	28	27	27	28	27	28	24	24	---
17	14	14	---	18	17	18	23	22	23	28	27	28	28	27	28	24	23	24
18	---	---	---	18	18	18	23	22	23	28	28	28	28	28	28	24	23	24
19	---	---	---	19	18	18	23	23	23	28	28	28	28	27	28	24	23	24
20	---	---	---	19	18	18	23	23	23	28	28	28	28	27	28	24	23	24
21	---	---	---	19	18	18	23	22	23	28	28	28	29	28	28	24	23	24
22	18	15	---	19	18	18	23	23	23	28	28	28	29	28	28	24	23	---
23	16	15	16	19	18	18	24	23	23	29	28	28	29	28	28	---	---	---
24	16	15	16	18	18	18	24	23	24	29	28	---	29	28	28	25	24	---
25	16	15	16	19	18	18	25	24	24	29	28	29	29	28	28	25	24	24
26	16	15	15	19	18	19	26	24	25	29	28	29	28	28	28	25	24	24
27	16	15	16	18	17	18	25	24	24	29	28	28	28	27	27	25	24	24
28	18	16	16	18	17	17	24	24	24	29	28	28	27	26	27	24	24	24
29	16	16	16	17	17	---	24	24	24	28	28	28	27	26	26	24	23	24
30	17	16	16	---	---	---	25	24	24	28	27	28	26	25	26	23	23	23
31	---	---	---	---	---	---	---	---	---	28	27	28	26	25	26	---	---	---

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 sq mi approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1963 to September 1968.
EXTREMES, 1967-68.--Specific conductance: Maximum daily, 20,000 micromhos Mar. 11; minimum daily, 600 micromhos Mar. 31, Apr. 1, 3, June 5.
EXTREMES, 1963-68.--Specific conductance: Maximum daily, 35,400 micromhos Nov. 7, 1963; minimum daily, 300 micromhos Mar. 18, 19, 1964.
REMARKS.--Records of discharge are given for Delaware River at Trenton, N. J.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT.										
04...	4060	3.3	.00	76	200	1700	80	35	0	477
NOV.										
09...	11200	3.1	.00	53	102	848	41	22	0	284
DEC.										
14...	31400	6.5	.00	31	52	370	20	10	0	163
JAN.										
05...	8000	6.9	.00	25	38	236	15	12	0	123
25...	7220	--	--	72	178	--	--	32	0	428
FEB.										
15...	7900	5.5	.00	88	218	1740	84	34	0	515
MAR.										
06...	5090	5.2	.00	100	260	2300	100	34	0	621
20...	36100	--	--	46	92	--	--	10	0	266
APR.										
03...	15000	4.5	.06	20	20	80	4.2	18	0	69
17...	6320	--	--	28	44	--	--	14	0	144
MAY										
01...	15000	4.6	.42	23	27	195	9.5	5	0	105
AUG.										
01...	3460	3.6	--	72	202	1600	80	33	0	428

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.										
04...	3050	.4	.6	5960	5600	1010	984	9420	6.6	2
NOV.										
09...	1500	.4	6.2	2950	2850	552	534	5000	6.7	5
DEC.										
14...	640	.4	9.5	1370	1300	292	284	2490	5.8	3
JAN.										
05...	440	.2	8.3	940	898	219	209	1740	6.0	3
25...	2750	--	2.3	--	--	912	886	9290	6.2	7
FEB.										
15...	3240	.3	1.8	6290	5900	1120	1090	9320	6.3	3
MAR.										
06...	4240	.3	1.3	8120	7640	1320	1290	13000	6.5	3
20...	1040	--	6.0	--	--	494	486	4320	5.6	2
APR.										
03...	160	.3	7.2	420	374	133	118	709	6.3	8
17...	560	--	5.0	--	--	251	240	2260	5.9	2
MAY										
01...	350	.4	6.9	824	724	169	165	1410	5.4	5
AUG.										
01...	2950	.4	2.4	5740	5350	1010	984	9480	6.4	10

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

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER			JANUARY			FEBRUARY			MARCH		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1...	11500	6400	8669	12800	6900	9390	12400	4800	8058	9500	2000	3158	11000	4600	7550	13000	8300	10115
2...	13000	6500	8875	12800	7000	9100	13100	5900	8288	6200	1900	3123	9500	5100	6946	14300	7800	10313
3...	12400	6550	8908	11800	6500	8590	12400	5900	8421	7600	1900	3515	7600	4100	5783	13000	6700	8688
4...	12200	6500	8871	9100	6250	--	8600	4000	5742	7300	2100	4094	5400	2800	4063	15800	8300	11021
5...	13000	6750	9402	--	--	--	10600	3500	5808	4900	1650	2535	7100	2650	4290	17000	8300	12608
6...	12500	7050	9413	--	--	--	10400	3400	6080	6700	1800	3990	7900	2350	4481	16700	10500	13425
7...	14000	7600	10133	--	--	--	8900	3400	5404	7300	1700	3510	8000	2300	5157	19000	9800	14204
8...	13000	7750	10392	10300	4750	--	7700	3400	5042	6600	1100	3698	12200	5000	9129	19200	10900	15046
9...	13100	8100	10367	12200	4700	7848	7700	2800	4808	9000	2100	6035	15600	6300	11604	18600	11000	15054
10...	13500	8250	10081	10400	3900	6498	8000	2900	4792	12100	5900	9425	11700	6300	9633	19800	12000	16038
11...	13000	7777	9552	11600	4200	7504	8300	4400	6483	14200	6800	10671	14800	5900	10458	20000	11800	16013
12...	13900	7500	9620	10300	5000	7642	10400	3400	6042	13900	7500	10878	17200	6200	12233	19500	12500	15754
13...	14300	7600	9975	9000	4400	6413	6500	1500	3300	16100	9700	11873	14600	6300	10480	18000	10800	14671
14...	14100	7800	10569	11700	4400	7285	4100	1250	2213	18400	10500	14579	13400	6200	9563	14600	8300	10900
15...	13200	8000	10269	8300	3000	5827	3050	1050	1583	15600	7700	11792	14700	6500	9821	13500	7800	10200
16...	12500	8250	10133	11100	3500	6402	5800	900	2140	9100	5100	7142	14300	5700	9025	14300	7600	10175
17...	12500	7900	10029	14000	5200	8688	6900	1000	2613	12700	5500	8058	13300	5600	9558	13600	7400	9921
18...	14000	8400	10656	13200	4800	8154	8400	1300	3204	11200	4900	7575	10300	4600	--	13700	5600	9054
19...	11700	6000	8633	9900	3600	6408	6800	1250	2954	10400	4600	6846	11000	2200	6646	13600	3200	7396
20...	11000	6000	7823	8900	3300	5383	5100	1300	2242	10200	4500	6750	12900	5100	8158	10000	2700	5167
21...	10900	5900	8202	12000	4200	7229	5900	1400	2560	9900	4600	6975	12700	5200	8438	6400	2000	3467
22...	11700	6000	7827	12500	5600	8563	6100	1450	3006	9500	4500	7011	14500	5300	10225	6800	1700	3200
23...	12000	6060	8478	11600	5100	8567	5100	1200	2229	10600	4900	6854	14100	5100	9263	8000	1700	3563
24...	12200	6250	8343	11300	4700	8088	9100	1100	4646	9800	4650	6121	15600	5800	10883	3300	1300	2404
25...	13500	7150	9560	10900	4800	7521	8000	1650	4663	12700	5100	8413	15700	6800	11558	3200	1000	1754
26...	11600	6100	8038	11100	4900	7783	9000	2200	4515	13900	4900	8417	16500	8000	11933	4100	1100	1733
27...	12100	5800	8029	11100	5100	7717	8900	2150	4329	12200	4600	6929	16800	8800	12054	2100	800	1371
28...	11500	5950	7942	9700	5000	6888	8800	2500	4788	11900	4900	7173	16300	9000	11842	1700	700	1104
29...	11300	5600	7910	9900	3900	6063	9100	2300	4998	12000	5100	7250	15400	9300	11942	1600	800	1029
30...	11800	5700	7894	11300	4200	6725	7500	2100	3700	12000	5100	7510	--	--	--	1900	700	938
31...	13000	6350	9046	--	--	--	7400	2050	3650	12300	5000	7529	--	--	--	1300	600	846

	APRIL			MAY			JUNE			JULY			AUGUST			SEPTEMBER		
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1...	1400	600	854	5100	1300	2396	--	--	--	6600	1900	3608	11500	6300	8425	16500	9500	11758
2...	1700	700	896	6400	1300	2650	--	--	--	6500	1700	3571	11000	5600	7575	16700	9500	12058
3...	2500	600	883	6500	1200	2792	--	--	--	6400	1700	3483	11800	5500	7671	15800	9300	11633
4...	2700	700	1242	7500	1400	3308	9500	1000	--	7200	1700	3879	11700	5500	7654	16000	9300	11796
5...	3700	700	1350	7300	1500	4392	6500	600	2842	8500	1900	4271	13300	5600	7846	16100	9500	11971
6...	4000	700	1883	8800	2300	4921	7100	700	2858	9000	2200	4488	13000	6000	8517	15700	10000	12788
7...	6500	2100	3904	9800	2200	5992	7400	1100	2975	9200	2400	4338	12800	6300	8492	15000	9300	11592
8...	6800	1600	3654	11800	2900	7154	7800	1200	3138	9500	2600	4625	12800	6200	8338	15000	9300	11604
9...	5900	1600	3350	10900	3800	7358	7300	1300	3117	9900	2800	4600	13200	6500	8879	11300	11300	--
10...	6900	1600	3121	11300	3300	6125	8200	1300	3242	8200	2800	4488	12900	6700	8883	--	--	--
11...	6300	1700	3192	11800	3400	6258	7300	1800	3638	8900	3100	5058	12200	6500	8675	--	--	--
12...	7400	1700	3404	11400	3700	6846	8000	1900	3683	10000	3400	5408	12000	6800	9146	--	--	--
13...	6600	1700	3342	11000	4100	6488	5900	1000	2400	9300	3500	5425	12500	6800	9450	--	--	--
14...	7700	1900	3508	12000	4100	6617	3300	800	1596	9000	3600	5508	11600	7200	9221	--	--	--
15...	7500	2100	3971	10900	3800	5867	4400	700	1538	8300	3600	5383	12400	6600	8863	--	--	--
16...	7400	2100	3750	9700	3900	5700	3300	700	1471	7900	3800	5521	13500	6700	9246	--	--	--
17...	7300	2200	4133	9800	3500	5517	3500	700	1546	8800	3800	5675	14500	7000	9704	19600	11300	--
18...	8200	2500	4396	9100	3400	5433	4500	700	1917	10200	4100	6571	15600	6600	10263	--	--	--
19...	7800	2700	4375	9300	3400	5467	5000	800	2263	10700	4400	6617	15500	7800	10954	--	--	--
20...	7400	2600	4392	7400	3400	4696	5000	900	2158	10700	4100	6292	14400	7300	10421	--	--	--
21...	8600	3100	5113	8400	3100	4879	7000	900	2746	12200	4200	7546	15000	7300	10108	--	--	--
22...	7900	3300	5292	10000	2900	5342	7500	1300	3483	13800	4700	8458	17000	7500	11146	--	--	--
23...	8200	3500	5379	10100	2900	5392	8700	1400	3371	13400	4800	7854	17600	8500	11525	--	--	--
24...	7900	3700	5558	9500	3100	5163	8200	2000	4063	12300	4500	7875	15600	8300	11417	--	--	--
25...	6700	3200	4400	9300	3000	4950	7800	2100	4179	11700	4700	7400	15000	8800	11392	--	--	--
26...	5500	2400	3538	9500	2900	4783	8800	2400	4463	11700	5400	7708	13800	8300	10696	--	--	--
27...	3800	1900	2817	10100	4500	6683	8700	2700	4896	12700	5400	8292	14100	7800	10746	--	--	--
28...	4000	1400	2325	8800	4600	6464	9200	2800	5154	12600	5900	8258	15300	9000	11479	--	--	--
29...	4300	1300	2017	--	--	--	7500	2500	4529	11000	5600	7863	15500	8900	11896	--	--	--
30...	3800	1300	2004	--	--	--	7400	2100	3679	10400	5700	7850	15800	9500	11788	--	--	--
31...	--	--	--	--	--	--	--	--	--	11100	6200	8221	16300	9300	11892	--	--	--

1-4837. ST. JONES RIVER AT DOVER, DEL.

LOCATION.--Lat 39°09'49", long 75°31'10", at gaging station 150 ft upstream from Division Street Bridge in Dover, Kent County, and 1,950 feet downstream from Silver Lake.
DRAINAGE AREA.--31.9 sq mi.
RECORDS AVAILABLE.--Chemical analyses: February 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
OCT.										
02...	26	9.1	.00	12	2.7	19	3.3	24	0	24
NOV.										
01...	17	13	.00	15	3.2	17	3.5	20	0	22
DEC.										
01...	19	19	.00	21	3.9	30	3.6	43	0	22
13...	180	19	.00	11	2.7	11	3.5	15	0	20
JAN.										
02...	58	16	.00	10	2.8	9.7	2.5	18	0	18
FEB.										
02...	49	17	.00	10	2.5	10	2.3	13	0	18
MAR.										
04...	34	21	.00	13	3.2	17	2.4	31	0	19
19...	278	9.6	.00	7.2	2.0	5.8	2.6	8	0	17
APR.										
02...	29	15	.00	10	2.5	12	2.9	26	0	19
MAY										
02...	27	13	--	12	2.7	12	2.8	28	0	17
JUNE										
03...	56	12	--	11	2.2	5.7	2.8	17	0	18
JULY										
01...	7.1	23	--	15	5.4	11	3.2	47	0	19
AUG.										
02...	10	14	--	14	3.2	17	3.3	36	0	23
SEPT.										
03...	6.2	14	--	16	3.5	23	4.5	39	0	27

DATE	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
02...	30	.1	4.7	136	117	41	22	209	6.6	40
NOV.										
01...	27	.0	13	151	124	51	34	216	6.4	20
DEC.										
01...	45	.0	11	203	177	69	34	321	6.8	30
13...	18	.0	6.1	124	99	39	26	164	6.6	25
JAN.										
02...	14	.4	6.4	115	89	37	22	137	6.9	40
FEB.										
02...	15	.0	9.7	110	91	36	25	143	6.9	5
MAR.										
04...	22	.2	13	141	126	46	20	209	7.5	15
19...	8.0	--	7.2	85	63	26	20	98	6.5	45
APR.										
02...	12	.0	9.9	118	96	36	14	147	7.1	45
MAY										
02...	16	.1	9.9	124	100	41	18	163	6.8	35
JUNE										
03...	11	.1	6.8	107	78	37	23	118	6.4	20
JULY										
01...	15	.2	7.6	150	123	60	21	184	6.9	120
AUG.										
02...	22	.2	8.0	140	122	48	19	205	7.7	22
SEPT.										
03...	28	.3	14	169	150	55	23	245	7.7	15

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
NOV. 12...	9.0	18	.00	4.1	1.2	8.0	2.2	22	0	2.6
DEC. 19...	20	14	.00	4.9	2.0	7.7	2.9	10	0	11
JAN. 24...	29	15	.00	4.4	1.9	7.6	2.0	15	0	7.9
FEB. 29...	19	18	.00	4.5	1.5	7.8	1.7	20	0	4.9
MAR. 30...	28	11	.00	3.5	1.2	7.2	2.3	14	0	7.3
MAY 07...	14	13	--	5.0	1.2	7.0	1.9	22	0	3.9
JUNE 06...	32	10	--	5.0	1.2	5.0	2.1	15	0	7.6
JULY 19...	16	13	--	3.5	1.5	8.5	2.2	22	0	3.6
AUG. 20...	9.7	9.9	--	3.5	1.4	9.0	2.5	28	0	2.6

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
NOV. 12...	10	.0	2.5	80	83	15	0	80	6.6	15
DEC. 19...	12	.4	3.0	83	63	20	12	94	6.8	50
JAN. 24...	8.9	.4	3.5	74	59	19	7	84	7.0	5
FEB. 29...	8.5	.0	5.3	61	62	17	1	82	7.4	6
MAR. 30...	7.5	.0	2.9	56	50	14	2	72	6.8	25
MAY 07...	8.5	.0	2.7	61	54	18	0	78	6.7	10
JUNE 06...	8.0	.0	2.3	71	49	18	5	73	6.6	35
JULY 19...	9.4	.1	2.2	62	55	15	0	76	7.5	7
AUG. 20...	8.8	.1	2.0	55	54	15	0	80	7.7	15

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 to SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
OCT.										
02...	129	18	.00	5.6	1.8	7.8	2.8	17	0	11
NOV.										
01...	93	19	.00	4.6	1.9	10	4.5	24	0	8.7
DEC.										
01...	70	19	.00	7.5	2.2	8.5	2.4	28	0	7.7
JAN.										
02...	171	17	.00	4.2	1.5	6.3	1.7	7	0	9.5
FEB.										
01...	126	17	.00	4.2	1.3	7.8	1.8	14	0	8.4
MAR.										
04...	91	52	.00	7.0	1.1	18	2.3	44	--	8.2
APR.										
01...	128	17	.00	4.0	1.6	7.2	1.8	12	0	8.0
MAY										
01...	94	28	.00	6.0	2.2	8.5	1.9	28	0	6.9
JUNE										
03...	97	17	.00	5.0	1.3	5.5	1.7	14	0	7.6
28...	64	17	.00	4.9	1.8	7.7	2.0	14	0	8.2
AUG.										
01...	43	17	--	4.0	1.8	18	3.5	16	0	5.2
SEPT.										
03...	38	16	--	6.5	1.9	9.0	3.8	19	0	6.0

DATE	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
02...	10	.0	6.4	87	72	22	8	105	7.0	10
NOV.										
01...	10	.0	6.0	89	76	20	0	109	7.1	5
DEC.										
01...	9.0	.0	7.0	93	77	28	5	113	7.0	3
JAN.										
02...	7.2	.4	7.2	75	59	17	11	77	6.5	40
FEB.										
01...	7.0	.1	7.7	70	62	16	5	83	7.0	3
MAR.										
04...	8.0	.0	8.1	133	126	22	0	135	8.2	3
APR.										
01...	7.5	.0	7.7	73	61	17	7	80	6.6	5
MAY										
01...	8.5	.1	6.8	92	83	24	1	98	7.0	20
JUNE										
03...	7.5	.0	6.0	67	59	18	7	78	6.6	10
28...	8.0	.2	9.8	68	67	20	8	92	6.8	8
AUG.										
01...	28	.0	8.6	108	94	18	5	151	7.3	10
SEPT.										
03...	10	.0	7.9	75	70	24	9	96	7.2	10

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: February 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT.										
30...	65	18	.00	9.8	2.9	6.8	2.7	22	0	18
NOV.										
28...	57	22	.00	9.8	2.9	7.6	2.1	26	0	16
DEC.										
28...	32	14	.00	7.7	2.5	4.9	2.0	8	0	21
JAN.										
30...	140	24	.00	9.5	2.8	7.8	1.6	21	0	19
FEB.										
28...	55	28	.00	9.8	2.6	7.6	1.6	28	0	16
MAR.										
19...	1470	6.4	.00	5.2	1.6	2.0	2.3	6	0	14
28...	201	13	.00	6.5	2.0	5.0	1.9	10	0	17
APR.										
24...	51	12	.00	8.2	2.5	6.2	1.9	22	0	15
MAY										
23...	36	16	--	11	2.5	6.0	1.9	29	0	14
JUNE										
24...	74	18	--	9.4	2.4	5.8	1.8	21	0	17
JULY										
19...	20	17	--	10	3.0	8.0	2.4	32	0	12
AUG.										
23...	7.9	14	--	11	3.0	8.0	2.5	36	0	11
SEPT.										
24...	9.7	28	--	12	3.6	12	3.0	50	0	12

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.										
30...	12	.0	.8	103	82	37	19	119	7.0	10
NOV.										
28...	12	.0	.7	109	86	37	15	122	6.6	8
DEC.										
28...	8.1	.4	2.3	88	67	30	23	101	6.7	30
JAN.										
30...	9.0	.4	2.6	102	87	35	18	120	7.0	8
FEB.										
28...	10	.0	3.5	103	93	35	12	124	7.6	7
MAR.										
19...	3.5	.1	2.7	53	41	20	15	68	6.5	45
28...	7.5	.0	2.7	83	61	24	16	88	6.6	45
APR.										
24...	9.0	.0	2.9	87	69	31	13	109	6.9	45
MAY										
23...	10	.0	2.9	92	79	38	14	119	6.9	15
JUNE										
24...	9.0	.1	3.7	99	78	34	17	109	6.8	100
JULY										
19...	12	.2	3.6	96	84	38	12	129	7.7	20
AUG.										
23...	12	.2	4.0	90	83	40	11	134	7.8	18
SEPT.										
24...	15	.1	3.2	123	114	45	4	162	7.8	12

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: November 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)
OCT.										
05...	26	8.5	--	--	9.1	2.4	3.9	1.8	31	0
NOV.										
02...	34	9.3	.23	.05	8.7	2.4	4.0	1.8	29	0
DEC.										
04...	95	--	--	--	--	--	--	--	23	0
27...	48	8.4	.44	.10	7.2	2.4	3.8	1.4	22	0
FEB.										
01...	73	8.7	.22	.00	7.4	2.7	4.2	1.7	20	0
APR.										
02...	68	6.4	.21	.00	7.2	2.7	4.0	1.4	21	0
24...	60	6.5	.23	.01	7.0	2.4	3.8	1.4	23	0
JUNE										
06...	53	7.6	.20	.07	8.5	2.6	4.0	1.5	26	0
JULY										
19...	25	7.3	--	--	10	2.8	4.1	2.1	34	0
SEPT.										
03...	16	6.3	--	--	9.3	2.6	4.6	1.9	34	0

DATE	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.										
05...	5.2	6.8	.0	6.1	59	32	8	89	7.5	3
NOV.										
02...	5.6	6.4	.0	5.1	58	32	8	87	7.2	3
DEC.										
04...	--	13	--	--	--	36	17	119	6.5	--
27...	7.0	6.8	.0	6.2	55	28	10	82	6.9	2
FEB.										
01...	9.2	7.3	.1	6.2	58	30	13	88	6.9	3
APR.										
02...	8.0	6.7	.2	4.8	51	29	12	84	6.9	2
24...	5.4	5.7	.0	6.3	50	28	9	84	6.9	4
JUNE										
06...	7.4	5.8	.1	5.5	56	32	10	86	6.9	4
JULY										
19...	5.6	6.7	.1	3.8	60	37	9	97	7.1	4
SEPT.										
03...	5.2	6.8	.1	5.4	59	34	6	100	7.6	--

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: June 1963 to April 1964.
Water temperatures: October 1963 to September 1968.
EXTREMES.--1967-68.--Water temperatures: Maximum, 32.5°C Aug. 8; minimum, freezing point on several days during February.
EXTREMES.--1963-68.--Water temperatures: Maximum, 32.5°C Aug. 8, 1965; Aug. 8, 1968; minimum, freezing point on several days during winter months.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(Recorder with temperature sensor attachment, thermocouple probe at river surface)

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	20	20	22	22	23	22	22	20	20	20	20	18	19	18	18	20	20	20	18	17	16	16	16	16	16	16	16	16	15	15		18
MINIMUM	20	18	19	20	20	21	20	18	19	19	18	--	17	17	18	18	18	18	17	16	15	14	14	15	16	15	15	14	14	14		17
NOVEMBER																																
MAXIMUM	15	16	16	16	14	--	--	--	10	12	11	12	12	12	11	8	8	8	8	8	8	8	9	8	10	9	9	8	7	6	--	10
MINIMUM	14	14	14	14	12	--	--	9	8	10	10	10	11	10	8	6	7	7	7	7	7	8	8	6	7	8	8	6	6	5	--	9
DECEMBER																																
MAXIMUM	6	--	--	--	--	--	--	8	7	8	7	8	8	8	8	--	6	7	7	8	8	9	9	6	5	6	5	5	6	5	5	--
MINIMUM	4	4	--	--	--	--	--	6	6	6	6	6	8	8	6	--	5	5	6	7	7	7	5	4	4	4	4	4	4	4	4	5
JANUARY																																
MAXIMUM	4	3	3	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	5	5	--
MINIMUM	3	2	2	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	3	4	--
FEBRUARY																																
MAXIMUM	5	5	6	5	4	5	4	4	4	4	2	2	--	--	2	2	2	2	2	2	2	1	2	2	2	3	4	4	4	--	--	3
MINIMUM	4	4	4	4	3	4	4	4	3	2	1	0	--	--	0	0	1	0	0	0	0	-0	0	0	0	1	1	2	2	--	--	2
MARCH																																
MAXIMUM	4	4	4	3	4	4	4	6	6	8	8	8	6	6	6	6	8	8	9	10	12	12	12	10	12	10	12	12	14	14	14	8
MINIMUM	2	2	2	0	2	2	2	2	4	6	6	5	4	4	4	5	6	7	6	7	8	9	10	8	8	8	9	10	11	12	12	6
APRIL																																
MAXIMUM	14	14	--	--	14	14	14	--	16	15	14	16	17	17	16	16	16	17	19	19	18	18	18	16	17	17	16	16	18	18	--	16
MINIMUM	13	11	11	12	12	12	11	14	13	13	13	12	13	14	14	14	14	14	16	16	16	16	16	16	16	15	16	15	15	15	--	14
MAY																																
MAXIMUM	18	17	19	18	20	18	18	18	18	20	--	--	--	--	20	20	21	22	22	22	21	22	20	20	22	22	22	19	20	20	20	20
MINIMUM	14	14	16	17	16	16	16	16	16	17	--	--	--	--	18	18	19	20	20	20	19	19	20	19	19	20	18	18	18	18	19	18
JUNE																																
MAXIMUM	22	22	23	24	25	25	26	26	27	28	27	27	27	26	28	28	26	26	26	26	27	26	29	29	30	30	30	28	28	30	--	27
MINIMUM	19	20	20	20	20	22	23	24	24	25	25	26	25	23	23	24	24	24	24	24	24	24	25	26	26	28	27	26	26	26	--	24
JULY																																
MAXIMUM	32	32	30	28	30	28	30	29	28	30	28	28	30	30	30	31	32	32	31	30	32	30	32	31	32	30	30	30	30	30	30	30
MINIMUM	28	28	28	26	26	26	26	27	27	27	27	27	27	28	28	28	28	29	29	28	28	28	28	29	29	28	28	28	28	28	28	28
AUGUST																																
MAXIMUM	30	30	31	32	30	31	31	32	31	31	31	29	28	29	30	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	28	28	28	28	28	28	29	29	29	30	28	27	28	27	28	28	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER																																
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26	26	26	26	26	26	26	26	27	26	26	25	26	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24	24	24	24	24	24	25	25	25	25	24	24	23	--	--

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, 1.5 miles downstream from Wolfden Run, and 68.9 miles upstream from mouth.
DRAINAGE AREA.--225 sq mi.
RECORDS AVAILABLE.--Water temperatures: August 1961 to September 1968.
EXTREMES, 1967-68.--Water temperatures; Maximum, 31°C July 23; minimum, freezing point on many days during January to March.
EXTREMES, 1961-68.--Water temperatures: Maximum, 32°C Aug. 15, 16, 18, 1965; minimum freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	15	17	18	19	21	19	14	14	14	14	13	13	12	14	15	16	16	15	9	9	9	9	9	11	9	8	7	8	7	8	9	13
MINIMUM	11	9	12	13	14	14	12	12	13	13	11	9	7	9	11	13	13	9	8	6	7	6	6	6	8	7	6	6	4	4	6	9
NOVEMBER																																
MAXIMUM	10	11	11	10	7	3	3	3	5	6	8	9	8	6	3	1	2	3	3	2	2	3	3	3	3	4	4	2	1	1	--	5
MINIMUM	9	10	9	7	3	2	2	1	1	3	5	7	6	3	1	1	1	2	2	1	2	2	3	2	2	3	2	1	1	1	--	3
DECEMBER																																
MAXIMUM	1	1	2	2	2	3	4	4	4	3	3	4	6	6	6	2	2	4	7	6	6	6	4	1	1	1	1	1	1	1	1	3
MINIMUM	1	1	1	2	2	2	3	4	3	3	3	3	4	6	2	1	1	2	4	4	4	4	1	1	1	1	1	1	1	1	1	2
JANUARY																																
MAXIMUM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
MINIMUM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
FEBRUARY																																
MAXIMUM	4	4	3	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	1
MINIMUM	3	3	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	1
MARCH																																
MAXIMUM	0	0	0	0	0	0	0	0	1	1	3	2	1	2	4	4	3	6	7	8	9	11	11	5	6	8	10	9	12	12	11	5
MINIMUM	0	0	0	0	0	0	0	0	0	1	1	0	1	0	2	3	3	2	3	5	6	8	4	3	2	4	7	7	8	10	9	3
APRIL																																
MAXIMUM	11	8	9	10	10	9	11	11	13	12	12	13	15	16	14	13	13	17	18	15	18	18	16	14	11	12	11	15	12	12	--	13
MINIMUM	8	6	7	9	8	6	7	10	10	10	9	8	9	11	10	8	8	11	13	12	12	13	13	11	8	7	9	8	9	8	--	9
MAY																																
MAXIMUM	16	16	18	16	15	14	14	17	16	18	17	16	17	16	16	17	18	17	14	13	12	14	13	12	16	16	16	12	16	16	13	15
MINIMUM	8	9	11	13	10	9	8	9	13	14	15	14	14	13	13	16	15	13	12	11	11	10	11	11	12	13	11	11	12	13	13	12
JUNE																																
MAXIMUM	16	16	16	16	19	21	21	22	21	26	23	21	20	20	23	22	20	20	21	22	22	24	26	27	26	25	26	22	26	28	--	22
MINIMUM	13	14	13	13	13	16	18	18	20	20	21	20	15	14	16	19	17	14	16	17	14	17	20	21	22	21	22	17	16	21	--	17
JULY																																
MAXIMUM	28	29	27	26	26	24	27	27	28	28	26	29	29	29	27	28	29	29	26	27	28	29	31	29	26	25	24	27	26	24	23	27
MINIMUM	21	22	22	19	17	18	17	19	21	21	21	22	21	22	21	22	22	23	22	19	19	20	22	23	24	22	22	22	19	18	21	21
AUGUST																																
MAXIMUM	27	26	27	26	27	28	29	28	27	27	24	24	23	24	27	28	28	28	29	30	30	30	30	30	29	26	22	24	23	23	23	27
MINIMUM	21	22	21	22	23	23	24	23	24	24	21	18	19	22	21	22	23	23	23	24	25	24	25	26	24	21	18	15	14	15	16	21
SEPTEMBER																																
MAXIMUM	20	22	23	24	22	23	22	23	22	20	21	19	21	23	23	23	21	22	19	22	24	24	24	26	22	21	19	19	19	18	--	22
MINIMUM	17	17	14	17	19	20	17	16	17	18	18	17	14	16	16	16	17	16	17	16	17	17	17	18	18	17	12	12	13	11	--	16

1-5958. NORTH BRANCH POTOMAC RIVER AT BARNUM, W. VA.

LOCATION.--Lat 39°26'44", long 79°06'39", on left bank at bridge at Barnum, Mineral County, 0.45 mile upstream from Polly Run, and 4 miles southwest of Piedmont.
DRAINAGE AREA.--266 sq mi.
RECORDS AVAILABLE.--Chemical analyses: April 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL ALUM-INUM (AL)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT.											
17...	35	12	--	4.1	2.2	55	18	2.9	1.7	--	--
DEC.											
04...	1070	4.2	--	--	--	11	3.3	1.7	1.0	--	--
JAN.											
16...	794	5.7	--	3.4	1.0	20	6.8	1.8	.9	0	0
FEB.											
07...	688	4.0	--	5.3	.64	14	4.7	1.4	.7	0	0
MAR.											
18...	1990	3.4	--	4.2	.48	11	3.6	1.5	.8	0	0
APR.											
12...	382	5.0	--	9.8	.61	16	5.0	1.8	.8	0	0
MAY											
17...	437	5.0	--	1.6	.43	14	4.3	1.6	.8	0	0
24...	8740	3.9	--	3.0	.61	10	2.3	1.2	1.2	0	0
JUNE											
19...	139	8.3	6.9	.47	1.2	25	8.6	2.1	1.1	0	0
JULY											
25...	23	16	10	.55	2.7	49	15	3.4	1.8	0	0
SEPT.											
05...	25	14	12	1.2	2.7	44	14	2.6	1.5	0	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	TOTAL ACIDITY AS H+	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH	COLOR
OCT.											
17...	336	4.8	.3	.9	441	212	212	2.8	919	3.0	1
DEC.											
04...	61	4.7	.1	1.3	119	40	70	.6	239	3.6	1
JAN.											
16...	119	3.2	.4	1.3	159	78	78	1.0	372	3.4	2
FEB.											
07...	83	2.5	.3	1.6	112	55	55	.7	282	3.5	2
MAR.											
18...	56	3.2	.2	2.1	82	43	43	.4	190	3.8	2
APR.											
12...	85	2.8	.2	.7	118	61	92	.6	280	3.4	0
MAY											
17...	65	2.6	.2	.4	94	53	69	.3	208	3.8	0
24...	44	1.7	.1	1.6	67	35	49	.3	150	3.9	0
JUNE											
19...	168	2.8	.3	.8	225	98	179	.8	498	3.2	3
JULY											
25...	277	3.9	.5	1.1	381	184	279	.7	660	3.2	0
SEPT.											
05...	280	2.2	.5	1.0	376	168	290	1.0	698	3.1	0

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, 0.5 mile northwest of Luke, Allegany County, and 53.3 miles upstream from mouth.
DRAINAGE AREA.--404 sq mi.
RECORDS AVAILABLE.--Water temperatures: December 1961 to December 1962, July to September 1963, December 1963 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum observed, 30°C Aug. 19-21; minimum, freezing point on many days during winter months.
EXTREMES, 1961-68.--Water temperatures: Maximum, 33°C July 3, 1966; minimum, freezing point on many days during winter months.
REMARKS.--Temperature records fair, probably because of friction in recorder.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	TOTAL ALUMINUM (AL)	TOTAL IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT., 1967												
17...	109	12	--	--	--	50	19	3.4	1.6	0	0	310
31...	194	6.7	--	--	--	23	7.2	1.8	1.1	0	0	135

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	TOTAL ACIDITY AS H+	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT., 1967												
17...	2.4	.5	.8	.01	410	415	203	203	2.3	833	3.0	3
31...	2.6	.2	.8	.01	189	185	87	87	1.1	424	3.3	0

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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	16	18	19	19	20	19	16	14	14	16	14	14	13	14	14	17	17	16	11	9	11	11	11	12	10	9	8	8	8	8	9	13
MINIMUM	12	11	13	14	16	16	13	13	14	14	12	11	9	11	12	13	14	11	9	8	8	7	7	8	9	8	7	7	6	6	7	11
NOVEMBER																																
MAXIMUM	10	12	11	11	9	6	4	4	6	7	9	10	9	7	6	3	4	6	5	4	4	4	4	4	4	5	5	4	2	2	--	6
MINIMUM	9	10	10	9	6	4	3	3	3	4	6	8	7	6	3	2	3	4	4	4	4	4	4	4	4	4	4	2	2	2	--	5
DECEMBER																																
MAXIMUM	2	2	3	3	3	4	5	6	6	6	6	7	8	9	9	6	4	6	8	8	7	8	8	4	2	1	0	0	0	0	0	5
MINIMUM	2	2	2	3	2	3	4	5	6	6	6	6	7	8	6	4	3	4	6	7	7	7	4	2	1	0	0	0	0	0	0	4
JANUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY																																
MAXIMUM	3	3	3	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	1
MINIMUM	2	3	2	2	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	1
MARCH																																
MAXIMUM	0	0	0	0	0	0	2	3	6	3	4	4	2	3	4	4	5	6	7	8	9	11	11	7	8	9	11	11	12	13	13	6
MINIMUM	0	0	0	0	0	0	0	0	1	1	2	1	1	1	3	4	5	4	5	7	8	9	7	5	6	7	9	9	10	12	11	4
APRIL																																
MAXIMUM	12	10	10	11	11	10	11	11	13	13	13	13	14	16	15	13	13	16	18	17	18	18	17	16	13	13	12	15	13	13	--	14
MINIMUM	10	8	8	10	9	8	8	11	11	11	10	10	11	13	12	10	11	12	14	14	14	15	16	13	10	9	11	10	11	11	--	11
MAY																																
MAXIMUM	16	17	18	17	16	16	16	17	16	19	18	17	18	17	16	17	18	18	16	14	13	14	14	12	15	16	16	11	14	14	13	16
MINIMUM	10	11	12	16	12	11	10	11	14	15	16	15	15	14	13	16	16	16	13	12	12	11	12	12	12	14	11	11	11	13	12	13
JUNE																																
MAXIMUM	16	16	17	17	19	21	21	22	21	24	23	23	22	21	24	22	22	22	22	23	23	26	27	27	26	26	26	23	26	29	--	23
MINIMUM	12	15	14	13	14	16	18	18	20	20	22	21	17	16	17	21	19	17	18	19	17	19	22	22	23	22	23	19	18	21	--	18
JULY																																
MAXIMUM	29	29	26	26	25	24	25	26	26	26	23	26	26	26	28	28	27	27	26	28	27	27	27	26	24	26	25	27	25	25	23	26
MINIMUM	22	23	22	19	18	19	18	19	20	20	21	20	20	21	21	23	22	23	23	22	21	21	22	22	22	22	24	23	19	19	21	21
AUGUST																																
MAXIMUM	24	26	28	27	28	29	29	29	29	28	27	26	26	26	28	29	29	29	30	30	30	29	28	28	28	24	22	22	22	22	22	27
MINIMUM	21	22	23	24	24	24	26	24	26	26	22	21	21	23	23	24	25	26	25	25	25	26	24	24	25	24	21	19	17	16	16	23
SEPTEMBER																																
MAXIMUM	20	21	21	23	21	24	25	24	23	21	21	22	22	23	22	21	20	19	18	19	20	21	21	21	19	18	17	17	17	16	--	21
MINIMUM	17	17	16	18	20	21	19	19	19	19	18	18	17	17	17	17	17	16	16	16	16	16	16	17	17	16	13	13	13	12	--	17

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: December 1964 to September 1968.
Water temperatures: October 1964 to September 1968.
Sediment records: October 1964 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum, 33°C July 16, 18, Aug. 19, 23; minimum, freezing point Jan. 2-16, 25, Feb. 11, 13.
Sediment concentrations: Maximum daily, 900 mg/l May 24; minimum daily, 5 mg/l June 24.
Sediment loads: Maximum daily, 31,000 tons May 24, minimum daily, 4 tons June 24, Aug. 23, 24, Sept. 25, 28.
EXTREMES, 1964-68.--Water temperatures: Maximum, 33°C July 13, 14, 1966, July 16, 18, Aug. 19, 23, 1968; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,800 mg/l Feb. 13, 1966; minimum daily, 5 mg/l April 20, 1967, June 24, 1968.
Sediment loads: Maximum daily, 61,000 tons Mar. 6, 1967; minimum daily, 3 tons Aug. 16, 1967.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)
OCT.										
01...	306	7.0	--	--	68	10	36	2.9	58	0
NOV.										
03...	346	5.8	1.2	.86	58	11	26	2.3	32	0
DEC.										
01...	536	5.3	1.3	.60	37	7.1	19	1.6	12	0
JAN.										
04...	656	5.7	1.7	.63	40	8.6	23	2.5	23	0
FEB.										
01...	6130	5.4	2.7	.38	15	4.2	4.3	1.1	7	0
MAR.										
01...	328	6.2	2.5	.84	63	14	38	3.0	43	0
APR.										
01...	1380	5.7	1.2	.49	28	7.4	9.9	1.5	16	0
MAY										
01...	409	5.3	1.2	.65	63	12	29	2.3	26	0
JULY										
01...	253	7.5	1.2	.85	72	16	26	2.0	41	0
AUG.										
02...	164	9.0	.84	1.0	106	21	57	2.0	62	0
SEPT.										
01...	138	8.1	.90	.75	110	20	56	4.1	56	0

DATE	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.										
01...	121	82	.2	2.0	358	211	164	582	7.3	22
NOV.										
03...	132	56	.3	1.3	309	190	164	512	7.3	10
DEC.										
01...	95	40	.2	2.0	213	122	112	368	6.8	3
JAN.										
04...	111	40	.3	1.9	244	136	117	420	6.7	5
FEB.										
01...	47	6.5	.1	2.6	89	55	50	140	6.6	2
MAR.										
01...	173	64	.3	1.1	384	215	180	615	6.9	10
APR.										
01...	86	17	.2	1.2	165	101	88	282	6.6	5
MAY										
01...	156	56	.3	.7	338	207	185	558	7.0	5
JULY										
01...	206	47	.4	.6	398	246	212	610	7.5	5
AUG.										
02...	247	115	.5	.4	588	351	300	890	7.2	35
SEPT.										
01...	225	138	.6	2.6	592	357	311	960	7.0	50

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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..	18	16	23	23	24	21	18	19	19	20	18	18	19	19	18	20	21	18	16	17	16	16	16	16	13	13	10	10	11	11	10	17
NOVEMBER.	13	14	16	12	10	9	8	13	10	11	13	14	11	10	8	7	7	9	8	8	7	7	7	6	8	8	7	4	4	1	--	9
DECEMBER.	3	2	3	4	4	7	7	8	7	6	4	7	7	7	4	4	4	4	8	8	4	8	4	3	3	3	3	1	2	2	1	5
JANUARY..	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	5	4	6	4	2	0	2	4	4	6	3	3	2
FEBRUARY.	4	4	4	4	4	4	4	4	4	1	0	1	0	1	2	3	2	2	4	3	1	2	4	4	3	6	7	6	3	--	--	3
MARCH....	4	7	4	8	9	6	9	10	13	10	7	2	2	3	4	6	4	8	8	10	11	11	9	7	8	11	13	12	16	16	16	9
APRIL....	13	13	13	16	12	13	13	14	17	16	17	17	19	20	17	17	17	21	21	20	21	21	17	16	13	16	13	17	16	14	--	16
MAY.....	16	17	18	18	16	16	19	19	18	21	17	19	21	16	17	18	19	17	16	14	14	16	13	13	14	16	12	10	14	13	14	16
JUNE.....	17	17	17	18	21	22	23	24	21	26	26	26	20	24	24	24	21	22	24	23	24	27	27	28	28	29	27	23	28	29	--	24
JULY.....	31	31	30	28	30	27	28	31	31	31	28	31	32	32	30	33	32	33	30	30	29	31	32	32	28	31	28	28	28	28	27	30
AUGUST...	30	31	31	30	30	32	32	32	32	29	30	27	27	29	30	30	31	32	33	31	31	32	33	32	31	27	27	28	27	26	26	30
SEPTEMBER	24	23	24	29	26	27	27	27	26	24	24	24	26	27	27	24	27	25	24	26	27	27	27	29	27	26	24	24	21	21	--	25

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN CONCENTRATION (MG/L)	OCTOBER LOAD (TONS)	NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN CONCENTRATION (MG/L)	NOVEMBER LOAD (TONS)	DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN CONCENTRATION (MG/L)	DECEMBER LOAD (TONS)
1	340	25	23	358	18	17	552	12	18
2	257	20	14	346	18	17	568	10	15
3	229	18	11	346	25	23	924	37	120
4	205	25	14	340	36	33	2330	130	820
5	187	25	13	316	30	26	2000	100	540
6	182	20	10	316	18	15	1230	28	93
7	182	24	12	306	19	16	1450	37	160
8	187	21	11	289	30	23	2990	180	1500
9	196	25	13	272	40	29	3030	130	1100
10	214	47	27	262	33	23	2290	38	240
11	210	35	20	257	30	21	4780	360	4600
12	201	25	14	257	31	21	4170	160	1800
13	201	25	14	257	29	20	4490	120	1500
14	196	21	11	253	38	26	3630	64	630
15	191	18	9.0	253	42	29	2700	36	260
16	182	13	6.0	243	34	22	2150	27	160
17	173	16	7.0	238	30	19	1460	17	67
18	182	27	13	253	31	21	1280	13	45
19	248	26	17	416	37	42	1200	16	52
20	416	27	30	430	41	48	1350	25	91
21	416	40	45	376	22	22	896	11	27
22	311	17	14	340	15	14	887	13	31
23	262	12	8.0	389	16	17	968	24	63
24	238	18	12	576	22	34	761	11	23
25	509	40	75	632	14	24	664	10	18
26	1150	100	320	1080	29	86	725	6	12
27	869	44	100	842	18	41	664	10	18
28	616	10	17	734	14	28	640	13	22
29	499	9	12	616	16	27	592	36	58
30	423	22	25	584	14	22	608	33	54
31	389	21	22	--	--	--	624	29	49
TOTAL	10061	--	939.0	12177	--	806	52603	--	14186

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	584	22	35	6200	190	3200	334	36	32
2	450	18	22	5060	100	1400	311	35	29
3	478	16	21	5100	100	1400	311	36	30
4	632	29	50	4080	49	540	294	37	29
5	632	48	82	2940	40	270	306	48	40
6	544	25	37	2470	28	190	334	37	33
7	500	22	30	1760	25	120	352	32	30
8	460	25	31	1590	25	110	358	34	33
9	443	20	24	1400	24	91	370	33	33
10	492	27	36	1110	23	69	1880	130	830
11	506	41	56	806	22	48	3370	86	780
12	402	40	43	797	27	58	2780	51	380
13	352	30	29	761	26	53	4040	100	1100
14	382	30	31	664	15	27	3440	85	790
15	409	36	40	689	22	41	2510	59	400
16	436	35	41	680	35	64	3060	120	1100
17	402	30	33	648	29	51	7740	520	11000
18	376	30	30	513	25	35	7080	160	3100
19	402	39	42	478	16	21	5860	100	1600
20	478	34	44	450	18	22	4710	76	970
21	726	27	56	409	26	29	4560	54	660
22	1190	56	180	300	37	30	4520	46	560
23	1310	36	130	310	27	23	6420	180	3100
24	1630	45	200	352	30	29	6980	220	4100
25	1630	63	280	358	29	28	4880	85	1100
26	1090	34	100	334	32	29	3140	51	430
27	977	21	55	311	25	21	2600	40	280
28	914	24	60	322	22	19	2190	34	200
29	1230	32	120	340	29	27	1910	28	140
30	2900	150	1400	--	--	--	1710	20	92
31	6520	540	9400	--	--	--	1590	19	82
TOTAL	29477	--	12738	40802	--	8045	89940	--	33083

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1430	18	70	402	20	22	5310	69	990
2	1470	24	95	389	19	20	4470	52	630
3	1250	16	54	364	13	13	4320	59	690
4	1150	24	75	423	17	19	3260	46	400
5	1140	20	62	506	22	30	2420	28	180
6	1100	16	48	499	18	24	1870	16	81
7	977	16	42	443	18	22	1580	13	56
8	914	15	37	402	19	21	1370	11	41
9	887	15	36	382	19	20	1150	10	31
10	806	13	28	376	22	22	1030	10	28
11	761	10	21	396	22	24	959	12	31
12	752	16	33	640	29	50	923	21	52
13	689	11	20	995	48	130	950	16	41
14	632	9	15	932	31	78	770	15	31
15	600	13	21	1390	58	270	656	13	23
16	576	22	34	1780	62	300	584	10	16
17	544	20	29	1560	33	140	506	11	15
18	506	12	16	1370	35	130	492	9	12
19	492	11	15	1680	41	190	464	14	18
20	464	18	23	1510	18	73	436	13	15
21	443	17	20	1390	20	75	409	10	11
22	443	13	16	1400	24	91	376	9	9.0
23	416	18	20	1620	91	520	328	9	8.0
24	485	25	33	11000	900	31000	300	5	4.0
25	576	65	100	13900	400	15000	294	6	5.0
26	506	32	44	7260	140	2700	376	12	12
27	457	17	21	5940	190	3600	500	32	51
28	430	11	13	12200	680	22000	608	32	52
29	402	15	16	8800	160	3800	376	25	25
30	389	25	26	6780	120	2200	306	25	21
31	--	--	--	7790	200	4200	--	--	--
TOTAL	21687	--	1083	94519	--	86784	37393	--	3579.0

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	257	26	18	173	19	9.0	138	28	10
2	248	20	13	173	16	7.0	138	20	7.0
3	233	17	11	182	22	11	138	21	8.0
4	219	20	12	233	29	21	133	24	9.0
5	233	19	12	210	30	17	147	18	7.0
6	229	18	11	178	18	9.0	229	29	18
7	214	18	10	210	22	12	210	24	14
8	205	17	9.0	214	42	24	173	24	11
9	205	20	11	279	27	22	160	25	11
10	210	21	12	248	34	23	215	42	26
11	214	20	12	219	39	23	196	34	18
12	229	20	12	257	36	25	196	27	14
13	210	21	12	243	28	18	182	25	12
14	229	24	16	210	30	17	187	25	13
15	295	56	47	191	30	16	169	24	11
16	289	32	25	205	20	11	155	23	10
17	219	24	14	210	24	14	151	20	8.0
18	201	38	21	182	14	7.0	147	20	8.0
19	196	25	13	187	14	7.0	147	30	12
20	196	20	11	178	12	6.0	151	20	8.0
21	205	35	19	160	12	5.0	155	12	5.0
22	191	28	14	155	14	6.0	155	12	5.0
23	173	20	9.0	147	11	4.0	151	14	6.0
24	173	19	9.0	151	9	4.0	151	13	5.0
25	178	20	10	155	15	6.0	147	11	4.0
26	214	19	11	147	18	7.0	138	19	7.0
27	224	21	13	147	15	6.0	142	13	5.0
28	219	28	17	138	16	6.0	133	11	4.0
29	160	32	14	133	32	12	138	16	6.0
30	160	26	11	129	35	12	142	31	12
31	169	19	9.0	133	27	10	--	--	--
TOTAL	6597	--	438.0	5777	--	377.0	4814	--	294.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 405847
TOTAL LOAD FOR YEAR (TONS) 162352.0

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP-ERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALY-SIS
JAN 31, 1968	1130	3.5	7470	682	13800	29	42	54	66	73	78	83	91	98	99	100	SBWC
MAR 17.....	1230	4.5	8740	548	12900	24	36	47	56	63	68	73	81	98	99	100	SBWC
MAY 28.....	1645	10	11600	460	14400	--	25	36	46	51	52	60	68	91	95	98	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), and 239 miles upstream from mouth.
DRAINAGE AREA.--4,073 sq mi.
RECORDS AVAILABLE.--Water temperatures: July 1952 to February 1964, July 1966 to September 1968.
EXTREMES,1967-68.--Water temperatures: Maximum, 32°C July 16-18, 23-24, Aug. 21, 23; minimum, freezing point on many days during winter months.
EXTREMES, 1952-64, 1966-68.--Water temperatures: Maximum 34°C July 22, 1952; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder. No temperature record Sept. 24-30. Temperature for this period estimated.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	17	17	18	20	21	21	18	16	16	16	16	15	16	15	14	16	17	16	13	13	13	12	12	13	12	11	11	11	11	10	9	15
MINIMUM	16	14	16	17	18	18	16	16	15	16	14	13	13	13	14	13	14	13	12	11	11	11	11	11	11	11	11	10	9	9	9	13
NOVEMBER																																
MAXIMUM	11	11	12	11	11	8	7	7	6	7	8	9	9	8	7	6	4	6	6	6	6	5	6	6	6	6	6	6	4	4	--	7
MINIMUM	9	11	11	11	8	7	7	6	6	6	7	8	8	7	6	4	4	4	6	6	6	4	4	5	6	6	6	6	4	3	2	--	6
DECEMBER																																
MAXIMUM	3	2	4	4	4	4	5	6	6	6	5	6	6	7	7	6	6	5	5	6	6	6	6	4	4	4	3	3	1	0	0	5
MINIMUM	2	2	2	3	3	4	4	5	6	5	5	5	6	6	6	6	6	5	5	5	5	6	6	4	4	4	3	3	1	0	0	4
JANUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	2	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
FEBRUARY																																
MAXIMUM	3	3	3	3	3	3	3	2	2	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	--	1
MINIMUM	2	3	3	3	3	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	1
MARCH																																
MAXIMUM	2	3	2	2	3	3	3	4	6	6	7	7	3	2	3	4	4	5	6	7	8	11	10	9	6	7	9	11	12	13	13	6
MINIMUM	0	0	0	0	1	3	2	2	3	5	5	3	2	2	2	3	3	4	5	6	7	8	9	6	5	6	7	8	9	11	11	4
APRIL																																
MAXIMUM	13	12	12	12	12	11	12	12	13	13	14	14	15	16	16	15	16	17	19	18	19	19	18	17	14	14	14	16	14	14	--	15
MINIMUM	12	11	11	11	11	9	9	11	11	12	12	12	13	13	14	12	13	14	16	17	17	17	17	14	12	11	13	12	13	13	--	13
MAY																																
MAXIMUM	16	17	18	18	18	18	18	18	18	19	19	19	19	19	18	18	19	19	19	18	16	17	17	14	14	16	16	14	13	14	14	17
MINIMUM	12	13	14	17	16	15	14	15	17	17	18	17	18	18	17	17	18	18	18	16	16	14	14	14	13	14	14	12	12	13	14	15
JUNE																																
MAXIMUM	15	16	17	18	19	21	22	23	23	24	24	25	25	23	24	25	25	23	24	24	24	26	28	28	29	29	28	24	25	28	--	24
MINIMUM	13	15	16	16	17	19	20	21	22	22	23	23	22	21	22	23	22	21	22	22	22	22	24	26	26	27	24	23	23	24	--	21
JULY																																
MAXIMUM	29	31	30	29	29	28	29	29	30	30	29	30	31	31	31	32	32	32	31	31	31	31	32	32	31	29	28	29	28	27	26	30
MINIMUM	26	28	28	26	24	24	24	25	26	26	27	26	26	27	28	27	28	28	29	26	25	26	27	28	27	26	26	24	23	23	23	26
AUGUST																																
MAXIMUM	27	29	31	30	29	31	30	31	31	30	29	28	27	27	29	30	31	31	29	31	32	30	32	31	30	28	25	25	24	24	24	29
MINIMUM	23	24	26	27	27	26	27	26	27	28	24	23	23	24	24	26	26	26	27	26	27	26	27	28	27	25	22	20	19	19	19	25
SEPTEMBER																																
MAXIMUM	22	23	23	24	23	24	24	24	24	23	21	22	22	23	23	23	23	22	21	22	23	24	23	26	23	21	20	20	20	19	--	23
MINIMUM	20	20	19	20	22	20	20	21	21	18	19	19	18	19	19	19	20	19	19	19	19	19	21	22	21	16	16	16	16	16	--	19

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.

LOCATION.--Lat 39°42'29", long 77°50'00", at highway bridge at Fairview, Washington County, 0.7 mile downstream from gaging station, 1.3 miles upstream from Rockdale Run, and 6 miles northwest of Hagerstown.
DRAINAGE AREA.--495 sq mi, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: October 1965 to September 1968.
Water temperatures: November 1966 to September 1968.
Sediment records: October 1966 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum, 27°C August 11, 23, 24; minimum, freezing point December 2, 3, January 19, 26.
Sediment concentrations: Maximum daily, 690 mg/l March 17; minimum daily, 2 mg/l several days during November, January, February, and July.
Sediment loads: Maximum daily, 6,700 tons March 17; minimum daily, 1 ton on many days.
EXTREMES, 1966-68.--Water temperatures: Maximum, 27°C August 11, 23, 24, 1968; minimum, freezing point December 2, 3, 1967, January 19, 26, 1968.
Sediment concentrations: Maximum daily, 690 mg/l March 17, 1968; minimum daily, 1 mg/l on many days during 1967 water year.
Sediment loads: Maximum daily, 11,000 tons March 7, 1967; minimum daily, less than 0.5 ton on many days during 1967 water year.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT.										
30...	460	8.6	.12	.01	41	8.3	5.1	2.4	124	0
NOV.										
09...	329	7.8	--	--	44	9.1	6.1	2.0	138	0
29...	244	3.3	.06	.01	44	8.8	6.3	2.0	137	0
DEC.										
21...	680	5.7	--	--	42	12	6.2	2.0	139	5
30...	412	6.2	.12	.00	49	12	5.4	1.6	167	0
JAN.										
22...	1270	7.6	.14	.05	32	8.8	5.4	2.4	97	1
30...	920	6.4	.27	.00	38	8.3	4.8	1.8	122	0
FEB.										
29...	302	1.1	--	--	46	15	6.4	2.2	159	4
MAR.										
06...	318	.6	.05	.02	46	14	7.6	2.1	173	0
30...	890	5.0	--	--	39	10	4.5	1.7	134	0
APR.										
15...	399	1.2	.12	.01	48	9.8	4.6	1.8	154	0
MAY										
24...	674	7.9	.56	.02	44	8.8	7.2	2.7	138	0
JUNE										
30...	345	3.1	.08	.05	35	8.3	5.2	2.3	112	4
JULY										
10...	168	1.7	.03	.01	48	11	4.8	1.8	160	2
29...	119	1.8	.03	.01	52	12	9.0	2.6	175	7
AUG.										
22...	151	7.3	.09	.05	47	10	6.6	3.2	160	0
30...	95	1.7	.04	.00	59	13	7.7	2.7	200	2
SEPT.										
29...	88	1.3	.06	.00	60	13	12	3.2	208	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
30...	23	9.3	.1	11	170	136	34	282	7.9	5
NOV.										
09...	24	10	.1	11	182	148	36	306	7.9	4
29...	22	11	.1	8.4	173	147	34	303	8.0	5
DEC.										
21...	22	7.7	.1	13	184	155	32	325	8.5	0
30...	24	9.4	.2	12	202	172	35	370	8.1	5
JAN.										
22...	23	10	.1	11	149	116	35	265	8.3	5
30...	24	9.2	.1	11	164	129	29	280	8.0	2
FEB.										
29...	24	12	.1	14	203	177	40	378	8.4	2
MAR.										
06...	19	11	.1	12	197	173	31	370	8.2	0
30...	21	8.3	.1	11	167	139	29	305	8.2	2
APR.										
15...	20	9.0	.1	11	182	161	35	328	8.0	3
MAY										
24...	21	13	.2	11	184	146	33	318	7.8	4
JUNE										
30...	18	8.4	.1	4.9	144	122	23	251	8.6	7
JULY										
10...	20	9.6	.2	8.2	186	165	31	322	8.3	5
29...	22	14	.2	4.1	211	179	24	360	8.6	10
AUG.										
22...	24	12	.2	7.5	197	159	28	330	7.9	8
30...	25	14	.2	8.2	232	201	33	402	8.3	5
SEPT.										
29...	29	18	.2	6.0	245	203	33	425	8.2	3

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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..	15	15	18	18	17	18	13	13	14	13	11	11	9	9	12	12	14	15	16	12	12	11	11	8	8	9	8	8	13	7	7	12
NOVEMBER.	9	8	10	8	7	4	4	4	5	4	8	8	7	7	4	4	3	4	4	4	4	4	4	4	5	6	6	6	3	4	--	5
DECEMBER.	3	0	0	6	3	4	5	8	7	7	4	5	7	7	4	4	5	4	4	5	4	4	5	4	4	4	4	5	4	4	3	4
JANUARY..	1	1	2	2	3	2	2	1	2	2	2	1	1	1	1	1	1	1	0	3	2	2	4	4	4	0	4	4	5	5	5	2
FEBRUARY.	7	7	6	6	5	6	6	6	3	3	4	3	4	4	4	4	4	4	4	4	3	3	4	2	2	4	4	4	4	--	--	4
MARCH....	4	4	3	2	4	4	4	5	6	5	4	4	4	4	4	4	5	6	8	9	9	10	10	8	8	7	11	11	15	16	15	7
APRIL....	13	9	10	10	9	9	8	8	8	8	7	8	12	15	15	13	12	12	12	12	14	15	15	14	15	15	15	16	15	16	--	12
MAY.....	16	16	16	15	15	15	13	13	14	13	15	15	15	16	15	15	17	11	17	15	15	14	18	18	14	14	11	11	10	13	13	14
JUNE.....	15	16	16	15	15	16	16	17	17	18	19	20	20	20	18	16	16	16	17	16	17	18	18	21	22	22	17	17	18	--		18
JULY.....	22	24	23	18	17	18	18	21	22	21	22	21	22	22	22	22	23	25	26	24	23	24	24	26	26	24	22	26	21	18	23	22
AUGUST...	22	22	22	23	24	23	26	25	26	26	27	22	21	26	23	22	25	25	26	23	26	26	27	27	26	25	21	17	17	17	16	23
SEPTEMBER	18	19	17	18	19	21	19	23	22	19	19	18	18	16	17	17	18	18	17	18	17	17	17	18	18	17	17	16	16	14	--	18

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN CONCEN-TRATION (MG/L)	OCTOBER LOAD (TONS)	NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN CONCEN-TRATION (MG/L)	NOVEMBER LOAD (TONS)	DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN CONCEN-TRATION (MG/L)	DECEMBER LOAD (TONS)
1	221	37	22	355	8	8.0	213	3	2.0
2	175	23	11	396	16	17	244	4	3.0
3	155	13	5.0	1020	59	160	954	43	110
4	142	9	3.0	770	47	98	1960	100	530
5	131	21	7.0	580	28	44	1370	71	260
6	125	20	7.0	469	12	15	1150	38	120
7	117	14	4.0	408	9	10	1270	30	100
8	116	13	4.0	361	9	9.0	1300	29	100
9	121	11	4.0	329	5	4.0	1080	20	58
10	144	13	5.0	307	5	4.0	974	13	34
11	217	20	12	286	5	4.0	2400	89	580
12	186	24	12	269	5	4.0	2680	94	680
13	157	19	8.0	260	5	4.0	2330	58	360
14	140	16	6.0	246	3	2.0	1800	28	140
15	134	15	5.0	231	3	2.0	1460	15	59
16	130	14	5.0	217	3	2.0	1250	16	54
17	126	14	5.0	220	4	2.0	1080	14	41
18	127	14	5.0	237	4	3.0	952	10	26
19	170	19	9.0	245	4	3.0	842	8	18
20	278	24	18	224	4	2.0	746	8	16
21	191	8	4.0	202	4	2.0	674	6	11
22	157	3	1.0	208	4	2.0	663	8	14
23	139	3	1.0	282	4	3.0	674	7	13
24	134	3	1.0	364	5	5.0	559	6	9.0
25	548	69	100	337	5	5.0	512	5	7.0
26	2440	280	1800	310	4	3.0	498	5	7.0
27	1190	68	220	283	2	2.0	455	5	6.0
28	752	25	51	256	2	1.0	438	5	6.0
29	559	17	26	237	2	1.0	429	5	6.0
30	456	11	14	227	2	1.0	425	6	7.0
31	395	9	10	--	--	--	460	4	5.0
TOTAL	10073	--	2385.0	10136	--	422.0	31842	--	3382.0

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	416	3	3.0	1680	70	320	306	3	2.0
2	314	3	3.0	1580	43	180	300	3	2.0
3	403	8	9.0	1700	55	250	280	3	2.0
4	428	5	6.0	1420	45	170	260	3	2.0
5	380	8	8.0	1200	22	71	310	3	2.0
6	370	26	26	1070	20	58	318	3	3.0
7	370	22	22	952	19	49	307	3	2.0
8	360	5	5.0	867	17	40	286	3	2.0
9	350	2	2.0	785	11	23	295	6	5.0
10	340	3	3.0	702	9	17	340	5	5.0
11	300	9	7.0	616	5	8.0	400	7	8.0
12	320	15	13	580	8	12	426	7	8.0
13	668	18	32	540	9	13	804	44	96
14	950	25	64	500	7	9.0	848	48	110
15	1820	34	170	480	7	9.0	822	37	82
16	1560	34	140	469	17	22	1080	41	120
17	1180	32	100	460	18	22	3580	690	6700
18	959	38	98	420	14	16	2830	420	3200
19	872	42	99	400	8	9.0	1940	65	340
20	920	45	110	410	8	9.0	1540	40	170
21	1000	85	230	390	8	8.0	1310	34	120
22	1150	87	270	360	8	8.0	1310	45	160
23	1100	49	150	360	8	8.0	2090	150	850
24	1000	38	100	340	2	2.0	2840	180	1400
25	880	11	26	310	2	2.0	1900	100	510
26	768	9	19	300	2	2.0	1530	60	250
27	733	11	22	290	2	2.0	1290	46	160
28	690	12	22	280	3	2.0	1120	25	76
29	741	10	20	306	6	5.0	1000	22	59
30	1030	20	56	--	--	--	907	21	51
31	2010	160	870	--	--	--	823	23	51
TOTAL	24382	--	2705.0	19767	--	1346.0	33392	--	14548.0

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	835	18	41	287	6	5.0	1610	50	220
2	762	16	33	275	6	4.0	1300	38	130
3	678	13	24	261	6	4.0	1160	40	130
4	640	11	19	256	6	4.0	929	36	90
5	645	8	14	255	6	4.0	777	28	59
6	606	8	13	247	6	4.0	671	26	47
7	549	5	7.0	241	6	4.0	591	26	42
8	525	5	7.0	228	6	4.0	532	25	36
9	513	5	7.0	218	5	3.0	483	26	34
10	474	5	6.0	220	5	3.0	547	56	83
11	455	5	6.0	224	5	3.0	539	56	82
12	439	5	6.0	250	7	5.0	657	55	98
13	419	5	6.0	267	8	6.0	873	75	180
14	405	5	5.0	236	6	4.0	696	57	110
15	395	7	7.0	226	6	4.0	532	44	63
16	386	7	7.0	236	6	4.0	481	38	49
17	366	7	7.0	268	10	7.0	653	68	120
18	354	7	7.0	261	10	7.0	555	54	81
19	349	7	7.0	236	7	4.0	447	35	42
20	337	8	7.0	233	7	4.0	396	29	31
21	330	8	7.0	231	7	4.0	364	25	25
22	326	8	7.0	222	6	4.0	331	23	21
23	311	8	7.0	235	6	4.0	312	16	13
24	336	4	4.0	623	39	66	295	15	12
25	457	4	5.0	709	49	94	273	16	12
26	398	4	4.0	511	32	44	316	23	20
27	338	4	4.0	437	24	28	326	20	18
28	311	4	3.0	1280	57	200	547	72	110
29	296	8	6.0	3750	190	1900	499	74	100
30	289	7	5.0	3010	100	810	342	40	37
31	--	--	--	2250	79	480	--	--	--
TOTAL	13524	--	288.0	18183	--	3721.0	18034	--	2095

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	284	13	10	106	10	3.0	88	7	2.0
2	250	7	5.0	152	20	8.0	86	6	1.0
3	231	11	7.0	145	17	6.0	88	4	1.0
4	235	13	8.0	129	11	4.0	92	4	1.0
5	228	10	6.0	119	12	4.0	86	3	1.0
6	206	7	4.0	115	14	4.0	225	17	10
7	193	6	3.0	124	18	6.0	374	34	34
8	185	6	3.0	135	23	8.0	222	14	8.0
9	175	5	2.0	121	18	6.0	162	7	3.0
10	168	6	3.0	115	14	4.0	194	17	9.0
11	175	20	9.0	157	20	8.0	844	140	320
12	233	62	39	137	11	4.0	513	94	130
13	169	20	9.0	120	8	3.0	288	38	30
14	155	9	4.0	112	6	2.0	219	26	15
15	147	9	4.0	109	5	1.0	183	14	7.0
16	156	10	4.0	108	5	1.0	162	10	4.0
17	144	9	4.0	241	75	49	148	8	3.0
18	143	7	3.0	143	43	17	137	7	3.0
19	128	4	1.0	147	70	28	127	6	2.0
20	122	4	1.0	365	300	300	121	3	1.0
21	116	3	1.0	224	150	91	115	3	1.0
22	116	2	1.0	153	60	25	108	4	1.0
23	128	3	1.0	129	22	8.0	104	4	1.0
24	145	8	3.0	119	13	4.0	104	4	1.0
25	134	5	2.0	131	12	4.0	102	4	1.0
26	130	6	2.0	121	9	3.0	104	4	1.0
27	133	8	3.0	111	7	2.0	99	3	1.0
28	125	6	2.0	102	8	2.0	95	3	1.0
29	116	7	2.0	97	8	2.0	88	4	1.0
30	111	7	2.0	95	6	2.0	86	3	1.0
31	103	6	2.0	88	7	2.0	--	--	--
TOTAL	5084	--	150.0	4270	--	611.0	5364	--	595.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 194051
TOTAL LOAD FOR YEAR (TONS) 32248.0

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALY-SIS
MAR 5, 1967	1250	11	498	133	179	69	86	93	97	100	--	--	--	--	--	--	SBWC
JUL 11.....	0815	15.5	1510	979	3990	--	60	78	94	98	100	--	--	--	--	--	SPWC
AUG 5.....	1015	12	533	108	155	44	66	79	94	99	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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: August 1965 to September 1968.
Water temperatures: October 1962 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum, 28°C Aug. 21, 23, 24; minimum, 2°C Jan. 2, 3, 5-14, Feb. 14.
EXTREMES, 1962-68.--Water Temperatures: Maximum, 28°C June 28, July 1-3, 1963, Aug. 21, 23, 24, 1968; minimum, freezing point on many days during winter months.
REMARKS.--Temperature records poor, probably because of friction in recorder.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)
OCT.										
03...	128	7.8	.10	.05	67	12	8.1	4.1	210	0
NOV.										
07...	218	8.4	--	--	61	12	6.1	3.1	197	0
DEC.										
19...	405	6.0	--	--	56	16	6.8	2.9	180	9
JAN.										
23...	515	7.8	.09	.04	53	16	6.4	3.1	176	6
MAR.										
05...	254	3.1	.06	.04	64	13	7.1	2.7	202	5
APR.										
16...	304	3.4	.05	.01	66	14	5.7	2.7	215	0
26...	282	8.1	.09	.01	56	12	6.8	3.2	182	0
MAY										
16...	209	8.3	.12	.01	64	14	7.7	3.0	211	0
28...	695	11	.88	.38	43	9.4	7.5	4.5	138	0
JULY										
10...	170	6.0	.09	.02	63	13	8.6	3.2	212	0
AUG.										
20...	147	7.7	.09	.01	53	11	11	5.0	168	0

DATE	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.										
03...	28	16	.3	14	260	218	46	435	7.7	7
NOV.										
07...	24	13	.2	14	239	202	40	398	7.6	4
DEC.										
19...	27	12	.2	17	241	206	43	421	8.7	0
JAN.										
23...	27	12	.2	17	234	198	44	411	8.7	0
MAR.										
05...	26	14	.2	17	251	213	39	462	8.4	0
APR.										
16...	27	12	.3	14	251	222	46	435	8.1	3
26...	24	12	.3	14	225	189	40	390	8.2	3
MAY										
16...	26	14	.3	15	256	217	44	432	8.1	5
28...	21	13	.2	12	190	146	33	325	8.0	6
JULY										
10...	28	15	.3	16	257	211	37	430	8.1	4
AUG.										
20...	31	15	.3	14	231	177	40	380	8.0	8

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

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), MAY TO SEPTEMBER 1968

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	249	227	339	312	367	356	410	404
2	---	---	---	---	262	249	347	332	351	331	410	407
3	---	---	---	---	265	260	357	344	345	329	410	401
4	---	---	---	---	278	259	364	351	348	334	406	400
5	---	---	---	---	308	274	364	352	349	347	403	395
6	---	---	---	---	320	300	368	355	348	341	401	395
7	---	---	---	---	307	295	371	360	353	342	403	392
8	---	---	---	---	320	304	377	364	357	353	396	388
9	---	---	---	---	329	319	376	367	371	357	396	386
10	---	---	---	---	329	315	371	362	380	371	390	368
11	---	---	---	---	342	312	374	363	382	376	367	311
12	---	---	---	---	347	329	371	363	383	377	309	302
13	---	---	---	---	334	314	376	362	381	377	306	301
14	---	---	---	---	329	320	385	370	383	381	319	306
15	---	---	---	---	333	317	382	363	386	383	337	318
16	---	---		397	334	316	368	356	392	386	347	332
17	---	---	414	394	338	288	373	357	392	390	354	340
18	---	---	408	391	333	310	375	364	399	392	359	349
19	---	---	399	388	312	273	375	363	394	383	371	356
20	---	---	397	391	329	272	369	361	382	368	379	364
21	---	---	404	395	338	327	367	359	379	365	382	371
22	---	---	411	406	337	326	363	359	383	367	381	374
23	---	---	414	400	348	332	362	356	396	377	383	377
24	---	---	396	334	353	335	365	360	407	391	382	375
25	---	---	359	309	351	341	370	365	411	399	382	376
26	---	---	343	307	357	330	370	362	416	406	388	379
27	---	---	342	332	357	332	369	364	416	406	396	386
28	---	---	330	297	337	281	371	365	410	403	391	387
29	---	---	305	205	330	315	371	365	411	404	394	388
30	---	---	231	210	318	295	368	361	410	403	394	390
31	---	---	244	222	---	---	363	359	410	403	---	---
MONTH	---	---	---	---	357	227	385	312	416	329	410	301

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(Continuous ethyl alcohol aclerated thermograph)

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	17	17	17	18	19	19	18	16	16	16	16	16	14	14	14	15	16	16	16	15	13	12	12	12	13	13	12	11	11	10	10	15
MINIMUM	17	16	16	17	18	18	16	16	16	16	16	14	13	13	14	14	15	16	15	13	12	12	11	12	12	12	11	11	10	9	9	14
NOVEMBER																																
MAXIMUM	12	12	12	12	11	9	8	8	7	8	9	11	11	10	9	7	6	7	7	7	7	7	8	8	7	7	7	7	5	5	--	8
MINIMUM	10	12	12	11	9	8	8	7	7	7	8	9	10	9	7	6	6	6	7	7	7	7	7	7	7	7	7	5	5	5	--	8
DECEMBER																																
MAXIMUM	5	4	5	5	6	7	8	8	8	8	8	7	8	8	8	8	7	7	7	7	8	8	8	6	6	5	5	5	4	4	3	6
MINIMUM	4	4	4	5	5	6	7	8	8	8	7	7	7	8	8	7	6	6	7	7	7	8	6	6	5	5	5	4	4	3	3	6
JANUARY																																
MAXIMUM	3	3	3	4	3	2	2	2	2	2	2	2	2	3	3	3	4	5	6	7	7	6	6	6	5	5	5	6	7	8	8	4
MINIMUM	3	2	2	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6	6	6	6	5	4	4	5	6	7	8	4
FEBRUARY																																
MAXIMUM	8	8	8	8	7	6	6	6	6	6	4	3	3	3	4	5	5	5	3	4	4	3	3	4	4	4	4	5	6	--	--	5
MINIMUM	8	8	8	7	6	6	6	6	6	4	3	3	3	2	3	4	5	3	3	3	3	3	3	3	4	4	4	4	5	--	--	4
MARCH																																
MAXIMUM	6	6	6	4	6	7	7	7	8	9	10	11	7	7	7	8	8	8	10	12	12	14	14	11	10	12	13	14	15	15	15	10
MINIMUM	4	4	4	4	4	6	6	7	7	8	9	6	6	5	6	7	8	7	8	10	12	12	11	9	8	10	12	13	13	14	14	8
APRIL																																
MAXIMUM	15	14	13	14	14	14	14	14	16	16	15	15	16	17	17	16	15	17	17	17	18	18	17	16	14	13	13	14	14	13	--	15
MINIMUM	14	12	12	13	14	12	12	14	14	14	14	14	14	16	16	14	14	15	17	17	17	17	16	14	12	11	13	12	13	13	--	14
MAY																																
MAXIMUM	14	14	16	16	16	16	15	16	16	17	17	18	19	19	17	17	18	18	18	17	16	16	16	15	17	17	17	14	14	16	16	16
MINIMUM	13	13	14	16	16	14	14	15	16	16	17	17	18	17	17	17	17	18	17	16	15	15	15	15	15	16	14	13	13	14	16	15
JUNE																																
MAXIMUM	17	17	17	18	19	21	21	22	22	23	23	22	22	19	20	21	21	20	20	21	21	22	23	24	24	24	24	22	22	23	--	21
MINIMUM	14	16	17	17	18	19	20	21	22	21	22	22	19	18	19	20	20	18	19	20	19	19	22	23	23	24	22	21	21	22	--	20
JULY																																
MAXIMUM	24	25	24	23	23	23	23	24	24	25	25	25	26	26	27	27	27	27	27	27	25	26	27	27	27	26	24	26	25	24	23	25
MINIMUM	23	24	23	23	22	22	22	22	23	23	24	24	24	24	25	26	26	26	27	25	23	24	25	26	26	24	24	24	23	22	23	24
AUGUST																																
MAXIMUM	24	24	26	26	26	27	27	27	27	27	27	25	24	24	25	26	27	27	26	26	28	27	28	28	27	27	24	22	22	21	21	26
MINIMUM	23	24	24	26	26	26	26	26	27	27	25	24	23	24	24	24	26	27	21	25	26	26	27	27	26	24	22	21	21	20	20	24
SEPTEMBER																																
MAXIMUM	21	21	21	22	22	22	22	22	22	21	21	21	20	20	21	21	21	21	21	21	20	20	21	21	22	22	22	20	19	18	--	21
MINIMUM	21	21	21	21	22	22	22	21	21	21	21	20	19	19	19	19	20	20	20	19	19	19	20	21	21	21	20	19	18	17	--	20

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 1968.
Water temperatures: October 1960 to September 1968.
Sediment records: October 1960 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum, 32°C July 18, 23; minimum, freezing point on several days during winter months.
Sediment concentrations: Maximum daily, 540 mg/l Mar. 18; minimum daily, 2 mg/l on several days during November and January.
Sediment loads: Maximum daily, 106,000 tons Mar. 8; minimum daily, 15 tons Nov. 22.
EXTREMES, 1960-68.--Water temperatures: Maximum, 33.5°C Aug. 24, 1964; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,180 mg/l Feb. 20, 1961; minimum daily, 1 mg/l 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 MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT.										
04...	4060	4.4	.15	.05	38	7.0	9.8	2.8	92	0
DEC.										
09...	18100	7.0	.31	.09	25	5.2	4.5	1.8	60	0
JAN.										
09...	5000	5.0	.16	.06	45	8.3	10	1.7	126	0
FEB.										
01...	39600	6.6	1.6	.25	23	4.8	5.1	1.7	58	0
MAR.										
01...	4960	2.1	--	--	44	10	9.4	1.6	133	0
APR.										
01...	13500	5.2	--	--	28	6.1	4.6	1.6	80	0
MAY										
01...	4820	1.9	.14	.01	42	8.3	6.9	1.9	118	0
JUNE										
01...	39000	6.4	.43	.15	18	3.8	2.9	1.3	48	0
JULY										
01...	4470	3.2	.28	.10	44	8.9	8.1	2.0	122	0
AUG.										
01...	1650	1.4	.15	.11	40	13	19	2.4	118	0
SEPT.										
01...	1140	.5	.11	.05	39	13	31	2.7	119	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
04...	37	19	.2	3.1	166	122	47	290	7.2	5
DEC.										
09...	27	8.9	.1	4.1	114	83	34	173	7.3	5
JAN.										
09...	40	13	.2	6.8	192	147	44	327	7.9	3
FEB.										
01...	29	7.8	.1	4.0	111	77	30	188	7.6	5
MAR.										
01...	42	11	.2	6.4	192	151	42	340	7.8	3
APR.										
01...	28	6.0	.2	4.3	123	95	30	220	7.7	5
MAY										
01...	37	10	.1	4.7	171	139	43	300	7.9	4
JUNE										
01...	22	4.0	.1	2.6	85	61	21	139	7.4	5
JULY										
01...	40	12	.2	4.0	182	147	47	315	8.0	3
AUG.										
01...	64	23	.3	.1	221	154	57	385	7.7	7
SEPT.										
01...	90	25	.3	1.4	262	151	54	435	7.8	5

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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..	17	16	16	18	16	16	16	16	17	16	14	14	18	10	15	15	16	18	13	11	15	13	11	11	11	12	10	10	10	8	8	14
NOVEMBER.	10	11	10	11	6	6	6	6	5	6	8	12	8	7	5	2	4	6	6	4	4	--	6	4	6	7	4	3	2	--	--	6
DECEMBER.	0	--	4	2	2	--	4	4	4	4	4	4	7	6	4	6	7	4	--	4	4	7	3	4	3	4	2	2	1	0	0	4
JANUARY..	0	0	0	0	0	0	0	0	0	--	0	0	0	1	1	0	0	0	0	2	4	4	2	0	0	0	2	2	2	3	4	1
FEBRUARY.	3	4	--	5	4	4	4	4	4	0	0	0	--	--	0	0	4	0	0	0	0	0	0	0	0	0	4	4	2	--	--	2
MARCH....	2	4	1	1	6	6	6	7	4	8	4	4	4	5	4	6	6	6	9	11	10	14	11	10	10	10	10	10	10	14	15	7
APRIL....	10	14	14	13	14	14	13	--	14	15	12	16	18	20	14	18	18	16	--	20	20	--	18	16	14	17	--	--	10	--	--	15
MAY.....	--	--	--	--	15	16	16	17	--	--	--	--	--	16	16	20	20	20	20	--	16	16	16	17	16	16	11	--	12	11	--	--
JUNE.....	17	18	17	--	22	--	22	23	20	24	26	24	23	26	22	23	16	20	24	26	--	25	26	28	26	28	--	22	26	29	--	23
JULY.....	29	30	26	27	26	26	27	29	25	25	26	28	25	26	28	28	30	32	28	29	29	28	32	30	27	28	--	28	26	25	27	28
AUGUST...	28	28	--	29	28	26	28	31	28	28	27	27	27	26	28	28	30	30	27	30	31	27	28	29	30	26	25	25	25	24	24	28
SEPTEMBER	22	23	--	23	24	25	22	25	24	22	21	22	23	24	22	22	24	23	23	24	24	23	26	26	23	23	24	23	20	22	--	23

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN CONCENTRATION (MG/L)	OCTOBER LOAD (TONS)	NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN CONCENTRATION (MG/L)	NOVEMBER LOAD (TONS)	DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN CONCENTRATION (MG/L)	DECEMBER LOAD (TONS)
1	9400	36	914	6700	19	344	3820	6	62
2	6830	23	424	6220	15	252	3520	4	38
3	5030	25	340	6220	13	218	4250	4	46
4	3940	21	223	6470	11	192	8480	18	492
5	3350	18	163	5790	10	156	16900	52	2370
6	2750	16	119	5280	8	114	17900	60	2900
7	2640	15	107	4890	4	53	16000	38	1640
8	2380	12	77	4400	4	48	15400	31	1290
9	2260	12	74	4020	4	43	18100	33	1610
10	2320	12	75	3890	4	42	19300	38	1980
11	2380	8	51	3700	4	40	23700	40	2560
12	2580	8	56	3570	3	29	45300	330	42900
13	2670	8	58	3360	3	27	49200	319	43100
14	2940	8	64	3220	3	26	38300	134	13900
15	2930	8	63	3160	3	26	30600	58	4790
16	2770	7	52	2860	3	23	23600	28	1780
17	2700	7	51	2840	3	23	18500	27	1350
18	3180	7	60	2870	3	23	15500	28	1170
19	3300	8	71	2850	3	23	13300	14	503
20	3290	8	71	2800	3	23	11800	9	287
21	4090	16	177	2800	3	23	10700	10	289
22	4450	13	156	2790	2	15	10100	10	273
23	4430	12	144	2910	2	16	9090	11	270
24	4200	12	136	2960	2	16	8430	9	205
25	4410	17	202	3150	2	17	8130	6	132
26	10000	51	1710	3360	2	18	7660	6	124
27	18900	117	5970	3840	4	41	7220	5	97
28	16900	80	3650	4020	4	43	7060	4	76
29	12900	46	3690	4170	4	45	7870	5	106
30	9880	26	694	3970	4	43	6840	4	74
31	7980	19	409	--	--	--	6170	4	67
TOTAL	167780	--	20051	119080	--	2002	482740	--	126481

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	6040	5	82	40700	224	25400	4870	7	92
2	5100	3	41	45600	203	25000	4700	3	38
3	4800	5	65	40000	116	12500	4710	7	89
4	5070	8	110	38400	79	8190	4620	6	75
5	4950	2	27	32800	56	4960	4550	8	98
6	4800	2	26	25900	43	3010	4850	10	131
7	4800	2	26	20600	32	1780	5040	7	95
8	4800	2	26	17600	21	998	5150	7	97
9	5000	2	27	15400	17	707	5350	8	116
10	5600	2	30	13900	11	413	5590	9	136
11	5400	2	29	12200	7	231	5980	8	129
12	5200	3	42	10400	8	225	8530	14	322
13	5000	3	41	9000	8	194	13400	28	1010
14	9770	31	1060	8170	13	287	25000	72	5340
15	14900	58	2330	7950	7	150	33400	119	10700
16	17500	40	1890	7750	7	146	28200	80	6090
17	14800	25	999	7840	7	148	36200	97	10400
18	11900	27	868	7800	14	295	69800	540	106000
19	10500	14	397	6910	8	149	61200	329	56200
20	9960	10	269	6470	8	140	42600	132	15200
21	10600	11	315	5990	9	145	32900	81	7200
22	12900	14	488	5510	10	149	27200	52	3820
23	17800	40	1920	5530	10	149	25900	59	4130
24	21900	84	4970	4960	8	107	36300	102	10400
25	23600	74	4720	5240	5	71	45000	189	23000
26	23100	46	2870	5400	5	73	35500	128	12300
27	19300	32	1670	5090	4	55	26900	72	5230
28	15700	27	1140	4950	4	53	21200	38	2180
29	13900	19	713	4640	5	63	17800	28	1350
30	14100	15	571	--	--	--	15700	24	1020
31	21300	40	2530	--	--	--	14200	30	1150
TOTAL	350090	--	30292	422700	--	85788	672340	--	284138

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	13300	21	754	4830	6	78	37500	87	8810
2	12300	16	531	4650	6	75	28200	93	7080
3	11600	34	1060	4580	6	74	21600	63	3670
4	11000	16	475	4590	6	74	18700	44	2220
5	10400	15	421	4520	7	85	15800	29	1240
6	9860	10	266	4330	7	82	13000	22	772
7	9540	10	258	4280	7	81	11000	21	624
8	9420	14	356	4290	6	70	9410	17	432
9	9000	13	316	4110	6	67	8370	13	294
10	8520	12	278	3980	6	64	7700	15	312
11	8150	12	264	3810	7	72	7320	33	652
12	7770	11	231	3710	7	70	7410	39	780
13	7350	13	258	3760	7	71	7810	21	443
14	7090	15	287	3710	10	100	7110	24	461
15	6850	20	370	4160	14	157	6440	27	470
16	6420	13	225	4590	16	198	5810	18	282
17	6190	12	201	4680	16	202	5440	14	206
18	6050	14	229	5800	17	202	5090	15	206
19	5780	16	250	6300	20	266	4940	26	346
20	5560	18	270	5940	20	321	4880	77	1010
21	5370	18	261	5980	19	307	4520	36	439
22	5280	18	257	5830	17	268	4580	28	346
23	5100	17	234	5650	16	244	4230	24	274
24	5100	14	193	6330	19	325	3920	24	254
25	5630	16	243	10500	56	2010	3570	22	212
26	5360	7	101	29900	212	17100	3390	25	229
27	5420	7	102	25400	168	11600	3480	31	291
28	5390	7	102	22600	87	5310	5530	80	1190
29	5220	7	99	56100	235	38000	4630	42	525
30	4940	5	66	62200	208	36600	5470	40	591
31	--	--	--	41900	54	9500	--	--	--
TOTAL	224960	--	8958	363010	--	123673	276850	--	34661

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4660	40	503	1630	19	84	1150	30	93
2	3730	32	322	1840	23	114	1010	18	49
3	3330	28	252	2020	30	164	1020	18	50
4	3650	28	276	2060	28	156	1090	24	71
5	3230	32	279	2000	28	151	1090	18	53
6	2930	30	237	2040	48	264	1350	18	66
7	3010	27	219	2100	45	255	1350	24	87
8	2800	26	197	1790	36	174	1410	15	57
9	2560	24	166	2060	49	272	1590	26	112
10	2360	21	134	1830	36	178	2470	99	891
11	2240	19	115	1910	35	180	4780	230	2970
12	2220	20	120	1860	33	166	4640	140	1750
13	2180	19	112	1790	22	106	3600	74	719
14	2090	17	96	1820	32	157	2840	59	452
15	2020	20	109	1920	34	176	2380	47	302
16	1940	22	115	1880	29	147	2060	39	217
17	2000	23	124	1750	25	118	1760	33	157
18	1890	19	97	1800	23	112	1600	25	108
19	2170	56	328	1770	22	105	1400	24	91
20	2110	35	199	2550	28	193	1440	23	89
21	2140	33	191	2040	24	132	1380	17	63
22	2010	31	168	2050	42	232	1320	10	36
23	1760	27	128	1860	40	201	1260	12	41
24	1720	29	135	1880	34	173	1200	16	52
25	1630	24	106	1630	22	97	1150	14	43
26	1660	25	112	1500	27	109	1190	13	42
27	1760	31	147	1390	26	98	1150	12	37
28	1960	26	138	1280	25	86	1140	9	28
29	1770	29	139	1250	23	78	1130	8	24
30	1620	27	118	1080	22	64	1110	7	21
31	1650	19	85	1210	21	69	--	--	--
TOTAL	72800	--	5467	55590	--	4611	52060	--	8771

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 3260000
TOTAL LOAD FOR YEAR (TONS) 734893

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP-ERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALY-SIS
DEC 12, 1967	2330	4.5	53000	452	64700	--	40	68	81	89	95	98	100	--	--	--	SPWC
FEB 2, 1968	0910	4.5	46700	208	26200	40	48	64	79	90	95	98	99	--	100	--	SBWC
MAR 15.....	1625	4.5	33300	107	9620	50	59	72	85	94	95	98	99	--	99	100	SBWC
MAR 19.....	1540	9	57400	232	36000	43	53	67	79	90	95	98	100	--	--	--	SBWC
MAR 25.....	1030	9.5	46500	220	27600	38	48	61	73	85	94	98	100	--	--	--	SBWC
MAY 26.....	1235	16.5	32000	224	19400	42	50	66	79	92	95	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 sq mi, upstream from gaging station.
RECORDS AVAILABLE.--Chemical analyses: December 1964 to September 1968.
Water temperatures: October 1960 to September 1968
Sediment records: October 1960 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum, 30.0°C July 18, 23, Aug. 8, 9, 23; minimum, freezing point Jan. 15, 16, Feb. 21, and probably several other days during periord of missing record.
Sediment concentrations: Maximum daily, 948 mg/l Sept. 11; minimum daily, 2 mg/l Nov. 15, 17.
Sediment loads: Maximum daily, 13,900 tons Sept. 11; minimum daily, 1.2 ton Aug. 16.
EXTREMES, 1960-68.--Water temperatures: Maximum, 30.5°C July 2, 12-13, 26, Aug. 27, 1966; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,300 mg/l July 22, 1967; minimum daily, 1 mg/l 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 MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SiO2)	TOTAL IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)
OCT. 01...	235	5.8	--	--	33	5.7	7.8	4.0	98	0
NOV. 04...	675	--	--	--	--	--	--	--	66	0
JAN. 15...	4650	6.5	1.2	.20	14	3.6	5.7	2.8	32	0
FEB. 04...	1670	8.8	.17	.03	22	5.1	4.7	2.0	48	0
MAR. 05...	432	.0	.13	.00	23	4.8	5.7	1.6	68	0
APR. 02...	862	.0	.18	.01	24	5.0	5.0	1.6	67	0
MAY 02...	428	3.3	--	--	23	4.1	5.3	1.6	61	9
JUNE 01...	3670	8.8	--	--	20	4.9	4.3	1.8	48	0
JULY 01...	412	9.6	--	--	27	5.6	6.6	3.5	82	0
AUG. 01...	102	2.4	--	--	38	6.4	8.6	3.2	127	0
SEPT. 03...	85	2.9	--	--	44	6.6	9.7	3.7	140	0

DATE	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT. 01...	20	12	.2	8.8	145	106	26	250	7.2	5
NOV. 04...	--	10	--	--	--	79	25	188	7.0	--
JAN. 15...	18	11	.2	8.2	86	50	24	145	6.7	10
FEB. 04...	25	10	.1	7.8	110	77	37	165	7.1	8
MAR. 05...	16	8.8	.2	8.1	101	77	22	185	7.6	3
APR. 02...	18	8.2	.1	5.6	100	81	26	185	8.1	3
MAY 02...	14	8.1	.1	.2	99	75	10	174	9.1	5
JUNE 01...	23	6.9	.1	7.7	102	70	31	167	7.3	8
JULY 01...	18	9.9	.2	8.5	129	91	24	212	7.5	15
AUG. 01...	17	12	.2	3.3	153	122	18	265	7.6	6
SEPT. 03...	18	15	.2	7.7	177	137	23	312	8.1	2

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

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

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..	16	16	20	20	22	16	16	16	18	16	14	14	14	14	14	16	17	18	16	12	12	11	11	12	--	11	12	11	10	10	10	15
NOVEMBER.	11	11	12	10	9	7	6	6	6	7	10	9	8	8	6	4	4	7	6	6	6	6	6	6	6	--	6	4	3	--	--	7
DECEMBER.	--	1	--	--	--	--	--	--	--	--	--	--	--	6	6	4	4	6	6	6	6	--	4	2	2	--	2	0	1	0	3	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	2	2	4	3	2	3	--	0	1	4	4	4	4	4	--
FEBRUARY.	4	--	4	4	--	5	--	4	4	1	--	--	--	--	--	1	2	1	1	1	0	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	--	--	--	7	10	8	9	7	3	4	4	6	7	6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	--	--	12	14	14	--	--	14	15	15	14	16	16	--	14	16	--	18	19	20	18	17	16	16	14	14	14	15	14	14	--	15
MAY.....	16	16	18	16	18	16	17	17	19	20	17	20	--	16	16	18	20	19	18	16	16	--	14	14	15	18	15	12	14	23	16	17
JUNE.....	16	18	--	18	20	24	26	--	24	26	23	23	20	22	24	26	20	22	23	22	23	--	26	26	28	27	24	20	22	26	--	23
JULY.....	29	26	25	26	26	--	24	27	26	27	27	28	26	27	28	29	29	30	26	27	28	28	30	--	27	28	26	28	28	26	24	27
AUGUST...	28	27	28	--	27	29	28	30	30	29	24	26	26	25	27	29	27	--	27	27	28	29	30	28	--	26	24	23	23	17	--	27
SEPTEMBER	22	24	--	24	24	24	23	23	23	21	19	22	22	22	--	22	21	23	21	23	23	23	24	25	25	24	--	20	--	17	--	22

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN CONCENTRATION (MG/L)	OCTOBER LOAD (TONS)	NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN CONCENTRATION (MG/L)	NOVEMBER LOAD (TONS)	DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN CONCENTRATION (MG/L)	DECEMBER LOAD (TONS)
1	254	55	38	299	22	18	226	4	2.4
2	196	35	19	348	28	28	260	4	2.8
3	172	25	12	1500	126	557	660	222	525
4	163	22	9.7	872	62	155	3660	378	3840
5	151	19	7.7	555	29	43	2030	53	209
6	142	15	5.8	449	15	18	1610	24	104
7	133	7	2.5	392	9	9.5	1570	26	110
8	139	7	2.6	360	7	6.8	1980	38	203
9	145	12	4.7	336	3	2.7	1320	25	89
10	181	21	10	324	3	2.6	1120	14	42
11	264	37	26	310	4	3.3	6410	206	4320
12	271	35	26	296	9	7.2	4840	125	1530
13	217	18	11	292	13	10	2960	54	432
14	184	14	7.0	278	7	5.2	1950	29	153
15	172	23	11	268	2	1.4	1580	18	77
16	163	24	11	254	4	2.7	1290	11	38
17	154	17	7.1	247	2	1.3	1090	9	26
18	280	74	70	271	14	10	972	9	24
19	1370	288	1100	299	4	3.2	906	8	20
20	718	124	252	296	4	3.2	807	5	11
21	408	39	43	274	4	3.0	730	5	9.9
22	310	24	20	264	6	4.3	735	7	14
23	268	21	15	292	6	4.7	878	9	21
24	244	20	13	344	6	5.6	702	5	9.5
25	288	51	48	368	8	7.9	590	4	6.4
26	1380	254	975	332	8	7.2	595	3	4.8
27	806	101	243	313	8	6.8	570	3	4.6
28	490	50	66	288	8	6.2	545	4	5.9
29	396	28	30	268	4	2.9	1020	19	52
30	340	19	17	247	4	2.7	906	13	32
31	316	19	16	--	--	--	735	9	18
TOTAL	10715	--	3119.1	11236	--	939.4	45247	--	11936.3

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (MG/L)	JUNE LOAD (TONS)
1	840	19	43	400	16	17	3200	10	950
2	851	19	44	384	10	10	2000	46	248
3	730	15	30	352	10	9.5	1600	44	190
4	686	15	28	340	14	13	1300	43	151
5	686	16	30	332	13	12	1030	31	86
6	630	15	26	320	10	8.6	840	24	54
7	575	13	20	310	10	8.4	724	21	41
8	550	11	16	285	10	7.7	640	18	31
9	540	11	16	271	10	7.3	585	17	27
10	508	13	18	268	10	7.2	590	23	37
11	481	13	17	268	10	7.2	555	20	30
12	463	13	16	299	14	11	691	66	166
13	440	12	14	317	20	17	930	240	603
14	424	12	14	292	26	20	675	166	303
15	416	13	15	278	27	20	503	70	95
16	404	14	15	289	20	16	494	81	75
17	392	14	15	317	15	13	708	171	283
18	376	14	14	310	12	10	757	127	260
19	364	13	13	285	12	9.2	535	68	98
20	352	13	12	268	12	8.7	645	88	153
21	344	13	12	254	12	8.2	590	167	266
22	332	13	12	244	10	6.6	408	100	110
23	328	11	9.7	275	10	7.4	356	70	67
24	396	18	19	1020	105	333	324	52	45
25	1090	70	206	1290	76	265	312	43	36
26	818	21	46	746	26	52	352	43	41
27	508	11	15	517	24	34	424	52	60
28	436	11	13	1600	387	2370	2090	844	5230
29	400	15	16	9510	350	8390	1090	377	1250
30	388	26	27	4600	275	3220	530	120	172
31	--	--	--	8290	528	12700	--	--	--
TOTAL	15748	--	791.7	34531	--	27619.0	25478	--	11158

DAY	JANUARY MEAN DISCHARGE (CFS)	JANUARY MEAN CONCEN-TRATION (MG/L)	JANUARY LOAD (TONS)	FEBRUARY MEAN DISCHARGE (CFS)	FEBRUARY MEAN CONCEN-TRATION (MG/L)	FEBRUARY LOAD (TONS)	MARCH MEAN DISCHARGE (CFS)	MARCH MEAN CONCEN-TRATION (MG/L)	MARCH LOAD (TONS)
1	600	5	8.1	1900	94	482	320	6	5.2
2	500	5	6.8	1630	35	154	360	6	5.8
3	550	10	15	2320	110	705	340	4	3.7
4	600	10	16	1630	43	199	340	6	5.5
5	500	10	14	1260	16	54	340	9	8.3
6	460	8	9.9	1090	12	35	360	12	12
7	500	10	14	1010	12	33	320	10	8.6
8	440	6	7.1	942	12	31	320	9	7.8
9	420	5	5.7	873	10	24	320	10	8.6
10	400	3	3.2	790	11	23	356	12	12
11	440	5	5.9	555	10	15	400	14	15
12	400	4	4.3	500	10	14	463	15	19
13	380	2	2.1	440	10	12	1260	50	189
14	1100	78	500	500	20	27	1590	62	266
15	4870	305	4050	600	20	32	1220	28	92
16	2990	58	600	545	10	15	1710	78	386
17	1890	24	122	494	10	13	5900	590	11200
18	1450	22	86	380	11	11	5160	520	7820
19	1230	22	73	416	10	11	3360	155	1410
20	1500	34	138	440	6	7.1	2070	61	341
21	1880	54	274	380	5	5.1	1660	34	152
22	2730	92	678	360	20	19	1690	41	187
23	2280	52	320	360	25	24	1940	70	366
24	1800	18	87	320	12	10	2700	118	860
25	1180	13	41	320	5	4.3	1560	42	177
26	1010	22	60	317	4	3.4	1260	17	58
27	918	14	35	336	4	3.6	1110	22	66
28	900	8	19	332	4	3.6	1010	24	65
29	924	9	22	344	6	5.6	942	21	53
30	1240	18	60	--	--	--	900	18	44
31	2200	151	997	--	--	--	829	16	36
TOTAL	38282	--	8274.1	21384	--	1975.7	42110	--	23879.5

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	404	58	63	110	10	3.0	79	6	1.3
2	344	47	44	158	15	6.4	81	8	1.7
3	332	58	52	184	9	4.5	84	16	3.6
4	328	42	37	194	9	4.7	86	23	5.3
5	296	35	28	158	9	3.8	86	24	5.6
6	259	30	21	155	12	5.0	197	68	36
7	238	26	17	137	9	3.3	454	174	213
8	221	29	17	131	6	2.1	284	90	69
9	214	27	16	184	13	6.4	162	55	24
10	203	26	14	140	11	4.2	340	94	159
11	197	24	13	187	12	6.1	4660	968	13900
12	194	13	6.8	256	60	41	834	199	541
13	187	13	6.6	152	37	15	376	73	74
14	180	13	6.3	128	17	5.9	266	58	42
15	197	13	6.9	122	5	1.6	214	52	30
16	231	18	11	113	4	1.2	184	41	20
17	210	20	11	670	306	681	165	32	14
18	207	20	11	494	292	427	152	24	9.8
19	200	27	15	235	143	90	146	25	9.9
20	203	34	19	472	216	433	134	22	8.0
21	203	39	21	494	274	400	128	18	6.2
22	158	39	17	221	132	79	119	14	4.5
23	143	27	10	162	76	33	119	17	5.5
24	134	27	9.8	134	54	20	113	18	5.5
25	128	48	17	116	53	17	110	18	5.3
26	131	22	7.8	105	59	17	105	16	4.5
27	134	6	2.2	96	36	9.3	99	13	3.5
28	131	24	8.5	88	11	2.6	96	9	2.3
29	119	31	10	84	11	2.5	94	9	2.3
30	110	23	6.8	84	9	2.0	88	14	3.3
31	108	10	2.9	81	8	1.7	--	--	--
TOTAL	6344	--	528.6	6045	--	2329.3	10055	--	15210.1
TOTAL DISCHARGE FOR YEAR (CFS-DAYS)									267175
TOTAL LOAD FOR YEAR (TONS)									107760.8

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMP-ERA-TURE (°C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALY-SIS
DEC 12, 1967	0720	--	4800	139	1800	48	59	72	83	92	93	95	96	--	97	100	SBWC
JAN 15, 1968	1940	0	4630	219	2740	36	50	64	79	91	95	97	99	--	100	--	SBWC
JAN 31.....	2155	0	2780	230	1730	36	47	70	85	95	98	99	100	--	--	--	SBWC
MAR 16.....	1900	5.5	1930	112	584	48	58	69	86	92	95	98	99	--	100	--	SBWC
MAY 29.....	0700	11	9880	482	12900	--	42	60	73	77	84	87	88	--	90	97	SPWC
JUN 28.....	2130	19.5	2560	1180	8160	--	63	81	93	97	99	100	--	--	--	--	SPWC
SEP 11.....	0900	19	6310	2380	40500	--	56	75	89	94	99	100	--	--	--	--	SPWC

1-6435. BENNETT CREEK AT PARK MILLS, MD.

LOCATION.--Lat 39°17'40", long 77°24'30", at gaging station 75 feet downstream from highway bridge, 0.2 mile south of Park Mills, Frederick County, 1.8 miles upstream from mouth, and 3.7 miles southwest of Urbana.
DRAINAGE AREA.--62.8 sq mi.
RECORDS AVAILABLE.--Chemical analyses: March to September 1968.
Water temperatures: April to September 1968.

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, MARCH TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL ALUM-INUM (AL)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
MAR., 1968												
05...	39	7.2	--	.17	.02	8.4	2.5	3.0	1.0	28	0	6.6
APR.												
24...	42	12	--	.11	.01	9.7	2.6	3.0	1.1	34	0	5.2
JUNE												
06...	38	8.8	--	.20	.02	9.5	2.7	3.1	1.3	34	0	5.8
JULY												
17...	21	8.0	--	--	--	12	2.8	3.2	2.7	44	0	5.4
SEP.												
12...	18	7.4	--	.18	.03	13	2.6	3.3	3.7	4	0	9.1

DATE	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	PHOS-PHATE (PO4)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS-	TOTAL ACIDITY AS H+	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
MAR., 1968												
05...	4.9	.2	4.1	--	50	52	32	9	--	82	6.9	2
APR.												
24...	4.4	.1	3.3	--	--	58	35	7	--	90	7.3	3
JUNE												
06...	4.4	.1	4.1	--	--	57	35	7	--	92	7.2	3
JULY												
17...	5.1	.1	3.5	--	--	65	42	6	--	108	7.0	5
SEP.												
12...	6.4	.1	3.1	--	--	70	43	9	--	120	7.2	8

1-6435. BENNETT CREEK AT PARK MILLS, MD.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), APRIL TO SEPTEMBER 1968

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	100	97	109	107			125	121	136	132
2	---	---	101	98	110	108			125	121	132	130
3	---	---	102	99	113	108			124	119	138	130
4	---	---	101	99	111	106			124	120	142	138
5	---	---	102	100	110	107			123	120	142	137
6	---	---	101	100	114	110			123	119	141	128
7	---	---	103	100	114	103			145	124	154	142
8	---	---	102	100	106	103			160	134	147	137
9	---	---	102	100	104	103			172	157	137	132
10	---	---	102	101					186	172	131	96
11	---	---	103	101					183	154		
12	---	---	104	102					195	167		
13	---	---	107	101					208	196		
14	---	---	108	103					218	209		
15	---	---	107	105					208	172		
16	---	---	105	104					185	170		
17	---	---	105	104					186	175		
18	---	---	110	104			111	108	196	182		
19	---	---	106	105			156	106	224	194		
20	---	---	106	104			166	146	221	213		
21	---	---	111	105			163	143	245	222		
22	---	---	108	106			143	133	260	246		
23	---	---	106	105			132	125	269	261		
24	---	---	111	102			127	123	268	259	---	---
25	---	---	139	112			128	125	262	255	---	---
26	105	101	131	119			127	123	258	221	---	---
27	101	95	119	115			126	121	224	208	---	---
28	99	96	121	110			124	119	209	184	---	---
29	99	96	127	99			124	120	183	168	---	---
30	100	98	112	104			142	123	166	140	---	---
31	---	---	109	105	---	---	124	119	139	134	---	---
MONTH	---	---	139	97	---	---	---	---	269	119	---	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	--	--	13.0	10.0	15.5	14.0			24.5	21.5	18.5	16.0
2	--	--	15.5	10.0	17.5	14.0			24.5	22.5	19.5	17.0
3	--	--	16.5	11.0	18.0	16.5			25.5	22.5	20.0	16.5
4	--	--	17.5	12.0	17.5	16.0			25.5	23.0	21.5	18.0
5	--	--	17.5	15.0	18.5	14.5			24.5	23.0	21.5	19.0
6	--	--	16.5	12.5	20.0	15.5			26.0	22.5	21.0	20.0
7	--	--	15.5	11.5	22.0	17.0			26.5	24.0	20.5	17.5
8	--	--	15.5	10.0	22.5	18.5			26.0	22.5	20.0	17.5
9	--	--	16.0	10.5	22.5	18.5			26.0	23.5	20.0	17.0
10	--	--	17.5	13.0	22.0	20.0			30.0	23.5	19.5	18.5
11	--	--	18.0	15.5	22.5	20.5			23.5	21.0		
12	--	--	16.0	15.0	22.5	20.5			21.5	18.5		
13	--	--	19.0	15.0					22.0	18.5		
14	--	--	19.0	16.0					22.5	21.0		
15	--	--	16.5	14.5					24.0	20.5		
16	--	--	15.0	13.5					24.5	21.5		
17	--	--	16.5	14.5					25.5	23.0		
18	--	--	19.0	15.0			27.0	23.5	25.0	23.0		
19	--	--	18.5	16.5			26.0	23.5	25.0	23.0		
20	--	--	18.0	14.5			23.5	21.0	25.0	21.5		
21	--	--	15.0	13.5			23.5	20.0	26.0	23.5		
22	--	--	15.0	12.0			24.5	20.5	26.0	22.5		
23	--	--	16.5	12.0			26.0	22.5	27.0	24.0		
24	--	--	14.5	13.5			26.5	23.0	27.0	24.0	--	--
25	--	--	14.5	13.5			24.5	23.5	26.5	23.0	--	--
26	13.0	11.0	18.5	13.5			24.5	22.0	24.0	21.0	--	--
27	15.0	9.0	19.0	14.5			23.5	21.5	20.5	18.5	--	--
28	13.5	11.5	18.0	11.5			25.0	21.5	19.5	16.0	--	--
29	15.0	9.5	12.5	11.0			23.0	20.5	19.0	15.5	--	--
30	12.5	10.5	16.0	12.0			22.5	19.5	19.0	15.0	--	--
31	--	--	15.5	14.0	--	--	22.5	20.5	19.0	15.0	--	--
MONTH	--	--	19.0	10.0	--	--	--	--	30.0	15.0	--	--

1-6450. SENECA CREEK AT DAWSONVILLE, MD.

LOCATION.--Lat 39°07'41", long 77°20'13", at gaging station 60 ft downstream from bridge on State Highway 28, 150 ft downstream from mouth of Great Seneca Creek, and 0.5 mile east of Dawsonville, Montgomery County.
DRAINAGE AREA.--101 sq mi.
RECORDS AVAILABLE.--Chemical analyses: November 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 to SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT.										
02...	32	8.8	--	--	9.0	3.0	3.5	2.7	34	0
25...	34	9.4	.21	.02	8.7	2.7	3.7	2.4	33	0
NOV.										
24...	45	9.2	.24	.00	7.9	2.9	3.7	1.8	31	0
JAN.										
11...	70	10	.14	.04	8.7	2.9	3.9	1.2	23	0
25...	82	11	.17	.00	8.0	3.0	4.3	1.3	22	0
MAR.										
06...	74	7.0	.23	.02	7.2	2.9	4.3	1.6	23	0
APR.										
25...	94	8.6	.10	.02	8.5	3.5	4.0	1.8	30	0
MAY										
24...	126	7.9	.36	.12	9.6	3.4	4.3	3.6	30	0
JUNE										
24...	74	9.6	.27	.15	10	2.6	4.1	2.5	31	0
JULY										
24...	34	8.5	.19	.09	9.0	2.6	5.0	2.7	35	0
SEPT.										
12...	50	8.9	.27	.05	8.8	2.4	4.1	4.1	29	0
25...	20	8.7	.17	.02	7.6	2.4	4.2	2.1	33	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT.										
02...	4.8	6.6	.1	4.7	60	34	6	89	7.1	4
25...	4.8	6.2	.1	4.0	59	32	6	85	7.0	3
NOV.										
24...	5.6	5.6	.2	4.0	56	32	6	88	7.1	3
JAN.										
11...	8.6	7.4	.1	7.2	61	34	14	89	7.0	4
25...	11	7.0	.2	7.1	64	33	15	98	7.0	0
MAR.										
06...	8.0	7.0	.1	5.3	54	30	11	88	6.9	2
APR.										
25...	8.0	6.8	.1	6.0	62	36	11	99	7.3	5
MAY										
24...	8.2	9.5	.1	5.7	67	38	14	110	7.2	10
JUNE										
24...	8.0	5.4	.1	7.0	64	36	10	96	7.1	8
JULY										
24...	4.3	7.1	.1	4.7	61	33	4	98	7.1	4
SEPT.										
12...	9.7	7.8	.1	3.2	64	32	8	94	7.2	7
25...	3.9	5.7	.1	3.1	54	29	2	84	6.8	5

1-6476.85 WILLIAMSBURG RUN NEAR OLNEY, MD.

LOCATION.--Lat 39°08'32", long 77°05'48", at gaging station 200 ft downstream from vehicle bridge on golf course of Norbeck Country Club, 0.2 mile downstream from Cashell Road, 0.5 mile upstream from confluence with North Branch Rock Creek, and 1.8 miles southwest of Olney, Montgomery County.
DRAINAGE AREA.--2.25 sq mi.
RECORDS AVAILABLE.--Sediment records: November 1966 to September 1968.
EXTREMES, 1967-68.--Sediment concentrations: Maximum daily, 1,230 mg/l Mar. 17; minimum daily, not determined.
Sediment loads: Maximum daily, 111 tons Mar. 17; minimum daily, 0 tons on many days during year.
EXTREMES, 1966-68.--Sediment concentrations: Maximum daily, 2,320 mg/l Aug. 4, 1967; minimum daily, not determined.
Sediment loads: Maximum daily, 331 tons Mar. 7, 1967; minimum daily, 0 tons on many days during 1968.

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.53	6	.01	.69	4	.01	.78	3	.01
2	.49	6	.01	4.6	387	13	.73	3	.01
3	.49	5	.01	1.2	16	.05	16	163	9.8
4	.49	5	.01	.90	10	.02	3.7	31	.31
5	.49	4	.01	.83	8	.02	2.3	12	.07
6	.49	4	.01	.78	7	.01	2.1	10	.06
7	.49	4	.01	.73	6	.01	2.1	7	.04
8	.57	4	.01	.78	6	.01	1.7	4	.02
9	.57	4	.01	.73	4	.01	1.4	4	.02
10	1.4	71	.60	.73	3	.01	12	572	56
11	.69	15	.03	.73	2	0	12	294	13
12	.65	8	.01	.78	2	0	5.9	60	.96
13	.61	6	.01	.73	1	0	2.3	13	.08
14	.61	6	.01	.73	1	0	1.9	11	.06
15	.65	5	.01	.73	1	0	1.7	9	.04
16	.61	5	.01	.69	1	0	1.5	8	.03
17	.61	5	.01	.73	1	0	1.4	8	.03
18	.90	53	.14	.78	1	0	1.4	7	.03
19	.73	20	.04	.73	1	0	1.4	7	.03
20	.61	6	.01	.69	1	0	1.4	7	.03
21	.65	4	.01	.69	1	0	1.4	6	.02
22	.65	4	.01	.78	10	.02	2.5	45	.42
23	.64	2	0	.90	10	.02	2.1	20	.11
24	.65	2	0	.78	8	.02	1.7	10	.05
25	3.4	238	9.0	.83	8	.02	1.7	8	.04
26	1.1	43	.12	.73	6	.01	2.1	8	.05
27	.78	10	.02	.73	4	.01	1.7	7	.03
28	.69	8	.01	.73	3	.01	13	185	20
29	.65	6	.01	.69	2	0	12	38	2.8
30	.69	6	.01	.83	5	.01	2.5	9	.06
31	.69	4	.01	--	--	--	1.9	9	.05
TOTAL	23.27	--	10.17	26.98	--	13.27	116.31	--	104.26

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.9	8	.04	1.9	10	.05	1.2	11	.04
2	1.5	8	.03	3.2	72	1.0	1.4	20	.08
3	1.5	7	.03	2.7	25	.18	1.2	15	.05
4	2.5	21	.14	1.9	12	.06	1.2	10	.03
5	1.7	10	.05	1.7	10	.05	1.4	10	.04
6	1.4	8	.03	1.5	10	.04	1.2	8	.03
7	1.4	8	.03	1.5	9	.04	1.1	12	.04
8	1.1	7	.02	1.5	9	.04	1.1	13	.04
9	1.1	7	.02	1.4	9	.03	1.4	15	.06
10	1.1	6	.02	1.2	9	.03	1.4	12	.05
11	1.1	6	.02	1.1	9	.03	1.4	10	.04
12	1.0	50	.14	1.1	9	.03	8.2	397	19
13	.98	20	.05	1.1	9	.03	11	194	6.8
14	47	298	52	1.1	8	.02	3.2	51	.48
15	4.0	33	.36	1.1	10	.03	4.0	58	.71
16	2.1	15	.09	1.2	10	.03	3.2	30	.26
17	1.7	10	.05	1.2	10	.03	17	1230	111
18	1.7	9	.04	1.1	10	.03	8.4	172	4.9
19	1.9	9	.05	1.1	10	.03	3.2	26	.22
20	1.9	8	.04	1.1	12	.04	2.7	15	.11
21	2.1	8	.05	1.1	13	.04	2.5	10	.07
22	1.9	8	.04	1.1	14	.04	2.3	8	.05
23	2.1	7	.04	1.1	14	.04	4.6	55	1.0
24	1.7	7	.03	1.1	15	.04	2.5	15	.10
25	1.4	7	.03	1.1	15	.04	2.1	12	.07
26	1.2	6	.02	1.1	16	.05	1.9	10	.05
27	1.2	6	.02	1.1	16	.05	1.9	8	.04
28	1.4	6	.02	1.1	17	.05	1.9	8	.04
29	1.5	6	.02	1.2	14	.05	1.7	7	.03
30	2.5	48	.47	--	--	--	1.7	7	.03
31	2.7	30	.24	--	--	--	1.7	7	.03
TOTAL	98.28	--	54.23	39.7	--	2.22	99.7	--	145.49

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.9	11	.06	1.2	5	.02	1.4	12	.05
2	1.5	25	.10	1.1	5	.01	1.4	10	.04
3	1.5	15	.06	1.1	5	.01	1.4	20	.08
4	2.1	27	.42	1.1	5	.01	1.4	10	.04
5	4.6	55	.74	1.1	6	.02	1.2	9	.03
6	1.9	19	.10	.98	6	.02	1.1	9	.03
7	1.7	15	.07	.98	6	.02	1.1	8	.02
8	1.5	10	.04	.98	6	.02	.98	8	.02
9	1.5	9	.04	.98	6	.02	1.1	7	.02
10	1.5	8	.03	.98	6	.02	1.1	7	.02
11	1.4	8	.03	.90	6	.01	1.1	7	.02
12	1.4	7	.03	1.9	32	.24	3.2	191	8.9
13	1.4	8	.03	1.1	15	.04	3.2	71	1.1
14	1.4	9	.03	.98	10	.03	1.1	20	.06
15	1.4	10	.04	1.1	10	.03	.98	15	.04
16	1.2	12	.04	1.1	28	.08	2.1	114	1.3
17	1.2	14	.05	.98	15	.04	3.2	187	3.1
18	1.2	15	.05	.98	10	.03	1.4	20	.08
19	1.2	16	.05	.98	9	.02	9.1	660	79
20	1.2	15	.05	.98	8	.02	2.7	200	1.5
21	1.2	12	.04	.90	7	.02	1.2	30	.10
22	1.1	12	.04	.83	7	.02	1.1	15	.04
23	1.1	10	.03	1.9	151	.92	.98	10	.03
24	3.2	218	3.3	2.3	67	.48	.98	10	.03
25	2.1	30	.17	1.1	10	.03	.98	9	.02
26	1.4	6	.02	.90	10	.02	2.7	733	42
27	1.4	4	.02	4.6	214	6.3	12	807	77
28	1.4	4	.02	28	657	83	5.2	96	3.4
29	1.2	4	.01	5.6	35	.53	1.4	20	.08
30	1.2	5	.02	2.3	20	.12	1.1	12	.04
31	--	--	--	1.9	15	.08	--	--	--
TOTAL	48.0	--	5.73	71.83	--	92.23	67.90	--	218.19

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.1	10	.03	.46	7	.01	.18	7	0
2	3.0	62	.92	.46	7	.01	.20	8	0
3	3.4	58	.86	.46	7	.01	.22	9	.01
4	1.2	15	.05	.43	6	.01	.16	10	0
5	1.1	12	.04	.46	6	.01	.17	12	.01
6	1.1	10	.03	.46	6	.01	1.4	285	2.8
7	.98	10	.03	.40	6	.01	.24	20	.01
8	.98	9	.02	.43	6	.01	.20	10	.01
9	.90	9	.02	.37	5	0	.18	10	0
10	.90	9	.02	.34	5	0	6.2	1110	53
11	.90	9	.02	.37	5	0	.57	90	.14
12	.83	8	.02	.28	5	0	.34	20	.02
13	.83	8	.02	.26	5	0	.28	15	.01
14	.83	8	.02	.28	4	0	.28	15	.01
15	.83	8	.02	.28	4	0	.26	12	.01
16	.73	7	.01	.43	29	.06	.28	11	.01
17	.73	7	.01	.90	80	.21	.26	11	.01
18	.69	7	.01	.34	25	.02	.26	10	.01
19	.78	40	.08	1.7	974	12	.24	10	.01
20	.73	15	.03	.49	89	.13	.24	9	.01
21	.65	13	.02	.31	10	.01	.22	9	.01
22	.65	12	.02	.26	9	.01	.22	8	0
23	.61	10	.02	.26	9	.01	.22	8	0
24	.61	10	.02	.24	8	.01	.20	7	0
25	.61	9	.01	.24	8	.01	.20	7	0
26	.57	9	.01	.20	7	0	.16	6	0
27	.57	9	.01	.18	7	0	.16	6	0
28	.53	9	.01	.18	6	0	.16	5	0
29	.46	8	.01	.18	6	0	.15	5	0
30	.46	8	.01	.18	5	0	.15	4	0
31	.49	7	.01	.16	6	0	--	--	--
TOTAL	28.75	--	2.41	11.99	--	12.55	14.00	--	56.09

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 646.71
TOTAL LOAD FOR YEAR (TONS) 716.84

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

LOCATION.--Lat 39°06'59", long 77°06'09", at gaging station 550 ft 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 confluence with Rock Creek.
DRAINAGE AREA.--9.73 sq mi.
RECORDS AVAILABLE.--Sediment records (periodic): November 1966 to September 1968.

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
NOV 2, 1967..	15	158	15	MAY 27.....	12	101	7.0
NOV 3.....	7.1	20	.38	MAY 28.....	100	816	341
DEC 3.....	51	309	66	MAY 29.....	26	86	7.5
DEC 4.....	17	30	1.4	JUN 16.....	17	684	137
DEC 10.....	30	215	48	JUN 19.....	31	920	332
DEC 11.....	52	97	17	JUN 20.....	17	206	21
JAN 14, 1968..	180	522	405	JUN 26.....	4.0	38	.90
JAN 15.....	24	41	3.2	JUN 27.....	36	823	241
MAR 12.....	25	387	64	JUN 28.....	48	481	159
MAR 13.....	43	181	31	SEP 10.....	25	1560	331
MAR 17.....	63	639	175	SEP 11.....	4.5	188	3.3
MAR 18.....	34	82	9.0				

POTOMAC RIVER BASIN

1-6477.25 MANOR RUN NEAR NORBECK, MD.

LOCATION.--Lat 39°06'36", long 77°06'00", at gaging station 100 ft downstream from ford on farm lane, 0.5 mile upstream from confluence with North Branch Rock Creek, and 1.2 miles west of Norbeck, Montgomery County.
DRAINAGE AREA.--1.01 sq mi.
RECORDS AVAILABLE.--Sediment records (periodic): November 1966 to September 1968.

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
OCT 25, 1967..	2.3	2030	119	JUN 13.....	1.2	327	2.8
NOV 2.....	2.6	1170	25	JUN 16.....	10	1690	536
JAN 14.....	27	884	119	JUN 19.....	9.7	1700	516
JAN 15.....	2.2	30	.18	JUN 20.....	1.4	50	.19
MAR 12.....	4.2	935	31	JUN 26.....	2.7	1030	115
MAR 13.....	4.2	625	7.5	JUN 27.....	6.0	1500	164
MAR 17.....	9.3	2450	195	JUN 28.....	1.6	211	1.2
MAR 18.....	3.8	650	8.0	JUL 2.....	4.6	3420	222
MAY 27.....	2.7	2100	28	JUL 3.....	1.9	1640	8.9
MAY 28.....	14	3930	320	SEP 10.....	9.1	3550	619
MAY 29.....	2.8	510	3.1	SEP 11.....	.38	123	.15
JUN 12.....	2.0	1690	55				

POTOMAC RIVER BASIN

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

LOCATION.--Lat 39°07'36", long 77°01'15", at gaging station 20 ft 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 sq mi.
RECORDS AVAILABLE.--Sediment records (periodic): March 1967 to September 1968.

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
NOV 2, 1967..	2.9	100	2.0	MAR 18.....	9.2	53	1.9
NOV 3.....	.93	25	.07	MAY 27.....	3.0	46	.83
JAN 14, 1968..	43	194	43	MAY 28.....	31	378	72
JAN 15.....	3.5	20	.19	JUN 19.....	11	353	78
MAR 12.....	8.1	300	22	JUN 20.....	2.7	69	.78
MAR 13.....	9.5	127	5.2	JUN 27.....	7.8	527	83
MAR 17.....	21	407	57	JUN 28.....	4.0	101	3.0

1-6500.85 NURSERY RUN AT CLOVERLY, MD.

LOCATION.--Lat 39°07'05", long 77°00'24", at gaging station 300 ft upstream from culvert on Bryants Nursery Road, 350 ft upstream from confluence with Browns Creek, 0.8 mile northwest of Cloverly, Montgomery County, and 2.4 miles southeast of Sandy Spring.
DRAINAGE AREA.--0.35 sq mi.
RECORDS AVAILABLE.--Sediment records: December 1966 to September 1968.
EXTREMES, 1967-68.--Sediment concentrations: Maximum daily, 279 mg/l June 19; minimum daily, not determined.
Sediment loads: Maximum daily, 17 tons June 19; minimum daily, 0 tons on many days during year.
EXTREMES, 1966-68.--Sediment concentrations: Maximum daily, 279 mg/l June 19, 1968; minimum daily, not determined.
Sediment loads: Maximum daily, 24 tons Aug. 25, 1967; minimum daily, 0 tons on many days during 1968.

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.14	1	0	.17	2	0	.18	1	0
2	.14	1	0	.83	21	.12	.18	1	0
3	.14	1	0	.32	3	0	2.0	26	.19
4	.14	1	0	.24	3	0	.55	3	0
5	.14	1	0	.22	3	0	.42	3	0
6	.13	1	0	.22	2	0	.41	3	0
7	.13	1	0	.19	2	0	.41	2	0
8	.15	2	0	.19	2	0	.36	2	0
9	.15	4	0	.19	2	0	.32	2	0
10	.38	9	.02	.19	2	0	1.1	18	.14
11	.21	5	0	.19	2	0	1.4	23	.09
12	.17	4	0	.19	2	0	.88	8	.02
13	.15	3	0	.19	2	0	.46	2	0
14	.15	3	0	.18	1	0	.39	2	0
15	.15	2	0	.17	1	0	.35	2	0
16	.15	2	0	.17	1	0	.33	2	0
17	.15	2	0	.17	1	0	.31	2	0
18	.39	16	.02	.18	1	0	.31	2	0
19	.24	5	0	.17	1	0	.30	2	0
20	.19	2	0	.17	1	0	.28	2	0
21	.17	2	0	.17	1	0	.28	2	0
22	.15	2	0	.19	1	0	.46	10	.01
23	.15	2	0	.23	1	0	.35	5	0
24	.16	10	0	.19	1	0	.30	3	0
25	.79	61	.55	.21	1	0	.29	3	0
26	.29	5	0	.19	1	0	.33	2	0
27	.21	3	0	.16	1	0	.28	2	0
28	.19	3	0	.16	1	0	2.0	63	.86
29	.18	2	0	.15	1	0	1.2	36	.17
30	.17	2	0	.20	1	0	.45	3	0
31	.17	2	0	--	--	--	.39	3	0
TOTAL	6.22	--	.59	6.39	--	.12	17.27	--	1.48

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.35	3	0	.35	6	.01	.24	3	0
2	.32	3	0	.52	7	.01	.29	3	0
3	.32	3	0	.45	5	.01	.24	5	0
4	.43	3	0	.36	4	0	.23	5	0
5	.32	3	0	.35	4	0	.24	4	0
6	.28	2	0	.34	3	0	.24	4	0
7	.28	2	0	.31	3	0	.22	4	0
8	.25	2	0	.31	3	0	.22	5	0
9	.20	2	0	.31	3	0	.29	8	.01
10	.20	2	0	.25	3	0	.27	5	0
11	.20	2	0	.20	3	0	.26	4	0
12	.19	2	0	.20	3	0	1.1	56	.32
13	.18	2	0	.20	3	0	.95	20	.05
14	6.5	259	9.8	.20	3	0	.48	9	.01
15	.60	8	.01	.22	4	0	.51	5	.01
16	.40	5	.01	.22	5	0	.49	5	.01
17	.34	3	0	.20	4	0	2.1	49	.39
18	.31	3	0	.20	3	0	1.5	37	.21
19	.33	3	0	.20	3	0	.59	10	.02
20	.33	3	0	.20	3	0	.50	6	.01
21	.33	3	0	.20	8	0	.44	4	0
22	.32	3	0	.20	6	0	.43	4	0
23	.33	3	0	.19	4	0	.65	9	.02
24	.31	3	0	.19	4	0	.46	5	.01
25	.28	3	0	.19	4	0	.41	3	0
26	.26	3	0	.19	4	0	.39	3	0
27	.27	3	0	.19	4	0	.39	3	0
28	.28	4	0	.19	4	0	.37	4	0
29	.28	5	0	.22	3	0	.35	5	0
30	.37	5	0	--	--	--	.35	5	0
31	.39	7	.01	--	--	--	.36	5	0
TOTAL	15.75	--	9.83	7.35	--	.03	15.56	--	1.07

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.38	6	.01	.28	4	0	.33	5	0
2	.35	4	0	.27	4	0	.31	5	0
3	.35	3	0	.26	4	0	.30	7	.01
4	.37	5	0	.27	4	0	.26	4	0
5	.44	10	.01	.25	4	0	.23	4	0
6	.36	4	0	.25	4	0	.22	4	0
7	.35	3	0	.24	4	0	.21	4	0
8	.35	3	0	.22	4	0	.21	4	0
9	.33	3	0	.21	3	0	.23	4	0
10	.31	3	0	.21	3	0	.23	4	0
11	.31	3	0	.22	5	0	.22	4	0
12	.32	14	.01	.25	8	.01	.44	11	.04
13	.31	10	.01	.22	5	0	.54	22	.05
14	.31	6	.01	.22	4	0	.26	6	0
15	.32	4	0	.24	5	0	.21	4	0
16	.33	3	0	.25	8	.01	.61	28	.18
17	.29	3	0	.23	5	0	.65	34	.08
18	.28	3	0	.21	4	0	.36	10	.01
19	.28	3	0	.22	6	0	2.3	279	17
20	.28	3	0	.22	5	0	.57	10	.02
21	.28	2	0	.20	4	0	.34	5	0
22	.28	2	0	.19	4	0	.29	4	0
23	.28	2	0	.39	7	0	.25	4	0
24	.71	25	.09	.47	10	0	.27	4	0
25	.42	12	.01	.27	6	0	.24	4	0
26	.33	5	0	.21	4	0	.31	11	.02
27	.35	4	0	.68	40	.14	.69	26	.09
28	.32	4	0	2.6	102	1.2	.43	17	.02
29	.28	4	0	.77	6	.01	.27	5	0
30	.30	4	0	.85	15	.08	.23	4	0
31	--	--	--	.44	5	.01	--	--	--
TOTAL	10.14	--	.15	11.81	--	1.46	12.01	--	17.52

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.20	4	0	.13	3	0	.09	3	0
2	.57	18	.07	.13	3	0	.10	3	0
3	.56	20	.03	.13	3	0	.10	3	0
4	.29	5	0	.13	3	0	.09	3	0
5	.25	4	0	.14	5	0	.09	3	0
6	.22	4	0	.13	3	0	.25	29	.03
7	.20	4	0	.12	3	0	.11	8	0
8	.19	4	0	.12	3	0	.10	6	0
9	.18	4	0	.12	3	0	.10	5	0
10	.18	4	0	.16	10	0	.63	42	.19
11	.18	4	0	.16	10	0	.19	15	.01
12	.17	4	0	.12	6	0	.13	7	0
13	.17	4	0	.12	4	0	.11	5	0
14	.17	4	0	.12	4	0	.11	4	0
15	.17	5	0	.12	3	0	.10	4	0
16	.16	6	0	.12	3	0	.10	4	0
17	.15	4	0	.16	10	0	.11	4	0
18	.15	4	0	.12	10	0	.10	3	0
19	.40	18	.04	.18	8	0	.10	3	0
20	.23	5	0	.15	7	0	.10	3	0
21	.16	5	0	.11	5	0	.09	3	0
22	.15	4	0	.10	4	0	.09	3	0
23	.14	4	0	.10	4	0	.09	2	0
24	.14	4	0	.10	4	0	.09	2	0
25	.14	3	0	.10	4	0	.09	2	0
26	.14	3	0	.09	4	0	.09	2	0
27	.14	3	0	.09	3	0	.09	2	0
28	.13	3	0	.09	3	0	.09	2	0
29	.13	3	0	.09	3	0	.09	1	0
30	.12	3	0	.08	3	0	.09	1	0
31	.13	4	0	.08	3	0	--	--	--
TOTAL	6.31	--	.14	3.71	--	0	3.71	--	.23

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 116.23
TOTAL LOAD FOR YEAR (TONS) 32.62

1-6504.5 BEL PRE CREEK AT LAYHILL, MD.

LOCATION.--Lat 39°05'27", long 77°03'11", at gaging station 130 ft 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 confluence with Northwest Branch.
DRAINAGE AREA.--1.69 sq mi.
RECORDS AVAILABLE.--Sediment records (periodic): November 1962 to September 1968.

PERIODIC DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
OCT 25, 1967..	11	646	130
OCT 26.....	.98	25	.07
NOV 2.....	8.4	437	31
NOV 3.....	.91	20	.05
DEC 3.....	27	303	30
DEC 4.....	3.7	25	.25
DEC 10.....	15	287	31
DEC 28.....	19	364	42
DEC 29.....	10	76	5.0
JAN 14, 1968..	45	350	62
JAN 15.....	3.1	15	.13
MAR 12.....	12	552	47
MAR 13.....	13	218	12
MAR 17.....	24	707	105
MAR 18.....	11	292	14
MAY 27.....	6.8	320	13
MAY 28.....	32	680	103
JUN 16.....	10	498	93
JUN 17.....	7.1	231	11
JUN 19.....	12	446	103
JUN 20.....	4.5	127	2.9
JUN 27.....	14	1200	231
JUN 28.....	5.5	348	13
JUL 2.....	11	1080	168
JUL 3.....	5.0	289	10
SEP 6.....	2.7	202	6.5
SEP 10.....	9.2	415	54
SEP 11.....	.53	50	.07

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

LOCATION.--Lat 39°03'55", long 77°01'48", at gaging station 400 ft 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 sq mi.
RECORDS AVAILABLE.--Sediment records: October 1962 to September 1968.
EXTREMES, 1967-68.--Sediment concentrations: Maximum daily, 1,690 mg/l June 27; minimum daily, not determined.
Sediment loads: Maximum daily, 1,430 tons May 28; minimum daily, .01 ton Sept. 29, 30.
EXTREMES, 1962-1968.--Sediment concentrations: Maximum daily, 4,340 mg/l 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, no flow on several days during August and September 1966.

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4.0	20	.22	6.2	5	.08	14	20	.76
2	3.8	15	.15	41	556	129	7.7	10	.21
3	3.9	10	.11	17	50	2.6	154	946	574
4	4.0	20	.22	8.9	10	.24	42	60	8.0
5	3.5	19	.18	7.5	10	.20	23	20	1.2
6	3.4	15	.14	7.0	10	.19	21	15	.85
7	3.7	10	.10	7.0	5	.09	20	10	.54
8	4.1	10	.11	6.9	5	.09	17	10	.46
9	4.3	5	.06	6.9	3	.06	14	10	.38
10	18	214	23	6.9	5	.09	62	171	118
11	9.2	30	.75	7.0	5	.09	135	759	420
12	4.9	15	.20	7.1	5	.10	65	329	71
13	4.8	10	.13	6.8	10	.18	24	65	4.2
14	4.5	5	.06	6.6	11	.20	18	40	1.9
15	4.4	5	.06	7.1	10	.19	15	30	1.2
16	4.7	2	.03	7.1	10	.19	14	20	.76
17	5.0	2	.03	7.9	10	.21	13	10	.35
18	12	100	3.2	9.0	5	.12	13	10	.35
19	9.6	20	.52	8.1	5	.11	12	26	.84
20	5.4	6	.09	7.6	5	.10	12	20	.65
21	5.2	5	.07	7.6	5	.10	11	15	.45
22	5.1	4	.06	8.6	4	.09	22	70	4.2
23	5.0	3	.04	8.6	4	.09	17	25	1.1
24	5.0	2	.03	7.6	4	.08	13	15	.53
25	44	680	309	8.6	3	.07	12	10	.32
26	13	120	4.2	7.2	3	.06	14	5	.19
27	7.5	40	.81	7.0	3	.06	11	5	.15
28	6.5	20	.35	6.7	2	.04	90	505	479
29	6.1	10	.16	6.0	2	.03	165	656	560
30	6.1	10	.16	10	20	.54	40	30	3.2
31	6.4	5	.09	--	--	--	24	11	.71
TOTAL	227.1	--	344.33	267.5	--	135.29	1114.7	--	2255.50

19	12	3	.10	10	30	.73	87	362	196
20	12	3	.10	9.7	28				
21	12	3	.10	9.4	10	.23	17	30	1.4
22	11	4	.12	8.0	8	.17	13	15	.53
23	11	4	.12	15	51	3.3	11	10	.30
24	27	168	24	23	63	4.0	11	56	1.7
25	26	133	11	12	13	.42	9.8	10	.26
26	14	25	.95	9.5	10	.26	8.5	10	.23
27	14	9	.34	33	409	48	44	1690	706
28	14	7	.26	219	1630	1430	69	633	269
29	12	5	.16	58	100	16	16	30	1.1
30	13	4	.14	25	30	2.0	11	15	.45
31	--	--	--	19	20	1.0	--	--	--
TOTAL	440	--	45.62	633.1	--	1550.84	690.0	--	2758.80

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	19	10	.51	18	24	1.2	13	10	.35
2	16	10	.43	28	240	40	10	17	.46
3	15	10	.41	33	127	15	8.6	17	.39
4	21	20	1.1	19	15	.77	10	16	.43
5	20	15	.81	16	10	.43	12	15	.49
6	13	10	.35	16	9	.39	12	15	.49
7	13	8	.28	15	9	.36	11	8	.24
8	12	8	.26	14	9	.34	11	4	.12
9	12	6	.19	14	8	.30	12	4	.13
10	12	6	.19	11	8	.24	13	4	.14
11	11	4	.12	10	8	.22	13	4	.14
12	10	4	.11	10	7	.19	59	420	281
13	11	4	.12	10	7	.19	116	759	341
14	438	411	783	10	7	.19	35	150	14
15	50	60	9.9	10	7	.19	34	50	4.6
16	24	20	1.3	10	7	.19	32	16	1.4
17	21	13	.74	10	7	.19	132	886	684
18	19	13	.67	9.5	7	.18	107	514	192
19	18	13	.63	9.5	7	.18	38	83	8.9
20	17	13	.60	10	7	.19	28	30	2.3
21	17	13	.60	8.6	12	.28	23	20	1.2
22	17	13	.60	9.3	10	.26	21	10	.57
23	17	13	.60	9.8	9	.24	41	153	23
24	16	12	.52	9.9	8	.21	27	25	1.8
25	13	12	.42	9.5	7	.18	20	7	.38
26	13	10	.35	9.6	6	.15	19	7	.36
27	13	10	.35	10	5	.14	18	7	.34
28	13	9	.32	9.5	4	.10	17	7	.32
29	13	8	.28	11	4	.12	16	7	.30
30	19	32	2.8	--	--	--	16	8	.35
31	24	60	4.3	--	--	--	15	8	.32
TOTAL	947	--	812.92	370.6	--	62.62	989.6	--	1561.52

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	17	9	.41	12	4	.13	14	12	.45
2	15	9	.36	11	4	.12	13	10	.35
3	15	9	.36	11	4	.12	13	9	.32
4	15	10	.41	12	5	.16	12	8	.26
5	24	54	4.2	11	5	.15	10	7	.19
6	16	8	.35	9.9	8	.21	9.4	6	.15
7	15	6	.24	9.5	7	.18	9.7	5	.12
8	15	4	.16	9.5	6	.15	8.7	5	.12
9	15	4	.16	9.2	5	.12	10	25	.68
10	14	4	.15	8.9	4	.10	10	12	.32
11	13	4	.14	9.1	6	.15	8.6	8	.19
12	13	4	.14	11	10	.30	22	920	134
13	13	3	.11	9.3	10	.27	37	494	140
14	13	3	.11	8.9	8	.19	11	27	.80
15	13	10	.35	11	11	.33	9.3	15	.38
16	12	8	.26	11	10	.30	36	1350	355
17	12	6	.19	9.9	8	.21	44	625	102
18	12	4	.13	8.7	6	.14	21	80	4.5
19	12	3	.10	10	50	1.4	47	1190	842
20	12	3	.10	9.7	28	.73	87	362	196
21	12	3	.10	9.4	10	.23	17	30	1.4
22	11	4	.12	8.0	8	.17	17	15	.53
23	11	4	.12	15	51	3.3	11	10	.30
24	27	168	24	23	63	4.0	11	56	1.7
25	26	133	11	12	13	.42	9.9	10	.26
26	14	24	.95	9.5	10	.26	9.5	10	.23
27	14	9	.34	33	409	98	44	1690	706
28	14	7	.26	219	1630	1430	69	633	269
29	12	5	.16	58	100	16	14	30	1.1
30	13	4	.14	25	30	2.0	11	15	.45
31	--	--	--	17	20	1.0	--	--	--
TOTAL	440	--	45.62	633.1	--	1550.84	690.0	--	2758.80

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

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	8.7	10	.23	3.4	8	.07	2.6	6	.04
2	52	784	467	4.7	15	.19	6.1	246	21
3	46	613	126	4.1	10	.11	3.2	50	.43
4	15	30	1.2	3.8	10	.10	2.1	10	.06
5	11	15	.45	3.6	9	.09	2.1	8	.05
6	9.7	10	.26	3.3	9	.08	14	155	12
7	8.8	9	.21	3.1	15	.13	3.7	15	.15
8	8.0	9	.19	4.1	15	.17	2.9	13	.10
9	7.7	9	.19	2.8	10	.08	3.0	12	.10
10	7.2	8	.16	5.8	36	1.6	29	1050	322
11	7.0	8	.15	5.8	18	.30	11	200	6.9
12	6.5	7	.12	2.8	10	.08	3.9	60	.63
13	6.8	7	.13	2.6	9	.06	3.2	46	.40
14	6.6	6	.11	3.0	9	.07	2.8	30	.23
15	6.2	6	.10	3.5	8	.08	2.6	15	.11
16	5.6	5	.08	3.0	8	.06	2.3	10	.06
17	5.3	5	.07	5.0	7	.09	2.5	8	.05
18	5.0	5	.07	4.0	7	.08	2.7	8	.06
19	10	43	2.1	4.7	40	.51	2.9	8	.06
20	8.2	30	.66	5.8	48	.75	2.8	6	.05
21	5.7	20	.31	3.4	20	.18	2.5	6	.04
22	5.2	15	.21	2.7	15	.11	2.1	6	.03
23	4.9	12	.16	2.3	10	.06	1.7	6	.03
24	4.2	10	.11	2.4	10	.06	1.7	6	.03
25	4.5	10	.12	2.5	9	.06	1.8	4	.02
26	4.3	10	.12	1.9	9	.05	1.8	4	.02
27	4.4	9	.11	1.9	8	.04	1.7	4	.02
28	4.4	9	.11	2.1	8	.05	1.9	4	.02
29	3.8	9	.09	1.9	7	.04	1.8	2	.01
30	3.4	9	.08	2.4	7	.05	1.5	2	.01
31	3.4	8	.07	2.7	6	.04	--	--	--
TOTAL	289.5	--	600.97	105.1	--	5.44	123.9	--	364.71

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 6189.1
TOTAL LOAD FOR YEAR (TONS) 10498.46

1-6610. CHAPTICO CREEK AT CHAPTICO, MD.

LOCATION.--Lat 38°22'45", long 76°46'56", at gaging station 0.8 mile north of Chaptico, St. Marys County, and 0.8 mile upstream from Chaptico Bay.
DRAINAGE AREA.--10.7 sq mi.
RECORDS AVAILABLE.--Chemical analyses: December 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT. 17...	1.2	12	.63	.02	8.9	2.1	3.1	2.0	32	0
NOV. 17...	2.1	12	.58	.02	10	2.4	2.9	2.2	31	0
JAN. 10...	6.4	12	.47	.11	9.0	2.4	3.2	1.4	21	0
MAR. 06...	7.2	8.5	.52	.08	7.6	2.0	2.8	1.2	16	0
APR. 20...	6.4	3.8	.57	.08	7.8	2.3	3.1	1.3	25	0
JUNE 07...	3.6	10	1.3	.15	8.8	2.4	3.1	1.4	28	0
JULY 19...	.52	11	1.4	.12	9.5	2.2	3.5	1.9	34	0
SEPT. 03...	2.8	7.0	1.6	.18	7.0	1.7	2.5	3.7	13	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT. 17...	5.2	6.4	.0	.4	57	30	4	81	6.6	8
NOV. 17...	6.4	7.1	.2	.2	59	35	10	84	7.2	7
JAN. 10...	14	5.8	.1	1.8	60	33	16	87	7.6	3
MAR. 06...	13	5.3	.2	1.9	50	27	14	76	6.7	3
APR. 20...	8.8	5.3	.1	.4	45	29	9	78	7.2	7
JUNE 07...	7.8	5.4	.1	1.6	55	32	9	84	7.2	40
JULY 19...	5.1	5.5	.2	.9	57	33	4	84	7.2	35
SEPT. 03...	14	6.6	.2	.3	49	25	14	76	6.7	25

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL ALUM-INUM (AL)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
01-4774.00 - SOUTH BRANCH NAAMAN CREEK NEAR CLAYMONT, DEL. (LAT 39 49 00 LONG 075 29 40)												
JULY, 1968 30...	.51	--	--	--	--	13	5.4	--	--	55	0	6.9
01-4790.00 - WHITE CLAY CREEK NEAR NEWARK, DEL (LAT 39 42 00 LONG 075 41 10)												
APR., 1968 09...	107	9.3	--	--	.00	16	6.5	4.5	3.5	53	0	19
01-4795.00 - MILL CREEK AT STANTON, DEL. (LAT 39 42 50 LONG 075 40 00)												
JULY, 1968 30...	2.8	--	--	--	--	12	5.0	--	--	49	0	14
01-4823.00 - RED LION CREEK AT RED LION, DEL. (LAT 39 36 20 LONG 075 39 55)												
JULY, 1968 25...	.41	--	--	--	--	6.5	3.9	--	--	19	0	11
01-4831.50 - WIGGINS MILLPOND OUTLET AT TOWNSEND, DEL. (LAT 39 24 12 LONG 075 42 16)												
JULY, 1968 25...	1.8	--	--	--	--	12	4.2	--	--	50	0	8.0
01-4836.50 - FORK BRANCH AT DUPONT, DEL. (LAT 39 11 56 LONG 075 34 40)												
JULY, 1968 24...	.39	--	--	--	--	18	2.8	--	--	57	0	11
01-4836.80 - MAIDSTONE BRANCH AT DUPONT, DEL. (LAT 39 11 18 LONG 075 34 04)												
JULY, 1968 24...	2.0	--	--	--	--	5.8	2.6	--	--	23	0	9.0
01-4840.20 - BROWNS BRANCH NEAR HOUSTON, DEL. (LAT 38 57 31 LONG 075 30 33)												
JULY, 1968 23...	7.6	--	--	--	--	10	2.8	--	--	32	0	10
01-4840.50 - PRATT BRANCH NEAR FELTON, DEL. (LAT 39 00 37 LONG 075 31 46)												
JULY, 1968 23...	1.7	--	--	--	--	7.8	4.0	--	--	16	0	14
01-4840.60 - DOUBLE RUN NEAR MAGNOLIA, DEL. (LAT 39 03 16 LONG 075 29 43)												
JULY, 1968 23...	3.0	17	--	--	--	4.5	3.0	8.5	2.8	15	0	6.6
01-4842.40 - PEMBERTON BRANCH NEAR MILTON, DEL. (LAT 38 46 26 LONG 075 20 29)												
JULY, 1968 23...	5.4	--	--	--	--	2.5	1.0	--	--	15	0	2.4
01-4842.70 - BEAVERDAM CREEK NEAR MILTON, DEL. (LAT 38 45 41 LONG 075 16 03)												
JULY, 1968 23...	7.2	--	--	--	--	4.2	1.8	--	--	10	0	5.7
01-4845.50 - PEPPER CREEK AT DAGSBORO, DEL. (LAT 38 32 50 LONG 075 14 40)												
JULY, 1968 23...	2.0	--	--	--	--	9.0	2.5	--	--	36	0	15
01-4877.00 - ELLIOTT POND BRANCH NEAR LAUREL, DEL. (LAT 38 34 39 LONG 075 31 42)												
JULY, 1968 23...	4.5	--	--	--	--	3.5	1.6	--	--	15	0	3.1

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	TOTAL ACIDITY AS H+	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
01-4774.00 - SOUTH BRANCH NAAMAN CREEK NEAR CLAYMONT, DEL. (LAT 39 49 00 LONG 075 29 40)												
JULY, 1968 30...	14	--	5.5	--	--	--	55	10	--	164	8.0	3
01-4790.00 - WHITE CLAY CREEK NEAR NEWARK, DEL (LAT 39 42 00 LONG 075 41 10)												
APR., 1968 09...	10	.0	8.7	--	115	104	67	23	--	184	7.4	3
01-4795.00 - MILL CREEK AT STANTON, DEL. (LAT 39 42 50 LONG 075 40 00)												
JULY, 1968 30...	9.5	--	4.6	--	--	--	51	11	--	146	8.1	3
01-4823.00 - RED LION CREEK AT RED LION, DEL. (LAT 39 36 20 LONG 075 39 55)												
JULY, 1968 25...	11	--	8.4	--	--	--	32	17	--	113	7.6	5
01-4831.50 - WIGGINS MILLPOND OUTLET AT TOWNSEND, DEL. (LAT 39 24 12 LONG 075 42 16)												
JULY, 1968 25...	9.0	--	2.6	--	--	--	48	7	--	136	8.0	5
01-4836.50 - FORK BRANCH AT DUPONT, DEL. (LAT 39 11 56 LONG 075 34 40)												
JULY, 1968 24...	7.0	--	6.9	--	--	--	57	10	--	191	7.9	100
01-4836.80 - MAIDSTONE BRANCH AT DUPONT, DEL. (LAT 39 11 18 LONG 075 34 04)												
JULY, 1968 24...	9.5	--	5.2	--	--	--	25	6	--	100	7.6	50
01-4840.20 - BROWNS BRANCH NEAR HOUSTON, DEL. (LAT 38 57 31 LONG 075 30 33)												
JULY, 1968 23...	11	--	16	--	--	--	37	11	--	147	7.8	3
01-4840.50 - PRATT BRANCH NEAR FELTON, DEL. (LAT 39 00 37 LONG 075 31 46)												
JULY, 1968 23...	11	--	13	--	--	--	36	23	--	120	7.5	3
01-4840.60 - DOUBLE RUN NEAR MAGNOLIA, DEL. (LAT 39 03 16 LONG 075 29 43)												
JULY, 1968 23...	13	.1	9.2	--	84	72	24	11	--	100	7.3	10
01-4842.40 - PEMBERTON BRANCH NEAR MILTON, DEL. (LAT 38 46 26 LONG 075 20 29)												
JULY, 1968 23...	7.0	--	3.6	--	--	--	10	0	--	57	7.3	8
01-4842.70 - BEAVERDAM CREEK NEAR MILTON, DEL. (LAT 38 45 41 LONG 075 16 03)												
JULY, 1968 23...	12	--	18	--	--	--	18	10	--	110	7.1	3
01-4845.50 - PEPPER CREEK AT DAGSBORO, DEL. (LAT 38 32 50 LONG 075 14 40)												
JULY, 1968 23...	12	--	6.8	--	--	--	33	4	--	150	7.9	15
01-4877.00 - ELLIOTT POND BRANCH NEAR LAUREL, DEL. (LAT 38 34 39 LONG 075 31 42)												
JULY, 1968 23...	7.0	--	12	--	--	--	15	3	--	75	7.3	2

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL ALUM-INUM (AL)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
HOFFMAN TUNNEL NEAR CLARYSVILLE MD (LAT 39 38 18 LONG 078 53 38)												
OCT., 1967												
17...	8.9	13	--	--	--	128	49	4.5	1.5	30	0	470
31...	8.9	13	--	--	--	128	49	4.6	1.4	30	0	471
01-6000.00 - NORTH BRANCH POTOMAC RIVER AT PINTO MD (LAT 39 33 59 LONG 078 50 25)												
OCT., 1967												
17...	116	6.8	--	--	--	109	12	56	3.2	33	0	224
31...	229	5.6	--	--	--	61	8.4	35	2.5	20	0	147
01-6190.00 - ANTIETAM CREEK NEAR WAYNESBORO PA (LAT 39 42 59 LONG 077 36 28)												
FEB., 1968												
26...	96	4.8	--	--	--	38	17	4.2	2.1	154	4	22
MAR.												
26...	214	6.4	--	--	--	35	11	3.6	1.9	126	0	18
APR.												
26...	104	7.6	--	--	--	39	12	3.7	2.0	142	1	18
MAY												
27...	126	8.1	--	--	--	30	9.1	4.7	1.9	108	0	15
JULY												
08...	60	6.3	--	--	--	36	13	3.8	2.2	140	0	17
29...	38	6.8	--	--	--	44	15	5.0	2.4	168	2	19
SEP.												
25...	34	7.2	--	.01	.00	49	17	5.0	3.1	189	0	20
01-6370.00 - LITTLE CATOCTIN CREEK AT HARMONY MD (LAT 39 28 55 LONG 077 32 20)												
FEB., 1968												
29...	6.6	12	--	.05	.00	7.6	3.8	3.3	.8	27	0	11
APR.												
24...	6.9	14	--	.11	.01	9.8	4.2	3.6	1.2	32	0	12
JUNE												
10...	16	15	--	.23	.01	9.2	3.8	3.3	.9	32	0	11
JULY												
19...	2.2	17	--	.18	.02	13	4.5	4.9	3.0	44	0	10
SEP.												
04...	.74	17	--	.21	.09	14	5.6	4.9	3.0	52	0	13

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	TOTAL ACIDITY AS H+	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
HOFFMAN TUNNEL NEAR CLARYSVILLE MD (LAT 39 38 18 LONG 078 53 38)												
OCT., 1967												
17...	5.5	.7	.2	.01	722	690	521	497	--	897	6.6	0
31...	5.8	.7	.3	.00	727	692	521	497	--	904	6.3	3
01-6000.00 - NORTH BRANCH POTOMAC RIVER AT PINTO MD (LAT 39 33 59 LONG 078 50 25)												
OCT., 1967												
17...	127	.4	1.7	.05	605	557	322	295	--	901	7.0	30
31...	69	.3	.8	.04	355	341	187	170	--	560	6.8	35
01-6190.00 - ANTIETAM CREEK NEAR WAYNESBORO PA (LAT 39 42 59 LONG 077 36 28)												
FEB., 1968												
26...	6.7	.2	18	--	--	193	165	33	--	341	8.4	2
MAR.												
26...	7.1	.2	13	--	--	158	133	30	--	275	7.9	0
APR.												
26...	6.8	.2	14	--	--	174	147	29	--	290	8.3	3
MAY												
27...	7.0	.2	13	--	--	142	113	24	--	240	8.1	2
JULY												
08...	6.4	.2	15	--	--	169	144	29	--	290	8.2	2
29...	7.3	.2	18	--	--	203	172	31	--	340	8.3	2
SEP.												
25...	7.8	.3	15	--	--	217	193	38	--	388	8.1	5
01-6370.00 - LITTLE CATOCTIN CREEK AT HARMONY MD (LAT 39 28 55 LONG 077 32 20)												
FEB., 1968												
29...	6.2	.2	.8	--	--	59	35	13	--	100	6.9	2
APR.												
24...	5.8	.1	4.1	--	--	71	42	16	--	110	7.3	0
JUNE												
10...	5.0	.1	2.0	--	--	66	39	13	--	100	7.4	6
JULY												
19...	8.2	.1	5.5	--	--	88	51	15	--	130	7.0	6
SEP.												
04...	10	.1	4.7	--	--	98	58	16	--	140	7.6	6

MONONGAHELA RIVER BASIN

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 sq mi.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1968.
EXTREMES, 1967-68.--Water temperatures: Maximum observed, 28°C July 15; minimum, freezing point on many days during winter months.
EXTREMES, 1962-68--Water temperatures: Maximum observed, 28°C July 22, 27, 28, 1964, July 4, 1966, July 15, 1968; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder. No temperature record August 11-13, 21-30.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DAY																													AVER-
MONTH	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	AGE
OCTOBER																																
MAXIMUM	13	13	16	16	17	16	13	13	13	13	12	11	11	12	12	13	13	12	9	9	8	7	8	9	9	8	8	8	5	8	9	11
MINIMUM	10	9	12	13	14	13	11	11	12	12	10	9	8	11	9	11	12	9	8	6	7	6	6	7	8	7	6	5	4	4	7	9
NOVEMBER																																
MAXIMUM	9	9	9	9	6	4	4	4	6	6	7	8	6	6	4	3	4	4	3	3	3	4	4	3	3	4	4	3	2	2	--	5
MINIMUM	8	9	8	6	3	3	3	3	4	4	6	6	5	4	1	1	3	3	2	2	3	3	3	3	3	3	2	1	0	--		4
DECEMBER																																
MAXIMUM	2	1	2	2	3	3	4	4	4	4	3	3	4	4	4	2	1	3	4	3	4	4	3	1	1	1	1	1	0	0	0	2
MINIMUM	1	1	1	1	2	3	3	4	3	3	3	3	3	4	2	1	0	1	3	3	3	3	1	0	0	1	0	0	0	0	0	2
JANUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	0
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
FEBRUARY																																
MAXIMUM	3	3	3	2	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	--	--		1
MINIMUM	2	3	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	--	--		1
MARCH																																
MAXIMUM	1	1	1	1	1	1	1	2	4	4	2	2	2	3	3	4	4	5	6	7	8	9	9	5	6	8	9	10	12	12	12	5
MINIMUM	1	1	1	1	1	1	1	1	2	2	2	1	2	1	2	3	3	3	4	5	6	7	5	4	4	5	7	7	8	9	9	4
APRIL																																
MAXIMUM	12	9	9	11	11	9	11	12	13	11	12	12	13	13	13	11	12	14	14	14	16	16	15	15	12	12	11	11	11	11	--	12
MINIMUM	9	8	7	9	8	7	8	11	10	9	8	8	9	11	10	8	9	11	13	12	12	14	14	12	9	8	10	9	11	10	--	10
MAY																																
MAXIMUM	12	13	16	14	13	12	12	14	14	16	14	14	16	14	14	15	16	16	13	12	12	12	12	12	13	14	14	12	14	14	13	14
MINIMUM	9	10	12	12	11	10	9	11	13	13	14	14	13	13	12	14	14	13	12	11	11	10	11	11	12	13	11	11	11	13	12	12
JUNE																																
MAXIMUM	14	14	16	16	17	18	20	21	21	22	21	19	18	17	19	19	18	18	19	19	19	21	24	24	22	22	22	19	21	26	--	20
MINIMUM	12	14	14	13	13	15	16	16	18	18	18	17	16	14	16	18	17	15	17	17	15	17	19	20	19	18	18	17	15	20	--	16
JULY																																
MAXIMUM	27	24	22	22	22	21	23	24	22	23	21	23	24	26	28	24	24	25	22	22	24	26	26	24	23	23	23	26	24	22	22	24
MINIMUM	22	20	19	17	17	17	17	18	19	18	19	18	19	21	22	21	19	20	19	17	18	20	21	18	21	19	20	22	20	18	19	19
AUGUST																																
MAXIMUM	23	22	22	24	23	26	23	24	23	22	--	--	--	21	23	23	24	26	27	26	--	--	--	--	--	--	--	--	--	--	21	--
MINIMUM	19	19	19	21	21	19	21	19	21	21	--	--	--	19	19	20	20	22	23	21	--	--	--	--	--	--	--	--	--	--	17	--
SEPTEMBER																																
MAXIMUM	20	21	21	23	22	22	21	22	22	21	20	18	18	21	21	22	20	21	19	21	21	22	22	23	22	21	19	18	18	17	--	21
MINIMUM	17	18	17	19	20	19	18	18	18	19	18	17	16	17	17	18	18	17	18	17	17	18	19	19	19	19	16	15	15	13	--	18

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 sq mi.
RECORDS AVAILABLE.--Chemical analyses: August 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)
OCT. 17...	6.6	3.5	.27	.20	28	7.7	12	2.4	36	0
JAN. 10...	63	4.6	.11	.23	10	3.4	4.0	1.1	9	0
FEB. 07...	103	4.4	.17	.14	8.4	2.5	3.4	.8	6	0
MAR. 18...	420	3.8	.27	.20	6.7	1.9	3.3	1.0	5	0
APR. 04...	115	3.6	.19	.15	7.6	2.1	3.3	.8	7	0
MAY 06...	101	2.1	.12	.13	8.7	2.4	3.8	1.9	10	0
21...	249	2.8	.21	.15	8.3	2.1	4.6	.8	10	0
JUNE 20...	54	3.9	--	--	11	2.8	4.2	1.2	13	0
JULY 24...	7.6	2.9	.71	.49	20	5.0	4.9	2.9	33	0
SEPT. 04...	4.8	2.3	--	--	29	8.3	9.6	4.5	51	0

DATE	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT. 17...	62	24	.0	1.3	159	102	72	274	7.1	1
JAN. 10...	27	8.3	.1	2.4	65	39	32	120	6.6	0
FEB. 07...	21	6.7	.1	2.3	53	32	27	92	6.5	3
MAR. 18...	18	5.6	.1	2.1	44	25	21	77	6.0	5
APR. 04...	19	6.2	.1	1.3	47	28	22	85	7.1	2
MAY 06...	21	6.1	.1	2.4	54	32	24	90	6.1	5
21...	19	8.0	.1	1.7	52	29	21	90	6.8	3
JUNE 20...	27	7.8	.1	2.1	66	39	29	112	7.3	5
JULY 24...	41	9.0	.2	2.5	105	71	44	183	7.8	5
SEPT. 04...	61	18	.2	6.2	164	107	65	286	7.6	5

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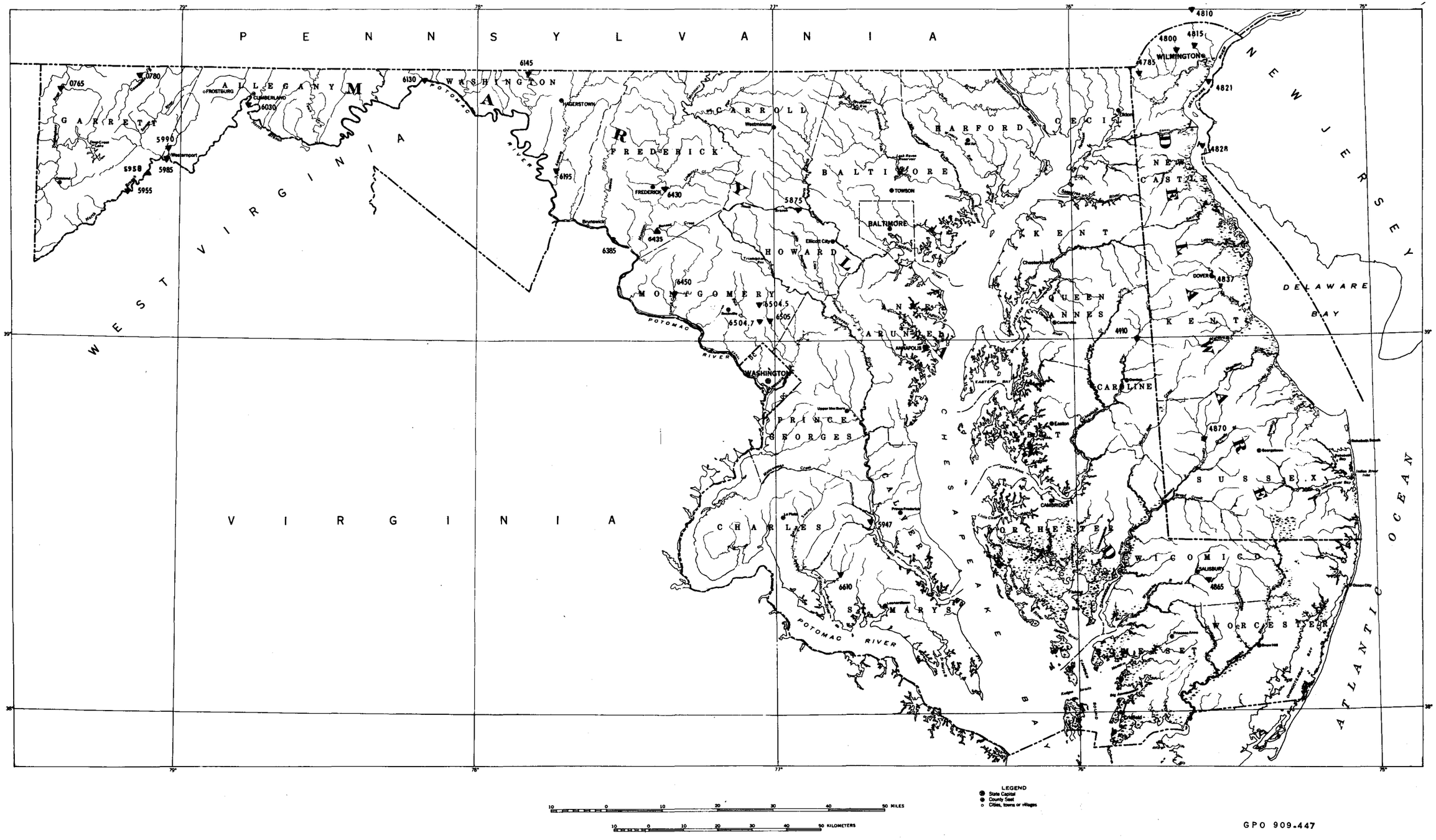

Plate 1. — Map showing location of quality of water stations.