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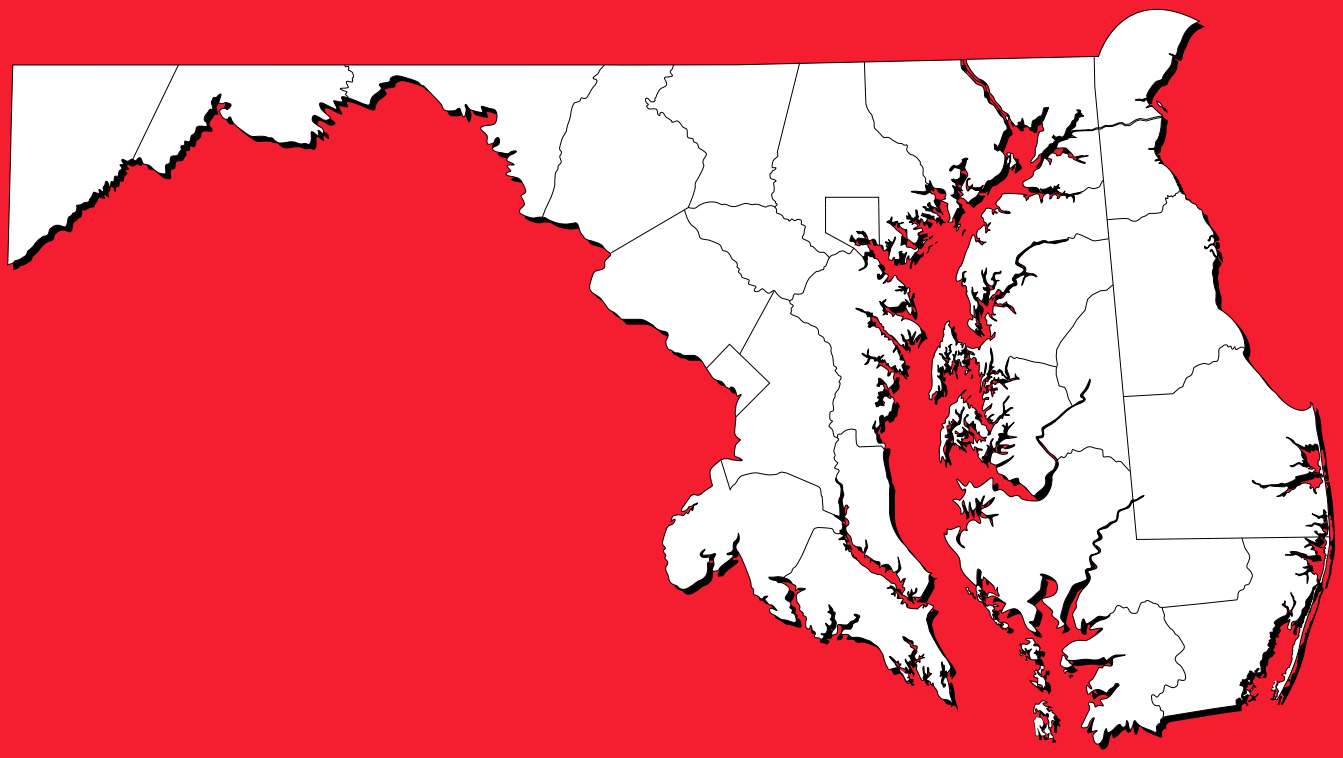
Water Resources Data Maryland, Delaware, and Washington, D.C. Water Year 2002

Volume 1. Surface Water Data

Water-Data Report MD-DE-DC-02-1



U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
States of Maryland and Delaware,
Washington, D.C. and with other agencies

CALENDAR FOR WATER YEAR 2002

2001

OCTOBER

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2002

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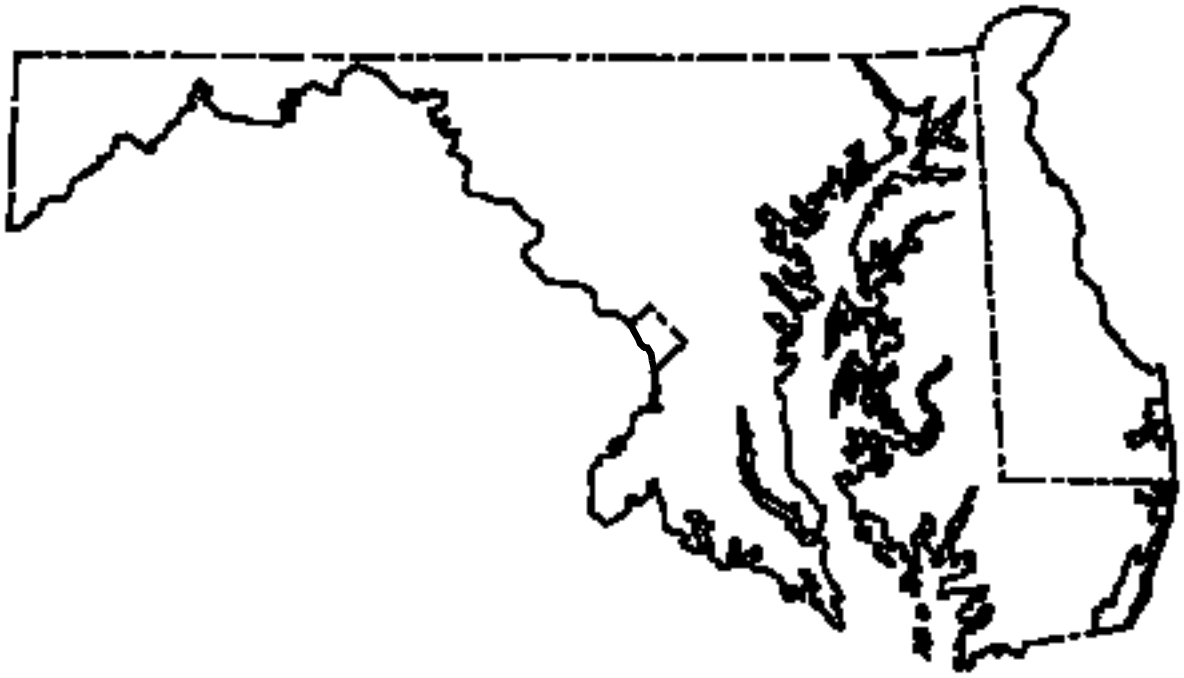
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Maryland, Delaware, and Washington, D.C. Water Year 2002

Volume 1. Surface-Water Data

By Robert W. James, Richard W. Saffer, Robert H. Pentz, and Anthony J. Tallman

Water-Data Report MD-DE-DC-02-1



Prepared in cooperation with
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and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

GAIL A. NORTON, Secretary

U.S. GEOLOGICAL SURVEY

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8987 Yellow Brick Road
Baltimore, Maryland 21237

2003

PREFACE

This volume of the annual hydrologic data report for Maryland, Delaware, and Washington, D.C. is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Maryland, Delaware, and Washington, D.C. are contained in two volumes:

Volume 1. Surface-Water Data

Volume 2. Ground-Water Data

This report (Volume 1) is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, Maryland Geological Survey, and Delaware Geological Survey, who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

S. M. Baker	E. J. Doheny	J. J. Manning
J. E. Beman	J. B. Evans	W. C. Lewis
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F. A. Danner	J. J. Kvech	C. J. Strain
J. R. Dine	B. F. Majedi	A. J. Tallman

This report was prepared under the general supervision of J. M. Gerhart, District Chief, MD-DE-DC District, and Cathrine A. Hill, Northeastern Regional Executive, and in cooperation with the States of Maryland and Delaware, Washington, D.C., and with other agencies.

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13. ABSTRACT *(Maximum 200 words)*

Water resources data for the 2002 water year for Maryland, Delaware, and Washington, D.C. consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs. This volume (Volume 1. Surface-Water Data) contains records for water discharge at 137 gaging stations; stage and contents of 1 reservoir; and water quality at 28 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations and stage only for 8 tidal crest-stage partial-record stations. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, local, and Federal agencies in Maryland, Delaware, and Washington, D.C.

14. SUBJECT TERMS

*Maryland, *Delaware, *Washington, D.C., *District of Columbia, * Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses.

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CONTENTS

ILLUSTRATIONS

[Letters after station name designate type of data collected: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevation and contents]

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[Letters after station name designate type of data collected: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (e) elevation and contents]

The following continuous-record surface-water discharge (gaging stations) in Maryland, Delaware, and the District of Columbia have been discontinued. Daily streamflow records (discharge) were collected and published for the period of record, expressed in water years, shown for each station.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Christina River near Bear, DE	01478040	40.6	1977-82
White Clay Creek above Newark, DE	01478500	66.7	1952-59, 1962-80
Mill Creek at Mill Creek Road at Hockessin, DE	01479197	3.66	1990-95
Mill Creek at Stanton, DE	01479500	12.4	1931-33
Little Mill Creek near Newport, DE	01480095	5.24	1991-95, 1997-98
Little Mill Creek at Elsmere, DE	01480100	6.70	1964-80
Army Creek at State Road, DE	01482200	2.42	1978-81
Red Lion Creek near Red Lion, DE	01482298	3.08	1978-81
Wiggins Millpond Outlet (head of Appoquinimink River):			
Noxontown Lake Outlet:			
Drawyer Creek tributary near Odessa, MD	01483170	4.68	1978-80
LEIPSIC RIVER BASIN			
Leipsic River near Cheswold, DE	01483500	9.35	1931-33, 1943-57
ST. JONES RIVER BASIN			
Fork Branch (head of St. Jones River)			
Mudstone Branch at Chestnut Grove, DE	01483670	8.96	1993-94
MURDERKILL RIVER BASIN			
Murderkill River near Felton, DE	01484000	13.6	1931-34, 1960-85, 1997-99
BROADKILL RIVER BASIN			
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1971-80
Sowbridge Branch (head of Primehook Creek) near Milton, DE	01484300	7.08	1957-78
INDIAN RIVER BASIN			
Cow Bridge Branch (head of Indian River):			
Swan Creek near Millsboro, DE	01484534	5.20	1998-2000
Vines Creek at Omar, DE	01484548	13.6	1985-88
Blackwater Creek near Clarkesville, DE	01484600	3.47	1998-2000
Bundicks Branch at Robinsville, DE	01484654	6.90	1998-2000
Munchy Branch near Rehoboth Beach, DE	01484668	0.52	1998-2000
NANTICOKE RIVER BASIN			
Nanticoke River:			
James Branch (head of Broad Creek):			
Trap Pond Outlet (head of Hitch Pond Branch) near Laurel, DE	01487500	16.7	1951-71
Broad Creek:			
Holly Ditch near Laurel, DE	01488000	2.19	1951-56
Marshyhope Creek near Adamsville, DE	01488500	43.9	1943-69, 1972-2002
Marshyhope Creek at Adamsville, DE	01488600	60.4	1969-71
Faulkner Branch at Federalsburg, MD	01489000	7.10	1950-92
Rewastico Creek near Hebron, MD	01489500	12.2	1950-56
TRANSQUAKING RIVER BASIN			
Transquaking River:			
Chicamacomico River near Salem, MD	01490000	15.0	1951-80
CHOPTANK RIVER BASIN			
Tappahanna Ditch (head of Choptank River):			
Tidy Island Creek (continuation of Tappahanna Ditch):			
Culbreth Marsh Ditch near Chapeltown, DE	01490500	11.6	1951-56
Choptank River:			
Kings Creek:			
Beaverdam Branch at Matthews, MD	01492000	5.85	1950-81
CHESTER RIVER BASIN			
Chester River:			
Southeast Creek at Church Hill, MD	01494000	12.5	1951-56
Chesterville Branch near Crumpton, MD	01493112	6.12	1996-2002
SASSAFRAS RIVER BASIN			
Sassafras River:			
Jacobs Creek near Sassafras, MD	01494500	5.39	1951-56

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
ELK RIVER BASIN			
Big Elk Creek (head of Elk River):			
Little Elk Creek at Childs, MD	01495500	26.8	1949-58
Long Creek near Chesapeake City, MD	01495800	4.36	1978-81
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River) at Leslie, MD	01496000	24.3	1949-84
PRINCIPIO CREEK BASIN			
Principio Creek near Principio Furnace, MD	01496200	9.03	1967-92
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek at Mill Green, MD	01578000	16.4	1905-09
Octoraro Creek near Rising Sun, MD	01578500	193	1932-58, 1969-77
Basin Run at Liberty Grove, MD	01579000	5.31	1949-58
Octoraro Creek at Rowlandsville, MD	01579500	210	1896-99
Deer Creek near Kalmia, MD	01580200	125	1967-77
Deer Creek near Churchville, MD	01580500	141	1905-09
BUSH RIVER BASIN			
Bynum Run near Bel Air, MD (head of Bush River)	01581000	7.7	1950-55
Church Creek:			
Cranberry Run at Aberdeen, MD	01581657	4.16	1988-89
Cranberry Run at Perryman, MD	01581658	5.22	1987-89
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Western Run:			
Delaware Run:			
Slade Run near Glyndon, MD	01583000	2.09	1947-81
Gunpowder Falls near Carney, MD	01584000	314	1949-64
Little Gunpowder Falls near Bel Air, MD	01585000	43	1904-09
Bird River:			
Whitemarsh Run (head of Bird River):			
Honeygo Run at White Marsh, MD	01585105	2.65	1990-93
Windlass Run near White Marsh, MD	01585107	2.03	1992-93
BACK RIVER BASIN			
Herring Run (head of Back River):			
Stemmers Run (head of Northeast Creek) at Rossville, MD	01585300	4.46	1959-72, 1974-89
Brien Run at Stemmers Run, MD	01585400	1.97	1958-87
PATAPSCO RIVER BASIN			
North Branch Patapsco River near Reistertown, MD	01586500	91.0	1927-54
North Branch Patapsco River near Marriottsville, MD	01587000	165	1930-60
South Branch Patapsco River at Henryton, MD	01587500	64.4	1948-80
Piney Run near Sykesville, MD	01588000	11.4	1931-58
Patapsco River at Woodstock, MD	01588500	251	1896-1909
Gwynns Falls near Owings Mills, MD	01589200	4.90	1958-75
Jones Falls near mouth at Baltimore, MD	01589480	60.4	1981-82
Curtis Creek:			
Furnace Creek:			
Sawmill Creek at Crain Highway at Glen Burnie, MD	01589512	8.24	1984-85, 1990-94
Marley Creek at Harundale, MD	01589522	4.79	1984-85
SOUTH RIVER BASIN			
North River (head of South River) near Annapolis, MD	01590000	8.50	1932-74
Bacon Ridge Branch at Chesterfield, MD	01590500	6.92	1943-52, 1975-90
RHODE RIVER BASIN			
Rhode River:			
Muddy Creek:			
North Fork Muddy Creek at South River, MD	01590700	0.88	1972-76

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
PATUXENT RIVER BASIN			
Patuxent River:			
Cattail Creek near Cookesville, MD	01591350	8.37	1977-81
Cattail Creek at Roxbury Mills, MD	01591500	27.7	1944-56
Patuxent River near Burtonsville, MD	01592000	127	1911-45
Little Patuxent River:			
Middle Patuxent River near Simpsonville, MD	01593710	48.4	1987-95
Dorsey Run near Jessup, MD	01594400	11.6	1948-58
Western Branch near Largo, MD	01594500	30.2	1950-75
Cocktown Creek near Huntingtown, MD	01594600	3.85	1957-76
Hunting Creek near Huntingtown, MD	01594670	9.38	1989-98
Killpeck Creek at Huntersville, MD	01594710	3.26	1986-98
St. Leonard Creek near St. Leonard, MD	01594800	6.73	1957-68
POTOMAC RIVER BASIN			
North Branch Potomac River:			
South Fork Sand Run near Wilson, MD	01594934	1.55	1980-86
North Branch Potomac River at Kitzmiller, MD	01595500*	225	1950-85
North Branch Potomac River at Barnum, WV	01595800*	266	1966-85
North Branch Potomac River at Bloomington, MD	01596000	287	1925-27, 1929-50
Savage River:			
Crabtree Creek near Swanton, MD	01597000	16.7	1948-81
Savage River at Bloomington, MD	01598000	115	1906-07, 1925-27, 1929-50
North Branch Potomac River at Pinto, MD	01600000*	596	1939-85
Wills Creek below Hyndman, PA	01601000	146	1951-67
North Branch Potomac River at Cumberland, MD	01602500	873	1894-97
Evitts Creek near Centerville, PA	01603500	30.2	1932-82
Evitts Creek near Cumberland, MD	01604000	89.0	1929-32
Sawpit Run near Oldtown, MD	01609500	5.08	1948-58
Little Tonoloway Creek near Hancock, MD	01612500	16.9	1947-63
Antietam Creek near Waynesboro, PA	01619000	93.5	1948-51, 1966-81
Beaver Creek:			
Albert Powell Fish Hatchery Spring at Beaver Creek, MD	01619320		1987-98
Catoctin Creek:			
Little Catoctin Creek at Harmony, MD	01637000	8.83	1947-59, 1968
Catoctin Creek near Jefferson, MD	01638000	111	1928-31
Monocacy River:			
Piney Creek near Taneytown, MD	01639140	31.3	1990-2002
Toms Creek at Emmitsburg, MD	01639375	41.3	1986-90
Big Pipe Creek (head of Double Pipe Creek):			
Little Pipe Creek at Avondale, MD	01640000	8.10	1947-56
Owens Creek near Foxville, MD	01640456	1.01	1986-87
Owens Creek at Lantz, MD	01640500	5.93	1932-84
Hunting Creek near Foxville, MD	01640965	2.14	1982-94
Hunting Creek tributary near Foxville, MD	01640970	4.01	1982-91
Hunting Creek near Thurmont, MD	01640975	7.08	1982-86
Bear Branch near Thurmont, MD	01640980	0.38	1990-95
Hunting Creek at Jimtown, MD	01641000	18.4	1950-92
Fishing Creek near Lewistown, MD	01641500	7.29	1948-84
Fishing Creek Tributary near Lewistown, MD	01641510	0.40	1988-95
Monocacy River near Frederick, MD	01642000	665	1896-1930
Linganore Creek near Frederick, MD	01642500	82.3	1932, 1934-82
Bennett Creek:			
Bennett Creek tributary at Park Mills, MD	01643495	0.15	1992-93
Broad Run at Elmer, MD	01643615	14	**(b)**1978-80
Seneca Creek:			
Great Seneca Creek near Gaithersburg, MD	01644500	41.0	1925-31
Watts Branch at Rockville, MD	01645200	3.70	1957-87
Little Falls Branch near Bethesda, MD	01646550	4.10	1944-59, 1962-79
Rock Creek:			
North Branch Rock Creek:			
Williamsburg Run near Olney, MD	01647685	2.25	1967-74
North Branch Rock Creek near Norbeck, MD	01647720	9.73	1967-77
Manor Run near Norbeck, MD	01647725	1.01	1967-74
North Branch Rock Creek near Rockville, MD	01647740	12.5	1967-77

***** Currently operated as a crest-stage partial-record station.
a Estimated daily discharges October 1953 to June 1964.
b Daily values data unpublished, available at Baltimore, MD office.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Potomac River--Continued			
Rock Creek--Continued:			
Rock Creek near Beech Drive at Kensington, MD	01647970	46.7	**(b)**2001
Rock Creek at Beech Drive near Kensington, MD	01647975	49.0	**(b)**2001
Rock Creek at Cedar Lane near Kensington, MD	01647976	51.3	**(b)**2001
Rock Creek at Q Street, Washington, DC	01649000	75.8	1892-94, 1929-33
Northeast Branch Anacostia River:			
Northwest Branch Anacostia River at Norwood, MD	01650050	2.45	1967-74
Browns Creek:			
Nursery Run at Cloverly, MD	01650085	0.35	1967-74
North Creek:			
Batchellors Run at Oakdale, MD	01650190	0.47	**(a)**1967-70
Bel Pre Creek at Lay Hill, MD	01650450	1.69	1967-74
Lutes Run at Lutes, MD	01650470	0.47	**(a)**1967-70
Anacostia River:			
Beaverdam Branch Anacostia River at Kenilworth Avenue, Washington, DC	01652000	14	1911-12
Henson Creek (head of Broad Creek) at Oxon Hill, MD	01653500	16.7	1948-78
Wicomico River:			
Chaptico Creek at Chaptico, MD	01661000	10.4	1947-72
OHIO RIVER BASIN			
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
South Branch Casselman River near Bittenger, MD	03077940	3.22	1976-81
Casselman River:			
Big Piney Run near Salisbury, PA	03078500	24.5	1932-70

a Daily values data unpublished, available at Baltimore, MD office.
b Daily values data unpublished, available at Baltimore, MD office.

The following crest-stage partial-record stations in Maryland and Delaware have been discontinued. Annual maximum discharge and gage-height data were collected and published for the period of record, expressed in water years, shown for each station.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Christina River near Bear, DE	01478040	40.6	1983-91
White Clay Creek:			
Pike Creek near Newark, DE	01478950	6.04	1969-75
Mill Creek at Hockessin, DE	01479200	**a**4.19	1966-75
West Branch Red Clay Creek:			
Red Clay Creek tributary near Yorklyn, DE	01479950	0.38	1966-75
Brandywine Creek:			
Brandywine Creek tributary near Centerville, DE	01481200	0.97	1966-75
Husbands Run:			
Willow Run at Rockland, DE	01481450	0.37	1966-75
Red Lion Creek:			
Doll Run at Red Lion, DE	01482310	**b**1.2	1966-75
SMYRNA RIVER BASIN			
Providence Creek (head of Smyrna River):			
Paw Paw Branch:			
Paw Paw Branch tributary near Clayton, DE	01483290	**b**1.3	1966-75
Smyrna River:			
Sawmill Branch:			
Sawmill Branch tributary near Blackbird, DE	01483400	**b**0.6	1966-75
LEIPSIC RIVER BASIN			
Leipsic River near Cheswold, DE	01483500	9.35	1958-75
ST. JONES RIVER BASIN			
St. Jones River:			
Puncheon Branch at Dover, DE	01483720	**b**2.3	1966-75
MURDERKILL RIVER BASIN			
Murderkill River:			
Murderkill River tributary near Felton, DE	01484002	**b**1.0	1966-75
Hudson Branch (head of Spring Creek):			
Pratt Branch near Felton, DE	01484050	3.29	1966-75
BROADKILL RIVER BASIN			
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1966-75
INDIAN RIVER BASIN			
Indian River:			
Whartons Branch near Millsboro, DE	01484531	5.8	1986-88
Pepper Creek at Dagsboro, DE	01484550	8.78	1960-75
Blackwater Creek near Clarksville, DE	01484600	3.5	1986-88
WICOMICO RIVER BASIN			
Andrews Branch (head of Wicomico River) near Delmar, MD	01486100	**b**4.1	1966-76
NANTICOKE RIVER BASIN			
Nanticoke River:			
Bridgeville Branch:			
Bridgeville Branch tributary at Bridgeville, DE	01486900	**b**0.8	1966-68
Gum Branch:			
Toms Dam Branch near Greenwood, DE	01486980	**b**6.4	1966-75
James Branch (head of Broad Creek):			
Trap Pond Outlet (head of Hitch Pond Branch) near Laurel, DE	01487500	16.7	1972-73, 1975
Broad Creek:			
Little Creek:			
Meadow Branch near Delmar, DE	01487900	**b**3.9	1967-75
Holly Ditch near Laurel, DE	01488000	2.19	1959-75
CHOPTANK RIVER BASIN			
Tappahanna Ditch (head of Choptank River) near Hartly, DE	01490470	5.93	1961-73
Tidy Island Creek (continuation of Tappahanna Creek):			
Culbreth Marsh Ditch:			
Beachy Neidig Ditch near Willow Grove, DE	01490490	**b**2.3	1966-75
Culbreth Marsh Ditch (Shades Branch) near Chapeltown, DE	**c**01490500	11.6	1957-68
Cow Marsh:			
Meredith Branch near Sandtown, DE	01490600	**b**8.4	1966-75
Broadway Branch:			
Oldtown Branch at Goldsboro, MD	01490800	3.9	1967-76
Gravelly Branch:			
Sangston Prong near Whiteleysburg, DE	01491010	**b**1.9	1966-75
Spring Branch near Greensboro, MD	01491050	**b**3.8	1966-76
Hunting Creek:			
Gravel Run at Beulah, MD	01492050	8.4	1966-76

a 0.15 square miles is probably noncontributing.
b Approximately.
c Prior to 1956 published as "Shades Branch".

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
WYE RIVER BASIN			
Wye River:			
Wye East River:			
Sallie Harris Creek near Carmichael, MD	01492500	8.09	1957-81
Skipton Creek:			
Mill Creek near Skipton, MD	01492550	**b**4.6	1966-76
CHESTER RIVER BASIN			
Andover Branch (head of Chester River):			
Southeast Creek at Church Hill, MD	01494000	12.5	1957-65
Browns Branch:			
Browns Branch tributary near Church Hill, MD	01494020	**b**1.7	1971-78
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River):			
Northeast River tributary near Charlestown, MD	01496080	**b**1.7	1967-76
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek:			
Broad Creek tributary at Whiteford, MD	01577940	0.77	1971-86
Octoraro Creek:			
Basin Run at West Nottinhgam, MD	01578800	**b**1.3	1967-76
Basin Run at Liberty Grove, MD	01579000	5.31	1965-76
Bush River Basin			
Bynum Run (head of Bush River) at Bel Air, MD	01581500	8.52	1971-72
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Piney Creek near Hereford, MD	01582510	**b**1.5	1966-79
Western Run:			
Western Run tributary at Western Run, MD	01583495	0.26	1966-76
Beaverdam Run:			
Baisman Run at Broadmoor, MD	01583580	1.47	1970-76
Little Gunpowder Falls at Laurel Brook, MD	01584500	36.1	1971-86
PATAPSCO RIVER BASIN			
North Branch Patapsco River:			
South Branch Patapsco River:			
Hay Meadow Branch:			
Hay Meadow Branch tributary at Poplar Springs, MD	01587050	0.54	1966-76
Piney Run near Sykesville, MD	01588000	11.4	1959-74
Patapsco River:			
Gwynns Falls at Owings Mills, MD	01589220	9.12	1958-65, 1967-68
Gwynns Falls at McDonough, MD	01589240	19.3	1958-68, 1971-84
Jones Falls at Brooklandville, MD	01589400	19.7	1958-65, 1968
PATUXENT RIVER BASIN			
Patuxent River:			
Little Patuxent River:			
Little Patuxent River tributary at Guilford Downs, MD	01593350	0.95	1966-76
Dorsey Run near Jessup, MD	01594400	11.6	1959-68
Mill Branch near Mitchellville, MD	01594445	**b**1.1	1967-76
POTOMAC RIVER BASIN			
North Branch Potomac River:			
Savage River near Frostburg, MD	01596005	**b**1.5	1971-86
Wills Creek below Hyndman, PA	01601000	146	1968-86
Potomac River:			
Town Creek:			
Sawpit Run near Oldtown, MD	01609500	5.08	1963-76
Fifteen Mile Creek:			
Pratt Hollow:			
Pratt Hollow tributary at Pratt, MD	01610105	0.70	1971-86
Sideling Hill Creek:			
Bear Creek at Forest Park, MD	01610150	10.4	1965-69, 1971-83
Little Tonoloway Creek near Hancock, MD	01612500	16.9	1964
Ditch Run near Hancock, MD	01613150	**b**4.8	1965-86
Potomac River tributary near Hancock, MD	01613160	**b**1.2	1965-76
Antietam Creek:			
Little Antietam Creek:			
Dog Creek:			
Dog Creek tributary near Locust Grove, MD	01619475	0.10	1966-76

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN --Continued			
Catoctin Creek:			
Little Catoctin Creek at Harmony, MD	01637000	8.8	1961-67, 1969-77
Hollow Road Creek (head of Cone Branch) near Middletown, MD	01637600	2.3	1965-74, 1977
Monocacy River:			
Piney Creek:			
Piney Creek tributary at Taneytown, MD	01639095	0.62	1967-76
Big Pipe Creek:			
Little Pipe Creek at Avondale, MD	01640000	8.10	1959-65, 1967-80
Owens Creek:			
Owens Creek tributary near Rocky Ridge, MD	01640700	**b**1.2	1967-77
Linganore Creek:			
Dollyhyde Creek at Libertytown, MD	01642400	**b**2.7	1969-76
Little Seneca Creek (head of Seneca Creek):			
Bucklodge Branch:			
Bucklodge Branch tributary near Barnesville, MD	01644420	0.27	1967-76
Little Falls Branch near Bethesda, MD	01646550	**b**4.1	1979-84
Northeast Branch Anacostia River:			
Northwest Branch Anacostia River at Norwood, MD	01650050	2.45	1975-76
Browns Creek:			
Nursery Run at Cloverly, MD	01650085	0.35	1975-76
North Creek:			
Batchellors Run at Oakdale, MD	01650190	0.47	1967-76
Mattawoman Creek near Pomonkey, MD	01658000	57.7	1973-86
Zekiah Swamp Run (head of Wicomico River):			
Wolf Den Branch near Cedarville, MD	01660900	**b**2.3	1966-80
Clark Run near Bel Alton, MD	01660930	10.4	1966-76
Herring Creek:			
Glebe Branch at Valley Lee, MD	01661430	**b**0.3	1968-78
OHIO RIVER BASIN			
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
Little Youghiogheny River:			
Little Youghiogheny River tributary near Deer Park, MD	03075450	0.57	1965-76
Toliver Run:			
Toliver Run tributary near Hoyes Run, MD	03075600	0.53	1965-86
Youghiogheny River tributary near Friendsville, MD	03076505	0.22	1965-76
North Branch Casselman River:			
North Branch Casselman River tributary at Foxtown, MD	03077700	**b**1.0	1965-77
Casselman River:			
Big Piney Run near Salisbury, PA	03078500	24.5	1974-86

b Approximately.

The following continuous-record surface-water-quality stations have been discontinued in Maryland and Delaware. Daily records of specific conductance (SC), water temperature (T), pH, dissolved oxygen (DO), and sediment (SED) were collected for the period (in water years) shown for each station.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Type of record	Period of record
DELAWARE RIVER BASIN				
Delaware River:				
Christina River:				
White Clay Creek:				
Red Clay Creek at Wooddale, DE	01480000	47.0	T	1953-81
Brandywine Creek at Wilmington, DE	01481500	314	T	1957-61
				1971-73
				1975-80
			SED	1947-61
				1964-80
Delaware Bay near Lewes, DE	01484450		SC, T	1993-98
CHOPTANK RIVER BASIN				
Choptank River near Greensboro, MD	01491000	113	SC, T	1975-91
			SED	1981-91
ELK RIVER BASIN				
Elk River near Town Point, MD	01495900		SC, T	1982-98
SUSQUEHANNA RIVER BASIN				
Susquehanna River at Conowingo, MD	01578310	27,100	SC, T	1979-81
				1984-92
			SED	1980-81
				1984-92
RHODE RIVER BASIN				
Rhode River:				
Muddy Creek:				
North Fork Muddy Creek at South River, MD	01590710	0.89	T	1971-78
Rhode River near South River, MD	01590720	18.0	SC, pH, T, DO	1971-83
PATUXENT RIVER BASIN				
Patuxent River near Bowie, MD	01594440	348	SC, T	1978-80
				1986-91
			SED	1986-91
Patuxent River at Benedict, MD	01594700	742	T	1964-69
POTOMAC RIVER BASIN				
North Branch Potomac River:				
Laurel Run at Dobbin Road near Wilson, MD	01594930	8.23	SC, T	1981-88
			pH	1984-88
Sand Run:				
South Fork Sand Run near Wilson, MD	01594934	1.55	SC, pH, T	1981-86
North Fork Sand Run near Wilson, MD	01594936	1.91	SC, T	1981-88
			pH	1985-88
McMillan Fork near Fort Pendelton, MD	01594950	2.30	SC, pH, T	1987-97
North Branch Potomac River at Kitzmiller, MD	01595500	225	SC, pH, DO	1981-85
			T	1961-85
North Branch Potomac River at Barnum, WV	01595800	266	SC, pH, T, DO	1981-85
North Branch Potomac River at Luke, MD	01598500	404	T	1961-81
North Branch Potomac River at Pinto, MD	01600000	596	SC, pH, T, DO	1981-85
North Branch Potomac River near Cumberland, MD	01603000	875	T, SED	1965-79
Potomac River at Hancock, MD	01613000	4,073	T	1952-64
				1966-75
Conococheague Creek at Fairview, MD	01614500	495	T, SED	1967-80
Potomac River at Shepherdstown, WV	01618000	5,936	SC, T	1981
Antietam Creek near Sharpsburg, MD	01619500	281	T	1963-75
Shenandoah River at Millville, WV	01636500	3,040	SC, T	1980-83
Potomac River at Point of Rocks, MD	01638500	9,651	T, SED	1961-93
Monocacy River at Bridgeport, MD	01639000	173	T, SED	1990-93
Hunting Creek near Foxville, MD	01640965	2.14	SC, T	1988-91
Hunting Creek tributary near Foxville, MD	01640970	4.01	SC, T	1988-91
Fishing Creek:				
Fishing Creek tributary near Lewistown, MD	01641510	0.40	SC, T	1988-90
Monocacy River at Reich's Ford Bridge near Frederick, MD	01643020		T, SED	1961-93
Watts Branch at Rockville, MD	01645200	3.70	T	1957-67
Potomac River at Great Falls, MD	01645500	11,430	SC, T	1973-78

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Type of record	Period of record
POTOMAC RIVER BASIN--Continued				
Potomac River at Chain Bridge at Washington, DC	01646580	11,570	SC, pH, T, DO	1978-81
			SED	1979-81
Rock Creek:				
North Branch Rock Creek:				
Williamsburg Run near Olney, MD	01647685	2.25	SED	1967-68
North Branch Rock Creek near Rockville, MD	01647740	12.5	SED	1967-77
Northeast Branch Anacostia River:				
Northwest Branch Anacostia River:				
Browns Creek:				
Nursery Run at Cloverly, MD	01650085	0.35	SED	1967-68
Northwest Branch Anacostia River near Colesville, MD	01650500	21.1	SED	1967-75
Potomac River at Indian Head, MD	01655480	12,160	SC, pH, T, DO	1978-81
Potomac River at Piney Point, MD	01661475	---	SC, pH, T, DO	1980-81
OHIO RIVER BASIN				
MONONGAHELA RIVER BASIN				
Monongahela River:				
Youghiogheny River at Friendsville, MD	03076500	295	T	1963-75

The following low-flow, partial-record stations have been operated in Maryland, Delaware, and the District of Columbia. Measurements at these sites were made during periods of base flow when streamflow was primarily from ground-water storage. The column headed "Period of record" shows the water years in which measurements were made.

NORTH ATLANTIC SLOPE BASINS	Station number	Drainage area (mi^2)	Period of record
DELAWARE RIVER BASIN			
Delaware River:			
Naaman Creek:			
South Branch Naaman Creek near Claymont, DE	01477400	3.83	1955-66, 1968-71
Christina River near Newark, DE	01477850	3.76	1981-83, 2002
West Branch Christina River near Newark, DE	01477860	4.20	1981-83, 2002
Belltown Run near Glasgow, DE	01478009	3.35	1978-81, 2002
Muddy Run at Glasgow, DE	01478024	5.43	1978-81, 2002
Muddy Run near Cooches Bridge, DE	01478028	8.21	1978-80, 2002
White Clay Creek:			
White Clay Creek tributary near Ogletown, DE	01478878	3.68	1978-80, 2002
Brandywine Creek:			
Rocky Run at Talleyville, DE	01481350	1.76	1957-59, 1966
Wilson Run at Guyencort, DE	01481400	1.62	1957-59, 2002
North Fork Wilson Run at Guyencort, DE	01481430	1.12	1957-59, 2002
Wilson Run at Rockland, DE	01481440	3.05	1957-63
Husbands Run at Rockland, DE	01481460	1.28	1957-59, 2002
Squirrel Run at Montchanin, DE	01481480	1.67	1957-59
Alapocas Run at Concord, DE	01481530	0.81	1957-59, 2002
Red Lion Creek at Red Lion, DE	01482300	3.20	1955-60, 1962-71
Dragon Creek at Kirkwood, DE	01482400	1.93	1978-81
Dragon Creek tributary at Kirkwood, DE	01482405	0.16	1978-81
Joy Run near Summit Bridge, DE	01482670	1.26	1978-80
Scott Run near Boyds Corner, DE	01482690	2.18	1978-81
Appoquinimink River:			
Wiggins Millpond Outlet (head of Appoquinimink River) at Townsend, DE	01483150	3.82	1957-60, 1962-66, 1968-71, 1978-80
Drawyer Creek near Mt. Pleasant, DE	01483160	1.54	1978-80
Spring Mill Branch near Armstrong, DE	**a**01483165@	4.68	1979-80
Dove Nest Branch near Odessa, DE	**a**01483170@	4.68	1978-80
SMYRNA RIVER BASIN			
Providence Creek (head of Smyrna River) at Clayton, DE	01483300	11.8	1955-60, 1962-63, 1966, 1968-69
Smyrna River:			
Mill Creek at Smyrna, DE	01483350	4.77	1955-57, 1959-60, 1962-63, 1966, 1968-69
ST. JONES RIVER BASIN			
Fork Branch (head of St. Jones River) at Dupont, DE	01483650	7.50	1955-57, 1959-60, 1962-66, 1968-71
Maidstone Branch at Dupont, DE	01483680	17.3	1955-57, 1959-60, 1962-66, 1968-71

a Prior to 2001 published as "Drawyer Creek tributary".
@ Currently a surface-water discharge station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
MURDERKILL RIVER BASIN			
Murderkill River:			
Browns Branch near Houston, DE	01484020	12.4	1955-71
Spring Creek:			
Hudson Branch (head of Spring Creek) near Canterbury, DE	01484040	8.40	1955-60
Pratt Branch near Felton, DE	01484050*	3.29	1955-57, 1959-60, 1962-71
Double Run near Magnolia, DE	01484060	5.68	1955-57, 1959-60, 1962-64, 1966-71
MISSPILLION RIVER BASIN			
Beaverdam Branch (head of Misspillion River):			
Cedar Creek near Lincoln, DE	01484200	7.21	1955-60, 1962-63, 1966, 1968-69
BROADKILL RIVER BASIN			
Pemberton Branch (head of Broadkill River) near Milton, DE	01484240	6.68	1955-66, 1968-71
Broadkill River:			
Beaverdam Creek near Milton, DE	01484270	6.10	1955-71
INDIAN RIVER BASIN			
Indian River:			
Sheep Pen Ditch near Shortly, DE	01484510	**b**5.4	1986-88, 1997-98
Iron Branch at Millsboro, DE	01484530	**b**8.0	1985-88, 1997-99, 2000
Whartons Branch near Millsboro, DE	01484531*	**b**5.8	1968-69, 1971, 1985-88, 1999-2000
Swan Creek near Warwick, DE	01484535	**b**5.6	1985-88, 1997-98
Pepper Creek at Dagsboro, DE	01484550*	8.78	1955-71, 1985-88, 1997-99, 2000
Blackwater Creek near Clarkesville, DE	01484600*	**b**3.5	1968-69, 1971, 1985-88, 1997-98
Love Creek at Robinsonville, DE	01484655	**b**11.1	1985-88, 1997-99, 2000
Chapel Branch at Angola, DE	01484677	**b**8.0	1985-88, 1997-99, 1997-99, 2000
Unity Branch at Angola, DE	01484678	4.2	1999-2000
MILLER CREEK BASIN			
Beaverdam Ditch (head of Miller Creek) near Millville, DE	01484695@	2.2	1997-98
DIRICKSON CREEK BASIN			
Bearhole Ditch (head of Dirickson Creek) at Bunting, DE	01484700	**b**6.4	1968-71, 1985-88, 1997-98
ST. MARTIN RIVER BASIN			
St. Martin River:			
Buntings Branch near Selbyville, DE	01484710	4.15	1999
Taylorville Creek near Berlin, MD	01484714	0.94	1999
TRAPPE CREEK BASIN			
Trappe Creek:			
Bottle Branch at Berlin, MD	01484716	0.35	1999-2000
NEWPORT CREEK BASIN			
Newport Creek near Berlin, MD	01484717	0.51	1999-2000
Beaverdam Creek at Ironshire, MD	01484718	1.33	1999-2000
BASSETT CREEK BASIN			
Bassett Creek near Ironshire, MD	01484719	1.22	1999-2000
Porter Creek near Newark, MD	01484720	0.76	1999-2000

@ Currently a surface-water discharge station.
b Approximately.
* Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
MARSHALL CREEK BASIN			
Marshall Creek at Newark, MD	01484721	1.30	1999-2000
Massey Branch near Newark, MD	01484722	0.54	1999-2000
WATERWORKS CREEK BASIN			
Waterworks Creek:			
Waterworks Creek tributary near Cedartown, MD	01484723	0.09	1999-2000
SCARBORO CREEK BASIN			
Scarboro Creek at Spence, MD	01484725	0.27	1999-2000
PAWPAW CREEK BASIN			
Pawpaw Creek at Spence, MD	01484726	1.48	1999-2000
TANHOUSE CREEK BASIN			
Tanhouse Creek near Boxiron, MD	01484727	0.45	1999-2000
BROCKATONORTON BAY BASIN			
Boxiron Creek (head of Brockatonorton Bay) at Boxiron, MD	01484728	0.41	1999-2000
Brockatonorton Bay tributary at Boxiron, MD	01484729	0.26	1999-2000
PIKES CREEK BASIN			
Pikes Creek near Stockton, MD	01484730	0.86	1999-2000
RILEY CREEK BASIN			
Riley Creek at Stockton, MD	01484731	0.12	1999-2000
SWANS GUT CREEK BASIN			
Little Mill Creek (head of Swans Gut Creek) near Stockton, MD	01484732	0.81	1999-2000
Marshall Ditch near Stockton, MD	01484733	0.28	1999-2000
LITTLE MOSQUITO CREEK BASIN			
Little Mosquito Creek:			
Wattsville Branch:			
Wattsville Branch tributary No. 1 at Wattsville, VA	0148473510	0.34	1999-2000
Snead Branch near Horntown, VA	0148474010	0.77	1999-2000
WICOMICO RIVER BASIN			
Andrews Branch (head of Wicomico River):			
Leonard Pond Run near Delmar, MD	01486200	13.4	1950-51, 1964, 1969-71
NANTICOKE RIVER BASIN			
Nanticoke River (Gravelly Fork):			
Deep Creek at Old Furnace, DE	01487100	33.0	1955-60, 1962-63, 1968
Tyndall Branch near Hardscrabble, De	01487120	12.7	1955-63, 1966
Lewes Creek:			
Butler Mill Branch near Woodland, De	01487300	6.96	1955-63, 1966, 1968-69
James Branch (head of Broad Creek):			
Elliott Pond Branch (Chipman Pond Branch) near Laurel, DE	01487700	8.55	1955-66, 1968-71
Chicone Creek at Reids Grove, MD	01489395	4.69	1951-53, 1969-71
Baron Creek at MD-DE State Corner	01489400	8.93	1950-52, 1969-70
CHOPTANK RIVER BASIN			
Choptank River near Choptank Mills, DE	01490550	**b**58	1985-87
Forge Branch at Greensboro, MD	01491060	9.84	1952-53
Watts Creek near Denton, MD	01491180	**b**11	1964-75
Tuckahoe CreeK:			
Knott Millpond near Hillsboro, MD	01491800	8.45	1952-53, 1968-71
Cabin Creek at Cabin Creek, MD	01492080	6.05	1952-53
WYE RIVER BASIN			
Wye River:			
Wye East River:			
Skipton Creek:			
Mill Creek near Wye Mills, MD	01492560	5.72	1952-53, 1982

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
CHESTER RIVER BASIN			
Andover Branch (head of Chester River):			
Cypress Branch at Millington, MD	01492980	**b**38	1964-66, 1968-75
Mills Branch near Millington, MD	01492990	9.98	1953-54, 1968-71
Chester River:			
Foreman Branch at Ewingville, MD	01493480	5.27	1953-54
Langford Creek:			
East Fork Langford Creek:			
Mill Pond Outlet near Langford, MD	01494035	5.10	1953-54, 1968-71
Old Mill Stream Branch (head of Corsica River) at Centerville, MD	01494100	11.2	1964-71
SASSAFRAS RIVER BASIN			
Sassafras River:			
Sassafras River tributary at Ginns Corner, MD	01494450	3.81	1982-83
Duffy Creek near Cecilton, MD	01494480	1.45	1968-71
WORTON CREEK BASIN			
Mill Creek (head of Worton Creek) at Hanesville, MD	01494600	4.63	1953-54, 1968-71
ELK RIVER BASIN			
Big Elk Creek (head of Elk River):			
Gramies Run at Elk Mills, MD	01494995	3.05	1981-83
Little Elk Creek at Rock Church, MD	01495480	17.8	1982-83
Laurel Run near Elkton, MD	01495520	3.87	1982-83
Dogwood Run at Elkton, MD	01495525	1.62	1982-83
Mill Creek near Elkton, MD	01495540	4.32	1968-70, 1982
Elk River:			
Perch Creek near Elkton, MD	01495550	**b**6.0	1964-75, 1978-80, 1982-83
Back Creek near Mt. Pleasant, DE	01495700	4.40	1968-69
Bohemia River:			
Sandy Branch at Bohemia Creek, MD	01495925	2.58	1968-70, 1982
Little Bohemia Creek near Warwick, MD	01495935	2.45	1953-54
Scotchman Creek:			
Scotchman Creek tributary near Cecilton, MD	01495950	1.40	1982-83
NORTHEAST RIVER BASIN			
Northeast Creek (head of Northeast River):			
Little Northeast Creek:			
West Branch Little Northeast Creek at Zion, MD	01496030	3.32	1981-83
Little Northeast Creek at Mechanic Valley, MD	01496050	**b**14	1964-75
Northeast River:			
Northeast River tributary at North East, MD	01496055	1.55	1982-83
Stony Run near North East, MD	01496060	8.23	1982-83
Northeast River tributary at Charlestown, MD	01496085*	1.03	1982-83
Hance Point Creek at Hance Point, MD	01496100	1.36	1983
PRINCIPIO CREEK BASIN			
Principio Creek:			
Principio Creek tributary at Belvedere, MD	01496225	2.08	1982-83
MILL CREEK BASIN			
Mill Creek at Jackson, MD	01496250	3.73	1982-83
SUSQUEHANNA RIVER BASIN			
Susquehanna River:			
Broad Creek at Pylesville, MD	01577950	11.3	1956-59, 1962-63, 1966
Conowingo Creek at Oakwood, MD	01578300	34.4	1982-83
Octoraro Creek:			
Stone Run near Rising Sun, MD	01578475	2.24	1982-83
Stone Run at Rising Sun, MD	01578480	6.71	1982-83
Love Run at Richardsmere, MD	01578490	3.55	1982-83
Octoraro Creek tributary at Richardsmere, MD	01578515	3.27	1982-83
Deer Creek at Gorsuch Mills, MD	01579875	**b**25	1975-79, 2002
Big Branch at Harkins, MD	01579900	6.39	1975-79, 2002
Little Deer Creek near Federal Hill, MD	01579925	14.0	1975-79, 2002
Stout Bottle Branch near Ady, MD	01580170	7.13	1980-82, 2002

b Approximately.
***** Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
SWAN CREEK BASIN			
Swan Creek at Swan Creek, MD	01580700	13.2	1956-59, 1962-63, 1966
BUSH RIVER BASIN			
Bynum Run (head of Bush River) at Bush, MD	01581600	22.5	1956-59, 1962-63, 1966
James Run at Bush, MD	01581650	11.1	1956-59, 1962-63, 1966
Bush River:			
Grays Run at Stepney, MD	01581660	5.35	1956-59, 1962-63, 1966
Winters Run (head of Otter Point Creek) near Bel Air, MD	01581750	37.0	1954-59, 1962-63, 1966
GUNPOWDER RIVER BASIN			
Gunpowder Falls (head of Gunpowder River):			
Grave Run near Beckleysville, MD	01581830@	7.68	1977-82, 2002
Georges Run at Armacost, MD	01581850	13.0	1956-59, 1962, 1966, 2002
Georges Run near Beckleysville, MD	01581870@	15.8	1977-82, 2002
Little Falls:			
Beetree Run at Bentley Springs, MD	01581960@	9.72	1975-79, 2002
Third Mine Branch near Stablersville, MD	01581980	5.27	1975-79, 2002
Green Branch at Phoenix, MD	01582900	4.45	1973, 1975-79, 2002
Western Run:			
Piney Run at Dover, MD	01583100@	12.3	1975-79, 2002
Blackrock Run at Coopersville, MD	01583200	9.38	1956-59, 1962-63, 1966, 2002
Beaverdam Run at Cockeysville, MD	01583600@	20.9	1956-59, 1962-63, 1966, 2002
Little Gunpowder Falls at Hess, MD	01584200	16.5	1956-59, 1962-63, 1966, 2002
PATAPSCO RIVER BASIN			
North Branch Patapsco River:			
Deep Run at Lawndale, MD	01585700	6.70	1975-82, 2002
Beaver Run at Finksburg, MD	01586200	12.7	1957-59, 1961-63, 1966, 2002
Middle Run near Finksburg, MD	01586550	6.18	1973, 1975-79, 2002
Morgan Run near Gamber, MD	01586600	26.0	1957-59, 1961-63, 1966, 2002
Little Morgan Run near Eldersburg, MD	01586650	7.13	1973, 1975-79, 2002
South Branch Patapsco River at Woodbine, MD	01587070	11.4	1975-79, 1988-90, 2002
Gillis Falls at Woodbine, MD	01587170	19.4	1975-79, 2002
Rockburn Branch at Elkridge, MD	01589040	3.69	1988-90, 2002
Deep Run at Hanover, MD	01589080	18.0	1975-79, 1988-90, 2002

@ Currently a surface-water discharge station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
PATAPSCO RIVER BASIN--Continued			
Patapsco River--Continued			
Stony Run at Elkridge, MD	01589090	**b**9.4	1955, 1964-67 2002
Gwynns Falls:			
Red Run near Owings Mills, MD	01589230	7.39	1975-79 2002
Gwynns Falls at Baltimore, MD	01589345	50.7	1980-82 2002
Jones Falls at Eccleston, MD	01589370	2.86	1976-79 2002
SEVERN RIVER BASIN			
Severn Run (head of Severn River) at Benfield, MD	01589800	**b**24	1964-67
PATUXENT RIVER BASIN			
Patuxent River at Mullinix, MD	01590800	10.7	1988-90
Cabin Branch near Florence, MD	01590900	8.36	1975-79 1988-90 2002
Cattail Creek:			
Cattail Creek tributary at Carrs Mill, MD	01591200	3.93	1956-59 1961-63 1966, 1988-90
Cattail Creek tributary at Daisy, MD	01591375	3.12	1977-82 1988-90 2002
Dorsey Branch near Knollwood, MD	01591475	3.78	1964, 1988-90 2002
Hawlings River near Unity, MD	01591650	5.08	1977-82 2002
Little Patuxent River at Pine Orchard, MD	01593200	7.03	1956-59 1961-64 1966, 1988-90 2002
Red Hill Branch at Columbia, MD	01593300	5.98	1988-90 2002
Middle Patuxent River near West Friendship, MD	01593600	11.4	1956-59 1961-64 1966, 1988-90
Middle Patuxent River tributary near Dayton, MD	01593650	4.25	1977-82
Middle Patuxent River tributary near Columbia, MD	01593675	9.12	1988-90
Middle Patuxent River tributary near Clarksville, MD	01593700	6.24	1977-82 1988-90 2002
Hammond Branch at Scaggsville, MD	01594100	3.01	1956-59 1962-64 1966, 1988-90 2002
Hammond Branch near Laurel, MD	01594200	6.83	1988-90 2002
Dorsey Run at Jessup, MD	01594395	6.59	1964, 1989-91 2002
Towsers Branch at Conoways, MD	01594423	5.69	1975-80
Stocketts Run near Hardesty, MD	01594455	6.68	1977-80
Rock Branch at Bayard, MD	01594465	6.73	1977-80
Western Branch:			
Northeast Branch at Kolbes, MD	01594490	7.74	1977-80
Collington Branch at Upper Marlboro, MD	01594525	22.9	1964-66 1975-79
Mataponi Creek near Naylor, MD	01594535	**b**14	1964-66 1982
Lyons Creek at Lyons Creek, MD	01594545	**b**15	1964-67

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN			
North Branch Potomac River:			
Glade Run at Steyer, MD	01594975	8.86	1977-82
Savage River:			
Little Savage River near Avilton, MD	01596200	1.95	1979-82
Big Run near Swanton, MD	01596600	13.4	1977-82
Crabtree Creek:			
Middle Fork near Swanton, MD	01597100	10.8	1977-82
Georges Creek near Midland, MD	01598770	13.1	1979-82
Woodland Creek at Ocean, MD	01598775	5.49	1979-82
Mill Run at Morrison, MD	01598980	7.35	1979-82
Mill Run at Rawlings, MD	01599800	2.84	1979-82
Wills Creek at Ellerslie, MD	01601100	185	1979-82
Jennings Run:			
North Branch Jennings Run at Barrelsville, MD	01601300	**b**12	1964-74
Jennings Run at Corriganville, MD	01601325	37.7	1975-79
Collier Run at Spring Gap, MD	01604150	**b**11	1964-74
Mill Run at Oldtown, MD	01605425	10.6	1975-79
Seven Springs Run at Oldtown, MD	01605475	9.16	1975-82
Town Creek:			
Murley Branch near Flintstone, MD	01608950	11.9	1977-78, 1980-82
Maple Run near Town Creek, MD	01608975	7.10	1977-78, 1980-82
Fifteen Mile Creek near Piney Grove, MD	01610060	20.2	1975-79
Deep Run near Little Orleans, MD	01610065	6.26	1975-79
Fifteen Mile Creek at Little Orleans, MD	01610075	61.6	1975-79
Sideling Hill Creek:			
Bear Creek at Forest Park, MD	01610150*	10.4	1975-79, 1985-87
Potomac River tributary at Woodmont, MD	01610170	3.29	1985-87
Tonoloway Creek at Hancock, MD	01613100	113	1985-87
Ditch Run near Hancock, MD	01613150*	4.80	1975-79
Licking Creek:			
Lanes Run near Forsythe, MD	01613540	9.98	1980-82, 1985-87
Licking Creek near Pectonville, MD	01613545	212	1985-87
Conococheague Creek:			
Little Conocoheague Creek near Charlton, MD	01614050	18.1	1985-87
Rockdale Run at Fairview, MD	01614525	9.67	1976-79, 1981-82, 1985-87
Rush Run near Huyett, MD	01614575	5.20	1976-79, 1981-82, 1985-87
Meadow Brook at Conococheague, MD	01614625	6.77	1976-79, 1981-82, 1985-87
Conococheague Creek tributary near Huyett, MD	01614675	7.94	1977-79, 1981-82, 1985-87
Conococheague Creek at Williamsport, MD	01614705	564	1985-87
Downey Branch near Downesville, MD	01617600	3.00	1976-79, 1981-82
Marsh Run:			
St. James Run at Spielman, MD	01617780	7.14	1977-79, 1981-82, 1985-87
Antietam Creek:			
Little Antietam Creek at Leitersburg, MD	01619050	24.5	1976-79, 1981-82, 1985-87
West Branch at Paramount, MD	01619145	5.07	1977-79, 1981-82
Marsh Run at Fiddlesburg, MD	01619150	**b**31	1965-74, 1976-79, 1985-87
Landis Spring Branch near Benevola, MD	01619275	6.60	1976-79, 1981-82, 1985-87
Beaver Creek at Benevola, MD	01619325	22.9	1975-79, 1985-87
Little Beaver Creek at Benevola, MD	01619350	8.70	1975-79, 1985-87

b Approximately.
* Also a crest-stage partial-record station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Potomac River-Continued			
Antietam Creek-Continued			
Little Antietam Creek at Keedysville, MD	01619480	**b**24	1964-67, 1976-79, 1985-87
Sharmans Branch near Antietam, MD	01619525	4.62	1977-79, 1981-82
Isreal Creek at Weverton, MD	01636730	13.2	1975-79, 1985-87
Catoctin Creek:			
Little Catoctin Creek near Brunswick, MD	01636850	8.64	1977-83
Middle Creek at Ellerton, MD	01636975	22.7	1977-82
Catoctin Creek at Olive, MD	01638050	112	1977-83
Potomac River tributary at Point of Rocks, MD	01638520	3.04	1982-83
Tuscarora Creek at Tuscarora, MD	01638600	20.3	1975-79, 1982-83
Monocacy River:			
Piney Creek at Taneytown, MD	01639100	22.9	1956-59, 1961-63, 1966, 2002
Piney Creek near Keysville, MD	01639150	34.4	1982-83, 2002
Toms Creek:			
Friends Creek near Emmitsburg, MD	01639325	12.2	1977-83, 2002
Toms Creek near Keysville, MD	01639390	88.1	1982-83, 2002
Double Pipe Creek:			2002
Big Pipe Creek (head of Double Pipe Creek) at Bachman Mills, MD	01639400	9.39	1956-59, 1961-63, 1966, 2002
Deep Run at Union Mills, MD	01639420	5.46	1975-79, 2002
Silver Run near Silver Run, MD	01639440	8.77	1975-82, 2002
Big Pipe Creek near Mayberry, MD	01639450	51.6	1956-59, 1962-63, 1966, 2002
Bear Branch near Mayberry, MD	01639465	13.9	1975-82, 2002
Meadow Branch near Uniontown, MD	01639470	12.6	1956-59, 1961-63, 1966, 2002
Little Pipe Creek:			
Wolfpit Branch at Linwood, MD	01640100	2.01	1956-59, 1961-63, 1966, 2002
Little Pipe Creek at Union Bridge, MD	01640150	40.4	1956-59, 1962-63, 1966, 2002
Beaver Dam Creek near Union Bridge, MD	01640160	7.04	1977-82, 2002
Little Pipe Creek at Keymar, MD	01640200	80.0	1982-83, 2002

b Approximately.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi^2)	Period of record
POTOMAC RIVER BASIN--Continued			
Potomac River-Continued			
Monocacy River--Continued			
Owens Creek near Thurmont, MD	01640600	14.4	1975-79, 2002
Little Owens Creek near Thurmont, MD	01640650	6.16	1975-79, 2002
Beaver Branch at Rocky Ridge, MD	01640720	6.53	1977-82, 2002
Owens Creek near Rocky Ridge, MD	01640750	38.8	1982-83, 2002
Fishing Creek near Utica, MD	01641600	17.9	1982-83, 2002
Tuscarora Creek near Frederick, MD	01641900	16.5	1975-79, 1982-83, 2002
Israel Creek near Walkersville, MD	01642050	**b**29	1964-66, 1975-79, 1982-83, 2002
Linganore Creek near New London, MD	01642430	45.2	1980-82, 2002
Bens Branch near New Market, MD	01642450	11.8	1975-82, 2002
Bush Creek at Ijamsville, MD	01643100	**b**17.5	1964-66, 2002
Bush Creek at Reels, MD	01643110	29.7	1982-83, 2002
Ballenger Creek near Lime Kiln, MD	01643125	20.2	1975-83, 2002
Bennett Creek:			
Little Bennett Creek at Hyattstown, MD	01643400	12.8	1968-69, 1975-79
Broad Run at Elmer, MD	01643615	14.0	1975-82
Seneca Creek:			
Little Seneca Creek at Boyds, MD	01644400	**b**21	1964-67
Bucklodge Branch near Dawsonville, MD	01644425	8.47	1975-82
Great Seneca Creek:			
Goshen Branch at Goshen, MD	01644480	7.63	1975-77, 1979
Dry Seneca Creek near Seneca, MD	01645050	19.2	1975-82
Rock Run near Cabin John, MD	01646220	**b**4.8	1964-67
Rock Creek at Redland, MD	01647620	7.45	1977-82
Northeast Branch Anacostia River:			
Paint Branch at College Park, MD	01649200	17.5	1980-82
Oxon Run (head of Oxon Creek) at Washington, DC	01652580	6.84	1980-82
Piscataway Creek:			
Tinkers Creek at Piscataway, MD	01653625	15.9	1975-82
Mattawoman Creek near Waldorf, MD	01657900	16.9	1980-82
Chicamuxen Creek:			
Reeder Run at Chicamuxen, MD	01658300	**b**5.6	1964-67
Nanjemoy Creek:			
Burgess Creek:			
Mill Run (head of Nanjemoy Creek) Welcome, MD	01660650	9.89	1980-82
Port Tobacco Creek (head of Port Tobacco River) near Marshalls Corner, MD	01660740	15.8	1977-82
Wicomico River:			
Zekiah Swamp Run (head of Wicomico River) near Malcolm, MD	01660905	12.1	1975-82
Clark Run near Bel Alton, MD	01660930	10.4	1975-79
Gilbert Swamp Run near Olivers Shop, MD	01660950	**b**32	1964-65
McIntosh Run:			
Brooks Run near Hollywood, MD	01661200	5.76	1980-82
Mcintosh Run at Tintop Hill, MD	01661300	12.1	1964-66, 1982
Glebe Run at Leonardtown, MD	01661410	5.81	1980-82

b Approximately.

OHIO RIVER BASIN	Station number	Drainage area (mi^2)	Period of record
MONONGAHELA RIVER BASIN			
Monongahela River:			
Youghiogheny River:			
Cherry Creek near Crellin, MD	03075350	16.7	1977-82
Snowy Creek:			
Laurel Run at Crellin, MD	03075400	10.9	1964-74
Little Youghiogheny River at Loch Lynn Heights, MD	03075475	13.2	1975-79
Muddy Creek at Swallow Falls State Park, MD	03075700	17.8	1977-82
Cherry Creek near McHenry, MD	03075900	12.3	1973, 1975-79
Bear Creek:			
South Branch Bear Creek near Accident, MD	03076580	6.01	1964-74
South Branch Bear Creek near Friendsville, MD	03076590	16.8	1975-79
Casselman River:			
North Branch Casselman River near Grantsville, MD	03077925	24.4	1975-80
South Branch Casselman River near Grantsville, MD	03077950	20.8	1975-79

Photo by W.C. Lewis

Low Flow measurement on the Potomac River below Little Falls Dam, July 9, 2002.

WATER RESOURCES DATA - MARYLAND, DELAWARE, AND WASHINGTON, D.C., 2002

VOLUME 1. SURFACE-WATER DATA

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Maryland and Delaware each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled **"Water Resources Data - Maryland, Delaware, and Washington, D.C."**

This report series includes records of stage, discharge, and water quality of streams and stage, contents, and water quality of lakes and reservoirs. This volume contains records for water discharge at 137 gaging stations; stage and contents at 1 reservoir; and water quality at 28 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations, and stage only for 8 tidal crest-gage partial-record stations. Locations of these sites are shown on figure 3. Locations of discontinued gaging stations are shown on figure 4. Additional water data were collected at various sites not part of the systematic data-collection program. These data represent that part of the National Water-Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Maryland, Delaware and Washington, D.C.

This series of annual reports for Maryland, Delaware, and Washington, D.C. began with a report for the 1961 water year that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the l975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. In the 1989 water year, the report format was changed to two volumes. Both volumes contained data on quantities of surface water, quality of surface and ground water, and ground-water levels. Volume 1 contained data on the Atlantic Slope Basins (Delaware River through Patuxent River) and Volume 2 contained data on the Monongahela and Potomac River Basins. Beginning with the 1991 water year, Volume 1 contains all information on quantities of surface water and surface-water-quality data and Volume 2 contains ground-water levels and ground-water-quality data.

Prior to the introduction of this series and for several water years concurrent with it, water resources data for Maryland and Delaware were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage, and on lake or reservoir contents and stage, through September 1960, were published annually under the title **"Surface-Water Supply of the United States, Parts 6A and 6B."** For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title **"Quality of Surface Waters of the United States,"** and water levels for the 1935 through 1974 water years were published under the title **"Ground-Water Levels in the United States."** The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States, and may be purchased from the U.S. Geological Survey, Branch of Information Services, Federal Center, Box 25286, Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example,this volume is identified as **"U.S. Geological Survey Water-Data Report MD-DE-DC-02-1".** For archiving and general distribution, the reports for l971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or on microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information including current prices for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone at (410) 238-4200.

COOPERATION

The U.S. Geological Survey and agencies of the State of Maryland had cooperative agreements for the collection of water-resource records from 1896 to 1909 and since 1924. Similar cooperative agreements have existed between the Survey and agencies of the State of Delaware since 1943. Organizations that assisted in collecting the data in this report through cooperative agreements with the Survey are:

Maryland Geological Survey, Emery T. Cleaves, Director.

Delaware Geological Survey, Robert R. Jordan, State Geologist.

Maryland Department of the Environment, Chesapeake Bay and Special Projects Program, Robert M. Summers, Division Chief.

District of Columbia Department of Public Works, Larry King, Director.

Maryland State Highway Administration, Parker F. Williams, Administrator.

Assistance with funds or services was given by the U.S. Army Corps of Engineers for collecting records at 10 gaging stations and 3 water-quality stations within Maryland.

The following organizations also aided in collecting records:

Delaware: Department of Natural Resources and Environmental Control, Water Resources Agency for New Castle County.

Maryland: Maryland Water Resources Administration, Washington Suburban Sanitary Commission, Interstate Commission Potomac River Basin, Upper Potomac River Commission, Baltimore County, Baltimore City, City of Aberdeen, Anne Arundel County, Harford County, Howard County, Montgomery County, Prince Georges County.

Organizations that provided data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow at the beginning of the 2002 water year was in the normal range throughout Maryland, Delaware, and Washington, D.C. except in Northeastern Maryland, where streamflow fell into the deficient range (lower 25 percent of the record) following below-normal rainfall (0.5 to 2.0 inches).During October 2001, streamflow fell into the deficient range throughout most of the Potomac River basin following below-normal rainfall (2.5 inches). During the period November 2001 to March 2002, streamflow was in the deficient range throughout all of Maryland, Delaware, and Washington, D.C. following below-normal precipitation (5.0 to 8.5 inches for 5 month period). Streamflow during March 2002 moved up into the normal range within the Potomac River basin following above normal rainfall (1.0 to 3.0 inches). In May 2002 streamflow was in the normal range throughout Maryland, Delaware, and Washington, D.C. except in Northeastern Maryland where streamflow remained in the deficient range. During June 2002 stream flow in Central Maryland fell into the deficient range following below-normal rainfall (1.0 to 2.5 inches). In July 2002 stream-flow throughout the region was in the deficient range following below-normal rainfall (0.5 to 3.5 inches). Only Western Maryland was in the normal range following above-normal rainfall (0.5 to 1.5 inches). Conditions during July 2002 remained the same during August 2002. During September 2002 streamflow on the Eastern Shore rose into the normal range following above-normal rainfall (1.0 to 12.0 inches). Flows along the upper reaches of the Potomac River were also in the normal range following water-supply releases from Bloomington Reservoir in Western Maryland.

During the 2002 water year, flows were in the deficient range at all five index stations: Potomac River at Paw Paw, WV, in western Maryland; Potomac River near Washington,D.C., in central Maryland; Deer Creek at Rocks, in northeastern Maryland; Choptank River at Greensboro, on the Eastern Shore of Maryland; and Seneca Creek at Dawsonville, in central Maryland. Record daily, monthly, and yearly means were set at most stations.Potomac River at Paw Paw, WV set a new monthly minimum in February 2002. The new record monthly mean was 24 percent lower than the record set in 1954. A new record daily minimum was set in March 2002. The new record daily minimum was 8 percent lower than the record set in 1947. Potomac River near Washington, D.C. set a new monthly minimum in February and March 2002. The new record monthly mean was 26 and 1 percent lower than the record set in 1934 and 1931, respectively. A new record daily minimum was set in March 2002. The new record daily minimum was 23 percent lower than the record set in 1934. A new record yearly mean was set. The new record yearly mean was 13 percent lower than the record set in 1969. Deer Creek at Rocks set new monthly minimums in 9 out of 12 months during the 2002 water year. The new record monthly means range from 3 to 40 percent lower than the previous records going back to 1932. New record daily minimums were set in 6 out of 12 months. The new record daily minimums ranged from 14 to 66 percent lower than the records going back to 1931. Choptank River at Greensboro set a new monthly minimum in February 2002. The new record monthly mean was 28 percent lower than the record set in 1966. A new record daily minimum was set in March and August 2002. The new record daily minimum was 25 and 75 percent lower than the record set in 1966 and 1999, respectively. A new record yearly minimum daily was set which was 75 percent lower than the record set in 1999.

Monthly and annual-mean discharges for water year 2002 were compared to long-term averages (reference period 1971-2000) for two representative streamflow-gaging stations in figure 1. Data for the station, Potomac River at Point of Rocks, in central Maryland, reflect runoff conditions in the Potomac River Basin, excluding the Coastal Plain. Data for the station, Choptank River near Greensboro, on the Eastern Shore of Maryland, reflect runoff from a 113 mi^2 (square mile) area, of which 21.6 mi^2 is located in Delaware in the central part of the Delmarva Peninsula.

Average freshwater inflow to the Chesapeake Bay was estimated to be 44,200 ft^3/s (cubic feet per second), on the basis of flows for the James, Potomac, and Susquehanna Rivers. This is 58 percent of the long-term average during the reference period (water years) 1952-2002. Flows for October averaged 38 percent of normal. During November, flows averaged 25 percent of normal. For December, flows averaged 46 percent of normal. For January, flows averaged 30 percent of normal. Flows in February averaged 51 percent of normal. Flows in March were 44 percent of normal while flows in April were 58 percent of normal. Flows for May were 130 percent of normal. June flows were 101 percent of normal. During July, flows were 60 percent of normal. August flows were 39 percent of normal. September flows were 41 percent of normal. No new flow records were set during the 2002 water year.

The combined storage in the three major water-supply reservoirs in the Baltimore City Municipal System (combined usable capacity of 76,050 million gallons [previously 85,430 million gallons, decrease in storage capacity due to increase in sediment storage]) decreased from 81 percent of capacity on September 30, 2001 to 42 percent of capacity on September 30, 2002.

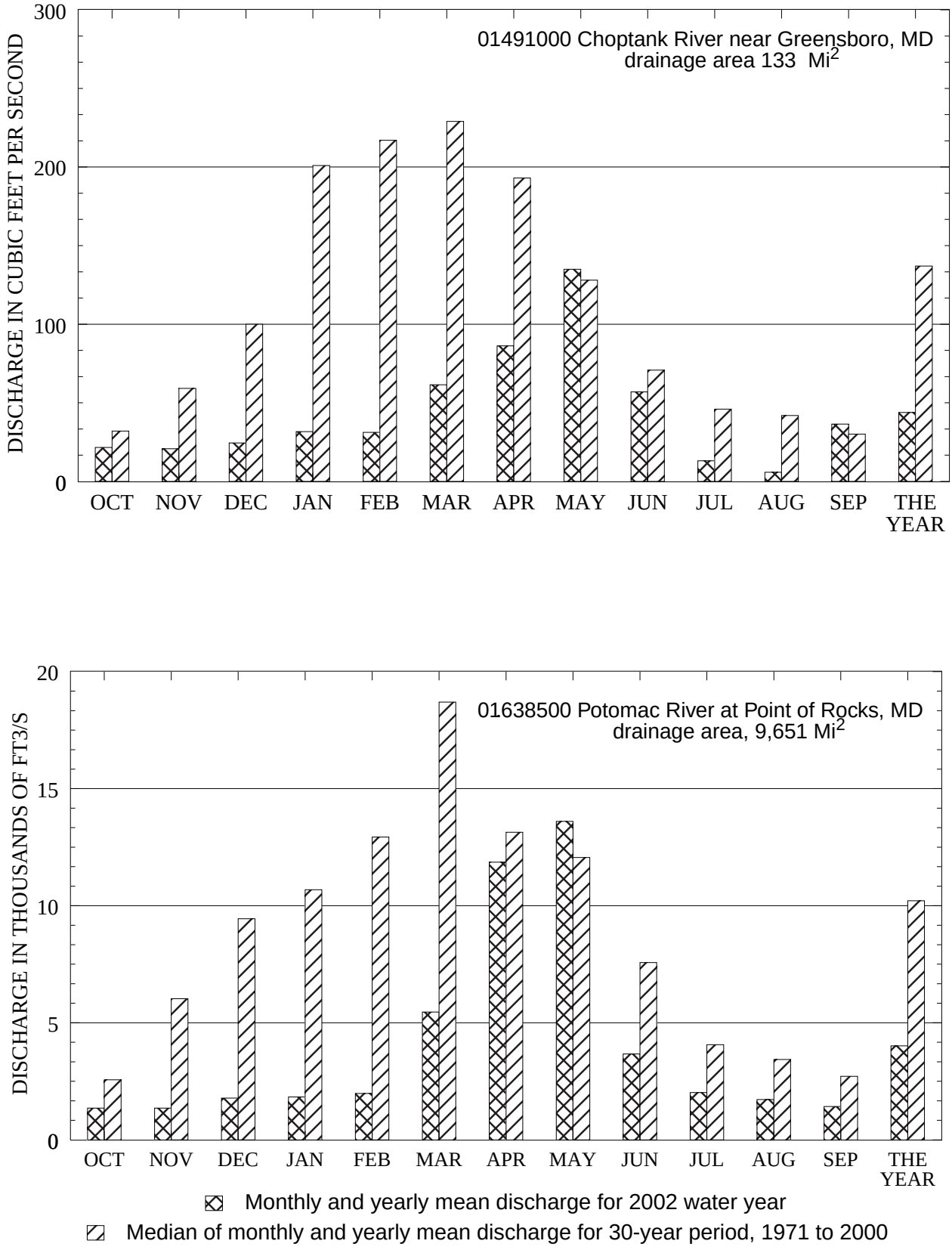

FIGURE 1. COMPARISON OF DISCHARGE AT TWO LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 2002 WATER YEAR WITH MEDIAN DISCHARGE FOR INDICATED PERIOD.

SPECIAL NETWORKS AND PROGRAMS

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations were operated in the Mississippi, Columbia, Colorado, and Rio Grande. From 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (**NAWQA**); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

Additional information about the NASQAN Program can be found at:

http://water.usgs.gov/nasqan/

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to coordinate efforts among the agencies.

Additional information about the NAWQA program is available through the world wide web at:

http://water.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 2002 water year that began October 1, 2001, and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The locations of the stations where the data were collected are shown in figure 3. The following sections of introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations are based on geographic location. The **"downstream order"** system is used for regular surface-water stations and the **"latitude-longitude"** system is used for surface-water stations where only miscellaneous measurements are made.

Downstream Order System

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 01477800, which appears just to the left of the station name, includes the two-digit part number **"01"** plus the six-digit downstream-order number **"477800."** The part number designates the major river basin; for example, part **"01"** is the North Atlantic Slope Basin.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the **LOCATION** paragraph of the station description (See figure 2 below).

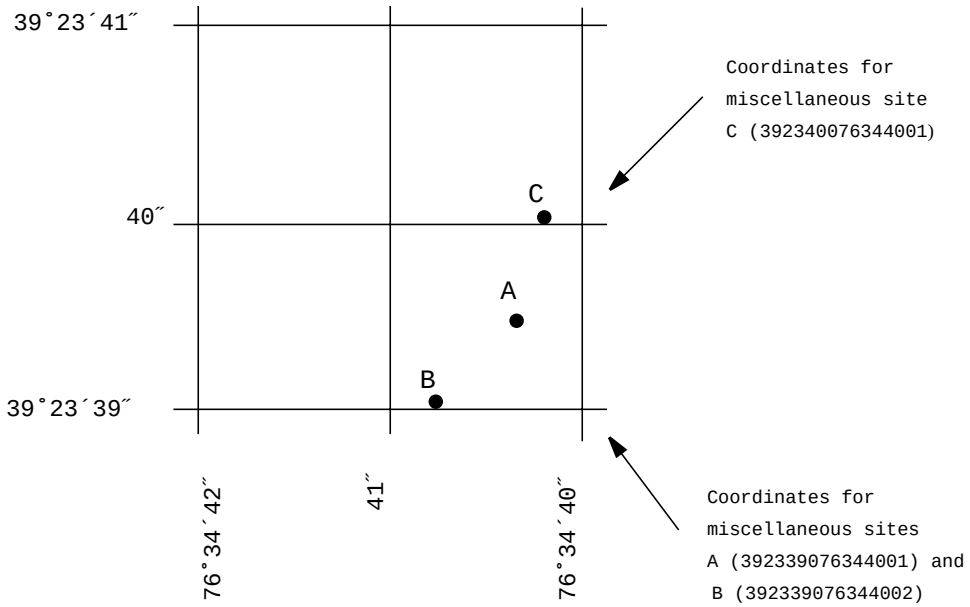

Figure 2. --System for numbering miscellaneous sites (latitude and longitude)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean-daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because mean-daily discharges and end-of-day contents commonly are published for such stations, they are referred to as **"daily stations."**

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as **"Crest-stage partial records,"** or **"Low-flow partial records."** Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered partial records, but they are presented separately in this report. Locations of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figure 3.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information such as weather records are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (**TWRI**'s), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (**ASTM**) standards and generally follow the standards of the International Organization for Standards (**ISO**).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily-mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations, the stage-discharge relation is affected by changing stage; at these stations, the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available curves or tables defining the relation of stage and content based on bathymetric surveys. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes are then determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic re-surveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly inaccurate as the time lapsed since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relations, similar to the methods by which other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, **"Data Presentation"** (**REMARKS** paragraph) and **"Identifying Estimated Daily Discharge."**

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table, and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily-mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly-mean flow data for a designated period, by water years; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

Station manuscript

The manuscript provides descriptive information under various headings such as station location, period of record, historical extremes outside the period of record, record accuracy, and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments which follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gaging station in relation to the cultural and physical features in the vicinity and to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in **"River Mileage Measurement,"** Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the maps available vary from one drainage basin to another, the accuracy of drainage areas also varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that flow could reasonably be considered equivalent to flow at the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: **"(M)"** means that only the instantaneous maximum discharge was revised; **"(m)"** that only the instantaneous minimum was revised; and **"(P)"** that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see Glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, **"Identifying Estimated Daily Discharge"**). If a **REMARKS** paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record, to extreme data for the period of record and the current year, and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included in this section is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

PEAK DISCHARGE(S) FOR CURRENT YEAR.--The maximum instantaneous discharge and any secondary peaks occurring during the current year are given. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, the records of a discontinued gaging station may occasionally need revision. Because there would be no current or, possibly, future station manuscript published for these stations to document the revision in a **"Revised Records"** entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. If the data for a discontinued station were obtained by computer retrieval, however, the data would be current and there would be no need to check because any published revision of data is always accompanied by a revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the **"REMARKS"** and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for **AVERAGE DISCHARGE** and **EXTREMES FOR THE PERIOD OF RECORD** have been deleted and the information contained in these paragraphs is now presented in the tabular summaries following the discharge table or in the **REMARKS** paragraph, as appropriate. No changes have been made to the data presentation of lake contents.

Data table of daily-mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed **"TOTAL"** gives the sum of the daily figures for each month, the line headed **"MEAN"** gives the average flow in cubic feet per second for the month, and the lines headed **"MAX"** and **"MIN"** give the maximum and minimum daily discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed **"CFSM"**), or in inches (line headed **"IN."**), or in acre-feet (line headed **"AC-FT"**). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion, or if the drainage area includes large non-contributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly-mean data

A tabular summary of the mean (line headed **"MEAN"**), maximum (line headed **"MAX"**), and minimum (line headed **"MIN"**) of monthly-mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period is expressed as **"FOR WATER YEARS ____-____, BY WATER YEAR (WY),"** and lists the first and last water years of the range of years selected from the **PERIOD OF RECORD** paragraph in the station manuscript. It consists of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled **"SUMMARY STATISTICS"** follows the statistics of monthly-mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, **"WATER YEARS ____-____,"** will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated **ANNUAL** (see line headings below), except for the **"ANNUAL 7-DAY MINIMUM"** statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the **REMARKS** paragraph of the manuscript or in footnotes. Because the designated period may not be the same as in the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the **REMARKS** paragraph or in footnotes. Selected streamflow-duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage area.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments below clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily-mean values of discharge for the year. At some stations, the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily-mean discharges for the year noted or for the designated period. At some stations the yearly mean is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual-mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual-mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily-mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily-mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.-- The lowest mean discharge for 7 consecutive days for a calendar year or a water year. (Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year, April 1 to March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

MAXIMUM PEAK FLOW.--The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the **REMARKS** paragraph in the manuscript.

MAXIMUM PEAK STAGE.-- The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the **REMARKS** paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

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

Cubic feet per second per square mile (CFSM, $ft^3/s/mi^2$) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

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

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made during times of drought or flood to give better areal coverage of those events. These measurements and others collected for some special reasons are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol **"e"** and printing a table footnote, **"e Estimated,"** or by listing the dates of the estimated record in the **REMARKS** paragraph of the station description.

Accuracy of the Records

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

The accuracy attributed to the records is indicated under **"REMARKS."** **"Excellent"** means that about 95 percent of the daily discharges are within 5 percent of their true values; **"good,"** within 10 percent; and **"fair,"** within 15 percent. Records that do not meet the criteria mentioned are rated **"poor."** Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second (ft^3/s) for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes affected by use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large when compared to the observed discharge.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the Maryland and Delaware offices of the MD-DE-DC District. In addition, most of the daily-mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of records

Water-quality data for surface-water sites are grouped into one of three classifications. A **continuing-record station** is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A **partial-record station** is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A **miscellaneous** sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between **"continuing records,"** as used in this report, and **"continuous recordings,"** which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 3.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available, or where the water quality differs significantly from that of the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is to insure that the data obtained represent the in situ quality of the water. For this reason, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made on-site when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in publications on **"Techniques of Water-Resources Investigations,"** Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1-A9. These references are listed under **"PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS"** (TWRI) section of this report. These methods are consistent with ASTM standards and generally follow ISO standards. Also, detailed information on collecting, treating, and shipping samples may be obtained from the U.S. Geological Survey Maryland and Delaware offices.

One sample can adequately define the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream-Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

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

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

Water temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Maryland and Delaware Offices of the U.S. Geological Survey.

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily, or in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after these periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are described in TWRI Book 3, Chapters C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (**BOD**), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in TWRI Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters that are currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of **"daily values"** of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge-gaging station, neither the **LOCATION** nor the **DRAINAGE AREA** statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments below describe information presented under the various headings of the station description.

LOCATION.--See Data Presentation under **"Records of Stage and Water Discharge;"** same comments apply.

DRAINAGE AREA.--See Data Presentation under **"Records of Stage and Water Discharge;"** same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, **NWIS**, and subsequently to its web-based National data system, **NWISWeb [http://water.usgs.gov/nwis/nwis]**. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from **NWIS** or **NWISWeb** to ensure the most recent updates. Updates to **NWISWeb** are currently made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant
V	Analyte was detected in both the environmental sample and the associated blank.
M	Presence of material verified but not quantified.

WATER-QUALITY CONTROL DATA

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the U.S. Geological Survey. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

Source solution blank - a blank solution that is transferred to a sample bottle in an area of the office laboratory with an atmosphere that is relatively clean and protected with respect to target analytes.

Ambient blank - a blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

Field blank - a blank solution that is subjected to all aspects of sample collection, field-processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is processed through the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank -a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank, but normally done in the more controlled conditions of the office.)

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

A Reference sample is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to insure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner so that the samples are considered to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Concurrent sample - a type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating collection of samples into two or more compositing containers.

Sequential sample - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Concurrent sample - a type of spike sample that is collected at the same time with the same sampling and compositing devices then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

Split sample - a type of spike sample in which a sample is split into subsamples contemporaneous in time and space then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

ACCESS TO USGS DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for the most current or discontinued gaging stations on the world wide web (**WWW**). These data may be accessed at

http://water.usgs.gov/

Some water-quality and ground-water data also are available on the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address for MD-DE-DC District office on back of the title page).

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (**SI**) units on the inside of the back cover.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (**See also "Annual runoff"**)

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

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

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "**filtered**" sample.

Annual runoff is the total quantity of water that is discharged ("**runs off**") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 to September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Recolors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (**g/m^3**), and periphyton and benthic organisms in grams per square meter (**g/m^2**). (**See also "Biomass"**)

Aspect is the direction toward which a slope faces with respect to the compass.

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

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peaks per year will be published.

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 ft) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler may also contain a component of the suspended load.

Bedload discharge (tons per day) is rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (**See also "Bedload" and "Sediment"**)

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (**See also "Bedload" and "Sediment"**)

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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

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

Biomass pigment ratio is an indicator of the total proportion of periphyton which are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and are generally reported as cells or units per milliliter (**mL**) or liter (**L**).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements on cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\,\pi r^3 \qquad \text{cone } 1/3\,\pi r^3 h \qquad \text{cylinder } \pi r^2 h.$$

pi is the ratio of the circumference to the diameter of a circle; pi = 3.14159…
From cell volume, total algal biomass expressed as biovolume ($\mu m^3/mL$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

Cfs-day (**See "Cubic foot per second-day"**)

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [**See also "Biochemical oxygen demand (BOD)"**]

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Clostridium perfringens (C. perfringens) is a spore-forming bacterium that is common in the feces of human and other warm-blooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (**See also "Bacteria"**)

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of waters and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

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

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "**second-feet**" sometimes is used synonymously with "**cubic feet per second**" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft^3/s)/d]) 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, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily-mean discharges reported in the daily-value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, (ft^3/s)/mi^2] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (**See also "Annual runoff"**)

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (**See also "Daily mean suspended-sediment concentration," "Sediment," and "Suspended-sediment concentration"**)

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data Collection Platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (**See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988"**)

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (**cells/mL**) of sample. (**See also "Phytoplankton"**)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediments or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (**cubic feet per second**). Discharge also can apply to the rate at which constituents such as suspended sediment, bedload, and dissolved or suspended chemical constituents, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (**tons per day**).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "**dissolved**" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (**oxygen gas**) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "**residue-on-evaporation**" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (**as mg/L $CaCO_3$**) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon Index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

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

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

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (**See "Drainage area"**)

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (**See also "Ash mass," "Biomass," and "Wet mass"**)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 ˚C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (**See also "Wet weight"**)

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (**See also "Substrate embeddedness class"**)

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar and subsequent transfer to EIA medium. Enterococci include ***Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,*** and their variants. (**See also "Bacteria**")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive, the index usually decreases with pollution.

Escherichia coli (E. coli) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 ˚C on mTEC medium. Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Estimated (E) concentration value is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (**MDL**), an '**E**' code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an '**E**' code even though the measured value is greater than the **MDL**. A value reported with an '**E**' code should be used with caution. When no analyte is detected in a sample, the default reporting value is the **MDL** preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (**See also "Phytoplankton"**)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried streambed sediments. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediments.

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

Fecal streptococcal bacteria are present in the intestine of warm-blooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Fire algae (Pyrrhophyta) are free-swimming unicells characterized by a red pigment spot.(**See also "Phytoplankton"**)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly larger than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any National geodetic datum. However, if the elevation of the gage datum relative to the National datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929 has been determined, then the gage readings can be converted to elevations above the National datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height is often used interchangeably with the more general term "**stage**," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data 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 computed.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (**NAWQA**) Program habitat sampling.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "**moss**" in lakes. Their concentrations are expressed as number of cells per milliliter (**cells/mL**) of sample. (**See also "Phytoplankton"**)

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate (**$CaCO_3$**).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. ***See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html***

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution which uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N}$$

where *n* is the number of individuals of each taxon, a is the tolerance value of each taxon, and *N* is the total number of organisms in the sample.

Horizontal datum (**See "Datum"**)

Hydrologic index stations referred to in this report are four continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

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

Inch (IN., in.), as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it. (**See also "Annual runoff"**)

Instantaneous discharge is the discharge at a particular instant of time. (**See also "Discharge"**)

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

Laboratory Reporting Level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The **LRL** controls false negative error. The probability of falsely reporting a non-detection for a sample that contained an analyte at a concentration equal to or greater than the **LRL** is predicted to be less than or equal to 1 percent. The value of the **LRL** will be reported with a "less than" (**<**) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually based on the most current quality-control data and may, therefore, change. **[Note: In several previous NWQL documents (Connor and others, 1998; NWQL Technical Memorandum 98.07, 1998), the LRL was called the non-detection value or NDV—a term that is no longer used.)**

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-Term Method Detection Level (LT–MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (**MDL**) spike sample measurements over an extended period of time. **LT–MDL** data are collected on a continuous basis to assess year-to-year variations in the **LT–MDL**. The **LT–MDL** controls false positive error. The chance of falsely reporting a concentration at or greater than the **LT–MDL** for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. ***See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html***

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that are usually arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (**See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration"**)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (**See also "Discharge"**)

Mean high or low tide is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (**See also "Datum"**)

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

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

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the **MDL** concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Minimum Reporting Level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (**Timme, 1995**).

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. ***See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88*** **(See "North American Vertical Datum of 1988")**

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate.")

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in **NTU** uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the U.S. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and U.S. first-order terrestrial leveling networks.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (**DOC**), particulate organic carbon (**POC**), or total organic carbon (**TOC**).

Organic mass or **volatile mass** of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (**See also "Ash mass," "Biomass," and "Dry mass"**)

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

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

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter Code is a 5-digit number used in the USGS computerized data system, National Water Information System (**NWIS**), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (**mm**), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) determine fall diameter of particles in either distilled water (**chemically dispersed**) or in native water (**the river water at the time and point of sampling**).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024-0.004	Sedimentation
Silt	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimentation/sieve
Gravel	2.0 -64.0	Sieve

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

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation to the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

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

Percent shading is determined by using a clinometer to estimate left and right bank shading. The values are added together and divided by 180 to determine percent shading relative to a horizontal surface.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year, but at a frequency insufficient to develop a daily record.

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

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed “acidic,” and solutions with a pH greater than 7 are termed “basic.” Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

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

Picocurie (PC, pCi) is one trillionth (**1 x 10^{-12}**) of the amount of radioactive nuclide represented by a curie (**Ci**). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (**dps**). A picocurie yields 0.037 dps, or 2.22 dpm (**disintegrations per minute**).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (**cells/mL of sample**).

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

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (**PCBs**) and have been identified in commercial **PCB** preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

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

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [**mg C/(m^2/time)**] for periphyton and macrophytes or per volume [**mg C/(m^3/time)**] for phytoplankton. Carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (**carbon-14**). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period. (**See also "Primary productivity"**)

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [**mg O/(m^2/time)**] for periphyton and macrophytes or per volume [**mg O/(m^3/time)**] for phytoplankton. Oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (**See also "Primary productivity"**)

Radioisotopes are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

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

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "**recurrence interval**" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow (**$7Q_{10}$**) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (**See "Recurrence interval"**)

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (**October 1968**) of the Water Resources Council, and typically used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin in a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (**See also "Annual runoff"**)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums, (**NGVD 1929 or NAVD 1988**). See separate entries for definitions of these datums. See conversion of units page (inside back cover) for identification of the datum used in this report.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "**fluvial sediment**." Sediment 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 and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day 10-year low flow (7Q10) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-run average. The recurrence interval of the 7Q10 is 10 years; the chance that the annual 7-day minimum flow will be less than the 7Q10 is 10 percent in any given year. (**See also "Recurrence interval" and "Annual 7-day minimum**")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (**in milligrams per liter**) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MILL/MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific waters, to evaluate mixing of different waters, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (**See "Gage height"**)

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

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

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (**<2mm, sand or finer**). Below are the class categories expressed as percent covered by fine sediment:

0	< no gravel or larger substrate
1	> 75%
2	51-75% 45-25%
3	26-50% 5 < 5%

Surface area of a lake is that area (**acres**) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (**0.1 to 0.2 ft**) of the bed material such as that material which is sampled using U.S. Series Bed-Material Samplers.

Suspended (**as used in tables of chemical analyses**) refers to the amount (**concentration**) of undissolved material in a water-sediment mixture. It is operationally defined as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (**See also "Sediment"**)

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (**mg/L**). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (**See also "Sediment" and "Suspended sediment"**)

Suspended-sediment discharge (tons/day) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (**mg/L**) x discharge (**ft^3/s**) x 0.0027. (**See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration"**)

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "**annual suspended-sediment load**" or "**sand-size suspended-sediment load**," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (**See also "Sediment"**)

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

Suspended solids, total residue at 105 ˚C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (**mg/L**). An aliquot of the sample is used for this analysis.

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (**taxa**) present in a defined area or sampling unit.

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

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

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder' is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (**See also "Bacteria"**)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "**total chloride discharge**," and so on.

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

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (**tail**) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (**See also "Organism count/volume"**)

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

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (**See also "Sediment," "Suspended sediment," "Suspended-Sediment Concentration," "Bedload," and "Bedload discharge"**)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "**annual suspended-sediment load**" or "**sand-size suspended-sediment load**," and so on. It differs from total sediment discharge in that load refers to the material whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (**See also "Sediment," "Suspended-Sediment Load," and "Total load"**)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values. Consequently, the method of measurement and type of instrument used to derive turbidity records should be included in the "**REMARKS**" column of the Annual Data Report.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of **UV** absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. **UV** absorbance (**absorption**) at 254 or 280 nanometers is measured in **UV** absorption units per centimeter of pathlength of UV light through a sample.

Vertical datum (**See "Datum"**)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many **VOCs** are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. **VOC** contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (**U.S. Environmental Protection Agency, 1996**).

Water year in USGS 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, 2002, is called the "**2002 water year**."

WDR is used as an abbreviation for "**Water-Data Report**" in the "**REVISED RECORDS**" paragraph to refer to State annual hydrologic-data reports. (**WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.**)

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

Wet mass is the mass of living matter plus contained water. (**See also "Biomass" and "Dry mass"**)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (**See also "Dry weight**")

WSP is used as an acronym for "**Water-Supply Paper**" in reference to previously published reports.

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

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals titled the **"Techniques of Water-Resources Investigations"** that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at **http://water.usgs.gov/pubs/twri/**. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superintendent of Documents, Government Printing Office). Please telephone **"1-888-ASK-USGS"** for current prices, and refer to the title, book number, section number, chapter number, and mention the **"U.S. Geological Survey Techniques of Water-Resources Investigations."** Other products can be viewed online at **http://www.usgs.gov/sales.html**, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are available online at **http://mac.usgs.gov/isb/pubs/forms/**. Prepayment by major credit card or by a check or money order payable to the **"U.S. Geological Survey"** is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1-D1. **Water temperature--influential factors, field measurements, and data presentation**, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. **Guidelines for collection and field analysis of ground-water samples for selected unstable constituents**, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2-D1. **Application of surface geophysics to ground-water investigations**, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. **Application of seismic-refraction techniques to hydrologic studies**, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

Section E. Subsurface Geophysical Methods

2-E1. **Application of borehole geophysics to water-resources investigations**, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

2-E2. **Borehole geopphysics applied to ground-water investigations**, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sample Methods

2-F1. **Application of drilling, coring, and sampling techniques to test holes and wells**, by Eugene Shuter and W. E. Teasdale: USGS-TWRI Book 2, Chapter F1. 1989. 97 pages.

Book 3. Application of Hydraulics

Section A. Surface-Water Techniques

3-A1. **General field and office procedures for indirect discharge measurements**, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. **Measurement of peak discharge by the slope-area method**, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. **Measurement of peak discharge at culverts by indirect methods**, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. **Measurement of peak discharge at width contractions by indirect methods**, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. **Measurement of peak discharge at dams by indirect methods**, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. **General procedure for gaging streams**, by R. W. Carter and Jacob Dividian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. **Stage measurements at gaging stations**, T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. **Discharge measurements at gaging stations**, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. **Measurement of time of travel and dispersion in streams by dye tracing**, by F. A. Kilpatrick, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. **Discharge ratings at gaging stations**, E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. **Measurement of discharge by moving-boat method**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

Book 3. Application of Hydraulics--Continued

***Section A. Surface-Water Techniques**--Continued*

3-A12. **Flurometric procedures for dye tracing**, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 34 pages.

3-A13. **Computation of continuous records of streamflow**, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. **Use of flumes in measuring discharge**, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. **Computation of water-surface profiles in open channels**, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. **Measurement of discharge using tracers**, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. **Acoustic velocity meter systems**, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. **Determination of stream reaeration coefficients by use of tracers**, by F. A. Kilpatrick, R. E. Rathbun, Nobuhiro Yotsukura, G. W. Parker, and L. L. Delong: USGS-TWRI Book 3, Chapter 18. 1989. 52 pages.

3-A19. **Levels of streamflow gaging stations**, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.

3-A20. **Simulation of soluble waste transport and buildup in surface waters using tracers**, by F. A. Kilpratrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.

3-A21. **Stream-gaging cableways**, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

3-B1. **Aquifer-test design, observation, and data analysis**, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pges.

3-B2. **Introduction to ground-water hydraulics, a programmed text for self-instruction**, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. **Type curves for selected problems of flow to wells in confined aquifers**, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. **Regression modeling of ground-water flow**, by R. L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B4. **Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems**, by R. L. Cooley: USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.

3-B5. **Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction**, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. **The principle of superposition and its application in ground-water hydraulics**, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.

3-B7. **Analytical solutions for one-, two-, and three dimensional solute transport in ground-water systems with uniform flow**, by E. J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.

3–B8. **System and boundary conceptualization in ground-water flow simulation**, by T.E. Reilly: USGS–TWRI Book 3, Chapter B8. 2001. 29 pages.

Section C. Sedimentation and Erosion Techniques

3-C1. **Fluvial sediment concepts**, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. **Field methods of measurement of fluvial sediment**, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, Chapter C2. 1999. 89 p.

3-C3. **Computation of fluvial-sediment discharge**, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

Book 4. Htdrologic Analysis and Interpretation

Section A. Statistical Analysis

4-A1. **Some statistical tools in hydrology**, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. **Frequency curves**, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4–A3. **Statistical methods in water resources**, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at **http://water.usgs.gov/pubs/twri/twri4a3/**. (Accessed August 30, 2002.)

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

Book 4. Hydrologic Analysis and Interpretation--Continued

Section B. Surface Water

4-B1. **Low-flow investigations**, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. **Storage analyses for water supply**, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. **Regional analyses of streamflow characteristics**, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. **Computation of rate and volume of stream depletion by wells**, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

Book 5. Laboratory Analysis

Section A. Water Analysis

5-A1. **Methods for determination of inorganic substances in water and fluvial sediments**, by M. J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. **Determination of minor elements in water by emission spectroscopy**, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. **Methods for determination of organic substances in water** and fluvial sediments, by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.

5-A4. **Methods for collection and analysis of aquatic biological and microbiological samples**, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. **Methods for determination of radioactive substances in water and fluvial sediments**, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. **Quality assurance practices for the chemical and biological analyses of water and fluvial sediments**, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

5-C1. **Laboratory theory and methods for sediment analysis**, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

Book 6. Modeling Techniques

Section A. Ground Water

6-A1. **A modular three-dimensional finite-difference ground-water flow model**, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.

6-A2. **Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model**, by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.

6-A3. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 1: Model Description and User's Manual**, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.

6-A4. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions**, by R. L. Cooley: USGS-TWRI Book 6, Chapter A4. 1992. 108 pages.

6-A5. **A modular finite-element model (MODFE) for areal and axisymetric ground-water-flow problems, Part 3: Design philosophy and programming details**, by L. J. Torak: USGS--TWRI Book 6, Chapter A5. 1993. 243 pages.

6-A6. **A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction**, by E.D. Swain and E.J. Wexler: USGS--TWRI Book 6, Chapter A6. 1995. 125 pages.

6–A7. **User’s guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow,** by Weixing Guo and C. D. Langevin: USGS–TWRI book 6, Chapter A7, 2002. 77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7-C1. **Finite difference model for aquifer simulation in two dimensions with results of numerical experiments**, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. **Computer model of two-dimensional solute transport and dispersion in ground water**, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. **A model for simulation of flow in singular and interconnected channels**, by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

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Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8-A1. **Methods of measuring water levels in deep wells**, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-A2. **Installation and service manual for U. S. Geological Survey manometers**, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

Section B. Instruments for Measurement of Discharge

8-B2. **Calibration and maintenance of vertical-axis type current meters**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. **National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling**, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A1. 1998. Variously paginated.

9-A2. **National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A2. 1998. Variously paginated.

9-A3. **National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A3. 1998. Variously paginated.

9-A4. **National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A4. 1999. Variously paginated.

9-A5. **National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples**, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A5. 1999. Variously paginated.

9-A6. **National Field Manual for the Collection of Water-Quality Data: Field Measurements**, edited by F.D. Wilde and D.B. Radtke: USGS--TWRI Book 9, Chapter A6. 1998. Variously paginated.

9-A7. **National Field Manual for the Collection of Water-Quality Data: Biological Indicators**, edited by D.N. Myers and F.D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997 and 1999. Variously paginated.

9-A8. **National Field Manual for the Collection of Water-Quality Data: Bottom-material samples**, edited by D.B. Radtke: USGS--TWRI Book 9, Chapter A8. 1998. Variously paginated

9-A9. **National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities**, edited by S.L. Lane and R.G. Fay: USGS--TWRI Book 9, Chapter A9. 1998. Variously paginated.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE

Listed below is a selection of reports on surface-water resources in Delaware which are available through the U.S. Geological Survey, Book and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, Colorado 80225. **An asterick (*) indicates that the publication is out of print and is not purchasable from any official source.**

PROFESSIONAL PAPERS

P-822 Cushing, E.M., Kantrowitz, I.H., and Taylor K.R., 1973, **Water resources of the Delmarva Peninsula**, 58 p.

P-750-D Johnston, R. H., 1971, **Base flow as an indicator of aquifer characteristics in the Coastal Plain of Delaware**: Geological Survey Research, p. D212-D215.

P-600-B Williams, O.O., 1968, **Reservoir effects on downstream water temperatures in the upper Delaware River basin**: Geological Survey Research, p. B195-B199.

P-485-A* Sigafoos, R.S., 1964, **Botanical evidence of floods and flood-plain deposition**, p. A1-A35.

P-450-E Giustic, E.V., and Schneider. W.J., 1962, **Comparison of drainage on topographic maps of the Piedmont province in Short papers in geology, hydrology, and topography**: Geological Survey Research, article 212, p. E1-E189.

P-424-B Carter, R.W., 1961, **Magnitude and frequency of floods in suburban areas in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 5, p. B9-B11.

P-417-B* Hely, A.G., and Olmsted, F.H., 1963, **Some relations between streamflow characteristics and the environment in the Delaware River region**, p. B1-B25.

P-381* Parker, G.G., Hely, A.G., Keighton, W.B., Olmsted, F.H., and others, 1965, **Water resources of the Delaware River basin**, 200 p.

WATER-SUPPLY PAPERS

W-2425 Hayes, M.A., 1997, **Delaware wetland resources, National Water Summary--Wetland Resources**, p. 147-152.

W-2400 **Delaware: Surface-Water Resources**

W-2375 **National Water Summary 1988-89--Floods and Droughts: Delaware**

W-2355-A Robert J. Shedlock, Judith M. Denver, Marta A. Hayes, Pixie A. Hamilton, Michael T. Koterba, Leon Joseph Bachman, Patrick J. Phillips, and William S.L. Banks, 1999, **Water-quality assessment of the Delmarva Peninsula, Delaware, Maryland, and Virginia: Results of Investigations**, 1987-91 41 p.

W-2300 Simmons, R.H., **Delaware surface-water resources *in* U.S. Geological Survey, 1986, National Water Summary 1985--Hydrologic events**, p. 181-186.

W-1871 Schneider, W.J., 1968, **Water data for metropolitan areas-A summary of data from 222 areas in the United States**, 397 p.

W-1849 Barnes, H.H., Jr., 1967, **Roughness characteristics of natural channels**, 213 p.

W-1838 Martin, R.O.R., and Hanson, R.L., 1966, **Reservoirs in the United States**, 115 p.

W-1813 Dalrymple, Tate, 1965, **Flood peak runoff and associated precipitation in selected drainage basins in the United States**, 406 p.

W-1812 Durfor, C.N., and Becker, Edith, 1964, **Public water supplies of the 100 largest cities in the United States, 1962**, 364 p.

W-1809-O Keighton, W.B., 1965, **Delaware River water quality, Bristol to Marcus Hook, Pennsylvania, August 1949 to December 1963**, 57 p.

W-1767* Rasmussen, W.C., Odell, J.W., and Beamer, N.H., 1966, **Delaware water**, 106 p.

W-1699-N Hardison, C.H., and Martin, R.O.R., 1963, **Water-supply characteristics of streams in the Delaware River basin and in southern New Jersey**, p. N1-N45.

W-1619-T Slaughter, T.H., 1962, **Beach-area water supplies between Ocean City, Maryland, and Rehoboth Beach, Delaware**, p. T1-T10.

W-1594-B Boggess, D.H., and Rima, D.H., 1962, **Experiments in water spreading at Newark, Delaware**, p. B1-B15.

W-1586-B* Cohen, Bernard, and McCarthy, L.T., Jr., 1962, **Salinity of the Delaware estuary**, p. B1-B57.

W-1586-C Miller, E.G., 1962, **Observations of tidal flow in the Delaware River**, p. C1-C26.

W-1586-E Lendo, A.C., 1966, **Record low tide of December 31, 1962, on the Delaware River**, p. E1-E20.

W-1586-G Keighton, W.B., 1966, **Fresh-water discharge-salinity relations in the tidal Delaware River**, p. G1-G16.

W-1473 Hem, J.D., 1959, **Study and interpretation of the chemical characteristics of natural water**, p. 269.

W-1420* Bogart, D.B., 1960, **Floods of August-October 1955, New England to North Carolina**, 854 p.

W-1302 Geological Survey Research, 1960, **Compilation of records of surface waters of the United States through September 1950-Part 1B, North Atlantic slope basins, New York to York River**, 679 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE--Contimued

WATER-SUPPLY PAPERS--Continued

W-1299 Lohr, E.W., and Love, S.K., 1954, **The industrial utility of public water supplies in the United States, 1952 *in* Part 1, States east of...**

W-1262 Durfor, C.N., and Keighton, W.B., 1954, **Chemical characteristics of Delaware River water, Trenton, New Jersey, to Marcus Hook, Pennsylvania**, 173 p.

W-995* Jones, B.E., and Helland, R.O., 1948, **Index to river surveys made by the United States Geological Survey and other agencies revised to July 1, 1947**, 145 p.

W-340* Wood, B.D., 1916, **Stream-gaging stations and publications relating to water resources, 1885-1913**, 195 p.

W-236* Dole, R.B., 1909, **The quality of the surface waters in the United States *in* Part 1, Analyses of waters east of the one-hundredth meridian**, 123 p.

W-57 U.S. Geological Survey, 1902, **Deep borings in the United States, Part I, Delaware**, p. 21.

W-44* Gannett, Henry, 1901, **Profiles of rivers in the United States**, 100 p.

CIRCULARS

C-381* Knox, C.F., 1956, **Index to surface-water records to September 30, 1955 *in* Part 1, North Atlantic slope basins**, 30 p.

C-190* Geological Survey Research, 1952, **Index to water-resources records in the Delaware River basin to September 30, 1951**, 19 p.

BULLETINS

B-1428 Marcus, P.A., 1976, **Directory to U.S. Geological Survey program activities in coastal areas, 1974-1976**, 154 p.

B-1245* Heck, l.W., Wraight, A.J., Orth, D.R., Carter, J.R., VanWinkle, L.G., 1966, **Delaware place names**, 124 p.

B-434* Geological Survey Research, 1910, **Results of spirit leveling in Delaware, District of Columbia, Maryland, and Virginia, 1896-1909 inclusive**, 74 p.

B-230* Gannett, Henry, 1904, **A gazetteer of Delaware**, 15 p.

HYDROLOGIC INVESTIGATIONS ATLASES

HA-335 Keighton, W.B., 1969, **Water quality in the Delaware estuary for two years of drought: 1965 and 1966 from Trenton, N.J., to Reedy Island, Del.**, scale 1:1,000,000.

HA-243 Barksdale, H.C., O'Bryan, Deric, Schneider, W.J., 1966, **Effect of drought on water resources in the Northeast**.

HA-61 Rainwater, F.H., 1962, **Stream composition of the conterminous United States**, 3 sheets, 1:24,000.

HA-11 Hely, A.G., Nordenson, T.J., and others, 1961, **Precipitation, water loss, and runoff in the Delaware River basin and New Jersey**, 11 p.

Wilmarth, M.G., 1937, **Delaware**, 1 sheet.

MISCELLANEOUS FIELD STUDIES MAPS

MF-798 Alexander, R.H., Fitzapatrick, K.A., Letke, K.S., Lins, H.F., Jr., and McGinty, H.K., III, 1976, **Land use and land cover in CARETS (Central Atlantic Regional Ecological Test Site) for Delaware, District of Columbia, and portions of Maryland, New Jersey, Pennsylvania, and Virginia**, scale 1:500,000 (1 inch - about 8 miles.)

FACT SHEETS

FS 02-152 Doheny, E.J., and Dillow, J.A., **Adjustments to U.S. Geological Survey Peak-Flow Magnitude-Frequency Relations in Delaware and Maryland Following Hurricane Floyd, September 1999**, 8 p.

FS 01-073 Tallman, A.J., and Fisher, G.T., **Flooding in Delaware and the Eastern Shore of Maryland from Hurricane Floyd, September 1999**, 2001, 4 p.

FS 99-126 by Wheeler, J.C., **Freshwater Use In Delaware**, 1995, 2 p.

FS 97-126 Preston, S.D., **Evaluation of the stream-gaging network in Maryland, Delaware, and Washington, D.C.**, 4 p.

FS 96-140 Zynjuk, L.D., and Majedi, B.S., **January 1996 floods deliver large loads of nutrients and sediments to the Chesapeake Bay**, 2 p.

FS 96-008 **U.S. Geological Survey programs in Delaware**, 4p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE--Continued

WATER-RESOURCES INVESTIGATIONS REPORTS

WRIR 97-4280 Ferrari, M.J., Ator, S.W., Blomquist, J.D., Dysart, J., **Pesticides in surface water of the Mid-Atlantic region**, 12 p.

WRIR 97-4139 Ator, S.W., and Ferrari, M.J., **Nitrate and selected pesticides in ground water of the Mid-Atlantic region**, 8 p.

WRIR 95-4153 Dillow, J.J.A., **Technique for estimating magnitude and frequency of peak flows in Delaware**, 26 p, 3 plates.

WRIR 94-4188 Paulachok, G.N., Simmons, R.H., and Tallmon, A.J., **Storm and flood of July 5, 1989 in Northern New Castle County, Delaware**, 29 p.

WRIR 94-4020 Carpenter, D.H., and Hayes, D.C., **Low flow characteristic of streams in Maryland and Delaware**, 113 p, 10 plates.

WRIR 90-4094 Phelan, D.J., **Water use in the St. Jones River basin, Kent County, Delaware 1983-86**, 30 p.

WRIR 87-4093 Carpenter, D.H., **Cost-effectiveness of the stream-gaging program in Maryland, Delaware, and the District of Columbia**, 85 p.

WRIR 78-93 Simmons, R.H., and Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Delaware**, 69 p.

OPEN-FILE REPORTS

OFR 96-554 Doheny, E.J., **A modified index for assessment of potential scour at bridges over waterways**, 16 p.

OFR 91-505 McFarland, J.A., Weiss, L.S., and others, **Water resources activities of the U.S. Geological Survey**, 130 p.

OFR 89-409 U.S. Geological Survey, **2nd National symposium--Water quality, Abstracts of the technical sessions, Orlando, Florida**, November 12-17, 1989, 150 p.

OFR 86-490 McGreevy, L.J., Hyatt, G.J., Cockey, E.J., **Water resources activities of the U.S. Geological Survey, Mid-Atlantic District 1984-1986**, 129 p.

OFR 78-93 Simmons, R.H., **Technique of estimating magnitude and frequency of floods in Delaware**, 69 p.

OFR 76-71 McKenzie, S.W., **Long-term water-quality trends in Delaware streams**, 72 p.

OFR 74-1015 Carpenter, D.H., **Floods of August and September 1971 in Maryland and Delaware**, 41 p.

1973 **Water resources of the Delmarva Peninsula, a summary report (White House document 93-68) to the Congress**, 59 p.

1972 Taylor, K.R., **A summary of peak stages and discharges in Maryland, Delaware, and District of Columbia for flood of June 1972,** 13 p.

1969 Simmons, R.H., **Floods of August 1967 in Maryland and Delaware**, 98 p.

SELECTED DELAWARE GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN DELAWARE

Listed below is a selection of reports on surface-water resources in Delaware which are available through the Delaware Geological Survey, by writing: Publications, Delaware Geological Survey, University of Delaware, Newark, DE 19716-7501.

BULLETINS

DGS B 10 Cohen, B., and McCarthy, L.T., Jr., 1963, **Salinity of the Delaware estuary**, 54 p.

DGS B 8 Rasmussen, W.C., Wilkens, R.A., Beall, R.M., and others, 1960, **Water resources of Sussex County, Delaware**, 228 p.

DGS B 6 Rasmussen, W.C., Groot, J.J., Martin, R.O.R., McCarren, E.F. Behn, V.C., and others, 1957, **The water resources of northern Delaware**, 223 p.

REPORTS OF INVESTIGATIONS

DGS RI 57 Doheny, E.J., 1998, **Evaluation of the stream-gaging network in Delaware**, 47 p.

DGS RI 8 Baker, W.W., Varrin, R.D., Groot, J.J., and Jordan, R.R., 1966, **Evaluation of the water resources of Delaware**, 47 p.

DGS RI 1 Cohen, B., 1957, **Salinity of the Delaware Estuary**, 85 p.

OPEN-FILE REPORTS

DGS OFR 40 Ramsey, K.W., Leathers, D.J., Wells, D.V., and Talley, J.H., **Summary Report, The Coastal Storms of January 27-29 and February 4-6, 1998, Delaware and Maryland**, 43 p.

DGS OFR 37 Ramsey, K.W., Talley, J.H., and Wells, D.V., **Summary Report: The coastal storm of December 10-14, 1992, Delaware and Maryland**, 29 p.

DGS OFR 36 Ramsey, K.W., qnd Talley, J.H., **Summary Report for the Coastal Storm of January 4, 1992**, 19 p.

DGS OFR 31 Talley, J.H., 1989, **The storm of July 5, 1989: Hydrologic conditions**, 29 p.

DGS OFR 18 Jordan, R.R., and Woodruff, K.D., 1982, **A numerical indicator of water conditions for northern Delaware**, 17 p.

DGS OFR 17 Schenck, W.S., 1982, **A guide to information on benchmarks in Delaware**,

INFORMATION SERIES

DGS I-6 Schenck, W.S., 1989, **Delaware's State boundaries**.

DGS I-5 Woodruff, K.D., 1988, **Earthquakes in Delaware**.

DGS I-1 Schenck, W.S., 1986, **Delaware Geological Survey Cartographic Information Center**.

SPECIAL PUBLICATIONS

DGS SP 17 Groot, J.J., 1988, **The Delaware Geological Survey: The formative years, 1951-1969**, 28 p.

DGS SP 14 Talley, J.H., and Andres, A.S., 1987, **Basic hydrologic data for Coastal Sussex County, Delaware**, 101 p.

DGS SP 3 Woodruff, K.D., and Talley, J.H., **Summary of water conditions in Delaware**, 4 p.

DGS SP 2 **Long range plan for Water Resources Investigations in Delaware, 1961**, 29 p.

DGS SP 1 **The story of your State Geological Survey's search for water**, 12 p.

UNPUBLISHED

Talley, J.H., **Summary report and data compilation for the storm of July 29, 1980 near Smyrna, Delaware**, 17 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND

Listed below is a selection of reports on surface-water resources in Maryland which are available through the U.S. Geological Survey, Book and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, Colorado 80225. **An asterick (*) indicates that the publication is out of print and is not purchasable from any official source.**

PROFESSIONAL PAPERS

P-1003 Yorke, T.H., and Herb, W.J., 1978, **Effects of urbanization on streamflow and sediment transport in the Rock Creek and Anacostia River basins**, Montgomery County, Maryland, 1962-74, 71 p.

P-800-C Breger, I.A., Zubovic, Peter, Chandler, J.C., 1972, **Preliminary studies of collodial substances in the water and sediments of the Chesapeake Bay**: Geological Survey Research, p. C263.

P-750-B Yorke, T.H., and Davis, W.J., 1971, **Effects of urbanization on sediment transport in Bel Pre Creek basin, Maryland**: Geological Survey Research, p. B218-B223.

P-650-C Trainer, F.W., 1969, **Drainage density as an indicator of base flow in part of the Potomac River basin**: Geological Survey Research, p. C177.

P-650-D Trainer, F.W., 1970, **Precipitation and base runoff, Big Pipe Creek basin, Maryland**: Geological Survey Research, p. D222.

P-575-C* Hanson, R.L., 1967, **Characteristics of summer baseflow of the Potomac River**: Geological Survey Research, p. C212-C215.

P-485-A* Sigafoos, R.S., 1964, **Botanical evidence of floods and flood-plain deposition**, p. A1-A35.

P-475-D* Cory, R.L., 1964, **Environmental factors affecting attached microorganisms, Patuxent River estuary, Maryland in Short papers in geology and hydrology**: Geological Survey Research, article 165, p. D194-D197.

P-450-C* Keller, F.J., 1962, **Effect of urban growth on sediment discharge, Northwest Branch Anacostia River basin, Maryland in Short papers in geology and hydrology**: Geological Survey Research, article 113, p. C129-C131.

P-450-D Eisenlohr, W.S., 1962, **Use of short records of runoff to estimate a 25-year average runoff in the Potomac River basin in Short papers in geology and hydrology**: Geological Survey Research, article 173, p. D178-D179.

P-450-D Feltz, H.R., and Wark, J.W., 1962, **Solute degradation in the Potomac River basin in Short papers in geology and hydrology**: Geological Survey Research, article 177, p. D186-D187.

P-450-E Giustic, E.V., and Schneider. W.J., 1962, **Comparison of drainage on topographic maps of the Piedmont province in Short papers in geology, hydrology, and topography**: Geological Survey Research, article 212, p. E1-E189.

P-424-B Carter, R.W., 1961, **Magnitude and frequency of floods in suburban areas in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 5, p. B9-B11.

P-424-C* Sigafoos, R.S., 1961, **Vegetation in relation to flood frequency near Washington, D.C. in Short papers in the geologic and hydrologic sciences**: Geological Survey Research, article 238, p. C248.

P-294-B* Hack, J.T., 1957, **Studies of longitudinal stream profiles in Virginia and Maryland**, p. 45-97.

P-154* Wells, R.C., Bailey, R.K., and Henderson, E.P., 1928, **Salinity of the water of Chesapeake Bay in Shorter contributions to general geology**: Geological Survey Research, p. 105-152.

P-90-B* Hunter, J.R., 1915, **Erosion and sedimentation in Chesapeake Bay around the mouth of Choptank River in Shorter contributions to general geology**: Geological Survey Research, p. 7-15.

P-72* Glenn, L.C., 1911, **Denudation and erosion in the southern Appalachian region and the Monongahela basin**, 137 p.

WATER-SUPPLY PAPERS

W-2425 Hayes, M.A., 1997, **Maryland and the District of Columbia wetland resources**, p. 219-224.

w-2400 **Maryland and the District of Columbia: Surface-Water Resources**

w-2375 **National Water Summary 1988-89--Floods and Droughts: Maryland and the District of Columbia**

W-2355-A Robert J. Shedlock, Judith M. Denver, Marta A. Hayes, Pixie A. Hamilton, Michael T. Koterba, Leon Joseph Bachman, Patrick J. Phillips, and William S.L. Banks, 1999, **Water-quality assessment of the Delmarva Peninsula, Delaware, Maryland, and Virginia: Results of Investigations**, 1987-91 41 p.

W-2347 Fisher, G.T., and Katz, B.G., 1988, **Urban stormwater runoff--Selected background information and techniques for problem assessment, with a Baltimore, Maryland, case study**, 30 p.

W-2296 Lantrip, B.M., and others, 1987, **Sediment/water-column flux of nutrients and oxygen in the tidal Patuxent River and estuary, Maryland**, 76 p.

W-2234 Glenn, J.L., 1988, **Bottom sediments and nutrients in the tidal Potomac system, Maryland and Virginia**, 74 p.

W-2234-A Carter, Virginia, Paschal, J.E., Jr., and Bartow, N.C., 1985, **Distribution and abundance of submersed aquatic vegetation in the tidal Potomac River and estuary, Maryland and Virginia, May 1978 to November 1981**, 46 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

WATER-SUPPLY PAPERS--Continued

W-2234-E Miller, A.J., 1987, **Shore erosion as a sediment source to the tidal Potomac River, Maryland and Virginia**, 45 p.

W-2234-G Hickman, R.E., 1987, **Loads of suspended sediment and nutrients from local nonpoint sources to the tidal Potomac River and estuary, Maryland and Virginia, 1979-1981 water years**, 35 p.

W-2234-I Dresler, P.V., 1980, **Benthic communities of the tidal Potomac River and Estuary, Maryland and Virginia, November 1977 through August 1979**, 149 p.

W-2234-J Shultz, D.J., 1989, **Nitrogen dynamics in the tidal freshwater Potomac River, Maryland and Virginia, water years 1979-1981**, 99 p.

W-2257 Taylor, K.R., James, R.W., Jr., and Helinsky, B.M., 1985, **Traveltime and dispersion in the Potomac River, Cumberland, Maryland to Washington, D.C.**, 30 p.

W-2071 Herb, W.J., 1980, **Sediment-trap efficiency of a multiple-purpose impoundment, North Branch Rock Creek basin, Montgomery County, Maryland, 1968-76**, 41 p.

W-1871 Schneider, W.J., 1968, **Water data for metropolitan areas-A summary of data from 222 areas in the United States**, 397 p.

W-1849 Barnes, H.H., Jr., 1967, **Roughness characteristics of natural channels**, 213 p.

W-1838 Martin, R.O.R., and Hanson, R.L., 1966, **Reservoirs in the United States**, 115 p.

W-1815 O'Bryan, Deric, and McAvoy, R.L., 1966, **Gunpowder Falls, Maryland: Uses of a water resource today and tomorrow**, 90 p.

W-1813 Dalrymple, Tate, 1965, **Flood peak runoff and associated precipitation in selected drainage basins in the United States**, 406 p.

W-1812 Durfor, C.N., and Becker, Edith, 1964, **Public water supplies of the 100 largest cities in the United States, 1962**, 364 p.

W-1619-T Slaughter, T.H., 1962, **Beach-area water supplies between Ocean City, Maryland, and Rehoboth Beach, Delaware**, p. T1-T10.

W-1532-F Williams, K.F., and Reed, L.A., 1972, **Appraisal of stream sedimentation in the Susquehanna River basin**, F1-F24.

W-1499-F Otton, E.G., Martin, R.O.R., and Durum, W.H., 1964, **Water resources of the Baltimore area, Maryland**, F1-F105.

W-1473 Hem, J.D., 1959, **Study and interpretation of the chemical characteristics of natural water**, p. 269.

W-1472 Rasmussen, W.C., and Andreasen, G.E., 1959, **Hydrologic budget of the Beaverdam Creek basin, Maryland**, 106 p.

W-1420* Bogart, D.B., 1960, **Floods of August-October 1955, New England to North Carolina**, 854 p.

W-1302 Geological Survey Research, 1960, **Compilation of records of surface waters of the United States through September 1950-Part 1B, North Atlantic slope basins, New York to York River**, 679 p.

W-1299 Lohr, E.W., and Love, S.K., 1954, **The industrial utility of public water supplies in the United States, 1952 *in* Part 1, States east of...**

W-995* Jones, B.E., and Helland, R.O., 1948, **Index to river surveys made by the United States Geological Survey and other agencies revised to July 1, 1947**, 145 p.

W-800* Geological Survey Research, 1937, **The floods of March 1936 *in* Part 3, Potomac, James, and upper Ohio Rivers**, 351 p.

W-340* Wood, B.D., 1916, **Stream-gaging stations and publications relating to water resources, 1885-1913**, 195 p.

W-236* Dole, R.B., 1909, **The quality of the surface waters in the United States *in* Part 1, Analyses of waters east of the one-hundredth meridian**, 123 p.

W-192* Parker, H.N. and others, 1907, **The Potomac River basin**, 364 p.

W-145* Stose, G.W., and Martin, G.C., 1905, **Water resources of the Pawpaw and Hancock quadrangles, West Virginia, Maryland, and Pennsylvania in Contributions to the hydrology of the Eastern United States:** Geological Survey Research, p. 58-63.

W-110 Martin, G.C., 1904, **Water resources of the Accident and Grantsville Quadrangles, Maryland**, p. 168-173.

W-57 U.S. Geological Survey, 1902, **Deep borings in the United States, Part I, Maryland**, p. 50.

W-110-A* Martin, G.C., 1905, **Water resources of the Accident and Grantsville quadrangles, Maryland in Contributions to the hydrology of the Eastern United States**: Geological Survey Research, p. 168-170.

W-110-B* Martin, G.C., 1905, **Water resources of the Frostburg and Flintstone quadrangles, Maryland and West Virginia in Contributions to the hydrology of the Eastern United States**: Geological Survey Research, p. 171-173.

W-44* Gannett, Henry, 1901, **Profiles of rivers in the United States**, 100 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

CIRCULARS

C-1166 Ator, S.W., Blomquist, J.D., Brakebill, J.W., Denis, J.M., Ferrari, M.J., Miller, C.V., Zappia, H., **Water quality in the Potomac River basin, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, 1992-96**, 38 p.

C-529-A Durum, W.H., and Langbein, W.B., 1966, **Water quality of the Potomac River estuary at Washington, D.C.**, 9 p.

C-529-B Wilson, J.F., Jr., Cobb, E.D., and Yotsukura, Nobuhiro, 1969, **Movement of a solute in the Potomac River estuary at Washington, D.C., at low inflow conditions**, 14 p.

C-526* Biesecker, J.E., and George, J.R., 1966, **Stream quality in Appalachia as related to coalmine drainage, 1965**, 27 p.

C-438 Searcy, J.K., and Davis, L.C., Jr., 1961, **Time of travel of water in the Potomac River, Cumberland to Washington**, 12 p.

C-381* Knox, C.F., 1956, **Index to surface-water records to September 30, 1955 *in* Part 1, North Atlantic slope basins**, 30 p.

C-204* Geological Survey Research, 1952, **Floods in Youghiogheny and Kiskiminetas River basins, Pennsylvania and Maryland, frequency and magnitude**, 22 p.

BULLETINS

B-434* Geological Survey Research, 1910, **Results of spirit leveling in Delaware, District of Columbia, Maryland, and Virginia, 1896-1909 inclusive**, 74 p.

B-231* Gannett, Henry, 1904, **A gazetteer of Maryland**, 15 p.

HYDROLOGIC INVESTIGATIONS ATLASES

HA-365 Weigle, J.M., Webb, W.E., and Gardner, R.A., 1970, **Water resources of southern Maryland**, scale 1:250,000.

HA-244 Crooks, J.W., O'Bryan, Deric, and others, 1967, **Water resources of the Patuxent River basin, Maryland**, scale 1:250,000, 5 sheets.

HA-243 Barksdale, H.C., O'Bryan, Deric, Schneider, W.J., 1966, **Effect of drought on water resources in the Northeast**.

HA-198 Schneider, W.J., 1965, **Water resources of the Appalachian Region, Pennsylvania to Alabama**.

HA-61 Rainwater, F.H., 1962, **Stream composition of the conterminous United States**, 3 sheets, 1:24,000.

Wilmarth, M.G., 1937, **Maryland**, 2 sheets.

MISCELLANEOUS GEOLOGIC INVESTIGATIONS MAPS

I-1313-H Lynch, D.D., Nuckels, E.H., Zenone, Chester, 1987, **Low-flow characteristics and chemical quality of streams in the Culpeper geologic basin, Virginia and Maryland**, 2 sheets.

I-858-A 1970, **Land use map, Washington urban area, District of Columbia, Maryland, and Virginia**, scale 1:100,000.

I-858-C 1970, **Census tracts, Washington urban area, District of Columbia, Maryland, and Virginia**, scale 1:100,000.

I-858-D 1976, **Land use change map, 1970-72, Washington urban area, D.C., Md., and Va.**, scale 1:100,000 (1 inch = about 1.6 miles.)

MISCELLANEOUS FIELD STUDIES MAPS

MF-798 Alexander, R.H., Fitzapatrick, K.A., Letke, K.S., Lins, H.F., Jr., and McGinty, H.K., III, 1976, **Land use and land cover in CARETS (Central Atlantic Regional Ecological Test Site) for Delaware, District of Columbia, and portions of Maryland, New Jersey, Pennsylvania, and Virginia**, scale 1:500,000 (1 inch - about 8 miles.)

FACT SHEETS

FS 02-152 Doheny, E.J., and Dillow, J.A., **Adjustments to U.S. Geological Survey Peak-Flow Magnitude-Frequency Relations in Delaware and Maryland Following Hurricane Floyd, September 1999**, 8 p.

FS 01-073 Tallman, A.J., and Fisher, G.T., **Flooding in Delaware and the Eastern Shore of Maryland from Hurricane Floyd, September 1999**, 4 p.

FS 00-157 by Scott W. Ator and Judith M. Denver (U.S. Geological Survey) and Ann M. Pitchford (U.S. Environmental Protection Agency), **Developing landscape-indicator models for pesticides and nutrients in streams of the Mid-Atlantic Coastal Plain**

FS 98-115 Wheeler, J.C., **Freshwater use in Maryland**, 2 p.

FS 98-003 Langland, M.J., **Changes in sediment and nutrient storage in three reservoirs in the lower Susquehanna River Basin and implications for the Chesapeake Bay**, 4 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

FACT SHEETS--Continued

FS 97-126 Preston, S.D., **Evaluation of the stream-gaging network in Maryland, Delaware, and Washington, D.C.**, 4 p.

FS 96-140 Zynjuk, L.D., and Majedi, B.S., **January 1996 floods deliver large loads of nutrients and sediments to the Chesapeake Bay**, 2 p.

FS 96-020 **U.S. Geological Survey Programs in Maryland and the District of Columbia**, 4 p.

FS 95-161 Denis, J.D., and Blomquist, J.D., **Nitrate in streams in the Great Valley carbonate subunit of the Potomac River Basin**, 4 p.

FS 95-136 Rice, K.C., and Bricker, O.P., **Seasonal cycles in streamwater quality on Catoctin Mountain, Maryland**, 2 p.

FS 95-107 Fisher, G.T., **Selected herbicides in major streams in the Potomac River Basin upstream from Washington, D.C.**, 4 p.

WATER-RESOURCES INVESTIGATIONS REPORTS

A pound sign (#) indicates that a report was published as an USGS Water-Resources Investigations Report and a USGS Open-File Report.

WRIR 00-4218 Sprague, L.I., Langland, M.J., ochum, S.E., Edwards, R.E., Blomquist, J.D., Phillips, S.W., Shenk, G.W., and Preston, S.D., **Factors Affecting Nutrient Trends in Major Rivers of the Chesapeake Bay Watershed**, 98 p.

WRIR 00-4156 Yochum, S.E., **A Revised Load Estimation Procedure for the Susquehanna, Potomac, Patuxent, and Choptank Rivers**, 49 p.

WRIR 99-4238 Belval, D.L. and Sprague, L.A., **Monitoring Nutrients in the Major Rivers Draining to Chesapeake Bay**, 8 p.

WRIR 99-4054 Preston, J.D. and Brakebill, J.W., **Application of Spatially Referenced Regression Modeling for the Evaluation of Total Nitrogen Loading in the Chesapeake Bay Watershed**, 12 p.

WRIR 98-4177 Darrell, L.C., Majedi, B.F., Lizarraga, J.S., and Blomquist, J.D., **Nutrient and Suspended-Sediment Concentrations, Trends, Loads, and Yields From the Nontidal Part of the Susquehanna, Potomac, Patuxent, and Choptank Rivers, 1985-96**, 38 p.

WRIR 97-4279 Dillow, J.J.A., **Technique for simulating peak-flow hydrographs in Maryland**, 39 p.

WRIR 97-4171 Lorah, M.M., Olsen, L.D., Smith, B.L., Johnson, M.A., Fleck, W.B., **Natural attenuation of chlorinated volatile organic compounds in a freshwater tidal wetland, Aberdeen Proving Ground, Maryland**, 95 p.

WRIR 97-4154 Lizarraga, J.S., **Estimation and analysis of nutrient and suspended-sediment Loads at selected sites in the Potomac River basin, 1993-95**, 23 p.

WRIR 97-4139 Ator, S.W., and Ferrari, M.J., **Nitrate and selected pesticides in ground water of the Mid Atlantic region**, 8 p.

WRIR 97-4051, Zappia, H., Fisher, G.T., **Water-quality assessment of the Potomac River basin: Analysis of available pesticide data, 1972-90**, 80 p.

WRIR 96-4273 Preston, S.D., **Study of Nonpoint source nutrient loading in the Patuxent River Basin, Maryland**, 6 p.

WRIR 96-4210 Zappia, Humbert, **Chlordane, DDT, PCb's, and other selected organic compounds in asiatic clams and yellow bullhead in the Potomac River Basin, Maryland, 1992**, 6 p.

WRIR 96-4175 Preston, S.D., and Summers, R.M., **Estimation of nutrient and suspended sediment loads in the Patuxent River Basin, Maryland, water years 1986-90**, 69 p.

WRIR 96-4169 Tenbus, F.J., and Phillips, S.W., **Hydrogeology and chemical quality of water and soil at Carroll Island, Aberdeen Proving Ground, Maryland**, 156 p.

WRIR 96-4034 Gerhart, J.M., and Brakebill, J.W., **Design and implementation of a sampling strategy for a water-quality assessment of the Potomac River Basin**, 31 p.

WRIR 95-4267 Gerhart, J.M., and Blomquist, J.D., **Selected trace-element and organic contaminants in streambed sediments of the Potomac River Basin**, 12 p.

WRIR 95-4221 Blomquist, J.D., and others, **Water-quality assessment of the Potomac River Basin: Basin description and analysis of available nutrient data, 1970-90**, 88 p.

WRIR 95-4155 Rice, K.C., and Bricker, O.P., **Hydrologic and geochemical factors affecting the chemistry of small headwater streams in response to acidic deposition on Catoctin Mountain, North-Central Maryland**, 63 p.

WRIR 95-4154 Dillow, J.J.A., **Technique for estimating magnitude and frequency of peak flows in Maryland**, 55 p.

WRIR 94-4020 Carpenter, D.H., and Hayes, D.C., **Low flow characteristic of streams in Maryland and Delaware**, 113 p, 10 plates.

WRIR 89-4139 Trombley, T.J., **Areal and temporal variations in surface-water quality in the Upper Potomac River basin**, 78 p.

WRIR 88-4213 Carpenter, D.H., **Floods in West Virginia, Pennsylvania, and Maryland, November 1985**, 86 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

WATER-RESOURCES INVESTIGATIONS REPORTS--Continued

WRIR 87-4093 Carpenter, D.H., **Cost-effectiveness of the stream-gaging program in Maryland, Delaware, and the District of Columbia**, 85 p.

WRIR 86-4097 Hopkins, H.T., Fisher, G.T., and McGreevy, L.J., **Reconnaissance of the ground-water, surface-water system in the Zekiah Swamp Run Basin, Charles and Prince Georges Counties, Maryland**, 48 p, 1 plate.

WRIR 85-4241 Trombley, T.J., and Zynjuk, L.D., **Hydrogeology and water quality of the Catoctin Mountain National Park area, Frederick County, Maryland**, 41 p.

WRIR 84-4203 James, R.W., Jr., and Helinsky, B.M., **Time of travel and dispersion in the Jones Falls, Baltimore, Maryland**, 29 p.

WRIR 84-4099 Fisher, G.T., and Katz, B.G., **Analysis of urban storm-water runoff characteristics of four basins in the Baltimore metropolitan area, Maryland**, 58 p.

WRIR 83-4255 Cohen, R.R.H., and Pollock, S.O., **Primary productivity by phytoplankton in the tidal, fresh Potomac River, Maryland, May 1980 to August 1981**, 76 p.

WRIR 82-4062 Trombley, T.J., **Downstream effects of reservoir releases to the Potomac River from Luke, Maryland to Washington, D.C.**, 35 p.

WRIR 82-32 Lang, D.J., **Water quality of the three major tributaries to the Chesapeake Bay, the Susquehanna, Potomac, and James Rivers, January 1979 - April 1981**, 64 p.

WRIR 81-1200# Katz, B.G., **Analysis and characterization of urban storm-water runoff for selected basins in the Baltimore Metropolitan Area--a project plan**, 49 p. (see page 31).

WRIR 81-10 Cory, R.L., and Dressler, P.V., **Diel oxygen variations in the Rhode River Estuary, Maryland, 1970-78**, 19 p.

WRIR 80-1016# Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Maryland**, 79 p. (see page 32)

WRIR 80-78 Lang, D.J., **Water quality monitoring of three major tributaries to the Chesapeake Bay-interim data report**, 66 p.

WRIR 77-20 Cory, R.L., **Water quality in Rhode River at Smithsonian pier near Annapolis, Maryland, January 1974 through December 1975**, 48 p.

WRIR 30-75 Redding, M.J., and Cory, R.L., **Macroscopic benthic fauna of three tidal creeks adjoining the Rhode River, Maryland**.

WRIR 10-74 Cory, R.L, and Redding, J.M., **Water quality in Rhode River at Smithsonian Institute pier near Annapolis, Maryland, April 1970 - December 1974**.

OPEN-FILE REPORTS

A pound sign (#) indicates that a report was published as an USGS Open-File Report and a USGS Water-Resources Investigations Report.

OFR 01-292 Phelan, D.J., Olsen, L.D., Senus, M.P., and Spencer, T.A., **Assessment of volatile organic compounds in surface water at Canal Creek, Aberdeen Proving Grounds, Maryland, November 1999-September 2000**, 49 p.

OFR 00-461 Doheny, E.J., and Fisher, G.T., **Estimated flood frequency and corresponding surface elevations at the confluence of the Potomac and Shenandoah Rivers, Harpers Ferry, West Virginia**, 20 p.

OFR-00-282 Spencer, T.A., Olsen, L.D., Lorah, M.M., and Mount, M.M., **Water-quality and Water-level Data for a Freshwater Tidal Wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, October 1998-September 1999**, 185 p.

OFR-00-203 Olsen, L.D., and Spencer, T.A., **Assessment of Volatile Organic Compounds in Surface Water at West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1999**, 15 p.

OFR-99-213 Doheny, Edward J., **Index of Hydrologic Characteristics and Data Resources for the Gwynns Falls Watershed, Baltimore County and Baltimore City, Maryland,** 17 p.

OFR-99-60 John W. Brakebill and Stephen D. Preston, **Digital Data Used to Relate Nutrient Inputs to Water Quality in the Chesapeake Bay Watershed**, Version 1.0.

OFR 99-57 Miller, C.V., Foster, G.D., Huff, T.B., Garbarino, John R., **Organic Compounds and Trace Elements in the Pocomoke River and Tributaries, Maryland**

OFR 98-180 A.L. Derosier, J.W. Brakebill, J.M. Denis, and S.K. Kelley, **Water-Quality Assessment of the Potomac River Basin: Water-Quality and Selected Spatial Data, 1992-96.**

OFR 97-777 Doheny, E.J., Auer, T.W., and Lamotte, Andrew, **Flood tracking chart for the Potomac River Basin**, 1 oversized sheet.

OFR 97-560 Olsen, L.D., Lorah, M.M., Marchand, E.H., Smith, B.L., and Johnson, M.A., **Hydrogeologic, water-quality, and sediment-quality data for a freshwater tidal wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1992-1996**, 267 p.

OFR 97-200 Doheny, E.J., **Flood-hydrology data for the Potomac River and selected tributaries in the vicinity of the Chesapeake and Ohio Canal National Historical Park, Maryland, West Virginia, and the District of Columbia**, 33 p.

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

OPEN-FILE REPORTS--Continued

OFR 95-560 Olsen, L.D., Lorah, M.M., Marchand, E.H., Smith, B.L., Johnson, M.A., **Hydrogeologic, Eater-quality, and sediment-quality data for a freshwater tidal wetland, West Branch Canal Creek, Aberdeen Proving Ground, Maryland, 1992-96**, 267 p.

OFR 97-200 Doheny, E.J., **Flood-hydrology data for the Potomac River and selected tributaries in the vicinity of the Chesapeake and Ohio Canal National Historical Park, Maryland, West Virginia, and the District of Columbia**, 33 p.

OFR 96-554 Doheny, E.J., **A modified index for assessment of potential scour at bridges over waterways**, 16 p.

OFR 95-282 Lorah, M.M., and Clark, J.S., **Contamination of ground water, surface water, and soil, and evaluation of selected ground-water pumping alternatives in the Canal Creek Area of Aberdeen Proving Ground, Maryland**, 318 p.

OFR 95-151 Rice, K.C., and others, **Hydrologic and water-quality data for two small watersheds on Catoctin Mountain, North-Central Maryland, 1987-93**, 195 p.

OFR 95-135 Doheny, E.J., Helinsky, B.M., and McGregor, R.A., **A technique for preliminary appraisal of potential and observed scour as applied to State-maintained highway bridges in Maryland**, 75 p.

OFR 92-649 Rice, K.C., and Bricker, O.P., **Acid-rain induced changes in stream water quality during storms on Catoctin Mountain, Maryland**, 2 p.

OFR 91-505 McFarland, J.A., Weiss, L.S., and others, **Water resources activities of the U.S. Geological Survey**, 130 p.
OFR 91-157 Gerhart, J.M., **National water-quality assessment program--the Potomac River Basin** (fact sheet).

OFR 89-409 U.S. Geological Survey, **2nd National symposium--Water quality, Abstracts of the technical sessions, Orlando, Florida**, November 12-17, 1989, 150 p.

OFR-88-709 Carter, Virginia, and others, **Data on physical, chemical, and biological characteristics of hydrilla beds, mixed vegetation beds, and unvegetated sites in the tidal Potomac River, Maryland and Virginia**, 196 p.

OFR-88-307 Rybicki, N.B., Anderson, R.T., and Carter, Virginia, **Data on the distribution and abundance of submersed aquatic vegetation in the tidal Potomac River and transition zone of the Potomac estuary, Maryland, Virginia, and the District of Columbia**, 31 p.

OFR 87-379 Fisher, G.T., and Simmons, R.H., **Data base development for water-quality modeling of the Patuxent River basin, Maryland**, 18 p.

OFR 86-490 McGreevy, L.J., Hyatt, G.J., Cockey, E.J., **Water resources activities of the U.S. Geological Survey, Mid-Atlantic District 1984-1986**, 129 p.

OFR 86-486 Lescinsky, J.B., **Floods of November 1985 in West Virginia, Pennsylvania, Maryland, and Virginia**, 33 p.

OFR 85-197 Hodges, A.L., Jr., **Estimated average annual alkalinity of six streams entering Deep Creek Lake, Garrett County, Maryland**, 63 p.

OFR 85-82 Carter, Virginia; Rybicki, N.B.; Anderson, R,T.; Trombley, T.J.; and Zynjuk, G.L., **Data on distribution and abundance of submerged aquatic vegetation in the tidal Potomac River and transition zone of the Potomac estuary, Maryland, Virginia, and the District of Columbia, 1983 and 1984**.

OFR 84-859 Cohen, R.R.H., Pollock, S.O., Stoelzel, V.E., and Boulukos, K.E., **Phytoplankton-abundance and generic-composition date for the Potomac River and Estuary, Maryland**, 29 p.

OFR 84-426 Hilleary, J.T., Hydrologic data: **South Branch Casselman River, Garrett County, and Marsh Run, Washington County, Maryland**, 63 p.

OFR-83-873 Hickman, R.E., **Water quality data for selected streams tributary to the tidal Potomac River and estuary, Maryland and Virginia, 1979-1983 water years**, 69 p.

OFR 83-861 Taylor, K.R., James, R.W., Jr., Helinsky, B.M., **Traveltime and dispersion in the Potomac River, Cumberland, Maryland, to Washington, D.C.**, 71 p.
OFR 83-33 Staubitz, W.W., and Sobashinski, J.R., **Hydrology of Area 6, eastern Coal Province, Maryland, West Virginia, and Pennsylvania**, 131 p.

OFR 81-1200# Katz, B.G., and Fisher, G.T., **Analysis and characterization of urban storm-water runoff for selected basins in the Baltimore, Maryland metropolitan area--a project plan**, 58 p. (see page 27)

OFR 81-812 Staubitz, W.W., **Quality of surface water in the coal mining areas of western Maryland and adjacent areas of Pennsylvania and West Virginia from April 1979 to June 1980**, 106 p.

OFR-81-538 Herb, W.J., Shaw, L.C., and Brown, D.E., **Hydrology of area 5, Eastern Coal Province, Pennsylvania, Maryland, and West Virginia**, 92 p.

OFR 81-10 Cory, R.L., **Diel oxygen variations in the Rhode River Estuary, Maryland, 1970-1978**, 14 p.

OFR 80-1016# Carpenter, D.H., **Technique for estimating magnitude and frequency of floods in Maryland**, 119 p. (see page 28)

OFR 78-171 Herb, W.J., **Excedence probability - Depth relationships of floods for Maryland streams west of Chesapeake Bay**, 14 p.

OFR 76-884 Herb, W.J., **Availability of hydrologic data for Montgomery County, Maryland**, 15 p., 1 sheet, 1:62,500 (1 inch = 1 mile).

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

OPEN-FILE REPORTS--Continued

OFR 76-178 Herb, W.J., **Availability of hydrologic data for Prince Georges County, Maryland**, 7 p.

1974 Carpenter, D.H., **Flood characteristics of small drainage basins in Maryland**, 90 p.

OFR 74-1015 Carpenter, D.H., **Floods of August and September 1971 in Maryland and Delaware**, 41 p.

1973 **Water resources of the Delmarva Peninsula, a summary report (White House document 93-68) to the Congress**, 59 p.

1972 **Sediment yields of urban construction sources, Montgomery County, Maryland, a progress report, Rock Creek Anacostia River basins**, 39 p.

1972 Taylor, K.R., **A summary of peak stages and discharges in Maryland, Delaware, and District of Columbia for flood of June 1972,** 13 p.

1969 Simmons, R.H., **Floods of August 1967 in Maryland and Delaware**, 98 p.

1959 Darling, J.M., **Floods in Maryland, Magnitude and Frequency**, 9 p.

SELECTED MARYLAND GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND

Listed below is a selection of reports on surface-water resources in Maryland which are available through the Maryland Geological Survey, 2300 St. Paul Street, Baltimore, Maryland 21218.

BULLETINS

MGS B 36 Duigon, M.T., and Dine, J.R., 1991, **Water resources of Washington County, Maryland**, 109 p.

MGS B 35 Werkheiser, W.H., 1990, **Hydrogeology and ground-water resources of Somerset County, Maryland**, 156 p.

MGS B 34 Otton, E.G., Wiley, R.E., McGregor, R.A., Achmad, G.J., Hiortdahl, S.N., and Gerhart, J.M., 1989, **Water resources and estimated effects of ground-water development, Duigon M.TCecil County, Maryland**, 133 p.

MGS B 33 Duigon, M.T., and Dine, J.R., 1987, **Water resources of Frederick County, Maryland**, 106 p.

MGS B 25 Darling, J.M., 1961, **Maryland streamflow characteristics**, 136 p.

MGS B 24 Slaughter, T.H., and Darling, J.M., 1961, **Water resources of Allegany and Washington Counties**, 408 p.

MGS B 22 Meyer, Gerald, and Beall, R.M., 1958, **Water resources of Carroll and Frederick Counties**, 355 p.

MGS B 21 Overbeck, R.M., Slaughter, T.H., and Hulme, A.E., 1958, **Water resources of Cecil, Kent, and Queen Annes Counties**, 478 p.

MGS B 18 Rasmussen, W.C., Slaughter, T.H., Hulme, A.E., and Murphy, J.J., 1956, **Water resources of Caroline, Dorchester, and Talbot Counties**, 465 p.

MGS B 17 Dingman, R.J., Ferguson, H.F., and Martin, R.O.R., 1956, **Water resources of Baltimore and Harford Counties**, 233 p.

MGS B 16 Rasmussen, W.C., Slaughter, T.H., Bennett, R.R., Meyer, R.R., and Hulme, G.E., 1955, **Water resources of Somerset, Wicomico, and Worchester Counties**, 535 p.

MGS B 14 Dingman, R.J., Meyer, Gerald, and Martin, R.O.R., 1954, **Water resources of Howard and Montgomery Counties**, 260 p.

MGS B 13 Amsden, T.W., Overbeck, R.M., and Martin, R.O.R., 1954, **Geology and water resources of Garrett County**, 349 p.

MGS B 11 Martin, R.O.R., and Ferguson, H.F., 1953, **Water resources of St. Marys County**, 195 p.

MGS B 10 Cooke, C., Wythe, Martin, R.O.R., and Meyer, Gerald, 1952, **Geology and water resources of Prince Georges's County**, 270 p.

MGS B 8 Bennion, V.R., Dougherty, D.F., and Overbeck, R.M., 1951, **Water resources of Calvert County**, 100 p.

MGS B 5 Bennion, V.R., and Brookhart, J.W., 1949, **Water resources of Anne Arundel County**, 14 p.

SELECTED MARYLAND GEOLOGICAL SURVEY REPORTS ON SURFACE-WATER RESOURCES IN MARYLAND--Continued

REPORTS OF INVESTIGATIONS--Continued

REPORTS OF INVESTIGATIONS

MGS RI 71 Cleaves, E.T., and Doheny, E.J., 2000, **A Strategy for improving the Stream-Gaging Network in Maryland**, 72 p.

MGS RI 48 Kerhin, R.T., and others, 1988, **The surficial sediments of Chesapeake Bay, Maryland: Physical characteristics and sediment budget**, 82 p.

MGS RI 45 Wiley, R.E., and Achmad, G.J., 1986, **Simulation of ground-water flow and base flow in weathered crystalline rock, Upper Cattail Creek, Howard County, Maryland**, 68 p.

MGS RI 42 Otton, E.G., and Hilleary, J.T., 1985, **Maryland springs--their physical, thermal, and chemical characteristics**, 151 p.

MGS RI 41-A Hiortdahl, S.N., 1988, **Hydrologic and mining data from an area of underground coal mining in Garrett County, Maryland**, 81 p.

MGS RI 41 Duigon, M.T., and Smigaj, M.J., 1985, **First report on the hydrologic effects of underground coal mining in southern Garrett County, Maryland**, 99 p.

MGS RI 40 **The Columbia aquifer of the Eastern Shore of Maryland**, 1984, Part 1, Bachman, L.J., and Wilson, J.M., Hydrogeology, Part 2, Wilson, J.M., and Bachman, L.J., **Selected water-well records, chemical analyses, water-level measurements, lithologic logs and geophysical logs**, 144 p.

MGS RI 35 Carpenter, D.H., 1983, **Characteristics of streamflow in Maryland**, 237 p.

MGS RI 17 Mack, F.K., Webb, W.E., and Gardner, R.A., 1971, **Water resources of Dorchester and Talbot Counties, Maryland, with special emphasis on the ground-water potential of the Cambridge and Easton areas**, 107 p.

MGS RI 16 Walker, P.N., 1971, **Flow characteristics of Maryland streams**, 160 p.

MGS RI 13 Webb, W.E., and Heddle, S.G., 1970, **Extent of brackish water in the tidal rivers of Maryland**, 46 p.

MGS RI 9 Thomas, J.D., and Heidel, S.G., 1969, **Chemical and physical character of municipal water supplies in Maryland**, 52 p.

MGS RI 5 Thomas, J.D., 1966, **Chemical quality reconnaissance of water of Maryland streams**, 61 p.

MGS RI 3 Boggess, D.H., and Heidel, S.G., 1968, **Water resources of the Salisbury area, Maryland**, 69 p.

MGS RI 1 Heidel, S.G., and Fernier, W.W., 1965, **Chemical quality of water and trace elements in the Patuxent River basin**, 40 p.

BASIC DATA REPORTS

MGS BDR 19 Dine, J.R., Adamski, J.C., Tompkins, M.D., 1992, **Hydrologic data for Howard County, Maryland**, 240 p.

MGS BDR 18 Duigon, M.T., Dine, J.R., and Tompkins, M.D., 1989, **Ground-water and surface-water data for Washington County, Maryland**, 273 p.

MGS BDR 16 Wiley, R.E., McGregor, R.A., deGrouchy, Joanne, and Tompkins, M.D., 1987, **Hydrologic data for Cecil County, Maryland**, 150 p.

MGS BDR 15 Dine, J.R., Tompkins, M.D., and Duigon, M.T., 1985, **Ground-water and surface-water data for Frederick County, Maryland**, 240 p.

MGS BDR 12 Hilleary, J.T., and Weigle, J.W., 1981, **Carroll County ground-water information: well records, spring records, and chemical-quality data**, 252 p.

MGS BDR 11 Nutter, L.J., Smigaj, M.J., and Knobel, L.L., 1980, **Garrett County water-well records, chemical-quality data, ground-water use, coal test-hole data, and surface-water data: with a section on gas-well records,** 102 p.

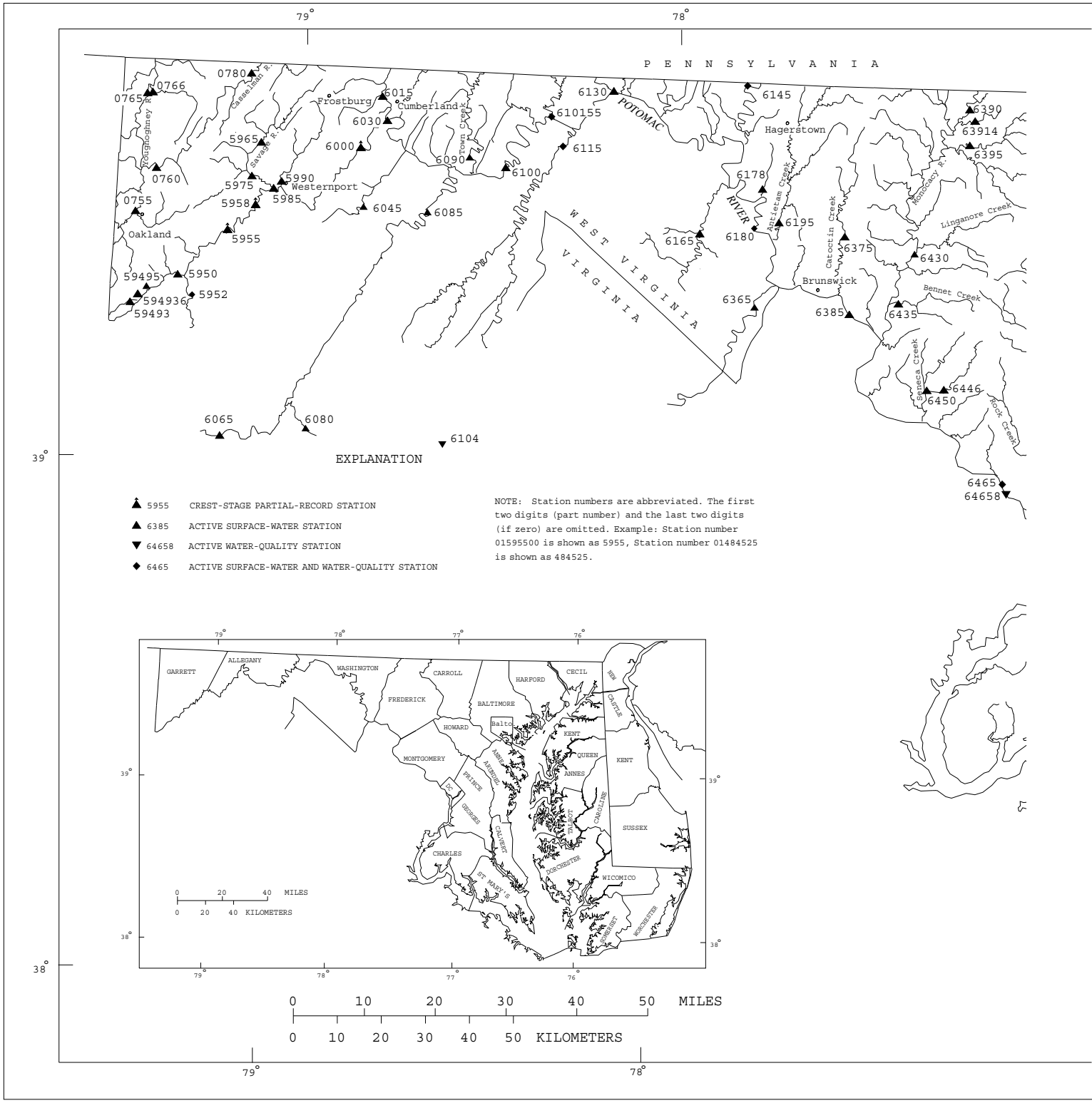
MGS BDR 2 Slaughter, T.H., and Laughlin, C.P., 1966, **Records of wells and springs in Charles County, Maryland**, 93 p.

MGS BDR 1 Laughlin, C.P., 1966, **Records of wells and springs in Baltimore County, Maryland**, 406 p.

INFORMATION CIRCULARS

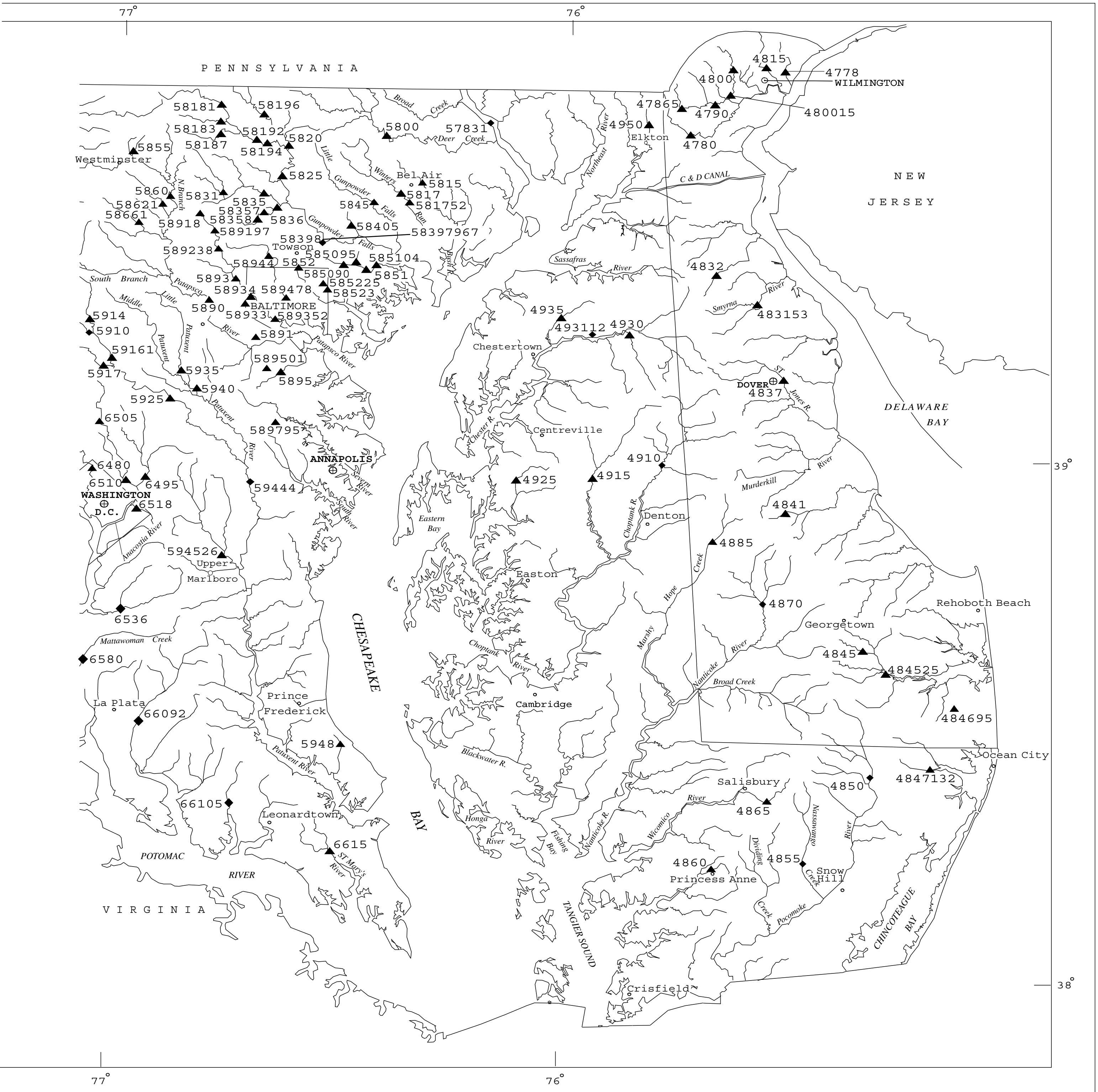
MGS IC 12 Taylor, K.R., and Solley, W.B., 1972, **Traveltime and concentration attenuation of a soluble dye in Antietam and Conococheague Creeks, Maryland**, 25 p.

MGS IC 9 Taylor, K.R., 1970, **Traveltime and concentration attenuation of a soluble dye in the Monocacy River, Maryland**, 23 p.



Base map modified from U.S. Geological Survey 1:100,000 DLG

Figure 3. Map of Maryland, Delaware, and Washington, D.C. showing location of surface-water, water-quality and crest-stage partial-record stations.


PENNSYLVANIA
NEW JERSEY
VIRGINIA
DELAWARE BAY
CHESAPEAKE BAY
TANGIER SOUND
CHINCOTEAGUE BAY
POTOMAC RIVER
WILMINGTON
BALTIMORE
ANNAPOLIS
WASHINGTON D.C.
DOVER
Westminster
Towson
Bel Air
Elkton
Chestertown
Centreville
Denton
Easton
Cambridge
Upper Marlboro
La Plata
Prince Frederick
Leonardtown
Salisbury
Princess Anne
Crisfield
Snow Hill
Georgetown
Rehoboth Beach
Ocean City
C & D CANAL
77°
76°
39°
38°
58181
58196
58183
58192
58187
58194
5820
5855
5800
57831
5825
5815
5817
581752
5845
5860
58621
58661
5831
5835
58357
58358
5836
58918
589197
58405
58397967
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589238
585095
585104
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5852
585090
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58934
589478
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58523
5890
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589352
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5925
6505
589795
6480
6510
6495
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594526
6536
6580
66092
5948
66105
6615
4815
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4800
480015
47865
4790
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4780
4832
483153
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493112
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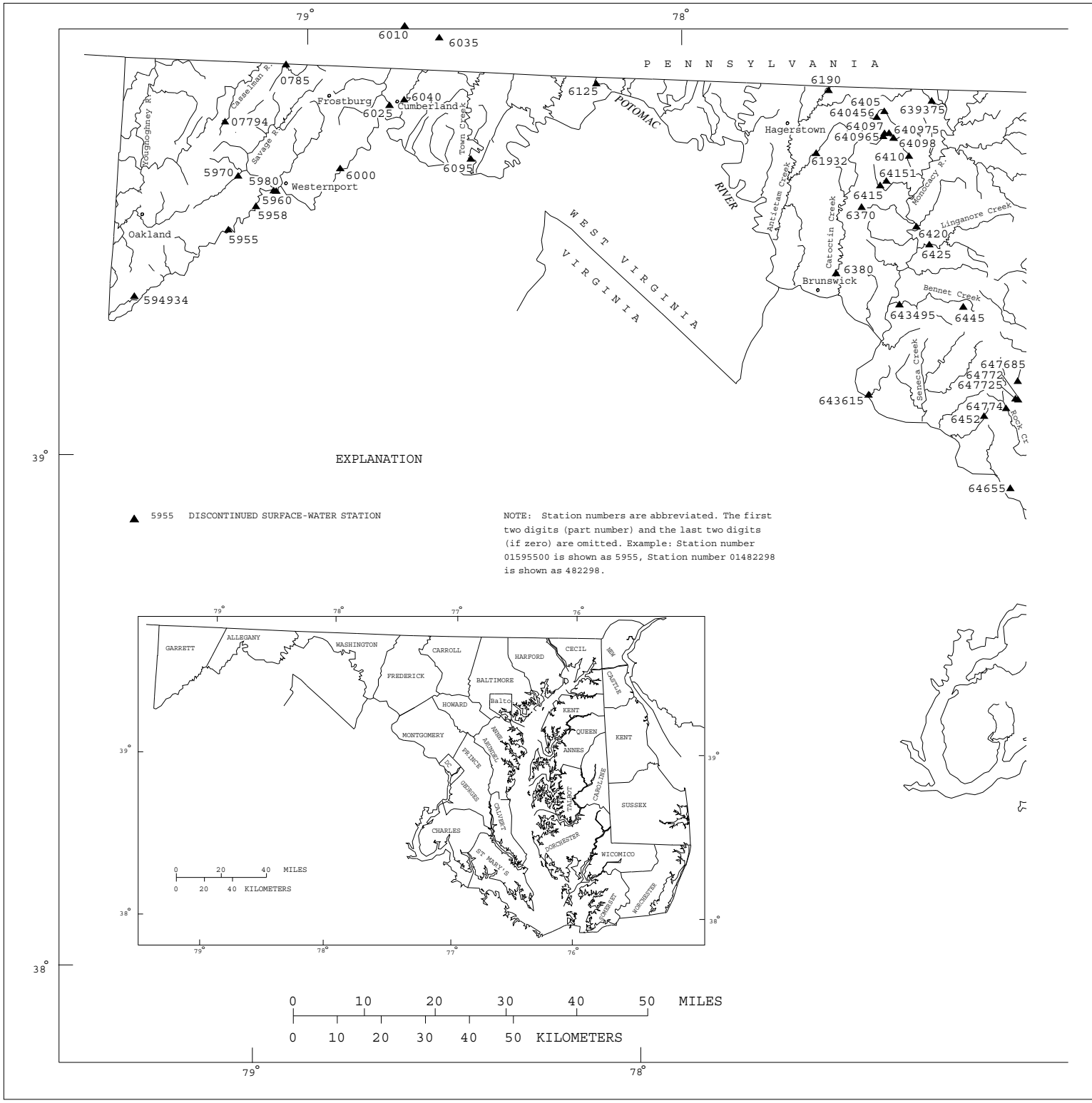


Base map modified from U.S. Geological Survey 1:100,000 DLG

Figure 4. Map of Maryland, Delaware, and Washington, D.C. showing location of discontinued surface-water stations.

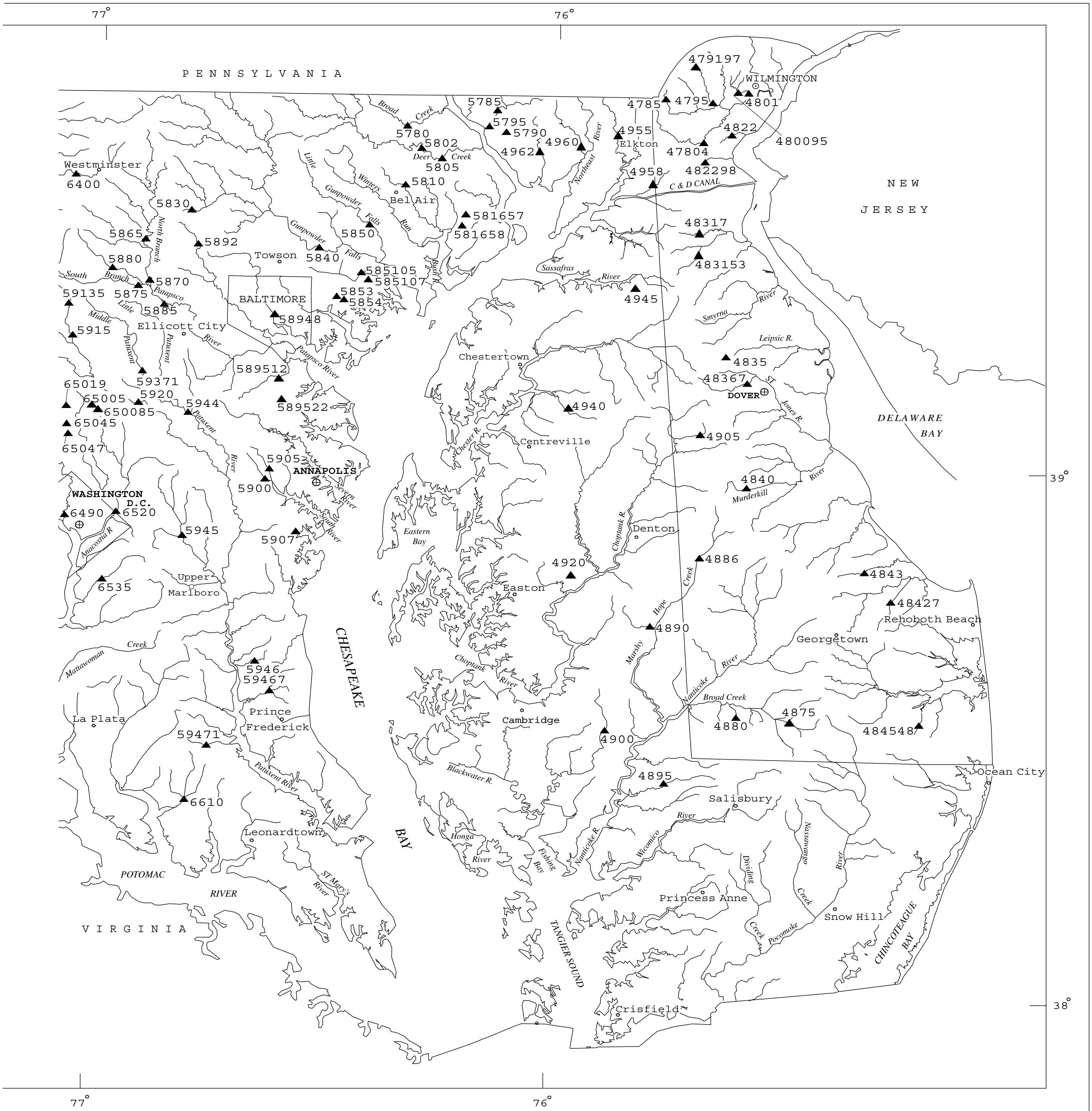

77°
76°
PENNSYLVANIA
479197
WILMINGTON
4785
4795
4801
4822
480095
4955
Elkton
47804
482298
4958
C & D CANAL
NEW
JERSEY
5785
5795
5790
4960
4962
5780
5802
5805
Broad
Creek
Deer
Creek
River
Northeast
Westminster
6400
5830
5810
Bel Air
Little
Gunpowder
Winters
Run
Falls
581657
581658
5850
Gunpowder
Falls
5840
Towson
5865
5892
North Branch
5880
5870
South
Branch
Patapsco
585105
585107
Bush R.
Sassafras
River
48317
483153
4945
59135
5875
5885
BALTIMORE
58948
5853
5854
Little
Middle
Patuxent
Patuxent
Ellicott City
River
5915
Smyrna
River
Leipsic R.
4835
48367
DOVER
ST.
Jones R.
Chestertown
589512
Patapsco River
59371
65019
65005
650085
5920
5944
Patuxent
589522
4940
65045
65047
Centreville
Chester R.
4905
DELAWARE
BAY
39°
5905
ANNAPOLIS
River
5900
Severn
River
4840
Murderkill
River
WASHINGTON
D.C.
6490
6520
Anacostia R.
5945
South
River
5907
Eastern
Bay
Choptank R.
Denton
4886
4920
Easton
4843
48427
Rehoboth Beach
6535
Upper
Marlboro
Creek
Mattawoman
Hope
Creek
4890
Georgetown
CHESAPEAKE
5946
59467
Choptank
River
Marshy
River
Nanticoke
Broad Creek
La Plata
Prince
Frederick
Cambridge
4875
4880
484548
59471
4900
Blackwater R.
4895
Ocean City
Salisbury
6610
Patuxent River
River
Leonardtown
BAY
Honga
River
Fishing
Bay
Nanticoke R.
Wicomico
Dividing
Creek
Nassawango
Creek
River
POTOMAC
RIVER
St. Mary's
River
Princess Anne
Snow Hill
VIRGINIA
TANGIER SOUND
Creek
Pocomoke
CHINCOTEAGUE
BAY
38°
Crisfield
77°
76°

Photo by Jim Jeffries

Discharge measurement being made using an AquaCalc and Flowtracker at Conococheague Creek at Fairview, Md (01614500).

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

REMARK CODES

The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count egual to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blank.
M	Presence of material verified but not quantified.

Dissolved Trace-Element Concentrations

NOTE--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the ug/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols in water year 1994.

Change in National Trends Network Procedures

NOTE--Sample handling procedures at all national Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

NORTH ATLANTIC SLOPE BASINS

DELAWARE RIVER BASIN

01477800 SHELLPOT CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°45'39.5", long 75°31'07.3", New Castle County, Hydrologic Unit 02040205, on right bank 100 ft east of intersection of 44th and Pine Streets in Clifton Park, 700 ft downstream from bridge on North Market Street in Wilmington, 0.2 mi downstream from Matson Run, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--7.46 mi^2.

PERIOD OF RECORD.--December 1945 to current year.

REVISED RECORDS.--WSP 1382: 1948(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 15.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those between 100 and 4,000 ft^3/s, which are fair, and those for estimated daily discharges (backwater, ice, and doubtful gage-height record), which are poor. Occasional regulation at low flow from unknown source upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1940, that of July 5, 1989. Flood of Aug. 1, 1945, reached a stage of about 8.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 24	2040	*660	*3.75	No peak greater than base discharge.			

Minimum discharge, 0.20 ft^3/s, Aug. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	e0.50	e0.70	e0.68	e6.0	1.0	12	4.9	4.7	0.58	0.27	26
2	0.92	e0.54	e0.64	e0.64	e3.0	3.8	2.9	42	0.82	0.53	0.28	7.6
3	0.53	e2.0	e0.60	e0.62	e2.5	69	2.3	7.0	0.65	0.48	0.33	0.86
4	0.46	e1.0	e0.56	e0.62	e2.0	3.4	2.0	2.6	0.66	0.45	0.33	0.51
5	0.44	e0.90	e0.80	e0.60	e1.4	1.7	1.8	2.0	0.75	0.40	0.27	0.41
6	1.9	e0.80	e0.70	28	1.4	1.4	1.6	1.7	9.8	0.37	0.25	0.35
7	0.87	e0.70	e0.60	11	1.9	1.3	1.5	1.4	5.6	0.38	0.23	0.35
8	0.46	e0.80	e8.0	3.2	1.8	1.2	1.4	1.3	1.1	0.37	0.23	0.35
9	0.41	e0.70	10	2.0	1.5	1.2	1.6	1.6	0.81	15	0.23	0.34
10	0.45	e0.60	1.3	1.8	1.5	5.6	1.9	1.5	0.75	10	0.24	0.31
11	0.46	e0.52	4.5	17	4.5	1.3	1.7	1.1	0.68	0.63	0.25	0.33
12	0.51	e0.48	1.6	3.5	1.6	1.1	4.4	3.5	0.67	0.44	0.22	0.33
13	0.57	e0.47	2.4	1.8	1.3	8.1	2.3	9.2	6.7	0.41	0.23	0.37
14	1.5	e0.47	6.2	1.5	1.1	2.4	1.6	2.0	49	1.2	0.23	0.41
15	6.7	e0.47	2.8	1.5	1.2	1.3	1.7	1.3	3.1	0.83	0.23	0.59
16	0.72	e0.50	0.98	1.4	1.3	1.3	1.7	1.1	1.9	0.44	0.27	1.2
17	0.66	e1.0	1.5	1.4	1.3	1.7	1.3	2.2	1.1	0.39	0.26	0.53
18	e0.60	e0.60	10	1.3	1.2	28	1.1	114	1.6	0.50	0.27	0.39
19	e0.56	e0.50	1.7	e1.3	1.2	4.7	3.0	6.0	3.7	0.53	0.27	0.35
20	e0.52	e1.8	0.99	e2.0	1.3	95	2.5	3.3	3.4	1.6	0.27	0.35
21	e0.52	e1.0	0.98	e3.3	4.0	11	1.4	2.7	0.86	0.46	0.27	0.35
22	e0.50	e0.70	0.78	e1.4	1.3	4.0	5.3	2.2	0.73	0.38	0.27	0.35
23	e0.50	e0.50	0.88	e5.0	1.0	2.6	1.6	1.8	0.66	0.47	0.32	0.37
24	e1.3	e0.56	20	e25	1.0	2.0	1.0	1.5	40	2.1	9.3	0.32
25	e0.70	e20	1.9	e7.0	1.0	1.8	6.8	1.3	5.9	0.47	3.4	0.36
26	e0.60	7.0	1.1	e4.0	1.1	6.6	2.2	1.3	0.97	0.37	0.39	29
27	e0.80	1.4	0.90	e3.0	1.1	37	1.1	16	11	3.8	0.28	18
28	e0.65	1.0	0.85	e2.0	1.0	4.1	50	3.5	4.7	0.98	1.1	19
29	e0.56	e0.90	0.80	e1.6	---	2.8	4.4	1.2	0.87	0.47	46	0.79
30	e0.52	e0.80	0.77	e1.5	---	2.4	2.7	1.0	0.66	0.36	1.0	0.47
31	e0.50	---	e0.72	e10	---	5.9	---	0.94	---	0.30	0.48	---
TOTAL	30.59	49.21	86.25	145.66	50.50	314.70	126.8	243.14	163.84	45.69	67.97	110.94
MEAN	0.99	1.64	2.78	4.70	1.80	10.2	4.23	7.84	5.46	1.47	2.19	3.70
MAX	6.7	20	20	28	6.0	95	50	114	49	15	46	29
MIN	0.41	0.47	0.56	0.60	1.0	1.0	1.0	0.94	0.65	0.30	0.22	0.31
CFSM	0.13	0.22	0.37	0.63	0.24	1.36	0.57	1.05	0.73	0.20	0.29	0.50
IN.	0.15	0.25	0.43	0.73	0.25	1.57	0.63	1.21	0.82	0.23	0.34	0.55

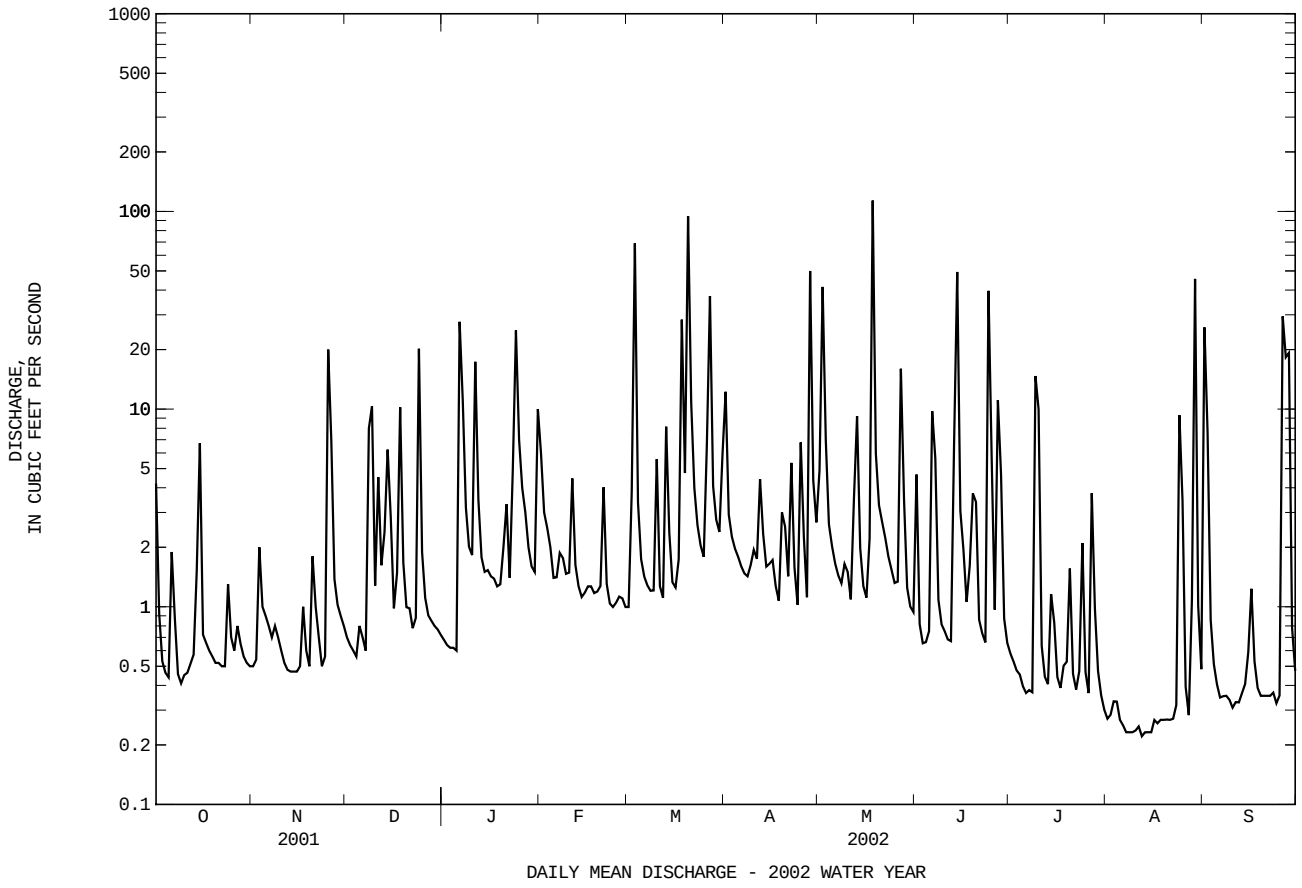
e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	5.01	8.30	11.5	12.5	12.9	16.4	12.7	10.7	7.21	8.31	6.85	7.40
MAX	22.5	27.7	48.7	37.9	34.1	46.4	32.7	31.6	34.8	69.5	62.8	58.3
(WY)	1996	1973	1997	1979	1979	2000	1983	1947	1975	1989	1967	1971
MIN	0.62	1.35	1.03	1.18	1.80	2.93	2.55	1.76	1.09	0.65	0.32	0.90
(WY)	1964	1966	1956	1981	2002	1985	1985	1955	1966	1957	1966	1951

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	2763.77		1435.29			
ANNUAL MEAN	7.57		3.93		9.95	
HIGHEST ANNUAL MEAN					16.2	1989
LOWEST ANNUAL MEAN					3.93	2002
HIGHEST DAILY MEAN	325	Mar 30	114	May 18	1480	Sep 16 1999
LOWEST DAILY MEAN	0.41	Oct 9	0.22	Aug 12	0.09	(a)
ANNUAL SEVEN-DAY MINIMUM	0.44	Aug 3	0.23	Aug 7	0.10	Aug 27 1966
MAXIMUM PEAK FLOW			660	Jun 24	(b)8040	Jul 5 1989
MAXIMUM PEAK STAGE			3.75	Jun 24	13.76	Jul 5 1989
INSTANTANEOUS LOW FLOW			0.20	(c)	0.09	Oct 2 1968
ANNUAL RUNOFF (CFSM)	1.02		0.53		1.33	
ANNUAL RUNOFF (INCHES)	13.78		7.16		18.13	
10 PERCENT EXCEEDS	13		7.0		18	
50 PERCENT EXCEEDS	1.9		1.1		2.8	
90 PERCENT EXCEEDS	0.50		0.35		0.78	

a Oct. 2, 4, 1968.
b From rating curve extended above 200 ft^3/s on basis of culvert and flow-over-road measurements at gage heights 9.10 and 11.91 ft.
c Aug. 12, 13.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE

LOCATION.--Lat 39°38'14.6", long 75°43'40.4", New Castle County, Hydrologic Unit 02040205, on right bank 60 ft downstream from highway bridge, 0.5 mi southeast of Coochs Bridge, 3.3 mi south of Newark, 3.6 mi upstream from Belltown Run, and 22.6 mi upstream from mouth.

DRAINAGE AREA.--20.5 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR MD-DE-79-1: 1943-70(P). WDR MD-DE-87-1: 1980-82(P).

GAGE.--Water-stage recorder. Datum of gage is 25.54 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 14, 1944, nonrecording gage on upstream side of bridge at same datum. Sept. 14, 1944, to May 13, 1969, recording gage at site on left bank at downstream side of highway bridge at same datum. May 26, 1969, to Dec. 5, 1973, recording gage on left bank 82 ft downstream from highway bridge at same datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (backwater and ice effect), which are fair. Low and medium flow regulated by mill upstream from station. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 29	0500	*629	*8.85	No peak greater than base discharge.			

Minimum discharge, 0.88 ft^3/s, Aug. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	e1.4	3.5	e3.4	17	4.8	31	12	8.1	3.4	2.4	72
2	4.5	e1.6	3.3	3.5	12	7.8	15	80	4.7	3.3	3.3	16
3	3.7	e3.0	3.5	3.7	9.1	80	12	25	4.5	3.3	2.2	4.8
4	3.5	2.6	3.5	3.7	8.1	16	10	12	4.5	3.3	2.1	3.7
5	3.0	2.6	3.5	3.6	7.0	10	9.2	10	4.6	3.2	1.9	3.2
6	8.4	2.9	3.2	36	6.5	8.5	8.7	8.6	14	2.9	1.6	2.8
7	3.6	3.9	3.2	46	6.8	7.5	7.8	7.7	15	2.6	1.7	2.5
8	2.5	3.4	11	15	7.1	6.8	7.5	6.8	5.1	2.4	1.9	2.3
9	2.5	2.7	17	11	5.8	6.5	8.0	7.4	4.7	5.4	e1.5	2.3
10	2.6	3.2	6.1	9.0	5.9	11	10	6.8	4.6	19	e1.3	2.3
11	2.7	4.0	12	43	11	6.6	7.3	5.6	4.5	3.8	e1.2	2.3
12	3.0	3.4	6.8	19	6.4	6.1	9.6	14	4.4	2.9	e1.1	2.2
13	2.8	3.1	5.8	10	6.2	25	9.1	12	26	2.8	e1.0	2.0
14	2.9	3.5	12	8.2	5.6	15	7.8	6.4	126	3.9	1.0	1.9
15	13	3.6	9.7	7.0	5.5	9.5	9.5	5.1	17	3.5	1.1	1.9
16	4.2	4.2	5.3	6.3	5.9	8.1	7.9	4.8	7.9	3.0	1.1	2.2
17	2.5	4.4	5.4	6.0	5.7	8.2	7.0	5.2	5.6	2.8	1.3	2.5
18	2.2	3.5	23	5.7	5.5	38	6.4	171	10	2.5	1.3	2.5
19	e2.0	4.2	9.0	6.5	5.2	19	12	22	9.8	2.3	e1.2	2.3
20	e1.9	5.4	5.3	11	5.5	181	17	11	5.0	2.3	e1.1	2.3
21	e1.9	4.9	4.5	10	10	46	8.9	8.5	4.7	2.3	e1.1	2.2
22	e2.0	4.6	4.0	11	6.0	20	15	7.0	4.5	2.2	e1.1	2.0
23	e1.8	4.2	4.1	15	5.2	14	8.6	6.1	4.4	3.2	1.5	1.9
24	e2.1	4.1	30	53	5.0	12	6.5	5.5	4.4	6.8	38	1.9
25	e1.8	47	9.9	25	5.2	11	10	4.8	5.2	2.7	14	1.8
26	e1.7	28	5.7	13	5.1	12	8.6	4.6	5.8	2.3	3.8	44
27	1.6	6.6	5.0	9.7	5.2	75	6.1	60	7.3	2.3	2.6	35
28	e1.6	4.2	5.1	8.4	5.2	19	110	14	8.3	3.0	4.0	21
29	e1.5	3.9	4.5	7.3	---	14	24	6.0	5.7	3.1	131	4.2
30	e1.4	3.7	4.1	7.0	---	12	13	5.5	5.0	2.4	6.9	3.2
31	e1.5	---	3.6	19	---	16	---	6.0	---	2.3	3.6	---
TOTAL	98.9	177.8	232.6	436.0	194.7	726.4	423.5	561.4	341.3	111.2	238.9	251.2
MEAN	3.19	5.93	7.50	14.1	6.95	23.4	14.1	18.1	11.4	3.59	7.71	8.37
MAX	13	47	30	53	17	181	110	171	126	19	131	72
MIN	1.4	1.4	3.2	3.4	5.0	4.8	6.1	4.6	4.4	2.2	1.0	1.8
CFSM	0.16	0.29	0.37	0.69	0.34	1.14	0.69	0.88	0.55	0.17	0.38	0.41
IN.	0.18	0.32	0.42	0.79	0.35	1.32	0.77	1.02	0.62	0.20	0.43	0.46

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

MEAN	14.6	23.5	33.9	39.5	41.4	48.2	36.2	30.8	20.7	21.0	17.1	16.2
MAX	62.9	82.8	122	165	154	121	107	77.6	76.5	165	117	107
(WY)	1972	1973	1997	1979	1979	1978	1983	1990	1972	1989	1967	1999
MIN	2.25	2.76	3.98	5.35	6.95	8.35	10.5	8.10	4.57	2.48	1.29	2.85
(WY)	1964	1966	1966	1981	2002	1981	1963	1965	1966	1963	1966	1965

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 2002	
ANNUAL TOTAL	7036.6		3793.9			
ANNUAL MEAN	19.3		10.4		28.5	
HIGHEST ANNUAL MEAN					53.4	1978
LOWEST ANNUAL MEAN					10.4	2002
HIGHEST DAILY MEAN	561	Mar 30	181	Mar 20	2650	Sep 16 1999
LOWEST DAILY MEAN	(e)1.4	(a)	1.0	(b)	0.20	(c)
ANNUAL SEVEN-DAY MINIMUM	1.5	Oct 27	1.1	Aug 10	0.50	Aug 25 1966
MAXIMUM PEAK FLOW			629	Aug 29	(d)7050	Sep 16 1999
MAXIMUM PEAK STAGE			8.85	Aug 29	13.73	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.88	Aug 13	0.15	Aug 20 1966
ANNUAL RUNOFF (CFSM)	0.94		0.51		1.39	
ANNUAL RUNOFF (INCHES)	12.77		6.88		18.90	
10 PERCENT EXCEEDS	34		19		48	
50 PERCENT EXCEEDS	9.9		5.2		13	
90 PERCENT EXCEEDS	3.3		2.0		4.2	

e Estimated.
a Oct. 30, Nov. 1.
b Aug. 13, 14.
c Aug. 7, 17, 18, 21, 27, 28, 1966.
d From rating curve extended above 1,500 ft^3/s.

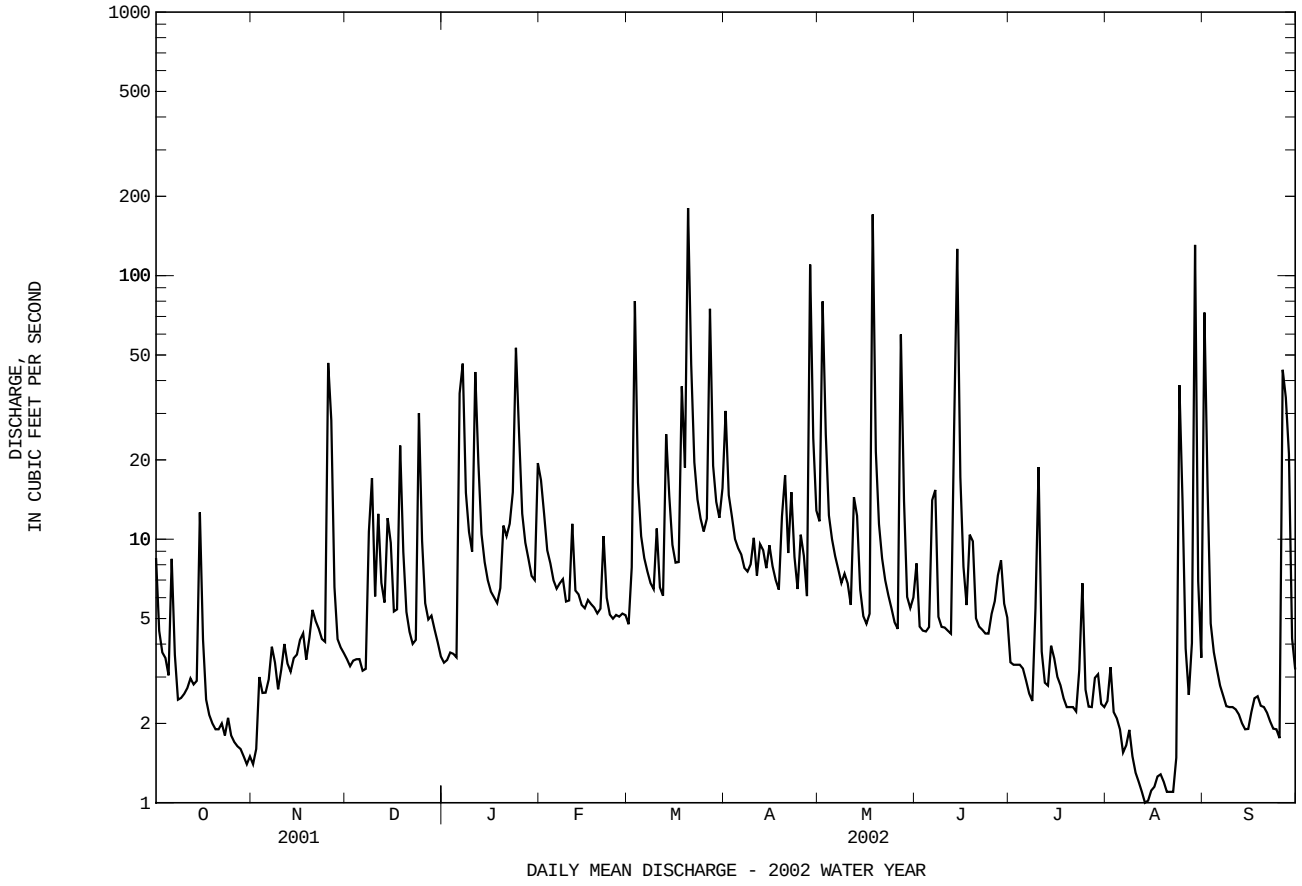


Photo by A.J. Tallman

Gage house at Christina River at Cooches Bridge, DE (01478000)
Hurricane Floyd September, 1999

01478000 CHRISTINA RIVER AT COOCHES BRIDGE, DE--Continued

PERIOD OF RECORD.--Water years 1974-78, October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
JUN 20...	1000	ENVIRONMENTAL	5.1	233	6.3	23.0	19.0	770	7.4	79	12.3	3.8

Date	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
JUN 20...	4.0	.06

01478650 WHITE CLAY CREEK AT NEWARK, DE

LOCATION.--Lat 39°41'21.2", long 75°44'55.5", New Castle County, Hydrologic Unit 02040205, on right bank 200 ft upstream from highway bridge on Paper Mill Road, at Newark, and 10.3 mi upstream from mouth.

DRAINAGE AREA.--69.0 mi^2.

PERIOD OF RECORD.--March 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 56.45 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Flow affected by City of Newark municipal water plant upstream from station. Records do not include a negligible diversion upstream from station by MBNA America. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1830	*470	*7.02	No peak greater than base discharge.			

Minimum discharge, 3.6 ft^3/s, Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	e19	26	e22	55	32	75	43	25	23	8.9	31
2	25	e21	24	e21	50	34	53	87	24	21	8.0	33
3	24	e23	24	e20	43	202	49	82	24	18	7.9	17
4	23	e30	24	e19	42	64	46	47	23	18	7.9	15
5	22	e25	25	e19	39	42	44	40	25	16	7.9	13
6	29	e20	25	35	38	38	43	38	33	14	7.6	e11
7	e20	e19	25	86	37	37	40	36	130	14	6.5	e10
8	e19	e21	26	48	38	35	39	37	37	15	6.5	e10
9	18	e19	43	37	36	35	39	36	32	18	7.4	e9.5
10	19	e19	33	35	36	45	42	36	29	25	7.3	e9.0
11	20	e18	34	119	40	38	39	32	27	15	5.4	e8.5
12	e19	e18	34	75	36	36	39	37	28	13	6.9	e7.5
13	e19	e17	33	43	36	50	40	52	35	13	6.6	e7.0
14	e19	e22	36	35	35	53	39	61	102	16	5.7	e7.4
15	45	e21	46	33	35	42	41	37	51	18	5.3	e8.0
16	e30	20	35	32	36	39	50	33	38	14	3.9	e9.0
17	e26	21	34	32	36	37	41	30	32	13	3.8	e10
18	e28	21	54	31	36	65	35	202	32	12	12	e8.0
19	e25	e20	39	30	34	63	39	75	36	12	7.8	e7.0
20	e24	25	33	35	35	199	54	45	30	12	6.9	e8.0
21	e24	e22	e31	32	44	140	35	38	26	11	5.5	e9.0
22	e23	e20	e30	31	39	64	40	35	25	11	5.2	e8.0
23	e23	e19	33	34	36	51	37	33	24	11	4.7	e7.5
24	e22	e22	48	96	36	47	32	30	25	13	13	e7.5
25	e22	38	41	99	36	45	33	29	44	13	36	7.7
26	e21	65	36	49	36	46	36	29	26	13	14	17
27	e20	30	32	42	35	162	32	30	24	13	10	67
28	e19	27	29	38	33	68	165	29	32	14	11	45
29	e20	27	31	36	---	55	75	28	24	14	91	19
30	e21	26	28	37	---	49	46	26	22	11	29	15
31	e20	---	23	52	---	51	---	24	---	9.2	14	---
TOTAL	715	715	1015	1353	1068	1964	1418	1417	1065	453.2	373.6	441.6
MEAN	23.1	23.8	32.7	43.6	38.1	63.4	47.3	45.7	35.5	14.6	12.1	14.7
MAX	45	65	54	119	55	202	165	202	130	25	91	67
MIN	18	17	23	19	33	32	32	24	22	9.2	3.8	7.0
CFSM	0.33	0.35	0.47	0.63	0.55	0.92	0.69	0.66	0.51	0.21	0.17	0.21
IN.	0.39	0.39	0.55	0.73	0.58	1.06	0.76	0.76	0.57	0.24	0.20	0.24

e Estimated

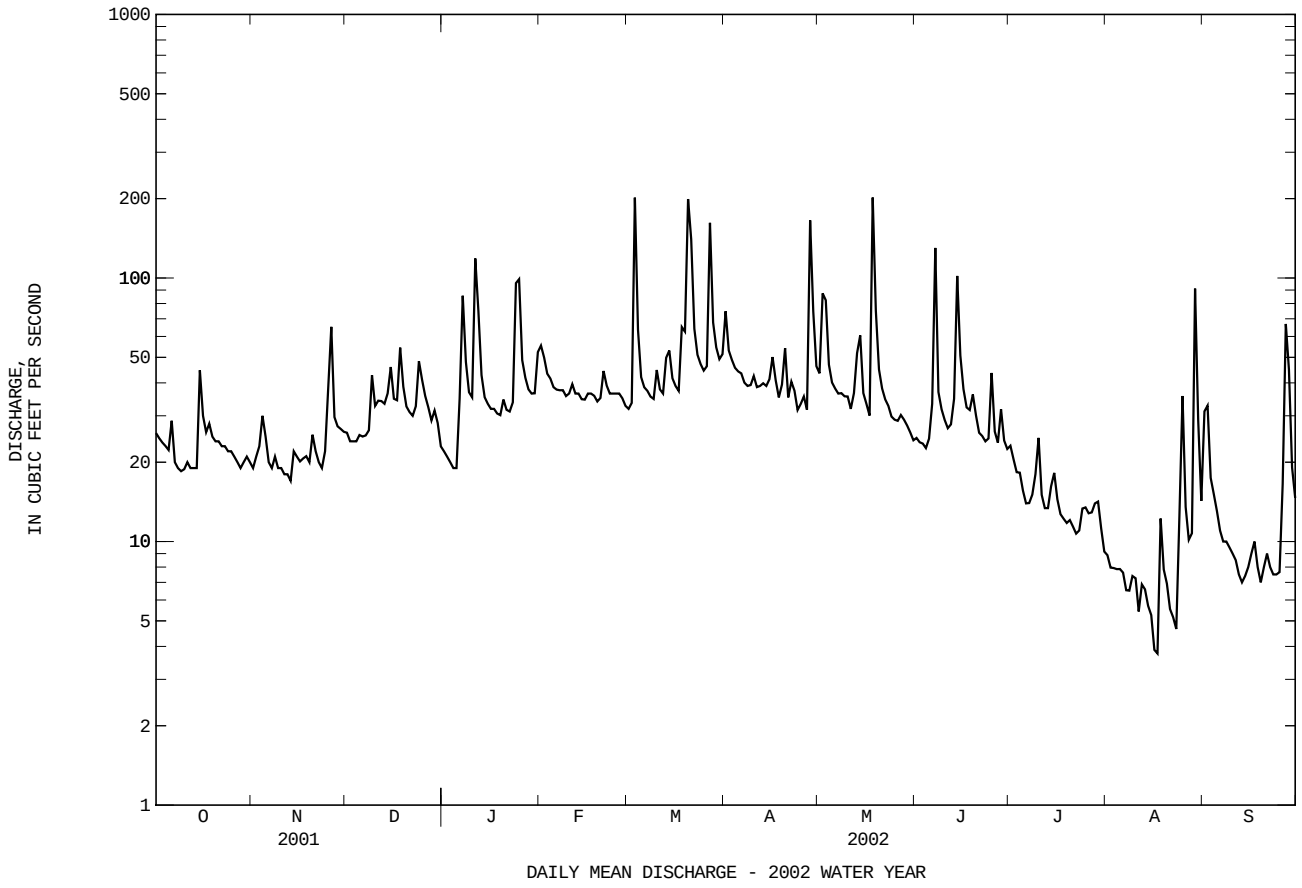
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2002, BY WATER YEAR (WY)

MEAN	58.1	58.2	89.8	117	93.9	159	106	83.8	58.0	42.2	40.1	63.0
MAX	185	144	326	256	159	345	171	145	115	104	119	267
(WY)	1997	1997	1997	1996	1997	1994	1996	1996	1996	1996	1996	1999
MIN	23.1	23.8	29.0	43.6	38.1	63.4	45.3	45.7	25.7	14.6	12.1	14.7
(WY)	2002	2002	1999	2002	2002	2002	1995	2002	1995	2002	2002	2002

01478650 WHITE CLAY CREEK AT NEWARK, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1994 - 2002	
ANNUAL TOTAL	24603		11998.4			
ANNUAL MEAN	67.4		32.9		79.1	
HIGHEST ANNUAL MEAN					129	1997
LOWEST ANNUAL MEAN					32.9	2002
HIGHEST DAILY MEAN	794	Mar 30	202	(a)	5750	Sep 16 1999
LOWEST DAILY MEAN	(e)17	Nov 13	3.8	Aug 17	3.8	Aug 17 2002
ANNUAL SEVEN-DAY MINIMUM	19	Nov 7	5.4	Aug 11	5.4	Aug 11 2002
MAXIMUM PEAK FLOW			470	Mar 20	(b)16800	Sep 16 1999
MAXIMUM PEAK STAGE			7.02	Mar 20	(c)17.13	Sep 16 1999
INSTANTANEOUS LOW FLOW			3.6	Aug 16	2.6	Sep 13 1995
ANNUAL RUNOFF (CFSM)	0.98		0.48		1.15	
ANNUAL RUNOFF (INCHES)	13.26		6.47		15.57	
10 PERCENT EXCEEDS	118		51		143	
50 PERCENT EXCEEDS	46		30		50	
90 PERCENT EXCEEDS	21		9.0		20	

a March 3 and May 18.
e Estimated.
b From rating curve extended above 2,500 ft^3/s on basis of runoff comparison with White Clay Creek above Newark, DE (01478500).
c From high-water mark.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01479000 WHITE CLAY CREEK NEAR NEWARK, DE

LOCATION.--Lat 39°41'57.2" long 75°40'30.1", New Castle County, Hydrologic Unit 02040205, on left bank 35 ft downstream from bridge on private road at Delaware Park Race Track, 0.4 mi downstream from the Baltimore and Ohio Railroad bridge, 1.1 mi downstream from Pike Creek, 3.8 mi east of Newark, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--89.1 mi^2.

PERIOD OF RECORD.--October 1931 to September 1936, June 1943 to September 1957, October 1959 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1051: 1933(M). WSP 1382: 1932, 1934. WDR MD-DE-83-1: 1978-82(P).

GAGE.--Water-stage recorder. Datum of gage is 9.00 ft above National Geodetic Vertical Datum of 1929. Nov. 17, 1931, to Sept. 30, 1936, June 4, 1943, to Sept. 30, 1957, and Oct. 1, 1959, to Apr. 7, 1976, at site 0.5 mi upstream at datum 2.6 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Flow affected by City of Newark municipal water plant upstream from station. Slight diurnal fluctuation at low flow caused by mills upstream from station. Records do not include a negligible diversion upstream from station by MBNA America. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 23 ft, previous site and datum, in July 1937 (probably affected by backwater from railroad bridge which has since been raised and widened), from information by Baltimore & Ohio Railroad.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 29	0515	*1,270	*9.54	No peak greater than base discharge.			

Minimum discharge, 5.4 ft^3/s, Aug. 16-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	31	32	e31	70	32	109	69	46	28	22	103
2	35	32	30	e29	59	40	77	167	38	26	16	53
3	32	33	29	e28	49	289	70	119	36	24	10	24
4	30	35	29	e27	46	90	65	72	35	23	9.8	18
5	28	33	29	e26	42	60	61	63	37	21	9.6	15
6	36	31	29	89	42	53	61	58	54	19	9.5	13
7	28	30	29	119	42	50	58	56	142	18	8.4	13
8	27	30	42	76	42	46	56	55	52	19	7.1	12
9	26	e29	67	60	39	44	57	54	43	34	7.5	12
10	26	e29	42	46	38	60	62	54	38	64	7.9	11
11	27	e28	49	144	48	48	56	48	35	24	7.3	11
12	28	e27	42	106	39	44	60	72	45	20	6.3	9.0
13	28	e26	38	62	38	77	58	69	86	19	7.3	8.7
14	28	e27	50	51	35	64	56	83	258	23	6.7	9.3
15	49	e28	55	46	35	50	58	56	80	24	6.1	11
16	36	e28	40	43	37	47	75	49	56	21	6.1	13
17	31	e29	39	41	37	46	63	48	52	18	5.4	13
18	31	e28	77	39	35	92	54	350	54	17	9.1	12
19	29	e27	55	40	34	76	70	115	93	16	9.5	9.6
20	29	e30	42	51	35	310	84	73	55	16	7.3	10
21	28	e33	37	42	50	190	61	63	39	15	6.5	10
22	28	e29	35	42	40	94	67	56	35	14	6.1	9.8
23	30	e27	36	49	36	77	61	53	32	17	6.1	8.5
24	30	e28	88	125	35	70	52	50	32	23	52	8.4
25	31	93	53	123	35	66	59	47	54	16	41	8.2
26	30	100	43	65	35	71	58	46	37	16	15	71
27	30	46	36	54	35	212	51	118	40	15	10	111
28	30	37	36	49	34	96	252	60	47	18	13	83
29	31	35	38	47	---	79	115	48	33	16	292	30
30	32	34	35	46	---	72	74	44	28	14	45	19
31	31	---	37	74	---	79	---	43	---	12	19	---
TOTAL	953	1053	1319	1870	1142	2724	2160	2358	1712	650	684.6	739.5
MEAN	30.7	35.1	42.5	60.3	40.8	87.9	72.0	76.1	57.1	21.0	22.1	24.6
MAX	49	100	88	144	70	310	252	350	258	64	292	111
MIN	26	26	29	26	34	32	51	43	28	12	5.4	8.2
CFSM	0.35	0.39	0.48	0.68	0.46	0.99	0.81	0.85	0.64	0.24	0.25	0.28
IN.	0.40	0.44	0.55	0.78	0.48	1.14	0.90	0.98	0.71	0.27	0.29	0.31

e Estimated

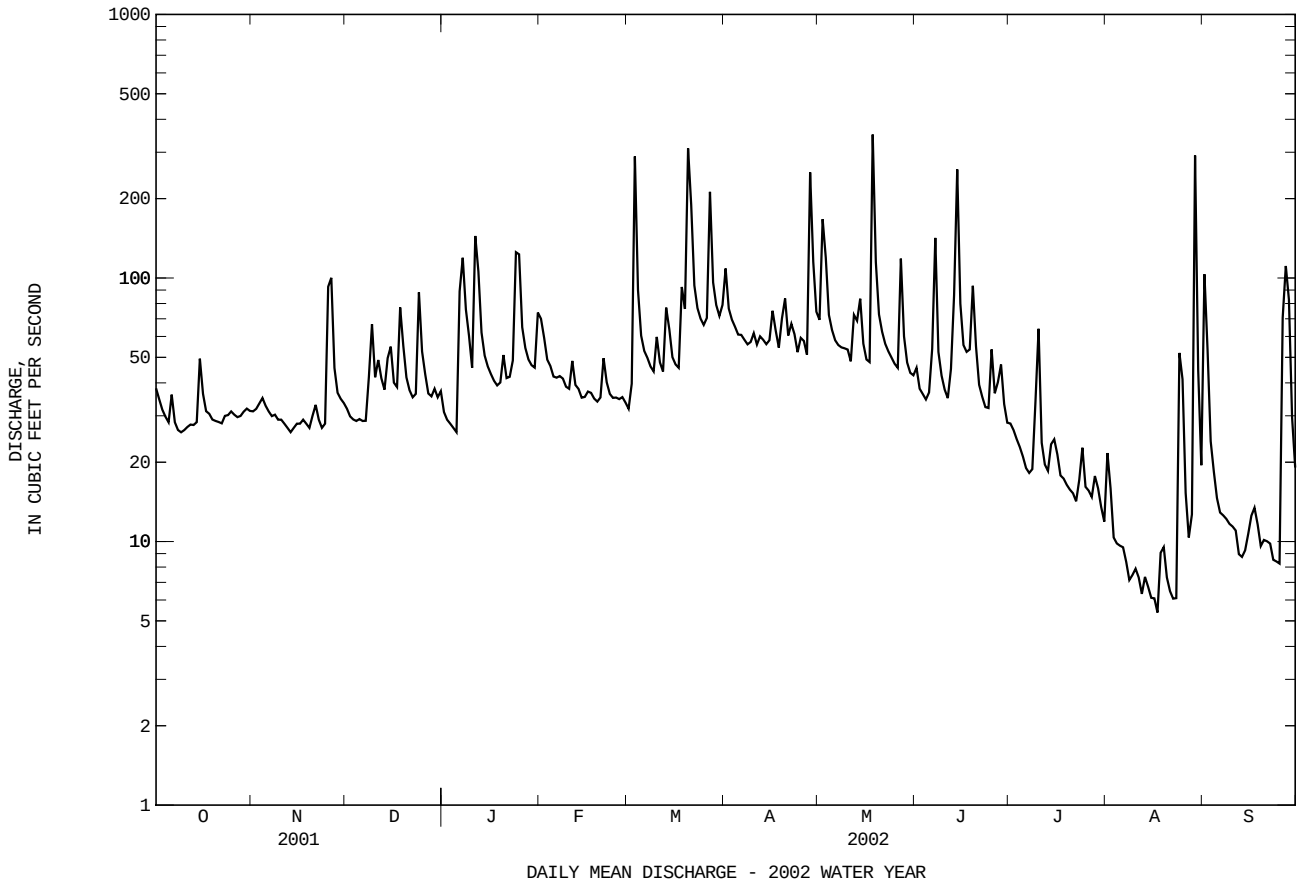
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1936, 1943 - 1957, 1960 - 2002, BY WATER YEAR (WY)

MEAN	65.0	90.2	114	146	158	176	150	127	97.0	92.9	77.2	76.2
MAX	234	221	405	493	542	402	342	265	311	540	301	416
(WY)	1997	1973	1997	1979	1979	1994	1983	1989	1972	1975	1967	1999
MIN	17.6	28.4	28.1	32.8	40.8	57.5	59.7	42.3	33.7	16.6	13.6	15.0
(WY)	1964	1966	1966	1966	2002	1981	1963	1955	1995	1963	1966	1932

01479000 WHITE CLAY CREEK NEAR NEWARK, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1932 - 1936, 1943 - 1957, 1960 - 2002	
ANNUAL TOTAL	31521		17365.1			
ANNUAL MEAN	86.4		47.6		114	
HIGHEST ANNUAL MEAN					193	1975
LOWEST ANNUAL MEAN					47.6	2002
HIGHEST DAILY MEAN	1070	Mar 30	350	May 18	8220	Sep 16 1999
LOWEST DAILY MEAN	21	Aug 9	5.4	Aug 17	5.0	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	23	Aug 3	6.5	Aug 11	5.7	Sep 7 1966
MAXIMUM PEAK FLOW			1270	Aug 29	(a)19500	Sep 16 1999
MAXIMUM PEAK STAGE			9.54	Aug 29	(b)17.74	Jun 22 1972
INSTANTANEOUS LOW FLOW			5.4	(c)	4.7	Sep 11 1966
ANNUAL RUNOFF (CFSM)	0.97		0.53		1.28	
ANNUAL RUNOFF (INCHES)	13.16		7.25		17.39	
10 PERCENT EXCEEDS	148		79		190	
50 PERCENT EXCEEDS	61		38		76	
90 PERCENT EXCEEDS	28		12		32	

a From rating curve extended above 6,700 ft^3/s on basis of contracted-opening and flow-over-road measurement at a gage height of 15.9 ft and on basis of runnoff comparisons with nearby stations.
b At previous site and datum.
c Aug. 16-18.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01480000 RED CLAY CREEK AT WOODDALE, DE

LOCATION.--Lat 39°45'46.1", long 75°38'11.4", New Castle County, Hydrologic Unit 02040205, on right bank 12 ft upstream from bridge on State Highway 48, 0.3 mi south of Wooddale, 2.3 mi north of Marshallton, and 4.9 mi upstream from mouth.

DRAINAGE AREA.--47.0 mi^2.

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

REVISED RECORDS.--WSP 1141: 1948. WSP 1272: 1951(m). WSP 1432: 1944(M), 1945, 1946(M), 1948, 1949(M). WSP 2102: 1960(M), 1964(M), 1966-67(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 81.46 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1950, nonrecording gage at site 10 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect, missing record), which are fair. Low flows augmented at times by inflow from Hoopes Reservoir located 1.7 miles upstream from gage on unnamed tributary to Red Clay Creek, capacity 2,000,000,000 gal. Water from Brandywine Creek is pumped into Hoopes Reservoir and is released into Red Clay Creek during periods of low flow. Water from Red Clay Creek is used for municipal supply. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 19	2300	*1,270	*4.66	No other peak greater than base discharge.			

Minimum discharge, 8.2 ft^3/s, Sept. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	e18	20	e20	37	20	52	e33	23	19	17	19
2	20	e18	19	e19	33	21	33	e70	21	18	16	22
3	19	e19	19	e18	28	211	29	e40	19	17	12	14
4	19	e22	19	e17	27	46	27	e30	19	17	16	11
5	19	e21	18	e17	25	31	26	e30	19	15	16	10
6	21	e20	18	30	24	28	26	e25	29	15	16	9.6
7	e19	e19	19	83	25	26	25	e23	93	14	15	9.3
8	e17	e19	20	41	25	25	24	e21	27	14	16	9.7
9	e16	e18	39	30	24	24	24	e21	23	16	16	9.7
10	e17	e18	23	28	24	31	26	e22	20	20	17	9.1
11	e18	e17	24	105	27	25	24	e20	19	14	18	8.9
12	e18	e16	23	55	24	24	24	e30	19	13	17	8.9
13	e18	e15	22	34	23	31	26	e40	19	13	16	13
14	e18	e16	26	30	23	31	24	43	71	14	15	14
15	e18	e18	31	28	22	27	24	26	37	15	16	15
16	23	e18	23	27	23	26	23	23	31	14	17	14
17	e20	e19	22	26	22	25	e23	21	23	13	16	10
18	e19	e18	44	24	22	59	e22	206	22	12	20	8.9
19	e18	e17	30	24	22	42	e21	60	145	12	15	8.8
20	e18	e18	25	28	21	170	e45	39	143	14	12	11
21	e18	e21	23	25	29	84	e30	34	31	13	15	15
22	e17	e18	23	25	24	41	e35	29	25	12	17	15
23	e19	e17	23	26	22	32	e25	27	22	12	17	15
24	e19	e18	43	79	22	29	e22	26	29	13	18	14
25	e20	e30	30	62	22	27	e23	25	69	12	22	14
26	e20	e50	26	36	22	27	e25	24	26	11	12	15
27	e19	24	24	31	21	116	e24	34	23	12	10	66
28	e19	22	23	28	20	41	e120	28	47	13	10	37
29	e18	20	23	27	---	33	e60	25	23	12	141	15
30	e20	20	22	26	---	31	e35	23	20	11	20	12
31	e19	---	e21	42	---	32	---	23	---	11	12	---
TOTAL	583	604	765	1091	683	1416	947	1121	1137	431	613	453.9
MEAN	18.8	20.1	24.7	35.2	24.4	45.7	31.6	36.2	37.9	13.9	19.8	15.1
MAX	23	50	44	105	37	211	120	206	145	20	141	66
MIN	16	15	18	17	20	20	21	20	19	11	10	8.8
(†)	--	--	--	--	--	--	--	--	--	-0.06	-6.56	-2.35
MEAN‡	--	--	--	--	--	--	--	--	--	13.8	13.2	12.8
CFSM‡	--	--	--	--	--	--	--	--	--	0.29	0.28	0.27
IN.‡	--	--	--	--	--	--	--	--	--	0.33	0.32	0.30

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

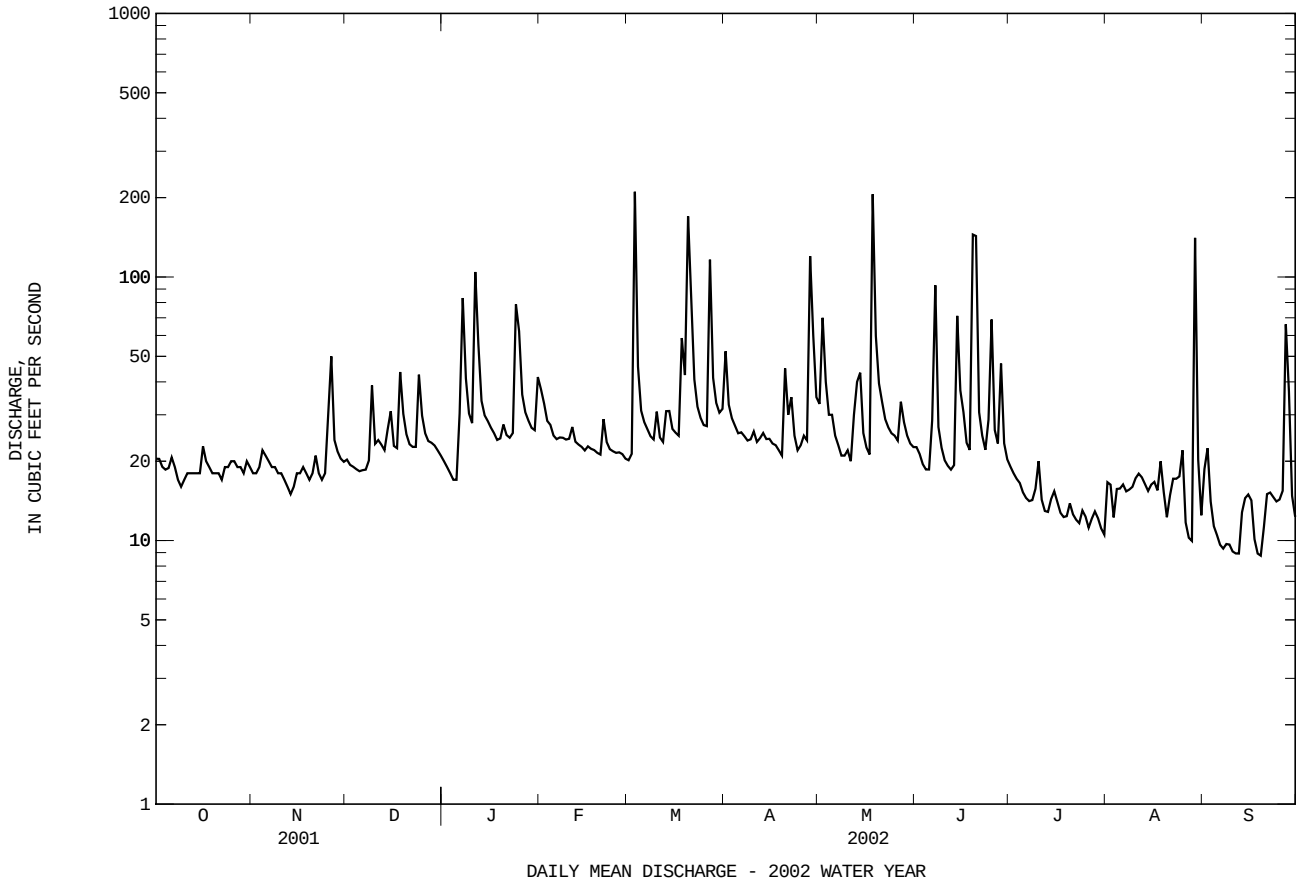
MEAN	36.2	48.3	62.6	76.6	85.3	93.2	83.9	72.3	55.9	49.5	42.4	41.9
MAX	129	115	212	232	237	209	167	156	147	279	180	196
(WY)	1972	1973	1997	1979	1979	1994	1958	1958	1972	1975	1955	1999
MIN	11.1	17.1	16.5	16.8	24.4	27.3	31.6	24.2	21.7	12.7	9.79	13.7
(WY)	1964	1999	1999	1981	2002	1981	2002	1955	1966	1963	1966	1964

† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.
‡ Adjusted for inflow.

01480000 RED CLAY CREEK AT WOODDALE, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 2002	
ANNUAL TOTAL	16768		9844.9			
ANNUAL MEAN	45.9		27.0		62.2	
ANNUAL MEAN‡	45.9		26.2		62.1	
HIGHEST ANNUAL MEAN					104	1975
LOWEST ANNUAL MEAN					27.0	2002
HIGHEST DAILY MEAN	436	Jan 30	211	Mar 3	3440	Sep 16 1999
LOWEST DAILY MEAN	15	(a)	8.8	Sep 19	4.5	Sep 4 1966
ANNUAL SEVEN-DAY MINIMUM	17	Nov 9	9.3	Sep 6	4.9	Sep 7 1966
MAXIMUM PEAK FLOW			1270	Jun 19	(b)7650	Sep 16 1999
MAXIMUM PEAK STAGE			4.66	Jun 19	(c)13.93	Sep 16 1999
INSTANTANEOUS LOW FLOW			8.2	(d)	2.9	Sep 4 1966
ANNUAL RUNOFF (CFSM)	0.98		0.57		1.32	
ANNUAL RUNOFF (CFSM)‡	0.98		0.56		1.32	
ANNUAL RUNOFF (INCHES)	13.27		7.79		17.99	
ANNUAL RUNOFF (INCHES)‡	13.27		7.58		17.94	
10 PERCENT EXCEEDS	76		40		107	
50 PERCENT EXCEEDS	34		22		42	
90 PERCENT EXCEEDS	18		13		19	

‡ Adjusted for inflow since June 1994.
a Aug. 9, Nov. 13.
b From rating curve extended above 3,900 ft^3/s on basis of contracted opening measurement at a gage-height of 9.93 ft.
c From high-water mark in well.
d Sept. 11, 12.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01480015 RED CLAY CREEK NEAR STANTON, DE

LOCATION.--Lat 39°42'56.7", long 75°38'23.8", New Castle County, Hydrologic Unit 02040205, on right bank at downstream side of westbound lane of bridge on State Highway 4, near Stanton, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--52.4 mi^2.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good below 800 ft^3/s and fair above, and those for estimated daily discharges (backwater, ice effect, and missing record), which are fair. Low flows augmented at times by inflow from Hoopes Reservoir located 5.7 miles upstream from gage on unnamed tributary to Red Clay Creek, capacity 2,000,000,000 gal. Water from Brandywine Creek is pumped into Hoopes Reservoir and is released into Red Clay Creek during periods of low flow. Water from Red Clay Creek is used for municipal supply. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 17, 2000	1330	*3,140	*17.10	Jun 16, 2001	2000	1,530	14.37
Jun 19, 2002	2330	*864	*11.34	No peak greater than base discharge.			

2001 Water Year Minimum discharge, 11 ft^3/s, Sept. 20.
2002 Water Year Minimum discharge, 6.8 ft^3/s, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e28	23	24	e42	60	49	77	50	54	30	23	21
2	e25	22	22	e42	54	49	69	49	94	32	22	19
3	e24	20	21	e41	51	48	64	48	54	30	21	18
4	24	20	20	e40	49	55	60	48	49	29	22	32
5	24	21	21	e40	188	78	57	49	47	35	22	40
6	24	21	22	e40	105	60	58	48	46	31	22	21
7	23	20	19	e39	77	55	58	47	46	29	21	19
8	22	20	20	e38	67	55	56	47	45	29	20	17
9	22	22	18	e38	59	54	58	47	45	33	19	18
10	22	38	18	e38	69	52	68	47	44	59	50	19
11	22	27	19	e37	55	50	69	46	48	50	78	18
12	22	20	19	e37	51	49	76	45	85	30	86	16
13	22	18	18	e37	52	107	62	44	46	28	55	14
14	22	25	77	e37	52	61	57	43	43	27	31	19
15	22	28	36	49	52	57	57	43	43	27	26	17
16	22	22	28	47	54	69	79	43	395	26	24	17
17	23	21	1060	42	81	89	63	43	201	25	23	16
18	26	20	111	41	53	61	61	44	57	25	23	15
19	25	20	66	169	50	55	57	45	47	26	20	16
20	22	20	58	156	49	54	55	44	43	25	26	19
21	22	20	52	81	49	150	55	65	41	24	22	83
22	22	20	51	e53	48	115	54	81	41	23	20	25
23	22	20	e50	e52	50	66	54	64	40	23	20	21
24	22	20	e48	e48	49	60	53	48	37	22	21	20
25	22	20	e47	e47	54	56	52	46	34	22	19	47
26	22	103	e47	e45	75	55	52	167	33	24	19	27
27	23	42	e46	43	55	54	51	147	31	25	20	22
28	23	28	e45	43	51	53	50	62	30	23	27	20
29	22	24	e44	42	---	56	50	54	30	23	20	20
30	22	27	e44	238	---	368	50	51	30	26	19	19
31	22	---	e43	97	---	102	---	48	---	24	27	---
TOTAL	710	772	2214	1839	1759	2342	1782	1753	1879	885	868	695
MEAN	22.9	25.7	71.4	59.3	62.8	75.5	59.4	56.5	62.6	28.5	28.0	23.2
MAX	28	103	1060	238	188	368	79	167	395	59	86	83
MIN	22	18	18	37	48	48	50	43	30	22	19	14
(†)	0	0	0	0	0	0	0	0	0	0	0	0
CFSM	0.44	0.49	1.36	1.13	1.20	1.44	1.13	1.08	1.20	0.54	0.53	0.44
IN.	0.50	0.55	1.57	1.31	1.25	1.66	1.27	1.24	1.33	0.63	0.62	0.49

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2001, BY WATER YEAR (WY)

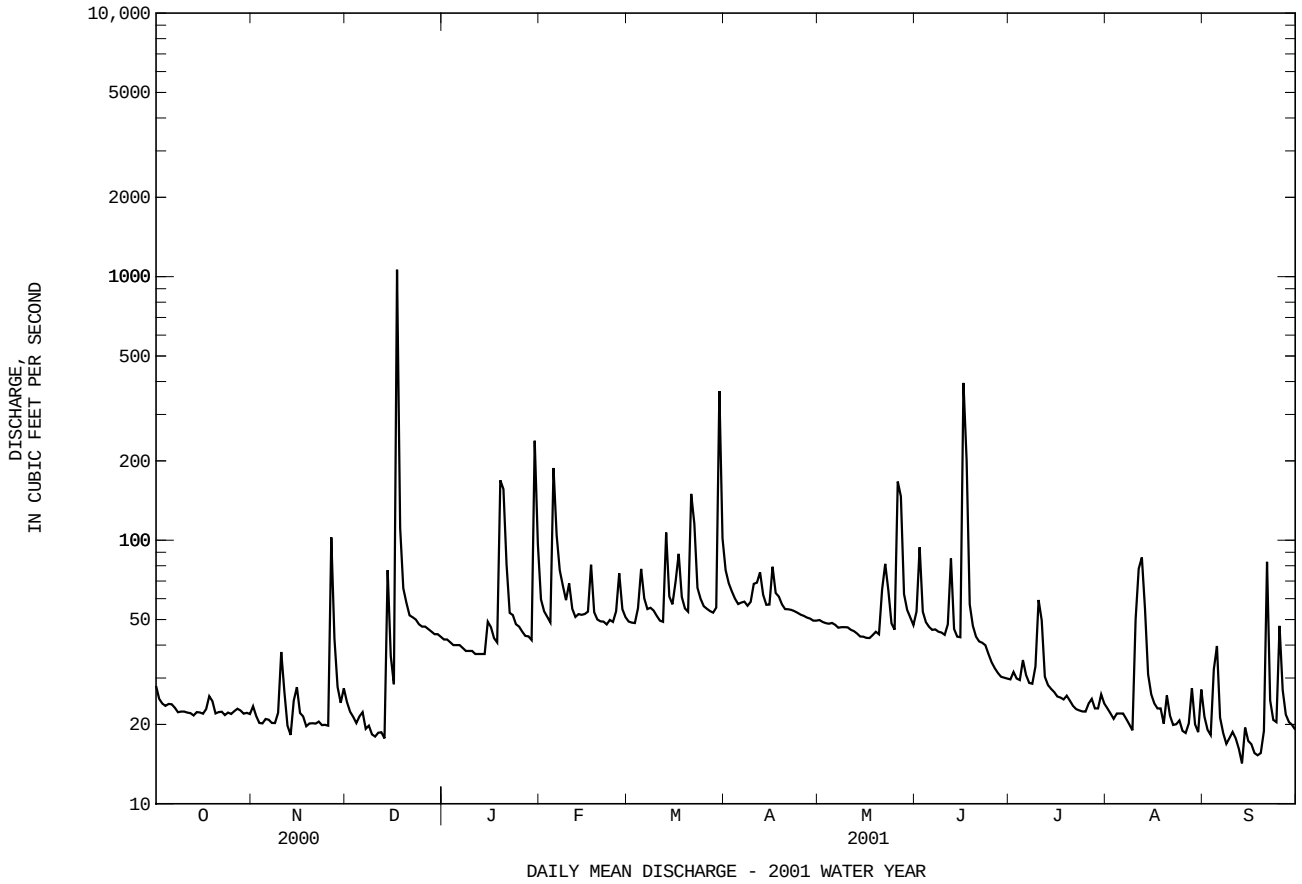
MEAN	45.6	52.4	70.6	95.1	76.6	118	90.6	76.0	59.2	55.8	42.4	58.5
MAX	120	91.5	240	220	151	229	191	138	104	246	97.7	219
(WY)	1997	1997	1997	1996	1994	2000	1993	1989	1996	1989	1996	1999
MIN	22.9	19.8	19.1	37.9	40.8	65.0	38.6	39.7	23.7	19.3	25.2	18.2
(WY)	2001	1999	1999	1992	1992	1990	1995	1995	1999	1999	1998	1998

† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.

01480015 RED CLAY CREEK NEAR STANTON, DE--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1989 - 2001	
ANNUAL TOTAL	26929		17498			
ANNUAL MEAN	73.6		47.9		70.1	
ANNUAL MEAN‡	73.6		47.9		69.7	
HIGHEST ANNUAL MEAN					98.2	1996
LOWEST ANNUAL MEAN					37.2	1995
HIGHEST DAILY MEAN	(e)2400	Mar 22	1060	Dec 17	4300	Sep 16 1999
LOWEST DAILY MEAN	18	(a)	14	Sep 13	(e)7.0	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	19	Dec 7	16	Sep 12	9.7	Jul 27 1999
MAXIMUM PEAK FLOW			3140	Dec 17	(b)8260	Sep 16 1999
MAXIMUM PEAK STAGE			17.10	Dec 17	(c)23.54	Sep 16 1999
INSTANTANEOUS LOW FLOW			(d)11	Sep 20	8.0	Aug 25 1999
ANNUAL RUNOFF (CFSM)	1.40		0.91		1.34	
ANNUAL RUNOFF (CFSM)‡	1.40		0.91		1.33	
ANNUAL RUNOFF (INCHES)	19.12		12.42		18.17	
ANNUAL RUNOFF (INCHES)‡	19.12		12.42		18.07	
10 PERCENT EXCEEDS	120		69		115	
50 PERCENT EXCEEDS	47		42		48	
90 PERCENT EXCEEDS	22		20		22	

‡ Adjusted for inflow since June 1994.
e Estimated.
a Nov. 13, and Dec. 9, 10, 13.
b From rating curve extended above 5,000 ft^3/s.
c From floodmarks: gage height affected by backwater.
d May have been lower, backwater from construction.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01480015 RED CLAY CREEK NEAR STANTON, DE--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	e19	21	e19	39	20	60	42	24	20	e17	29
2	21	e19	20	e18	e34	23	41	88	23	19	e18	33
3	20	e20	20	e17	e29	193	37	61	21	19	e11	16
4	17	23	19	e17	e28	55	35	42	21	18	e17	13
5	18	e22	19	e17	e26	38	33	38	21	16	e17	12
6	21	21	19	e35	e25	35	33	35	26	14	16	10
7	20	e20	19	80	e25	33	32	34	92	14	e17	9.5
8	18	20	23	46	e25	32	31	32	30	14	e17	10
9	17	e19	43	30	e24	31	31	33	24	21	16	10
10	18	e19	26	26	e24	39	33	33	22	29	17	9.1
11	18	e18	26	91	e28	30	30	30	21	15	19	8.4
12	19	e17	25	61	e24	28	32	36	22	13	17	7.3
13	e18	e17	23	33	23	38	32	62	26	12	15	11
14	e18	e17	27	28	22	37	31	64	91	15	15	17
15	27	e19	35	26	22	31	30	38	44	17	13	17
16	23	e19	24	25	23	31	29	33	35	15	15	18
17	20	e20	23	24	23	30	27	32	27	12	14	11
18	e19	e19	43	23	22	60	26	201	26	12	19	8.4
19	e19	e18	31	23	22	48	e23	63	71	12	14	7.8
20	e19	e20	24	27	22	152	e50	42	171	14	10	7.8
21	e19	e23	23	24	28	100	e35	35	36	13	11	16
22	e18	e20	22	24	23	49	e40	33	28	11	15	17
23	e20	e19	22	25	22	41	32	30	25	11	15	16
24	e20	e20	47	75	21	38	27	28	26	13	e20	15
25	e21	e40	30	72	21	36	30	29	75	12	e25	15
26	21	64	24	36	21	38	32	27	29	10	11	29
27	e19	26	23	30	21	115	27	49	27	11	8.1	75
28	e19	23	22	28	20	49	133	33	49	12	7.8	47
29	18	21	22	26	---	41	65	28	26	12	142	20
30	22	21	21	26	---	39	43	25	21	e10	30	15
31	e20	---	e20	41	---	40	---	25	---	e9.2	16	---
TOTAL	609	663	786	1073	687	1570	1140	1381	1180	445.2	614.9	530.3
MEAN	19.6	22.1	25.4	34.6	24.5	50.6	38.0	44.5	39.3	14.4	19.8	17.7
MAX	27	64	47	91	39	193	133	201	171	29	142	75
MIN	17	17	19	17	20	20	23	25	21	9.2	7.8	7.3
(†)	--	--	--	--	--	--	--	--	--	-0.1	-6.6	-2.4
MEAN‡	--	--	--	--	--	--	--	--	--	14.3	13.2	15.3
CFSM‡	--	--	--	--	--	--	--	--	--	0.27	0.25	0.29
IN.‡	--	--	--	--	--	--	--	--	--	0.31	0.29	0.32

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

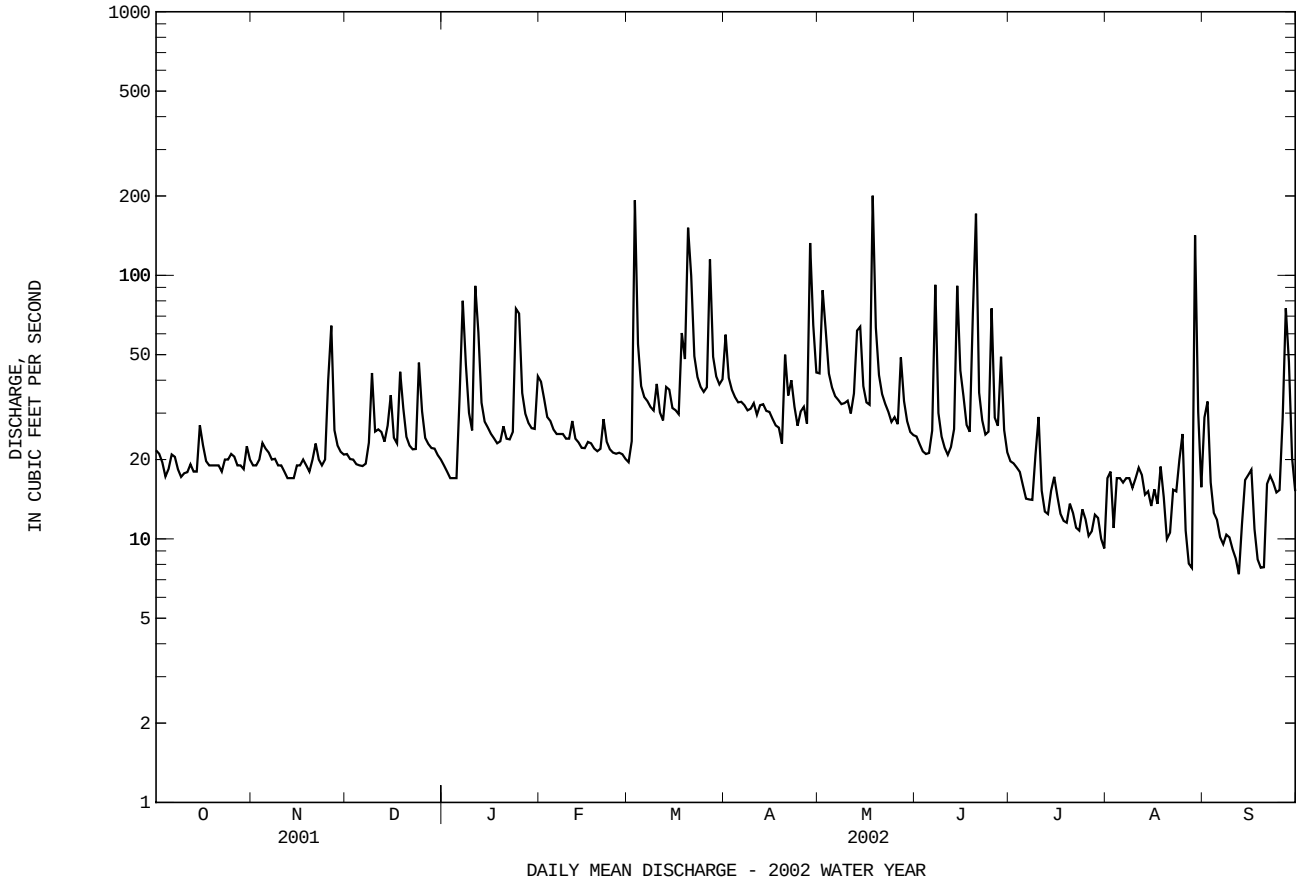
MEAN	43.8	50.3	67.3	90.8	72.9	113	86.9	73.7	57.8	52.9	40.8	55.6
MAX	120	91.5	240	220	151	229	191	138	104	246	97.7	219
(WY)	1997	1997	1997	1996	1994	2000	1993	1989	1996	1989	1996	1999
MIN	19.6	19.8	19.1	34.6	24.5	50.6	38.0	39.7	23.7	14.4	19.8	17.7
(WY)	2002	1999	1999	2002	2002	2002	2002	1995	1999	2002	2002	2002

† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.
‡ Adjusted for inflow.

01480015 RED CLAY CREEK NEAR STANTON, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	15860		10679.4			
ANNUAL MEAN	43.5		29.3		67.1	
ANNUAL MEAN‡	46.5		28.5		66.7	
HIGHEST ANNUAL MEAN					98.2	1996
LOWEST ANNUAL MEAN					29.3	2002
HIGHEST DAILY MEAN	395	Jun 16	201	May 18	4300	Sep 16 1999
LOWEST DAILY MEAN	14	Sep 13	7.3	Sep 12	7.0	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	16	Sep 12	9.2	Sep 6	9.2	Sep 6 2002
MAXIMUM PEAK FLOW			864	Jun 19	(a)8260	Sep 16 1999
MAXIMUM PEAK STAGE			11.34	Jun 20	(b)23.54	Sep 16 1999
INSTANTANEOUS LOW FLOW			(c)6.8	Sep 12	(c)6.8	Sep 12 2002
ANNUAL RUNOFF (CFSM)	0.83		0.56		1.28	
ANNUAL RUNOFF (CFSM)‡	0.83		0.54		1.27	
ANNUAL RUNOFF (INCHES)	11.26		7.58		17.41	
ANNUAL RUNOFF (INCHES)‡	11.26		7.33		17.29	
10 PERCENT EXCEEDS	66		46		111	
50 PERCENT EXCEEDS	38		23		45	
90 PERCENT EXCEEDS	19		13		21	

‡ Adjusted for inflow since June 1994.
a From rating curve extended above 5,000 ft^3/s.
b From floodmarks: gage height affected by backwater.
c May have been lower during periods of missing gage-height record.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01481500 BRANDYWINE CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°46'09.9", long 75°34'25.0", New Castle County, Hydrologic Unit 02040205, on right bank in Rockford Park, 0.2 mi downstream from Rising Sun Bridge, in Wilmington, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--October 1946 to current year. Prior to December 1946 monthly discharge only, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1948, 1950.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 68.23 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Some diurnal fluctuation at low flow caused by mills upstream from station. Flow regulated since November 1973 by Marsh Creek Reservoir, capacity 7,230,000,000 gal, about 27 mi upstream. No diversion just upstream from station by plant of E. I. du Pont de Nemours & Co. since June l3, 1960. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 7	0615	*2,000	*5.00	No peak greater than base discharge.			

Minimum discharge, 32 ft^3/s, July 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	107	114	e95	273	131	282	276	182	113	52	98
2	128	109	111	e93	267	125	252	318	162	108	58	183
3	122	112	108	e91	209	593	217	819	147	105	52	105
4	119	116	107	e90	192	525	209	357	136	98	143	81
5	117	106	110	e90	169	239	213	266	135	92	85	70
6	114	105	112	e135	159	188	197	234	171	84	60	63
7	108	102	109	343	166	176	189	216	1030	79	54	56
8	108	104	111	248	171	173	185	201	352	81	49	54
9	108	102	199	171	164	172	183	208	212	90	46	52
10	110	105	193	159	163	170	193	277	182	105	46	49
11	111	103	151	295	173	180	197	215	171	92	44	47
12	113	99	137	564	161	147	184	195	156	79	44	45
13	112	99	133	232	153	160	187	417	155	75	43	42
14	113	e101	141	178	147	200	187	892	317	78	43	42
15	131	102	208	155	139	188	223	452	390	85	39	43
16	128	102	169	143	147	168	201	303	260	85	39	59
17	117	105	138	138	146	155	178	257	201	79	38	75
18	119	105	211	139	138	246	170	868	183	70	37	57
19	115	103	214	139	135	327	161	689	209	69	36	49
20	117	107	159	144	133	371	193	376	225	70	38	46
21	117	111	139	149	166	918	177	314	160	69	38	48
22	115	106	130	143	156	416	187	276	143	68	35	46
23	113	104	129	147	140	275	219	250	133	66	35	46
24	107	105	e210	320	136	232	180	230	173	69	41	43
25	121	141	e190	783	134	211	173	218	171	67	131	54
26	107	289	e160	295	134	198	197	205	138	65	79	54
27	110	174	e150	211	136	476	182	232	123	64	53	344
28	110	128	e140	181	129	397	379	236	190	64	52	322
29	108	116	120	171	---	265	614	213	145	67	220	160
30	108	115	116	164	---	232	321	196	121	64	173	99
31	104	---	97	236	---	225	---	179	---	58	87	---
TOTAL	3562	3483	4516	6442	4536	8479	6630	10385	6473	2458	1990	2532
MEAN	115	116	146	208	162	274	221	335	216	79.3	64.2	84.4
MAX	132	289	214	783	273	918	614	892	1030	113	220	344
MIN	104	99	97	90	129	125	161	179	121	58	35	42
(†)	-14.8	-5.6	-1.6	7.6	0.0	15.3	-3.4	0.8	-2.5	-8.8	-5.4	-3.4
MEAN‡	100	110	144	216	162	289	218	336	214	70.5	58.8	81.0
CFSM‡	.32	.35	.46	.69	.52	.92	.69	1.07	.68	.22	.19	.26
IN‡	.37	.39	.53	.80	.54	1.06	.77	1.23	.76	.25	.22	.29

e Estimated

† Change in contents in Marsh Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Department of Environmental Resources.

‡ Adjusted for change in reservoir contents.

01481500 BRANDYWINE CREEK AT WILMINGTON, DE--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1973, BY WATER YEAR (WY) [UNREGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	223	356	434	498	681	734	696	559	435	330	315	284
MAX	860	794	979	1052	1454	1206	1406	1087	1343	749	1436	1403
(WY)	1972	1972	1973	1953	1971	1958	1958	1958	1972	1958	1955	1971
MIN	80.6	117	129	173	225	333	259	190	149	92.5	81.9	99.6
(WY)	1964	1966	1966	1955	1954	1969	1963	1963	1963	1963	1957	1964

SUMMARY STATISTICS	WATER YEARS 1947 - 1973	
ANNUAL MEAN	461	
HIGHEST ANNUAL MEAN	732	1972
LOWEST ANNUAL MEAN	252	1954
HIGHEST DAILY MEAN	14300	Jun 23 1972
LOWEST DAILY MEAN	56	Aug 23 1957
ANNUAL SEVEN-DAY MINIMUM	59	Aug 18 1957
INSTANTANEOUS PEAK FLOW	(a)29000	Jun 23 1972
INSTANTANEOUS PEAK STAGE	15.49	Jun 23 1972
INSTANTANEOUS LOW FLOW	(b)30	Dec 26 1948
ANNUAL RUNOFF (CFSM)	1.47	
ANNUAL RUNOFF (INCHES)	19.93	
10 PERCENT EXCEEDS	864	
50 PERCENT EXCEEDS	316	
90 PERCENT EXCEEDS	125	

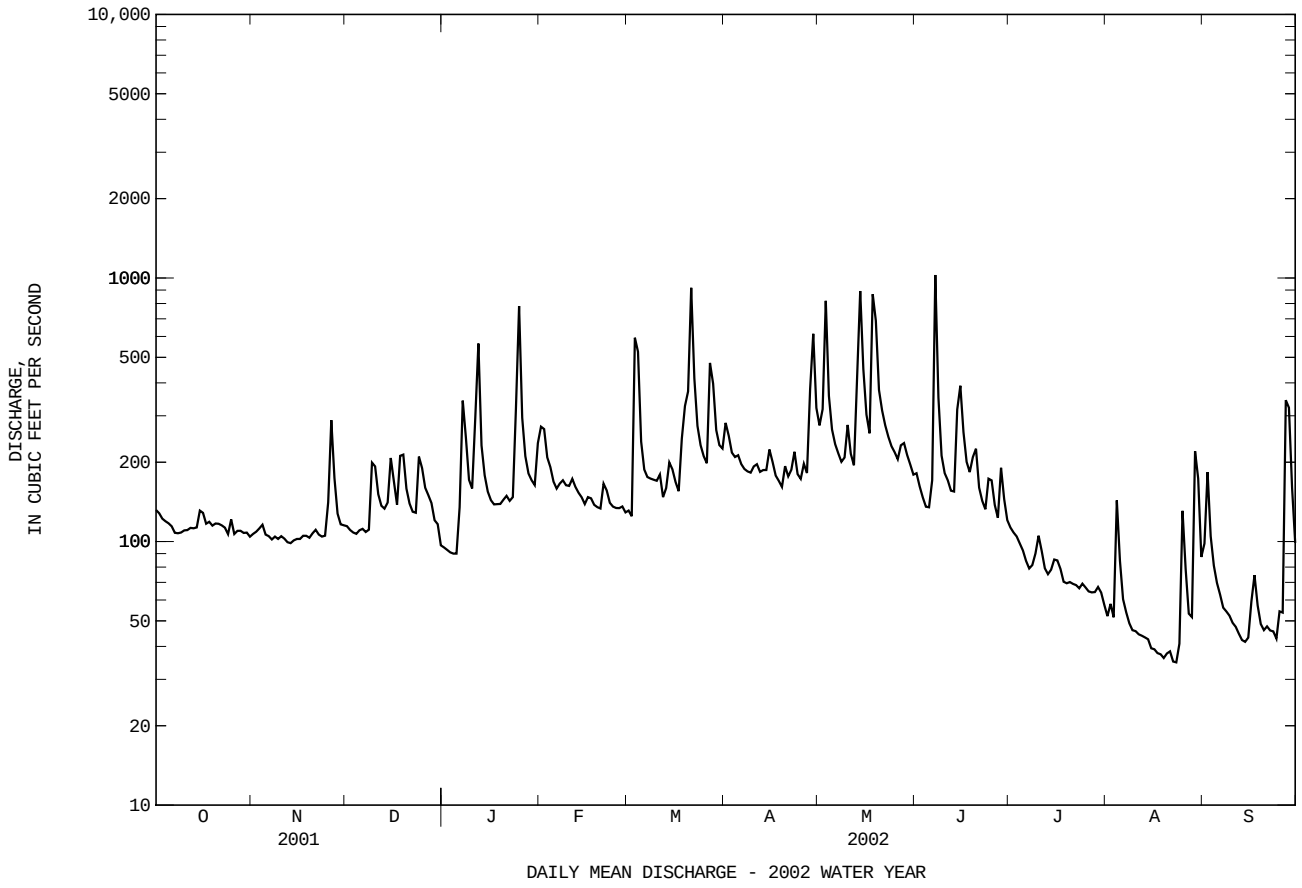
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2002, BY WATER YEAR (WY) [REGULATED]

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	297	355	518	614	617	751	706	585	432	370	254	309
MAX	1022	856	1927	1868	1610	1839	1773	1168	1079	1243	572	1099
(WY)	1997	1997	1997	1979	1979	1994	1983	1989	1975	1975	1996	1999
MIN	115	116	145	119	162	230	221	304	172	79.3	64.2	84.4
(WY)	2002	2002	1981	1981	2002	1981	2002	1977	1985	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1974 - 2002	
ANNUAL TOTAL	126654		61486			
ANNUAL MEAN	347		168		483	
ANNUAL MEAN‡	346		167		484	
HIGHEST ANNUAL MEAN					835	1984
LOWEST ANNUAL MEAN					168	2002
HIGHEST DAILY MEAN	3270	Mar 30	1030	Jun 7	14200	Sep 17 1999
LOWEST DAILY MEAN	(e)90	(c)	35	(d)	35	(d)
ANNUAL SEVEN-DAY MINIMUM	102	Nov 9	37	Aug 17	37	Aug 17 2002
MAXIMUM PEAK FLOW			2000	Jun 7	(a)28700	Sep 17 1999
MAXIMUM PEAK STAGE			5.00	Jun 7	15.43	Sep 17 1999
INSTANTANEOUS LOW FLOW			(f)32	Jul 27	(f)32	Jul 27 2002
ANNUAL RUNOFF (CFSM)	1.11		0.54		1.54	
ANNUAL RUNOFF (CFSM)‡	1.10		0.53		1.54	
ANNUAL RUNOFF (INCHES)	15.00		7.28		20.91	
ANNUAL RUNOFF (INCHES)‡	14.93		7.19		20.93	
10 PERCENT EXCEEDS	701		279		891	
50 PERCENT EXCEEDS	240		139		338	
90 PERCENT EXCEEDS	108		54		137	

a From rating curve extended above 18,000 ft^3/s.
b During period of ice effect.
‡ Adjusted for change in reservoir contents since November 1973.
e Estimated.
c Sept. 18, 19.
d Aug. 22, 23, 2002.
f As a result of regulation from Hagley Museum and Library.

01481500 BRANDYWINE CREEK AT WILMINGTON, DE--Continued



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by A.J.Tallman

Gage house at 01481500 Brandywine Creek at Wilmington, De

01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE

LOCATION.--Lat 39°26'00.4", long 75°41'59.8", New Castle County, Hydrologic Unit 02040205, on right bank just upstream from Noxontown Lake Dam, 15 ft upstream from from bridge on State Road 38, 2.0 mi southwest of Odessa, 2.4 mi southeast of Middletown, and 10.1 mi upstream from mouth of Appoquinimink River.

DRAINAGE AREA.--8.85 mi^2.

PERIOD OF RECORD.--October 1992 to September 1994, November 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater, missing record), which are poor. Outflow of lake controlled by stop logs at outlet. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36 ft^3/s, April 29, gage height, 1.68 ft; minimum discharge, 0.00 ft^3/s, Oct. 26, (wind effect, may also have occured during period of missing record).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	e1.2	5.7	2.7	7.2	2.1	11	9.4	9.1	2.0	1.2	e5.0
2	2.1	e1.6	e4.0	2.6	5.0	3.2	7.8	19	6.8	1.7	1.4	e15
3	1.8	3.5	e3.0	2.6	4.3	12	4.8	16	4.8	1.6	1.4	e9.0
4	1.7	5.0	e2.5	2.7	4.1	8.5	3.9	11	4.5	1.6	1.7	e5.0
5	1.6	3.2	e2.0	2.7	4.6	5.3	3.4	7.6	5.1	1.4	1.8	e3.0
6	1.6	2.2	e3.0	5.9	4.5	4.0	3.2	5.7	11	1.0	1.3	e2.0
7	1.3	2.6	6.8	13	5.8	2.1	2.8	4.7	13	0.90	0.64	e1.5
8	1.1	3.9	7.5	9.2	6.0	2.3	3.2	4.0	11	0.85	e0.40	e1.0
9	1.4	3.4	10	6.3	5.3	3.8	3.6	3.6	8.8	0.64	e0.30	e0.80
10	1.5	4.0	7.0	4.7	6.0	2.8	7.4	3.6	7.0	1.5	e0.30	e0.70
11	1.8	4.8	6.6	8.0	7.1	2.6	6.4	2.6	6.6	1.4	e0.30	e0.60
12	1.7	5.5	5.2	8.0	6.6	2.4	6.1	4.4	5.4	1.4	e0.35	e0.50
13	1.7	6.7	5.1	5.5	4.8	5.1	6.9	10	6.1	1.2	e0.40	e0.40
14	1.8	6.2	5.0	3.7	4.5	5.6	5.8	5.9	11	1.4	e0.37	0.38
15	2.5	4.1	3.6	2.8	4.9	3.9	5.3	3.5	10	1.4	e0.35	0.46
16	2.2	e2.0	2.6	4.2	4.8	2.4	5.4	2.6	7.7	0.98	e0.34	0.52
17	1.9	e3.0	3.1	4.7	4.4	3.9	5.2	2.8	5.5	0.71	e0.34	0.51
18	1.4	6.7	6.0	5.1	4.0	11	4.4	22	4.7	0.57	e0.40	0.52
19	e1.3	8.4	5.2	6.1	4.4	10	4.1	19	5.2	0.55	e0.20	0.54
20	e1.2	e4.0	3.4	9.5	5.1	13	3.6	13	4.4	0.56	e0.15	0.52
21	e1.0	e3.0	2.6	7.8	4.8	14	2.5	10	4.1	0.53	e0.12	0.52
22	e1.2	e2.5	2.6	6.1	4.3	8.8	4.5	9.3	4.0	0.43	e0.10	0.67
23	2.3	e4.0	2.8	5.8	4.3	6.9	3.1	8.9	3.0	0.35	e0.10	0.94
24	2.4	7.0	8.4	7.4	4.2	4.7	2.7	7.9	2.6	0.80	e0.10	0.62
25	2.6	9.1	6.9	8.2	4.3	3.7	5.2	6.6	2.3	1.0	e0.20	0.50
26	1.8	17	4.9	6.4	3.4	3.9	5.3	6.5	2.1	1.5	e0.16	2.1
27	e1.5	13	4.1	5.2	3.3	12	4.0	8.9	1.8	1.7	e0.15	5.7
28	e1.4	8.7	3.3	4.6	2.8	9.8	19	13	1.8	2.3	e0.17	2.2
29	e1.3	7.0	2.8	4.7	---	7.1	24	11	1.7	2.4	e0.20	1.2
30	e1.2	7.1	2.9	4.5	---	4.9	13	10	1.8	1.9	e8.0	0.97
31	e1.2	---	2.7	6.7	---	7.3	---	9.2	---	1.6	e6.0	---
TOTAL	51.9	160.4	141.3	177.4	134.8	189.1	187.6	271.7	172.9	37.87	28.94	63.37
MEAN	1.67	5.35	4.56	5.72	4.81	6.10	6.25	8.76	5.76	1.22	0.93	2.11
MAX	2.6	17	10	13	7.2	14	24	22	13	2.4	8.0	15
MIN	1.0	1.2	2.0	2.6	2.8	2.1	2.5	2.6	1.7	0.35	0.10	0.38
CFSM	0.19	0.60	0.52	0.65	0.54	0.69	0.71	0.99	0.65	0.14	0.11	0.24
IN.	0.22	0.67	0.59	0.75	0.57	0.79	0.79	1.14	0.73	0.16	0.12	0.27

e Estimated

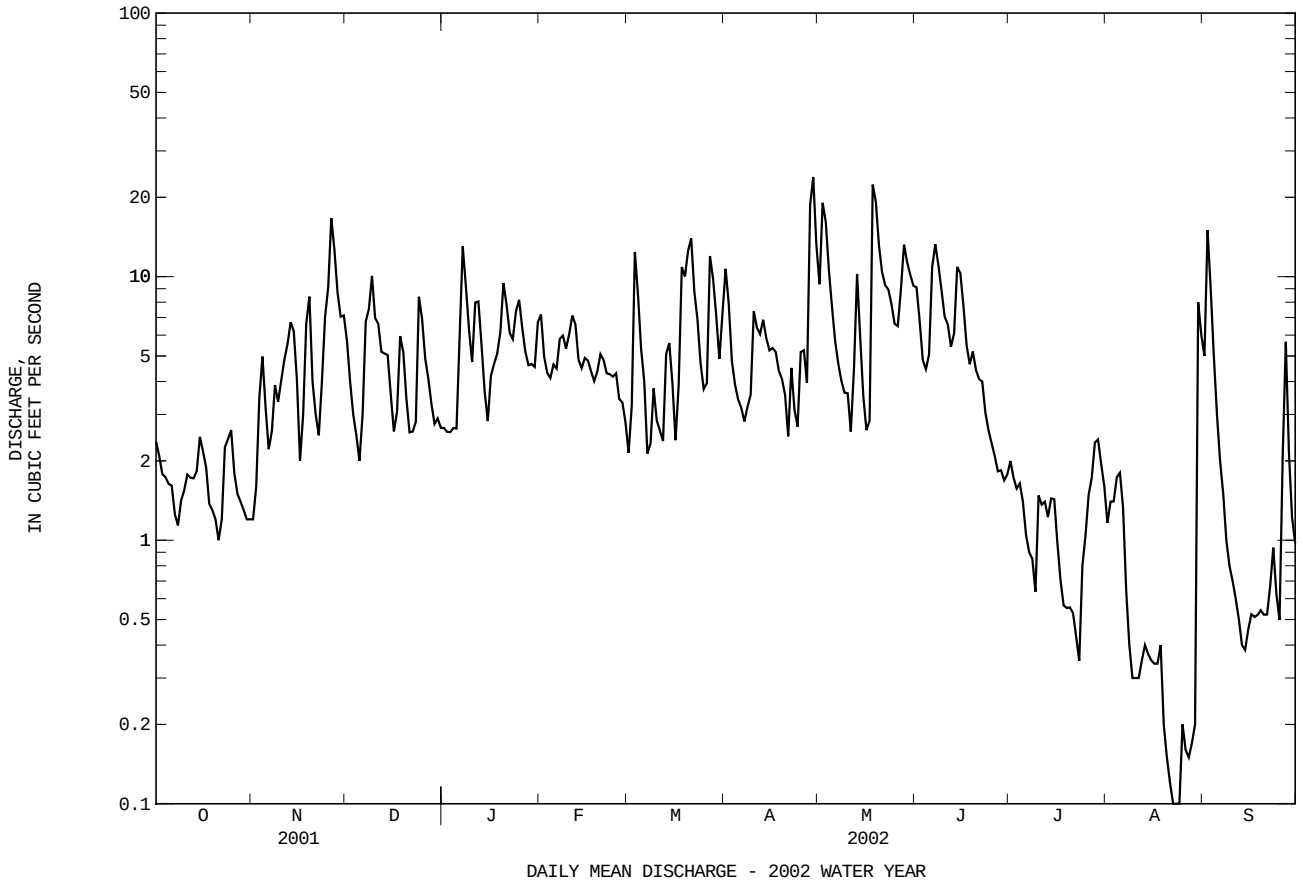
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, 2000 - 2002, BY WATER YEAR (WY)

MEAN	4.27	7.44	10.3	11.6	15.7	23.0	15.8	12.1	7.96	4.59	6.81	6.41
MAX	6.33	8.57	16.7	21.1	32.7	37.4	27.9	15.7	10.9	7.00	13.6	14.1
(WY)	2001	1993	1993	1994	1994	1994	1993	1993	2001	2000	2000	2000
MIN	1.67	5.35	4.56	5.72	4.81	6.10	6.25	8.76	5.76	1.22	0.93	2.11
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 1994, 2000 - 2002	
ANNUAL TOTAL	2954.18		1617.28			
ANNUAL MEAN	8.09		4.43		10.2	
HIGHEST ANNUAL MEAN					14.5	1994
LOWEST ANNUAL MEAN					4.43	2002
HIGHEST DAILY MEAN	81	May 27	24	Apr 29	359	(a)
LOWEST DAILY MEAN	0.83	Sep 3	(e)0.10	(a)	0.10	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	0.99	Aug 24	0.13	Aug 20	0.13	Aug 20 2002
MAXIMUM PEAK FLOW			36	Apr 29	(b)602	Mar 3 1994
MAXIMUM PEAK STAGE			(c)0.00	Oct 26	(c)0.00	Oct 26 2001
ANNUAL RUNOFF (CFSM)	0.91		0.50		1.15	
ANNUAL RUNOFF (INCHES)	12.42		6.80		15.62	
10 PERCENT EXCEEDS	16		9.2		19	
50 PERCENT EXCEEDS	6.2		3.7		7.1	
90 PERCENT EXCEEDS	1.3		0.55		1.6	

e Estimated
a Aug. 22-24, 2002.
b From rating curve extended above 250 ft^3/s.
c Wind effect.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01483200 BLACKBIRD CREEK AT BLACKBIRD, DE

LOCATION.--Lat 39°21'58.6", long 75°40'09.8", New Castle County, Hydrologic Unit 02040205, on left bank 15 ft downstream from highway culverts, 0.5 mi upstream from Barlow Branch, 0.6 mi southwest of Blackbird, 5.6 mi northwest of Smyrna, and 13.8 mi upstream from mouth.

DRAINAGE AREA.--3.85 mi^2.

PERIOD OF RECORD.--Annual maximum, water years 1952-56, and occasional low-flow measurements, water years 1952-53, 1955-56. October 1956 to current year.

REVISED RECORDS.--WRD MD-DE-89-1: 1987-88(P).

GAGE.--Water-stage recorder. Concrete control since May 23, 1968. Datum of gage is 17.89 ft above National Geodetic Vertical Datum of 1929. Mar. 5, 1951, to Oct. 16, 1956, nonrecording gage and crest-stage gage at site 15 ft upstream at datum 1.0 ft higher. Oct. 17, 1956, to June 16, 1986, recording gage at same site on right bank at datum 1.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Occasional regulation at low and medium flow by Blackbird Lake Dam upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	1600	*40	*1.94	No peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, Aug. 21-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	e0.34	1.1	0.94	2.1	1.3	5.2	2.8	1.1	0.80	0.15	1.3
2	1.0	e0.38	1.1	0.89	1.9	1.5	3.1	6.7	1.00	0.83	0.16	6.4
3	0.72	e0.45	0.99	0.96	1.6	6.0	2.6	5.1	0.90	0.73	0.16	3.2
4	0.48	e0.66	0.94	0.99	1.6	2.9	2.1	2.3	0.85	0.59	0.15	2.2
5	0.42	e0.40	1.0	1.0	1.4	1.8	2.0	2.2	1.5	0.52	0.15	1.6
6	0.42	e0.35	1.1	2.2	1.3	1.7	2.0	2.0	11	0.42	0.14	1.1
7	0.46	e0.38	1.1	5.6	1.6	1.6	2.0	1.8	15	0.44	0.09	0.88
8	0.44	e0.47	1.5	2.6	1.7	1.6	1.9	1.6	3.6	0.46	0.09	0.67
9	0.36	e0.39	2.9	1.8	1.5	1.7	2.1	1.6	1.5	0.49	0.07	0.48
10	0.29	e0.45	1.6	1.6	1.5	1.7	4.5	1.8	1.3	0.47	0.08	0.35
11	0.33	e0.56	1.7	3.5	2.3	1.5	2.6	1.3	1.1	0.44	0.08	0.27
12	0.34	e0.80	1.6	3.4	1.6	1.6	2.7	1.7	1.1	0.41	0.08	0.25
13	0.40	e0.52	1.5	2.0	1.5	2.6	2.8	3.4	1.9	0.38	0.09	0.22
14	0.38	0.45	1.5	1.7	1.4	2.3	2.4	1.6	7.2	0.40	0.09	0.18
15	0.41	0.49	1.5	1.6	1.4	1.8	2.2	1.4	5.1	0.40	0.09	0.17
16	0.44	0.59	1.2	1.5	1.4	1.7	3.3	1.2	2.4	0.40	0.09	0.17
17	0.38	0.51	1.2	1.4	1.4	1.7	2.4	1.2	1.5	0.34	0.09	0.17
18	0.34	0.56	2.2	1.4	1.3	7.2	1.9	17	1.6	0.31	0.09	0.16
19	0.34	0.55	1.6	1.6	1.3	4.7	1.9	9.4	2.6	0.31	0.08	0.14
20	0.34	0.68	1.3	1.8	1.4	8.8	1.6	2.4	1.5	0.26	0.06	0.12
21	0.34	0.68	1.1	1.9	1.4	8.2	1.6	1.8	1.2	0.18	0.04	0.11
22	0.37	0.64	1.1	2.3	1.4	3.7	2.9	1.5	1.1	0.11	0.02	0.10
23	0.42	0.56	1.1	2.5	1.3	2.9	2.0	1.4	1.0	0.10	0.03	0.08
24	0.37	0.52	3.4	2.7	1.2	2.5	1.5	1.5	1.1	0.13	0.03	0.07
25	e0.38	2.7	2.1	2.7	1.2	2.5	1.9	1.4	1.2	0.10	0.05	0.07
26	e0.35	8.9	1.4	1.9	1.4	2.5	1.8	1.3	1.3	0.10	0.06	0.09
27	e0.33	3.9	1.3	1.7	1.3	7.0	1.4	6.1	1.1	0.11	0.04	0.21
28	e0.33	1.6	1.2	1.6	1.3	3.7	13	3.6	1.0	0.12	0.06	0.31
29	e0.32	1.4	1.2	1.5	---	3.1	12	1.8	0.94	0.13	0.78	0.35
30	e0.34	1.3	1.2	1.5	---	2.7	3.8	1.3	0.84	0.13	2.6	0.34
31	e0.33	---	1.0	1.8	---	3.1	---	1.1	---	0.13	1.5	---
TOTAL	13.27	32.18	44.73	60.58	41.7	97.6	93.2	91.3	74.53	10.74	7.29	21.76
MEAN	0.43	1.07	1.44	1.95	1.49	3.15	3.11	2.95	2.48	0.35	0.24	0.73
MAX	1.1	8.9	3.4	5.6	2.3	8.8	13	17	15	0.83	2.6	6.4
MIN	0.29	0.34	0.94	0.89	1.2	1.3	1.4	1.1	0.84	0.10	0.02	0.07
CFSM	0.11	0.28	0.37	0.51	0.39	0.82	0.81	0.76	0.65	0.09	0.06	0.19
IN.	0.13	0.31	0.43	0.59	0.40	0.94	0.90	0.88	0.72	0.10	0.07	0.21

e Estimated

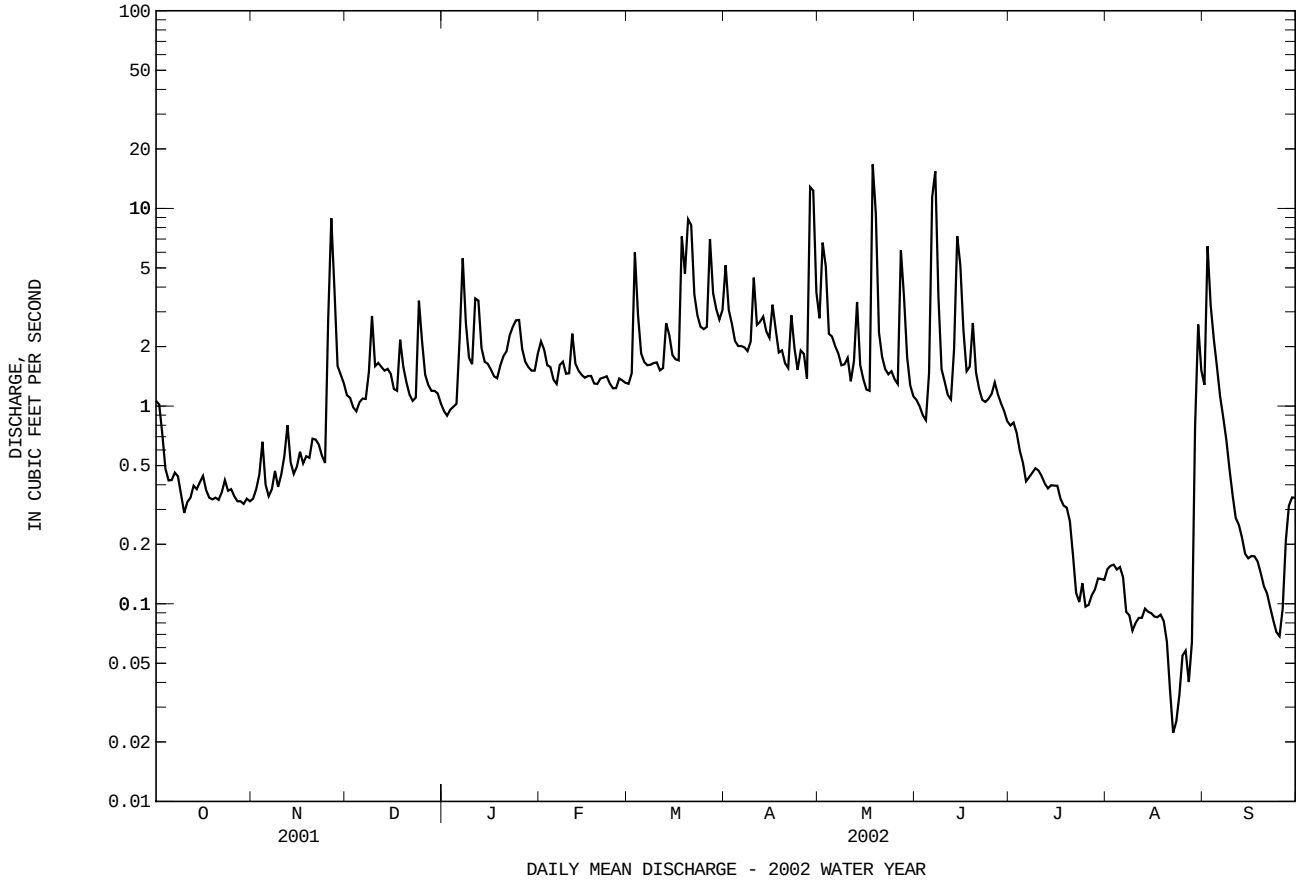
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2002, BY WATER YEAR (WY)

MEAN	2.42	3.41	4.99	6.15	7.13	8.78	7.47	5.37	3.66	2.83	2.09	2.50
MAX	8.83	10.4	23.5	18.1	19.2	20.3	21.0	13.9	24.4	17.0	7.10	20.1
(WY)	1972	1957	1997	1978	1979	1958	1983	1989	1972	1989	2000	1999
MIN	0.30	0.73	0.71	1.51	1.49	1.98	2.16	1.26	0.54	0.077	0.013	0.21
(WY)	1969	1966	1966	1981	2002	1966	1966	1977	1966	1966	1966	1968

01483200 BLACKBIRD CREEK AT BLACKBIRD, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 2002	
ANNUAL TOTAL	1663.91		588.88			
ANNUAL MEAN	4.56		1.61		4.72	
HIGHEST ANNUAL MEAN					9.05	1972
LOWEST ANNUAL MEAN					1.40	1966
HIGHEST DAILY MEAN	64	Mar 30	17	May 18	397	Sep 16 1999
LOWEST DAILY MEAN	0.24	Sep 20	0.02	Aug 22	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.33	Oct 26	0.04	Aug 21	0.00	Jul 17 1966
MAXIMUM PEAK FLOW			40	May 27	(b)789	Sep 16 1999
MAXIMUM PEAK STAGE			1.94	May 27	6.47	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.02	(c)	0.00	(d)
ANNUAL RUNOFF (CFSM)	1.18		0.42		1.23	
ANNUAL RUNOFF (INCHES)	16.08		5.69		16.66	
10 PERCENT EXCEEDS	9.8		3.1		9.7	
50 PERCENT EXCEEDS	2.0		1.3		2.7	
90 PERCENT EXCEEDS	0.40		0.13		0.50	

a Sept. 11, 1965; July 12-15, 17-31, Aug. 1-12, 14, 15, 18-31, Sept. 1-20, 1966.
b From rating curve extended above 600 ft^3/s.
c Aug. 21-24.
d No flow at times during 1964-66.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01483700 ST. JONES RIVER AT DOVER, DE

LOCATION.--Lat 39°09'49.4", long 75°31'08.7", Kent County, Hydrologic Unit 02040207, on left bank 150 ft upstream from Division Street Bridge in Dover, 1,950 ft downstream from Silver Lake, and 12.5 mi upstream from mouth.

DRAINAGE AREA.--31.9 mi^2.

PERIOD OF RECORD.--January 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.00 ft above National Geodetic Vertical Datum of 1929. Prior to June 1973, at datum 0.50 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater from tides), which are fair. Flow affected by Silver Lake. Flow occasionally affected by tide and wind effect. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 294 ft^3/s, Sept. 1, gage height, 4.29 ft; minimum discharge, 0.20 ft^3/s, Nov. 2, 3, Dec. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	0.33	e0.33	6.0	e5.7	4.0	29	27	6.3	2.9	2.8	114
2	e11	0.28	e0.40	5.8	6.4	4.9	23	71	6.3	2.8	2.3	124
3	7.4	0.29	e0.80	5.4	5.8	30	21	99	5.3	2.6	2.1	64
4	5.7	0.34	0.60	5.4	8.6	21	15	57	5.1	2.9	1.8	25
5	4.6	0.35	0.60	5.4	6.2	11	13	28	5.2	3.0	1.7	11
6	5.0	0.39	0.93	9.3	4.2	8.1	12	17	37	1.9	e1.6	6.9
7	4.2	0.38	1.2	25	9.2	7.3	11	14	101	1.5	e1.5	e5.4
8	21	0.37	2.1	20	9.4	6.4	10	11	70	1.3	e1.2	e4.0
9	35	0.35	2.3	12	8.1	6.3	11	10	27	1.7	e1.1	e3.3
10	33	0.36	2.3	9.5	8.1	8.3	29	11	12	2.3	e1.0	e3.0
11	33	0.69	3.4	17	15	4.0	26	8.5	8.5	e2.2	e0.89	e4.3
12	32	1.3	4.1	17	8.5	5.2	23	13	6.8	e1.9	e0.80	e1.9
13	31	1.0	e5.4	15	8.6	17	19	33	7.6	e1.8	e0.80	1.7
14	e31	0.51	4.6	8.7	6.5	21	17	34	e34	e2.0	e0.80	1.6
15	e29	0.62	5.1	8.6	6.7	15	14	21	46	e3.0	0.74	1.6
16	16	0.88	4.9	7.1	6.7	12	16	13	26	3.0	0.71	2.9
17	e0.67	e0.40	5.1	4.9	7.1	8.6	17	13	13	e2.9	e0.73	2.9
18	0.63	e0.33	10	3.8	5.2	24	14	66	14	e2.6	e0.67	e2.3
19	0.78	0.46	6.8	8.1	4.3	26	10	89	41	e1.7	e0.67	e2.0
20	0.54	0.72	7.8	18	5.0	44	9.0	53	46	e1.7	e0.60	e1.9
21	0.70	1.2	7.1	17	5.8	53	8.4	25	23	e1.8	e0.60	e1.9
22	2.0	1.1	5.9	14	5.8	30	12	15	11	e1.8	e0.60	1.8
23	2.5	0.81	5.6	12	4.9	16	9.8	12	7.9	e3.8	e0.60	e2.0
24	8.7	0.62	8.9	12	4.8	12	8.2	10	6.6	11	e0.60	e1.8
25	16	0.44	8.8	15	5.0	9.9	9.5	9.2	5.7	16	e0.60	e1.6
26	9.5	0.34	9.0	12	e5.4	12	9.5	8.9	5.4	e11	e0.60	e7.8
27	0.54	0.39	8.0	11	6.3	53	8.3	8.3	4.5	8.3	0.54	e10
28	0.64	0.53	7.1	8.6	4.3	48	78	7.5	4.7	7.1	3.5	12
29	0.69	e0.53	7.0	7.9	---	27	91	7.0	4.4	5.5	17	6.8
30	0.71	e0.40	6.9	7.8	---	19	52	6.7	3.4	4.8	12	5.3
31	e0.53	---	6.2	e6.9	---	20	---	6.7	---	3.3	9.7	---
TOTAL	356.03	16.71	149.26	336.2	187.6	584.0	625.7	804.8	594.7	120.1	70.85	434.7
MEAN	11.5	0.56	4.81	10.8	6.70	18.8	20.9	26.0	19.8	3.87	2.29	14.5
MAX	35	1.3	10	25	15	53	91	99	101	16	17	124
MIN	0.53	0.28	0.33	3.8	4.2	4.0	8.2	6.7	3.4	1.3	0.54	1.6
CFSM	0.36	0.02	0.15	0.34	0.21	0.59	0.65	0.81	0.62	0.12	0.07	0.45
IN.	0.42	0.02	0.17	0.39	0.22	0.68	0.73	0.94	0.69	0.14	0.08	0.51

e Estimated

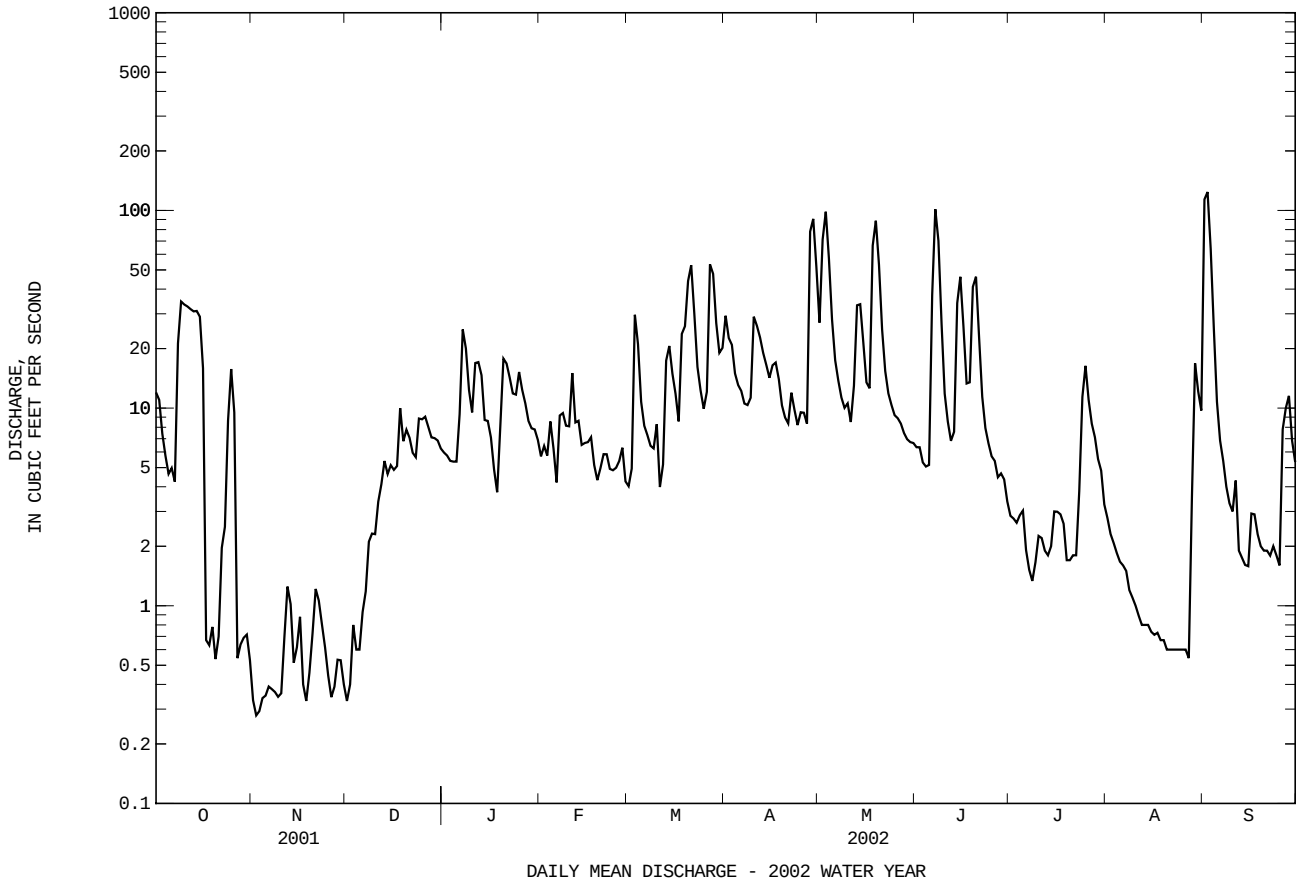
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002, BY WATER YEAR (WY)

MEAN	18.7	23.2	36.1	49.3	59.2	75.6	57.4	37.0	28.8	17.7	23.8	20.4
MAX	93.5	103	145	156	143	187	180	117	138	88.6	144	128
(WY)	1972	1973	1997	1978	1998	1994	1983	1989	1996	1975	1958	1960
MIN	0.40	0.56	1.35	1.64	6.70	10.7	13.5	9.86	4.36	2.10	0.69	1.92
(WY)	1964	2002	1966	1966	2002	1966	1966	1963	1986	1966	1966	1970

01483700 ST. JONES RIVER AT DOVER, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1958 - 2002	
ANNUAL TOTAL	12238.20		4280.65			
ANNUAL MEAN	33.5		11.7		36.5	
HIGHEST ANNUAL MEAN					69.3	1972
LOWEST ANNUAL MEAN					6.14	1966
HIGHEST DAILY MEAN	464	Mar 22	124	Sep 2	1460	Sep 13 1960
LOWEST DAILY MEAN	0.28	Nov 2	0.28	Nov 2	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.34	Nov 1	0.34	Nov 1	0.34	Nov 1 2001
MAXIMUM PEAK FLOW			294	Sep 1	1900	Sep 13 1960
MAXIMUM PEAK STAGE			4.29	Sep 1	(b)9.45	Sep 13 1960
INSTANTANEOUS LOW FLOW			0.20	(c)	0.00	(d)
ANNUAL RUNOFF (CFSM)	1.05		0.37		1.14	
ANNUAL RUNOFF (INCHES)	14.27		4.99		15.53	
10 PERCENT EXCEEDS	72		28		82	
50 PERCENT EXCEEDS	16		6.7		20	
90 PERCENT EXCEEDS	0.72		0.62		3.6	

a July 9, 1959, May 9, 10, 1961.
b From floodmark.
c Nov. 2, 3, Dec. 5.
d No flow at times in 1959, 1961, 1962.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01484100 BEAVERDAM BRANCH AT HOUSTON, DE

LOCATION.--Lat 38°54'20.8", long 75°30'45.9", Kent County, Hydrologic Unit 02040207, on left bank 15 ft upstream from culverts on State Highway 384, 0.8 mi south of Houston, and 1.2 mi upstream from Blairs Pond and mouth.

DRAINAGE AREA.--2.83 mi^2.

PERIOD OF RECORD.--May 1958 to current year.

REVISED RECORDS.--WDR MD-DE-84-1: 1981, 1983 (M).

GAGE.--Water-stage recorder and concrete control; timber control prior to Nov. 8, 1979. Datum of gage is 35.67 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Diversion for irrigation of about l50 acres upstream from station during some years. Several measurements of water temperature were made during this year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 1	1830	*38	*3.46	No other peak greater than base discharge.			

Minimum discharge, 0.04 ft^3/s, Aug. 25-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	1.3	1.1	0.84	1.6	0.76	4.1	e3.5	1.9	1.0	0.63	19
2	2.1	1.3	1.1	0.84	1.5	0.81	2.8	e8.0	1.6	0.99	0.61	11
3	2.0	1.3	1.1	0.87	1.6	1.8	4.2	e13	1.5	0.96	0.59	3.3
4	1.9	1.2	1.1	0.84	1.7	1.3	4.3	e5.3	1.5	0.92	0.58	2.7
5	1.9	1.2	1.1	0.84	1.4	1.0	3.3	e4.8	1.7	0.82	0.56	2.4
6	2.0	1.2	1.1	1.3	1.2	0.99	3.0	e4.3	2.5	0.78	0.61	2.3
7	1.9	1.2	1.1	1.7	1.7	0.91	2.8	e3.8	2.3	0.81	0.54	2.1
8	1.9	1.2	1.3	1.2	1.6	0.84	2.8	3.5	2.0	0.82	0.53	2.0
9	1.9	1.2	1.4	1.3	1.4	0.77	2.8	3.5	1.9	0.81	0.51	2.1
10	1.9	1.2	1.2	1.2	1.4	0.80	3.3	3.4	1.8	0.80	0.49	2.3
11	1.9	1.2	1.3	1.5	1.4	0.69	2.9	3.2	1.7	0.72	0.48	2.2
12	1.8	1.2	1.2	1.4	1.3	0.76	e2.7	3.1	1.7	0.74	0.46	2.1
13	1.7	e1.1	1.2	1.3	1.2	0.95	e3.3	3.4	1.9	0.75	0.45	2.1
14	1.7	e1.0	1.2	1.2	1.2	0.88	e3.2	3.3	2.0	0.83	0.42	2.1
15	1.7	e1.1	1.1	1.1	1.2	0.78	e3.0	2.9	1.9	0.82	0.40	2.4
16	1.7	e1.1	1.1	1.1	1.1	0.75	e2.8	2.6	1.8	0.75	0.37	2.6
17	1.6	e1.0	1.1	1.1	1.1	0.73	e2.6	2.3	1.6	0.70	0.37	1.9
18	1.5	e1.0	1.3	1.1	1.0	1.8	e2.5	2.2	1.6	0.71	0.38	1.7
19	1.5	e1.0	1.1	1.2	1.0	1.6	e2.3	2.0	1.6	0.72	0.36	1.6
20	1.6	e1.0	1.0	1.6	1.0	3.2	e2.1	1.8	1.6	0.72	0.35	1.6
21	1.5	e1.1	1.0	1.5	1.0	3.0	e2.0	1.9	1.5	0.64	0.35	1.5
22	1.4	e1.2	0.97	1.5	0.99	2.1	e2.1	1.9	1.4	0.63	0.32	1.5
23	1.4	e1.0	0.97	1.3	0.92	2.0	e2.0	2.0	1.2	0.66	0.31	1.4
24	1.4	e1.1	1.4	1.3	0.92	1.9	e2.0	2.0	1.3	0.91	0.27	1.4
25	1.3	e1.2	1.1	1.7	0.92	1.9	e2.1	2.0	1.4	1.3	0.07	1.3
26	1.3	e1.2	1.0	1.5	0.89	2.0	e1.8	2.0	1.6	0.96	0.05	1.7
27	1.3	e1.1	1.0	1.4	0.83	3.8	e1.5	2.1	1.2	1.1	0.04	1.7
28	1.3	e1.1	0.98	1.4	0.76	2.5	e2.8	1.9	1.2	1.0	0.05	1.5
29	1.3	e1.1	0.92	1.4	---	2.3	e5.1	2.0	1.1	0.83	0.86	1.4
30	1.3	e1.1	0.88	1.4	---	2.2	e4.3	2.0	1.1	0.66	0.52	1.4
31	1.3	---	0.85	1.4	---	2.7	---	2.1	---	0.62	0.43	---
TOTAL	51.3	34.2	34.27	39.33	33.83	48.52	86.5	101.8	49.1	25.48	12.96	84.3
MEAN	1.65	1.14	1.11	1.27	1.21	1.57	2.88	3.28	1.64	0.82	0.42	2.81
MAX	2.3	1.3	1.4	1.7	1.7	3.8	5.1	13	2.5	1.3	0.86	19
MIN	1.3	1.0	0.85	0.84	0.76	0.69	1.5	1.8	1.1	0.62	0.04	1.3
CFSM	0.58	0.40	0.39	0.45	0.43	0.55	1.02	1.16	0.58	0.29	0.15	0.99
IN.	0.67	0.45	0.45	0.52	0.44	0.64	1.14	1.34	0.65	0.33	0.17	1.11

e Estimated

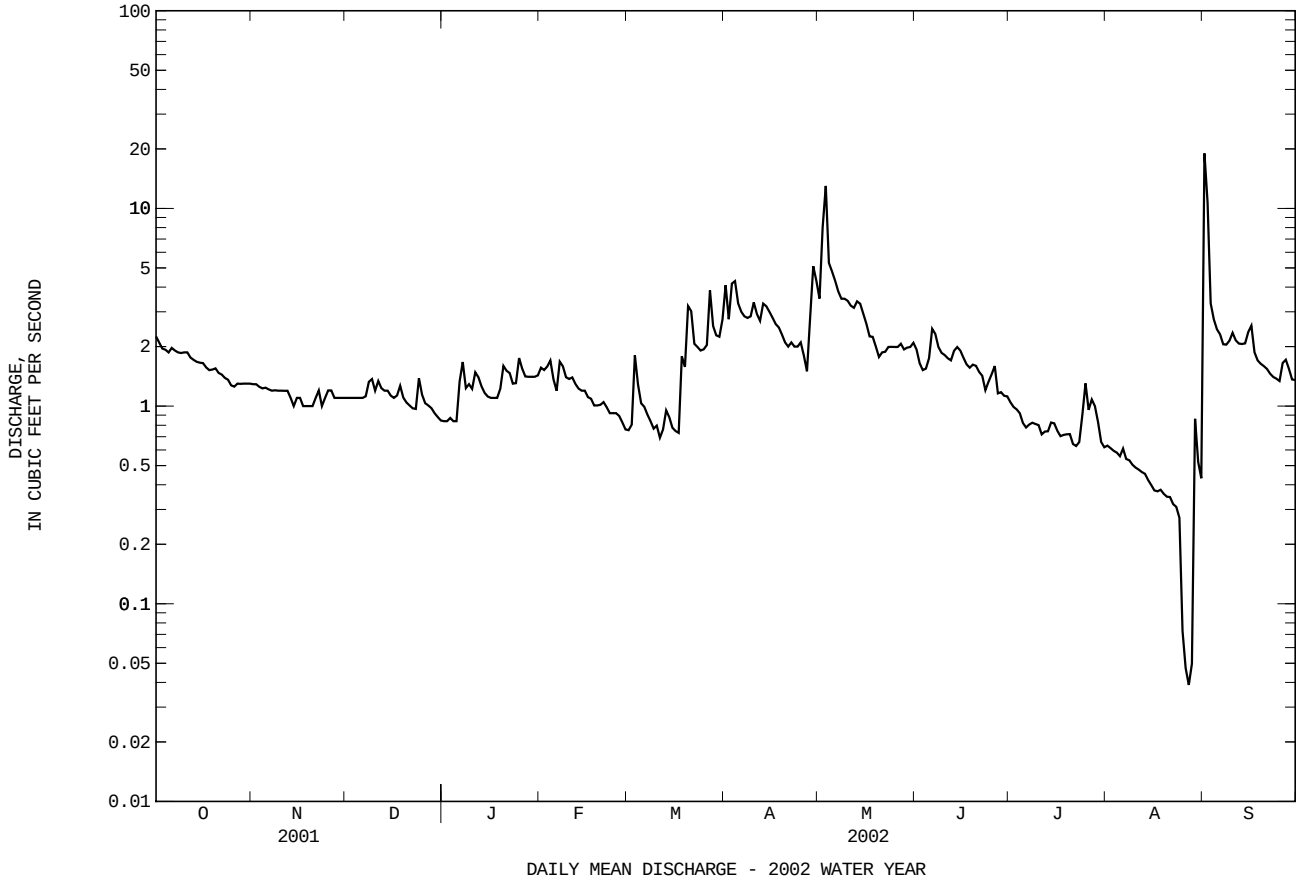
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002, BY WATER YEAR (WY)

MEAN	1.83	2.15	3.14	4.43	5.39	6.40	5.57	4.37	3.06	2.69	2.37	2.10
MAX	4.69	7.56	11.5	10.7	16.2	18.0	11.0	10.5	6.54	16.8	9.38	10.1
(WY)	1959	1998	1973	1978	1998	1994	1983	1984	2001	1975	1967	1960
MIN	0.37	0.44	0.48	0.57	1.06	1.57	1.90	1.88	1.22	0.42	0.42	0.44
(WY)	1987	1988	1966	1966	1966	2002	1985	1977	1986	1977	2002	1986

01484100 BEAVERDAM BRANCH AT HOUSTON, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1958 - 2002	
ANNUAL TOTAL	1409.87		601.59			
ANNUAL MEAN	3.86		1.65		3.58	
HIGHEST ANNUAL MEAN					5.92	1998
LOWEST ANNUAL MEAN					1.20	1966
HIGHEST DAILY MEAN	55	Jun 17	19	Sep 1	98	May 30 1984
LOWEST DAILY MEAN	0.85	Dec 31	0.04	Aug 27	(a)0.00	Jul 28 1977
ANNUAL SEVEN-DAY MINIMUM	0.96	Dec 25	0.16	Aug 22	0.06	Jul 19 1977
MAXIMUM PEAK FLOW			38	Sep 1	(b)176	Sep 12 1960
MAXIMUM PEAK STAGE			3.46	Sep 1	5.55	Sep 12 1960
INSTANTANEOUS LOW FLOW			0.04	(c)	(a)0.00	(d)
ANNUAL RUNOFF (CFSM)	1.36		0.58		1.27	
ANNUAL RUNOFF (INCHES)	18.53		7.91		17.21	
10 PERCENT EXCEEDS	6.2		2.8		6.5	
50 PERCENT EXCEEDS	3.3		1.3		2.7	
90 PERCENT EXCEEDS	1.1		0.70		0.81	

a Result of pumpage for irrigation.
b From rating curve extended above 75 ft^3/s.
c Aug. 25-28.
d July 18-30, 1977.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01484500 STOCKLEY BRANCH AT STOCKLEY, DE

LOCATION.--Lat 38°38'19.9", long 75°20'31.1", Sussex County, Hydrologic Unit 02060010, on left bank at highway bridge in Stockley, 1.6 mi upstream from mouth, and 4.4 mi southeast of Georgetown.

DRAINAGE AREA.--5.24 mi^2.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 24.54 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 16, 1950, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by inflow from sand mine dewatering process. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 1	1530	*161	*5.02	No other peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, Aug. 22, 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	5.4	3.0	3.8	3.0	5.1	16	4.4	5.5	4.6	2.8	84
2	9.3	4.5	3.3	3.8	4.4	1.2	5.3	12	5.7	1.0	2.5	35
3	6.4	5.0	3.1	3.9	4.4	3.3	6.2	12	5.8	3.3	0.38	13
4	6.2	5.6	3.4	2.7	3.1	6.7	9.4	9.1	5.8	3.6	3.8	9.7
5	6.2	6.7	2.6	3.7	3.8	5.4	7.2	8.3	5.4	5.0	3.4	6.5
6	6.4	5.6	2.1	6.0	3.6	4.4	7.1	8.3	4.1	3.5	2.9	7.1
7	6.3	5.0	4.2	5.5	3.7	1.1	6.7	8.2	4.2	6.0	2.3	8.0
8	7.2	4.5	4.1	3.3	4.1	0.96	6.4	7.5	5.8	2.3	2.1	7.2
9	6.1	5.1	3.6	3.9	4.7	5.1	6.5	4.8	5.7	3.1	2.7	2.9
10	5.3	5.6	4.0	3.0	4.6	6.0	6.9	4.8	5.1	3.4	2.6	4.6
11	5.1	5.8	4.1	3.0	3.7	1.9	6.4	6.4	2.4	3.1	2.6	5.2
12	5.1	5.6	2.9	4.1	3.2	1.0	7.0	6.6	4.3	2.5	2.6	5.2
13	5.5	5.2	4.7	4.2	2.8	1.8	6.8	6.5	4.7	0.63	2.6	5.6
14	5.9	3.6	3.9	3.2	0.66	3.7	6.5	5.1	5.6	5.5	2.5	5.3
15	7.3	3.4	3.2	0.81	3.0	3.8	6.6	6.3	6.4	3.9	2.5	6.2
16	5.5	4.5	3.4	2.4	4.3	5.2	5.9	5.9	5.9	2.9	3.0	8.2
17	5.2	4.2	2.9	2.6	4.3	5.1	3.8	4.0	5.6	2.5	2.9	4.1
18	5.8	1.3	4.6	3.8	3.2	6.3	3.5	7.0	5.7	0.43	4.4	3.5
19	5.3	1.3	2.8	4.4	2.9	3.4	4.5	6.9	5.5	0.39	3.9	7.5
20	5.4	6.6	2.6	4.6	2.8	3.4	5.4	6.8	5.4	3.6	3.4	8.9
21	5.7	5.7	3.3	4.0	1.2	4.2	5.8	6.0	6.0	5.0	0.23	7.9
22	6.0	3.4	3.7	4.1	4.9	5.4	7.2	4.1	4.6	3.7	0.41	3.2
23	5.4	4.0	3.8	4.2	5.0	5.3	6.3	3.8	7.0	4.6	2.5	6.9
24	5.1	4.1	4.1	4.3	4.8	5.5	5.9	4.2	5.3	3.1	2.3	6.5
25	5.1	4.0	3.9	3.2	3.5	5.5	4.0	5.8	4.5	3.3	2.3	5.2
26	7.1	4.6	3.9	4.1	0.83	5.0	3.2	6.0	4.1	3.0	2.2	5.4
27	5.5	3.6	3.8	4.0	0.79	4.7	5.5	5.9	3.7	2.0	0.07	5.5
28	5.5	3.5	4.0	2.9	2.3	3.4	12	5.6	4.3	5.7	1.5	5.2
29	5.5	3.3	4.0	2.5	---	2.5	7.7	3.6	4.5	4.0	2.8	5.8
30	6.3	2.5	3.8	0.63	---	5.3	6.2	3.0	6.1	3.1	3.2	7.7
31	8.4	---	3.8	2.2	---	7.8	---	3.8	---	2.7	1.5	---
TOTAL	190.3	133.2	110.6	108.84	93.58	129.46	197.9	192.7	154.7	101.45	74.89	297.0
MEAN	6.14	4.44	3.57	3.51	3.34	4.18	6.60	6.22	5.16	3.27	2.42	9.90
MAX	9.3	6.7	4.7	6.0	5.0	7.8	16	12	7.0	6.0	4.4	84
MIN	5.1	1.3	2.1	0.63	0.66	0.96	3.2	3.0	2.4	0.39	0.07	2.9
CFSM	1.17	0.85	0.68	0.67	0.64	0.80	1.26	1.19	0.98	0.62	0.46	1.89
IN.	1.35	0.95	0.79	0.77	0.66	0.92	1.40	1.37	1.10	0.72	0.53	2.11

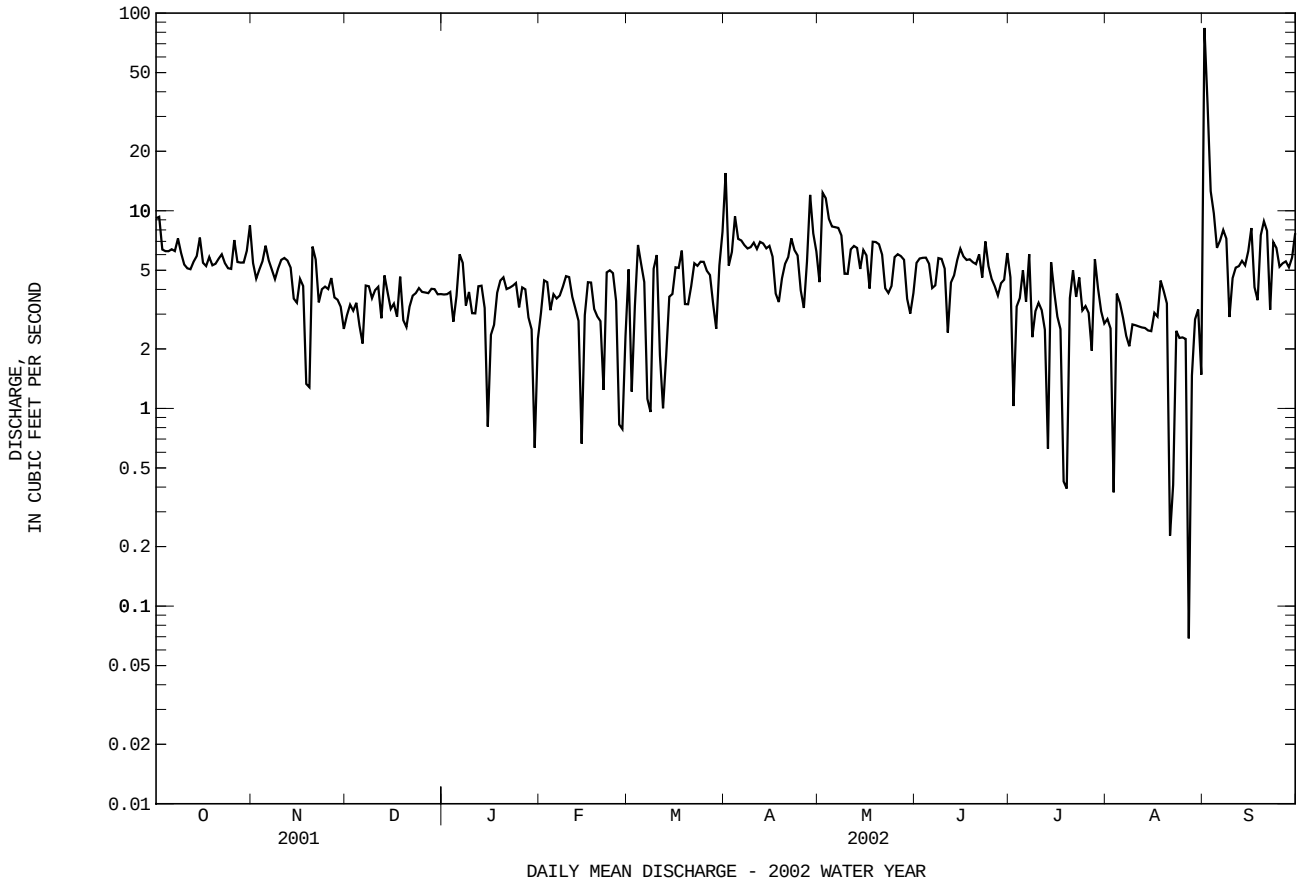
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

MEAN	3.55	4.75	6.68	9.32	10.5	12.6	10.4	7.80	5.73	4.26	5.14	3.73
MAX	10.5	14.3	22.8	24.8	29.9	31.2	24.4	19.7	25.3	17.5	24.8	12.2
(WY)	1972	1957	1946	1978	1998	1994	1983	1948	1948	1945	1989	1992
MIN	0.67	0.77	0.76	0.92	1.19	4.05	3.78	2.36	1.80	1.21	0.65	0.67
(WY)	1989	1989	1989	1989	1989	1966	1985	1985	1977	1977	1944	1988

01484500 STOCKLEY BRANCH AT STOCKLEY, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 2002	
ANNUAL TOTAL	3226.5		1784.62			
ANNUAL MEAN	8.84		4.89		7.04	
HIGHEST ANNUAL MEAN					12.0	1958
LOWEST ANNUAL MEAN					3.24	1966
HIGHEST DAILY MEAN	145	Aug 14	84	Sep 1	195	Mar 3 1994
LOWEST DAILY MEAN	1.3	(a)	0.07	Aug 27	0.07	Aug 27 2002
ANNUAL SEVEN-DAY MINIMUM	2.9	Nov 30	1.4	Aug 21	0.13	Sep 2 1944
MAXIMUM PEAK FLOW			161	Sep 1	(b)303	Mar 3 1994
MAXIMUM PEAK STAGE			5.02	Sep 1	5.63	Aug 14 2001
INSTANTANEOUS LOW FLOW			0.00	(c)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.69		0.93		1.34	
ANNUAL RUNOFF (INCHES)	22.91		12.67		18.26	
10 PERCENT EXCEEDS	14		6.9		14	
50 PERCENT EXCEEDS	7.4		4.4		5.2	
90 PERCENT EXCEEDS	4.0		2.5		1.6	

a Nov. 18, 19.
b From rating curve extended above 150 ft^3/s.
c Aug. 22, 27, 28, 2002.



01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE

LOCATION.--Lat 38°35'40.4", long 75°17'27.7" Hydrologic Unit 02060010, on right bank just upstream from Millsboro Pond Dam, 10 ft upstream from bridge on State Highway 24, at Millsboro.

DRAINAGE AREA.--66.0 mi^2.

PERIOD OF RECORD.--May 1986 to September 1988, March 1991 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.98 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Outflow from lake controlled by sluice gates at outlet. No gate openings during water year. Natural flow of stream affected by inflow from sand mine dewatering process. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the period.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 624 ft^3/s, Sept. 2, gage height, 3.94 ft; minimum discharge, 8.0 ft^3/s, Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	32	37	34	35	28	117	70	36	20	17	300
2	44	32	37	34	32	28	99	100	35	20	17	536
3	44	31	37	36	32	47	74	131	34	17	16	239
4	41	31	37	37	34	44	70	94	34	17	16	110
5	39	31	37	37	29	38	66	88	34	17	19	76
6	36	31	37	47	30	36	64	82	37	17	16	64
7	37	31	37	72	42	33	62	78	47	15	15	61
8	37	31	39	55	46	29	61	76	42	14	13	60
9	37	31	47	43	40	30	61	73	37	12	12	57
10	35	31	45	40	39	33	72	70	34	12	9.7	52
11	34	33	46	42	39	29	69	70	30	12	9.7	54
12	34	34	47	41	35	28	65	66	25	12	9.7	54
13	32	34	45	45	35	37	68	64	26	12	9.7	51
14	31	31	44	39	33	44	67	72	28	12	9.5	51
15	40	31	42	36	31	39	66	63	37	12	11	57
16	38	31	40	34	32	37	67	59	36	12	13	80
17	31	31	40	34	34	36	62	55	36	12	14	76
18	28	31	46	34	32	58	62	59	34	12	16	60
19	28	29	44	39	31	62	60	64	32	12	14	55
20	28	35	37	54	31	59	57	60	28	12	16	54
21	28	37	33	49	33	68	56	57	28	12	14	54
22	28	37	34	42	31	55	63	49	27	12	12	54
23	28	37	34	40	32	48	60	47	22	12	12	51
24	28	35	43	40	32	47	57	46	22	21	13	51
25	27	35	42	42	31	47	70	44	22	14	14	51
26	24	37	40	38	29	47	65	44	21	12	14	52
27	24	37	38	37	30	68	58	44	20	22	14	56
28	26	37	36	37	27	59	103	44	20	43	16	54
29	28	37	37	35	---	50	107	43	20	30	46	51
30	29	36	36	31	---	49	75	40	20	18	27	51
31	31	---	34	31	---	65	---	37	---	15	20	---
TOTAL	1019	997	1228	1255	937	1378	2103	1989	904	492	475.3	2672
MEAN	32.9	33.2	39.6	40.5	33.5	44.5	70.1	64.2	30.1	15.9	15.3	89.1
MAX	44	37	47	72	46	68	117	131	47	43	46	536
MIN	24	29	33	31	27	28	56	37	20	12	9.5	51
CFSM	0.50	0.50	0.60	0.61	0.51	0.67	1.06	0.97	0.46	0.24	0.23	1.35
IN.	0.57	0.56	0.69	0.71	0.53	0.78	1.19	1.12	0.51	0.28	0.27	1.51

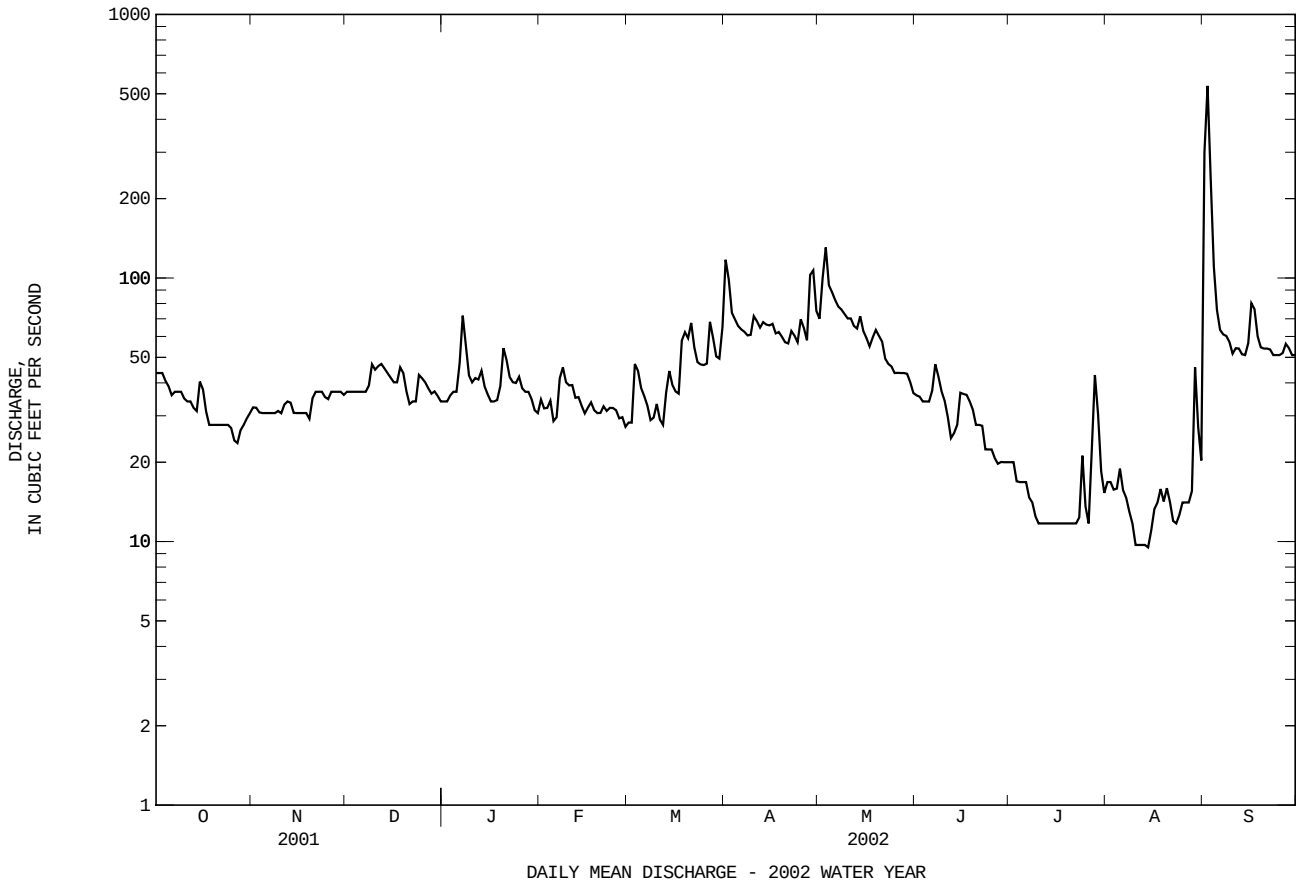
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1988, 1991 - 2002, BY WATER YEAR (WY)

MEAN	51.0	52.9	74.9	97.8	136	158	132	96.0	65.4	48.3	54.5	55.8
MAX	109	81.6	198	174	428	373	184	151	98.1	75.8	132	122
(WY)	1997	1998	1997	1998	1998	1994	1994	1996	2001	1996	2001	2000
MIN	20.8	24.3	33.2	40.5	33.5	44.5	69.1	47.3	30.1	15.9	15.3	20.1
(WY)	1987	1988	1988	2002	2002	2002	1995	1986	2002	2002	2002	1986

01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 1988, 1991 - 2002	
ANNUAL TOTAL	30551		15449.3			
ANNUAL MEAN	83.7		42.3		86.1	
HIGHEST ANNUAL MEAN					132	1998
LOWEST ANNUAL MEAN					42.3	2002
HIGHEST DAILY MEAN	548	Aug 14	536	Sep 2	1260	Mar 4 1994
LOWEST DAILY MEAN	24	(a)	9.5	Aug 14	(b, e)0.00	Aug 30 1998
ANNUAL SEVEN-DAY MINIMUM	26	Oct 22	10	Aug 9	10	Aug 9 2002
MAXIMUM PEAK FLOW			624	Sep 2	(c)1770	Mar 3 1994
MAXIMUM PEAK STAGE			3.94	Sep 2	4.94	Mar 3 1994
INSTANTANEOUS LOW FLOW			8.0	Aug 14	(b)0.00	(d)
ANNUAL RUNOFF (CFSM)	1.27		0.64		1.31	
ANNUAL RUNOFF (INCHES)	17.22		8.71		17.73	
10 PERCENT EXCEEDS	147		66		157	
50 PERCENT EXCEEDS	72		37		69	
90 PERCENT EXCEEDS	34		15		28	

a Oct. 26, 27.
b As a result of lake being refilled.
e Estimated.
c From rating curve extended above 1,500 ft^3/s.
d Aug. 29-31, 1998.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01484695 BEAVERDAM DITCH NEAR MILLVILLE, DE

LOCATION.--Lat 38°31'17.2", long 75°08'00.2", Sussex County, Hydrologic Unit 02060010, at culverts on Road No. 368, 1.6 mi upstream from mouth, and 2.1 mi southwest of Millville.

DRAINAGE AREA.--2.25 mi^2.

PERIOD OF RECORD.--August 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929. from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. Flow occasionally affected by releases from sand pits located upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 2	--	*UNKNOWN	*UNKNOWN	No other peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, July 8-13, 15-18, Aug. 14, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.18	0.11	0.10	0.12	0.82	0.40	8.1	3.3	0.26	0.02	0.29	e1.0
2	0.16	0.11	0.11	0.12	0.77	0.40	5.6	11	0.20	0.02	0.20	e50
3	0.14	0.11	0.10	0.14	0.69	1.3	4.5	11	0.17	0.03	0.14	e20
4	0.11	0.11	0.10	0.16	0.66	1.3	3.8	5.3	0.15	0.03	0.11	9.2
5	0.09	0.11	0.11	0.14	0.63	1.0	3.2	4.8	0.12	0.02	0.08	6.0
6	0.13	0.09	0.10	0.72	0.57	0.89	2.7	4.2	0.15	0.01	0.09	4.5
7	0.13	0.09	0.12	1.5	0.92	0.82	2.3	3.9	0.34	0.01	0.07	3.5
8	0.10	0.10	0.14	0.83	1.1	0.77	2.0	3.2	0.26	0.01	0.05	3.0
9	0.09	0.11	0.15	0.61	0.92	0.73	1.9	2.6	0.22	0.01	0.04	2.5
10	0.09	0.10	0.14	0.51	0.88	0.73	2.7	2.4	0.19	0.01	0.03	2.2
11	0.08	0.10	0.33	0.56	1.1	0.64	2.5	1.9	0.14	0.01	0.03	1.9
12	0.08	0.10	0.34	0.53	1.0	0.62	2.5	1.6	0.10	0.01	0.02	1.6
13	0.08	0.10	0.54	0.74	0.92	1.1	2.6	1.6	0.10	0.01	0.02	1.4
14	0.09	0.09	0.41	0.64	0.80	1.5	2.3	3.0	0.15	0.01	0.01	1.2
15	0.19	0.10	0.35	0.61	0.74	1.3	2.2	2.3	0.26	0.01	0.01	1.2
16	0.13	0.07	0.28	0.55	0.71	1.3	2.0	1.6	0.28	0.01	0.01	1.5
17	0.11	0.07	0.26	0.51	0.69	1.2	1.7	1.3	0.28	0.00	0.01	1.5
18	0.10	0.06	0.43	0.51	0.65	4.0	1.6	1.6	0.21	0.00	0.02	1.4
19	0.10	0.06	0.32	0.71	0.58	4.4	1.4	1.6	0.16	0.20	0.02	1.2
20	0.10	0.06	0.28	1.5	0.58	5.3	1.3	1.3	0.12	0.13	0.01	1.1
21	0.10	0.06	0.25	1.3	0.61	7.1	1.2	1.1	0.10	0.06	0.01	0.95
22	0.10	0.07	0.22	1.2	0.60	4.8	1.4	0.97	0.08	0.04	0.01	0.80
23	0.11	0.09	0.23	1.1	0.58	3.6	1.4	0.83	0.06	0.02	0.01	0.70
24	0.11	0.09	0.66	1.1	0.50	3.0	1.2	0.72	0.05	0.03	0.02	0.63
25	0.11	0.09	0.50	1.3	0.46	2.5	1.2	0.65	0.04	0.04	0.02	0.58
26	0.11	0.11	0.25	1.2	0.44	2.2	1.3	0.60	0.03	0.03	0.01	0.70
27	0.11	0.10	0.19	1.1	0.48	3.0	1.1	0.53	0.03	4.6	0.01	0.92
28	0.12	0.12	0.17	1.1	0.44	2.8	5.3	0.46	0.03	12	0.05	0.82
29	0.10	0.12	0.16	0.98	---	2.2	7.1	0.41	0.03	3.0	0.19	0.66
30	0.12	0.11	0.14	0.91	---	2.1	4.6	0.36	0.02	1.1	0.11	0.60
31	0.12	---	0.12	0.85	---	3.5	---	0.31	---	0.49	0.11	---
TOTAL	3.49	2.81	7.60	23.85	19.84	66.50	82.7	76.44	4.33	21.97	1.81	123.26
MEAN	0.11	0.094	0.25	0.77	0.71	2.15	2.76	2.47	0.14	0.71	0.058	4.11
MAX	0.19	0.12	0.66	1.5	1.1	7.1	8.1	11	0.34	12	0.29	50
MIN	0.08	0.06	0.10	0.12	0.44	0.40	1.1	0.31	0.02	0.00	0.01	0.58
CFSM	0.05	0.04	0.11	0.35	0.32	0.96	1.24	1.11	0.06	0.32	0.03	1.84
IN.	0.06	0.05	0.13	0.40	0.33	1.11	1.38	1.28	0.07	0.37	0.03	2.06

e Estimated

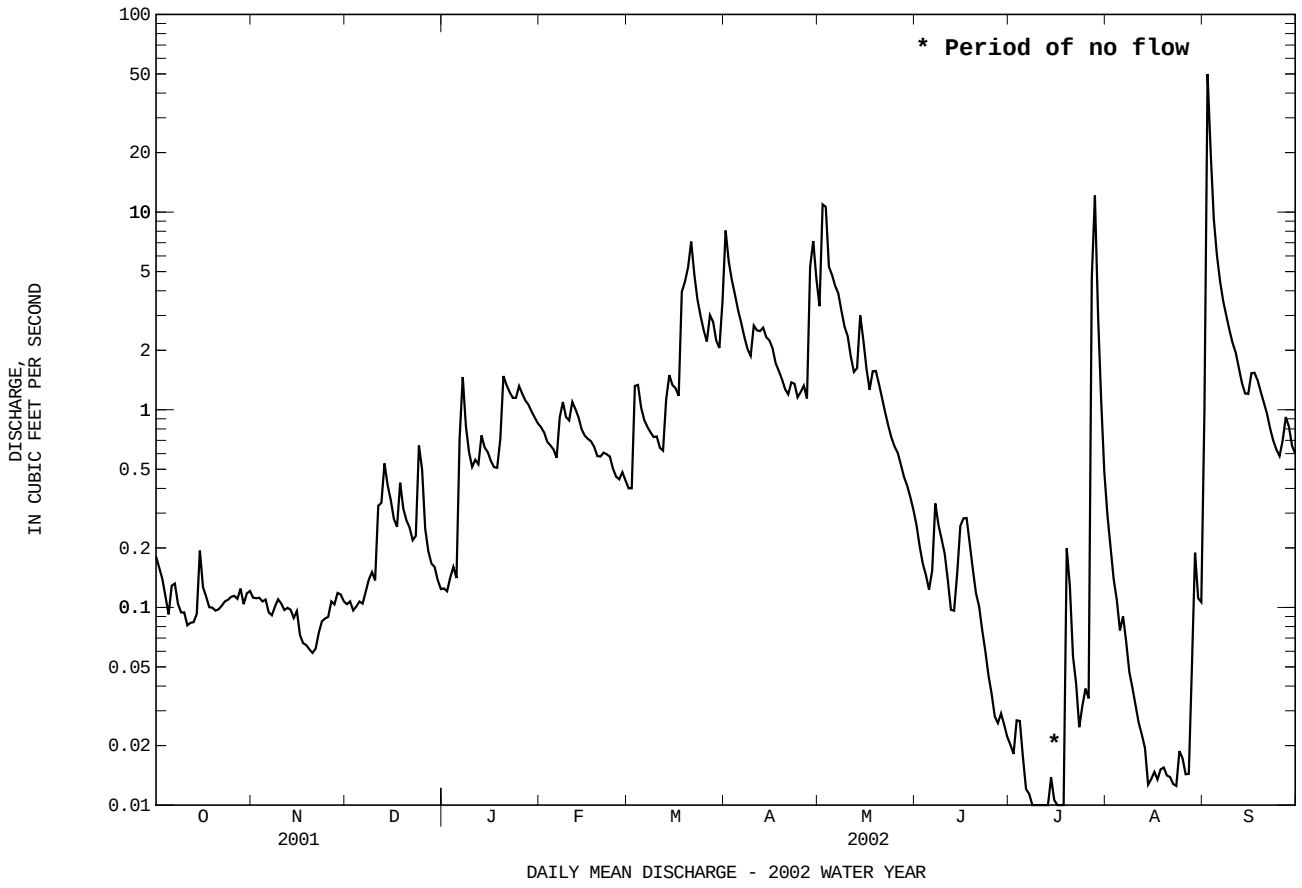
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

MEAN	2.16	0.97	1.46	3.19	4.08	7.22	4.54	1.89	3.03	2.22	2.25	3.01
MAX	5.47	2.74	3.61	5.13	5.65	11.3	7.52	3.22	6.73	7.47	4.74	5.88
(WY)	2000	2000	2000	1999	2001	2000	2000	2000	2000	2000	2000	2000
MIN	0.095	0.094	0.25	0.77	0.71	2.15	2.76	0.78	0.14	0.13	0.058	0.15
(WY)	1999	2002	2002	2002	2002	2002	2002	1999	2002	1999	2002	1998

01484695 BEAVERDAM DITCH NEAR MILLVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1998 - 2002	
ANNUAL TOTAL	1037.85		434.60			
ANNUAL MEAN	2.84		1.19		3.05	
HIGHEST ANNUAL MEAN					5.60	2000
LOWEST ANNUAL MEAN					1.19	2002
HIGHEST DAILY MEAN	56	Aug 14	(e)50	Sep 2	119	Mar 22 2000
LOWEST DAILY MEAN	0.06	(a)	0.00	(b)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	0.06	Nov 16	0.01	Jul 12	0.01	Jul 12 2002
MAXIMUM PEAK FLOW			UNKNOWN	Sep 2	(c)147	Mar 22 2000
MAXIMUM PEAK STAGE			UNKNOWN	Sep 2	4.97	Mar 22 2000
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(d)
ANNUAL RUNOFF (CFSM)	1.28		0.53		1.37	
ANNUAL RUNOFF (INCHES)	17.31		7.25		18.60	
10 PERCENT EXCEEDS	7.9		2.9		6.8	
50 PERCENT EXCEEDS	0.66		0.40		1.1	
90 PERCENT EXCEEDS	0.10		0.03		0.09	

e Estimated
a Nov. 18-21.
b July 17, 18, 2002.
c From rating curve extended above 55 ft^3/s.
d July 8-13, 15-18, Aug. 14, 22, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

0148471320 BIRCH BRANCH AT SHOWELL, MD

LOCATION.--Lat 38°24'33.6", long 75°12'44.6", Worchester County, Hydrologic Unit 02060010, on right bank at downstream side of bridge on U.S. Highway 113, 0.75 mi north of Showell, and 1.1 mi upstream from mouth.

DRAINAGE AREA.--6.38 mi^2.

PERIOD OF RECORD.--December 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater, missing record), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 1	1615	*177	*7.73	No other peak greater than base discharge.			

Minimum discharge, 0.14 ft^3/s, Aug. 19-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.56	e0.54	0.45	0.59	1.0	0.90	19	e6.0	1.1	0.33	0.18	67
2	0.51	e0.50	0.44	0.60	1.2	1.0	9.2	e7.0	1.0	0.30	0.18	32
3	0.47	e0.48	0.42	0.64	1.2	2.7	7.1	e15	0.92	0.66	0.18	9.5
4	0.45	e0.46	0.45	0.66	1.4	2.3	5.8	e9.0	0.91	0.64	0.18	5.8
5	0.44	e0.44	0.46	0.67	1.3	1.9	4.9	e7.0	0.90	0.34	0.18	3.8
6	0.60	e0.42	0.47	1.8	0.81	1.7	4.3	e5.5	0.96	0.29	0.19	2.9
7	0.57	e0.41	0.52	1.5	1.8	1.6	3.7	4.7	1.3	0.26	0.18	2.1
8	0.84	e0.40	0.50	0.94	2.0	1.6	3.4	3.9	1.0	0.26	0.18	1.8
9	0.78	0.52	0.51	0.84	1.8	1.5	3.3	3.4	0.93	0.25	0.18	1.5
10	e0.60	e0.42	0.51	0.85	1.9	1.6	3.7	3.2	0.91	0.26	0.17	1.4
11	e0.50	0.43	0.75	0.87	2.2	1.3	3.4	2.7	0.84	0.25	0.17	1.2
12	e0.45	0.42	0.53	0.88	1.9	1.3	3.5	2.5	0.74	0.23	0.17	0.95
13	e0.43	0.40	0.55	1.2	1.8	2.5	3.6	2.7	0.75	0.23	0.17	0.83
14	e0.60	0.41	0.51	1.0	1.7	3.4	e3.6	5.9	1.3	0.27	0.16	0.76
15	e0.90	0.44	0.47	1.0	1.6	2.7	e3.5	3.5	1.5	0.27	0.16	0.85
16	e0.70	e0.36	0.46	1.0	1.6	2.4	e3.4	2.8	1.5	0.23	0.16	0.97
17	e0.60	e0.35	0.46	1.0	1.6	2.0	e3.3	2.4	1.2	0.21	0.15	0.86
18	e0.54	0.44	0.68	1.1	1.4	5.7	e3.3	3.0	0.91	0.21	0.15	0.77
19	e0.52	e0.30	0.51	1.4	1.3	5.5	e3.0	2.9	0.79	0.25	0.15	0.69
20	e0.50	e0.33	0.48	2.4	1.3	7.4	e2.7	2.6	0.71	0.26	0.15	0.64
21	e0.50	0.44	0.49	1.8	1.3	9.4	e2.5	2.3	0.67	0.22	0.14	0.57
22	e0.50	0.46	0.47	1.6	1.2	5.6	e2.6	2.1	0.61	0.21	0.14	0.53
23	e0.54	0.47	0.46	1.4	1.1	4.1	e3.0	2.0	0.58	0.20	0.14	0.52
24	e0.60	0.48	0.90	1.4	1.1	3.5	e2.4	2.0	0.55	0.26	0.15	0.50
25	e0.66	0.49	0.61	1.6	1.1	3.1	e2.4	1.7	0.44	0.29	0.15	0.49
26	e0.66	0.47	0.56	1.5	1.0	2.9	e2.1	1.6	0.39	0.25	0.14	0.71
27	e0.60	0.46	0.57	1.4	1.0	5.5	e2.0	1.5	0.37	0.27	0.14	0.83
28	e0.70	0.45	0.57	1.4	0.97	4.7	e5.0	1.4	0.41	0.27	0.39	0.69
29	e0.60	0.46	0.57	1.4	---	3.7	e13	1.3	0.39	0.22	0.39	0.63
30	e0.64	0.45	0.56	1.4	---	3.3	e8.0	1.2	0.35	0.20	0.20	0.62
31	e0.60	---	0.55	1.2	---	7.8	---	1.2	---	0.19	0.24	---
TOTAL	18.16	13.10	16.44	37.04	39.58	104.60	140.7	114.0	24.93	8.58	5.61	142.41
MEAN	0.59	0.44	0.53	1.19	1.41	3.37	4.69	3.68	0.83	0.28	0.18	4.75
MAX	0.90	0.54	0.90	2.4	2.2	9.4	19	15	1.5	0.66	0.39	67
MIN	0.43	0.30	0.42	0.59	0.81	0.90	2.0	1.2	0.35	0.19	0.14	0.49
CFSM	0.09	0.07	0.08	0.19	0.22	0.53	0.74	0.58	0.13	0.04	0.03	0.74
IN.	0.11	0.08	0.10	0.22	0.23	0.61	0.82	0.66	0.15	0.05	0.03	0.83

e Estimated

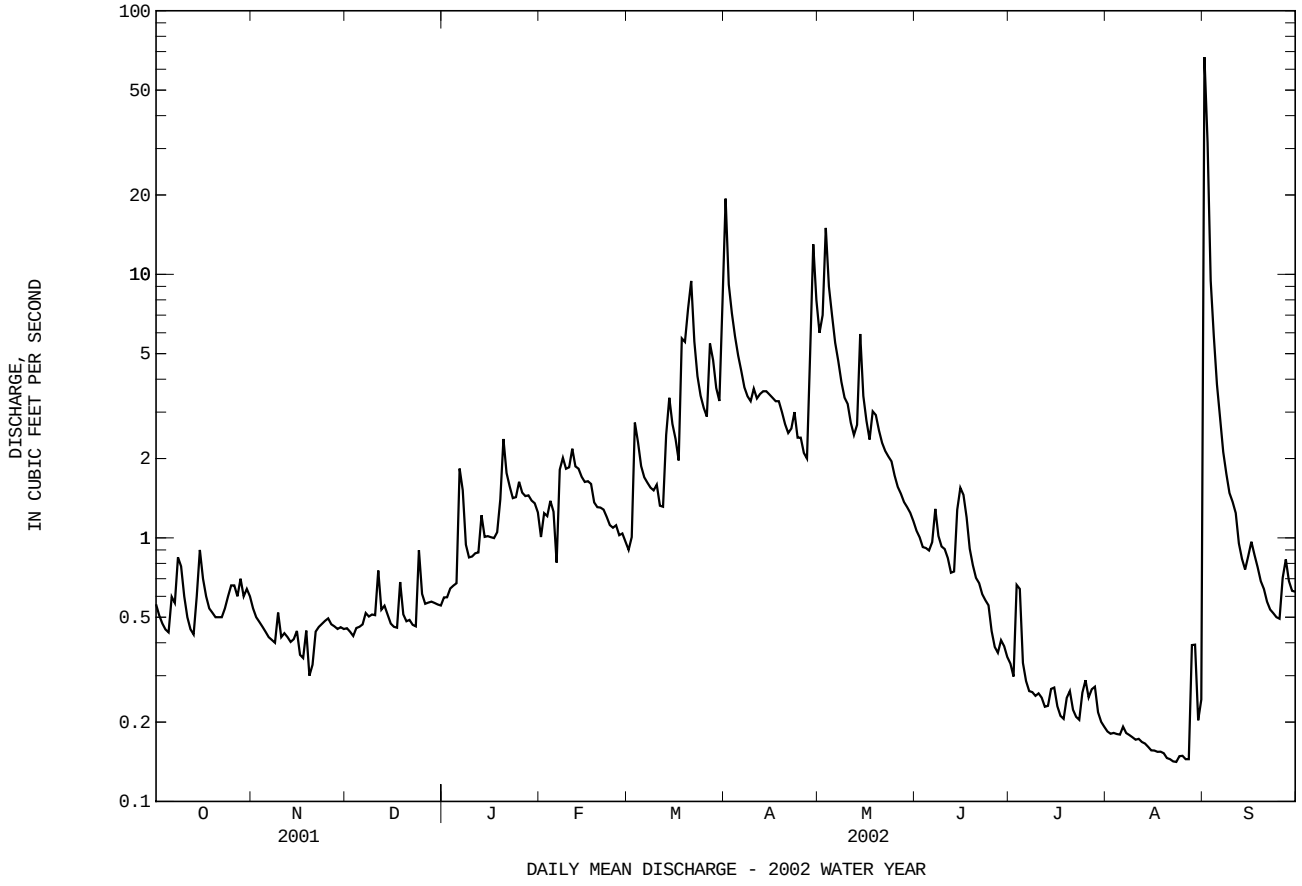
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	1.17	0.96	3.24	4.57	8.36	15.3	9.07	3.93	4.37	3.21	2.55	3.55
MAX	1.75	1.48	5.48	7.98	11.9	25.7	14.8	5.02	8.58	6.44	5.00	5.26
(WY)	2001	2001	2000	2001	2001	2000	2000	2001	2001	2000	2000	2000
MIN	0.59	0.44	0.53	1.19	1.41	3.37	4.69	3.10	0.83	0.28	0.18	0.63
(WY)	2002	2002	2002	2002	2002	2002	2002	2000	2002	2002	2002	2001

0148471320 BIRCH BRANCH AT SHOWELL, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	1975.72		665.15			
ANNUAL MEAN	5.41		1.82		3.84	
HIGHEST ANNUAL MEAN					5.87	2001
LOWEST ANNUAL MEAN					1.82	2002
HIGHEST DAILY MEAN	69	Mar 21	67	Sep 1	311	Mar 22 2000
LOWEST DAILY MEAN	(e)0.30	Nov 19	0.14	(a)	0.14	(a)
ANNUAL SEVEN-DAY MINIMUM	0.38	Nov 14	0.14	Aug 21	0.14	Aug 21 2002
MAXIMUM PEAK FLOW			177	Sep 1	(b)563	Mar 22 2000
MAXIMUM PEAK STAGE			7.73	Sep 1	9.38	Mar 22 2000
INSTANTANEOUS LOW FLOW			0.14	(c)	0.14	(c)
ANNUAL RUNOFF (CFSM)	0.85		0.29		0.60	
ANNUAL RUNOFF (INCHES)	11.52		3.88		8.19	
10 PERCENT EXCEEDS	11		3.6		8.2	
50 PERCENT EXCEEDS	3.5		0.79		1.5	
90 PERCENT EXCEEDS	0.47		0.23		0.41	

e Estimated
a Aug. 21-23, 26, 27, 2002.
b From rating curve extended above 230 ft^3/s.
c Aug. 19-28, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01485000 POCOMOKE RIVER NEAR WILLARDS, MD

LOCATION.--Lat 38°23'20.0", long 75°19'28.0", Worcester County, Hydrologic Unit 02060009, on left bank 30 ft downstream from bridge on State Highway 346, 0.6 mi upstream from Burnt Mill Branch, 1.3 mi east of Willards, 1.3 mi west of Whaleysville, and 50.3 mi upstream from mouth.

DRAINAGE AREA.--60.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 13.95 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 2	0900	*707	*10.50	No other peak greater than base discharge.			

Minimum discharge, 0.93 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	10	6.7	8.6	20	14	165	74	17	7.4	3.2	248
2	12	9.3	6.4	7.3	19	14	123	78	16	7.1	3.2	682
3	12	8.7	6.2	7.5	18	20	97	93	15	7.0	3.4	467
4	11	8.6	6.3	8.2	18	22	85	69	14	8.7	3.4	256
5	11	8.1	6.2	8.0	18	19	73	66	14	7.9	3.2	141
6	12	7.3	6.2	8.7	19	19	66	62	14	6.7	3.3	97
7	13	7.6	6.4	19	20	19	60	57	18	6.0	3.2	72
8	12	7.6	6.7	14	27	18	55	51	16	5.8	2.7	59
9	11	7.1	6.7	13	25	18	52	47	14	5.7	2.6	51
10	11	7.3	6.6	13	24	18	54	45	14	5.6	2.5	45
11	12	6.8	7.8	13	25	17	52	40	13	5.3	2.4	42
12	12	6.1	8.1	12	23	17	50	36	12	4.9	2.2	37
13	12	6.2	7.6	14	22	20	50	36	12	4.8	2.1	31
14	12	6.5	7.2	14	20	28	48	64	14	5.2	2.0	27
15	14	6.6	7.1	14	19	27	47	53	15	5.6	1.9	27
16	13	6.9	6.6	14	19	27	45	44	25	5.1	1.9	29
17	13	6.4	6.3	15	19	24	42	40	19	4.6	1.9	38
18	12	6.5	8.1	13	18	35	41	41	15	4.3	1.9	34
19	12	6.7	8.1	14	18	54	41	48	14	4.3	1.7	30
20	12	7.3	7.3	24	18	57	38	42	12	5.3	1.5	26
21	11	7.6	7.0	27	17	101	35	39	11	4.6	1.5	23
22	11	6.7	6.6	24	17	76	39	34	11	4.1	1.3	22
23	11	7.3	6.5	22	16	62	39	32	10	4.1	1.3	20
24	11	9.2	8.5	23	15	56	34	30	9.6	4.8	1.6	19
25	11	6.5	8.4	25	15	50	35	28	9.2	5.4	1.8	17
26	12	6.7	7.6	24	15	47	36	26	8.6	4.8	1.5	18
27	11	6.7	7.5	23	15	71	32	24	8.2	4.9	1.5	22
28	11	7.0	7.6	22	15	73	78	22	8.3	5.0	2.4	22
29	11	7.2	7.7	21	---	63	156	20	8.1	4.4	9.3	18
30	11	7.7	7.4	21	---	58	96	20	7.8	4.0	6.0	17
31	10	---	7.1	20	---	75	---	19	---	3.7	4.1	---
TOTAL	362	220.2	220.5	506.3	534	1219	1864	1380	394.8	167.1	82.5	2637
MEAN	11.7	7.34	7.11	16.3	19.1	39.3	62.1	44.5	13.2	5.39	2.66	87.9
MAX	14	10	8.5	27	27	101	165	93	25	8.7	9.3	682
MIN	10	6.1	6.2	7.3	15	14	32	19	7.8	3.7	1.3	17
CFSM	0.19	0.12	0.12	0.27	0.32	0.65	1.03	0.74	0.22	0.09	0.04	1.45
IN.	0.22	0.14	0.14	0.31	0.33	0.75	1.15	0.85	0.24	0.10	0.05	1.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	35.2	47.5	78.9	110	126	145	100	58.4	43.6	34.2	49.7	27.2
MAX	164	221	306	322	482	393	277	236	216	217	507	128
(WY)	1977	1980	1997	1978	1998	1994	1983	1978	1972	1975	1989	1979
MIN	2.47	3.36	7.11	15.5	19.1	39.3	29.5	16.1	9.31	5.39	2.66	3.13
(WY)	1999	1999	2002	1981	2002	2002	1995	1985	1986	2002	2002	1995

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	20748.7		9587.4			
ANNUAL MEAN	56.8		26.3		71.7	
HIGHEST ANNUAL MEAN					130	1979
LOWEST ANNUAL MEAN					24.8	1981
HIGHEST DAILY MEAN	637	Mar 22	682	Sep 2	2580	Aug 20 1989
LOWEST DAILY MEAN	6.1	Nov 12	1.3	(a)	1.3	Sep 15 1995
ANNUAL SEVEN-DAY MINIMUM	6.3	Dec 1	1.5	Aug 20	1.5	Aug 20 2002
MAXIMUM PEAK FLOW			707	Sep 2	(b)2820	Aug 20 1989
MAXIMUM PEAK STAGE			10.50	Sep 2	15.41	Aug 20 1989
INSTANTANEOUS LOW FLOW			0.93	Aug 22	0.93	Aug 22 2002
ANNUAL RUNOFF (CFSM)	0.94		0.43		1.18	
ANNUAL RUNOFF (INCHES)	12.76		5.90		16.10	
10 PERCENT EXCEEDS	128		55		158	
50 PERCENT EXCEEDS	26		14		39	
90 PERCENT EXCEEDS	7.3		4.5		8.3	

a Aug. 22, 23.
b From rating curve extended above 1,600 ft^3/s.

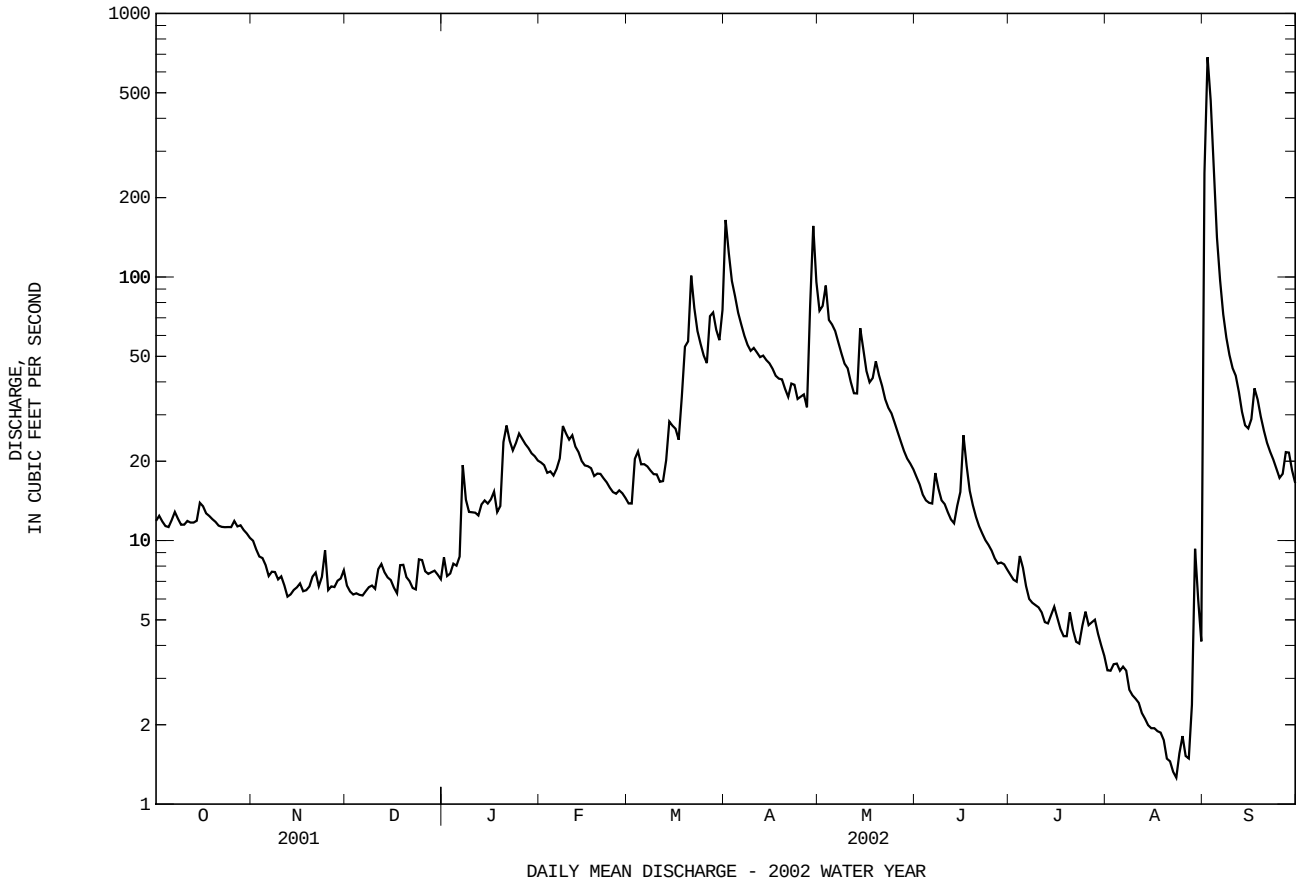


Photo by A.J. Tallman

Gage house at Pocomoke River near Willards, MD (01485000)

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-78, 1991, 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
MAR												
25...	0830	ENVIRONMENTAL	51	160	6.1	16.0	10.0	9.3	4.1	3.23	.016	3.25
APR												
29...	0940	ENVIRONMENTAL	172	--	--	--	--	--	5.4	2.86	.070	2.93

Date	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)
MAR													
25...	.12	.88	.76	.081	E.01	<.006	<.006	<.004	<.005	.007	<.010	<.002	<.041
APR													
29...	.57	2.5	1.9	.40	.09	<.006	1.16	<.004	<.005	1.89	<.010	<.002	<.041

Date	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)
MAR													
25...	<.020	<.005	<.018	<.003	E.004	116	<.005	<.005	<.02	<.002	<.009	<.005	<.003
APR													
29...	<.020	<.005	<.018	<.003	E.035	151	<.005	<.005	<.02	<.002	<.009	<.005	<.003

Date	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)
MAR													
25...	90.8	<.004	<.035	<.027	<.050	<.006	.032	<.006	<.002	<.007	.003	<.010	<.004
APR													
29...	104	<.004	<.035	<.027	<.050	<.006	.277	<.006	<.002	<.007	<.003	<.010	<.004

Date	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)
MAR													
25...	<.022	<.006	<.011	E.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005
APR													
29...	<.022	<.006	<.011	.05	<.004	<.010	<.011	<.02	8.58	<.02	<.034	<.02	<.005

Date	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR				
25...	<.002	<.009	11	1.5
APR				
29...	<.002	<.009	46	21.4

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

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD

LOCATION.--Lat 38°13'44.1", long 75°28'17.2", Worcester County, Hydrologic Unit 02060009, on right bank 15 ft downstream from bridge on State Highway 12, 0.5 mi upstream from Furnace Branch, 0.6 mi downstream from Millville Creek, 5.5 mi northwest of Snow Hill, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--44.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1332: 1953.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 12.29 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 2	0800	*1,100	*7.06	No other peak greater than base discharge.			

Minimum discharge, 0.63 ft^3/s, Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	3.7	4.5	4.8	12	7.9	76	80	4.8	2.0	1.1	373
2	4.4	3.7	4.3	4.6	12	7.8	99	55	4.3	1.9	1.1	1050
3	4.1	3.7	4.0	4.7	11	23	83	43	3.5	1.8	1.0	760
4	3.7	3.8	3.9	5.1	10	25	61	36	3.3	1.7	0.94	413
5	3.6	3.5	3.9	5.2	9.7	21	47	38	3.2	1.7	1.1	212
6	4.5	3.4	3.9	13	9.1	18	39	35	3.6	1.6	1.2	98
7	6.4	3.3	3.9	33	18	16	34	31	5.9	1.5	1.0	59
8	5.3	3.3	4.1	22	24	14	30	27	5.2	1.4	0.94	42
9	4.5	3.3	4.1	15	21	12	27	23	4.3	1.2	0.90	33
10	4.2	3.3	4.1	12	18	13	27	22	3.8	1.1	0.84	26
11	4.1	3.3	9.7	11	19	11	27	19	3.4	1.1	0.75	23
12	3.9	3.3	9.6	10	16	10	28	16	3.2	1.0	0.76	19
13	3.9	3.3	8.2	14	15	21	30	15	3.3	0.98	0.75	16
14	3.8	3.4	7.0	14	14	31	30	22	5.3	1.2	0.73	14
15	6.7	3.3	6.2	12	12	27	35	19	6.0	1.3	0.72	13
16	5.9	3.4	5.4	10	12	23	31	15	4.8	1.1	0.75	19
17	4.3	3.4	5.2	9.1	12	19	27	13	3.8	0.93	0.75	21
18	4.0	3.5	11	9.1	11	30	24	14	3.4	0.90	0.77	17
19	3.8	3.5	9.1	11	10	39	21	17	3.2	1.0	0.83	14
20	3.7	3.6	6.9	26	10	45	19	14	3.0	1.0	0.82	12
21	3.7	3.7	5.7	23	10	58	17	13	2.8	0.99	0.83	11
22	3.7	3.6	5.2	21	9.7	57	35	11	2.7	0.94	0.81	10
23	3.9	3.7	4.8	17	9.1	44	37	10	2.6	1.1	0.80	9.6
24	3.9	3.7	8.3	16	9.1	35	33	9.2	2.4	3.7	0.97	8.6
25	3.9	3.7	9.5	20	8.8	29	33	8.4	2.2	3.3	1.0	8.0
26	3.8	3.8	7.6	20	8.6	25	33	7.9	2.2	2.8	0.94	8.1
27	3.6	3.9	6.5	17	8.6	41	29	7.1	2.2	2.7	0.94	10
28	3.5	3.9	5.8	16	8.2	47	65	7.0	2.2	2.3	1.7	10
29	3.5	4.2	5.5	15	---	44	125	6.6	2.1	1.9	6.5	8.7
30	3.6	4.5	5.5	14	---	38	120	5.8	2.0	1.5	3.5	8.0
31	3.6	---	5.0	13	---	45	---	5.2	---	1.3	2.6	---
TOTAL	129.9	107.7	188.4	437.6	347.9	876.7	1322	645.2	104.7	48.94	38.34	3326.0
MEAN	4.19	3.59	6.08	14.1	12.4	28.3	44.1	20.8	3.49	1.58	1.24	111
MAX	6.7	4.5	11	33	24	58	125	80	6.0	3.7	6.5	1050
MIN	3.5	3.3	3.9	4.6	8.2	7.8	17	5.2	2.0	0.90	0.72	8.0
CFSM	0.09	0.08	0.14	0.31	0.28	0.63	0.98	0.46	0.08	0.04	0.03	2.47
IN.	0.11	0.09	0.16	0.36	0.29	0.73	1.10	0.53	0.09	0.04	0.03	2.76

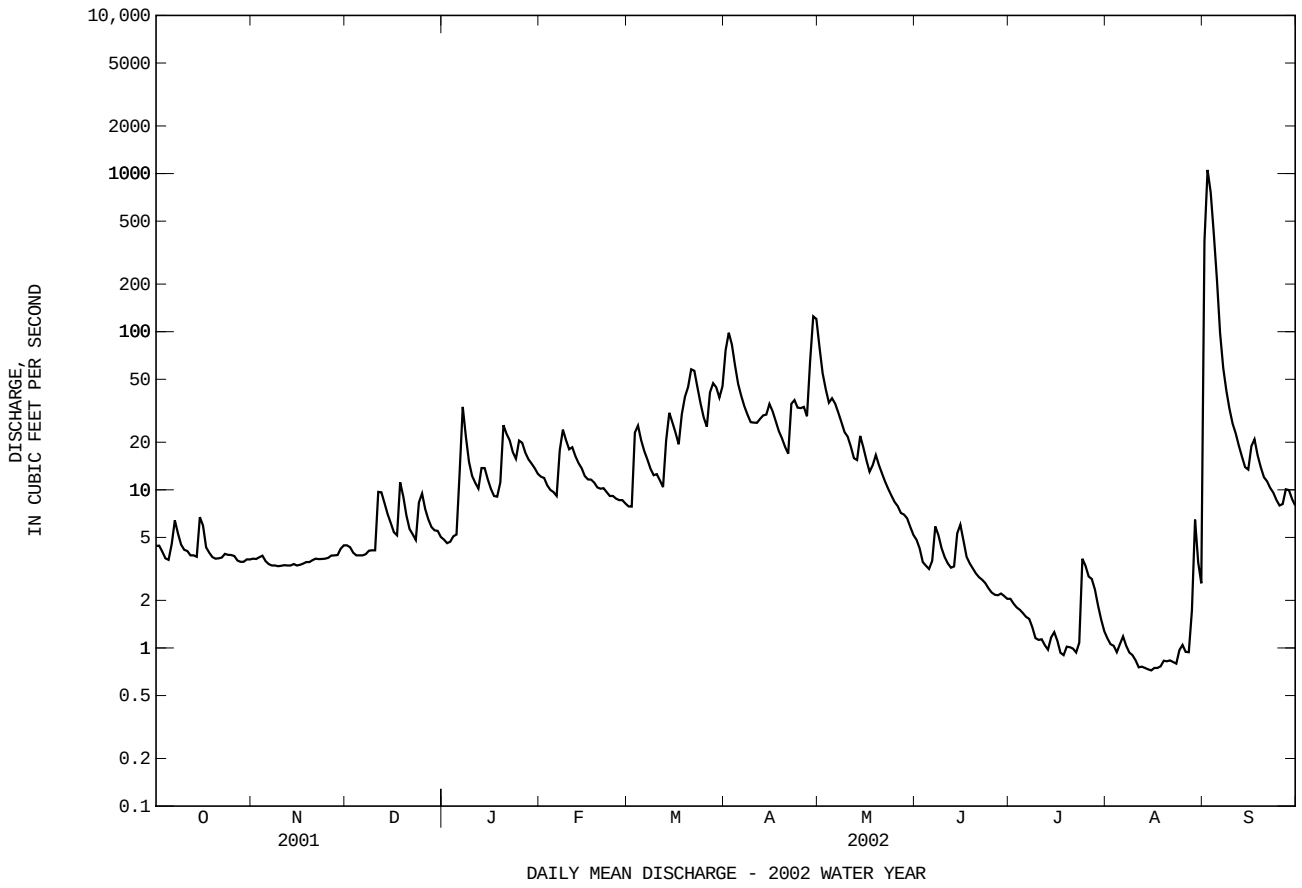
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	24.9	34.2	55.2	83.5	96.1	115	76.0	43.1	27.4	20.9	37.6	20.1
MAX	150	175	196	261	322	302	202	183	160	120	346	177
(WY)	1977	1980	1997	1978	1998	1994	1983	1978	1972	1975	1989	1979
MIN	1.62	2.39	6.08	10.8	12.4	28.3	17.7	7.10	2.52	1.58	1.24	1.64
(WY)	1999	1999	2002	1966	2002	2002	1985	1986	1986	2002	2002	1980

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	13000.9		7573.38			
ANNUAL MEAN	35.6		20.7		53.1	
HIGHEST ANNUAL MEAN					116	1979
LOWEST ANNUAL MEAN					20.7	2002
HIGHEST DAILY MEAN	662	Mar 22	1050	Sep 2	2590	Aug 19 1989
LOWEST DAILY MEAN	2.8	Jul 17	0.72	Aug 15	0.72	Aug 15 2002
ANNUAL SEVEN-DAY MINIMUM	3.3	Nov 7	0.74	Aug 11	0.74	Aug 11 2002
MAXIMUM PEAK FLOW			1100	Sep 2	(a)3930	Aug 19 1989
MAXIMUM PEAK STAGE			7.06	Sep 2	9.07	Aug 19 1989
INSTANTANEOUS LOW FLOW			0.63	Aug 14	0.63	Aug 14 2002
ANNUAL RUNOFF (CFSM)	0.79		0.46		1.18	
ANNUAL RUNOFF (INCHES)	10.77		6.27		16.08	
10 PERCENT EXCEEDS	80		35		124	
50 PERCENT EXCEEDS	13		6.9		25	
90 PERCENT EXCEEDS	3.7		1.1		3.3	

a From rating curve extended above 1,300 ft^3/s on basis of contracted-opening measurement at gage height 9.07 ft.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

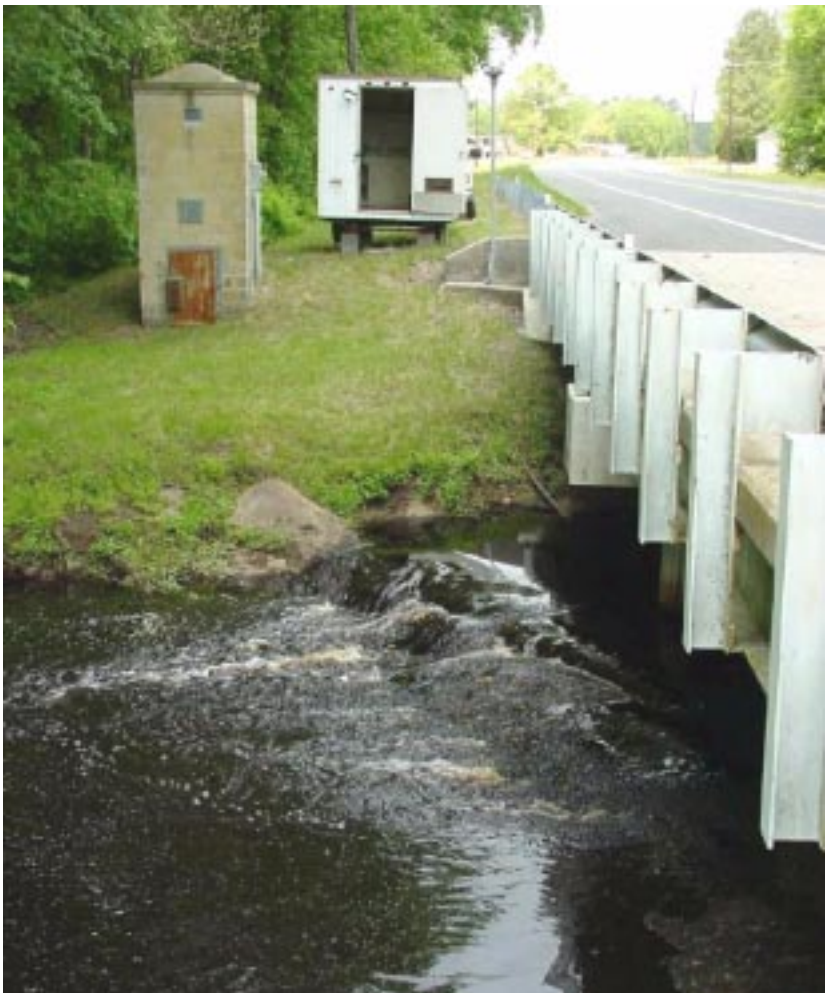


Photo by A.J. Tallman

Nassawango Creek near Snow Hill, MD (01485500)

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-78, 1991, 1999 to current year.

REMARKS.--Chemical analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
OCT												
09...	1730	ENVIRONMENTAL	4.5	70	6.7	10.3	14.1	22	1.1	--	28.34	1
MAY												
21...	1000	ENVIRONMENTAL	13	--	--	--	--	--	--	2.19	--	--

Date	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)
OCT													
09...	.48	.06	.003	.06	.02	.42	.3	.36	.40	.28	.142	.062	.019
MAY													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT				
09...	7.3	6.3	1.3	.02
MAY				
21...	--	15.9	7	.25

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD

LOCATION.--Lat 38°12'50.0", long 75°40'17.0", Somerset County, Hydrologic Unit 02060009, on right bank 45 ft downstream from farm bridge, 1.4 mi northeast of Princess Anne, and 1.6 mi upstream from confluence with Loretto Branch.

DRAINAGE AREA.--4.80 mi^2.

PERIOD OF RECORD.--April 1951 to September 1971, October 1974 to current year.

REVISED RECORDS.--WDR MD-DE-75-1: Drainage area. WDR MD-DE-85-1: 1983-84 (P).

GAGE.--Water-stage recorder. Datum of gage is 7.03 ft above National Geodetic Vertical Datum of 1929. Artificial control since Apr. 30, 1975. Nov. 26, 1968, to Sept. 30, 1971, water-stage recorder above and nonrecording gage below gage height 1.4 ft. Prior to Nov. 26, 1968, recording gage at site 40 ft upstream at datum 1.0 ft higher.

REMARKS.--No estimated daily discharges. Records good except those above 170 ft^3/s, which are poor. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	1415	*70	*3.24	No other peak greater than base discharge.			

Minimum discharge, 0.14 ft^3/s, Aug. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	0.60	0.50	0.52	1.6	1.1	19	7.8	1.7	0.55	0.39	0.46
2	0.99	0.60	0.47	0.50	1.5	1.1	9.8	6.5	1.8	0.54	0.56	0.42
3	0.92	0.60	0.46	0.57	1.4	2.3	7.6	5.3	1.7	0.53	0.75	0.35
4	0.89	0.59	0.46	0.55	1.5	2.4	6.6	4.4	1.9	0.52	0.37	0.32
5	0.87	0.58	0.46	0.54	1.3	1.9	5.3	5.4	2.1	0.49	0.33	0.30
6	0.95	0.56	0.48	0.96	1.3	1.7	4.6	5.2	2.3	0.44	0.35	0.28
7	0.94	0.55	0.50	1.7	2.1	1.6	4.0	4.4	2.4	0.43	0.33	0.26
8	0.84	0.55	0.50	1.2	2.5	1.6	3.7	3.7	1.7	0.42	0.30	0.26
9	0.80	0.54	0.50	1.0	2.0	1.6	3.4	3.4	1.3	0.42	0.28	0.26
10	0.81	0.54	0.46	1.0	1.9	1.6	3.4	3.3	1.2	0.48	0.28	0.26
11	0.84	0.54	0.70	1.0	1.9	1.5	3.1	2.9	1.3	0.45	0.28	0.26
12	0.84	0.52	0.58	0.98	1.8	1.5	3.1	2.7	1.4	0.40	0.27	0.23
13	0.81	0.51	0.54	1.2	1.7	2.4	3.2	3.0	1.3	0.39	0.24	0.22
14	0.82	0.53	0.53	1.1	1.5	3.7	3.0	6.5	1.4	0.42	0.24	0.23
15	0.95	0.53	0.51	1.1	1.6	2.9	3.5	3.9	1.2	0.43	0.21	0.30
16	0.82	0.53	0.48	1.0	1.6	2.7	3.3	3.2	1.1	0.39	0.19	0.34
17	0.76	0.51	0.51	1.0	1.5	2.4	2.9	2.9	1.0	0.34	0.18	0.31
18	0.72	0.50	0.74	1.0	1.4	4.4	2.7	3.2	0.92	0.35	0.18	0.27
19	0.72	0.51	0.57	1.2	1.3	4.7	2.5	3.2	0.87	0.35	0.17	0.25
20	0.72	0.53	0.54	2.5	1.4	5.3	2.4	2.8	0.82	0.33	0.16	0.24
21	0.72	0.51	0.50	2.2	1.4	7.7	2.3	2.7	0.78	0.32	0.16	0.23
22	0.72	0.50	0.50	1.9	1.3	5.0	4.0	2.5	0.76	0.30	0.15	0.21
23	0.72	0.50	0.50	1.9	1.3	3.9	3.6	2.4	0.74	0.29	0.16	0.21
24	0.72	0.57	0.68	1.9	1.2	3.4	2.9	2.3	0.73	0.31	0.19	0.19
25	0.71	0.84	0.62	2.0	1.2	3.1	3.2	2.1	0.69	0.41	0.17	0.19
26	0.65	0.96	0.60	1.9	1.3	3.0	3.4	2.1	0.66	0.42	0.16	0.22
27	0.63	0.84	0.59	1.8	1.3	4.9	2.9	1.9	0.66	0.43	0.16	0.23
28	0.60	0.50	0.56	1.8	1.1	4.3	31	1.9	0.68	0.36	0.24	0.21
29	0.62	0.50	0.56	1.7	---	3.6	22	1.8	0.63	0.31	1.5	0.18
30	0.61	0.50	0.53	1.6	---	3.5	11	1.8	0.56	0.33	0.62	0.18
31	0.60	---	0.51	1.6	---	6.5	---	1.8	---	0.38	0.38	---
TOTAL	24.31	17.14	16.64	40.92	42.9	97.3	183.4	107.0	36.30	12.53	9.95	7.87
MEAN	0.78	0.57	0.54	1.32	1.53	3.14	6.11	3.45	1.21	0.40	0.32	0.26
MAX	1.0	0.96	0.74	2.5	2.5	7.7	31	7.8	2.4	0.55	1.5	0.46
MIN	0.60	0.50	0.46	0.50	1.1	1.1	2.3	1.8	0.56	0.29	0.15	0.18
CFSM	0.16	0.12	0.11	0.28	0.32	0.65	1.27	0.72	0.25	0.08	0.07	0.05
IN.	0.19	0.13	0.13	0.32	0.33	0.75	1.42	0.83	0.28	0.10	0.08	0.06

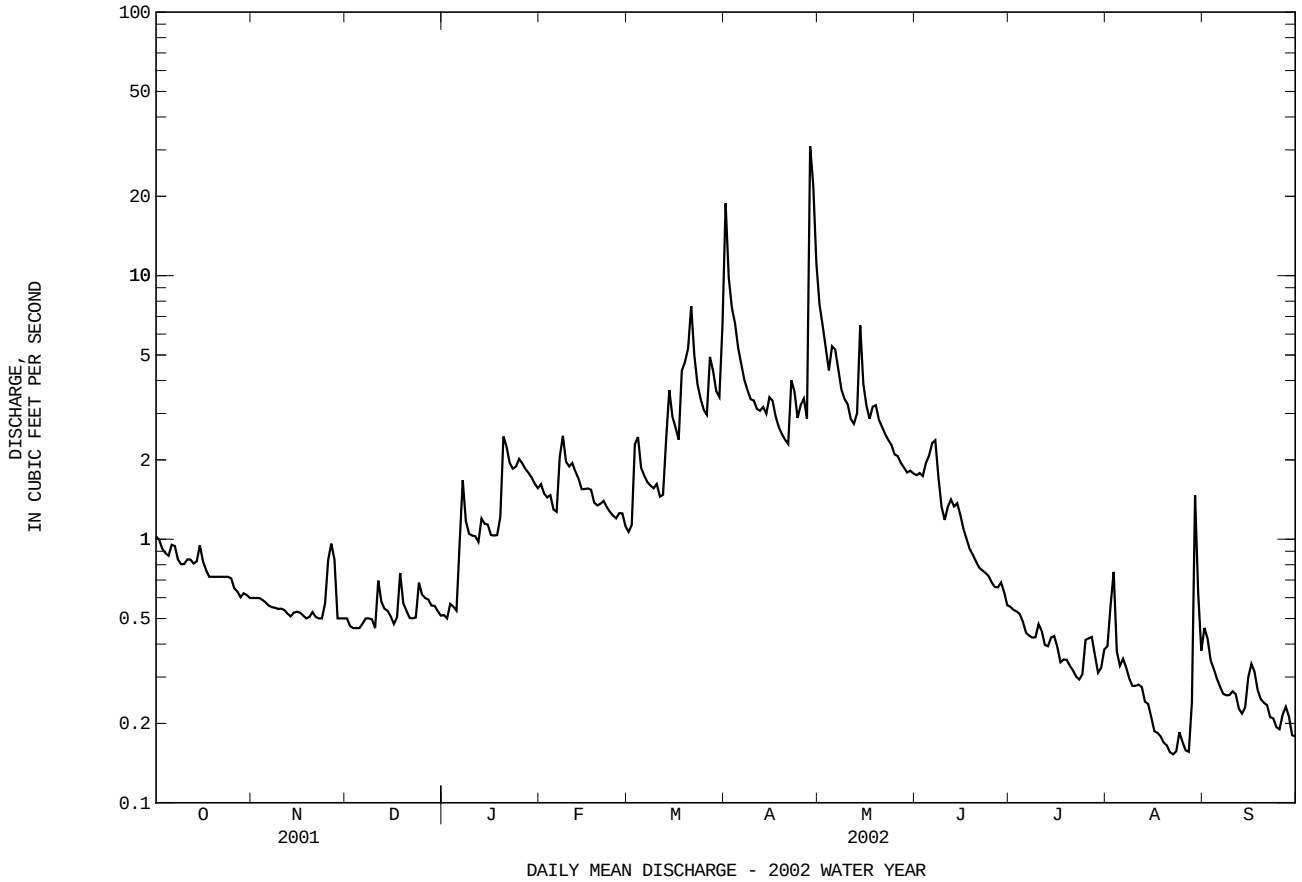
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1971, 1975 - 2002, BY WATER YEAR (WY)

MEAN	1.85	2.41	4.88	8.15	9.27	11.2	7.38	3.90	2.40	1.70	3.56	1.89
MAX	10.5	17.5	22.5	24.9	29.1	30.3	17.3	12.2	12.7	9.20	27.8	18.7
(WY)	1980	1980	1997	1998	1998	1994	1983	1978	1979	1975	1969	1979
MIN	0.030	0.050	0.13	0.51	1.53	2.64	1.64	0.62	0.39	0.16	0.003	0.017
(WY)	1967	1967	1967	1966	2002	1981	1967	1957	1964	1953	1966	1966

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 1971, 1975 - 2002	
ANNUAL TOTAL	1470.33		596.26			
ANNUAL MEAN	4.03		1.63		4.86	
HIGHEST ANNUAL MEAN					10.3	1979
LOWEST ANNUAL MEAN					1.41	1981
HIGHEST DAILY MEAN	137	Mar 21	31	Apr 28	255	Jan 28 1998
LOWEST DAILY MEAN	0.46	(a)	0.15	(b)	0.00	(c)
ANNUAL SEVEN-DAY MINIMUM	0.48	Nov 30	0.16	Aug 20	0.00	Aug 23 1963
MAXIMUM PEAK FLOW			70	Apr 28	(d)547	Aug 20 1969
MAXIMUM PEAK STAGE			3.24	Apr 28	(f)7.08	Aug 19 1985
INSTANTANEOUS LOW FLOW			0.14	(g)	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.84		0.34		1.01	
ANNUAL RUNOFF (INCHES)	11.40		4.62		13.77	
10 PERCENT EXCEEDS	8.7		3.4		11	
50 PERCENT EXCEEDS	1.5		0.82		2.1	
90 PERCENT EXCEEDS	0.54		0.27		0.34	

a Dec. 3-5, 10.
b Aug. 2-23, 27.
c No flow during 1954, 1963, 1964, 1966.
d From rating curve extended above 170 ft^3/s on basis of channal-conveyance study.
f Gage height of 5.44 ft occurred on Aug. 20, 1969 following ditching of the stream channel.
g Aug. 21, 22.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01486500 BEAVERDAM CREEK NEAR SALISBURY, MD

LOCATION.--Lat 38°21'11.2", long 75°34'21.2", Wicomico County, Hydrologic Unit 02060007, on right bank at downstream side of highway bridge on Schumaker Drive, 0.5 mi upstream from Beaglin Branch, 0.8 mi upstream from mouth, and 2 mi from Salisbury.

DRAINAGE AREA.-- 19.5 mi^2.

PERIOD OF RECORD.--October 1929 to August 1933, May 1934 to September 1935, May 1936 to Setpember 1975, October 2000 to September 2002. Prior to October 1948, published as East Branch Wicomico River near Salisbury.

REVISED RECORDS.--WSP 741: 1931(m). WSP 1232: Drainage area. WSP 1432: 1931, 1936-37, 1940.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 20 ft above sea level, from topographic map. October 1929 to September 27, 1938, at site on left bank above Lake Schumaker Dam at datum of 17.95 ft above sea level (City of Salisbury bench mark), and from September 28, 1938 to September 1975 at site at upstream side of Schumaker Dam between spillway and emergency floodgate at datum of 8.93 ft above sea level (City of Salisbury bench mark).

REMARKS.--No estimated daily discharges. Records good except those above 80 ft^3/s, which are poor. Outflow from lake controlled by spillway valve. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES FOR CURRENT PERIOD.--**2001 Water Year** maximum discharge, 1,810 ft^3/s, March 21, gage height, 3.92 ft; minimum discharge, 0.00 ft^3/s, Jan. 29, 30.
2002 Water Year maximum discharge, 2,450 ft^3/s, Sept. 1, gage height, 4.48 ft; minimum discharge, 0.00 ft^3/s, Feb. 20-28, March 1, 2, 4, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	8.0	11	11	27	18	61	18	17	11	11	13
2	11	7.8	11	13	26	18	43	17	23	13	8.6	12
3	10	7.2	10	14	24	16	36	16	19	9.7	7.8	12
4	9.7	8.7	10	14	23	17	32	15	16	9.1	7.0	11
5	9.2	8.8	10	14	25	21	29	15	37	8.8	11	12
6	9.6	8.4	9.8	14	24	21	28	13	26	8.5	13	11
7	8.8	9.0	9.6	14	25	20	28	13	36	7.9	8.5	12
8	8.0	9.9	9.4	14	26	18	26	13	36	7.7	8.0	12
9	8.0	13	9.1	14	26	18	27	13	28	8.1	7.7	11
10	8.0	13	9.4	18	26	17	26	13	20	7.4	35	12
11	8.0	13	10	31	25	16	40	12	17	8.3	76	13
12	8.0	12	9.8	32	24	15	45	14	15	7.0	52	11
13	8.0	12	9.7	11	25	29	44	14	14	6.6	166	10
14	7.6	17	20	12	24	26	42	12	13	6.5	506	11
15	7.3	16	18	12	24	29	36	11	13	6.4	87	11
16	7.7	13	18	18	24	49	32	11	13	6.4	37	10
17	8.0	13	27	30	25	41	35	11	29	6.1	24	10
18	8.1	13	27	30	24	31	35	13	30	7.6	22	10
19	8.0	13	20	35	24	25	31	30	21	8.3	26	10
20	8.0	12	17	34	12	22	27	19	15	7.5	21	10
21	8.0	12	15	54	1.2	555	25	20	12	6.9	18	14
22	7.7	12	15	61	0.77	984	24	31	12	6.5	16	11
23	7.7	12	14	57	2.9	131	23	70	13	7.8	17	10
24	7.2	12	13	57	2.1	63	22	44	15	8.4	22	11
25	7.1	12	12	48	5.3	42	24	25	12	6.8	18	15
26	7.6	32	12	34	26	37	22	33	11	17	16	11
27	8.0	17	12	20	25	33	20	41	9.9	21	14	10
28	7.9	13	12	1.5	21	31	19	34	9.5	8.3	15	10
29	7.6	12	12	0.87	---	33	18	27	9.3	22	14	10
30	5.8	11	12	20	---	81	18	23	9.6	43	13	9.3
31	7.1	---	12	29	---	96	---	18	---	18	13	---
TOTAL	254.7	372.8	416.8	767.37	567.27	2553	918	659	551.3	327.6	1310.6	335.3
MEAN	8.22	12.4	13.4	24.8	20.3	82.4	30.6	21.3	18.4	10.6	42.3	11.2
MAX	12	32	27	61	27	984	61	70	37	43	506	15
MIN	5.8	7.2	9.1	0.87	0.77	15	18	11	9.3	6.1	7.0	9.3
CFSM	0.42	0.64	0.69	1.27	1.04	4.22	1.57	1.09	0.94	0.54	2.17	0.57
IN.	0.49	0.71	0.80	1.46	1.08	4.87	1.75	1.26	1.05	0.62	2.50	0.64

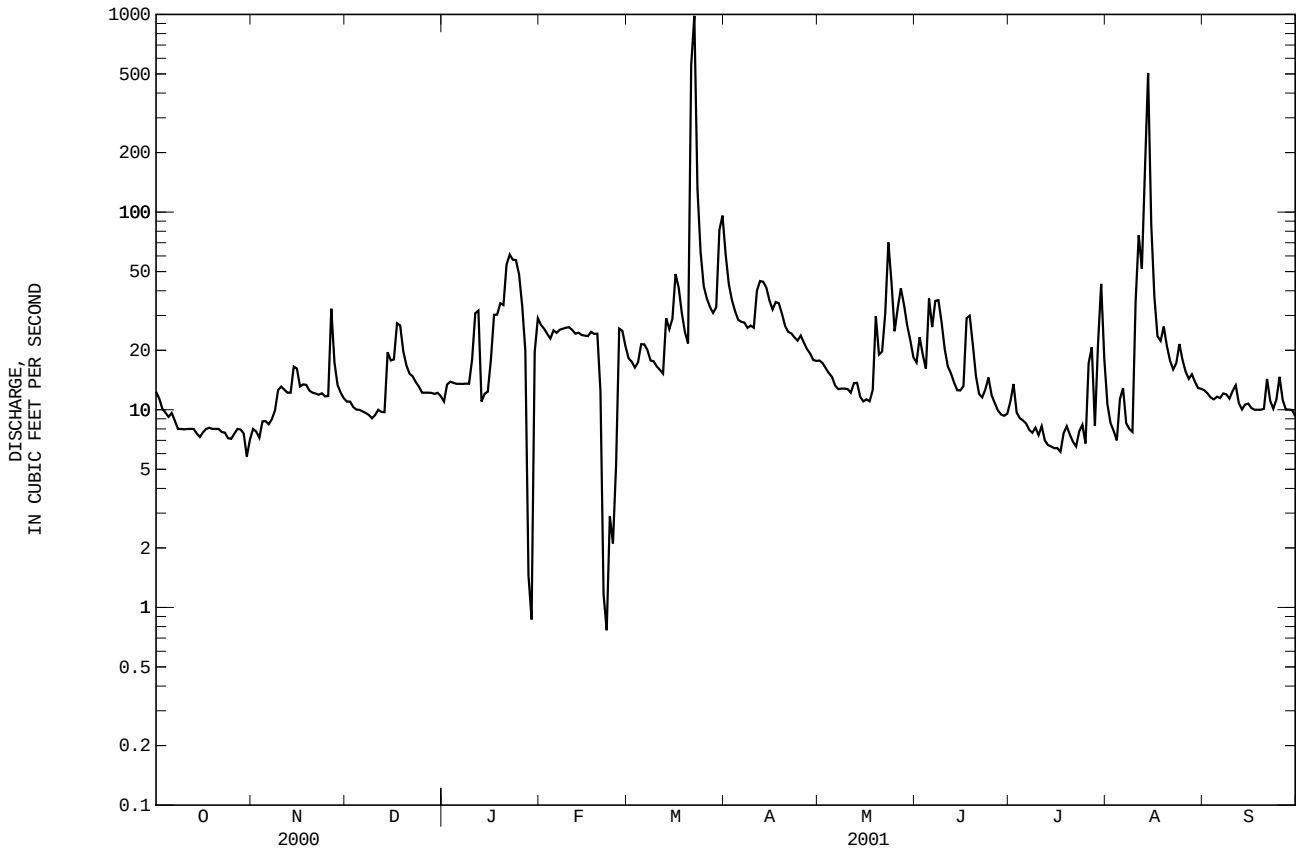
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1933, 1935, 1938 - 1975, 2001, BY WATER YEAR (WY)

MEAN	15.2	17.9	23.8	30.1	35.4	41.4	32.7	23.7	18.5	14.5	22.1	13.0
MAX	48.3	58.5	75.8	62.2	89.2	82.4	72.8	74.5	76.1	53.0	104	27.7
(WY)	1956	1949	1949	1962	1961	2001	1958	1958	1948	1975	1948	1955
MIN	3.69	4.02	3.78	4.17	3.96	4.60	11.5	9.02	7.59	5.05	4.77	3.75
(WY)	1931	1931	1931	1931	1931	1931	1931	1930	1930	1931	1966	1930

01486500 BEAVERDAM CREEK NEAR SALISBURY, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 1930 - 1933, 1935, 1938 - 1975, 2001	
ANNUAL TOTAL	9033.74			
ANNUAL MEAN	24.7		24.0	
HIGHEST ANNUAL MEAN			42.7	1948
LOWEST ANNUAL MEAN			6.56	1931
HIGHEST DAILY MEAN	984	Mar 22	984	Mar 22 2001
LOWEST DAILY MEAN	0.77	Feb 22	0.40	Dec 17 1963
ANNUAL SEVEN-DAY MINIMUM	6.7	Jul 12	0.64	Oct 2 1962
MAXIMUM PEAK FLOW	(a)1810	Mar 21	(a)1810	Mar 21 2001
MAXIMUM PEAK STAGE	3.92	Mar 21	(b)14.31	Aug 4 1948
INSTANTANEOUS LOW FLOW	0.00	(c)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.27		1.23	
ANNUAL RUNOFF (INCHES)	17.23		16.71	
10 PERCENT EXCEEDS	35		45	
50 PERCENT EXCEEDS	14		17	
90 PERCENT EXCEEDS	7.8		6.9	

a From rating curve extended above 80 ft^3/s.
b From high-water mark in well, at previous site and datum.
c Jan. 29, 30, 2001.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01486500 BEAVERDAM CREEK NEAR SALISBURY, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	5.7	7.0	7.0	14	0.00	58	27	5.8	3.1	2.0	1360
2	9.5	5.7	7.0	13	13	1.8	41	22	5.3	3.1	22	522
3	9.0	5.7	6.9	25	12	3.2	26	19	5.1	3.1	5.8	88
4	8.9	5.3	6.1	16	12	0.49	21	16	5.0	3.1	3.3	29
5	8.2	5.3	6.1	9.0	11	2.7	16	19	5.1	3.1	2.7	13
6	12	5.8	6.8	16	11	8.4	14	16	11	2.7	4.9	8.4
7	11	5.9	7.4	22	14	9.0	13	15	13	2.5	2.1	6.4
8	9.2	5.7	7.1	12	12	9.4	12	14	6.8	2.7	1.7	5.8
9	8.4	6.4	7.4	10	12	9.0	12	12	6.1	2.7	1.4	5.7
10	8.0	6.5	7.0	9.7	12	7.7	20	13	5.6	2.7	1.5	5.8
11	7.4	5.5	13	8.7	12	7.0	16	12	5.4	2.6	1.5	5.6
12	7.0	5.6	9.9	9.0	11	7.1	16	11	4.9	2.3	1.5	5.0
13	7.0	5.7	7.7	11	11	13	20	16	5.5	2.4	1.5	4.7
14	8.3	5.7	6.8	9.7	11	17	18	17	6.4	2.9	1.6	4.7
15	13	6.0	6.4	8.7	11	13	17	12	6.8	2.9	1.7	6.7
16	8.5	6.4	6.4	8.2	9.9	11	15	9.4	6.4	2.4	1.5	6.7
17	6.7	6.4	6.8	8.0	11	9.9	13	8.0	7.1	2.1	1.7	5.9
18	6.4	6.4	11	8.1	13	22	14	13	5.7	2.1	1.4	5.5
19	6.4	6.4	8.7	11	14	20	13	11	5.6	2.3	1.2	5.1
20	6.4	6.8	7.4	17	5.8	24	12	8.7	5.0	2.3	1.4	5.1
21	6.4	6.8	6.9	12	0.00	31	12	8.0	4.6	2.1	1.4	5.2
22	6.4	6.5	7.0	14	0.00	23	26	7.7	4.6	2.0	1.2	5.1
23	6.4	6.5	7.0	16	0.00	18	17	7.3	4.1	1.8	1.5	5.0
24	6.4	6.8	11	15	0.00	15	14	6.8	4.2	3.0	3.6	5.1
25	5.1	7.0	9.0	16	0.00	13	15	6.7	4.2	3.7	2.2	4.9
26	5.0	7.0	8.0	15	0.00	12	14	6.4	3.6	3.4	1.9	5.6
27	5.0	7.0	7.4	15	0.00	20	13	6.2	3.3	3.1	1.8	6.2
28	5.1	7.0	7.0	15	0.00	17	50	6.3	4.3	3.0	7.0	6.0
29	5.1	7.0	7.0	14	---	15	54	6.3	4.0	2.5	22	5.5
30	5.1	7.0	7.0	14	---	12	49	6.1	3.5	2.0	4.6	5.1
31	5.4	---	7.0	14	---	34	---	6.2	---	1.9	4.6	---
TOTAL	232.7	187.5	237.2	399.1	232.70	405.69	651	365.1	168.0	81.6	114.2	2152.8
MEAN	7.51	6.25	7.65	12.9	8.31	13.1	21.7	11.8	5.60	2.63	3.68	71.8
MAX	13	7.0	13	25	14	34	58	27	13	3.7	22	1360
MIN	5.0	5.3	6.1	7.0	0.00	0.00	12	6.1	3.3	1.8	1.2	4.7
CFSM	0.38	0.32	0.39	0.66	0.43	0.67	1.11	0.60	0.29	0.13	0.19	3.68
IN.	0.44	0.36	0.45	0.76	0.44	0.77	1.24	0.70	0.32	0.16	0.22	4.11

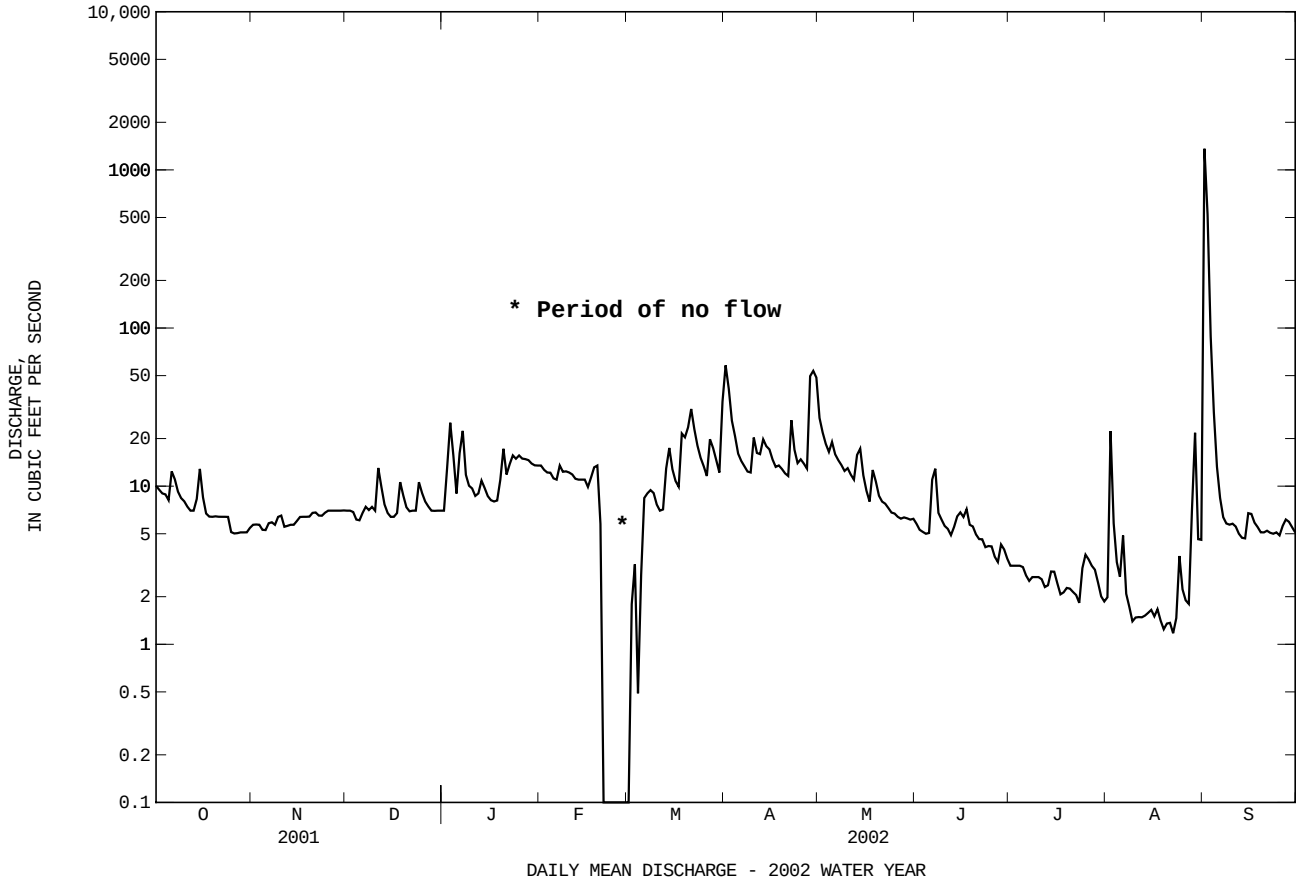
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1933, 1935, 1938 - 1975, 2001 - 2002, BY WATER YEAR (WY)

MEAN	15.0	17.6	23.4	29.7	34.7	40.7	32.5	23.4	18.2	14.2	21.6	14.4
MAX	48.3	58.5	75.8	62.2	89.2	82.4	72.8	74.5	76.1	53.0	104	71.8
(WY)	1956	1949	1949	1962	1961	2001	1958	1958	1948	1975	1948	2002
MIN	3.69	4.02	3.78	4.17	3.96	4.60	11.5	9.02	5.60	2.63	3.68	3.75
(WY)	1931	1931	1931	1931	1931	1931	1931	1930	2002	2002	2002	1930

01486500 BEAVERDAM CREEK NEAR SALISBURY, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1930 - 1933, 1935, 1938 - 1975, 2001 - 2002	
ANNUAL TOTAL	8646.84		5227.59			
ANNUAL MEAN	23.7		14.3		23.7	
HIGHEST ANNUAL MEAN					42.7	1948
LOWEST ANNUAL MEAN					6.56	1931
HIGHEST DAILY MEAN	984	Mar 22	1360	Sep 1	1360	Sep 1 2002
LOWEST DAILY MEAN	0.77	Feb 22	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	5.1	Oct 25	0.00	Feb 21	0.00	Feb 21 2002
MAXIMUM PEAK FLOW			2450	Sep 1	(b)2450	Sep 1 2002
MAXIMUM PEAK STAGE			4.48	Sep 1	(c)14.31	Aug 4 1948
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	1.21		0.73		1.22	
ANNUAL RUNOFF (INCHES)	16.50		9.97		16.55	
10 PERCENT EXCEEDS	35		17		45	
50 PERCENT EXCEEDS	13		7.0		16	
90 PERCENT EXCEEDS	6.4		2.1		6.7	

a Feb. 21-28, March 1, 2002.
b From rating curve extended above 80 ft^3/s.
c At previous site and datum, from high-water mark in well.
d Feb. 20-28, March 1, 2, 4, 5.
f Jan. 29, 30, 2001, Feb. 20-28, March 1, 2, 4, 5, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE

LOCATION.--Lat 38°43'42.0", long 75°33'42.7", Sussex County, Hydrologic Unit 02060008, on left bank at downstream side of highway bridge on county road No. 545, 800 ft downstream from Gum Branch, 2.5 mi southeast of Bridgeville, and 50.5 mi upstream from mouth.

DRAINAGE AREA.--75.4 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1943 to current year. Prior to October 1955, published as Gravelly Fork near Bridgeville.

REVISED RECORDS.--WSP 1111: 1947. WSP 1232: 1945-49.

GAGE.--Water-stage recorder. Datum of gage is 13.64 ft above National Geodetic Vertical Datum of 1929 (levels by Soil Conservation Service). Prior to Apr. 19, 1947, nonrecording gage, and Apr. 19, 1947 to Dec. 18, 1969, recording gage at present site and datum. Timber control Sept. 3, 1947 to Dec. 18, 1969. Feb. 18, 1970 to Oct. 1, 1973, recording gage at site 300 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 11.0 ft in September 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 360 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 2	0415	*758	*7.18	No other peak greater than base discharge.			

Minimum discharge, 12 ft^3/s, Aug. 14-17, 20-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	43	36	32	37	33	116	106	48	21	18	268
2	64	43	35	32	37	33	107	176	45	20	17	639
3	60	44	35	33	37	48	93	227	43	21	16	251
4	58	42	35	32	37	41	99	160	40	20	16	159
5	56	42	34	32	37	37	89	145	37	21	16	119
6	59	42	34	40	36	36	86	133	43	18	20	99
7	58	42	35	57	42	36	82	125	47	20	17	88
8	54	41	38	43	42	35	82	117	43	20	16	82
9	52	41	42	39	38	34	81	112	41	18	15	76
10	51	41	36	38	37	35	89	107	39	19	15	73
11	51	40	40	40	39	35	82	97	35	18	14	71
12	51	39	40	40	38	35	82	91	34	18	15	66
13	49	39	39	39	37	38	100	95	42	17	14	59
14	49	38	37	38	36	37	94	115	45	18	13	59
15	53	38	36	37	37	35	89	95	44	21	12	61
16	49	38	35	36	37	35	85	85	41	20	12	93
17	50	37	34	36	37	35	82	82	38	17	13	85
18	48	38	40	35	35	57	79	91	36	17	14	74
19	47	38	37	36	35	57	76	87	34	17	14	68
20	47	39	35	45	35	62	73	79	32	16	12	64
21	46	38	35	41	35	104	72	75	29	17	12	61
22	46	37	34	40	35	74	75	73	29	17	12	59
23	46	37	34	39	34	66	69	70	29	17	12	57
24	46	37	41	39	33	63	64	67	28	25	12	53
25	47	38	38	42	33	60	67	65	25	32	12	50
26	46	42	36	40	33	59	66	60	22	28	12	55
27	45	38	35	39	34	88	61	60	25	26	12	61
28	44	37	35	39	33	78	126	56	25	39	14	57
29	44	38	35	38	---	71	184	52	26	27	35	52
30	44	37	33	37	---	70	125	49	24	24	22	50
31	43	---	33	37	---	77	---	50	---	20	18	---
TOTAL	1570	1184	1122	1191	1016	1604	2675	3002	1069	649	472	3109
MEAN	50.6	39.5	36.2	38.4	36.3	51.7	89.2	96.8	35.6	20.9	15.2	104
MAX	67	44	42	57	42	104	184	227	48	39	35	639
MIN	43	37	33	32	33	33	61	49	22	16	12	50
CFSM	0.67	0.52	0.48	0.51	0.48	0.69	1.18	1.28	0.47	0.28	0.20	1.37
IN.	0.77	0.58	0.55	0.59	0.50	0.79	1.32	1.48	0.53	0.32	0.23	1.53

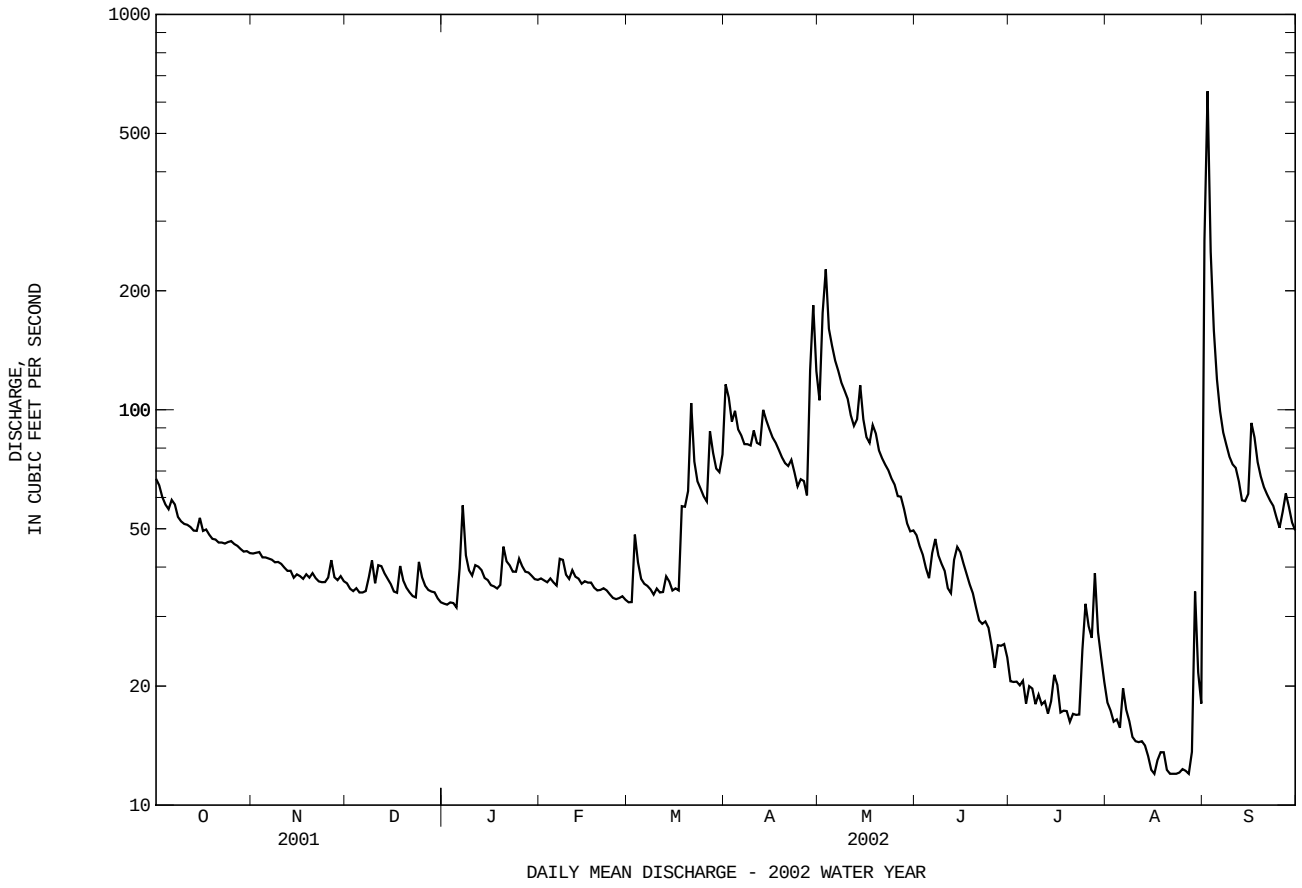
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2002, BY WATER YEAR (WY)

MEAN	46.4	59.6	86.6	117	136	162	139	102	75.0	57.5	63.1	49.6
MAX	137	192	294	311	388	421	300	219	298	210	412	234
(WY)	1980	1957	1949	1978	1998	1994	1958	1990	1948	1959	1967	1960
MIN	17.9	21.2	23.6	23.8	36.3	51.7	47.8	45.8	29.3	17.5	13.6	10.1
(WY)	1944	1988	1999	1966	2002	2002	1985	1951	1986	1944	1943	1943

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 2002	
ANNUAL TOTAL	41907		18663			
ANNUAL MEAN	115		51.1		91.3	
HIGHEST ANNUAL MEAN					170	1958
LOWEST ANNUAL MEAN					43.8	1985
HIGHEST DAILY MEAN	851	Aug 12	639	Sep 2	2880	Feb 26 1979
LOWEST DAILY MEAN	33	(a)	12	(b)	6.6	Sep 29 1943
ANNUAL SEVEN-DAY MINIMUM	35	Dec 1	12	Aug 20	7.8	Sep 23 1943
MAXIMUM PEAK FLOW			758	Sep 2	3020	Feb 26 1979
MAXIMUM PEAK STAGE			7.18	Sep 2	10.31	Feb 26 1979
INSTANTANEOUS LOW FLOW			12	(c)	(d)6.3	Sep 29 1943
ANNUAL RUNOFF (CFSM)	1.52		0.68		1.21	
ANNUAL RUNOFF (INCHES)	20.68		9.21		16.45	
10 PERCENT EXCEEDS	197		88		175	
50 PERCENT EXCEEDS	88		39		67	
90 PERCENT EXCEEDS	38		18		26	

a Dec. 30, 31.
b Aug. 15, 16, 20-27.
c Aug. 14-17, 20-28.
d Mimimum discharge observed.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by A.J. Tallman

Gage house at Nanticoke River near Bridgeville, DE (01487000)

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961-72, 1974-80, 1991, 1994, 1995, 1998 to current year.

REMARKS.--Nutrient analyses were performed at the Maryland Department of Health and Mental Hygiene laboratory (DHMH), Baltimore, MD.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
09...	1545	ENVIRONMENTAL	52	127	6.4	17.0	13.1	2.1	<10	7.60	3.44
MAY											
23...	1000	ENVIRONMENTAL	71	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT													
09...	8.75	2.73	6.6	13.1	<.1	19.3	2	5.3	5.25	.007	5.26	.031	.08
MAY													
23...	--	--	9.3	--	--	--	--	--	--	--	--	--	--

Date	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT													
09...	.02	5.3	.05	.042	.035	.013	9.2	2.3	2.1	<20	53	29.1	2.0
MAY													
23...	--	--	--	--	--	--	--	--	2.0	--	--	--	4.0

Date	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT	
09...	.28
MAY	
23...	.77

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

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE

LOCATION.--Lat 38°50'58.9", long 75°40'23.2", Kent County, Hydrologic Unit 02060008, on left bank 45 ft upstream from highway bridge, 1.4 mi upstream from Cattail Branch, 1.6 mi northeast of Adamsville, 4.9 mi northwest of Greenwood, and 33 mi upstream from mouth.

DRAINAGE AREA.--43.9 mi^2.

PERIOD OF RECORD.--April 1943 to March 1969, October 1971 to September 2002 (Discontinued).

REVISED RECORDS.--WSP 1141: 1948(P). WSP 1432: 1946(M), 1948, 1952.

GAGE.--Water-stage recorder. Datum of gage is 26.21 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1953, nonrecording gage and crest-stage gage, and Nov. 24, 1953, to March 1969, recording gage at site on old channel about 240 ft southeast of present site at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges . Records good. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 16.5 ft, present datum, in September 1935, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	1515	574	5.36	Sep 2	0200	*1,180	*7.40

Minimum discharge, 2.7 ft^3/s, Aug. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	22	15	13	16	15	75	64	29	15	7.2	272
2	30	21	15	13	16	17	58	242	27	14	5.5	634
3	29	21	14	13	15	21	61	148	25	14	5.2	104
4	28	21	14	13	16	17	80	95	25	11	7.6	59
5	28	22	14	13	16	17	59	85	27	12	7.3	43
6	27	20	14	15	16	16	55	75	32	10	8.6	35
7	27	20	14	18	19	16	50	69	34	11	8.2	32
8	26	20	15	15	18	16	47	63	29	10	6.3	29
9	25	20	15	14	16	16	46	58	27	8.8	5.6	27
10	25	19	13	14	17	16	54	55	27	8.8	4.3	26
11	25	19	14	15	18	16	49	50	26	7.1	3.2	26
12	26	18	14	15	17	16	49	46	25	6.0	3.4	24
13	26	18	14	15	17	20	57	53	25	6.9	5.7	21
14	25	17	14	14	16	19	53	55	27	9.1	6.1	21
15	26	18	14	14	16	17	50	47	27	13	6.3	22
16	26	18	13	14	17	17	47	43	26	11	5.8	25
17	25	17	13	14	16	17	45	42	24	8.2	4.8	23
18	24	17	15	14	16	23	42	49	23	6.1	3.5	21
19	24	17	14	15	16	26	39	52	30	7.1	3.4	21
20	24	17	13	17	16	43	38	44	39	6.7	4.3	21
21	24	18	13	16	16	70	37	41	27	7.3	4.6	21
22	24	16	13	16	16	41	38	39	25	7.2	4.8	20
23	24	16	13	16	16	35	35	38	24	6.9	4.9	20
24	24	17	15	17	15	34	32	37	20	13	3.5	19
25	24	17	14	19	15	31	34	36	22	23	4.1	17
26	23	17	14	17	15	29	32	34	24	17	5.1	19
27	22	16	14	17	16	73	29	33	22	11	4.9	19
28	21	15	14	17	15	54	120	32	20	11	5.5	20
29	21	15	14	17	---	46	107	31	17	11	14	18
30	21	15	14	17	---	43	74	30	15	10	13	17
31	21	---	13	16	---	46	---	30	---	9.5	11	---
TOTAL	776	544	432	473	454	883	1592	1816	770	322.7	187.7	1676
MEAN	25.0	18.1	13.9	15.3	16.2	28.5	53.1	58.6	25.7	10.4	6.05	55.9
MAX	31	22	15	19	19	73	120	242	39	23	14	634
MIN	21	15	13	13	15	15	29	30	15	6.0	3.2	17
CFSM	0.57	0.41	0.32	0.35	0.37	0.65	1.21	1.33	0.58	0.24	0.14	1.27
IN.	0.66	0.46	0.37	0.40	0.38	0.75	1.35	1.54	0.65	0.27	0.16	1.42

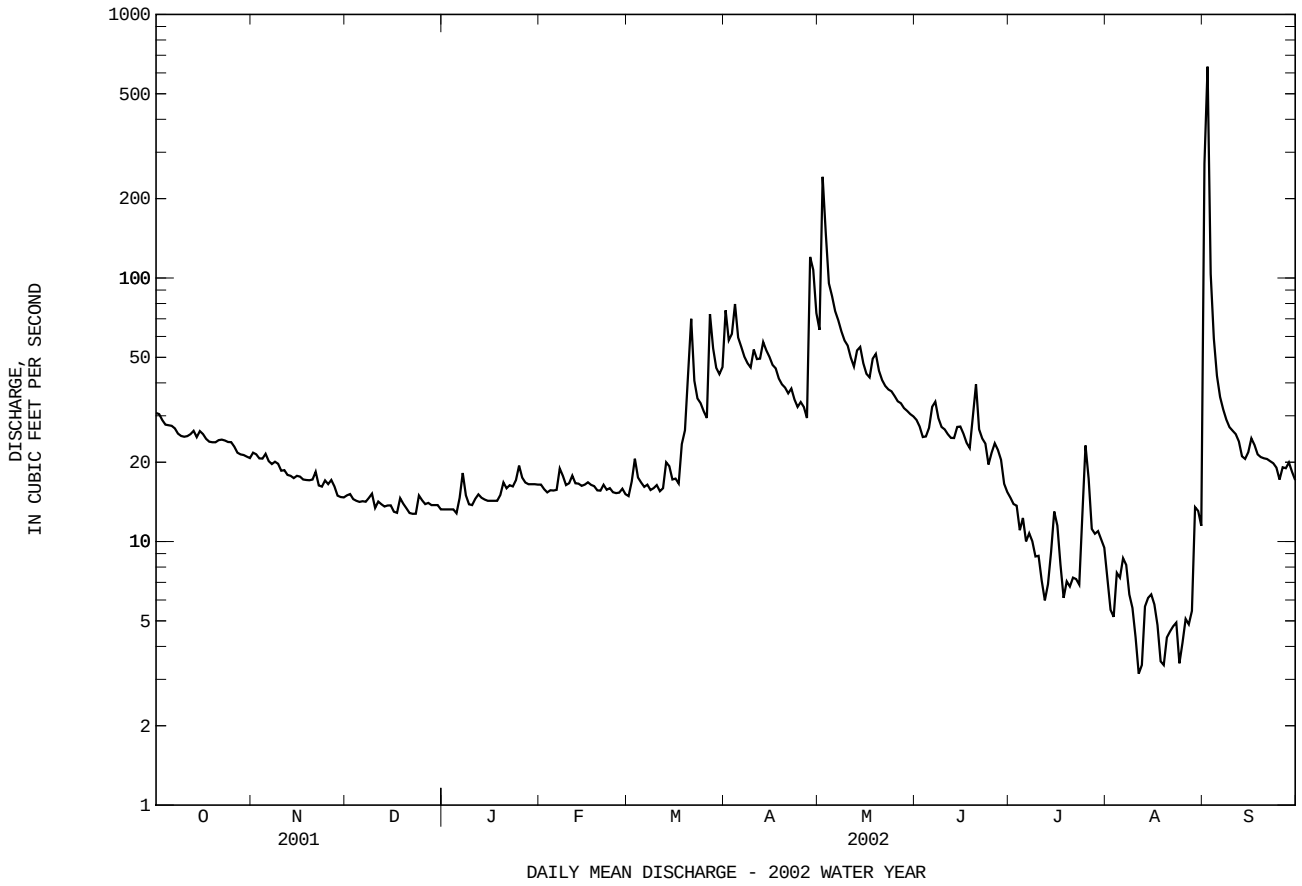
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1969, 1972 - 2002, BY WATER YEAR (WY)

MEAN	20.2	34.5	58.8	82.6	89.3	110	76.8	52.9	36.9	34.3	36.3	24.2
MAX	101	190	219	258	279	284	226	178	156	297	340	197
(WY)	1972	1957	1997	1978	1998	1994	1983	1989	1948	1975	1967	1999
MIN	3.46	4.95	3.22	4.30	16.2	27.8	21.7	15.5	7.32	4.58	2.83	2.78
(WY)	1966	1966	1966	1966	2002	1966	1985	1957	1965	1944	1964	1964

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1943 - 1969, 1972 - 2002	
ANNUAL TOTAL	22907		9926.4			
ANNUAL MEAN	62.8		27.2		55.2	
HIGHEST ANNUAL MEAN					111	1958
LOWEST ANNUAL MEAN					16.2	1966
HIGHEST DAILY MEAN	1510	Jun 17	634	Sep 2	2710	Aug 5 1967
LOWEST DAILY MEAN	13	(a)	3.2	Aug 11	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	13	Dec 16	4.1	Aug 18	1.3	Sep 5 1964
MAXIMUM PEAK FLOW			1180	Sep 2	(c)3700	Jul 13 1975
MAXIMUM PEAK STAGE			7.40	Sep 2	13.98	Aug 5 1967
INSTANTANEOUS LOW FLOW			2.7	(d)	1.0	(f)
ANNUAL RUNOFF (CFSM)	1.43		0.62		1.26	
ANNUAL RUNOFF (INCHES)	19.41		8.41		17.08	
10 PERCENT EXCEEDS	104		49		114	
50 PERCENT EXCEEDS	46		18		30	
90 PERCENT EXCEEDS	16		8.2		7.9	

a Dec. 10, 16, 17, 20-23, 31.
b Sept. 9, 10, 1964.
c From rating curve extended above 3,300 ft^3/s.
d Aug. 11, 12.
f Sept. 9, 10, 1964; Aug. 20, 1965.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by A.J. Tallman

Gage house at Marshyhope Creek near Adamsville, DE (01488500)

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-80, 1974-80, 1991, October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
MAY												
20...	1000	ENVIRONMENTAL	46	--	--	--	--	--	--	--	11.5	3.6
JUN												
20...	1000	ENVIRONMENTAL	41	233	6.3	23.0	19.0	770	7.4	79	--	--

Date	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAY		
20...	6.0	.75
JUN		
20...	--	--

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD

LOCATION.--Lat 38°59'49.9", long 75°47'08.9", Caroline County, Hydrologic Unit 02060005, on left bank at highway bridge (removed), 0.1 mi upstream from Gravelly Branch, 2.0 mi northeast of Greensboro, and 60 mi upstream from mouth.

DRAINAGE AREA.--113 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1948 to current year.

REVISED RECORDS.--WSP 1622: 1948. WDR MD-DE-79-1: 1961(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.51 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing or erroneous record, backwater), which are fair. Diversions for irrigation of about 500 acres upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1935 is believed to have been higher than that of Aug. 4, 1967, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 3	2030	*406	*4.06	No peak greater than base discharge.			

Minimum discharge, 0.26 ft^3/s, Aug. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	20	24	20	33	28	e105	174	52	24	e5.5	57
2	28	19	22	20	33	28	98	211	47	19	3.4	150
3	26	20	20	20	31	51	90	336	44	18	e6.0	179
4	24	19	21	21	30	50	84	297	40	16	e5.0	99
5	24	20	21	21	30	40	77	189	35	14	4.9	49
6	22	19	21	25	29	36	72	155	48	12	6.8	37
7	24	18	21	46	33	34	68	133	155	14	e3.0	32
8	22	18	22	40	37	34	65	118	222	14	e2.1	29
9	21	19	30	33	34	36	64	103	107	e14	e1.8	26
10	21	18	27	31	33	35	88	94	65	12	e2.4	24
11	21	18	28	34	35	32	97	82	57	10	e2.1	21
12	21	19	28	37	35	32	89	74	48	9.7	e1.8	20
13	21	18	27	34	33	36	89	137	46	11	e1.5	18
14	21	19	27	31	32	44	85	190	e52	15	e4.0	19
15	23	19	25	30	31	40	80	154	e50	e14	8.5	19
16	24	20	25	28	31	39	77	115	e42	13	e2.3	27
17	22	20	25	27	31	37	71	94	e40	8.7	e0.92	29
18	21	19	28	27	30	48	65	125	e37	e7.5	e0.56	24
19	20	20	27	28	29	60	62	239	e40	5.8	e0.35	20
20	21	20	25	36	30	71	59	236	94	e8.0	0.49	17
21	21	21	23	37	30	117	57	160	72	e9.0	0.42	17
22	21	22	22	37	30	123	61	124	50	5.5	1.3	17
23	21	21	22	36	30	82	61	103	43	5.2	0.43	16
24	21	21	28	36	30	69	55	90	39	18	e1.0	16
25	21	21	29	40	29	64	53	83	35	28	e1.5	14
26	19	31	27	39	29	61	54	76	34	23	4.9	18
27	18	29	24	36	29	102	51	68	31	16	7.9	28
28	19	26	24	34	28	141	138	62	30	16	7.0	28
29	18	24	23	34	---	111	233	57	29	12	28	24
30	19	25	22	33	---	e115	238	55	27	7.6	36	20
31	19	---	21	33	---	e110	---	55	---	6.3	27	---
TOTAL	670	623	759	984	875	1906	2586	4189	1711	406.3	178.87	1094
MEAN	21.6	20.8	24.5	31.7	31.2	61.5	86.2	135	57.0	13.1	5.77	36.5
MAX	28	31	30	46	37	141	238	336	222	28	36	179
MIN	18	18	20	20	28	28	51	55	27	5.2	0.35	14
CFSM	0.19	0.18	0.22	0.28	0.28	0.54	0.76	1.20	0.50	0.12	0.05	0.32
IN.	0.22	0.21	0.25	0.32	0.29	0.63	0.85	1.38	0.56	0.13	0.06	0.36

e Estimated

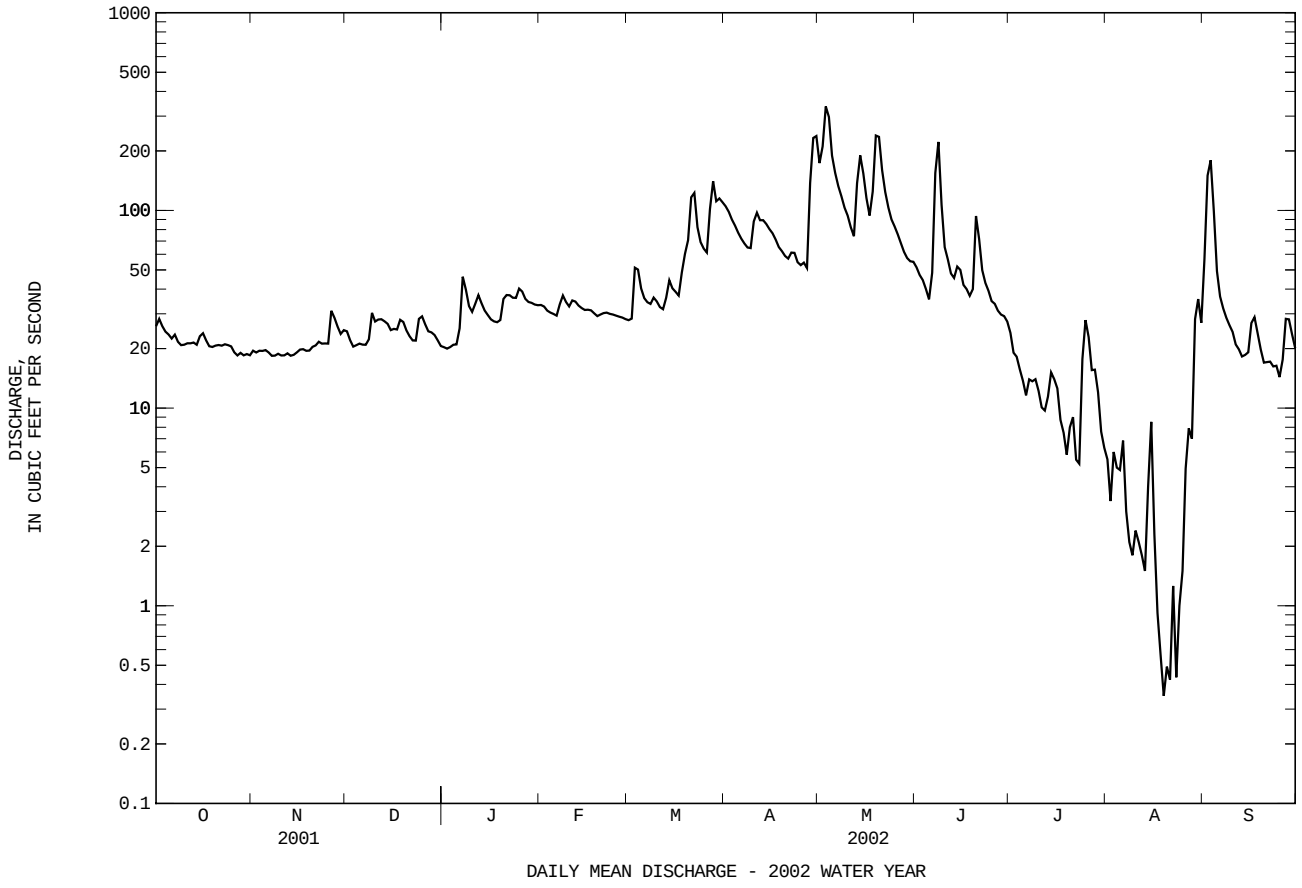
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	54.2	85.7	148	196	223	269	200	133	99.0	58.3	81.3	55.0
MAX	402	476	680	559	646	826	649	457	445	421	829	425
(WY)	1972	1957	1997	1978	1979	1994	1983	1989	2001	1975	1967	1999
MIN	9.85	10.9	13.3	17.9	31.2	43.7	47.2	30.3	19.5	9.49	5.31	9.38
(WY)	1966	1966	1966	1966	2002	1966	1966	1977	1986	1977	1966	1987

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002	
ANNUAL TOTAL	55786		15982.17			
ANNUAL MEAN	153		43.8		132	
HIGHEST ANNUAL MEAN					237	1972
LOWEST ANNUAL MEAN					26.6	1966
HIGHEST DAILY MEAN	3830	Jun 18	336	May 3	6160	Aug 4 1967
LOWEST DAILY MEAN	18	(a)	(e)0.35	Aug 19	(e)0.35	Aug 19 2002
ANNUAL SEVEN-DAY MINIMUM	18	Nov 7	0.64	Aug 17	0.64	Aug 17 2002
MAXIMUM PEAK FLOW			406	May 3	(b)6970	Aug 4 1967
MAXIMUM PEAK STAGE			4.06	May 3	14.47	Aug 4 1967
INSTANTANEOUS LOW FLOW			0.26	(c)	0.26	(c)
ANNUAL RUNOFF (CFSM)	1.35		0.39		1.17	
ANNUAL RUNOFF (INCHES)	18.36		5.26		15.92	
10 PERCENT EXCEEDS	284		98		283	
50 PERCENT EXCEEDS	79		28		72	
90 PERCENT EXCEEDS	21		8.9		15	

a Oct. 27, 29, Nov. 7, 8, 10, 11, 13.
e Estimated.
b From rating curve extended above 3,600 ft^3/s.
c Aug. 19, 20, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by A.J. Tallman

Gage house and control at Choptank River near Greensboro, MD (01491000)

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1981, October 1984 to September 1991.
WATER TEMPERATURE: October 1974 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to September 1991.

REMARKS.--On May 5 and Nov. 15, 1994 samples were collected and analyzed using ultraclean methodologies. Data on trace metals for these dates are available from the University of Delaware. Data on organics for these dates are available from George Mason University.Sample for Sept. 17, 1999 was collected at highway bridge on MD State Rte. 287, approximately 3 mi upstream from gaging station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1975-81, 1988, 1990-91): Maximum daily, 313 microsiemens, Dec. 20, 1987; minimum daily, 40 microsiemens, Jan. 31, 1980.
WATER TEMPERATURE (water years 1975-81, 1985, 1988-91): Maximum daily, 28.5°C, Aug. 14, 1988; minimum daily, 0.0°C, on many days during winter periods.
SEDIMENT CONCENTRATION: Maximun daily mean, 107 mg/L, Dec. 26, 1986; minimum daily mean, 1 mg/L, on many days during water years 1982-91.
SEDIMENT LOAD: Maximum daily, 448 tons, Dec. 26, 1986; minimum daily, 0.02 ton, Aug. 30, Sept. 7, 1982, July 25, 1986, Oct. 16, 23, 26, 27, 1987, Sept. 23, 1988.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
03...	1130	ENVIRONMENTAL	26	161	7.3	23.0	15.5	763	9.3	93	51	13.7
NOV												
06...	1000	ENVIRONMENTAL	19	170	7.3	10.5	9.5	764	9.0	78	--	--
DEC												
05...	1230	ENVIRONMENTAL	21	164	7.4	24.0	10.5	772	E9.8	--	--	--
JAN												
08...	1045	ENVIRONMENTAL	41	163	7.3	2.0	2.0	766	12.8	92	52	14.2
FEB												
05...	1200	ENVIRONMENTAL	30	189	7.4	.0	3.5	770	13.2	98	--	--
05...	*1201*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAR												
12...	1230	ENVIRONMENTAL	32	168	7.5	11.0	7.5	770	11.9	98	--	--
18...	1300	ENVIRONMENTAL	50	157	7.4	8.5	9.5	769	10.6	92	--	--
27...	1315	ENVIRONMENTAL	111	145	7.1	14.5	11.0	764	10.7	97	--	--
APR												
05...	1200	ENVIRONMENTAL	77	144	7.1	8.0	12.5	771	10.1	93	40	10.6
05...	*1201*	*REPLICATE*	--	--	--	--	--	--	--	--	*40*	*10.6*
MAY												
03...	1100	ENVIRONMENTAL	7	111	6.9	17.0	17.5	762	6.4	67	--	--
JUN												
07...	1100	ENVIRONMENTAL	147	133	7.1	21.0	22.0	765	6.1	70	--	--
JUL												
10...	*1059*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
10...	1100	ENVIRONMENTAL	13	160	7.3	27.0	24.5	760	6.2	75	47	12.6
10...	*1101*	*REPLICATE*	--	--	--	--	--	--	--	--	*47*	*12.3*
24...	1200	ENVIRONMENTAL	20	164	7.4	28.0	25.5	765	5.7	70	--	--
AUG												
01...	1245	ENVIRONMENTAL	7.6	169	7.3	36.0	27.0	758	6.3	79	--	--
01...	*1246*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
29...	1230	ENVIRONMENTAL	30	181	7.2	23.0	20.5	764	6.9	77	--	--
SEP												
06...	*0944*	*BLANK*	--	--	--	--	--	--	--	--	--	--
06...	0945	ENVIRONMENTAL	37	182	7.0	24.5	21.0	766	6.9	77	--	--

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
03...	4.04	7.12	3.91	24	30	17.8	14.2	E.1	15.4	<10	106	1.8	1.50
NOV													
06...	--	--	--	--	--	--	--	--	14.6	12	--	1.5	1.16
DEC													
05...	--	--	--	--	--	--	--	--	14.7	<10	--	1.6	1.37
JAN													
08...	4.05	6.84	3.42	24	29	21.0	14.1	E.1	14.2	<10	108	2.5	1.75
FEB													
05...	--	--	--	--	--	--	--	--	14.6	<10	--	1.8	1.46
05...	--	--	--	--	--	--	--	--	*14.5*	*<10*	--	*1.8*	*1.47*
MAR													
12...	--	--	--	--	--	--	--	--	13.1	<10	--	1.5	1.12
18...	--	--	--	--	--	--	--	--	13.0	<10	--	1.4	.96
27...	--	--	--	--	--	--	--	--	15.3	<10	--	1.7	1.23
APR													
05...	3.37	8.53	2.76	14	17	24.6	12.9	.1	16.3	11	105	1.1	.72
05...	*3.37*	*8.48*	*2.74*	--	--	*24.3*	*13.1*	*.1*	*16.2*	*<10*	*104*	*1.1*	*.72*
MAY													
03...	--	--	--	--	--	--	--	--	14.8	19	--	1.5	.63
JUN													
07...	--	--	--	--	--	--	--	--	13.5	<10	--	1.7	.92
JUL													
10...	*<.008*	*<.09*	*<.10*	--	--	*<.1*	*<.30*	*<.10*	*<.13*	*17*	*<10*	--	--
10...	3.86	8.81	2.52	--	--	14.8	15.4	E.08	15.6	34	106	1.5	1.01
10...	*3.82*	*8.81*	*2.57*	--	--	*14.6*	*15.4*	*E.09*	*15.5*	*20*	*110*	*1.5*	*.97*
24...	--	--	--	--	--	--	--	--	14.6	<10	--	1.6	1.27
AUG													
01...	--	--	--	--	--	--	--	--	14.7	<10	--	1.6	1.26
01...	--	--	--	--	--	--	--	--	*14.8*	*<10*	--	*1.7*	*1.23*
29...	--	--	--	--	--	--	--	--	13.6	<10	--	1.9	1.52
SEP													
06...	--	--	--	--	--	--	--	--	*E.2*	*<10*	--	--	--
06...	--	--	--	--	--	--	--	--	15.5	<10	--	1.6	1.05

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
03...	.007	1.51	.05	.32	.28	1.8	.27	.24	.060	.023	.016	3.6	232
NOV													
06...	.006	1.16	<.04	.34	.24	1.4	--	--	.045	.018	.011	4.4	--
DEC													
05...	.006	1.38	E.03	.26	.23	1.6	--	--	.051	.025	.016	--	--
JAN													
08...	.014	1.76	.13	.75	.39	2.2	.62	.26	.073	.014	.008	5.2	198
FEB													
05...	.010	1.47	E.03	.30	.21	1.7	--	--	.041	.012	.008	2.9	--
05...	*.010*	*1.48*	*E.03*	*.29*	*.24*	*1.7*	--	--	*.040*	*.012*	*.009*	*3.0*	--
MAR													
12...	.006	1.13	<.04	.33	.22	1.3	--	--	E.04	.017	.009	4.6	--
18...	.010	.97	.07	.43	.28	1.3	.36	.21	.058	.023	.015	4.8	--
27...	.013	1.24	.07	.44	.35	1.6	.37	.28	.065	.020	.012	5.7	--
APR													
05...	.008	.73	E.04	.36	.33	1.1	--	--	.049	.025	.016	5.0	432
05...	*.008*	*.73*	*.07*	*.35*	*.30*	*1.0*	*.28*	*.23*	*.051*	*.025*	*.016*	*5.4*	*410*
MAY													
03...	.018	.65	.13	.82	.68	1.3	.68	.54	.184	.041	.023	--	--
JUN													
07...	.036	.96	.14	.77	.65	1.6	.64	.51	.150	.056	.033	8.4	--
JUL													
10...	*<.002*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*<.6*	*<10*
10...	.005	1.01	<.04	.45	.32	1.3	--	--	.099	.040	.028	5.0	92
10...	*.005*	*.97*	*E.03*	*.51*	*.36*	*1.3*	--	--	*.099*	*.035*	*.023*	*6.6*	*144*
24...	.007	1.28	E.03	.36	.35	1.6	--	--	.106	.044	.031	4.9	--
AUG													
01...	.006	1.26	E.03	.38	.32	1.6	--	--	.094	.053	.040	4.1	--
01...	*.006*	*1.24*	*E.03*	*.45*	*.31*	*1.5*	--	--	*.094*	*.049*	*.037*	*4.3*	--
29...	.007	1.53	<.04	.40	.33	1.9	--	--	.075	.042	.028	4.9	--
SEP													
06...	*<.002*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*<.6*	--
06...	.009	1.06	.07	.56	.42	1.5	.49	.35	.087	.031	.017	5.7	--

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT			
03...	39.6	1.7	.12
NOV			
06...	--	.8	.04
DEC			
05...	--	2.1	.12
JAN			
08...	101	4.4	.49
FEB			
05...	--	4.2	.34
05...	--	--	--
MAR			
12...	--	3.3	.29
18...	--	3.8	.51
27...	--	7.9	2.4
APR			
05...	83.9	3.1	.64
05...	*83.9*	*3.4*	--
MAY			
03...	--	60	54.2
JUN			
07...	--	15	5.9
JUL			
10...	*<2.0*	*<.1*	--
10...	83.9	3.9	.14
10...	*81.0*	*5.3*	--
24...	--	4.3	.23
AUG			
01...	--	2.5	.05
01...	--	*2.1*	--
29...	--	2.6	.21
SEP			
06...	--	*<.1*	--
06...	--	3.7	.37

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

01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD

LOCATION.--Lat 38°58'00.5", long 75°56'35.0", Queen Annes County, Hydrologic Unit 02060005, on right bank 100 ft upstream from highway bridge on Crouse Mill Road, 0.1 mi downstream from Blockston Branch, 2.6 mi downstream from confluence of German Branch and Mason Branch, and 2.6 mi south of Ruthsburg.

DRAINAGE AREA.--85.2 mi^2.

PERIOD OF RECORD.--March 1951 to September 1956, November 2000 to September 2002.

REVISED RECORDS.--WDR MD-DE-02-1.

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22, 2001	0445	*2,110	*6.46	Jun 17, 2001	2245	1,070	5.28
Mar 30, 2001	1930	1,410	5.73	Aug 12, 2001	1315	984	5.15
May 27, 2001	1030	965	5.12				
Sep 2, 2002	0900	*524	*4.27	No peak greater than base discharge.			

November 2000 to September 2001 Minimum discharge, 29 ft^3/s, Aug. 8.
2002 Water year Minimum discharge, 1.5 ft^3/s, Aug. 8, 9.

DISCHARGE, CUBIC FEET PER SECOND, NOVEMBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e60	69	e60	145	127	347	83	93	55	59	48
2	---	e58	64	e59	119	119	246	82	230	70	53	45
3	---	e56	62	e58	108	113	198	79	196	76	49	41
4	---	e55	59	e58	98	112	173	77	127	74	41	39
5	---	e55	58	58	161	187	155	75	108	232	37	48
6	---	e54	57	58	458	220	147	72	97	342	34	45
7	---	54	56	59	228	160	146	68	211	165	34	43
8	---	54	55	60	163	133	139	68	268	106	30	42
9	---	55	55	66	141	122	138	68	134	96	31	39
10	---	70	53	63	134	116	166	67	101	86	33	38
11	---	71	54	60	123	108	179	62	87	87	59	38
12	---	63	55	59	110	104	272	55	80	70	713	35
13	---	58	53	58	112	134	204	48	76	60	530	34
14	---	60	70	58	115	151	168	47	72	52	179	36
15	---	66	93	60	116	128	146	46	70	49	105	38
16	---	62	81	62	129	143	150	44	68	46	80	34
17	---	59	130	62	379	138	163	49	532	42	69	31
18	---	57	259	61	289	127	182	51	827	51	64	31
19	---	55	142	85	169	113	159	56	307	67	59	32
20	---	54	110	416	146	103	134	58	167	61	60	35
21	---	52	95	546	135	468	125	63	131	52	58	39
22	---	51	87	248	124	1610	120	72	137	39	52	37
23	---	50	82	164	119	506	115	78	138	34	53	34
24	---	50	75	139	125	271	110	68	110	32	74	33
25	---	50	e70	129	137	206	103	58	94	32	56	47
26	---	100	67	119	215	179	97	171	84	59	49	46
27	---	126	e64	109	168	166	94	772	73	231	46	39
28	---	92	e64	105	138	151	91	352	65	95	44	36
29	---	75	e63	98	---	145	87	183	61	68	43	36
30	---	71	e62	113	---	849	84	124	56	82	43	34
31	---	---	e62	179	---	775	---	96	---	69	47	---
TOTAL	---	1893	2426	3529	4604	7984	4638	3292	4800	2680	2884	1153
MEAN	---	63.1	78.3	114	164	258	155	106	160	86.5	93.0	38.4
MAX	---	126	259	546	458	1610	347	772	827	342	713	48
MIN	---	50	53	58	98	103	84	44	56	32	30	31
CFSM	---	0.74	0.92	1.34	1.93	3.02	1.81	1.25	1.88	1.01	1.09	0.45
IN.	---	0.83	1.06	1.54	2.01	3.49	2.03	1.44	2.10	1.17	1.26	0.50

e Estimated

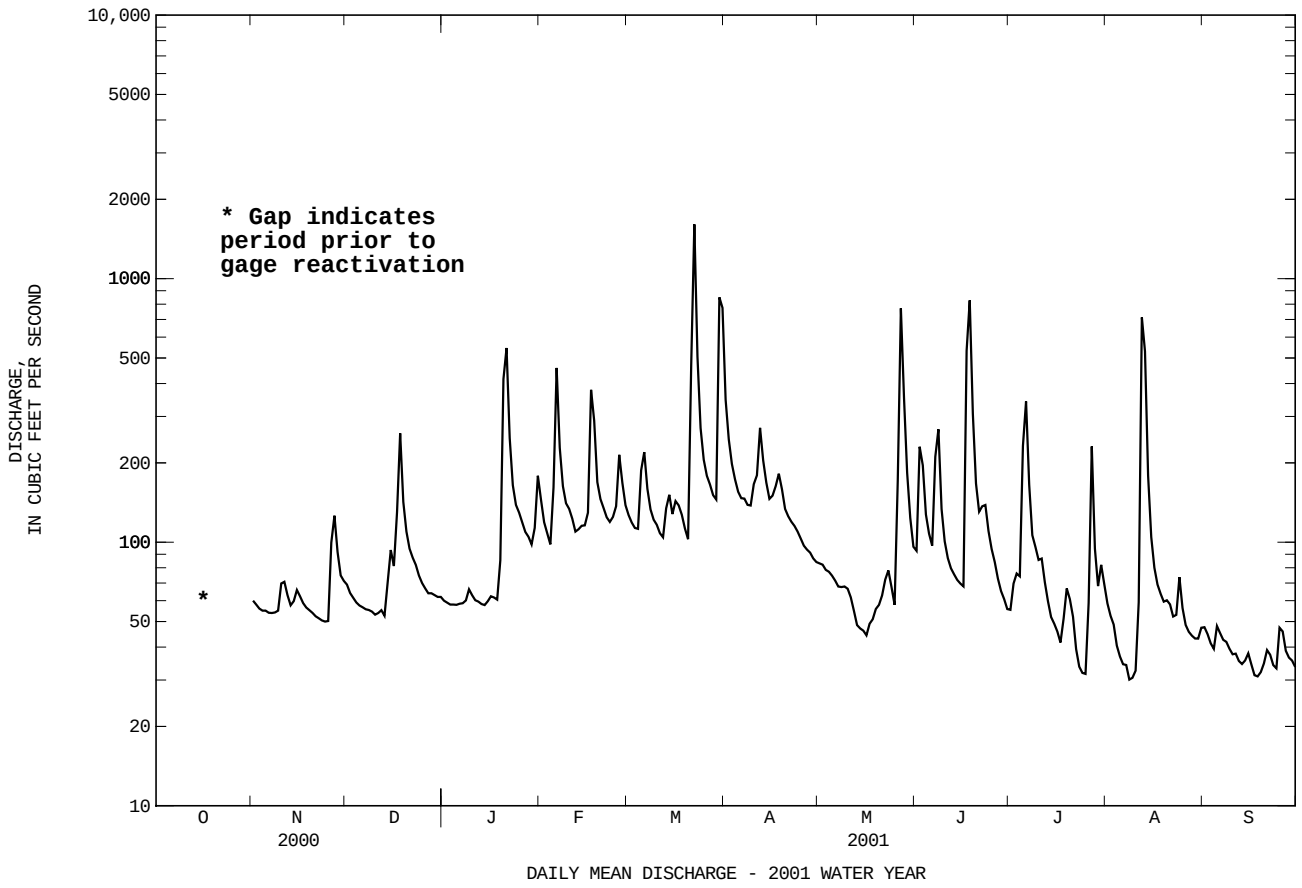
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1956, 2001, BY WATER YEAR (WY)

MEAN	30.9	68.7	105	128	137	199	146	96.1	77.0	53.0	74.1	37.7
MAX	37.4	131	233	230	195	284	266	191	160	92.8	181	87.6
(WY)	1956	1952	1952	1952	1953	1953	1952	1953	2001	1952	1955	1952
MIN	18.1	28.3	30.5	36.8	70.0	117	68.5	34.5	29.4	26.3	19.3	16.5
(WY)	1955	1955	1956	1955	1955	1955	1955	1955	1954	1956	1954	1956

01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1951 - 1956 2001	
ANNUAL MEAN	94.3	
HIGHEST ANNUAL MEAN	155	1952
LOWEST ANNUAL MEAN	54.9	1956
HIGHEST DAILY MEAN	1610	Mar 22 2001
LOWEST DAILY MEAN	14	(a)
ANNUAL SEVEN-DAY MINIMUM	14	Sep 21 1956
MAXIMUM PEAK FLOW	(b)2110	Mar 22 2001
MAXIMUM PEAK STAGE	6.46	Mar 22 2001
INSTANTANEOUS LOW FLOW	13	Sep 15 1956
ANNUAL RUNOFF (CFSM)	1.11	
ANNUAL RUNOFF (INCHES)	15.03	
10 PERCENT EXCEEDS	200	
50 PERCENT EXCEEDS	52	
90 PERCENT EXCEEDS	19	

a Aug. 1, Sept. 6, 7, 28-30, Oct. 5, 12-14, 1954, Aug. 14, 1955, Aug. 19, Sept. 3-5, 13-16, 21-24, 26, 26, 1956.
b From rating curve extended above 1,730 ft^3/s.



01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	30	32	24	31	23	49	64	26	7.9	2.0	137
2	37	29	29	24	29	24	44	119	22	7.2	2.1	415
3	35	30	27	24	28	44	42	247	18	6.0	2.1	123
4	35	30	28	24	27	38	39	106	23	4.6	1.9	55
5	33	28	28	24	26	29	37	75	26	3.7	1.8	33
6	33	26	30	29	25	27	37	62	50	3.1	1.7	26
7	32	26	31	56	29	27	34	55	77	2.7	1.6	24
8	29	26	30	43	31	27	33	52	44	2.4	1.6	20
9	29	26	36	34	30	27	35	50	30	2.2	1.6	18
10	30	25	30	33	29	26	52	49	27	2.2	1.7	21
11	30	25	32	36	29	23	53	45	27	2.7	2.1	21
12	30	25	32	40	29	22	47	41	25	2.4	2.2	18
13	31	25	29	33	22	29	49	83	26	2.2	2.1	15
14	29	26	28	29	20	35	43	92	30	2.3	1.9	14
15	28	25	27	28	22	29	38	62	33	2.7	1.9	14
16	28	27	26	29	26	27	44	49	28	3.5	2.6	21
17	27	28	26	28	26	27	39	44	25	3.0	3.9	21
18	26	26	30	27	24	40	36	82	23	2.3	4.4	18
19	26	27	29	28	23	50	e36	175	24	2.0	3.9	16
20	28	27	29	35	24	61	e37	96	31	1.9	3.2	16
21	28	28	29	35	25	102	e37	66	22	1.8	2.8	15
22	27	27	28	35	25	66	e32	55	15	1.7	2.6	15
23	26	26	27	34	24	46	e32	51	12	1.8	2.4	15
24	26	26	33	34	24	39	e33	50	11	3.4	2.8	16
25	27	27	33	37	23	36	33	48	10	5.1	4.2	16
26	27	37	28	35	24	35	31	44	9.6	5.4	5.3	19
27	27	33	26	33	24	77	30	41	9.2	5.1	5.5	29
28	27	31	26	30	24	72	96	39	9.4	5.1	6.0	28
29	26	32	26	30	---	50	163	37	9.0	5.2	11	22
30	27	32	25	31	---	43	102	36	8.2	3.1	33	18
31	29	---	24	33	---	44	---	35	---	2.2	21	---
TOTAL	908	836	894	995	723	1245	1413	2150	730.4	106.9	142.9	1239
MEAN	29.3	27.9	28.8	32.1	25.8	40.2	47.1	69.4	24.3	3.45	4.61	41.3
MAX	37	37	36	56	31	102	163	247	77	7.9	33	415
MIN	26	25	24	24	20	22	30	35	8.2	1.7	1.6	14
CFSM	0.34	0.33	0.34	0.38	0.30	0.47	0.55	0.81	0.29	0.04	0.05	0.48
IN.	0.40	0.37	0.39	0.43	0.32	0.54	0.62	0.94	0.32	0.05	0.06	0.54

e Estimated

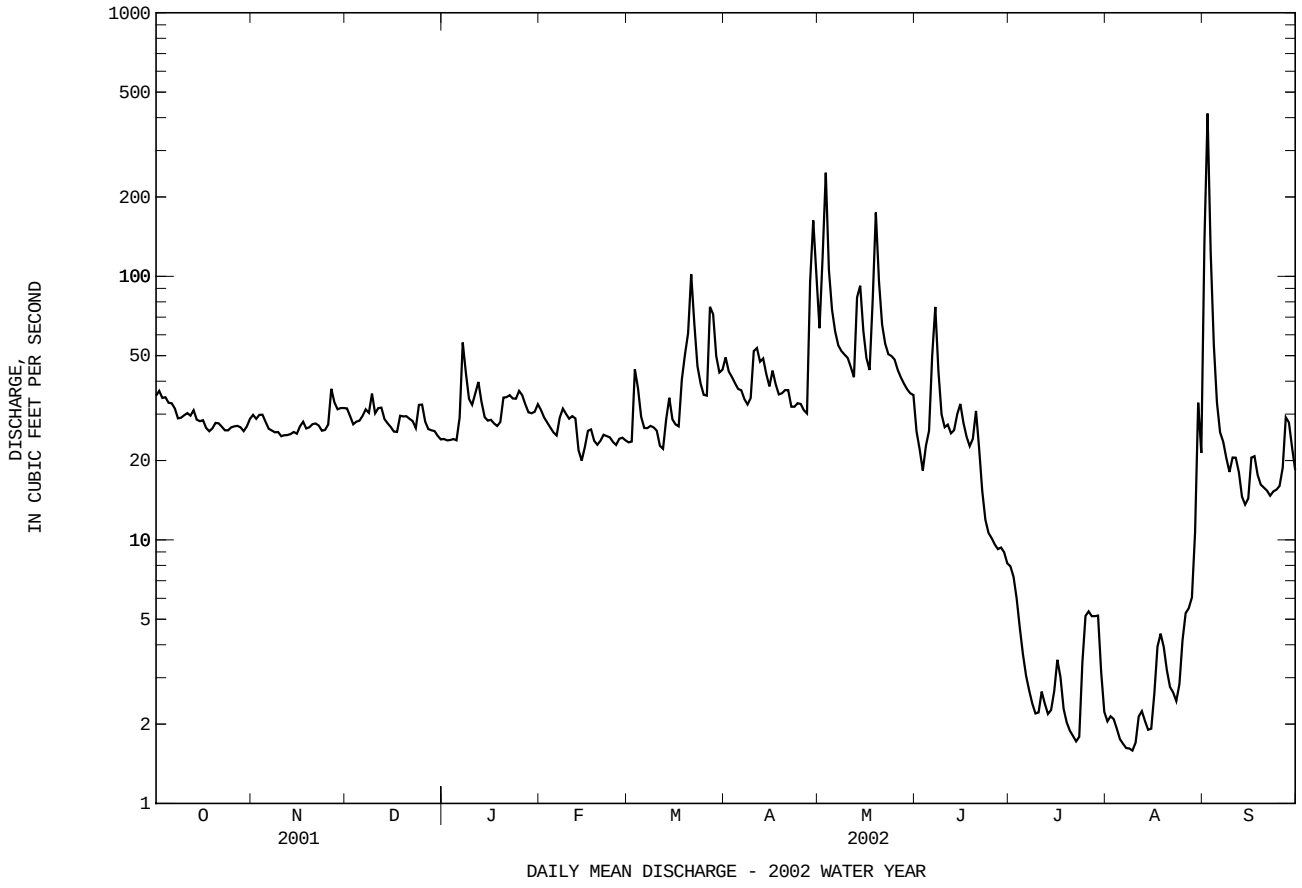
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1956, 2001 - 2002, BY WATER YEAR (WY)

MEAN	30.6	62.8	93.8	114	122	176	133	92.8	70.4	46.8	65.4	38.2
MAX	37.4	131	233	230	195	284	266	191	160	92.8	181	87.6
(WY)	1956	1952	1952	1952	1953	1953	1952	1953	2001	1952	1955	1952
MIN	18.1	27.9	28.8	32.1	25.8	40.2	47.1	34.5	24.3	3.45	4.61	16.5
(WY)	1955	2002	2002	2002	2002	2002	2002	1955	2002	2002	2002	1956

01491500 TUCKAHOE CREEK NEAR RUTHSBURG, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 1956, 2001 - 2002	
ANNUAL TOTAL	38202		11383.2			
ANNUAL MEAN	105		31.2		83.8	
HIGHEST ANNUAL MEAN					155	1952
LOWEST ANNUAL MEAN					31.2	2002
HIGHEST DAILY MEAN	1610	Mar 22	415	Sep 2	1610	Mar 22 2001
LOWEST DAILY MEAN	24	Dec 31	1.6	(a)	1.6	(a)
ANNUAL SEVEN-DAY MINIMUM	25	Nov 9	1.7	Aug 4	1.7	Aug 4 2002
MAXIMUM PEAK FLOW			520	Sep 2	(b)2110	Mar 22 2001
MAXIMUM PEAK STAGE			4.26	Sep 2	6.46	Mar 22 2001
INSTANTANEOUS LOW FLOW			1.5	(c)	1.5	(c)
ANNUAL RUNOFF (CFSM)	1.23		0.37		0.98	
ANNUAL RUNOFF (INCHES)	16.68		4.97		13.36	
10 PERCENT EXCEEDS	185		50		182	
50 PERCENT EXCEEDS	61		28		41	
90 PERCENT EXCEEDS	27		2.9		18	

a Aug. 7-9, 2002.
b From rating curve extended above 1,730 ft^3/s.
c Aug. 8, 9, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01492500 SALLIE HARRIS CREEK NEAR CARMICHAEL, MD

LOCATION.--Lat 38°57'53.6", long 76°06'31.8", Queen Anne County, Hydrologic Unit 02060002, on left bank at downstream side of eastbound lanes of bridge on U.S. Highway 50, 2.0 mi northeast of Carmichael, 2.2 mi northwest of Wye Mills, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--8.09 mi^2.

PERIOD OF RECORD.--June 1951 to September 1956. Annual maximum, water years 1957-81. October 2000 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5.96 ft above National Geodetic Vertical Datum of 1929. June 1951 to September 1956 recording gage at site 30 ft upstream from present site at datum 9.38 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 2	0145	*86	*3.28	No peak greater than base discharge.			

Minimum discharge, 0.67 ft^3/s, Aug. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.6	4.3	3.2	e3.1	e2.9	9.1	3.2	2.6	2.4	1.8	33
2	3.7	3.7	3.9	3.2	e3.1	5.0	5.5	28	2.3	2.4	1.7	44
3	3.3	3.8	3.8	3.2	e3.0	17	4.9	14	2.2	2.3	1.8	5.7
4	3.2	3.8	3.8	3.2	e3.0	4.9	4.7	6.1	2.2	2.3	1.7	3.4
5	2.9	3.7	3.8	3.2	e3.3	3.2	4.2	5.8	2.5	2.2	1.6	2.6
6	2.8	3.4	5.1	7.7	3.5	3.2	4.1	5.0	6.7	2.2	1.6	2.2
7	2.8	3.2	5.4	14	5.3	3.2	3.8	4.6	8.2	2.2	1.4	2.1
8	2.8	3.4	6.2	4.3	4.7	3.4	3.8	4.3	4.0	2.2	1.5	2.0
9	2.7	3.2	6.6	3.2	3.4	3.3	4.1	4.0	3.5	2.3	1.5	1.9
10	2.9	3.4	4.3	3.1	3.3	2.7	11	4.1	3.3	2.4	1.5	2.0
11	3.0	3.4	5.7	5.0	4.4	2.5	5.3	3.8	3.2	2.3	1.5	1.9
12	3.0	3.3	4.9	4.7	e3.2	3.4	4.6	3.6	3.0	2.2	1.4	1.9
13	2.9	3.5	4.2	3.2	e3.0	6.7	4.9	4.1	3.2	2.1	1.4	1.9
14	3.0	3.4	4.2	3.1	e2.8	6.0	4.7	4.0	4.1	2.8	1.4	2.0
15	4.2	3.4	3.9	2.9	e3.0	4.0	4.3	3.6	4.2	2.3	1.3	2.0
16	3.0	3.4	3.7	2.9	e3.3	3.6	4.1	3.2	3.4	2.2	1.3	2.3
17	2.4	3.3	3.7	2.9	e3.3	3.5	e3.9	3.2	3.1	2.0	1.2	2.2
18	2.4	3.2	5.1	3.2	e3.1	12	e3.7	16	2.9	2.0	1.2	2.1
19	2.7	3.4	4.3	3.2	e2.9	8.4	e3.4	7.5	2.9	1.9	1.2	2.2
20	2.8	3.5	3.8	4.9	e3.0	17	2.9	4.5	2.9	1.8	1.2	2.1
21	3.0	3.4	3.6	4.5	e3.1	17	2.7	3.8	2.8	1.8	1.3	2.1
22	3.1	3.4	3.5	5.0	e3.1	7.6	3.7	3.5	2.7	1.8	1.3	2.1
23	2.7	3.4	3.6	3.7	e3.0	6.0	3.2	3.4	2.7	2.0	1.5	2.0
24	2.8	3.4	7.5	3.5	e2.9	5.8	3.6	3.2	2.7	2.2	1.5	1.9
25	3.0	4.6	5.0	4.0	e2.9	5.5	3.7	3.0	2.6	2.2	1.5	1.9
26	2.9	9.6	4.1	3.4	e3.0	5.5	3.8	2.9	2.6	2.3	1.6	2.7
27	3.0	5.1	3.7	2.9	e3.0	18	3.5	2.9	2.6	2.3	1.6	2.9
28	3.2	4.5	3.6	2.9	e3.0	8.1	25	2.8	2.7	2.3	2.0	3.9
29	3.4	4.4	3.6	2.9	---	5.9	14	2.7	2.6	2.0	3.4	2.7
30	3.2	4.4	3.5	3.0	---	5.4	4.4	2.7	2.5	1.9	2.0	2.4
31	3.4	---	3.3	3.1	---	6.0	---	2.6	---	1.8	1.9	---
TOTAL	94.0	115.2	135.7	123.2	91.7	206.7	164.6	166.1	96.9	67.1	48.8	144.1
MEAN	3.03	3.84	4.38	3.97	3.27	6.67	5.49	5.36	3.23	2.16	1.57	4.80
MAX	4.2	9.6	7.5	14	5.3	18	25	28	8.2	2.8	3.4	44
MIN	2.4	3.2	3.3	2.9	2.8	2.5	2.7	2.6	2.2	1.8	1.2	1.9
CFSM	0.37	0.47	0.54	0.49	0.40	0.82	0.68	0.66	0.40	0.27	0.19	0.59
IN.	0.43	0.53	0.62	0.57	0.42	0.95	0.76	0.76	0.45	0.31	0.22	0.66

e Estimated

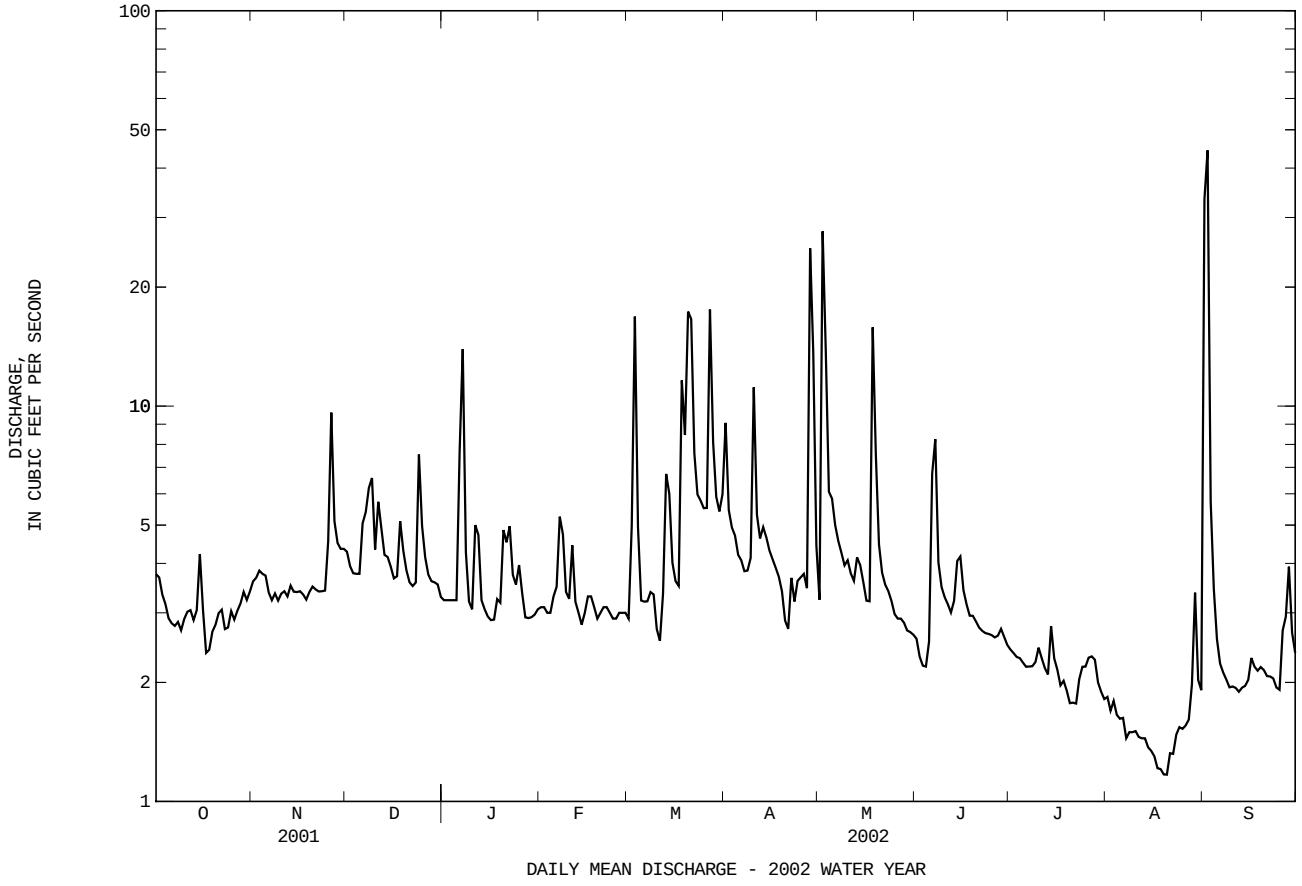
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1956, 2001 - 2002, BY WATER YEAR (WY)

MEAN	3.68	6.52	8.62	9.29	9.64	14.0	11.9	8.31	5.58	3.95	7.26	4.30
MAX	4.86	10.0	16.7	17.2	15.7	21.5	29.8	14.3	9.89	7.13	24.3	13.0
(WY)	1956	1953	1952	1953	1953	2001	1952	2001	2001	2001	1955	1952
MIN	2.15	3.84	3.66	3.65	3.27	6.67	5.03	2.68	2.67	2.16	1.57	2.03
(WY)	1955	2002	1956	1955	2002	2002	1955	1955	1956	2002	2002	1954

01492500 SALLIE HARRIS CREEK NEAR CARMICHAEL, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 1956, 2001 - 2002	
ANNUAL TOTAL	3295.3		1454.1			
ANNUAL MEAN	9.03		3.98		7.84	
HIGHEST ANNUAL MEAN					12.0	1952
LOWEST ANNUAL MEAN					3.98	2002
HIGHEST DAILY MEAN	126	May 26	44	Sep 2	428	Aug 13 1955
LOWEST DAILY MEAN	2.4	(a)	1.2	(b)	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	2.7	Oct 17	1.2	Aug 15	1.2	Aug 15 2002
MAXIMUM PEAK FLOW			86	Sep 2	(c)1030	Aug 13 1955
MAXIMUM PEAK STAGE			3.29	Sep 2	(d)7.02	Aug 13 1955
INSTANTANEOUS LOW FLOW			0.67	Aug 21	0.67	Aug 21 2002
ANNUAL RUNOFF (CFSM)	1.12		0.49		0.97	
ANNUAL RUNOFF (INCHES)	15.15		6.69		13.16	
10 PERCENT EXCEEDS	13		5.6		14	
50 PERCENT EXCEEDS	5.4		3.2		4.2	
90 PERCENT EXCEEDS	3.1		1.9		2.1	

a Oct. 17, 18.
b Aug. 17-20, 2002.
c From rating curve extended above 370 ft^3/s by logrithmic plotting at previous site and datum.
d At previous site and datum.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01493000 UNICORN BRANCH NEAR MILLINGTON, MD

LOCATION.--Lat 39°14'58.9", long 75°51'40.7", Queen Annes County, Hydrologic Unit 02060002, on right bank 20 ft upstream from bridge on State Highway 313, 0.9 mi upstream from mouth, and 1.4 mi southwest of Millington.

DRAINAGE AREA.--19.7 mi^2.

PERIOD OF RECORD.--January 1948 to current year.

REVISED RECORDS.--WSP 1382: 1952(P). WRD MD-DE-95-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flow by Unicorn Lake Dam upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 3	0230	*94	*2.82	No peak greater than base discharge.			

Minimum discharge, 1.3 ft^3/s, Aug. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.3	8.1	8.1	9.4	7.3	15	15	8.8	7.0	4.9	18
2	11	8.4	8.1	8.1	8.6	8.0	14	42	8.0	5.8	5.1	20
3	9.4	8.4	8.2	8.1	8.6	14	12	61	8.4	5.3	5.2	11
4	8.8	8.4	8.3	8.1	8.3	11	12	23	7.8	5.1	6.5	8.1
5	8.6	8.0	8.0	8.7	8.3	9.7	11	18	8.5	4.5	5.7	7.3
6	9.2	7.7	8.1	11	8.2	9.0	11	15	15	4.4	5.3	6.9
7	8.4	6.9	7.3	16	9.4	8.5	12	13	14	5.3	5.0	6.2
8	8.3	7.3	8.4	11	8.9	8.4	11	13	12	5.3	4.4	6.4
9	8.6	7.3	10	9.9	8.4	8.8	11	12	11	4.8	3.6	6.4
10	8.6	8.2	9.1	9.5	8.5	7.7	16	12	9.7	6.8	4.0	6.5
11	8.5	8.0	9.9	12	9.2	7.9	15	11	8.7	7.1	3.8	6.0
12	8.2	8.1	9.1	11	8.9	7.7	13	13	8.5	5.4	4.0	5.7
13	8.1	8.8	8.9	10	8.3	9.1	13	23	9.9	4.9	3.2	5.6
14	8.9	8.7	9.1	16	8.2	8.4	12	17	15	4.8	2.3	5.7
15	9.8	8.6	8.4	21	8.2	8.5	12	14	14	4.8	2.0	6.7
16	7.8	8.5	8.1	13	8.1	8.2	11	12	11	4.3	2.9	6.6
17	7.0	8.6	8.6	1.7	7.8	8.3	11	12	10	4.2	3.5	6.0
18	7.2	8.6	10	1.8	7.9	13	10	37	9.8	4.0	4.8	5.8
19	8.0	8.6	9.4	2.0	7.8	13	10	45	13	3.7	3.7	5.2
20	8.1	8.6	8.5	5.1	8.1	18	9.4	21	11	4.7	2.8	5.0
21	8.2	8.6	8.2	9.3	7.9	23	8.9	17	10	5.1	2.8	4.8
22	7.7	8.2	8.2	9.7	7.7	15	10	15	8.9	4.6	2.3	5.8
23	8.5	8.5	8.5	10	7.7	13	10	14	8.6	5.6	3.4	5.4
24	7.9	8.3	11	11	7.7	11	9.3	13	7.8	14	4.2	4.9
25	7.7	11	9.6	11	7.8	11	9.9	12	7.3	9.2	6.2	4.4
26	7.2	13	8.9	9.8	7.7	11	9.7	11	6.8	8.6	5.4	7.0
27	7.4	9.3	8.6	9.4	7.4	20	9.3	13	7.4	8.7	4.9	10
28	7.6	8.6	8.4	9.1	7.3	17	29	12	8.5	9.6	5.5	7.2
29	8.0	8.6	8.1	9.0	---	14	36	10	7.8	8.0	11	6.5
30	8.1	8.9	8.1	8.8	---	12	20	9.6	7.7	6.0	8.7	6.9
31	8.8	---	8.1	9.1	---	13	---	8.8	---	6.1	6.8	---
TOTAL	262.6	257.0	269.3	298.3	230.3	354.5	393.5	564.4	294.9	187.7	143.9	218.0
MEAN	8.47	8.57	8.69	9.62	8.22	11.4	13.1	18.2	9.83	6.05	4.64	7.27
MAX	13	13	11	21	9.4	23	36	61	15	14	11	20
MIN	7.0	6.9	7.3	1.7	7.3	7.3	8.9	8.8	6.8	3.7	2.0	4.4
CFSM	0.43	0.44	0.44	0.49	0.42	0.58	0.67	0.93	0.50	0.31	0.24	0.37
IN.	0.50	0.49	0.51	0.56	0.44	0.67	0.74	1.07	0.56	0.35	0.27	0.41

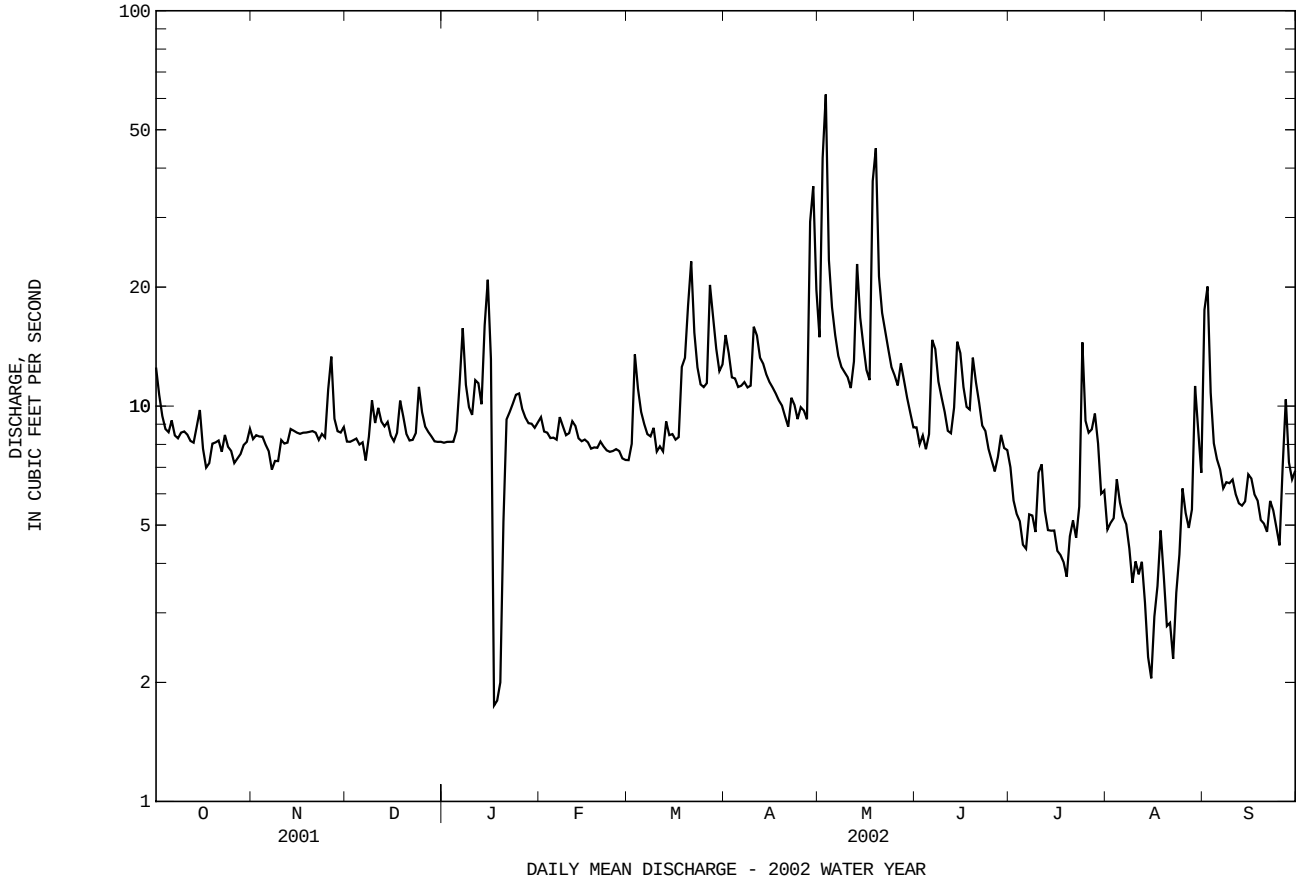
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	14.7	17.1	25.3	32.0	36.5	43.7	36.5	26.7	21.3	16.3	17.3	16.5
MAX	91.5	65.4	124	83.7	83.7	105	109	66.8	86.9	52.5	62.5	112
(WY)	1972	1972	1997	1978	1961	1994	1983	1989	1996	1972	1967	1999
MIN	5.27	4.99	5.32	5.80	8.22	9.29	10.7	8.64	4.51	5.22	3.15	4.79
(WY)	1966	1966	1966	1966	2002	1966	1966	1977	1966	1977	1966	1977

01493000 UNICORN BRANCH NEAR MILLINGTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002	
ANNUAL TOTAL	9385.3		3474.4			
ANNUAL MEAN	25.7		9.52		25.2	
HIGHEST ANNUAL MEAN					51.8	1972
LOWEST ANNUAL MEAN					7.08	1966
HIGHEST DAILY MEAN	306	Jun 17	61	May 3	1200	Sep 16 1999
LOWEST DAILY MEAN	6.9	Nov 7	1.7	Jan 17	0.10	Jun 9 1965
ANNUAL SEVEN-DAY MINIMUM	7.6	Nov 5	3.1	Aug 11	0.14	Jun 8 1965
MAXIMUM PEAK FLOW			94	May 3	(a)2600	Sep 16 1999
MAXIMUM PEAK STAGE			2.82	May 3	9.40	Sep 16 1999
INSTANTANEOUS LOW FLOW			1.3	(b)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.31		0.48		1.28	
ANNUAL RUNOFF (INCHES)	17.74		6.57		17.39	
10 PERCENT EXCEEDS	42		14		47	
50 PERCENT EXCEEDS	16		8.5		16	
90 PERCENT EXCEEDS	8.2		4.9		7.3	

a From rating curve extended above 600 ft^3/s on basis of USGS Cap Culvert Analysis Program of peak flow.
b Aug. 14, 15.
c No flow for part of each day June 13, 14, 1965, and Jan. 6, 7, 10, 13-16,20, 21, 23, 24, 27, 31, Feb. 2, 3, 14, 20, 1997, caused by regulation at Unicorn Lake Dam.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD

LOCATION.--Lat 39°15'25.4", long 75°56'24.5", Kent County, Hydrologic Unit 02060002, on middle pier of double box culvert at downstream side of State Highway 291, 1.2 mi upstream from mouth, and 1.5 mi northwest of Crumpton.

DRAINAGE AREA.--6.12 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1996 to September 2002 (Discontinued).

GAGE.--Water-stage recorder. Datum of gage is 2.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair except those for estimated daily discharges (missing record, backwater from beaver dams, doubtful gage-height record), which are poor. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 26	0500	*64	*4.81	No other peak greater than base discharge.			

Minimum discharge, unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	e4.7	e4.5	e4.1	e3.9	e3.7	4.3	4.1	3.3	e2.3	e2.5	e7.5
2	5.5	4.2	e4.4	e4.2	4.8	e3.7	4.1	6.8	3.1	e2.7	e2.2	e9.5
3	5.2	e4.1	e4.4	e4.2	4.7	5.4	e4.0	4.4	2.9	e2.5	e2.1	e5.6
4	e5.2	e4.4	4.4	4.6	e4.6	4.5	e3.9	4.4	2.9	e2.3	e1.9	e3.8
5	e4.6	e4.3	4.4	e4.4	e4.5	4.3	e3.8	4.9	3.0	e2.2	e2.0	e3.3
6	e4.9	e4.2	4.4	6.1	e4.4	4.3	e3.9	4.2	3.7	e2.1	e1.9	e3.2
7	e4.8	e4.2	4.5	8.4	e4.8	4.2	e3.8	e4.0	11	e2.1	e2.1	e2.9
8	e4.8	e4.2	4.8	4.9	e4.6	4.2	e3.7	e3.9	3.5	e2.0	e2.0	e2.8
9	e4.8	e4.1	e5.0	4.7	e4.4	4.2	e3.8	e3.9	3.1	e2.3	e1.7	e2.9
10	e4.7	e4.1	e4.5	e4.6	e4.2	4.2	5.0	e3.8	3.0	e4.0	e1.9	e2.7
11	e4.7	e4.1	e4.8	5.9	e4.7	4.1	4.4	e3.8	3.1	e3.0	e1.8	e2.5
12	e4.7	e5.0	e4.7	5.1	e4.4	4.1	4.2	e4.0	3.1	e2.4	e1.9	e2.3
13	e4.7	e4.4	e4.6	4.6	e4.2	4.4	4.2	4.9	3.2	e2.3	e1.9	e2.5
14	e4.6	e4.2	e4.8	4.4	e4.1	4.3	4.2	4.3	4.1	e3.0	e1.7	e2.6
15	e10	e4.1	e4.7	e4.3	e4.3	4.2	4.2	e4.1	3.9	e2.8	e1.7	e2.7
16	e7.0	e4.2	e4.6	e4.5	e6.0	e4.1	4.1	e3.9	3.2	e2.6	e1.8	e2.8
17	e4.3	e4.1	e4.6	e4.3	e4.4	4.2	4.1	e3.8	3.2	e2.5	e1.9	e2.8
18	e4.2	e4.2	e5.0	e4.2	4.1	4.5	e4.0	25	3.1	e2.4	e2.4	e2.8
19	e4.2	e5.0	e4.5	e4.2	4.0	5.1	e3.8	6.3	e3.0	e2.5	e2.2	e2.7
20	e4.1	e4.4	4.5	e4.7	e3.9	6.0	e3.8	4.6	e2.9	e2.2	e1.9	e2.8
21	e4.4	e4.1	4.4	e4.4	e3.9	5.6	e3.7	4.0	e2.9	e2.1	e1.8	e2.6
22	e4.3	e3.9	e4.3	e4.3	e3.8	4.5	e4.2	3.9	e2.8	e2.1	e1.8	e2.6
23	e4.2	e3.8	e4.4	e4.2	e4.1	4.3	e4.0	3.7	e2.8	e2.1	e2.1	e2.5
24	e4.2	e4.2	5.5	e4.1	e3.8	e4.1	e3.9	3.7	e3.0	e4.0	e2.6	e2.3
25	e4.2	e8.0	4.9	e4.1	e3.9	e4.0	e3.7	3.6	e2.7	e2.7	e3.8	e2.4
26	e4.1	e20	e4.6	e4.1	4.2	e4.0	e3.7	3.5	e2.5	e2.8	e3.0	e3.5
27	e4.1	e4.8	e4.5	e4.6	e4.0	5.9	e3.6	3.5	e2.5	e3.0	e2.5	e6.0
28	e4.0	e4.6	4.6	e4.4	e3.9	4.5	7.4	3.5	e2.7	e5.0	e2.9	e5.0
29	e4.0	e4.4	e4.4	e4.2	---	6.2	5.3	3.4	e2.6	e3.8	e7.3	e3.5
30	e4.0	e4.6	e4.3	e4.1	---	4.9	4.3	3.3	e2.4	e3.2	e5.3	e3.1
31	e5.0	---	e4.2	e4.0	---	4.4	---	3.3	---	e2.7	e4.0	---
TOTAL	149.0	148.6	142.2	142.9	120.6	140.1	125.1	148.5	99.2	83.7	76.6	104.2
MEAN	4.81	4.95	4.59	4.61	4.31	4.52	4.17	4.79	3.31	2.70	2.47	3.47
MAX	10	20	5.5	8.4	6.0	6.2	7.4	25	11	5.0	7.3	9.5
MIN	4.0	3.8	4.2	4.0	3.8	3.7	3.6	3.3	2.4	2.0	1.7	2.3
CFSM	0.79	0.81	0.75	0.75	0.70	0.74	0.68	0.78	0.54	0.44	0.40	0.57
IN.	0.91	0.90	0.86	0.87	0.73	0.85	0.76	0.90	0.60	0.51	0.47	0.63

e Estimated

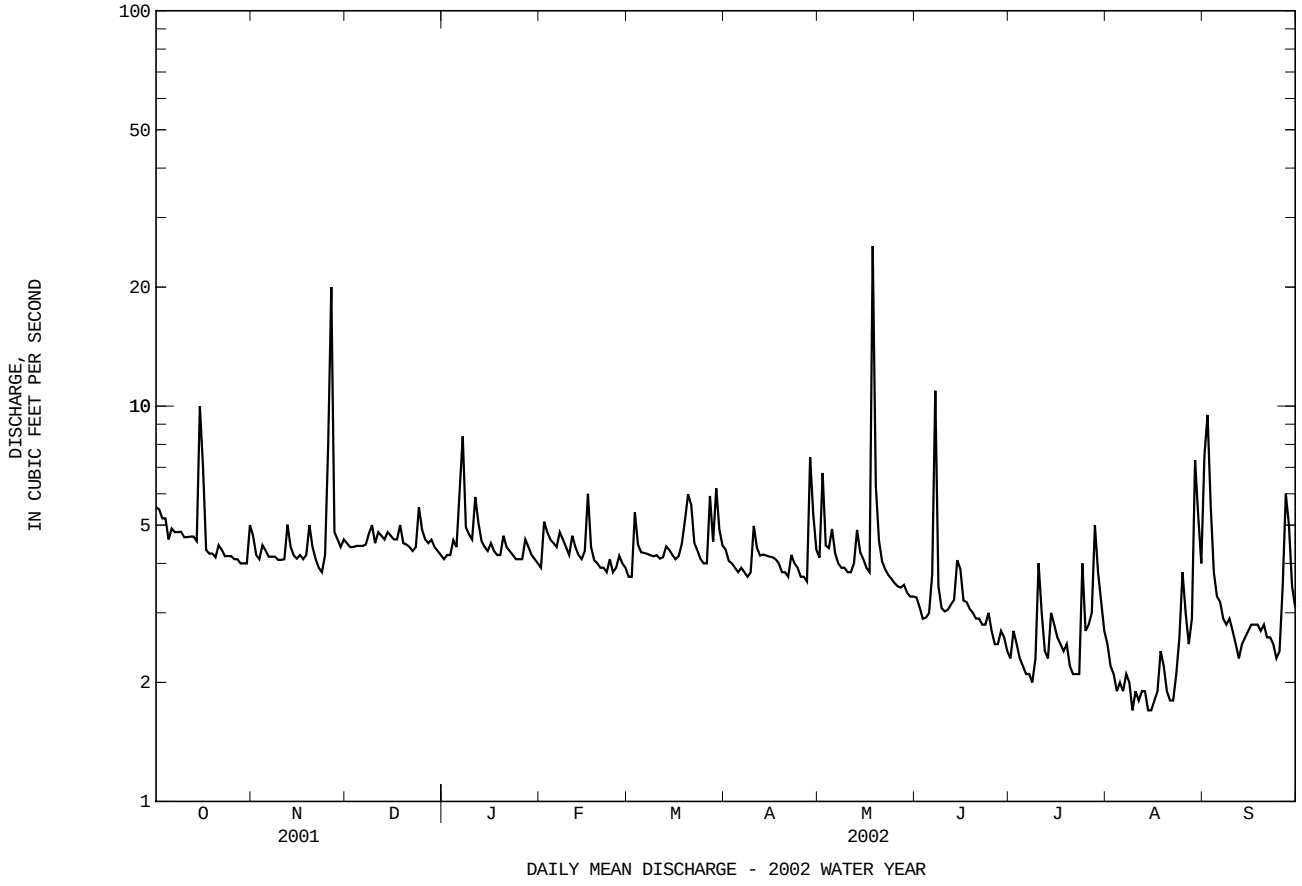
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	5.42	5.90	6.93	7.84	7.85	9.69	8.18	8.09	7.40	6.20	5.03	9.20
MAX	7.21	8.59	14.3	12.3	11.9	15.0	11.2	10.9	10.3	8.99	6.92	31.1
(WY)	1997	1997	1997	1998	1997	1998	2000	2001	1998	2001	2001	1999
MIN	4.81	4.26	3.84	4.61	4.31	4.52	4.17	4.79	3.31	2.70	2.47	3.47
(WY)	2002	1999	1999	2002	2002	2002	2002	2002	2002	2002	2002	2002

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	2585.7		1480.7			
ANNUAL MEAN	7.08		4.06		7.33	
HIGHEST ANNUAL MEAN					9.00	1997
LOWEST ANNUAL MEAN					4.06	2002
HIGHEST DAILY MEAN	56	May 26	25	May 18	722	Sep 16 1999
LOWEST DAILY MEAN	(e)3.8	Nov 23	(e)1.7	(a)	(e)1.7	(b)
ANNUAL SEVEN-DAY MINIMUM	4.1	Oct 24	1.8	Aug 9	1.8	Aug 9 2002
MAXIMUM PEAK FLOW			64	Nov 26	(c)3220	Sep 16 1999
MAXIMUM PEAK STAGE			4.81	Nov 26	10.22	Sep 16 1999
INSTANTANEOUS LOW FLOW			UNKNOWN		1.1	Aug 30 1999
ANNUAL RUNOFF (CFSM)	1.16		0.66		1.20	
ANNUAL RUNOFF (INCHES)	15.72		9.00		16.26	
10 PERCENT EXCEEDS	9.5		5.0		11	
50 PERCENT EXCEEDS	5.7		4.1		5.4	
90 PERCENT EXCEEDS	4.4		2.4		3.4	

e Estimated.
a Aug. 9, 14, 15.
b Aug. 30, 1999, Aug. 9, 14, 15, 2002
c From rating curve extended above 60 ft^3/s on basis of culvert determination of peak flow.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
05...	0900	ENVIRONMENTAL	4.9	172	7.1	21.0	15.5	761	8.5	85	59	16.0
09...	0930	ENVIRONMENTAL	11	175	5.3	14.0	10.0	781	9.8	85	--	--
NOV												
05...	*1015*	*BLANK*	--	--	--	--	--	--	--	--	--	--
05...	1030	ENVIRONMENTAL	5.8	174	5.7	13.0	11.0	768	8.6	77	--	--
14...	1015	ENVIRONMENTAL	12	176	7.1	16.0	8.0	770	10.2	85	--	--
14...	*1016*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
26...	0215	ENVIRONMENTAL	28	--	--	--	--	--	--	--	--	--
DEC												
03...	*1030*	*BLANK*	--	--	--	--	--	--	--	--	--	--
03...	1100	ENVIRONMENTAL	4.9	184	5.5	15.0	9.0	775	9.0	77	--	--
03...	1105	ENVIRONMENTAL	4.9	169	6.9	12.0	10.5	770	--	--	--	--
JAN												
09...	1000	ENVIRONMENTAL	4.7	176	5.6	7.0	4.0	761	13.5	103	--	--
09...	1300	ENVIRONMENTAL	4.7	166	6.9	5.0	5.0	755	12.0	95	56	15.6
FEB												
04...	1030	ENVIRONMENTAL	4.7	178	6.1	8.5	6.0	760	11.0	89	--	--
06...	1200	ENVIRONMENTAL	4.7	182	7.0	7.0	5.5	771	14.2	112	--	--
06...	*1201*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAR												
04...	1030	ENVIRONMENTAL	4.4	179	6.4	1.5	7.0	766	9.9	81	--	--
07...	1145	ENVIRONMENTAL	4.3	178	7.3	23.0	9.5	772	--	--	--	--
27...	1145	ENVIRONMENTAL	6.7	149	7.0	10.0	9.5	765	10.9	95	--	--
APR												
01...	1000	ENVIRONMENTAL	4.4	165	6.5	20.0	11.5	761	8	76	--	--
01...	1100	ENVIRONMENTAL	4.4	162	7.0	15.5	12.5	760	10.9	103	56	15.4
15...	0930	ENVIRONMENTAL	4.2	179	6.5	27.0	17.0	766	7.3	75	--	--
MAY												
01...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	--
01...	1045	ENVIRONMENTAL	4.1	167	7.1	21.0	15.0	762	9.6	96	--	--
06...	0900	ENVIRONMENTAL	4.2	169	6.2	20.0	14.0	773	7.4	71	--	--
06...	*0900*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
18...	1115	ENVIRONMENTAL	35	--	--	--	--	--	--	--	--	--
20...	*0900*	*BLANK*	--	--	--	--	--	--	--	--	--	--
20...	1000	ENVIRONMENTAL	4.6	145	5.9	--	13	770	8.2	77	--	--
28...	1000	ENVIRONMENTAL	3.6	--	--	--	--	--	--	--	--	--
JUN												
03...	0815	ENVIRONMENTAL	2.8	179	6.1	22.0	17.0	766	7.6	78	--	--
03...	*0830*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
06...	1015	ENVIRONMENTAL	3.0	174	7.2	.0	20.5	758	8.0	89	--	--
17...	0830	ENVIRONMENTAL	3.2	177	5.9	22.0	17.0	762	8.2	85	--	--
JUL												
02...	*0930*	*BLANK*	--	--	--	--	--	--	--	--	--	--
02...	1000	ENVIRONMENTAL	3.4	184	6.4	28.0	20.0	767	8.2	90	--	--
SEP												
17...	1015	ENVIRONMENTAL	E2.8	185	7.1	28.0	19.0	763	7.3	79	--	--

E Estimated value.

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
05...	4.62	5.15	3.69	25		3.0	13.5	<.1	9.68	<10	108	7.3	7.06
09...	--	--	--	28	34	3.0	13.0	--	--	--	--	8.0	7.75
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	28	34	3.8	14.1	--	--	--	--	7.8	7.49
14...	--	--	--	--	--	--	--	--	10.5	<10	--	8.6	8.38
14...	--	--	--	--	--	--	--	--	*10.7*	*<10*	--	*8.6*	*8.39*
26...	--	--	--	--	--	--	--	--	6.9	--	--	7.1	4.83
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	32	38	3.7	12.8	--	--	--	--	7.7	7.22
03...	--	--	--	--	--	--	--	--	10.6	10	--	--	--
JAN													
09...	--	--	--	24	30	4.1	12.3	--	--	--	--	8.5	7.71
09...	4.22	4.60	3.84	23	28	4.2	12.3	<.1	9.24	20	104	8.6	8.15
FEB													
04...	--	--	--	28	34	3.5	12.7	--	--	--	--	8.3	8.11
06...	--	--	--	--	--	--	--	--	10.5	<10	--	8.8	8.63
06...	--	--	--	--	--	--	--	--	*10.2*	*<10*	--	*8.6*	*8.48*
MAR													
04...	--	--	--	31	38	4.8	12.9	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	10.0	<10	--	8.9	8.67
27...	--	--	--	--	--	--	--	--	7.6	22	--	6.0	5.33
APR													
01...	--	--	--	29	35	4.8	13.4	--	--	--	--	--	--
01...	4.22	5.19	3.09	25	30	4.4	11.6	E.1	9.61	<10	102	6.6	6.20
15...	--	--	--	27		--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	*<.2*	*<10*	--	--	--
01...	--	--	--	--	--	--	--	--	10.1	<10	--	7.3	6.82
06...	--	--	--		41	4.5	12.0	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	4.2	358	--	4.5	2.11
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	2.9	--	--	--	--	--	--	--
JUN													
03...	--	--	--	42	51	2.6	12.4	--	--	--	--	6.9	6.58
03...	--	--	--	--	--	*2.6*	*12.7*	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	10.4	14	--	8.0	7.75
17...	--	--	--	31	38	--	--	--	--	--	--	7.7	7.25
JUL													
02...	--	--	--	--	--	*<.1*	*E.17*	--	--	--	--	--	--
02...	--	--	--	32	40	2.3	13.3	--	--	--	--	7.3	7.02
SEP													
17...	--	--	--	--	--	--	--	--	10.8	<10	--	7.8	7.62

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

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
OCT													
05...	.017	7.07	E.03	.26	.19	7.3	--	--	.030	.006	<.007	1.8	--
09...	.008	7.76	<.04	.27	--	--	--	--	.048	--	<.02	--	2.1
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	.018	7.50	E.02	.30	--	--	--	--	.038	--	<.02	--	1.7
14...	.015	8.40	<.04	.23	.16	8.6	--	--	.022	.005	<.007	2.0	--
14...	*.016*	*8.40*	*<.04*	*.23*	*.18*	*8.6*	--	--	*.027*	*E.004*	*<.007*	*2.4*	--
26...	.048	4.88	.07	2.2	1.1	6.0	2.1	1.0	.79	.176	.145	--	--
DEC													
03...	*<.008*	*<.05*	*<.04*	*.35*	--	--	--	--	*<.004*	--	*<.02*	--	--
03...	.040	7.26	.12	.45	.31	7.6	.33	.19	.067	.006	--	2.5	1.9
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	.021	7.73	.05	.81	--	--	.76	--	.185	--	<.02	--	1.8
09...	.022	8.17	.04	.39	.18	8.3	.35	.14	.068	E.004	<.007	2.9	--
FEB													
04...	.018	8.13	E.03	.17	--	--	--	--	.023	--	<.02	--	1.6
06...	.014	8.64	<.04	.14	.11	8.8	--	--	.020	E.004	<.007	--	--
06...	*.014*	*8.49*	*<.04*	*.16*	*.12*	*8.6*	--	--	*.021*	*E.003*	*<.007*	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	1.8
07...	.026	8.69	E.02	.21	.14	8.8	--	--	.025	E.004	<.007	1.8	--
27...	.041	5.37	.10	.66	.42	5.8	.57	.32	.119	.013	E.005	5.0	--
APR													
01...	--	--	--	--	--	--	--	--	--	--	--	--	2.8
01...	.029	6.23	.10	.41	.34	6.6	.31	.24	.047	.013	E.006	3.2	--
15...	<.008	<.05	<.04	.33	--	--	--	--	.030	--	<.02	--	--
MAY													
01...	*<.008*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*<.6*	--
01...	.028	6.85	.08	.45	.31	7.2	.37	.22	.048	.014	E.006	2.6	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	3.6
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	.023	2.13	.26	2.3	.85	3.0	2.1	.59	.95	.167	.136	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	1.3
JUN													
03...	.017	6.60	E.03	.25	--	--	--	--	.033	--	<.02	--	1.7
03...	--	--	--	--	--	--	--	--	--	--	--	--	*2.0*
06...	.023	7.78	.04	.20	.18	8.0	.16	.14	.032	.013	.007	2.0	--
17...	.024	7.28	<.04	.38	--	--	--	--	.048	--	<.02	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	*.5*
02...	.014	7.03	<.04	.23	--	--	--	--	.026	--	<.02	--	1.2
SEP													
17...	.019	7.64	E.02	.20	.15	7.8	--	--	.024	.008	<.007	1.4	--

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

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR ESA WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
OCT													
05...	--	35	72.9	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	<.002	--	--	<.004	--	--	.045	<.005	.028	<.010
NOV													
05...	--	--	--	*<.002*	*<.05*	*<.05*	*<.004*	*<.05*	*<.05*	*<.002*	*<.005*	*<.007*	*<.010*
05...	.5	--	--	<.002	<.05	<.05	<.004	.54	2.34	.043	<.005	.029	<.010
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	.7	--	--	<.002	<.05	<.05	<.004	.39	1.77	.043	<.005	.014	<.010
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	.7	--	--	<.006	<.05	<.05	<.006	.30	1.50	.050	<.005	.031	<.010
09...	--	91	152	--	--	--	--	--	--	--	--	--	--
FEB													
04...	.3	--	--	<.006	--	--	<.006	--	--	.048	<.005	.036	<.010
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	.7	--	--	<.006	--	--	<.006	--	--	.064	<.005	.032	<.010
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	.8	--	--	<.006	--	--	<.006	--	--	.123	<.005	5.70	<.010
01...	--	145	185	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	E.004	--	--	<.006	--	--	.042	<.005	.035	<.010
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	.3	--	--	<.006	--	--	E.005	--	--	.059	<.005	.087	<.010
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	*<.009*	--
20...	--	--	--	--	--	--	--	--	--	--	--	.586	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	.8	--	--	<.006	<.05	<.05	<.006	.24	1.28	.046	<.005	.073	<.010
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	<.006	<.05	<.05	<.006	.28	1.42	.040	<.005	.077	<.010
JUL													
02...	*<.1*	--	--	--	--	--	--	--	--	--	--	--	--
02...	.3	--	--	<.006	<.05	<.05	<.006	.23	1.28	.041	<.005	.033	<.010
SEP													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
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01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DIMETH-ENAMID OA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)
OCT													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.002	<.041	E.009	<.005	<.018	<.003	E.100	99.1	<.005	<.005	--	--	<.02
NOV													
05...	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*<.006*	*91.1*	*<.005*	*<.005*	*<.05*	*<.05*	*<.02*
05...	<.002	<.041	E.009	<.005	<.018	<.003	E.120	92.0	<.005	<.005	<.05	<.05	<.02
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	<.002	E.007	E.013	<.005	<.018	<.003	E.06	89.5	<.005	<.005	<.05	<.05	<.02
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.002	<.041	<.020	<.005	<.018	<.003	E.109	104	<.005	<.005	<.05	<.05	<.02
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	<.002	<.041	E.013	<.005	<.018	<.003	E.153	121	<.005	<.005	--	--	<.02
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	<.002	<.041	E.015	<.005	<.018	<.003	E.125	113	<.005	<.005	--	--	<.02
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<.002	<.041	<.020	<.005	<.018	<.003	E.052	118	<.005	<.005	--	--	<.02
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.002	<.041	E.015	<.005	<.018	<.003	E.065	100	<.005	<.005	--	--	<.02
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.002	<.041	E.009	E.003	<.018	<.003	E.094	99.1	<.005	<.005	--	--	<.02
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	*<.03*	--	--	--	--	--	--
20...	--	--	--	--	--	--	E.17	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	<.002	<.041	E.010	<.005	<.018	<.003	E.116	113	<.005	<.005	<.05	<.05	<.02
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.002	<.041	<.020	<.005	<.018	<.003	E.140	122	<.005	<.005	<.05	<.05	<.02
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	<.002	E.011	E.013	<.005	<.018	<.003	E.129	104	<.005	<.005	<.05	<.05	<.02
SEP													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

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01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OA, WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)
OCT													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.002	<.009	<.005	--	--	<.003	92.7	<.004	<.035	<.027	<.050	<.006	--
NOV													
05...	*<.002*	*<.009*	*<.005*	*<.05*	*<.05*	*<.003*	*88.5*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	*<.05*
05...	<.002	<.009	<.005	<.05	<.05	<.003	88.0	<.004	<.035	<.027	<.050	<.006	2.91
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	<.002	<.009	<.005	<.05	<.05	<.003	81.1	<.004	<.035	<.027	<.050	<.006	2.32
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.011	<.009	<.005	<.05	<.05	<.003	93.6	<.004	<.035	<.027	<.050	<.006	2.27
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	.005	<.009	<.005	--	--	<.003	113	<.004	<.035	<.027	<.050	<.006	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	<.002	<.009	<.005	--	--	<.003	104	<.004	<.035	<.027	<.050	<.006	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<.002	<.009	<.005	--	--	<.003	92.7	<.004	<.035	<.027	<.050	<.006	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.002	<.009	<.005	--	--	<.003	85.6	<.004	<.035	<.027	<.050	<.006	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.002	<.009	<.005	--	--	<.003	102	<.004	<.035	<.027	<.050	<.006	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	<.002	<.009	<.005	<.05	<.05	<.003	107	<.004	<.035	<.027	<.050	<.006	1.75
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	<.002	<.009	<.005	<.05	<.05	<.003	82.6	<.004	<.035	<.027	<.050	<.006	2.40
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	<.002	<.009	<.005	<.05	<.05	<.003	96.2	<.004	<.035	<.027	<.050	<.006	2.11
SEP													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
OCT													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	.077	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01	<.004
NOV													
05...	*<.05*	*<.013*	*<.006*	*<.002*	*<.007*	*<.003*	*<.007*	*<.002*	*<.010*	*<.006*	*<.011*	*<.01*	*<.004*
05...	.75	.080	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01	<.004
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	.53	.108	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01	<.004
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	.46	.097	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.341
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	.092	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.063
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	.149	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.018
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	--	1.04	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.050
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	.398	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.021
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	1.59	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.050
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
03...	.43	.249	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	.010
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	.61	.735	<.006	<.002	<.007	<.003	<.010	<.004	E.015	<.006	<.011	<.01	.010
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	.35	.071	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004
SEP													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
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01493112 CHESTERVILLE BRANCH NEAR CRUMPTON, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	7.7	.10
09...	<.010	<.011	<.02	.070	<.02	<.034	<.02	<.005	<.002	<.009	18	.53
NOV												
05...	*<.010*	*<.011*	*<.02*	*<.011*	*<.02*	*<.034*	*<.02*	*<.005*	*<.002*	*<.009*	--	--
05...	<.010	<.011	<.02	.053	<.02	<.034	<.02	<.005	<.002	<.009	12	.19
14...	--	--	--	--	--	--	--	--	--	--	3.1	.10
14...	--	--	--	--	--	--	--	--	--	--	*7.7*	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
03...	--	--	--	--	--	--	--	--	--	--	--	--
03...	<.010	<.011	<.02	.563	<.006	<.034	<.02	<.005	<.002	<.009	16	.21
03...	--	--	--	--	--	--	--	--	--	--	12	.16
JAN												
09...	<.010	<.011	<.02	.110	<.02	<.034	<.02	<.005	<.002	<.009	--	--
09...	--	--	--	--	--	--	--	--	--	--	20	.26
FEB												
04...	<.010	<.011	<.02	.032	<.02	<.034	<.02	<.005	<.002	<.009	4.0	.05
06...	--	--	--	--	--	--	--	--	--	--	7.0	.09
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
04...	<.010	<.011	<.02	.048	<.02	<.034	<.02	<.005	<.002	<.009	3.0	.04
07...	--	--	--	--	--	--	--	--	--	--	3.7	.04
27...	--	--	--	--	--	--	--	--	--	--	26	.47
APR												
01...	<.010	<.011	<.02	1.80	<.02	<.034	<.02	<.005	<.002	<.009	7.0	.08
01...	--	--	--	--	--	--	--	--	--	--	5.5	.07
15...	<.010	<.011	<.02	.695	<.02	<.034	<.02	<.005	<.002	<.009	6.0	.07
MAY												
01...	--	--	--	--	--	--	--	--	--	--	*<.1*	--
01...	--	--	--	--	--	--	--	--	--	--	7.2	.08
06...	<.010	<.011	<.02	1.80	<.02	<.034	<.02	<.005	<.002	<.009	13	.15
06...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	407	38.5
20...	--	--	--	--	*<.006*	--	--	--	--	--	--	--
20...	--	--	--	--	<.006	--	--	--	--	--	19	.24
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
03...	<.010	<.011	<.02	.286	<.02	<.034	<.02	<.005	<.002	<.009	5.0	.04
03...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	2.5	.02
17...	<.010	<.011	<.02	1.94	<.02	<.034	<.02	<.005	<.002	<.009	6.0	.05
JUL												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	<.010	<.011	<.02	.104	<.02	<.034	<.02	<.005	<.002	<.009	3.0	.03
SEP												
17...	--	--	--	--	--	--	--	--	--	--	2.2	E.02

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

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD

LOCATION.--Lat 39°16'48.1", long 76°00'52.4", Kent County, Hydrologic Unit 02060002, on right bank 200 ft upstream from highway bridge, 2.0 mi southwest of Kennedyville, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--12.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1552: 1952, 1953(P), 1954(M), 1955, 1956-57(M). WDR MD-DE-76-1: Drainage area. WDR MD-DE- 79-1: 1961(M). WDR MD-DE-80-1: 1976(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.76 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for estimated daily discharges (tidal effect, backwater from beaverdams), which are fair. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 7	0330	*37	1.77	No peak greater than base discharge.			
Sep 27	2345	(a)	*2.04				

(a) Tidal effect.

Minimum discharge, 0.90 ft^3/s, Aug. 4, 5, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.2	5.8	4.7	7.1	4.9	8.2	5.7	3.0	2.4	2.1	14
2	e6.6	4.6	5.5	4.8	6.5	5.5	5.9	14	2.7	2.8	1.6	19
3	4.6	4.6	5.4	5.2	5.7	13	5.6	8.7	2.5	2.6	1.4	8.6
4	4.3	4.4	5.6	5.3	5.8	7.4	4.8	5.7	2.5	2.3	1.1	5.0
5	4.1	4.2	5.7	5.2	5.0	5.5	4.6	5.5	2.8	2.0	1.3	3.4
6	4.2	4.2	5.8	10	5.2	5.6	4.7	5.2	11	2.0	1.2	3.0
7	4.7	4.3	6.0	17	7.1	5.7	4.5	5.1	26	2.0	1.4	2.6
8	4.1	4.4	7.3	8.8	7.1	5.5	4.5	4.8	9.7	1.8	1.3	2.4
9	4.0	4.4	9.0	7.2	6.6	5.5	5.2	4.7	e5.5	2.2	1.1	e2.6
10	3.9	4.5	6.5	6.7	6.2	5.5	8.2	4.9	4.1	3.6	1.3	e2.2
11	4.0	4.4	7.9	13	7.1	4.7	5.4	4.1	4.3	2.8	1.2	2.0
12	4.0	4.6	7.0	10	7.5	4.6	5.1	5.9	4.0	2.5	1.3	1.7
13	4.4	4.3	6.6	7.3	5.9	6.8	5.3	6.7	4.7	2.1	1.3	2.0
14	4.2	4.9	7.0	6.3	5.3	5.9	4.9	5.0	e10	e2.8	1.2	2.1
15	e6.6	5.0	6.8	6.0	5.6	5.3	4.7	4.7	8.6	e2.8	1.2	2.2
16	e5.8	5.1	6.1	5.5	5.6	5.4	4.8	4.7	e5.5	e2.6	1.3	2.4
17	4.0	4.6	6.3	5.5	5.7	5.2	4.6	5.5	4.3	2.6	e1.4	2.5
18	4.1	4.7	9.1	5.3	5.6	11	4.2	25	3.6	2.3	2.0	2.4
19	4.1	5.1	7.1	5.4	5.2	7.9	4.2	14	3.5	2.5	1.7	2.4
20	4.4	4.9	6.1	6.8	5.3	18	4.3	7.5	3.4	2.0	e1.4	2.5
21	4.4	4.6	5.7	6.6	5.3	15	4.3	5.8	3.2	2.0	1.3	e2.2
22	5.0	4.3	5.6	7.0	5.1	7.3	5.6	5.8	3.2	e2.0	1.4	e2.2
23	4.8	4.3	5.9	7.6	5.0	5.9	5.0	5.3	3.0	2.1	1.7	e2.0
24	4.3	4.8	9.5	8.1	4.9	5.5	4.6	4.3	3.1	3.1	2.4	1.8
25	4.0	9.7	7.1	7.8	5.3	5.0	5.2	4.0	2.8	2.7	4.3	e2.0
26	4.1	24	6.3	6.4	5.4	5.3	5.1	4.1	2.6	3.4	2.8	e3.6
27	4.1	8.9	5.8	5.8	5.1	12	4.7	3.7	2.6	3.5	2.0	e9.1
28	4.0	6.3	5.7	5.5	4.9	7.2	20	4.0	2.8	4.6	2.9	e7.1
29	4.1	5.9	5.8	5.7	---	6.0	12	4.5	2.7	4.0	13	3.6
30	4.6	e6.2	5.5	5.6	---	5.6	6.5	3.9	2.5	3.2	7.5	2.8
31	4.4	---	5.0	6.5	---	6.0	---	3.4	---	2.2	4.7	---
TOTAL	140.1	170.4	200.5	218.6	162.1	219.7	176.7	196.2	150.2	81.5	71.8	121.4
MEAN	4.52	5.68	6.47	7.05	5.79	7.09	5.89	6.33	5.01	2.63	2.32	4.05
MAX	6.6	24	9.5	17	7.5	18	20	25	26	4.6	13	19
MIN	3.9	4.2	5.0	4.7	4.9	4.6	4.2	3.4	2.5	1.8	1.1	1.7
CFSM	0.36	0.45	0.51	0.56	0.46	0.56	0.46	0.50	0.39	0.21	0.18	0.32
IN.	0.41	0.50	0.59	0.64	0.47	0.64	0.52	0.57	0.44	0.24	0.21	0.36

e Estimated

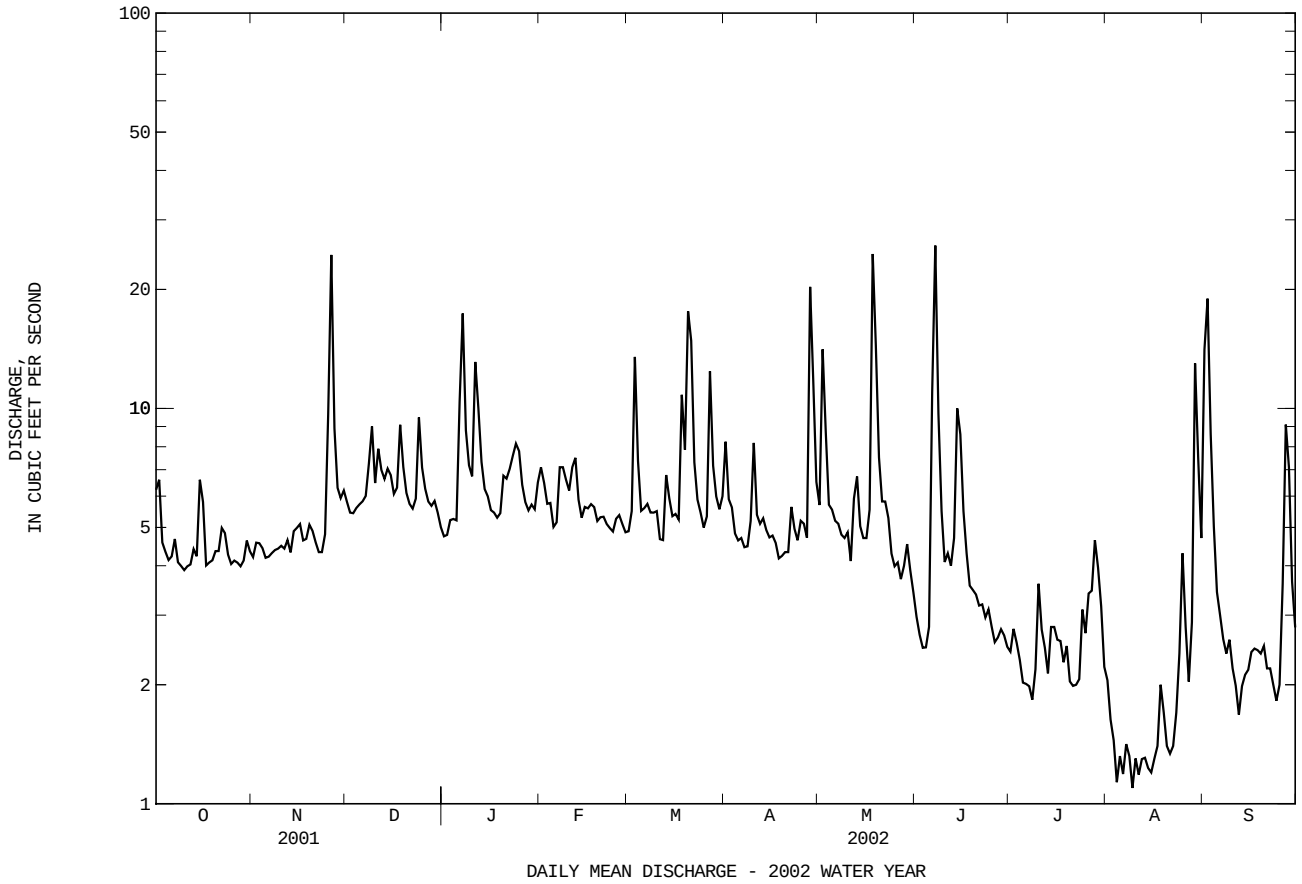
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

MEAN	7.53	9.02	11.9	13.6	13.9	14.3	10.9	9.39	12.9	8.50	8.40	10.1
MAX	32.3	30.7	51.3	45.6	47.1	36.7	29.5	20.6	113	26.9	27.8	135
(WY)	1972	1973	1997	1978	1979	1994	1983	1990	1972	1989	1971	1999
MIN	2.98	3.14	3.21	3.74	5.09	4.47	4.49	3.77	1.96	1.11	1.41	2.07
(WY)	1964	1966	1966	1966	1968	1966	1966	1955	1966	1966	1966	1967

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002	
ANNUAL TOTAL	3156.6		1909.2			
ANNUAL MEAN	8.65		5.23		10.9	
HIGHEST ANNUAL MEAN					24.2	1972
LOWEST ANNUAL MEAN					3.67	1966
HIGHEST DAILY MEAN	90	May 27	26	Jun 7	(e)3600	Sep 16 1999
LOWEST DAILY MEAN	3.5	Aug 25	1.1	(a)	0.70	(b)
ANNUAL SEVEN-DAY MINIMUM	3.7	Aug 23	1.2	Aug 9	0.71	Sep 7 1966
MAXIMUM PEAK FLOW			37	Jun 7	(c)11200	Sep 16 1999
MAXIMUM PEAK STAGE			(d)2.04	Sep 27	(f)15.03	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.90	(g)	0.60	(h)
ANNUAL RUNOFF (CFSM)	0.68		0.41		0.86	
ANNUAL RUNOFF (INCHES)	9.25		5.59		11.64	
10 PERCENT EXCEEDS	12		7.9		16	
50 PERCENT EXCEEDS	6.2		4.8		6.4	
90 PERCENT EXCEEDS	4.1		2.1		3.2	

e Estimated.
a Aug. 4, 9.
b July 21, Aug. 28-31, Sept. 4, 8-13, 1966.
c From rating curve extended above 640 ft^3/s on basis of USGS Cap Culvert Analysis and flow-over-road measurement of peak flow.
d Tidal effect.
f From floodmark.
g Aug. 4, 5, 9.
h Aug. 28, 29, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973-80, 1991, 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)
FEB												
06...	1030	ENVIRONMENTAL	5.1	187	6.7	5.5	.5	771	13.5	93	41	--
MAR												
06...	1000	ENVIRONMENTAL	5.5	181	6.7	15.0	3.0	774	12.4	91	39	--
13...	1000	ENVIRONMENTAL	7.1	173	6.9	9.0	8.0	759	9.5	81	38	--
20...	1000	ENVIRONMENTAL	20	164	6.7	11.0	8.0	768	9.3	78	35	--
27...	1000	ENVIRONMENTAL	5.8	165	6.8	8.0	8.0	766	10.7	90	--	35
APR												
03...	1030	ENVIRONMENTAL	5.8	176	6.9	24.0	15.0	762	8.9	88	44	--
11...	0830	ENVIRONMENTAL	5.5	188	6.4	19.0	11.0	778	8.1	72	46	--
17...	*0815*	*BLANK*	--	--	--	--	--	--	--	--	--	--
17...	0900	ENVIRONMENTAL	4.7	189	6.7	27.0	19.5	759	6.5	71	52	--
24...	0900	ENVIRONMENTAL	4.7	174	6.8	11.0	--	772	9.2	--	44	--
24...	*0905*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
01...	*0900*	*BLANK*	--	--	--	--	--	--	--	--	--	--
01...	*0915*	*BLANK*	--	--	--	--	--	--	--	--	--	--
01...	1000	ENVIRONMENTAL	5.8	180	6.7	18.0	15.0	762	7.6	75	41	--
08...	1000	ENVIRONMENTAL	4.7	182	6.8	23.0	18.0	768	7.0	73	44	--
08...	*1005*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
16...	1030	ENVIRONMENTAL	4.0	174	6.4	--	15.4	769	7.6	75	41	--
22...	0900	ENVIRONMENTAL	6.2	166	6.3	--	11.5	775	9.2	83	--	--
30...	0930	ENVIRONMENTAL	4.3	174	6.3	24.5	19.0	766	6.2	67	42	--
JUN												
05...	0900	ENVIRONMENTAL	--	173	6.5	26.0	21.0	766	6.8	76	45	--
05...	*0930*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
13...	0915	ENVIRONMENTAL	--	178	6.3	--	22.0	760	5.5	63	46	--
19...	0900	ENVIRONMENTAL	3.4	183	6.3	22.5	20.0	773	6.3	68	42	--
26...	0930	ENVIRONMENTAL	--	--	--	--	--	--	--	--	--	--
26...	1000	ENVIRONMENTAL	2.6	188	6.7	28.0	20.0	766	--	--	50	--
26...	1330	ENVIRONMENTAL	--	--	--	--	--	--	--	--	--	--
JUL												
01...	1000	ENVIRONMENTAL	2.0	184	6.4	27.5	21.0	769	6.7	75	50	--
01...	1030	ENVIRONMENTAL	--	--	--	--	--	--	--	--	--	--
16...	1300	ENVIRONMENTAL	4.7	198	6.7	32.0	25.0	769	8.7	104	49	--
AUG												
12...	*1130*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	*1135*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	1200	ENVIRONMENTAL	1.4	181	7.2	.0	23.0	775	7.5	86	52	--
28...	1115	ENVIRONMENTAL	--	--	--	--	--	--	--	--	--	--
28...	1215	ENVIRONMENTAL	--	--	--	--	--	--	--	--	--	--
29...	1315	ENVIRONMENTAL	--	200	6.6	--	19.0	--	5.7	--	--	--
29...	1330	ENVIRONMENTAL	--	202	6.7	--	19.0	--	5.7	--	--	--
SEP												
03...	1100	ENVIRONMENTAL	--	198	6.7	--	20.0	--	6.3	--	--	--
03...	1130	ENVIRONMENTAL	--	198	6.7	--	20.0	--	6.5	--	--	--
09...	0900	ENVIRONMENTAL	--	185	6.9	--	18.0	--	5.9	--	--	--
09...	0930	ENVIRONMENTAL	--	186	7.0	--	18.0	--	6.9	--	--	--
16...	1100	ENVIRONMENTAL	2.6	186	7.1	26.0	20.0	765	6.6	72	47	--
16...	1200	ENVIRONMENTAL	--	186	6.9	--	21.5	--	5.4	--	--	--
25...	0900	ENVIRONMENTAL	1.7	179	6.9	--	16.2	--	7.2	--	--	--
25...	1000	ENVIRONMENTAL	--	182	6.8	--	16.0	--	7.6	--	--	--
30...	1000	ENVIRONMENTAL	2.8	190	6.9	--	17.0	--	7.6	--	--	--
30...	1100	ENVIRONMENTAL	--	189	6.9	--	17.0	--	8.7	--	--	--

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ANC BICARBONATE IT FIELD MG/L AS HCO3 (00450)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)
FEB													
06...	50	--	5.7	17.8	4.9	3.34	.023	3.37	.92	1.5	.63	.105	<.02
MAR													
06...	47	--	6.3	17.3	4.8	3.49	.032	3.52	.64	1.3	.61	.120	E.01
13...	46	--	--	--	3.8	2.73	.039	2.77	.29	.99	.70	.114	<.02
20...	43	--	--	--	3.9	2.16	.035	2.20	.40	1.7	1.3	.31	.02
27...	--	43	--	--	3.5	2.25	.048	2.29	.34	1.2	.89	.20	.02
APR													
03...	54	--	5.4	16.6	3.4	2.44	.054	2.50	.24	.90	.66	.113	E.02
11...	56	--	--	--	3.7	2.26	.065	2.33	.40	1.4	.99	.153	.02
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	63	--	--	--	3.2	1.88	.110	1.99	.44	1.2	.79	.137	E.01
24...	54	--	--	--	3.5	2.56	.077	2.64	.34	.86	.52	.118	E.01
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	<.1	<.30	--	--	<.008	<.05	<.04	<.10	--	<.004	<.02
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
01...	50	--	7.2	16.4	4.1	2.52	.138	2.66	.59	1.5	.87	.176	.02
08...	54	--	--	--	3.7	2.50	.132	2.63	.27	1.1	.80	.175	E.02
08...	--	--	--	--	3.7	2.50	.132	2.63	.27	1.1	.78	.178	.02
16...	50	--	--	--	3.1	2.38	.064	2.45	.14	.69	.56	.136	E.02
22...	--	--	--	--	3.6	2.44	.075	2.51	.23	1.1	.89	.174	<.02
30...	52	--	--	--	3.3	2.55	.079	2.63	.14	.70	.57	.154	.03
JUN													
05...	55	--	3.5	15.1	3.5	2.83	.067	2.90	.07	.56	.49	.113	E.01
05...	--	--	--	--	3.4	2.84	.066	2.90	.07	.54	.47	.117	<.02
13...	56	--	--	--	2.9	2.07	.092	2.16	.12	.76	.64	.151	.03
19...	52	--	--	--	2.9	2.24	.074	2.31	.08	.61	.53	.128	.02
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	60	--	--	--	2.7	2.08	.033	2.12	.09	.57	.49	.135	.02
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	60	--	2.6	15.9	2.7	2.16	.026	2.18	.04	.51	.47	.121	<.02
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	60	--	--	--	2.7	2.11	.026	2.14	.05	.60	.55	.116	<.02
AUG													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	63	--	3.0	15.8	2.8	2.26	.019	2.28	.07	.55	.47	.112	<.02
28...	--	--	--	--	--	2.06	.028	2.09	.11	--	--	--	<.02
28...	--	--	--	--	2.8	2.02	.027	2.05	.10	.70	.60	.108	E.01
29...	--	--	--	--	2.2	1.12	.023	1.15	.11	1.1	.96	.29	.04
29...	--	--	--	--	2.2	1.14	.023	1.16	.11	1.1	.97	.29	.07
SEP													
03...	--	--	--	--	1.7	.78	.020	.80	.11	.92	.81	.181	.03
03...	--	--	--	--	1.7	.81	.019	.83	.11	.89	.78	.173	.03
09...	--	--	--	--	3.0	2.40	.018	2.42	.08	.54	.46	.113	.02
09...	--	--	--	--	3.0	2.42	.017	2.44	.09	.53	.44	.108	.02
16...	57	--	5.4	16.6	2.8	2.28	.022	2.30	.04	.55	.51	.106	E.01
16...	--	--	--	--	2.8	2.26	.022	2.28	.08	.56	.48	.108	E.01
25...	--	--	--	--	--	--	<.008	<.05	E.02	.47	--	.098	E.01
25...	--	--	--	--	2.8	2.40	.013	2.41	.06	.44	.38	.095	.02
30...	--	--	--	--	2.5	1.97	.010	1.98	.07	.47	.41	.094	.02
30...	--	--	--	--	2.5	1.99	.010	2.00	.07	.45	.39	.097	E.01

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

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61029)	ACETO-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61030)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61031)	ALA-CHLOR ESA WAT FLT GF 0.7U REC (UG/L) (50009)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)
FEB													
06...	25.2	1.0	<.006	.1	<.1	<.006	.1	.6	.037	<.005	.042	<.010	<.002
MAR													
06...	3.3	1.0	<.006	<.1	<.1	<.006	.1	.7	.025	<.005	.024	<.010	<.002
13...	--	--	<.006	--	--	<.006	--	--	.019	<.005	.021	<.010	<.002
20...	--	--	<.006	.1	<.1	<.006	.1	.5	.017	<.005	.024	<.010	<.002
27...	--	--	<.006	.1	<.1	<.006	.1	.4	.034	<.005	.099	<.010	<.002
APR													
03...	9.2	.7	<.006	.1	<.1	<.006	.1	.5	.023	<.005	.058	<.010	<.002
11...	--	--	<.006	<.1	<.1	<.006	.1	.6	.022	<.005	.048	<.010	E.001
17...	--	--	<.006	<.1	<.1	<.006	<.1	<.1	<.004	<.005	<.007	<.010	<.002
17...	--	--	<.006	.1	<.1	<.006	.1	.6	.012	<.005	.055	<.010	<.002
24...	--	--	<.006	<.1	<.1	<.006	.1	.7	.012	<.005	.070	<.010	<.002
24...	--	--	<.006	.1	<.1	<.006	.1	.6	.011	<.005	.066	<.010	<.002
MAY													
01...	--	--	<.006	<.1	<.1	<.006	<.1	<.1	<.004	<.005	<.007	<.010	<.002
01...	--	--	<.006	<.1	<.1	<.006	<.1	<.1	<.004	<.005	<.007	<.010	<.002
01...	6.2	1.3	<.006	.1	<.1	.027	.2	.5	.018	<.005	2.20	<.010	<.002
08...	--	--	<.006	.1	<.1	.035	.1	.5	.012	<.005	1.86	<.010	<.002
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	<.006	<.1	<.1	.008	.1	.5	.008	<.005	.654	<.010	<.002
22...	--	--	<.006	--	--	.018	--	--	.008	<.005	2.41	<.010	<.002
30...	--	--	<.006	.09	<.05	<.006	.16	.81	<.004	<.005	1.53	<.010	<.002
JUN													
05...	3.8	--	<.006	.05	<.05	<.006	.07	.57	<.004	<.005	.505	<.010	<.002
05...	--	--	<.006	.06	<.05	<.006	.07	.56	<.004	<.005	.481	<.010	<.002
13...	--	--	<.006	<.05	<.05	<.006	.19	.68	<.004	<.005	4.08	<.010	<.002
19...	--	--	<.006	<.05	<.05	.010	.17	.58	.008	<.005	1.82	<.010	<.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	<.006	.08	<.05	<.006	.18	.83	<.004	<.005	.648	<.010	<.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	8.7	.3	<.006	.05	<.05	<.006	.09	.56	<.004	<.005	.440	<.010	<.002
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	4.0	.9	<.006	<.05	<.05	<.006	.08	.59	<.004	<.005	.113	<.010	<.002
AUG													
12...	E.2	<.1	--	--	--	--	--	--	--	--	--	--	--
12...	<.3	--	--	--	--	--	--	--	--	--	--	--	--
12...	3.7	.4	<.006	<.05	<.05	<.006	.11	.64	<.004	<.005	.034	<.010	<.002
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	4.3	.5	<.006	.05	<.05	<.006	.11	.66	<.004	<.005	.041	<.010	<.002
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
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01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DIMETH-ENAMID OA, WATER FLT, REC (UG/L) (62482)	DIMETH-ENAMID, ESA, WAT FLT (UG/L) (61951)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)
FEB													
06...	<.041	<.020	<.005	<.018	<.003	E.054	125	<.005	<.005	<.05	<.05	<.02	<.002
MAR													
06...	<.041	E.014	<.005	<.018	<.003	E.049	108	<.005	<.005	<.05	<.05	<.02	<.002
13...	<.041	<.020	<.005	<.018	<.003	E.026	103	<.005	<.005	--	--	<.02	<.002
20...	<.041	<.020	<.005	<.018	<.003	E.016	112	<.005	<.005	<.05	<.05	<.02	<.002
27...	<.041	<.020	<.005	<.018	<.003	E.022	125	<.005	<.005	<.05	<.05	<.02	<.002
APR													
03...	<.041	<.020	<.005	<.018	<.003	E.028	117	<.005	<.005	<.05	<.05	<.02	<.002
11...	<.041	<.020	<.005	<.018	<.003	E.014	99.1	<.005	<.005	<.05	<.05	<.02	.004
17...	<.041	<.020	<.005	<.018	<.003	<.006	101	<.005	<.005	<.05	<.05	<.02	<.002
17...	<.041	<.020	<.005	<.018	<.003	E.025	102	<.005	<.005	<.05	<.05	<.02	<.002
24...	<.041	E.011	<.005	<.018	<.003	E.030	108	<.005	<.005	<.05	<.05	<.02	<.002
24...	<.041	<.020	<.005	<.018	<.003	E.028	104	<.005	<.005	<.05	<.05	<.02	<.002
MAY													
01...	<.041	<.020	<.005	<.018	<.003	<.006	92.1	<.005	<.005	<.05	<.05	<.02	<.002
01...	<.041	<.020	<.005	<.018	<.003	<.006	92.7	<.005	<.005	<.05	<.05	<.02	<.002
01...	<.041	<.020	<.005	<.018	<.003	E.099	103	<.005	<.005	.09	<.05	<.02	<.002
08...	<.041	<.020	<.005	<.018	<.003	E.094	111	<.005	<.005	.16	.05	<.02	<.002
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.041	<.020	<.005	<.018	<.003	E.071	119	<.005	<.005	<.05	<.05	<.02	<.002
22...	<.041	<.020	<.005	<.018	<.003	E.248	92.2	<.005	<.005	--	--	<.02	<.002
30...	<.041	E.029	<.005	<.018	<.003	E.112	113	<.005	<.005	.12	.05	<.02	<.002
JUN													
05...	E.060	<.020	<.005	<.018	<.003	E.074	127	<.005	<.005	<.05	<.05	<.02	<.004
05...	E.056	<.020	<.005	<.018	<.003	E.068	112	<.005	<.005	<.05	<.05	<.02	<.002
13...	<.041	<.020	<.005	<.018	<.003	E.361	114	<.005	<.005	.11	.08	<.02	<.002
19...	<.041	<.020	<.005	<.018	<.003	E.290	99.1	<.005	<.005	<.05	.06	<.02	<.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.041	<.020	<.005	<.018	<.003	E.144	105	<.005	<.005	.06	.05	<.02	<.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	<.041	E.010	<.005	<.018	<.003	E.108	109	<.005	<.005	<.05	<.05	<.02	<.002
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.041	<.020	<.005	<.018	<.003	E.045	99.2	<.005	<.005	<.05	<.05	<.02	<.002
AUG													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.041	E.008	<.005	<.018	<.003	E.039	114	<.005	<.005	<.05	<.05	<.02	<.002
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.041	E.007	<.005	E.010	<.003	E.031	127	<.005	<.005	<.05	<.05	<.02	<.002
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

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01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FLUFEN-ACET, ESA, WAT FLT (UG/L) (61952)	FLUFE-NACET OA, WATER FLT, REC (UG/L) (62483)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLA-CHLOR ESA FLTRD 0.7 UM GF REC (UG/L) (61043)	METOLA-CHLOR OA FLTRD 0.7 UM GF REC (UG/L) (61044)
FEB													
06...	<.009	<.005	<.05	<.05	<.003	111	<.004	<.035	<.027	<.050	<.006	3.5	.5
MAR													
06...	<.009	<.005	<.05	<.05	<.003	97.2	<.004	<.035	<.027	<.050	<.006	3.8	.4
13...	<.009	<.005	--	--	<.003	88.5	<.004	<.035	<.027	<.050	<.006	--	--
20...	<.009	<.005	<.05	<.05	<.003	96.4	<.004	<.035	<.027	<.050	<.006	2.8	.4
27...	<.009	<.005	<.05	<.05	<.003	92.4	<.004	<.035	<.027	<.050	<.006	2.5	.4
APR													
03...	<.009	<.005	<.05	<.05	<.003	84.7	<.004	<.035	<.027	<.050	<.006	3.7	.4
11...	<.009	<.005	<.05	<.05	<.003	104	<.004	<.035	<.027	<.050	<.006	2.9	.4
17...	<.009	<.005	<.05	<.05	<.003	88.2	<.004	<.035	<.027	<.050	<.006	<.1	<.1
17...	<.009	<.005	<.05	<.05	<.003	81.3	<.004	<.035	<.027	<.050	<.006	3.1	.4
24...	<.009	<.005	<.05	<.05	<.003	98.2	<.004	<.035	<.027	<.050	<.006	4.4	.3
24...	<.009	<.005	<.05	<.05	<.003	92.4	<.004	<.035	<.027	<.050	<.006	3.7	.3
MAY													
01...	<.009	<.005	<.05	<.05	<.003	101	<.004	<.035	<.027	<.050	<.006	<.1	<.1
01...	<.009	<.005	<.05	<.05	<.003	95.4	<.004	<.035	<.027	<.050	<.006	<.1	<.1
01...	<.009	<.005	<.05	<.05	<.003	92.3	<.004	<.035	<.027	<.050	<.006	2.8	.5
08...	<.009	<.005	<.05	<.05	<.003	93.2	<.004	<.035	<.027	<.050	<.006	3.5	.5
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.009	<.005	<.05	<.05	<.003	96.3	<.004	<.035	<.027	<.050	<.006	2.6	.3
22...	<.009	<.005	--	--	<.003	92.2	<.004	<.075	<.027	<.050	<.006	--	--
30...	<.009	<.005	<.05	<.05	<.003	100	<.004	E.013	<.027	<.050	<.006	3.23	.68
JUN													
05...	<.009	<.005	<.05	<.05	<.003	97.3	<.004	<.035	<.027	<.050	<.006	4.00	.44
05...	<.009	<.005	<.05	<.05	<.003	96.4	<.004	<.035	<.027	<.050	<.006	3.90	.43
13...	<.009	<.005	<.05	<.05	<.003	91.1	<.004	<.035	<.027	<.050	<.006	2.76	.79
19...	<.009	<.005	<.05	<.05	<.003	97.3	<.004	E.027	<.027	<.050	<.006	2.98	.79
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.009	<.005	<.05	<.05	<.003	102	<.004	<.035	<.027	<.050	<.006	3.79	.65
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	<.009	<.005	<.05	<.05	<.003	102	<.004	<.035	<.027	<.050	<.006	2.76	.41
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.009	<.005	<.05	<.05	<.003	74.6	<.004	<.035	<.027	<.050	<.006	2.49	.24
AUG													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.009	<.005	<.05	<.05	<.003	101	<.004	<.035	<.027	<.050	<.006	3.47	.25
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.009	<.005	<.05	<.05	<.003	110	<.004	<.035	<.027	<.050	<.006	2.90	.51
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)
FEB													
06...	.231	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
MAR													
06...	.159	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
13...	.132	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
20...	.172	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
27...	.392	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
APR													
03...	.239	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M	<.004	<.010
11...	.203	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
17...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
17...	.137	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
24...	.143	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
24...	.132	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
MAY													
01...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
01...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
01...	.825	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
08...	.415	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01	<.004	<.010
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	.133	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01	<.004	<.010
22...	.957	<.006	<.002	<.007	<.003	<.010	<.004	.060	<.006	<.011	<.01	<.004	<.010
30...	.329	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
JUN													
05...	.099	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
05...	.091	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
13...	.726	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M	<.004	<.010
19...	.593	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	.160	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	.077	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M	<.004	<.010
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	.031	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
AUG													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	.021	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M	<.004	<.010
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	.055	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
FEB													
06...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	15	.21	--	--
MAR													
06...	<.011	<.02	.005	<.02	<.034	<.02	<.005	<.002	<.009	12	.18	--	--
13...	<.011	<.02	.008	<.02	<.034	<.02	<.005	<.002	<.009	14	.27	--	--
20...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	91	4.9	--	--
27...	<.011	<.02	.012	<.02	<.034	<.02	<.005	<.002	<.009	31	.49	--	--
APR													
03...	<.011	<.02	.008	<.02	<.034	<.02	<.005	<.002	<.009	10	.16	--	--
11...	<.011	<.02	.017	<.02	<.034	<.02	<.005	<.002	<.009	14	.21	--	--
17...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	--	--	--	--
17...	<.011	<.02	.009	<.02	<.034	<.02	<.005	<.002	<.009	18	.23	--	--
24...	<.011	<.02	.015	<.02	<.034	<.02	<.005	<.002	<.009	11	.14	--	--
24...	<.011	<.02	.016	<.02	<.034	<.02	<.005	<.002	<.009	--	--	--	--
MAY													
01...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	--	--	--	--
01...	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	--	--	--	--
01...	<.011	<.02	1.16	<.02	<.034	<.02	<.005	<.002	<.009	19	.30	--	--
08...	<.011	<.02	.823	<.02	<.034	<.02	<.005	<.002	<.009	23	.29	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.011	<.02	.200	<.02	<.034	<.02	<.005	<.002	<.009	14	.15	--	--
22...	<.011	<.02	.625	<.02	<.034	<.02	<.005	<.002	<.009	20	.33	--	--
30...	<.011	<.02	.392	<.02	<.034	<.02	<.005	<.002	<.009	18	.21	--	--
JUN													
05...	<.011	<.02	.116	<.02	<.034	<.02	<.005	<.002	<.009	14	--	--	--
05...	<.011	<.02	.111	<.02	<.034	<.02	<.005	<.002	<.009	--	--	--	--
13...	<.011	<.02	1.66	<.02	<.034	<.02	<.005	<.002	<.009	16	--	--	--
19...	<.011	<.02	.776	<.02	<.034	<.02	<.005	<.002	<.009	11	.10	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	24	28.70
26...	<.011	<.02	.289	<.02	<.034	<.02	<.005	<.002	<.009	24	.17	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	21	24.10
JUL													
01...	<.011	<.02	.153	<.02	<.034	<.02	<.005	<.002	<.009	14	.08	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	26	29.70
16...	<.011	<.02	.033	<.02	<.034	<.02	<.005	<.002	<.009	10	.13	--	--
AUG													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<.011	<.02	.009	<.02	<.034	<.02	<.005	<.002	<.009	17	.06	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	13	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	43	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	17	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	16	--	--	--
16...	<.011	<.02	.016	<.02	<.034	<.02	<.005	<.002	<.009	12	.08	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	8.0	--	--	--
30...	--	--	--	--	--	--	--	--	--	8.0	.06	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PHEO-PHYTIN A, PERI-PHYTON (MG/M2) (62359)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)
FEB		
06...	--	--
MAR		
06...	--	--
13...	--	--
20...	--	--
27...	--	--
APR		
03...	--	--
11...	--	--
17...	--	--
17...	--	--
24...	--	--
24...	--	--
MAY		
01...	--	--
01...	--	--
01...	--	--
08...	--	--
08...	--	--
16...	--	--
22...	--	--
30...	--	--
JUN		
05...	--	--
05...	--	--
13...	--	--
19...	--	--
26...	2.4	10.7
26...	--	--
26...	.5	1.4
JUL		
01...	--	--
01...	.2	.8
16...	--	--
AUG		
12...	--	--
12...	--	--
12...	--	--
28...	--	--
28...	--	--
29...	--	--
29...	--	--
SEP		
03...	--	--
03...	--	--
09...	--	--
09...	--	--
16...	--	--
16...	--	--
25...	--	--
25...	--	--
30...	--	--
30...	--	--

01495000 BIG ELK CREEK AT ELK MILLS, MD

LOCATION.--Lat 39°39'25.4", long 75°49'20.5", Cecil County, Hydrologic Unit 02060002, on right bank 100 ft downstream from highway bridge at Elk Mills (State Highway 277), 3.5 mi north of Elkton, and 7 mi upstream from confluence with Little Elk Creek.

DRAINAGE AREA.--52.6 mi^2.

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1932-33, 1934(M), 1935, 1936(M), 1938, 1919-40(M), 1942(M), 1943-51, 1952-53(P).

GAGE.--Water-stage recorder. Datum of gage is 68.69 ft above National Geodetic Vertical Datum of 1929. Prior to May 17, 1946, nonrecording gage at bridge 100 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect, doubtful gage-height record), which are fair. Slight diurnal fluctuation caused by mills upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1884 reached a stage of about 19 ft, from information by local residents; discharge, about 18,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 18	1515	*381	*3.82	No peak greater than base discharge.			

Minimum discharge measured, 2.2 ft^3/s, Aug. 21, may have been lower during period of doubtful gage-height record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	e13	17	e14	42	20	56	39	22	15	4.4	22
2	19	e13	16	e13	38	21	42	77	20	14	3.7	23
3	17	e15	16	e13	32	135	38	87	18	13	3.4	15
4	16	e20	16	e12	30	53	36	43	18	13	3.1	10
5	15	e15	16	e12	29	34	35	38	19	11	2.9	8.3
6	15	e13	17	e20	e27	30	34	35	23	9.7	3.3	7.2
7	13	e13	17	71	e26	29	32	33	119	9.0	e2.6	6.6
8	12	e15	18	38	27	27	31	32	31	9.5	e2.5	6.3
9	12	e13	29	30	26	26	32	31	25	10	e3.0	6.4
10	12	e13	24	25	25	32	34	32	23	20	e2.3	6.6
11	12	e12	23	109	27	28	32	28	20	13	e2.7	5.9
12	12	e12	23	77	25	26	30	32	20	9.7	e2.5	4.8
13	12	e11	21	39	25	35	31	45	25	8.9	e2.2	4.8
14	11	e14	24	32	24	38	31	53	71	11	e2.0	5.1
15	17	e22	32	30	23	32	33	33	40	13	e1.9	5.8
16	16	e19	24	29	24	30	31	29	29	12	e1.8	7.9
17	13	e14	21	27	23	28	30	27	24	8.7	e1.8	9.8
18	13	e14	34	26	23	45	27	148	22	7.2	e3.0	7.1
19	12	e13	32	24	22	47	37	69	23	6.8	e2.6	6.2
20	13	e18	24	32	23	148	62	41	21	7.2	e2.3	6.2
21	14	e15	21	28	26	113	35	35	20	7.2	e2.2	6.2
22	14	e14	20	e26	24	54	36	32	19	6.6	e2.1	5.8
23	e14	e13	20	28	23	42	35	30	18	6.6	e2.1	5.4
24	e13	e14	30	79	22	38	29	29	17	8.8	e5.0	5.2
25	e13	e23	28	84	21	36	30	27	19	8.2	42	5.2
26	e13	e50	22	41	22	35	30	26	19	7.1	12	8.5
27	e13	23	20	34	22	112	27	27	17	7.0	5.8	47
28	e13	19	19	32	22	55	126	27	21	8.4	5.4	39
29	e13	18	20	30	---	42	74	26	17	12	25	20
30	e15	18	17	30	---	39	42	24	16	7.6	24	12
31	e14	---	e16	39	---	40	---	24	---	5.6	11	---
TOTAL	430	499	677	1124	723	1470	1178	1259	796	306.8	190.6	329.3
MEAN	13.9	16.6	21.8	36.3	25.8	47.4	39.3	40.6	26.5	9.90	6.15	11.0
MAX	19	50	34	109	42	148	126	148	119	20	42	47
MIN	11	11	16	12	21	20	27	24	16	5.6	1.8	4.8
CFSM	0.26	0.32	0.42	0.69	0.49	0.90	0.75	0.77	0.50	0.19	0.12	0.21
IN.	0.30	0.35	0.48	0.79	0.51	1.04	0.83	0.89	0.56	0.22	0.13	0.23

e Estimated

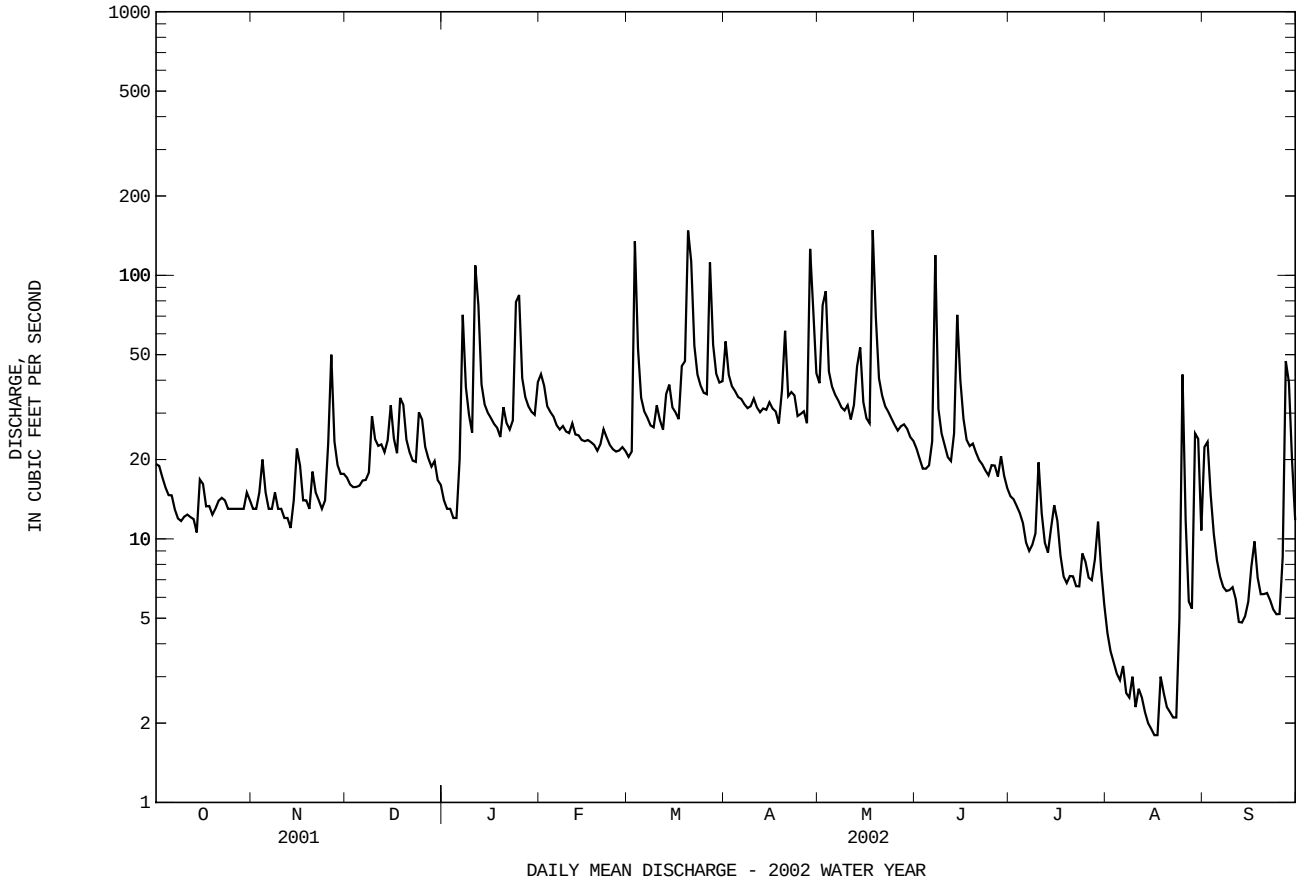
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

MEAN	41.5	53.9	68.5	86.5	96.8	101	89.5	76.0	58.0	55.1	50.4	45.1
MAX	152	125	276	283	236	247	191	160	216	248	241	205
(WY)	1997	1997	1997	1979	1936	1994	1993	1958	1972	1975	1933	1999
MIN	11.1	16.6	18.7	19.2	25.8	35.6	34.5	26.8	21.4	9.90	6.15	9.95
(WY)	1964	2002	1966	1966	2002	1981	1963	1955	1963	2002	2002	1932

01495000 BIG ELK CREEK AT ELK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1932 - 2002	
ANNUAL TOTAL	17986		8982.7			
ANNUAL MEAN	49.3		24.6		68.6	
HIGHEST ANNUAL MEAN					109	1972
LOWEST ANNUAL MEAN					24.6	2002
HIGHEST DAILY MEAN	556	Jan 30	148	Mar 20	4570	Sep 16 1999
LOWEST DAILY MEAN	(e)11	Oct 14	(e, b)1.8	(c)	(e, b)1.8	(c)
ANNUAL SEVEN-DAY MINIMUM	12	Oct 8	2.1	Aug 11	2.1	Aug 11 2002
MAXIMUM PEAK FLOW			381	May 18	(d)10600	Jul 5 1937
MAXIMUM PEAK STAGE			3.82	May 18	(f)14.54	Sep 16 1999
INSTANTANEOUS LOW FLOW			(g)2.2	Aug 21	(g)2.2	Aug 21 2002
ANNUAL RUNOFF (CFSM)	0.94		0.47		1.30	
ANNUAL RUNOFF (INCHES)	12.72		6.35		17.72	
10 PERCENT EXCEEDS	93		41		114	
50 PERCENT EXCEEDS	36		21		46	
90 PERCENT EXCEEDS	14		6.1		20	

e Estimated.
a Oct. 14, Nov. 13.
b May have been lower during period of doubtful gage-height record.
c Aug. 16, 17, 2002.
d From rating curve extended above 1,700 ft^3/s on basis of velocity-area and conveyance studies.
f From floodmarks.
g Measured discharge, may have been lower during period of doubtful gage-height record.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD

LOCATION.--Lat 39°39'28.1", long 76°10'28.2", Harford County, Hydrologic Unit 02050306, at downstream side of Conowingo Dam, 1.0 mi southwest of Conowingo, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--27,100 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 5.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated by Conowingo Reservoir beginning October 1928, usable capacity, 55,070,000,000 gal; dead storage, 45,290,000,000 gal. Records do not include a small infrequent diversion upstream from station to augment municipal supply of city of Baltimore. Records of diversion available from Baltimore Department of Public Works. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 224,000 ft^3/s, May 15, gage height, 21.62 ft; minimum discharge, 670 ft^3/s, Dec. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

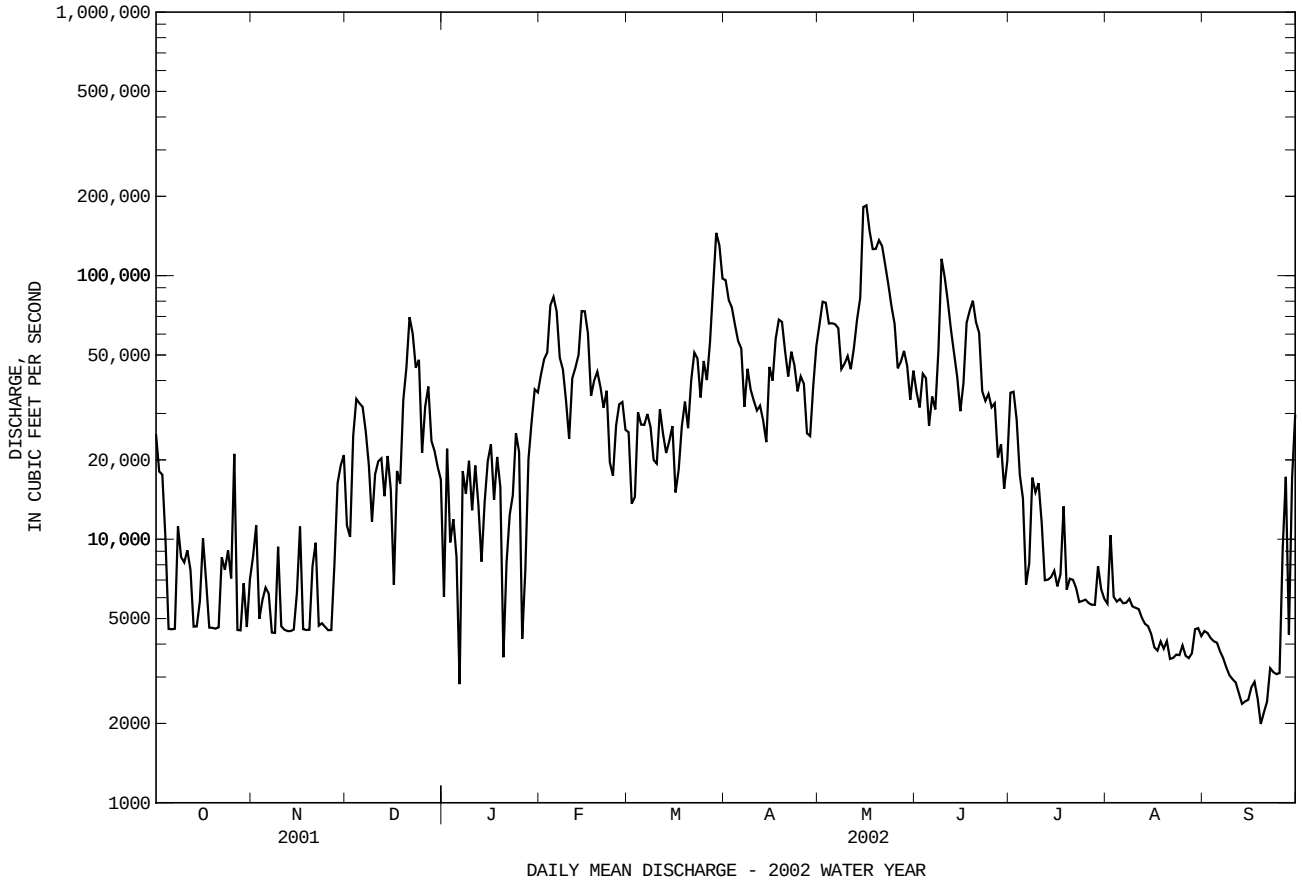
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25000	8590	11300	6050	42200	25500	96100	65400	36200	35900	5700	4480
2	18100	11300	10200	22000	48200	13600	80800	79600	31600	36300	10400	4410
3	17600	4990	24700	9720	51200	14500	75600	78900	42400	28400	6050	4210
4	10100	5890	34100	11900	77200	30300	64900	65800	40900	17600	5800	4100
5	4570	6560	32800	8570	83000	27200	56400	66000	27000	14300	5930	4050
6	4550	6220	31800	2820	73200	27200	52900	65400	34800	6730	5720	3750
7	4570	4420	25700	18100	48900	29900	31800	63200	31100	8080	5740	3530
8	11200	4410	19000	14900	44000	26700	44300	44200	52100	17100	5940	3260
9	8550	9360	11700	19800	33500	20000	37000	46400	116000	15100	5560	3050
10	8160	4670	17600	12900	24100	19300	33500	49500	98700	16300	5490	2940
11	9080	4540	19700	19000	40800	31100	30800	44200	79900	11500	5430	2860
12	7640	4480	20300	13500	44800	25100	32100	53300	62400	6990	5030	2610
13	4660	4480	14600	8220	50000	21200	28200	68100	50700	7020	4770	2370
14	4670	4540	20700	13900	73400	23600	23400	82300	41200	7180	4680	2420
15	5810	6250	15400	19800	73200	26900	45100	182000	30600	7600	4360	2460
16	10100	11200	6710	22900	60400	15000	40000	185000	39100	6620	3890	2740
17	6920	4560	18200	14100	35000	18400	57700	148000	66300	7360	3780	2880
18	4620	4520	16200	20500	40000	26800	68100	126000	73700	13300	4090	2480
19	4610	4530	33700	15800	43200	33300	66800	126000	80400	6430	3840	1990
20	4580	7920	44800	3570	37800	26400	51700	136000	66600	7080	4110	2200
21	4630	9700	69500	8160	31600	40000	41500	129000	60700	7010	3510	2420
22	8550	4700	60300	12400	36600	51100	51500	110000	36400	6520	3550	3240
23	7650	4800	44700	14700	19600	48500	45600	92400	33500	5780	3650	3130
24	9070	4650	47900	25200	17400	34500	36400	76500	35600	5830	3630	3080
25	7100	4520	21300	21400	27000	47500	41500	65500	31700	5900	3950	3110
26	21100	4520	31800	4190	32500	40100	38900	44500	32800	5730	3610	9180
27	4520	8060	37900	7610	33200	55700	25200	47200	20400	5640	3540	17200
28	4510	16300	23600	20100	26000	90500	24600	51800	22900	5640	3690	4350
29	6810	19000	21600	27800	---	145000	38200	45500	15500	7900	4560	17000
30	4640	20900	18800	37000	---	130000	54200	33800	19800	6460	4600	29700
31	7060	---	16800	36100	---	97500	---	43600	---	5940	4290	---
TOTAL	260730	220580	823410	492710	1248000	1262400	1414800	2515100	1411000	345240	148890	155200
MEAN	8411	7353	26560	15890	44570	40720	47160	81130	47030	11140	4803	5173
MAX	25000	20900	69500	37000	83000	145000	96100	185000	116000	36300	10400	29700
MIN	4510	4410	6710	2820	17400	13600	23400	33800	15500	5640	3510	1990
CFSM	0.31	0.27	0.98	0.59	1.64	1.50	1.74	2.99	1.74	0.41	0.18	0.19
IN.	0.36	0.30	1.13	0.68	1.71	1.73	1.94	3.45	1.94	0.47	0.20	0.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	22460	33970	47500	41550	52020	72540	78520	48380	34750	19100	13210	15620
MAX	81800	73170	113700	122500	115800	147800	250100	108200	208000	59050	48580	88450
(WY)	1977	1978	1997	1996	1984	1994	1993	1989	1972	1972	1994	1975
MIN	5557	5465	6733	7164	13050	28320	33850	18810	7691	5338	4803	3476
(WY)	1970	1999	1999	1981	1980	1969	1995	2001	1999	1999	2002	1995

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1968 - 2002	
ANNUAL TOTAL	8599260		10298060			
ANNUAL MEAN	23560		28210		39870	
HIGHEST ANNUAL MEAN					61090	1978
LOWEST ANNUAL MEAN					22850	1999
HIGHEST DAILY MEAN	138000	Apr 12	185000	May 16	1120000	Jun 24 1972
LOWEST DAILY MEAN	3100	Jan 7	1990	Sep 19	269	Jul 13 1969
ANNUAL SEVEN-DAY MINIMUM	4490	Sep 18	2450	Sep 14	1810	Sep 24 1980
MAXIMUM PEAK FLOW			224000	May 15	1130000	Jun 24 1972
MAXIMUM PEAK STAGE			21.62	May 15	36.83	Jun 24 1972
INSTANTANEOUS LOW FLOW			670	Dec 8	144	Mar 2 1969
ANNUAL RUNOFF (CFSM)	0.87		1.04		1.47	
ANNUAL RUNOFF (INCHES)	11.80		14.14		19.99	
10 PERCENT EXCEEDS	58900		66100		83700	
50 PERCENT EXCEEDS	16100		19000		26700	
90 PERCENT EXCEEDS	4670		4110		5420	



DAILY MEAN DISCHARGE - 2002 WATER YEAR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1979 to April 1981, July 1984 to September 1992.
WATER TEMPERATURE: June 1979 to April 1981, July 1984 to September 1992.
SUSPENDED-SEDIMENT DISCHARGE: October 1979 to April 1981, July 1984 to September 1992.

REMARKS.--During the period Oct. 1994 to Jan. 1995, monthly samples were collected and analyzed using ultraclean methodologies. Data on trace metals for this period are available from the University of Delaware. Data on organics for this period are available from George Mason University.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1980, 1985-89, 1991-92): Maximum daily, 475 microsiemens, Nov. 13-15, 1980 and Aug. 31, 1991; minimum daily, 100 microsiemens, May 1, 1991.
WATER TEMPERATURE (water years 1980, 1985-89, 1991-92): Maximum daily, 30.5°C, Aug. 18, 1988; minimum daily, 1.0°C, Feb. 5, 6, 9, 1980, Feb. 12, 1988.
SEDIMENT CONCENTRATION: Maximun daily mean, 207 mg/L, Mar. 17, 1986; minimum daily mean, 1 mg/L, June 27, 1987, May 27, 28, 30, Nov. 1-3, 10, 11, Dec. 22-24, 27, 30, 31, 1991.
SEDIMENT LOAD: Maximum daily, 197,000 tons, Mar. 16, 17, 1986; minimum daily, 4.4 tons, Feb. 10, 1985.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT												
04...	1145	ENVIRONMENTAL	4370	9	7.7	27.0	11.0	761	--	8.4	77	--
NOV												
07...	1115	ENVIRONMENTAL	4370	311	7.8	18.0	15.5	764	--	8.7	87	--
07...	*1116*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
20...	0920	ENVIRONMENTAL	4410	364	6.3	8.6	14.0	754	--	7.5	74	--
DEC												
11...	0945	ENVIRONMENTAL	23300	275	7.8	8.5	12.0	769	--	9.9	91	--
11...	*0946*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0947*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0948*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0949*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0950*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0951*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0952*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0953*	*REPLICATE*	--	--	--	--	--	--	*4.8*	--	--	*<1.5*
11...	*0954*	*REPLICATE*	--	--	--	--	--	--	*4.1*	--	--	*<1.6*
11...	*0955*	*REPLICATE*	--	--	--	--	--	--	*4.0*	--	--	*<1.5*
11...	*0956*	*REPLICATE*	--	--	--	--	--	--	*4.1*	--	--	*<1.4*
11...	*0957*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0958*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*0959*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*1000*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
11...	*1001*	*REPLICATE*	--	--	--	--	--	--	*5.8*	--	--	--
11...	*1002*	*REPLICATE*	--	--	--	--	--	--	*4.8*	--	--	--
11...	*1003*	*REPLICATE*	--	--	--	--	--	--	*7.1*	--	--	--
11...	*1004*	*REPLICATE*	--	--	--	--	--	--	*4.2*	--	--	--
18...	0940	ENVIRONMENTAL	21800	247	6.5	10.3	10.7	736	--	10.4	97	--
JAN												
10...	1100	ENVIRONMENTAL	4720	198	7.6	7.0	4.0	759	--	14.3	110	--
24...	1000	ENVIRONMENTAL	24100	271	7.4	--	5.5	744	--	14.1	115	--
24...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
FEB												
07...	1145	ENVIRONMENTAL	63800	204	7.6	4.5	3.5	761	--	14.1	107	--
07...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
14...	1100	ENVIRONMENTAL	63500	184	7.7	2.0	5.5	774	--	--	--	--
14...	*1101*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
20...	*0825*	*BLANK*	--	--	--	--	--	--	--	--	--	--
20...	0920	ENVIRONMENTAL	57900	190	7.4	7.6	4.9	751	--	12.4	98	--
MAR												
08...	1200	ENVIRONMENTAL	23600	224	8.1	13.0	8.5	774	--	--	--	--
22...	0900	ENVIRONMENTAL	46400	237	7.8	-1.4	9.5	753	--	11.3	100	--
28...	1045	ENVIRONMENTAL	66600	211	7.8	8.0	7.0	769	--	12.7	104	--
28...	*1046*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
29...	1030	ENVIRONMENTAL	156000	201	7.8	10.0	7.0	765	--	13.5	111	--
APR												
03...	1100	ENVIRONMENTAL	65900	153	7.5	23.0	10.0	759	--	12.6	112	--
03...	*1101*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
19...	1010	ENVIRONMENTAL	65200	220	8.2	25.3	19.1	750	--	10.5	115	--
MAY												
02...	0945	ENVIRONMENTAL	71900	210	8.5	19.5	15.5	750	--	11.6	119	--
09...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	--
09...	1045	ENVIRONMENTAL	56000	168	7.5	14.5	16.5	765	--	10.5	107	--
16...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
16...	1145	ENVIRONMENTAL	197000	140	7.8	22.1	14.2	753	--	10.7	106	--
16...	*1146*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT													
04...	120	31.1	10.5	17.3	2.86	57	69	60.9	26.1	E.1	1.80	<10	188
NOV													
07...	--	--	--	--	--	--	--	--	--	--	.9	42	--
07...	--	--	--	--	--	--	--	--	--	--	.9	--	--
20...	--	--	--	--	--	64	78	61.2	27.9	--	--	--	--
DEC													
11...	100	26.8	8.19	12.4	2.09	--	--	50.3	19.4	E.1	2.21	20	166
11...	97	25.9	7.89	12.0	2.00	--	--	50.8	19.7	E.1	2.13	12	166
11...	100	27.0	8.24	12.3	2.04	--	--	50.3	19.8	E.1	2.23	10	162
11...	100	26.7	8.12	12.2	1.99	--	--	50.6	19.9	E.1	2.14	<10	162
11...	--	--	--	--	--	--	--	--	--	--	--	48	--
11...	--	--	--	--	--	--	--	--	--	--	--	<2	--
11...	--	--	--	--	--	--	--	--	--	--	--	9	--
11...	--	--	--	--	--	--	--	--	--	--	--	24	--
11...	--	--	--	--	--	--	--	--	--	--	2.25	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.25	6	--
11...	--	--	--	--	--	--	--	--	--	--	2.25	4	--
11...	--	--	--	--	--	--	--	--	--	--	2.25	4	--
11...	--	--	--	--	--	--	--	--	--	--	2.44	6	--
11...	--	--	--	--	--	--	--	--	--	--	2.38	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.38	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.42	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.40	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.40	5	--
11...	--	--	--	--	--	--	--	--	--	--	2.40	6	--
11...	--	--	--	--	--	--	--	--	--	--	2.40	5	--
18...	--	--	--	--	--	44	54	36.5	17.6	--	--	--	--
JAN													
10...	67	18.4	5.03	8.88	1.47	32	40	29.3	14.5	E.1	3.96	<10	116
24...	--	--	--	--	--	48	58	37.2	22.6	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	3.8	<10	--
07...	--	--	--	--	--	--	--	--	--	--	3.9	<10	--
14...	--	--	--	--	--	--	--	--	--	--	4.3	<10	--
14...	--	--	--	--	--	--	--	--	--	--	--	<10	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	30	37	21.5	17.7	--	--	--	--
MAR													
08...	--	--	--	--	--	--	--	--	--	--	2.0	<10	--
22...	--	--	--	--	--	45	54	30.1	18.8	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	3.2	<10	--
28...	--	--	--	--	--	--	--	--	--	--	3.2	<10	--
29...	--	--	--	--	--	--	--	--	--	--	3.6	16	--
APR													
03...	53	15.0	3.82	8.03	1.32	24	29	20.6	12.7	.1	4.40	14	93
03...	53	14.8	3.77	7.91	1.30	--	--	20.7	12.8	.1	4.31	16	88
19...	--	--	--	--	--	44	53	29.9	15.6	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	1.3	12	--
09...	--	--	--	--	--	--	--	--	--	--	<.2	<10	--
09...	--	--	--	--	--	--	--	--	--	--	3.7	<10	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	25	31	20.4	7.30	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT													
04...	1.2	.67	.023	.70	.05	.47	.32	1.0	.42	.27	--	.053	.015
NOV													
07...	1.0	.58	.023	.61	.12	.41	.34	.95	.29	.23	--	.035	.012
07...	1.0	.58	.023	.60	.12	.41	.35	.95	.30	.23	--	.039	.012
20...	1.1	.61	.017	.63	.12	.42	.34	.97	.30	.22	--	.022	.006
DEC													
11...	1.1	.77	.011	.79	.05	.30	.24	1.0	.25	.19	--	.029	.011
11...	1.1	.77	.012	.79	.06	.29	.25	1.0	.24	.19	--	.026	.011
11...	1.1	.77	.011	.78	.05	.28	.26	1.0	.22	.20	--	.027	.010
11...	1.1	.78	.012	.79	.06	.35	.26	1.0	.29	.20	--	.025	.011
11...	1.2	--	--	.850	.050	--	--	1.2	--	--	.840	.031	.015
11...	1.2	--	--	.860	.050	--	--	1.2	--	--	.860	.030	.014
11...	1.2	--	--	.860	.050	--	--	1.2	--	--	.870	.027	.014
11...	1.3	--	--	.860	.050	--	--	1.2	--	--	.860	.027	.014
11...	1.1	.80	.010	.808	.068	.29	.18	.99	.22	.11	--	.022	<.001
11...	1.0	.78	.010	.788	.067	.21	.19	.98	.14	.12	--	.020	<.001
11...	1.1	.81	.011	.822	.067	.29	.18	1.0	.22	.11	--	.020	<.001
11...	1.1	.81	.011	.822	.067	.24	.18	1.0	.17	.11	--	.024	<.001
11...	1.3	--	--	.950	.070	.35	.23	1.2	.28	.16	--	.030	.010
11...	1.1	--	--	.810	.060	.30	.20	1.0	.24	.14	--	.040	.010
11...	1.2	--	--	.980	.060	.27	.19	1.2	.21	.13	--	.020	<.010
11...	1.3	--	--	.960	.060	.32	.31	1.3	.26	.25	--	.060	.010
11...	--	.83	.009	.842	.065	--	--	.98	--	--	--	--	.030
11...	--	.81	.009	.818	.065	--	--	1.0	--	--	--	--	.015
11...	--	.80	.009	.809	.066	--	--	.92	--	--	--	--	.011
11...	--	.81	.009	.817	.068	--	--	1.0	--	--	--	--	.017
18...	1.0	.79	.009	.80	E.04	.25	.21	1.0	--	--	--	.029	.008
JAN													
10...	1.2	.94	.005	.95	E.03	.23	.17	1.1	--	--	--	.023	.011
24...	1.5	1.18	.008	1.18	<.04	.29	.12	1.3	--	--	--	.028	.009
24...	1.5	1.16	.008	1.17	<.04	.28	.12	1.3	--	--	--	.029	.007
FEB													
07...	1.3	--	E.007	.93	E.04	.33	.19	1.1	--	--	--	.031	.011
07...	1.2	--	E.007	.94	.04	.28	.19	1.1	.24	.14	--	.029	.009
14...	1.2	.95	.007	.96	.05	.25	.15	1.1	.20	.10	--	.030	.012
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	<.002	<.05	<.04	<.10	<.10	--	--	--	--	<.004	<.004
20...	1.1	.86	.006	.87	.05	.26	.22	1.1	.20	.16	--	.039	.013
MAR													
08...	1.1	.90	.007	.91	<.04	.21	.13	1.0	--	--	--	.023	.007
22...	1.1	.77	.007	.78	<.04	.32	.12	.90	--	--	--	.034	.006
28...	1.4	1.11	.008	1.12	<.04	.25	.15	1.3	--	--	--	.040	.008
28...	1.4	1.11	.008	1.12	<.04	.27	.17	1.3	--	--	--	.043	.008
29...	1.5	1.10	.008	1.11	E.03	.35	.17	1.3	--	--	--	.064	.011
APR													
03...	1.2	.89	.007	.89	.04	.35	.19	1.1	.30	.15	--	.053	.012
03...	1.2	.88	.006	.89	E.04	.32	.20	1.1	--	--	--	.053	.011
19...	1.1	.69	.009	.70	<.04	.40	.22	.92	--	--	--	.046	.006
MAY													
02...	1.0	.57	.007	.57	<.04	.42	.17	.75	--	--	--	.050	.007
09...	--	--	<.002	<.05	<.04	<.10	<.10	--	--	--	--	<.004	<.004
09...	.89	.64	.005	.65	<.04	.25	.16	.81	--	--	--	.034	.008
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	1.1	.68	.006	.69	.04	.46	.23	.92	.42	.19	--	.094	.013
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)
OCT													
04...	.007	3.6	--	12	34.1	215	--	--	--	--	--	--	--
NOV													
07...	<.007	4.0	--	--	--	--	--	--	--	--	--	--	--
07...	E.004	4.4	--	--	--	--	--	--	--	--	--	--	--
20...	<.007	--	--	--	--	--	<.002	<.004	<.002	<.005	.017	<.010	<.002
DEC													
11...	.007	--	--	12	11.4	164	--	--	--	--	--	--	--
11...	.008	2.7	--	16	11.4	158	--	--	--	--	--	--	--
11...	E.006	3.2	--	11	13.3	164	--	--	--	--	--	--	--
11...	.008	3.0	--	13	10.7	162	--	--	--	--	--	--	--
11...	<.010	2.2	--	--	--	--	--	--	--	--	--	--	--
11...	.013	2.2	--	--	--	--	--	--	--	--	--	--	--
11...	.011	2.2	--	--	--	--	--	--	--	--	--	--	--
11...	<.010	2.2	--	--	--	--	--	--	--	--	--	--	--
11...	.007	2.1	2.1	--	--	--	--	--	--	--	--	--	--
11...	.007	2.1	2.1	--	--	--	--	--	--	--	--	--	--
11...	.007	2.1	2.2	--	--	--	--	--	--	--	--	--	--
11...	.007	2.1	2.1	--	--	--	--	--	--	--	--	--	--
11...	<.010	1.9	<1.9	--	--	--	--	--	--	--	--	--	--
11...	<.010	1.9	<1.9	--	--	--	--	--	--	--	--	--	--
11...	<.010	1.9	1.9	--	--	--	--	--	--	--	--	--	--
11...	<.010	1.9	--	--	--	--	--	--	--	--	--	--	--
11...	.007	--	--	--	--	--	--	--	--	--	--	--	--
11...	.007	--	--	--	--	--	--	--	--	--	--	--	--
11...	.007	--	--	--	--	--	--	--	--	--	--	--	--
11...	.007	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.007	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	E.006	2.3	--	43	28.0	93.0	--	--	--	--	--	--	--
24...	E.004	--	--	--	--	--	<.006	<.006	<.004	<.005	.016	<.010	<.002
24...	<.007	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	<.02	2.6	--	--	--	--	--	--	--	--	--	--	--
07...	<.02	2.7	--	--	--	--	--	--	--	--	--	--	--
14...	.007	2.4	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.007	--	--	--	--	--	--	--	--	--	--	--	--
20...	.007	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
08...	<.007	2.8	--	--	--	--	--	--	--	--	--	--	--
22...	<.007	--	--	--	--	--	<.006	<.006	<.004	<.005	.011	<.010	<.002
28...	<.007	3.0	--	--	--	--	--	--	--	--	--	--	--
28...	<.007	3.2	--	--	--	--	--	--	--	--	--	--	--
29...	.007	3.5	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	E.006	3.9	--	30	63.9	70.2	--	--	--	--	--	--	--
03...	E.006	4.0	--	30	64.2	69.1	--	--	--	--	--	--	--
19...	<.007	--	--	--	--	--	<.006	<.006	<.004	<.005	.027	<.010	<.002
MAY													
02...	<.007	2.9	--	--	--	--	--	--	--	--	--	--	--
09...	<.007	<.6	--	--	--	--	--	--	--	--	--	--	--
09...	<.007	3.0	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	<.006	<.006	<.004	<.005	<.007	<.010	<.002
16...	.007	--	--	--	--	--	<.006	.035	.009	<.005	.442	<.010	<.002
16...	--	--	--	--	--	--	<.006	.037	.009	<.005	.463	<.010	<.002

E Estimated value.
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01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.041	<.020	<.005	<.018	<.003	E.018	100	<.005	<.005	<.02	<.090	<.009	<.005
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	E.007	<.020	<.005	<.018	<.003	E.018	105	<.005	<.005	<.02	<.002	<.009	<.005
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.041	<.020	<.005	<.018	<.003	E.008	118	<.005	<.005	<.02	<.002	<.009	<.005
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	E.007	<.020	<.005	<.018	<.003	E.009	96.5	E.004	<.005	<.02	<.002	<.009	<.005
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.041	<.020	<.005	<.018	<.003	<.006	102	<.005	<.005	<.02	<.002	<.009	<.005
16...	E.004	<.020	<.005	<.018	<.003	E.021	109	E.003	<.005	<.02	<.002	<.009	<.005
16...	E.004	<.020	<.005	<.018	<.003	E.022	116	E.004	<.005	<.02	<.002	<.009	<.005

E Estimated value.
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01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.003	93.5	<.004	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.007
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.003	99.1	<.004	<.035	<.027	<.050	<.006	E.006	<.006	<.002	<.007	<.003	<.010
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.003	99.2	<.004	<.035	<.027	<.050	<.006	E.006	<.006	<.002	<.007	<.003	<.010
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.003	93.9	<.004	<.035	<.027	<.050	<.006	E.012	<.006	<.002	<.007	<.003	<.010
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.003	96.5	<.004	<.035	<.027	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.010
16...	<.003	96.5	<.004	<.035	<.027	<.050	<.006	.158	<.006	<.002	<.007	<.003	<.010
16...	<.003	102	<.004	<.035	<.027	<.050	<.006	.165	<.006	<.002	<.007	<.003	<.010

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	<.002	<.010	<.006	<.011	M	<.004	<.010	<.011	<.02	<.011	<.02	<.034	<.02
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<.004	<.022	<.006	<.011	E.01	<.004	<.010	<.011	<.02	.011	<.02	<.034	<.02
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02
16...	<.004	<.022	<.006	<.011	E.01	<.004	<.010	<.011	<.02	.035	<.02	<.034	<.02
16...	<.004	<.022	<.006	<.011	E.01	<.004	<.010	<.011	<.02	.035	<.02	<.034	<.02

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
04...	--	--	--	9.4	111	--
NOV						
07...	--	--	--	7.0	82.6	--
07...	--	--	--	7.4	--	--
20...	<.005	<.002	<.009	6.4	76.2	--
DEC						
11...	--	--	--	9.0	566	--
11...	--	--	--	5.1	--	--
11...	--	--	--	7.2	--	--
11...	--	--	--	5.7	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
11...	--	--	--	--	--	--
18...	--	--	--	12	712	--
JAN						
10...	--	--	--	4.3	54.8	--
24...	<.005	<.002	<.009	7.3	475	--
24...	--	--	--	--	--	--
FEB						
07...	--	--	--	5.0	861	--
07...	--	--	--	5.6	--	--
14...	--	--	--	12	2060	90
14...	--	--	--	9.0	--	87
20...	--	--	--	--	--	--
20...	--	--	--	9.0	1410	96
MAR						
08...	--	--	--	3.8	242	--
22...	<.005	<.002	<.009	10	1250	90
28...	--	--	--	9.9	1780	--
28...	--	--	--	9.8	--	--
29...	--	--	--	22	9480	--
APR						
03...	--	--	--	19	60	--
03...	--	--	--	20	--	--
19...	<.005	<.002	<.009	11	1940	88
MAY						
02...	--	--	--	12	2310	--
09...	--	--	--	.2	--	--
09...	--	--	--	6.4	968	--
16...	<.005	<.002	<.009	--	--	--
16...	<.005	<.002	<.009	51	27100	95
16...	<.005	<.002	<.009	52	--	96

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)
JUN												
04...	1000	ENVIRONMENTAL	23800	209	8.3	24.5	24.0	763	--	8.2	98	--
04...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1002*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1003*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1004*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1005*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1006*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1007*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
04...	*1008*	*REPLICATE*	--	--	--	--	--	--	*5.0*	--	--	*<10*
04...	*1009*	*REPLICATE*	--	--	--	--	--	--	*4.8*	--	--	*<10*
04...	*1010*	*REPLICATE*	--	--	--	--	--	--	*5.1*	--	--	*<10*
04...	*1011*	*REPLICATE*	--	--	--	--	--	--	*5.2*	--	--	*<10*
04...	*1012*	*REPLICATE*	--	--	--	--	--	--	*5.2*	--	--	--
04...	*1013*	*REPLICATE*	--	--	--	--	--	--	*5.3*	--	--	--
04...	*1014*	*REPLICATE*	--	--	--	--	--	--	*5.2*	--	--	--
04...	*1015*	*REPLICATE*	--	--	--	--	--	--	*4.8*	--	--	--
04...	*1016*	*REPLICATE*	--	--	--	--	--	--	*5.1*	--	--	--
04...	*1017*	*REPLICATE*	--	--	--	--	--	--	*4.5*	--	--	--
04...	*1018*	*REPLICATE*	--	--	--	--	--	--	*5.3*	--	--	--
04...	*1019*	*REPLICATE*	--	--	--	--	--	--	*5.8*	--	--	--
10...	1115	ENVIRONMENTAL	87300	213	7.7	27.5	22.0	763	--	9.3	107	--
13...	1010	ENVIRONMENTAL	66100	176	7.6	22.7	22.4	747	--	7.5	88	--
13...	*1400*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JUL												
11...	*1059*	*BLANK*	--	--	--	--	--	--	--	--	--	--
11...	1100	ENVIRONMENTAL	9530	255	7.7	25.0	30.0	765	--	7.2	94	--
25...	1000	ENVIRONMENTAL	5870	275	7.4	24.2	28.7	755	--	4.4	58	--
AUG												
02...	1030	ENVIRONMENTAL	5780	292	7.7	31.5	30.5	759	--	5.9	79	--
02...	*1031*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
04...	*0944*	*BLANK*	--	--	--	--	--	--	--	--	--	--
04...	0945	ENVIRONMENTAL	4080	376	7.8	29.5	26.5	760	--	6.7	84	--
18...	1015	ENVIRONMENTAL	2750	407	6.9	23.5	25.6	753	--	4.6	57	--

Date	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
JUN													
04...	--	79	21.8	5.91	8.29	1.37	--	--	31.9	14.2	E.07	1.73	<10
04...	--	*79*	*21.9*	*5.92*	*8.30*	*1.41*	--	--	*31.8*	*14.1*	*E.07*	*1.73*	*<10*
04...	--	*79*	*21.8*	*5.89*	*8.24*	*1.36*	--	--	*31.9*	*13.6*	*E.06*	*1.74*	*<10*
04...	--	*79*	*21.8*	*5.90*	*8.33*	*1.43*	--	--	*31.8*	*13.7*	*E.06*	*1.74*	*<10*
04...	--	--	--	--	--	--	--	--	--	--	--	--	*12*
04...	--	--	--	--	--	--	--	--	--	--	--	--	*14*
04...	--	--	--	--	--	--	--	--	--	--	--	--	*10*
04...	--	--	--	--	--	--	--	--	--	--	--	--	*14*
04...	*<1.4*	--	--	--	--	--	--	--	--	--	--	*1.78*	*<1*
04...	*<1.1*	--	--	--	--	--	--	--	--	--	--	*1.78*	*7*
04...	*<1.4*	--	--	--	--	--	--	--	--	--	--	*1.78*	*7*
04...	*<1.1*	--	--	--	--	--	--	--	--	--	--	*1.78*	*6*
04...	--	--	--	--	--	--	--	--	--	--	--	*2.14*	*8*
04...	--	--	--	--	--	--	--	--	--	--	--	*2.10*	*8*
04...	--	--	--	--	--	--	--	--	--	--	--	*2.16*	*6*
04...	--	--	--	--	--	--	--	--	--	--	--	*2.16*	*6*
04...	--	--	--	--	--	--	--	--	--	--	--	*1.80*	*7*
04...	--	--	--	--	--	--	--	--	--	--	--	*1.80*	*7*
04...	--	--	--	--	--	--	--	--	--	--	--	*1.80*	*7*
04...	--	--	--	--	--	--	--	--	--	--	--	*1.80*	*7*
10...	--	--	--	--	--	--	--	--	--	--	--	2.6	12
13...	--	--	--	--	--	--		40	26.0	10.3	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	*<.01*	*<.008*	*<.09*	*<.10*	--	--	*<.1*	*<.30*	*<.10*	*<.13*	*18*
11...	--	92	25.0	7.06	11.0	1.70	--	--	35.1	17.1	E.07	1.88	48
25...	--	--	--	--	--	--	51	62	40.7	18.1	--	--	--
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	1.4	<10
02...	--	--	--	--	--	--	--	--	--	--	--	*1.4*	*<10*
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	*<.2*	*<10*
04...	--	--	--	--	--	--	--	--	--	--	--	2.5	<10
18...	--	--	--	--	--	--	59	72	75.2	.3	--	--	--

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
JUN													
04...	129	.96	.62	.008	.62	.05	.33	.21	.83	.28	.16	--	.028
04...	*127*	*.95*	*.61*	*.008*	*.62*	*.04*	*.33*	*.21*	*.83*	*.29*	*.17*	--	*.028*
04...	*128*	*.96*	*.61*	*.008*	*.62*	*.05*	*.34*	*.22*	*.84*	*.29*	*.17*	--	*.027*
04...	*124*	*.92*	*.62*	*.008*	*.62*	*.04*	*.30*	*.21*	*.84*	*.26*	*.17*	--	*.030*
04...	--	*.98*	--	--	*.650*	*.030*	--	--	*.83*	--	--	*.630*	*.025*
04...	--	*.92*	--	--	*.630*	*.030*	--	--	*.80*	--	--	*.630*	*.028*
04...	--	*.96*	--	--	*.650*	*.030*	--	--	*.79*	--	--	*.640*	*.028*
04...	--	*.92*	--	--	*.640*	*.030*	--	--	*.87*	--	--	*.620*	*.026*
04...	--	*1.1*	*.63*	*.009*	*.641*	*.055*	*.41*	*.26*	*.90*	*.35*	*.21*	--	*.031*
04...	--	*1.0*	*.62*	*.009*	*.634*	*.053*	*.41*	*.25*	*.88*	*.36*	*.20*	--	*.031*
04...	--	*.94*	*.61*	*.009*	*.617*	*.056*	*.32*	*.25*	*.87*	*.26*	*.19*	--	*.030*
04...	--	*.99*	*.63*	*.011*	*.643*	*.054*	*.35*	*.22*	*.86*	*.30*	*.17*	--	*.035*
04...	--	*.90*	--	*<.010*	*.620*	*.056*	*.28*	*.13*	*.75*	*.22*	*.07*	--	*.035*
04...	--	*1.0*	--	*<.010*	*.640*	*.054*	*.36*	*.12*	*.76*	*.30*	*.07*	--	*.043*
04...	--	*.97*	--	*<.010*	*.623*	*.055*	*.34*	*.15*	*.78*	*.29*	*.10*	--	*.038*
04...	--	*.97*	--	*<.010*	*.622*	*.056*	*.35*	*.26*	*.89*	*.29*	*.21*	--	*.023*
04...	--	--	*.63*	*.007*	*.633*	*.052*	--	--	*.81*	--	--	--	--
04...	--	--	*.63*	*.007*	*.633*	*.051*	--	--	*.84*	--	--	--	--
04...	--	--	*.63*	*.007*	*.637*	*.052*	--	--	*.81*	--	--	--	--
04...	--	--	*.62*	*.007*	*.628*	*.051*	--	--	*.80*	--	--	--	--
10...	--	1.1	.75	.008	.76	E.03	.34	.22	.98	--	--	--	.056
13...	--	1.0	.57	.008	.58	.08	.46	.34	.92	.38	.26	--	.047
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	*<10*	--	--	*<.002*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	--	*<.004*
11...	137	.85	.36	.021	.38	.11	.47	.34	.73	.36	.23	--	.040
25...	--	.96	.43	.079	.51	.10	.45	.34	.85	.35	.24	--	.030
AUG													
02...	--	.96	.46	.046	.50	.13	.46	.35	.85	.32	.22	--	.029
02...	--	*.90*	*.44*	*.046*	*.48*	*.13*	*.42*	*.35*	*.84*	*.29*	*.23*	--	*.029*
SEP													
04...	--	--	--	*<.002*	*E.04*	*<.04*	*<.10*	*<.10*	--	--	--	--	*<.004*
04...	--	1.0	.61	.019	.63	.06	.39	.27	.90	.33	.22	--	.039
18...	--	1.0	.62	.049	.67	<.04	.35	--	--	--	--	--	.034

Date	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
JUN													
04...	.009	<.007	3.1	--	E10	17.3	105	--	--	--	--	--	--
04...	*.009*	*<.007*	*3.0*	--	*E7*	*17.0*	*105*	--	--	--	--	--	--
04...	*.011*	*<.007*	*2.9*	--	*E8*	*15.8*	*104*	--	--	--	--	--	--
04...	*.009*	*<.007*	*2.7*	--	*11*	*15.6*	*105*	--	--	--	--	--	--
04...	*<.010*	*<.010*	*2.3*	--	--	--	--	--	--	--	--	--	--
04...	*<.010*	*<.010*	*2.4*	--	--	--	--	--	--	--	--	--	--
04...	*<.010*	*<.010*	*2.4*	--	--	--	--	--	--	--	--	--	--
04...	*<.010*	*<.010*	*2.4*	--	--	--	--	--	--	--	--	--	--
04...	*.004*	*.004*	*2.4*	*2.2*	--	--	--	--	--	--	--	--	--
04...	*.004*	*.004*	*2.2*	*2.3*	--	--	--	--	--	--	--	--	--
04...	*.003*	*.004*	*2.4*	*2.2*	--	--	--	--	--	--	--	--	--
04...	*.005*	*.004*	*2.2*	*2.2*	--	--	--	--	--	--	--	--	--
04...	*.019*	*<.010*	*2.1*	*2.1*	--	--	--	--	--	--	--	--	--
04...	*.015*	*<.010*	*2.1*	*2.1*	--	--	--	--	--	--	--	--	--
04...	*.018*	*<.010*	*1.9*	*<1.9*	--	--	--	--	--	--	--	--	--
04...	*.005*	*<.010*	*2.2*	*<2.2*	--	--	--	--	--	--	--	--	--
04...	*.015*	*.005*	--	--	--	--	--	--	--	--	--	--	--
04...	*.014*	*.004*	--	--	--	--	--	--	--	--	--	--	--
04...	*.019*	*.004*	--	--	--	--	--	--	--	--	--	--	--
04...	*.015*	*.004*	--	--	--	--	--	--	--	--	--	--	--
10...	.013	E.006	3.9	--	--	--	--	--	--	--	--	--	--
13...	.016	.008	--	--	--	--	--	<.006	.017	<.015	<.005	.328	<.010
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	*<.004*	*<.007*	*<.6*	--	*<10*	*<2.0*	*<.6*	--	--	--	--	--	--
11...	.010	<.007	3.3	--	12	9.2	128	--	--	--	--	--	--
25...	.007	<.007	--	--	--	--	--	<.006	<.006	<.004	<.005	.211	<.010
AUG													
02...	.006	<.007	3.5	--	--	--	--	--	--	--	--	--	--
02...	*.008*	*<.007*	--	--	--	--	--	--	--	--	--	--	--
SEP													
04...	*<.004*	*<.007*	*<.6*	--	--	--	--	--	--	--	--	--	--
04...	.013	.008	--	--	--	--	--	--	--	--	--	--	--
18...	--	<.02	--	--	--	--	--	<.006	<.006	<.004	<.005	.058	<.010

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ- INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)
JUN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	<.002	<.041	<.020	<.005	<.018	<.003	E.028	106	<.005	<.005	<.02	<.002	<.009
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.002	<.041	<.020	<.005	<.018	<.003	E.035	126	<.005	<.005	<.02	<.002	<.009
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.002	<.041	<.020	<.005	<.018	<.003	E.041	115	<.005	<.005	<.02	<.002	<.009

Date	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)
JUN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	<.005	<.003	107	<.004	<.035	<.027	<.050	<.006	.105	<.006	<.002	<.007	<.003
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.005	<.003	104	<.004	<.035	<.027	<.050	<.006	.040	<.006	<.002	<.007	<.003
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.005	<.003	98.3	<.004	<.035	<.027	<.050	<.006	E.011	<.006	<.002	<.007	<.003

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

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)
JUN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011	<.02	.032	<.02	<.034
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.010	<.004	<.022	<.006	<.011	E.01	<.004	<.010	<.011	<.02	.015	<.02	<.034
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	<.010	<.004	<.022	<.006	<.011	.02	<.004	<.010	<.011	<.02	.011	<.02	<.034

Date	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN							
04...	--	--	--	--	5.2	4	--
04...	--	--	--	--	*5.4*	--	--
04...	--	--	--	--	*6.0*	--	--
04...	--	--	--	--	*5.7*	--	--
04...	--	--	--	--	*14*	--	--
04...	--	--	--	--	*20*	--	--
04...	--	--	--	--	*11*	--	--
04...	--	--	--	--	*1.0*	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--
10...	--	--	--	--	14	50	--
13...	<.02	<.005	<.002	<.009	12	2140	--
13...	--	--	--	--	*.6*	--	--
JUL							
11...	--	--	--	--	*<.1*	--	--
11...	--	--	--	--	7.8	201	--
25...	<.02	<.005	<.002	<.009	7.0	111	95
AUG							
02...	--	--	--	--	6.1	95.2	--
02...	--	--	--	--	*5.8*	--	--
SEP							
04...	--	--	--	--	*<.1*	--	--
04...	--	--	--	--	5.8	63.9	--
18...	<.02	<.005	<.002	<.009	3.9	29.0	--

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

01580000 DEER CREEK AT ROCKS, MD

LOCATION.--Lat 39°37'47.9", long 76°24'11.9", Harford County, Hydrologic Unit 02050306, on right bank 0.3 mi upstream from bridge on Cherry Hill Road, 0.8 mi southeast of Rocks, 1.2 mi upstream from Stirrup Run, and 23.5 mi upstream from mouth.

DRAINAGE AREA.--94.4 mi^2.

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for November and December 1926, published in WSP 1302.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1927-36 (maximum and minimum only 1927-29, maximum only 1930-32, 1936).

GAGE.--Water-stage recorder. Concrete control since Sept. 7, 1938. Datum of gage is 250.40 ft above National Geodetic Vertical Datum of 1929.(Baltimore City bench mark).

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Prior to 1965, some regulation at low flow by mills upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1888, that of Aug. 23, 1933.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	2115	*332	*3.09	No peak greater than base discharge.			

Minimum discharge, 3.5 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	32	36	35	56	32	53	51	33	19	11	112
2	33	32	34	38	52	33	47	77	31	18	9.8	62
3	32	32	33	37	46	103	45	69	28	18	57	34
4	31	32	33	33	44	60	46	52	28	16	29	26
5	29	30	33	33	e39	45	43	48	28	15	17	21
6	29	31	33	38	e42	42	42	45	61	13	15	18
7	28	33	33	55	42	40	40	44	100	13	13	17
8	28	31	36	e41	40	39	39	42	44	14	11	16
9	29	31	51	e40	38	37	39	43	37	16	10	15
10	29	30	41	39	38	46	45	45	33	25	9.3	15
11	30	30	44	86	40	42	39	39	31	17	8.7	14
12	31	30	41	75	38	38	38	42	29	15	8.2	12
13	31	31	37	50	36	49	40	48	34	14	7.8	11
14	32	31	40	43	34	59	43	53	78	19	7.2	12
15	49	31	50	40	35	47	52	43	56	23	6.4	14
16	37	31	41	38	36	42	46	39	41	19	6.1	20
17	38	31	38	37	35	41	41	36	35	15	5.9	17
18	36	30	55	36	34	56	45	80	32	14	5.7	14
19	33	31	49	36	33	58	57	65	32	14	5.2	13
20	33	32	41	41	33	162	43	47	33	17	4.7	13
21	33	32	37	37	34	153	40	42	29	13	4.2	13
22	33	31	35	37	34	84	43	40	26	12	4.0	13
23	33	31	34	38	32	66	41	38	25	13	5.4	14
24	33	31	40	70	32	59	37	36	24	11	12	14
25	32	43	38	82	32	55	38	35	23	12	27	13
26	30	78	35	53	32	54	39	34	22	13	14	18
27	30	43	e32	47	34	90	36	58	22	17	11	94
28	31	37	e39	43	33	64	129	66	22	17	14	65
29	31	36	e34	42	---	56	89	47	21	16	54	37
30	32	36	e34	41	---	53	59	40	19	15	39	26
31	32	---	e33	54	---	50	---	36	---	14	23	---
TOTAL	1004	1020	1190	1415	1054	1855	1434	1480	1057	487	455.6	783
MEAN	32.4	34.0	38.4	45.6	37.6	59.8	47.8	47.7	35.2	15.7	14.7	26.1
MAX	49	78	55	86	56	162	129	80	100	25	57	112
MIN	28	30	32	33	32	32	36	34	19	11	4.0	11
CFSM	0.34	0.36	0.41	0.48	0.40	0.63	0.51	0.51	0.37	0.17	0.16	0.28
IN.	0.40	0.40	0.47	0.56	0.42	0.73	0.57	0.58	0.42	0.19	0.18	0.31

e Estimated

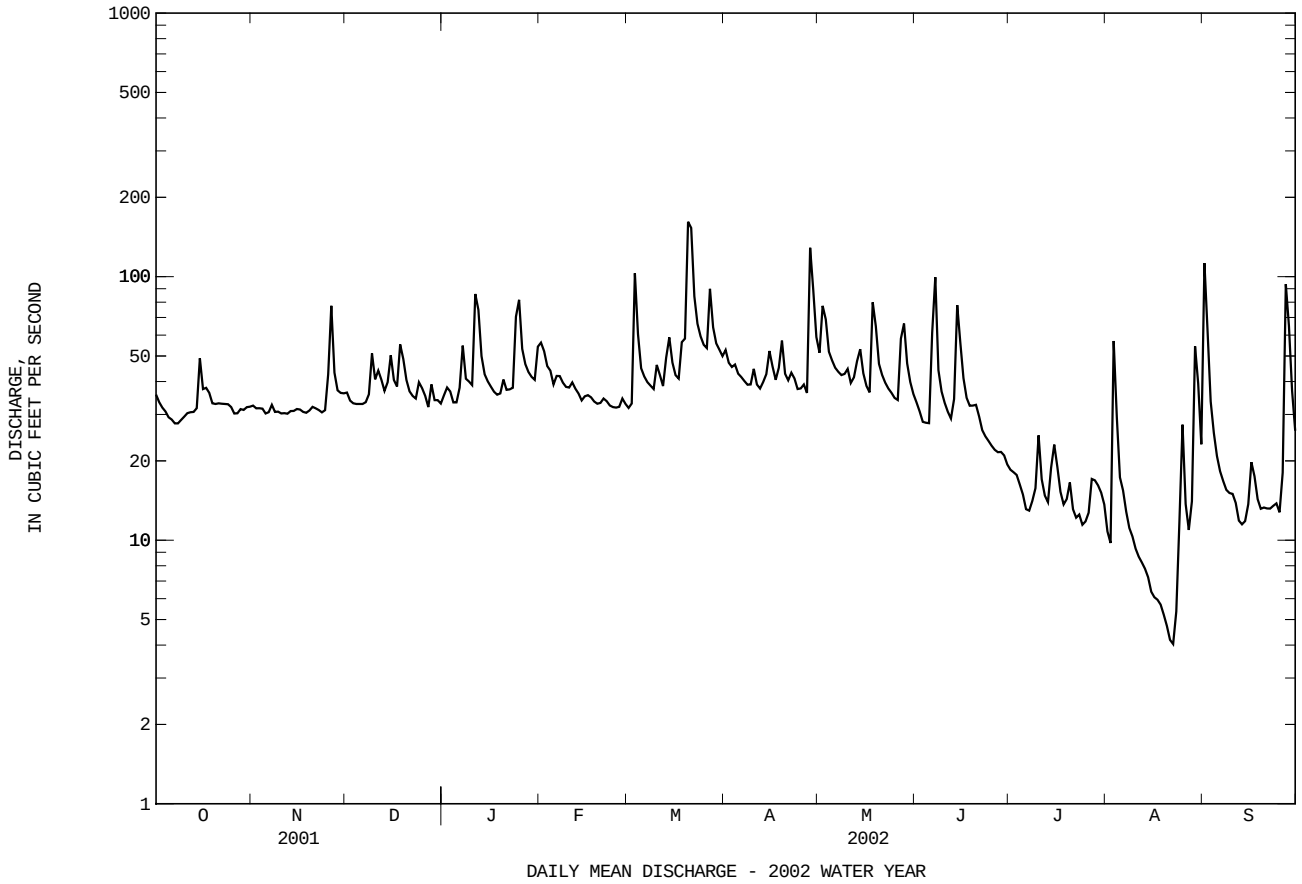
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2002, BY WATER YEAR (WY)

MEAN	82.9	101	116	142	160	170	168	148	122	102	92.5	85.8
MAX	317	266	392	422	415	486	379	421	576	279	362	345
(WY)	1980	1927	1997	1996	1979	1994	1984	1989	1972	1972	1933	1975
MIN	26.0	32.5	37.8	41.7	37.6	59.8	47.8	47.7	35.2	15.7	14.7	26.1
(WY)	1964	1932	1966	1966	2002	2002	2002	2002	2002	2002	2002	2002

01580000 DEER CREEK AT ROCKS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1927 - 2002	
ANNUAL TOTAL	27928		13234.6			
ANNUAL MEAN	76.5		36.3		124	
HIGHEST ANNUAL MEAN					224	1972
LOWEST ANNUAL MEAN					36.3	2002
HIGHEST DAILY MEAN	637	Mar 30	162	Mar 20	6610	Jun 22 1972
LOWEST DAILY MEAN	24	(a)	4.0	Aug 22	4.0	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	26	Sep 13	5.0	Aug 17	5.0	Aug 17 2002
MAXIMUM PEAK FLOW			332	Mar 20	(b)13600	Aug 23 1933
MAXIMUM PEAK STAGE			3.09	Mar 20	(c)17.70	Aug 23 1933
INSTANTANEOUS LOW FLOW			3.5	Aug 22	3.5	Aug 22 2002
ANNUAL RUNOFF (CFSM)	0.81		0.38		1.31	
ANNUAL RUNOFF (INCHES)	11.01		5.22		17.84	
10 PERCENT EXCEEDS	142		56		210	
50 PERCENT EXCEEDS	56		34		92	
90 PERCENT EXCEEDS	31		13		44	

a Sept. 18, 19.
b From rating curve extended above 3,000 ft^3/s, on basis of slope-area measurements at gage heights 13.3 and 17.7 ft.
c From floodmarks.



01581500 BYNUM RUN AT BEL AIR, MD

LOCATION.--Lat 39°32'29.3", long 76°19'48.4", Harford County, Hydrologic Unit 02060003, on right bank 30 ft downstream from bridge on State Highway 22, 1.0 mi east of Bel Air, and 8.5 mi upstream from mouth.

DRAINAGE AREA.--8.52 mi^2.

PERIOD OF RECORD.--June 1944 to April 1951, July 1955 to September 1970, June 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 251.43 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater from leaves), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 440 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0745	*330	*2.93	No peak greater than base discharge.			

Minimum discharge, 0.01 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	e2.1	2.2	2.0	8.0	2.3	9.1	4.5	1.7	0.99	0.33	44
2	2.2	e1.8	1.8	2.0	5.4	8.9	5.8	57	1.5	0.94	0.31	5.0
3	e1.8	e1.7	1.9	2.0	4.1	74	5.5	8.7	1.5	0.98	3.6	1.7
4	e1.7	e1.6	1.9	2.0	3.5	9.8	5.0	5.3	1.4	0.84	0.62	1.1
5	e1.6	e1.5	1.8	1.9	3.1	5.5	4.5	4.7	1.5	0.71	1.9	0.75
6	e1.5	e1.4	1.6	17	3.0	4.5	4.5	4.1	11	0.62	1.7	0.67
7	e1.4	e1.4	1.6	16	3.7	3.7	4.2	4.0	6.0	0.65	0.36	0.67
8	e1.3	e1.3	5.6	6.8	3.2	3.2	4.1	3.6	2.2	0.67	0.27	0.60
9	e1.2	e1.3	6.3	4.6	2.9	3.4	4.6	4.4	1.6	15	0.22	0.60
10	e1.1	e2.0	2.4	3.7	2.8	23	5.2	4.3	1.4	10	0.19	0.56
11	e1.0	e1.6	5.9	25	3.2	4.7	4.2	3.3	1.3	1.7	0.15	0.57
12	e1.0	e1.5	2.9	8.1	2.9	3.8	3.8	17	1.2	1.2	0.13	0.54
13	e2.0	e1.4	2.1	5.6	2.8	31	4.0	9.5	33	0.95	0.10	0.55
14	7.4	e1.3	5.5	4.1	2.8	9.9	4.0	5.0	36	1.6	0.09	0.71
15	9.8	e1.3	4.1	3.2	2.8	6.5	4.0	3.8	6.0	1.1	0.08	1.5
16	4.2	e1.8	2.3	2.9	3.1	5.0	3.7	3.2	3.3	0.85	0.09	3.1
17	7.6	e1.6	2.7	2.8	2.4	4.9	3.5	3.0	2.3	0.69	0.08	0.95
18	3.4	e1.4	13	2.8	2.3	23	3.4	27	2.9	0.60	0.06	0.67
19	e2.4	e1.7	3.4	2.9	2.5	9.2	4.0	6.2	2.4	0.57	0.04	0.57
20	e2.6	e1.8	2.6	4.0	2.8	90	3.8	3.9	2.4	0.53	0.03	0.57
21	e3.6	e1.5	2.1	3.9	3.0	18	3.3	3.1	1.7	0.51	0.02	0.57
22	e2.5	e1.7	1.9	4.7	2.6	8.5	5.7	2.7	1.5	0.46	0.01	0.55
23	e2.2	e1.6	1.9	9.3	2.8	6.7	3.4	2.6	1.5	8.7	0.09	0.48
24	e2.0	3.1	6.4	42	2.4	5.9	3.2	2.4	1.4	5.6	9.3	0.43
25	e1.8	37	2.7	11	2.5	5.3	3.5	2.3	1.4	1.2	1.3	0.45
26	e1.7	15	2.1	5.9	3.0	13	3.2	2.3	1.3	3.9	0.52	25
27	e1.6	4.1	2.3	4.5	3.3	23	3.0	2.4	1.3	1.4	0.38	29
28	e2.1	2.8	2.3	4.1	2.5	7.7	58	2.4	1.2	1.7	5.4	17
29	e2.4	2.3	2.2	3.3	---	6.4	9.1	2.2	1.1	0.77	11	2.2
30	e1.8	2.4	2.0	3.2	---	5.8	5.4	2.1	1.0	0.52	1.5	1.3
31	e2.8	---	1.9	9.5	---	7.8	---	1.9	---	0.42	0.84	---
TOTAL	82.8	103.0	99.4	220.8	89.4	434.4	188.7	208.9	134.0	66.37	40.71	142.36
MEAN	2.67	3.43	3.21	7.12	3.19	14.0	6.29	6.74	4.47	2.14	1.31	4.75
MAX	9.8	37	13	42	8.0	90	58	57	36	15	11	44
MIN	1.0	1.3	1.6	1.9	2.3	2.3	3.0	1.9	1.0	0.42	0.01	0.43
CFSM	0.31	0.40	0.38	0.84	0.37	1.64	0.74	0.79	0.52	0.25	0.15	0.56
IN.	0.36	0.45	0.43	0.96	0.39	1.90	0.82	0.91	0.59	0.29	0.18	0.62

e Estimated

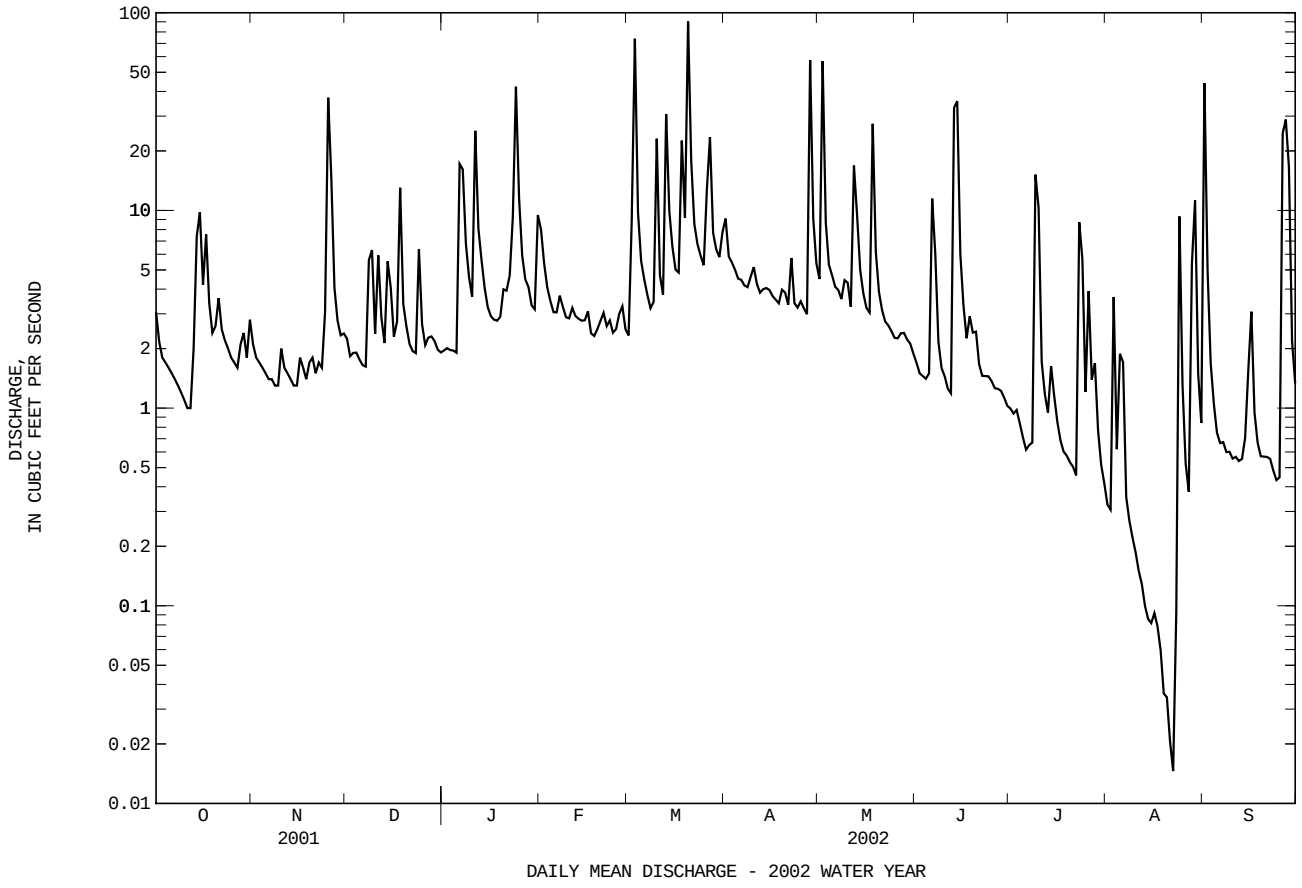
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1951, 1955 - 1970, 1999 - 2002, BY WATER YEAR (WY)

MEAN	4.51	8.10	12.1	12.6	16.3	17.8	13.6	9.99	7.49	6.08	8.02	9.74
MAX	14.3	20.8	36.5	33.4	35.2	38.2	29.7	25.2	16.5	21.7	63.0	90.1
(WY)	2000	1957	1958	1958	1961	1958	1961	1948	1970	1945	1967	1999
MIN	0.95	1.74	1.74	2.46	3.19	5.68	4.17	2.89	2.07	0.92	0.96	0.97
(WY)	1964	1966	1966	1966	2002	1966	1963	1963	1969	1963	1966	1962

01581500 BYNUM RUN AT BEL AIR, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 1951, 1955 - 1970, 1999 - 2002	
ANNUAL TOTAL	3226.69		1810.84			
ANNUAL MEAN	8.84		4.96		10.2	
HIGHEST ANNUAL MEAN					19.2	1958
LOWEST ANNUAL MEAN					4.96	2002
HIGHEST DAILY MEAN	210	Mar 30	90	Mar 20	2320	Sep 16 1999
LOWEST DAILY MEAN	0.52	Aug 9	0.01	Aug 22	0.01	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	0.64	Aug 4	0.05	Aug 16	0.05	Aug 16 2002
MAXIMUM PEAK FLOW			330	May 2	(a)7330	Sep 16 1999
MAXIMUM PEAK STAGE			2.93	May 2	9.91	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.01	(b)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.04		0.58		1.19	
ANNUAL RUNOFF (INCHES)	14.09		7.91		16.19	
10 PERCENT EXCEEDS	18		9.3		18	
50 PERCENT EXCEEDS	3.7		2.5		4.8	
90 PERCENT EXCEEDS	1.2		0.57		1.6	

a From rating curve extended above 560 ft^3/s on basis of contracted-opening measurement at gage height 6.18 ft.
b Aug. 21-23.
c Sept. 8-10, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581700 WINTERS RUN NEAR BENSON, MD

LOCATION.--Lat 39°31'11.8", long 76°22'22.7", Harford County, Hydrologic Unit 02060003, on left bank 30 ft downstream from bridge on U.S. Highway 1, 0.1 mi upstream from Heavenly Waters, 1.2 mi northeast of Benson, 1.8 mi southwest of Bel Air, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--34.8 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 195 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good below 200 ft^3/s and fair above except those for estimated daily discharges (equipment malfunction), which are fair. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0845	*356	*3.03	No peak greater than base discharge.			

Minimum discharge, 0.34 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	9.1	15	13	23	12	23	19	9.5	5.4	2.4	85
2	12	11	14	13	20	14	19	80	8.6	5.3	2.1	20
3	9.8	9.1	13	14	17	92	19	31	7.9	5.1	8.7	10
4	11	10	14	13	16	27	18	23	8.0	4.6	4.3	7.6
5	9.5	e9.6	14	14	15	20	17	18	8.1	4.0	3.1	6.1
6	9.6	e8.8	14	21	16	17	17	16	17	3.5	4.8	5.2
7	9.3	8.6	13	31	17	15	16	18	19	3.4	2.4	4.8
8	8.8	11	17	23	18	15	16	15	11	3.8	1.8	4.4
9	e8.8	10	24	17	14	15	17	16	9.0	13	1.6	4.2
10	e9.4	9.8	15	16	14	26	18	16	8.4	17	1.5	4.0
11	10	8.9	20	38	15	16	16	14	8.2	6.0	1.4	3.6
12	9.6	9.9	16	25	14	15	16	21	7.8	4.6	1.4	3.1
13	8.8	9.7	14	19	14	34	16	26	34	4.3	1.3	3.1
14	9.2	9.0	20	17	14	24	16	18	50	6.0	1.1	3.6
15	21	11	17	17	14	20	17	15	21	6.4	0.92	5.2
16	10	10	14	15	16	18	15	15	15	4.9	0.81	9.8
17	15	9.2	15	16	14	17	15	13	11	4.0	0.77	5.0
18	11	10	27	14	12	29	17	41	11	3.5	0.68	4.3
19	e9.6	10	19	18	12	25	27	25	12	3.4	0.61	4.0
20	e8.8	9.4	17	19	13	118	20	18	10	3.2	0.53	4.3
21	e8.4	10	e16	16	14	57	16	15	9.7	2.9	0.43	4.3
22	e14	9.0	14	16	e13	32	19	14	8.6	2.8	0.38	3.9
23	8.8	10	e13	18	e13	25	17	13	8.0	10	0.42	3.5
24	10	9.2	e22	50	12	22	14	13	7.6	9.7	9.9	3.5
25	9.8	42	e18	35	12	20	14	12	7.0	4.5	6.2	3.4
26	8.7	44	e16	23	13	23	14	12	6.6	7.1	2.8	19
27	e8.8	20	13	22	13	45	14	13	6.4	6.3	2.4	44
28	e9.0	17	15	18	12	25	91	12	6.2	6.2	5.7	33
29	e9.6	15	13	16	---	22	36	12	5.8	4.9	21	11
30	9.2	17	13	16	---	21	24	11	5.6	3.7	8.2	7.5
31	9.4	---	13	22	---	22	---	10	---	2.9	5.8	---
TOTAL	319.9	387.3	498	625	410	883	614	595	358.0	172.4	105.45	330.4
MEAN	10.3	12.9	16.1	20.2	14.6	28.5	20.5	19.2	11.9	5.56	3.40	11.0
MAX	21	44	27	50	23	118	91	80	50	17	21	85
MIN	8.4	8.6	13	13	12	12	14	10	5.6	2.8	0.38	3.1
CFSM	0.30	0.37	0.46	0.58	0.42	0.82	0.59	0.55	0.34	0.16	0.10	0.32
IN.	0.34	0.41	0.53	0.67	0.44	0.94	0.66	0.64	0.38	0.18	0.11	0.35

e Estimated

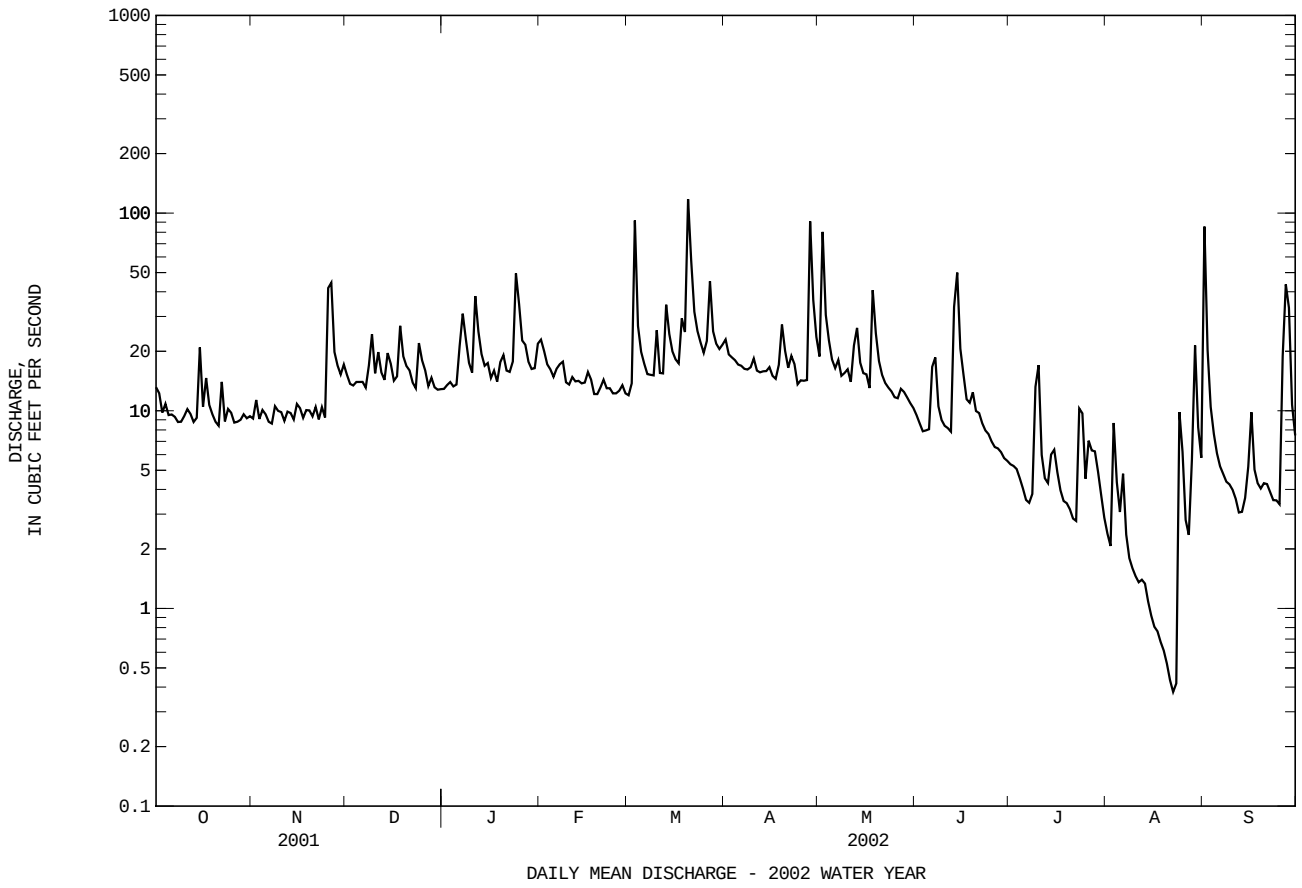
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	35.4	44.3	53.1	62.9	66.4	69.1	62.8	58.3	49.5	41.6	35.7	39.6
MAX	94.0	93.5	149	167	151	163	134	162	204	133	137	140
(WY)	1980	1997	1997	1996	1979	1994	1983	1989	1972	1975	1971	1975
MIN	10.3	12.5	16.1	16.9	14.6	22.5	20.5	17.9	11.9	5.56	3.40	10.4
(WY)	2002	1982	2002	1981	2002	1981	2002	1969	2002	2002	2002	1986

01581700 WINTERS RUN NEAR BENSON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	10025.0		5298.45			
ANNUAL MEAN	27.5		14.5		51.3	
HIGHEST ANNUAL MEAN					86.0	1972
LOWEST ANNUAL MEAN					14.5	2002
HIGHEST DAILY MEAN	323	Mar 30	118	Mar 20	3000	Jun 22 1972
LOWEST DAILY MEAN	7.1	Sep 13	0.38	Aug 22	0.38	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	8.1	Sep 13	0.55	Aug 17	0.55	Aug 17 2002
MAXIMUM PEAK FLOW			356	May 2	(a)7600	Jun 22 1972
MAXIMUM PEAK STAGE			3.03	May 2	11.60	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.34	(b)	0.34	(b)
ANNUAL RUNOFF (CFSM)	0.79		0.42		1.47	
ANNUAL RUNOFF (INCHES)	10.72		5.66		20.02	
10 PERCENT EXCEEDS	47		23		86	
50 PERCENT EXCEEDS	22		13		36	
90 PERCENT EXCEEDS	9.2		3.6		15	

a From rating curve extended above 4,600 ft^3/s.
b Aug. 22, 23, 2002.



01581752 PLUMTREE RUN NEAR BEL AIR, MD

LOCATION.--Lat 39°29'47.0", long 76°20'52.0", Harford County, Hydrologic Unit 02060003, on downstream side of bridge on Plumtree Road, 0.7 mi upstream from Atkisson Reservoir, and 2.5 mi south of Bel Air.

DRAINAGE AREA.--2.50 mi^2.

PERIOD OF RECORD.--October 2001 to September 2002.

GAGE.--Water-stage recorder. Datum of gage is 170 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater), which are fair. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 215 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0745	*219	*3.54	No other peak greater than base discharge.			

Minimum discharge, 0.07 ft^3/s, Aug. 19-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	e0.47	0.81	0.88	2.1	0.79	3.3	1.3	0.67	0.34	0.18	15
2	0.68	e0.43	0.61	1.0	1.3	4.1	1.6	19	0.58	0.32	0.15	1.4
3	0.64	e0.40	0.59	0.97	1.0	17	1.5	2.9	0.52	0.31	2.7	0.52
4	0.62	e0.40	0.59	0.85	0.94	2.0	1.4	1.7	0.50	0.30	0.27	0.41
5	0.58	e0.39	0.59	0.88	0.90	1.3	1.3	1.6	0.53	0.26	0.62	0.32
6	0.64	e0.39	0.59	7.5	0.90	1.1	1.2	1.4	5.3	0.24	1.2	0.30
7	0.59	e0.39	0.59	3.9	1.2	1.0	1.2	1.3	2.2	0.25	0.20	0.27
8	0.53	e0.38	3.1	1.3	0.95	1.0	1.1	1.2	0.75	0.26	0.15	0.26
9	0.54	e0.38	2.1	1.1	0.85	0.96	1.4	1.4	0.65	6.3	0.14	0.23
10	0.56	e0.38	0.78	0.91	0.85	4.4	1.6	1.4	0.56	3.1	0.14	0.23
11	0.56	e0.38	2.8	6.2	0.94	1.0	1.2	1.0	0.50	0.50	0.12	0.22
12	0.56	e0.37	0.94	1.4	0.87	0.93	1.2	4.7	0.44	0.39	0.22	0.19
13	0.56	e0.37	0.86	1.0	0.83	8.3	1.2	2.2	16	0.36	0.21	0.18
14	2.7	e0.37	2.8	0.90	0.80	1.8	1.2	1.2	15	0.71	0.14	0.22
15	3.6	e0.37	1.3	0.89	0.80	1.4	1.2	1.3	2.0	0.41	0.11	0.47
16	0.91	e0.44	0.81	0.81	0.81	1.3	1.2	0.97	0.98	0.31	0.12	0.82
17	1.8	e0.40	1.0	0.80	0.78	1.4	1.2	0.90	0.78	0.26	0.11	0.25
18	0.67	e0.38	4.9	0.78	0.72	6.1	1.0	11	1.3	0.25	0.08	0.20
19	e0.62	e0.42	1.0	0.99	1.3	1.9	1.4	1.6	0.93	0.25	0.08	0.19
20	e0.56	e0.45	0.87	1.7	1.4	24	1.3	1.2	0.68	0.23	0.07	0.20
21	e0.60	e0.41	0.85	1.3	1.4	4.2	1.0	1.0	0.57	0.21	0.07	0.20
22	e0.56	e0.40	0.81	1.6	0.76	2.2	2.5	1.0	0.52	0.22	0.07	0.21
23	e0.56	e0.39	0.80	2.9	0.75	1.8	1.1	0.96	0.49	2.1	0.09	0.17
24	e0.52	e0.47	3.4	8.9	0.70	1.7	0.96	0.94	0.46	1.1	8.8	0.15
25	e0.48	17	1.0	2.3	0.73	1.5	1.2	0.86	0.44	0.43	1.1	0.15
26	e0.47	3.9	0.90	1.4	0.76	5.4	1.0	0.85	0.46	3.0	0.26	14
27	e0.50	1.0	0.85	1.2	1.4	5.9	0.90	0.93	0.42	0.56	0.20	9.0
28	e0.46	0.82	0.86	1.0	0.76	1.9	21	0.83	0.40	1.3	4.7	4.0
29	e0.52	0.75	0.81	0.96	---	1.7	3.1	0.72	0.39	0.45	5.0	0.75
30	e0.47	0.75	0.81	0.97	---	1.6	1.4	0.66	0.37	0.30	0.54	0.52
31	e0.52	---	0.84	3.3	---	3.5	---	0.65	---	0.24	0.34	---
TOTAL	24.78	33.85	39.56	60.59	27.50	113.18	61.86	68.67	55.39	25.26	28.18	51.03
MEAN	0.80	1.13	1.28	1.95	0.98	3.65	2.06	2.22	1.85	0.81	0.91	1.70
MAX	3.6	17	4.9	8.9	2.1	24	21	19	16	6.3	8.8	15
MIN	0.46	0.37	0.59	0.78	0.70	0.79	0.90	0.65	0.37	0.21	0.07	0.15
CFSM	0.32	0.45	0.51	0.78	0.39	1.46	0.82	0.89	0.74	0.33	0.36	0.68
IN.	0.37	0.50	0.59	0.90	0.41	1.68	0.92	1.02	0.82	0.38	0.42	0.76

e Estimated

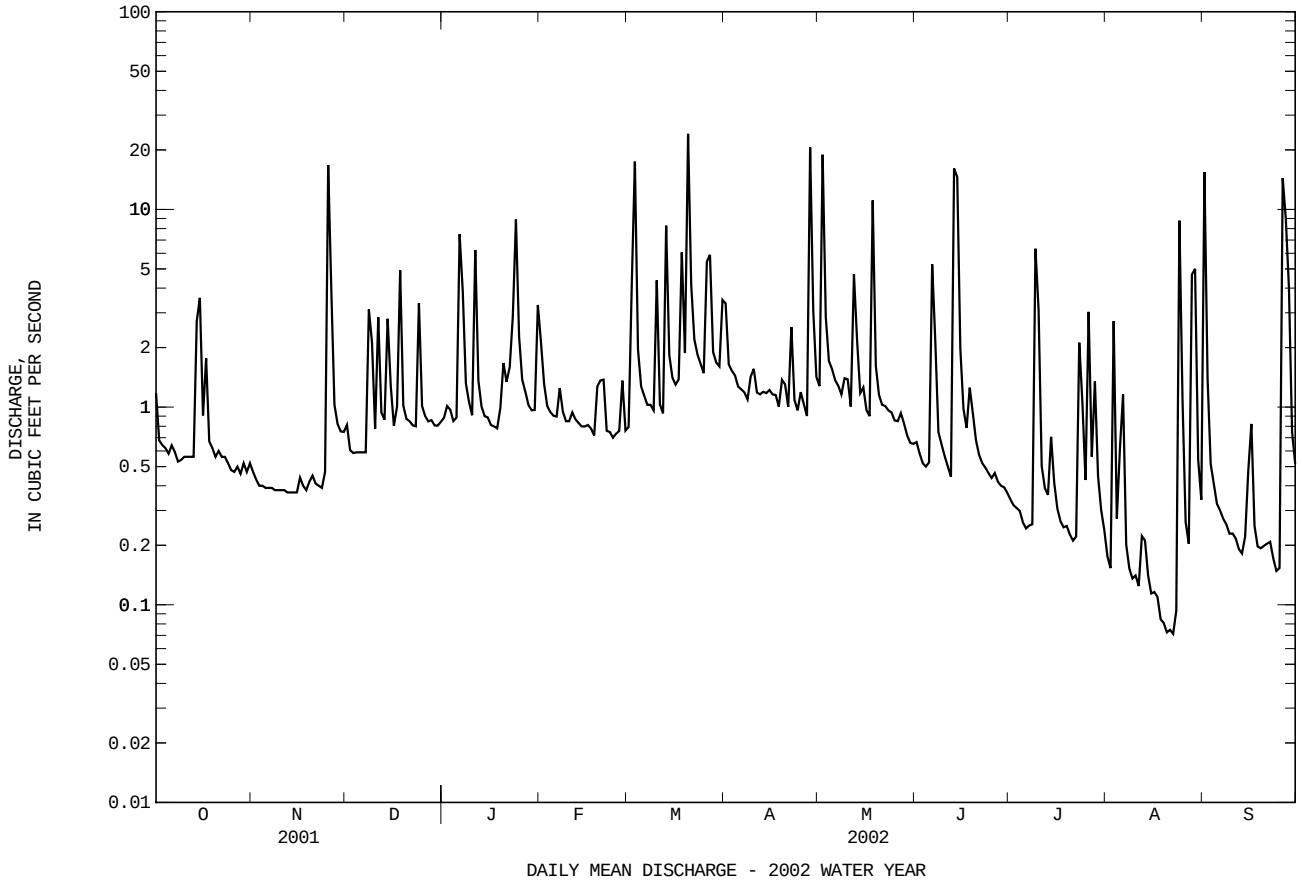
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 2002, BY WATER YEAR (WY)

MEAN	0.80	1.13	1.28	1.95	0.98	3.65	2.06	2.22	1.85	0.81	0.91	1.70
MAX	0.80	1.13	1.28	1.95	0.98	3.65	2.06	2.22	1.85	0.81	0.91	1.70
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002
MIN	0.80	1.13	1.28	1.95	0.98	3.65	2.06	2.22	1.85	0.81	0.91	1.70
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581752 PLUMTREE RUN NEAR BEL AIR, MD--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR	
ANNUAL TOTAL	589.85	
ANNUAL MEAN	1.62	
HIGHEST DAILY MEAN	24	Mar 20
LOWEST DAILY MEAN	0.07	(a)
ANNUAL SEVEN-DAY MINIMUM	0.08	Aug 17
MAXIMUM PEAK FLOW	(b)219	May 2
MAXIMUM PEAK STAGE	3.54	May 2
INSTANTANEOUS LOW FLOW	0.07	(c)
ANNUAL RUNOFF (CFSM)	0.65	
ANNUAL RUNOFF (INCHES)	8.78	
10 PERCENT EXCEEDS	3.2	
50 PERCENT EXCEEDS	0.83	
90 PERCENT EXCEEDS	0.23	

a Aug. 20-22, 2002.
b From rating curve extended above 85 ft^3/s.
c Aug. 19-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD

LOCATION.--Lat 39°41'23.3", long 76°46'53.3", Baltimore County, Hydrologic Unit 02060003, on left bank 500 ft upstream from bridge on Gunpowder Road, 0.4 mi upstream from Walker Run, 0.5 mi north of Hoffmanville, and 0.7 mi upstream from Prettyboy Reservoir.

DRAINAGE AREA.--27.0 mi^2.

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 555 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1445	*154	*2.59	No peak greater than base discharge.			

Minimum discharge, 1.8 ft^3/s, Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	12	9.1	17	8.6	19	13	9.5	5.0	3.1	29
2	10	11	11	9.4	15	9.4	15	26	8.6	4.9	2.9	13
3	10	11	11	9.9	13	31	14	16	7.7	4.7	2.7	e9.0
4	10	11	10	10	12	14	14	13	7.3	4.4	2.6	e7.4
5	10	10	9.9	10	12	11	13	12	7.6	4.2	2.5	e6.2
6	10	10	9.8	12	11	11	12	12	10	3.9	2.6	5.5
7	10	10	9.8	17	11	11	12	12	11	4.1	2.4	5.0
8	10	10	12	14	11	10	12	12	8.4	4.3	2.2	4.8
9	9.7	9.9	19	13	11	10	12	12	7.8	3.9	2.2	4.6
10	10	9.8	13	15	11	15	13	13	7.7	4.6	2.1	4.5
11	11	9.8	14	47	12	11	12	11	6.5	4.0	2.0	4.5
12	11	9.6	13	22	10	11	11	13	6.2	3.4	2.0	4.5
13	11	9.4	12	16	10	17	11	21	14	3.3	2.1	4.6
14	12	9.4	16	14	10	17	13	22	18	5.3	2.0	4.6
15	22	9.7	17	13	10	13	19	14	12	5.3	2.0	5.0
16	13	9.4	13	13	10	13	14	11	9.0	4.1	2.1	7.1
17	17	9.4	12	12	9.9	12	12	9.6	7.8	3.5	2.1	6.0
18	12	9.4	24	12	9.2	19	11	30	8.2	3.2	2.1	5.4
19	12	9.4	16	12	9.1	17	10	15	9.9	3.3	2.1	5.3
20	12	9.6	13	13	9.6	68	10	12	8.4	3.2	2.0	5.3
21	11	9.6	12	12	9.8	36	10	11	7.1	3.1	2.0	5.8
22	11	9.4	11	12	9.5	22	12	10	6.5	3.1	2.0	7.5
23	12	9.4	11	15	9.4	18	10	9.4	6.1	2.7	2.3	9.5
24	12	9.4	13	26	9.1	16	9.8	9.1	5.9	2.8	13	6.9
25	12	23	11	21	9.0	15	10	9.0	5.7	3.0	6.2	5.8
26	11	25	11	15	9.2	17	10	8.9	5.6	6.8	3.9	12
27	11	13	10	13	9.6	35	9.8	13	5.8	6.5	3.7	44
28	11	12	10	13	8.8	19	38	18	5.8	11	7.3	28
29	11	12	10	12	---	17	19	20	5.8	5.3	50	11
30	11	12	8.8	12	---	15	14	12	5.2	4.2	11	8.3
31	11	---	8.9	18	---	16	---	10	---	3.5	7.3	---
TOTAL	357.7	333.6	384.2	462.4	298.2	555.0	401.6	430.0	245.1	134.6	154.5	280.1
MEAN	11.5	11.1	12.4	14.9	10.7	17.9	13.4	13.9	8.17	4.34	4.98	9.34
MAX	22	25	24	47	17	68	38	30	18	11	50	44
MIN	9.7	9.4	8.8	9.1	8.8	8.6	9.8	8.9	5.2	2.7	2.0	4.5
CFSM	0.43	0.41	0.46	0.55	0.39	0.66	0.50	0.51	0.30	0.16	0.18	0.35
IN.	0.49	0.46	0.53	0.64	0.41	0.76	0.55	0.59	0.34	0.19	0.21	0.39

e Estimated

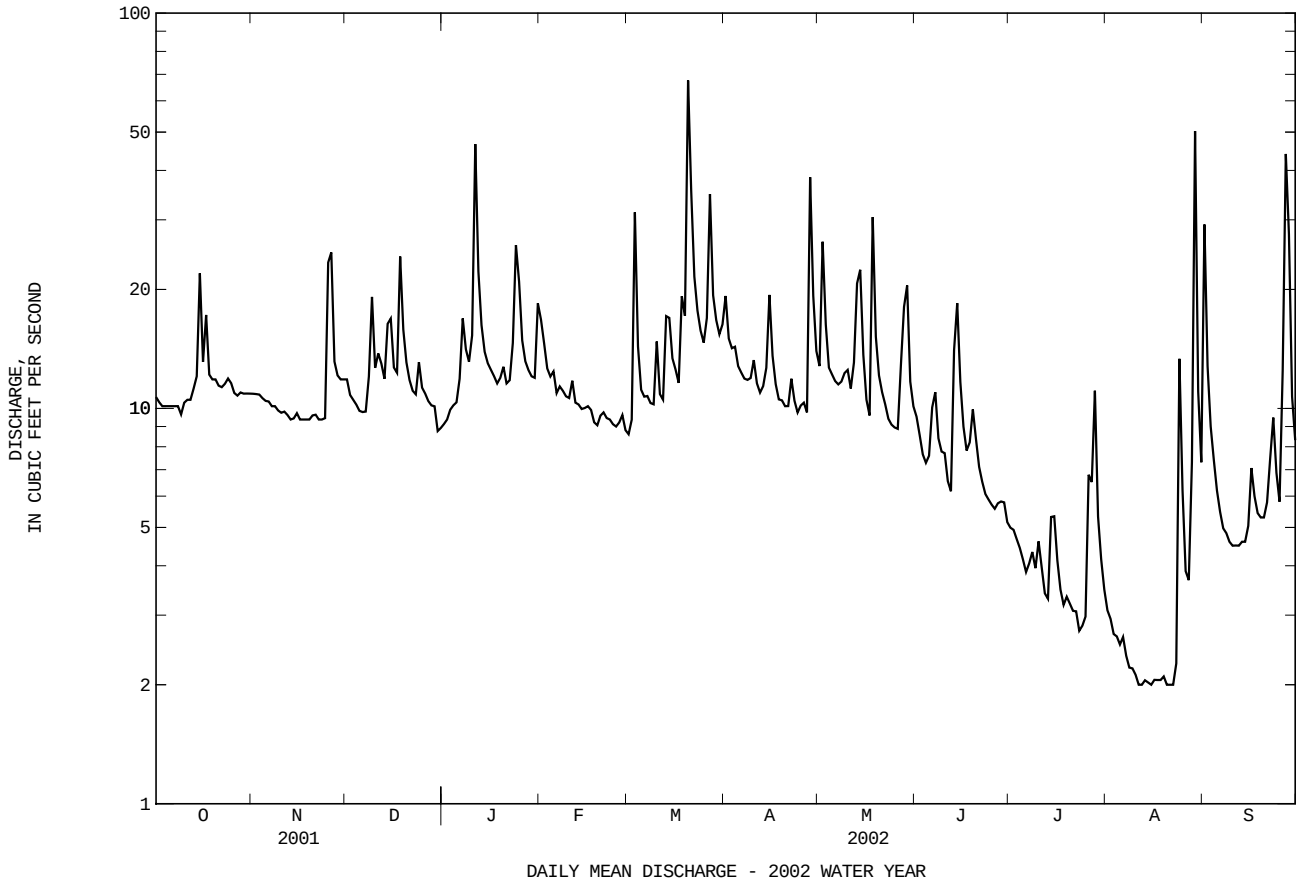
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	14.8	14.2	18.5	19.6	22.0	30.2	27.8	25.5	21.5	14.7	10.9	17.2
MAX	18.1	17.3	24.6	24.3	33.3	42.5	42.2	34.7	29.1	25.0	16.0	28.9
(WY)	2001	2001	2001	2001	2001	2001	2001	2000	2001	2000	2000	2000
MIN	11.5	11.1	12.4	14.9	10.7	17.9	13.4	13.9	8.17	4.34	4.98	9.34
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581810 GUNPOWDER FALLS AT HOFFMANVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	8300.6		4037.0			
ANNUAL MEAN	22.7		11.1		18.0	
HIGHEST ANNUAL MEAN					24.8	2001
LOWEST ANNUAL MEAN					11.1	2002
HIGHEST DAILY MEAN	179	Jun 23	68	Mar 20	179	Jun 23 2001
LOWEST DAILY MEAN	6.7	(a)	2.0	(b)	2.0	(b)
ANNUAL SEVEN-DAY MINIMUM	7.1	Sep 13	2.0	Aug 10	2.0	Aug 10 2002
MAXIMUM PEAK FLOW			154	Mar 20	(c)643	Jun 23 2001
MAXIMUM PEAK STAGE			2.59	Mar 20	4.55	Jun 23 2001
INSTANTANEOUS LOW FLOW			1.8	Aug 17	1.8	Aug 17 2002
ANNUAL RUNOFF (CFSM)	0.84		0.41		0.66	
ANNUAL RUNOFF (INCHES)	11.44		5.56		9.03	
10 PERCENT EXCEEDS	42		17		35	
50 PERCENT EXCEEDS	17		10		13	
90 PERCENT EXCEEDS	9.4		3.8		5.8	

a Sept. 18, 19.
b Aug. 11-15, 20-22, 2002.
c From rating curve extended above 380 ft^3/s.



01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD

LOCATION.--Lat 39°39'17.3", long 76°46'51.3", Baltimore County, Hydrologic Unit 02060003, on left bank off of Gunpowder Road (formerly Upper Beckleysville Road), 1000 ft upstream from Pretty Boy Reservoir, 0.9 mi north of Beckleysville, and 1.7 mi downstream from Indian Run.

DRAINAGE AREA.--7.68 mi^2.

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 540.00 ft above National Geodetic Vertical Datum of 1929, from topographic map. Previously operated as a low-flow site during water years 1977-82 at same site.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	1815	*48	*1.27	No peak greater than base discharge.			

Minimum discharge, 0.54 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	3.4	3.5	e3.2	5.3	3.0	5.4	4.7	3.4	2.6	1.1	9.4
2	3.7	3.4	3.4	e3.2	5.2	3.3	4.8	8.6	3.2	2.6	1.1	4.3
3	3.7	3.4	3.3	e3.3	4.2	8.6	4.6	5.9	2.7	2.3	1.1	3.2
4	3.6	3.4	3.1	e3.2	4.0	4.5	4.6	5.0	2.5	2.0	0.92	2.5
5	3.6	3.4	3.0	4.2	4.0	3.8	4.4	4.6	2.5	2.2	0.89	2.4
6	3.6	3.4	3.0	5.1	4.1	3.4	4.1	4.3	9.3	2.2	0.83	2.3
7	3.6	3.4	3.0	6.8	3.7	3.4	4.1	4.1	5.8	2.2	0.83	2.0
8	3.6	3.4	4.0	4.6	3.5	3.2	4.1	4.0	3.9	2.2	0.80	1.9
9	3.6	3.4	5.4	4.4	3.4	3.2	4.1	4.1	3.4	2.4	0.77	1.9
10	3.8	3.4	4.0	4.5	3.4	4.9	4.3	4.1	3.3	2.6	0.77	1.8
11	3.9	3.8	4.4	11	4.2	3.6	3.9	3.7	3.0	1.9	0.75	1.6
12	3.9	3.4	3.9	6.1	3.4	3.4	3.9	4.3	2.7	1.9	0.69	1.6
13	3.9	3.3	3.6	4.7	3.3	5.7	3.9	5.5	5.1	1.8	0.65	1.5
14	4.2	3.0	5.5	3.9	3.5	5.1	4.1	5.1	6.1	1.9	0.65	1.5
15	6.0	3.0	5.1	3.9	3.3	4.3	5.5	4.3	4.7	1.9	0.63	1.6
16	4.0	3.0	4.1	3.7	3.2	4.1	4.3	3.6	3.7	1.8	0.60	1.9
17	4.7	3.0	4.1	3.6	3.2	3.9	3.7	3.2	3.4	1.5	0.58	1.8
18	4.1	3.0	7.2	3.6	3.1	5.2	3.6	8.3	5.2	1.4	0.58	1.6
19	4.1	3.0	4.9	3.5	3.2	4.8	3.7	5.0	4.3	1.4	0.58	1.5
20	3.9	3.1	4.2	3.7	3.1	17	3.4	4.1	3.5	1.4	0.58	1.5
21	3.9	3.2	4.0	3.4	3.0	10	3.4	3.7	3.4	1.4	0.55	1.6
22	3.7	3.0	3.7	3.4	3.0	7.7	4.0	3.5	3.4	1.2	0.54	2.5
23	3.6	3.0	3.6	4.2	3.0	5.6	3.6	3.4	3.3	1.2	0.55	2.8
24	3.6	3.0	4.0	8.3	2.9	5.2	3.3	3.1	3.0	1.2	4.1	1.9
25	3.5	6.5	3.7	6.3	2.8	4.8	3.6	2.8	2.9	1.2	1.7	1.8
26	3.4	5.9	3.6	4.8	2.8	5.4	3.4	2.8	2.8	1.8	1.3	4.7
27	3.4	4.0	3.6	4.4	3.1	8.3	3.2	6.2	2.8	2.0	1.2	9.6
28	3.4	3.7	3.5	4.2	3.0	5.6	11	7.2	2.8	2.0	3.8	7.6
29	3.4	3.6	3.2	4.0	---	5.1	6.5	5.8	2.7	1.5	13	3.3
30	3.3	3.6	e3.2	3.9	---	4.9	5.4	4.2	2.6	1.3	3.5	2.8
31	3.3	---	e3.4	6.1	---	5.0	---	3.6	---	1.2	2.7	---
TOTAL	118.1	105.1	122.2	143.2	97.9	166.0	131.9	142.8	111.4	56.2	48.34	86.4
MEAN	3.81	3.50	3.94	4.62	3.50	5.35	4.40	4.61	3.71	1.81	1.56	2.88
MAX	6.0	6.5	7.2	11	5.3	17	11	8.6	9.3	2.6	13	9.6
MIN	3.3	3.0	3.0	3.2	2.8	3.0	3.2	2.8	2.5	1.2	0.54	1.5
CFSM	0.50	0.46	0.51	0.60	0.46	0.70	0.57	0.60	0.48	0.24	0.20	0.38
IN.	0.57	0.51	0.59	0.69	0.47	0.80	0.64	0.69	0.54	0.27	0.23	0.42

e Estimated

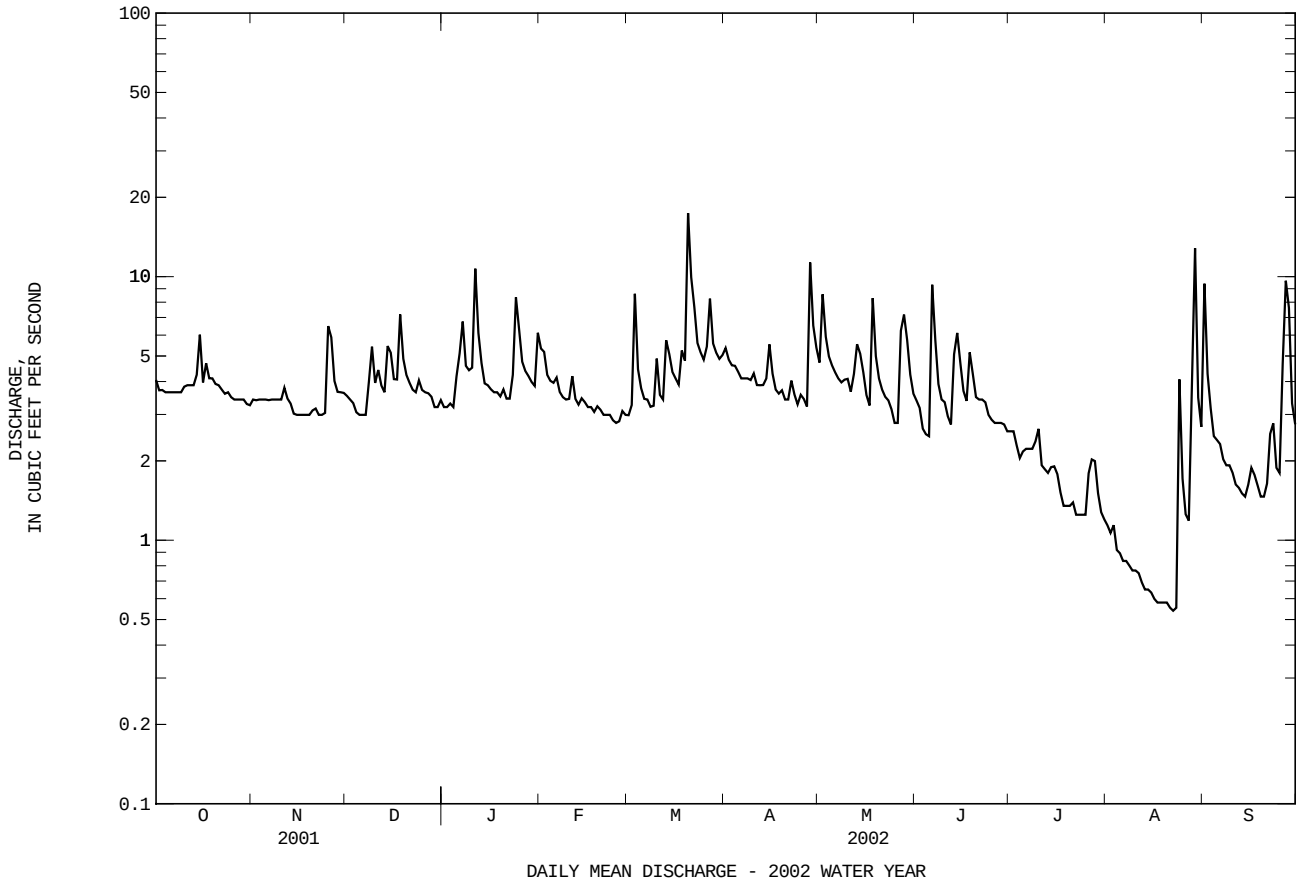
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	5.10	4.72	5.88	6.13	6.51	8.63	9.92	8.20	6.37	4.49	3.84	5.37
MAX	6.40	5.95	7.82	7.64	9.52	11.9	13.5	10.5	7.84	7.16	5.17	8.58
(WY)	2001	2001	2001	2001	2001	2001	2000	2000	2000	2000	2000	2000
MIN	3.81	3.50	3.94	4.62	3.50	5.35	4.40	4.61	3.71	1.81	1.56	2.88
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581830 GRAVE RUN NEAR BECKLEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	2524.1		1329.54			
ANNUAL MEAN	6.92		3.64		5.65	
HIGHEST ANNUAL MEAN					7.67	2001
LOWEST ANNUAL MEAN					3.64	2002
HIGHEST DAILY MEAN	34	Mar 30	17	Mar 20	40	Dec 17 2000
LOWEST DAILY MEAN	2.3	(a)	0.54	Aug 22	0.54	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 13	0.57	Aug 17	0.57	Aug 17 2002
MAXIMUM PEAK FLOW			48	Jun 6	(b)212	Sep 24 2001
MAXIMUM PEAK STAGE			1.27	Jun 6	3.57	Sep 24 2001
INSTANTANEOUS LOW FLOW			0.54	(c)	0.54	(c)
ANNUAL RUNOFF (CFSM)	0.90		0.47		0.74	
ANNUAL RUNOFF (INCHES)	12.23		6.44		10.00	
10 PERCENT EXCEEDS	12		5.4		10	
50 PERCENT EXCEEDS	5.6		3.5		4.7	
90 PERCENT EXCEEDS	3.2		1.5		2.3	

a Sept. 18, 19.
b From rating curve extended above 49 ft^3/s.
c Aug. 21-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD

LOCATION.--Lat 39°37'32.5", long 76°46'21.8", Baltimore County, Hydrologic Unit 02060003, on left bank, 20 ft downstream from bridge on Georges Creek Road, 1000 ft upstream from Pretty Boy Reservoir, and 1.0 mi southeast of Beckleysville.

DRAINAGE AREA.--15.8 mi^2.

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 540.00 ft above National Geodetic Vertical Datum of 1929, from topographic map. Previously operated as a low-flow site during water years 1977-82 at same site.

REMARKS.--Records good except those for estimated daily discharges (backwater,ice effect), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	1915	*337	*2.28	No peak greater than base discharge.			

Minimum discharge, 0.95 ft^3/s, Aug. 15-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	e6.7	7.5	e7.1	12	6.4	11	8.7	8.0	4.2	2.0	20
2	6.8	6.7	7.5	e7.1	10	6.8	9.3	21	6.9	4.1	1.9	8.5
3	6.6	6.7	6.7	7.3	9.5	21	9.2	11	6.2	3.9	3.2	6.1
4	6.3	6.7	6.7	7.1	9.2	10	8.9	8.8	6.0	3.6	3.4	5.1
5	6.3	6.4	6.7	6.8	9.3	8.4	8.2	8.4	5.9	3.3	2.4	4.3
6	6.3	6.5	6.7	8.1	9.1	8.2	7.6	7.7	42	3.0	2.3	3.9
7	6.3	6.7	6.7	11	8.5	7.8	7.5	7.3	15	3.1	1.8	3.6
8	6.5	6.7	7.9	8.8	8.2	7.5	7.5	6.8	8.4	3.2	1.6	3.5
9	6.7	6.7	12	8.1	7.8	7.5	7.8	6.8	7.5	3.3	1.5	3.5
10	6.7	6.7	8.4	10	7.6	9.4	8.7	6.7	6.9	5.4	1.3	3.4
11	6.7	6.7	9.1	38	8.3	7.7	7.8	6.2	6.5	3.7	1.2	3.2
12	6.7	6.7	8.8	15	7.7	7.5	7.5	6.6	6.2	3.2	1.1	3.2
13	6.7	6.5	8.5	11	7.5	12	7.1	9.3	8.2	3.1	1.1	3.2
14	6.9	6.3	12	10	7.4	12	7.6	8.7	12	4.7	1.0	3.1
15	13	6.3	12	9.6	7.2	9.7	11	6.8	9.1	4.5	0.96	3.4
16	7.1	6.3	9.4	9.1	7.2	9.0	8.4	5.9	7.6	3.4	0.99	4.1
17	9.0	6.3	9.2	8.5	7.1	8.7	7.2	5.5	6.9	2.9	1.0	3.8
18	7.8	6.3	18	8.5	6.7	11	9.3	20	7.5	2.7	0.95	3.3
19	7.5	6.3	11	8.7	6.7	9.8	11	9.6	7.9	3.0	0.95	3.2
20	7.5	6.3	9.3	9.2	6.8	49	7.7	7.4	6.7	2.8	0.95	3.3
21	7.4	6.4	8.5	8.3	6.9	24	7.5	6.5	6.2	3.1	0.95	3.7
22	6.7	6.3	8.0	8.2	6.7	15	8.1	6.0	5.8	3.3	0.95	5.4
23	6.7	6.3	8.0	9.6	6.7	12	6.9	5.8	5.7	2.5	0.99	5.4
24	6.9	6.3	9.0	24	6.7	11	6.6	5.4	5.3	3.5	12	4.0
25	7.1	16	8.3	16	6.7	10	6.9	5.1	5.2	3.2	4.1	3.8
26	6.7	16	7.7	12	6.7	11	6.8	4.9	5.0	5.6	3.0	9.5
27	e6.7	9.0	7.6	11	7.0	19	6.3	14	4.8	4.8	2.8	26
28	e6.7	8.0	7.5	10	6.4	12	31	22	4.9	4.3	7.0	21
29	e6.7	7.5	7.3	9.5	---	11	14	15	4.6	3.5	31	7.4
30	e6.7	7.5	e7.2	9.0	---	9.8	10	11	4.3	2.9	7.2	6.1
31	e6.7	---	e7.3	13	---	9.9	---	8.8	---	2.4	5.1	---
TOTAL	219.5	219.8	270.5	339.6	217.6	374.1	274.4	283.7	243.2	110.2	106.69	188.0
MEAN	7.08	7.33	8.73	11.0	7.77	12.1	9.15	9.15	8.11	3.55	3.44	6.27
MAX	13	16	18	38	12	49	31	22	42	5.6	31	26
MIN	6.3	6.3	6.7	6.8	6.4	6.4	6.3	4.9	4.3	2.4	0.95	3.1
CFSM	0.45	0.46	0.55	0.69	0.49	0.76	0.58	0.58	0.51	0.22	0.22	0.40
IN.	0.52	0.52	0.64	0.80	0.51	0.88	0.65	0.67	0.57	0.26	0.25	0.44

e Estimated

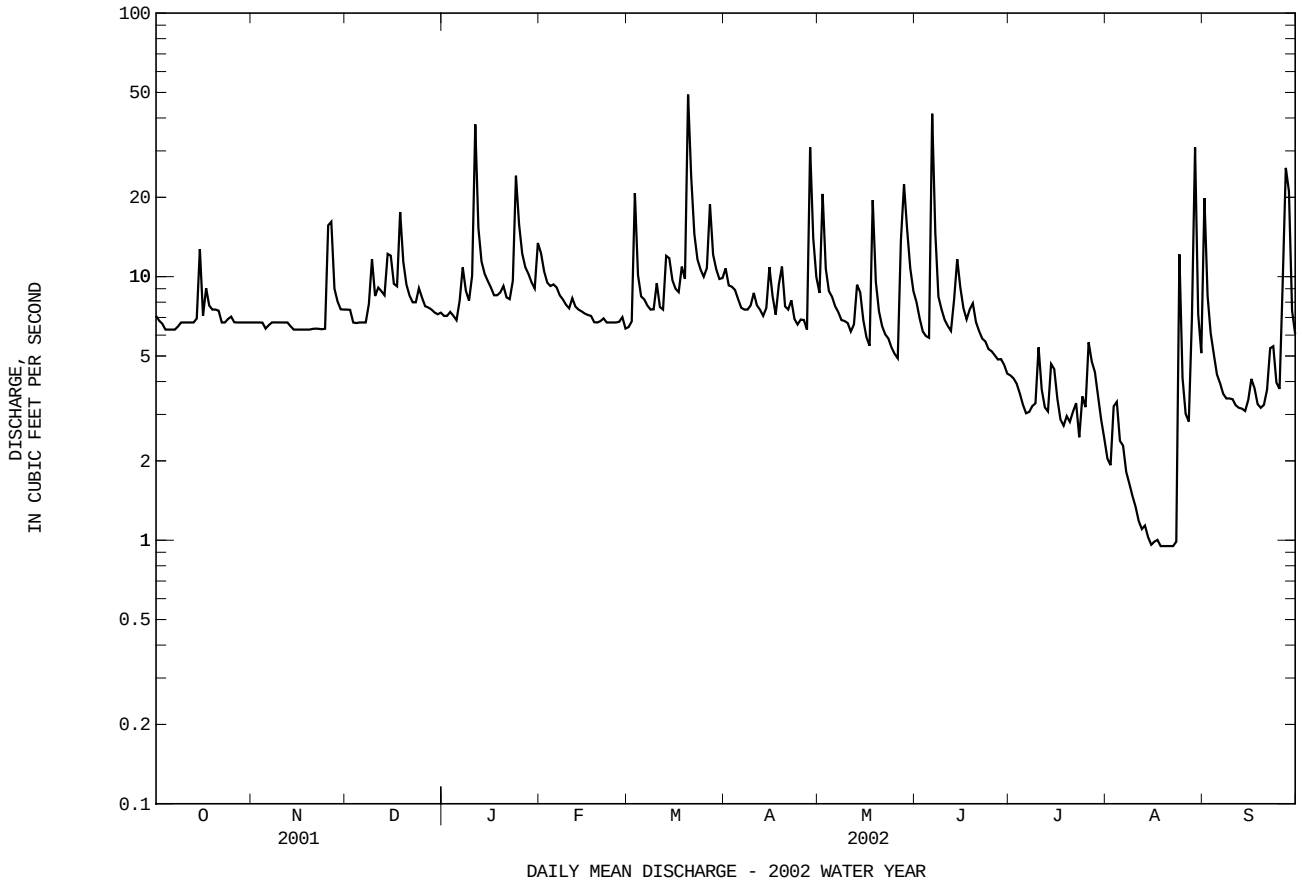
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	10.3	9.73	14.6	15.8	14.3	19.0	19.7	14.7	13.1	9.45	7.97	13.8
MAX	13.6	12.1	20.4	20.5	20.9	26.0	27.8	18.2	16.0	16.3	11.2	24.7
(WY)	2001	2001	2001	2001	2001	2001	2000	2001	2001	2000	2000	2000
MIN	7.08	7.33	8.73	11.0	7.77	12.1	9.15	9.15	8.11	3.55	3.44	6.27
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581870 GEORGES RUN NEAR BECKLEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	5310.7		2847.29			
ANNUAL MEAN	14.5		7.80		12.1	
HIGHEST ANNUAL MEAN					16.5	2001
LOWEST ANNUAL MEAN					7.80	2002
HIGHEST DAILY MEAN	121	Mar 30	49	Mar 20	159	Dec 17 2000
LOWEST DAILY MEAN	3.9	Sep 19	0.95	(a)	0.95	(a)
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 13	0.96	Aug 16	0.96	Aug 16 2002
MAXIMUM PEAK FLOW			337	Jun 6	(b)837	May 26 2001
MAXIMUM PEAK STAGE			2.28	Jun 6	3.81	May 26 2001
INSTANTANEOUS LOW FLOW			0.95	(c)	0.95	(c)
ANNUAL RUNOFF (CFSM)	0.92		0.49		0.77	
ANNUAL RUNOFF (INCHES)	12.50		6.70		10.44	
10 PERCENT EXCEEDS	24		12		21	
50 PERCENT EXCEEDS	11		6.9		9.4	
90 PERCENT EXCEEDS	5.8		3.2		4.2	

a Aug. 18-22, 2002.
b From rating curve extended above 186 ft^3/s.
c Aug. 15-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581920 GUNPOWDER FALLS NEAR PARKTON, MD

LOCATION.--Lat 39°37'08.0", long 76°41'25.1", Baltimore County, Hydrologic Unit 02060003, on left bank at downstream side of bridge on Falls Road, and 1.0 mi downstream from Prettyboy Reservoir.

DRAINAGE AREA.--81.5 mi^2.

PERIOD OF RECORD.--July 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 360.0 ft above National Geodetic Vertical Datum of 1929. November 1982 to November 1990, nonrecording gage 100 ft downstream.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Prettyboy Reservoir 1.0 mi upstream, beginning April 10, 1933, for water supply of Baltimore City (usable capacity, 20,000,000,000 gal; dead storage, 1,080,000,000 gal). U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 335 ft^3/s, Nov. 13, gage height, 2.75 ft; minimum discharge, 13 ft^3/s, Mar. 23-27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	180	41	175	63	15	28	39	31	30	71	98
2	87	179	41	174	63	15	34	41	31	30	68	97
3	87	178	40	173	63	16	35	36	31	28	71	96
4	122	179	43	146	63	15	30	31	30	27	70	95
5	137	180	47	105	63	15	34	31	30	27	71	95
6	137	181	47	105	63	15	35	31	32	27	72	95
7	138	151	47	89	42	15	31	31	31	27	83	94
8	138	132	48	64	16	15	28	30	31	27	85	94
9	159	116	47	64	16	15	26	31	31	28	91	94
10	187	91	47	64	16	15	34	30	31	27	89	93
11	187	91	47	64	16	15	39	31	31	34	84	92
12	186	90	47	64	16	15	38	31	31	44	82	91
13	186	84	47	64	16	16	37	30	32	44	84	91
14	186	57	47	64	16	15	37	30	32	44	94	91
15	186	51	47	64	16	15	35	30	31	44	99	91
16	186	42	47	63	16	15	40	30	31	43	109	91
17	185	41	47	63	16	15	42	30	31	44	116	91
18	184	41	47	63	16	15	42	32	31	54	116	90
19	184	41	47	63	16	15	42	31	31	63	114	90
20	183	41	47	63	16	16	40	30	31	63	107	90
21	183	41	47	63	16	15	39	40	31	63	99	89
22	183	41	47	63	16	14	42	49	30	63	99	89
23	183	41	47	63	15	13	42	49	30	63	99	90
24	182	41	46	64	15	13	42	46	30	63	98	90
25	182	42	46	63	15	13	42	43	30	63	97	90
26	182	41	46	63	15	13	41	43	30	63	97	76
27	182	41	46	63	15	24	39	44	30	63	97	53
28	181	41	45	63	15	36	42	38	31	63	98	53
29	181	41	46	63	---	35	40	36	31	66	98	53
30	180	41	45	63	---	32	39	32	31	71	97	53
31	180	---	111	63	---	30	---	31	---	72	97	---
TOTAL	5132	2557	1490	2488	750	541	1115	1087	925	1468	2852	2595
MEAN	166	85.2	48.1	80.3	26.8	17.5	37.2	35.1	30.8	47.4	92.0	86.5
MAX	187	181	111	175	63	36	42	49	32	72	116	98
MIN	87	41	40	63	15	13	26	30	30	27	68	53
(†)	9285	8294	8124	7402	7533	8328	8428	8633	8670	7957	6983	5052

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

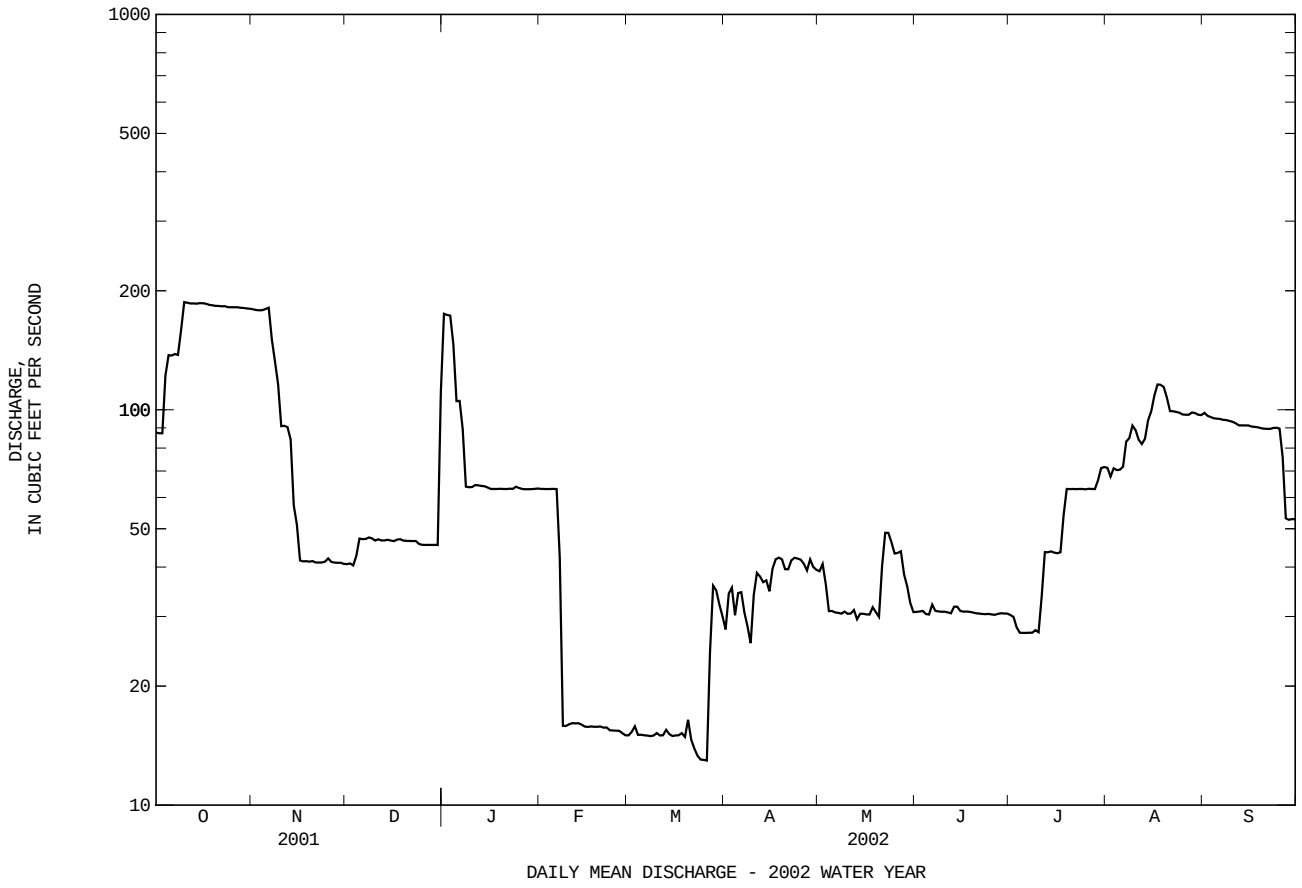
MEAN	130	121	83.1	89.5	54.6	37.0	39.0	41.2	59.9	98.4	121	118
MAX	166	156	118	98.7	82.4	56.5	40.9	47.4	89.1	149	209	188
(WY)	2002	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001
MIN	95.2	85.2	48.1	80.3	26.8	17.5	37.2	35.1	30.8	47.4	63.5	78.6
(WY)	2001	2002	2002	2002	2002	2002	2002	2002	2002	2002	2000	2000

(†) Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 2001, 11,906,000,000 gal). Records furnished by Baltimore Department of Public Works.

01581920 GUNPOWDER FALLS NEAR PARKTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	38421		23000			
ANNUAL MEAN	105		63.0		87.0	
HIGHEST ANNUAL MEAN					111	2001
LOWEST ANNUAL MEAN					63.0	2002
HIGHEST DAILY MEAN	441	Sep 29	187	Oct 10	441	Sep 29 2001
LOWEST DAILY MEAN	36	(a)	13	(b)	13	(b)
ANNUAL SEVEN-DAY MINIMUM	37	May 10	14	Mar 20	14	Mar 20 2002
MAXIMUM PEAK FLOW			335	Nov 13	(c)449	Sep 28 2001
MAXIMUM PEAK STAGE			2.75	Nov 13	3.01	Sep 28 2001
INSTANTANEOUS LOW FLOW			13	(d)	13	(d)
ANNUAL RUNOFF (CFSM)	1.29		0.77		1.07	
ANNUAL RUNOFF (INCHES)	17.54		10.50		14.51	
10 PERCENT EXCEEDS	220		137		178	
50 PERCENT EXCEEDS	88		46		63	
90 PERCENT EXCEEDS	41		16		30	

a May 23-25.
b March 23-26, 2002.
c From rating curve extended above 230 ft^3/s.
d March 23-27, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581940 MINGO BRANCH NEAR HEREFORD, MD

LOCATION.--Lat 39°36'40.5", long 76°40'30.8", Baltimore County, Hydrologic Unit 02060003, on right bank 0.2 mi upstream from mouth, and 1.5 mi northwest of Hereford, MD.

DRAINAGE AREA.--0.78 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 399 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect, variable leakage), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	0430	(a)	*1.12	No peak greater than base discharge.			
Jun 13	2200	*24	0.93				

(a) Backwater from beaverdam.

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.21	0.26	0.19	e0.19	0.32	0.20	e0.40	0.29	0.16	e0.07	0.00	1.0
2	0.23	0.24	0.19	e0.19	0.29	0.29	e0.36	0.73	0.12	e0.06	0.00	0.12
3	0.22	0.29	0.19	e0.19	0.29	0.85	e0.33	0.35	0.12	e0.05	0.15	0.06
4	e0.21	0.29	0.19	e0.19	0.29	0.38	e0.31	0.24	0.12	e0.05	0.00	0.06
5	e0.20	0.24	0.19	e0.19	0.34	0.32	e0.28	0.19	0.09	e0.05	0.00	0.04
6	e0.20	0.23	0.19	0.78	0.35	0.32	e0.26	0.17	0.74	e0.05	0.00	e0.03
7	e0.20	0.24	0.19	0.58	0.29	0.29	e0.25	0.13	0.42	e0.05	0.00	e0.02
8	e0.21	0.29	0.36	0.38	0.29	0.29	e0.25	0.13	0.26	e0.05	0.00	e0.02
9	e0.22	0.29	0.38	0.35	0.29	0.29	e0.27	0.13	0.22	0.24	0.00	e0.02
10	e0.22	0.27	0.29	0.41	0.29	0.38	e0.28	0.14	0.18	0.27	0.00	e0.02
11	e0.22	0.23	0.36	0.90	0.29	0.29	e0.25	0.13	0.16	0.06	0.00	e0.02
12	e0.22	0.23	0.26	0.34	0.25	0.29	e0.24	0.34	0.13	0.04	0.00	e0.02
13	e0.22	0.23	0.23	0.25	0.23	0.60	e0.23	0.36	1.5	0.05	0.00	e0.02
14	e0.24	0.23	0.37	0.23	0.27	0.37	e0.29	0.22	1.0	0.23	0.00	e0.02
15	0.81	0.23	0.32	0.23	0.27	0.31	e0.42	0.18	0.37	0.10	0.00	0.04
16	e0.24	0.23	0.26	0.23	0.23	0.29	e0.30	0.16	0.30	0.05	0.00	0.03
17	e0.66	0.23	0.25	0.23	0.22	0.29	e0.23	0.16	0.19	0.05	0.00	e0.02
18	0.29	0.23	0.36	0.23	0.19	0.44	e0.35	0.86	0.19	0.06	0.00	e0.02
19	0.29	0.23	0.35	0.28	0.19	0.35	e0.54	0.24	0.17	0.06	0.00	e0.02
20	0.27	0.23	e0.28	0.36	0.19	1.3	e0.27	0.19	0.13	0.04	0.00	e0.02
21	0.23	0.23	e0.24	0.29	0.19	0.55	e0.25	0.23	0.12	0.07	0.00	e0.02
22	0.23	0.23	e0.22	0.29	0.19	0.39	e0.26	0.22	e0.12	0.07	0.00	e0.05
23	0.25	0.23	e0.24	0.30	0.19	0.35	e0.22	0.19	e0.11	0.05	0.00	e0.05
24	0.25	0.23	0.29	0.73	0.19	0.29	e0.20	0.18	e0.10	0.08	0.31	e0.03
25	0.32	0.92	0.22	0.51	0.19	0.29	e0.21	0.16	e0.09	0.03	0.00	e0.02
26	0.32	0.46	0.19	0.43	0.19	0.49	e0.20	0.16	e0.09	0.23	0.00	0.87
27	0.32	0.35	0.20	0.33	0.25	0.54	e0.32	0.49	e0.09	0.06	0.00	0.88
28	0.32	0.28	0.19	0.29	0.19	0.41	e1.0	0.21	e0.14	0.07	0.53	0.36
29	0.30	0.23	0.19	0.29	---	0.40	e0.64	0.18	e0.09	0.03	0.64	0.11
30	0.30	0.20	e0.20	0.29	---	0.36	e0.34	0.19	e0.07	0.00	0.09	0.06
31	0.29	---	e0.19	0.41	---	&0.41	---	0.18	---	0.00	0.05	---
TOTAL	8.71	8.30	7.77	10.89	6.95	12.62	9.75	7.73	7.59	2.37	1.77	4.07
MEAN	0.28	0.28	0.25	0.35	0.25	0.41	0.33	0.25	0.25	0.076	0.057	0.14
MAX	0.81	0.92	0.38	0.90	0.35	1.3	1.0	0.86	1.5	0.27	0.64	1.0
MIN	0.20	0.20	0.19	0.19	0.19	0.20	0.20	0.13	0.07	0.00	0.00	0.02
CFSM	0.36	0.35	0.32	0.45	0.32	0.52	0.42	0.32	0.32	0.10	0.07	0.17
IN.	0.42	0.40	0.37	0.52	0.33	0.60	0.47	0.37	0.36	0.11	0.08	0.19

e Estimated

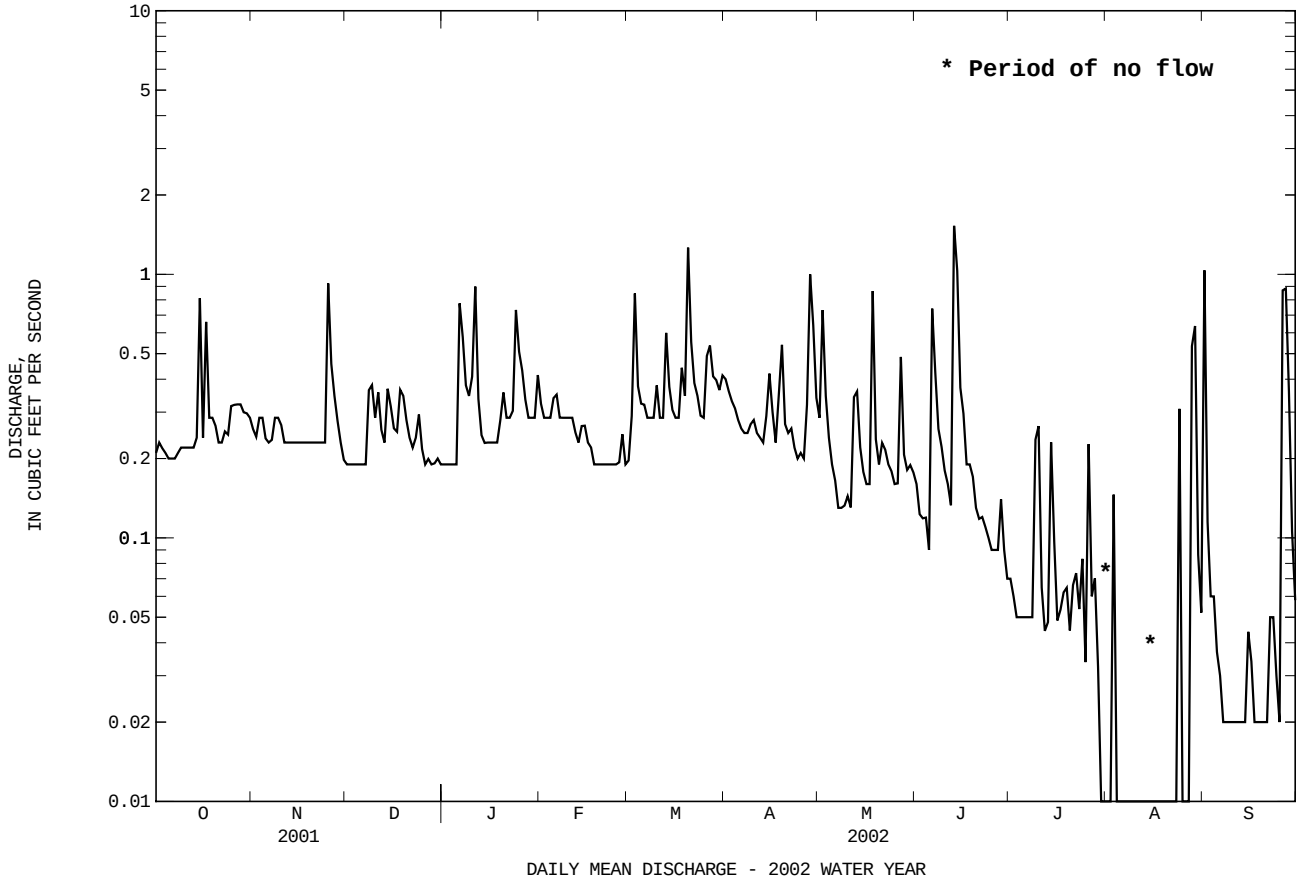
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	0.42	0.44	0.68	0.51	0.57	1.01	1.21	0.89	0.65	0.46	0.29	0.33
MAX	0.64	0.65	0.94	0.63	0.82	1.66	2.02	1.36	0.86	0.87	0.51	0.62
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2001	2000	2000	2000
MIN	0.28	0.28	0.25	0.35	0.25	0.41	0.33	0.25	0.25	0.076	0.057	0.14
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581940 MINGO BRANCH NEAR HEREFORD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	219.63		88.52			
ANNUAL MEAN	0.60		0.24		0.62	
HIGHEST ANNUAL MEAN					0.95	2000
LOWEST ANNUAL MEAN					0.24	2002
HIGHEST DAILY MEAN	3.7	Mar 30	1.5	Jun 13	8.5	Dec 17 2000
LOWEST DAILY MEAN	0.04	Sep 9	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.07	Sep 3	0.00	Aug 4	0.00	Aug 4 2002
MAXIMUM PEAK FLOW			24	Jun 13	(b)164	Dec 17 2000
MAXIMUM PEAK STAGE			(c)1.12	Apr 28	1.80	Dec 17 2000
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(d)
ANNUAL RUNOFF (CFSM)	0.77		0.31		0.80	
ANNUAL RUNOFF (INCHES)	10.47		4.22		10.83	
10 PERCENT EXCEEDS	1.2		0.41		1.3	
50 PERCENT EXCEEDS	0.51		0.23		0.42	
90 PERCENT EXCEEDS	0.19		0.02		0.13	

a July 30, 31, Aug. 1, 2, 4-23, 25-27, 2002.
b From rating curve extended above 11 ft^3/s.
c Result of beaverdam.
d Many days in 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01581960 BEETREE RUN AT BENTLEY SPRINGS, MD

LOCATION.--Lat 39°40'23.1", long 76°40'30.7", Baltimore County, Hydrologic Unit 02060003, on left bank at downstream side of bridge on Bentley Road, and 0.43 mi upstream from mouth.

DRAINAGE AREA.--9.72 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 775 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 3	0130	*306	*2.36	No peak greater than base discharge.			

Minimum discharge, 1.1 ft^3/s, Aug. 19, 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	4.9	5.2	e4.7	6.5	4.2	6.1	5.1	4.2	2.7	2.0	43
2	5.1	5.0	5.0	e4.8	5.9	4.5	5.5	9.0	3.9	2.7	1.8	7.4
3	5.0	5.1	4.9	e4.9	5.5	13	5.6	5.9	3.6	2.5	33	5.1
4	4.9	4.9	4.9	e4.8	5.3	5.9	5.4	5.2	3.6	2.4	3.9	4.3
5	4.8	4.9	4.9	e4.7	5.3	5.4	5.1	4.9	3.6	2.2	3.4	3.7
6	4.8	5.0	4.9	e10	5.4	4.9	5.1	4.7	11	2.0	3.2	3.4
7	4.8	5.1	4.9	e8.4	5.1	4.8	4.9	4.6	6.8	2.1	2.8	3.3
8	4.9	5.0	6.0	e5.8	4.9	4.7	4.8	4.5	4.5	2.2	2.6	3.2
9	5.1	4.9	6.9	e5.2	4.7	4.7	5.0	4.8	4.1	2.1	2.4	3.1
10	5.1	4.8	5.4	6.0	4.7	5.9	5.0	4.6	3.9	2.7	2.3	3.1
11	5.1	4.9	6.0	14	4.9	5.0	4.7	4.2	3.7	2.2	2.1	3.1
12	5.2	4.6	5.5	7.2	4.6	4.9	4.6	4.5	3.6	2.0	2.0	3.1
13	5.2	4.7	5.4	6.1	4.6	7.6	4.7	5.7	6.7	1.9	1.9	3.1
14	5.4	4.7	7.6	5.5	4.8	6.3	5.1	5.7	7.4	3.3	1.7	3.1
15	7.6	4.8	6.8	5.2	4.6	5.6	5.7	4.5	5.2	2.7	1.5	3.3
16	5.7	4.8	5.6	5.1	4.6	5.4	4.9	4.2	4.4	2.2	1.6	3.7
17	6.2	4.8	5.5	5.0	4.5	5.2	4.6	4.1	4.0	1.9	1.5	3.2
18	5.4	4.8	8.3	4.9	4.3	8.1	4.6	11	4.4	1.9	1.4	3.1
19	5.2	4.8	6.1	5.1	4.4	6.5	4.5	5.5	4.4	2.2	1.4	3.2
20	5.1	5.1	5.6	5.3	4.4	25	4.4	4.8	3.8	1.9	1.5	3.3
21	4.8	4.8	5.4	4.8	4.5	12	4.4	4.5	3.6	1.7	1.3	3.4
22	4.9	4.8	5.1	4.8	4.3	8.1	4.9	4.3	3.4	1.9	1.1	3.7
23	4.9	4.8	5.1	5.4	4.2	7.0	4.3	4.1	3.3	1.6	1.5	4.2
24	4.8	4.8	5.9	11	4.1	6.4	4.1	4.1	3.2	1.9	7.3	3.4
25	4.8	10	5.2	7.4	4.2	6.0	4.5	4.0	3.1	1.7	2.9	3.3
26	5.1	7.8	5.1	6.0	4.2	6.6	4.3	3.9	3.1	3.6	2.2	7.6
27	5.1	5.6	e5.1	5.4	4.7	9.4	4.1	12	3.0	2.8	2.1	14
28	5.1	5.3	e5.0	5.2	4.2	6.4	14	10	3.5	4.4	4.5	11
29	5.0	5.1	5.1	5.1	---	6.0	6.8	5.4	3.3	5.0	18	4.6
30	5.1	5.3	e4.8	5.2	---	5.7	5.5	4.9	2.9	3.4	4.6	4.0
31	5.1	---	e5.0	7.3	---	5.9	---	4.5	---	2.3	3.6	---
TOTAL	160.4	155.9	172.2	190.3	133.4	217.1	157.2	169.2	129.2	76.1	123.1	171.0
MEAN	5.17	5.20	5.55	6.14	4.76	7.00	5.24	5.46	4.31	2.45	3.97	5.70
MAX	7.6	10	8.3	14	6.5	25	14	12	11	5.0	33	43
MIN	4.8	4.6	4.8	4.7	4.1	4.2	4.1	3.9	2.9	1.6	1.1	3.1
CFSM	0.53	0.53	0.57	0.63	0.49	0.72	0.54	0.56	0.44	0.25	0.41	0.59
IN.	0.61	0.60	0.66	0.73	0.51	0.83	0.60	0.65	0.49	0.29	0.47	0.65

e Estimated

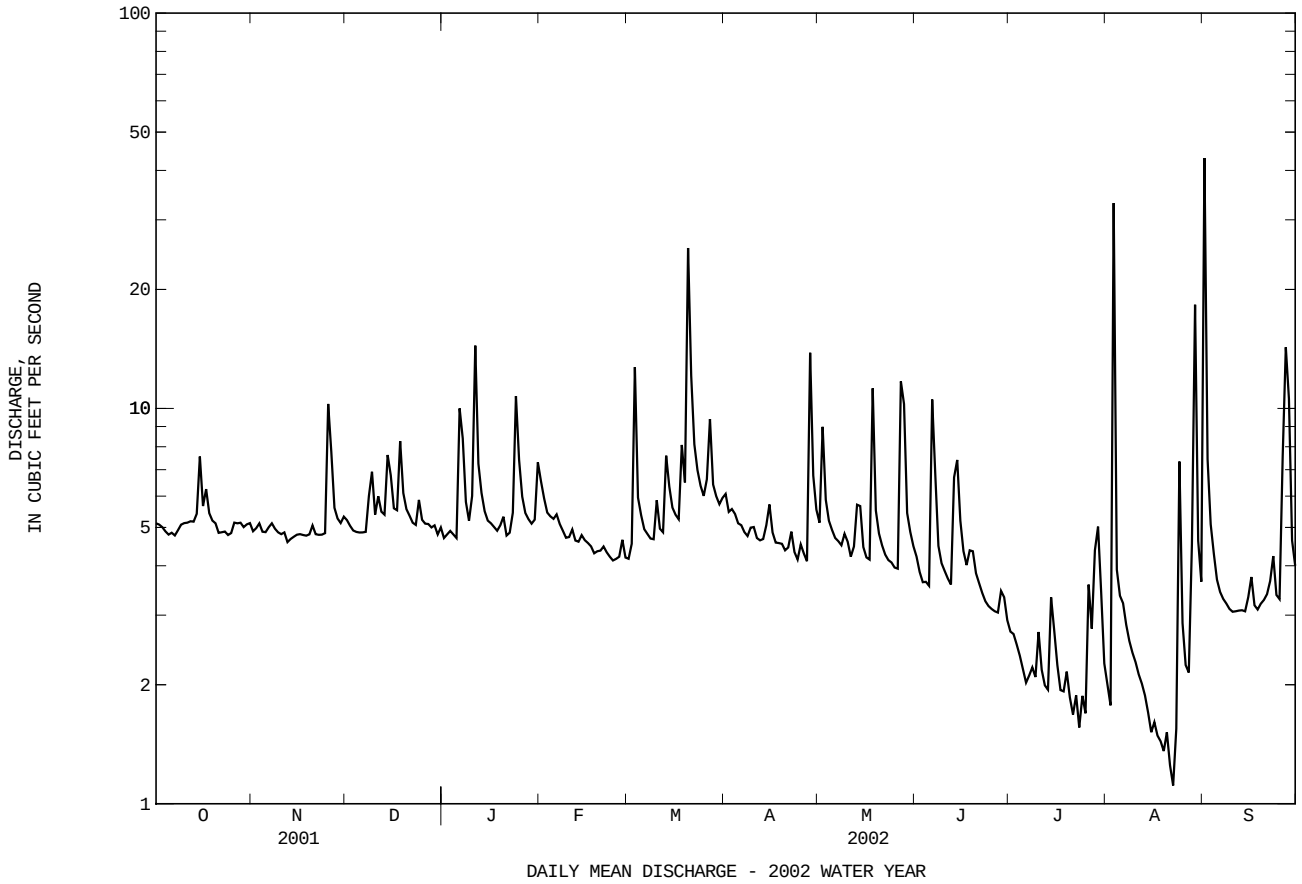
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	6.81	6.37	9.73	7.92	10.3	12.9	14.0	10.5	8.15	6.31	7.10	7.59
MAX	8.18	7.09	12.4	9.53	14.3	16.7	22.1	14.0	10.6	10.2	10.6	11.0
(WY)	2000	2001	2001	2001	2000	2000	2000	2000	2000	2000	2001	2000
MIN	5.17	5.20	5.55	6.14	4.76	7.00	5.24	5.46	4.31	2.45	3.97	5.70
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01581960 BEETREE RUN AT BENTLEY SPRINGS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	3378.2		1855.1			
ANNUAL MEAN	9.26		5.08		8.96	
HIGHEST ANNUAL MEAN					11.6	2000
LOWEST ANNUAL MEAN					5.08	2002
HIGHEST DAILY MEAN	109	Aug 11	43	Sep 1	122	Dec 17 2000
LOWEST DAILY MEAN	4.3	(a)	1.1	Aug 22	1.1	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	4.6	Sep 13	1.4	Aug 17	1.4	Aug 17 2002
MAXIMUM PEAK FLOW			306	Aug 3	(b)1150	Apr 17 2000
MAXIMUM PEAK STAGE			2.36	Aug 3	3.87	Apr 17 2000
INSTANTANEOUS LOW FLOW			1.1	(c)	1.1	Aug 19 2002
ANNUAL RUNOFF (CFSM)	0.95		0.52		0.92	
ANNUAL RUNOFF (INCHES)	12.93		7.10		12.53	
10 PERCENT EXCEEDS	15		6.8		15	
50 PERCENT EXCEEDS	7.4		4.8		7.0	
90 PERCENT EXCEEDS	4.9		2.3		4.2	

a Aug. 8, 9, 2001.
b From rating curve extended above 185 ft^3/s.
c Aug. 19, 21-23.



01582000 LITTLE FALLS AT BLUE MOUNT, MD

LOCATION.--Lat 39°36'14.7", long 76°37'13.7", Baltimore County, Hydrologic Unit 02060003, on left bank at downstream side of Pennsylvania Railroad bridge, 0.2 mi north of Blue Mount, 0.6 mi upstream from mouth, 0.9 mi downstream from First Mine Branch, and 1.2 mi south of White Hall.

DRAINAGE AREA.--52.9 mi^2.

PERIOD OF RECORD.--June 1944 to current year.

REVISED RECORDS.--WSP 111: 1944(M), 1945-47(P). WDR MD-DE-85-1: 1984(P).

GAGE.--Water-stage recorders. Elevation of gage is 305 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Slight diurnal fluctuation at low flow caused by mill upstream from station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 3	0415	*1,110	*4.30	No other peak greater than base discharge.			

Minimum discharge, 4.5 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	22	20	34	19	32	28	19	11	7.3	134
2	20	22	21	20	31	20	28	53	17	11	9.2	38
3	20	22	20	21	27	63	27	36	16	11	210	22
4	19	22	20	20	26	31	28	29	16	9.7	20	17
5	19	22	20	21	25	25	25	27	16	9.1	13	14
6	18	21	20	24	28	24	25	25	41	8.2	13	13
7	18	22	20	34	25	23	24	25	49	8.2	10	12
8	18	22	23	27	24	22	24	24	21	9.1	9.7	11
9	19	22	33	24	23	22	25	24	18	12	9.1	11
10	20	21	24	26	23	31	27	24	17	18	8.5	10
11	20	21	26	76	24	23	23	21	16	10	8.1	9.8
12	21	21	24	42	22	23	23	25	15	8.6	7.8	8.8
13	20	21	23	29	22	36	24	29	25	8.5	7.7	8.9
14	21	21	29	26	21	35	29	30	57	13	7.1	9.3
15	34	21	32	25	22	29	35	23	30	13	6.4	11
16	23	21	25	24	22	27	27	21	23	10	6.3	14
17	26	20	24	24	21	25	24	20	19	8.5	6.2	11
18	21	20	40	23	20	39	23	52	19	8.1	6.0	10
19	22	20	28	22	20	34	24	30	21	8.6	5.5	9.9
20	21	21	25	28	21	111	23	24	18	8.1	5.3	10
21	21	20	23	26	21	76	22	23	16	7.4	5.1	10
22	21	20	22	24	20	47	26	22	15	7.9	4.8	11
23	20	20	22	26	20	39	23	21	14	6.9	5.8	12
24	21	20	26	54	19	34	21	20	14	7.2	26	10
25	21	36	22	43	19	32	23	19	13	7.2	13	9.4
26	20	46	22	31	20	32	23	19	13	11	8.7	20
27	21	25	e21	28	22	54	21	38	13	12	8.3	71
28	22	23	e21	26	19	36	79	39	13	12	15	44
29	22	22	e21	25	---	32	44	25	13	19	73	19
30	23	22	e20	25	---	30	32	22	12	12	20	16
31	23	---	e21	37	---	30	---	20	---	8.5	14	---
TOTAL	656	680	740	901	641	1104	834	838	609	314.8	569.9	607.1
MEAN	21.2	22.7	23.9	29.1	22.9	35.6	27.8	27.0	20.3	10.2	18.4	20.2
MAX	34	46	40	76	34	111	79	53	57	19	210	134
MIN	18	20	20	20	19	19	21	19	12	6.9	4.8	8.8
CFSM	0.40	0.43	0.45	0.55	0.43	0.67	0.53	0.51	0.38	0.19	0.35	0.38
IN.	0.46	0.48	0.52	0.63	0.45	0.78	0.59	0.59	0.43	0.22	0.40	0.43

e Estimated

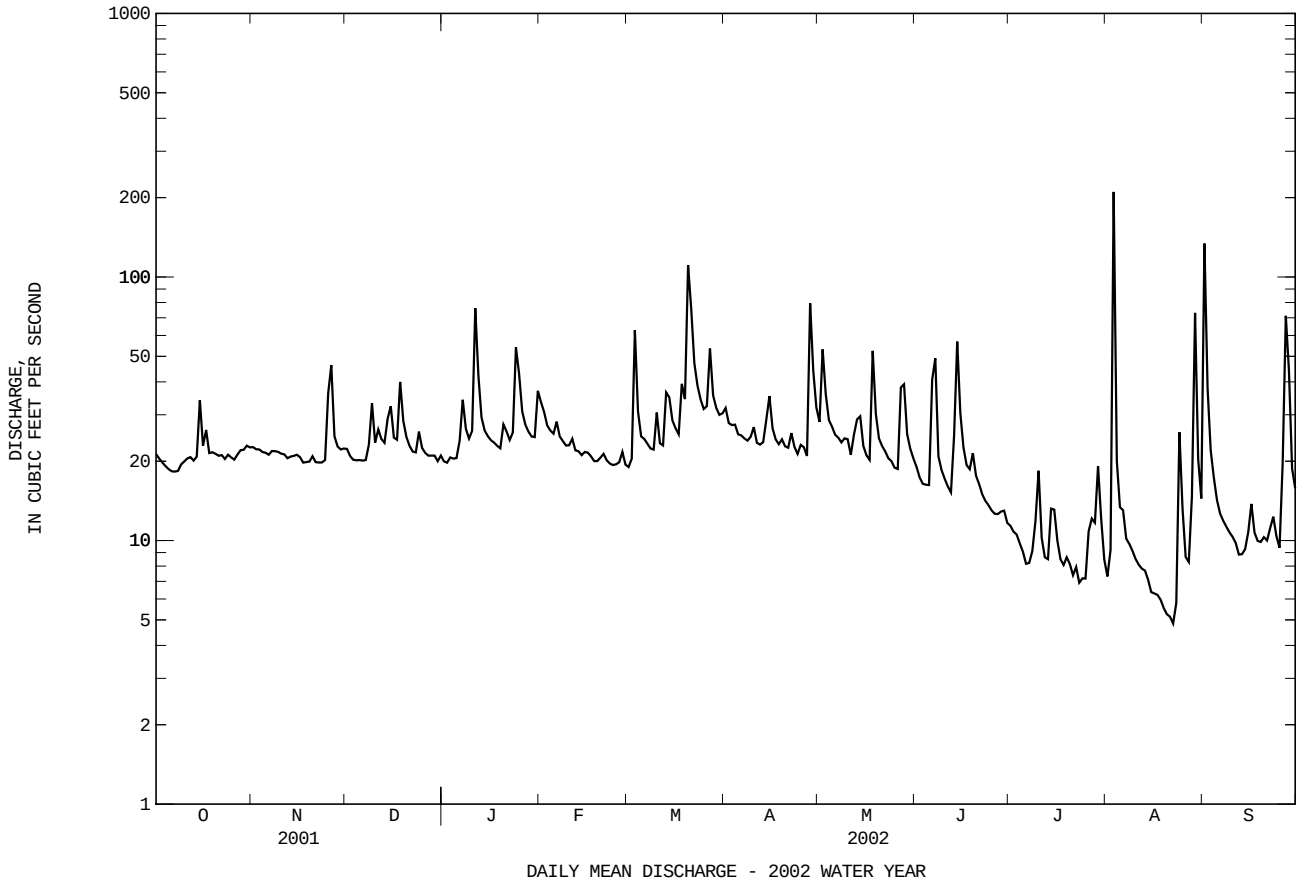
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	45.1	55.0	64.6	76.4	86.5	92.8	91.2	82.4	68.4	55.8	46.1	46.7
MAX	203	129	198	190	187	261	194	202	353	158	159	227
(WY)	1980	1972	1997	1996	1979	1994	1952	1952	1972	1972	1971	1975
MIN	16.7	22.7	20.9	22.1	22.9	35.6	27.8	27.0	20.3	10.2	9.44	17.2
(WY)	1964	2002	1966	1981	2002	2002	2002	2002	2002	2002	1966	1986

01582000 LITTLE FALLS AT BLUE MOUNT, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	16250		8494.8			
ANNUAL MEAN	44.5		23.3		67.5	
HIGHEST ANNUAL MEAN					132	1972
LOWEST ANNUAL MEAN					23.3	2002
HIGHEST DAILY MEAN	300	Mar 30	210	Aug 3	4730	Jun 22 1972
LOWEST DAILY MEAN	16	(a)	4.8	Aug 22	4.5	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	16	Sep 13	5.5	Aug 17	4.8	Sep 6 1966
MAXIMUM PEAK FLOW			1110	Aug 3	(b)8280	Jun 22 1972
MAXIMUM PEAK STAGE			4.30	Aug 3	18.54	Jun 22 1972
INSTANTANEOUS LOW FLOW			4.5	Aug 22	1.9	Aug 29 1966
ANNUAL RUNOFF (CFSM)	0.84		0.44		1.28	
ANNUAL RUNOFF (INCHES)	11.43		5.97		17.34	
10 PERCENT EXCEEDS	80		34		117	
50 PERCENT EXCEEDS	36		21		51	
90 PERCENT EXCEEDS	20		9.2		24	

a Aug. 9, Sept. 16-19.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement of peak flow.



01582500 GUNPOWDER FALLS AT GLENCOE, MD

LOCATION.--Lat 39°32'58.9", long 76°38'10.0", Baltimore County, Hydrologic Unit 02060003, on right downstream wingwall of bridge on Glencoe Road at intersection of Upper Glencoe Road and Lower Glencoe Road in Glencoe, and 0.7 mi upstream from Piney Creek.

DRAINAGE AREA.--160 mi^2.

PERIOD OF RECORD.--October 1977 to June 1980, December 1982 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1985(M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 250 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No estimated daily discharges. Flow regulated by Prettyboy Reservoir, 12 mi upstream, beginning Apr. 10, 1933, for water supply of Baltimore City (usable capacity, 20,000,000,000 gal; dead storage, 1,080,000,000 gal). U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 929 ft^3/s, Aug. 3, gage height, 4.32 ft; minimum discharge, 37 ft^3/s, July 6-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	199	67	195	106	42	74	78	53	43	81	223
2	115	198	66	194	102	44	68	108	51	42	78	145
3	112	198	65	196	99	95	77	89	48	42	259	124
4	130	197	64	188	97	59	70	70	47	39	97	118
5	157	195	69	134	94	49	68	68	47	38	88	114
6	156	197	69	139	95	48	71	65	56	37	88	111
7	156	183	69	147	94	47	67	64	109	37	90	109
8	156	156	73	100	49	46	64	62	57	37	84	107
9	164	152	90	96	47	45	62	62	53	39	92	107
10	202	116	77	97	46	57	67	63	51	57	91	106
11	202	115	79	152	48	48	71	59	50	41	91	105
12	202	114	78	121	45	47	70	64	48	51	90	102
13	202	118	76	105	45	61	69	72	56	51	89	101
14	202	80	79	100	45	65	72	69	118	58	93	101
15	216	79	87	98	46	55	88	61	73	60	104	102
16	205	65	77	97	45	52	73	58	61	55	109	107
17	207	64	76	97	44	50	75	56	56	52	124	103
18	205	64	95	95	43	63	72	96	53	54	123	101
19	204	64	84	96	43	63	76	74	57	73	122	101
20	204	64	79	99	44	139	70	63	53	72	119	101
21	202	64	76	96	46	127	69	62	51	72	103	101
22	202	64	75	95	45	79	74	75	49	72	103	102
23	202	63	73	97	43	67	72	74	48	71	103	103
24	202	63	79	129	43	62	69	73	47	72	127	102
25	201	80	74	124	43	58	72	67	46	71	115	101
26	199	110	72	105	43	57	71	66	45	76	106	107
27	199	72	70	101	46	83	67	85	45	79	105	141
28	199	68	75	99	43	85	141	90	46	76	114	105
29	199	68	71	97	---	80	102	68	45	84	177	78
30	199	68	67	97	---	76	83	62	44	87	124	72
31	199	---	117	109	---	73	---	55	---	83	115	---
TOTAL	5719	3338	2368	3695	1629	2022	2244	2178	1663	1821	3404	3300
MEAN	184	111	76.4	119	58.2	65.2	74.8	70.3	55.4	58.7	110	110
MAX	216	199	117	196	106	139	141	108	118	87	259	223
MIN	112	63	64	95	43	42	62	55	44	37	78	72
(†)	9285	8294	8124	7402	7533	8328	8428	8633	8670	7957	6983	5052

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

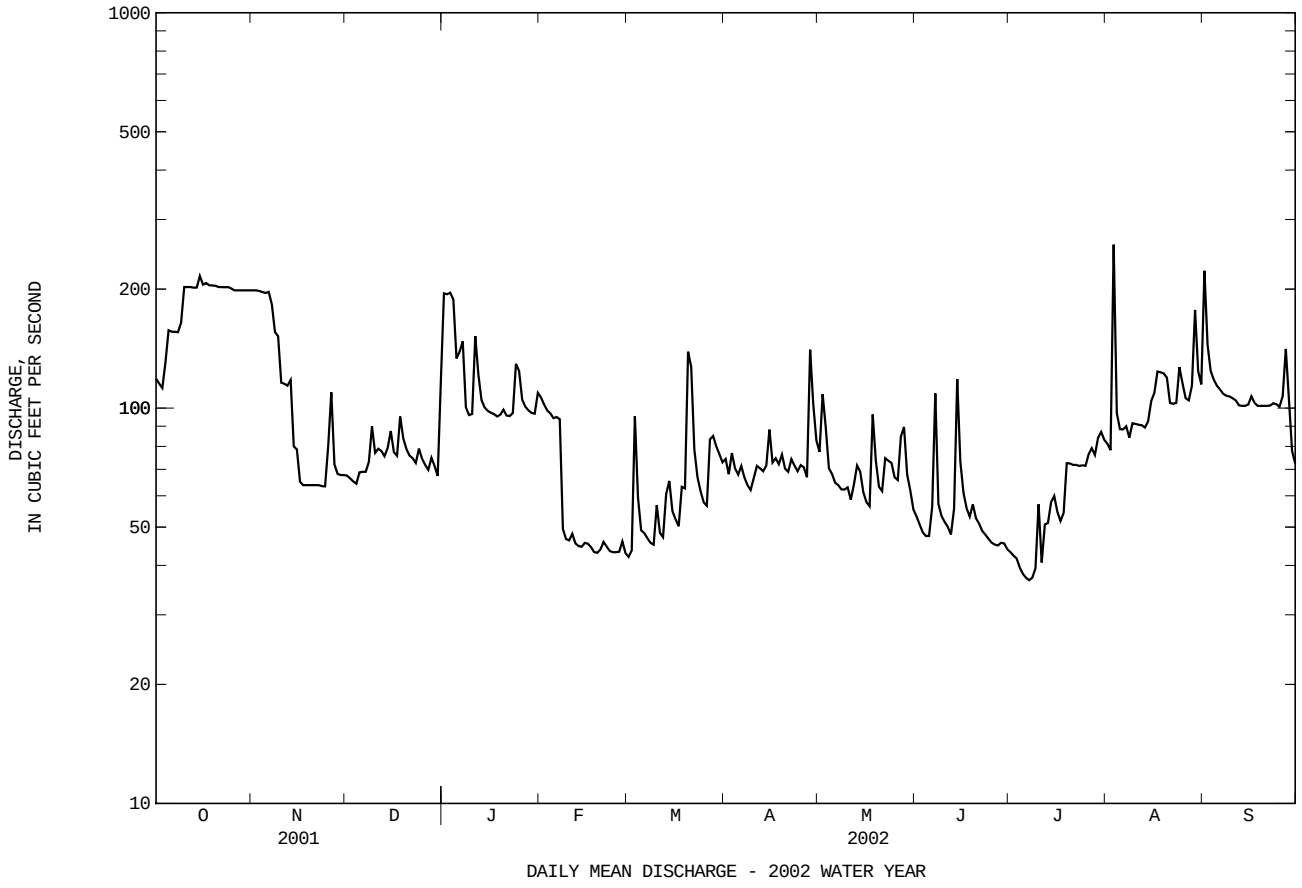
MEAN	162	168	190	224	226	257	257	244	179	172	154	159
MAX	603	342	604	625	598	755	586	476	284	280	267	512
(WY)	1980	1997	1997	1979	1979	1994	1993	1989	1989	1986	1996	1979
MIN	52.4	76.4	76.4	63.3	58.2	65.2	74.8	70.3	55.4	58.7	70.8	69.6
(WY)	1987	2000	2002	1983	2002	2002	2002	2002	2002	2002	1985	1983

(†) Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 2001, 11,906,000,000 gal). Records furnished by Baltimore Department of Public Works.

01582500 GUNPOWDER FALLS AT GLENCOE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002	
ANNUAL TOTAL	58455		33381			
ANNUAL MEAN	160		91.5		198	
HIGHEST ANNUAL MEAN					311	1979
LOWEST ANNUAL MEAN					91.5	2002
HIGHEST DAILY MEAN	459	Aug 11	259	Aug 3	4500	Sep 6 1979
LOWEST DAILY MEAN	63	(a)	37	(b)	31	Sep 3 1999
ANNUAL SEVEN-DAY MINIMUM	64	Nov 18	38	Jul 3	35	Aug 29 1999
MAXIMUM PEAK FLOW			929	Aug 3	(c)6110	Sep 6 1979
MAXIMUM PEAK STAGE			4.32	Aug 3	15.30	Sep 6 1979
INSTANTANEOUS LOW FLOW			37	(d)	30	Sep 3 1999
ANNUAL RUNOFF (CFSM)	1.00		0.57		1.24	
ANNUAL RUNOFF (INCHES)	13.59		7.76		16.80	
10 PERCENT EXCEEDS	247		169		340	
50 PERCENT EXCEEDS	146		76		155	
90 PERCENT EXCEEDS	79		46		79	

a Nov. 23, 24.
b July 6-8.
c From rating curve extended above 2,400 ft^3/s on basis of slope-area measurement at gage height of 12.65 ft.
d July 6-9.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01583100 PINEY RUN AT DOVER, MD

LOCATION.--Lat 39°31'14.2", long 76°46'00.8", Baltimore County, Hydrologic Unit 02060003, on right bank 400 ft downstream from bridge on Maryland Route 128, 0.7 mi upstream from mouth, and 2.4 mi southwest of Butler.

DRAINAGE AREA.--12.3 mi^2.

PERIOD OF RECORD.--May 1982 to February 1988. October 1996 to current year.

REVISED RECORDS.--WDR MD-DE-87-1: 1984-86(P).

GAGE.--Water-stage recorder. Elevation of gage is 380 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	2045	*137	*3.05	No peak greater than base discharge.			

Minimum discharge, 0.72 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.7	5.4	5.2	6.3	4.4	6.9	7.1	5.8	3.7	2.1	8.0
2	4.6	4.6	5.3	5.0	6.3	4.6	6.3	11	5.3	3.5	2.1	5.8
3	4.6	4.6	5.3	5.3	5.9	9.8	6.3	8.6	5.2	3.4	2.4	5.0
4	4.6	4.6	5.3	6.0	5.8	5.8	6.1	7.1	4.8	3.1	2.8	4.0
5	4.4	4.6	5.3	6.2	5.8	5.4	6.0	6.7	4.6	2.8	2.0	3.4
6	4.3	4.8	5.1	5.9	5.4	5.2	6.0	6.3	16	2.7	2.2	3.2
7	4.3	4.9	5.1	6.9	5.3	5.1	6.0	6.0	10	2.7	1.7	3.0
8	4.5	4.9	5.6	6.4	5.2	5.1	6.0	5.9	6.3	3.0	1.7	3.3
9	4.6	5.1	6.8	5.5	5.1	5.1	5.9	5.8	5.7	5.0	1.6	2.7
10	4.6	5.0	5.7	6.4	5.2	5.9	6.5	6.0	5.3	6.4	1.5	2.6
11	4.6	4.9	6.3	19	6.2	5.6	6.0	5.4	5.1	3.4	1.5	2.5
12	4.8	4.9	6.0	8.8	6.0	5.3	5.9	6.5	4.8	2.9	1.5	2.5
13	4.9	4.9	5.8	7.7	5.2	6.9	5.8	7.9	6.2	2.9	1.4	2.5
14	4.9	4.9	6.7	7.1	5.0	6.5	6.5	6.8	12	4.0	1.2	2.5
15	6.3	4.9	6.8	6.1	5.1	6.0	8.8	6.0	7.6	4.0	1.1	2.8
16	5.1	4.9	6.0	5.8	5.1	5.7	6.5	5.6	6.3	3.3	1.3	3.6
17	5.7	4.9	6.2	5.8	5.0	5.5	6.0	5.3	5.8	2.8	1.3	3.1
18	5.0	4.8	8.4	5.7	5.0	6.6	6.7	11	5.3	2.7	1.1	2.9
19	4.9	4.9	6.6	5.6	4.7	6.1	8.0	7.2	5.3	3.0	1.1	2.9
20	4.8	5.0	6.2	6.3	4.8	19	6.2	6.3	5.1	2.8	1.1	2.9
21	4.6	4.9	6.0	5.5	5.1	12	5.8	6.1	4.9	3.1	1.0	2.8
22	4.8	4.9	5.8	5.4	5.1	8.3	6.6	5.8	4.5	3.7	0.96	4.1
23	4.9	4.7	5.8	6.0	4.9	7.4	6.2	5.5	4.5	2.6	1.3	4.3
24	5.1	4.7	6.5	11	4.7	7.0	5.6	5.5	4.4	3.0	8.5	3.2
25	4.8	11	5.9	8.1	4.7	6.6	5.7	5.3	4.2	2.8	3.4	3.0
26	4.6	9.2	5.8	6.7	4.7	6.9	5.8	5.1	4.1	6.0	2.4	5.6
27	4.6	6.1	5.4	6.4	5.1	10	5.4	8.4	3.9	4.2	2.3	14
28	4.9	5.8	5.2	6.1	4.7	7.0	15	12	4.1	3.5	4.9	9.1
29	4.9	5.5	5.2	5.9	---	6.5	9.9	8.9	3.8	3.0	15	5.2
30	4.9	5.4	4.8	5.8	---	6.5	7.6	6.8	3.7	2.6	5.4	4.2
31	4.9	---	5.0	6.6	---	6.7	---	6.1	---	2.3	4.3	---
TOTAL	149.4	159.0	181.3	210.2	147.4	214.5	202.0	214.0	174.6	104.9	82.16	124.7
MEAN	4.82	5.30	5.85	6.78	5.26	6.92	6.73	6.90	5.82	3.38	2.65	4.16
MAX	6.3	11	8.4	19	6.3	19	15	12	16	6.4	15	14
MIN	4.3	4.6	4.8	5.0	4.7	4.4	5.4	5.1	3.7	2.3	0.96	2.5
CFSM	0.39	0.43	0.48	0.55	0.43	0.56	0.55	0.56	0.47	0.28	0.22	0.34
IN.	0.45	0.48	0.55	0.64	0.45	0.65	0.61	0.65	0.53	0.32	0.25	0.38

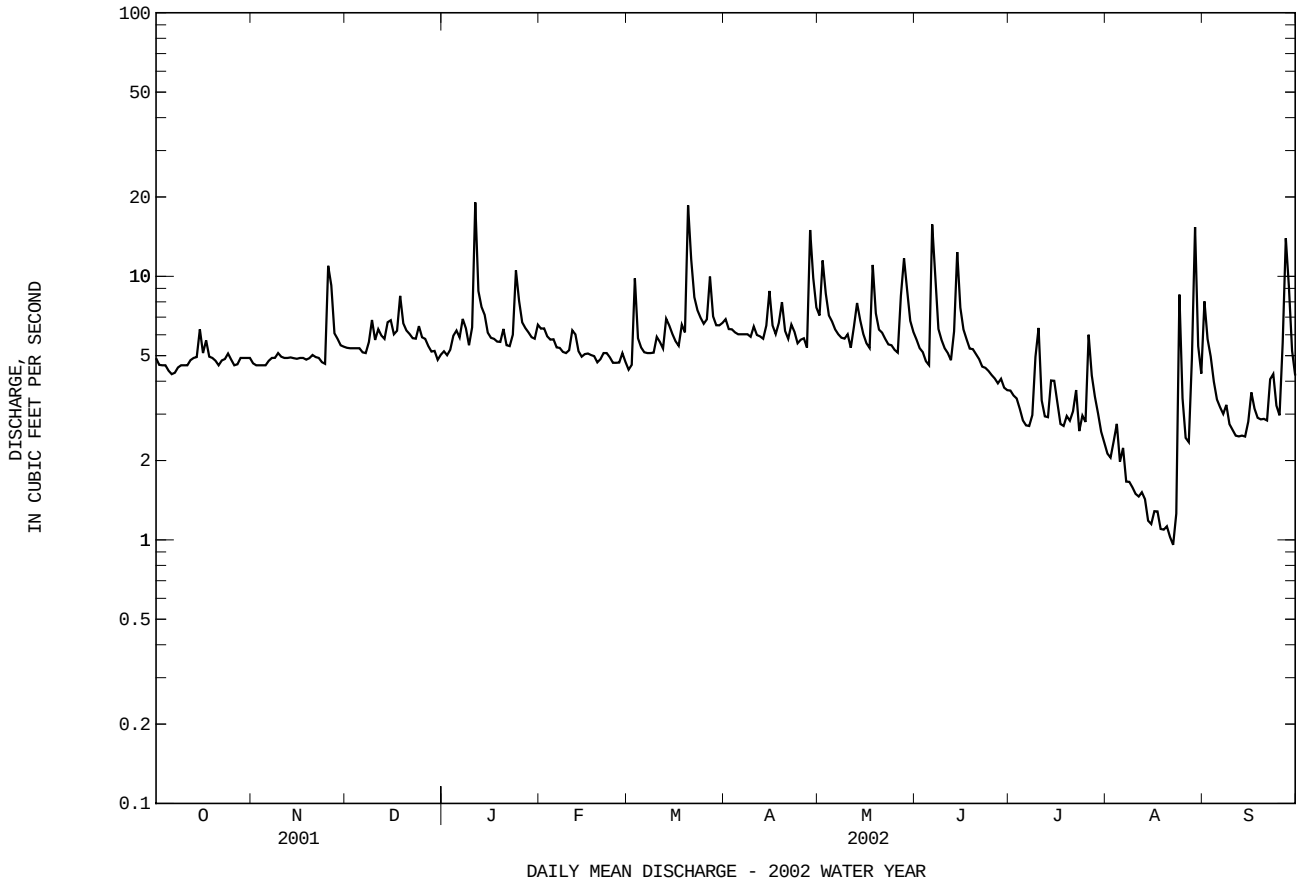
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1988, 1997 - 2002, BY WATER YEAR (WY)

MEAN	9.70	12.4	16.0	15.4	18.8	18.6	19.3	15.6	11.7	9.62	7.71	8.79
MAX	26.0	28.7	49.8	31.1	37.9	35.5	36.1	28.5	20.0	25.7	18.2	21.3
(WY)	1997	1997	1997	1997	1985	1998	1983	1998	1998	1984	1984	1987
MIN	4.68	5.30	5.85	6.78	5.26	6.92	6.73	6.90	5.57	3.38	2.65	3.95
(WY)	1987	2002	2002	2002	2002	2002	2002	2002	1986	2002	2002	1986

01583100 PINEY RUN AT DOVER, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1982 - 1988, 1997 - 2002	
ANNUAL TOTAL	3537.7		1964.16			
ANNUAL MEAN	9.69		5.38		13.6	
HIGHEST ANNUAL MEAN					21.6	1997
LOWEST ANNUAL MEAN					5.38	2002
HIGHEST DAILY MEAN	78	Mar 30	19	(a)	599	Feb 12 1985
LOWEST DAILY MEAN	4.3	(b)	0.96	Aug 22	0.96	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	4.5	Oct 2	1.1	Aug 16	1.1	Aug 16 2002
MAXIMUM PEAK FLOW			137	Jun 6	(c)3220	Sep 8 1987
MAXIMUM PEAK STAGE			3.05	Jun 6	8.28	Sep 8 1987
INSTANTANEOUS LOW FLOW			0.72	(d)	0.72	(d)
ANNUAL RUNOFF (CFSM)	0.79		0.44		1.10	
ANNUAL RUNOFF (INCHES)	10.70		5.94		15.00	
10 PERCENT EXCEEDS	16		7.1		25	
50 PERCENT EXCEEDS	7.7		5.2		9.9	
90 PERCENT EXCEEDS	4.8		2.8		5.0	

a Jan. 11, March 20.
b Oct. 6, 7.
c From rating curve extended above 2,000 ft^3/s.
d Aug. 22, 23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01583500 WESTERN RUN AT WESTERN RUN, MD

LOCATION.--Lat 39°30'38.8", long 76°40'35.4", Baltimore County, Hydrologic Unit 02060003, on right bank 100 ft downstream from bridge on Western Run Road, 0.3 mi southeast of Western Run, 2.5 mi northwest of Cockeysville, 3.2 mi upstream from Beaverdam Run, and 5.0 mi upstream from mouth.

DRAINAGE AREA.--59.8 mi^2.

PERIOD OF RECORD.--September 1944 to current year.

REVISED RECORDS.--WSP 1502: 1945-46, 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 262.78 ft above National Geodetic Vertical Datum of 1929 (Baltimore County bench mark).

REMARKS.--Records good except those for estimated daily discharges (backwater, missing data, syphon lagging), which are fair. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1730	*183	*1.65	No peak greater than base discharge.			

Minimum discharge, UNKNOWN.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	e19	17	21	29	18	31	30	20	11	e8.0	20
2	18	e18	16	19	27	19	28	64	18	10	e7.8	19
3	17	e18	16	18	24	52	27	43	16	10	e7.0	13
4	17	e18	16	21	24	30	26	32	16	9.8	e8.6	11
5	16	e18	16	22	22	24	25	30	16	e9.2	e7.2	9.7
6	16	e18	16	e24	23	23	24	27	21	e9.0	e6.6	9.2
7	16	e18	16	e40	23	22	24	26	51	e8.8	e6.2	9.0
8	16	e18	16	29	23	21	23	25	20	e8.6	e5.4	8.8
9	16	e19	26	24	22	21	24	24	18	e9.0	e5.2	8.7
10	17	e19	19	24	21	24	26	25	16	24	e5.0	8.6
11	17	e20	21	67	24	21	23	21	16	11	e4.7	8.0
12	18	e19	22	41	23	20	22	22	15	9.5	e4.5	7.5
13	17	e18	20	31	21	31	22	32	17	9.4	e4.4	7.6
14	17	e18	21	27	20	33	23	26	48	11	e4.2	8.0
15	25	e18	27	25	21	27	35	22	31	12	e4.1	8.2
16	19	e18	22	23	21	25	26	20	22	9.9	e4.0	9.5
17	20	e18	19	22	20	24	23	19	18	e9.0	e3.9	8.7
18	18	e18	28	22	19	32	23	46	16	e8.8	e3.8	8.4
19	18	e18	28	21	19	32	30	31	16	e8.6	e3.7	8.1
20	18	e19	23	26	19	88	25	24	15	e8.6	e3.6	8.3
21	18	e19	21	22	20	70	22	22	15	e8.6	e3.6	8.3
22	18	e18	21	22	19	45	28	21	14	e9.0	e3.6	8.6
23	18	e18	20	24	18	37	23	20	13	e8.8	e4.3	9.0
24	18	e18	22	48	18	34	21	19	13	e8.6	20	8.9
25	18	25	21	44	18	32	22	18	13	e9.0	12	8.1
26	18	31	20	32	19	32	22	18	12	12	7.9	11
27	18	25	19	29	20	50	20	37	12	14	7.6	47
28	19	19	25	26	18	36	73	37	12	11	9.4	32
29	19	18	20	25	---	33	49	40	12	e8.8	47	15
30	19	17	22	24	---	31	35	27	11	e8.4	17	12
31	e19	---	23	28	---	31	---	22	---	e8.0	12	---
TOTAL	556	575	639	871	595	1018	825	870	553	313.4	252.3	359.2
MEAN	17.9	19.2	20.6	28.1	21.2	32.8	27.5	28.1	18.4	10.1	8.14	12.0
MAX	25	31	28	67	29	88	73	64	51	24	47	47
MIN	16	17	16	18	18	18	20	18	11	8.0	3.6	7.5
CFSM	0.30	0.32	0.34	0.47	0.36	0.55	0.46	0.47	0.31	0.17	0.14	0.20
IN.	0.35	0.36	0.40	0.54	0.37	0.63	0.51	0.54	0.34	0.19	0.16	0.22

e Estimated

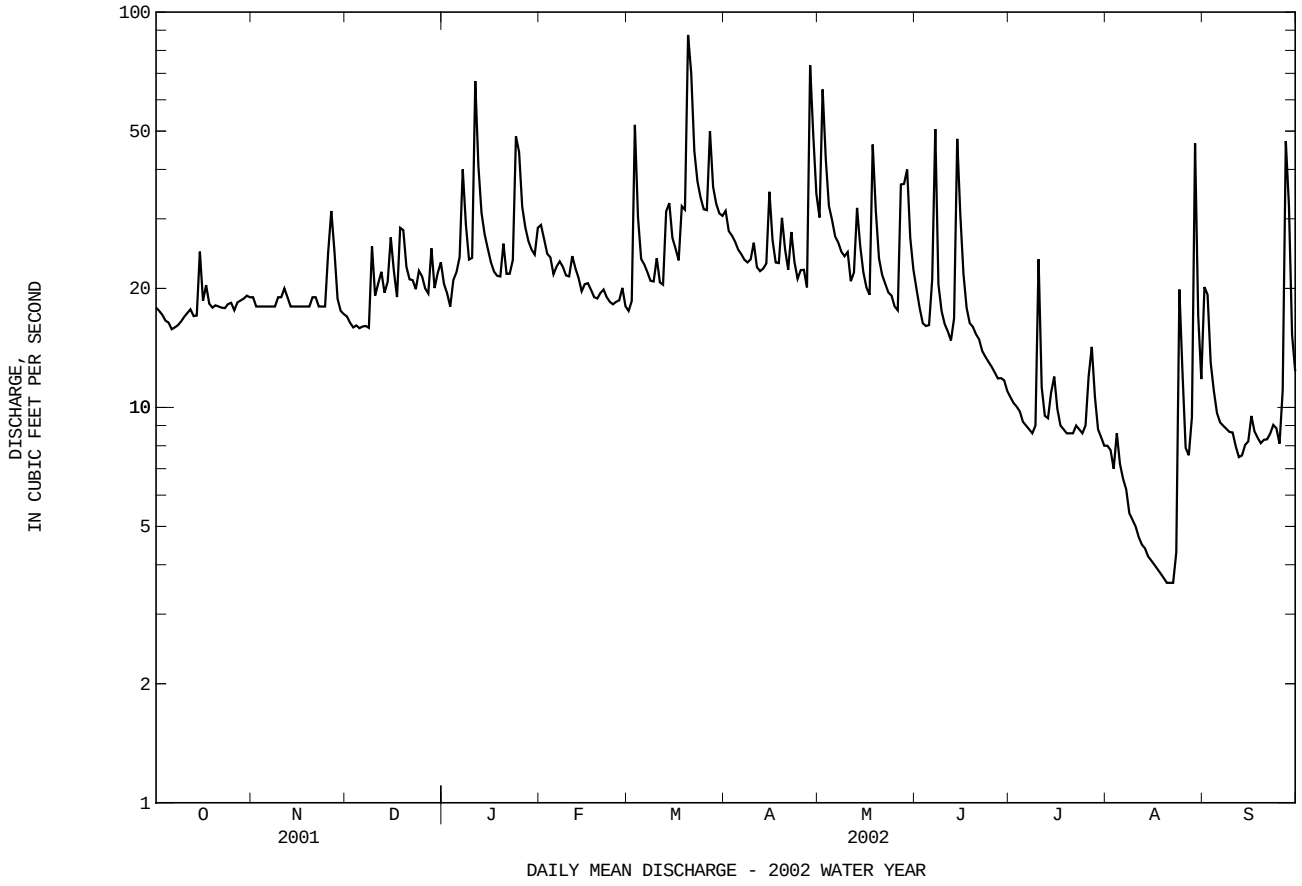
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	45.4	55.9	67.4	80.5	90.4	95.3	89.3	80.9	68.8	54.2	47.9	46.7
MAX	209	143	217	222	240	237	209	227	395	164	183	261
(WY)	1980	1997	1997	1979	1979	1994	1952	1952	1972	1972	1971	1975
MIN	16.4	19.2	19.0	20.5	21.2	32.8	27.5	28.1	18.4	10.1	7.78	12.0
(WY)	1964	2002	1966	1966	2002	2002	2002	2002	2002	2002	1966	2002

01583500 WESTERN RUN AT WESTERN RUN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	15275		7426.9			
ANNUAL MEAN	41.8		20.3		68.5	
HIGHEST ANNUAL MEAN					138	1972
LOWEST ANNUAL MEAN					20.3	2002
HIGHEST DAILY MEAN	364	Mar 30	88	Mar 20	7000	Jun 22 1972
LOWEST DAILY MEAN	13	(a)	(e)3.6	(b)	2.5	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	14	Sep 13	3.7	Aug 16	3.7	Aug 16 2002
MAXIMUM PEAK FLOW			183	Mar 20	(c)38000	Jun 22 1972
MAXIMUM PEAK STAGE			1.65	Mar 20	(d)26.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			UNKNOWN		2.4	Sep 12 1966
ANNUAL RUNOFF (CFSM)	0.70		0.34		1.14	
ANNUAL RUNOFF (INCHES)	9.50		4.62		15.56	
10 PERCENT EXCEEDS	72		32		117	
50 PERCENT EXCEEDS	35		19		51	
90 PERCENT EXCEEDS	17		8.5		23	

a Sept. 17-19.
e Estimated
b Aug. 20-22.
c From rating curve extended above 3,200 ft^3/s, on basis of slope-area measurement and contracted-opening measurement of peak flow.
d From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01583570 POND BRANCH AT OREGON RIDGE, MD

LOCATION.--Lat 39°28'49.1", long 76°41'15.0", Baltimore County, Hydrologic Unit 02060003, on left bank 500 ft upstream from pond, 600 ft above mouth, 1.0 mi southwest of Beaver Dam Road and Ivy Hill Road interchange, and 2.3 mi west of Cockeysville.

DRAINAGE AREA.--0.12 mi^2.

PERIOD OF RECORD.--January 1983 to September 1986, April 1998 to current year.

REVISED RECORDS.--WDR MD-DE-01-1: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and triple V-notch sharp-crested weir plate. Datum of gage is 450 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.1 ft^3/s, May 2, gage height, 1.64 ft; minimum discharge, 0.000 ft^3/s, June 24, Aug. 10-31, Sept. 1, 4-26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.04	0.040	0.047	0.040	0.055	0.047	0.061	0.047	0.034	0.005	0.003	0.11
2	e0.04	0.040	0.047	0.040	0.051	0.082	0.051	0.25	0.030	0.005	0.003	0.036
3	e0.04	0.040	0.047	0.040	0.047	0.15	0.053	0.086	0.029	0.005	0.050	0.019
4	e0.04	0.040	0.047	0.040	0.047	0.061	0.054	0.075	0.025	0.005	0.009	0.007
5	0.037	0.039	0.047	0.044	0.047	0.049	0.054	0.068	0.026	0.004	0.005	0.004
6	0.040	0.040	0.047	0.090	0.047	0.047	0.054	0.062	0.039	0.003	0.004	0.004
7	0.040	0.040	0.047	0.074	0.047	0.047	0.054	0.062	0.034	0.003	0.004	0.005
8	0.040	0.040	0.072	0.058	0.047	0.047	0.053	0.062	0.024	0.003	0.003	0.003
9	0.040	0.040	0.058	0.055	0.047	0.047	0.059	0.062	0.020	0.022	0.003	0.005
10	0.040	0.037	0.046	0.057	0.054	0.056	0.054	0.058	0.019	0.011	0.002	0.004
11	0.040	0.040	0.070	0.11	0.051	0.047	0.047	0.054	0.020	0.006	0.000	0.002
12	0.040	0.034	0.055	0.063	0.047	0.047	0.047	0.053	0.019	0.005	0.000	0.000
13	0.040	0.035	0.054	0.055	0.047	0.090	0.047	0.052	0.067	0.005	0.000	0.000
14	0.061	0.040	0.073	0.054	0.047	0.055	0.047	0.047	0.074	0.014	0.000	0.000
15	0.056	0.040	0.057	0.051	0.047	0.047	0.050	0.047	0.039	0.008	0.000	0.010
16	0.042	0.040	0.054	0.047	0.047	0.046	0.037	0.047	0.028	0.006	0.000	0.007
17	0.055	0.047	0.060	0.047	0.047	0.043	0.033	0.049	0.022	0.006	0.000	0.002
18	0.043	0.047	0.078	0.047	0.047	0.080	0.10	0.15	0.021	0.008	0.000	0.004
19	0.033	0.047	0.054	0.049	0.047	0.051	0.062	0.062	0.019	0.012	0.000	0.006
20	0.033	0.047	0.048	0.048	0.047	0.18	0.048	0.050	0.020	0.012	0.000	0.006
21	0.028	0.047	0.047	0.049	0.047	0.077	0.048	0.047	0.021	0.005	0.000	0.006
22	0.027	0.047	0.047	0.055	0.047	0.062	0.061	0.044	0.021	0.005	0.000	0.007
23	0.027	0.047	0.049	0.084	0.047	0.062	0.041	0.040	0.016	0.004	0.000	0.015
24	0.033	0.050	0.084	0.13	0.047	0.057	0.033	0.036	0.010	0.005	0.075	0.001
25	0.039	0.31	0.055	0.069	0.047	0.051	0.043	0.033	0.007	0.005	0.001	0.001
26	0.040	0.068	0.050	0.062	0.047	0.081	0.037	0.039	0.007	0.020	0.000	0.11
27	0.033	0.050	0.041	0.057	0.051	0.077	0.034	0.088	0.007	0.012	0.000	0.15
28	0.033	0.047	0.040	0.054	0.047	0.062	0.22	0.049	0.007	0.014	0.065	0.065
29	0.033	0.047	0.040	0.047	---	0.062	0.066	0.044	0.006	0.007	0.18	0.034
30	0.033	0.047	0.040	0.047	---	0.062	0.052	0.037	0.005	0.005	0.019	0.032
31	0.035	---	0.040	0.059	---	0.062	---	0.035	---	0.004	0.002	---
TOTAL	1.201	1.573	1.641	1.822	1.343	2.034	1.700	1.935	0.716	0.234	0.428	0.655
MEAN	0.039	0.052	0.053	0.059	0.048	0.066	0.057	0.062	0.024	0.008	0.014	0.022
MAX	0.061	0.31	0.084	0.13	0.055	0.18	0.22	0.25	0.074	0.022	0.18	0.15
MIN	0.027	0.034	0.040	0.040	0.047	0.043	0.033	0.033	0.005	0.003	0.000	0.000
CFSM	0.32	0.44	0.44	0.49	0.40	0.55	0.47	0.52	0.20	0.06	0.12	0.18
IN.	0.37	0.49	0.51	0.56	0.42	0.63	0.53	0.60	0.22	0.07	0.13	0.20

e Estimated

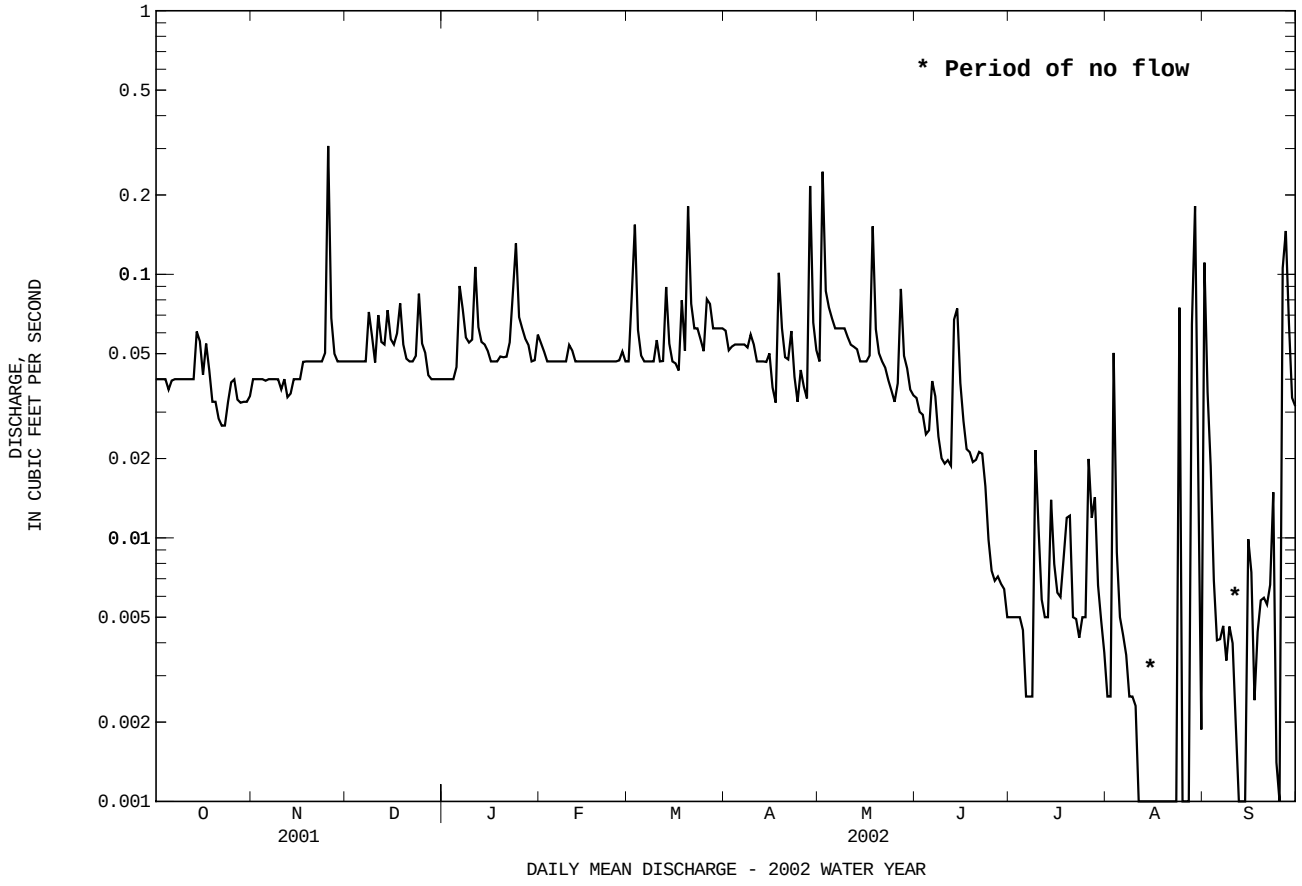
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1986, 1998 - 2002, BY WATER YEAR (WY)

MEAN	0.092	0.11	0.13	0.10	0.13	0.15	0.19	0.20	0.14	0.098	0.081	0.069
MAX	0.13	0.20	0.30	0.17	0.20	0.24	0.40	0.41	0.28	0.27	0.16	0.13
(WY)	1985	1984	1984	1999	1984	1983	1983	1984	1983	1984	1984	1984
MIN	0.038	0.054	0.054	0.059	0.050	0.066	0.056	0.062	0.024	0.008	0.008	0.009
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	1986	1986

01583570 POND BRANCH AT OREGON RIDGE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1983 - 1986, 1998 - 2002
ANNUAL TOTAL	31.140	15.370	
ANNUAL MEAN	0.085	0.042	0.11
HIGHEST ANNUAL MEAN			0.23 1984
LOWEST ANNUAL MEAN			0.042 2002
HIGHEST DAILY MEAN	0.51 Mar 30	0.31 Nov 25	1.8 Jul 1 1984
LOWEST DAILY MEAN	0.030 (a)	0.000 (b)	0.000 (c)
ANNUAL SEVEN-DAY MINIMUM	0.03 Oct 18	0.00 Aug 6	0.00 Jul 11 1986
MAXIMUM PEAK FLOW		2.1 May 2	18 Jul 1 1984
MAXIMUM PEAK STAGE		1.64 May 2	2.19 Jul 1 1984
INSTANTANEOUS LOW FLOW		0.00 (d)	0.00 (c)
ANNUAL RUNOFF (CFSM)	0.71	0.35	0.94
ANNUAL RUNOFF (INCHES)	9.65	4.76	12.77
10 PERCENT EXCEEDS	0.14	0.07	0.22
50 PERCENT EXCEEDS	0.07	0.05	0.09
90 PERCENT EXCEEDS	0.04	0.00	0.03

a Oct. 22, 23.
b Aug. 11-23, 26, 27, Sept. 12-14.
c No flow at times in 1986 and 2002.
d June 24, Aug. 10-31, Sept. 1, 4-26.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01583580 BAISMAN RUN AT BROADMOOR, MD

LOCATION.--Lat 39°28'46.1", long 76°40'40.9", Baltimore County, Hydrologic Unit 02060003, on right bank at upstream side of bridge on Ivy Hill Road, 0.3 mi upstream from mouth, 0.6 mi southwest of Broadmoor, and 1.8 mi west of Cockeysville.

DRAINAGE AREA.--1.47 mi^2.

PERIOD OF RECORD.--August 1964 to September 1969, November 1999 to current year.

GAGE.--Water-stage recorder, crest-stage gage, weir plate. Datum of gage is 330 ft above National Geodetic Vertical Datum of 1929. from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0730	*26	*2.10	No other peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, July 23, 30, 31, Aug. 1-3, 7-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.44	0.42	0.47	e0.43	0.63	0.47	0.67	0.69	0.37	0.13	0.00	0.78
2	0.40	0.47	0.45	e0.41	0.55	0.58	0.61	3.0	0.33	0.12	0.00	0.30
3	0.38	0.47	0.45	e0.43	0.55	1.8	0.61	1.1	0.31	0.11	0.49	0.21
4	0.36	0.46	0.45	e0.47	0.50	0.71	0.57	0.88	0.31	0.09	0.10	0.17
5	0.34	0.44	0.45	e0.56	0.59	0.82	0.56	0.81	0.31	0.07	0.06	0.13
6	0.32	0.42	0.45	e0.52	0.75	0.57	0.54	0.74	0.47	0.05	0.05	0.12
7	0.29	0.43	0.45	e0.70	0.54	0.56	0.54	0.72	0.42	0.06	0.01	0.09
8	0.31	0.43	0.69	e0.56	0.50	0.51	0.54	0.68	0.32	0.08	0.00	0.08
9	0.34	0.41	0.67	e0.46	0.49	0.53	0.59	0.69	0.29	0.24	0.00	0.08
10	0.37	0.42	0.51	e0.60	0.50	0.61	0.58	0.66	0.27	0.31	0.00	0.07
11	0.38	0.41	0.67	1.3	0.50	0.50	0.52	0.58	0.26	0.13	0.00	0.06
12	0.38	0.41	0.54	0.69	0.47	0.51	0.52	0.60	0.24	0.09	0.00	0.05
13	0.35	0.43	0.52	0.58	0.46	0.93	0.54	0.61	0.72	0.09	0.00	0.05
14	0.44	0.45	0.66	0.56	0.62	0.69	0.56	0.54	0.92	0.21	0.00	0.05
15	0.54	0.44	0.57	0.53	0.56	0.61	0.67	0.52	0.56	0.17	0.00	0.09
16	0.39	0.43	0.50	0.50	0.47	0.59	0.54	0.47	0.39	0.10	0.00	0.14
17	0.42	0.44	0.55	0.50	0.45	0.59	0.49	0.47	0.32	0.06	0.00	0.08
18	0.38	0.44	0.78	0.49	0.45	0.95	e0.60	1.4	0.29	0.06	0.00	0.06
19	0.43	0.45	0.56	0.52	0.50	0.71	e0.70	0.64	0.28	0.07	0.00	0.06
20	0.42	0.44	0.49	0.62	0.45	2.2	e0.55	0.54	0.28	0.06	0.00	0.06
21	0.39	0.42	0.48	0.54	0.46	1.1	e0.48	0.51	0.25	0.04	0.00	0.06
22	0.38	0.44	0.46	0.54	0.44	0.81	e0.55	0.48	0.23	0.04	0.00	0.06
23	0.37	0.44	0.46	0.72	0.44	0.75	e0.54	0.46	0.22	0.01	0.00	0.07
24	0.39	0.51	0.59	1.4	0.42	0.70	e0.53	0.45	0.20	0.05	0.43	0.05
25	0.38	2.3	0.50	0.81	0.44	0.66	e0.53	0.41	0.19	0.05	0.07	0.04
26	0.40	0.85	0.47	0.67	0.46	0.84	0.53	0.43	0.18	0.21	0.05	0.83
27	0.40	0.56	e0.50	0.61	0.49	0.97	0.50	0.96	0.17	0.16	0.06	1.3
28	0.40	0.50	e0.43	0.58	0.42	0.74	2.4	0.58	0.18	0.16	0.42	0.74
29	0.41	0.51	e0.41	0.56	---	0.70	0.97	0.51	0.17	0.07	1.4	0.23
30	0.40	0.50	e0.40	0.56	---	0.66	0.80	0.45	0.14	0.03	0.23	0.19
31	0.40	---	e0.42	0.69	---	0.71	---	0.41	---	0.00	0.17	---
TOTAL	12.00	15.74	16.00	19.11	14.10	24.08	19.33	21.99	9.59	3.12	3.54	6.30
MEAN	0.39	0.52	0.52	0.62	0.50	0.78	0.64	0.71	0.32	0.10	0.11	0.21
MAX	0.54	2.3	0.78	1.4	0.75	2.2	2.4	3.0	0.92	0.31	1.4	1.3
MIN	0.29	0.41	0.40	0.41	0.42	0.47	0.48	0.41	0.14	0.00	0.00	0.04
CFSM	0.26	0.36	0.35	0.42	0.34	0.53	0.44	0.48	0.22	0.07	0.08	0.14
IN.	0.30	0.40	0.40	0.48	0.36	0.61	0.49	0.56	0.24	0.08	0.09	0.16

e Estimated

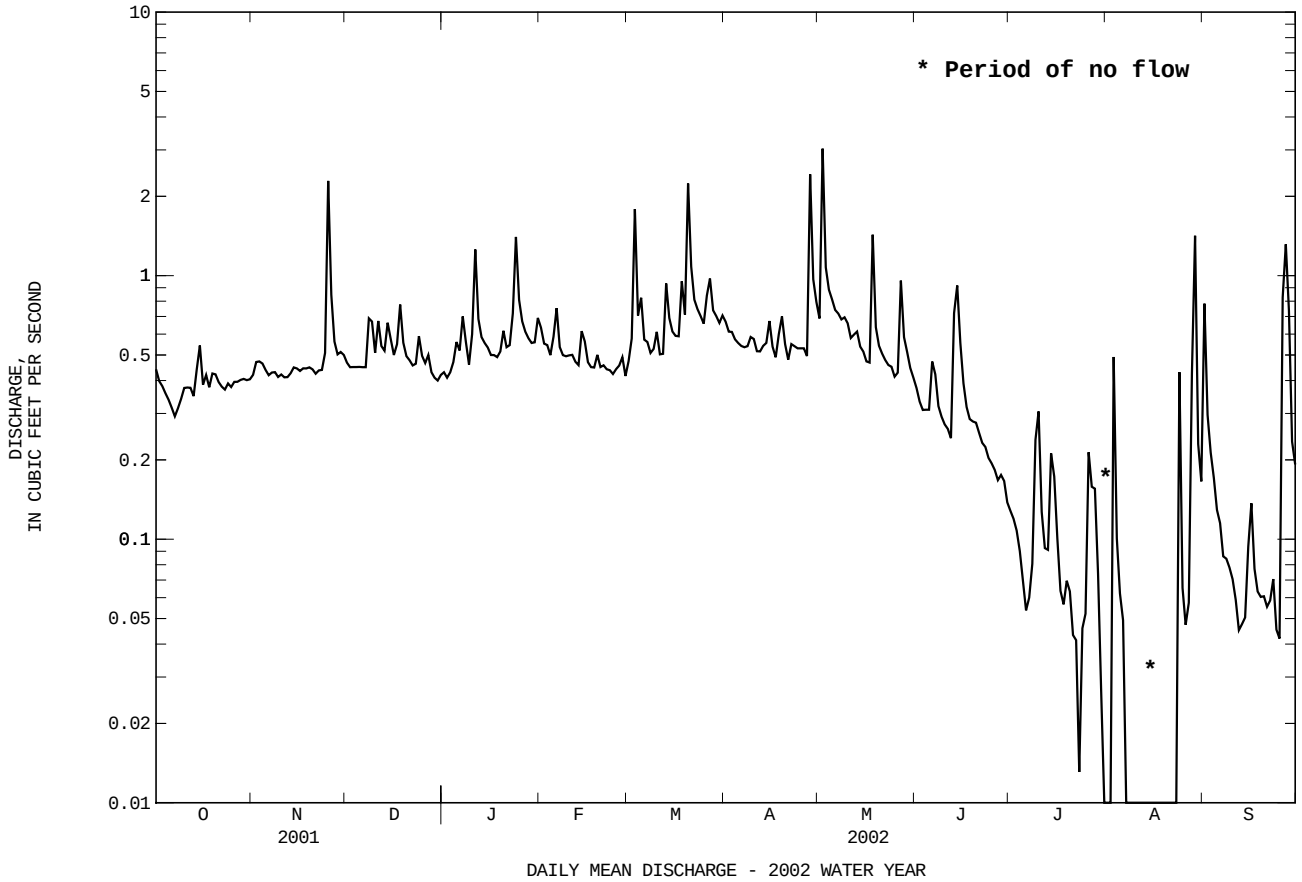
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1969, 2000 - 2002, BY WATER YEAR (WY)

MEAN	0.76	0.85	1.05	1.00	1.16	1.58	1.55	1.39	0.98	0.68	0.85	0.80
MAX	1.52	1.37	1.95	1.69	1.98	2.61	3.45	2.79	2.02	1.30	3.08	2.19
(WY)	2000	2000	2000	1968	2000	2000	2000	2000	1968	2000	1967	1968
MIN	0.39	0.44	0.41	0.46	0.50	0.78	0.64	0.71	0.32	0.10	0.11	0.21
(WY)	2002	1966	1966	1966	2002	2002	2002	2002	2002	2002	2002	2002

01583580 BAISMAN RUN AT BROADMOOR, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 1969, 2000 - 2002	
ANNUAL TOTAL	339.36		164.90			
ANNUAL MEAN	0.93		0.45		1.06	
HIGHEST ANNUAL MEAN					1.85	2000
LOWEST ANNUAL MEAN					0.45	2002
HIGHEST DAILY MEAN	7.1	Mar 30	3.0	May 2	41	Sep 10 1968
LOWEST DAILY MEAN	0.29	Oct 7	0.00	(a)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	0.33	Oct 4	0.00	Aug 8	0.00	Aug 28 1966
MAXIMUM PEAK FLOW			26	May 2	(c)490	Sep 10 1968
MAXIMUM PEAK STAGE			2.10	May 2	5.43	Sep 10 1968
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.63		0.31		0.72	
ANNUAL RUNOFF (INCHES)	8.59		4.17		9.78	
10 PERCENT EXCEEDS	1.7		0.72		1.8	
50 PERCENT EXCEEDS	0.77		0.45		0.86	
90 PERCENT EXCEEDS	0.40		0.06		0.40	

a No flow July 31, Aug. 1-2, 7-23.
b No flow Aug. 28-31, Sept. 1-4, 7-12, 1966, July 31, Aug. 1, 2, 7-23, 2002.
c From rating curve extended above 30 ft^3/s on basis of culvert and flow-over-road measurement at gage height of 5.43 ft and on basis of slope-area measurement at gage height of 2.87 ft.
d No flow July 23, 30, 31, Aug. 1-3, 7-24.
f No flow Aug. 27 to Sept. 13, 1966, July 23, 30, 31, Aug. 1-3, 7-24, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD

LOCATION.--Lat 39°29'08.1", long 76°38'44.6", Baltimore County, Hydrologic Unit 02060003, on left bank of bridge on Maryland Route 45 at Cockeysville, and 0.45 mi upstream from mouth.

DRAINAGE AREA.--20.9 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

REVISED RECORDS.--WDR MD-DE-88: 1983-87.

GAGE.--Water-stage recorder. Datum of gage is 240.42 ft above National Geodetic Vertical Datum of 1929. Previously operated as a low-flow site during water years 1955-59 and 1962-64 at same site. Dec. 15, 1982 to June 15, 1993, water-stage recorder 600 ft downstream and 50 ft upstream from bridge on Beaverdam Run Lane at datum 1.38 ft lower.

REMARKS.--No estimated daily discharges. Records good. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 18	1600	*659	*5.12	No other peak greater than base discharge.			

Minimum discharge, 2.5 ft^3/s, Aug. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	8.3	11	7.8	14	7.2	13	14	9.0	5.1	3.4	51
2	7.8	8.3	10	8.3	11	24	11	106	8.2	4.9	3.2	10
3	7.2	9.4	9.3	8.6	11	62	10	24	6.8	4.7	40	7.1
4	6.9	9.5	8.9	8.4	10	13	11	17	6.6	4.7	6.9	5.9
5	7.1	8.0	8.7	8.4	9.5	13	9.7	15	6.8	4.2	4.8	5.4
6	8.5	7.7	7.9	25	9.7	11	11	13	22	4.2	4.3	5.9
7	7.7	7.9	8.5	21	11	10	11	10	11	4.4	4.4	7.9
8	6.7	7.9	24	11	9.9	9.3	10	9.6	7.5	4.0	4.4	7.8
9	7.4	8.0	16	9.4	9.7	10	12	11	6.8	18	4.5	6.3
10	6.8	8.9	10	9.3	10	16	11	10	5.9	9.1	6.2	5.0
11	7.3	7.6	18	36	10	9.0	11	10	6.2	5.0	6.4	4.8
12	7.7	8.1	10	14	9.2	9.2	11	12	6.3	5.6	5.6	6.2
13	8.5	8.1	9.9	11	9.1	33	11	11	24	5.9	3.6	6.4
14	20	8.5	18	9.8	9.0	14	13	9.8	32	7.9	3.8	7.3
15	13	8.4	12	9.4	8.6	11	15	10	12	5.0	4.0	11
16	10	8.5	9.8	9.0	8.5	13	11	9.2	8.8	4.8	3.5	8.4
17	8.9	8.7	13	9.2	8.5	14	10	11	7.2	4.8	4.8	7.6
18	7.4	8.7	25	9.1	8.2	31	108	54	7.2	9.6	4.9	6.9
19	7.0	8.4	11	10	8.3	15	35	13	7.2	6.6	3.0	5.6
20	7.9	8.2	12	13	8.6	95	18	10	7.0	6.6	3.9	5.7
21	8.1	8.0	11	11	9.1	30	16	8.8	7.0	6.5	3.0	5.8
22	7.2	8.5	9.7	12	10	19	23	8.3	6.5	5.2	3.2	6.8
23	7.5	8.2	9.2	14	9.0	16	14	8.5	6.5	6.7	4.7	6.3
24	7.9	10	15	44	8.9	14	12	8.6	5.3	6.2	47	6.4
25	8.0	81	9.6	19	8.6	12	14	9.3	5.2	5.2	7.9	5.8
26	7.9	27	8.8	13	8.8	28	11	10	5.8	18	6.0	74
27	8.7	12	8.9	12	9.6	28	11	27	6.1	6.3	5.1	67
28	8.8	11	8.5	10	7.7	14	114	10	7.4	9.5	39	32
29	7.7	10	9.1	9.8	---	13	25	9.2	6.6	4.4	46	9.9
30	7.9	10	8.1	10	---	14	17	8.6	6.4	3.8	7.8	7.8
31	8.0	---	8.8	19	---	16	---	8.5	---	3.7	6.8	---
TOTAL	259.7	352.8	359.7	421.5	265.5	623.7	609.7	496.4	271.3	200.6	302.1	404.0
MEAN	8.38	11.8	11.6	13.6	9.48	20.1	20.3	16.0	9.04	6.47	9.75	13.5
MAX	20	81	25	44	14	95	114	106	32	18	47	74
MIN	6.7	7.6	7.9	7.8	7.7	7.2	9.7	8.3	5.2	3.7	3.0	4.8
CFSM	0.40	0.56	0.56	0.65	0.45	0.96	0.97	0.77	0.43	0.31	0.47	0.64
IN.	0.46	0.63	0.64	0.75	0.47	1.11	1.09	0.88	0.48	0.36	0.54	0.72

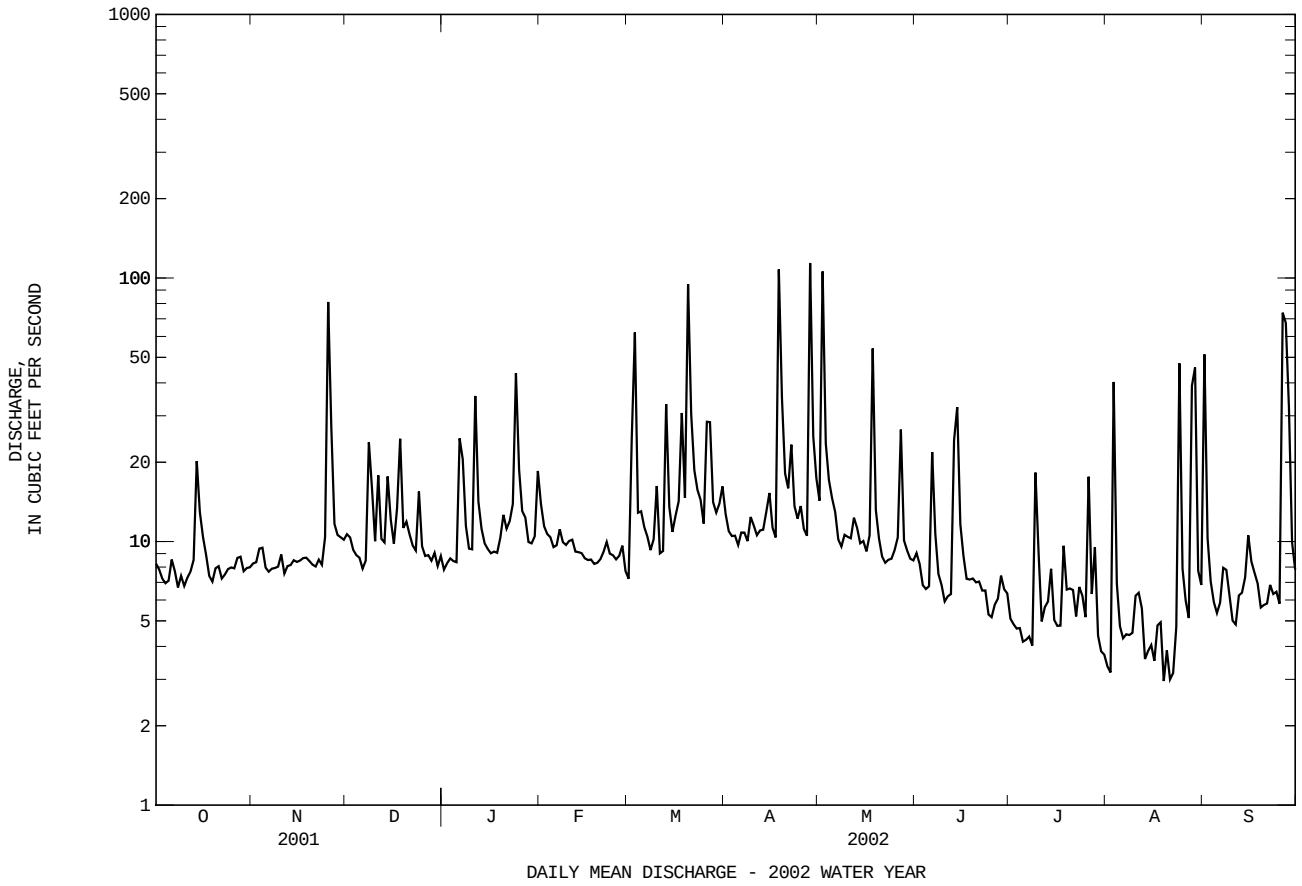
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

MEAN	20.3	28.1	30.2	31.9	32.5	42.0	37.0	35.3	24.8	24.6	21.1	22.1
MAX	45.3	55.4	91.0	69.5	57.5	90.2	81.6	80.5	50.7	72.7	46.0	60.9
(WY)	1997	1997	1997	1996	1994	1994	1983	1989	1996	1996	1996	1999
MIN	8.38	11.8	11.6	13.6	9.48	20.1	18.5	14.5	9.04	6.47	9.75	7.29
(WY)	2002	2002	2002	2002	2002	2002	1985	1986	2002	2002	2002	1986

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	7066.7		4567.0			
ANNUAL MEAN	19.4		12.5		29.1	
HIGHEST ANNUAL MEAN					45.8	1996
LOWEST ANNUAL MEAN					12.5	2002
HIGHEST DAILY MEAN	221	Mar 30	114	Apr 28	903	Jan 19 1996
LOWEST DAILY MEAN	6.7	(a)	3.0	(b)	3.0	(b)
ANNUAL SEVEN-DAY MINIMUM	7.3	Oct 4	3.8	Aug 16	3.8	Aug 16 2002
MAXIMUM PEAK FLOW			659	Apr 18	(c)3360	Jul 1 1984
MAXIMUM PEAK STAGE			5.12	Apr 18	(d)12.10	Jul 1 1984
INSTANTANEOUS LOW FLOW			2.5	(f)	2.5	(f)
ANNUAL RUNOFF (CFSM)	0.93		0.60		1.39	
ANNUAL RUNOFF (INCHES)	12.58		8.13		18.94	
10 PERCENT EXCEEDS	33		20		50	
50 PERCENT EXCEEDS	13		9.0		20	
90 PERCENT EXCEEDS	7.9		5.2		10	

a Oct. 8, 10.
b Aug. 19, 21, 2002.
c From rating curve extended above 1,000 ft^3/s.
d From floodmarks.
f Aug. 19, 20, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

0158397967 MINEBANK RUN NEAR GLEN ARM, MD

LOCATION.--Lat 39°24'36", long 76°33'23", Baltimore County, Hydrologic Unit 02060003, on left bank 0.25 mi upstream from Sherwood Bridge in Cromwell Valley Park, 0.9 mi upstream from mouth, 1.6 mi northwest of Carney, and 4.5 mi southwest of Glen Arm.

DRAINAGE AREA.--2.06 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to September 2002.

GAGE.--Water-stage recorder. Datum of gage is 216.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those above estimated daily discharges (missing or questionable record), which are fair. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 3	0125	(a)*725	(b)*7.58	Jun 6	1755	(a)466	(b)6.88

(a) Discharge from slope-area indirect discharge computation.
(b) High-water mark from crest-stage gage.

Minimum discharge, 0.04 ft^3/s, many days, may have been less during August period of questionable record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.26	0.30	0.86	0.30	0.79	0.30	1.2	0.99	0.92	0.29	e0.06	9.6
2	e0.23	0.32	1.1	0.30	0.48	7.7	0.78	13	0.88	0.27	e0.06	0.22
3	e0.19	0.35	1.1	0.31	0.49	8.4	0.79	1.2	0.85	0.26	15	0.15
4	e0.19	0.35	1.1	0.31	0.49	0.61	0.79	1.0	0.84	0.24	0.19	0.16
5	e0.22	0.30	2.3	0.38	0.45	0.52	0.81	0.98	1.1	0.19	0.12	0.13
6	e0.29	0.23	0.34	5.5	0.46	0.52	0.85	0.83	13	0.18	0.12	0.09
7	e0.21	0.23	0.30	1.7	0.90	0.50	0.85	0.78	1.0	0.21	0.10	0.13
8	e0.18	0.25	3.3	0.58	0.43	0.46	0.87	0.76	0.76	0.20	0.10	0.13
9	e0.18	0.26	0.95	0.55	0.37	0.46	1.5	0.94	0.74	4.2	0.09	0.20
10	e0.18	0.26	0.40	0.44	0.37	0.81	1.00	0.85	0.54	0.49	0.08	0.22
11	e0.21	0.25	2.1	4.5	0.44	0.46	0.82	0.76	0.40	0.18	0.06	0.22
12	e0.22	0.23	0.45	0.60	0.35	0.59	0.81	1.7	0.40	0.12	e0.05	0.22
13	e0.40	0.24	0.44	0.42	0.37	3.9	0.86	1.1	4.2	0.14	e0.05	0.24
14	e3.0	0.26	1.4	0.40	0.35	0.65	0.97	0.87	8.8	0.58	e0.05	0.27
15	e0.88	0.26	0.46	0.42	0.35	0.56	1.2	0.80	1.3	0.21	0.05	1.5
16	1.6	0.26	0.40	0.43	0.35	0.50	1.0	0.76	0.60	0.15	e0.05	0.32
17	0.83	0.26	1.3	0.40	0.35	0.68	1.1	0.82	0.51	0.11	e0.04	0.20
18	0.37	0.26	2.1	0.40	0.33	3.3	6.6	7.9	1.2	0.10	e0.04	0.17
19	0.14	0.26	0.50	0.68	0.35	0.69	8.0	0.80	0.63	0.15	e0.04	0.18
20	0.18	0.27	0.41	1.4	0.35	13	1.2	0.74	0.38	0.15	e0.04	0.11
21	0.16	0.26	0.40	0.88	0.35	1.3	1.2	0.67	0.42	0.13	0.04	e0.06
22	0.22	0.26	0.40	0.95	0.37	0.87	2.9	0.67	0.43	0.11	0.04	e0.04
23	0.32	0.26	0.40	1.6	0.51	0.78	0.83	0.77	0.42	4.2	e0.04	e0.06
24	0.31	0.85	3.6	4.2	0.41	0.71	0.79	0.89	0.35	0.41	6.5	e0.04
25	0.31	18	0.48	0.80	0.40	0.67	1.7	0.96	0.28	0.17	0.13	e0.05
26	0.34	1.1	0.46	0.63	0.40	6.4	0.82	0.86	0.27	3.6	0.06	18
27	0.34	0.45	0.40	0.67	0.43	1.6	0.77	2.1	0.47	0.27	0.05	5.4
28	0.33	0.39	e0.38	0.52	0.30	0.82	18	0.92	0.42	0.19	7.3	0.80
29	0.37	1.0	e0.36	0.50	---	0.75	1.4	0.87	0.42	0.09	2.1	0.12
30	0.35	0.40	0.35	0.69	---	0.73	1.1	0.99	0.30	0.07	0.14	0.12
31	0.33	---	0.35	1.7	---	2.6	---	0.96	---	0.06	0.10	---
TOTAL	13.34	28.37	28.89	33.16	11.99	61.84	61.51	48.24	42.83	17.72	32.89	39.15
MEAN	0.43	0.95	0.93	1.07	0.43	1.99	2.05	1.56	1.43	0.57	1.06	1.30
MAX	3.0	18	3.6	5.5	0.90	13	18	13	13	4.2	15	18
MIN	0.14	0.23	0.30	0.30	0.30	0.30	0.77	0.67	0.27	0.06	0.04	0.04
CFSM	0.21	0.46	0.45	0.52	0.21	0.97	1.00	0.76	0.69	0.28	0.52	0.63
IN.	0.24	0.51	0.52	0.60	0.22	1.12	1.11	0.87	0.77	0.32	0.59	0.71

e Estimated

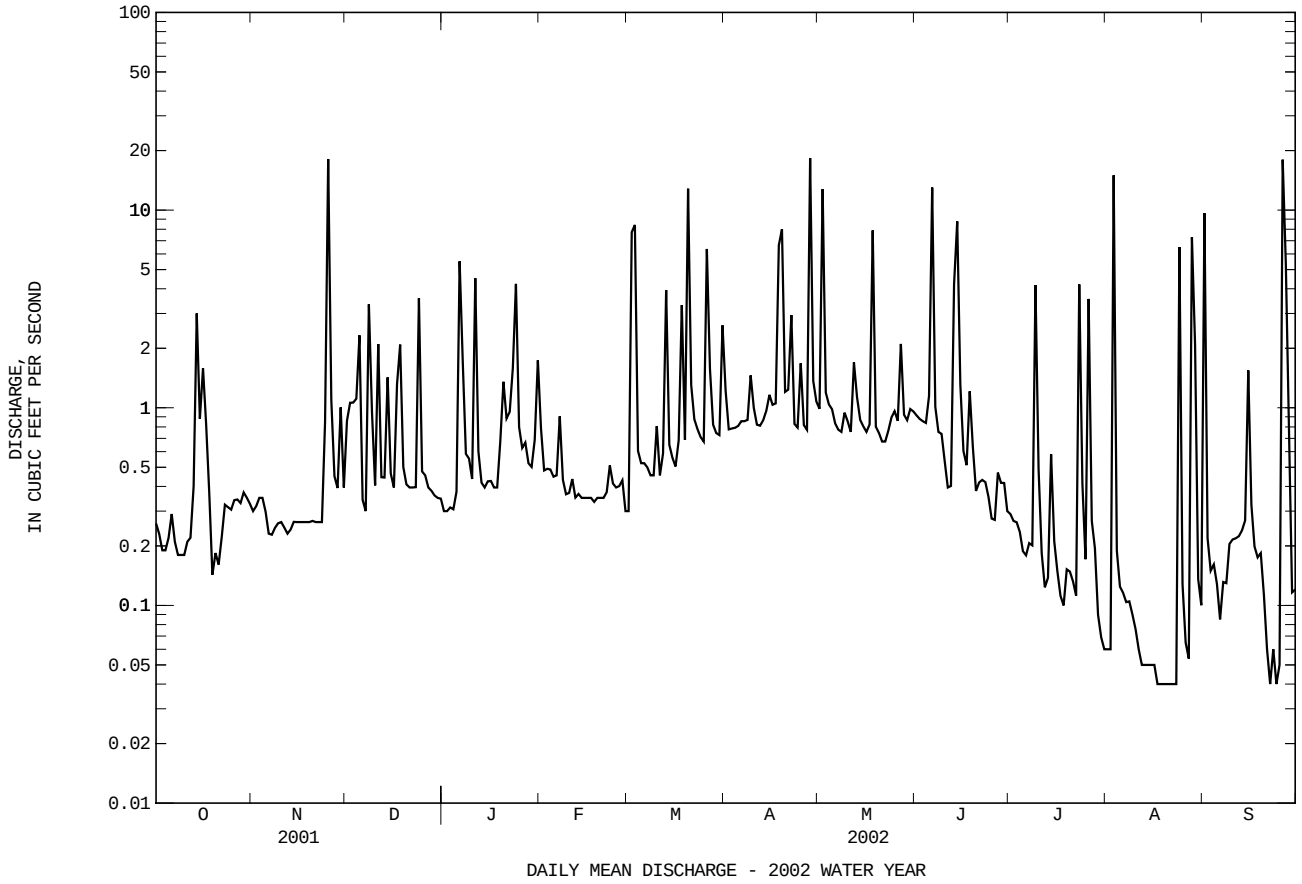
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2002, BY WATER YEAR (WY)

MEAN	0.43	0.95	0.93	1.07	0.43	1.99	2.05	1.56	1.43	0.57	1.06	1.31
MAX	0.43	0.95	0.93	1.07	0.43	1.99	2.05	1.56	1.43	0.57	1.06	1.31
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002
MIN	0.43	0.95	0.93	1.07	0.43	1.99	2.05	1.56	1.43	0.57	1.06	1.31
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

0158397967 MINEBANK RUN NEAR GLEN ARM, MD--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR	
ANNUAL TOTAL	419.93	
ANNUAL MEAN	1.15	
HIGHEST DAILY MEAN	18	(a)
LOWEST DAILY MEAN	(e)0.04	(b)
ANNUAL SEVEN-DAY MINIMUM	0.04	Aug 17
MAXIMUM PEAK FLOW	(c)725	Aug 3
MAXIMUM PEAK STAGE	(d)7.58	Aug 3
INSTANTANEOUS LOW FLOW	(f)0.04	(g)
ANNUAL RUNOFF (CFSM)	0.56	
ANNUAL RUNOFF (INCHES)	7.58	
10 PERCENT EXCEEDS	2.1	
50 PERCENT EXCEEDS	0.43	
90 PERCENT EXCEEDS	0.12	

a Nov. 25, April 28, Sept. 26.
e Estimated.
b Aug. 17-23.
c From rating curve extended above 20 ft^3/s on basis of slope-area measurement of peak flow.
d High-water mark from crest-stage gage.
f May have been less during August period of questionable record.
g Many days.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS personnel

Control riffles downstream of Minebank Run near Glen Arm, MD (0158397967)

0158397967 MINEBANK RUN NEAR GLEN ARM, MD--Continued

PERIOD OF RECORD.--October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1025	ENVIRONMENTAL	.49	862	7.9	-1.0	3.6	12.4	280	72.2	24.2	58.8
MAY												
20...	0945	ENVIRONMENTAL	.73	768	7.7	12.0	13.3	10.4	--	--	--	--
JUL												
15...	0905	ENVIRONMENTAL	.22	753	7.6	27.0	20.8	6.6	250	64.3	22.6	43.2
15...	*0906*	*REPLICATE*	--	--	--	--	--	--	*260*	*65.0*	*22.8*	*44.2*
31...	1315	ENVIRONMENTAL	.09	849	7.5	32.0	27.9	6.8	--	--	--	--
AUG												
08...	1020	ENVIRONMENTAL	.11	802	7.3	24.0	21.6	7.0	--	--	--	--
15...	0945	ENVIRONMENTAL	.05	881	7.2	--	23.9	7.1	--	--	--	--
27...	1055	ENVIRONMENTAL	.06	691	7.3	--	22.9	6.9	--	--	--	--
27...	*1056*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
03...	0910	ENVIRONMENTAL	.17	601	7.6	20.0	19.8	9.4	--	--	--	--
19...	1010	ENVIRONMENTAL	.17	625	7.7	24.5	20.4	11.8	--	--	--	--
26...	0925	ENVIRONMENTAL	.05	852	7.3	--	18.8	7.2	--	--	--	--

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR													
05...	3.16	22.6	155	.1	9.4	<.008	1.21	<.04	E.10	--	<.06	<.02	4.7
MAY													
20...	--	--	--	--	--	<.008	.96	<.04	.11	1.1	<.06	<.02	--
JUL													
15...	3.39	19.5	116	.15	9.3	<.008	.66	<.08	.11	.77	<.06	<.02	8.1
15...	*3.44*	*19.5*	*117*	*.15*	*9.3*	*<.008*	*.70*	*<.04*	*.11*	*.82*	*<.06*	*<.02*	--
31...	--	--	--	--	--	E.004	.36	<.04	.12	.49	<.06	<.02	--
AUG													
08...	--	--	--	--	--	<.008	.38	<.04	E.09	--	<.06	<.02	--
15...	--	--	--	--	--	<.008	.23	<.04	.11	.34	<.06	<.02	--
27...	--	--	--	--	--	<.008	.28	<.04	E.09	--	<.06	<.02	--
27...	--	--	--	--	--	*<.008*	*.28*	*<.04*	*E.08*	--	*<.06*	*<.02*	--
SEP													
03...	--	--	--	--	--	<.008	.53	<.04	E.10	--	<.06	<.02	--
19...	--	--	--	--	--	<.008	.47	<.04	E.08	--	<.06	<.02	--
26...	--	--	--	--	--	<.008	.48	<.04	E.09	--	<.06	<.02	--

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR		
05...	<10	4.9
MAY		
20...	--	--
JUL		
15...	<10	15.8
15...	*<10*	*16.7*
31...	--	--
AUG		
08...	--	--
15...	--	--
27...	--	--
27...	--	--
SEP		
03...	--	--
19...	--	--
26...	--	--

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

01583980 MINEBANK RUN AT LOCH RAVEN, MD

LOCATION.--Lat 39°25'00.0", long 76°32'46.7", Baltimore County, Hydrologic Unit 02060003, on left bank 15 ft downstream from bridge on lane leading to Cromwell Valley Park-Willow Grove Farm, 0.3 mi off Cromwell Bridge Road, 0.4 mi west of Loch Raven, and 0.6 mi upstream from mouth.

DRAINAGE AREA.--2.90 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 181.39 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those above 150 ft^3/s and estimated daily discharges (missing record), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 3	0140	*771	(a)*5.43	No other peak greater than base discharge.			

(a) High-water mark from crest-stage gage.

Minimum discharge, 0.11 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	e0.53	0.53	e0.72	0.73	0.46	1.4	1.2	1.1	0.39	0.28	7.3
2	e0.68	e0.52	0.53	e0.70	0.73	4.5	0.85	15	1.1	0.39	0.28	0.65
3	e0.70	e0.52	0.53	e0.84	0.73	7.7	0.85	2.0	1.1	0.41	17	0.44
4	e0.73	e0.52	0.53	e1.2	0.66	0.80	0.85	1.4	1.1	0.43	1.6	0.41
5	e0.72	e0.52	1.4	e2.5	0.53	0.73	0.85	1.4	0.84	0.33	1.1	0.39
6	e0.70	e0.52	0.67	e4.7	0.53	0.68	0.85	1.2	14	0.33	1.3	0.34
7	e0.66	e0.52	0.62	e2.5	0.53	0.61	0.79	1.1	1.5	0.32	1.2	0.32
8	e0.61	e0.53	1.6	e1.1	0.53	0.53	0.68	1.1	0.85	0.31	0.30	0.27
9	e0.77	e0.55	0.90	e1.0	0.53	0.53	0.75	1.1	0.85	2.6	0.33	0.26
10	e0.80	e0.57	0.62	e0.95	0.53	0.53	0.85	1.2	0.83	0.65	0.40	0.28
11	e0.91	e0.57	1.2	e4.3	0.53	0.53	0.85	1.0	0.82	0.44	0.24	0.28
12	e0.76	e0.53	0.62	e1.3	0.53	0.53	0.85	1.7	0.70	0.39	0.23	0.27
13	e0.73	e0.55	0.62	0.53	0.53	3.5	0.73	1.4	3.8	0.37	0.23	0.22
14	e5.7	e0.57	0.82	0.53	0.53	0.73	0.62	1.2	9.2	0.34	0.24	0.19
15	e3.0	e0.57	0.62	0.53	0.53	0.73	0.62	1.1	2.2	0.38	0.23	0.39
16	e1.6	e0.57	e0.62	0.46	0.49	0.73	0.62	1.1	1.3	0.34	0.23	0.47
17	e2.4	e0.57	e2.9	0.46	0.46	0.73	0.63	1.0	1.2	0.33	0.19	0.34
18	e0.80	e0.57	e2.3	0.43	0.43	2.8	5.5	7.8	1.6	0.30	0.19	0.33
19	e0.76	e0.57	e1.4	0.39	0.41	0.73	10	1.3	1.1	0.28	0.18	0.29
20	e0.63	e0.57	e1.3	0.56	0.40	13	1.7	1.1	0.85	0.28	0.16	0.32
21	e0.56	e0.58	e0.90	0.69	0.41	1.7	1.4	1.1	0.79	0.28	0.16	0.29
22	e0.53	e0.57	e0.90	0.62	0.41	0.87	3.5	1.0	0.73	0.29	0.14	0.28
23	e0.60	e0.57	e2.2	1.2	0.40	0.85	1.1	0.85	0.62	2.9	0.13	0.27
24	e0.62	0.57	e3.8	4.2	0.40	0.85	1.0	0.85	0.60	0.58	3.4	0.23
25	e0.56	15	e1.1	0.94	0.39	0.85	1.8	0.95	0.53	0.39	0.41	0.23
26	e0.54	1.1	e0.94	0.85	0.39	5.5	1.2	1.1	0.51	2.5	0.34	12
27	e0.54	0.74	e0.87	0.85	0.43	2.2	1.0	2.2	0.41	0.49	0.35	3.6
28	e0.54	0.71	e0.85	0.85	0.47	0.89	20	1.1	0.40	0.39	4.8	1.1
29	e0.54	0.84	e0.82	0.75	---	0.85	2.4	1.1	0.39	0.37	2.0	0.46
30	e0.53	0.62	e0.79	0.62	---	0.85	1.5	1.1	0.39	0.35	0.62	0.34
31	e0.53	---	e0.75	1.3	---	2.6	---	1.1	---	0.31	0.51	---
TOTAL	30.75	32.24	34.25	38.57	14.17	59.09	65.74	57.85	51.41	18.46	38.77	32.56
MEAN	0.99	1.07	1.10	1.24	0.51	1.91	2.19	1.87	1.71	0.60	1.25	1.09
MAX	5.7	15	3.8	4.7	0.73	13	20	15	14	2.9	17	12
MIN	0.53	0.52	0.53	0.39	0.39	0.46	0.62	0.85	0.39	0.28	0.13	0.19
CFSM	0.34	0.37	0.38	0.43	0.17	0.66	0.76	0.64	0.59	0.21	0.43	0.37
IN.	0.39	0.41	0.44	0.49	0.18	0.76	0.84	0.74	0.66	0.24	0.50	0.42

e Estimated

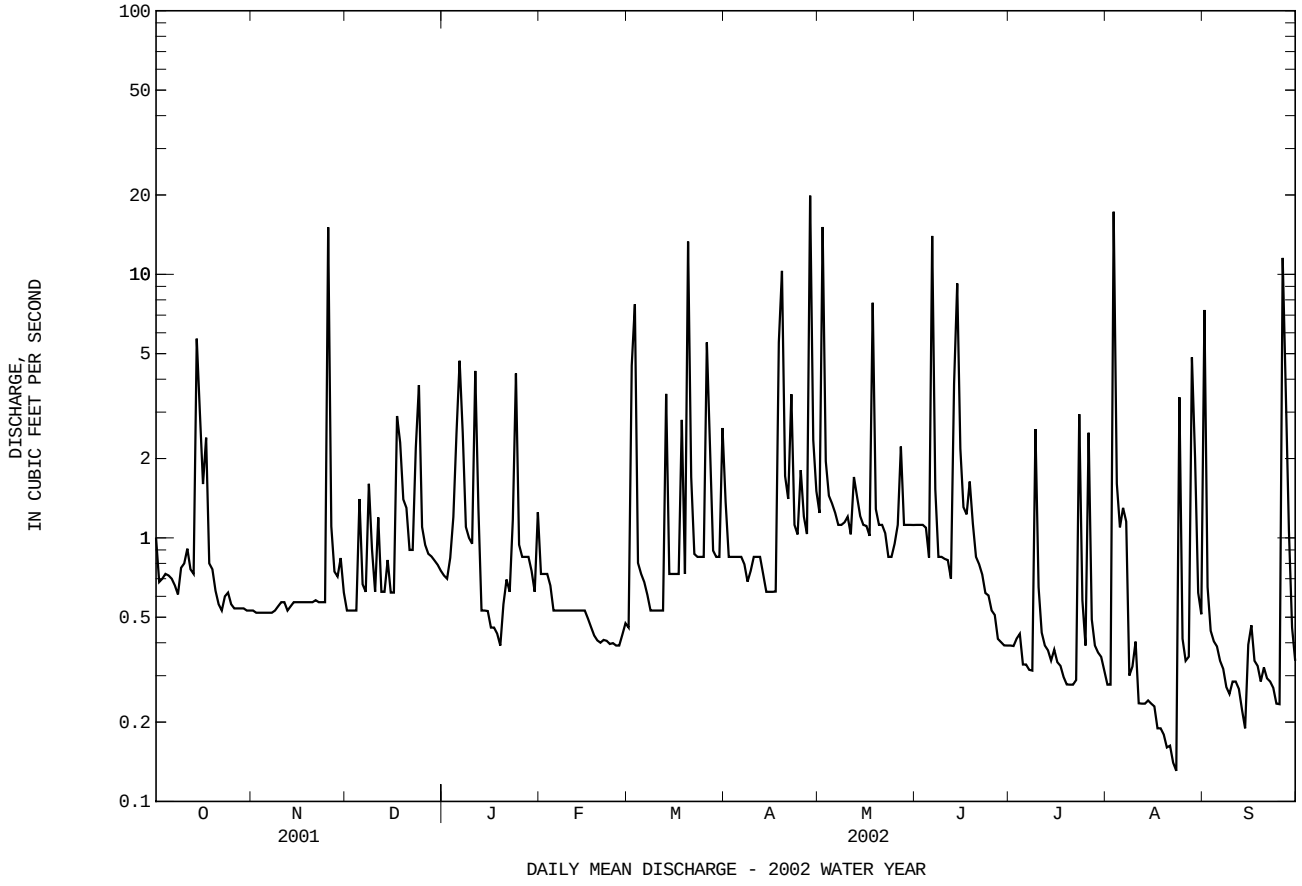
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

MEAN	1.77	2.38	3.18	3.31	3.67	5.07	3.31	2.82	2.67	1.85	2.12	3.77
MAX	3.69	5.01	9.99	5.83	8.31	9.03	4.32	4.94	5.51	4.37	4.55	11.6
(WY)	1997	1998	1997	1998	1998	1998	1997	1998	1998	2000	1999	1999
MIN	0.65	0.78	0.70	1.24	0.51	1.91	2.19	1.48	1.29	0.60	1.01	1.04
(WY)	2001	1999	1999	2002	2002	2002	2002	1999	1999	2002	2001	2001

01583980 MINEBANK RUN AT LOCH RAVEN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	694.24		473.86			
ANNUAL MEAN	1.90		1.30		2.99	
HIGHEST ANNUAL MEAN					4.37	1997
LOWEST ANNUAL MEAN					1.30	2002
HIGHEST DAILY MEAN	30	Mar 21	20	Apr 28	150	Sep 16 1999
LOWEST DAILY MEAN	0.50	(a)	0.13	Aug 23	0.13	Aug 23 2002
ANNUAL SEVEN-DAY MINIMUM	0.51	Aug 24	0.16	Aug 17	0.16	Aug 17 2002
MAXIMUM PEAK FLOW			771	Aug 3	(b)1960	Sep 2 1997
MAXIMUM PEAK STAGE			(c)5.43	Aug 3	7.94	Sep 2 1997
INSTANTANEOUS LOW FLOW			0.11	(d)	0.08	Jul 20 1999
ANNUAL RUNOFF (CFSM)	0.66		0.45		1.03	
ANNUAL RUNOFF (INCHES)	8.91		6.08		14.00	
10 PERCENT EXCEEDS	3.6		2.4		5.7	
50 PERCENT EXCEEDS	1.1		0.68		1.4	
90 PERCENT EXCEEDS	0.54		0.32		0.54	

a August 6, 7, 10.
b From rating curve extended above 150 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
c High-water mark from crest-stage gage.
d August 22, 23.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS personnel

Downstream of Minebank Run at Loch Raven, MD (01583980)

01583980 MINEBANK RUN AT LOCH RAVEN, MD--Continued

PERIOD OF RECORD.--October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR 06...	1135	ENVIRONMENTAL	.65	986	7.7	15.0	12.9	9.8	280	66.8	28.0	79.6

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR 06...	2.80	17.2	188	E.1	9.8	<.008	1.50	<.04	E.05	<.06	<.02	8.3	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR 06...	E1.2

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

01584050 LONG GREEN CREEK AT GLEN ARM, MD

LOCATION.--Lat 39°27'16.9", long 76°28'44.0", Baltimore County, Hydrologic Unit 02060003, on right bank 0.5 mi downstream from bridge on Glen Arm Road, 0.6 mi upstream from State Highway 147 (Harford Road), 0.8 mi east of Glen Arm, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--9.40 mi^2.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing or questionable data) which are fair/poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 18	1615	*106	*2.55	No peak greater than base discharge.			

Minimum discharge, 0.26 ft^3/s, Feb. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.3	2.4	2.4	2.4	3.9	2.6	4.5	5.5	e2.8	1.7	1.2	5.8
2	e2.3	2.4	2.3	2.4	3.4	3.5	3.9	19	e2.5	1.7	1.1	2.6
3	e2.3	2.4	2.3	e2.5	3.1	13	3.7	6.8	e2.3	1.6	1.3	1.9
4	e2.3	2.5	2.3	e2.5	3.0	5.1	3.6	5.2	e2.2	1.5	1.2	e1.5
5	e2.3	2.4	2.3	e2.5	2.7	4.1	3.5	4.8	e2.1	1.4	1.1	e1.4
6	e2.2	2.4	2.3	4.1	2.8	3.9	3.4	4.5	7.0	1.4	1.1	e1.3
7	e2.2	2.4	2.4	5.6	3.1	3.6	3.3	4.2	4.3	1.4	1.0	e1.3
8	e2.2	2.4	3.3	3.8	2.8	3.4	3.3	4.2	2.5	1.5	1.0	e1.2
9	e2.1	2.4	3.7	3.1	2.8	3.3	3.4	4.3	2.3	1.5	0.99	e1.2
10	e2.1	2.4	2.7	3.1	2.7	3.4	3.4	e3.9	2.3	2.0	0.95	e1.1
11	e2.1	2.3	3.7	7.4	2.7	2.7	3.2	e3.5	2.4	1.5	0.93	e1.1
12	2.2	2.2	3.0	4.2	2.6	2.6	3.2	e3.3	2.1	1.4	0.93	1.1
13	2.1	2.3	2.8	3.6	2.6	5.2	3.2	e7.0	4.1	1.4	0.90	1.1
14	2.4	2.3	3.4	3.2	2.7	3.6	3.2	3.7	7.8	1.6	0.87	e1.0
15	3.3	2.3	3.0	3.1	2.8	3.4	3.1	3.1	3.8	1.5	0.85	e1.3
16	2.4	2.4	2.7	3.0	2.8	3.1	3.1	3.2	3.0	1.3	e0.84	e1.9
17	2.6	2.3	2.8	2.8	2.8	2.8	3.0	e10	2.6	e1.2	e0.84	e1.3
18	2.2	2.3	4.7	2.8	2.6	4.8	11	6.6	2.3	e1.5	0.90	e1.2
19	2.3	2.4	3.1	2.8	2.7	3.7	8.9	4.5	2.3	e1.4	e0.84	e1.2
20	2.3	2.4	2.8	3.1	2.8	18	4.9	3.9	2.1	e1.3	e0.82	e1.1
21	2.2	2.4	2.7	3.0	2.8	9.1	4.1	3.5	2.2	1.3	e0.80	1.1
22	2.2	2.4	2.8	3.1	2.7	5.7	4.6	3.6	2.1	1.2	e0.76	1.1
23	2.2	2.4	2.8	3.9	2.7	4.9	3.7	3.4	2.0	3.9	e0.96	1.1
24	2.3	2.5	3.6	7.5	2.6	4.5	3.4	e3.2	1.9	2.7	e2.6	1.1
25	2.2	8.4	2.6	5.2	2.7	4.2	4.3	e3.0	1.9	1.6	e1.5	e1.1
26	2.1	5.3	2.6	4.1	2.8	5.2	4.1	e2.8	1.9	2.6	1.1	e2.0
27	2.2	2.7	2.5	3.7	2.9	8.0	3.6	e2.7	1.9	1.7	1.1	e6.0
28	2.2	2.5	2.4	3.5	2.7	5.2	18	e3.7	1.9	1.9	2.7	5.0
29	2.2	2.5	2.4	3.3	---	4.8	8.0	e3.1	1.8	1.5	4.2	e2.0
30	2.3	2.5	2.4	3.2	---	4.4	6.2	e2.8	1.7	1.3	1.7	e1.8
31	2.3	---	2.5	4.0	---	4.7	---	e2.5	---	1.2	1.4	---
TOTAL	70.6	80.9	87.3	112.5	79.3	156.5	142.8	145.5	82.1	50.7	38.48	53.9
MEAN	2.28	2.70	2.82	3.63	2.83	5.05	4.76	4.69	2.74	1.64	1.24	1.80
MAX	3.3	8.4	4.7	7.5	3.9	18	18	19	7.8	3.9	4.2	6.0
MIN	2.1	2.2	2.3	2.4	2.6	2.6	3.0	2.5	1.7	1.2	0.76	1.0
CFSM	0.24	0.29	0.30	0.39	0.30	0.54	0.51	0.50	0.29	0.17	0.13	0.19
IN.	0.28	0.32	0.35	0.45	0.31	0.62	0.57	0.58	0.32	0.20	0.15	0.21

e Estimated

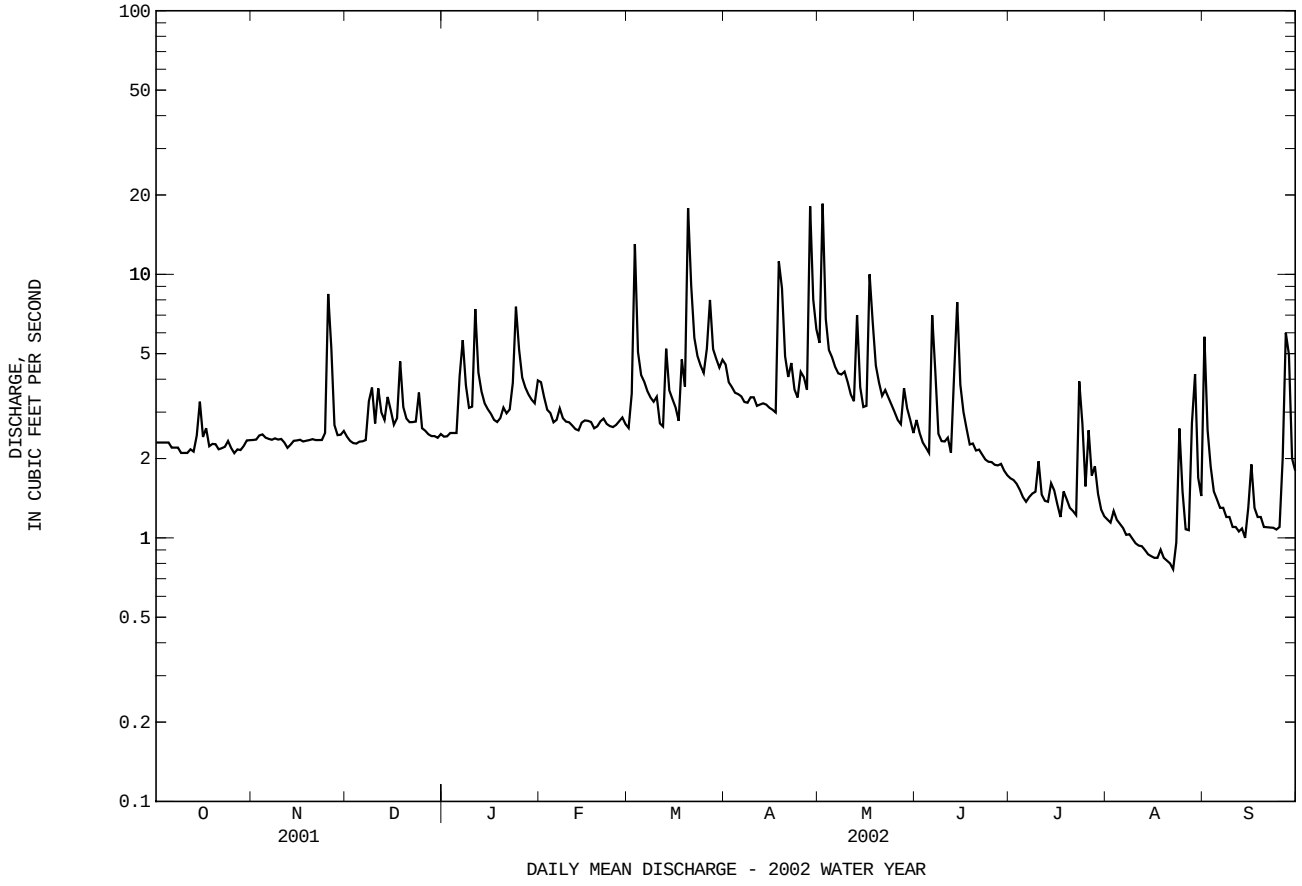
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2002, BY WATER YEAR (WY)

MEAN	7.59	8.62	11.2	14.1	14.1	16.6	13.8	12.3	9.66	8.43	7.24	7.80
MAX	25.1	18.0	33.0	38.4	39.3	39.2	35.3	28.1	18.5	28.0	26.9	32.2
(WY)	1980	1980	1997	1979	1979	1994	1983	1989	1996	1989	1978	1979
MIN	2.28	2.70	2.82	3.63	2.83	5.05	4.76	4.69	2.74	1.64	1.24	1.80
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01584050 LONG GREEN CREEK AT GLEN ARM, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1976 - 2002	
ANNUAL TOTAL	2028.1		1100.58			
ANNUAL MEAN	5.56		3.02		10.9	
HIGHEST ANNUAL MEAN					18.1	1979
LOWEST ANNUAL MEAN					3.02	2002
HIGHEST DAILY MEAN	68	Mar 30	19	May 2	408	Jan 26 1978
LOWEST DAILY MEAN	1.8	(a)	(e)0.76	Aug 22	(e)0.76	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 3	0.83	Aug 16	0.83	Aug 16 2002
MAXIMUM PEAK FLOW			106	Apr 18	(b)3250	Jul 1 1984
MAXIMUM PEAK STAGE			2.55	Apr 18	6.70	Jul 1 1984
INSTANTANEOUS LOW FLOW			(c)0.26	Feb 5	(c)0.26	Feb 5 2002
ANNUAL RUNOFF (CFSM)	0.59		0.32		1.16	
ANNUAL RUNOFF (INCHES)	8.03		4.36		15.82	
10 PERCENT EXCEEDS	10		4.8		18	
50 PERCENT EXCEEDS	3.9		2.6		7.9	
90 PERCENT EXCEEDS	2.2		1.2		3.2	

a Aug. 10, Sept. 7 - 9, 17 - 19.
e Estimated
b From rating curve extended above 1,300 ft^3/s.
c Result of freezeup.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD

LOCATION.--Lat 39°30'19.3", long 76°25'54.4", Baltimore County, Hydrologic Unit 02060003, on right bank 700 ft upstream from Laurel Brook, 750 ft upstream from bridge on Bottom Road, 5 mi southwest of Bel Air, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--36.1 mi^2.

PERIOD OF RECORD.--October 1926 to September 1970, October 1998 to current year. Monthly discharge only for some periods, published in WSP 1302. Annual maximums, water years 1971-86.

REVISED RECORDS.--WSP 726: 1927-31, drainage area. WSP 1502: 1936 (M), 1944-46, 1947-48 (P), 1949 (M), 1950-51.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 261.43 ft above National Geodetic Vertical Datum of 1929 (city of Baltimore benchmark).

REMARKS.--Records good except those for estimated daily discharges (ice effect, questionable record), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1645	*181	*2.44	No peak greater than base discharge.			

Minimum discharge, 1.1 ft^3/s, Aug. 21, may have been lower during period of questionable record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	13	15	14	20	14	20	19	12	6.7	e2.8	26
2	15	13	15	14	18	15	18	55	e11	6.7	e2.5	15
3	14	13	15	14	17	55	17	27	e11	6.5	e7.0	7.8
4	13	13	15	14	17	23	17	20	e10	6.0	e5.0	4.9
5	13	13	15	14	16	19	17	18	e9.8	e5.6	e4.0	3.6
6	12	13	15	16	17	18	17	17	e12	e5.0	e3.2	3.3
7	12	13	15	23	16	17	17	16	16	e4.5	e2.7	3.2
8	12	13	16	19	16	17	16	16	12	e5.2	e2.4	3.1
9	11	13	20	17	16	16	16	15	12	e5.4	e2.3	3.0
10	11	13	17	17	16	18	18	16	e11	16	e2.3	2.9
11	11	13	17	33	16	17	16	14	e10	7.5	e2.2	2.8
12	11	13	17	24	15	16	16	15	e9.0	e5.6	e2.1	2.6
13	11	13	16	19	15	24	16	21	e12	e5.4	e1.9	2.6
14	11	13	17	17	15	23	16	18	e27	e6.0	e1.8	2.7
15	17	13	18	17	15	19	18	16	e18	7.4	e1.7	3.2
16	12	13	16	16	15	18	16	14	e13	6.0	e1.6	4.8
17	13	13	16	16	15	17	16	13	11	e5.8	e1.5	3.7
18	12	13	22	16	15	22	16	34	10	e5.4	e1.4	3.2
19	12	13	18	15	15	21	22	21	10	e5.0	e1.3	3.1
20	12	13	16	18	15	74	17	16	9.9	e4.7	e1.2	3.2
21	12	13	16	16	15	46	16	15	9.6	e4.0	e1.1	3.2
22	12	13	16	16	15	27	17	14	8.8	e3.6	e0.90	3.4
23	12	13	15	17	14	22	16	14	8.5	e5.0	e1.0	3.4
24	12	13	17	35	14	21	15	13	8.4	e6.0	e6.0	3.1
25	12	29	16	31	14	20	15	13	8.2	e5.2	e7.0	3.3
26	12	40	16	21	14	20	15	12	7.9	e6.4	e4.2	8.3
27	12	18	15	19	15	34	14	15	7.6	6.3	e3.3	32
28	12	17	17	18	15	23	61	15	7.6	6.0	e5.0	26
29	12	16	15	17	---	20	30	14	7.5	e5.4	19	11
30	12	16	e14	17	---	19	21	13	6.9	e4.0	9.1	8.5
31	12	---	e14	19	---	19	---	12	---	e3.2	6.4	---
TOTAL	382	448	502	579	436	734	562	551	327.7	181.5	113.90	206.9
MEAN	12.3	14.9	16.2	18.7	15.6	23.7	18.7	17.8	10.9	5.85	3.67	6.90
MAX	17	40	22	35	20	74	61	55	27	16	19	32
MIN	11	13	14	14	14	14	14	12	6.9	3.2	0.90	2.6
CFSM	0.34	0.41	0.45	0.52	0.43	0.66	0.52	0.49	0.30	0.16	0.10	0.19
IN.	0.39	0.46	0.52	0.60	0.45	0.76	0.58	0.57	0.34	0.19	0.12	0.21

e Estimated

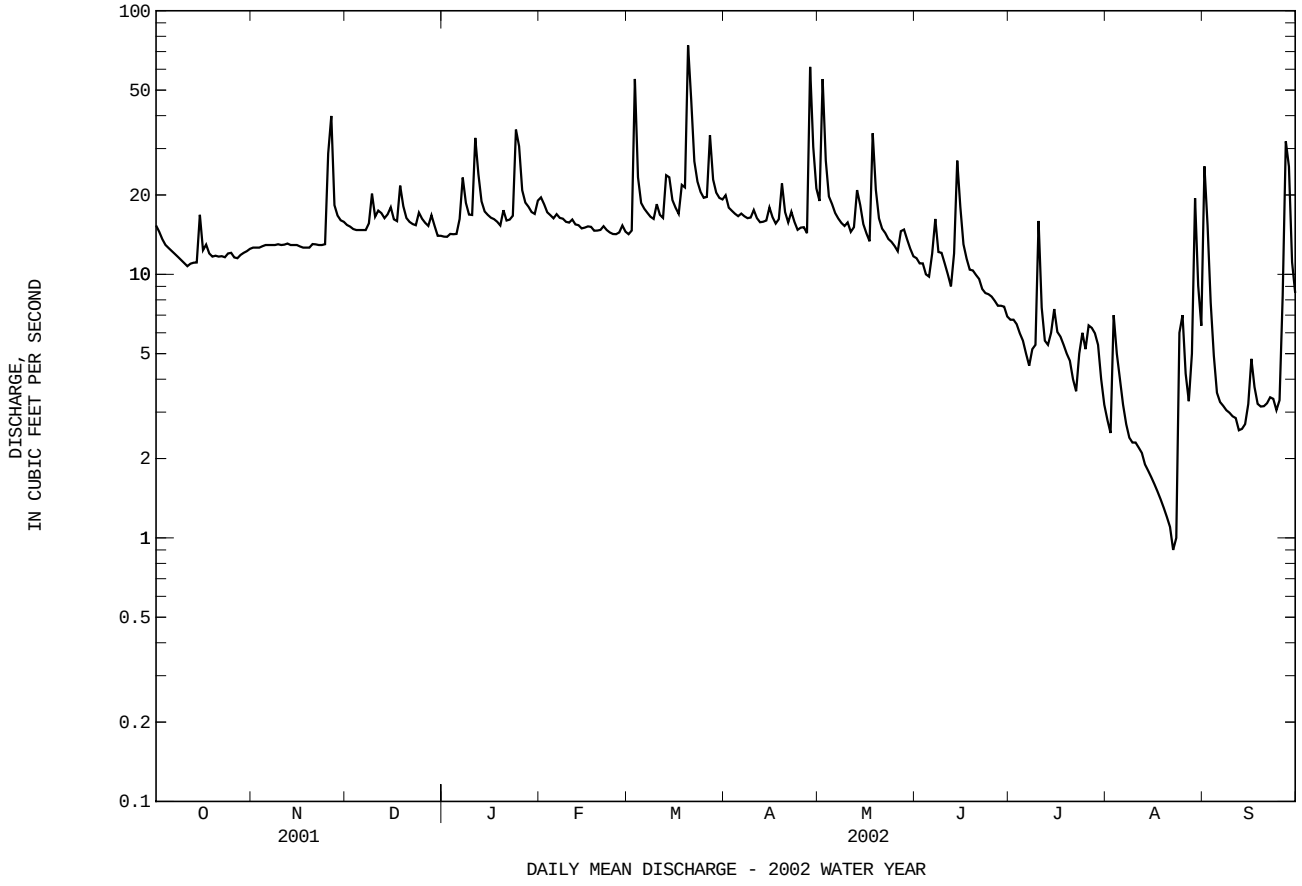
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1970, 1999 - 2002, BY WATER YEAR (WY)

MEAN	29.8	38.2	39.7	48.8	56.0	58.5	58.2	48.5	41.0	34.4	37.1	31.5
MAX	81.8	118	80.9	110	115	129	120	133	161	88.5	215	117
(WY)	1930	1927	1951	1936	1936	1936	1952	1952	1928	1952	1928	1934
MIN	7.83	9.29	12.1	16.2	15.6	23.7	18.7	17.2	10.9	5.85	3.67	6.90
(WY)	1932	1932	1932	1966	2002	2002	2002	1963	2002	2002	2002	2002

01584500 LITTLE GUNPOWDER FALLS AT LAUREL BROOK, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1927 - 1970, 1999 - 2002	
ANNUAL TOTAL	10482		5024.00			
ANNUAL MEAN	28.7		13.8		43.2	
HIGHEST ANNUAL MEAN					81.5	1952
LOWEST ANNUAL MEAN					13.8	2002
HIGHEST DAILY MEAN	276	Mar 30	74	Mar 20	2800	Aug 23 1933
LOWEST DAILY MEAN	11	(a)	(e)0.90	Aug 22	(e)0.90	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	11	Oct 8	1.2	Aug 17	1.2	Aug 17 2002
MAXIMUM PEAK FLOW			181	Mar 20	(b)9200	Aug 23 1933
MAXIMUM PEAK STAGE			2.44	Mar 20	10.30	Aug 23 1933
INSTANTANEOUS LOW FLOW			(c)1.1	Aug 21	(c)1.1	Aug 21 2002
ANNUAL RUNOFF (CFSM)	0.80		0.38		1.20	
ANNUAL RUNOFF (INCHES)	10.80		5.18		16.25	
10 PERCENT EXCEEDS	47		20		70	
50 PERCENT EXCEEDS	23		14		32	
90 PERCENT EXCEEDS	13		3.3		14	

a Sept. 18, 19, Oct. 9 - 14.
e Estimated.
b From rating curve extended above 2,300 ft^3/s on basis of slope-area measurement of peak flow.
c Measured discharge of 1.1 ft^3/s, Aug. 21, 2002, may have been lower during period of questionable record.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585090 WHITEMARSH RUN NEAR FULLERTON, MD

LOCATION.--Lat 39°22'46.5", long 76°29'44.9", Baltimore County, Hydrologic Unit 02060003, on right bank 200 ft downstream of Route 43 bridge, 1.0 mi west of White Marsh. and 5.0 mi upstream from mouth.

DRAINAGE AREA.--2.73 mi^2.

PERIOD OF RECORD.--January 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 125 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater from beavers, missing record), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 23	1815	*1,710	*4.92	No other peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, July 23, Aug. 10-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.0	e0.64	e0.80	e0.43	1.7	e0.60	2.3	e2.0	1.1	0.16	0.15	16
2	e1.3	e0.56	e1.1	e0.41	0.76	21	1.1	e60	0.41	0.15	0.11	1.1
3	e1.1	e0.50	e0.50	0.38	0.62	27	1.0	e3.0	0.33	0.16	6.4	0.43
4	e0.90	e0.45	e0.50	0.56	0.59	1.1	e0.90	1.9	0.31	0.15	0.36	0.32
5	e0.70	e0.41	e0.50	0.45	1.3	e0.80	e0.64	1.9	4.8	0.13	0.15	0.24
6	e0.60	e0.45	e0.50	14	0.52	e0.60	e0.52	1.6	30	0.07	0.10	0.23
7	e0.50	e0.50	e0.50	4.7	1.4	e0.50	e0.48	1.3	2.3	0.07	0.04	0.26
8	e1.40	e0.54	e8.0	2.5	0.53	e0.45	e0.50	1.2	1.1	0.10	0.03	e0.22
9	0.55	e0.45	e3.0	e1.8	0.43	0.33	e1.0	1.2	0.66	5.1	0.02	e0.20
10	e0.50	e0.60	e0.80	e1.2	e0.49	2.0	e2.1	1.2	0.54	1.4	0.01	e0.19
11	0.41	e0.56	e7.5	e15	e0.60	0.42	e0.90	0.68	0.37	0.22	0.00	e0.18
12	e0.41	e0.65	e1.2	e3.0	e0.50	0.42	e0.50	4.4	0.28	0.09	0.00	e0.16
13	e0.41	e0.70	e0.80	e2.0	e0.40	9.7	e0.48	5.2	7.2	0.06	0.00	e0.14
14	6.5	e0.70	e6.0	e1.5	e0.40	0.81	e0.60	1.5	24	1.0	0.00	e0.20
15	2.6	e1.80	e2.0	e1.2	e0.50	0.50	e0.80	1.3	3.6	0.29	0.00	e1.0
16	1.9	e0.65	e1.3	e1.1	e0.50	0.42	e0.55	0.90	1.2	0.10	0.00	e0.80
17	1.4	e0.70	e3.0	e1.1	e0.45	0.65	e0.35	1.1	e0.75	0.04	0.00	e0.20
18	0.56	e0.55	e10	e0.90	e0.40	8.1	e4.0	15	1.6	0.03	0.00	e0.18
19	0.51	e0.35	e2.2	e1.5	e0.45	0.94	e20	1.4	5.2	1.6	0.00	e0.17
20	e0.45	e0.28	e1.5	e3.0	e0.60	38	e4.0	0.96	1.4	0.11	0.00	e0.17
21	e0.40	e0.25	e1.1	e1.5	e0.70	3.1	e2.0	0.86	0.63	0.03	0.00	e0.15
22	e0.40	e0.25	e0.90	e1.0	0.46	1.2	e10	0.82	0.42	0.02	0.00	e0.14
23	e0.50	e0.25	e1.3	e4.0	0.42	0.75	e1.3	0.70	0.38	53	0.00	e0.13
24	e0.52	e0.80	e10	20	0.42	0.54	e0.80	0.71	0.36	3.5	e10	e0.13
25	e0.40	52	e1.3	1.8	0.51	0.47	e4.0	0.90	0.31	0.94	e0.60	e0.13
26	e0.30	4.1	e1.1	e1.2	3.1	14	e0.80	0.68	0.28	3.9	e0.30	27
27	e0.32	0.74	e0.90	e1.0	4.3	5.7	e0.40	3.5	0.62	0.68	0.14	8.3
28	e0.32	e1.0	e0.80	e0.96	e0.60	1.5	e100	1.5	0.62	0.87	12	2.8
29	e0.38	e1.2	e0.60	e0.80	---	1.2	e10	0.78	0.24	0.44	4.9	0.30
30	e0.45	e1.0	e0.50	e0.90	---	1.1	e3.0	0.54	0.16	0.36	3.0	0.15
31	e0.60	---	e0.47	e6.0	---	4.9	---	1.1	---	0.42	0.48	---
TOTAL	29.29	72.63	70.67	95.89	23.65	148.80	175.02	119.83	91.17	75.19	38.79	61.62
MEAN	0.94	2.42	2.28	3.09	0.84	4.80	5.83	3.87	3.04	2.43	1.25	2.05
MAX	6.5	52	10	20	4.3	38	100	60	30	53	12	27
MIN	0.30	0.25	0.47	0.38	0.40	0.33	0.35	0.54	0.16	0.02	0.00	0.13
CFSM	0.35	0.89	0.84	1.13	0.31	1.76	2.14	1.42	1.11	0.89	0.46	0.75
IN.	0.40	0.99	0.96	1.31	0.32	2.03	2.38	1.63	1.24	1.02	0.53	0.84

e Estimated

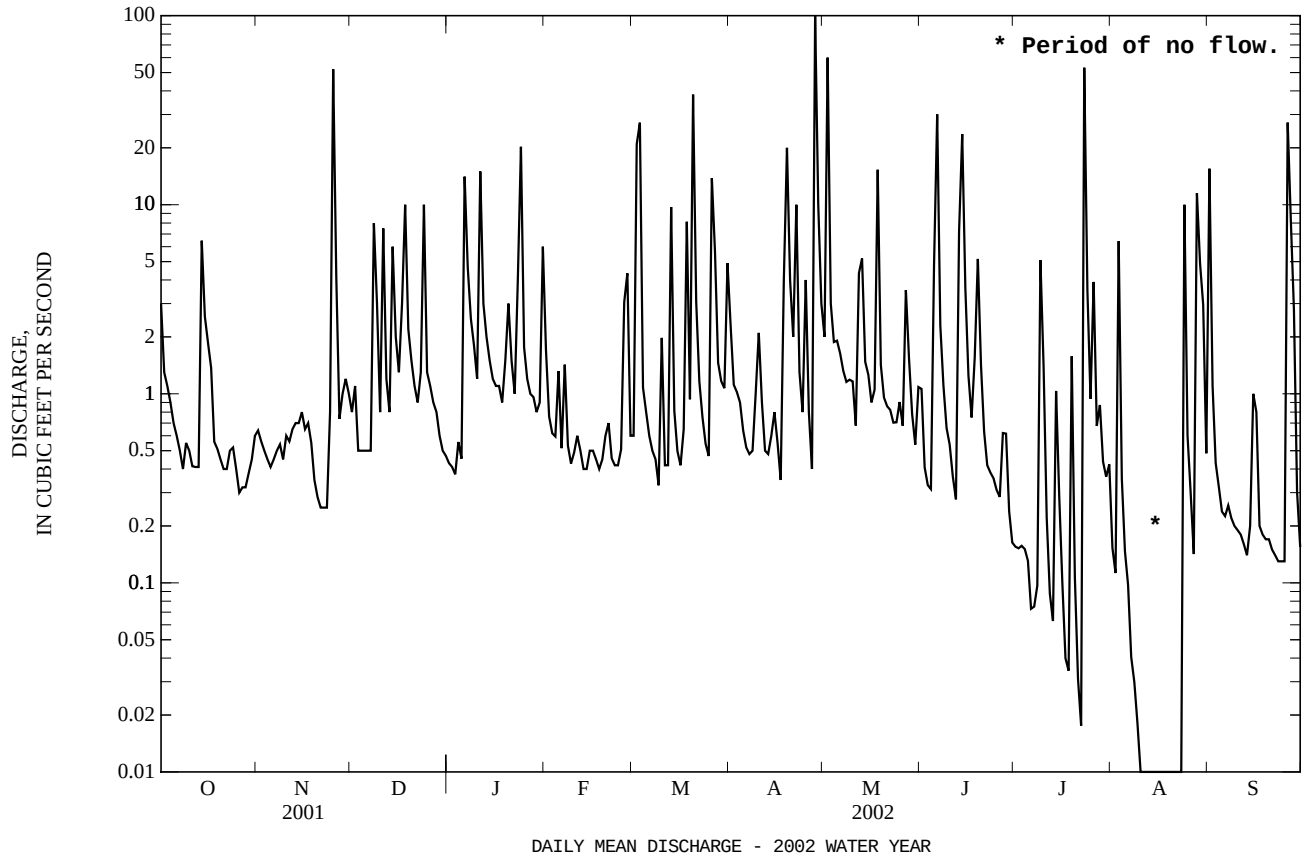
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2002, BY WATER YEAR (WY)

MEAN	3.71	3.89	4.37	6.44	4.88	7.16	4.25	4.08	4.39	3.55	3.21	5.20
MAX	10.8	7.49	12.6	13.2	12.0	13.1	6.58	6.88	13.5	10.3	9.81	20.2
(WY)	1996	1998	1997	1996	1998	1998	1996	1996	1996	2000	1999	1999
MIN	0.61	1.02	0.95	2.44	0.84	4.61	1.99	1.64	1.44	0.41	0.96	2.07
(WY)	2001	1999	1999	2000	2002	1995	1995	1997	1995	1997	1995	2002

01585090 WHITEMARSH RUN NEAR FULLERTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1995 - 2002	
ANNUAL TOTAL	1131.74		1002.55			
ANNUAL MEAN	3.10		2.75		4.78	
HIGHEST ANNUAL MEAN					7.35	1996
LOWEST ANNUAL MEAN					2.60	2002
HIGHEST DAILY MEAN	62	Mar 21	(e)100	Apr 28	418	Sep 16 1999
LOWEST DAILY MEAN	(e)0.25	Nov 21	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.38	Nov 17	0.00	Aug 11	0.00	Aug 11 2002
MAXIMUM PEAK FLOW			1710	Jul 23	(b)3480	Jul 16 2000
MAXIMUM PEAK STAGE			4.92	Jul 23	5.99	Jul 16 2000
INSTANTANEOUS LOW FLOW			0.00	(c)	0.00	(d)
ANNUAL RUNOFF (CFSM)	1.14		1.01		1.75	
ANNUAL RUNOFF (INCHES)	15.42		13.66		23.81	
10 PERCENT EXCEEDS	6.1		5.1		10	
50 PERCENT EXCEEDS	1.3		0.65		1.4	
90 PERCENT EXCEEDS	0.52		0.14		0.36	

e Estimated
a Aug. 11-23, 2002.
b From rating curve extended above 120 ft^3/s.
c July 23, Aug. 10-24.
d Aug. 26, 1995, Aug. 14, 1999, July 23, Aug. 10-24, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°23'09.2", long 76°28'07.9", Baltimore County, Hydrologic Unit 02060003, on left bank 100 ft upstream of culverts under Baconsfield Drive, 0.6 mi upstream from confluence with Whitemarsh Run, 0.9 mi southeast of Perry Hall, and 2.1 mi east of White Marsh.

DRAINAGE AREA.--1.34 mi^2.

PERIOD OF RECORD.--April 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 75 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good above 0.5 ft^3/s and fair below except those for estimated daily discharges (recorder malfunction,ice effect and float wire tangled), which are poor.Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 19	Unknown	*301	(a)*3.59	No other peak greater than base discharge.			

(a) From Crest-stage gage.

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.74	0.07	0.07	0.05	0.84	0.15	1.3	0.42	0.44	0.05	0.01	7.6
2	0.11	0.06	0.07	0.05	0.36	5.2	0.46	e0.58	0.17	0.05	0.00	0.42
3	0.08	0.06	0.07	0.05	0.32	9.1	0.42	e0.98	0.13	0.05	0.60	0.19
4	0.07	0.06	0.07	e0.06	0.26	0.55	0.53	0.75	0.14	0.04	0.04	0.13
5	0.03	0.06	0.07	0.05	0.18	0.35	0.50	0.57	2.5	0.03	0.02	0.20
6	0.05	0.15	0.07	6.3	0.18	0.32	0.32	0.51	11	0.05	0.00	0.11
7	0.03	0.04	0.07	2.4	0.69	0.28	0.32	0.51	0.90	0.11	0.00	0.11
8	0.02	0.04	0.67	0.47	0.22	0.22	0.32	0.49	0.26	0.16	0.00	0.11
9	0.03	0.05	0.41	0.47	0.18	0.24	0.70	0.55	0.18	3.1	0.00	0.11
10	0.04	0.06	0.07	0.37	0.19	0.88	0.48	0.43	0.23	0.62	0.00	0.11
11	0.04	0.08	2.1	5.4	0.20	0.18	0.26	0.37	0.13	0.05	0.00	0.11
12	0.03	0.08	0.08	0.53	0.18	0.16	0.26	3.2	0.13	0.03	0.00	0.11
13	0.05	0.07	0.07	0.32	0.18	4.0	0.26	2.4	4.4	0.03	0.00	0.11
14	3.1	0.09	1.4	0.26	e0.16	0.48	0.31	0.61	13	0.35	0.00	0.16
15	0.61	0.08	0.10	0.21	0.18	0.32	0.58	0.41	1.4	0.06	0.00	0.37
16	0.72	0.08	0.06	0.21	0.18	0.25	0.38	0.26	0.28	0.03	0.00	0.23
17	0.19	0.08	0.79	0.21	0.18	0.38	0.26	0.60	0.13	0.01	0.00	0.11
18	0.03	0.08	2.3	0.21	e0.16	3.4	2.1	7.1	0.52	0.06	0.00	0.09
19	0.03	0.08	0.08	e0.40	0.18	0.48	8.8	0.42	1.3	0.83	0.00	0.09
20	0.04	0.08	0.07	e1.6	0.22	17	0.91	0.30	0.26	0.11	0.00	0.09
21	0.03	0.07	0.06	e1.0	0.29	1.6	0.45	0.26	0.10	0.04	0.00	0.09
22	0.03	0.07	0.06	e1.2	0.18	0.72	e1.2	0.26	0.07	0.45	0.00	0.09
23	0.05	0.07	0.07	e1.6	0.15	0.50	e0.60	0.26	0.07	8.9	0.00	0.10
24	0.05	e0.15	2.8	e3.6	0.15	0.44	e0.36	0.26	0.07	0.57	5.6	0.09
25	0.04	e2.0	0.08	e2.0	0.15	0.39	e0.82	0.26	0.07	0.06	0.09	0.11
26	0.04	e10.0	e0.07	e0.50	0.59	5.8	e0.50	0.27	0.08	0.08	0.03	13
27	0.04	e0.80	e0.07	e0.30	0.55	2.7	0.27	1.6	0.37	0.07	0.02	4.3
28	e0.04	e0.30	e0.06	e0.26	0.17	0.63	e7.0	0.27	0.15	1.4	7.3	1.5
29	e0.05	e0.12	e0.06	0.21	---	0.48	e2.0	0.20	0.06	0.07	2.0	0.33
30	e0.05	0.07	e0.06	0.39	---	0.41	e0.80	0.18	0.05	0.03	0.16	0.19
31	e0.06	---	0.05	1.7	---	2.6	---	0.86	---	0.02	0.09	---
TOTAL	6.52	15.10	12.13	32.38	7.47	60.21	33.47	26.14	38.59	17.51	15.96	30.36
MEAN	0.21	0.50	0.39	1.04	0.27	1.94	1.12	0.84	1.29	0.56	0.51	1.01
MAX	3.1	10	2.8	6.3	0.84	17	8.8	7.1	13	8.9	7.3	13
MIN	0.02	0.04	0.05	0.05	0.15	0.15	0.26	0.18	0.05	0.01	0.00	0.09
CFSM	0.16	0.38	0.29	0.78	0.20	1.45	0.83	0.63	0.96	0.42	0.38	0.76
IN.	0.18	0.42	0.34	0.90	0.21	1.67	0.93	0.73	1.07	0.49	0.44	0.84

e Estimated

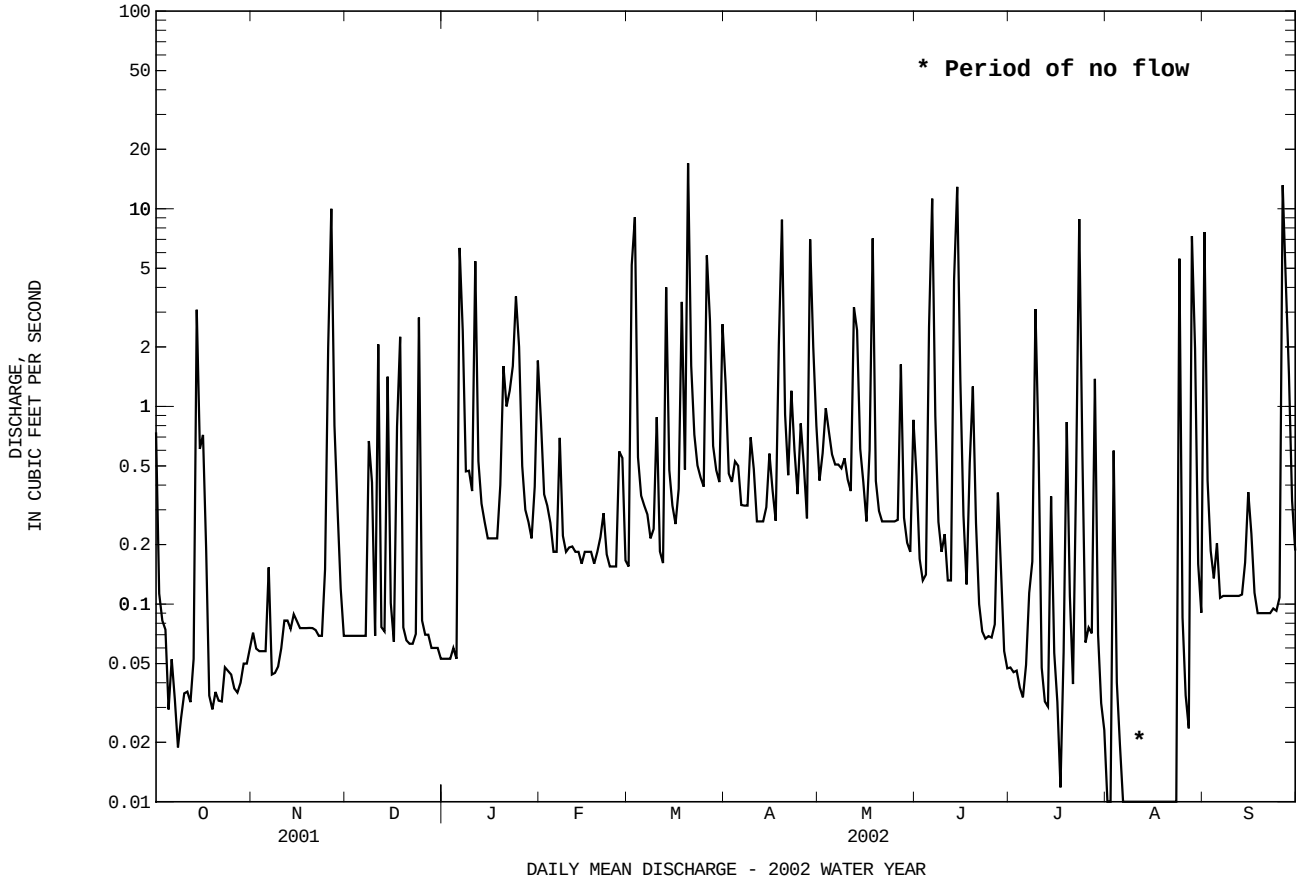
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

MEAN	1.42	2.01	2.36	2.97	2.44	3.97	1.92	1.72	1.56	1.56	1.33	2.04
MAX	4.75	3.46	6.03	5.39	4.74	6.79	3.61	3.11	4.72	3.82	3.67	7.80
(WY)	1996	1998	1997	1996	1998	1993	1996	1996	1996	1996	1994	1999
MIN	0.21	0.50	0.39	1.04	0.27	1.94	0.92	0.74	0.59	0.14	0.34	0.82
(WY)	2001	2002	2002	2000	2002	2002	1995	1997	1994	1997	2001	1997

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	403.07		295.84			
ANNUAL MEAN	1.10		0.81		2.13	
HIGHEST ANNUAL MEAN					3.39	1996
LOWEST ANNUAL MEAN					0.81	2002
HIGHEST DAILY MEAN	30	Mar 21	17	Mar 20	140	Sep 16 1999
LOWEST DAILY MEAN	0.02	(a)	0.00	(b)	0.00	(c)
ANNUAL SEVEN-DAY MINIMUM	0.03	Sep 3	0.00	Aug 6	0.00	Aug 6 2002
MAXIMUM PEAK FLOW			301	Apr 19	(d)502	Jun 19 1996
MAXIMUM PEAK STAGE			(f)3.59	Apr 19	5.05	Jun 19 1996
INSTANTANEOUS LOW FLOW			0.00	(g)	0.00	(h)
ANNUAL RUNOFF (CFSM)	0.82		0.60		1.59	
ANNUAL RUNOFF (INCHES)	11.19		8.21		21.56	
10 PERCENT EXCEEDS	2.4		2.0		4.7	
50 PERCENT EXCEEDS	0.27		0.18		0.60	
90 PERCENT EXCEEDS	0.05		0.03		0.12	

a Aug. 29, Sept. 6-9, Oct. 8.
b Aug. 2, 6-23.
c Aug. 7, 10-13, 1999, Aug. 2, 6-23, 2002.
d From rating curve extended above 200 ft^3/s.
f From crest-stage gage.
g July 17, 18, 23, Aug. 1-3, 6-24.
h Aug. 6-8, 10-14, 1999, July 17, 18, 23, Aug. 1-3, 6-24, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585100 WHITEMARSH RUN AT WHITE MARSH, MD

LOCATION.--Lat 39°22'15.1", long 76°26'46.5", Baltimore County, Hydrologic Unit 02060003, on right bank at downstream side of bridge on Interstate Highway I-95, 1.0 mi southwest of White Marsh, and 3.5 mi upstream from mouth.

DRAINAGE AREA.--7.61 mi^2.

PERIOD OF RECORD.--February 1959 to September 1989, March 1992 to current year.

REVISED RECORDS.--WDR MD-DE-73-1: 1960(M), 1967-68, 1969(M). WDR MD-DE-79-1: 1965-66(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 38.96 ft above National Geodetic Vertical Datum of 1929. Prior to June 12, 2002, water-stage recorder at site 2,500 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Low flow affected by operations of sand and gravel plant in vicinity of gage. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 23	1915	*863	*10.07	No other peak greater than base discharge.			

Minimum discharge, 0.18 ft^3/s, Aug. 7-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	1.1	e1.6	1.5	6.1	1.4	10	3.4	3.8	0.97	0.52	48
2	1.6	0.99	e2.0	1.7	3.3	19	3.2	98	0.77	0.90	0.41	3.7
3	1.6	0.81	0.90	1.7	2.5	66	2.9	12	0.61	0.90	7.1	2.1
4	1.2	0.70	0.90	1.9	2.2	4.7	2.4	5.2	0.61	0.83	0.97	1.7
5	1.1	0.67	0.90	1.6	2.2	2.5	2.1	4.7	6.6	0.73	0.58	1.4
6	1.1	0.72	0.88	31	2.0	2.0	1.8	3.5	67	0.69	0.42	1.4
7	1.0	0.75	0.88	18	5.1	2.0	1.7	3.0	11	0.74	0.30	1.4
8	0.87	0.82	14	5.4	2.7	1.7	1.7	2.6	2.8	0.76	0.31	1.4
9	1.2	0.71	6.9	4.0	2.2	1.8	2.4	2.4	1.9	7.8	0.28	1.3
10	1.1	0.90	1.7	3.2	2.2	7.0	4.7	3.1	1.7	3.1	0.23	1.3
11	1.5	0.86	12	32	2.4	1.5	2.3	1.9	1.5	0.96	0.27	1.3
12	1.2	1.0	2.2	5.4	1.9	1.4	1.7	14	1.1	0.77	0.38	1.3
13	1.1	1.2	1.7	3.1	1.8	28	1.7	21	16	0.71	0.45	1.2
14	20	1.2	e10	2.6	1.7	3.8	1.9	5.1	57	1.5	0.45	0.99
15	17	1.3	e3.5	2.4	1.9	2.2	2.4	3.0	9.4	1.0	0.45	1.3
16	3.3	1.1	2.2	2.3	1.9	2.0	1.9	1.9	3.1	0.74	0.45	2.2
17	5.9	1.2	3.9	2.3	1.8	2.2	1.4	3.3	2.1	0.63	0.54	1.4
18	1.2	0.96	17	2.0	1.6	23	17	45	3.2	0.60	0.54	1.3
19	1.2	0.90	3.1	3.4	1.7	3.9	38	4.7	7.4	1.8	0.56	1.2
20	0.96	0.82	2.2	12	2.1	95	6.5	2.4	3.5	1.0	0.63	1.2
21	0.70	0.71	1.9	6.6	2.7	14	3.1	2.0	1.9	0.69	0.63	1.1
22	0.70	0.70	1.7	8.0	1.6	4.3	14	1.7	1.6	0.92	0.63	0.99
23	0.85	0.70	2.3	12	1.4	3.0	2.0	1.5	1.5	65	0.63	0.99
24	0.87	1.2	17	32	1.4	2.4	1.3	1.6	1.5	10	26	0.99
25	0.65	103	2.7	6.7	1.4	2.0	6.5	1.3	1.3	1.9	2.3	0.99
26	0.50	19	2.3	3.1	2.1	25	1.7	1.1	1.2	11	1.3	81
27	0.53	3.9	2.1	2.4	5.7	25	0.95	8.5	1.5	1.6	1.3	26
28	0.53	2.4	2.1	2.3	1.5	4.4	138	3.5	1.8	3.1	34	13
29	0.63	e2.4	1.8	2.0	---	3.2	20	1.4	1.1	1.1	18	1.6
30	0.73	e2.0	2.0	2.1	---	2.9	5.5	1.0	1.1	0.68	4.2	1.3
31	1.0	---	1.6	12	---	14	---	2.4	---	0.70	1.9	---
TOTAL	76.22	154.72	125.96	226.7	67.1	371.3	300.75	266.2	215.59	123.82	106.73	205.05
MEAN	2.46	5.16	4.06	7.31	2.40	12.0	10.0	8.59	7.19	3.99	3.44	6.83
MAX	20	103	17	32	6.1	95	138	98	67	65	34	81
MIN	0.50	0.67	0.88	1.5	1.4	1.4	0.95	1.0	0.61	0.60	0.23	0.99
CFSM	0.32	0.68	0.53	0.96	0.31	1.57	1.32	1.13	0.94	0.52	0.45	0.90
IN.	0.37	0.76	0.62	1.11	0.33	1.82	1.47	1.30	1.05	0.61	0.52	1.00

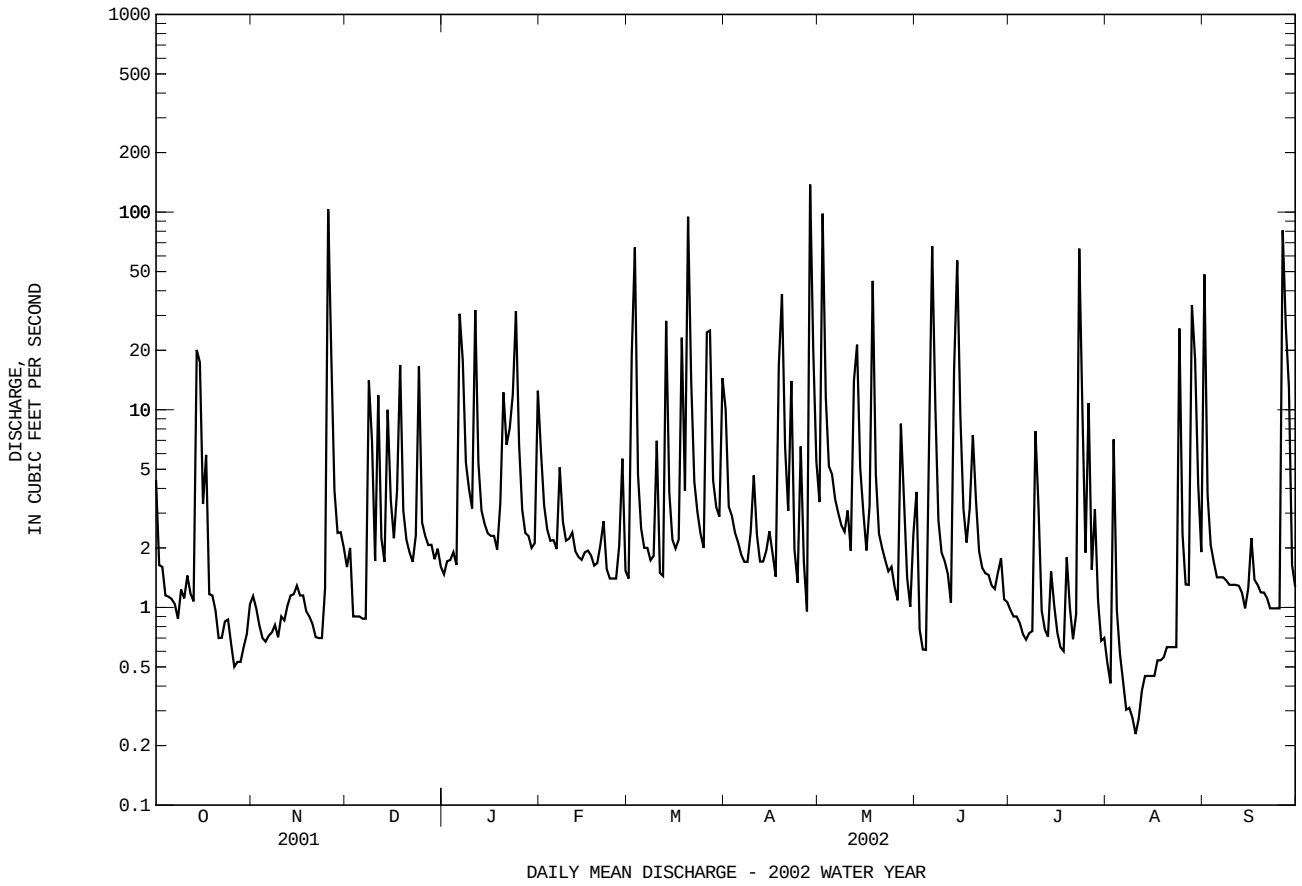
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1989, 1992 - 2002, BY WATER YEAR (WY)

MEAN	7.31	10.2	13.0	14.5	15.4	17.2	12.8	11.2	9.17	9.30	9.94	10.5
MAX	27.2	31.8	41.5	45.2	42.7	43.2	43.5	43.7	44.5	45.4	90.1	48.6
(WY)	1972	1973	1984	1978	1979	1993	1983	1989	1972	1989	1971	1999
MIN	1.91	1.82	1.69	1.82	2.40	4.66	4.35	2.24	2.01	1.34	1.18	1.41
(WY)	2001	1966	1966	1981	2002	1969	1985	1969	1986	1966	1962	1980

01585100 WHITEMARSH RUN AT WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1959 - 1989, 1992 - 2002	
ANNUAL TOTAL	2964.75		2240.14			
ANNUAL MEAN	8.12		6.14		11.9	
HIGHEST ANNUAL MEAN					21.0	1971
LOWEST ANNUAL MEAN					4.27	1969
HIGHEST DAILY MEAN	163	Mar 30	138	Apr 28	980	Sep 16 1999
LOWEST DAILY MEAN	0.50	Oct 26	0.23	Aug 10	0.10	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	0.63	Oct 24	0.31	Aug 6	0.31	Aug 6 2002
MAXIMUM PEAK FLOW			863	Jul 23	(a)8000	Aug 1 1971
MAXIMUM PEAK STAGE			10.07	Jul 23	(b)14.05	Aug 1 1971
INSTANTANEOUS LOW FLOW			0.18	(c)	(d)0.00	Mar 20 1965
ANNUAL RUNOFF (CFSM)	1.07		0.81		1.57	
ANNUAL RUNOFF (INCHES)	14.49		10.95		21.31	
10 PERCENT EXCEEDS	17		14		22	
50 PERCENT EXCEEDS	3.0		1.9		4.0	
90 PERCENT EXCEEDS	1.0		0.70		1.4	

a From rating curve extended above 1,300 ft^3/s on the basis of a culvert measurement at a gage height of 10.04 ft and on the basis of a culvert and flow-over-road measurement of peak flow.
b At site 2,500 feet downstream at same datum.
c Aug. 7-12.
d Result of constuction work upstream from station.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585104 HONEYGO RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°22'58.8", long 76°25'58.7", Baltimore County, Hydrologic Unit 02060003, on left bank at upstream side of bridge on State Highway 7, and 0.55 mi upstream from mouth.

DRAINAGE AREA.--2.50 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 25 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0800	*120	*2.10	No other peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, Aug. 14-17.

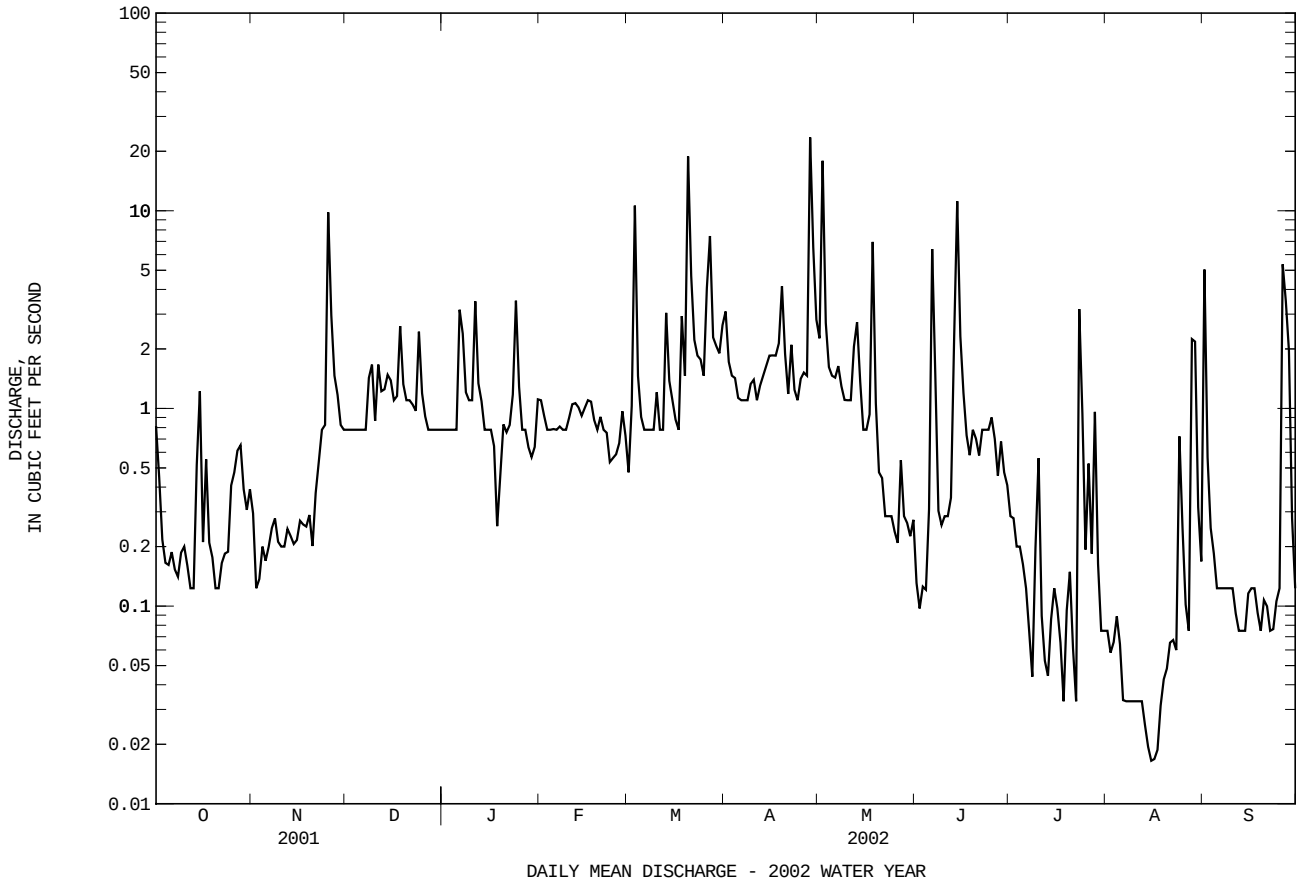
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.81	0.29	0.78	0.78	1.1	0.47	3.1	2.3	0.13	0.28	0.07	5.0
2	0.45	0.12	0.78	0.78	0.92	1.0	1.7	18	0.10	0.28	0.06	0.57
3	0.22	0.14	0.78	0.78	0.78	11	1.5	2.7	0.13	0.20	0.07	0.25
4	0.17	0.20	0.78	0.78	0.78	1.5	1.4	1.6	0.12	0.20	0.09	0.18
5	0.16	0.17	0.78	0.78	0.79	0.90	1.1	1.5	0.31	0.16	0.06	0.12
6	0.19	0.20	0.78	3.2	0.78	0.78	1.1	1.4	6.4	0.12	0.03	0.12
7	0.15	0.25	0.78	2.4	0.81	0.78	1.1	1.6	1.5	0.07	0.03	0.12
8	0.14	0.28	1.4	1.2	0.78	0.78	1.1	1.3	0.30	0.04	0.03	0.12
9	0.19	0.21	1.7	1.1	0.78	0.78	1.3	1.1	0.26	0.20	0.03	0.12
10	0.20	0.20	0.86	1.1	0.90	1.2	1.4	1.1	0.28	0.56	0.03	0.12
11	0.16	0.20	1.7	3.5	1.0	0.78	1.1	1.1	0.28	0.09	0.03	0.09
12	0.12	0.25	1.2	1.3	1.1	0.78	1.3	2.1	0.35	0.05	0.03	0.07
13	0.12	0.23	1.2	1.1	1.0	3.0	1.5	2.7	2.2	0.04	0.03	0.07
14	0.52	0.21	1.5	0.78	0.92	1.4	1.6	1.4	11	0.09	0.02	0.07
15	1.2	0.22	1.4	0.78	1.0	1.1	1.9	0.78	2.3	0.12	0.02	0.12
16	0.21	0.27	1.1	0.78	1.1	0.88	1.9	0.78	1.2	0.10	0.02	0.12
17	0.55	0.26	1.2	0.64	1.1	0.78	1.9	0.93	0.73	0.07	0.02	0.12
18	0.21	0.25	2.6	0.25	0.87	2.9	2.1	7.0	0.58	0.03	0.03	0.09
19	0.18	0.29	1.3	0.46	0.78	1.5	4.2	1.1	0.78	0.10	0.04	0.07
20	0.12	0.20	1.1	0.83	0.91	19	1.9	0.47	0.70	0.15	0.05	0.11
21	0.12	0.37	1.1	0.76	0.78	4.7	1.2	0.44	0.58	0.06	0.07	0.10
22	0.17	0.54	1.0	0.82	0.75	2.2	2.1	0.28	0.78	0.03	0.07	0.07
23	0.18	0.78	0.97	1.2	0.54	1.9	1.2	0.28	0.78	3.2	0.06	0.08
24	0.19	0.82	2.4	3.5	0.56	1.8	1.1	0.28	0.78	0.94	0.72	0.11
25	0.41	9.8	1.2	1.3	0.59	1.5	1.4	0.24	0.90	0.19	0.25	0.12
26	0.47	3.0	0.91	0.78	0.67	4.1	1.5	0.21	0.70	0.53	0.10	5.4
27	0.61	1.5	0.78	0.78	0.97	7.5	1.5	0.55	0.46	0.18	0.07	3.5
28	0.65	1.2	0.78	0.64	0.73	2.3	24	0.28	0.68	0.96	2.2	2.0
29	0.39	0.82	0.78	0.57	---	2.1	6.5	0.26	0.47	0.16	2.2	0.28
30	0.31	0.78	0.78	0.64	---	1.9	2.8	0.23	0.41	0.07	0.32	0.12
31	0.39	---	0.78	1.1	---	2.6	---	0.27	---	0.07	0.17	---
TOTAL	9.96	24.05	35.20	35.41	23.79	83.91	77.5	54.28	36.19	9.34	7.02	19.43
MEAN	0.32	0.80	1.14	1.14	0.85	2.71	2.58	1.75	1.21	0.30	0.23	0.65
MAX	1.2	9.8	2.6	3.5	1.1	19	24	18	11	3.2	2.2	5.4
MIN	0.12	0.12	0.78	0.25	0.54	0.47	1.1	0.21	0.10	0.03	0.02	0.07
CFSM	0.13	0.32	0.45	0.46	0.34	1.08	1.03	0.70	0.48	0.12	0.09	0.26
IN.	0.15	0.36	0.52	0.53	0.35	1.25	1.15	0.81	0.54	0.14	0.10	0.29
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)												
MEAN	1.78	1.35	2.99	2.53	4.30	5.42	3.79	2.18	1.99	1.74	0.63	1.00
MAX	4.57	2.52	5.55	3.39	8.29	8.65	6.47	2.46	2.42	4.36	1.21	1.68
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	2000
MIN	0.32	0.74	1.14	1.14	0.85	2.71	2.32	1.75	1.21	0.30	0.23	0.65
(WY)	2002	2001	2002	2002	2002	2002	2001	2002	2002	2002	2002	2002

01585104 HONEYGO RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	690.76		416.08			
ANNUAL MEAN	1.89		1.14		2.47	
HIGHEST ANNUAL MEAN					4.26	2000
LOWEST ANNUAL MEAN					1.14	2002
HIGHEST DAILY MEAN	39	Mar 30	24	Apr 28	63	Mar 21 2000
LOWEST DAILY MEAN	0.11	Sep 9	0.02	(a)	0.02	(a)
ANNUAL SEVEN-DAY MINIMUM	0.13	Sep 3	0.02	Aug 11	0.02	Aug 11 2002
MAXIMUM PEAK FLOW			120	May 2	(b)216	Dec 17 2000
MAXIMUM PEAK STAGE			2.10	May 2	3.38	Dec 17 2000
INSTANTANEOUS LOW FLOW			0.02	(c)	0.02	(c)
ANNUAL RUNOFF (CFSM)	0.76		0.46		0.99	
ANNUAL RUNOFF (INCHES)	10.28		6.19		13.41	
10 PERCENT EXCEEDS	3.6		2.2		5.4	
50 PERCENT EXCEEDS	0.78		0.78		1.0	
90 PERCENT EXCEEDS	0.19		0.07		0.19	

a Aug. 14-17, 2002
b From rating curve extended above 90 ft^3/s.
c Aug. 13-18, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585200 WEST BRANCH HERRING RUN AT IDLEWYLDE, MD

LOCATION.--Lat 39°22'25.1", long 76°35'03.6", Baltimore County, Hydrologic Unit 02060003, on left bank 40 ft downstream from bridge on Regester Avenue, at Idlewylde, 0.1 mi north of Baltimore city limits, 1.0 mi upstream from mouth, and 1.3 mi east of State Highway 45.

DRAINAGE AREA.--2.13 mi^2.

PERIOD OF RECORD.--July 1957 to May 1965, January 1966 to September 1987, October 1996 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 285 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 31, 1965, at site 40 ft upstream at datum 3.24 ft higher.

REMARKS.--Records good except those for estimated daily discharges (missing or questionable record), which are fair. Diurnal fluctuation (occasionally extensive) caused by ready-mixed concrete plant upstream from station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 290 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1850	312	3.53	Jun 6	1805	409	3.90
May 2	0655	358	3.71	Aug 3	0140	*716	*4.82

Minimum discharge, 0.00 ft^3/s, Aug. 14-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	0.11	e0.24	e0.23	1.0	0.40	1.2	0.54	0.27	0.08	0.09	14
2	0.23	0.10	e0.23	e0.23	0.59	10	0.59	16	0.44	0.09	0.08	0.54
3	0.21	0.09	e0.22	e0.23	0.48	11	0.56	0.80	0.14	0.11	18	0.38
4	0.19	0.09	e0.22	e0.23	0.53	0.62	0.48	0.57	0.17	0.24	0.51	0.40
5	0.17	0.07	e0.21	e0.23	0.48	0.52	0.51	0.55	1.4	0.30	0.14	0.49
6	0.36	0.08	e0.21	e5.4	0.39	0.48	0.54	0.43	16	0.09	0.90	0.53
7	0.14	0.07	e0.21	e0.90	1.2	0.44	0.54	0.40	0.57	0.09	1.9	0.52
8	0.15	0.07	e5.6	e0.60	0.43	0.41	0.52	0.35	0.17	0.07	2.0	0.51
9	0.16	0.07	e0.30	e0.50	0.42	0.41	1.4	0.64	0.18	4.9	1.9	0.50
10	0.18	0.10	e0.28	e0.43	0.48	1.1	0.67	0.42	0.10	0.52	1.9	0.43
11	0.20	0.15	e4.3	e5.1	0.48	0.37	0.45	0.35	0.07	0.10	2.0	0.23
12	0.18	0.16	e0.29	e2.8	0.37	0.39	0.47	1.9	0.07	0.11	1.0	0.10
13	0.12	0.16	e0.28	e1.4	0.36	6.0	0.47	2.1	6.9	0.08	0.41	0.20
14	6.4	0.15	e4.0	e0.80	0.35	0.51	0.68	0.50	12	1.1	e0.02	0.18
15	1.2	0.15	e0.30	e0.43	0.37	0.44	0.69	0.45	2.7	0.11	e0.00	2.5
16	3.8	0.15	e0.30	e0.33	0.35	0.42	0.64	0.32	0.41	0.32	e0.00	0.38
17	0.70	0.14	e0.40	e0.31	0.35	0.87	0.39	0.53	0.27	0.16	e0.00	0.29
18	0.37	e0.13	e4.5	e0.30	0.32	4.8	3.7	11	2.5	0.14	e0.00	0.28
19	0.13	e0.12	e0.32	e0.30	0.27	0.59	2.6	0.52	1.1	0.16	e0.00	0.16
20	0.13	e0.11	e0.30	e1.5	0.26	18	0.55	0.37	0.26	0.20	e0.01	0.14
21	0.10	e4.0	e0.28	e0.90	0.27	1.4	1.1	0.32	0.21	0.19	e0.00	0.15
22	0.09	e0.30	e0.26	e1.0	0.23	0.82	3.8	0.29	0.18	0.13	e0.00	0.28
23	0.08	e0.25	e0.24	e2.3	0.23	0.69	0.42	0.25	0.15	2.0	e0.00	0.74
24	0.09	e0.25	e4.3	e5.0	0.24	0.58	0.37	0.26	0.11	0.35	e7.7	0.35
25	0.09	25	e0.34	e0.90	0.25	0.52	1.9	0.34	0.11	0.13	0.33	0.33
26	0.08	e2.2	e0.30	e0.35	0.30	8.1	0.40	0.27	0.13	4.0	0.17	21
27	0.08	e0.29	e0.28	e0.33	0.74	2.0	0.38	2.8	0.82	0.22	0.15	6.9
28	0.09	e0.27	e0.27	e0.31	0.38	0.72	27	0.40	0.27	0.15	11	2.2
29	0.09	e0.26	e0.25	e0.30	---	0.65	1.1	0.29	0.15	0.12	3.1	1.0
30	0.11	e0.25	e0.27	e2.5	---	0.59	0.64	0.23	0.34	0.10	0.39	0.81
31	0.10	---	e0.24	e1.4	---	4.2	---	0.21	---	0.12	0.30	---
TOTAL	17.22	35.34	29.74	37.54	12.12	78.04	54.76	44.40	48.19	16.48	54.00	56.52
MEAN	0.56	1.18	0.96	1.21	0.43	2.52	1.83	1.43	1.61	0.53	1.74	1.88
MAX	6.4	25	5.6	5.4	1.2	18	27	16	16	4.9	18	21
MIN	0.08	0.07	0.21	0.23	0.23	0.37	0.37	0.21	0.07	0.07	0.00	0.10
CFSM	0.26	0.55	0.45	0.57	0.20	1.18	0.86	0.67	0.75	0.25	0.82	0.88
IN.	0.30	0.62	0.52	0.66	0.21	1.36	0.96	0.78	0.84	0.29	0.94	0.99

e Estimated

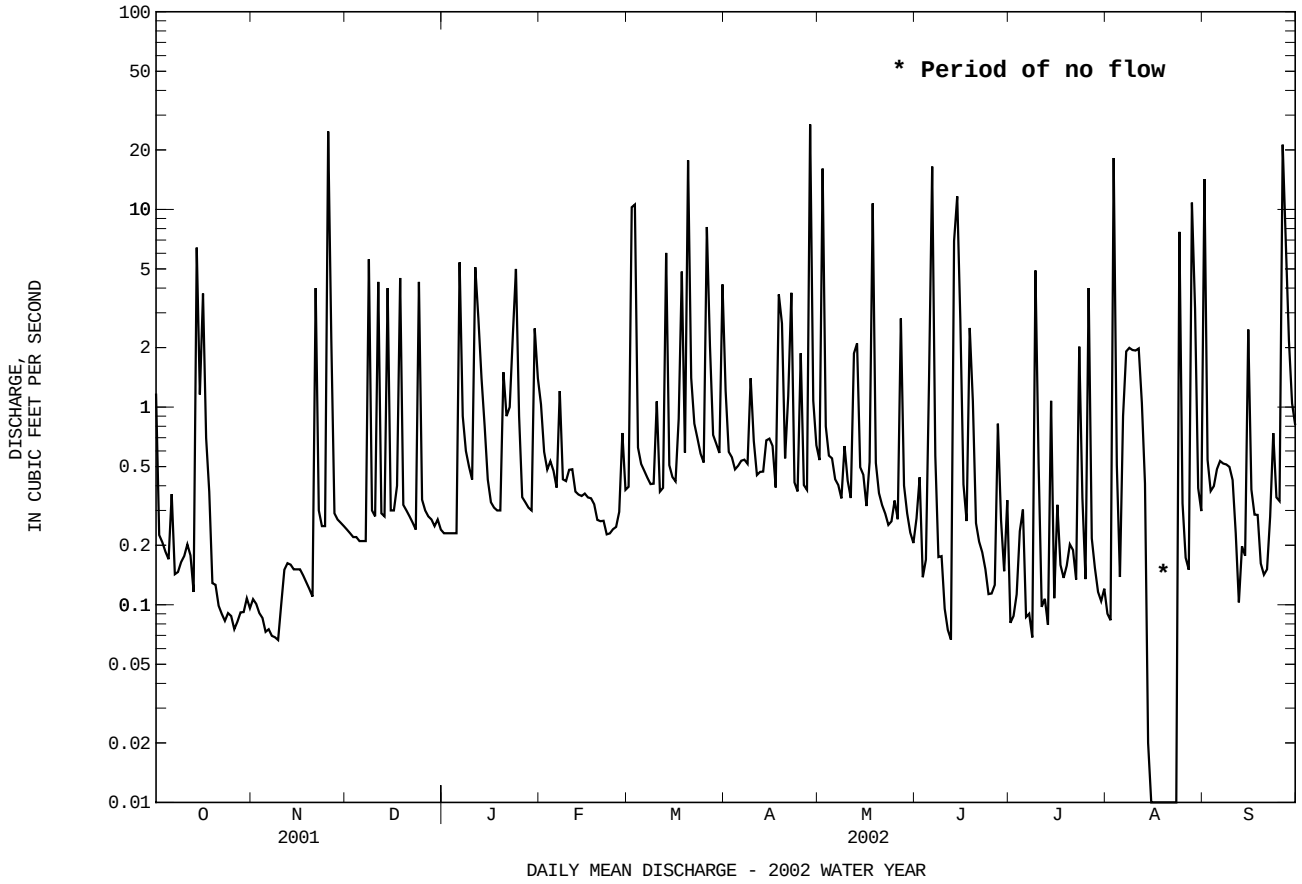
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1987, 1997 - 2002, BY WATER YEAR (WY)

MEAN	1.76	2.22	2.69	2.63	3.07	3.38	3.00	2.62	2.41	2.08	2.27	2.57
MAX	5.74	6.59	6.71	9.14	7.41	6.82	7.80	5.06	9.61	5.64	12.2	10.6
(WY)	1972	1973	1997	1979	1979	1998	1983	1984	1972	1975	1971	1999
MIN	0.49	0.43	0.51	0.26	0.43	1.06	1.12	0.88	0.79	0.38	0.40	0.41
(WY)	2001	1982	1981	1981	2002	1981	1985	1963	1966	1966	1966	1970

01585200 WEST BRANCH HERRING RUN AT IDLEWYLDE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 1987 1997 - 2002	
ANNUAL TOTAL	588.78		484.35			
ANNUAL MEAN	1.61		1.33		2.60	
HIGHEST ANNUAL MEAN					4.26	1972
LOWEST ANNUAL MEAN					1.33	2002
HIGHEST DAILY MEAN	38	Mar 21	27	Apr 28	137	Jun 22 1972
LOWEST DAILY MEAN	0.07	(a)	0.00	(b)	0.00	(c)
ANNUAL SEVEN-DAY MINIMUM	0.08	Nov 3	0.00	Aug 15	0.00	Aug 14 1957
MAXIMUM PEAK FLOW			716	Aug 3	(d)1740	Sep 11 1971
MAXIMUM PEAK STAGE			4.82	Aug 3	6.80	Sep 11 1971
INSTANTANEOUS LOW FLOW			(e)0.00	(f)	0.00	(g)
ANNUAL RUNOFF (CFSM)	0.76		0.62		1.22	
ANNUAL RUNOFF (INCHES)	10.28		8.46		16.58	
10 PERCENT EXCEEDS	4.0		2.9		5.3	
50 PERCENT EXCEEDS	0.60		0.35		1.1	
90 PERCENT EXCEEDS	0.12		0.10		0.38	

a Sept. 6, 9.
b Aug. 15-19, 21-23
c Aug. 14-24, 1957. Aug. 15-19, 21-23, 2002.
d From rating curve extended above 90 ft^3/s on basis of slope-area measurement at gage height of 6.37 ft.
e Estimated.
f Aug. 14-24.
g Aug. 14-24, 1957, Aug. 14-24, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD

LOCATION.--Lat 39°20'12.1", long 76°32'26.2", Baltimore City, Hydrologic Unit 02060003, on left bank at upstream side of culvert inlet off of Todd Ave, at Baltimore, and 20 ft upstream from mouth.

DRAINAGE AREA.--0.21 mi^2.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good between 0.20 and 20 ft^3/s, poor above and below. Baltimore City gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1845	94	2.42	Jun 6	1742	80	2.16
May 2	0638	76	2.08	Jun 19	1920	101	2.54
May 12	1817	128	3.06	Jul 23	1743	69	1.96
May 13	1449	134	3.18	Aug 3	0126	*231	*5.03
May 27	0841	51	1.62	Aug 24	0631	52	1.64

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	0.01	0.05	0.01	0.06	0.00	0.04	0.10	0.05	0.03	0.00	0.70
2	0.02	0.01	0.03	0.02	0.04	0.89	0.02	1.7	0.05	0.02	0.00	0.05
3	0.02	0.01	0.02	0.02	0.02	0.42	0.02	0.11	0.05	0.02	4.2	0.03
4	0.02	0.00	0.02	0.02	0.03	0.01	0.02	0.14	0.05	0.02	0.02	0.02
5	0.02	0.00	0.02	0.01	0.02	0.01	0.02	0.10	0.06	0.02	0.02	0.02
6	0.03	0.00	0.02	0.73	0.02	0.01	0.02	0.12	1.9	0.02	0.02	0.02
7	0.02	0.00	0.02	0.04	0.11	0.01	0.02	0.11	0.02	0.02	0.02	0.02
8	0.02	0.00	0.53	0.01	0.02	0.01	0.02	0.10	0.02	0.02	0.02	0.02
9	0.01	0.00	0.07	0.02	0.02	0.02	0.13	0.13	0.02	0.27	0.02	0.02
10	0.01	0.00	0.03	0.01	0.03	0.21	0.03	0.05	0.02	0.09	0.02	0.01
11	0.01	0.00	0.25	0.48	0.04	0.01	0.03	0.05	0.01	0.03	0.02	0.00
12	0.01	0.00	0.02	0.02	0.02	0.03	0.03	1.1	0.01	0.02	0.03	0.00
13	0.01	0.00	0.02	0.02	0.02	0.38	0.03	1.2	0.77	0.02	0.03	0.00
14	0.50	0.00	0.18	0.02	0.02	0.02	0.05	0.05	0.73	0.14	0.00	0.01
15	0.02	0.00	0.03	0.02	0.02	0.02	0.05	0.02	0.04	0.02	0.01	0.10
16	0.12	0.00	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.02
17	0.01	0.00	0.13	0.02	0.02	0.08	0.02	0.29	0.02	0.00	0.01	0.01
18	0.00	0.00	0.15	0.02	0.02	0.30	0.07	1.1	0.12	0.01	0.00	0.00
19	0.00	0.00	0.02	0.06	0.02	0.04	0.19	0.05	1.0	0.01	0.00	0.00
20	0.00	0.00	0.02	0.22	0.03	1.5	0.02	0.05	0.02	0.00	0.00	0.00
21	0.00	0.00	0.02	0.13	0.02	0.11	0.09	0.05	0.02	0.00	0.00	0.00
22	0.00	0.00	0.02	0.07	0.02	0.09	0.28	0.05	0.02	0.00	0.00	0.00
23	0.00	0.00	0.14	0.11	0.02	0.05	0.05	0.05	0.02	1.0	0.01	0.00
24	0.01	0.17	0.23	0.47	0.00	0.05	0.04	0.05	0.02	0.01	0.78	0.00
25	0.01	3.1	0.02	0.07	0.00	0.04	0.19	0.05	0.02	0.02	0.01	0.00
26	0.02	0.06	0.02	0.05	0.10	0.84	0.05	0.06	0.02	0.48	0.00	2.0
27	0.02	0.05	0.02	0.03	0.00	0.08	0.12	0.81	0.06	0.02	0.00	0.41
28	0.26	0.05	0.02	0.02	0.00	0.02	2.5	0.05	0.02	0.02	0.95	0.04
29	0.09	0.05	0.02	0.02	---	0.02	0.11	0.05	0.02	0.01	0.12	0.02
30	0.02	0.05	0.02	0.10	---	0.02	0.10	0.05	0.02	0.01	0.05	0.02
31	0.01	---	0.01	0.15	---	0.25	---	0.30	---	0.00	0.04	---
TOTAL	1.34	3.56	2.19	3.01	0.76	5.56	4.39	8.16	5.22	2.37	6.41	3.54
MEAN	0.043	0.12	0.071	0.097	0.027	0.18	0.15	0.26	0.17	0.076	0.21	0.12
MAX	0.50	3.1	0.53	0.73	0.11	1.5	2.5	1.7	1.9	1.0	4.2	2.0
MIN	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.02	0.01	0.00	0.00	0.00
CFSM	0.21	0.57	0.34	0.46	0.13	0.85	0.70	1.25	0.83	0.36	0.98	0.56
IN.	0.24	0.63	0.39	0.53	0.13	0.98	0.78	1.45	0.92	0.42	1.14	0.63

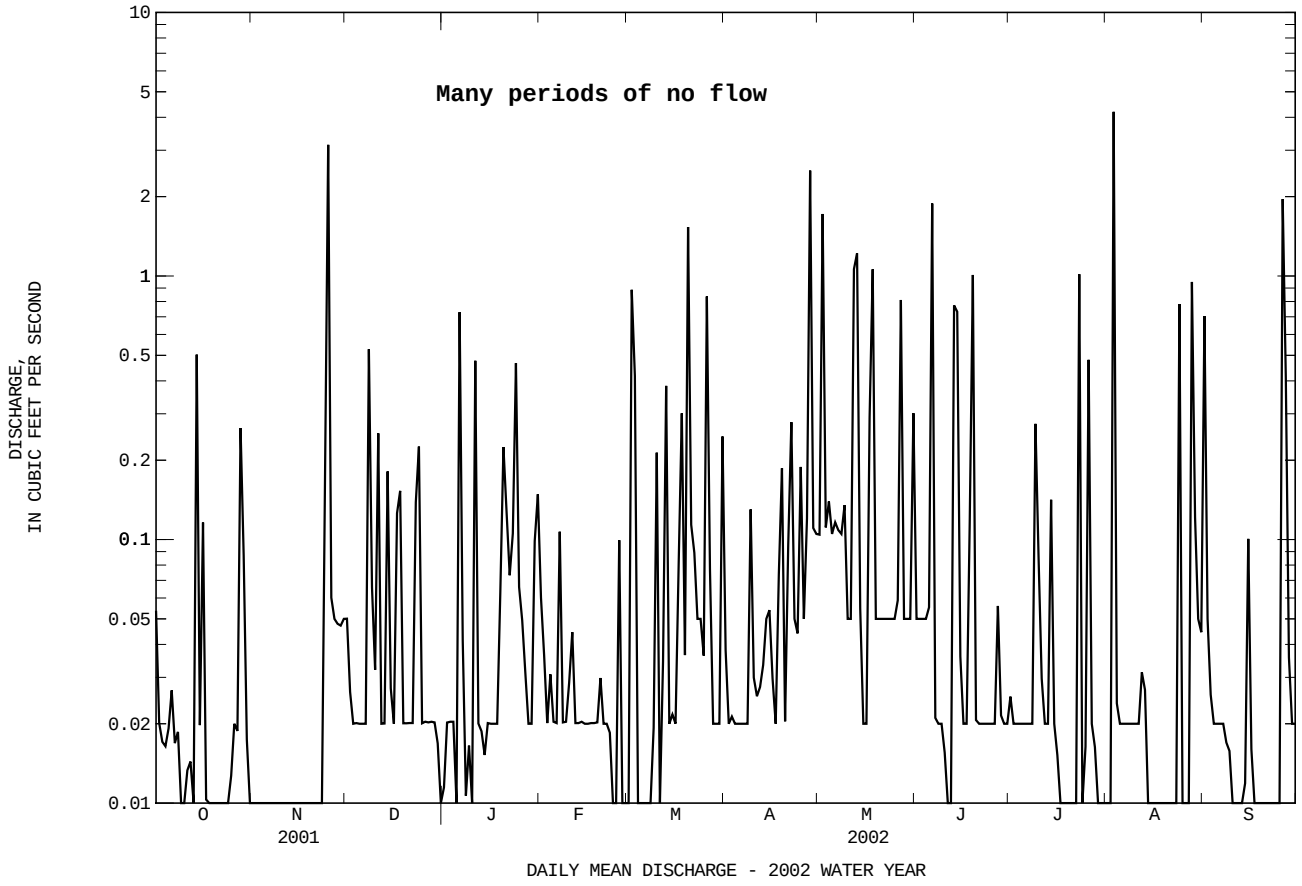
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	0.12	0.16	0.17	0.26	0.28	0.29	0.18	0.17	0.14	0.17	0.18	0.23
MAX	0.25	0.41	0.44	0.53	0.57	0.40	0.32	0.29	0.17	0.47	0.29	0.73
(WY)	2000	1998	1997	1999	1998	1997	2000	1998	2002	2000	1999	1999
MIN	0.037	0.076	0.045	0.093	0.027	0.18	0.10	0.074	0.086	0.025	0.065	0.086
(WY)	2001	2000	1999	2001	2002	2002	2001	1999	1999	1997	1998	2001

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	43.08		46.51			
ANNUAL MEAN	0.12		0.13		0.19	
HIGHEST ANNUAL MEAN					0.25	1998
LOWEST ANNUAL MEAN					0.12	2001
HIGHEST DAILY MEAN	3.1	Nov 25	4.2	Aug 3	13	Sep 16 1999
LOWEST DAILY MEAN	0.00	(a)	0.00	(b)	0.00	(c)
ANNUAL SEVEN-DAY MINIMUM	0.00	Nov 4	0.00	Nov 4	0.00	Dec 15 1998
MAXIMUM PEAK FLOW			231	Aug 3	(d)247	Sep 2 1998
MAXIMUM PEAK STAGE			5.03	Aug 3	5.38	Sep 2 1998
INSTANTANEOUS LOW FLOW			0.00	(b)	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.56		0.61		0.93	
ANNUAL RUNOFF (INCHES)	7.63		8.24		12.58	
10 PERCENT EXCEEDS	0.29		0.25		0.42	
50 PERCENT EXCEEDS	0.03		0.02		0.05	
90 PERCENT EXCEEDS	0.01		0.00		0.01	

a Sept. 13, 17-19, Oct. 18-23, Nov. 4-23.
b Many days.
c Many days in 1997-1999, 2001, 2002.
d From rating curve extended above 20 ft^3/s on basis of runoff comparison with nearby station.
f No flow at times during 1997-2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD

LOCATION.--Lat 39°19'48.3", long 76°32'05.6", Baltimore City, Hydrologic Unit 02060003, on right downstream side of bridge on Radecke Avenue, at Baltimore, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--3.52 mi^2.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good below 300 ft^3/s and fair above, except those for estimated daily discharges (backwater, missing record, ice effect), which are poor. Baltimore City gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1850	1,650	6.56	Jun 19	1924	789	5.31
May 2	0647	1,200	5.99	Jul 23	1752	994	5.68
May 13	1500	1,200	5.99	Aug 3	UNKNOWN	*4,100	(a)*8.56
Jun 6	0039	731	5.19	Aug 24	0639	824	5.38
Jun 6	1753	882	5.49				

a From crest-stage gage.

Minimum discharge, UNKNOWN.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	e0.30	0.45	e0.41	e1.1	0.46	1.5	0.68	0.64	1.6	0.43	11
2	0.28	e0.29	0.36	e0.41	e0.75	19	0.67	32	0.55	0.39	0.55	0.70
3	e0.27	e0.29	0.35	e0.42	e0.52	13	0.66	1.2	0.55	0.96	e80	0.47
4	e0.25	e0.28	0.35	e0.42	e0.47	0.63	0.58	1.00	0.54	0.39	e3.0	0.45
5	e0.26	e0.28	0.37	e0.42	e0.49	0.53	0.58	0.72	1.6	0.38	e0.70	0.41
6	e0.29	e0.29	0.37	14	e0.46	0.53	0.56	0.62	35	0.38	0.42	0.39
7	e0.27	e0.29	0.39	1.7	e2.0	0.52	0.58	0.61	0.88	0.38	0.41	0.38
8	e0.26	e0.29	7.4	0.57	e0.67	0.52	0.62	0.58	0.56	0.38	0.43	0.37
9	e0.25	e0.30	0.80	1.0	e0.47	0.57	2.6	0.98	0.53	8.4	0.49	0.35
10	e0.25	e0.31	0.35	0.54	e0.54	3.6	0.75	0.56	0.53	2.6	0.70	0.35
11	e0.24	e0.31	4.2	9.3	e1.2	0.94	0.53	0.53	0.53	0.38	0.41	0.41
12	e0.24	e0.32	0.41	0.65	0.45	1.0	0.53	e20	0.53	0.38	0.42	0.52
13	e0.23	e0.36	0.42	0.58	0.46	9.0	0.53	e18	12	0.38	0.48	0.54
14	7.7	e0.41	2.5	0.55	0.45	0.68	0.53	1.2	14	1.5	0.37	0.70
15	0.57	1.6	0.46	0.53	0.49	0.60	0.75	0.72	3.3	0.38	0.40	1.8
16	1.8	0.39	0.54	0.49	0.49	0.54	0.84	0.61	0.61	0.38	0.41	0.42
17	0.41	0.31	2.2	0.49	0.48	1.3	0.53	3.3	0.53	0.37	0.36	0.38
18	e0.31	0.32	3.3	0.47	0.45	5.9	1.1	18	3.2	0.37	0.32	0.38
19	e0.28	0.33	0.51	1.0	0.48	0.69	1.8	0.84	14	0.38	0.34	0.36
20	e0.26	0.33	0.50	3.4	0.66	32	0.54	0.63	0.79	0.38	0.33	0.35
21	e0.24	0.32	0.44	2.2	0.50	1.8	1.1	0.56	0.51	0.39	0.27	0.35
22	e0.22	0.32	0.43	1.3	0.45	0.80	5.6	0.54	0.48	0.40	0.26	0.34
23	e0.20	0.32	0.54	2.1	0.45	0.66	0.63	0.58	0.44	18	0.24	0.32
24	e0.18	0.76	5.9	8.5	0.45	0.61	0.60	0.59	0.44	0.54	16	0.34
25	e0.17	56	0.46	0.93	0.45	0.59	3.2	0.61	0.46	0.53	0.41	0.34
26	e0.17	0.71	0.42	e0.63	2.2	15	0.63	0.59	0.46	7.8	0.40	35
27	e0.21	0.43	0.42	e0.55	0.66	2.7	1.0	13	1.7	0.45	0.43	7.8
28	e0.43	0.38	e0.42	e0.51	0.46	0.87	e40	0.72	0.47	0.42	14	1.1
29	e0.33	0.43	e0.42	e0.48	---	0.73	e2.0	0.57	0.40	0.42	2.1	0.41
30	e0.32	0.39	e0.42	e1.3	---	0.66	0.84	0.54	0.38	0.43	0.45	0.56
31	e0.31	---	e0.41	e3.2	---	5.7	---	1.9	---	0.41	0.42	---
TOTAL	18.20	67.66	36.51	59.05	18.70	122.13	72.38	122.98	96.61	50.55	125.95	67.29
MEAN	0.59	2.26	1.18	1.90	0.67	3.94	2.41	3.97	3.22	1.63	4.06	2.24
MAX	7.7	56	7.4	14	2.2	32	40	32	35	18	80	35
MIN	0.17	0.28	0.35	0.41	0.45	0.46	0.53	0.53	0.38	0.37	0.24	0.32
CFSM	0.17	0.64	0.33	0.54	0.19	1.12	0.69	1.13	0.91	0.46	1.15	0.64
IN.	0.19	0.72	0.39	0.62	0.20	1.29	0.76	1.30	1.02	0.53	1.33	0.71

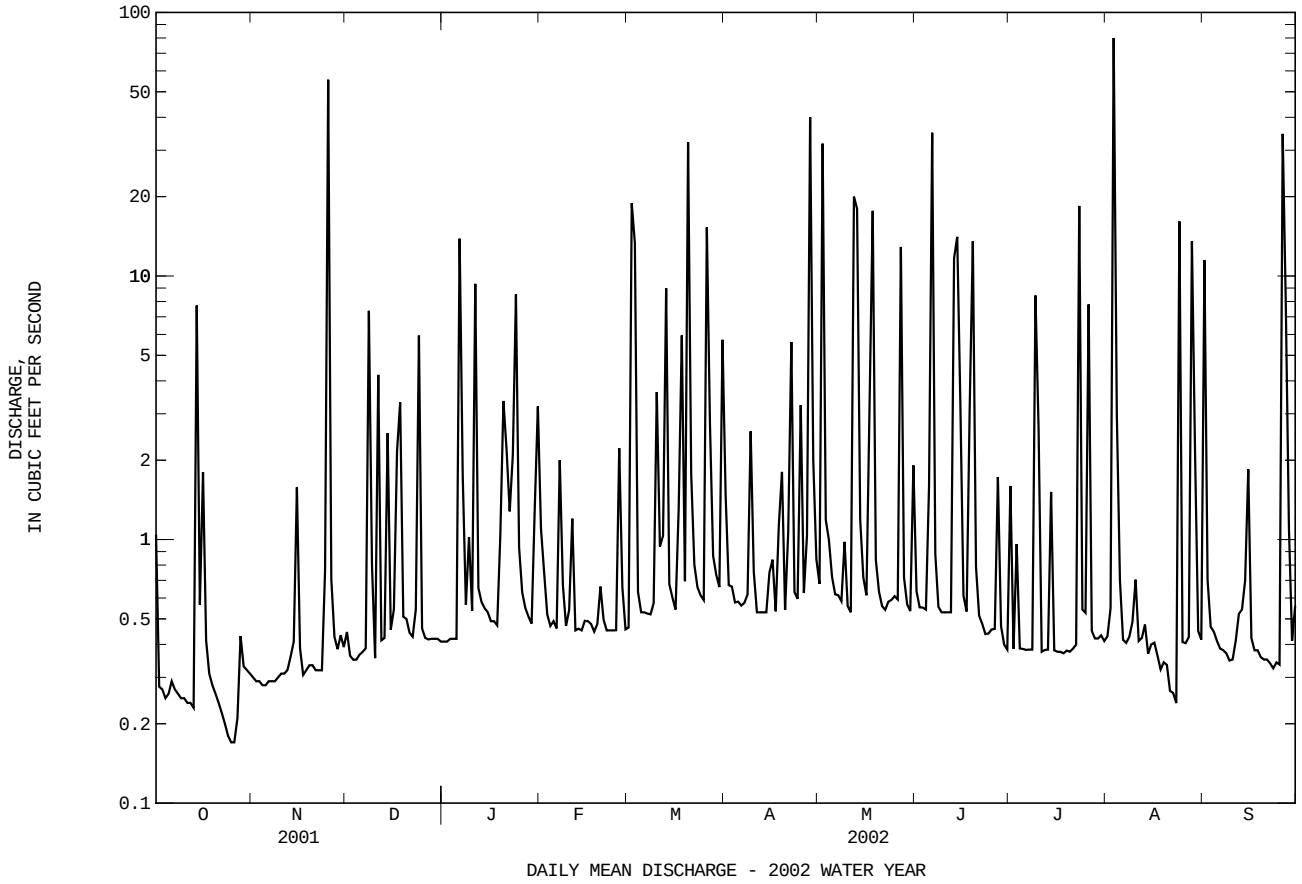
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	2.07	3.18	3.71	4.63	4.76	6.84	3.13	2.96	2.68	2.95	3.74	4.48
MAX	4.16	7.36	10.5	9.43	11.5	11.3	5.46	4.30	3.51	8.47	8.16	15.5
(WY)	1997	1998	1997	1998	1998	1998	2000	1998	2001	2000	1999	1999
MIN	0.55	1.25	0.96	1.90	0.67	3.94	2.16	1.06	1.57	0.36	1.43	1.42
(WY)	2001	1999	1999	2002	2002	2002	2001	1997	1999	1997	2001	2001

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	957.40		858.01			
ANNUAL MEAN	2.62		2.35		3.75	
HIGHEST ANNUAL MEAN					4.99	1998
LOWEST ANNUAL MEAN					2.35	2002
HIGHEST DAILY MEAN	64	Mar 21	(e)80	Aug 3	310	Sep 16 1999
LOWEST DAILY MEAN	(e)0.17	(a)	(e)0.17	(a)	0.17	(b)
ANNUAL SEVEN-DAY MINIMUM	0.20	Oct 21	0.20	Oct 21	0.18	Oct 1 1997
MAXIMUM PEAK FLOW			4100	Aug 3	(c)4160	Aug 14 1999
MAXIMUM PEAK STAGE			(d)8.56	Aug 3	8.60	Aug 14 1999
INSTANTANEOUS LOW FLOW			UNKNOWN		0.15	(f)
ANNUAL RUNOFF (CFSM)	0.75		0.67		1.06	
ANNUAL RUNOFF (INCHES)	10.12		9.07		14.46	
10 PERCENT EXCEEDS	5.7		3.5		7.5	
50 PERCENT EXCEEDS	0.88		0.53		0.86	
90 PERCENT EXCEEDS	0.31		0.31		0.38	

e Estimated.
a Oct. 25, 26..
b Oct. 1, 2, 1997, Oct. 25, 26, 2001.
c From rating curve extended above 320 ft^3/s.
d From crest-stage gage.
f Oct. 20, 1997, Aug. 12, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD

LOCATION.--Lat 39°35'36.0", long 76°58'03.1", Carroll County, Hydrologic Unit 02060003, on left bank 80 ft upstream from culvert, 0.7 mi upstream from mouth, and 1.8 mi northeast of Westminster.

DRAINAGE AREA.--3.29 mi^2.

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1432: Drainage area, 1954-55. WDR MD-DE-75-1: 1972(M). WDR MD-DE-79-1: 1973-78(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 670 ft above National Geodetic Vertical Datum of 1929. from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Occasional small diversions to and releases from Cranberry Reservoir located 1 mi upstream from station since August 1957, capacity, 113,700,000 gal. Beginning October l972 occasional large diversions past the gaging station from the reservoir through a 30-inch pipe. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	1915	*65	*2.63	No peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.27	0.34	0.29	e0.30	0.32	0.20	0.31	0.24	0.39	0.25	0.05	0.28
2	0.24	0.26	0.28	0.24	0.29	0.26	0.29	0.94	0.36	0.23	0.01	0.24
3	0.22	0.20	0.24	0.20	0.29	0.68	0.27	0.37	0.31	0.23	0.01	0.22
4	0.20	0.20	0.24	e0.20	0.26	0.33	0.24	0.34	0.29	0.19	0.01	0.20
5	0.24	0.20	0.24	e0.20	0.24	0.29	0.24	0.37	0.27	0.19	0.01	0.18
6	0.26	0.22	0.24	0.29	0.24	0.24	0.24	0.38	7.6	0.18	0.04	0.17
7	0.20	0.24	0.24	0.25	0.26	0.24	0.24	0.34	0.69	0.18	0.04	0.17
8	0.23	0.23	0.51	0.23	0.25	0.24	0.24	0.34	0.50	0.16	0.05	0.18
9	0.29	0.24	0.72	0.20	0.24	0.24	0.25	0.35	0.46	0.39	0.05	0.18
10	0.29	0.24	0.34	0.24	0.20	0.22	0.24	0.34	0.41	0.57	0.04	0.18
11	0.29	0.24	0.36	1.1	0.24	0.20	0.24	0.32	0.39	0.20	0.04	0.18
12	0.29	0.24	0.34	0.47	0.24	0.20	0.24	0.38	0.37	0.17	0.05	0.19
13	0.27	0.24	0.34	0.39	0.24	0.34	0.24	0.43	0.47	0.18	0.04	0.20
14	0.33	0.24	0.39	0.34	0.24	0.31	0.24	0.36	0.97	0.28	0.04	0.20
15	0.76	0.24	0.34	0.34	0.24	0.27	0.31	0.34	0.43	0.23	0.08	0.22
16	0.32	0.24	0.29	0.31	0.24	0.24	0.24	0.32	0.39	0.16	0.12	0.22
17	0.31	0.22	0.31	0.29	0.24	0.22	0.23	0.34	0.37	0.14	0.11	0.22
18	0.29	0.20	0.74	0.29	0.22	0.28	0.57	2.9	0.34	0.15	0.11	0.22
19	0.28	0.20	0.37	0.31	0.20	0.25	0.27	0.57	0.34	0.14	0.11	0.23
20	0.27	0.20	0.34	0.29	0.20	5.1	0.22	0.51	0.38	0.11	0.10	0.23
21	0.31	0.20	0.34	0.25	0.20	0.69	0.22	0.46	0.37	0.13	0.12	0.23
22	0.41	0.20	0.30	0.27	0.20	0.48	0.30	0.46	0.30	0.11	0.15	0.23
23	0.51	0.27	0.29	0.30	0.20	0.41	0.26	0.44	0.27	0.11	0.18	0.21
24	0.45	0.25	0.37	0.66	0.20	0.37	0.23	0.39	0.27	0.12	0.34	0.21
25	0.24	1.7	0.34	0.48	0.20	0.34	0.26	0.39	0.27	0.12	0.20	0.21
26	0.24	0.58	0.33	0.39	0.20	0.49	0.26	0.39	0.27	0.28	0.19	0.33
27	0.29	0.37	0.29	0.34	0.22	0.59	0.24	0.46	0.28	0.22	0.17	1.1
28	0.31	0.34	0.29	0.34	0.23	0.35	1.4	1.2	0.34	0.15	0.30	0.60
29	0.39	0.34	0.29	0.34	---	0.34	0.33	0.61	0.29	0.08	0.41	0.21
30	0.37	0.33	0.27	0.34	---	0.31	0.27	0.50	0.25	0.06	0.23	0.20
31	0.34	---	0.25	0.37	---	0.33	---	0.40	---	0.07	0.22	---
TOTAL	9.71	9.21	10.52	10.56	6.54	15.05	9.13	16.18	18.64	5.78	3.62	7.64
MEAN	0.31	0.31	0.34	0.34	0.23	0.49	0.30	0.52	0.62	0.19	0.12	0.25
MAX	0.76	1.7	0.74	1.1	0.32	5.1	1.4	2.9	7.6	0.57	0.41	1.1
MIN	0.20	0.20	0.24	0.20	0.20	0.20	0.22	0.24	0.25	0.06	0.01	0.17
CFSM	0.10	0.09	0.10	0.10	0.07	0.15	0.09	0.16	0.19	0.06	0.04	0.08
IN.	0.11	0.10	0.12	0.12	0.07	0.17	0.10	0.18	0.21	0.07	0.04	0.09

e Estimated

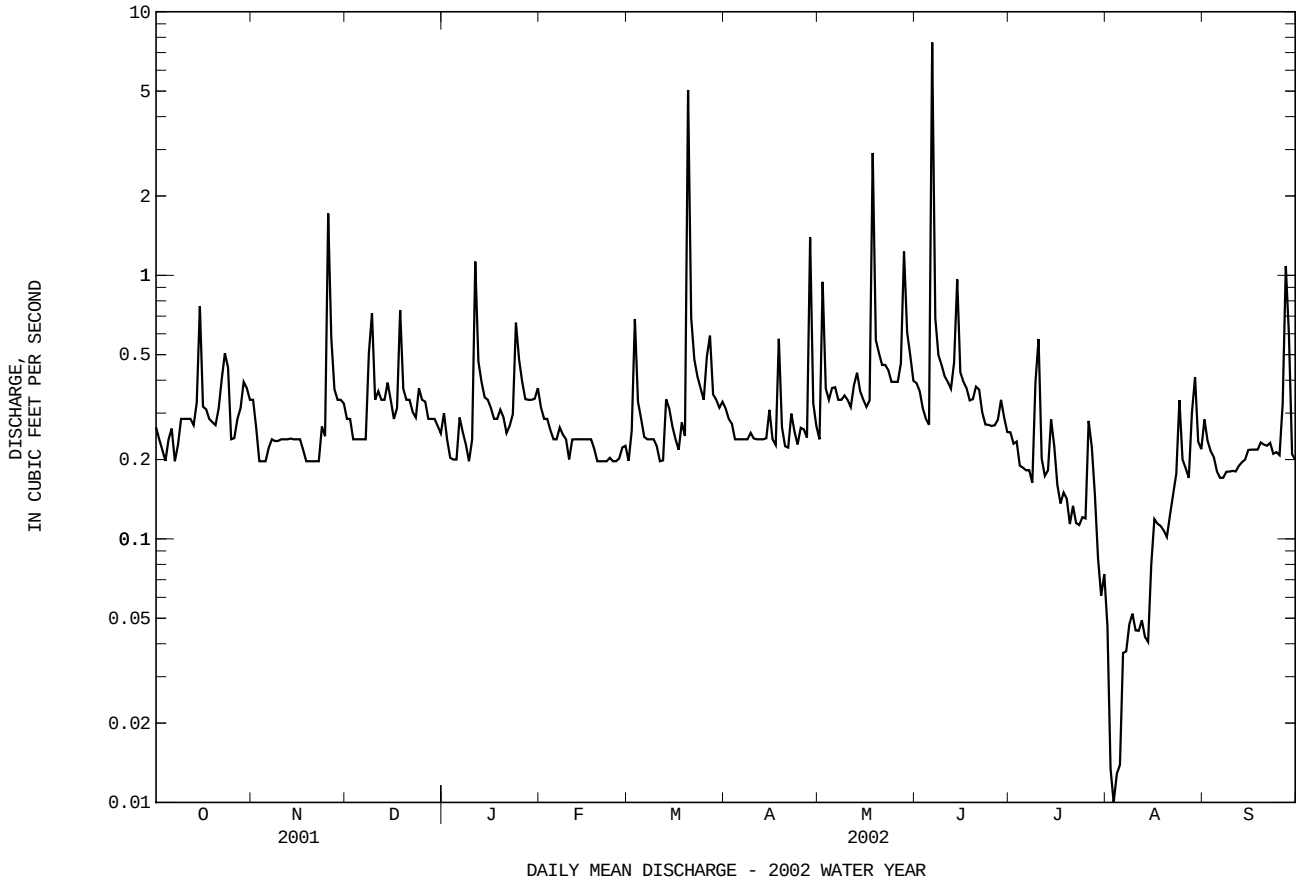
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	2.06	2.38	3.03	3.50	4.29	4.62	4.55	3.93	3.46	2.60	2.00	2.29
MAX	9.96	6.66	11.4	13.2	10.7	12.9	12.3	11.3	29.5	11.1	6.91	21.7
(WY)	1980	1953	1997	1996	1974	1994	1993	1952	1972	1972	1955	1975
MIN	0.31	0.31	0.34	0.34	0.23	0.49	0.30	0.52	0.62	0.19	0.12	0.25
(WY)	1998	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	499.71		122.58			
ANNUAL MEAN	(a)1.37		(a)0.34		(a)3.22	
HIGHEST ANNUAL MEAN					7.82	1972
LOWEST ANNUAL MEAN					0.34	2002
HIGHEST DAILY MEAN	22	Mar 30	7.6	Jun 6	440	Jun 22 1972
LOWEST DAILY MEAN	0.15	Sep 3	0.01	(b)	0.01	(c)
ANNUAL SEVEN-DAY MINIMUM	0.17	Sep 2	0.02	Aug 1	0.01	Sep 6 1995
MAXIMUM PEAK FLOW			65	Jun 6	(d)2220	Sep 26 1975
MAXIMUM PEAK STAGE			2.63	Jun 6	7.47	Sep 26 1975
INSTANTANEOUS LOW FLOW			(f)0.00	(g)	(f)0.00	(h)
ANNUAL RUNOFF (CFSM)	0.42		0.10		0.98	
ANNUAL RUNOFF (INCHES)	5.65		1.39		13.30	
10 PERCENT EXCEEDS	3.6		0.46		5.8	
50 PERCENT EXCEEDS	0.51		0.26		2.2	
90 PERCENT EXCEEDS	0.24		0.16		0.53	

a Unadjusted for storage and diversions.
b Aug. 2-5.
c Sept. 6-16, 1995.
d From rating curve extended above 200 ft^3/s on basis of culvert measurement at gage heights 5.54 and 7.47 ft.
f Result of regulation.
g July 4, 30, 31, Aug. 1-7, 10-15.
h Sept. 5, 1995, July 4, 30, 31, Aug. 1-7, 10-15, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD

LOCATION.--Lat 39°30'13.2", long 76°53'05.5", Carroll County, Hydrologic Unit 02060003, on left bank at downstream side of private footbridge at Cedarhurst, 0.8 mi downstream from Roaring Run, 8 mi southeast of Westminster, and 16.5 mi upstream from confluence with South Branch.

DRAINAGE AREA.--56.6 mi^2.

PERIOD OF RECORD.--September 1945 to current year.

REVISED RECORDS.--WSP 1903: 1959-60.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 420.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (lagging intake), which are fair. Slight diurnal fluctuation at low and medium flow caused by mill upstream from station. Low flow affected slightly by Cranberry Reservoir since August 1957, capacity, 113,700,000 gal. Records do not include a mean discharge of 2.80 ft^3/s diverted upstream from station for municipal supply of Westminster; sewage effluent discharged into Little Pipe Creek in Monocacy River basin. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	2230	*773	*3.58	No peak greater than base discharge.			

Minimum discharge, 1.3 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	23	14	27	14	28	24	21	16	5.4	33
2	16	18	18	14	26	15	22	61	18	15	5.5	21
3	15	18	17	14	22	50	22	36	16	15	5.7	13
4	15	17	16	14	20	23	22	25	14	14	8.4	10
5	15	17	16	15	18	18	21	23	14	13	6.1	9.6
6	15	16	16	17	18	17	20	20	101	13	5.6	9.5
7	15	16	16	24	19	17	19	19	84	14	4.5	8.7
8	14	16	18	21	17	16	18	18	28	14	e4.0	8.5
9	15	16	35	18	17	17	18	18	21	25	e3.6	7.7
10	15	16	20	20	17	23	21	18	18	40	e3.3	7.1
11	15	17	23	74	18	18	18	16	17	12	e3.2	6.4
12	15	16	21	41	16	16	17	24	15	10	e3.0	5.3
13	16	15	19	27	16	29	17	39	20	9.2	e3.2	5.5
14	16	15	25	23	15	30	20	33	50	13	e2.6	6.2
15	36	15	31	21	16	22	32	22	33	13	e2.5	7.0
16	19	16	21	20	16	20	21	18	23	9.4	e2.6	9.2
17	25	15	20	19	16	19	19	16	22	7.6	e3.1	6.7
18	19	15	42	19	15	27	17	66	21	7.0	e3.2	5.7
19	18	15	26	19	15	25	23	33	21	7.9	e2.3	6.0
20	19	15	21	21	15	131	18	22	19	7.5	e1.7	6.7
21	18	15	19	20	15	82	16	19	18	8.3	e1.4	6.8
22	17	15	18	20	15	42	22	18	18	7.2	e0.83	10
23	17	15	18	23	15	32	18	16	18	7.0	e0.90	11
24	17	15	22	56	15	29	16	16	16	9.4	53	7.3
25	16	49	19	44	14	30	16	15	15	7.1	14	5.7
26	15	62	18	28	14	25	17	15	15	23	7.6	15
27	16	23	16	25	15	55	15	32	16	16	6.0	91
28	16	19	17	22	14	30	87	67	19	11	19	71
29	16	18	16	21	---	26	49	61	20	8.5	87	18
30	16	18	14	20	---	24	28	28	17	7.4	22	12
31	17	---	15	29	---	24	---	23	---	6.1	13	---
TOTAL	531	570	636	763	476	946	697	861	748	386.6	304.23	440.6
MEAN	17.1	19.0	20.5	24.6	17.0	30.5	23.2	27.8	24.9	12.5	9.81	14.7
MAX	36	62	42	74	27	131	87	67	101	40	87	91
MIN	14	15	14	14	14	14	15	15	14	6.1	0.83	5.3
CFSM	0.30	0.34	0.36	0.43	0.30	0.54	0.41	0.49	0.44	0.22	0.17	0.26
IN.	0.35	0.37	0.42	0.50	0.31	0.62	0.46	0.57	0.49	0.25	0.20	0.29

e Estimated

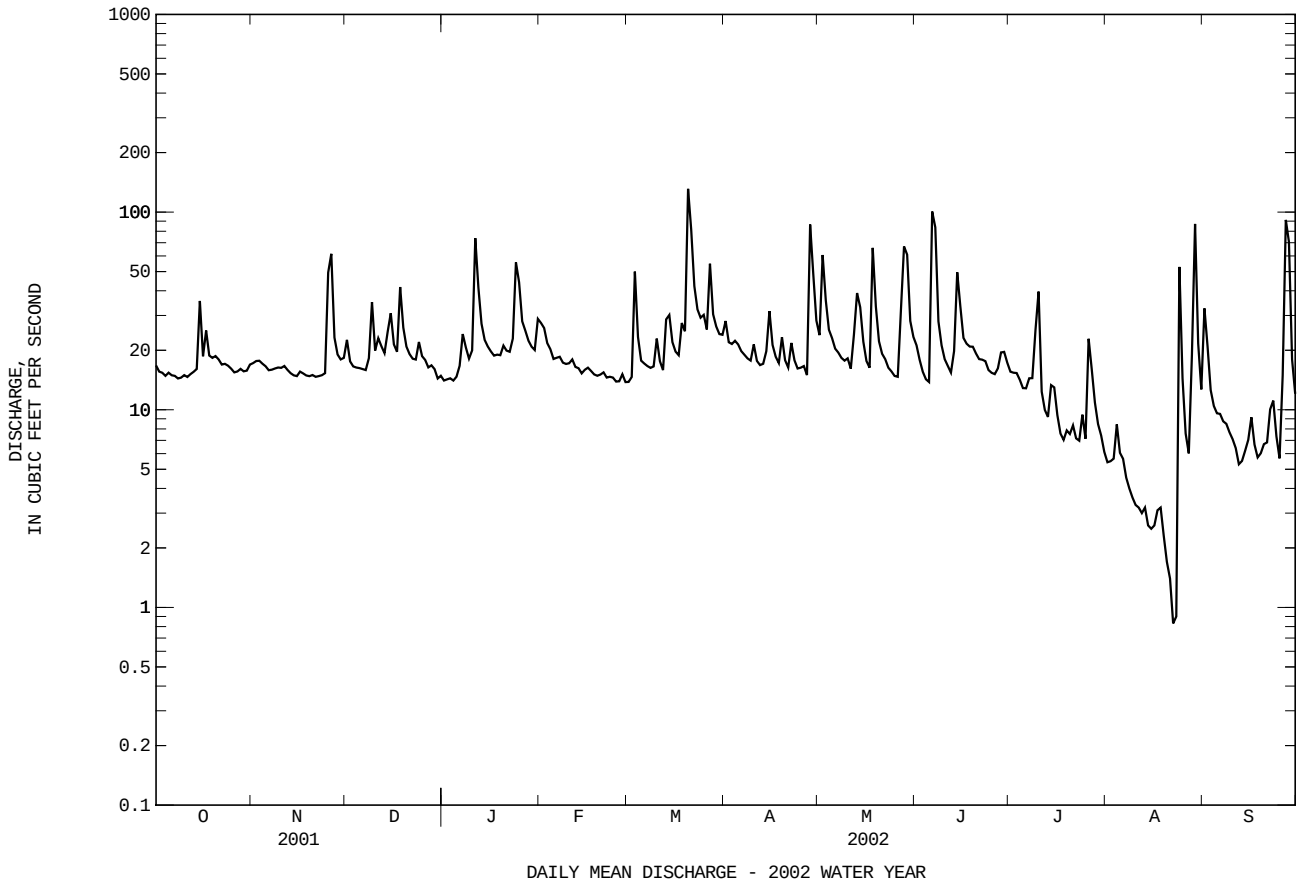
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

MEAN	41.6	50.2	61.9	74.4	85.2	95.0	86.3	75.0	63.3	48.4	40.9	42.6
MAX	214	114	240	225	212	243	213	201	390	149	165	356
(WY)	1980	1953	1997	1996	1979	1994	1993	1952	1972	1972	1955	1975
MIN	11.8	15.8	15.5	17.6	17.0	30.5	23.2	26.3	19.5	9.72	6.91	12.4
(WY)	1964	1966	1966	1966	2002	2002	2002	1969	1969	1966	1966	1964

01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	15968		7359.43			
ANNUAL MEAN	43.7		20.2		63.2	
HIGHEST ANNUAL MEAN					121	1972
LOWEST ANNUAL MEAN					20.2	2002
HIGHEST DAILY MEAN	418	Mar 30	131	Mar 20	6000	Jun 22 1972
LOWEST DAILY MEAN	12	(a)	(e)0.83	Aug 22	(e)0.83	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	12	Sep 7	1.9	Aug 17	1.9	Aug 17 2002
MAXIMUM PEAK FLOW			773	Jun 6	(b)27800	Jun 22 1972
MAXIMUM PEAK STAGE			3.58	Jun 6	(c)20.75	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.83	(d)	0.83	(d)
ANNUAL RUNOFF (CFSM)	0.77		0.36		1.12	
ANNUAL RUNOFF (INCHES)	10.49		4.84		15.17	
10 PERCENT EXCEEDS	79		32		111	
50 PERCENT EXCEEDS	32		17		43	
90 PERCENT EXCEEDS	15		7.0		19	

a Sept.7, 10-13, 17-19.
e Estimated.
b From rating curve extended above 4,100 ft^3/s on basis of contracted-opening measurement of peak flow.
c From high-water mark in well.
d Aug. 22, 23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01586210 BEAVER RUN NEAR FINKSBURG, MD

LOCATION.--Lat 39°29'22.0", long 76°54'10.6", Carroll County, Hydrologic Unit 02060003, on downstream center line of bridge pier on Hughes Road, 0.25 mi northwest of intersection of Hughes Road and Maryland Route 91, and 0.75 mi southwest of Finksburg.

DRAINAGE AREA.--14.0 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 428.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater from leaves, ice effect), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 6	2145	*82	*1.53	No peak greater than base discharge.			

Minimum discharge, 0.23 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	e4.3	5.3	e5.6	6.8	4.9	7.9	7.0	5.5	2.4	1.7	5.2
2	e4.4	e4.3	5.1	e5.4	6.5	5.1	6.9	16	5.1	2.3	1.5	4.5
3	e4.3	e4.3	5.1	e5.2	6.0	14	6.8	8.9	4.5	2.3	2.1	3.4
4	e4.1	e4.3	4.8	e5.2	5.7	7.0	6.6	7.1	4.4	2.3	2.3	2.9
5	e3.9	e4.2	4.7	e5.2	6.3	5.9	6.4	6.5	4.1	2.1	1.5	2.4
6	3.9	e4.2	4.6	e5.6	5.5	5.7	6.5	6.7	14	1.8	1.4	2.2
7	3.6	e4.2	4.6	e6.6	5.3	5.4	5.6	5.8	11	1.7	1.2	2.1
8	3.5	e4.2	5.3	e6.2	5.3	5.3	5.5	6.0	5.6	2.3	1.0	2.1
9	3.7	e4.1	8.0	e5.4	5.1	5.1	5.7	5.6	4.9	6.2	0.88	2.0
10	3.9	e4.0	5.5	e5.4	5.1	7.1	6.5	5.8	4.4	10	0.87	1.9
11	3.9	e4.0	6.6	19	5.3	5.9	5.6	5.1	3.9	3.1	0.79	1.7
12	3.9	e4.1	6.1	9.7	5.1	5.6	5.3	5.0	3.7	2.6	0.77	1.4
13	3.9	e4.0	5.6	7.4	5.1	8.9	5.3	8.7	4.6	2.5	0.72	1.4
14	4.3	e4.0	7.0	6.4	5.0	9.0	5.9	6.3	9.6	3.7	0.58	1.5
15	7.1	e4.0	7.8	5.7	4.9	7.1	8.6	5.4	6.7	3.7	0.49	1.9
16	4.5	e4.0	6.0	5.6	4.8	6.7	6.5	4.8	5.1	2.7	0.49	2.3
17	5.7	e4.0	5.7	5.3	4.8	6.3	5.3	4.6	4.3	2.3	0.50	2.1
18	e4.7	e4.0	10	5.3	4.8	9.8	5.1	13	3.9	2.1	0.49	1.9
19	e4.6	e4.1	7.2	5.3	4.9	8.5	5.1	6.7	4.0	2.2	0.36	1.7
20	e4.6	e4.0	6.2	5.6	5.1	34	5.3	5.4	3.8	2.1	0.35	1.8
21	e4.5	e4.0	5.7	5.1	5.1	21	5.1	5.3	3.6	3.0	0.31	2.1
22	e4.4	e4.0	5.4	5.1	5.1	13	6.8	4.8	3.3	2.7	0.27	3.2
23	e4.4	e4.3	5.3	5.8	4.8	11	5.2	4.5	3.2	3.4	0.32	3.9
24	e4.4	e5.0	6.2	15	4.8	9.5	5.1	4.4	3.2	4.3	15	2.8
25	e4.5	23	5.4	10	4.8	8.5	5.1	4.3	3.1	2.3	3.1	2.2
26	e4.4	15	5.3	7.6	4.7	8.3	5.1	4.3	2.9	4.7	1.9	7.0
27	e4.3	6.9	5.5	6.7	5.1	14	5.1	19	2.7	3.6	1.8	20
28	e4.3	6.0	5.6	6.3	5.1	9.1	22	17	2.6	2.6	6.2	12
29	e4.4	5.6	5.0	5.8	---	8.1	12	13	2.6	2.3	17	4.6
30	e4.4	5.6	5.0	5.6	---	7.7	8.0	7.3	2.5	2.0	4.9	3.7
31	e4.4	---	5.1	6.7	---	7.5	---	6.1	---	1.9	3.5	---
TOTAL	135.4	161.7	180.7	210.8	146.9	285.0	201.9	230.4	142.8	93.2	74.29	107.9
MEAN	4.37	5.39	5.83	6.80	5.25	9.19	6.73	7.43	4.76	3.01	2.40	3.60
MAX	7.1	23	10	19	6.8	34	22	19	14	10	17	20
MIN	3.5	4.0	4.6	5.1	4.7	4.9	5.1	4.3	2.5	1.7	0.27	1.4
CFSM	0.31	0.39	0.42	0.49	0.37	0.66	0.48	0.53	0.34	0.21	0.17	0.26
IN.	0.36	0.43	0.48	0.56	0.39	0.76	0.54	0.61	0.38	0.25	0.20	0.29

e Estimated

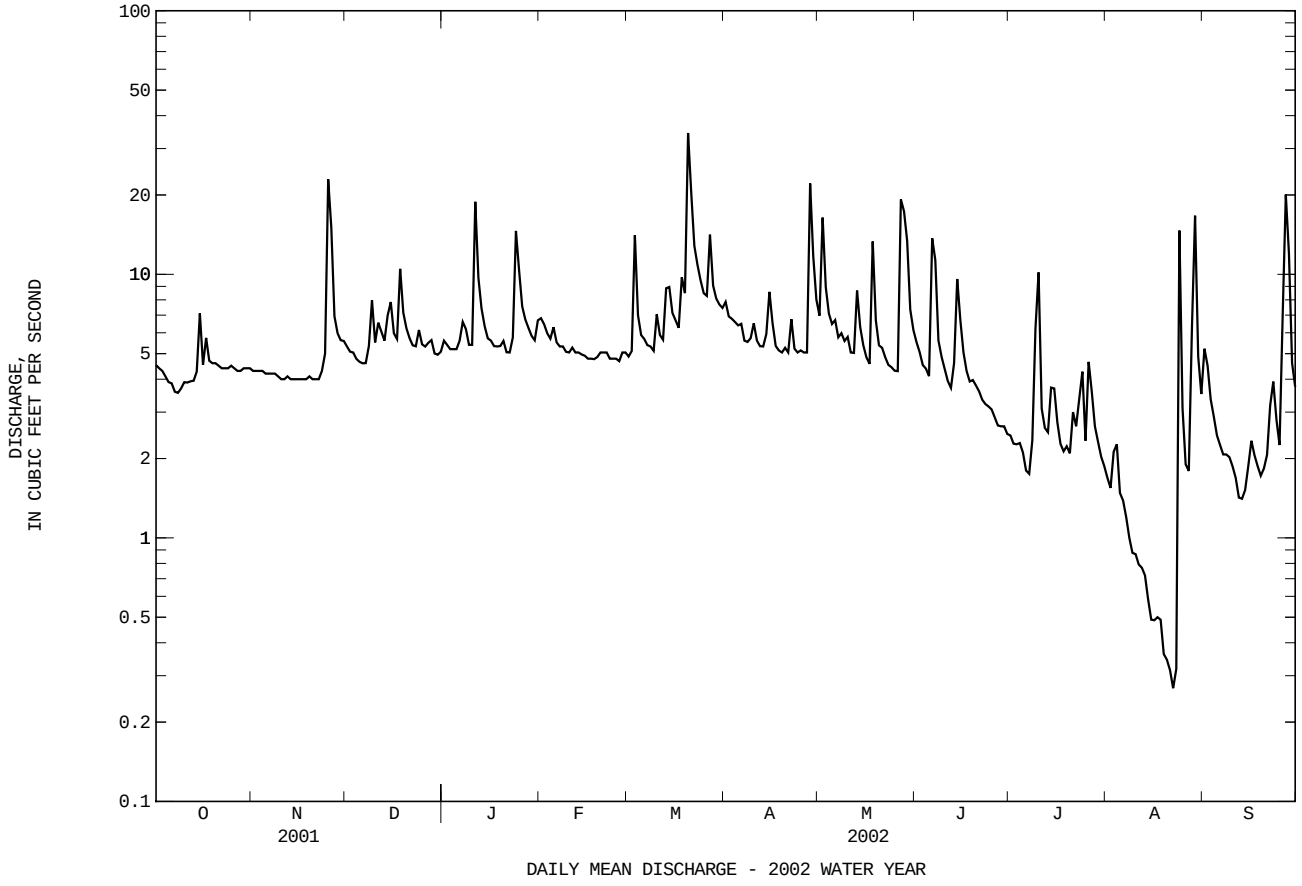
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

MEAN	9.66	13.2	17.1	18.9	20.8	25.4	24.0	20.8	12.6	10.0	9.04	8.50
MAX	30.0	27.5	56.0	49.6	41.4	62.0	54.7	51.9	25.3	32.4	29.9	25.1
(WY)	1997	1997	1997	1996	1994	1993	1993	1989	1989	1996	1984	1996
MIN	3.73	5.39	4.94	6.80	5.25	9.19	6.73	7.43	4.76	3.01	2.40	2.78
(WY)	1987	2002	1999	2002	2002	2002	2002	2002	2002	2002	2002	1986

01586210 BEAVER RUN NEAR FINKSBURG, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	3917.9		1970.99			
ANNUAL MEAN	10.7		5.40		15.8	
HIGHEST ANNUAL MEAN					25.2	1996
LOWEST ANNUAL MEAN					5.40	2002
HIGHEST DAILY MEAN	88	Mar 30	34	Mar 20	528	Jan 19 1996
LOWEST DAILY MEAN	3.1	(a)	0.27	Aug 22	0.27	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 13	0.37	Aug 17	0.37	Aug 17 2002
MAXIMUM PEAK FLOW			82	Jun 6	(b)2150	May 6 1989
MAXIMUM PEAK STAGE			1.53	Jun 6	(c)5.70	May 6 1989
INSTANTANEOUS LOW FLOW			0.23	(d)	0.23	(d)
ANNUAL RUNOFF (CFSM)	0.77		0.39		1.13	
ANNUAL RUNOFF (INCHES)	10.41		5.24		15.34	
10 PERCENT EXCEEDS	23		8.5		29	
50 PERCENT EXCEEDS	7.7		5.0		11	
90 PERCENT EXCEEDS	4.0		2.0		4.6	

a Sept. 18, 19.
b From rating curve extended above 600 ft^3/s.
c From floodmarks.
d Aug. 21-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01586610 MORGAN RUN NEAR LOUISVILLE, MD

LOCATION.--Lat 39°27'06.8", long 76°57'19.1", Carroll County, Hydrologic Unit 02060003, on right downstream wingwall of bridge on London Bridge Road, 1.4 mi southwest of Gamber, and 1.65 mi south of the intersection of Maryland Route 32, and 1.7 mi west of Louisville.

DRAINAGE AREA.--28.0 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

REVISED RECORDS.--WRD MD-DE-84: 1983(P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 430 ft above National Geodetic Vertical Datum of 1929. from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	2015	*163	*2.31	No peak greater than base discharge.			

Minimum discharge, 0.73 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	8.1	11	11	14	9.2	16	14	e11	3.4	2.1	5.3
2	7.8	8.1	10	9.1	13	9.9	14	32	e9.8	3.2	2.0	5.2
3	7.6	8.2	9.8	9.2	12	23	13	19	e8.2	3.1	1.9	4.0
4	7.3	8.1	9.5	9.1	12	13	13	15	e8.2	2.8	1.8	3.4
5	7.1	7.8	9.5	9.1	11	11	12	14	e16	2.5	1.7	2.9
6	6.8	7.5	9.4	10	12	11	12	13	e20	2.2	1.7	2.7
7	6.7	7.5	9.5	12	11	11	11	13	15	2.3	1.4	2.6
8	6.6	7.5	11	11	11	10	11	12	8.4	2.5	1.3	2.6
9	7.1	7.6	15	10	11	10	12	12	7.5	4.1	1.3	2.6
10	7.4	7.4	11	11	11	13	12	12	7.0	12	1.3	2.4
11	7.7	7.7	13	28	11	11	11	11	6.6	4.0	1.2	2.3
12	7.6	7.1	12	18	10	11	11	11	6.1	3.1	1.2	2.0
13	7.6	e7.2	11	14	10	16	11	e13	7.7	3.0	1.1	1.9
14	8.3	e7.1	13	13	9.9	15	12	e12	13	5.1	e1.0	2.0
15	14	7.5	14	e11	10	13	16	e10	11	4.7	1.0	2.4
16	8.9	7.5	12	e11	10	12	12	e9.4	8.3	3.4	1.0	2.9
17	10	7.5	11	e10	10	12	11	e9.2	7.2	2.7	1.1	2.4
18	8.6	7.5	18	e10	9.6	20	10	e22	6.7	2.5	0.97	2.2
19	8.4	7.5	13	e10	9.6	17	10	e17	6.7	2.5	0.88	2.1
20	8.4	7.7	12	e10	9.9	66	10	e13	6.1	2.6	0.85	2.1
21	8.3	7.5	11	e9.6	9.9	41	10	e11	5.6	4.9	0.78	2.2
22	8.3	7.5	11	e10	9.6	25	13	e10	5.3	3.5	0.73	2.8
23	8.3	7.5	11	e11	9.4	21	11	e9.0	5.0	3.8	0.74	3.2
24	8.2	7.8	12	26	9.4	19	10	e8.4	4.7	7.0	12	2.5
25	8.0	43	11	21	9.4	17	10	e8.6	4.4	3.6	3.4	2.2
26	7.8	28	11	15	9.5	17	10	e8.8	4.1	7.2	2.1	6.9
27	7.8	13	10	14	10	24	9.9	e23	4.1	5.3	2.1	18
28	8.0	11	11	13	9.3	17	36	e22	4.1	4.1	6.8	13
29	8.1	11	10	12	---	16	22	e20	3.9	3.2	16	5.6
30	8.1	11	10	12	---	15	16	e16	3.5	2.7	5.7	4.3
31	8.1	---	10	14	---	15	---	e12	---	2.4	4.1	---
TOTAL	250.9	299.4	352.7	394.1	294.5	541.1	387.9	432.4	235.2	119.4	81.25	116.7
MEAN	8.09	9.98	11.4	12.7	10.5	17.5	12.9	13.9	7.84	3.85	2.62	3.89
MAX	14	43	18	28	14	66	36	32	20	12	16	18
MIN	6.6	7.1	9.4	9.1	9.3	9.2	9.9	8.4	3.5	2.2	0.73	1.9
CFSM	0.29	0.36	0.41	0.45	0.38	0.62	0.46	0.50	0.28	0.14	0.09	0.14
IN.	0.33	0.40	0.47	0.52	0.39	0.72	0.52	0.57	0.31	0.16	0.11	0.16

e Estimated

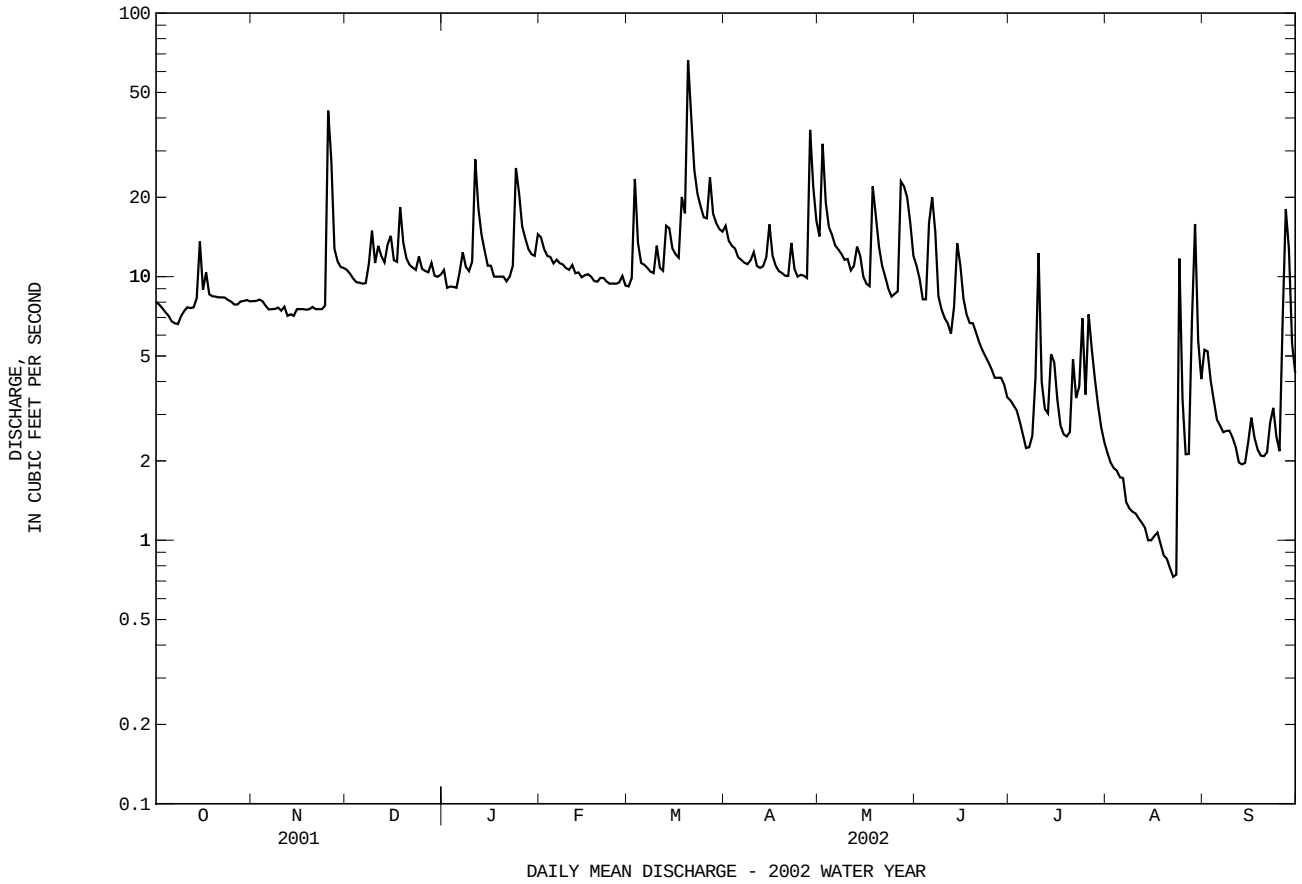
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

MEAN	19.1	25.3	35.7	39.7	42.5	56.8	53.3	42.7	27.2	19.6	16.8	17.0
MAX	65.7	63.0	132	117	91.2	154	141	111	71.4	71.8	59.0	77.8
(WY)	1997	1997	1997	1996	1984	1993	1993	1989	1996	1996	1996	1996
MIN	5.69	9.98	9.70	12.7	10.5	17.5	12.9	13.9	7.84	3.85	2.62	3.89
(WY)	1987	2002	1999	2002	2002	2002	2002	2002	2002	2002	2002	2002

01586610 MORGAN RUN NEAR LOUISVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	6863.3		3505.55			
ANNUAL MEAN	18.8		9.60		32.9	
HIGHEST ANNUAL MEAN					58.3	1996
LOWEST ANNUAL MEAN					9.60	2002
HIGHEST DAILY MEAN	192	Mar 30	66	Mar 20	1370	Jan 19 1996
LOWEST DAILY MEAN	4.9	(a)	0.73	Aug 22	0.73	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	5.1	Sep 13	0.86	Aug 17	0.86	Aug 17 2002
MAXIMUM PEAK FLOW			163	Nov 25	(b)3550	Jan 19 1996
MAXIMUM PEAK STAGE			2.31	Nov 25	8.45	Jan 19 1996
INSTANTANEOUS LOW FLOW			0.73	(c)	0.73	(c)
ANNUAL RUNOFF (CFSM)	0.67		0.34		1.18	
ANNUAL RUNOFF (INCHES)	9.12		4.66		15.98	
10 PERCENT EXCEEDS	35		16		63	
50 PERCENT EXCEEDS	14		9.5		22	
90 PERCENT EXCEEDS	7.5		2.4		8.8	

a Sept. 18, 19.
b From rating curve extended above 1,900 ft^3/s.
c Aug. 21-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD

LOCATION.--Lat 39°18'37.1", long 76°47'32.7", Baltimore County, Hydrologic Unit 02070003, on left bank at downstream side of highway bridge at Hollofield,0.3 mi downstream from Dogwood Run, 3.0 mi north of Ellicott City, and 28 mi upstream from mouth.
DRAINAGE AREA.--285 mi^2.

PERIOD OF RECORD.--May 1944 to January 1992, March 1994 to September 1995, January 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 187.7 ft above National Geodetic Vertical Datum of 1929. June 26 to December 8, 1972, nonrecording gage at same site and datum. Prior to June 22, 1972, water-stage recorder at site on opposite bank at same datum.

REMARKS.--Records good except those for estimated daily discharges (missing record, backwater), which are fair. Flow regulated by Liberty Reservoir, 11 mi upstream, beginning July 22, 1954, usable capacity 42,070,000,000 gallons; dead storage 1,260,000,000 gallons. Diversions upstream from station for municipal supply of Westminster (sewage effluent discharged into Little Pipe Creek), and from Liberty Reservoir beginning February 26, 1953, for municipal supply of Baltimore, and beginning February 1970 for small municipal supply for part of Carroll County. U.S. Geological Survey satellite telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 714 ft^3/s, Nov. 25, gage height, 3.04 ft; minimum discharge, 5.7 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	37	56	41	69	42	79	72	53	20	12	35
2	36	37	52	e40	61	46	70	273	46	19	11	30
3	35	38	48	e39	57	155	67	148	41	20	66	24
4	34	38	47	e39	56	82	65	96	39	23	25	20
5	33	37	47	e39	52	60	62	84	39	27	18	17
6	32	37	46	54	51	55	61	72	82	21	31	15
7	31	37	46	79	55	52	60	67	78	19	21	14
8	31	37	53	67	56	50	59	63	44	17	14	13
9	31	37	76	54	52	50	61	61	38	17	11	13
10	32	37	57	53	51	60	66	63	36	30	10	13
11	32	37	65	97	55	52	58	56	35	25	9.6	12
12	32	38	62	95	53	50	57	64	33	19	9.1	11
13	32	37	56	69	50	72	59	70	39	16	8.9	10
14	34	37	60	62	48	73	59	54	122	22	8.3	10
15	73	37	65	57	48	61	68	50	84	25	7.8	13
16	52	38	56	54	49	58	63	46	60	22	7.3	17
17	53	37	55	52	48	57	57	45	44	17	6.9	15
18	49	37	86	52	46	83	67	112	37	15	6.6	13
19	43	38	72	53	45	81	67	81	36	14	6.8	13
20	40	39	58	58	46	227	61	57	33	15	6.4	12
21	39	38	52	55	47	202	54	50	30	14	6.0	12
22	37	37	49	55	45	111	77	47	28	14	5.9	12
23	36	38	49	60	44	89	64	45	27	13	6.2	16
24	34	39	61	95	43	79	51	43	27	21	37	18
25	35	146	54	106	43	73	52	42	26	21	33	15
26	34	260	49	73	44	79	52	41	24	27	16	43
27	34	88	47	65	47	137	48	110	24	40	12	133
28	34	69	45	61	44	92	214	216	23	26	35	117
29	35	62	e43	58	---	79	140	100	23	20	115	43
30	36	59	e41	57	---	74	86	70	21	16	45	26
31	36	---	40	69	---	75	---	60	---	13	26	---
TOTAL	1163	1583	1693	1908	1405	2556	2104	2458	1272	628	633.8	755
MEAN	37.5	52.8	54.6	61.5	50.2	82.5	70.1	79.3	42.4	20.3	20.4	25.2
MAX	73	260	86	106	69	227	214	273	122	40	115	133
MIN	31	37	40	39	43	42	48	41	21	13	5.9	10
(†)	38016	35275	32874	30998	29507	29585	29083	29185	28133	25630	24563	20126
(‡)	120	210	126	179	137	116	106	106	110	121	153	157

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1992, 1994 - 1995, 2000 - 2002, BY WATER YEAR (WY)

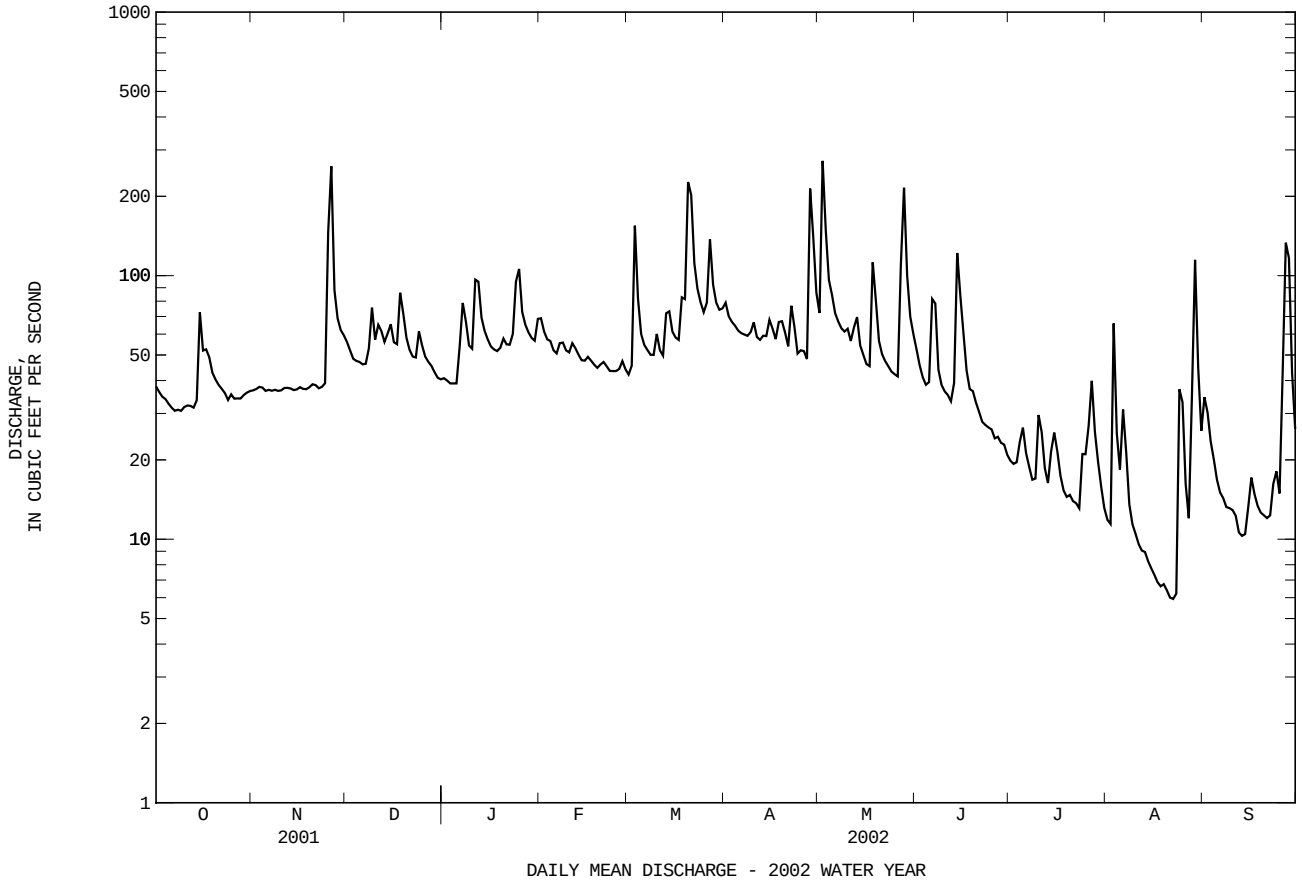
MEAN	117	139	182	210	255	274	275	245	214	146	113	133
MAX	857	590	675	770	724	804	1071	1102	2024	601	516	1493
(WY)	1980	1953	1973	1949	1951	1953	1952	1952	1972	1956	1971	1975
MIN	14.7	35.2	32.7	33.3	50.2	74.3	70.1	58.3	33.5	20.3	20.1	19.4
(WY)	1987	1966	1966	1966	2002	1981	2002	1963	1986	2002	1966	1986

† Month-end contents, in millions of gallons in Liberty Reservoir. Records furnished by Baltimore City Department of Public Works.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.

01589000 PATAPSCO RIVER AT HOLLOFIELD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 1992, 1994 - 1995, 2000 - 2002	
ANNUAL TOTAL	39429		18158.8			
ANNUAL MEAN	108		49.8		*193	
ANNUAL MEAN DIVERSIONS‡	138		137		166	
HIGHEST ANNUAL MEAN					*524	1972
LOWEST ANNUAL MEAN					*49.8	2002
HIGHEST DAILY MEAN	1490	Jun 23	273	May 2	30000	Jun 22 1972
LOWEST DAILY MEAN	27	(a)	5.9	Aug 22	5.9	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	29	Sep 13	6.4	Aug 17	6.4	Aug 17 2002
MAXIMUM PEAK FLOW			714	Nov 25	(b)80600	Jun 22 1972
MAXIMUM PEAK STAGE			3.04	Nov 25	(c)31.30	Jun 22 1972
INSTANTANEOUS LOW FLOW			5.7	(d)	5.7	(d)
ANNUAL RUNOFF (CFSM)	0.38		0.17		0.68	
ANNUAL RUNOFF (INCHES)	5.15		2.37		9.19	
10 PERCENT EXCEEDS	184		80		404	
50 PERCENT EXCEEDS	76		45		110	
90 PERCENT EXCEEDS	36		14		38	

* Unadjusted for diversions.
‡ Diversions, in cubic feet per second, upstream from station for municipal supply for city of Westminster; and from Liberty Reservoir for municipal supply of city of Baltimore, and for part of Carroll County. Records provided by cities of Westminster and Baltimore, respectively.
a Sept. 18, 19.
b From rating curve extended above 27,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Aug. 22, 23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589100 EAST BRANCH HERBERT RUN AT ARBUTUS, MD

LOCATION.--Lat 39°14'24.0", long 76°41'31.9", Baltimore County, Hydrologic Unit 02060003, on left bank 50 ft upstream from bridge on Tom Day Boulevard at U.S. Route 1 in Arbutus, 0.5 mi upstream from mouth, and 2 mi south of Baltimore city limits.

DRAINAGE AREA.--2.47 mi^2.

PERIOD OF RECORD.--August 1957 to September 1989, October 1998 to current year.

REVISED RECORDS.--WDR MD-DE-81: 1979.

GAGE.--Water-stage recorder and V-notch sharp crested weir. Elevation of gage is 45 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to August 1981 at site 100 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, backwater from leaves), which are fair. Slight regulation at low flow from unknown source upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1900	*604	*4.96	May 2	0715	600	4.94

Minimum discharge, 0.27 ft^3/s, on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	e0.35	0.54	0.51	1.1	0.49	1.7	1.0	0.61	0.43	0.52	15
2	0.46	e0.35	0.47	0.52	e0.70	10	0.95	40	0.57	0.45	0.49	1.4
3	0.43	0.35	0.47	0.58	e0.66	10	0.88	2.9	0.56	0.45	16	1.1
4	0.40	0.34	0.47	0.54	1.7	1.1	0.80	2.0	0.54	0.42	0.97	0.78
5	0.35	0.36	0.47	0.52	1.0	0.78	0.73	1.3	0.72	0.42	0.72	0.73
6	0.35	0.34	0.47	9.1	0.65	0.73	0.73	1.0	12	0.44	0.71	0.73
7	e0.34	0.36	0.47	2.4	1.6	0.70	0.73	0.96	1.4	0.44	0.74	0.68
8	e0.34	0.37	6.2	0.87	0.75	0.72	0.73	0.91	0.78	0.48	0.78	0.67
9	e0.34	0.36	1.5	0.83	0.68	1.0	3.2	1.1	0.70	12	0.76	0.65
10	e0.34	e0.35	0.60	0.70	0.81	3.9	1.2	0.83	0.69	2.2	0.63	0.63
11	0.34	e0.35	4.5	6.6	1.2	0.72	0.74	0.72	0.66	0.69	0.63	0.66
12	0.35	e0.35	0.71	1.0	0.83	0.74	0.74	7.8	0.55	0.61	0.63	0.65
13	0.36	e0.35	0.63	0.78	0.71	6.1	0.75	5.4	6.7	0.61	0.63	0.63
14	4.8	e0.35	2.3	0.81	0.60	1.0	0.74	1.5	7.6	5.0	0.60	0.64
15	1.4	0.35	0.72	0.74	0.54	0.83	0.83	0.94	1.4	0.84	0.60	1.2
16	1.8	0.33	0.54	0.70	0.48	0.75	0.71	0.87	0.80	0.61	0.60	0.79
17	0.68	0.34	1.7	0.65	0.47	1.3	0.67	4.2	0.65	0.53	0.59	0.63
18	0.44	0.33	2.8	0.58	0.57	4.1	15	14	0.58	0.53	0.60	0.61
19	0.40	0.33	0.68	1.7	0.49	0.95	2.1	1.1	0.59	0.54	0.56	0.63
20	0.40	0.35	e0.60	2.4	0.57	20	1.0	0.81	0.54	0.54	0.52	0.63
21	0.37	0.34	e0.54	1.5	0.58	2.1	1.2	0.71	0.52	0.53	0.52	0.63
22	e0.36	0.33	e0.54	1.4	0.50	1.2	5.9	0.68	0.49	0.57	0.52	0.63
23	e0.36	0.34	e0.93	1.6	0.48	1.1	0.91	0.65	0.47	2.0	0.62	0.78
24	e0.36	0.59	e4.1	3.2	0.47	0.96	0.78	0.69	0.45	0.94	7.2	0.59
25	0.36	47	e0.73	1.1	0.47	0.88	1.4	0.78	0.46	0.87	0.96	0.54
26	e0.35	4.2	0.63	0.78	0.61	7.7	0.75	0.69	0.48	18	1.1	24
27	e0.35	1.1	0.62	0.73	0.67	2.8	0.74	4.8	2.0	1.1	0.66	8.4
28	0.35	0.66	0.60	0.72	0.49	1.1	30	1.1	0.70	0.70	11	2.5
29	e0.34	0.62	0.56	0.66	---	0.97	1.9	0.66	0.47	0.62	4.0	0.86
30	e0.35	0.54	0.53	0.66	---	0.90	1.2	0.63	0.47	0.58	0.94	0.76
31	e0.35	---	e0.53	2.6	---	3.9	---	0.62	---	0.52	0.84	---
TOTAL	19.52	62.68	37.15	47.48	20.38	89.52	79.71	101.35	45.15	54.66	56.64	69.13
MEAN	0.63	2.09	1.20	1.53	0.73	2.89	2.66	3.27	1.50	1.76	1.83	2.30
MAX	4.8	47	6.2	9.1	1.7	20	30	40	12	18	16	24
MIN	0.34	0.33	0.47	0.51	0.47	0.49	0.67	0.62	0.45	0.42	0.49	0.54
CFSM	0.25	0.85	0.49	0.62	0.29	1.17	1.08	1.32	0.61	0.71	0.74	0.93
IN.	0.29	0.94	0.56	0.72	0.31	1.35	1.20	1.53	0.68	0.82	0.85	1.04

e Estimated.

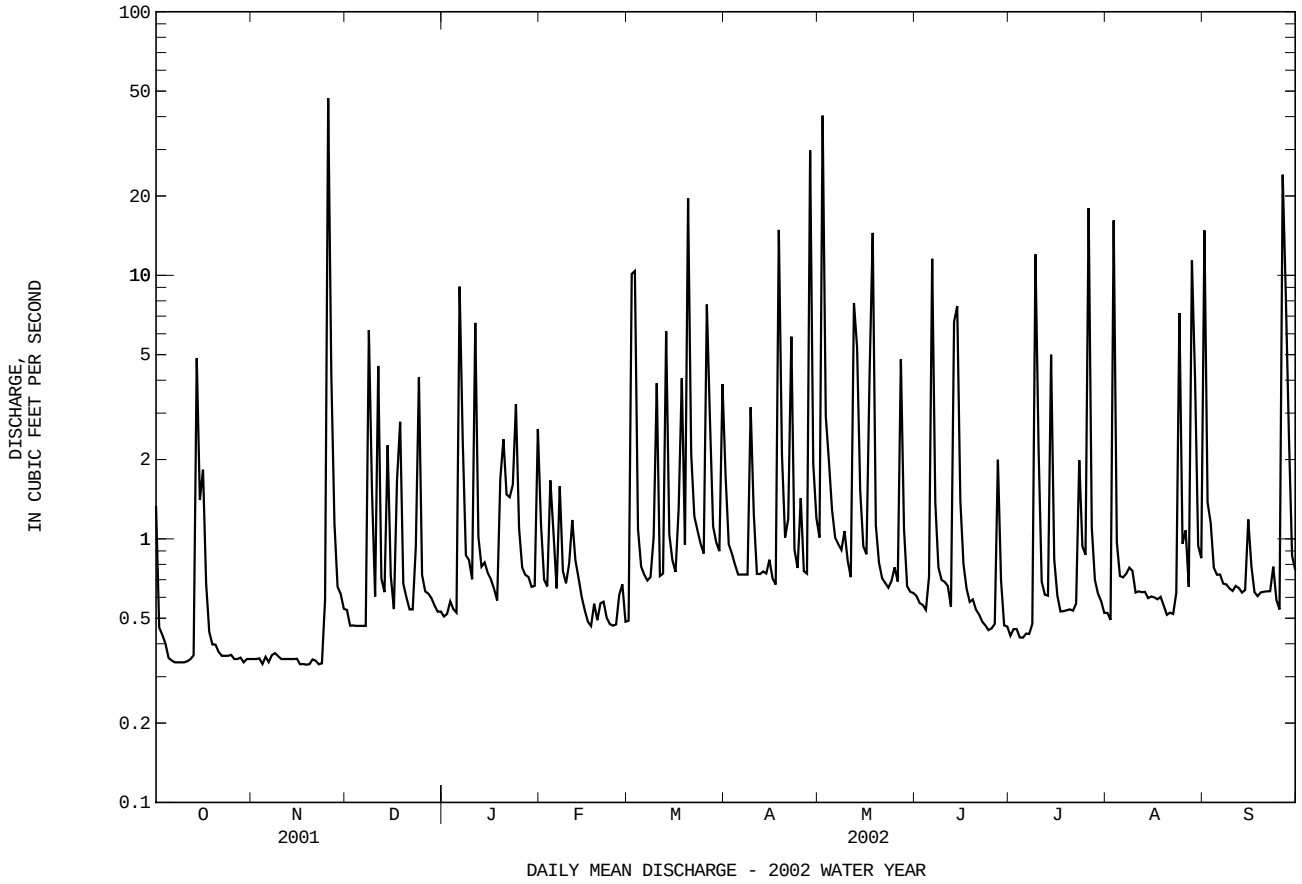
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1989, 1998 - 2002, BY WATER YEAR (WY)

MEAN	2.20	2.75	3.18	3.25	3.94	4.15	3.59	3.44	2.97	2.77	3.07	3.56
MAX	7.62	8.39	7.54	13.4	11.0	10.7	11.8	10.6	13.5	10.2	13.5	15.7
(WY)	1972	1973	1984	1979	1979	1958	1983	1989	1972	1975	1979	1979
MIN	0.58	0.63	0.70	0.56	0.73	1.41	1.20	0.89	0.95	0.78	0.80	0.63
(WY)	2001	1982	1981	1981	2002	1981	1985	1986	1986	1966	1982	1986

01589100 EAST BRANCH HERBERT RUN AT ARBUTUS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 1989, 1998 - 2002	
ANNUAL TOTAL	897.04		683.37			
ANNUAL MEAN	2.46		1.87		3.24	
HIGHEST ANNUAL MEAN					6.85	1979
LOWEST ANNUAL MEAN					1.87	2002
HIGHEST DAILY MEAN	47	Nov 25	47	Nov 25	200	Jun 22 1972
LOWEST DAILY MEAN	0.33	(a)	0.33	(a)	0.21	Aug 10 1999
ANNUAL SEVEN-DAY MINIMUM	0.34	Nov 16	0.34	Nov 16	0.24	Aug 6 1999
MAXIMUM PEAK FLOW			604	Nov 25	(b)2460	Sep 6 1979
MAXIMUM PEAK STAGE			4.96	Nov 25	(c)13.70	Sep 6 1979
INSTANTANEOUS LOW FLOW			0.27	(d)	0.16	(f)
ANNUAL RUNOFF (CFSM)	0.99		0.76		1.31	
ANNUAL RUNOFF (INCHES)	13.51		10.29		17.80	
10 PERCENT EXCEEDS	4.5		3.9		5.8	
50 PERCENT EXCEEDS	0.85		0.69		1.4	
90 PERCENT EXCEEDS	0.36		0.36		0.61	

a Nov. 16, 18, 19, 22.
b From rating curve extended above 280 ft^3/s on basis of culvert measurement at gage height 5.0 ft, present site, and culvert and flow-over-road measurement of peak flow at gage height 13.7 ft, present site.
c From floodmarks.
d Oct. 5, 6, 25, Nov. 6, 8, 21.
f Aug. 7, 10, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589197 GWYNNS FALLS NEAR DELIGHT, MD

LOCATION.--Lat 39°26'34.6", long 76°47'00.3", Baltimore County, Hydrologic Unit 02060003, on downstream side of bridge on Gwynbrook Avenue, 1.2 mi east of Delight, and 1.6 mi north of Owings Mills.

DRAINAGE AREA.--4.23 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 534.20 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1915	194	2.99	May 2	0730	*217	*3.17

Minimum discharge, UNKNOWN

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.3	1.6	1.4	2.0	1.4	2.7	2.0	1.6	1.1	e0.50	5.6
2	1.2	1.3	1.5	1.4	1.7	4.1	2.1	23	1.5	1.0	e0.38	1.3
3	1.2	1.3	1.4	1.4	1.6	11	2.0	3.5	1.4	0.99	e0.50	1.0
4	1.2	1.3	1.4	1.4	1.6	2.3	2.0	2.4	1.4	0.98	0.67	0.98
5	1.2	1.3	1.4	1.4	1.5	1.7	1.8	2.2	1.4	0.98	e0.56	0.96
6	1.1	1.3	1.4	5.5	1.4	1.6	1.7	2.0	6.8	0.98	e0.44	0.90
7	1.2	1.3	1.4	4.2	1.6	1.5	1.7	1.8	2.4	0.98	e0.40	0.86
8	1.2	1.3	4.2	2.2	1.6	1.5	1.7	1.7	1.4	0.99	e0.40	0.86
9	1.2	1.2	3.2	1.8	1.5	1.6	2.4	1.8	1.3	2.7	e0.39	0.82
10	1.2	1.2	1.7	1.8	1.4	3.2	2.2	1.9	1.3	1.8	e0.36	0.78
11	1.2	1.3	3.6	7.9	1.8	1.5	1.6	1.5	1.3	0.93	e0.34	0.78
12	1.2	1.2	1.8	2.5	1.5	1.4	1.5	2.6	1.3	0.72	e0.32	0.78
13	1.2	1.3	1.6	1.8	1.4	7.0	1.5	2.2	3.9	0.70	e0.31	0.78
14	2.6	1.3	3.4	1.5	1.4	2.5	1.9	1.6	6.0	1.2	e0.33	0.79
15	2.7	1.3	2.0	1.5	1.4	1.8	4.2	1.6	2.4	0.90	e0.30	1.0
16	1.7	1.3	1.6	1.5	1.4	1.7	1.7	1.5	1.5	0.71	e0.30	1.0
17	1.7	1.3	2.2	1.4	1.4	2.1	1.5	1.6	1.3	0.66	e0.29	0.86
18	1.3	1.3	5.4	1.4	1.4	7.9	5.3	14	1.4	0.66	e0.27	0.88
19	1.3	1.3	2.0	1.5	1.4	2.7	3.7	2.5	1.5	0.66	e0.26	0.78
20	1.3	1.3	1.6	2.0	1.4	24	2.3	1.8	1.3	0.61	e0.25	0.76
21	1.3	1.3	1.5	2.0	1.4	4.8	1.9	1.7	1.3	0.66	e0.25	0.71
22	1.3	1.3	1.5	2.0	1.4	2.9	5.1	1.7	1.3	0.69	e0.25	0.71
23	1.3	1.3	1.5	2.7	1.4	2.6	1.9	1.6	1.2	1.3	0.57	1.0
24	1.2	1.3	3.3	11	1.4	2.4	1.6	1.5	1.2	0.99	12	0.71
25	1.2	24	1.7	3.2	1.3	2.2	1.9	1.4	1.2	0.70	1.0	0.71
26	1.2	4.7	e1.4	2.1	1.4	7.6	1.6	1.8	1.2	3.2	0.71	13
27	1.2	2.0	e1.4	1.8	2.1	5.9	1.4	13	1.2	1.0	0.71	14
28	1.2	1.5	e1.4	1.6	1.4	2.8	24	8.2	1.2	0.81	11	4.9
29	1.2	1.5	e1.4	1.6	---	2.2	3.8	3.2	1.2	0.71	8.1	1.2
30	1.3	1.6	1.4	1.5	---	2.1	2.4	1.9	1.1	0.70	1.2	1.0
31	1.3	---	1.4	2.9	---	3.0	---	1.6	---	0.64	0.96	---
TOTAL	41.8	66.2	62.3	77.9	42.2	121.0	91.1	110.8	54.5	31.65	44.32	60.41
MEAN	1.35	2.21	2.01	2.51	1.51	3.90	3.04	3.57	1.82	1.02	1.43	2.01
MAX	2.7	24	5.4	11	2.1	24	24	23	6.8	3.2	12	14
MIN	1.1	1.2	1.4	1.4	1.3	1.4	1.4	1.4	1.1	0.61	0.25	0.71
CFSM	0.32	0.52	0.48	0.59	0.36	0.92	0.72	0.84	0.43	0.24	0.34	0.48
IN.	0.37	0.58	0.55	0.69	0.37	1.06	0.80	0.97	0.48	0.28	0.39	0.53

e Estimated

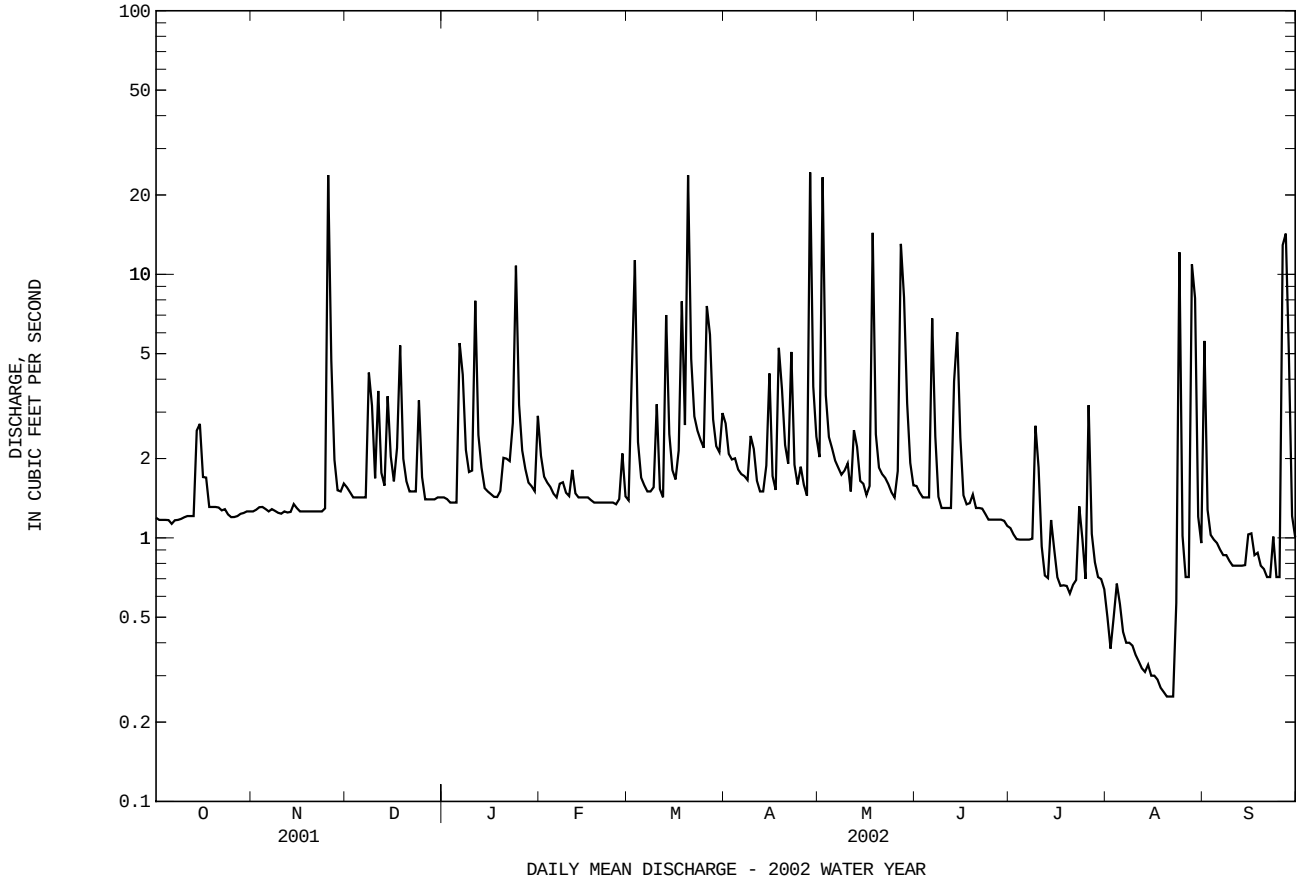
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

MEAN	2.65	2.92	4.16	4.23	3.45	5.80	4.34	3.44	3.37	2.94	3.68	4.92
MAX	5.18	4.76	6.45	7.92	5.12	7.82	5.95	4.02	5.63	5.48	6.79	11.1
(WY)	2000	2000	2001	1999	1999	2001	2000	2001	2001	1999	1999	1999
MIN	1.35	2.08	2.01	2.43	1.51	3.90	3.04	2.57	1.82	1.02	1.43	2.01
(WY)	2002	1999	2002	2000	2002	2002	2002	1999	2002	2002	2002	2002

01589197 GWYNNS FALLS NEAR DELIGHT, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1999 - 2002	
ANNUAL TOTAL	1298.9		804.18			
ANNUAL MEAN	3.56		2.20		3.83	
HIGHEST ANNUAL MEAN					4.67	1999
LOWEST ANNUAL MEAN					2.20	2002
HIGHEST DAILY MEAN	78	Jun 16	24	(a)	151	Sep 16 1999
LOWEST DAILY MEAN	1.1	Oct 6	(e)0.25	(b)	(e)0.25	(b)
ANNUAL SEVEN-DAY MINIMUM	1.2	Sep 30	(e)0.27	Aug 16	0.27	Aug 16 2002
MAXIMUM PEAK FLOW			217	May 2	(c)856	Jul 22 1999
MAXIMUM PEAK STAGE			3.17	May 2	6.65	Jul 22 1999
INSTANTANEOUS LOW FLOW			UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	0.84		0.52		0.91	
ANNUAL RUNOFF (INCHES)	11.42		7.07		12.30	
10 PERCENT EXCEEDS	5.7		3.6		5.7	
50 PERCENT EXCEEDS	2.0		1.4		2.2	
90 PERCENT EXCEEDS	1.3		0.71		1.2	

a Nov. 25, March 20, and April 28.
e Estimated.
b Aug. 20-22, 2002
c From rating curve extended above 380 ft^3/s.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD

LOCATION.--Location -Lat 39°24'01.6", long 76°46'13.6", Baltimore County, Hydrologic Unit 02060003, on left bank 650 ft upstream of confluence with Gwynns Falls, on grounds of McDonogh School,650 ft upstream from mouth 0.7 mile northwest of McDonogh, 0.8 mile southwest of Garrison, and 1.4 miles southeast of Owings Mills.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--November 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 472 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good below 0.65 ft^3/s and poor above. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1.2 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0700	*0.26	*0.41	No peak greater than base discharge.			

Minimum discharge, 0.000 ft^3/s, July 31 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.004	0.004	0.004	0.014	0.008	0.004	0.009	0.011	0.006	0.004	0.001	0.001
2	0.004	0.005	0.004	0.017	0.006	0.007	0.009	0.036	0.006	0.004	0.000	0.000
3	0.004	0.004	0.004	0.009	0.006	0.013	0.009	0.019	0.006	0.004	0.001	0.000
4	0.005	0.004	0.004	0.006	0.006	0.008	0.009	0.014	0.006	0.003	0.001	0.000
5	0.006	0.004	0.004	0.006	0.007	0.006	0.009	0.013	0.006	0.003	0.000	0.000
6	0.006	0.004	0.006	0.008	0.006	0.006	0.009	0.011	0.009	0.003	0.000	0.000
7	0.005	0.004	0.009	0.006	0.006	0.006	0.009	0.009	0.008	0.003	0.000	0.000
8	0.004	0.005	0.020	0.006	0.006	0.006	0.009	0.013	0.006	0.003	0.000	0.000
9	0.004	0.005	0.010	0.006	0.006	0.008	0.012	0.013	0.006	0.007	0.000	0.000
10	0.004	0.004	0.008	0.006	0.006	0.006	0.013	0.013	0.006	0.005	0.000	0.000
11	0.004	0.004	0.005	0.016	0.006	0.006	0.011	0.015	0.006	0.004	0.000	0.000
12	0.004	0.004	0.004	0.008	0.006	0.006	0.010	0.012	0.009	0.004	0.000	0.000
13	0.004	0.004	0.004	0.006	0.006	0.006	0.009	0.009	0.010	0.004	0.000	0.000
14	0.005	0.004	0.005	0.006	0.006	0.006	0.010	0.009	0.012	0.004	0.000	0.000
15	0.005	0.004	0.004	0.006	0.006	0.006	0.012	0.009	0.010	0.004	0.000	0.000
16	0.005	0.004	0.004	0.006	0.006	0.006	0.009	0.009	0.009	0.004	0.000	0.000
17	0.006	0.004	0.005	0.006	0.004	0.008	0.009	0.009	0.009	0.004	0.000	0.000
18	0.006	0.004	0.005	0.006	0.004	0.010	0.014	0.020	0.009	0.004	0.000	0.000
19	0.006	0.005	0.006	0.006	0.004	0.009	0.014	0.018	0.007	0.003	0.000	0.000
20	0.006	0.006	0.006	0.006	0.004	0.024	0.009	0.014	0.006	0.003	0.000	0.000
21	0.006	0.006	0.004	0.006	0.004	0.017	0.007	0.011	0.006	0.002	0.000	0.000
22	0.005	0.006	0.004	0.007	0.004	0.013	0.010	0.009	0.006	0.001	0.000	0.000
23	0.005	0.004	0.004	0.009	0.004	0.012	0.008	0.009	0.004	0.004	0.000	0.000
24	0.006	0.005	0.004	0.010	0.004	0.009	0.006	0.009	0.004	0.003	0.004	0.000
25	0.006	0.015	0.004	0.009	0.004	0.009	0.009	0.009	0.005	0.003	0.000	0.000
26	0.005	0.006	0.004	0.009	0.004	0.013	0.010	0.010	0.004	0.004	0.000	0.015
27	0.004	0.006	0.004	0.009	0.004	0.018	0.011	0.015	0.004	0.002	0.000	0.008
28	0.004	0.005	0.004	0.006	0.004	0.016	0.024	0.011	0.006	0.002	0.002	0.000
29	0.004	0.004	0.005	0.006	---	0.013	0.015	0.009	0.005	0.001	0.001	0.000
30	0.004	0.004	0.006	0.006	---	0.011	0.013	0.009	0.004	0.001	0.000	0.000
31	0.004	---	0.012	0.007	---	0.009	---	0.008	---	0.001	0.000	---
TOTAL	0.150	0.147	0.176	0.240	0.147	0.297	0.317	0.385	0.200	0.101	0.010	0.024
MEAN	0.005	0.005	0.006	0.008	0.005	0.010	0.011	0.012	0.007	0.003	0.000	0.001
MAX	0.006	0.015	0.020	0.017	0.008	0.024	0.024	0.036	0.012	0.007	0.004	0.015
MIN	0.004	0.004	0.004	0.006	0.004	0.004	0.006	0.008	0.004	0.001	0.000	0.000
CFSM	0.16	0.16	0.19	0.26	0.17	0.32	0.35	0.41	0.22	0.11	0.01	0.03
IN.	0.19	0.18	0.22	0.30	0.18	0.37	0.39	0.48	0.25	0.13	0.01	0.03

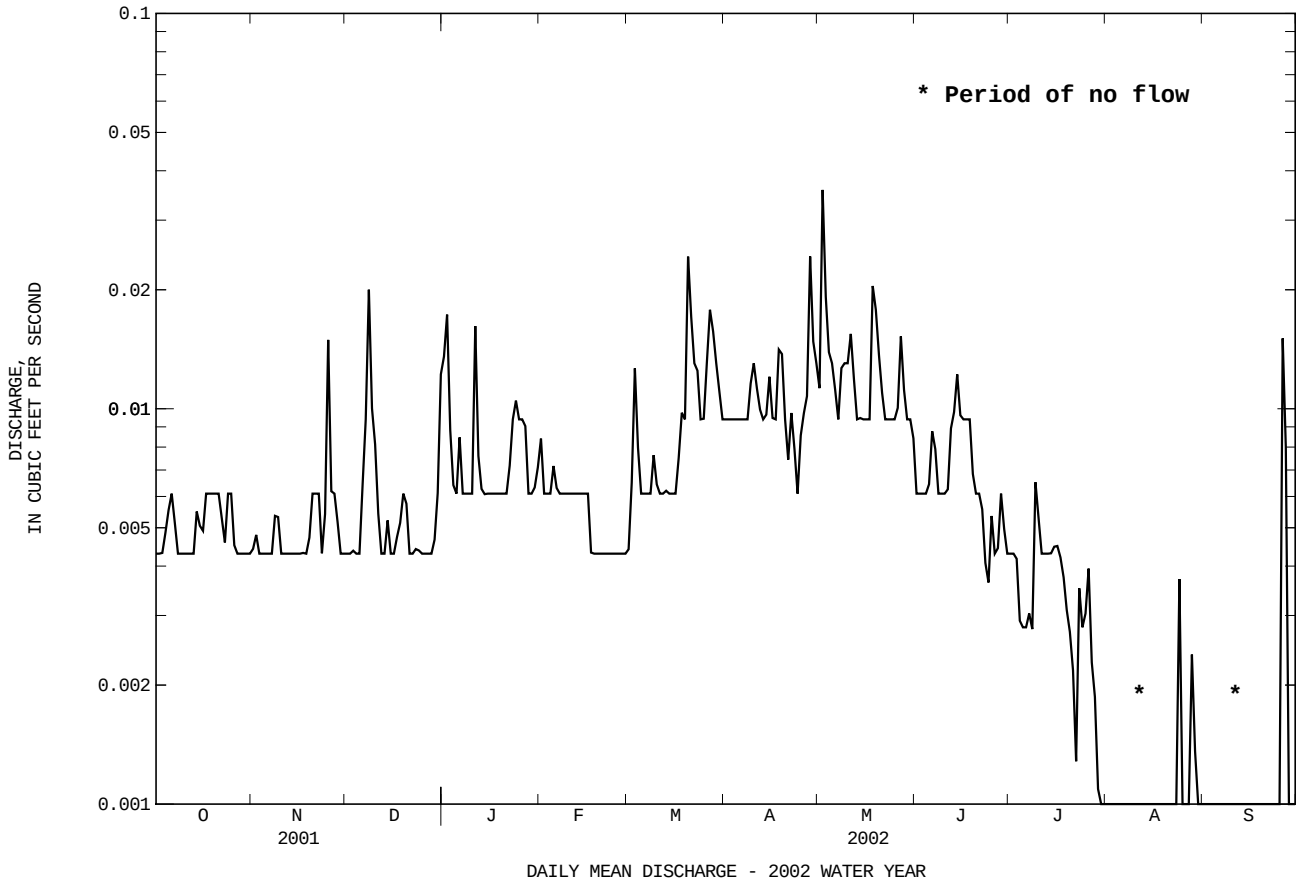
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	0.014	0.015	0.022	0.025	0.023	0.031	0.031	0.023	0.021	0.014	0.009	0.008
MAX	0.026	0.028	0.037	0.033	0.037	0.045	0.049	0.033	0.033	0.025	0.020	0.019
(WY)	2000	2000	2000	2001	2000	2000	2000	2000	2000	2000	2000	2000
MIN	0.004	0.003	0.004	0.011	0.006	0.011	0.010	0.013	0.008	0.001	0.000	0.001
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01589238 GWYNNS FALLS TRIBUTARY AT MCDONOGH, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 2000 - 2002
ANNUAL TOTAL	6.350	2.180	
ANNUAL MEAN	0.017	0.006	0.019
HIGHEST ANNUAL MEAN			0.032 2000
LOWEST ANNUAL MEAN			0.006 2002
HIGHEST DAILY MEAN	0.25 Jan 19	0.040 May 2	0.25 Jan 19 2001
LOWEST DAILY MEAN	0.000 Aug 7	0.000 (a)	0.000 (a)
ANNUAL SEVEN-DAY MINIMUM	0.00 Aug 23	0.00 Oct 26	0.00 Aug 23 2001
MAXIMUM PEAK FLOW		0.26 May 2	2.6 Dec 17 2000
MAXIMUM PEAK STAGE		0.41 May 2	0.74 Dec 17 2000
INSTANTANEOUS LOW FLOW		0.00 (b)	0.00 (a)
ANNUAL RUNOFF (CFSM)	0.58	0.20	0.65
ANNUAL RUNOFF (INCHES)	7.87	2.70	8.82
10 PERCENT EXCEEDS	0.03	0.01	0.04
50 PERCENT EXCEEDS	0.01	0.01	0.02
90 PERCENT EXCEEDS	0.00	0.00	0.00

a Aug. 5-23, 25-27, 30, 31, Sept. 1-25, 29, 30, 2002.
b July 31 to Sept. 30, 2002.



01589300 GWYNNS FALLS AT VILLA NOVA, MD

LOCATION.--Lat 39°20'45.2", long 76°43'59.5", Baltimore County, Hydrologic Unit 02060003, on right bank 300 ft downstream from bridge on Essex Road, 300 ft north of State Highway 26 (Liberty Road), in Villa Nova, 1.1 mi west of Baltimore city limits, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--32.5 mi^2.

PERIOD OF RECORD.--February 1957 to September 1988, October 1996 to current year.

REVISED RECORDS.--WDR MD-DE-83: 1981-82(P). WDR MD-DE-84: 1981(P).

GAGE.--Water-stage recorder. Datum of gage is 361.32 ft above National Geodetic Vertical Datum of 1929 (Baltimore County bench mark). Prior to Aug. 27, 1963 and Oct. 25, 1972, to Sept. 20, 1973, water-stage recorder, and June 26, 1972 to Oct. 24, 1972, nonrecording gage, at site 300 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Slight diurnal fluctuation at times from unknown source upstream from station. Small diversion for irrigation upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 21, 1956, reached a stage of 12.6 ft, discharge, 5,270 ft^3/s on basis of contracted-opening measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1930	*724	*4.32	No peak greater than base discharge.			

Minimum discharge, 1.8 ft^3/s, Aug. 20-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	10	13	e11	22	e11	26	25	12	10	2.9	44
2	12	11	12	11	22	e26	17	218	11	11	2.8	15
3	11	10	11	9.4	15	135	17	47	10	7.7	60	8.4
4	11	11	11	e11	15	27	17	28	9.4	6.9	6.5	7.1
5	10	11	11	e11	14	18	16	24	13	6.5	5.0	6.1
6	10	11	10	e34	15	16	15	20	56	6.1	3.1	5.4
7	10	10	11	44	18	15	15	19	39	6.0	2.9	5.1
8	10	10	27	22	17	14	15	18	14	6.4	2.9	5.0
9	9.3	11	35	17	15	14	19	18	11	16	2.8	4.8
10	9.1	11	15	15	15	28	21	19	10	22	2.6	4.9
11	8.5	11	30	60	18	15	15	16	9.8	7.9	2.5	4.5
12	8.5	11	17	25	15	14	15	25	8.5	6.7	2.3	4.4
13	8.6	10	14	17	14	52	16	20	25	6.4	2.3	4.0
14	17	10	23	15	12	24	16	16	78	12	2.4	4.2
15	33	10	21	14	12	18	30	16	29	8.6	2.3	7.6
16	13	11	14	14	12	16	18	13	16	6.4	2.2	11
17	18	11	17	13	12	17	16	13	14	6.9	2.1	5.4
18	11	11	48	12	11	69	77	102	19	6.5	2.0	4.6
19	11	11	20	14	11	29	55	26	19	6.2	1.9	4.5
20	10	10	16	19	11	205	28	18	15	6.1	1.9	4.5
21	10	9.9	14	18	e11	61	23	16	11	6.0	1.9	4.6
22	10	10	e13	18	e11	28	54	15	8.7	5.8	1.9	4.4
23	10	10	e13	23	e11	21	23	13	8.1	5.8	2.0	10
24	11	12	28	67	e11	19	19	12	8.5	14	92	5.3
25	10	162	14	31	e11	18	25	12	8.3	5.4	16	4.2
26	11	81	12	19	e11	41	22	12	7.2	24	5.3	92
27	11	23	11	17	e14	82	20	72	14	12	4.1	138
28	10	16	11	16	e11	27	238	41	10	6.2	65	105
29	10	14	11	15	---	21	55	36	8.2	4.5	98	20
30	10	14	e11	16	---	19	32	16	7.7	3.9	17	14
31	11	---	e11	32	---	25	---	14	---	3.4	9.3	---
TOTAL	359.0	563.9	525	660.4	387	1125	975	960	510.4	263.3	425.9	558.0
MEAN	11.6	18.8	16.9	21.3	13.8	36.3	32.5	31.0	17.0	8.49	13.7	18.6
MAX	33	162	48	67	22	205	238	218	78	24	98	138
MIN	8.5	9.9	10	9.4	11	11	15	12	7.2	3.4	1.9	4.0
CFSM	0.36	0.58	0.52	0.66	0.43	1.12	1.00	0.95	0.52	0.26	0.42	0.57
IN.	0.41	0.65	0.60	0.76	0.44	1.29	1.12	1.10	0.58	0.30	0.49	0.64

e Estimated.

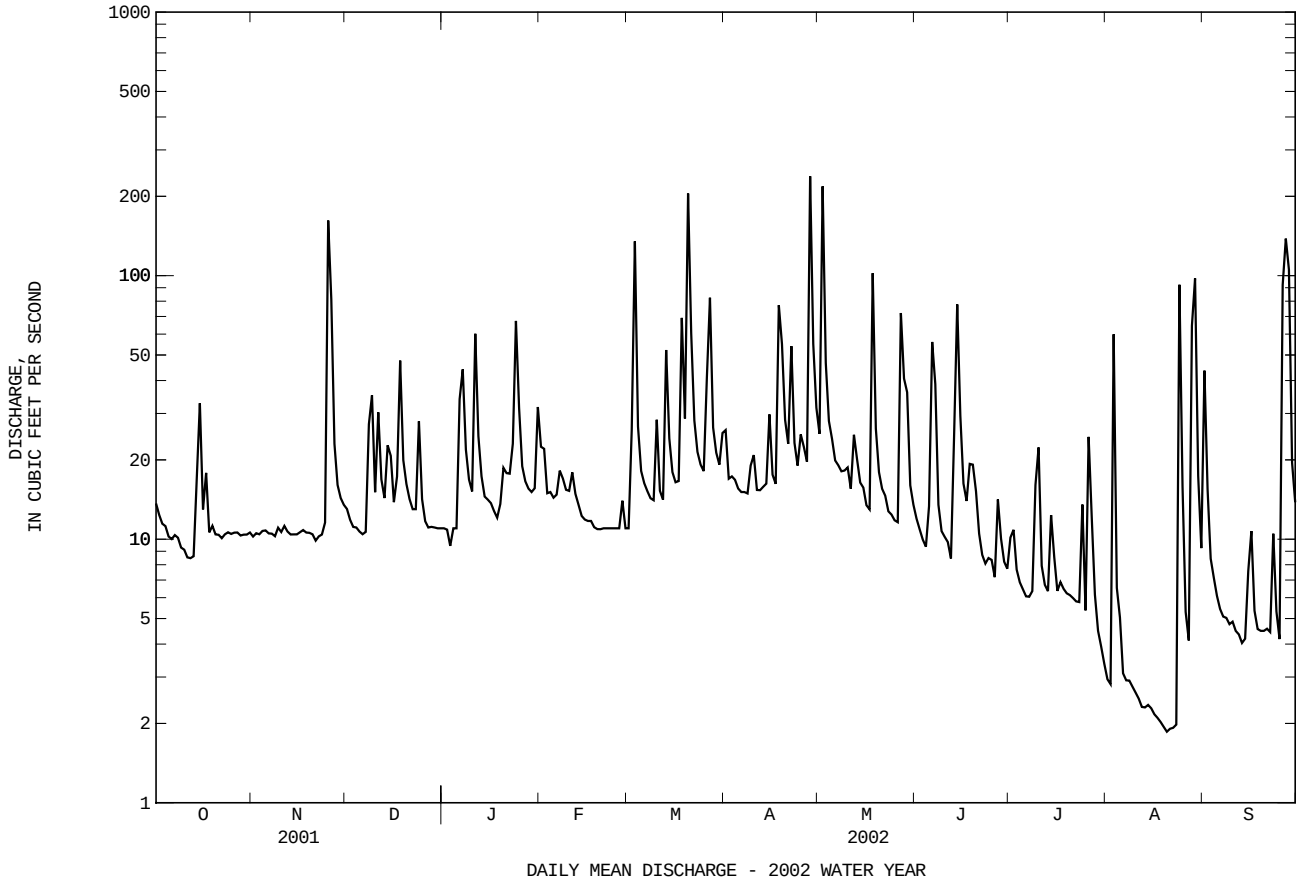
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1988, 1997 - 2002, BY WATER YEAR (WY)

MEAN	26.0	33.2	41.6	43.8	51.8	56.0	49.6	42.0	35.9	25.6	28.4	33.0
MAX	111	82.1	135	146	130	107	129	78.9	244	79.5	186	173
(WY)	1980	1997	1997	1979	1979	1998	1973	1983	1972	1975	1984	1979
MIN	7.10	10.4	9.18	10.5	13.8	21.4	20.7	14.4	8.95	6.37	5.02	7.35
(WY)	1964	1966	1966	1981	2002	1981	1963	1969	1986	1966	1966	1986

01589300 GWYNNS FALLS AT VILLA NOVA, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 1988 1997 - 2002	
ANNUAL TOTAL	10991.0		7312.9			
ANNUAL MEAN	30.1		20.0		39.0	
HIGHEST ANNUAL MEAN					76.8	1972
LOWEST ANNUAL MEAN					20.0	2002
HIGHEST DAILY MEAN	517	Mar 30	238	Apr 28	5000	Jun 22 1972
LOWEST DAILY MEAN	6.5	Aug 10	1.9	(a)	1.7	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	7.3	Sep 7	2.0	Aug 17	2.0	Aug 17 2002
MAXIMUM PEAK FLOW			724	Nov 25	(b)16200	Jun 22 1972
MAXIMUM PEAK STAGE			4.32	Nov 25	(c)21.50	Jun 22 1972
INSTANTANEOUS LOW FLOW			1.8	(d)	1.7	(e)
ANNUAL RUNOFF (CFSM)	0.93		0.62		1.20	
ANNUAL RUNOFF (INCHES)	12.58		8.37		16.32	
10 PERCENT EXCEEDS	53		34		66	
50 PERCENT EXCEEDS	17		13		22	
90 PERCENT EXCEEDS	10		5.0		9.6	

a Aug. 19-23.
b From rating curve extended above 4,200 ft^3/s on basis of contracted-opening measurement of peak flow.
c From floodmarks.
d Aug. 20-23.
e Sept. 7, 8, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589330 DEAD RUN AT FRANKLINTOWN, MD

LOCATION.--Lat 39°18'40.4", long 76°42'59.9", Baltimore County, Hydrologic Unit 02060003, on right bank at downstream side of bridge on Colonial Road at Security Boulevard at Franklintown, 0.3 mi west of Baltimore city limits, and 1.2 mi southwest of Woodlawn, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--5.52 mi^2.

PERIOD OF RECORD.--October 1959 to September 1987, July 1998 to current year.

REVISED RECORDS.--WDR MD-DE-80-1: 1979(m).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 310 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good above 0.4 ft^3/s and fair below, except those for estimated daily discharges (backwater), which are poor. Occasional regulation at low flow from unknown source upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1935	*1,450	*6.36	Aug 3	1540	1,420	6.29
May 2	0725	934	4.99	Aug 24	0700	665	4.08
Jun 6	1820	981	5.12				

Minimum discharge, 0.14 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	e0.35	1.1	0.60	2.6	0.61	4.4	2.2	1.5	0.60	0.29	26
2	0.75	e0.35	0.87	0.61	1.4	27	2.0	75	0.95	0.59	0.28	1.7
3	0.63	0.35	0.75	0.60	1.0	42	1.8	3.6	0.74	0.50	102	0.91
4	0.60	0.35	0.71	0.64	1.1	2.0	1.4	2.6	0.73	0.49	6.4	0.65
5	e0.57	e0.34	0.59	0.60	0.99	1.3	1.2	2.3	3.2	0.41	2.1	0.51
6	0.68	e0.34	0.51	21	1.1	1.1	1.1	1.6	81	0.31	1.1	0.42
7	e0.53	e0.34	0.55	8.3	3.4	1.0	1.0	1.5	4.5	0.33	0.61	0.40
8	e0.47	0.34	16	1.8	1.2	0.98	1.0	1.4	1.4	0.35	0.59	0.36
9	e0.44	e0.33	4.3	1.3	0.97	1.4	4.7	1.8	1.0	5.8	0.41	e0.31
10	e0.42	0.33	1.0	1.3	1.0	6.9	2.7	1.7	1.0	4.6	0.33	e0.29
11	e0.41	0.35	12	19	2.9	1.1	1.2	1.4	0.89	0.56	0.30	e0.26
12	e0.40	0.34	1.4	2.2	1.1	1.0	1.1	21	0.84	0.35	0.32	e0.30
13	0.40	0.33	1.3	1.4	0.89	17	1.2	23	9.1	0.31	0.25	e0.26
14	16	0.33	6.0	1.2	0.80	2.1	1.1	3.1	34	8.0	0.24	1.3
15	5.8	0.35	1.6	0.99	0.87	1.4	1.2	1.9	5.0	0.88	0.27	13
16	5.3	0.33	0.92	0.87	1.0	1.3	1.4	1.4	1.4	0.51	0.26	2.5
17	2.0	0.33	4.4	0.87	0.76	3.4	1.0	2.7	1.0	0.33	0.27	0.61
18	0.69	0.33	9.5	0.83	0.82	10	39	39	0.82	0.33	0.27	0.41
19	0.55	0.36	1.3	2.6	0.73	1.9	4.3	2.1	4.8	0.35	0.62	0.37
20	e0.50	e0.35	1.0	5.6	0.75	62	1.7	1.5	1.0	0.34	0.22	e0.30
21	e0.45	e0.33	0.99	3.5	0.90	5.1	3.5	1.2	0.82	0.34	0.22	e0.26
22	e0.42	e0.33	0.92	3.8	0.72	2.4	13	1.1	0.85	0.36	0.17	e0.23
23	e0.40	e0.33	0.90	4.7	0.87	2.0	1.4	1.0	0.74	1.00	0.72	1.6
24	e0.39	4.4	10	16	0.73	1.6	1.1	1.2	0.75	1.4	48	0.26
25	e0.38	149	1.2	2.9	0.71	1.4	3.5	2.1	0.72	0.37	2.1	0.22
26	e0.37	11	0.90	1.5	0.81	24	1.3	1.1	0.66	23	1.1	78
27	e0.37	2.3	0.75	1.2	1.7	8.4	1.4	10	8.3	1.4	0.63	21
28	e0.36	1.6	0.74	1.1	0.70	2.2	85	6.8	1.9	0.60	66	7.6
29	e0.36	1.6	0.60	1.0	---	1.8	4.5	2.0	0.67	0.43	18	1.1
30	e0.36	1.3	0.58	1.1	---	1.6	2.2	1.2	1.1	0.33	1.5	0.71
31	0.36	---	0.60	8.4	---	11	---	3.5	---	0.28	0.72	---
TOTAL	43.96	179.01	83.98	117.51	32.52	246.99	191.40	222.0	171.38	55.45	256.29	161.84
MEAN	1.42	5.97	2.71	3.79	1.16	7.97	6.38	7.16	5.71	1.79	8.27	5.39
MAX	16	149	16	21	3.4	62	85	75	81	23	102	78
MIN	0.36	0.33	0.51	0.60	0.70	0.61	1.0	1.0	0.66	0.28	0.17	0.22
CFSM	0.26	1.08	0.49	0.69	0.21	1.44	1.16	1.30	1.03	0.32	1.50	0.98
IN.	0.30	1.21	0.57	0.79	0.22	1.66	1.29	1.50	1.15	0.37	1.73	1.09

e Estimated.

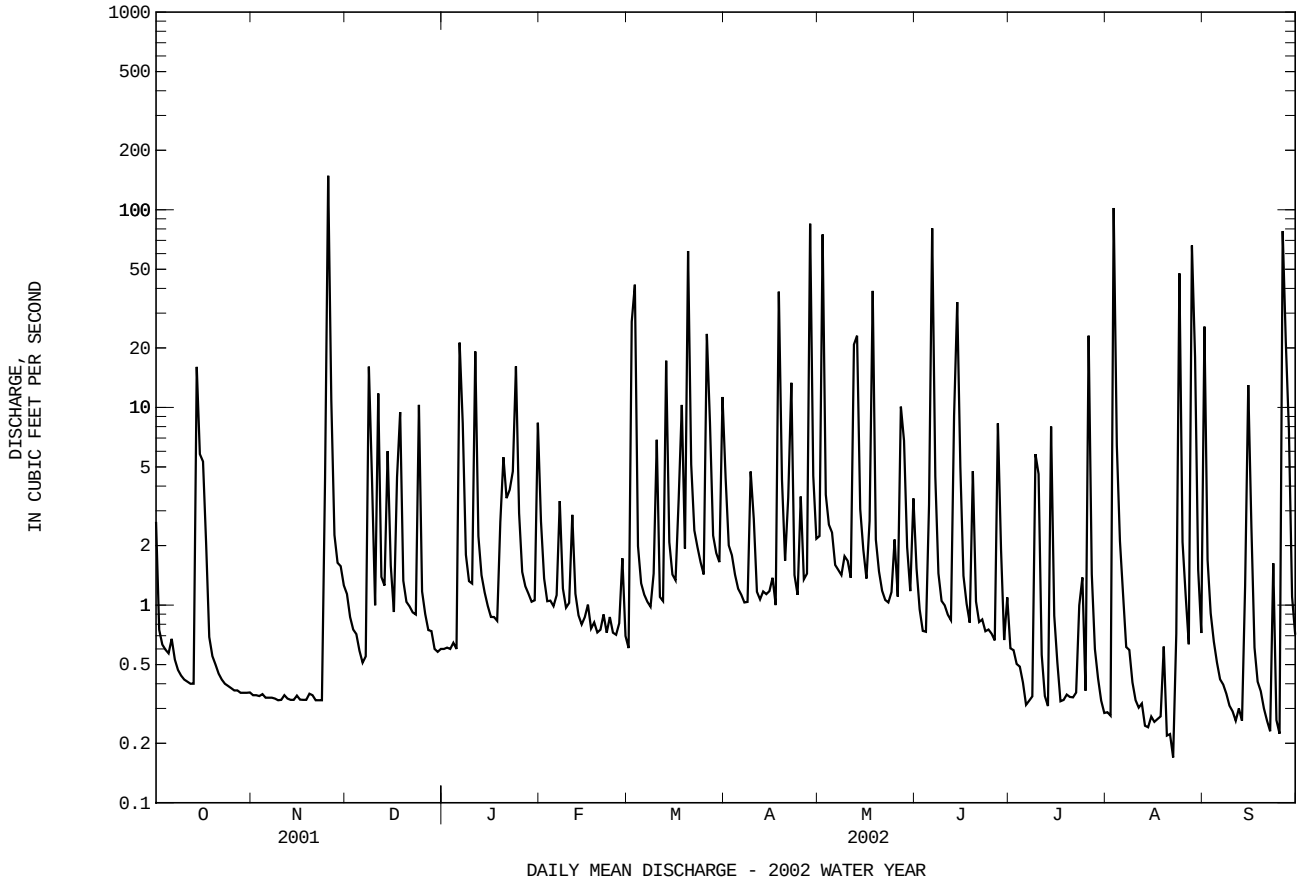
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1987, 1998 - 2002, BY WATER YEAR (WY)

MEAN	5.25	6.29	8.16	8.90	10.8	10.7	8.95	7.34	6.55	4.91	6.75	8.52
MAX	21.8	20.6	24.0	38.1	31.3	25.9	29.6	16.3	28.4	27.7	33.9	39.5
(WY)	1977	1973	1978	1979	1979	1983	1983	1983	1972	1975	1984	1979
MIN	0.33	0.69	0.57	0.67	1.16	3.39	1.27	1.15	1.62	0.66	0.85	0.81
(WY)	1964	1966	1966	1981	2002	1966	1963	1963	1966	1963	1966	1970

01589330 DEAD RUN AT FRANKLINTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 1987, 1998 - 2002	
ANNUAL TOTAL	2307.06		1762.33			
ANNUAL MEAN	6.32		4.83		7.77	
HIGHEST ANNUAL MEAN					15.5	1979
LOWEST ANNUAL MEAN					3.78	1963
HIGHEST DAILY MEAN	149	Nov 25	149	Nov 25	800	Aug 13 1984
LOWEST DAILY MEAN	0.33	(a)	0.17	Aug 22	0.17	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	0.33	Nov 12	0.27	Aug 12	0.20	Aug 24 1966
MAXIMUM PEAK FLOW			1450	Nov 25	(b)7400	Jun 22 1972
MAXIMUM PEAK STAGE			6.36	Nov 25	(c)12.50	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.14	Aug 22	0.10	(d)
ANNUAL RUNOFF (CFSM)	1.15		0.87		1.41	
ANNUAL RUNOFF (INCHES)	15.55		11.88		19.12	
10 PERCENT EXCEEDS	13		9.3		15	
50 PERCENT EXCEEDS	1.5		1.0		2.0	
90 PERCENT EXCEEDS	0.42		0.33		0.69	

a Nov. 9, 10, 13, 14, 16-18, 21-23.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement of peak flow at bridge 0.6 mi downstream, adjusted for flow from intervening area.
c From floodmarks.
d Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589340 ROGNEL HEIGHTS STORM SEWER OUTFALL AT BALTIMORE, MD

LOCATION.--Lat 39°17'59.5", long 76°41'24.5", Baltimore City, Hydrologic Unit 02060003, on left wingwall of culvert at downstream side of storm sewer outfall on Seminole Avenue, 0.3 mi upstream from confluence with Dead Run, 0.6 mi southeast of Leakin Park, and 1.5 mi southwest of Walbrook.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--November 1998 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 318 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1615	*22	*1.18	Jun 6	1630	13	0.89
May 2	0530	12	0.87	Aug 24	0615	11	0.84
May 13	1335	16	0.99				

Minimum discharge, 0.000 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.005	0.000	0.000	0.000	0.008	0.000	0.001	0.001	0.000	0.000	0.000	0.31
2	0.000	0.000	0.000	0.000	0.000	0.19	0.000	0.16	0.000	0.000	0.000	0.000
3	0.000	0.000	0.000	0.000	0.000	0.041	0.000	0.000	0.000	0.000	0.050	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000
6	0.000	0.000	0.000	0.12	0.000	0.000	0.000	0.000	0.078	0.000	0.000	0.000
7	0.000	0.000	0.000	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	0.000	0.000	0.10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.003	0.000	0.097	0.000	0.001
10	0.000	0.000	0.000	0.000	0.000	0.030	0.000	0.000	0.000	0.004	0.000	0.001
11	0.000	0.000	0.052	0.065	0.012	0.000	0.000	0.003	0.000	0.000	0.000	0.001
12	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.044	0.000	0.000	0.000	0.000
13	0.000	0.000	0.000	0.000	0.000	0.077	0.000	0.12	0.076	0.000	0.000	0.000
14	0.069	0.000	0.023	0.000	0.000	0.000	0.005	0.001	0.094	0.032	0.000	0.005
15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.062
16	0.026	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000
17	0.000	0.000	0.020	0.000	0.000	0.016	0.000	0.018	0.000	0.000	0.000	0.000
18	0.000	0.000	0.019	0.000	0.000	0.029	0.059	0.11	0.000	0.000	0.000	0.000
19	0.000	0.000	0.000	0.000	0.000	0.001	0.022	0.000	0.009	0.000	0.000	0.000
20	0.000	0.000	0.000	0.009	0.000	0.23	0.000	0.000	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	0.011	0.000	0.000	0.13	0.000	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	0.007	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.034	0.009	0.000	0.000	0.002	0.000	0.000	0.010	0.003	0.000
24	0.000	0.013	0.026	0.032	0.000	0.000	0.002	0.009	0.000	0.000	0.100	0.000
25	0.000	0.34	0.000	0.000	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.001	0.066	0.000	0.018	0.000	0.051	0.000	0.38
27	0.000	0.000	0.000	0.000	0.000	0.000	0.084	0.024	0.011	0.000	0.000	0.032
28	0.000	0.000	0.000	0.000	0.000	0.000	0.41	0.000	0.000	0.000	0.36	0.000
29	0.000	0.000	0.000	0.000	---	0.000	0.000	0.000	0.001	0.000	0.028	0.000
30	0.000	0.000	0.000	0.009	---	0.000	0.004	0.000	0.000	0.000	0.000	0.001
31	0.000	---	0.000	0.012	---	0.057	---	0.002	---	0.000	0.000	---
TOTAL	0.100	0.353	0.274	0.283	0.034	0.745	0.814	0.522	0.284	0.194	0.541	0.793
MEAN	0.003	0.012	0.009	0.009	0.001	0.024	0.027	0.017	0.009	0.006	0.017	0.026
MAX	0.069	0.34	0.10	0.12	0.013	0.23	0.41	0.16	0.094	0.097	0.36	0.38
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CFSM	0.11	0.39	0.29	0.30	0.04	0.80	0.90	0.56	0.32	0.21	0.58	0.88
IN.	0.12	0.44	0.34	0.35	0.04	0.92	1.01	0.65	0.35	0.24	0.67	0.98

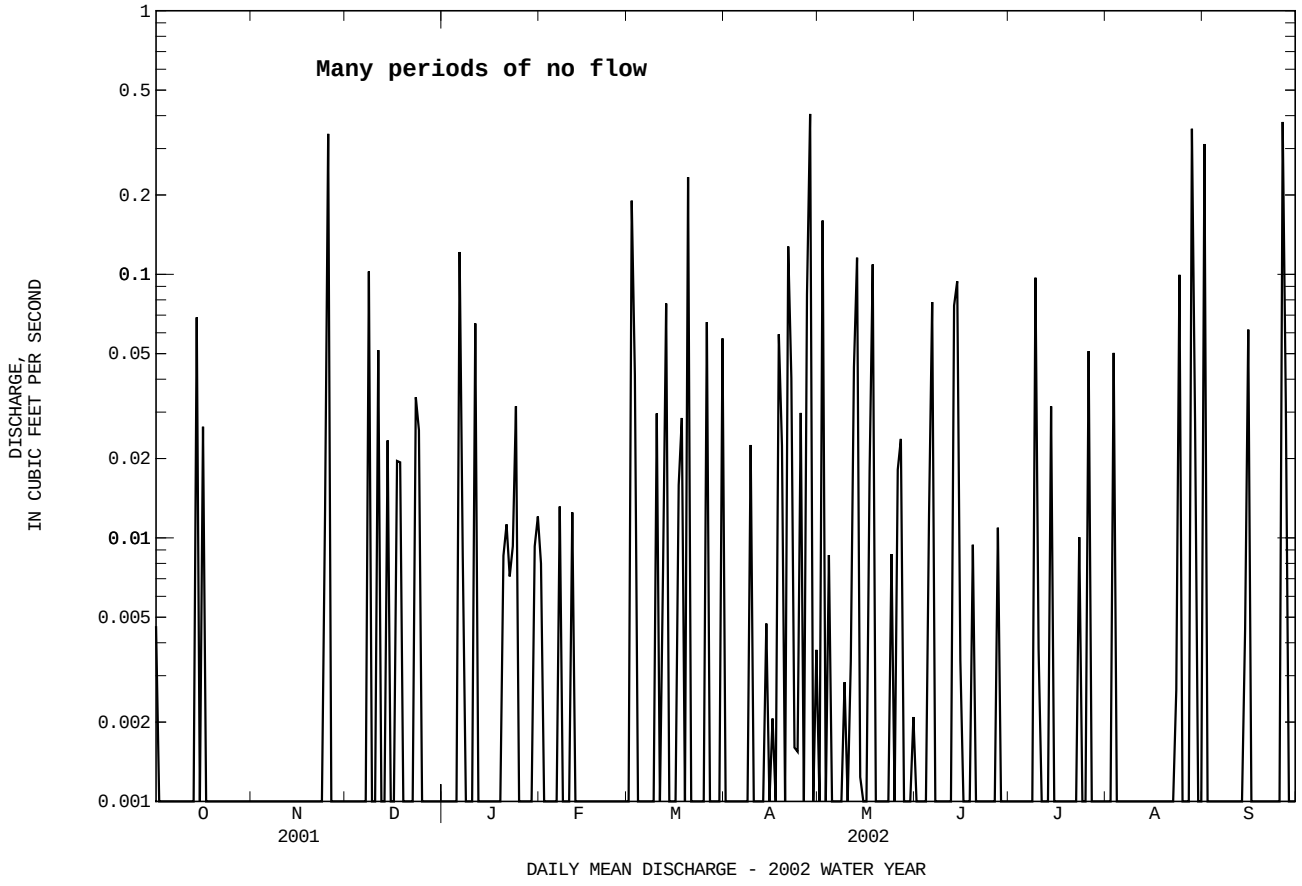
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

MEAN	0.008	0.010	0.008	0.020	0.077	0.030	0.020	0.016	0.014	0.011	0.026	0.032
MAX	0.015	0.012	0.014	0.031	0.26	0.070	0.027	0.028	0.017	0.018	0.056	0.072
(WY)	2000	2002	2000	1999	2001	2001	2000	2001	1999	2000	1999	1999
MIN	0.000	0.009	0.002	0.009	0.001	0.009	0.011	0.005	0.009	0.006	0.009	0.013
(WY)	2001	2001	1999	2002	2002	1999	2001	1999	2002	2001	2000	2001

01589340 ROGNEL HEIGHTS STORM SEWER OUTFALL AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1999 - 2002	
ANNUAL TOTAL	14.000		4.890			
ANNUAL MEAN	0.038		0.013		0.022	
HIGHEST ANNUAL MEAN					0.038	2001
LOWEST ANNUAL MEAN					0.013	2002
HIGHEST DAILY MEAN	4.7	Feb 22	0.41	Apr 28	4.7	Feb 22 2001
LOWEST DAILY MEAN	0.000	Jan 1	0.000	(a)	0.000	(a)
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 12	0.00	Oct 1	0.00	Oct 19 1998
MAXIMUM PEAK FLOW			22	Nov 25	(b)22	Nov 25 2001
MAXIMUM PEAK STAGE			1.18	Nov 25	1.18	Nov 25 2001
INSTANTANEOUS LOW FLOW			0.00	(a)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.28		0.45		0.74	
ANNUAL RUNOFF (INCHES)	17.36		6.06		10.12	
10 PERCENT EXCEEDS	0.05		0.03		0.04	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Many days.
b From rating curve extended above 0.8 ft^3/s on basis of slope-area measurements at gage heights of 0.80, 0.82, and 1.04 ft.
c No flow at times each year.



01589352 GWYNNS FALLS AT WASHINGTON BOULEVARD AT BALTIMORE, MD

LOCATION.--Lat 39°16'17.4", long 76°38'54.8", Baltimore City, Hydrologic Unit 02060003, on left bank at Carroll Park Municipal Golf Course, 350 ft upstream from bridge on Washington Boulevard, 0.9 mi northwest of Morrell Park, and approximately 1.6 mi upstream from mouth.

DRAINAGE AREA.--65.9 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1710	*5,060	*9.77	Aug 3	1550	2,270	6.43
May 2	0620	2,760	7.14				

Minimum discharge, 6.5 ft^3/s, Aug. 18, 20-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	e25	28	e20	45	23	65	41	32	23	11	171
2	20	e23	25	e20	35	102	38	566	24	25	12	39
3	18	e21	25	e20	32	364	34	89	24	25	325	22
4	17	e20	25	e19	31	55	33	56	23	23	40	19
5	15	e19	24	19	29	36	30	47	25	20	21	18
6	14	e19	e23	111	30	31	29	39	306	18	16	16
7	14	e22	24	93	41	27	28	35	97	20	13	16
8	14	17	80	44	33	26	28	33	33	19	11	14
9	14	16	71	33	28	26	41	34	26	e74	12	15
10	15	17	29	31	28	73	47	36	24	e38	11	16
11	14	15	74	134	37	31	29	30	25	e19	9.4	16
12	14	14	36	52	30	27	27	142	23	e16	13	15
13	13	15	e26	35	27	123	27	175	88	e15	9.7	14
14	47	17	e43	31	25	53	28	43	240	e29	10	14
15	78	18	e38	30	25	33	38	37	63	e21	9.9	41
16	31	16	27	29	26	32	32	29	36	e17	11	35
17	33	17	33	29	26	34	28	40	27	e16	9.8	18
18	19	17	94	28	25	115	211	261	35	e15	8.7	16
19	16	17	40	34	25	58	122	56	43	e17	10	15
20	15	18	31	49	25	458	47	35	30	e14	10	14
21	15	17	25	45	23	117	41	30	26	e19	9.4	15
22	16	17	24	42	23	57	115	28	23	e17	9.3	14
23	15	18	22	47	23	42	40	26	23	e20	13	17
24	14	21	47	130	23	37	30	28	23	e23	243	18
25	14	698	28	69	23	35	41	30	27	e16	42	14
26	13	202	23	39	23	113	36	26	22	e73	19	357
27	12	46	23	34	29	164	30	146	43	e29	15	224
28	13	35	22	33	24	54	608	60	37	e18	231	175
29	14	31	22	33	---	42	96	68	23	e19	180	39
30	16	28	20	32	---	38	52	33	21	e16	39	25
31	18	---	e20	70	---	77	---	32	---	e13	24	---
TOTAL	615	1476	1072	1435	794	2503	2051	2331	1492	727	1398.2	1442
MEAN	19.8	49.2	34.6	46.3	28.4	80.7	68.4	75.2	49.7	23.5	45.1	48.1
MAX	78	698	94	134	45	458	608	566	306	74	325	357
MIN	12	14	20	19	23	23	27	26	21	13	8.7	14
CFSM	0.30	0.75	0.52	0.70	0.43	1.23	1.04	1.14	0.75	0.36	0.68	0.73
IN.	0.35	0.83	0.61	0.81	0.45	1.41	1.16	1.32	0.84	0.41	0.79	0.81

e Estimted

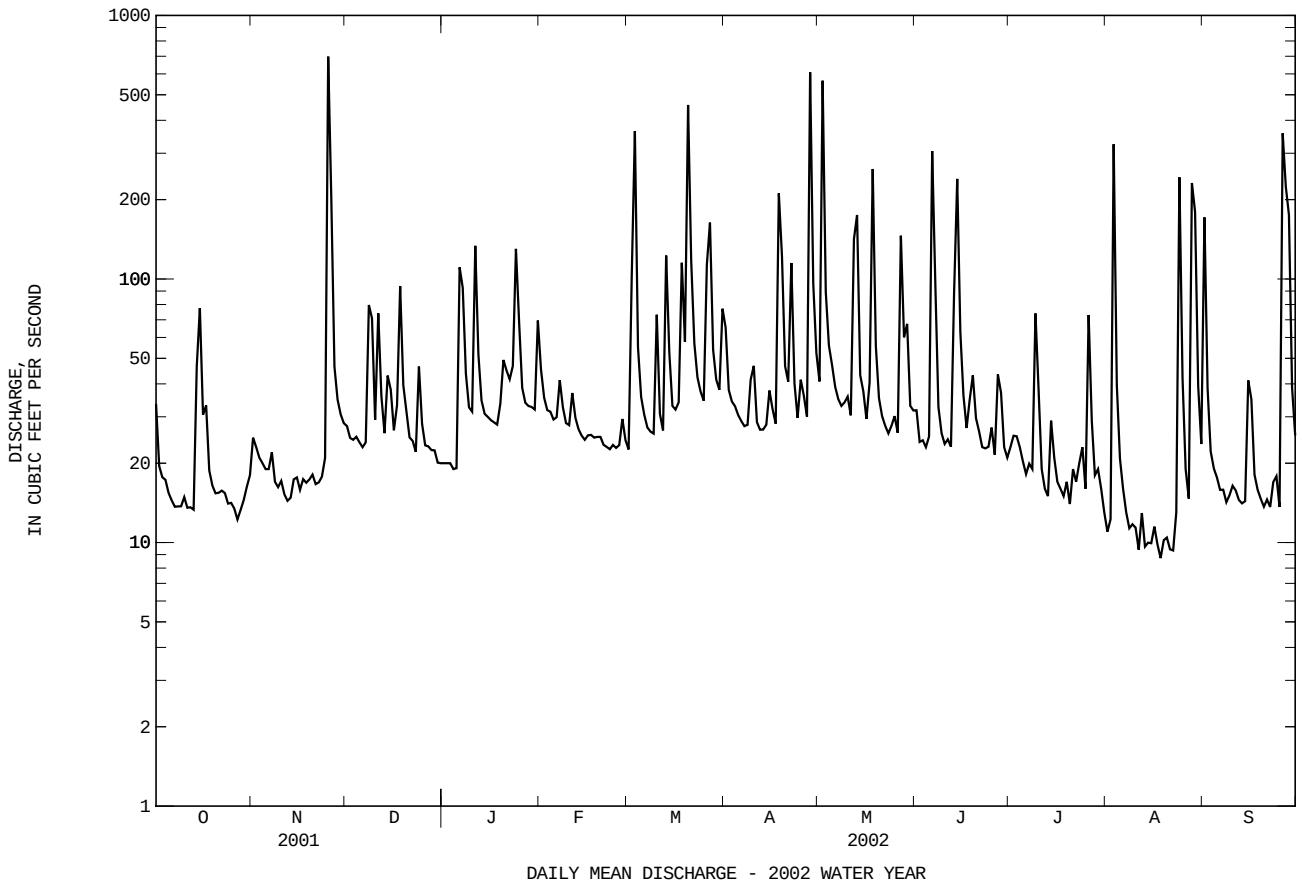
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2002, BY WATER YEAR (WY)

MEAN	44.0	45.7	61.6	72.8	69.9	115	88.9	70.4	64.3	54.5	70.9	110
MAX	85.4	57.0	92.3	127	108	132	121	75.2	75.3	79.7	144	278
(WY)	2000	2000	2000	1999	2000	2000	2000	2002	2001	1999	1999	1999
MIN	19.8	36.8	34.6	46.3	28.4	80.7	63.9	64.5	49.7	23.5	44.6	36.1
(WY)	2002	1999	2002	2002	2002	2002	2001	1999	2002	2002	2000	2001

01589352 GWYNNS FALLS AT WASHINGTON BOULEVARD AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1999 - 2002	
ANNUAL TOTAL	21394		17336.2			
ANNUAL MEAN	58.6		47.5		72.3	
HIGHEST ANNUAL MEAN					97.7	1999
LOWEST ANNUAL MEAN					47.5	2002
HIGHEST DAILY MEAN	973	Mar 30	698	Nov 25	3520	Sep 16 1999
LOWEST DAILY MEAN	12	Oct 27	8.7	Aug 18	8.7	Aug 18 2002
ANNUAL SEVEN-DAY MINIMUM	14	Oct 23	9.7	Aug 16	9.7	Aug 16 2002
MAXIMUM PEAK FLOW			5060	Nov 25	(a)23900	Aug 26 1999
MAXIMUM PEAK STAGE			9.77	Nov 25	20.03	Aug 26 1999
INSTANTANEOUS LOW FLOW			6.5	(b)	6.5	(b)
ANNUAL RUNOFF (CFSM)	0.89		0.72		1.10	
ANNUAL RUNOFF (INCHES)	12.08		9.79		14.90	
10 PERCENT EXCEEDS	106		91		137	
50 PERCENT EXCEEDS	33		27		40	
90 PERCENT EXCEEDS	16		14		20	

a From rating curve extended above 6,200 ft^3/s on basis of slope-area measurement of peak flow.
b Aug. 18, 20-22, 2002.



01589440 JONES FALLS AT SORRENTO, MD

LOCATION.--Lat 39°23'30.2", long 76°39'39.4", Baltimore County, Hydrologic Unit 02060003, on right bank 0.3 mi downstream from bridge on State Highway 25 (Falls Road), 0.4 mi downstream from Slaughterhouse Branch and Sorrento, and 12.5 mi upstream from mouth.

DRAINAGE AREA.--25.2 mi^2.

PERIOD OF RECORD.--Annual maximum, water years 1958-66. April 1966 to September 1988, October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 240 ft above National Geodetic Vertical Datum of 1929, from topographic map. January 1958 to April 1966, non-recording gage at site 450 ft upstream at same gage datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1945	*384	*5.87	No peak greater than base discharge.			

Minimum discharge, 1.3 ft^3/s, Aug. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	7.3	9.1	e8.5	12	8.9	16	15	9.0	4.3	2.3	14
2	7.7	7.4	8.9	e8.5	10	11	14	82	8.4	4.2	2.2	6.3
3	6.8	7.4	9.0	8.4	10	45	13	24	8.0	4.0	7.7	4.7
4	6.6	7.4	8.8	8.3	10	16	12	17	7.2	3.7	3.5	4.2
5	6.3	7.3	8.8	8.3	9.6	13	11	16	7.1	3.4	2.5	3.8
6	6.3	7.4	8.5	13	10	12	11	14	14	3.2	2.2	3.5
7	6.3	7.4	8.4	17	11	12	11	13	14	3.3	1.9	3.5
8	6.2	7.4	13	12	10	11	11	13	8.6	3.4	1.9	3.2
9	6.1	7.1	14	11	10	11	12	13	8.3	4.8	1.8	3.1
10	6.4	7.1	9.4	10	10	13	12	13	7.4	7.5	1.6	3.0
11	6.1	7.2	13	22	10	11	11	11	6.6	4.1	1.6	2.7
12	5.9	7.2	10	15	9.7	11	11	11	6.3	3.6	1.6	3.1
13	6.2	7.4	9.5	12	9.7	21	11	11	8.0	3.3	1.5	2.7
14	6.6	7.3	11	11	9.1	14	11	11	20	4.6	1.4	2.7
15	12	7.3	11	10	9.3	12	12	10	11	4.3	1.4	3.4
16	8.3	7.3	9.2	9.8	9.5	12	11	10	8.5	3.7	1.5	4.2
17	9.4	7.3	9.8	9.5	9.3	12	11	9.5	7.5	3.0	1.5	3.1
18	7.6	7.5	17	9.1	9.0	21	50	26	8.3	2.9	1.4	2.9
19	7.4	7.6	11	10	9.1	18	29	14	8.1	3.6	1.4	3.0
20	7.5	8.2	10	11	9.1	52	16	11	7.2	3.0	1.4	2.9
21	7.6	7.8	9.5	10	9.1	30	14	10	7.0	2.7	1.4	2.7
22	7.6	7.8	9.4	10	8.8	19	20	9.6	6.2	2.6	1.4	2.8
23	7.8	7.8	9.5	13	8.8	16	14	9.3	5.8	2.6	1.5	3.2
24	7.7	8.3	12	27	8.8	15	12	9.0	5.4	4.0	12	2.9
25	7.5	60	9.6	17	8.9	14	14	8.8	5.3	3.3	3.8	2.6
26	7.4	35	9.3	13	9.2	15	13	9.0	5.1	6.1	3.0	27
27	7.5	11	9.0	11	9.7	25	12	15	5.3	4.7	2.8	35
28	7.4	10	9.0	11	9.0	17	85	12	5.8	4.0	13	30
29	7.4	9.5	8.9	10	---	15	27	10	4.8	3.5	22	6.9
30	7.7	9.5	8.5	10	---	14	18	9.4	4.4	3.0	5.7	5.3
31	7.6	---	e8.5	14	---	14	---	9.0	---	2.5	4.5	---
TOTAL	226.8	314.2	312.6	370.4	268.7	530.9	525	455.6	238.6	116.9	113.4	198.4
MEAN	7.32	10.5	10.1	11.9	9.60	17.1	17.5	14.7	7.95	3.77	3.66	6.61
MAX	12	60	17	27	12	52	85	82	20	7.5	22	35
MIN	5.9	7.1	8.4	8.3	8.8	8.9	11	8.8	4.4	2.5	1.4	2.6
CFSM	0.29	0.42	0.40	0.47	0.38	0.68	0.69	0.58	0.32	0.15	0.15	0.26
IN.	0.33	0.46	0.46	0.55	0.40	0.78	0.78	0.67	0.35	0.17	0.17	0.29

e Estimated.

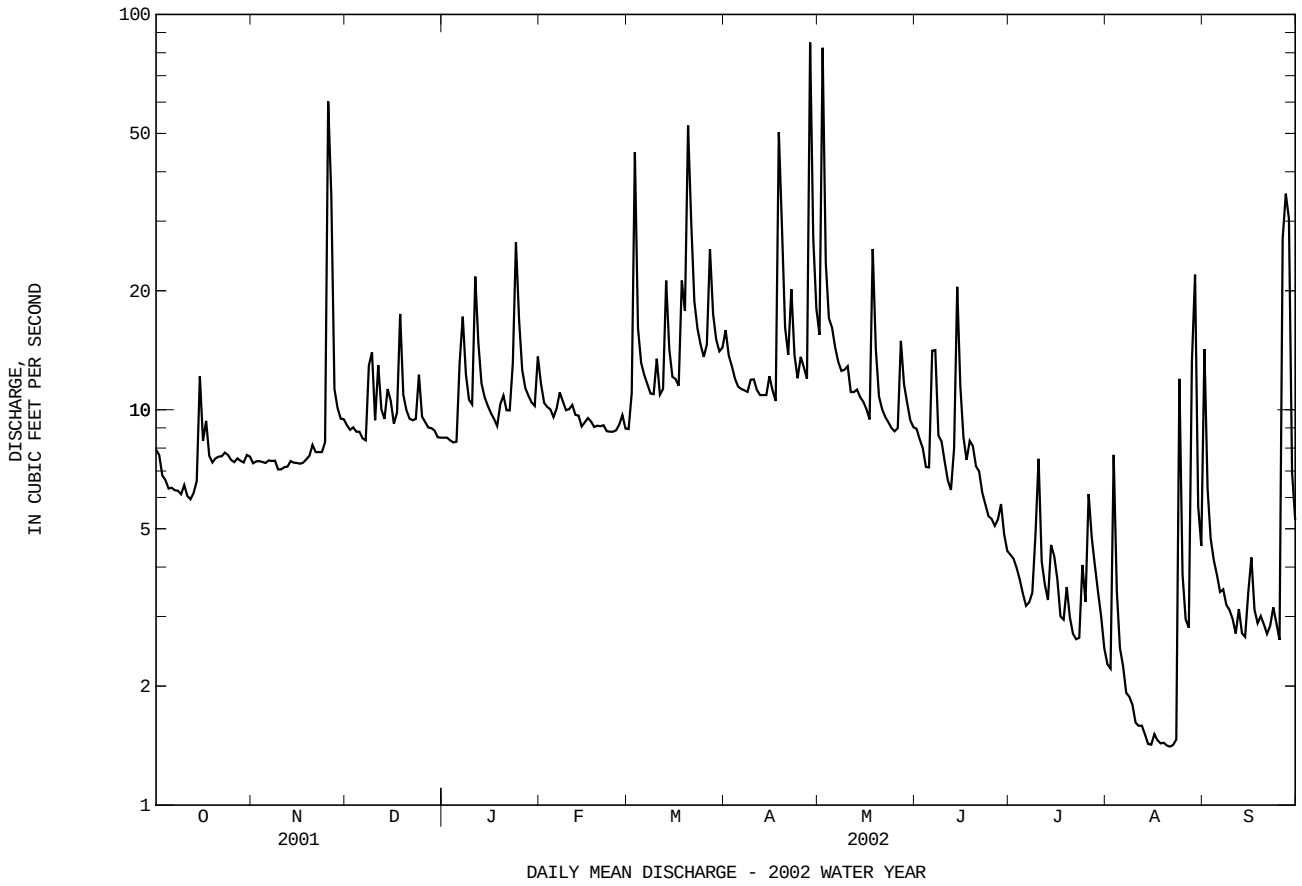
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1988, 1997 - 2002, BY WATER YEAR (WY)

MEAN	23.3	26.1	33.2	34.4	38.8	42.5	39.9	33.2	29.3	23.6	22.0	26.3
MAX	100	60.4	94.9	105	97.9	82.6	95.7	66.7	150	73.0	72.3	132
(WY)	1980	1973	1997	1979	1979	1998	1973	1973	1972	1984	1971	1979
MIN	6.47	10.2	10.1	9.92	9.60	17.1	17.5	13.0	7.95	3.77	3.66	6.26
(WY)	1987	1982	2002	1981	2002	2002	2002	1969	2002	2002	2002	1986

01589440 JONES FALLS AT SORRENTO, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1966 - 1988, 1997 - 2002	
ANNUAL TOTAL	6663.7		3671.5			
ANNUAL MEAN	18.3		10.1		31.3	
HIGHEST ANNUAL MEAN					62.5	1972
LOWEST ANNUAL MEAN					10.1	2002
HIGHEST DAILY MEAN	315	Mar 30	85	Apr 28	2600	Jun 22 1972
LOWEST DAILY MEAN	5.0	Sep 19	1.4	(a)	1.4	(a)
ANNUAL SEVEN-DAY MINIMUM	6.2	Oct 7	1.4	Aug 14	1.4	Aug 14 2002
MAXIMUM PEAK FLOW			384	Nov 25	(b)13800	Jun 22 1972
MAXIMUM PEAK STAGE			5.87	Nov 25	(c)18.11	Jun 22 1972
INSTANTANEOUS LOW FLOW			1.3	(d)	1.3	(d)
ANNUAL RUNOFF (CFSM)	0.72		0.40		1.24	
ANNUAL RUNOFF (INCHES)	9.84		5.42		16.87	
10 PERCENT EXCEEDS	32		15		52	
50 PERCENT EXCEEDS	13		9.0		21	
90 PERCENT EXCEEDS	7.2		3.0		9.3	

a Aug. 14, 15, 18-22.
b From rating curve extended above 1,400 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Aug. 14, 15.



01589478 JONES FALLS AT MARYLAND AVENUE AT BALTIMORE, MD

LOCATION.--Lat 39°18'33.5", long 76°37'09.9", Baltimore City, Hydrologic Unit 02060003, on left bank 300 ft downstream from Howard Street bridge.

DRAINAGE AREA.--54.9 mi^2.

PERIOD OF RECORD.--May 1981 to September 1982, December 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 43.0 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good below 300 ft^3/s and fair above except those for estimated daily discharges (missing record), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	1845	*5,940	*5.40	No other peak greater than base discharge.			

Minimum discharge, 7.6 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	22	20	18	33	18	42	33	24	16	10	147
2	19	18	18	18	25	68	28	333	19	15	10	28
3	18	17	17	19	22	261	26	58	19	14	168	17
4	17	17	17	19	23	38	24	38	18	14	23	15
5	17	16	18	18	21	29	25	34	26	13	13	13
6	18	15	18	78	21	26	23	31	211	12	11	12
7	17	14	17	71	28	23	22	29	71	11	10	11
8	16	15	57	34	24	22	23	28	26	12	9.1	11
9	16	16	55	26	21	21	31	28	22	53	9.1	12
10	16	16	25	25	21	44	32	30	21	32	9.0	12
11	22	16	49	93	25	22	23	24	19	16	9.1	11
12	16	16	28	40	20	22	22	91	19	13	9.2	10
13	16	15	23	27	20	86	23	86	67	12	9.1	10
14	74	16	35	24	19	35	24	30	159	25	9.0	10
15	39	16	30	22	20	26	25	25	46	17	8.7	26
16	26	16	21	21	19	24	24	22	27	14	8.8	29
17	30	16	26	21	19	27	23	26	22	13	9.0	12
18	19	16	68	20	18	78	181	153	38	12	8.3	11
19	18	17	30	26	19	36	98	33	35	14	8.4	9.3
20	18	17	23	38	20	276	39	24	21	13	8.2	11
21	17	16	21	33	20	78	32	22	20	11	8.3	10
22	17	16	20	29	19	41	73	22	18	11	7.8	9.8
23	17	16	22	36	18	33	29	21	17	15	8.1	11
24	18	21	50	88	18	29	25	21	17	20	148	10
25	17	534	24	48	18	28	37	20	18	13	27	9.3
26	17	133	21	30	19	77	28	21	18	56	13	212
27	16	29	20	26	20	103	24	67	29	21	11	155
28	15	22	19	24	18	36	403	29	23	14	116	117
29	15	21	19	24	---	30	69	24	42	13	110	23
30	16	20	19	23	---	28	39	23	17	12	22	16
31	19	---	18	47	---	54	---	27	---	12	15	---
TOTAL	645	1155	848	1066	588	1719	1517	1453	1129	539	846.2	990.4
MEAN	20.8	38.5	27.4	34.4	21.0	55.5	50.6	46.9	37.6	17.4	27.3	33.0
MAX	74	534	68	93	33	276	403	333	211	56	168	212
MIN	15	14	17	18	18	18	22	20	17	11	7.8	9.3
CFSM	0.36	0.66	0.47	0.59	0.36	0.95	0.87	0.80	0.65	0.30	0.47	0.57
IN.	0.41	0.74	0.54	0.68	0.38	1.10	0.97	0.93	0.72	0.34	0.54	0.63

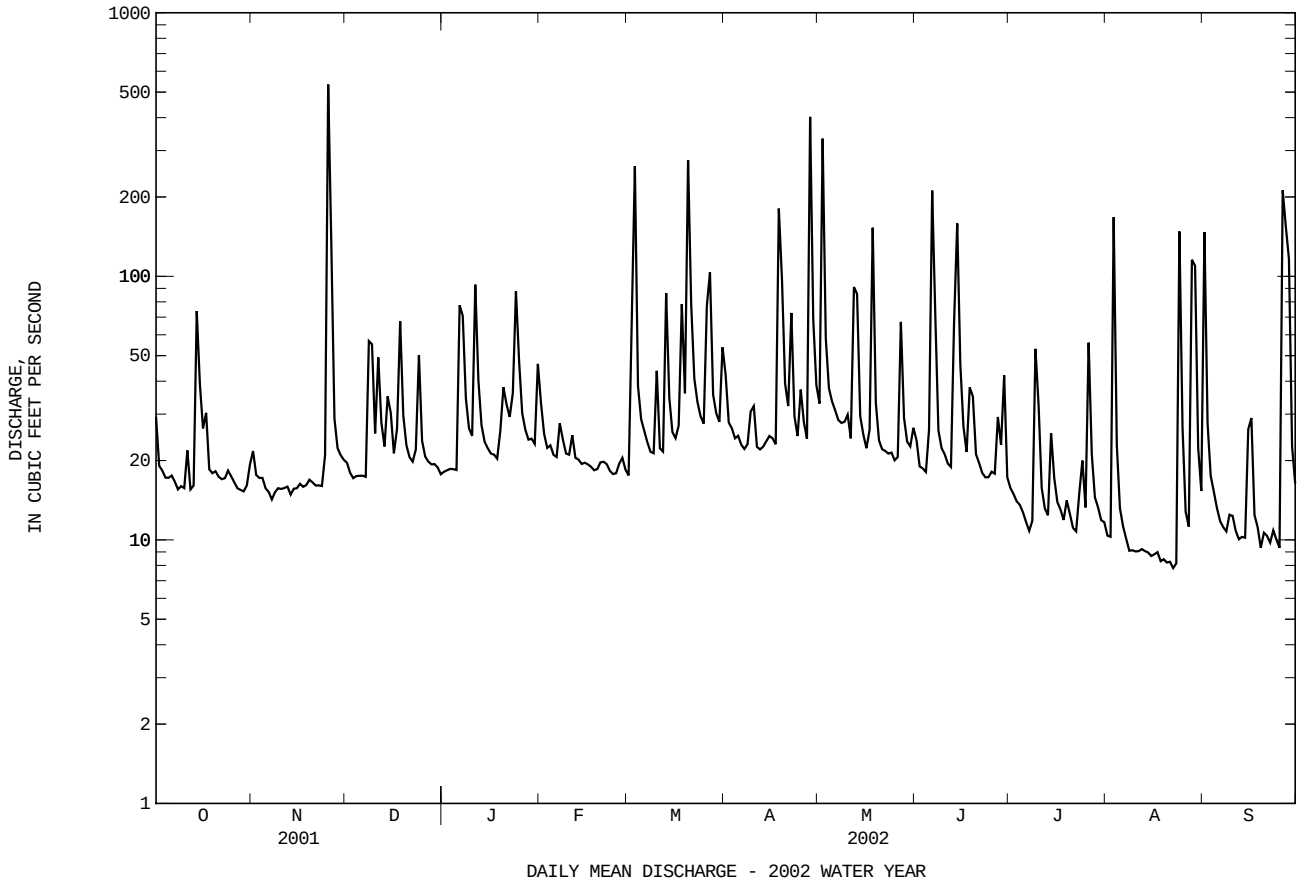
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1982, 2000 - 2002, BY WATER YEAR (WY)

MEAN	27.2	33.5	50.0	49.6	72.6	98.6	77.4	60.8	82.3	59.3	41.8	45.7
MAX	32.2	38.5	82.9	56.4	109	156	119	77.1	123	105	55.0	91.4
(WY)	1982	2002	2001	2000	2000	2000	2000	2000	1982	2000	1982	2000
MIN	20.8	25.0	27.4	34.4	21.0	52.8	50.6	46.9	37.6	17.4	27.3	29.4
(WY)	2002	1982	2002	2002	2002	1982	2002	2002	2002	2002	2002	2001

01589478 JONES FALLS AT MARYLAND AVENUE AT BALTIMORE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1981 - 1982, 2000 - 2002	
ANNUAL TOTAL	19671		12495.6			
ANNUAL MEAN	53.9		34.2		50.5	
HIGHEST ANNUAL MEAN					59.2	2001
LOWEST ANNUAL MEAN					34.2	2002
HIGHEST DAILY MEAN	1140	Mar 30	534	Nov 25	1300	Mar 21 2000
LOWEST DAILY MEAN	14	Nov 7	7.8	Aug 22	7.8	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	15	Nov 5	8.3	Aug 17	8.3	Aug 17 2002
MAXIMUM PEAK FLOW			5940	Nov 25	(a)10600	Jun 25 1981
MAXIMUM PEAK STAGE			5.40	Nov 25	(b)6.41	Jun 25 1981
INSTANTANEOUS LOW FLOW			7.6	(c)	7.6	(c)
ANNUAL RUNOFF (CFSM)	0.92		0.59		0.87	
ANNUAL RUNOFF (INCHES)	12.55		7.97		11.76	
10 PERCENT EXCEEDS	93		67		90	
50 PERCENT EXCEEDS	34		21		31	
90 PERCENT EXCEEDS	17		11		17	

a From rating curve extended above 1,000 ft^3/s on basis of slope-area measurement of peak flow 3,200 feet downstream.
b From floodmarks.
c Aug. 21-23, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589500 SAWMILL CREEK AT GLEN BURNIE, MD

LOCATION.--Lat 39°10'12.0", long 76°37'50.2", Anne Arundel County, Hydrologic Unit 02060003, on left bank 300 ft upstream from bridge on State Highway 648, 0.25 mi southeast of State Highway 3, and 0.5 mi northwest of Glen Burnie.

DRAINAGE AREA.--4.97 mi^2.

PERIOD OF RECORD.--May 1944 to September 1952. Annual maximum, water years 1965-70. September 1983 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1984-88.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 26.07 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Low flow affected by ground-water diversions from Anne Arundel County municipal well fields upstream from station. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1933 reached a stage of about 14 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 18	1800	*88	*3.31	Jun 6	1815	43	2.58
May 2	1000	35	2.43				

Minimum discharge, 1.3 ft^3/s, Aug. 12-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	2.7	2.7	2.7	2.6	2.1	3.0	3.5	2.3	1.8	1.5	10
2	3.0	2.7	2.7	2.7	2.4	2.6	2.6	15	2.2	1.8	1.5	3.7
3	2.9	2.7	2.7	2.7	2.4	7.3	2.5	6.3	2.1	1.7	5.8	2.9
4	2.8	2.7	2.7	2.7	2.4	2.9	2.4	3.8	2.2	1.6	2.2	2.5
5	2.7	2.7	2.7	2.7	2.3	2.3	2.4	3.5	2.9	1.5	1.8	2.1
6	2.7	2.7	2.9	4.4	2.3	2.2	2.4	3.2	13	1.5	1.8	2.0
7	2.7	2.7	2.9	4.8	2.7	2.2	2.4	3.2	8.0	1.6	1.6	2.0
8	2.7	2.7	3.9	3.1	2.5	2.2	2.4	3.0	3.6	1.6	1.6	e2.0
9	2.7	2.7	4.1	2.9	2.4	2.3	2.7	3.0	3.1	2.0	1.5	e1.9
10	2.7	2.7	3.1	2.9	2.3	2.4	3.1	2.9	2.9	3.1	1.5	e1.8
11	2.7	2.7	4.1	4.6	2.3	2.3	2.4	2.7	2.7	2.0	1.5	e1.8
12	2.7	2.7	3.4	3.4	2.2	2.4	2.4	3.1	2.6	1.8	1.5	e1.6
13	2.7	2.7	3.8	3.0	2.2	3.5	2.4	3.5	3.5	1.8	1.4	e1.6
14	2.9	2.7	3.2	2.7	2.2	2.7	2.4	2.9	3.7	4.1	1.4	e1.5
15	3.7	2.7	3.0	2.7	2.2	2.4	2.4	2.8	3.4	2.5	1.4	e1.8
16	2.9	2.7	2.9	2.7	2.2	2.4	2.4	2.6	2.9	2.1	1.4	e2.1
17	3.0	2.7	2.9	2.7	2.2	2.4	2.3	2.7	2.6	1.9	1.3	e1.9
18	2.7	2.7	3.4	2.7	2.2	3.6	21	5.5	2.4	1.9	1.3	e1.6
19	2.7	2.7	3.0	2.7	2.2	2.7	13	3.4	2.4	1.9	1.3	e1.5
20	2.7	2.7	2.9	3.1	2.2	7.6	4.2	3.0	2.3	1.8	1.3	e1.5
21	2.7	2.7	2.9	3.0	2.2	4.8	3.5	2.9	2.3	1.8	1.3	e1.5
22	2.7	2.7	2.8	2.9	2.1	3.0	5.9	2.8	2.2	1.8	1.3	e1.5
23	2.7	2.7	2.8	2.9	2.3	2.6	3.4	2.8	2.0	2.8	1.4	e1.5
24	2.8	2.8	4.1	3.1	2.3	2.5	3.1	2.8	1.9	3.3	1.7	e1.5
25	2.7	4.1	3.1	2.9	2.2	2.4	3.3	2.8	1.9	2.2	1.5	e1.5
26	2.7	4.9	2.9	2.6	2.2	2.8	2.9	2.7	1.8	2.8	1.7	e6.0
27	2.7	3.1	2.8	2.5	2.3	4.3	2.8	2.7	2.0	2.3	1.6	e5.0
28	2.7	2.9	2.8	2.5	2.2	2.8	17	2.6	2.2	2.1	9.3	e2.4
29	2.7	2.9	2.8	2.5	---	2.6	8.4	2.5	1.9	1.9	5.7	e2.2
30	2.7	2.9	2.7	2.5	---	2.5	4.2	2.4	1.8	1.8	3.0	e2.2
31	2.7	---	2.7	2.7	---	2.7	---	2.4	---	1.7	2.6	---
TOTAL	86.7	85.7	95.4	92.0	64.2	93.5	135.3	109.0	90.8	64.5	65.7	73.1
MEAN	2.80	2.86	3.08	2.97	2.29	3.02	4.51	3.52	3.03	2.08	2.12	2.44
MAX	3.7	4.9	4.1	4.8	2.7	7.6	21	15	13	4.1	9.3	10
MIN	2.7	2.7	2.7	2.5	2.1	2.1	2.3	2.4	1.8	1.5	1.3	1.5
CFSM	0.56	0.57	0.62	0.60	0.46	0.61	0.91	0.71	0.61	0.42	0.43	0.49
IN.	0.65	0.64	0.71	0.69	0.48	0.70	1.01	0.82	0.68	0.48	0.49	0.55

e Estimated

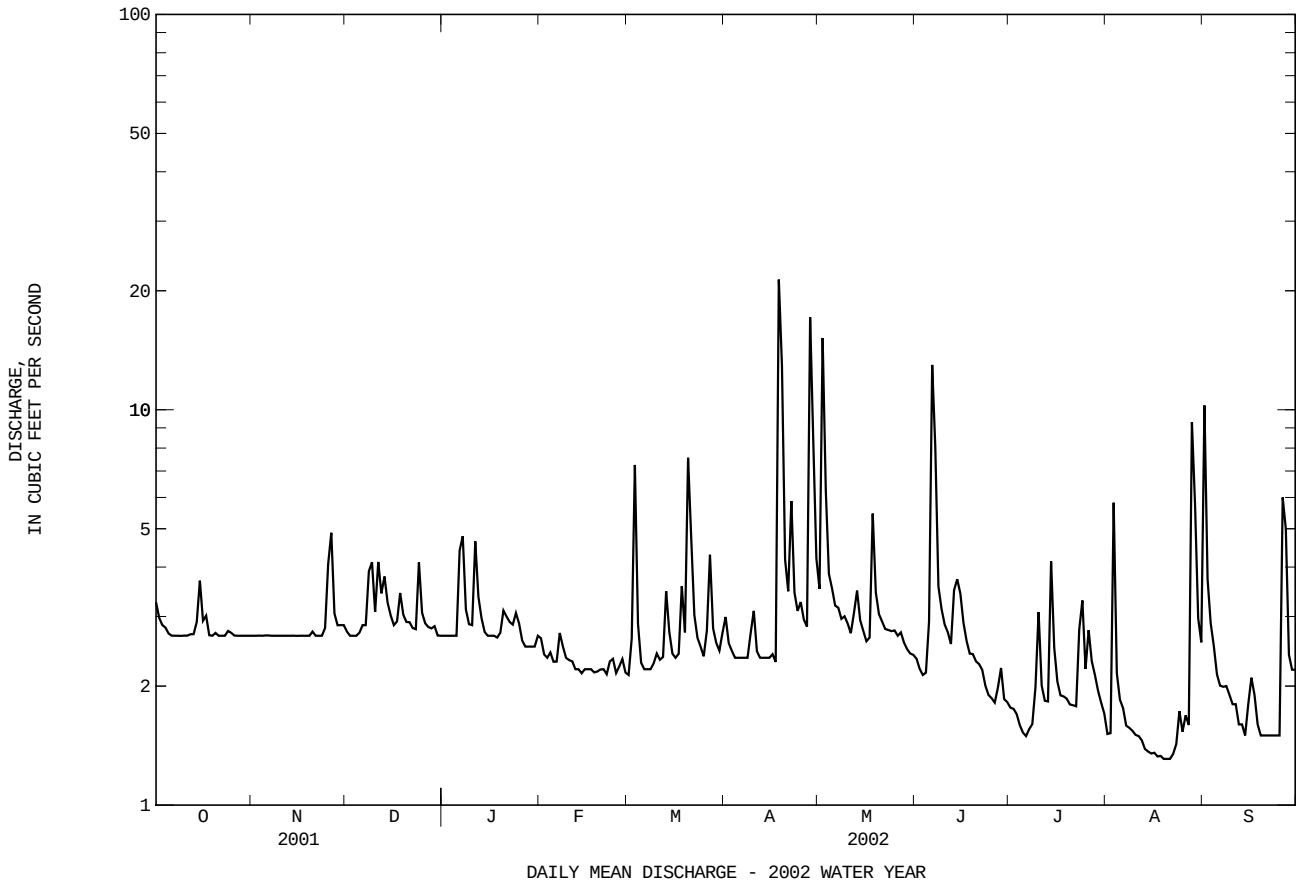
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 -1952, 1983 - 2002, BY WATER YEAR (WY)

MEAN	3.63	4.19	4.60	4.94	5.07	6.03	5.68	5.61	4.92	4.44	4.37	4.59
MAX	9.03	10.3	13.0	14.4	14.4	13.5	13.8	13.3	11.4	9.45	12.4	13.1
(WY)	1949	1952	1949	1949	1949	1949	1952	1952	1948	1952	1948	1952
MIN	0.030	0.19	0.13	0.30	0.76	0.76	0.75	0.11	0.081	0.10	0.15	0.024
(WY)	1987	1987	1989	1989	1989	1986	1985	1986	1986	1985	1986	1986

01589500 SAWMILL CREEK AT GLEN BURNIE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 1952, 1983 - 2002	
ANNUAL TOTAL	1541.5		1055.9			
ANNUAL MEAN	4.22		2.89		4.82	
HIGHEST ANNUAL MEAN					11.0	1949
LOWEST ANNUAL MEAN					0.43	1986
HIGHEST DAILY MEAN	40	Jun 7	21	Apr 18	155	Sep 16 1999
LOWEST DAILY MEAN	2.4	Aug 9	1.3	(a)	0.01	(b)
ANNUAL SEVEN-DAY MINIMUM	2.6	Aug 4	1.3	Aug 16	0.01	Jul 25 1986
MAXIMUM PEAK FLOW			88	Apr 18	(c)294	Sep 16 1999
MAXIMUM PEAK STAGE			3.31	Apr 18	5.74	Sep 16 1999
INSTANTANEOUS LOW FLOW			1.3	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.85		0.58		0.97	
ANNUAL RUNOFF (INCHES)	11.54		7.90		13.18	
10 PERCENT EXCEEDS	5.6		3.7		9.1	
50 PERCENT EXCEEDS	3.2		2.7		3.8	
90 PERCENT EXCEEDS	2.7		1.6		0.55	

a Aug. 14-22.
b Many days in 1985-1987.
c From rating curve extended above 40 ft^3/s on basis of Culvert Type IV measurement of peak flow.
d Aug. 12-23.
f Sept. 6, 7, 1985, July 29, Aug. 2, 1986.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD

LOCATION.--Lat 39°10'39.6", long 76°39'03.6", Anne Arundel County, Hydrologic Unit 02060003, on right bank 2,000 ft upstream from culvert on Hammond Ferry Road, and 1.2 mi southwest of Ferndale.

DRAINAGE AREA.--0.58 mi^2.

PERIOD OF RECORD.--November 1994 to September 1995. October 1996 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good below 30 ft^3/s and fair above except those for estimated daily values (backwater), which are fair. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	0515	*50	*1.64	No peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, July 4-9, Aug. 10-14, 19-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.80	0.14	e0.10	0.06	0.29	0.06	0.53	0.51	0.04	0.03	0.04	9.7
2	0.14	0.14	e0.09	0.06	0.18	1.9	e0.18	8.6	0.03	0.03	0.03	0.65
3	0.12	0.12	e0.09	0.06	0.16	5.8	e0.18	0.62	0.03	0.03	5.5	0.29
4	0.10	0.10	e0.09	0.06	0.13	0.36	e0.18	0.61	0.03	0.03	0.72	0.21
5	0.10	0.10	0.10	0.06	0.06	0.34	e0.18	0.27	1.1	0.02	0.14	0.14
6	0.10	0.10	0.11	3.8	0.06	0.37	e0.18	0.19	4.2	0.02	0.14	0.11
7	0.08	0.10	0.14	1.6	0.60	0.16	e0.18	0.14	1.5	0.02	0.12	0.08
8	0.07	0.10	3.9	0.18	0.12	0.14	e0.18	0.14	1.2	0.02	0.10	0.06
9	e0.07	0.10	0.53	0.18	0.10	0.15	e2.7	0.18	1.00	2.1	0.10	0.06
10	e0.07	0.10	0.18	0.14	0.07	0.31	e1.7	0.29	0.57	2.1	0.05	0.06
11	e0.07	0.10	2.4	3.4	0.16	0.14	e0.18	0.20	0.14	0.18	0.03	0.05
12	e0.07	0.10	0.22	0.23	0.06	0.19	e0.18	1.2	0.14	0.14	0.03	0.03
13	e0.07	0.10	0.18	0.17	0.06	2.4	e0.18	0.55	1.4	0.14	0.03	0.04
14	1.4	0.10	1.1	0.14	0.06	0.25	e0.18	0.23	1.5	4.0	0.03	0.03
15	1.6	0.09	0.24	0.14	0.06	0.23	e0.18	0.22	0.93	0.27	0.03	0.11
16	0.88	e0.09	0.23	0.14	0.06	0.23	e0.18	0.14	0.16	0.23	0.03	0.09
17	0.35	e0.09	0.66	0.14	0.08	0.69	e0.18	1.2	0.14	0.17	0.03	0.05
18	0.18	e0.09	1.1	0.14	0.06	3.2	e14	4.8	0.14	0.14	0.03	0.03
19	0.18	e0.09	0.24	0.65	0.07	0.40	e8.3	1.6	0.12	0.14	0.03	0.03
20	0.16	e0.09	0.23	1.1	0.08	7.9	e0.18	0.57	0.10	0.13	0.02	0.03
21	0.14	e0.09	0.23	0.48	0.12	0.79	e0.62	0.14	0.06	0.08	0.02	0.03
22	e0.12	e0.09	0.12	0.27	0.10	0.29	e7.5	0.14	0.05	0.06	0.02	0.03
23	e0.11	e0.09	0.10	0.29	0.10	0.23	e0.30	0.14	0.04	1.8	0.02	0.03
24	e0.10	0.54	2.0	0.95	0.10	0.23	e0.30	0.16	0.04	0.98	0.79	0.03
25	e0.09	4.1	0.12	0.26	0.10	0.23	e2.5	0.23	0.03	0.18	0.09	0.03
26	e0.09	2.2	0.10	0.18	0.37	1.9	e0.38	0.14	0.03	1.2	0.53	6.2
27	e0.09	0.24	0.10	0.15	0.28	2.2	e0.30	0.39	0.08	0.23	0.07	6.5
28	e0.09	0.18	0.10	0.13	0.12	0.25	31	0.22	0.07	0.18	12	3.5
29	e0.09	e0.14	0.10	0.10	---	0.23	e0.62	0.11	0.05	0.14	7.3	0.42
30	e0.09	e0.11	0.10	0.11	---	0.23	e0.18	0.06	0.03	0.14	0.60	0.19
31	e0.09	---	0.06	0.81	---	1.5	---	0.05	---	0.08	0.64	---
TOTAL	7.71	9.82	15.06	16.18	3.81	33.30	73.63	24.04	14.95	15.01	29.31	28.81
MEAN	0.25	0.33	0.49	0.52	0.14	1.07	2.45	0.78	0.50	0.48	0.95	0.96
MAX	1.6	4.1	3.9	3.8	0.60	7.9	31	8.6	4.2	4.0	12	9.7
MIN	0.07	0.09	0.06	0.06	0.06	0.06	0.18	0.05	0.03	0.02	0.02	0.03
CFSM	0.43	0.56	0.84	0.90	0.23	1.85	4.23	1.34	0.86	0.83	1.63	1.66
IN.	0.49	0.63	0.97	1.04	0.24	2.14	4.72	1.54	0.96	0.96	1.88	1.85

e Estimated

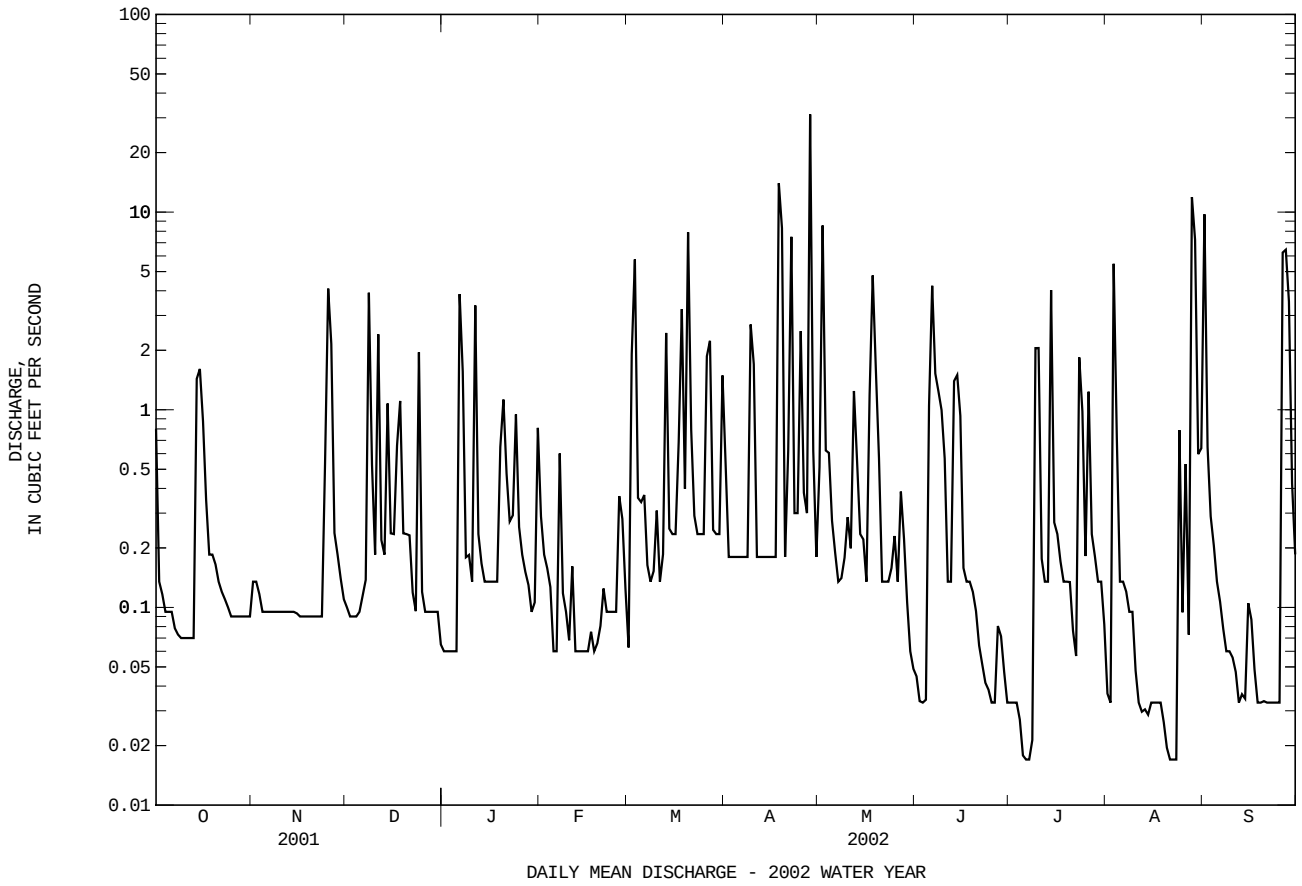
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995, 1997 - 2002, BY WATER YEAR (WY)

MEAN	0.72	0.99	1.14	1.33	1.21	1.78	1.21	1.05	0.89	0.79	1.18	1.72
MAX	1.75	2.45	3.23	2.51	3.41	2.54	2.45	1.82	1.65	1.75	2.24	6.09
(WY)	1997	1998	1997	1998	1998	1998	2002	2001	2000	2000	1999	1999
MIN	0.15	0.33	0.49	0.52	0.14	1.07	0.65	0.55	0.45	0.43	0.38	0.41
(WY)	2001	2002	2002	2002	2002	2002	2001	1999	1999	1997	1998	1998

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	365.38		271.63			
ANNUAL MEAN	1.00		0.74		1.22	
HIGHEST ANNUAL MEAN					1.43	1997
LOWEST ANNUAL MEAN					0.74	2002
HIGHEST DAILY MEAN	21	Aug 31	31	Apr 28	82	Sep 16 1999
LOWEST DAILY MEAN	(e)0.06	(a)	0.02	(b)	0.02	(b)
ANNUAL SEVEN-DAY MINIMUM	0.07	Oct 7	0.02	Jul 2	0.02	Jul 2 2002
MAXIMUM PEAK FLOW			50	Apr 28	(c)298	Sep 16 1999
MAXIMUM PEAK STAGE			1.64	Apr 28	3.38	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.02	(d)	0.02	(d)
ANNUAL RUNOFF (CFSM)	1.73		1.28		2.10	
ANNUAL RUNOFF (INCHES)	23.43		17.42		28.48	
10 PERCENT EXCEEDS	2.1		1.6		2.9	
50 PERCENT EXCEEDS	0.27		0.14		0.29	
90 PERCENT EXCEEDS	0.10		0.03		0.12	

e Estimated.
a Oct. 8-13.
b July 5-8, Aug. 20-23, 2002.
c From rating curve extended above 20 ft^3/s.
d July 4-9, Aug. 10-14, 19-24, 2002.



01589795 SOUTH FORK JABEZ BRANCH AT MILLERSVILLE, MD

LOCATION.--Lat 39°04'05.7", long 76°39'05.5", Anne Arundel County, Hydrologic Unit 02060004, on left bank 300 ft upstream from the confluence with the West Branch Jabez Branch, 0.5 mi northwest of Millersville, 1.0 mi west of Gambrills, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--1.0 mi^2.

PERIOD OF RECORD.--August 1989 to September 1990, July 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 60 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges (backwater and variable leakage), which are poor. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 18	1850	*74	*5.88	May 2	0800	22	5.06

Minimum discharge, 0.05 ft^3/s, Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.12	e0.14	0.14	e0.14	0.14	0.14	0.17	0.22	0.19	e0.13	0.14	0.51
2	e0.12	e0.14	0.14	e0.14	0.14	0.16	0.17	3.1	0.17	e0.13	0.15	0.17
3	e0.12	0.13	0.15	e0.14	0.14	0.40	0.17	0.29	0.17	e0.13	0.16	0.14
4	e0.12	0.12	0.31	e0.14	0.14	0.20	0.17	0.24	0.17	e0.13	0.14	0.14
5	e0.12	0.13	e0.20	e0.14	0.14	0.20	0.17	0.24	0.17	e0.13	0.14	0.14
6	e0.12	0.14	e0.18	e0.50	0.14	0.20	0.17	0.24	0.18	e0.13	0.14	0.14
7	e0.12	0.14	e0.23	e0.25	0.14	0.18	0.17	0.24	0.18	e0.13	0.14	0.14
8	e0.12	0.16	e0.60	e0.14	0.14	0.17	0.17	0.22	0.17	e0.13	0.14	0.14
9	e0.12	0.17	e0.35	e0.14	0.14	0.17	0.18	0.24	0.16	e0.13	0.14	e0.14
10	0.12	0.17	e0.20	e0.14	0.14	0.14	0.17	0.22	0.15	0.20	0.13	e0.14
11	0.12	0.17	e0.56	0.84	0.14	0.14	0.17	0.21	0.14	0.14	0.13	e0.14
12	0.12	0.17	e0.22	0.14	0.14	0.14	0.17	0.21	0.15	e0.14	0.12	e0.14
13	0.12	0.17	e0.17	0.14	0.14	0.17	0.17	0.24	0.16	e0.14	0.12	e0.14
14	0.14	0.17	e0.17	0.14	0.14	0.17	0.17	0.22	0.17	0.28	0.11	e0.14
15	0.17	0.17	e0.17	0.14	0.14	0.16	0.17	0.22	0.16	0.20	0.12	e0.16
16	e0.13	0.15	e0.17	0.14	0.14	0.14	0.15	0.21	0.14	e0.14	0.11	e0.15
17	e0.12	0.16	e0.17	0.14	0.14	0.17	0.14	0.20	e0.16	e0.14	0.10	e0.14
18	e0.13	0.15	e0.40	0.14	0.14	0.17	8.9	0.66	e0.16	e0.14	0.11	e0.14
19	e0.13	0.18	e0.17	0.14	0.14	0.14	1.5	0.24	0.14	e0.14	0.11	e0.14
20	e0.13	0.20	e0.17	0.14	0.14	0.39	0.28	0.24	e0.16	e0.14	0.11	0.14
21	e0.13	0.20	e0.17	0.14	0.14	0.17	0.26	0.24	e0.15	e0.14	0.12	0.14
22	e0.13	0.20	e0.15	0.14	0.14	0.17	0.54	0.23	e0.14	e0.14	0.12	0.14
23	e0.13	0.15	e0.15	0.14	0.14	0.17	0.24	0.21	e0.14	0.48	0.13	0.14
24	e0.13	0.15	e0.45	0.14	0.14	0.17	0.24	0.20	e0.14	0.20	0.14	0.14
25	e0.13	0.18	e0.17	0.14	0.14	0.17	0.23	0.20	e0.14	0.19	0.13	0.14
26	e0.14	0.15	e0.15	0.14	0.14	0.17	0.21	0.20	e0.14	0.20	0.14	0.18
27	e0.14	0.14	e0.15	0.14	0.14	0.22	0.20	0.20	e0.14	0.18	0.12	0.16
28	e0.14	0.14	e0.15	0.14	0.14	0.17	2.4	0.20	e0.16	0.17	0.36	0.16
29	e0.14	0.14	e0.14	0.14	---	0.17	0.32	0.20	e0.14	0.14	0.27	0.15
30	e0.14	0.14	e0.14	0.14	---	0.17	0.24	0.20	e0.14	0.14	0.19	0.15
31	e0.14	---	e0.14	0.14	---	0.17	---	0.20	---	0.14	0.17	---
TOTAL	4.00	4.72	6.83	5.51	3.92	5.67	18.41	10.18	4.68	5.09	4.45	4.73
MEAN	0.13	0.16	0.22	0.18	0.14	0.18	0.61	0.33	0.16	0.16	0.14	0.16
MAX	0.17	0.20	0.60	0.84	0.14	0.40	8.9	3.1	0.19	0.48	0.36	0.51
MIN	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.20	0.14	0.13	0.10	0.14

e Estimated

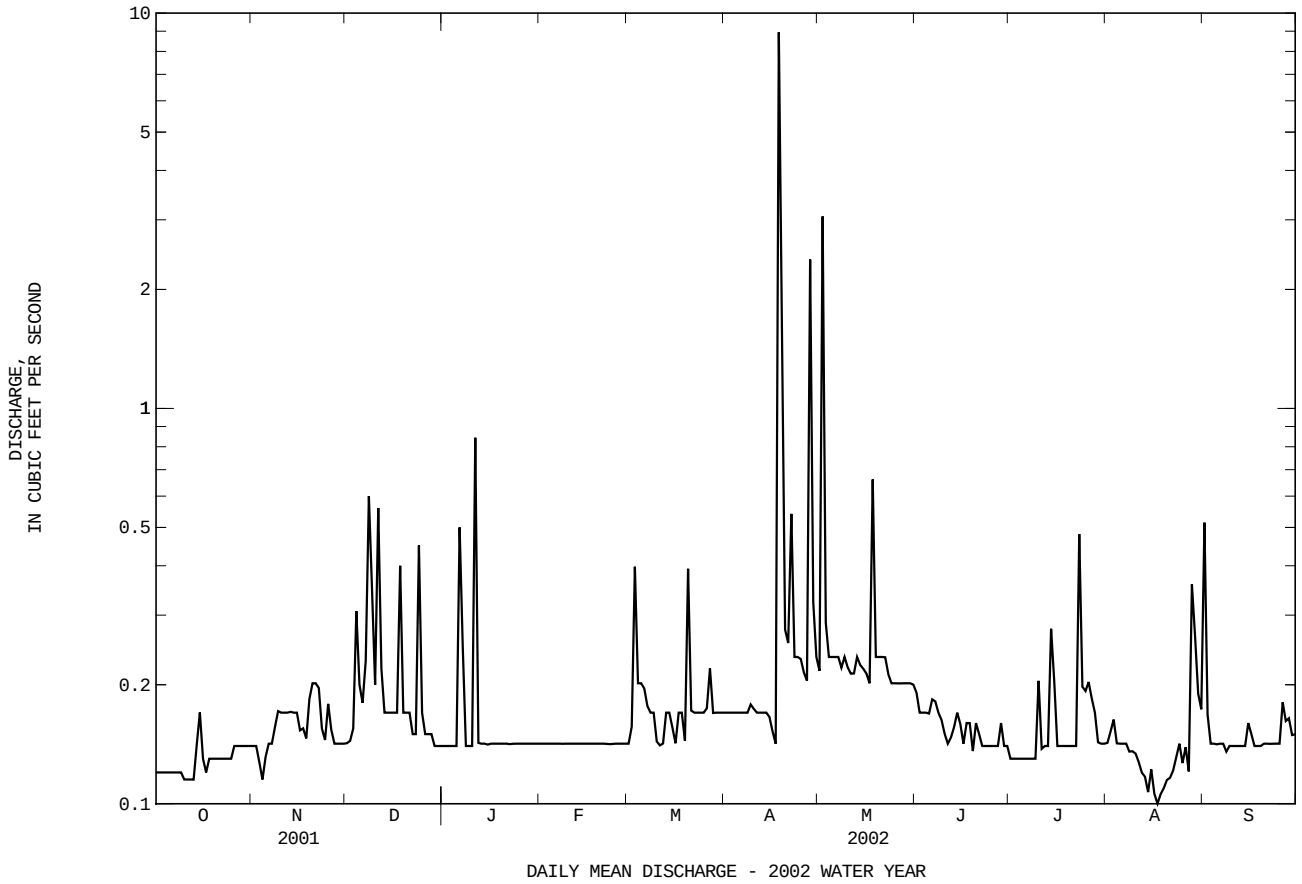
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1990, 1997 - 2002, BY WATER YEAR (WY)

MEAN	0.34	0.37	0.37	0.60	0.63	0.64	0.52	0.44	0.31	0.36	0.35	0.68
MAX	0.52	0.77	0.41	1.60	2.01	1.47	0.75	0.80	0.46	0.65	0.52	3.23
(WY)	1990	1998	1998	1998	1998	1998	2000	1990	1998	2000	1997	1999
MIN	0.13	0.16	0.22	0.18	0.14	0.18	0.32	0.27	0.16	0.16	0.14	0.16
(WY)	2002	2002	2002	2002	2002	2002	1999	1999	2002	2002	2002	2002

01589795 SOUTH FORK JABEZ BRANCH AT MILLERSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 1990, 1997 - 2002	
ANNUAL TOTAL	117.59		78.19			
ANNUAL MEAN	0.32		0.21		0.47	
HIGHEST ANNUAL MEAN					0.78	1998
LOWEST ANNUAL MEAN					0.21	2002
HIGHEST DAILY MEAN	6.4	Mar 21	8.9	Apr 18	82	Sep 16 1999
LOWEST DAILY MEAN	(e)0.12	(a)	0.10	Aug 17	0.10	Aug 17 2002
ANNUAL SEVEN-DAY MINIMUM	0.12	Sep 30	0.11	Aug 14	0.11	Aug 14 2002
MAXIMUM PEAK FLOW			74	Apr 18	(b)300	Sep 16 1999
MAXIMUM PEAK STAGE			5.88	Apr 18	6.97	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.05	Aug 17	0.05	Aug 17 2002
ANNUAL RUNOFF (CFSM)	0.32		0.21		0.47	
ANNUAL RUNOFF (INCHES)	4.37		2.91		6.39	
10 PERCENT EXCEEDS	0.45		0.24		0.51	
50 PERCENT EXCEEDS	0.20		0.14		0.31	
90 PERCENT EXCEEDS	0.13		0.13		0.14	

e Some of these days are estimates.
a Aug. 21, 22, Sept. 30, Oct. 1-13, 17, Dec. 4.
b From rating curve extended above 15 ft^3/s.



01591000 PATUXENT RIVER NEAR UNITY, MD

LOCATION.--Lat 39°14'17.7", long 77°03'20.6", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 0.6 mi upstream from Cattail Creek, 0.8 mi upstream from Triadelphia Reservoir, 1.1 mi northeast of Unity, and 97 mi upstream from mouth.

DRAINAGE AREA.--34.8 mi^2.

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1111: 1947. WSP 1432: 1948.

GAGE.--Water stage recorder and concrete control. Datum of gage is 364.76 ft above National Geodetic Vertical Datum of 1929 (Washington Suburban Sanitary Commission bench mark). Prior to Aug. 14, 1946, non-recording gage at same site and datum. U.S. Geological Survey gage- height telemeter at station.

REMARKS.--No estimated daily discharges. Records good. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 770 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 28	0045	*414	*4.34	No peak greater than base discharge.			

Minimum discharge, 0.39 ft^3/s, Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.7	12	10	17	11	21	19	15	5.6	3.4	4.8
2	11	10	12	10	15	11	18	92	13	5.4	3.1	5.2
3	10	10	11	11	14	34	18	42	11	5.2	3.0	4.1
4	9.8	10	11	11	13	19	17	28	11	4.7	3.3	3.5
5	9.5	10	11	10	13	15	16	24	11	4.1	2.9	3.0
6	9.2	10	11	12	13	15	15	21	11	3.4	8.2	2.7
7	9.0	9.9	11	17	14	14	15	19	11	3.3	3.6	2.6
8	9.2	9.6	13	15	14	13	15	18	9.9	3.6	2.8	2.5
9	9.1	9.6	18	14	13	13	15	17	9.4	3.8	2.5	2.4
10	9.2	9.6	14	14	13	14	17	17	9.1	8.0	2.2	2.2
11	9.2	9.9	17	27	15	13	15	15	8.7	5.5	2.0	1.9
12	9.0	9.9	16	21	14	13	14	14	8.2	4.1	1.9	1.7
13	9.0	10	15	17	13	17	15	17	10	3.7	1.8	1.5
14	9.4	9.9	16	15	12	18	15	14	28	7.4	1.6	1.4
15	19	9.6	17	15	12	16	17	13	21	7.5	1.4	1.7
16	12	9.5	15	14	13	15	15	12	14	5.2	1.3	2.2
17	12	9.5	15	13	12	14	14	12	11	4.1	1.2	2.2
18	11	9.5	23	13	12	19	13	32	10	3.6	1.1	1.8
19	11	9.5	17	13	12	18	13	19	9.4	3.4	0.92	1.5
20	10	9.8	15	14	12	69	14	15	8.9	3.3	0.70	1.4
21	10	9.5	14	13	12	52	13	13	8.6	3.5	0.56	1.4
22	9.9	9.5	13	13	12	31	17	13	7.9	3.0	0.46	1.5
23	9.9	9.5	13	16	11	25	14	12	7.6	3.4	0.41	2.3
24	9.9	9.8	16	26	11	22	13	12	7.2	9.6	2.6	2.2
25	10	50	14	26	11	20	13	11	6.9	4.5	3.9	1.8
26	9.6	55	13	19	11	21	13	11	6.6	12	2.0	3.6
27	9.7	18	13	17	12	36	12	39	6.5	9.8	1.8	17
28	9.9	14	13	16	11	24	57	91	6.8	6.8	4.1	16
29	9.5	13	12	15	---	21	37	27	7.2	5.8	12	6.0
30	9.7	13	12	15	---	20	23	19	6.2	4.7	5.5	4.3
31	9.9	---	11	17	---	20	---	16	---	3.9	3.8	---
TOTAL	316.6	396.8	434	479	357	663	524	724	312.1	161.9	86.05	106.4
MEAN	10.2	13.2	14.0	15.5	12.8	21.4	17.5	23.4	10.4	5.22	2.78	3.55
MAX	19	55	23	27	17	69	57	92	28	12	12	17
MIN	9.0	9.5	11	10	11	11	12	11	6.2	3.0	0.41	1.4
CFSM	0.29	0.38	0.40	0.44	0.37	0.61	0.50	0.67	0.30	0.15	0.08	0.10
IN.	0.34	0.42	0.46	0.51	0.38	0.71	0.56	0.77	0.33	0.17	0.09	0.11

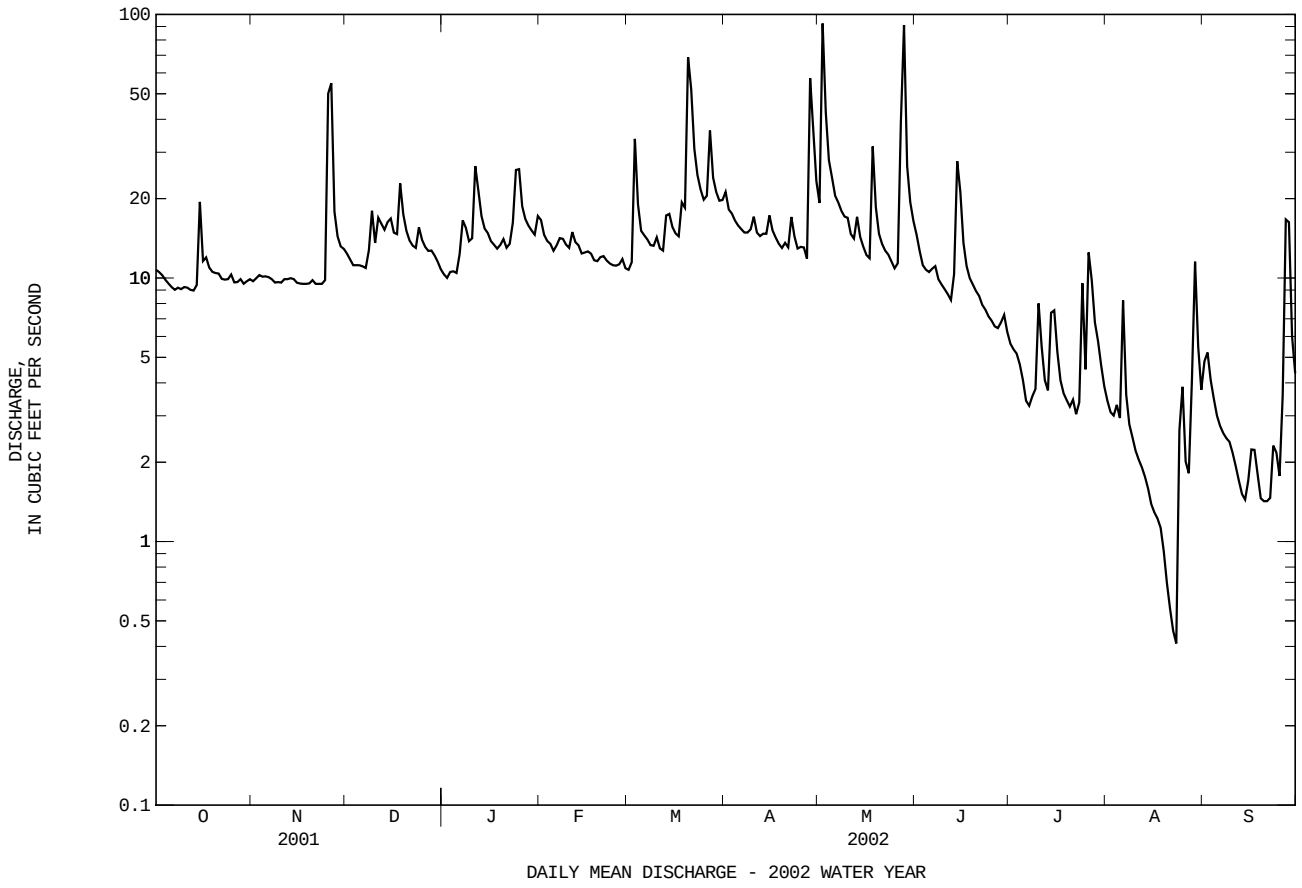
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	21.7	28.4	39.6	46.6	53.8	61.7	57.2	48.3	35.7	25.3	21.5	26.4
MAX	150	82.8	155	139	152	173	158	141	206	102	120	214
(WY)	1980	1953	1997	1996	1979	1993	1993	1952	1972	1956	1971	1971
MIN	4.19	9.09	8.51	10.0	12.8	21.4	17.5	15.2	7.53	2.78	2.78	3.55
(WY)	1987	1966	1966	1966	2002	2002	2002	1963	1999	1999	2002	2002

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	10130.7		4560.85			
ANNUAL MEAN	27.8		12.5		38.8	
HIGHEST ANNUAL MEAN					82.3	1972
LOWEST ANNUAL MEAN					12.5	2002
HIGHEST DAILY MEAN	283	Mar 30	92	May 2	2590	Sep 26 1975
LOWEST DAILY MEAN	7.8	(a)	0.41	Aug 23	0.20	(b)
ANNUAL SEVEN-DAY MINIMUM	8.1	Sep 13	0.76	Aug 17	0.23	Aug 9 1999
MAXIMUM PEAK FLOW			414	May 28	(c)21800	Sep 11 1971
MAXIMUM PEAK STAGE			4.34	May 28	18.60	Sep 11 1971
INSTANTANEOUS LOW FLOW			0.39	(d)	0.20	(e)
ANNUAL RUNOFF (CFSM)	0.80		0.36		1.12	
ANNUAL RUNOFF (INCHES)	10.83		4.88		15.15	
10 PERCENT EXCEEDS	50		19		70	
50 PERCENT EXCEEDS	19		11		25	
90 PERCENT EXCEEDS	9.6		2.6		8.9	

a Sept. 17-19.
b Sept. 10, 11, 1966.
c From rating curve extended above 1,500 ft^3/s on basis of slope-area measurement at gage height 13.00 ft.
d Aug. 22, 23.
e Sept. 10-12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01591400 CATTAIL CREEK NEAR GLENWOOD, MD

LOCATION (REVISED).--Lat 39°15'21.5", long 77°03'03.8", Howard County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 1.2 mi upstream from mouth.

DRAINAGE AREA.--22.9 mi^2.

PERIOD OF RECORD.--June 1978 to September 1983 (published as "at Roxbury Mills Road at Roxbury Mills, MD"), October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 28, 1983, at site 800 ft upstream at datum 1.76 ft lower.

REMARKS.--Records good except those for estimated daily discharges (ice effect and backwater), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	1100	*347	*3.37	No peak greater than base discharge.			

Minimum discharge measured, 0.10 ft^3/s, Aug. 22, may have been lower during period of questionable gage-height record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	7.2	13	8.2	13	8.5	14	11	8.4	3.2	1.8	3.6
2	8.3	7.3	12	8.5	12	8.8	12	68	7.6	3.0	1.7	4.0
3	8.2	7.1	12	8.8	11	25	12	21	6.8	3.0	1.6	3.2
4	e8.0	7.1	11	8.6	11	13	11	14	6.6	2.6	2.7	2.8
5	e7.7	7.2	10	8.5	9.9	10	11	13	6.5	2.3	1.9	2.5
6	e7.5	7.1	10	9.6	9.7	9.7	10	11	7.0	2.0	2.6	2.2
7	e7.3	7.1	9.8	15	9.9	9.7	9.9	11	8.5	1.9	1.7	2.0
8	e7.2	7.1	11	13	10	9.5	9.7	10	6.5	2.0	1.4	1.9
9	e7.1	7.1	20	11	10	9.1	10	9.5	6.3	2.1	1.1	1.7
10	e7.1	7.1	12	12	9.9	9.7	11	9.8	5.7	3.8	0.90	1.7
11	e7.0	7.1	15	28	11	8.6	9.9	8.8	5.5	2.9	0.76	1.5
12	e6.9	7.1	14	17	10	8.7	9.7	8.5	5.2	2.3	0.63	1.3
13	e6.9	7.1	13	14	10	12	9.7	11	5.8	2.1	0.52	e1.1
14	e7.3	7.2	13	13	9.3	12	9.7	9.3	16	3.9	0.46	e1.0
15	15	7.3	14	12	9.1	10	13	8.4	12	3.6	0.36	1.3
16	9.8	7.2	12	11	9.1	10	11	7.9	8.3	2.9	0.33	1.6
17	9.5	7.4	11	11	9.1	9.8	9.5	7.7	7.0	2.3	0.34	1.7
18	8.6	7.1	23	10	9.1	13	9.0	21	6.0	1.9	0.32	1.4
19	8.1	7.1	14	10	8.9	13	8.8	11	5.7	e1.8	0.25	1.1
20	7.9	7.3	13	11	8.8	50	8.7	9.1	5.5	e1.7	0.20	e1.0
21	7.8	7.4	11	10	8.6	28	8.5	8.4	5.2	e1.8	0.14	e1.0
22	7.7	7.4	10	10	8.5	18	11	7.9	4.7	e1.5	0.10	1.1
23	7.5	7.1	10	13	8.5	15	9.2	7.5	4.4	e1.7	e0.09	1.3
24	7.2	7.1	12	23	8.5	13	8.5	7.4	4.3	5.0	1.9	1.5
25	9.3	54	11	19	8.5	12	8.5	7.1	3.9	2.7	2.0	1.3
26	8.2	44	9.8	14	8.5	13	8.4	7.2	3.7	5.6	1.1	2.7
27	7.4	16	9.3	13	8.7	26	7.9	38	3.5	5.0	0.99	13
28	7.1	14	9.1	12	8.5	16	37	37	3.5	3.8	2.7	15
29	7.1	12	9.1	11	---	14	18	13	3.5	3.0	8.9	4.8
30	7.1	13	9.0	11	---	13	13	10	3.5	2.4	3.7	3.6
31	7.1	---	8.4	12	---	13	---	9.2	---	2.1	2.9	---
TOTAL	247.7	325.3	371.5	388.2	269.1	441.1	339.6	433.7	187.1	85.9	46.09	83.9
MEAN	7.99	10.8	12.0	12.5	9.61	14.2	11.3	14.0	6.24	2.77	1.49	2.80
MAX	15	54	23	28	13	50	37	68	16	5.6	8.9	15
MIN	6.9	7.1	8.4	8.2	8.5	8.5	7.9	7.1	3.5	1.5	0.09	1.0
CFSM	0.35	0.47	0.52	0.55	0.42	0.62	0.49	0.61	0.27	0.12	0.06	0.12
IN.	0.40	0.53	0.60	0.63	0.44	0.72	0.55	0.70	0.30	0.14	0.07	0.14

e Estimated.

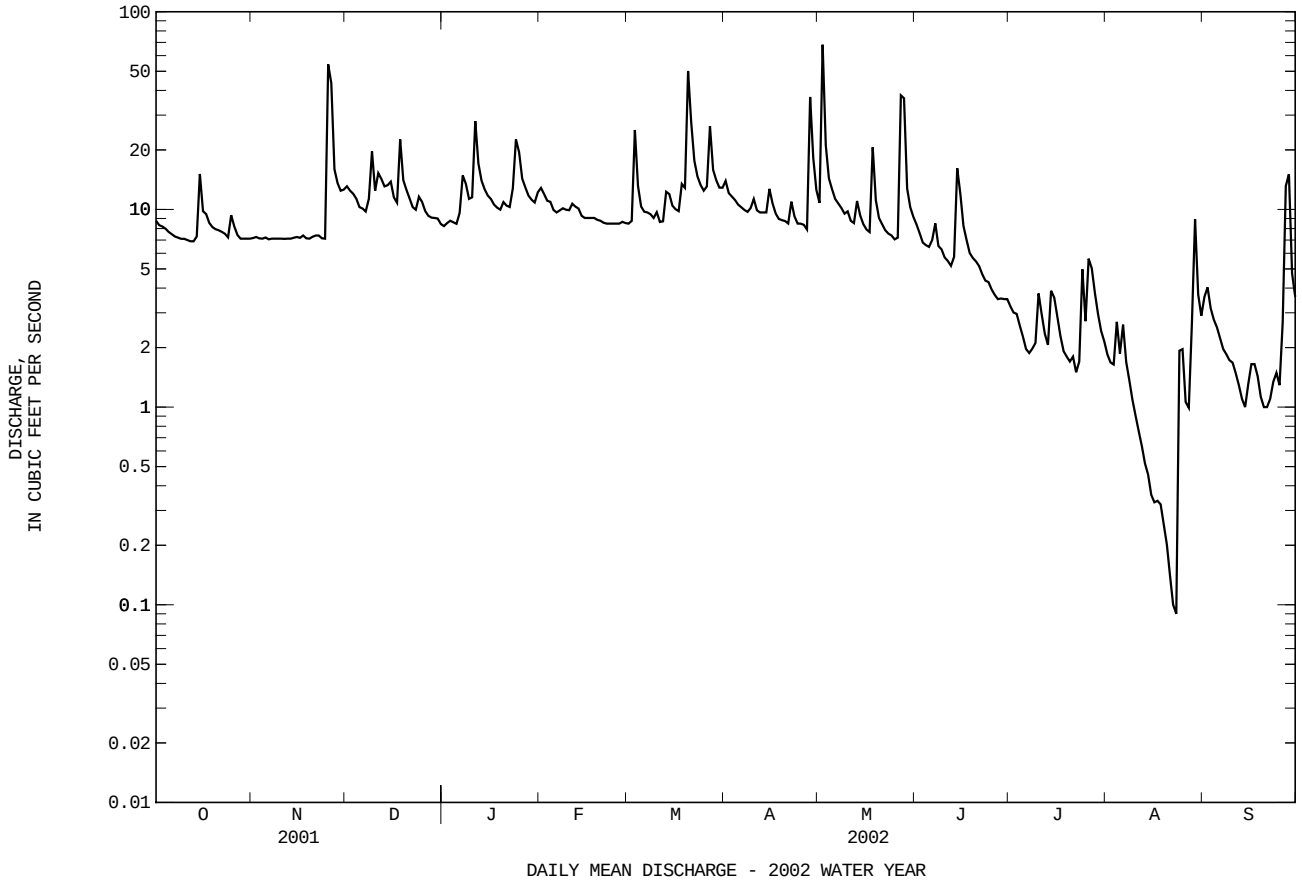
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

MEAN	17.7	21.3	27.8	32.6	36.2	38.6	34.7	30.6	22.1	15.7	13.1	16.6
MAX	76.6	62.8	103	113	103	109	112	92.5	50.6	55.1	41.5	81.6
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	2001	1996	1996	1979
MIN	3.73	5.96	7.49	8.38	9.61	14.2	11.3	10.1	5.60	2.77	1.49	2.80
(WY)	1987	1982	1999	1981	2002	2002	2002	1999	1999	2002	2002	2002

01591400 CATTAIL CREEK NEAR GLENWOOD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002	
ANNUAL TOTAL	7721.8		3219.19			
ANNUAL MEAN	21.2		8.82		25.6	
HIGHEST ANNUAL MEAN					45.7	1996
LOWEST ANNUAL MEAN					8.82	2002
HIGHEST DAILY MEAN	486	Jun 23	68	May 2	2100	Jan 19 1996
LOWEST DAILY MEAN	6.1	(a)	(e)0.09	Aug 23	(e)0.09	Aug 23 2002
ANNUAL SEVEN-DAY MINIMUM	6.3	Sep 13	0.21	Aug 17	0.21	Aug 17 2002
MAXIMUM PEAK FLOW			347	May 2	(b)5210	Jan 19 1996
MAXIMUM PEAK STAGE			3.37	May 2	8.96	Jan 19 1996
INSTANTANEOUS LOW FLOW			(c)0.10	Aug 22	0.07	(d)
ANNUAL RUNOFF (CFSM)	0.92		0.39		1.12	
ANNUAL RUNOFF (INCHES)	12.54		5.23		15.17	
10 PERCENT EXCEEDS	30		14		41	
50 PERCENT EXCEEDS	14		8.5		16	
90 PERCENT EXCEEDS	7.2		1.7		6.0	

a Sept. 17-19.
e Estimated.
b From rating curve extended above 175 ft^3/s on basis of contracted-opening and flow-over-road measurement at gage height of 8.41 ft.
c Minimum discharge measured, may have been lower during period of questionable gage-height record.
d Aug. 14, 19, 20, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD

LOCATION.--Lat 39°11'31.9", long 77°00'15.8", Montgomery County, Hydrologic Unit 02060006, on right bank at Brighton Dam, 500 ft downstream from Triadelphia Reservoir, 1.3 mi east of Brighton, and 92 mi upstream from mouth.

DRAINAGE AREA.--78.6 mi^2.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 310 ft above National Geodetic Vertical Datum of 1929, from topographic map. June 1978 to October 1980, nonrecording gage 300 ft upstream on left bank at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Triadelphia Reservoir, 500 ft upstream, usable capacity, 6,200,000,000 gal; no dead storage. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a discharge of 17,800 ft^3/s. Data provided by Washington Suburban Sanitary Commission.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft^3/s, Oct. 19, Nov. 28, gage height, 2.02 ft; minimum discharge, 4.9 ft^3/s, Nov. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	45	47	43	45	39	13	e9.4	50	49	20	18
2	89	45	47	43	44	39	12	9.5	50	49	19	18
3	87	45	47	43	44	39	12	9.4	50	49	19	18
4	86	45	47	44	44	39	11	9.4	50	49	19	18
5	84	44	57	44	44	39	11	9.3	50	50	19	18
6	72	43	85	45	44	39	11	9.3	51	49	19	18
7	61	43	84	45	44	39	11	9.3	50	48	20	18
8	61	44	83	45	44	39	11	9.4	50	48	20	18
9	61	41	83	45	43	39	11	9.4	50	48	20	18
10	61	41	82	45	43	40	11	9.3	50	48	21	18
11	61	41	82	45	43	39	11	9.2	50	48	21	18
12	61	41	81	45	43	39	11	9.3	50	48	21	18
13	61	32	82	45	43	39	10	9.4	49	47	21	18
14	61	31	82	45	42	39	9.4	9.2	50	48	22	18
15	41	46	81	45	43	39	9.5	21	51	48	22	18
16	29	44	80	45	43	39	9.6	47	50	45	22	17
17	24	42	80	45	43	39	9.7	47	50	31	23	17
18	20	41	81	45	43	39	9.8	48	49	15	23	17
19	52	39	80	44	43	39	9.8	49	49	18	21	18
20	101	39	80	44	43	39	9.6	48	49	18	18	18
21	100	37	79	44	43	39	9.6	49	49	18	18	18
22	91	35	78	44	43	38	9.6	49	49	18	18	18
23	85	34	58	44	43	36	9.4	49	49	18	18	18
24	84	33	44	45	41	36	9.4	49	50	19	18	18
25	78	36	44	44	39	36	e9.4	49	50	19	18	18
26	72	46	44	44	39	36	e9.4	50	50	19	18	18
27	53	43	44	45	39	36	e9.4	50	50	19	18	18
28	45	52	44	45	39	36	e9.4	50	50	19	18	17
29	45	58	43	45	---	35	e9.4	50	49	20	18	18
30	45	47	43	45	---	13	e9.4	50	49	20	18	17
31	45	---	43	45	---	13	---	51	---	19	17	---
TOTAL	2003	1253	2035	1380	1194	1135	307.8	936.8	1493	1061	607	535
MEAN	64.6	41.8	65.6	44.5	42.6	36.6	10.3	30.2	49.8	34.2	19.6	17.8
MAX	101	58	85	45	45	40	13	51	51	50	23	18
MIN	20	31	43	43	39	13	9.4	9.2	49	15	17	17
(†)	3210	3100	2550	2510	2350	2630	3170	3570	3040	2550	2280	2120

e Estimated.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002, BY WATER YEAR (WY)

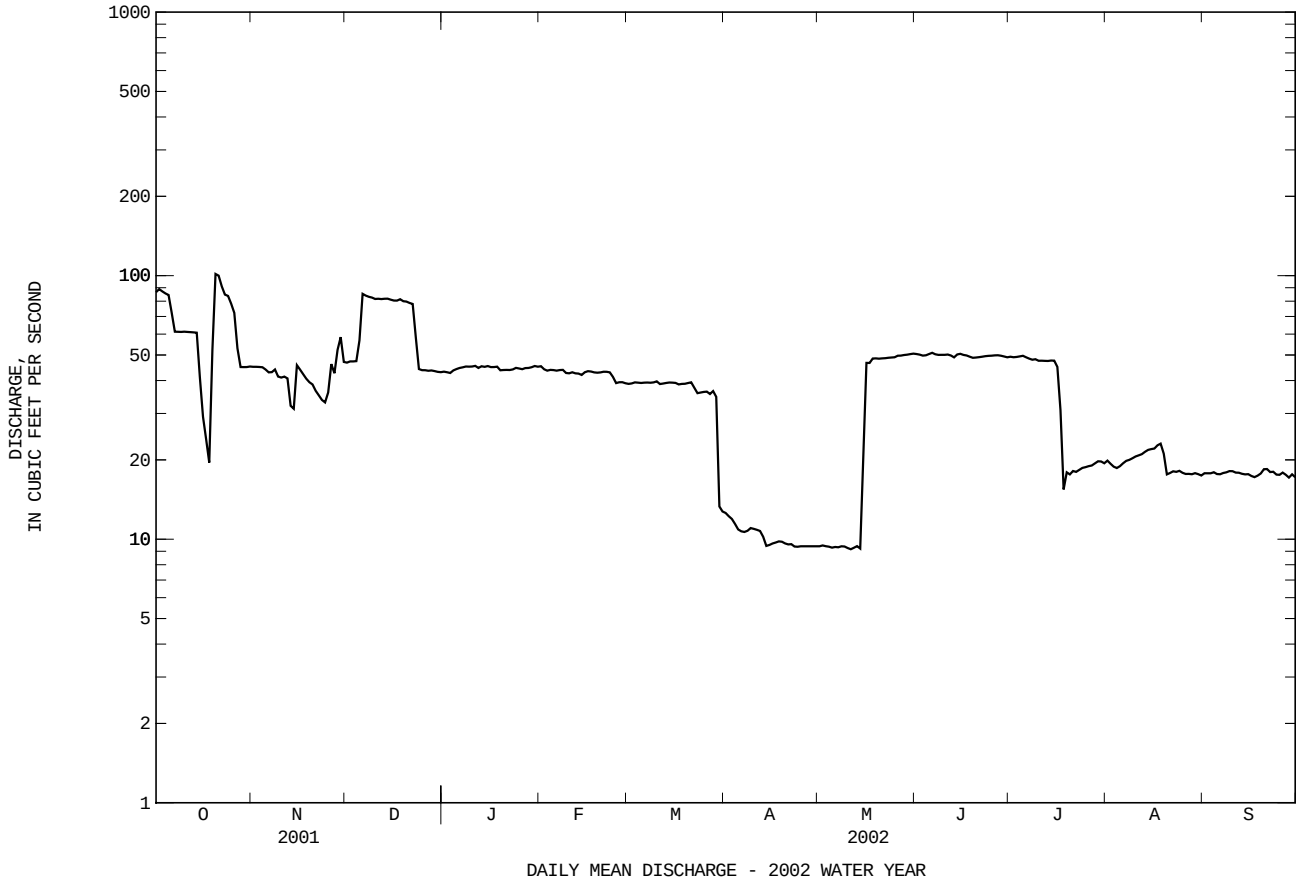
MEAN	63.8	58.0	84.6	73.6	79.5	114	123	92.1	75.2	61.6	64.9	73.2
MAX	138	166	373	183	256	320	304	229	170	135	143	219
(WY)	1997	1997	1984	1991	1994	1993	1993	1989	1989	1996	1996	1996
MIN	7.87	17.1	14.9	9.33	9.57	8.90	8.49	8.63	22.4	30.3	18.1	17.8
(WY)	1987	1989	1992	1982	1999	1981	1981	1981	1981	1995	1987	2002

† Monthend contents, in millions of gallons, in Triadelphia Reservoir (contents on Sept. 30, 2001, 4,020,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1981 - 2002	
ANNUAL TOTAL	27794		13940.6			
ANNUAL MEAN	76.1		38.2		80.2	
ANNUAL MEAN‡	65.1		30.2		78.1	
HIGHEST ANNUAL MEAN					134	1984
LOWEST ANNUAL MEAN					38.2	2002
HIGHEST DAILY MEAN	409	Jun 25	101	Oct 20	1730	May 6 1989
LOWEST DAILY MEAN	20	Oct 18	9.2	(a)	2.1	(b)
ANNUAL SEVEN-DAY MINIMUM	36	Nov 19	9.3	May 5	4.0	Oct 16 1980
MAXIMUM PEAK FLOW			105	(c)	2650	May 6 1989
MAXIMUM PEAK STAGE			2.02	(c)	10.26	May 6 1989
INSTANTANEOUS LOW FLOW			4.9	(d)	1.2	Dec 3 1985
ANNUAL RUNOFF (CFSM)	0.97		0.49		1.02	
ANNUAL RUNOFF (INCHES)	13.15		6.60		13.87	
10 PERCENT EXCEEDS	97		61		161	
50 PERCENT EXCEEDS	69		43		54	
90 PERCENT EXCEEDS	45		11		9.9	

‡ Adjusted for change in reservoir contents.
a May 11, 14.
b Jan. 27, 28, 1983.
c Oct. 19, Nov. 28.
d Nov. 13, 14.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD

LOCATION.--Lat 39°10'28.8", long 77°01'17.7", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 650, 1.0 mi upstream from mouth, and 1.7 mi north of Sandy Spring.

DRAINAGE AREA.--27.0 mi^2.

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-level recorder. Elevation of gage is 320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS--Records good except those for estimated daily discharges (missing record), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	2100	*322	*2.86	No peak greater than base discharge.			

Minimum discharge, 0.12 ft^3/s, Aug. 23, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.9	11	8.6	14	8.9	19	17	11	3.2	2.0	5.9
2	6.5	6.7	9.9	8.6	12	9.6	16	130	8.7	3.1	1.7	4.8
3	6.1	6.5	9.4	8.9	11	49	15	47	7.4	2.9	17	3.3
4	6.1	6.6	9.4	8.9	11	20	14	25	6.9	2.9	7.5	2.7
5	6.1	6.7	9.4	8.9	10	14	13	20	6.5	2.6	3.5	2.3
6	6.0	6.5	9.5	13	10	13	13	17	7.3	2.2	2.9	1.9
7	5.7	6.5	9.2	20	11	13	12	15	8.3	2.0	2.4	1.8
8	5.5	6.6	12	16	12	12	12	14	6.6	2.2	1.7	1.7
9	5.7	6.5	21	12	11	11	13	12	6.4	4.6	1.4	1.5
10	5.7	6.3	15	11	11	13	17	12	5.8	6.8	1.4	1.4
11	5.4	6.5	21	20	12	11	14	11	5.6	4.3	1.2	1.4
12	5.4	6.5	19	17	12	11	13	10	5.4	3.2	0.87	1.1
13	5.4	6.5	16	13	11	20	13	16	6.7	2.5	0.76	1.0
14	7.5	6.5	16	12	11	20	12	13	12	16	0.72	0.96
15	21	6.5	17	11	11	16	13	11	19	7.5	0.61	1.9
16	10	6.5	15	11	11	14	13	10	10	4.4	0.60	2.8
17	13	6.5	14	11	11	14	12	9.9	7.3	3.5	0.60	2.2
18	9.2	6.5	20	9.9	10	24	11	22	6.3	2.9	0.59	e1.4
19	6.7	6.5	15	9.9	10	19	11	14	5.7	2.7	0.50	e1.1
20	6.5	6.8	12	12	10	76	11	11	5.3	2.5	0.40	e0.98
21	6.6	6.9	11	11	10	43	11	9.6	5.0	2.2	0.33	e0.90
22	6.5	6.5	11	11	10	24	18	9.2	4.6	2.6	0.20	e1.2
23	6.5	6.5	11	13	9.9	19	13	8.4	4.3	2.4	0.14	e1.7
24	6.5	7.1	14	18	9.4	17	11	8.3	4.0	8.5	0.20	e1.3
25	6.7	67	13	18	9.4	15	11	8.2	3.7	4.1	0.39	e1.2
26	8.7	78	12	14	9.4	19	11	16	3.7	12	0.43	11
27	6.7	20	11	13	9.8	44	10	84	3.5	8.7	0.50	21
28	6.6	15	11	12	9.1	23	86	28	4.0	4.9	7.9	29
29	6.5	13	10	12	---	19	44	17	4.6	3.7	13	6.9
30	6.6	12	9.5	12	---	17	22	13	3.8	2.7	4.9	4.4
31	6.9	---	8.9	14	---	17	---	12	---	2.2	2.9	---
TOTAL	225.0	363.1	403.2	390.7	299.0	645.5	504	650.6	199.4	136.0	79.24	120.74
MEAN	7.26	12.1	13.0	12.6	10.7	20.8	16.8	21.0	6.65	4.39	2.56	4.02
MAX	21	78	21	20	14	76	86	130	19	16	17	29
MIN	5.4	6.3	8.9	8.6	9.1	8.9	10	8.2	3.5	2.0	0.14	0.90
CFSM	0.27	0.45	0.48	0.47	0.40	0.77	0.62	0.78	0.25	0.16	0.09	0.15
IN.	0.31	0.50	0.56	0.54	0.41	0.89	0.69	0.90	0.27	0.19	0.11	0.17

e Estimated

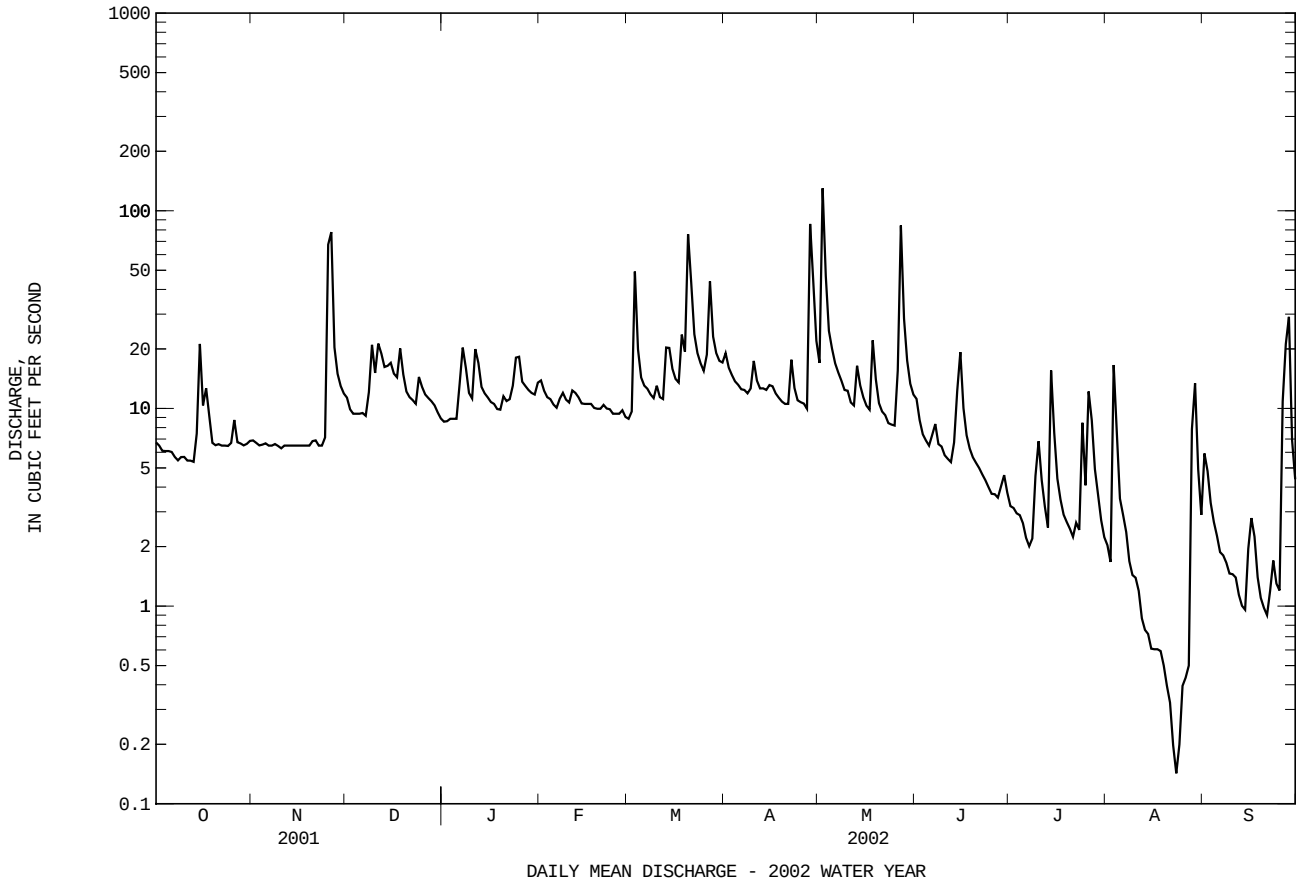
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

MEAN	20.6	27.1	31.9	37.4	42.1	47.9	40.0	35.0	29.0	16.0	12.9	18.1
MAX	129	68.8	104	115	112	116	90.7	94.3	73.0	52.4	36.6	90.2
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	1998	1996	1996	1996
MIN	2.68	7.27	8.86	9.31	10.7	18.8	16.8	12.1	4.71	2.16	2.56	3.11
(WY)	1987	1982	1999	1981	2002	1981	2002	1999	1999	1999	2002	1986

01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002	
ANNUAL TOTAL	9061.4		4016.48			
ANNUAL MEAN	24.8		11.0		29.7	
HIGHEST ANNUAL MEAN					52.9	1996
LOWEST ANNUAL MEAN					11.0	2002
HIGHEST DAILY MEAN	568	Jun 22	130	May 2	1840	Jan 19 1996
LOWEST DAILY MEAN	5.4	Oct 11	0.14	Aug 23	0.14	Aug 23 2002
ANNUAL SEVEN-DAY MINIMUM	5.5	Oct 7	0.30	Aug 20	0.30	Aug 20 2002
MAXIMUM PEAK FLOW			322	Nov 25	(a)5180	Jan 19 1996
MAXIMUM PEAK STAGE			2.86	Nov 25	9.24	Jan 19 1996
INSTANTANEOUS LOW FLOW			0.12	(b)	0.12	(b)
ANNUAL RUNOFF (CFSM)	0.92		0.41		1.10	
ANNUAL RUNOFF (INCHES)	12.48		5.53		14.94	
10 PERCENT EXCEEDS	40		19		50	
50 PERCENT EXCEEDS	15		9.5		19	
90 PERCENT EXCEEDS	6.5		1.8		5.4	

a From rating curve extended above 1,300 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
b Aug. 23, 24, 2002.



01592500 PATUXENT RIVER NEAR LAUREL, MD

LOCATION.--Lat 39°06'56.6", long 76°52'25.5", Prince Georges County, Hydrologic Unit 02060006, on right bank at Rocky Gorge pumping station, 600 ft downstream from T. Howard Duckett Reservoir, 0.7 mi upstream from Walker Branch, 1.3 mi northwest of Laurel, and 81 mi upstream from mouth.

DRAINAGE AREA.--132 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to current year.

REVISED RECORDS.--WDR MD-DE-78-1: 1976(M). WDR MD-DE-89-1: 1978(M), 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 153.5 ft above National Geodetic Vertical Datum of 1929 (levels by Washington Suburban Sanitary Commission). Prior to Oct. 1, 1955, water-stage recorder and concrete control at site 0.3 mi downstream at different datum. Oct. 1, 1955 to Sept. 30, 1956, nonrecording gage at present site at datum 1.2 ft lower. Oct. 1, 1956 to Jan. 27, 1957, nonrecording gage at present site and datum. Jan. 28, 1957 to May 3, 1972, water-stage recorder and concrete control at present site and datum. May 4, 1972 to Sept. 4, 1973, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Records do not include diversion at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Flow regulated by Triadelphia Reservoir, and since March 1954 by T. Howard Duckett Reservoir, combined usable capacity, 11,800,000,000 gal; dead storage, 80,000,000 gal. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 473 ft^3/s, July 1, gage height, 6.56 ft; minimum discharge, 12 ft^3/s, Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	22	22	21	20	21	20	21	21	26	19	20
2	24	21	22	20	20	21	20	21	21	21	19	19
3	23	21	22	20	21	21	20	21	21	19	19	19
4	21	22	21	20	21	21	23	22	21	19	19	19
5	21	21	21	20	21	21	20	22	20	19	19	19
6	21	22	21	20	21	21	21	21	21	19	19	19
7	21	21	21	20	21	21	21	21	20	19	19	19
8	21	21	21	20	21	21	21	22	20	19	19	19
9	21	22	21	21	21	20	21	21	20	20	19	20
10	21	22	21	20	21	20	21	21	20	20	19	20
11	21	21	21	20	21	20	21	21	20	20	19	20
12	21	21	21	20	21	20	21	21	20	19	19	19
13	21	21	22	20	21	20	21	21	21	19	19	19
14	21	22	22	20	21	20	21	21	20	19	19	19
15	21	21	22	20	21	20	21	21	20	19	19	19
16	21	22	22	21	21	20	21	21	20	19	20	19
17	22	22	21	22	21	20	21	21	20	19	20	19
18	22	21	21	20	21	20	21	21	20	19	20	20
19	22	22	21	20	21	20	21	21	20	19	20	19
20	22	22	21	20	21	20	21	21	20	19	19	19
21	22	22	21	20	21	20	21	21	20	19	20	20
22	22	22	21	20	21	20	23	21	20	19	20	20
23	22	22	21	20	21	20	21	21	20	19	20	20
24	22	22	21	20	21	20	21	21	20	19	20	22
25	22	22	21	20	21	20	20	21	20	19	19	24
26	22	22	21	20	21	20	21	21	21	19	20	20
27	22	22	21	20	21	20	21	21	21	19	20	20
28	22	22	21	20	21	20	21	21	21	19	20	20
29	21	22	21	20	---	20	20	21	21	19	20	20
30	21	22	21	20	---	20	21	21	20	20	20	20
31	22	---	21	20	---	20	---	21	---	19	19	---
TOTAL	672	650	658	625	586	628	628	654	610	602	602	591
MEAN	21.7	21.7	21.2	20.2	20.9	20.3	20.9	21.1	20.3	19.4	19.4	19.7
MAX	24	22	22	22	21	21	23	22	21	26	20	24
MIN	21	21	21	20	20	20	20	21	20	19	19	19
(†)	7770	7150	6720	6370	5850	6120	6550	7380	7080	6420	5400	4650
(‡)	70.9	69.9	64.6	67.2	66.3	57.8	29.0	30.0	32.4	34.2	44.6	40.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

MEAN	43.62	48.11	75.26	101.0	113.2	133.4	136.9	108.7	85.73	58.12	48.20	62.24
MAX	379	272	457	480	462	557	444	397	822	280	226	587
(WY)	1980	1953	1997	1978	1979	1993	1952	1989	1972	1945	1971	1979
MIN	7.76	7.21	8.45	7.84	7.92	7.88	7.47	9.04	7.88	7.81	5.72	4.91
(WY)	1968	1985	1966	1966	1966	1966	1966	1985	1967	1967	1966	1966

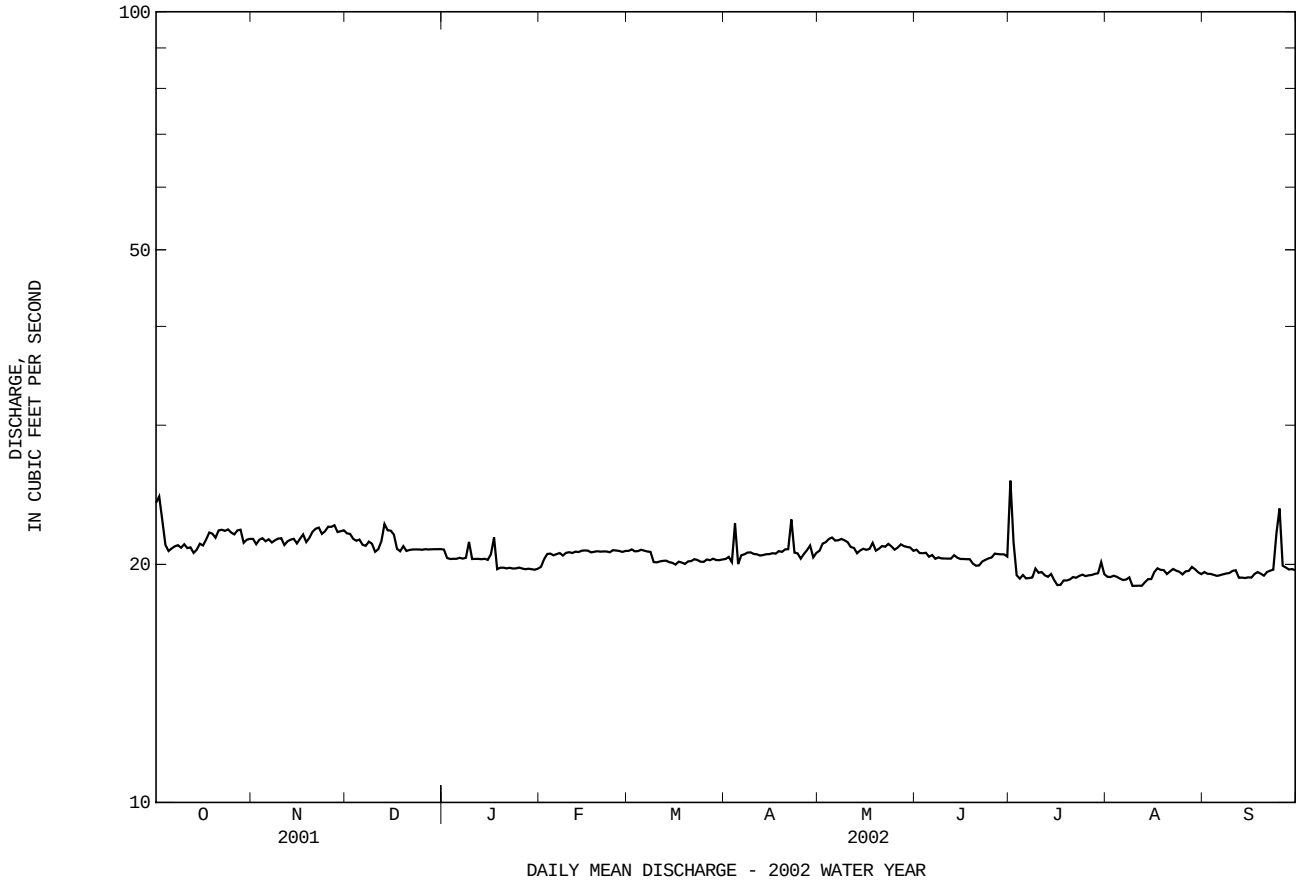
† Combined month-end total contents, in millions of gallons, in Tridelphia and T. Howard Duckett Reservoirs (contents on Sept. 30, 2001, 8,780,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

‡ Diversions, in cubic feet per second, upstream from station at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Records provided by Washington Suburban Sanitary Commission.

01592500 PATUXENT RIVER NEAR LAUREL, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	22507		7506			
ANNUAL MEAN	61.7		20.6		84.3	
ANNUAL MEAN‡	130		71.1			
HIGHEST ANNUAL MEAN					241	1972
LOWEST ANNUAL MEAN					9.09	1966
HIGHEST DAILY MEAN	1040	Jun 23	26	Jul 1	13000	Jun 22 1972
LOWEST DAILY MEAN	20	(a)	19	(b)	1.1	Jun 26 1956
ANNUAL SEVEN-DAY MINIMUM	20	Aug 17	19	Jul 12	3.7	Aug 29 1966
MAXIMUM PEAK FLOW			473	Jul 1	(c)26000	Jun 22 1972
MAXIMUM PEAK STAGE			6.56	Jul 1	(d)25.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			12	Oct 25	(f)0.05	Jul 18 1985
ANNUAL RUNOFF (CFSM)	0.47		0.16		0.64	
ANNUAL RUNOFF (INCHES)	6.34		2.12		8.68	
10 PERCENT EXCEEDS	147		22		187	
50 PERCENT EXCEEDS	22		21		22	
90 PERCENT EXCEEDS	21		19		12	

‡ Adjusted for diversions.
a Feb. 13-15, March 13, 14, 18, May 3-6, July 24-27, Aug. 6, 7, 17-28.
b July 3-8, 12-29, 31, Aug. 1-15, 20, 25, 31, Sept. 2-8, 12-17, 19, 20.
c From rating curve extended above 6,600 ft^3/s on basis of contracted-opening measurement of peak flow.
d From floodmarks.
f Valve closed for repair.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by W.C. Lewis

Below dam at Patuxent River near Laurel, MD (01592500).

01592500 PATUXENT RIVER NEAR LAUREL, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
JUN												
13...	*0844*	*BLANK*	--	--	--	--	--	*E.2*	*<.1*	*<1*	*<.5*	*<.5*
13...	0845	ENVIRONMENTAL	20	145	7.3	26.5	750	2.5	.7	<1	<.5	<.5

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
JUN		
13...	*<.5*	*<.5*
13...	M	<.5

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD

LOCATION.--Lat 39°10'03.9", long 76°51'04.5", Howard County, Hydrologic Unit 02060006, on left bank 25 ft downstream from bridge on Guilford Road (formerly State Highway 32), 1 mi west of Guilford, 3 mi upstream from Middle Patuxent River, 4 mi north of Laurel, and 20.1 mi upstream from mouth.

DRAINAGE AREA.--38.0 mi^2.

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for April 1932, published in WSP 1302.

REVISED RECORDS.--WSP 1502: 1933, 1934(M), 1939(M), 1945(M), 1948(P).

GAGE.--Water-stage recorder. Concrete control since June 20, 1946. Datum of gage is 259.26 ft above National Geodetic Vertical Datum of 1929. Prior to June 25, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are fair. Low flow affected by regulation from unknown source. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	1000	*739	*5.73	No peak greater than base discharge.			

Minimum discharge, 0.87 ft^3/s, Aug. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	e7.5	15	12	19	12	37	21	15	5.4	3.7	50
2	13	e7.5	15	12	16	18	20	268	13	4.4	2.8	18
3	13	e7.5	14	12	15	123	17	66	11	4.5	30	9.9
4	13	e7.3	14	12	15	28	16	30	8.3	3.9	39	7.1
5	12	e7.5	14	12	14	17	15	26	8.1	3.2	9.2	5.5
6	11	e7.2	13	32	13	15	14	20	24	3.0	6.1	4.2
7	11	e7.0	13	48	16	15	14	18	40	2.7	4.4	3.6
8	11	e7.0	24	23	16	14	14	17	13	2.6	3.4	3.3
9	9.6	e7.0	34	18	14	14	20	16	11	15	3.0	3.2
10	8.1	e7.0	16	16	14	18	29	15	9.8	26	2.4	3.3
11	7.7	e7.0	35	48	24	13	16	14	8.5	8.4	2.0	2.7
12	7.2	e7.0	20	28	24	13	15	15	7.6	5.3	2.0	2.4
13	7.9	e7.0	17	20	14	36	15	38	17	4.0	1.8	3.0
14	10	e7.6	24	22	13	21	15	28	47	38	1.4	3.1
15	32	e7.8	22	25	13	15	15	16	30	13	1.3	9.1
16	14	e8.0	18	24	13	14	14	14	15	7.1	1.2	13
17	17	e8.0	17	20	13	13	14	18	11	5.3	1.2	6.1
18	13	e8.0	33	16	13	29	58	86	9.2	4.1	1.2	4.8
19	14	e8.0	21	16	12	18	67	29	8.5	4.2	1.2	3.8
20	21	e8.5	17	22	12	128	25	17	9.2	3.9	0.97	3.5
21	14	e8.5	14	20	13	64	18	15	7.5	3.5	0.88	3.0
22	14	e8.0	13	20	13	29	49	14	5.9	3.3	1.3	3.1
23	9.7	e9.0	14	21	12	21	22	13	5.6	22	1.8	4.1
24	e9.1	13	28	37	12	19	16	13	4.8	20	5.2	3.8
25	e9.4	129	16	29	12	18	16	13	4.5	9.4	5.3	2.6
26	e9.0	242	14	18	12	28	16	13	4.1	70	2.1	51
27	e8.0	43	14	16	14	77	14	44	18	23	1.6	93
28	e7.9	29	13	16	12	27	224	27	19	9.9	49	52
29	e7.8	21	13	16	---	20	67	21	9.9	6.8	69	14
30	e7.8	16	e12	15	---	19	28	16	6.5	5.5	14	8.9
31	e7.7	---	e12	23	---	27	---	16	---	4.1	8.3	---
TOTAL	363.9	667.9	559	669	403	923	920	977	402.0	341.5	276.75	395.1
MEAN	11.7	22.3	18.0	21.6	14.4	29.8	30.7	31.5	13.4	11.0	8.93	13.2
MAX	32	242	35	48	24	128	224	268	47	70	69	93
MIN	7.2	7.0	12	12	12	12	14	13	4.1	2.6	0.88	2.4
CFSM	0.31	0.59	0.47	0.57	0.38	0.78	0.81	0.83	0.35	0.29	0.23	0.35
IN.	0.36	0.65	0.55	0.65	0.39	0.90	0.90	0.96	0.39	0.33	0.27	0.39

e Estimated.

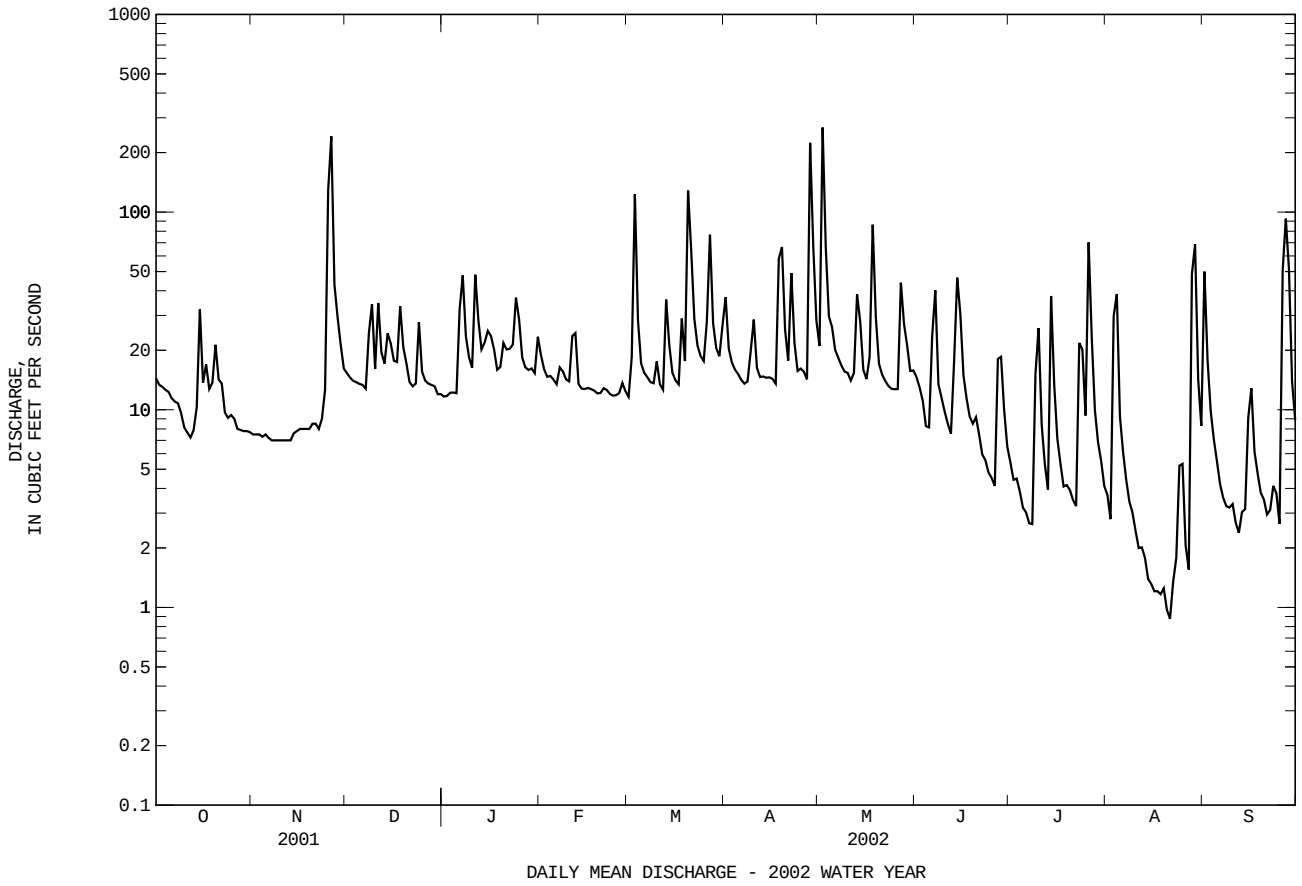
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

MEAN	26.2	37.4	44.8	52.7	59.9	66.0	58.0	49.0	38.4	29.2	27.4	31.8
MAX	107	108	130	145	147	181	160	197	265	119	130	214
(WY)	1980	1973	1997	1978	1979	1993	1973	1989	1972	1945	1955	1975
MIN	5.90	9.31	11.6	12.9	14.4	24.9	21.0	15.7	9.32	6.66	4.91	3.88
(WY)	1942	1942	1966	1955	2002	1981	1947	1955	1986	1966	1957	1932

01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1932 - 2002	
ANNUAL TOTAL	12350.2		6898.15			
ANNUAL MEAN	33.8		18.9		43.4	
HIGHEST ANNUAL MEAN					93.7	1972
LOWEST ANNUAL MEAN					18.9	2002
HIGHEST DAILY MEAN	523	Mar 30	268	May 2	4680	Jun 22 1972
LOWEST DAILY MEAN	4.1	Sep 19	0.88	Aug 21	0.00	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	5.3	Sep 13	1.1	Aug 15	0.73	Sep 6 1966
MAXIMUM PEAK FLOW			739	May 2	(a)12400	Jun 22 1972
MAXIMUM PEAK STAGE			5.73	May 2	(b)18.38	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.87	(c)	0.00	(d)
ANNUAL RUNOFF (CFSM)	0.89		0.50		1.14	
ANNUAL RUNOFF (INCHES)	12.09		6.75		15.53	
10 PERCENT EXCEEDS	64		32		72	
50 PERCENT EXCEEDS	20		14		26	
90 PERCENT EXCEEDS	7.8		3.6		10	

a From rating curve extended above 1,800 ft^3/s on basis of contracted-opening measurement at gage height 13.26 ft and contracted-opening and flow-over-embankment measurement at gage height 18.38 ft.
b From high-water mark in well.
c Aug. 20, 21.
d Sept. 6-12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD

LOCATION.--Lat 39°08'03.9", long 76°48'58.2", Howard County, Hydrologic Unit 02060006, on left bank 20 ft downstream from bridge on southbound lanes of U.S. Highway 1, 0.4 mi southeast of Savage, 0.9 mi downstream from Middle Patuxent River, and 16.2 mi upstream from mouth.

DRAINAGE AREA.--98.4 mi^2.

PERIOD OF RECORD.--October 1939 to September 1958. Annual maximums, water years 1959-66, 68, 72, 75. October 1975 to September 1980. May 1985 to current year. Prior to December 1939 monthly discharge only, published in WSP 1302.

REVISED RECORDS.--WRD MD-DE-89: 1985, 1987-88(P).

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above National Geodetic Vertical Datum of 1929, from topographic maps. Prior to October 1958, water-stage recorder at site 400 ft downstream at same datum. October 1958 to September 1972, crest-stage gage at site 400 ft downstream on right bank at same datum. October 1975 to September 1980, water-stage recorder at site 500 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are poor. Some diurnal fluctuation at low flow caused by plant 0.5 mi upstream. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 26	0015	*1,120	*7.14	No peak greater than base discharge.			

Minimum discharge, 1.1 ft^3/s, Aug. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	22	42	e36	54	28	84	62	41	15	8.4	77
2	32	23	39	e33	46	33	59	503	33	13	7.9	42
3	29	24	37	33	41	249	53	162	29	13	16	21
4	28	24	37	32	40	75	49	79	25	10	78	15
5	27	24	36	32	e38	52	45	71	24	9.6	21	12
6	25	22	36	55	e37	46	43	61	39	8.7	14	9.6
7	23	22	35	101	42	44	41	57	74	8.2	9.9	9.1
8	23	22	47	61	46	42	42	52	35	8.2	7.9	7.9
9	23	21	81	e50	39	41	48	48	29	23	6.8	7.3
10	22	22	47	44	37	54	69	48	26	57	6.9	7.5
11	22	22	74	85	45	40	48	43	24	19	5.8	6.6
12	22	22	58	75	55	37	42	48	22	13	5.4	4.5
13	23	22	47	54	37	75	44	68	38	10	5.2	4.2
14	24	23	57	50	34	66	43	68	74	66	4.7	4.8
15	67	28	57	54	33	50	43	44	68	35	4.0	11
16	38	28	46	51	34	45	44	39	44	18	3.2	20
17	40	27	43	47	34	42	40	41	30	12	2.8	12
18	32	26	70	41	32	73	96	152	25	9.8	2.7	9.2
19	31	26	56	42	31	60	132	72	22	9.9	2.3	7.7
20	40	27	46	52	32	268	60	48	23	9.7	2.5	6.9
21	34	27	38	50	34	163	48	41	21	13	1.3	6.2
22	34	26	36	50	33	80	92	38	19	8.9	1.1	5.4
23	27	26	37	52	31	64	58	36	18	34	1.9	5.6
24	27	28	62	73	30	58	44	35	17	53	3.2	5.6
25	29	171	45	73	30	55	43	34	15	21	9.0	5.4
26	26	454	38	53	30	58	43	32	15	80	6.4	54
27	24	84	37	48	34	154	39	99	21	51	4.6	176
28	24	63	e33	45	30	75	426	71	46	23	69	95
29	25	53	36	44	---	62	162	56	22	17	108	36
30	25	44	e33	43	---	58	79	44	17	14	34	19
31	24	---	e38	54	---	62	---	44	---	10	18	---
TOTAL	904	1453	1424	1613	1039	2309	2159	2296	936	693.0	471.9	703.5
MEAN	29.2	48.4	45.9	52.0	37.1	74.5	72.0	74.1	31.2	22.4	15.2	23.4
MAX	67	454	81	101	55	268	426	503	74	80	108	176
MIN	22	21	33	32	30	28	39	32	15	8.2	1.1	4.2
CFSM	0.30	0.49	0.47	0.53	0.38	0.76	0.73	0.75	0.32	0.23	0.15	0.24
IN.	0.34	0.55	0.54	0.61	0.39	0.87	0.82	0.87	0.35	0.26	0.18	0.27

e Estimated

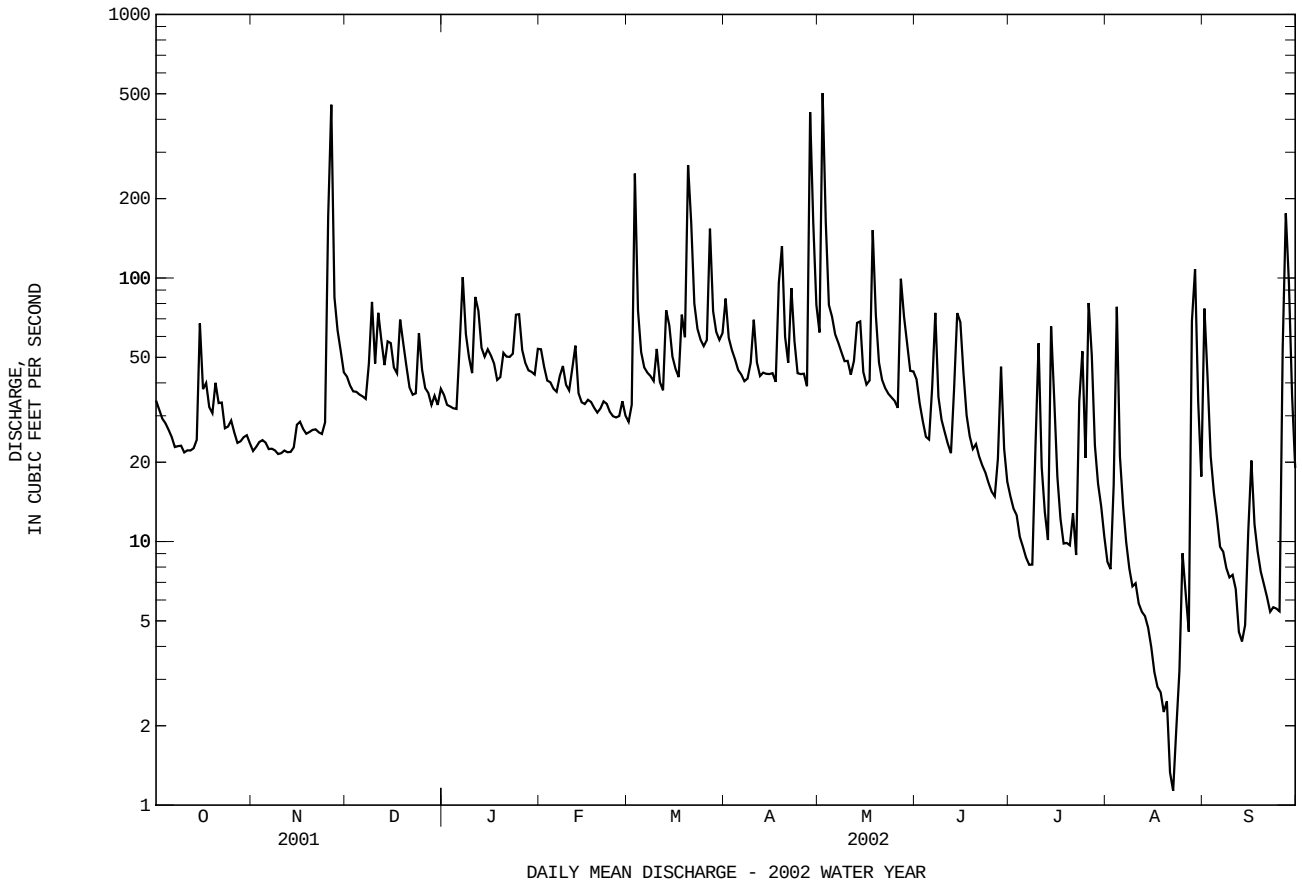
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1958, 1976 - 1980, 1985 - 2002, BY WATER YEAR (WY)

MEAN	70.6	97.1	117	146	141	167	138	125	94.4	73.5	62.5	71.1
MAX	336	260	386	386	375	368	351	367	294	312	315	432
(WY)	1980	1997	1997	1979	1979	1994	1952	1989	1951	1945	1955	1979
MIN	14.7	22.5	35.4	34.0	37.1	74.5	60.0	39.5	25.5	13.8	15.1	12.8
(WY)	1942	1942	1999	1942	2002	2002	1947	1955	1986	1999	1957	1986

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1940 - 1958, 1976 - 1980, 1985 - 2002	
ANNUAL TOTAL	32039		16001.4			
ANNUAL MEAN	87.8		43.8		109	
HIGHEST ANNUAL MEAN					196	1979
LOWEST ANNUAL MEAN					43.8	2002
HIGHEST DAILY MEAN	1990	Jun 23	503	May 2	5250	Sep 6 1979
LOWEST DAILY MEAN	16	(a)	1.1	Aug 22	1.1	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	18	Sep 13	2.1	Aug 17	2.1	Aug 17 2002
MAXIMUM PEAK FLOW			1120	Nov 26	(b)35400	Jun 22 1972
MAXIMUM PEAK STAGE			7.14	Nov 26	(c)25.40	Jun 22 1972
INSTANTANEOUS LOW FLOW			1.1	(d)	1.1	(d)
ANNUAL RUNOFF (CFSM)	0.89		0.45		1.10	
ANNUAL RUNOFF (INCHES)	12.11		6.05		15.00	
10 PERCENT EXCEEDS	151		73		185	
50 PERCENT EXCEEDS	58		36		71	
90 PERCENT EXCEEDS	24		8.3		26	

a Sept. 17, 18.
b From rating curve extended above 11,000 ft^3/s on basis of contracted-opening measurement of peak flow.
c From floodmarks.
d Aug. 21, 22, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01594440 PATUXENT RIVER NEAR BOWIE, MD

LOCATION.--Lat 38°57'21.3", long 76°41'37.3", Anne Arundel County, Hydrologic Unit 02060006, on left bank 45 ft upstream from bridge on U.S. Highway 50 (John Hanson Highway), 3.0 mi east of Bowie City Hall, 3.1 mi downstream from mouth of Little Patuxent River, 4.2 mi northwest of Davidsonville, and 60 mi upstream from mouth.

DRAINAGE AREA.--348 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1955 to June 1977 (gage heights and discharge measurements only), June 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 13.10 ft above National Geodetic Vertical Datum of 1929. Prior to June 27, 1977, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (doubtful/missing record), which are fair. Flow regulated by T. Howard Duckett Reservoir, usable capacity 5,600,000,000 gal, 21 mi upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, UNKNOWN; minimum discharge, 68 ft^3/s, Aug. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	118	149	129	167	132	268	284	155	89	78	283
2	131	119	143	129	158	136	219	e760	136	88	77	294
3	120	120	142	131	151	511	181	e1400	129	85	98	141
4	116	123	133	127	148	367	170	374	122	82	137	107
5	109	125	132	126	140	213	161	298	119	79	118	93
6	108	118	132	154	136	177	155	252	132	77	90	89
7	109	118	132	352	150	166	153	220	e330	76	79	86
8	106	121	145	239	167	161	151	211	e210	78	77	86
9	106	117	287	184	152	157	153	194	e150	79	73	85
10	108	116	205	170	144	184	284	189	e130	278	73	83
11	108	119	229	198	147	180	202	174	117	144	75	81
12	109	121	260	292	155	150	164	165	113	98	74	78
13	109	118	176	200	147	212	158	273	117	88	74	77
14	112	117	165	173	133	286	160	233	222	192	73	78
15	186	116	192	163	132	195	159	182	223	244	74	88
16	170	122	167	159	134	169	153	163	173	123	75	104
17	151	121	156	155	136	162	149	158	133	93	75	102
18	140	121	182	151	134	238	258	412	118	85	74	88
19	124	124	201	145	132	254	723	376	120	81	75	83
20	124	120	168	180	130	370	371	211	109	81	73	81
21	133	121	152	186	135	735	249	176	105	79	74	81
22	128	123	142	183	135	325	388	161	99	98	73	81
23	122	120	141	177	133	235	321	154	97	87	72	82
24	117	118	196	187	133	202	217	148	96	245	74	81
25	118	149	200	238	134	188	198	145	92	131	77	79
26	115	580	156	190	132	181	201	139	90	118	82	94
27	112	390	147	167	139	380	182	185	89	216	79	396
28	115	211	141	161	132	300	e690	245	120	125	129	315
29	117	173	140	154	---	217	e1500	181	113	101	438	192
30	116	159	136	149	---	196	407	158	95	88	200	123
31	117	---	124	150	---	192	---	145	---	85	117	---
TOTAL	3789	4538	5171	5499	3966	7571	8745	8366	4054	3613	3057	3731
MEAN	122	151	167	177	142	244	292	270	135	117	98.6	124
MAX	186	580	287	352	167	735	1500	1400	330	278	438	396
MIN	106	116	124	126	130	132	149	139	89	76	72	77
CFSM	0.35	0.43	0.48	0.51	0.41	0.70	0.84	0.78	0.39	0.33	0.28	0.36
IN.	0.41	0.49	0.55	0.59	0.42	0.81	0.93	0.89	0.43	0.39	0.33	0.40

e Estimated

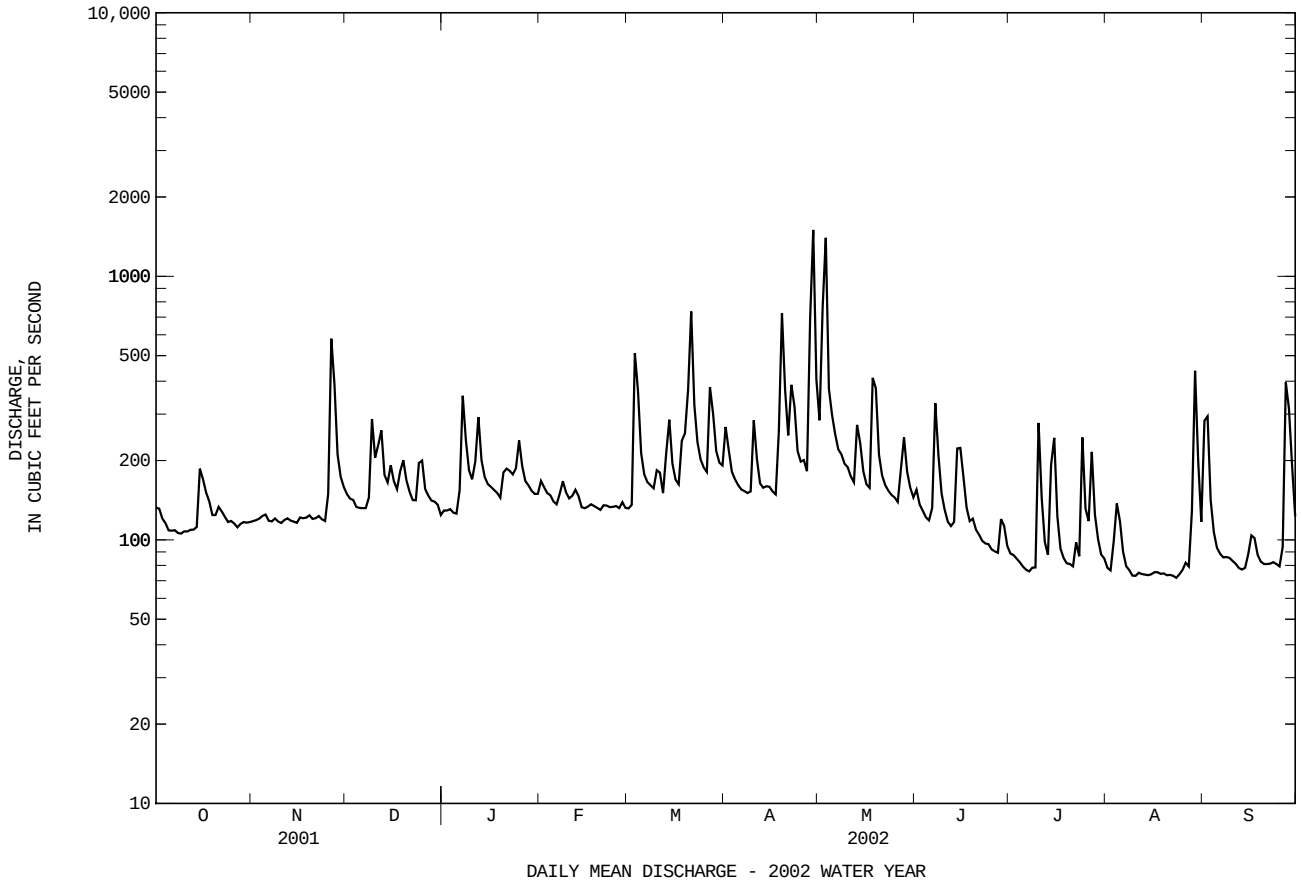
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2002, BY WATER YEAR (WY)

MEAN	240	293	387	477	460	595	500	453	327	212	201	250
MAX	1093	747	1357	1316	1232	1358	1247	1291	846	579	532	1358
(WY)	1980	1997	1997	1978	1979	1993	1983	1989	1989	1996	1979	1979
MIN	80.4	108	128	119	142	173	167	154	115	97.3	86.1	65.2
(WY)	1987	1982	1999	1981	2002	1981	1985	1986	1991	1999	1987	1986

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1977 - 2002	
ANNUAL TOTAL	110245		62100			
ANNUAL MEAN	302		170		367	
HIGHEST ANNUAL MEAN					637	1979
LOWEST ANNUAL MEAN					170	2002
HIGHEST DAILY MEAN	2640	Jun 8	(e)1500	Apr 29	8860	Jan 27 1978
LOWEST DAILY MEAN	95	Sep 18	72	Aug 23	56	(a)
ANNUAL SEVEN-DAY MINIMUM	101	Sep 13	74	Aug 18	57	Sep 15 1986
MAXIMUM PEAK FLOW			UNKNOWN		(b)31100	Jun 22 1972
MAXIMUM PEAK STAGE			UNKNOWN		(c)27.90	Jun 22 1972
INSTANTANEOUS LOW FLOW			68	Aug 23	32	Aug 9 1966
ANNUAL RUNOFF (CFSM)	0.87		0.49		1.05	
ANNUAL RUNOFF (INCHES)	11.78		6.64		14.32	
10 PERCENT EXCEEDS	525		270		755	
50 PERCENT EXCEEDS	205		140		218	
90 PERCENT EXCEEDS	116		81		103	

e Estimated.
a Sept. 17-19, 1986.
b From rating curve extended above 9,200 ft^3/s on basis of contracted-opening measurement of peak flow.
c From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-80, 1985 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1977 to September 1980, October 1984 to September 1991.
WATER TEMPERATURE: December 1977 to September 1980, October 1984 to September 1991.
SUSPENDED-SEDIMENT DISCHARGE: October 1985 to September 1991.

REMARKS.--Water-quality samples are collected from bridge on Governor Bridge Road located 0.3 mi downstream from U.S. Highway 50 (John Hanson Highway). On May 6 and Nov. 16, 1994 samples were collected and analyzed using ultraclean methodologies. Data on trace metals for these dates are available from the University of Delaware. Data on organics for these dates are available from George Mason University.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1985-91): Maximum daily, 954 microsiemens, Dec. 15, 1989; minimum daily, 100 microsiemens, May 7, 1989.
WATER TEMPERATURE (water years 1985-91): Maximum daily, 29.0°C, July 25, 1987; minimum daily, 0.0°C, on many days during winter periods.
SEDIMENT CONCENTRATION: Maximun daily mean, 700 mg/L, June 3, 1985; minimum daily mean, 1 mg/L, Jan. 22,1990.
SEDIMENT LOAD: Maximum daily, 4,050 tons, May 7, 1989; minimum daily, 0.55 ton, Jan. 22, 1990.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
02...	0915	ENVIRONMENTAL	129	312	7.5	18.0	14.5	760	8.9	88	71	20.3
15...	0900	ENVIRONMENTAL	154	315	7.5	15.0	17.0	761	6.8	70	--	--
NOV												
05...	1015	ENVIRONMENTAL	122	343	7.5	11.0	13.0	766	8.4	79	--	--
26...	1000	ENVIRONMENTAL	653	260	7.4	16.0	25.0	768	--	--	--	--
26...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
DEC												
04...	0930	ENVIRONMENTAL	131	313	7.7	7.0	9.0	769	11.2	96	--	--
JAN												
07...	1130	ENVIRONMENTAL	410	294	7.5	4.0	4.0	751	12.4	96	70	19.8
FEB												
12...	1015	ENVIRONMENTAL	142	368	7.7	5.5	5.5	762	12.3	97	--	--
12...	*1016*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAR												
13...	1100	ENVIRONMENTAL	178	324	7.5	10.5	8.5	761	10.5	90	--	--
20...	1300	ENVIRONMENTAL	349	292	7.4	10.0	9.5	763	10.8	95	--	--
26...	1130	ENVIRONMENTAL	175	328	7.6	9.5	10.0	768	10.1	89	--	--
APR												
02...	1230	ENVIRONMENTAL	216	304	7.6	20.0	12.5	765	10.4	98	71	19.9
02...	*1231*	*REPLICATE*	--	--	--	--	--	--	--	--	*71*	*19.8*
29...	1000	ENVIRONMENTAL	944	178	7.2	14.0	15.0	757	7.9	79	--	--
29...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
07...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	--
07...	1045	ENVIRONMENTAL	217	283	7.4	23.5	16.5	765	8.6	87	--	--
JUN												
05...	0930	ENVIRONMENTAL	113	327	7.4	29.5	22.0	761	7.0	80	--	--
JUL												
01...	*1229*	*BLANK*	--	--	--	--	--	--	--	--	--	*<.01*
01...	1230	ENVIRONMENTAL	87	348	7.6	33.5	--	765	7.4	--	74	21.5
24...	0845	ENVIRONMENTAL	311	284	7.4	24.5	25.0	764	6.1	73	--	--
AUG												
01...	1000	ENVIRONMENTAL	76	355	7.6	35.0	25.0	760	6.7	81	--	--
01...	*1001*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
29...	0945	ENVIRONMENTAL	499	199	7.3	23.0	20.5	765	6.8	75	--	--
SEP												
05...	*1014*	*BLANK*	--	--	--	--	--	--	--	--	--	--
05...	1015	ENVIRONMENTAL	92	323	7.6	28.0	21.5	763	7.2	82	--	--
27...	0915	ENVIRONMENTAL	491	274	7.0	22.0	19.0	756	7.2	78	--	--

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

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
02...	4.82	28.1	5.30	53	64	18.7	42.6	.3	7.99	<10	174	2.3	1.43
15...	--	--	--	--	--	--	--	--	7.3	10	--	2.0	1.40
NOV													
05...	--	--	--	--	--	--	--	--	6.8	<10	--	2.2	1.43
26...	--	--	--	--	--	--	--	--	5.7	192	--	3.1	1.44
26...	--	--	--	--	--	--	--	--	*5.8*	*172*	--	*3.0*	*1.40*
DEC													
04...	--	--	--	--	--	--	--	--	9.4	10	--	2.4	1.70
JAN													
07...	5.05	24.6	4.85	44	53	17.3	41.2	.3	7.16	60	168	2.8	2.04
FEB													
12...	--	--	--	--	--	--	--	--	5.9	<10	--	2.7	2.04
12...	--	--	--	--	--	--	--	--	*5.9*	*<10*	--	*2.6*	*2.01*
MAR													
13...	--	--	--	--	--	--	--	--	6.5	<10	--	1.9	1.30
20...	--	--	--	--	--	--	--	--	6.3	30	--	1.7	1.01
26...	--	--	--	--	--	--	--	--	7.7	<10	--	1.9	1.39
APR													
02...	5.20	27.6	3.86	47	57	16.6	46.4	.2	6.27	<10	171	1.6	1.11
02...	*5.16*	*27.2*	*3.94*	--	--	*16.5*	*47.1*	*.2*	*6.19*	*<10*	*178*	*1.5*	*1.11*
29...	--	--	--	--	--	--	--	--	5.5	62	--	1.4	.58
29...	--	--	--	--	--	--	--	--	*5.6*	*55*	--	*1.5*	*.56*
MAY													
07...	--	--	--	--	--	--	--	--	*<.5*	*<10*	--	--	--
07...	--	--	--	--	--	--	--	--	9.0	18	--	1.8	1.19
JUN													
05...	--	--	--	--	--	--	--	--	8.4	20	--	2.0	1.32
JUL													
01...	*<.008*	*<.09*	*<.10*	--	--	*<.1*	*<.30*	*<.10*	*<.13*	*14*	*<10*	--	--
01...	5.01	.7	6.07	--	--	21.1	48.4	.47	7.61	21	200	1.9	1.36
24...	--	--	--	--	--	--	--	--	5.2	E147	--	2.3	1.34
AUG													
01...	--	--	--	--	--	--	--	--	8.2	10	--	1.7	1.16
01...	--	--	--	--	--	--	--	--	*8.2*	*<10*	--	*1.7*	*1.15*
29...	--	--	--	--	--	--	--	--	5.0	66	--	1.8	.84
SEP													
05...	--	--	--	--	--	--	--	--	*<.2*	*<10*	--	--	--
05...	--	--	--	--	--	--	--	--	8.6	<10	--	1.8	1.26
27...	--	--	--	--	--	--	--	--	5.0	152	--	2.6	1.34

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

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
02...	.026	1.46	.49	.87	.90	2.4	.38	.41	.100	.053	.03	4.4	227
15...	.016	1.42	.05	.60	.46	1.9	.55	.41	.122	.044	.03	6.1	--
NOV													
05...	.030	1.46	.24	.72	.62	2.1	.48	.38	.075	.028	E.01	5.7	--
26...	.018	1.46	E.02	1.6	.38	1.8	--	--	.49	.026	<.02	17.0	--
26...	*.017*	*1.42*	*E.03*	*1.6*	*.43*	*1.8*	--	--	*.47*	*.029*	*<.02*	*16.0*	--
DEC													
04...	.024	1.72	.24	.70	.68	2.4	.46	.44	.082	.033	.03	4.3	--
JAN													
07...	.037	2.08	.14	.75	.50	2.6	.61	.36	.199	.037	.02	6.3	144
FEB													
12...	.029	2.07	.18	.60	.55	2.6	.42	.37	.085	.036	.03	3.3	--
12...	*.029*	*2.04*	*.18*	*.59*	*.56*	*2.6*	*.42*	*.39*	*.083*	*.037*	*.02*	*3.8*	--
MAR													
13...	.021	1.32	.17	.59	.58	1.9	.42	.41	.080	.028	E.01	4.8	--
20...	.016	1.03	.12	.63	.40	1.4	.51	.28	.135	.029	E.01	6.3	--
26...	.014	1.40	.10	.55	.41	1.8	.45	.31	.077	.029	E.01	4.2	--
APR													
02...	.011	1.12	.07	.43	.39	1.5	.36	.32	.072	.034	E.02	4.5	293
02...	*.010*	*1.12*	*.06*	*.40*	*.38*	*1.5*	*.34*	*.32*	*.073*	*.035*	*E.02*	*4.3*	*255*
29...	.016	.60	.07	.77	.48	1.1	.70	.42	.193	.033	E.01	11.1	--
29...	*.016*	*.58*	*.07*	*.95*	*.50*	*1.1*	*.88*	*.43*	*.182*	*.033*	*E.02*	*11.2*	--
MAY													
07...	*<.006*	*<.05*	*<.04*	*<.08*	*<.10*	--	--	--	*<.004*	*<.006*	*<.02*	*<.6*	--
07...	.016	1.20	.10	.56	.45	1.6	.46	.34	.116	.037	.02	5.1	--
JUN													
05...	.019	1.34	.06	.61	.48	1.8	.55	.42	.194	.070	.05	5.5	--
JUL													
01...	*<.008*	*<.05*	*<.04*	*E.05*	*<.10*	--	--	--	*<.004*	*E.003*	*<.02*	*<.6*	*<10*
01...	.028	1.39	.09	.46	.47	1.9	.38	.38	.19	.133	.12	4.6	142
24...	.018	1.36	.04	.97	.50	1.9	.93	.45	.33	.046	.03	10.9	--
AUG													
01...	.013	1.17	.05	.57	.42	1.6	.52	.37	.132	.065	.05	4.3	--
01...	*.013*	*1.16*	*.05*	*.55*	*.46*	*1.6*	*.50*	*.40*	*.132*	*.067*	*.05*	*4.4*	--
29...	.012	.85	.04	.91	.37	1.2	.86	.33	.29	.050	.03	9.7	--
SEP													
05...	*<.008*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*E.002*	*<.004*	*<.02*	*<.6*	--
05...	.017	1.28	.09	.52	.54	1.8	.43	.44	.197	.106	.09	5.3	--
27...	.011	1.35	E.03	1.2	.41	1.8	--	--	.57	.116	.10	11.6	--

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

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
02...	106	6.2	2.2	--
15...	--	15	6.3	--
NOV				
05...	--	5.0	1.6	--
26...	--	202	356	--
26...	--	*206*	--	--
DEC				
04...	--	6.2	2.2	--
JAN				
07...	149	61	67.4	--
FEB				
12...	--	4.8	1.8	--
12...	--	*4.0*	--	--
MAR				
13...	--	13	6.2	--
20...	--	35	32.7	--
26...	--	15	7.2	--
APR				
02...	130	7.4	4.3	--
02...	*129*	*9.3*	--	--
29...	--	91	232	75
29...	--	*88*	--	*74*
MAY				
07...	--	*<.1*	--	--
07...	--	24	13.9	--
JUN				
05...	--	22	6.9	--
JUL				
01...	*<2.0*	*<.1*	--	--
01...	88.3	13	3.1	--
24...	--	158	133	--
AUG				
01...	--	11	2.3	--
01...	--	*13*	--	--
29...	--	109	147	--
SEP				
05...	--	*<.1*	--	--
05...	--	18	4.5	--
27...	--	204	270	--

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

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD

LOCATION.--Lat 38°48'51.2", long 76°44'55.4", Prince Georges County, Hydrologic Unit 02060006, on left bank 1000 ft upstream from bridge on Water Street, 0.2 mi south of Upper Marlboro, and 4.7 mi upstream from mouth.

DRAINAGE AREA.--89.7 mi^2.

PERIOD OF RECORD.--October 1985 to April 1989, April 1992 to current year.

GAGE.--Water-stage recorder elevation of gage is 5 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. U.S. Geological Survey gage-height telemeter at station.Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 29	0030	*641	*6.70	No peak greater than base discharge.			

Minimum discharge, 0.32 ft^3/s, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	9.4	16	18	24	16	70	67	9.0	5.3	2.4	244
2	14	9.5	14	16	24	18	47	355	6.4	4.6	2.3	188
3	12	10	13	15	19	254	39	360	9.6	4.5	8.3	50
4	11	9.4	13	17	19	95	33	99	8.5	3.9	49	22
5	10	9.3	13	15	20	46	30	73	12	3.7	29	14
6	11	9.2	14	36	19	34	28	51	38	3.3	43	9.9
7	15	9.6	13	131	31	29	26	43	38	3.0	8.7	7.1
8	9.0	10	27	57	32	25	26	38	17	3.1	4.3	6.3
9	8.7	9.8	74	35	24	23	27	34	12	3.4	2.9	5.5
10	8.9	9.7	32	29	21	31	90	35	11	3.4	2.3	4.7
11	9.1	9.9	76	41	22	26	44	e29	9.1	3.7	2.0	4.4
12	9.3	9.7	56	44	21	23	32	e26	8.3	3.5	1.9	3.5
13	8.9	9.5	33	32	20	79	30	e35	22	3.0	1.5	3.3
14	8.7	10	27	26	19	65	29	e29	51	71	1.3	3.3
15	32	11	25	23	19	40	28	e23	35	41	1.3	10
16	16	13	20	23	18	31	26	20	24	16	1.4	7.1
17	15	16	21	20	16	29	23	20	14	9.3	1.3	5.6
18	10	9.3	31	19	15	89	95	344	10	6.3	1.3	4.9
19	8.9	9.4	22	20	15	60	250	169	30	4.7	1.4	3.5
20	9.0	10	19	51	14	130	123	64	25	3.8	1.2	2.9
21	9.1	9.4	18	38	16	151	62	42	11	3.3	1.1	2.1
22	7.6	9.0	16	37	18	74	146	34	8.1	2.8	1.5	2.7
23	8.4	8.9	16	33	18	48	82	27	6.9	4.2	2.4	2.4
24	9.4	9.1	61	32	15	38	47	20	6.7	7.2	2.5	2.0
25	8.4	21	39	39	14	34	44	20	5.3	9.1	1.7	2.0
26	7.6	93	27	31	15	34	39	11	4.7	13	6.3	4.3
27	7.1	37	22	27	24	162	30	15	4.5	22	2.7	66
28	7.6	23	19	24	19	77	360	16	7.5	9.0	74	26
29	7.8	19	19	24	---	52	455	18	18	6.9	167	16
30	9.2	17	18	23	---	42	118	13	6.9	4.6	38	9.7
31	9.2	---	17	24	---	43	---	14	---	3.1	18	---
TOTAL	331.9	450.1	831	1000	551	1898	2479	2144	469.5	285.7	482.0	733.2
MEAN	10.7	15.0	26.8	32.3	19.7	61.2	82.6	69.2	15.7	9.22	15.5	24.4
MAX	32	93	76	131	32	254	455	360	51	71	167	244
MIN	7.1	8.9	13	15	14	16	23	11	4.5	2.8	1.1	2.0
CFSM	0.12	0.17	0.30	0.36	0.22	0.68	0.92	0.77	0.17	0.10	0.17	0.27
IN.	0.14	0.19	0.34	0.41	0.23	0.79	1.03	0.89	0.19	0.12	0.20	0.30

e Estimated

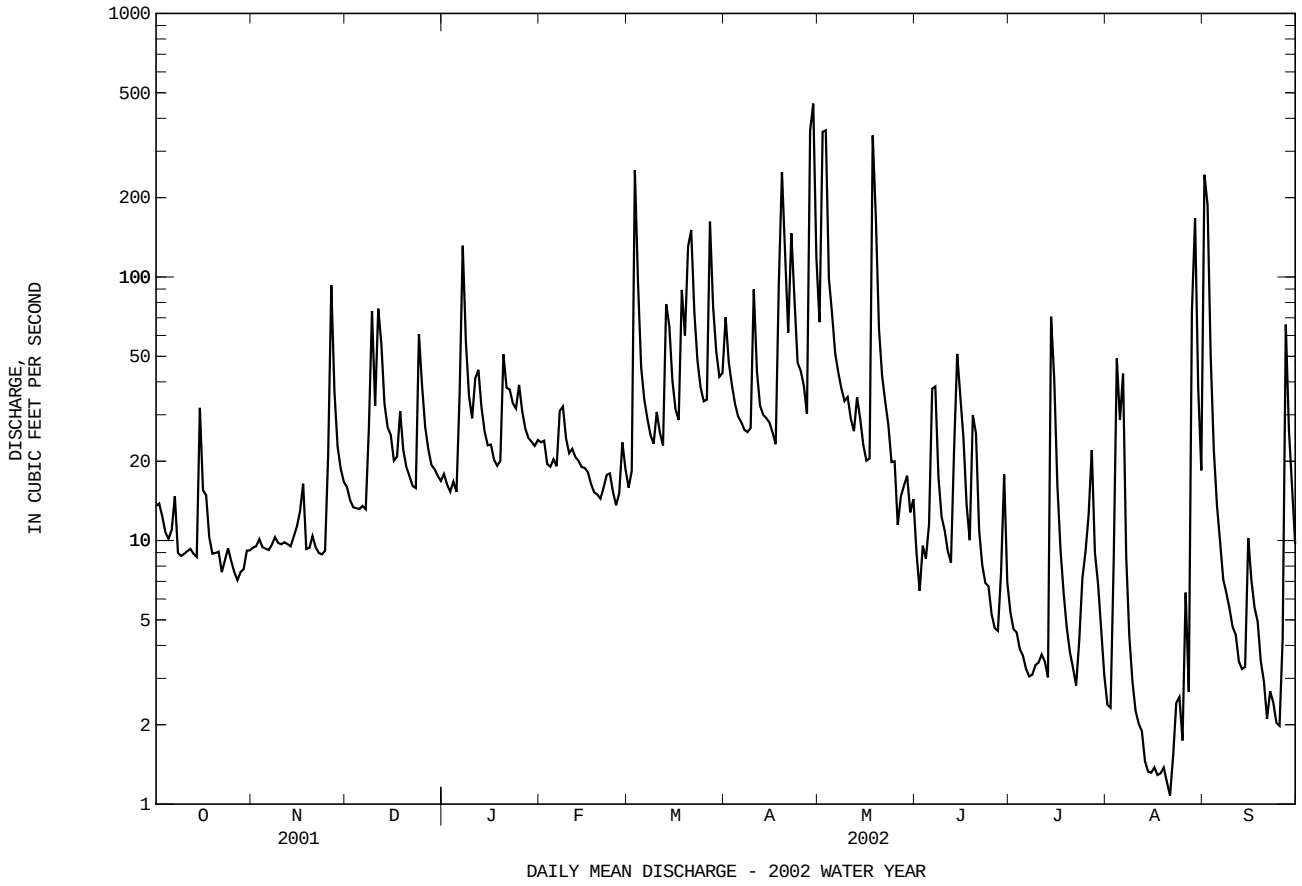
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	45.2	78.6	90.6	118	129	176	111	86.2	53.5	52.3	43.8	63.1
MAX	145	178	261	260	333	445	191	164	118	162	95.5	322
(WY)	1996	1998	1997	1996	1998	1994	1993	1996	1996	2000	1994	1999
MIN	6.54	11.0	24.5	32.3	19.7	61.2	49.1	21.4	9.42	5.61	9.74	9.35
(WY)	1999	1999	1999	2002	2002	2002	1995	1999	1986	1999	1995	1986

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002	
ANNUAL TOTAL	26503.4		11655.4			
ANNUAL MEAN	72.6		31.9		88.8	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					31.9	2002
HIGHEST DAILY MEAN	771	Mar 22	455	Apr 29	4090	Sep 16 1999
LOWEST DAILY MEAN	7.1	Oct 27	1.1	Aug 21	1.1	Aug 21 2002
ANNUAL SEVEN-DAY MINIMUM	8.0	Oct 22	1.3	Aug 15	1.3	Aug 15 2002
MAXIMUM PEAK FLOW			641	Apr 29	(a)10400	Sep 16 1999
MAXIMUM PEAK STAGE			6.70	Apr 29	15.39	Sep 16 1999
INSTANTANEOUS LOW FLOW			0.32	Sep 21	0.32	Sep 21 2002
ANNUAL RUNOFF (CFSM)	0.81		0.36		0.99	
ANNUAL RUNOFF (INCHES)	10.99		4.83		13.45	
10 PERCENT EXCEEDS	141		65		183	
50 PERCENT EXCEEDS	43		18		48	
90 PERCENT EXCEEDS	9.7		3.4		9.0	

a From rating curve extended above 2,400 ft^3/s.



01594800 ST. LEONARD CREEK NEAR ST. LEONARD, MD

LOCATION.--Lat 38'26'56.1", long 76'29'42.5", Calvert County, Hydrologic Unit 02060006, on downstream side of bridge on Parran Road, 1.6 mi west of Long Beach, 2.0 mi southeast of St. Leonard, 3.8 mi northwest of Lusby, and 5.2 miles above mouth.

DRAINAGE AREA.--6.73 mi^2.

PERIOD OF RECORD.--November 1956 to September 1968, October 2000 to September 2002.

GAGE.--Water-stage recorder. Elevation of gage is 5 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Water-discharge records fair except those for estimated daily discharges (ice effect, missing record, backwater), which are poor.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 26, 2001	2015	*48	*3.92	No peak greater than base discharge.			
Sep 1, 2002	2330	*33	*3.23	No peak greater than base discharge.			

2001 Water Year Minimum discharge, 1.5 ft^3/s, July 25, 26.
2002 Water Year Minimum discharge, 0 ft^3/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5.4	e2.8	e3.6	e4.1	e9.6	e7.8	e10	e6.7	e13	6.2	e5.6	e3.9
2	e5.2	e2.9	e3.4	e4.0	e8.0	e7.3	e7.9	e5.7	e33	7.9	e4.5	e2.6
3	e4.6	e2.9	e3.1	e4.0	e7.1	e7.0	e7.1	e5.7	e9.7	5.5	e3.6	e2.1
4	e4.4	e3.2	e3.0	e4.0	e6.4	e7.8	e6.6	e5.3	e6.5	5.6	e3.4	e1.9
5	e4.2	e3.1	e2.9	e4.1	e29	e16	e5.9	e5.9	e11	7.6	3.7	e1.5
6	e4.3	e2.8	e3.0	e4.2	e22	e12	e5.8	e4.6	e7.3	6.2	e2.8	e1.4
7	e4.2	e2.8	e3.0	e4.4	e12	e8.9	e5.9	e4.4	e28	3.9	e1.9	e1.4
8	e3.5	e2.9	e3.0	e6.3	e9.4	e7.7	e5.6	e4.2	e27	5.6	e1.4	1.9
9	e3.2	e3.1	e2.9	e8.8	e8.5	e7.4	e8.2	e4.4	e9.8	8.4	e1.1	2.8
10	e3.3	e6.1	e2.8	e6.6	e8.2	e6.8	e6.9	e4.4	e6.6	5.4	e1.9	3.1
11	e3.2	e4.5	e3.0	e6.3	e6.8	e6.7	e12	e4.0	e5.5	14	8.7	3.5
12	e3.1	e3.0	e3.1	e6.2	e6.2	e6.5	e15	e3.6	e4.7	6.0	15	2.0
13	e3.1	e2.6	e2.6	e5.7	e8.1	e14	e9.4	e4.3	e4.5	4.8	23	2.0
14	e3.0	e4.7	e11	e5.6	e8.4	e10	e8.0	e3.4	e4.1	3.8	11	2.2
15	e2.9	e5.4	e9.1	e6.2	e9.9	e9.1	e6.8	e3.3	e4.1	2.7	e7.7	1.9
16	e3.0	e3.6	e10	e6.2	e11	e14	e14	e3.2	e10	2.7	e6.1	e1.8
17	e2.9	e3.2	e35	e5.9	e30	e9.9	e15	e3.5	18	4.0	e5.1	e1.8
18	e2.9	e2.9	e21	e5.6	e15	e8.4	e12	e4.4	e7.9	5.6	e5.0	e1.7
19	e3.1	e2.9	e7.1	e11	e10	e7.3	e11	e13	7.6	5.9	e4.8	e1.7
20	e2.8	e2.7	e6.5	e35	e9.2	e6.9	e9.7	e8.1	6.9	e4.5	e5.0	e1.6
21	e2.8	e2.7	e6.1	e23	e8.5	e36	e9.4	e12	7.1	e3.7	e4.0	e5.4
22	e2.7	e2.7	e5.6	e17	e7.3	e34	e9.1	e15	6.8	e3.2	3.1	e3.4
23	e2.6	e2.6	e5.3	e13	e9.1	e15	e8.8	e31	8.8	2.7	3.9	e2.6
24	e2.7	e2.4	e5.0	e11	e11	e11	e8.6	e11	8.1	2.7	11	e2.4
25	e2.8	e8.8	e4.8	e9.2	e12	e8.8	e7.9	e12	7.3	e2.1	e5.5	e4.4
26	e2.9	e18	e4.6	e8.0	e13	e7.4	e7.4	e40	6.9	9.3	e3.9	e3.3
27	e3.1	e11	e4.5	e9.2	e9.6	e6.2	e7.0	e35	6.5	20	e3.2	e2.7
28	e3.2	e5.6	e4.6	e7.3	e8.5	e5.2	e6.5	e16	6.1	5.5	e3.0	e2.3
29	e3.0	e4.4	e4.3	e7.2	---	e7.4	e6.0	e10	5.9	18	e2.1	e2.1
30	e2.8	e4.0	e4.2	e14	---	e27	e5.9	e7.2	5.8	22	e2.6	e1.9
31	e2.9	---	e4.1	e14	---	e15	---	e5.7	---	8.6	e4.8	---
TOTAL	103.8	130.3	192.2	277.1	313.8	354.5	259.4	297.0	294.5	214.1	168.4	73.3
MEAN	3.35	4.34	6.20	8.94	11.2	11.4	8.65	9.58	9.82	6.91	5.43	2.44
MAX	5.4	18	35	35	30	36	15	40	33	22	23	5.4
MIN	2.6	2.4	2.6	4.0	6.2	5.2	5.6	3.2	4.1	2.1	1.1	1.4
CFSM	0.50	0.65	0.92	1.33	1.67	1.70	1.28	1.42	1.46	1.03	0.81	0.36
IN.	0.57	0.72	1.06	1.53	1.73	1.96	1.43	1.64	1.63	1.18	0.93	0.41

e Estimated

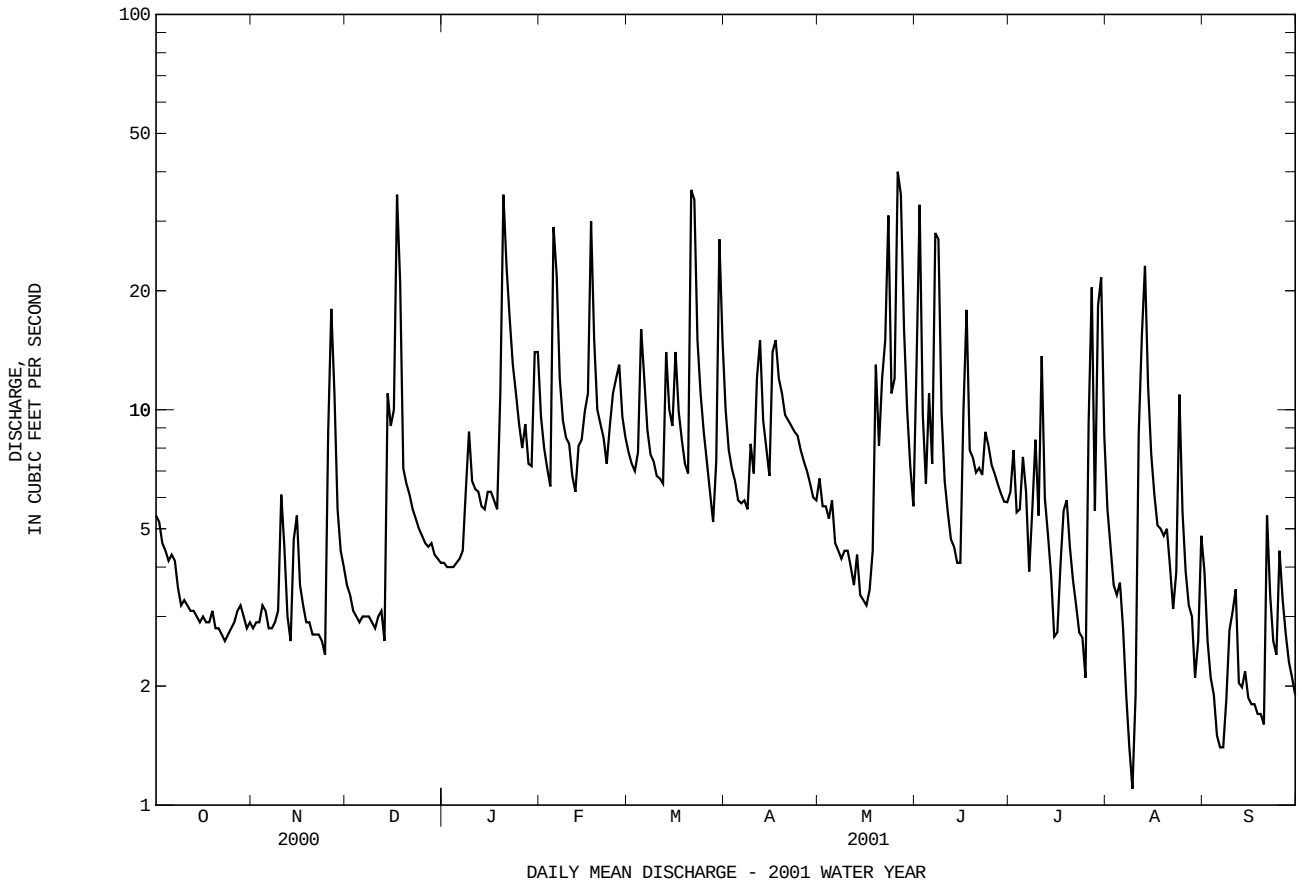
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1968, 2001, BY WATER YEAR (WY)

MEAN	4.54	6.05	7.11	8.28	9.85	11.6	10.8	8.88	6.41	4.73	4.42	4.20
MAX	10.4	11.0	11.9	13.3	24.8	22.9	26.1	26.1	13.9	10.8	14.9	13.1
(WY)	1961	1961	1958	1958	1961	1958	1958	1958	1958	1958	1958	1960
MIN	1.73	2.41	3.23	4.33	3.69	5.55	4.29	4.11	1.72	0.80	0.33	1.31
(WY)	1968	1968	1966	1966	1968	1966	1967	1957	1966	1966	1966	1967

01594800 ST. LEONARD CREEK NEAR ST. LEONARD, MD--Continued

SUMMARY STATISTICS	FOR 2001 WATER YEAR		WATER YEARS 1957 - 1968, 2001	
ANNUAL TOTAL	2678.4			
ANNUAL MEAN	7.34		7.32	
HIGHEST ANNUAL MEAN			14.5	1958
LOWEST ANNUAL MEAN			3.84	1966
HIGHEST DAILY MEAN	40	May 26	140	Aug 25 1958
LOWEST DAILY MEAN	(e)1.1	Aug 9	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	1.8	Sep 14	0.00	Aug 24 1966
MAXIMUM PEAK FLOW	48	May 26	288	Jul 30 1960
MAXIMUM PEAK STAGE	3.92	May 26	6.35	Jul 30 1960
INSTANTANEOUS LOW FLOW	1.5	(b)	0.00	(c)
ANNUAL RUNOFF (CFSM)	1.09		1.09	
ANNUAL RUNOFF (INCHES)	14.80		14.79	
10 PERCENT EXCEEDS	14		15	
50 PERCENT EXCEEDS	5.7		5.4	
90 PERCENT EXCEEDS	2.7		1.7	

e Estimated
a Aug. 24-31, Sept. 1-10, 1966.
b July 25, 26.
c No flow at times during water years 1963-66.



DAILY MEAN DISCHARGE - 2001 WATER YEAR

01594800 ST. LEONARD CREEK NEAR ST. LEONARD, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.2	e1.1	2.4	1.1	4.0	2.1	4.4	4.4	1.4	0.18	e0.00	11
2	e2.5	1.2	2.4	1.00	3.8	2.8	4.1	4.5	1.1	0.13	e0.00	13
3	e1.8	1.2	2.6	1.4	3.4	9.2	4.0	4.3	0.64	0.13	e0.00	e3.2
4	e1.4	1.3	2.8	2.1	3.4	4.4	3.9	3.8	e0.64	0.13	e0.00	e1.2
5	e1.2	2.3	2.8	2.5	2.8	4.0	3.9	5.1	e0.76	0.10	e0.00	e0.64
6	e1.9	2.7	2.8	8.4	3.2	3.9	3.6	4.1	3.3	0.08	e0.06	e0.41
7	e2.2	2.5	2.8	13	5.9	3.9	3.6	3.7	5.2	0.00	0.00	e0.32
8	e1.5	2.5	3.9	5.0	4.5	3.9	3.5	3.9	e1.9	0.00	e0.00	e0.23
9	e1.2	3.3	4.9	4.7	4.2	3.8	3.6	3.8	e1.0	0.00	e0.00	e0.13
10	e1.2	3.6	3.0	4.6	4.1	4.1	4.0	4.3	e1.0	0.00	e0.00	e0.06
11	e1.0	3.3	9.1	4.7	4.2	4.0	3.5	3.4	e0.64	0.00	e0.00	e0.01
12	1.9	3.0	5.0	4.5	3.9	3.9	3.6	3.3	e0.64	e0.00	e0.00	e0.00
13	2.5	2.7	3.6	4.3	3.9	4.4	3.6	3.3	e0.90	e0.00	e0.00	e0.00
14	1.9	e2.6	3.0	4.0	3.9	4.2	3.4	4.6	e4.5	e0.13	e0.00	e0.00
15	4.9	2.3	2.6	3.9	3.8	4.1	3.4	3.5	e1.7	e0.13	e0.00	e0.13
16	2.7	2.2	2.1	3.9	3.9	3.9	2.6	4.0	e1.0	e0.06	0.00	1.5
17	e1.5	2.4	2.3	3.8	3.8	4.0	2.3	3.6	e0.90	e0.06	0.00	1.0
18	1.7	2.8	5.2	3.8	3.6	8.3	1.9	6.2	e0.76	e0.01	0.00	e0.32
19	1.5	2.8	3.3	4.0	3.5	4.5	2.4	5.4	e0.52	e0.00	0.00	e0.23
20	1.5	3.5	2.6	6.3	2.9	8.1	3.4	4.4	e0.64	e0.00	e0.00	e0.13
21	1.9	3.1	2.1	4.7	2.9	5.6	2.9	4.1	0.77	e0.00	e0.00	e0.13
22	e1.9	2.6	1.9	4.4	3.1	4.2	10	4.3	0.65	e0.00	e0.01	e0.06
23	1.4	3.9	2.1	4.2	2.3	4.1	5.4	3.9	0.46	e0.00	e0.06	e0.06
24	2.7	4.7	5.8	4.2	2.2	4.1	4.5	3.8	0.46	e0.13	e0.23	e0.01
25	3.0	5.4	3.5	4.4	2.3	3.9	6.4	3.4	0.42	e0.01	e0.00	e0.00
26	2.2	6.2	2.9	4.0	2.5	4.0	5.0	2.8	0.35	e0.23	e0.00	e3.7
27	2.1	3.3	2.3	3.9	2.9	12	4.4	2.7	e0.23	e0.23	e0.00	8.6
28	2.1	3.2	1.9	3.9	1.8	4.4	11	2.3	0.66	e0.32	e0.76	e1.9
29	1.3	2.9	2.1	3.9	---	4.2	6.5	2.1	0.67	e0.23	8.0	e0.52
30	1.2	3.1	1.5	3.7	---	4.2	4.7	1.8	0.47	e0.01	2.9	e0.32
31	e1.2	---	1.2	3.6	---	4.5	---	1.7	---	e0.00	0.86	---
TOTAL	59.2	87.7	96.5	131.90	96.7	146.7	129.5	116.5	34.28	2.30	12.88	48.81
MEAN	1.91	2.92	3.11	4.25	3.45	4.73	4.32	3.76	1.14	0.074	0.42	1.63
MAX	4.9	6.2	9.1	13	5.9	12	11	6.2	5.2	0.32	8.0	13
MIN	1.0	1.1	1.2	1.0	1.8	2.1	1.9	1.7	0.23	0.00	0.00	0.00
CFSM	0.28	0.43	0.46	0.63	0.51	0.70	0.64	0.56	0.17	0.01	0.06	0.24
IN.	0.33	0.48	0.53	0.73	0.53	0.81	0.72	0.64	0.19	0.01	0.07	0.27

e Estimated

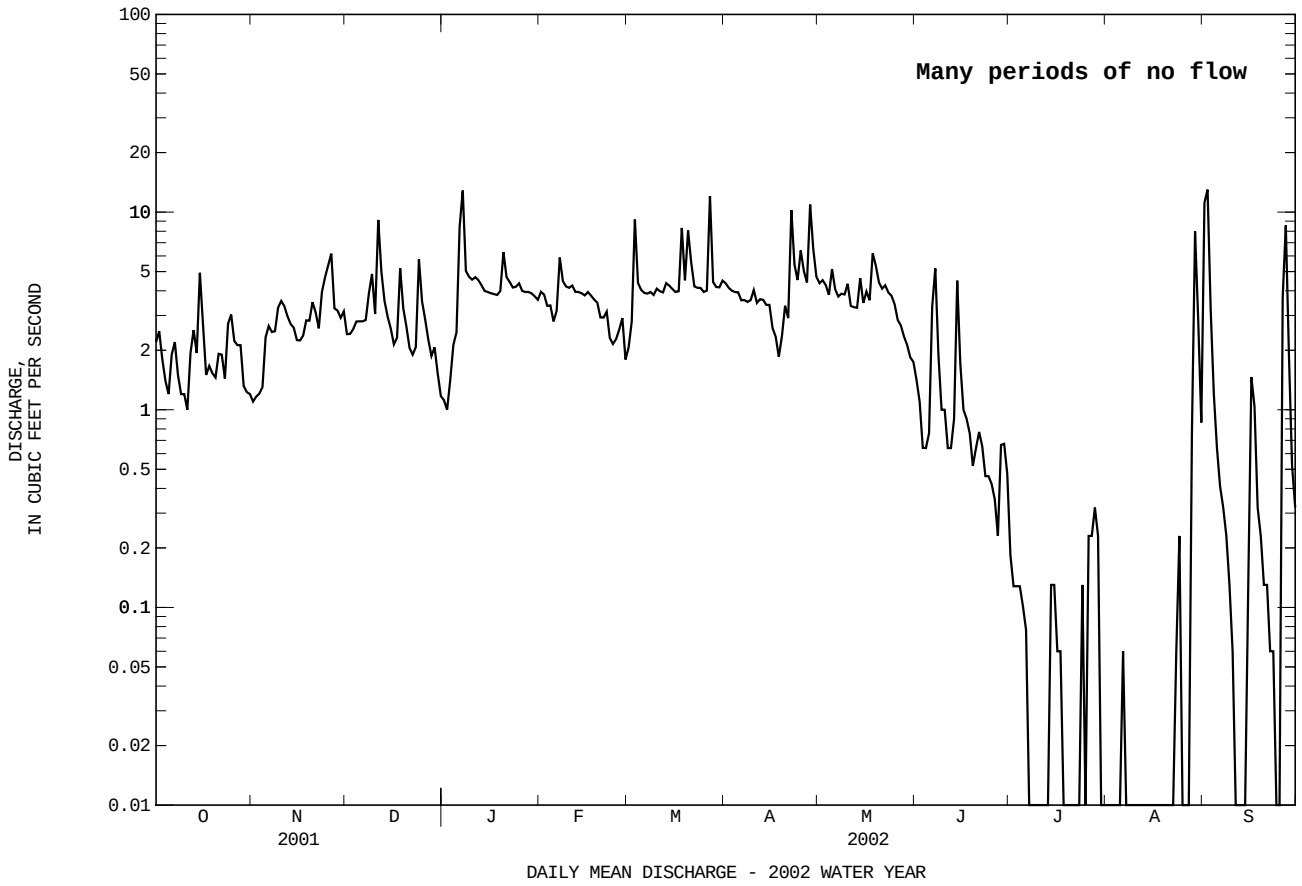
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1968, 2001 - 2002, BY WATER YEAR (WY)

MEAN	4.34	5.81	6.82	7.99	9.40	11.1	10.4	8.52	6.04	4.39	4.13	4.01
MAX	10.4	11.0	11.9	13.3	24.8	22.9	26.1	26.1	13.9	10.8	14.9	13.1
(WY)	1961	1961	1958	1958	1961	1958	1958	1958	1958	1958	1958	1960
MIN	1.73	2.41	3.11	4.25	3.45	4.73	4.29	3.76	1.14	0.074	0.33	1.31
(WY)	1968	1968	2002	2002	2002	2002	1967	2002	2002	2002	1966	1967

01594800 ST. LEONARD CREEK NEAR ST. LEONARD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 1968, 2001 - 2002	
ANNUAL TOTAL	2495.5		962.97			
ANNUAL MEAN	6.84		2.64		6.96	
HIGHEST ANNUAL MEAN					14.5	1958
LOWEST ANNUAL MEAN					2.64	2002
HIGHEST DAILY MEAN	40	May 26	13	Jan 7	140	Aug 25 1958
LOWEST DAILY MEAN	(e)1.0	Oct 11	0.00	(a)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.2	Oct 29	0.00	Jul 7	0.00	Aug 24 1966
MAXIMUM PEAK FLOW			33	Sep 1	288	Jul 30 1960
MAXIMUM PEAK STAGE			3.23	Sep 1	6.35	Jul 30 1960
INSTANTANEOUS LOW FLOW			0.00	(c)	0.00	(d)
ANNUAL RUNOFF (CFSM)	1.02		0.39		1.03	
ANNUAL RUNOFF (INCHES)	13.79		5.32		14.06	
10 PERCENT EXCEEDS	13		4.7		14	
50 PERCENT EXCEEDS	5.5		2.6		5.0	
90 PERCENT EXCEEDS	1.9		0.00		1.5	

e Estimated
a July 7-13, 19-23, 31, Aug. 1-5, 7-21, 25-27, Sept. 12-14, 25.
b Aug. 24-31, Sept. 1-10, 1966, July 7-13, 19-23, 31, Aug. 1-5, 7-21, 25-27, Sept. 12-14, 25, 2002.
c Many days.
d No flow at times during water years 1963-66, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD

LOCATION.--Lat 39°14'37.0", long 79°25'41.9", Garrett County, Hydrologic Unit 02070002, on left bank at downstream side of bridge (abandoned) on Dobbin Road, 0.6 mi south of intersection of Kempton Road, 1.2 mi from mouth, and 3.0 mi southwest of Wilson.

DRAINAGE AREA.--8.23 mi^2.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (beaver dam, ice effect), which are poor. Natural flow of stream affected by inflow from deep coal mine dewatering process. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 170 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 24	1330	266	4.51	May 18	0715	360	5.22
Mar 20	1230	504	6.38	Jul 10	0645	*588	*7.19
Apr 22	0700	228	4.22	Jul 27	1545	267	4.52
Apr 28	1130	318	4.91				

Minimum discharge, UNKNOWN

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.3	e3.1	e3.0	7.4	19	12	63	42	14	5.3	19	e5.2
2	e5.1	e3.0	e3.0	7.5	17	13	43	48	12	8.8	16	e4.8
3	e4.8	e4.6	e3.0	8.3	15	22	37	37	10	9.2	20	e4.6
4	e4.0	e3.5	e3.1	e7.8	15	18	31	32	23	5.4	17	e4.8
5	e4.8	e3.3	e3.1	e7.8	14	16	26	29	31	5.0	14	e4.3
6	e5.9	e3.2	e3.5	e7.8	13	16	24	25	31	4.6	18	e4.1
7	e4.5	e3.0	e5.1	e7.9	13	14	21	40	36	4.5	12	e4.0
8	e3.8	e3.2	13	e8.5	13	13	19	37	23	4.3	10	e3.6
9	e4.1	e4.3	22	9.5	13	12	22	43	18	5.9	9.3	e3.6
10	e3.7	e3.3	e8.6	13	15	12	33	40	14	238	8.7	e4.0
11	e3.4	e2.8	e8.2	58	33	11	23	33	13	46	8.2	e4.0
12	e3.2	e2.4	e7.6	31	22	11	21	30	11	24	7.7	e4.0
13	e3.2	e2.6	e7.0	23	20	12	21	32	36	17	7.3	e4.0
14	5.8	e2.5	e10	18	17	11	25	38	40	70	6.9	e4.1
15	5.1	e2.5	e9.0	17	16	9.7	100	32	26	32	6.6	e5.2
16	4.8	e2.5	e8.0	14	16	15	55	27	21	21	6.5	e4.5
17	6.2	e2.4	7.4	13	15	14	40	27	17	16	6.5	e3.9
18	4.3	e2.5	31	12	13	26	33	180	14	22	6.7	e3.8
19	4.2	e2.7	19	11	13	24	30	75	12	61	7.7	3.8
20	4.2	e4.3	19	10	15	274	45	49	10	54	10	3.8
21	3.4	e3.9	13	9.4	20	130	70	39	8.9	30	6.7	2.8
22	3.0	e2.9	11	8.8	17	60	164	32	8.0	22	6.4	e15
23	3.1	e1.9	10	12	15	44	72	27	7.4	19	6.6	e12
24	2.9	e1.7	16	153	14	38	48	24	6.9	19	19	e6.0
25	3.5	e5.8	11	92	13	32	43	24	6.4	16	14	e6.6
26	e3.2	e5.6	9.3	43	15	42	35	19	6.0	65	7.7	e10
27	e3.6	e3.5	8.8	32	15	50	30	17	6.3	155	7.4	e34
28	e4.1	e3.4	8.5	25	13	37	152	15	8.8	78	e7.3	e22
29	e3.6	e3.1	8.0	22	---	33	85	16	6.7	43	e7.8	e16
30	e3.2	e3.0	e7.8	20	---	29	52	17	5.7	32	e7.0	e10
31	e3.1	---	7.7	21	---	47	---	14	---	24	e6.0	---
TOTAL	126.1	96.5	304.7	730.7	449	1097.7	1463	1140	483.1	1157.0	314.0	218.5
MEAN	4.07	3.22	9.83	23.6	16.0	35.4	48.8	36.8	16.1	37.3	10.1	7.28
MAX	6.2	5.8	31	153	33	274	164	180	40	238	20	34
MIN	2.9	1.7	3.0	7.4	13	9.7	19	14	5.7	4.3	6.0	2.8
CFSM	0.49	0.39	1.19	2.86	1.95	4.30	5.93	4.47	1.96	4.53	1.23	0.88
IN.	0.57	0.44	1.38	3.30	2.03	4.96	6.61	5.15	2.18	5.23	1.42	0.99

e Estimated

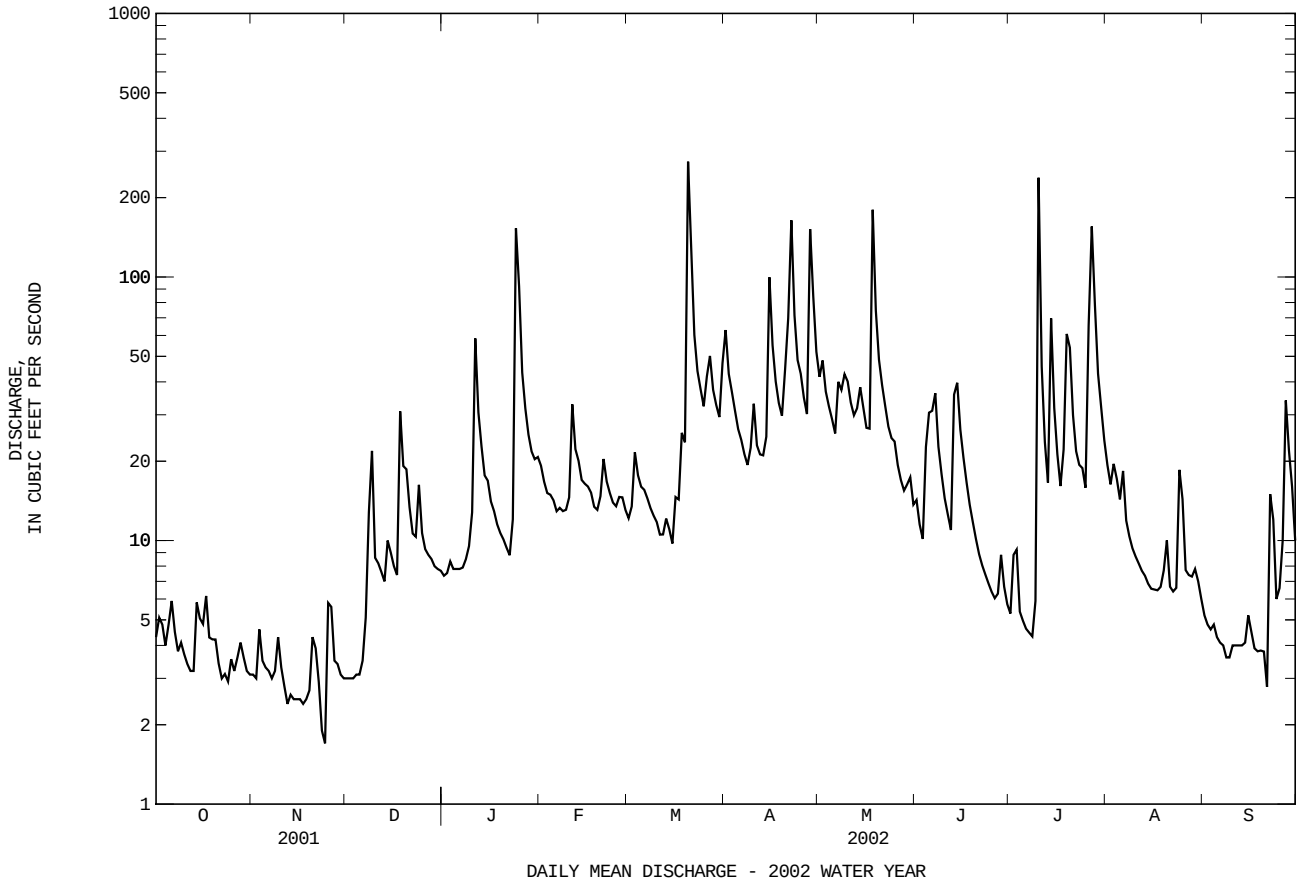
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

MEAN	9.14	18.3	27.9	26.6	36.3	39.7	33.2	28.4	18.2	19.4	11.7	8.23
MAX	26.2	42.8	51.9	51.2	68.5	71.6	61.0	69.8	62.8	46.1	40.2	41.3
(WY)	1997	1987	1985	1996	1994	1994	1984	1996	1981	2001	1980	1996
MIN	3.27	2.20	5.09	8.85	7.24	13.9	9.60	9.35	2.78	2.84	1.71	2.64
(WY)	1993	1999	1999	1981	1993	1990	1995	1991	1999	1999	1999	1999

01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1980 - 2002	
ANNUAL TOTAL	7950.6		7580.3			
ANNUAL MEAN	21.8		20.8		22.8	
HIGHEST ANNUAL MEAN					35.6	1996
LOWEST ANNUAL MEAN					14.8	1999
HIGHEST DAILY MEAN	276	Jul 29	274	Mar 20	492	Feb 9 1994
LOWEST DAILY MEAN	(e)1.7	Nov 24	(e)1.7	Nov 24	(e)0.62	Aug 18 1999
ANNUAL SEVEN-DAY MINIMUM	2.5	Nov 12	2.5	Nov 12	0.93	Aug 30 1999
MAXIMUM PEAK FLOW			588	Jul 10	(a)863	Nov 5 1985
MAXIMUM PEAK STAGE			7.19	Jul 10	10.10	Nov 5 1985
INSTANTANEOUS LOW FLOW			UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.65		2.52		2.77	
ANNUAL RUNOFF (INCHES)	35.94		34.26		37.65	
10 PERCENT EXCEEDS	47		43		48	
50 PERCENT EXCEEDS	12		13		15	
90 PERCENT EXCEEDS	3.4		3.4		3.6	

e Estimated
a From rating curve extended above 450 ft^3/s on basis of runoff comparisons with nearby stations.



01594936 NORTH FORK SAND RUN NEAR WILSON, MD

LOCATION.--Lat 39°15'37.1", long 79°24'35.2", Garrett County, Hydrologic Unit 02070002, on right bank, 0.1 mi northwest of Wilson-Corona Road, 0.1 mi upstream from mouth and 0.8 mi northwest of Wilson.

DRAINAGE AREA.--1.91 mi^2.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and steel weir plate. Elevation of gage is 2,515 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good above 0.5 ft^3/s and fair below except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 24	1200	43	3.29	Apr 28	0900	83	3.82
Mar 20	1030	125	4.30	May 18	0445	122	4.27
Apr 21	1715	42	3.26	Jul 10	0515	50	3.39
Apr 22	0115	69	3.64	Jul 27	0730	*323	*6.07

Minimum discharge, 0.16 ft^3/s, Nov. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.26	0.38	0.38	0.58	3.5	2.1	15	7.7	2.1	0.38	2.6	0.28
2	0.37	0.36	0.36	0.58	3.0	2.3	9.1	11	1.6	0.37	2.0	0.27
3	0.36	0.51	0.38	e0.70	2.7	4.6	7.3	7.1	1.5	0.36	5.6	0.25
4	0.27	0.41	0.35	0.67	2.5	3.2	5.9	5.7	2.0	0.35	3.9	0.26
5	0.37	0.45	0.31	e0.68	2.3	3.0	4.9	4.6	2.1	0.91	2.4	0.23
6	0.45	0.38	0.42	e0.68	2.2	2.7	4.2	4.0	3.6	1.4	2.6	0.23
7	0.46	0.36	0.52	e0.68	2.2	2.6	3.4	6.8	3.8	0.45	1.8	0.23
8	0.40	0.38	2.0	0.74	2.2	2.4	3.1	7.4	2.0	0.27	1.6	0.20
9	0.38	0.49	3.5	1.0	2.2	2.2	3.8	8.7	1.7	0.65	1.4	0.19
10	0.43	0.34	1.2	4.0	2.5	2.1	6.1	7.4	1.5	16	1.1	0.24
11	0.43	0.29	1.2	13	6.2	1.8	3.7	5.8	1.4	2.0	0.91	0.23
12	0.37	0.26	1.0	4.9	3.9	1.9	3.3	5.0	1.3	1.2	0.87	0.23
13	0.43	0.29	0.94	3.9	3.3	2.1	3.3	8.0	2.0	0.90	0.89	0.25
14	0.79	0.27	1.8	3.0	2.8	2.0	4.6	10	4.1	10	0.83	0.25
15	1.2	0.67	1.5	3.1	2.7	1.8	20	8.3	2.2	2.9	0.81	0.30
16	0.88	0.80	1.1	2.6	2.7	2.5	10	6.4	1.6	1.7	0.84	0.57
17	0.86	0.49	1.8	2.5	2.6	2.5	11	6.4	1.4	1.4	0.80	0.47
18	0.61	0.33	5.7	2.2	2.1	5.8	9.2	46	1.2	1.2	0.81	0.25
19	0.50	0.23	3.0	2.0	2.2	5.2	7.2	16	1.1	1.8	1.1	0.24
20	0.69	0.45	2.9	1.9	2.9	59	11	11	0.94	1.6	1.8	0.22
21	0.57	0.39	2.1	1.7	4.5	23	19	7.9	0.81	0.98	0.68	0.20
22	0.45	0.30	1.6	1.7	3.2	14	38	6.0	0.71	0.78	0.55	1.7
23	0.39	0.18	1.4	2.5	2.8	9.9	17	4.8	0.61	0.73	0.51	2.0
24	0.37	0.16	2.1	22	2.6	8.3	11	4.1	0.55	1.1	1.1	0.46
25	0.40	0.71	1.3	13	2.4	6.7	9.0	3.8	0.55	0.92	0.68	0.38
26	0.38	0.68	1.1	7.4	2.6	11	6.7	2.8	0.56	14	0.51	3.8
27	0.43	0.68	1.1	5.3	2.5	13	5.3	2.5	0.66	58	0.50	8.9
28	0.48	0.72	1.1	4.2	2.2	8.4	32	2.2	0.97	13	0.49	5.0
29	0.42	0.56	1.1	3.5	---	6.9	15	3.1	0.63	6.8	0.57	1.6
30	0.40	0.42	0.93	3.3	---	5.8	10	2.9	0.51	5.6	0.42	1.00
31	0.38	---	0.70	3.7	---	11	---	2.1	---	3.4	0.34	---
TOTAL	15.18	12.94	44.89	117.71	79.5	229.8	309.1	235.5	45.70	151.15	41.01	30.43
MEAN	0.49	0.43	1.45	3.80	2.84	7.41	10.3	7.60	1.52	4.88	1.32	1.01
MAX	1.2	0.80	5.7	22	6.2	59	38	46	4.1	58	5.6	8.9
MIN	0.26	0.16	0.31	0.58	2.1	1.8	3.1	2.1	0.51	0.27	0.34	0.19
CFSM	0.26	0.23	0.76	1.99	1.49	3.88	5.39	3.98	0.80	2.55	0.69	0.53
IN.	0.30	0.25	0.87	2.29	1.55	4.48	6.02	4.59	0.89	2.94	0.80	0.59

e Estimated

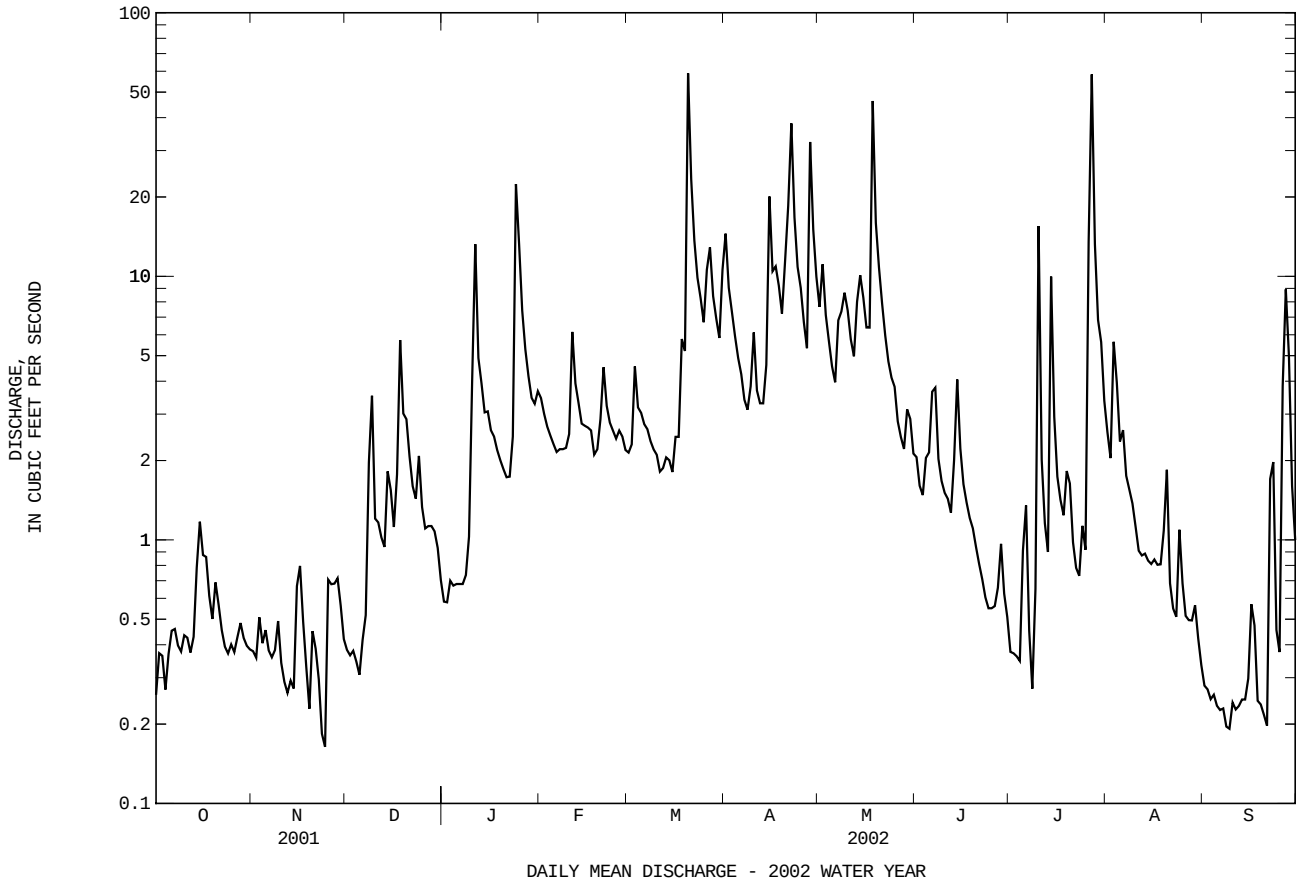
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

MEAN	1.40	3.91	5.18	5.39	7.42	8.35	6.67	5.50	3.22	3.48	1.97	1.48
MAX	4.43	17.5	8.67	12.9	15.9	16.1	13.4	13.5	12.7	8.97	8.09	9.38
(WY)	1997	1986	1991	1996	1986	1994	1984	1996	1981	1996	1996	1996
MIN	0.21	0.26	0.78	1.29	1.37	2.52	2.22	1.32	0.43	0.28	0.30	0.19
(WY)	1992	1999	1999	1981	1993	1990	1995	1999	1999	1988	1983	1991

01594936 NORTH FORK SAND RUN NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1980 - 2002	
ANNUAL TOTAL	1293.28		1312.91			
ANNUAL MEAN	3.54		3.60		4.44	
HIGHEST ANNUAL MEAN					7.72	1996
LOWEST ANNUAL MEAN					2.74	1999
HIGHEST DAILY MEAN	30	Apr 11	59	Mar 20	141	Feb 9 1994
LOWEST DAILY MEAN	0.16	Nov 24	0.16	Nov 24	0.09	(a)
ANNUAL SEVEN-DAY MINIMUM	0.29	Nov 18	0.22	Sep 5	0.12	Aug 12 1988
MAXIMUM PEAK FLOW			323	Jul 27	(b)895	May 31 1985
MAXIMUM PEAK STAGE			6.07	Jul 27	10.47	May 31 1985
INSTANTANEOUS LOW FLOW			0.16	(c)	0.01	(d)
ANNUAL RUNOFF (CFSM)	1.86		1.88		2.33	
ANNUAL RUNOFF (INCHES)	25.19		25.57		31.62	
10 PERCENT EXCEEDS	8.5		8.8		10	
50 PERCENT EXCEEDS	1.8		1.7		2.7	
90 PERCENT EXCEEDS	0.39		0.36		0.41	

a Aug. 22, 1985, Aug. 24, 1993.
b From rating curve extended above 90 ft^3/s on basis of contracted-opening measurement of peak-flow.
c Aug. 16, 17.
d July 18 and Aug. 9, 1988, result of beaver activity upstream.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD

LOCATION.--Lat 39°16'36.1", long 79°23'25.1", Garrett County, Hydrologic Unit 02070002, on left bank upstream side of culvert on private driveway off Wilson-Corona Road, 200 ft upstream from mouth, 1.0 mi south of Bayard, WV, and 1.7 mi southwest of Fort Pendleton.

DRAINAGE AREA.--2.30 mi^2.

PERIOD OF RECORD.--October 1986 to current year.

REVISED RECORDS.--WDR MD-DE-95-1: 1988, 1991-93 (M).

GAGE.--Water-stage recorder and sacrete bag control. Datum of gage is 2,441.94 ft above National Geodetic Vertical Datum of 1929 (Garrett County bench mark).

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1000	123	3.83	Apr 28	0830	90	3.28
Apr 21	1600	47	2.40	May 18	0430	141	4.10
Apr 22	0015	77	3.03	Jul 27	0730	*240	*5.33

Minimum discharge, 0.00 ft^3/s, Nov. 11, 20, 21, Dec. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.03	0.03	e0.44	3.0	e1.5	13	10	2.1	0.25	2.7	0.18
2	0.07	0.03	0.02	e0.60	2.5	1.7	9.4	11	1.7	0.23	2.1	0.17
3	0.06	0.04	0.02	e0.54	2.2	3.3	7.8	8.3	1.3	0.22	6.8	0.16
4	0.06	0.03	0.01	e0.52	e2.0	3.2	6.1	6.7	1.9	0.20	5.4	0.15
5	0.05	0.03	0.00	e0.54	e1.8	3.5	5.3	5.9	1.7	0.22	3.3	0.14
6	0.07	0.02	0.03	e0.60	e1.7	2.2	4.7	5.2	2.6	0.18	3.0	0.14
7	0.05	0.02	0.06	e0.66	1.6	1.9	4.0	7.4	2.8	0.18	2.1	0.11
8	0.04	0.02	0.61	e0.80	1.5	1.7	3.6	8.3	1.6	0.17	1.8	0.10
9	0.04	0.02	1.9	e1.0	1.6	1.6	4.1	9.6	1.2	0.24	1.4	0.10
10	0.03	0.02	0.60	e2.0	2.0	1.4	5.3	9.0	1.0	5.6	1.2	0.09
11	0.03	0.00	0.42	13	4.9	1.3	3.9	7.4	0.85	0.69	1.0	0.08
12	0.03	0.00	0.30	3.9	3.5	1.2	3.5	6.8	0.75	0.35	0.88	0.07
13	0.03	0.00	0.25	2.8	3.0	1.4	3.5	9.5	1.3	0.31	0.71	0.07
14	0.10	0.00	0.73	2.2	3.3	1.3	4.7	13	2.8	5.1	0.61	0.07
15	0.06	0.00	0.75	1.9	2.3	1.1	18	12	1.5	1.4	0.53	0.10
16	0.05	0.00	0.42	1.6	2.2	1.8	11	9.3	1.1	0.68	0.47	0.19
17	0.09	0.00	0.71	1.5	2.1	1.8	12	9.1	0.82	0.45	0.46	0.11
18	0.06	0.00	4.1	1.3	2.3	4.8	10	49	0.66	0.43	0.55	0.11
19	0.03	0.00	2.2	1.3	2.2	4.6	8.9	21	0.58	1.2	0.97	0.10
20	0.03	0.03	1.6	1.1	2.1	56	14	14	0.51	0.88	1.3	0.10
21	0.03	0.01	0.96	1.0	3.2	26	24	10	0.45	0.43	0.61	0.09
22	0.02	0.00	0.68	0.83	2.6	16	44	8.0	0.39	0.32	0.39	0.89
23	0.02	0.00	0.61	1.3	2.2	11	22	6.5	0.35	0.29	0.34	0.73
24	0.02	0.00	0.95	21	2.1	8.7	14	5.7	0.33	0.48	0.86	0.16
25	0.03	0.37	0.75	13	1.8	7.1	11	5.1	0.30	0.40	0.65	0.12
26	0.03	0.12	0.47	7.0	1.9	11	8.6	4.2	0.28	10	0.40	1.7
27	0.03	0.05	0.60	5.1	2.0	13	7.2	3.4	0.31	49	0.30	5.1
28	0.03	0.04	0.65	4.0	e1.8	9.1	35	3.0	0.44	13	0.26	3.5
29	0.03	0.03	0.53	3.4	---	7.4	19	3.5	0.33	6.9	0.28	1.1
30	0.03	0.03	e0.50	3.0	---	6.3	13	3.0	0.26	5.1	0.26	0.57
31	0.03	---	e0.46	3.1	---	9.7	---	2.3	---	3.5	0.23	---
TOTAL	1.36	0.94	21.92	101.03	65.4	222.6	350.6	287.2	32.21	108.40	41.86	16.30
MEAN	0.044	0.031	0.71	3.26	2.34	7.18	11.7	9.26	1.07	3.50	1.35	0.54
MAX	0.10	0.37	4.1	21	4.9	56	44	49	2.8	49	6.8	5.1
MIN	0.02	0.00	0.00	0.44	1.5	1.1	3.5	2.3	0.26	0.17	0.23	0.07
CFSM	0.02	0.01	0.31	1.42	1.02	3.12	5.08	4.03	0.47	1.52	0.59	0.24
IN.	0.02	0.02	0.35	1.63	1.06	3.60	5.67	4.65	0.52	1.75	0.68	0.26

e Estimated

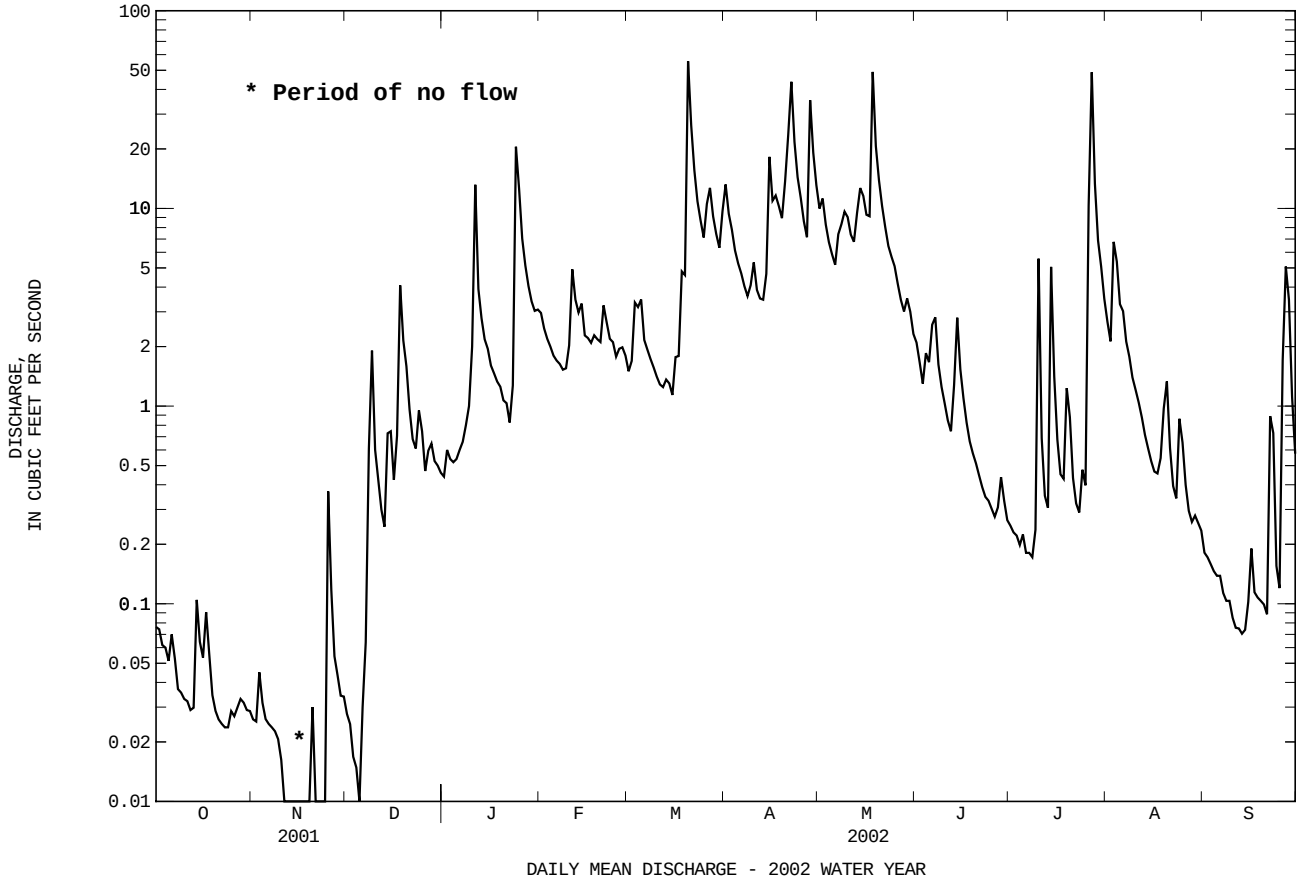
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

MEAN	1.12	2.97	4.90	6.40	7.45	8.89	6.77	5.86	2.15	3.12	1.70	1.31
MAX	4.57	10.2	10.0	11.5	14.7	17.6	11.7	13.9	5.29	9.93	9.26	9.25
(WY)	1990	1987	1991	1990	1994	1994	2002	1996	1989	2001	1996	1996
MIN	0.044	0.031	0.20	1.69	1.27	3.34	1.27	1.11	0.16	0.018	0.031	0.064
(WY)	2002	2002	1999	2000	1993	1990	1995	1999	1999	1999	1999	1998

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1987 - 2002	
ANNUAL TOTAL	1432.23		1249.82			
ANNUAL MEAN	3.92		3.42		4.37	
HIGHEST ANNUAL MEAN					7.49	1996
LOWEST ANNUAL MEAN					2.73	1999
HIGHEST DAILY MEAN	45	Feb 15	56	Mar 20	110	May 26 1990
LOWEST DAILY MEAN	0.00	(a)	0.00	(a)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	0.00	Nov 11	0.00	Nov 11	0.00	Aug 10 1999
MAXIMUM PEAK FLOW			240	Jul 27	340	Feb 9 1994
MAXIMUM PEAK STAGE			5.33	Jul 27	(c)7.67	Jul 26 2001
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(b)
ANNUAL RUNOFF (CFSM)	1.71		1.49		1.90	
ANNUAL RUNOFF (INCHES)	23.16		20.21		25.84	
10 PERCENT EXCEEDS	10		9.5		10	
50 PERCENT EXCEEDS	1.4		1.0		2.5	
90 PERCENT EXCEEDS	0.03		0.03		0.11	

a Nov. 11-19, 22-24, Dec. 5.
b Many days in 1999, 2002.
c Affected by backwater.
d Nov. 11-25, Dec. 5, 6.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD

LOCATION.--Lat 39°18'06.8", long 79°18'24.8", Garrett County, Hydrologic Unit 02070002, on left bank 0.3 mi southeast of Steyer, 0.4 mi downstream from Steyer Run, 2.0 mi northeast of Gorman, and at mile 81.8.

DRAINAGE AREA.--73.1 mi^2.

PERIOD OF RECORD.--July 1956 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,276.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges (ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1954, reached a stage of 13.0 ft, from floodmarks; discharge, 11,300 ft^3/s, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1230	2,910	6.95	May 18	0630	2,430	6.41
Apr 28	1030	2,200	6.14	Jul 27	0830	*3,870	*7.83

Minimum discharge, 6.6 ft^3/s, Nov. 24, Dec. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	16	13	e60	143	e70	491	312	156	52	125	39
2	43	14	12	e58	125	e66	309	392	120	53	105	38
3	40	15	18	e74	105	148	254	290	102	96	144	38
4	37	23	21	e64	112	139	211	236	152	59	150	36
5	33	19	19	e56	110	127	181	209	174	66	97	34
6	21	31	8.6	34	133	119	162	178	190	53	115	33
7	19	30	9.8	68	101	112	144	290	260	50	86	24
8	21	31	21	73	100	105	131	338	160	49	73	30
9	36	32	117	66	93	100	135	358	125	52	67	32
10	36	15	70	131	95	94	221	318	106	881	64	32
11	35	16	60	320	237	86	154	248	96	233	61	32
12	35	14	52	186	175	86	141	223	89	121	55	31
13	22	23	46	e120	152	90	141	256	128	95	51	30
14	18	29	59	e100	129	92	175	342	172	369	53	31
15	39	28	57	e82	e110	84	745	312	127	190	50	33
16	41	25	36	e71	e92	91	415	245	104	126	49	36
17	29	11	39	e64	e86	94	301	228	92	102	49	37
18	28	15	184	e60	e86	189	248	1320	81	105	50	35
19	25	15	148	e58	e86	201	215	589	72	220	56	33
20	19	28	128	e66	e100	1660	355	391	66	313	69	32
21	18	27	106	e60	167	861	568	299	60	152	53	32
22	21	16	84	e54	142	451	1250	239	58	106	48	40
23	34	11	76	e56	115	329	583	198	55	91	47	78
24	31	9.5	101	662	103	275	386	173	52	90	68	42
25	31	18	86	504	e88	235	326	175	50	81	77	23
26	30	44	86	265	e80	288	261	140	48	509	52	45
27	18	37	79	191	e84	403	220	124	51	1660	46	194
28	15	33	78	165	e74	278	1170	113	67	612	44	196
29	21	28	67	144	---	234	694	439	61	310	46	80
30	30	14	e56	135	---	209	409	386	53	218	42	58
31	30	---	e52	159	---	292	---	183	---	161	40	---
TOTAL	896	667.5	1989.4	4206	3223	7608	10996	9544	3127	7275	2132	1454
MEAN	28.9	22.2	64.2	136	115	245	367	308	104	235	68.8	48.5
MAX	43	44	184	662	237	1660	1250	1320	260	1660	150	196
MIN	15	9.5	8.6	34	74	66	131	113	48	49	40	23
CFSM	0.40	0.30	0.88	1.86	1.57	3.36	5.01	4.21	1.43	3.21	0.94	0.66
IN.	0.46	0.34	1.01	2.14	1.64	3.87	5.60	4.86	1.59	3.70	1.08	0.74

e Estimated

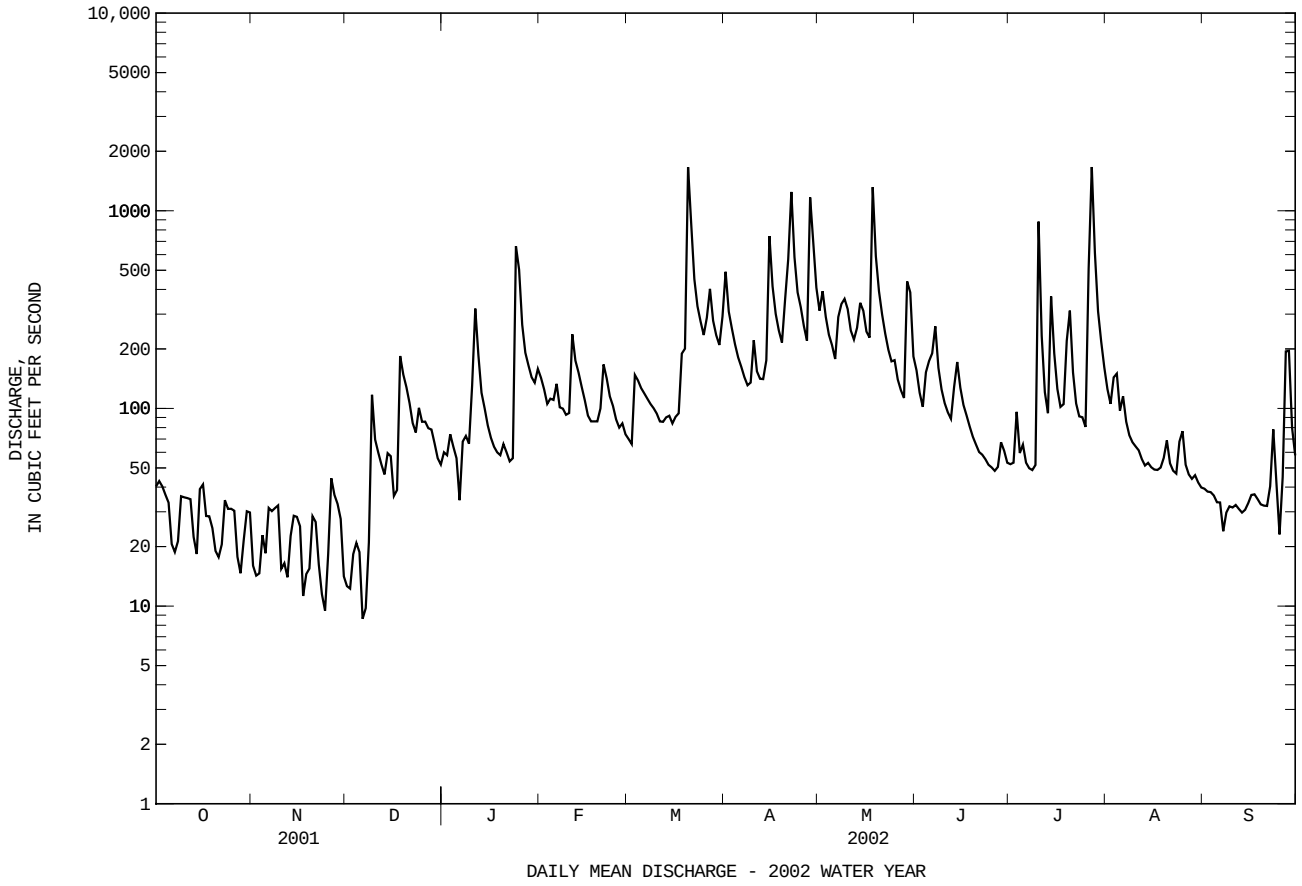
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	69.9	133	220	232	264	339	277	199	118	101	78.1	55.1
MAX	316	588	527	569	604	885	573	540	442	340	355	340
(WY)	1977	1986	1973	1974	1994	1963	1958	1996	1981	1978	1996	1996
MIN	12.8	22.2	46.1	41.8	65.9	112	78.2	62.5	15.5	14.3	6.72	5.99
(WY)	1964	2002	1999	1977	1993	1990	1995	1965	1965	1965	1965	1959

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	58087.9		53117.9			
ANNUAL MEAN	159		146		173	
HIGHEST ANNUAL MEAN					297	1996
LOWEST ANNUAL MEAN					115	1959
HIGHEST DAILY MEAN	1730	Jul 26	1660	(a)	4530	Feb 9 1994
LOWEST DAILY MEAN	8.6	Dec 6	8.6	Dec 6	3.1	Sep 9 1965
ANNUAL SEVEN-DAY MINIMUM	14	Dec 1	14	Dec 1	3.6	Sep 23 1959
MAXIMUM PEAK FLOW			3870	Jul 27	(b)11500	Nov 5 1985
MAXIMUM PEAK STAGE			7.83	Jul 27	13.14	Nov 5 1985
INSTANTANEOUS LOW FLOW			6.6	(c)	2.7	Aug 18 1999
ANNUAL RUNOFF (CFSM)	2.18		1.99		2.36	
ANNUAL RUNOFF (INCHES)	29.56		27.03		32.13	
10 PERCENT EXCEEDS	370		312		382	
50 PERCENT EXCEEDS	86		86		104	
90 PERCENT EXCEEDS	24		23		21	

a March 20, July 27.
b From rating curve extended above 3,000 ft^3/s on basis of slope-area measurement at gage height of 10.30 ft.
c Nov. 24, Dec. 6.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01595200 STONY RIVER NEAR MOUNT STORM, WV

LOCATION.--Lat 39°16'10", long 79°15'45", Grant County, Hydrologic Unit 02070002, on left bank 100 ft downstream from highway bridge on U.S. Highway 50, 1.0 mi west of Mount Storm, and at mile 6.4.

DRAINAGE AREA.--48.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,554.54 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for periods of estimated daily discharges (no gage-height record, ice effect), which are poor. Flow regulated by Stony River Reservoir, 14.0 mi upstream from station until use of reservoir discontinued June 1987. Regulation since 1963 by Virginia Electric and Power Company dam (Mount Storm Lake), 4.0 mi upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,540 ft^3/s, July 27, gage height, 7.76 ft. Minimum discharge, 3.1 ft^3/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	7.6	4.9	e7.8	102	22	261	339	97	9.3	66	4.9
2	9.9	5.2	4.5	e7.6	140	20	161	281	81	9.2	153	4.8
3	9.3	4.9	4.3	e7.5	128	70	98	260	49	9.7	197	7.2
4	7.0	4.9	6.3	e7.4	77	80	142	299	63	8.4	100	7.1
5	6.2	4.3	7.2	e7.3	59	e78	132	238	44	9.3	22	7.4
6	6.7	7.0	6.1	e7.2	35	e70	93	116	47	8.7	17	5.9
7	5.1	6.7	5.7	e7.1	34	e64	67	72	72	8.4	13	4.4
8	4.4	6.4	8.8	e7.0	38	56	49	78	40	8.4	12	3.5
9	6.6	6.4	21	10	44	54	30	135	25	9.4	12	3.7
10	6.5	5.7	13	18	50	53	137	201	22	81	11	7.1
11	5.9	4.2	16	55	105	71	41	174	20	21	10	7.0
12	6.5	4.0	13	27	79	61	35	147	18	13	9.8	5.5
13	5.0	3.9	11	17	e60	33	34	156	19	11	9.6	3.6
14	4.2	6.7	17	15	e45	42	104	175	21	61	9.1	5.2
15	4.9	7.5	17	e14	e34	42	299	162	20	33	8.7	4.4
16	7.2	5.7	11	13	25	43	103	108	18	33	8.6	6.2
17	8.0	4.9	10	e12	e24	67	73	97	16	14	8.8	7.0
18	6.7	4.2	23	e10	e23	100	72	501	15	12	9.0	6.0
19	5.6	4.0	20	9.1	e26	126	58	419	14	13	8.7	6.2
20	4.6	7.2	16	e8.5	31	1010	117	328	13	12	8.8	6.5
21	4.2	6.6	15	9.8	42	454	486	182	13	11	8.3	4.4
22	4.1	5.9	12	13	80	315	778	134	11	10	7.8	4.8
23	6.6	4.3	9.8	15	49	296	368	107	12	10	7.0	9.5
24	7.3	4.0	e9.5	120	e40	300	422	67	12	9.8	9.6	8.1
25	6.4	6.9	e9.2	91	e32	185	313	72	11	10	8.6	6.3
26	4.8	9.4	8.9	36	26	110	201	69	13	42	7.6	18
27	e4.5	8.3	e8.6	53	e24	140	156	53	12	779	7.1	51
28	e4.2	8.3	e8.4	125	e23	134	470	45	13	394	7.6	33
29	e4.0	7.8	e8.2	146	---	286	594	137	12	164	10	12
30	e5.8	5.7	8.0	77	---	228	451	146	11	90	8.4	11
31	e7.8	---	7.8	109	---	88	---	89	---	76	6.1	---
TOTAL	186.8	178.6	341.2	1062.3	1475	4698	6345	5387	834	1980.6	782.2	271.7
MEAN	6.026	5.953	11.01	34.27	52.68	151.5	211.5	173.8	27.80	63.89	25.23	9.057
MAX	9.9	9.4	23	146	140	1010	778	501	97	779	197	51
MIN	4.0	3.9	4.3	7.0	23	20	30	45	11	8.4	6.1	3.5

e Estimated

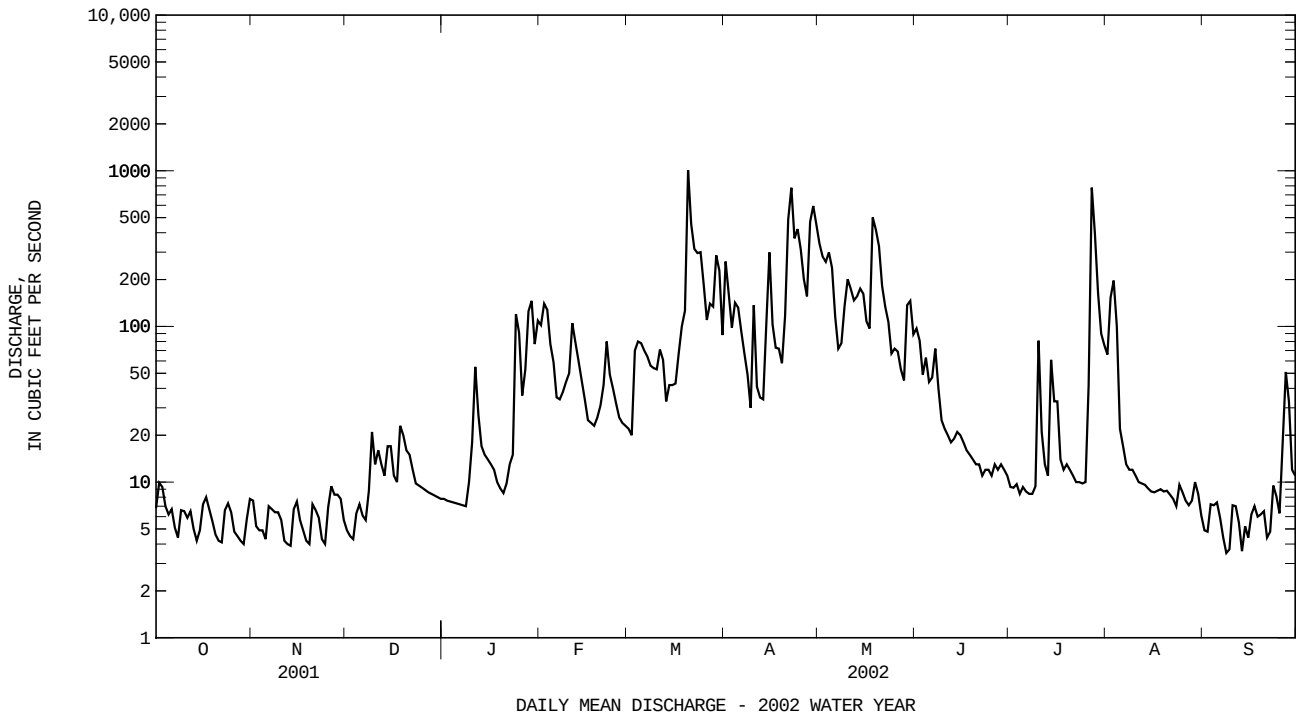
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	45.06	82.96	105.0	113.4	142.2	215.7	157.6	120.2	68.13	47.87	35.01	34.88
MAX	234	669	301	267	361	537	371	271	237	205	200	314
(WY)	1977	1986	1973	1996	1994	1963	1987	1988	1981	1978	1996	1996
MIN	3.36	5.53	8.36	20.9	21.3	46.9	51.8	28.3	9.91	4.36	3.28	3.89
(WY)	1992	1999	1999	1981	1978	1990	1995	1964	1964	1968	1999	1985

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	28159.1		23542.4			
ANNUAL MEAN	77.15		64.50		97.11	
HIGHEST ANNUAL MEAN					166	1996
LOWEST ANNUAL MEAN					42.0	1964
HIGHEST DAILY MEAN	949	Apr 11	1010	Mar 20	9880	Nov 5 1985
LOWEST DAILY MEAN	3.9	Nov 13	3.5	Sep 8	1.3	Aug 28 1988
ANNUAL SEVEN-DAY MINIMUM	5.2	Nov 18	5.0	Sep 7	1.7	Aug 28 1988
MAXIMUM PEAK FLOW			2540	Jul 27	(a)14000	Nov 5 1985
MAXIMUM PEAK STAGE			7.76	Jul 27	(b)16.41	Nov 5 1985
INSTANTANEOUS LOW FLOW			3.1	(c)	1.3	(d)
10 PERCENT EXCEEDS	214		161		229	
50 PERCENT EXCEEDS	30		14		47	
90 PERCENT EXCEEDS	6.2		5.2		8.2	

a From rating curve extended above 7,500 ft^3/s on basis of slope-area measurement of peak flow.
b From floodmarks.
c Sept. 13, 14.
d Aug. 22, 23, 28, 29, 1988.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: December 1961 to March 1974, September 1974 to September 1995, October 1996 to current year.

INSTRUMENTATION.--Temperature recorder (continuous ethyl alcohol-actuated thermograph) December 1961 to October 2001. Satellite telemetry installed Oct. 22, 2001.

REMARKS.--Upstream reservoir regulation defined on the discharge manuscript. No temperature record Oct. 1-22, 27-31, due to equipment malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 31.3°C, Aug. 3, 2002; minimum, -0.5°C, Jan. 16-20, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES.--Maximum, 31.3°C, Aug. 3; minimum, 0.1°C, Dec. 21, 25, 27, 28, Jan. 1-4, 7-10, 12-14, 16, 18-20, and March 4.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.2	9.3	0.3	11.0	1.5	13.6	17.7	22.8	24.9	26.6	18.8
2	---	11.4	7.7	0.5	8.6	0.9	15.0	18.1	22.5	26.2	30.5	21.2
3	---	12.1	5.2	0.3	8.8	2.9	11.6	16.5	20.2	26.9	31.3	22.4
4	---	9.8	6.5	0.7	8.0	1.0	11.2	16.0	20.7	27.6	28.9	23.6
5	---	8.3	8.2	0.6	3.9	4.9	11.8	19.2	22.7	27.3	26.6	21.8
6	---	6.4	8.1	0.3	3.3	7.8	9.4	17.0	20.4	24.5	24.3	21.7
7	---	7.7	8.7	0.2	4.0	7.7	10.4	15.0	19.3	23.5	21.8	21.5
8	---	8.0	6.9	0.4	4.9	9.5	13.6	15.6	20.5	25.8	20.8	21.8
9	---	7.1	6.1	0.5	5.7	10.9	12.9	18.7	21.1	25.2	22.0	21.4
10	---	6.8	4.1	0.4	7.3	9.2	16.5	19.5	22.1	21.7	23.1	21.1
11	---	6.9	6.2	0.5	6.3	7.2	14.5	19.7	23.5	21.8	23.2	20.1
12	---	4.5	5.8	0.6	5.9	8.7	14.4	20.5	21.7	22.1	24.6	18.6
13	---	4.1	8.3	0.4	5.4	8.2	13.6	19.4	20.8	19.4	24.3	19.1
14	---	5.3	10.2	0.7	6.6	11.1	13.9	16.0	20.4	18.3	24.2	18.3
15	---	7.3	8.4	0.5	7.3	12.0	14.3	17.4	18.0	21.3	23.0	19.0
16	---	8.2	4.6	0.6	6.3	11.4	16.7	18.1	18.1	22.8	22.0	19.3
17	---	8.4	7.2	0.8	4.3	9.4	16.7	16.3	19.9	25.4	22.8	20.2
18	---	6.6	7.3	0.7	3.2	9.4	16.7	15.1	20.8	23.3	24.9	19.8
19	---	7.4	5.7	0.5	5.0	10.8	18.4	15.8	20.9	22.3	23.8	21.4
20	---	7.3	4.3	0.4	5.9	12.9	15.9	15.2	21.4	24.7	24.0	22.4
21	---	3.9	1.5	0.7	6.1	12.5	17.5	13.9	22.6	25.8	23.7	20.1
22	---	4.5	1.4	1.1	6.8	10.1	16.8	16.7	23.7	25.3	24.2	20.8
23	14.0	4.2	1.0	1.5	5.7	11.6	15.0	18.4	24.0	25.7	25.5	18.8
24	15.7	6.8	1.2	4.4	5.8	12.7	18.1	19.0	25.1	22.5	23.9	17.6
25	13.5	9.5	0.8	4.0	7.8	12.2	16.6	17.9	25.6	20.4	23.3	15.8
26	9.4	7.7	1.1	3.1	7.5	9.9	16.4	19.8	24.6	19.9	21.2	14.5
27	---	7.0	0.6	5.5	3.6	8.3	14.6	19.4	23.6	26.3	21.2	17.5
28	---	9.1	0.5	9.5	2.5	12.5	15.1	18.3	22.9	28.5	19.4	16.4
29	---	10.4	0.5	10.9	---	16.1	14.5	19.8	24.0	26.7	17.3	16.8
30	---	11.8	0.2	10.9	---	16.3	16.8	19.4	23.1	25.1	20.7	17.5
31	---	---	0.3	11.2	---	13.2	---	21.5	---	26.3	19.0	---

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	5.3	7.2	0.1	8.6	0.4	7.7	13.5	18.5	18.2	22.3	16.6
2	---	8.2	4.7	0.1	7.5	0.4	10.9	14.0	19.0	19.8	23.6	16.2
3	---	9.0	2.4	0.1	7.7	0.5	9.0	12.9	15.9	20.4	27.3	16.8
4	---	6.8	2.7	0.1	3.8	0.1	8.4	12.5	16.3	20.4	25.5	19.3
5	---	5.4	5.3	0.2	2.3	0.5	8.7	14.3	17.6	21.8	22.2	15.8
6	---	3.4	6.2	0.2	1.6	4.3	6.8	13.2	16.6	17.8	19.9	15.8
7	---	3.5	6.9	0.1	2.8	5.9	4.7	13.8	15.4	16.6	16.5	15.3
8	---	4.5	5.9	0.1	2.6	5.1	8.1	12.6	15.0	17.3	15.2	15.2
9	---	4.7	3.9	0.1	2.9	7.0	10.5	13.3	15.0	19.9	15.0	14.4
10	---	3.6	2.3	0.1	4.5	3.8	9.1	16.3	16.0	18.6	15.8	14.4
11	---	3.9	3.7	0.3	3.5	2.5	8.7	14.5	17.4	17.3	17.3	16.5
12	---	1.5	4.9	0.1	4.3	6.5	8.9	16.7	18.4	14.9	18.5	13.2
13	---	0.8	5.6	0.1	3.6	6.9	11.3	16.0	18.7	17.4	18.9	12.1
14	---	1.1	8.3	0.1	4.4	6.9	10.1	12.2	18.0	16.6	19.2	14.3
15	---	3.2	4.4	0.2	5.1	8.5	11.0	12.1	15.2	16.6	19.0	17.0
16	---	4.6	2.9	0.1	4.3	9.4	10.7	13.4	14.4	18.2	20.1	17.4
17	---	5.8	4.3	0.2	0.9	7.4	11.9	14.8	13.7	19.5	19.6	15.2
18	---	3.6	4.1	0.1	0.3	7.0	13.5	12.1	14.0	20.9	20.4	14.8
19	---	3.7	3.6	0.1	1.5	9.4	13.1	13.9	15.2	20.1	20.3	17.5
20	---	3.0	0.6	0.1	3.9	8.0	13.9	13.6	15.6	19.6	20.0	17.4
21	---	1.5	0.1	0.2	4.3	7.9	14.7	12.0	15.8	19.0	17.4	18.2
22	---	1.7	0.2	0.2	4.5	7.9	10.1	10.5	15.9	20.0	18.8	18.5
23	9.0	1.5	0.3	0.3	3.9	7.9	9.7	11.9	16.1	20.5	20.5	15.5
24	10.8	2.8	0.2	0.7	2.7	9.3	13.7	13.6	17.5	19.3	20.6	12.5
25	9.4	6.8	0.1	2.1	4.3	9.9	13.2	15.2	18.2	18.8	19.2	12.9
26	5.7	5.1	0.3	1.5	3.6	8.3	11.8	15.6	19.3	18.1	17.4	13.5
27	---	4.6	0.1	2.1	0.4	6.7	11.2	16.3	20.3	18.5	16.9	13.4
28	---	7.0	0.1	5.5	0.5	6.7	11.5	14.6	18.8	26.3	16.6	14.8
29	---	8.1	0.2	7.4	---	12.5	13.2	15.2	17.3	24.8	15.5	12.5
30	---	8.9	0.2	9.8	---	13.2	13.2	14.6	18.0	23.1	15.4	13.2
31	---	---	0.2	9.4	---	6.7	---	16.8	---	22.5	15.6	---

01596500 SAVAGE RIVER NEAR BARTON, MD

LOCATION.--Lat 39°34'12.2", long 79°06'07.0", Garrett County, Hydrologic Unit 02070002, on right bank 0.9 mi upstream from Bear Pen Run, 1.5 mi downstream from Poplar Lick Run, 5.4 mi northwest of Barton, and 10 mi upstream from mouth.

DRAINAGE AREA.--49.1 mi^2.

PERIOD OF RECORD.--September 1948 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect and frozen well), which are fair. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1829	*986	*3.58	No other peak greater than base discharge.			

Minimum discharge, 0.55 ft^3/s, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	3.1	11	e7.6	58	e59	228	189	41	8.1	5.4	2.1
2	3.4	3.0	9.8	e7.2	53	26	199	229	34	7.6	4.5	1.9
3	3.3	4.4	8.8	e6.8	50	56	154	217	29	7.5	4.4	1.8
4	3.1	5.9	8.1	e6.6	e44	68	116	166	28	6.8	3.8	1.6
5	2.9	5.0	7.7	e6.6	e42	75	94	128	26	7.2	3.4	1.4
6	2.7	3.9	7.3	e7.4	e60	70	79	101	33	7.7	13	1.2
7	2.5	3.5	7.2	e11	e36	58	67	108	48	6.9	7.0	1.1
8	2.5	3.2	9.2	e15	e36	50	59	129	36	6.4	4.3	0.93
9	2.5	3.0	23	e23	e34	45	54	178	30	6.9	3.4	0.83
10	2.5	2.9	19	37	33	41	53	172	25	29	2.7	0.78
11	2.5	2.8	17	139	52	34	44	134	22	15	2.5	0.65
12	2.5	2.7	15	128	e45	33	40	116	20	7.7	2.3	0.64
13	2.8	2.6	14	108	e40	32	40	125	74	4.8	2.0	0.82
14	5.9	2.5	23	e88	e33	30	45	128	105	18	1.9	0.66
15	18	2.5	32	e55	e33	27	95	122	79	13	1.6	1.00
16	8.6	2.5	26	e40	e33	31	97	109	62	7.6	1.6	1.9
17	6.7	2.7	25	e34	e33	30	93	98	48	5.7	1.6	1.6
18	6.1	2.8	53	30	e30	68	82	504	38	4.5	1.6	1.3
19	5.2	2.8	55	e21	e30	134	72	369	32	7.1	4.0	1.5
20	4.3	2.9	47	e17	35	650	65	217	28	6.5	4.8	1.6
21	4.0	3.3	38	e30	34	605	70	151	23	5.1	2.7	1.4
22	3.8	3.2	e32	24	33	296	194	113	20	4.0	2.1	2.3
23	3.7	3.0	e28	23	30	184	186	91	17	3.5	1.9	4.8
24	3.4	3.0	e25	112	28	138	141	77	15	3.3	9.7	3.8
25	3.2	10	e23	167	27	110	114	67	13	3.3	8.7	2.4
26	3.0	21	e17	118	27	121	92	57	11	9.4	4.4	4.0
27	2.9	12	e13	88	e26	215	75	48	11	53	2.8	34
28	3.1	18	e11	71	e22	185	399	45	11	25	2.4	26
29	3.3	14	e9.7	61	---	145	403	55	10	13	2.4	11
30	3.3	12	e8.8	55	---	114	228	44	8.9	8.8	2.5	6.8
31	3.3	---	e8.2	62	---	115	---	39	---	6.9	2.4	---
TOTAL	128.6	164.2	631.8	1599.2	1037	3845	3678	4326	977.9	319.3	117.8	121.81
MEAN	4.15	5.47	20.4	51.6	37.0	124	123	140	32.6	10.3	3.80	4.06
MAX	18	21	55	167	60	650	403	504	105	53	13	34
MIN	2.5	2.5	7.2	6.6	22	26	40	39	8.9	3.3	1.6	0.64
CFSM	0.08	0.11	0.42	1.05	0.75	2.53	2.50	2.84	0.66	0.21	0.08	0.08
IN.	0.10	0.12	0.48	1.21	0.79	2.91	2.79	3.28	0.74	0.24	0.09	0.09

e Estimated

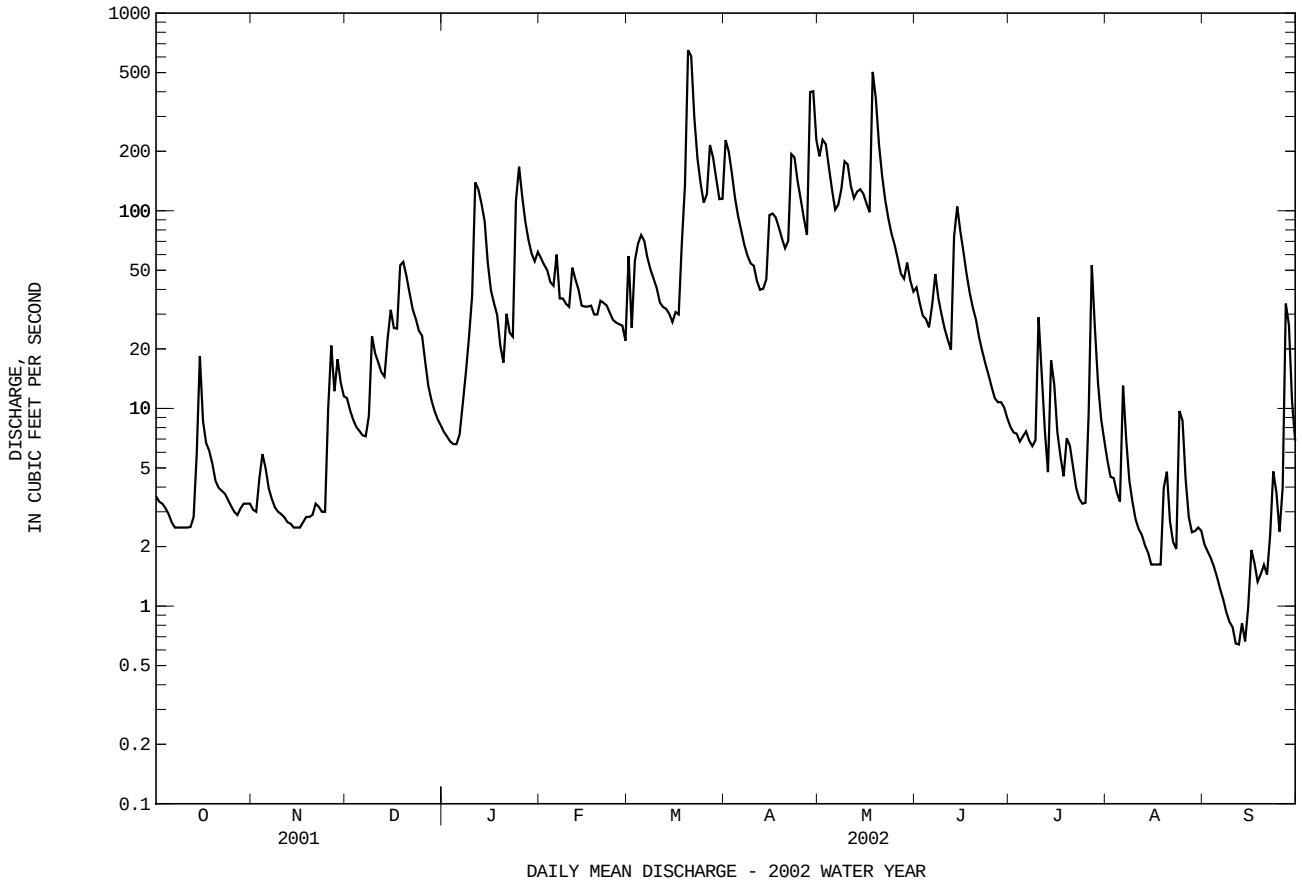
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	25.8	50.2	87.0	93.9	127	180	141	93.9	47.7	20.3	18.3	18.4
MAX	157	336	256	251	307	362	343	235	154	111	116	233
(WY)	1955	1986	1973	1952	1956	1994	1993	1996	1981	1989	1956	1996
MIN	1.52	2.29	2.37	13.7	19.4	30.8	33.0	21.8	5.48	2.60	1.57	1.78
(WY)	1964	1999	1999	1977	1954	1990	1968	1991	1965	1999	1999	1991

01596500 SAVAGE RIVER NEAR BARTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002	
ANNUAL TOTAL	22599.8		16946.61			
ANNUAL MEAN	61.9		46.4		75.0	
HIGHEST ANNUAL MEAN					138	1996
LOWEST ANNUAL MEAN					34.9	1954
HIGHEST DAILY MEAN	1010	Jun 7	650	Mar 20	2180	Nov 5 1985
LOWEST DAILY MEAN	2.5	Oct 7	0.64	Sep 12	0.50	(a)
ANNUAL SEVEN-DAY MINIMUM	2.5	Oct 6	0.76	Sep 8	0.63	Aug 29 1966
MAXIMUM PEAK FLOW			986	Mar 20	(b)7510	Oct 15 1954
MAXIMUM PEAK STAGE			3.58	Mar 20	8.45	Oct 15 1954
INSTANTANEOUS LOW FLOW			0.55	Sep 12	0.40	(c)
ANNUAL RUNOFF (CFSM)	1.26		0.95		1.53	
ANNUAL RUNOFF (INCHES)	17.12		12.84		20.76	
10 PERCENT EXCEEDS	168		123		185	
50 PERCENT EXCEEDS	24		20		33	
90 PERCENT EXCEEDS	3.3		2.5		3.8	

a Sept. 2, 3, 12, 1966.
b From rating curve extended above 1,600 ft^3/s on basis of slope-area measurement of peak flow.
c Sept. 3, 4, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD

LOCATION.--Lat 39°30'09.9", long 79°07'26.3", Garrett County, Hydrologic Unit 02070002, on left bank 0.7 mi downstream from Savage River Dam, 1.1 mi downstream from Crabtree Creek, 3.2 mi northwest of Bloomington, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--106 mi^2.

PERIOD OF RECORD.--October 1948 to current year.

REVISED RECORDS.--WSP 1432: 1955. WDR MD-DE-96-1: 1996(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,276.40 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Diversions upstream from station by Baltimore and Ohio Railroad and by cities of Frostburg and Westernport for municipal supply. Flow regulated by Savage River Reservoir beginning December 1950, capacity 20,000 acre-ft. U.S. Army Corps of Engineers satellite collection platform at station. Upper Potomac River Commission gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,480 ft^3/s, April 28, gage height, 3.80 ft; minimum discharge, 13 ft^3/s, Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	73	39	39	106	70	530	403	84	64	47	34
2	43	73	39	39	106	69	494	620	59	52	47	29
3	43	73	39	39	106	69	362	581	49	47	47	29
4	43	73	39	38	106	69	266	396	49	47	47	29
5	43	73	39	38	107	69	212	301	49	47	27	28
6	43	53	39	38	107	69	178	245	71	47	20	47
7	43	42	39	38	107	69	151	233	82	47	31	59
8	43	41	39	38	107	69	132	306	82	47	47	59
9	43	41	39	38	107	69	124	594	82	47	47	73
10	43	41	39	38	107	69	123	493	82	50	47	75
11	65	41	39	38	106	69	123	345	82	48	51	54
12	75	41	39	38	106	69	122	298	82	48	75	54
13	75	41	39	38	106	69	121	297	85	48	75	60
14	75	41	39	38	106	69	121	297	85	48	75	60
15	76	40	39	38	106	62	121	296	84	48	75	48
16	76	40	39	38	106	57	231	296	84	48	75	42
17	76	40	39	38	106	57	266	296	84	48	75	41
18	75	40	39	38	106	57	238	525	84	48	75	41
19	75	40	39	38	106	58	230	840	84	48	74	44
20	74	40	39	38	83	70	231	490	84	47	98	48
21	74	40	39	38	71	73	233	341	84	47	107	59
22	74	40	39	38	71	104	406	303	84	47	104	67
23	74	40	39	38	71	121	588	303	84	47	98	41
24	74	40	39	40	71	121	380	208	84	47	100	24
25	74	40	39	41	71	121	291	172	82	47	91	24
26	74	40	39	41	71	190	239	170	82	47	77	24
27	74	40	39	41	71	558	227	138	82	48	76	26
28	74	40	39	41	71	487	781	122	71	47	64	25
29	74	40	39	41	---	343	1050	105	65	47	55	25
30	73	40	39	41	---	268	564	97	64	47	48	25
31	73	---	39	78	---	242	---	91	---	47	45	---
TOTAL	1984	1387	1209	1241	2671	3956	9135	10202	2309	1492	2020	1294
MEAN	64.0	46.2	39.0	40.0	95.4	128	304	329	77.0	48.1	65.2	43.1
MAX	76	73	39	78	107	558	1050	840	85	64	107	75
MIN	43	40	39	38	71	57	121	91	49	47	20	24
(†)	10900	8800	8650	11900	11300	20100	20200	19100	17700	16300	12800	10600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

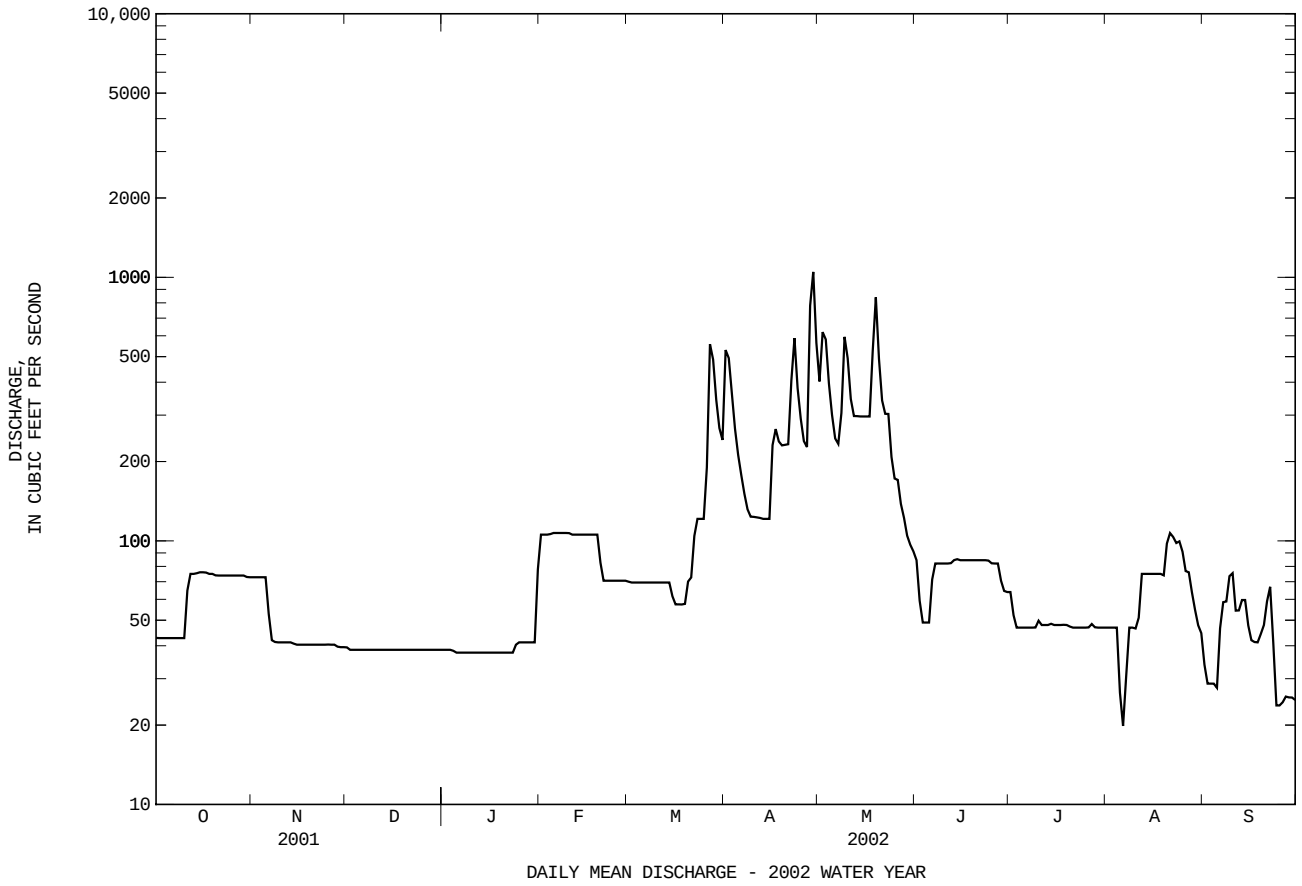
MEAN	104	118	204	210	274	330	224	203	117	69.0	72.9	90.3
MAX	446	641	655	713	633	842	813	563	329	329	262	472
(WY)	1955	1986	1973	1952	1998	1994	1993	1996	1996	1990	1956	1996
MIN	8.14	8.88	12.7	23.7	38.7	105	11.9	18.0	15.8	23.4	6.37	11.7
(WY)	1952	1952	1954	1954	1954	1976	1954	1976	1977	1951	1951	1951

† Monthend contents, in acre-feet, in Savage River Reservoir (contents on Sept. 30, 2001, 14,400 acre-feet). Records furnished by U.S. Army Corps of Engineers.

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002	
ANNUAL TOTAL	49983		38900			
ANNUAL MEAN	137		107		168	
ANNUAL MEAN‡	137		102		168	
HIGHEST ANNUAL MEAN					300	1996
LOWEST ANNUAL MEAN					69.7	1954
HIGHEST DAILY MEAN	2990	Jun 7	1050	Apr 29	4320	Sep 7 1996
LOWEST DAILY MEAN	36	(a)	20	Aug 6	0.60	(b)
ANNUAL SEVEN-DAY MINIMUM	37	Jul 26	25	Sep 24	0.64	Aug 4 1951
MAXIMUM PEAK FLOW			1480	Apr 28	9190	Sep 7 1996
MAXIMUM PEAK STAGE			3.80	Apr 28	10.09	Sep 7 1996
INSTANTANEOUS LOW FLOW			13	Sep 23	0.35	Oct 27 1966
ANNUAL RUNOFF (CFSM)	1.29		1.01		1.58	
ANNUAL RUNOFF (CFSM)‡	1.29		0.96		1.58	
ANNUAL RUNOFF (INCHES)	17.54		13.65		21.49	
ANNUAL RUNOFF (INCHES)‡	17.54		12.98		21.49	
10 PERCENT EXCEEDS	331		266		411	
50 PERCENT EXCEEDS	77		69		83	
90 PERCENT EXCEEDS	39		39		25	

‡ Adjusted for change in reservoir contents since December 1950.
a July 27, 28.
b July 27-31, Aug. 5, 6, 9, 10, 1951.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD

LOCATION.--Lat 39°28'45.1", long 79°03'54.0", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank 0.2 mi downstream from Savage River, 0.5 mi northwest of Luke, and at mile 53.3.

DRAINAGE AREA.--406 mi^2.

PERIOD OF RECORD.--June 1899 to July 1906 (published as "at Piedmont, W. Va."), October 1949 to current year.

REVISED RECORDS.--WSP 192: 1899-1904. WSP 1432: 1905-6, drainage area at former site. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 944.22 ft above National Geodetic Vertical Datum of 1929. June 27, 1899, to July 15, 1906, nonrecording gage at bridge 1.1 mi downstream at datum about 35 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated prior to July 1981 by Stony River Reservoir 45 mi upstream from station, since December 1950 by Savage River Reservoir, 5 mi upstream from station (see station 01597500), and since July 1981 by Jennings Randolph Lake, 9 mi upstream from station. Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899-1906. U.S. Army Corps of Engineers satellite collection platform at station. Upper Potomac River Commission gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,110 ft^3/s, July 28, gage height, 7.10 ft; minimum discharge, 157 ft^3/s, Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	217	186	173	259	216	1820	2840	926	242	446	268
2	232	217	182	173	259	220	2060	3530	597	231	446	219
3	232	217	181	173	257	228	1700	2430	477	217	427	217
4	232	217	181	173	255	228	874	1550	479	216	398	216
5	232	217	180	173	253	224	682	1470	475	214	381	213
6	436	203	179	174	252	224	811	1360	495	214	300	261
7	596	190	179	174	255	223	726	1240	511	214	231	317
8	596	190	183	173	255	223	582	1600	477	194	236	308
9	232	190	187	173	255	223	666	2290	426	193	236	405
10	232	190	186	175	255	221	537	1850	358	233	236	573
11	247	189	184	186	259	220	501	1520	326	196	290	509
12	259	187	182	188	257	220	551	1380	327	205	403	436
13	259	187	176	185	255	220	553	1320	331	205	405	442
14	261	187	182	183	255	220	645	1240	337	269	404	442
15	260	187	180	181	254	214	1750	1170	333	228	404	395
16	260	187	176	181	252	213	2250	1160	329	223	404	348
17	259	187	178	181	252	213	1310	1150	325	222	636	346
18	259	187	181	181	252	231	819	2450	323	222	592	345
19	259	187	180	181	252	236	869	2730	313	226	344	347
20	259	187	177	181	235	523	1180	1850	299	225	529	348
21	259	187	176	181	220	401	1710	2560	294	222	649	340
22	259	186	176	180	220	355	3140	1950	294	220	619	323
23	257	184	176	179	220	347	3240	1490	292	220	555	245
24	239	184	176	226	220	334	2920	1160	290	220	558	165
25	219	193	176	272	218	413	2190	781	290	220	517	164
26	217	189	176	197	217	951	1380	716	290	339	435	181
27	217	187	176	194	217	1670	1010	643	291	2570	399	197
28	217	187	176	193	217	1680	2670	534	271	2780	417	177
29	217	187	176	193	---	1530	3790	467	245	1150	371	167
30	217	187	174	196	---	1350	3240	725	244	544	314	164
31	217	---	173	227	---	1260	---	934	---	453	308	---
TOTAL	8369	5791	5551	5800	6827	15031	46176	48090	11265	13327	12890	9078
MEAN	270	193	179	187	244	485	1539	1551	376	430	416	303
MAX	596	217	187	272	259	1680	3790	3530	926	2780	649	573
MIN	217	184	173	173	217	213	501	467	244	193	231	164
CFSM	0.66	0.48	0.44	0.46	0.60	1.19	3.79	3.82	0.92	1.06	1.02	0.75
IN.	0.77	0.53	0.51	0.53	0.63	1.38	4.23	4.41	1.03	1.22	1.18	0.83

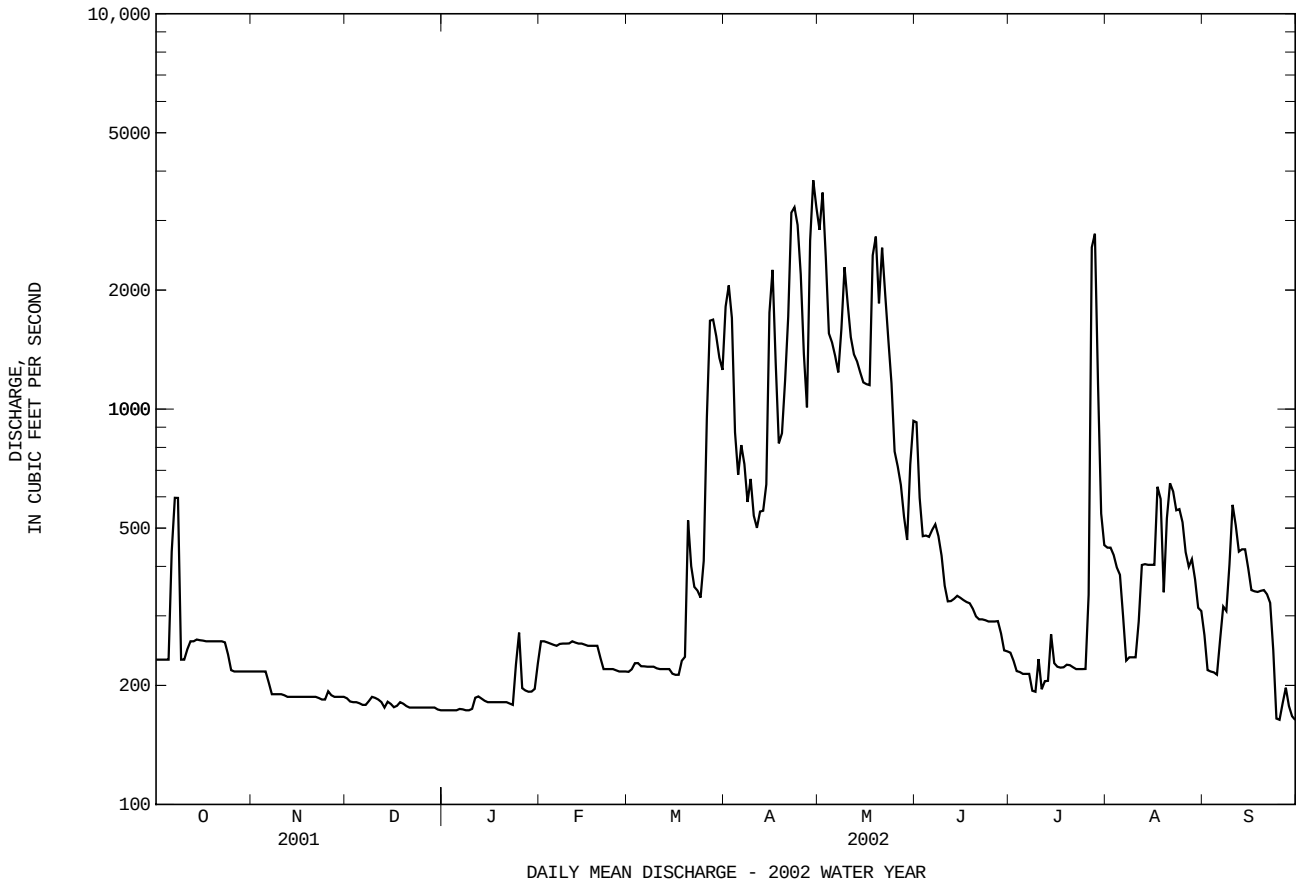
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1950 - 2002, BY WATER YEAR (WY)

MEAN	333	446	796	890	1080	1522	1205	903	533	351	325	286
MAX	1423	2806	2536	2368	2487	3414	3098	2484	1493	1294	1525	1998
(WY)	1955	1986	1973	1996	1994	1963	1993	1996	1981	1990	1996	1996
MIN	27.6	33.5	123	166	99.8	467	278	165	108	91.4	37.0	17.1
(WY)	1905	1905	1999	1977	1905	1988	1995	1982	1969	1953	1904	1904

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1899 - 1906, 1950 - 2002	
ANNUAL TOTAL	221220		188195			
ANNUAL MEAN	606		516		723	
ANNUAL MEAN‡	589		499		724	
HIGHEST ANNUAL MEAN					1342	1996
LOWEST ANNUAL MEAN					412	1969
HIGHEST DAILY MEAN	4430	Jun 7	3790	Apr 29	18400	Aug 18 1955
LOWEST DAILY MEAN	173	Dec 31	164	(a)	6.0	Sep 4 1904
ANNUAL SEVEN-DAY MINIMUM	175	Dec 25	173	Dec 30	11	Aug 29 1904
MAXIMUM PEAK FLOW			5110	Jul 28	(b)39400	Oct 15 1954
MAXIMUM PEAK STAGE			7.10	Jul 28	17.15	Oct 15 1954
INSTANTANEOUS LOW FLOW			157	Sep 23	6.0	Sep 4 1904
ANNUAL RUNOFF (CFSM)	1.49		1.27		1.78	
ANNUAL RUNOFF (CFSM)‡	1.45		1.23		1.78	
ANNUAL RUNOFF (INCHES)	20.27		17.24		24.18	
ANNUAL RUNOFF (INCHES)‡	19.72		16.66		24.22	
10 PERCENT EXCEEDS	1360		1350		1620	
50 PERCENT EXCEEDS	399		253		408	
90 PERCENT EXCEEDS	187		180		114	

‡ Adjusted for change in reservoir contents since October 1949.
a Sept. 25, 30.
b From rating curve extended above 25,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01599000 GEORGES CREEK AT FRANKLIN, MD

LOCATION.--Lat 39°29'38.1", long 79°02'40.9", Allegany County, Hydrologic Unit 02070002, on right bank at Franklin, and 1.2 mi upstream from Westernport and mouth.

DRAINAGE AREA.--72.4 mi^2.

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Westernport"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1940. WDR MD-DE-86-1: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 958.18 ft above National Geodetic Vertical Datum of 1929. May 4, 1905, to July 15, 1906, nonrecording gage at bridge 0.8 mi downstream at different datum. Oct. 16, 1929, to Oct. 1, 1937, water-stage recorder at site 95 ft downstream at present datum.

REMARKS.--Records good, except those for estimated daily discharges (ice effect), which are fair. Records include about 0.5 ft^3/s of sewage from city of Frostburg, which obtains its water supply from Big Piney Run (Monongahela River basin) and Savage River. A negligible discharge is diverted upstream from station by Frostburg Water Co. for municipal supplies of Eckhart and Welsh Hill. An undetermined amount of water is diverted from the upper third of basin into the Wills Creek basin by the Hoffman drainage tunnel (see station 01601500). National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 29, 1924, reached a stage of about 10 ft, from floodmarks, at site 95 ft downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1330	*948	*5.85	No peak greater than base discharge.			

Minimum discharge, 3.9 ft^3/s, Sept. 12, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	9.4	9.9	e8.6	35	13	249	186	53	15	11	6.4
2	9.8	9.4	9.4	e8.4	29	15	158	262	45	15	11	6.6
3	9.4	9.5	9.4	8.3	26	43	133	196	39	15	14	6.5
4	8.9	9.4	9.4	8.1	26	49	109	150	40	13	14	5.8
5	8.5	9.2	9.1	8.3	23	30	92	129	35	13	11	5.1
6	8.2	9.1	8.9	e8.5	23	28	82	112	44	11	14	4.9
7	8.4	9.0	9.2	e9.0	23	26	74	149	63	11	12	4.7
8	8.4	9.0	13	9.2	23	24	70	206	38	11	9.6	4.6
9	8.6	8.6	24	10	22	23	68	261	31	11	8.7	4.4
10	8.7	8.8	15	16	20	21	67	201	28	55	7.9	4.3
11	8.5	8.6	14	29	26	19	63	159	26	20	7.5	4.2
12	8.7	8.8	12	24	25	19	58	153	24	14	7.1	4.1
13	8.8	8.9	12	21	23	19	55	165	99	14	7.0	4.1
14	9.3	8.9	21	17	20	19	63	142	117	39	6.7	4.2
15	13	8.8	24	17	20	19	168	116	76	22	6.3	5.3
16	10	8.8	16	15	20	23	111	97	57	16	6.6	5.9
17	10	8.8	15	14	20	23	97	91	45	13	7.0	5.1
18	9.7	8.6	23	13	18	67	87	371	37	15	6.4	4.7
19	9.5	8.9	20	12	17	81	80	219	31	20	6.6	4.7
20	9.4	8.7	17	13	18	576	75	176	29	14	6.1	5.0
21	9.3	8.8	15	12	19	372	77	145	25	12	5.6	4.7
22	9.2	8.6	13	13	18	219	165	124	23	11	5.6	17
23	9.3	8.6	12	13	17	152	125	107	21	11	5.9	21
24	9.3	8.6	13	68	16	119	108	96	20	11	12	8.6
25	9.4	27	11	70	15	95	100	90	18	11	8.8	6.9
26	8.9	22	10	43	15	151	88	79	17	26	6.8	16
27	9.2	14	10	34	15	219	79	69	17	56	6.2	54
28	9.7	13	e9.8	29	14	141	430	66	18	29	6.3	35
29	9.5	10	e9.4	27	---	120	303	70	17	18	7.4	16
30	9.5	10	9.2	27	---	102	219	59	15	14	7.2	12
31	9.5	---	e9.0	35	---	146	---	53	---	12	6.7	---
TOTAL	288.6	309.8	412.7	640.4	586	2973	3653	4499	1148	568	259.0	291.8
MEAN	9.31	10.3	13.3	20.7	20.9	95.9	122	145	38.3	18.3	8.35	9.73
MAX	13	27	24	70	35	576	430	371	117	56	14	54
MIN	8.2	8.6	8.9	8.1	14	13	55	53	15	11	5.6	4.1
CFSM	0.13	0.14	0.18	0.29	0.29	1.32	1.68	2.00	0.53	0.25	0.12	0.13
IN.	0.15	0.16	0.21	0.33	0.30	1.53	1.88	2.31	0.59	0.29	0.13	0.15

e Estimated

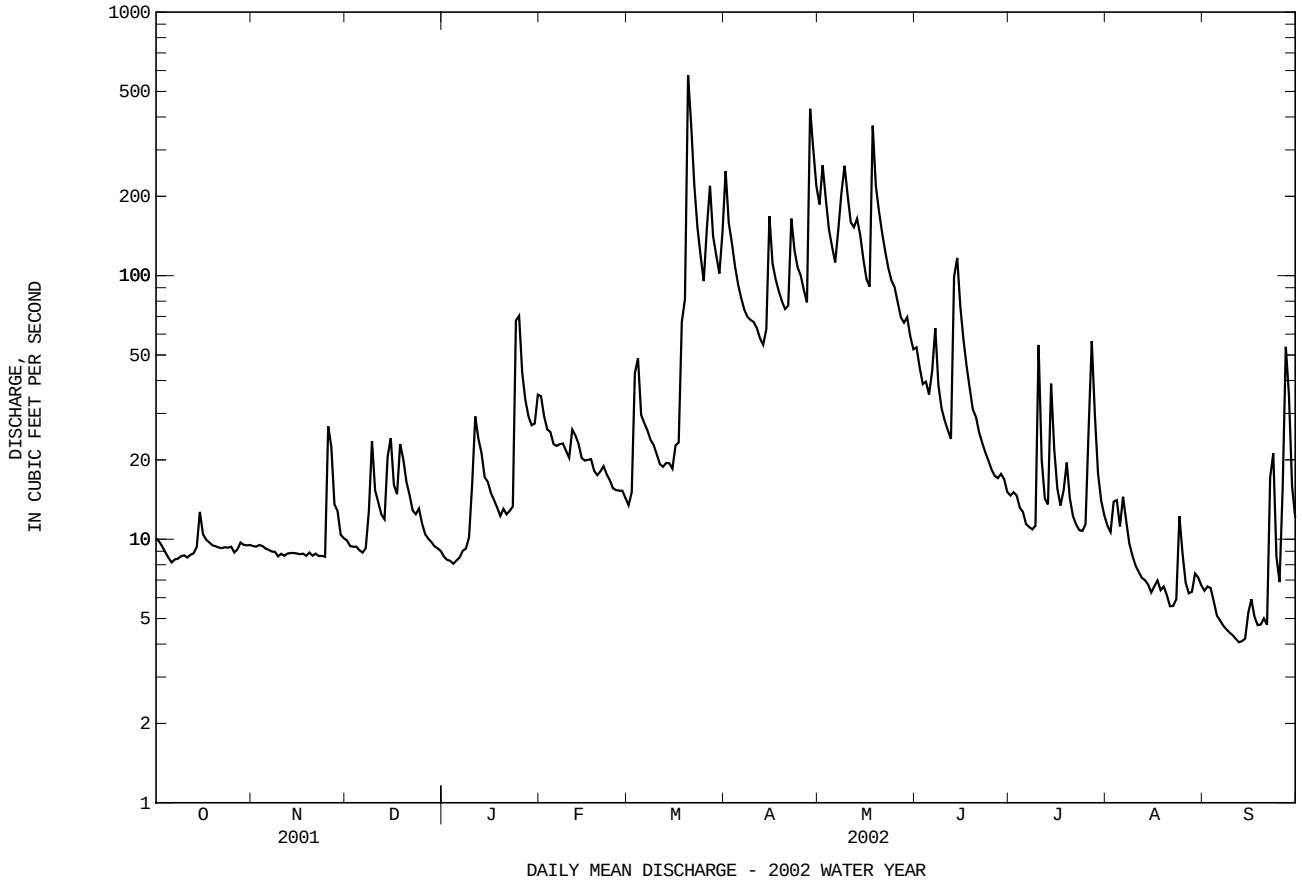
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1906, 1930 - 2002, BY WATER YEAR (WY)

MEAN	31.6	42.0	72.6	91.4	126	204	171	121	59.2	30.5	23.7	22.6
MAX	270	355	314	371	355	682	420	294	171	185	120	277
(WY)	1943	1986	1973	1937	1998	1936	1993	1989	1995	1989	1955	1996
MIN	1.78	3.40	3.42	10.9	8.77	43.2	40.0	27.7	12.5	5.19	3.97	2.65
(WY)	1931	1931	1944	1940	1954	1990	1954	1934	1969	1930	1930	1932

01599000 GEORGES CREEK AT FRANKLIN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1905 - 1906, 1930 - 2002	
ANNUAL TOTAL	25481.1		15629.3			
ANNUAL MEAN	69.8		42.8		81.9	
HIGHEST ANNUAL MEAN					136	1996
LOWEST ANNUAL MEAN					30.7	1969
HIGHEST DAILY MEAN	1320	Jun 7	576	Mar 20	4130	Mar 17 1936
LOWEST DAILY MEAN	8.2	Oct 6	4.1	(a)	1.6	(b)
ANNUAL SEVEN-DAY MINIMUM	8.5	Oct 5	4.3	Sep 8	1.6	Sep 29 1930
MAXIMUM PEAK FLOW			948	Mar 20	(c)8500	Mar 17 1936
MAXIMUM PEAK STAGE			5.85	Mar 20	(d)9.60	Mar 17 1936
INSTANTANEOUS LOW FLOW			3.9	(f)	1.6	(g)
ANNUAL RUNOFF (CFSM)	0.96		0.59		1.13	
ANNUAL RUNOFF (INCHES)	13.09		8.03		15.37	
10 PERCENT EXCEEDS	179		119		196	
50 PERCENT EXCEEDS	31		15		37	
90 PERCENT EXCEEDS	9.2		7.0		7.2	

a Sept. 12, 13.
b Sept. 29, 30, 1930.
c From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
d At site then in use.
f Sept. 12, 14.
g Sept. 29 to Oct. 13, 1930.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01601500 WILLS CREEK NEAR CUMBERLAND, MD

LOCATION.--Lat 39°40'10.6", long 78°47'16.9", Allegany County, Hydrologic Unit 02070002, on right bank at downstream side of railway bridge, 0.15 mi downstream from Braddock Run, 2.0 mi upstream from Cumberland, and mouth.

DRAINAGE AREA.--247 mi^2.

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Cumberland"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1432: 1906, 1930(M), 1933-34(M), 1936-37, 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 640.89 ft above National Geodetic Vertical Datum of 1929. May 6, 1905, to July 14, 1906, nonrecording gage at highway bridge 700 ft upstream at different datum. Oct. 18, 1929, to Mar. 17, 1936, water-stage recorder, and Apr. 1, 1936, to Mar. 19, 1937, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Records include drainage from numerous active and abandoned coal mines. An undetermined amount of water is diverted into the basin from Georges Creek basin by Hoffman drainage tunnel. Miscellaneous measurements of discharge from the Hoffman drainage tunnel have been made in the water years 1944, 1964-65, 1967-82, and 1984 by the U.S. Geological Survey, and in the water years 1958 and 1959 by the Maryland Geological Survey. Slight diurnal fluctuation at low flow caused by quarry upstream. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	2015	*3,490	*6.53	No peak greater than base discharge.			

Minimum discharge, 14 ft^3/s, Sept. 10-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	26	44	e27	126	53	751	892	171	45	23	20
2	24	27	42	e26	121	66	624	987	146	43	21	20
3	23	28	37	25	115	177	565	863	128	41	25	20
4	23	28	34	25	113	284	461	724	124	39	25	19
5	22	27	32	25	94	241	379	585	114	37	50	18
6	21	28	30	e26	97	226	322	477	160	35	107	17
7	21	29	30	e27	100	186	276	454	210	33	60	17
8	21	28	38	e28	91	159	243	566	139	32	38	16
9	21	27	57	e30	82	138	228	838	114	32	31	16
10	21	27	66	44	75	126	222	1090	102	32	27	15
11	21	26	52	96	89	111	188	812	93	32	25	14
12	21	26	45	136	100	103	172	628	86	31	23	14
13	21	26	42	114	97	100	179	612	134	30	22	14
14	27	26	57	92	84	99	209	639	281	49	21	14
15	38	26	89	89	90	92	360	580	177	38	20	16
16	52	26	77	74	100	97	320	492	141	39	19	16
17	39	26	64	65	94	115	309	424	118	33	19	16
18	33	26	97	59	86	306	296	1300	100	33	27	15
19	30	26	126	47	76	496	304	1160	89	32	45	15
20	29	26	100	44	86	2230	282	867	80	30	25	16
21	28	25	82	60	82	2220	295	646	73	28	22	17
22	27	25	67	56	80	1110	518	502	67	27	21	36
23	26	25	57	53	75	707	491	409	62	25	24	37
24	26	25	55	92	69	519	469	337	58	24	44	23
25	27	63	54	210	65	404	423	289	55	28	33	19
26	26	107	42	173	64	463	365	248	58	44	32	34
27	26	65	36	149	66	728	315	211	55	54	26	109
28	26	54	e33	129	61	628	1330	212	52	39	24	131
29	26	51	e31	114	---	543	1850	322	50	34	23	68
30	26	45	e29	105	---	450	1180	305	48	28	22	45
31	26	---	e28	124	---	457	---	203	---	25	21	---
TOTAL	823	1020	1673	2364	2478	13634	13926	18674	3285	1072	945	847
MEAN	26.5	34.0	54.0	76.3	88.5	440	464	602	110	34.6	30.5	28.2
MAX	52	107	126	210	126	2230	1850	1300	281	54	107	131
MIN	21	25	28	25	61	53	172	203	48	24	19	14
CFSM	0.11	0.14	0.22	0.31	0.36	1.78	1.88	2.44	0.44	0.14	0.12	0.11
IN.	0.12	0.15	0.25	0.36	0.37	2.05	2.10	2.81	0.49	0.16	0.14	0.13

e Estimated

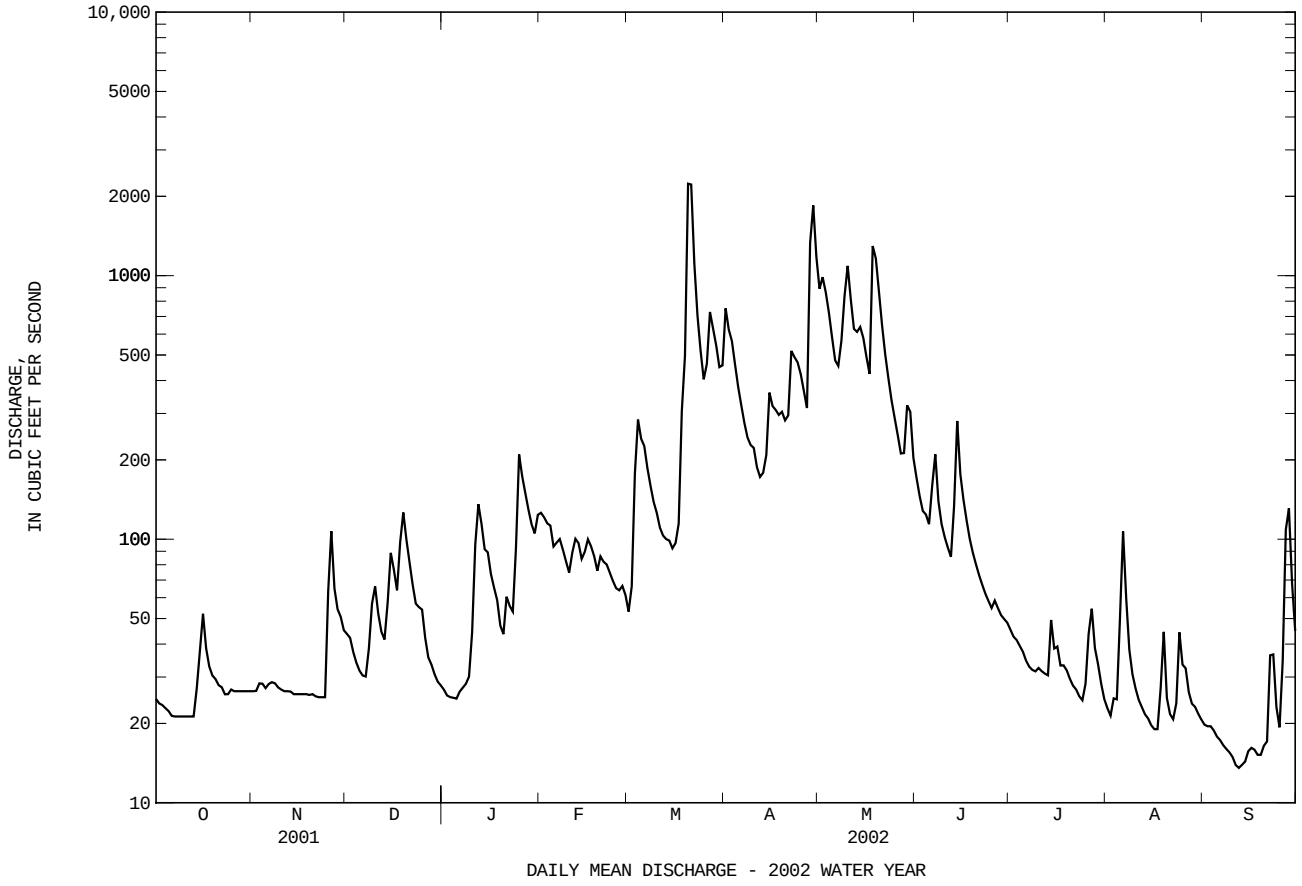
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1906, 1930 - 2002, BY WATER YEAR (WY)

MEAN	133	199	321	384	510	802	674	454	229	112	88.1	83.7
MAX	1130	1520	1113	1481	1255	2410	1910	1109	967	641	674	1083
(WY)	1943	1986	1973	1996	1971	1936	1993	1989	1972	1989	1984	1996
MIN	11.9	15.5	18.4	54.2	65.8	182	184	101	51.1	24.3	16.6	12.1
(WY)	1931	1931	1944	1940	1954	1990	1968	1934	1965	1965	1930	1932

01601500 WILLS CREEK NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1905 - 1905 1930 - 2002	
ANNUAL TOTAL	73331		60741			
ANNUAL MEAN	201		166		332	
HIGHEST ANNUAL MEAN					599	1996
LOWEST ANNUAL MEAN					122	1954
HIGHEST DAILY MEAN	2620	Apr 16	2230	Mar 20	19200	Jan 19 1996
LOWEST DAILY MEAN	21	Oct 6	14	(a)	10	(b)
ANNUAL SEVEN-DAY MINIMUM	21	Oct 6	15	Sep 8	10	Oct 8 1930
MAXIMUM PEAK FLOW			3490	Mar 20	(c)45900	Jan 19 1996
MAXIMUM PEAK STAGE			6.53	Mar 20	(d)23.11	Jan 19 1996
INSTANTANEOUS LOW FLOW			14	(f)	9.0	Oct 14 1930
ANNUAL RUNOFF (CFSM)	0.81		0.67		1.34	
ANNUAL RUNOFF (INCHES)	11.04		9.15		18.24	
10 PERCENT EXCEEDS	561		483		788	
50 PERCENT EXCEEDS	78		55		145	
90 PERCENT EXCEEDS	26		21		29	

a Sept. 11-14.
b Oct. 8-10, 1930.
c From rating curve extended above 11,000 ft^3/s on basis of slope-area measurement at gage heights of 13.45 and 20.2 ft.
d From floodmarks at present site.
f Sept. 10-15.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD

LOCATION.--Lat 39°37'18.5", long 78°46'24.3", Allegany County, Hydrologic Unit 02070002, on left bank at downstream side of Wiley Ford Bridge, 2.0 mi south of Cumberland, 2.1 mi downstream from Wills Creek, and at mile 19.6.

DRAINAGE AREA.--877 mi^2.

PERIOD OF RECORD.--May 1929 to current year. Gage-height records collected at various sites about 2.0 mi upstream from September 1901 to December 1932 and thereafter at present site, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 726: Drainage area. WSP 781: 1932(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 585.22 ft above National Geodetic Vertical Datum of 1929. Prior to June 18, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Prior to July 1981 some regulation at low flow by Stony River Reservoir, 79 mi upstream from station. Low-flow regulation since December 1950 by Savage River Reservoir, 39 mi upstream from station (see station 01597500). Flow regulated by Jennings Randolph Lake, 43 mi upstream from station since July 1981. Prior to July 1957, small amount of inflow from industrial wastes and sewage from city of Cumberland from water diverted from Evitts Creek, mouth of which is downstream from station. Diversion to Chesapeake and Ohio Canal prior to 1935. National Weather Service gage height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 29.2 ft, June 1, 1889, discharge, about 89,000 ft^3/s. Flood of Mar. 29, 1924, reached a stage of 28.4 ft, discharge, about 82,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,740 ft^3/s, April 29, gage height, 8.55 ft; minimum discharge, 202 ft^3/s, Sept. 25, 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	324	319	317	271	446	351	3170	4490	1350	391	529	360
2	324	319	310	e270	448	365	3190	5230	1220	388	519	297
3	324	322	307	e265	437	484	3150	4940	780	372	529	262
4	322	322	303	e265	435	630	2000	3050	769	355	503	259
5	319	324	302	267	422	552	1520	2690	760	352	515	248
6	319	324	300	270	410	542	1420	2360	793	340	544	246
7	486	308	302	e275	418	493	1340	2220	984	339	390	320
8	862	294	316	e275	416	455	1140	2490	839	342	327	362
9	424	291	356	276	406	433	1160	3930	728	330	321	360
10	324	290	359	288	396	420	1140	3950	656	436	315	521
11	324	290	334	334	409	410	869	3060	574	427	313	577
12	340	290	326	398	428	401	903	2640	542	341	404	489
13	348	290	316	378	416	398	952	2520	610	345	468	470
14	358	290	332	355	413	402	1050	2470	877	465	469	476
15	372	290	373	346	408	395	2130	2230	865	477	464	482
16	374	290	356	330	414	389	3240	2060	687	396	461	417
17	368	290	330	323	416	412	2610	1950	623	372	486	397
18	360	290	355	316	412	654	1640	3820	584	377	630	402
19	360	290	392	307	396	991	1540	5210	569	389	610	387
20	357	289	367	305	401	3890	1660	3340	528	376	440	399
21	354	284	343	311	385	4400	2020	3600	502	360	649	402
22	354	284	328	309	377	2420	4290	3250	490	352	666	435
23	350	284	317	307	372	1760	4560	2390	478	356	631	450
24	351	285	319	346	372	1400	4140	2140	472	349	633	289
25	336	352	312	602	361	1160	3450	1530	469	358	610	207
26	317	424	301	494	362	1410	2320	1350	468	438	539	250
27	319	352	288	436	363	2820	1870	1220	461	1360	460	457
28	319	331	e285	408	362	2820	3890	1080	455	3910	457	502
29	319	326	e280	387	---	2540	7030	1110	422	1700	457	339
30	319	321	e275	377	---	2270	5290	1120	397	779	396	273
31	319	---	272	401	---	2070	---	1240	---	574	367	---
TOTAL	11246	9255	9973	10492	11301	38137	74684	84680	19952	18146	15102	11335
MEAN	363	308	322	338	404	1230	2489	2732	665	585	487	378
MAX	862	424	392	602	448	4400	7030	5230	1350	3910	666	577
MIN	317	284	272	265	361	351	869	1080	397	330	313	207
CFSM	0.41	0.35	0.37	0.39	0.46	1.40	2.84	3.11	0.76	0.67	0.56	0.43
IN.	0.48	0.39	0.42	0.45	0.48	1.62	3.17	3.59	0.85	0.77	0.64	0.48

e Estimated

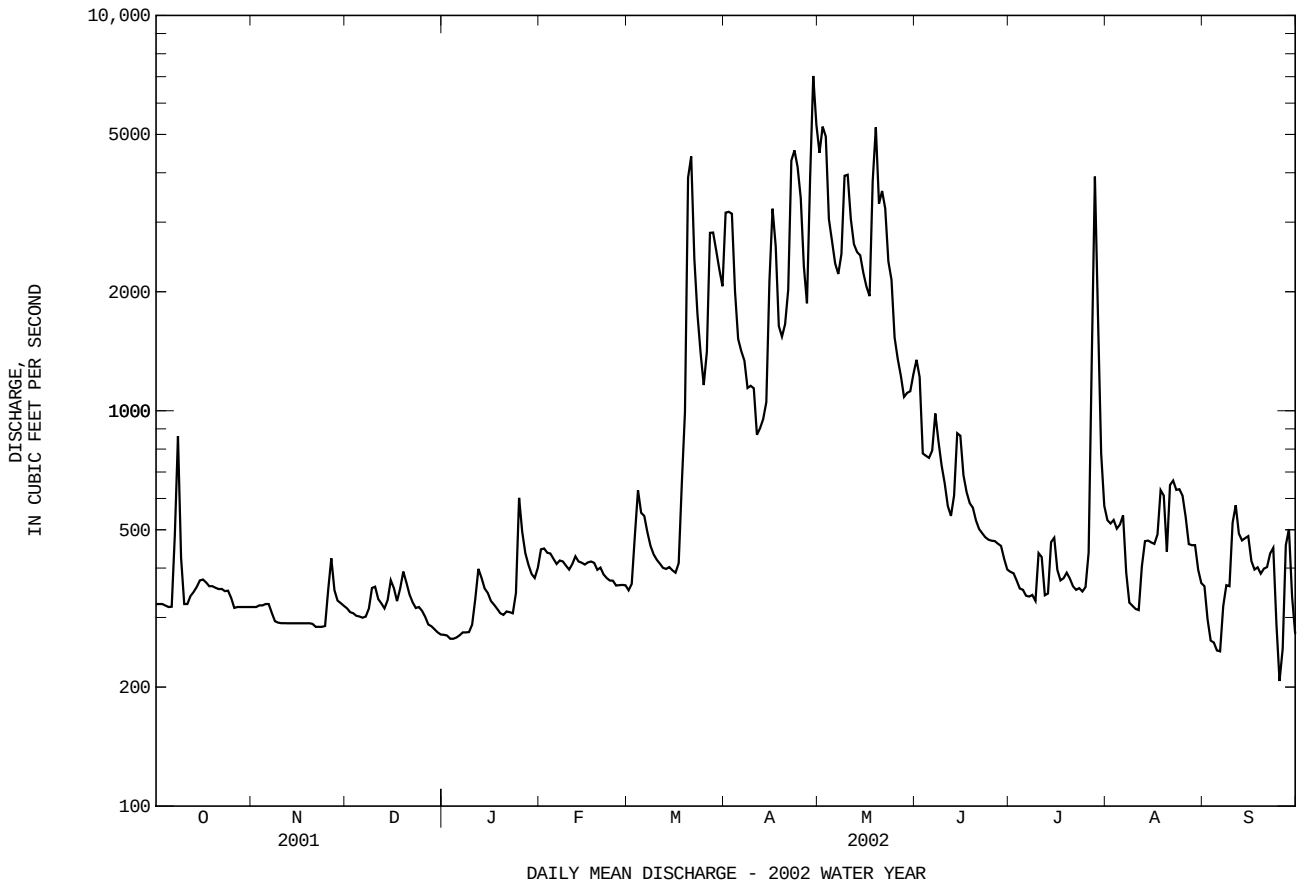
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2002, BY WATER YEAR (WY)

MEAN	590	770	1274	1545	1990	2866	2354	1730	907	533	467	441
MAX	3791	5350	4652	5115	4410	8763	5866	4070	2375	2270	2152	4117
(WY)	1943	1986	1973	1937	1998	1936	1993	1996	1981	1989	1996	1996
MIN	28.9	44.8	134	269	393	789	705	374	209	89.7	57.7	40.3
(WY)	1931	1931	1931	1940	1934	1990	1995	1934	1965	1930	1930	1932

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1929 - 2002	
ANNUAL TOTAL	375037		314303			
ANNUAL MEAN	1027		861		1287	
ANNUAL MEAN‡	1010		844		1286	
HIGHEST ANNUAL MEAN					2390	1996
LOWEST ANNUAL MEAN					632	1969
HIGHEST DAILY MEAN	7370	Jun 7	7030	Apr 29	47400	Mar 18 1936
LOWEST DAILY MEAN	272	Dec 31	207	Sep 25	13	(a)
ANNUAL SEVEN-DAY MINIMUM	287	Nov 18	269	Dec 31	16	Sep 20 1932
MAXIMUM PEAK FLOW			7740	Apr 29	(b)88200	Mar 17 1936
MAXIMUM PEAK STAGE			8.55	Apr 29	29.10	Mar 17 1936
INSTANTANEOUS LOW FLOW			202	(c)	12	Sep 22 1932
ANNUAL RUNOFF (CFSM)	1.17		0.98		1.47	
ANNUAL RUNOFF (CFSM)‡	1.15		0.96		1.47	
ANNUAL RUNOFF (INCHES)	15.91		13.33		19.94	
ANNUAL RUNOFF (INCHES)‡	15.65		13.07		19.96	
10 PERCENT EXCEEDS	2610		2400		2980	
50 PERCENT EXCEEDS	559		406		674	
90 PERCENT EXCEEDS	317		290		176	

‡ Adjusted for change in reservoir contents since October 1949.
a Sept. 21-24, 1932.
b From rating curve extended above 33,000 ft^3/s on basis of slope-area measurement of peak flow.
c Sept. 25, 26.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV

LOCATION.--Lat 39°26'35", long 78°49'20", Mineral County, Hydrologic Unit 02070002, on right bank 100 ft downstream from Hazel Run, 1.0 mi downstream from Cabin Run, 4.0 mi northeast of Headsville, 8.0 mi east of Keyser, and at mile 13.0.

DRAINAGE AREA.--211 mi^2.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 951: 1939-40. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 624.90 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 11, 1946, nonrecording gage on bridge 1.0 mi upstream at datum 6.14 ft higher. Oct. 11-23, 1946, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. The flow from 115 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,887 acre-ft. National Weather Service gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,570 ft^3/s, May 2, gage height, 7.37 ft. Minimum discharge, 1.4 ft^3/s, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	13	e9.0	31	15	228	512	65	11	89	8.3
2	11	12	12	8.7	32	15	227	1050	55	10	55	8.3
3	11	11	12	e8.4	31	20	192	729	46	9.3	37	8.2
4	9.8	11	12	e8.2	30	22	155	532	44	8.4	33	7.6
5	9.5	11	12	e8.0	27	24	126	493	47	8.7	28	6.3
6	9.2	11	11	e7.8	26	27	103	419	49	7.3	25	5.4
7	9.2	11	11	e7.6	26	27	87	389	61	6.2	21	4.8
8	9.2	11	12	e9.0	25	26	73	399	50	6.0	17	4.3
9	10	11	17	11	24	25	65	439	40	5.0	14	3.8
10	12	11	18	14	23	24	65	479	35	51	12	3.7
11	10	11	19	19	22	22	56	385	33	22	11	3.0
12	8.2	11	20	19	22	21	50	318	32	14	9.8	2.8
13	8.7	11	19	19	22	21	48	274	27	12	8.9	2.6
14	9.1	11	22	19	21	22	59	248	47	83	8.9	1.9
15	14	11	24	18	21	21	289	209	47	76	8.1	1.9
16	11	11	23	17	21	21	274	173	39	45	7.5	3.6
17	11	11	22	16	20	21	223	146	32	30	8.0	3.8
18	11	11	22	15	20	29	178	758	27	27	7.3	4.7
19	12	11	20	14	19	39	145	595	24	74	7.7	4.9
20	11	12	18	14	19	648	132	494	21	187	6.7	5.5
21	12	12	17	15	19	649	138	406	19	71	6.2	5.5
22	12	12	15	15	19	493	834	326	17	49	5.6	5.8
23	12	12	e14	15	18	414	593	263	16	47	5.4	7.7
24	12	12	e13	21	18	331	502	222	14	39	6.2	8.7
25	13	15	e12	34	17	265	445	187	14	34	6.6	8.3
26	11	18	e11	40	17	226	369	158	13	173	6.5	11
27	11	16	e11	38	16	212	291	136	14	395	5.7	50
28	11	16	e10	34	16	174	876	140	13	423	5.6	91
29	12	15	e10	30	---	145	937	111	13	287	6.3	61
30	12	14	e9.6	28	---	121	647	92	13	202	7.4	44
31	12	---	e9.2	29	---	113	---	76	---	137	8.2	---
TOTAL	338.9	365	470.8	560.7	622	4233	8407	11158	967	2549.9	484.6	388.4
MEAN	10.93	12.17	15.19	18.09	22.21	136.5	280.2	359.9	32.23	82.25	15.63	12.95
MAX	14	18	24	40	32	649	937	1050	65	423	89	91
MIN	8.2	11	9.2	7.6	16	15	48	76	13	5.0	5.4	1.9
CFSM	0.05	0.06	0.07	0.09	0.11	0.65	1.33	1.71	0.15	0.39	0.07	0.06
IN.	0.06	0.06	0.08	0.10	0.11	0.75	1.48	1.97	0.17	0.45	0.09	0.07

e Estimated

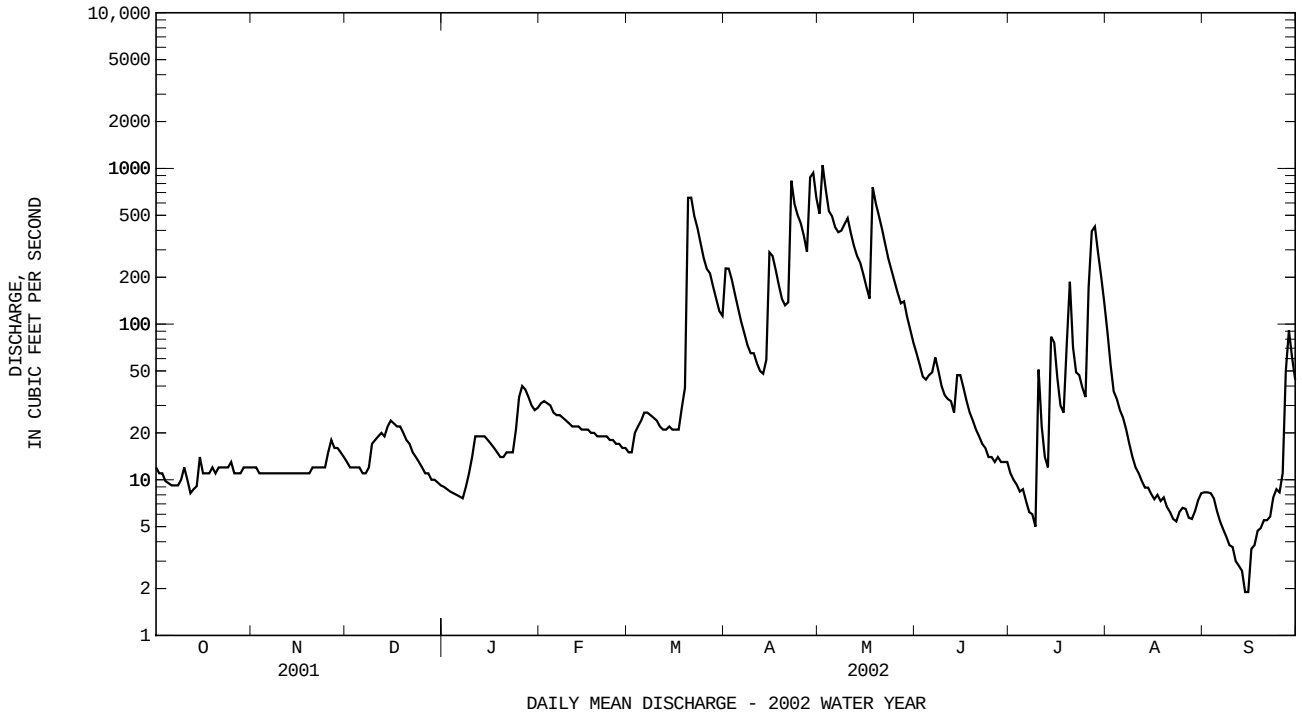
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	71.32	81.61	158.7	205.2	303.9	424.0	312.4	221.9	104.6	58.87	57.55	48.10
MAX	745	901	825	908	893	1346	1085	763	379	415	586	767
(WY)	1943	1986	1973	1996	1994	1963	1993	1988	1940	1989	1996	1996
MIN	2.24	4.39	9.70	18.1	22.2	58.3	54.1	21.2	8.38	3.14	5.20	2.80
(WY)	1992	1992	1944	2002	2002	1990	1969	1969	1999	1999	1966	1991

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	35137.7		30545.3			
ANNUAL MEAN	96.27		83.69		170.1	
HIGHEST ANNUAL MEAN					387	1996
LOWEST ANNUAL MEAN					35.1	1969
HIGHEST DAILY MEAN	956	Mar 22	1050	May 2	11100	Oct 15 1942
LOWEST DAILY MEAN	6.5	Sep 20	1.9	(a)	0.48	Aug 23 1999
ANNUAL SEVEN-DAY MINIMUM	6.9	Sep 14	2.8	Sep 10	0.87	Aug 17 1999
MAXIMUM PEAK FLOW			1570	May 2	(b)16000	Aug 19 1955
MAXIMUM PEAK STAGE			7.37	May 2	12.20	Aug 19 1955
INSTANTANEOUS LOW FLOW			1.4	Sep 12	0.45	(c)
ANNUAL RUNOFF (CFSM)	0.46		0.40		0.81	
ANNUAL RUNOFF (INCHES)	6.19		5.39		10.95	
10 PERCENT EXCEEDS	250		274		440	
50 PERCENT EXCEEDS	32		19		58	
90 PERCENT EXCEEDS	11		7.6		10	

a Sept. 14, 15.
b From rating curve extended above 4,900 ft^3/s on basis of contracted-opening measurement of peak flow.
c Aug. 23, 24, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV

LOCATION.--Lat 38°59'28", long 79°10'34", Grant County, Hydrologic Unit 02070001, on right bank 1.1 mi downstream from North Fork South Branch Potomac River, 2.6 mi west of Petersburg, and at mile 74.7.

DRAINAGE AREA.--676 mi^2.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 951: 1939-41. WSP 1141: 1932, 1933(M), 1936-38. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 968.34 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 4, 1928, nonrecording gage and June 1928 to Nov. 5, 1985, water-stage recorder at site 1,125 ft downstream at datum 6.34 ft lower. Nov. 5, 1985, to June 22, 1994, and October 23, 1996 to current year, water-stage recorder at present site and datum. June 22, 1994, to October 23, 1996, water-stage recorder at site 325 ft downstream at datum 2.34 ft lower.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect, no gage-height record), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1877 reached a stage of 21.2 ft, from floodmarks at previous site and datum, about 59,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1030	10,300	8.04	Apr 28	2230	9,250	7.89
Apr 22	0900	*20,600	*10.81				

Minimum discharge, 49 ft^3/s, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	78	88	e90	313	174	1500	2530	785	148	212	76
2	87	78	85	e88	286	177	1500	2200	687	136	180	76
3	83	79	83	e85	261	251	1260	2410	573	134	164	72
4	80	79	81	84	244	529	1010	1930	722	167	205	67
5	78	79	79	e83	220	457	825	1600	757	139	204	64
6	75	78	78	e80	202	446	710	1280	595	121	167	61
7	73	78	78	e78	216	391	623	1280	567	111	148	58
8	72	78	86	e76	211	346	547	4250	487	103	135	56
9	74	78	100	e88	201	e320	496	3370	410	99	119	55
10	74	76	107	105	200	e300	523	2790	363	150	109	54
11	74	75	127	131	237	e290	512	2000	329	191	103	53
12	77	76	154	217	315	e270	464	1550	298	196	96	52
13	77	77	169	199	307	e260	467	1340	290	152	96	51
14	77	77	148	170	284	306	573	1330	412	429	93	51
15	84	77	144	151	261	305	1070	1330	382	561	86	54
16	91	76	145	143	249	300	1940	1200	330	367	91	61
17	90	75	133	134	245	e300	1450	1040	292	271	87	61
18	89	75	128	128	229	e400	1150	2350	259	215	87	59
19	84	75	190	128	210	572	1080	2460	233	186	85	57
20	84	73	193	122	208	5700	1510	1770	230	175	88	55
21	81	72	165	119	223	4060	2610	1380	232	181	79	54
22	81	72	146	125	243	2220	14900	1120	200	156	75	68
23	80	72	131	122	234	1420	6370	927	181	138	72	101
24	79	72	e120	228	220	e1200	3550	794	168	124	74	130
25	77	79	e115	734	207	e940	2340	699	158	159	77	120
26	73	93	e110	593	202	e800	1650	620	153	202	79	115
27	73	130	e105	444	200	905	1260	743	178	392	76	911
28	76	116	e100	359	193	898	4220	937	183	536	77	636
29	77	100	e98	310	---	819	6870	1110	189	466	88	418
30	78	92	e96	289	---	743	3920	927	168	332	84	284
31	78	---	e92	309	---	738	---	811	---	262	80	---
TOTAL	2467	2435	3674	6012	6621	26837	66900	50078	10811	6999	3416	4030
MEAN	79.58	81.17	118.5	193.9	236.5	865.7	2230	1615	360.4	225.8	110.2	134.3
MAX	91	130	193	734	315	5700	14900	4250	785	561	212	911
MIN	72	72	78	76	193	174	464	620	153	99	72	51
CFSM	0.12	0.12	0.18	0.29	0.35	1.28	3.30	2.39	0.53	0.33	0.16	0.20
IN.	0.14	0.13	0.20	0.33	0.36	1.48	3.68	2.76	0.59	0.39	0.19	0.22

e Estimated

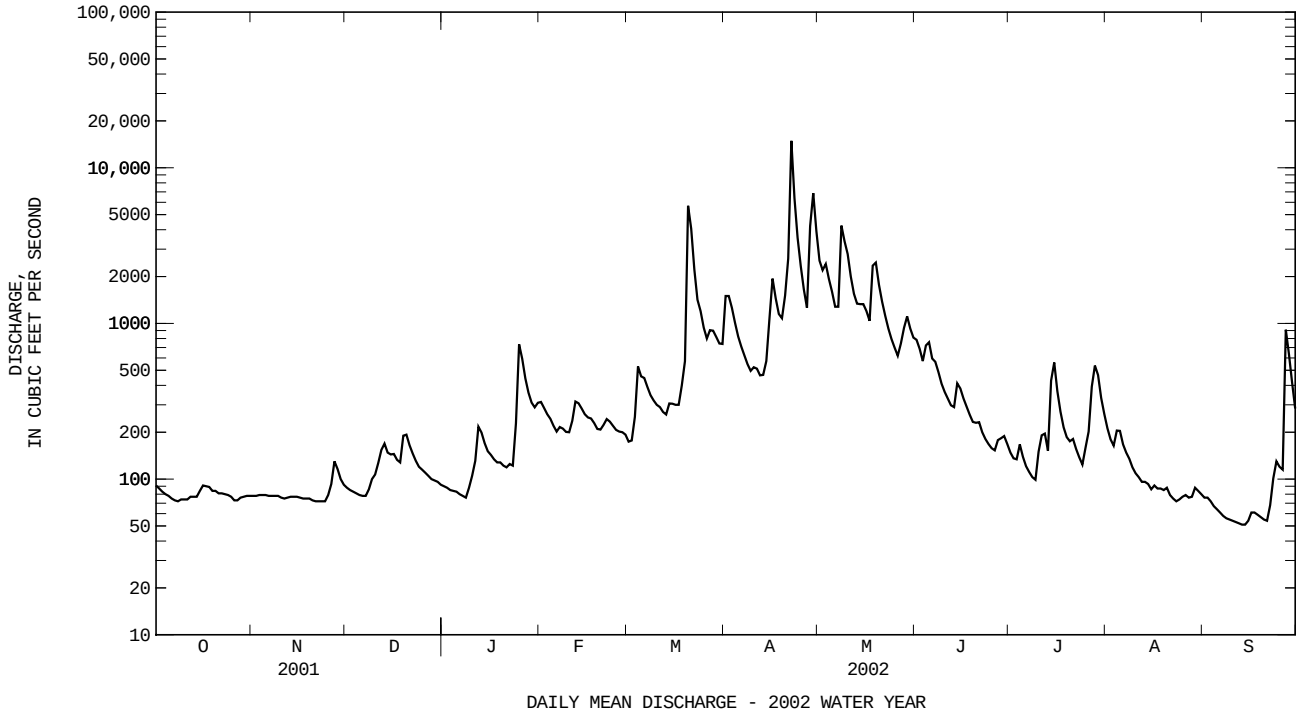
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2002, BY WATER YEAR (WY)

MEAN	317.5	477.5	695.6	923.5	1154	1631	1272	1008	527.6	290.9	285.6	255.3
MAX	1863	5569	2511	3386	3519	4090	2888	3546	2175	1479	1601	2968
(WY)	1977	1986	1973	1996	1994	1936	1993	1996	1949	1949	1996	1996
MIN	49.3	62.7	95.1	143	212	543	398	233	125	63.9	54.1	52.3
(WY)	1931	1931	1966	1981	1934	1990	1986	1930	1999	1999	1930	1930

01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1928 - 2002	
ANNUAL TOTAL	196549		190280			
ANNUAL MEAN	538.5		521.3		734.3	
HIGHEST ANNUAL MEAN					1619	1996
LOWEST ANNUAL MEAN					365	1969
HIGHEST DAILY MEAN	5050	May 23	14900	Apr 22	77000	Nov 5 1985
LOWEST DAILY MEAN	72	(a)	51	(b)	43	(c)
ANNUAL SEVEN-DAY MINIMUM	73	Nov 18	53	Sep 9	44	Sep 6 1966
MAXIMUM PEAK FLOW			20600	Apr 22	(d)130000	Nov 5 1985
MAXIMUM PEAK STAGE			10.81	Apr 22	(f)25.40	Nov 5 1985
INSTANTANEOUS LOW FLOW			49	Sep 14	42	(g)
ANNUAL RUNOFF (CFSM)	0.80		0.77		1.09	
ANNUAL RUNOFF (INCHES)	10.82		10.47		14.76	
10 PERCENT EXCEEDS	1540		1280		1650	
50 PERCENT EXCEEDS	246		170		372	
90 PERCENT EXCEEDS	78		75		95	

a Oct. 8, Nov. 21-24.
b Sept. 13, 14.
c Sept. 27-29, 1959, Sept. 11, 12, 1966.
d From rating curve extended above 16,700 ft^3/s on basis of slope-area measurement of peak flow.
f From floodmarks at former site at gage datum 962.00 ft.
g Sept. 28, 29, 1959, Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV

LOCATION.--Lat 39°00'44", long 78°57'23", Hardy County, Hydrologic Unit 02070001, on right bank 0.2 mi downstream from Stony Creek, 3.5 mi south of Moorefield, and at mile 5.3.

DRAINAGE AREA.--277 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1928 to September 1935, August 1938 to current year.

REVISED RECORDS.--WSP 1141: 1933(M), 1940, 1942-43, 1945, 1948(M). WSP 1302:l93l(M), l935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 861.51 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers datum). Prior to March 11, 1940, nonrecording gage at Harness Ford Bridge 2.0 mi upstream at datum about 31 ft higher.

REMARKS.--Water-discharge records good except those for periods of estimated daily discharges (ice effect, doubtful gage-height record), which are poor. The flow from 92.7 mi^2 upstream from station is partially controlled, but not diverted, by several floodwater detention reservoirs with a total combined detention capacity of 19,870 acre-ft. National Weather Service gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,240 ft^3/s, Apr. 22, gage height, 7.92 ft. Minimum discharge, UNKNOWN.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	15	21	e23	49	24	312	713	175	35	41	16
2	25	17	20	e23	49	25	407	545	139	34	36	16
3	25	17	19	e22	49	36	356	450	119	32	32	16
4	24	17	19	e22	49	39	287	353	107	31	28	15
5	24	15	18	e21	46	72	236	302	111	28	28	14
6	22	15	18	e21	44	75	202	267	112	27	32	13
7	22	15	18	e21	45	76	173	259	113	26	30	e12
8	22	15	21	e20	43	76	153	613	100	25	27	e12
9	22	15	25	e20	43	71	139	890	88	24	25	e12
10	22	14	21	23	41	66	131	798	77	34	23	e11
11	22	14	27	29	41	61	121	611	68	31	22	e11
12	22	14	30	32	40	57	111	475	60	26	20	e10
13	22	14	34	34	40	58	109	397	63	28	20	e11
14	22	14	44	37	39	58	113	346	153	51	20	e12
15	24	14	42	37	39	57	129	288	159	41	20	13
16	23	14	37	34	37	55	205	240	140	41	21	17
17	24	14	35	34	37	57	245	209	112	38	19	e16
18	29	14	35	32	37	66	232	590	92	33	18	e15
19	26	14	33	32	37	84	267	637	77	30	18	e14
20	24	14	32	34	34	638	527	438	66	28	17	e14
21	23	13	e31	31	33	737	968	330	58	28	16	17
22	22	13	e30	29	31	462	5690	263	53	28	16	19
23	20	13	e29	30	30	320	3070	220	48	53	15	24
24	20	13	e28	33	29	246	1520	191	46	106	15	24
25	19	18	e27	34	28	202	797	167	42	49	15	23
26	17	21	e27	36	27	173	497	148	40	71	15	38
27	16	22	e26	45	25	204	356	174	38	105	14	399
28	18	21	e25	47	24	238	744	191	37	99	14	398
29	17	25	e25	45	---	235	1880	177	36	75	16	250
30	16	23	24	45	---	214	1100	164	36	63	17	171
31	17	---	e24	49	---	205	---	178	---	48	16	---
TOTAL	676	477	845	975	1066	4987	21077	11624	2565	1368	666	1633
MEAN	21.81	15.90	27.26	31.45	38.07	160.9	702.6	375.0	85.50	44.13	21.48	54.43
MAX	29	25	44	49	49	737	5690	890	175	106	41	399
MIN	16	13	18	20	24	24	109	148	36	24	14	10
CFSM	0.08	0.06	0.10	0.11	0.14	0.58	2.54	1.35	0.31	0.16	0.08	0.20
IN.	0.09	0.06	0.11	0.13	0.14	0.67	2.83	1.56	0.34	0.18	0.09	0.22

e Estimated

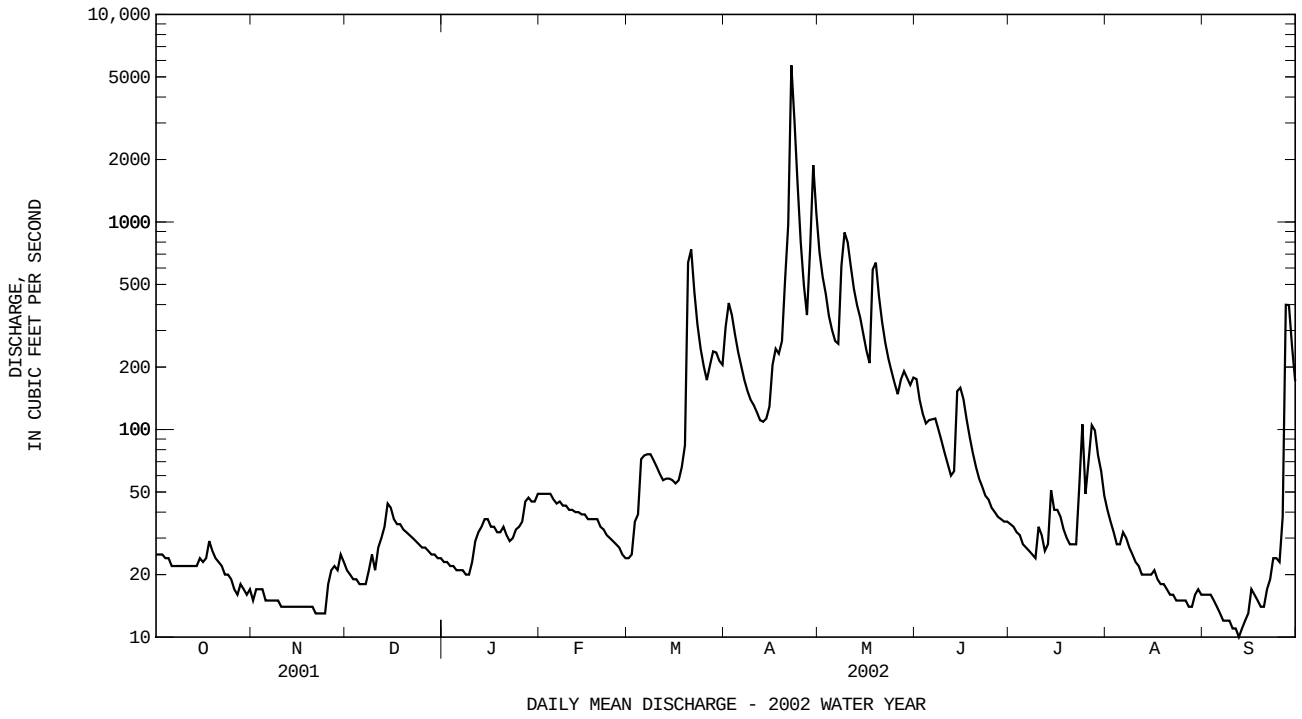
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1935, 1938 - 2002, BY WATER YEAR (WY)

MEAN	124.7	172.3	202.7	264.4	331.8	490.3	406.3	324.2	166.8	84.35	106.5	93.81
MAX	776	2951	879	1267	1591	1327	1787	946	1071	510	801	1340
(WY)	1977	1986	1974	1996	1998	1993	1987	1988	1949	1949	1955	1996
MIN	12.8	14.0	17.4	21.3	25.2	72.2	91.7	51.2	28.1	9.48	10.4	10.2
(WY)	1992	1999	1966	1981	1934	1981	1981	1930	1977	1999	1965	1968

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1928 - 1935, 1938 - 2002	
ANNUAL TOTAL	66570		47959			
ANNUAL MEAN	182.4		131.4		230.0	
HIGHEST ANNUAL MEAN					480	1996
LOWEST ANNUAL MEAN					85.9	1934
HIGHEST DAILY MEAN	1840	Apr 11	5690	Apr 22	28000	Nov 5 1985
LOWEST DAILY MEAN	13	(a)	(e)10	Sep 12	4.4	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	13	Nov 18	11	Sep 7	5.3	Sep 5 1966
MAXIMUM PEAK FLOW			7240	Apr 22	(b)110000	Nov 5 1985
MAXIMUM PEAK STAGE			7.92	Apr 22	(c)19.99	Nov 5 1985
INSTANTANEOUS LOW FLOW			UNKNOWN		3.1	Aug 13 1999
ANNUAL RUNOFF (CFSM)	0.66		0.47		0.83	
ANNUAL RUNOFF (INCHES)	8.94		6.44		11.28	
10 PERCENT EXCEEDS	456		294		508	
50 PERCENT EXCEEDS	82		33		95	
90 PERCENT EXCEEDS	19		15		21	

a Nov. 21-24.
e Estimated
b From rating curve extended above 39,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS personnel

Water-quality sample preparation.

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-97, October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
JUN 04...	1330	ENVIRONMENTAL	107	14.9	2.0	1.0	.29

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV

LOCATION.--Lat 39°26'49", long 78°39'16", Hampshire County, Hydrologic Unit 02070001, on left bank at highway bridge, 2.0 mi east of Springfield, and at mile 13.5.

DRAINAGE AREA.--1,486 mi^2.

PERIOD OF RECORD.--June 1894 to February 1896 (fragmentary), June 1899 to February 1902, August 1903 to July 1906, August 1928 to current year.

REVISED RECORDS.--WSP 1552: 1903-06, 1929-30(M), 1932-33(M), 1935(M), 1937-40(M), 1942-43(M), 1945(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 562.02 ft above National Geodetic Vertical Datum of 1929. June 1894 to February 1896, nonrecording gage at Baltimore & Ohio Railroad bridge 11.2 mi upstream at different datum. June 26, 1899, to Feb. 2, 1902, nonrecording gage at bridge 10.0 mi upstream at different datum. Aug. 28, 1903, to July 14, 1906, nonrecording gage at present site at different datum. Aug. 8 to Sept. 24, 1928, nonrecording gage at present site and datum.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. National Weather Service gage height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 34 ft, from floodmarks, discharge, 140,000 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	0130	11,500	10.08	Apr 29	1030	14,800	11.80
Apr 23	0100	*27,700	*17.49				

Minimum discharge, 73 ft3/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	129	179	e155	437	256	1560	4800	1180	251	417	131
2	151	131	164	150	448	248	2440	4410	1100	235	339	126
3	145	132	160	e145	419	256	2150	4270	968	210	287	122
4	139	132	153	e140	389	293	1750	3350	849	202	249	120
5	133	133	149	e135	357	557	1420	2730	943	191	235	113
6	129	132	149	e135	337	616	1190	2280	993	202	262	107
7	126	129	146	e130	309	598	1030	1930	900	181	248	99
8	121	132	150	e130	306	549	901	3050	830	164	219	93
9	118	132	159	e150	312	494	803	5070	728	153	198	91
10	117	131	175	173	300	451	757	4670	626	167	183	87
11	120	128	193	187	291	415	735	3550	563	186	169	82
12	122	130	209	207	288	394	707	2700	514	267	156	77
13	124	130	238	242	372	384	657	2270	462	253	150	76
14	132	128	271	322	397	374	716	2010	519	337	151	75
15	147	129	285	279	385	393	1110	1890	925	852	144	74
16	146	130	272	253	355	418	2010	1780	742	812	154	77
17	148	132	254	234	339	410	2320	1560	616	563	141	81
18	149	132	241	220	329	450	1850	3600	513	423	142	90
19	144	132	227	212	319	556	1530	5300	448	471	140	98
20	142	134	215	212	294	2950	1680	3420	400	815	132	94
21	143	131	290	211	282	8700	2370	2550	376	324	123	91
22	142	132	272	200	281	4340	14600	2000	361	270	122	94
23	139	131	248	200	299	2740	17800	1640	331	248	121	101
24	136	132	234	224	309	1940	7750	1390	295	407	124	107
25	133	137	216	309	295	1500	4650	1210	265	405	116	141
26	131	149	e200	875	279	1230	3160	1070	250	330	113	178
27	128	158	e190	776	267	1260	2360	1490	292	708	112	451
28	123	162	e180	620	258	1410	3180	1500	258	1650	112	1860
29	123	196	e175	512	---	1330	12500	1790	263	1020	116	1150
30	129	194	e165	451	---	1200	7840	1610	257	764	121	806
31	127	---	e160	426	---	1100	---	1290	---	546	130	---
TOTAL	4169	4140	6319	8615	9253	37812	103526	82180	17767	13607	5426	6892
MEAN	134.5	138.0	203.8	277.9	330.5	1220	3451	2651	592.2	438.9	175.0	229.7
MAX	162	196	290	875	448	8700	17800	5300	1180	1650	417	1860
MIN	117	128	146	130	258	248	657	1070	250	153	112	74
CFSM	0.09	0.09	0.14	0.19	0.22	0.82	2.32	1.78	0.40	0.30	0.12	0.15
IN.	0.10	0.10	0.16	0.22	0.23	0.95	2.59	2.06	0.44	0.34	0.14	0.17

e Estimated

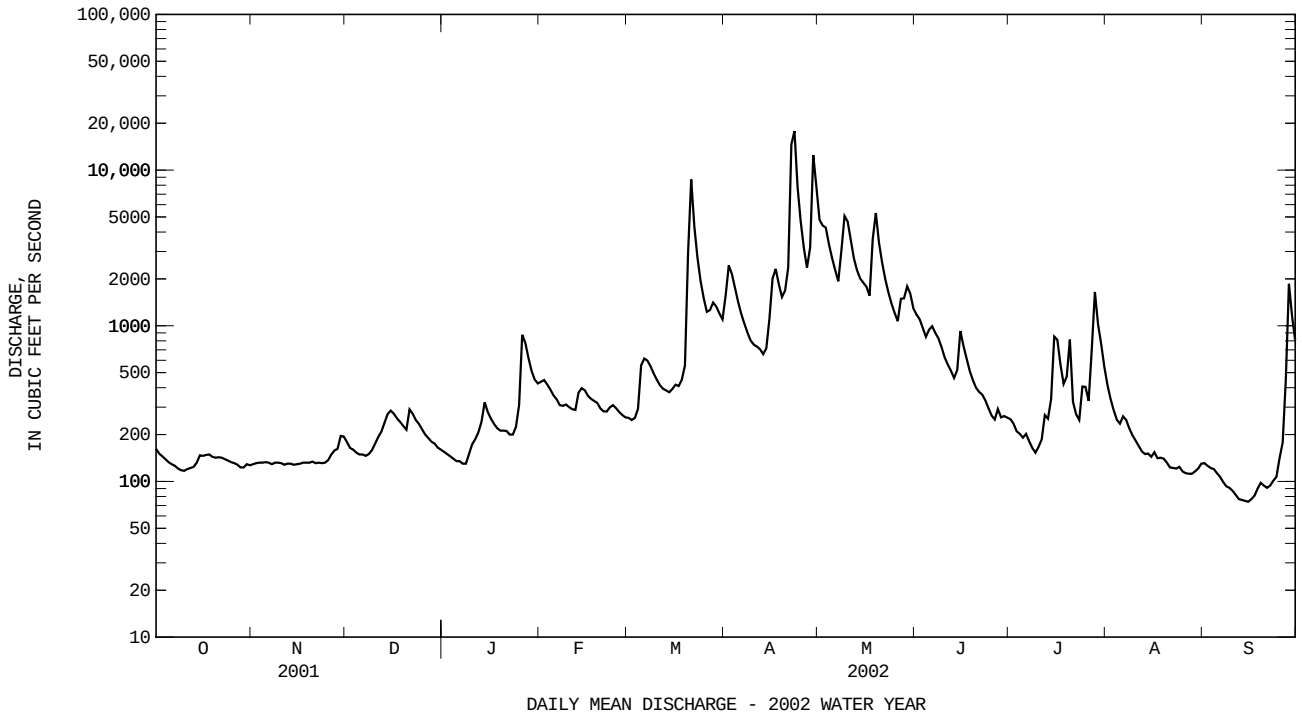
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1928 - 2002, BY WATER YEAR (WY)

MEAN	608.3	839.9	1214	1623	2035	2994	2365	1814	1010	524.4	540.3	464.2
MAX	4629	12850	5000	6928	6474	10490	6421	5785	5231	2638	3923	6538
(WY)	1977	1986	1973	1996	1998	1936	1987	1996	1949	1949	1955	1996
MIN	79.4	82.2	147	271	330	791	829	366	217	86.7	73.5	76.6
(WY)	1931	1905	1966	1981	2002	1981	1976	1977	1999	1999	1930	1930

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1899 - 1906, 1928 - 2002	
ANNUAL TOTAL	371949		299706			
ANNUAL MEAN	1019		821.1		1332	
HIGHEST ANNUAL MEAN					2975	1996
LOWEST ANNUAL MEAN					566	1969
HIGHEST DAILY MEAN	9060	Apr 12	17800	Apr 23	145000	Nov 5 1985
LOWEST DAILY MEAN	117	Oct 10	74	Sep 15	52	(a)
ANNUAL SEVEN-DAY MINIMUM	121	Oct 7	77	Sep 11	54	Sep 7 1966
MAXIMUM PEAK FLOW			27700	Apr 23	(b)240000	Nov 5 1985
MAXIMUM PEAK STAGE			17.49	Apr 23	(c)44.22	Nov 5 1985
INSTANTANEOUS LOW FLOW			73	Sep 15	29	(d)
ANNUAL RUNOFF (CFSM)	0.69		0.55		0.90	
ANNUAL RUNOFF (INCHES)	9.31		7.50		12.18	
10 PERCENT EXCEEDS	2580		1960		3010	
50 PERCENT EXCEEDS	516		262		646	
90 PERCENT EXCEEDS	132		123		151	

a Sept. 11, 12, 1966.
b From rating curve extended above 145,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Jan. 28, 1956 (result of freeze-up), July 30, 1966 (result of temporary dam).



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01609000 TOWN CREEK NEAR OLDTOWN, MD

LOCATION.--Lat 39°33'11.6", long 78°33'18.0", Allegany County, Md., Hydrologic Unit 02070003, on right bank at downstream side of bridge on Pack Horse Road (formerly Oldtown Road), 0.4 mi northeast of Maryland 51 State Highway 51, 2.0 mi upstream from mouth of Sawpit Run, 3.0 mi northeast of Oldtown, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--148 mi^2.

PERIOD OF RECORD.--July 1928 to September 1935, June 1967 to September 1981, May 2001 to September 2002.

REVISED RECORDS.--OFR 95-292: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 547.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect), which are fair. Low flow affected by U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 17 or 18, 1936 reached a stage of 19.08 ft, from floodmarks, discharge 27,000 ft^3/s.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 7, 2001	0815	610	4.80	No peak greater than base discharge.			
May 18, 2002	1700	*1,160	*6.35	No peak greater than base discharge.			

May-September 2001 Minimum discharge, 4.2 ft^3/s, Sept. 19, 20, 24.

2002 Water Year Minimum discharge, 0.00 ft^3/s, Dec. 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, MAY 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e76	47	22	16	11
2	---	---	---	---	---	---	---	e72	52	24	13	16
3	629	---	---	---	---	---	---	e68	56	22	11	13
4	---	---	---	---	---	---	---	e64	48	21	16	13
5	---	---	---	---	---	---	---	e60	42	25	33	11
6	---	---	---	---	---	---	---	e56	41	50	27	9.0
7	---	---	---	---	---	---	---	e53	401	38	17	7.4
8	---	---	---	---	---	---	---	e50	247	31	13	6.7
9	---	---	---	---	---	---	---	e47	141	34	10	6.1
10	---	---	---	---	---	---	---	e44	97	32	10	6.0
11	---	---	---	---	---	---	---	e42	75	26	14	5.6
12	---	---	---	---	---	---	---	39	63	22	25	5.1
13	---	---	---	---	---	---	---	37	54	18	35	5.0
14	---	---	---	---	---	---	---	33	47	16	23	5.0
15	---	---	---	---	---	---	---	31	41	14	17	4.6
16	---	---	---	---	---	---	---	30	41	12	13	4.7
17	---	---	---	---	---	---	---	30	51	12	11	4.6
18	---	---	---	---	---	---	---	31	46	12	10	4.6
19	---	---	---	---	---	---	---	34	34	12	15	4.5
20	---	---	---	---	---	---	---	34	30	11	25	4.6
21	---	---	---	---	---	---	---	41	65	11	16	4.9
22	---	---	---	---	---	---	---	68	83	9.5	19	4.8
23	---	---	---	---	---	---	---	235	78	8.2	15	4.9
24	---	---	---	---	---	---	---	116	67	7.9	15	6.7
25	---	---	---	---	---	---	---	73	50	7.5	11	26
26	---	---	---	---	---	---	---	97	38	8.8	11	35
27	---	---	---	---	---	---	---	88	31	10	10	21
28	---	---	---	---	---	---	---	82	27	11	13	14
29	---	---	---	---	---	---	---	75	25	14	12	11
30	---	---	---	---	---	---	---	62	23	16	9.4	9.3
31	---	---	---	---	---	---	---	52	---	18	8.7	---
TOTAL	---	---	---	---	---	---	---	1920	2141	575.9	494.1	285.1
MEAN	---	---	---	---	---	---	---	61.9	71.4	18.6	15.9	9.50
MAX	---	---	---	---	---	---	---	235	401	50	35	35
MIN	---	---	---	---	---	---	---	30	23	7.5	8.7	4.5
CFSM	---	---	---	---	---	---	---	0.42	0.48	0.13	0.11	0.06
IN.	---	---	---	---	---	---	---	0.48	0.54	0.14	0.12	0.07

e Estimated

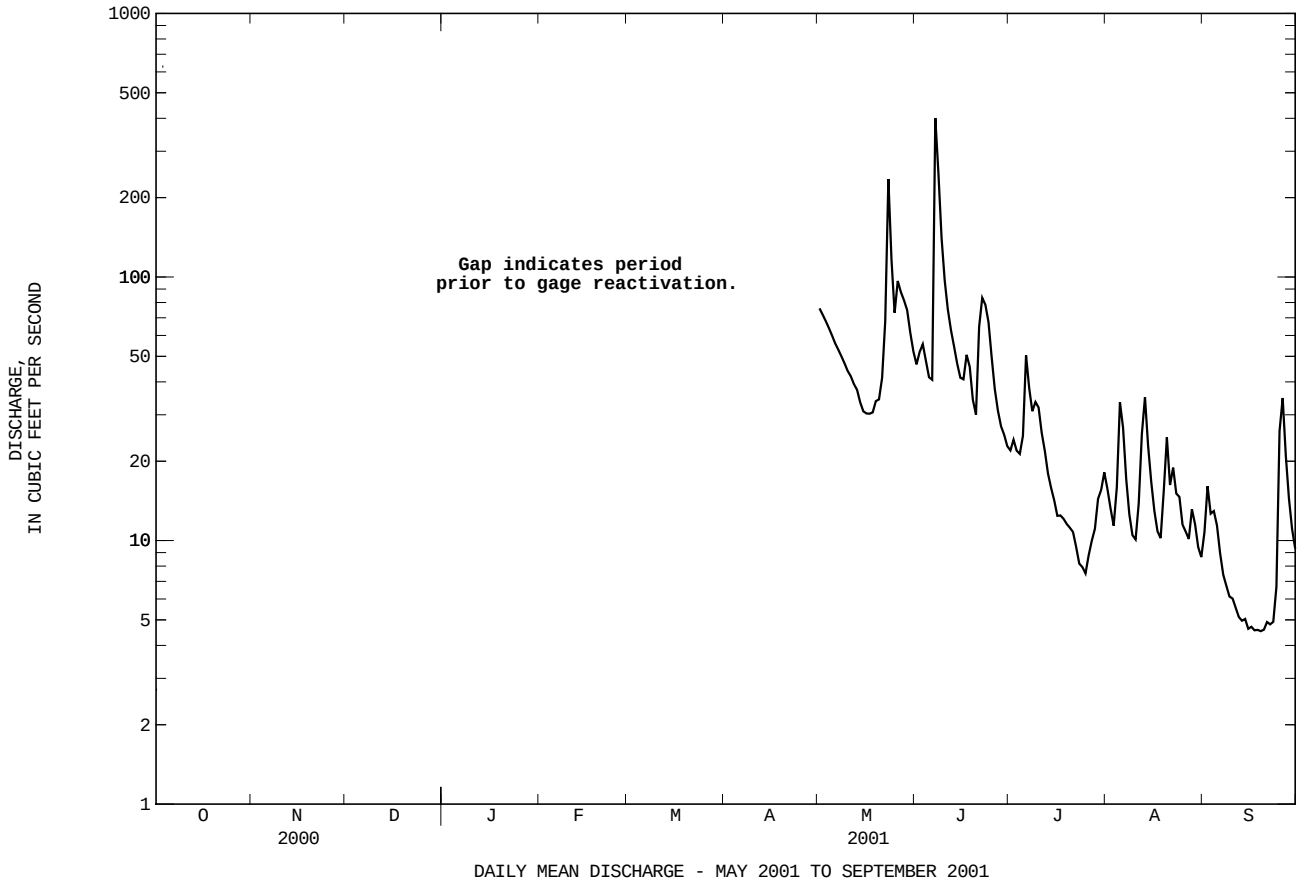
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1935, 1967 - 1981, 2001, BY WATER YEAR (WY)

MEAN	96.3	107	173	169	219	316	325	229	118	58.2	38.3	44.8
MAX	623	343	576	383	616	636	712	490	830	306	162	253
(WY)	1977	1971	1973	1974	1971	1978	1970	1978	1972	1931	1969	1975
MIN	2.97	4.40	12.3	17.4	27.2	121	76.8	36.4	16.2	2.59	2.06	1.77
(WY)	1931	1931	1931	1929	1934	1981	1968	1934	1930	1930	1930	1932

01609000 TOWN CREEK NEAR OLDTOWN, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1928 - 1935, 1967 - 1981, 2001		
ANNUAL MEAN	159		
HIGHEST ANNUAL MEAN	250		1972
LOWEST ANNUAL MEAN	69.7		1969
HIGHEST DAILY MEAN	8140	Jun 22	1972
LOWEST DAILY MEAN	0.90	(a)	
ANNUAL SEVEN-DAY MINIMUM	0.90	Aug 7	1930
MAXIMUM PEAK FLOW	(b)11700	Jun 22	1972
MAXIMUM PEAK STAGE	14.13	Jun 22	1972
INSTANTANEOUS LOW FLOW	0.90	(a)	
ANNUAL RUNOFF (CFSM)	1.07		
ANNUAL RUNOFF (INCHES)	14.58		
10 PERCENT EXCEEDS	379		
50 PERCENT EXCEEDS	66		
90 PERCENT EXCEEDS	10		

a Aug. 2, 3, 7-14, 1930.
b From rating curve extended above 9,500 ft^3/s.



DAILY MEAN DISCHARGE - MAY 2001 TO SEPTEMBER 2001

01609000 TOWN CREEK NEAR OLDTOWN, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	4.3	11	e9.5	30	12	290	337	94	15	5.7	6.0
2	7.8	4.8	11	e9.4	32	13	235	350	80	14	4.5	5.7
3	7.3	4.9	11	e9.4	29	18	188	330	64	13	3.8	5.6
4	6.9	5.1	11	e9.4	28	54	150	231	55	11	30	5.1
5	6.7	5.4	11	e9.4	22	47	122	193	54	8.7	54	4.2
6	6.2	5.2	11	e10	23	38	106	164	51	7.6	233	3.7
7	6.4	5.1	10	e11	26	33	92	153	162	7.1	74	3.3
8	5.2	5.2	11	e12	23	31	82	202	99	7.3	38	2.8
9	4.9	5.1	13	14	21	27	78	407	67	6.4	25	2.5
10	4.8	5.0	17	17	20	25	93	307	54	9.6	19	2.2
11	5.3	4.8	20	22	20	22	80	198	45	7.5	15	1.8
12	5.7	4.6	18	31	19	21	69	167	38	5.6	13	1.2
13	6.2	4.7	16	35	19	22	69	207	35	5.3	12	0.95
14	7.7	4.6	16	29	17	21	168	228	45	18	11	0.66
15	8.0	4.6	18	27	17	21	614	176	58	17	8.8	1.0
16	8.1	4.7	25	22	16	21	353	134	43	14	7.9	1.8
17	7.0	4.8	23	20	16	22	234	113	34	10	7.2	1.9
18	7.0	4.9	21	18	16	40	178	700	27	7.9	6.9	1.7
19	6.2	4.9	22	12	14	176	146	610	22	15	6.6	1.5
20	5.6	4.9	23	18	15	492	128	369	19	19	6.0	1.4
21	5.2	4.9	20	20	15	717	117	260	16	16	5.8	1.2
22	5.2	5.0	18	18	15	338	199	199	14	16	5.3	3.0
23	5.1	4.9	16	19	14	213	210	159	16	11	5.3	31
24	5.1	4.9	17	22	13	158	170	133	19	12	13	57
25	5.2	6.3	14	64	13	125	149	114	17	8.2	14	19
26	4.7	13	14	59	13	105	130	99	18	14	9.4	16
27	4.4	28	8.8	40	13	166	109	83	40	22	8.2	54
28	4.3	18	e10	32	13	148	518	348	26	24	7.4	233
29	4.9	15	e9.6	28	---	124	826	189	21	18	7.6	112
30	4.8	13	9.5	26	---	112	491	142	18	12	6.7	56
31	4.3	---	e9.5	27	---	103	---	110	---	8.0	6.2	---
TOTAL	184.5	210.6	465.4	700.1	532	3465	6394	7412	1351	380.2	670.3	637.21
MEAN	5.95	7.02	15.0	22.6	19.0	112	213	239	45.0	12.3	21.6	21.2
MAX	8.3	28	25	64	32	717	826	700	162	24	233	233
MIN	4.3	4.3	8.8	9.4	13	12	69	83	14	5.3	3.8	0.66
CFSM	0.04	0.05	0.10	0.15	0.13	0.76	1.44	1.62	0.30	0.08	0.15	0.14
IN.	0.05	0.05	0.12	0.18	0.13	0.87	1.61	1.86	0.34	0.10	0.17	0.16

e Estimated

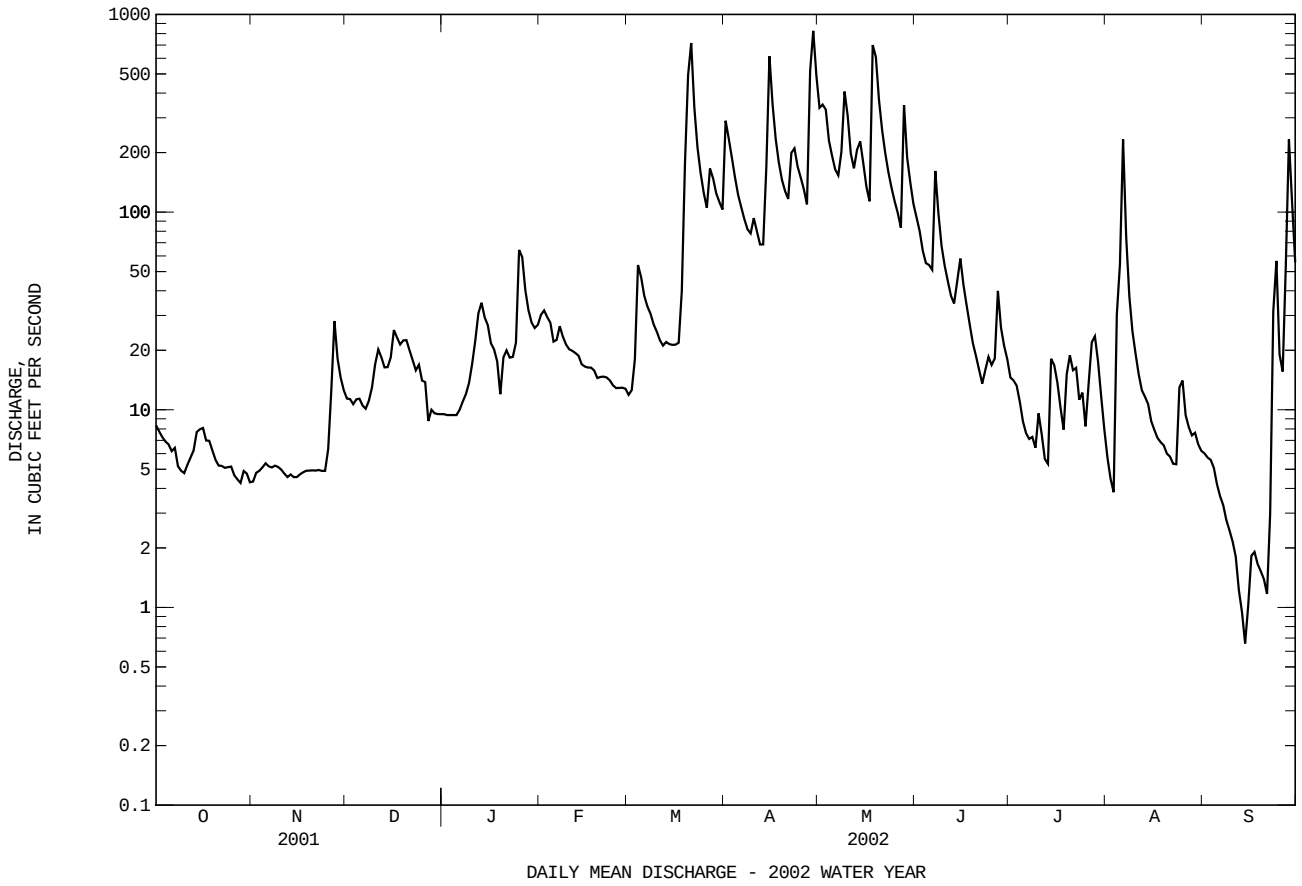
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1935, 1967 - 1981, 2001 - 2002, BY WATER YEAR (WY)

MEAN	92.2	102	166	162	210	307	320	230	115	56.2	37.6	43.9
MAX	623	343	576	383	616	636	712	490	830	306	162	253
(WY)	1977	1971	1973	1974	1971	1978	1970	1978	1972	1931	1969	1975
MIN	2.97	4.40	12.3	17.4	19.0	112	76.8	36.4	16.2	2.59	2.06	1.77
(WY)	1931	1931	1931	1929	2002	2002	1968	1934	1930	1930	1930	1932

01609000 TOWN CREEK NEAR OLDTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1928 - 1935, 1967 - 1981, 2001 - 2002	
ANNUAL TOTAL	22402.31			
ANNUAL MEAN	61.4		154	
HIGHEST ANNUAL MEAN			250	1972
LOWEST ANNUAL MEAN			61.4	2002
HIGHEST DAILY MEAN	826	Apr 29	8140	Jun 22 1972
LOWEST DAILY MEAN	0.66	Sep 14	0.66	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 12	0.90	Aug 7 1930
MAXIMUM PEAK FLOW	1160	May 18	(a)11700	Jun 22 1972
MAXIMUM PEAK STAGE	6.35	May 18	14.13	Jun 22 1972
INSTANTANEOUS LOW FLOW	(b)0.00	(c)	(b)0.00	(c)
ANNUAL RUNOFF (CFSM)	0.41		1.04	
ANNUAL RUNOFF (INCHES)	5.63		14.18	
10 PERCENT EXCEEDS	177		365	
50 PERCENT EXCEEDS	17		63	
90 PERCENT EXCEEDS	4.9		9.5	

a From rating curve extended above 9,500 ft^3/s.
b Result of freezeup.
c Dec. 27, 28, 2001.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01610000 POTOMAC RIVER AT PAW PAW, WV

LOCATION.--Lat 39°32'20.1", long 78°27'23.0", Allegany County, Md., Hydrologic Unit 02070003, on left bank 250 ft upstream from bridge on Maryland State Highway 51 at Paw Paw, 3.3 mi downstream from Little Cacapon River, and at mile 277.

DRAINAGE AREA.--3,129 mi^2.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 487.88 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1939, nonrecording gage at bridge 250 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Low flow affected by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 54.0 ft on Mar. 18, 1936, discharge, 240,000 ft^3/s, from rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	0600	22,000	16.18	Apr 29	1330	24,500	17.12
Apr 23	0500	*33,000	*19.99				

Minimum discharge, 393 ft^3/s, Nov. 11-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	524	438	534	e450	1030	656	5280	11600	3230	758	1480	628
2	511	438	499	e440	1100	650	6740	11200	3040	740	1280	625
3	499	445	478	e440	1070	755	6560	12700	2520	700	1160	532
4	486	446	465	e440	1020	986	5280	8770	2190	646	1230	513
5	478	439	456	e440	958	1140	4030	7230	2140	610	1110	498
6	469	443	448	e440	898	1360	3430	6250	2370	581	1520	481
7	579	441	448	e460	894	1280	3200	5500	2580	575	1170	466
8	711	419	457	e490	868	1210	2860	6320	2420	546	837	496
9	968	404	535	e500	860	1120	2530	10600	2080	527	723	524
10	489	398	567	514	837	1040	2590	10700	1840	524	676	527
11	448	393	589	548	819	950	2330	8680	1630	800	635	805
12	451	393	576	673	823	903	2180	6990	1460	694	599	801
13	478	401	585	738	845	897	2150	6410	1400	648	748	669
14	503	395	604	743	925	887	2510	6020	1950	907	800	675
15	556	393	716	742	904	887	5060	5490	2340	1500	793	690
16	551	393	738	683	895	913	6480	4960	2090	1700	769	703
17	550	393	677	635	873	915	6720	4500	1770	1290	775	579
18	530	393	654	596	848	1050	4940	9050	1540	1040	991	563
19	531	393	685	574	822	1730	4120	14000	1360	1160	1010	585
20	531	396	685	564	795	4380	3950	9590	1220	1710	717	592
21	524	398	637	557	785	17400	4960	7740	1110	1130	786	596
22	524	393	665	566	734	9590	15000	7040	1060	852	1000	607
23	519	393	616	551	727	6370	26000	5520	1020	904	997	799
24	513	393	591	601	733	4810	14000	4740	955	960	1030	737
25	505	419	569	926	728	3870	9950	3940	902	1140	995	537
26	462	630	538	1400	713	3380	7310	3390	863	1130	914	527
27	433	642	520	1570	694	4640	5600	3490	930	1900	814	920
28	433	552	514	1300	677	5240	7470	4100	922	5950	707	2760
29	433	527	506	1130	---	4900	21600	3930	853	3940	753	2420
30	433	549	491	1030	---	4420	16500	3820	799	2700	726	1720
31	438	---	e470	995	---	3910	---	3410	---	1870	637	---
TOTAL	16060	13150	17513	21736	23875	92239	211330	217680	50584	40132	28382	23575
MEAN	518	438	565	701	853	2975	7044	7022	1686	1295	916	786
MAX	968	642	738	1570	1100	17400	26000	14000	3230	5950	1520	2760
MIN	433	393	448	440	677	650	2150	3390	799	524	599	466
CFSM	0.17	0.14	0.18	0.22	0.27	0.95	2.25	2.24	0.54	0.41	0.29	0.25
IN.	0.19	0.16	0.21	0.26	0.28	1.10	2.51	2.59	0.60	0.48	0.34	0.28

e Estimated

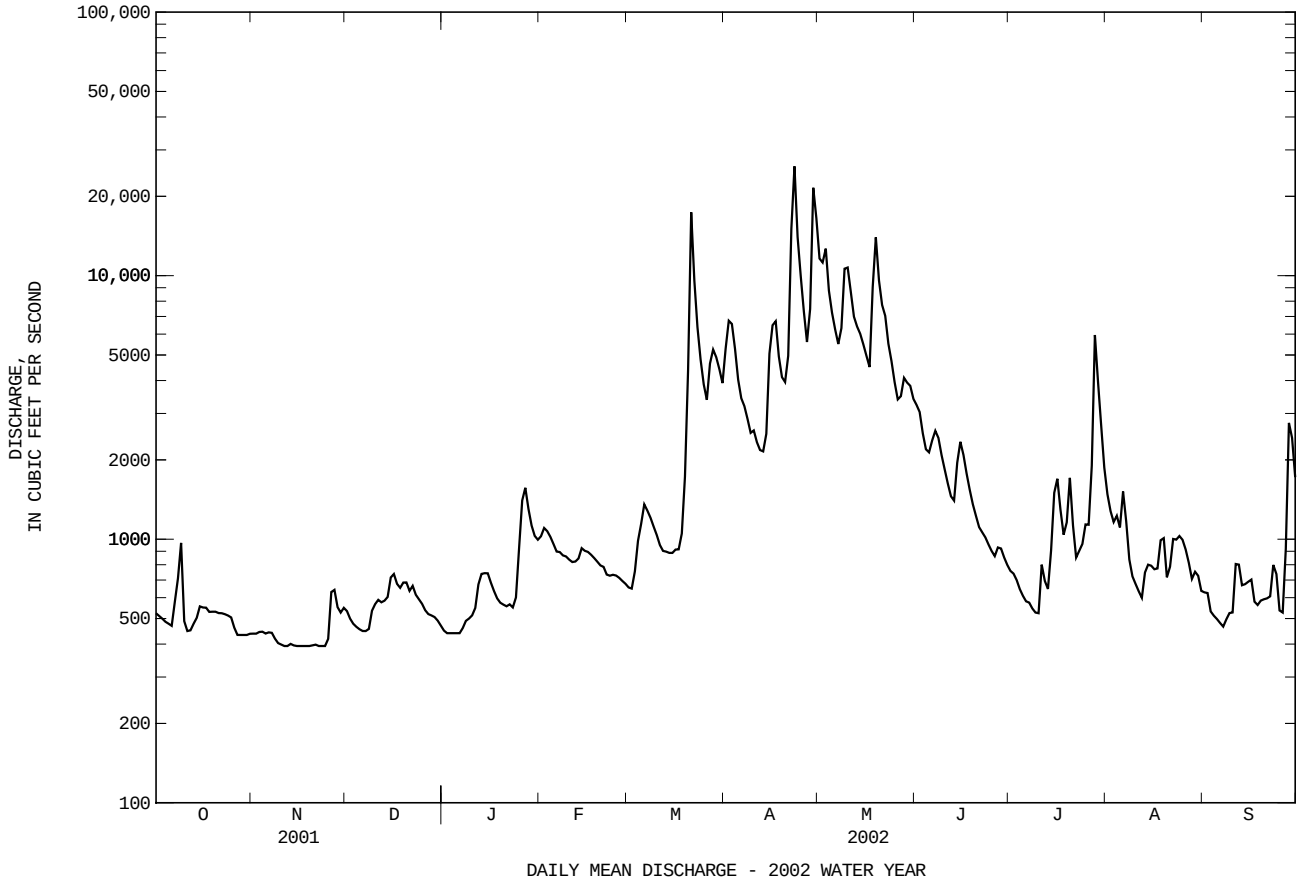
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

MEAN	1487	1991	3235	3930	5286	7415	5994	4482	2535	1351	1268	1142
MAX	9709	17180	12300	13040	14040	17440	15620	11210	7612	5071	6775	12080
(WY)	1977	1986	1973	1996	1998	1994	1993	1996	1972	1949	1996	1996
MIN	261	327	388	679	853	2043	1882	1074	544	303	278	252
(WY)	1952	1966	1966	1981	2002	1990	1995	1941	1965	1966	1944	1959

01610000 POTOMAC RIVER AT PAW PAW, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002	
ANNUAL TOTAL	894604		756256			
ANNUAL MEAN	2451		2072		3333	
HIGHEST ANNUAL MEAN					6433	1996
LOWEST ANNUAL MEAN					1499	1969
HIGHEST DAILY MEAN	17600	Apr 12	26000	Apr 23	125000	Nov 6 1985
LOWEST DAILY MEAN	393	(a)	393	(a)	172	(b)
ANNUAL SEVEN-DAY MINIMUM	394	Nov 14	394	Nov 14	179	Sep 7 1966
MAXIMUM PEAK FLOW			33000	Apr 23	(c)235000	Nov 5 1985
MAXIMUM PEAK STAGE			19.99	Apr 23	53.58	Nov 5 1985
INSTANTANEOUS LOW FLOW			393	(d)	164	(f)
ANNUAL RUNOFF (CFSM)	0.78		0.66		1.07	
ANNUAL RUNOFF (INCHES)	10.64		8.99		14.47	
10 PERCENT EXCEEDS	6420		5510		7590	
50 PERCENT EXCEEDS	1250		814		1770	
90 PERCENT EXCEEDS	460		448		447	

a Nov. 11, 12, 15-19, 22-24.
b Sept. 10, 12, 13, 1966.
c From rating curve extended above 85,000 ft^3/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.
d Nov. 11-25.
f Sept 10, 11, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD

LOCATION.--Lat 39°38'58.3", long 78°20'38.9", Washington County, Hydrologic Unit 02070003, on left bank at downstream side of bridge on Zeigler Road, 1.2 mi upstream from mouth, and 4.0 mi south of Bellegrove.

DRAINAGE AREA.--102 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to September 1977, April 1999 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 440.41 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good above 1.0 ft^3/s and poor below except those for estimated daily discharges (ice effect, missing record), which are poor. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	2130	*871	*3.62	No peak greater than base discharge.			

Minimum discharge, 0.02 ft^3/s, Sept. 11-15, 17-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.24	0.31	2.0	e1.0	18	2.3	144	203	41	e1.3	2.3	0.61
2	0.20	0.32	2.0	e0.88	21	2.4	151	177	34	e1.0	1.4	0.56
3	0.17	0.33	1.6	e0.76	19	5.8	123	157	26	e0.84	1.3	0.50
4	0.15	0.33	1.5	e0.74	17	25	93	115	21	e0.72	1.0	0.39
5	0.15	0.31	1.4	0.62	12	26	72	98	20	e0.58	1.0	0.26
6	0.16	0.30	1.3	e0.62	13	21	59	84	20	e0.48	9.1	0.18
7	0.16	0.29	1.3	e0.72	13	18	49	77	48	e0.41	10	0.12
8	0.14	0.30	1.6	e0.80	11	16	42	81	42	e0.34	5.4	0.07
9	0.13	0.30	2.2	e1.1	9.7	13	39	94	27	e0.28	3.2	0.05
10	0.11	0.29	3.4	e1.6	8.4	11	53	103	21	e0.40	2.5	0.04
11	0.10	0.28	4.1	5.6	7.8	9.4	46	82	17	e0.30	1.8	0.03
12	0.10	0.28	4.9	15	7.1	8.5	38	72	13	e0.25	1.4	0.03
13	0.10	0.28	5.5	18	6.6	8.7	37	79	11	e0.22	1.1	0.02
14	0.22	0.27	6.3	16	5.6	8.3	99	84	18	e3.7	0.82	0.02
15	0.52	0.28	7.4	14	5.4	7.8	476	71	48	e4.0	0.63	0.02
16	0.73	0.28	7.2	12	5.2	7.6	316	57	32	e1.9	0.50	0.03
17	1.5	0.28	7.3	11	4.6	7.7	204	49	23	e1.0	0.39	0.03
18	1.2	0.28	8.0	7.6	4.3	20	144	382	16	e0.45	0.27	0.02
19	0.71	0.28	7.9	5.2	4.0	89	114	405	12	e0.47	0.26	0.02
20	0.69	0.28	7.2	6.9	3.8	325	96	238	11	0.62	0.15	0.02
21	0.61	0.27	6.3	6.4	3.6	468	85	162	8.2	4.9	0.13	0.02
22	0.48	0.26	5.3	6.0	3.3	216	125	117	6.4	5.0	0.10	0.03
23	0.40	0.27	4.8	6.2	3.1	129	134	90	5.2	3.1	0.09	0.05
24	0.37	0.28	4.7	12	2.9	91	114	74	3.9	2.6	0.68	0.05
25	0.37	0.64	4.2	50	2.7	69	99	61	3.1	1.8	3.5	0.03
26	0.36	2.7	3.3	42	2.6	57	84	63	2.8	2.3	2.5	0.82
27	0.34	5.1	e2.5	29	2.5	88	68	109	e4.0	2.2	1.5	16
28	0.34	3.0	e2.1	23	2.4	84	224	108	e2.3	2.7	1.1	87
29	0.33	2.3	e1.8	18	---	72	476	80	e1.9	3.8	1.0	48
30	0.32	2.0	e1.5	15	---	65	299	60	e1.5	4.1	0.80	25
31	0.31	---	e1.2	15	---	59	---	46	---	3.6	0.67	---
TOTAL	11.71	22.69	121.8	342.74	219.6	2030.5	4103	3678	540.3	55.36	56.59	180.02
MEAN	0.38	0.76	3.93	11.1	7.84	65.5	137	119	18.0	1.79	1.83	6.00
MAX	1.5	5.1	8.0	50	21	468	476	405	48	5.0	10	87
MIN	0.10	0.26	1.2	0.62	2.4	2.3	37	46	1.5	0.22	0.09	0.02
CFSM	0.00	0.01	0.04	0.11	0.08	0.64	1.34	1.16	0.18	0.02	0.02	0.06
IN.	0.00	0.01	0.04	0.12	0.08	0.74	1.50	1.34	0.20	0.02	0.02	0.07

e Estimated

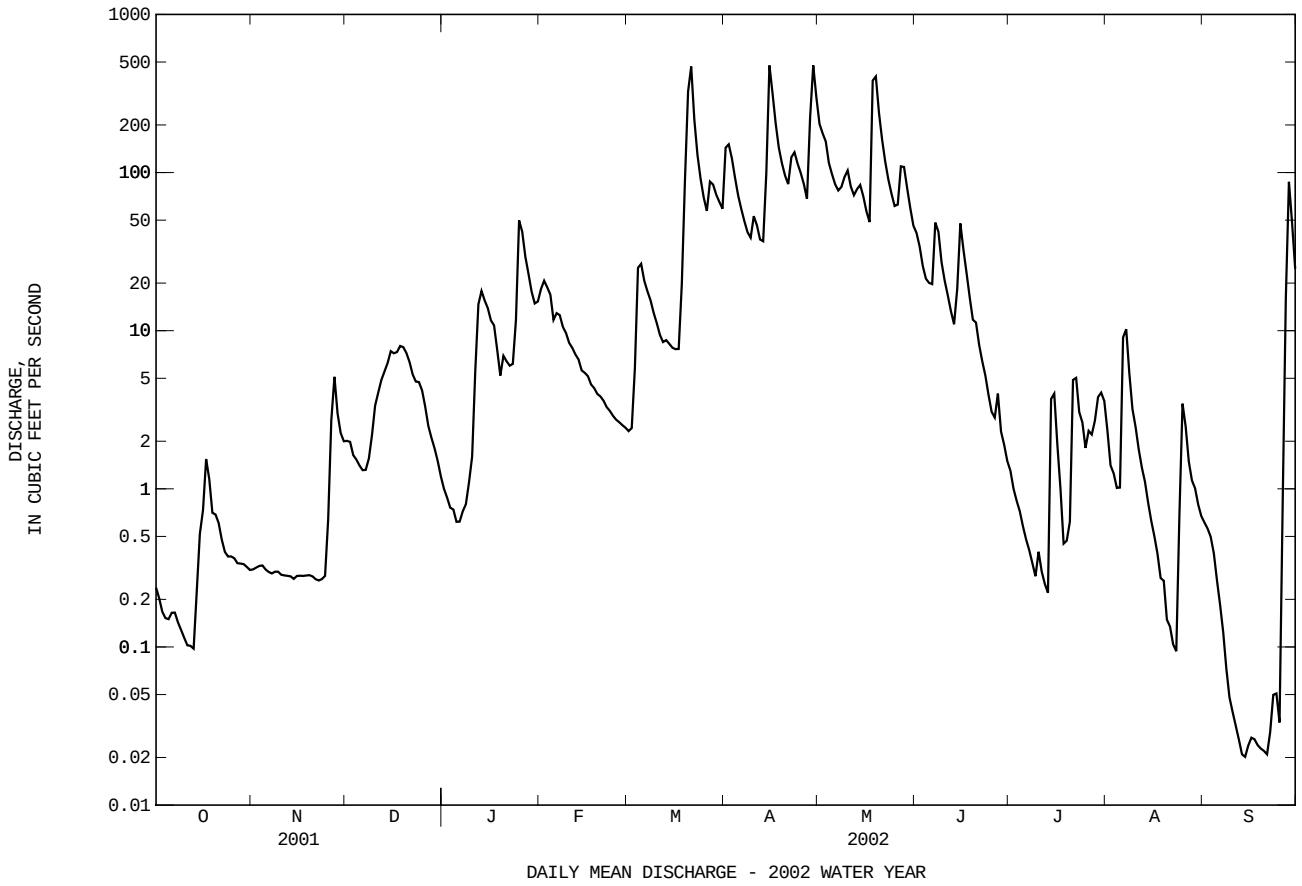
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1977, 1999 - 2002, BY WATER YEAR (WY)

MEAN	84.8	74.2	149	104	172	195	210	114	106	30.7	20.8	23.6
MAX	569	293	401	230	523	346	518	288	726	87.6	85.1	194
(WY)	1977	1971	1973	1974	1971	1977	1970	1971	1972	1977	1969	1975
MIN	0.38	0.76	3.93	11.1	7.84	65.5	37.8	22.9	5.10	1.22	0.039	0.69
(WY)	2002	2002	2002	2002	2002	2002	1971	1969	1999	1999	1968	2001

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 1977, 1999 - 2002	
ANNUAL TOTAL	20241.76		11362.31			
ANNUAL MEAN	55.5		31.1		108	
HIGHEST ANNUAL MEAN					177	1972
LOWEST ANNUAL MEAN					31.1	2002
HIGHEST DAILY MEAN	1110	Mar 22	476	Apr 15	9200	Jun 22 1972
LOWEST DAILY MEAN	0.07	Sep 23	0.02	(a)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	0.08	Sep 17	0.02	Sep 13	0.00	Aug 18 1968
MAXIMUM PEAK FLOW			871	Mar 20	(c)14200	Jun 22 1972
MAXIMUM PEAK STAGE			3.62	Mar 20	12.44	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.02	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.54		0.31		1.06	
ANNUAL RUNOFF (INCHES)	7.38		4.14		14.36	
10 PERCENT EXCEEDS	158		92		256	
50 PERCENT EXCEEDS	7.6		3.8		34	
90 PERCENT EXCEEDS	0.28		0.21		1.6	

a Sept. 13-15, 18-21.
b Aug. 18-31, Sept. 1-9, 1968, Aug. 6-24, 1999.
c From rating curve extended above 10,400 ft^3/s.
d Sept. 11-15, 17-22.
f Aug. 17-31, Sept. 1-10, 1968, Aug. 6-25, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by Jim Jeffries

Gage and water-quality house
at Sideling Hill Creek near Bellgrove, Md (01610155)

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985, 1986, 1997, 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
02...	0750	ENVIRONMENTAL	.21	246	6.7	12.0	11.1	751	9.4	86	.23	.01
NOV												
20...	1005	ENVIRONMENTAL	.26	245	6.7	7.0	4.9	753	11.2	89	--	--
DEC												
04...	*0820*	*BLANK*	--	--	--	--	--	--	--	--	--	--
04...	0845	ENVIRONMENTAL	1.3	397	6.8	.0	3.8	764	10.8	82	--	--
17...	*1645*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JAN												
08...	0925	ENVIRONMENTAL	1.2	264	6.8	-1.0	.1	755	12.7	88	.16	--
FEB												
04...	0815	ENVIRONMENTAL	17	177	6.6	-1.0	1.6	745	12.4	91	.55	--
MAR												
04...	0810	ENVIRONMENTAL	15	176	6.2	-5.0	1.5	754	13.3	96	.15	.01
18...	1614	ENVIRONMENTAL	26	149	6.8	--	--	--	--	--	.23	--
19...	1018	ENVIRONMENTAL	103	230	6.8	--	--	--	--	--	.45	--
20...	1235	ENVIRONMENTAL	175	*110*	*6.8*	*8.0*	*6.8*	*746*	*10.9*	*91*	.67	--
20...	*1236*	*REPLICATE*	--	--	--	--	--	--	--	--	*.78*	--
20...	1338	ENVIRONMENTAL	208	110	6.8	--	--	--	--	--	.78	--
20...	1638	ENVIRONMENTAL	408	123	6.8	--	--	--	--	--	1.3	--
20...	1938	ENVIRONMENTAL	804	128	6.7	--	--	--	--	--	2.0	.68
20...	2238	ENVIRONMENTAL	818	97	6.8	--	--	--	--	--	2.2	.78
20...	*2239*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.2*	*.78*
21...	0738	ENVIRONMENTAL	519	86	6.8	--	--	--	--	--	1.7	.97
22...	1043	ENVIRONMENTAL	217	90	6.6	--	--	--	--	--	1.5	--
APR												
01...	0800	ENVIRONMENTAL	122	100	6.8	7.0	9.1	752	11.0	97	.51	.35
15...	0716	ENVIRONMENTAL	469	108	6.8	--	--	--	--	--	1.4	--
15...	1016	ENVIRONMENTAL	577	95	6.7	--	--	--	--	--	1.0	--
15...	2215	ENVIRONMENTAL	427	79	6.7	--	--	--	--	--	.77	--
29...	0920	ENVIRONMENTAL	505	68	6.8	--	13.0	746	9.5	92	.66	--
JUN												
03...	0830	ENVIRONMENTAL	26	113	6.4	15.0	19.5	753	8.3	92	.41	--
JUL												
08...	0845	ENVIRONMENTAL	E.34	137	6.7	19.0	20.6	758	7.5	84	.34	--
AUG												
05...	0900	ENVIRONMENTAL	.86	182	7.2	25.0	25.1	754	7.2	88	.35	--
SEP												
09...	0825	ENVIRONMENTAL	.05	192	6.7	10.0	16.7	758	7.4	77	.30	--

E Estimated value.

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
02...	.001	.013	.006	.22	.18	.19	.21	.17	.008	<.006	<.007	2.4	<.01
NOV													
20...	<.002	<.013	<.015	.17	.16	--	--	--	.006	<.004	<.007	2.1	<.01
DEC													
04...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*.3*	--
04...	<.002	<.013	<.015	.16	.16	--	--	--	.004	<.004	<.007	3.3	.01
17...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*3.5*	--
JAN													
08...	<.002	.017	<.015	.15	.15	.16	--	--	E.003	<.004	<.007	1.7	.01
FEB													
04...	<.002	.407	<.015	.14	.11	.52	--	--	E.003	<.004	<.007	3.3	.15
MAR													
04...	.001	.016	<.002	.13	.12	.14	--	--	.005	<.006	<.007	1.1	.04
18...	<.002	.046	<.015	.18	.12	.17	--	--	.007	E.002	<.007	1.7	.12
19...	<.002	.238	<.015	.21	.14	.38	--	--	.012	<.004	<.007	6.0	1.7
20...	E.002	.323	<.015	.35	.20	.52	--	--	.038	.004	<.007	24	11.5
20...	*E.002*	*.327*	*<.015*	*.45*	*.17*	*.50*	--	--	*.035*	*E.004*	*<.007*		--
20...	E.002	.373	<.015	.40	.17	.55	--	--	.041	E.004	<.007	37	20.9
20...	E.002	.529	<.015	.76	.22	.75	--	--	.085	E.004	<.007	91	100
20...	.003	.681	<.015	1.3	.26	.94	--	--	.169	.006	<.007	228	495
20...	.004	.784	E.011	1.5	.28	1.1	--	--	.190	.007	<.007	243	537
20...	*.004*	*.781*	*E.009*	*1.4*	*.31*	*1.1*	--	--	*.17*	*.007*	*<.007*	*227*	--
21...	.004	.979	E.011	.68	.29	1.3	--	--	.090	.007	<.007	82	114
22...	E.002	.961	<.015	.57	.18	1.1	--	--	.063	.007	E.004	63	37.1
APR													
01...	.001	.356	.003	.16	E.10	--	.15	--	.009	<.006	<.007	3.7	1.2
15...	E.002	.411	<.015	.98	.26	.67	--	--	.120	.007	<.007	137	173
15...	E.002	.381	<.015	.62	.22	.60	--	--	.077	.005	<.007	77	120
15...	E.002	.426	<.015	.35	.22	.64	--	--	.033	.006	<.007	20	23.1
29...	E.002	.299	<.015	.36	.21	.51	--	--	.038	.005	<.007	29	39.7
JUN													
03...	E.002	.164	E.010	.24	.20	.36	--	--	.013	.006	<.007	4.5	.32
JUL													
08...	<.002	.028	E.012	.31	.27	.30	--	--	.014	.008	<.007	1.1	<.01
AUG													
05...	E.002	.041	E.012	.31	.23	.27	--	--	.013	.005	<.007	1.6	<.01
SEP													
09...	E.002	.047	E.012	.26	.21	.26	--	--	.009	E.004	<.007	.6	<.01

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

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
02...	--
NOV	
20...	--
DEC	
04...	--
04...	--
17...	--
JAN	
08...	--
FEB	
04...	--
MAR	
04...	--
18...	--
19...	--
20...	--
20...	--
20...	--
20...	95
20...	96
20...	97
20...	*98*
21...	--
22...	--
APR	
01...	--
15...	87
15...	94
15...	92
29...	--
JUN	
03...	--
JUL	
08...	--
AUG	
05...	--
SEP	
09...	--

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2001 to September 2002.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT												
24...	1145	ENVIRONMENTAL	2.2	94	7.3	24.0	15.8	725	8.6	91	43	52
NOV												
05...	1220	ENVIRONMENTAL	2.0	96	7.6	10.5	10.2	732	10.4	96	44	54
DEC												
13...	1615	ENVIRONMENTAL	3.1	74	7.4	14.5	9.9	727	10.4	96	31	37
JAN												
10...	1230	ENVIRONMENTAL	3.6	70	7.3	14.5	3.5	727	13.5	107	29	36
FEB												
13...	1330	ENVIRONMENTAL	3.7	58	7.2	2.5	4.5	732	12.2	98	24	29
MAR												
07...	1500	ENVIRONMENTAL	3.4	58	7.4	15.0	6.2	737	12.1	101	22	27
APR												
03...	1215	ENVIRONMENTAL	24	35	6.1	13.0	9.8	725	10.2	95	7	9
MAY												
08...	1230	ENVIRONMENTAL	21	34	6.6	23.0	14.4	734	10.7	109	9	11
08...	*1231*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
JUN												
03...	1245	ENVIRONMENTAL	6.5	45	7.0	24.5	17.5	730	9.2	100	15	19
JUL												
11...	*1300*	*BLANK*	--	--	--	--	--	--	--	--	--	--
11...	1500	ENVIRONMENTAL	2.3	72	7.8	24.0	20.9	734	8.6	100	--	--
31...	1230	ENVIRONMENTAL	6.0	--	--	--	--	--	--	--	--	--
31...	1400	ENVIRONMENTAL	6.3	--	--	--	--	--	--	--	--	--
31...	1630	ENVIRONMENTAL	6.0	--	--	--	--	--	--	--	--	--
AUG												
08...	1115	ENVIRONMENTAL	3.2	67	7.4	21.5	17.6	735	8.9	97	30	37
08...	*1116*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
SEP												
11...	1115	ENVIRONMENTAL	1.1	107	7.8	--	18.1	724	9.0	95	48	59

Date	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)
OCT													
24...	4.7	.69	--	<.008	<.05	<.04	E.06	.008	<.02	1.5	<.1	--	--
NOV													
05...	4.9	.69	--	<.008	<.05	<.04	<.10	.007	<.02	1.6	.2	<.002	<.004
DEC													
13...	4.7	.81	--	<.008	E.04	<.04	E.09	.004	<.02	1.3	<.1	--	--
JAN													
10...	5.4	.64	--	<.008	.11	E.02	E.06	.005	<.02	1.0	<.1	<.006	<.006
FEB													
13...	5.5	.70	.28	<.008	.09	<.04	.19	E.002	<.02	.9	<.1	--	--
MAR													
07...	5.6	.77	--	<.008	.12	<.04	E.07	E.002	<.02	1.0	<.1	<.006	<.006
APR													
03...	5.4	.79	--	<.008	.33	<.04	E.09	.008	<.02	1.5	.3	<.006	<.006
MAY													
08...	5.0	.35	--	<.008	.14	<.04	E.08	.005	<.02	1.8	.3	<.006	<.006
08...	*5.0*	*.34*	--	*<.008*	*.14*	*<.04*	*E.09*	*.006*	*<.02*	--	*.2*	*<.006*	*<.006*
JUN													
03...	3.9	.72	.19	<.008	.09	E.03	.10	.006	<.02	1.2	.2	<.006	<.006
JUL													
11...	*<.1*	*<.30*	--	*<.008*	*<.05*	*<.04*	*<.10*	*<.004*	*<.02*	*<.3*	*<.1*	*<.006*	*<.006*
11...	3.8	.67	.19	<.008	.09	<.04	.10	.011	<.02	1.1	.2	<.006	<.006
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	4.0	.67	--	<.008	.10	<.04	E.07	.008	<.02	1.3	.1	--	--
08...	--	--	--	--	--	--	--	--	--	*1.4*	--	--	--
SEP													
11...	4.7	.59	--	<.008	.11	<.04	E.08	.011	<.02	1.1	.2	<.006	<.006

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

01610400 WAITES RUN NEAR WARDENSVILLE, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	<.002	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	98.1	<.005
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	107	<.005
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	110	<.005
APR													
03...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	109	<.005
MAY													
08...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	106	<.005
08...	*<.004*	*<.005*	*<.007*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*<.006*	*101*	*<.005*
JUN													
03...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	E.005	111	<.005
JUL													
11...	*<.004*	*<.005*	*<.007*	*<.010*	*<.002*	*<.041*	*<.020*	*<.005*	*<.018*	*<.003*	*<.006*	*117*	*<.005*
11...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	103	<.005
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003	<.006	91.0	<.005

Date	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	<.005	<.02	<.002	<.009	<.005	<.003	90.2	<.004	<.035	<.027	<.050	<.006	<.013
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	<.005	<.02	<.002	<.009	<.005	<.003	97.2	<.004	<.035	<.027	<.050	<.006	<.013
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	<.005	<.02	<.002	<.009	<.005	<.003	108	<.004	<.035	<.027	<.050	<.006	<.013
APR													
03...	<.005	<.02	<.002	<.009	<.005	<.003	80.8	<.004	<.035	<.027	<.050	<.006	<.013
MAY													
08...	<.005	<.02	<.002	<.009	<.005	<.003	106	<.004	<.035	<.027	<.050	<.006	<.013
08...	*<.005*	*<.02*	*<.002*	*<.009*	*<.005*	*<.003*	*102*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	*<.013*
JUN													
03...	<.005	<.02	<.002	<.009	<.005	<.003	112	<.004	<.035	<.027	<.050	<.006	<.013
JUL													
11...	*<.005*	*<.02*	*<.002*	*<.009*	*<.005*	*<.003*	*96.3*	*<.004*	*<.035*	*<.027*	*<.050*	*<.006*	*<.013*
11...	<.005	<.02	<.002	<.009	<.005	<.003	95.6	<.004	<.035	<.027	<.050	<.006	<.013
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	<.005	<.02	<.002	<.009	<.005	<.003	101	<.004	<.035	<.027	<.050	<.006	<.013

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

01610400 WAITES RUN NEAR WARDENSVILLE, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01	<.004	<.010	<.011
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
APR													
03...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
MAY													
08...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
08...	*<.006*	*<.002*	*<.007*	*<.003*	*<.010*	*<.004*	*<.022*	*<.006*	*<.011*	*<.01*	*<.004*	*<.010*	*<.011*
JUN													
03...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
JUL													
11...	*<.006*	*<.002*	*<.007*	*<.003*	*<.010*	*<.004*	*<.022*	*<.006*	*<.011*	*<.01*	*<.004*	*<.010*	*<.011*
11...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01	<.004	<.010	<.011

Date	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PHEO-PHYTIN A, PERI-PHYTON (MG/M2) (62359)
OCT													
24...	--	--	--	--	--	--	--	--	6.3	.04	--	--	--
NOV													
05...	<.02	<.011	<.02	<.034	<.02	<.005	<.002	<.009	2.2	.01	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	5.3	.04	--	--	--
JAN													
10...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	4.1	.04	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	3.5	.04	--	--	--
MAR													
07...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	.6	.01	--	--	--
APR													
03...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	6.6	.44	--	--	--
MAY													
08...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.8	.10	--	--	--
08...	*<.02*	*<.005*	*<.02*	*<.034*	*<.02*	*<.005*	*<.002*	*<.009*	*2.6*	--	--	--	--
JUN													
03...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.8	.03	--	--	--
JUL													
11...	*<.02*	*<.005*	*<.02*	*<.034*	*<.02*	*<.005*	*<.002*	*<.009*	--	--	--	--	--
11...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	2.9	.02	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	16	16.50	<1.0
31...	--	--	--	--	--	--	--	--	--	--	35	38.00	2.2
31...	--	--	--	--	--	--	--	--	--	--	27	29.00	1.2
AUG													
08...	--	--	--	--	--	--	--	--	1.5	.01	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.8	.01	--	--	--

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

01610400 WAITES RUN NEAR WARDENSVILLE, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)
OCT	
24...	--
NOV	
05...	--
DEC	
13...	--
JAN	
10...	--
FEB	
13...	--
MAR	
07...	--
APR	
03...	--
MAY	
08...	--
08...	--
JUN	
03...	--
JUL	
11...	--
11...	--
31...	3.5
31...	4.0
31...	4.5
AUG	
08...	--
08...	--
SEP	
11...	--

POTOMAC RIVER BASIN

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV

LOCATION.--Lat 39°34'56", long 78°18'36", Morgan County, Hydrologic Unit 02070003, on left bank at Rock Ford, 3.0 mi southwest of Great Cacapon, and at mile 6.1.

DRAINAGE AREA.--675 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1922 to September 1995, October 1996 to current year.

REVISED RECORDS.--WSP 800: 1924(M). WSP 921: Drainage area. WSP 951: 1936-37. WSP 1552: 1925-26(M), 1928-1929(M), 1932. WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 456.78 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 10, 1933, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for periods of estimated daily discharges (ice effect), which are poor. High end of rating not confirmed above 3,000 ft^3/s since cableway removed in July 1992.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1889 reached a stage of about 24.7 ft, from floodmarks, discharge, 57,500 ft^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	0830	4,630	7.39	Apr 29	1330	4,620	7.38
Apr 23	0000	*6,160	*8.47				

Minimum discharge, 38 ft3/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	60	77	e65	150	73	530	1800	539	124	225	58
2	83	62	80	e64	156	73	1050	1470	420	109	172	69
3	77	62	77	e63	174	90	939	2240	336	100	143	64
4	71	62	73	e62	170	90	764	1590	284	92	122	60
5	67	62	72	e60	154	108	614	1200	244	86	109	56
6	64	64	70	e59	142	184	503	994	272	79	165	53
7	59	66	69	e58	135	170	438	805	271	78	125	51
8	54	64	69	e58	122	141	387	786	273	74	98	49
9	50	66	72	68	122	138	346	866	257	70	85	46
10	47	65	73	78	125	130	327	871	221	77	78	45
11	47	61	76	86	125	119	316	1210	189	72	73	43
12	47	59	79	94	120	110	302	977	168	76	68	42
13	47	58	82	124	113	107	265	807	156	85	65	41
14	53	60	86	186	107	107	274	798	156	100	61	39
15	66	59	106	166	105	108	410	785	525	362	59	39
16	79	60	107	144	102	118	545	648	547	350	56	41
17	79	60	111	125	100	133	637	536	365	236	54	41
18	89	60	118	114	96	141	601	923	269	169	54	41
19	108	60	117	105	92	153	524	3010	213	151	56	41
20	91	62	106	104	91	288	464	1950	186	163	64	44
21	78	62	98	100	89	3190	604	1400	170	198	57	49
22	73	62	92	96	87	1930	2150	1030	155	155	54	44
23	68	62	88	93	85	1220	4180	795	143	130	52	49
24	66	62	e83	101	83	832	2180	644	132	120	58	57
25	66	66	e80	122	82	629	1490	544	120	188	60	83
26	62	72	e77	173	79	515	1110	469	114	225	59	92
27	60	74	e75	226	77	536	850	614	106	416	52	126
28	60	76	e73	198	75	727	840	1340	119	657	50	621
29	60	76	e71	172	---	670	3660	1630	140	729	54	525
30	60	76	e69	156	---	581	2680	1200	151	456	56	338
31	60	---	e67	151	---	508	---	753	---	309	56	---
TOTAL	2083	1920	2593	3471	3158	13919	29980	34685	7241	6236	2540	2947
MEAN	67.19	64.00	83.65	112.0	112.8	449.0	999.3	1119	241.4	201.2	81.94	98.23
MAX	108	76	118	226	174	3190	4180	3010	547	729	225	621
MIN	47	58	67	58	75	73	265	469	106	70	50	39
CFSM	0.10	0.09	0.12	0.17	0.17	0.67	1.48	1.66	0.36	0.30	0.12	0.15
IN.	0.11	0.11	0.14	0.19	0.17	0.77	1.65	1.91	0.40	0.34	0.14	0.16

e Estimated

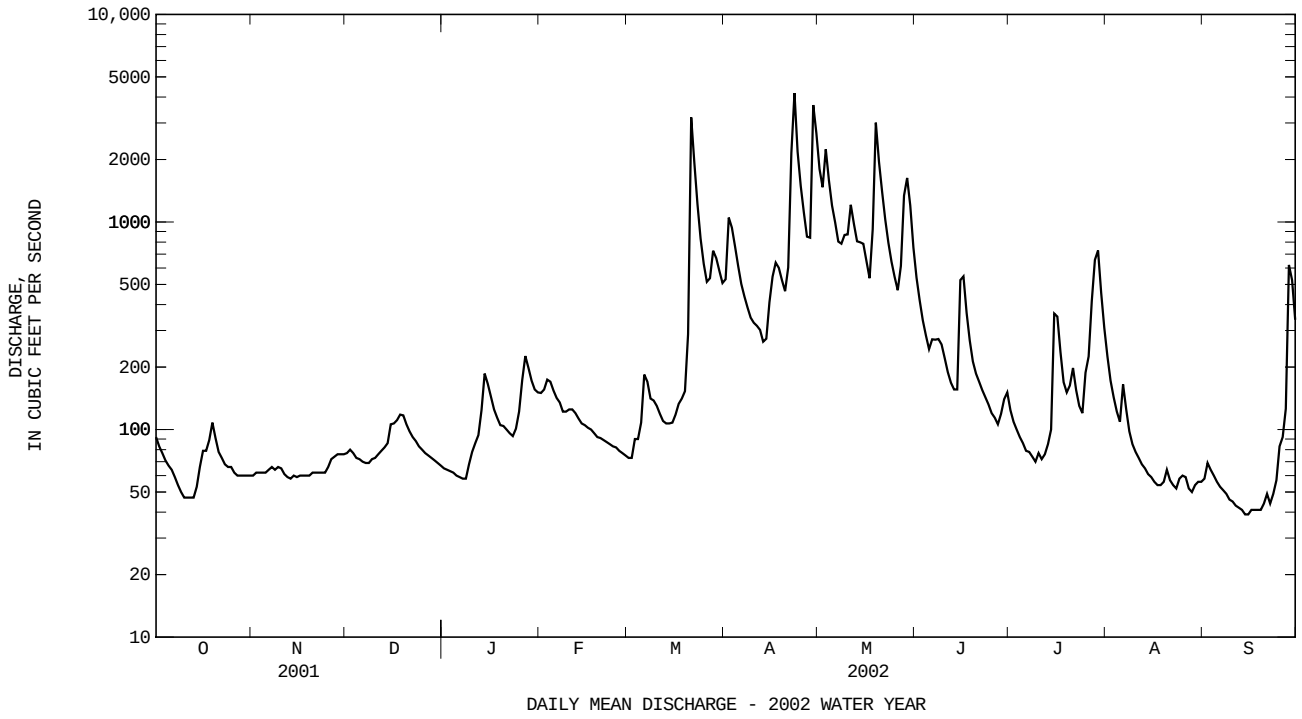
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1995, 1997 - 2002, BY WATER YEAR (WY)

MEAN	323.3	361.6	507.2	632.0	879.4	1272	1108	852.4	424.2	192.1	232.7	174.4
MAX	2976	2577	2121	1751	3234	5708	2976	3565	3525	936	2791	1636
(WY)	1943	1986	1973	1998	1998	1936	1987	1924	1972	1972	1955	1975
MIN	44.8	51.1	56.5	69.6	89.1	247	242	157	72.5	53.8	39.8	39.4
(WY)	1931	1966	1966	1956	1934	1990	1947	1969	1999	1999	1966	1932

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1923 - 1995, 1997 - 2002	
ANNUAL TOTAL	141148		110773			
ANNUAL MEAN	386.7		303.5		581.6	
HIGHEST ANNUAL MEAN					1135	1972
LOWEST ANNUAL MEAN					180	1969
HIGHEST DAILY MEAN	(e)4000	Mar 23	4180	Apr 23	67900	Mar 18 1936
LOWEST DAILY MEAN	47	(a)	39	(b)	26	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	49	Oct 8	40	Sep 13	28	Sep 7 1966
MAXIMUM PEAK FLOW			6160	Apr 23	(c)87600	Mar 18 1936
MAXIMUM PEAK STAGE			8.47	Apr 23	30.10	Mar 18 1936
INSTANTANEOUS LOW FLOW			38	(d)	26	(f)
ANNUAL RUNOFF (CFSM)	0.57		0.45		0.86	
ANNUAL RUNOFF (INCHES)	7.78		6.10		11.71	
10 PERCENT EXCEEDS	932		796		1330	
50 PERCENT EXCEEDS	187		105		240	
90 PERCENT EXCEEDS	65		56		67	

a Oct. 10-13.
b Sept. 14, 15.
c From rating curve extended above 52,000 ft^3/s.
d Sept. 14, 15.
f Sept. 11-13, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS personnel

Photo by USGS personnel

Cacapon River near Great Cacapon, WV (01611500)

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1968-80, 1982, 1992, 1994, 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
02...	1010	ENVIRONMENTAL	82	173	7.8	23.0	15.2	755	9.3	93	.16	.01
NOV												
20...	1215	ENVIRONMENTAL	62	213	7.7	9.0	8.2	753	10.5	90	--	--
DEC												
04...	*0940*	*BLANK*	--	--	--	--	--	--	--	--	--	--
04...	1110	ENVIRONMENTAL	72	199	7.3	13.0	7.1	763	10.5	87	--	--
18...	*1430*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JAN												
08...	1140	ENVIRONMENTAL	E58	203	7.2	3.0	.0	770	12.7	86	--	--
FEB												
04...	1000	ENVIRONMENTAL	166	159	7.6	1.0	4.0	748	11.7	91	.12	--
MAR												
04...	1000	ENVIRONMENTAL	88	159	7.7	-4.0	3.3	756	12.8	96	.14	.01
20...	1050	ENVIRONMENTAL	216	161	6.8	--	--	--	--	--	.29	--
21...	0503	ENVIRONMENTAL	3210	148	6.0	--	--	--	--	--	1.9	--
21...	0833	ENVIRONMENTAL	4630	137	6.2	--	--	--	--	--	1.8	.29
21...	*0834*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.0*	*.29*
21...	2337	ENVIRONMENTAL	2550	108	6.3	--	--	--	--	--	2.7	1.35
22...	1440	ENVIRONMENTAL	1790	100	6.8	--	--	--	--	--	2.5	1.62
APR												
01...	1000	ENVIRONMENTAL	492	118	7.7	12.0	11.2	752	10.8	100	.89	.68
17...	1255	ENVIRONMENTAL	644	119	7.3	34.0	21.4	755	8.7	99	.33	--
22...	0947	ENVIRONMENTAL	864	117	7.6	--	--	--	--	--	.51	.23
22...	1317	ENVIRONMENTAL	1060	114	7.1	--	--	--	--	--	.55	.24
22...	1647	ENVIRONMENTAL	3980	111	7.0	--	--	--	--	--	1.5	.31
22...	2017	ENVIRONMENTAL	5340	108	7.5	--	--	--	--	--	2.1	.40
22...	*2018*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.0*	*.40*
23...	0317	ENVIRONMENTAL	5550	91	7.1	--	--	--	--	--	2.0	.72
23...	1200	ENVIRONMENTAL	3730	87	6.9	--	--	--	--	--	2.1	.91
29...	1055	ENVIRONMENTAL	4530	98	7.1	11.0	13.9	--	9.3	--	1.3	.44
JUN												
03...	1100	ENVIRONMENTAL	331	109	8.0	21.0	22.6	752	8.8	103	.79	.50
JUL												
08...	1040	ENVIRONMENTAL	74	160	7.6	28.0	24.8	759	8.0	97	--	--
AUG												
05...	1040	ENVIRONMENTAL	105	144	7.8	29.0	28.1	755	7.6	98	.69	.32
SEP												
09...	1015	ENVIRONMENTAL	46	156	7.6	23.0	21.8	758	8.1	93	--	--

E Estimated value.

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
02...	.001	.008	.006	.15	.11	.12	.14	.11	.009	E.003	<.007	2.6	.58
NOV													
20...	<.002	<.013	<.015	E.10	E.09	--	--	--	.006	E.003	<.007	3.6	.60
DEC													
04...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*.3*	--
04...	<.002	<.013	<.015	E.09	.11	--	--	--	.005	<.004	<.007	13	2.6
18...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	--	--
JAN													
08...	<.002	E.010	<.015	E.10	E.07	--	--	--	.005	E.002	<.007	5.4	--
FEB													
04...	<.002	.016	<.015	.10	.10	.12	--	--	.005	<.004	<.007	1.9	.85
MAR													
04...	.001	.009	<.002	.14	.11	.11	--	--	.008	<.006	<.007	1.4	.33
20...	<.002	.013	E.012	.28	.15	.17	--	--	.014	.005	<.007	4.5	2.6
21...	E.002	.128	<.015	1.8	.20	.33	--	--	.27	.005	<.007	395	3420
21...	.003	.292	<.015	1.5	.27	.56	--	--	.23	.007	<.007	378	4730
21...	*.003*	*.289*	*<.015*	*1.7*	*.28*	*.57*	--	--	*.28*	*.007*	*<.007*	*365*	--
21...	.010	1.36	.031	1.3	.53	1.9	1.3	.50	.21	.014	<.007	186	1280
22...	.010	1.63	E.010	.83	.41	2.0	--	--	.103	.011	<.007	67	322
APR													
01...	.003	.684	.004	.20	.15	.84	.20	.15	.015	.006	<.007	3.7	4.9
17...	<.002	.090	<.015	.24	.17	.27	--	--	.018	.005	<.007	12	20.9
22...	.003	.230	E.014	.28	.22	.45	--	--	.017	E.003	<.007	9.0	21.0
22...	.003	.242	<.015	.31	.20	.45	--	--	.018	E.003	<.007	9.0	25.8
22...	.005	.317	.018	1.2	.26	.58	1.2	.25	.162	.006	<.007	217	2330
22...	.004	.407	.021	1.7	.29	.70	1.6	.27	.23	.006	<.007	275	3960
22...	*.004*	*.407*	*.021*	*1.6*	*.29*	*.69*	*1.6*	*.26*	*.24*	*.006*	*<.007*	*272*	--
23...	.008	.726	.037	1.3	.49	1.2	1.2	.46	.30	.016	E.004	267	4000
23...	.008	.922	.039	1.2	.49	1.4	1.1	.45	.24	.031	.017	197	1980
29...	.003	.443	<.015	.90	.30	.74	--	--	.144	.011	<.007	140	1710
JUN													
03...	.004	.500	E.010	.29	.25	.75	--	--	.021	.011	E.004	5.6	5.0
JUL													
08...	<.002	E.011	E.010	.36	.27	--	--	--	.017	.010	<.007	.9	.18
AUG													
05...	.006	.324	.018	.37	.30	.62	.35	.28	.020	.012	E.005	2.3	.65
SEP													
09...	<.002	<.013	E.008	.18	.18	--	--	--	.016	.006	<.007	1.1	.14

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

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
02...	--
NOV	
20...	--
DEC	
04...	--
04...	--
18...	--
JAN	
08...	--
FEB	
04...	--
MAR	
04...	--
20...	--
21...	82
21...	91
21...	*93*
21...	96
22...	--
APR	
01...	--
17...	28
22...	94
22...	68
22...	62
22...	51
22...	*69*
23...	81
23...	87
29...	--
JUN	
03...	--
JUL	
08...	--
AUG	
05...	--
SEP	
09...	--

01613000 POTOMAC RIVER AT HANCOCK, MD

LOCATION.--Lat 39°41'51.2", long 78°10'40.4", Washington County, Hydrologic Unit 02070004, on left bank, 0.2 mi downstream from Little Tonoloway Creek, 0.5 mi downstream from bridge on U.S. Highway 522 at Hancock, 1.1 mi upstream from Tonoloway Creek (formerly called Great or Big Tonoloway Creek), and at mile 239.

DRAINAGE AREA.--4,090 mi^2.

PERIOD OF RECORD.--October 1932 to current year. Gage-height records collected at same site since June 1925 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 781: 1933(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 383.68 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1932, to Jan. 5, 1935, Mar. 18, 1936, to Jan. 20, 1937, nonrecording gage, on former highway bridge just upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Slight regulation at low flow from power plants upstream. Low flow affected slightly by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1932, about 40 ft in May 1889, discharge, about 220,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	1400	23,600	13.29	Apr 29	2030	26,400	14.16
Apr 23	1200	*33,000	*15.98				

Minimum discharge, 299 ft^3/s, Dec. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	589	455	623	e470	1150	715	4560	13600	3680	784	1730	616
2	559	455	599	e465	1180	701	6870	10800	3340	730	1370	598
3	541	462	563	e460	1250	759	7170	14300	2990	701	1190	597
4	524	463	531	e460	1230	851	6370	10700	2390	655	1110	535
5	507	463	515	e460	1150	1130	4870	8150	2160	602	1120	478
6	488	458	505	e460	1080	1340	3980	7060	2240	564	1140	456
7	470	462	495	484	1020	1540	3500	6120	2430	541	1380	426
8	543	471	501	e560	1010	1430	3190	5970	2660	535	1050	408
9	735	450	515	e580	973	1330	2840	8990	2300	513	787	446
10	952	437	566	610	962	1220	2690	10800	1960	504	683	495
11	530	426	626	622	944	1130	2640	9820	1700	493	637	486
12	455	420	651	639	920	1040	2320	7830	1480	688	603	680
13	455	415	644	769	914	1010	2230	6930	1360	637	577	719
14	501	415	667	884	935	996	2410	6520	1390	688	667	612
15	588	415	697	905	1000	982	5120	6130	2260	976	716	614
16	598	415	804	877	988	987	6690	5470	2700	1780	710	634
17	604	415	820	793	966	1030	7300	4950	2100	1590	690	638
18	589	415	792	729	947	1120	6170	6750	1730	1220	691	554
19	596	416	753	683	916	1470	4800	16500	1480	1010	866	529
20	597	423	761	671	887	2780	4270	12500	1310	1170	899	536
21	585	423	756	647	863	16600	4670	8830	1180	1650	670	548
22	571	423	703	633	843	13000	8630	7860	1080	1070	684	562
23	563	423	726	633	789	8060	29100	6540	1020	869	899	593
24	555	423	690	658	782	5940	17200	5330	967	934	1010	701
25	539	447	654	761	782	4710	11500	4680	899	943	928	701
26	521	502	626	1160	779	3920	8680	3870	849	1240	902	589
27	488	649	595	1750	756	4090	6560	3730	826	1340	829	646
28	458	701	575	1710	729	5550	6060	4820	878	3560	752	1520
29	455	624	568	1450	---	5480	20000	5250	881	6050	671	3600
30	450	615	495	1270	---	4950	20600	4940	848	3630	695	2360
31	450	---	e480	1200	---	4470	---	4080	---	2380	684	---
TOTAL	17056	13981	19496	24453	26745	100331	222990	239820	53088	40047	27340	22877
MEAN	550	466	629	789	955	3236	7433	7736	1770	1292	882	763
MAX	952	701	820	1750	1250	16600	29100	16500	3680	6050	1730	3600
MIN	450	415	480	460	729	701	2230	3730	826	493	577	408
CFSM	0.13	0.11	0.15	0.19	0.23	0.79	1.82	1.89	0.43	0.32	0.22	0.19
IN.	0.16	0.13	0.18	0.22	0.24	0.91	2.03	2.18	0.48	0.36	0.25	0.21

e Estimated

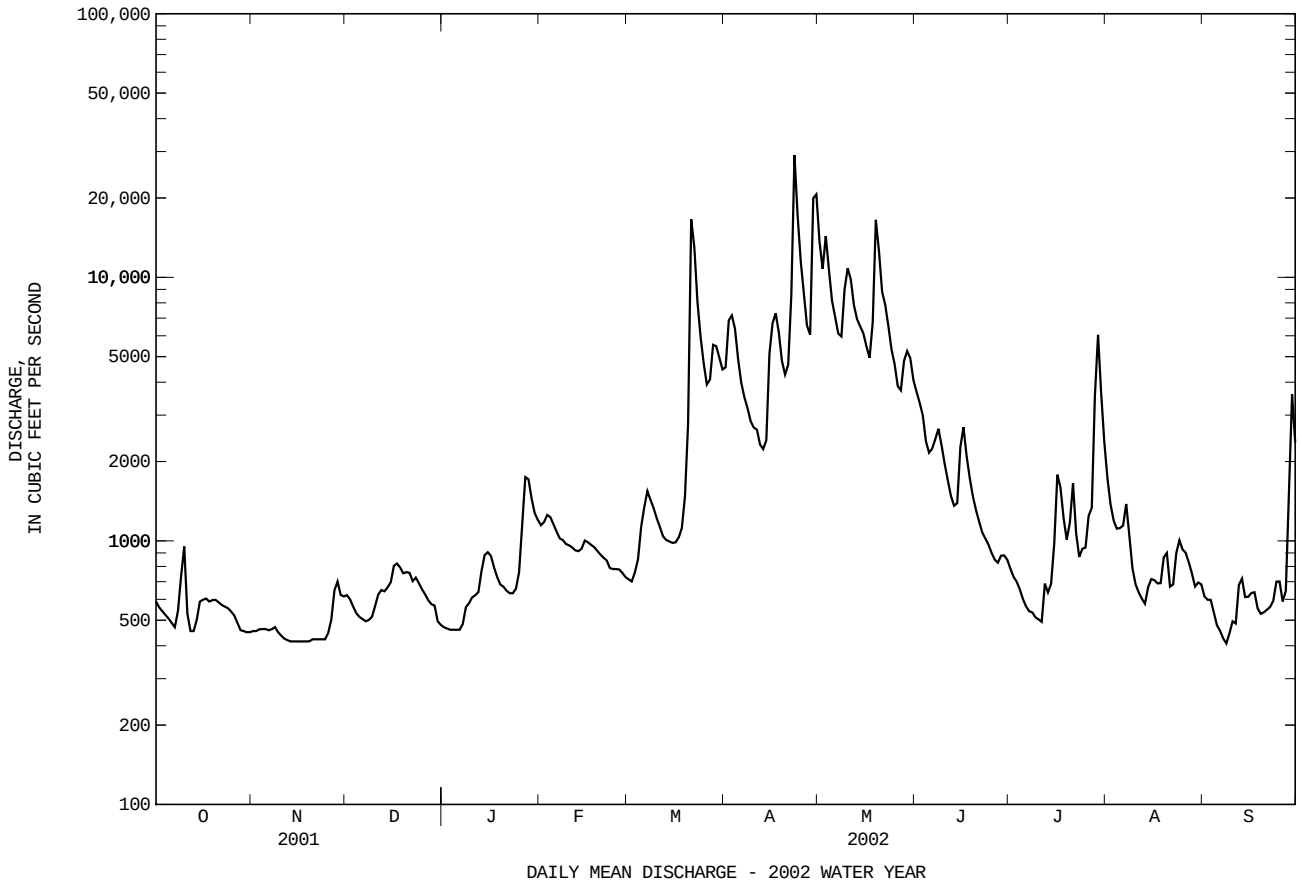
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2002, BY WATER YEAR (WY)

MEAN	1972	2455	3920	5049	6510	9282	7604	5505	3066	1572	1592	1420
MAX	13270	20090	15160	17180	17560	32280	19170	13260	13390	6677	9479	15100
(WY)	1977	1986	1973	1996	1998	1936	1993	1988	1972	1949	1955	1996
MIN	309	399	463	751	955	2311	2286	1344	622	357	342	329
(WY)	1942	1966	1966	1956	2002	1990	1995	1941	1969	1966	1944	1946

01613000 POTOMAC RIVER AT HANCOCK, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1933 - 2002	
ANNUAL TOTAL	1035400		808224			
ANNUAL MEAN	2837		2214		4150	
HIGHEST ANNUAL MEAN					7932	1996
LOWEST ANNUAL MEAN					1770	1969
HIGHEST DAILY MEAN	22800	Mar 22	29100	Apr 23	261000	Mar 18 1936
LOWEST DAILY MEAN	415	Nov 13	408	Sep 8	184	Oct 3 1932
ANNUAL SEVEN-DAY MINIMUM	415	Nov 13	415	Nov 13	215	Sep 7 1966
MAXIMUM PEAK FLOW			33000	Apr 23	(a)340000	Mar 18 1936
MAXIMUM PEAK STAGE			15.98	Apr 23	47.60	Mar 18 1936
INSTANTANEOUS LOW FLOW			299	Dec 30	180	Oct 4 1932
ANNUAL RUNOFF (CFSM)	0.69		0.54		1.01	
ANNUAL RUNOFF (INCHES)	9.42		7.35		13.79	
10 PERCENT EXCEEDS	6960		6120		9470	
50 PERCENT EXCEEDS	1500		848		2150	
90 PERCENT EXCEEDS	495		463		541	

a From rating curve extended above 120,000 ft^3/s on basis of slope-area measurement of peak flow.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD

LOCATION.--Lat 39°42'59.0", long 77°49'29.2", Washington County, Hydrologic Unit 02070004, on right bank 0.7 mi upstream from highway bridge in Fairview, 2.0 mi upstream from Rockdale Run, 6.5 mi northwest of Hagerstown, and 19.1 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1432: 1929(M), 1930, 1931-32(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 391.85 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 6, 1932, nonrecording gage at highway bridge 0.7 mi downstream at datum 2.93 ft lower. Dec. 6, 1932, to Oct. 7, 1933, nonrecording gage 150 ft downstream from former site at datum 4.92 ft lower than present datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair. Diversions for irrigation upstream from station. National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known prior to 1928, about 16.5 ft, present datum, sometime in 1889, from information by local residents, discharge, about 22,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	0200	*2,070	*5.10	No peak greater than base discharge.			

Minimum discharge, 35 ft^3/s, Aug. 18, 19, 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	71	84	e76	187	79	481	602	328	97	55	73
2	78	70	83	e76	191	80	437	585	295	92	63	69
3	78	76	79	e76	180	167	371	547	255	93	57	68
4	74	71	78	e76	171	305	327	437	231	82	58	66
5	71	70	76	e78	143	230	293	382	217	78	64	62
6	69	67	74	e80	145	188	269	347	211	72	61	58
7	65	66	72	e84	145	172	249	326	326	69	66	54
8	63	69	74	e90	130	155	233	338	282	70	57	52
9	65	70	84	e110	123	141	224	326	217	72	50	51
10	66	65	97	149	115	134	253	410	195	71	48	51
11	68	77	94	166	113	130	235	341	182	71	46	49
12	71	58	93	235	113	123	215	295	173	65	47	45
13	72	66	86	236	109	126	203	318	184	62	44	45
14	71	65	88	179	106	126	242	359	300	74	43	46
15	87	65	112	142	99	122	1110	338	282	89	42	45
16	130	65	109	120	97	122	866	293	232	77	43	47
17	106	67	103	113	96	124	620	264	200	69	41	51
18	96	67	112	106	93	179	529	769	182	64	39	51
19	85	64	132	104	90	345	590	1180	170	60	42	59
20	78	66	121	104	90	812	496	748	158	60	41	98
21	77	65	108	114	89	1750	429	593	140	61	40	68
22	74	65	97	106	87	974	450	499	130	58	38	62
23	75	66	91	106	86	655	436	431	124	59	39	194
24	72	66	92	131	83	508	374	383	118	69	189	145
25	74	76	92	321	82	418	337	342	115	76	249	108
26	70	123	87	291	82	368	318	313	110	74	108	92
27	65	148	87	213	82	823	288	770	107	79	82	352
28	66	111	e84	179	80	724	495	547	113	72	78	579
29	66	91	e82	160	---	553	961	484	112	67	88	362
30	69	84	e78	148	---	467	735	412	107	60	87	235
31	70	---	e77	167	---	401	---	347	---	58	80	---
TOTAL	2350	2250	2826	4336	3207	11501	13066	14326	5796	2220	2085	3337
MEAN	75.8	75.0	91.2	140	115	371	436	462	193	71.6	67.3	111
MAX	130	148	132	321	191	1750	1110	1180	328	97	249	579
MIN	63	58	72	76	80	79	203	264	107	58	38	45
CFSM	0.15	0.15	0.18	0.28	0.23	0.75	0.88	0.94	0.39	0.14	0.14	0.23
IN.	0.18	0.17	0.21	0.33	0.24	0.87	0.98	1.08	0.44	0.17	0.16	0.25

e Estimated

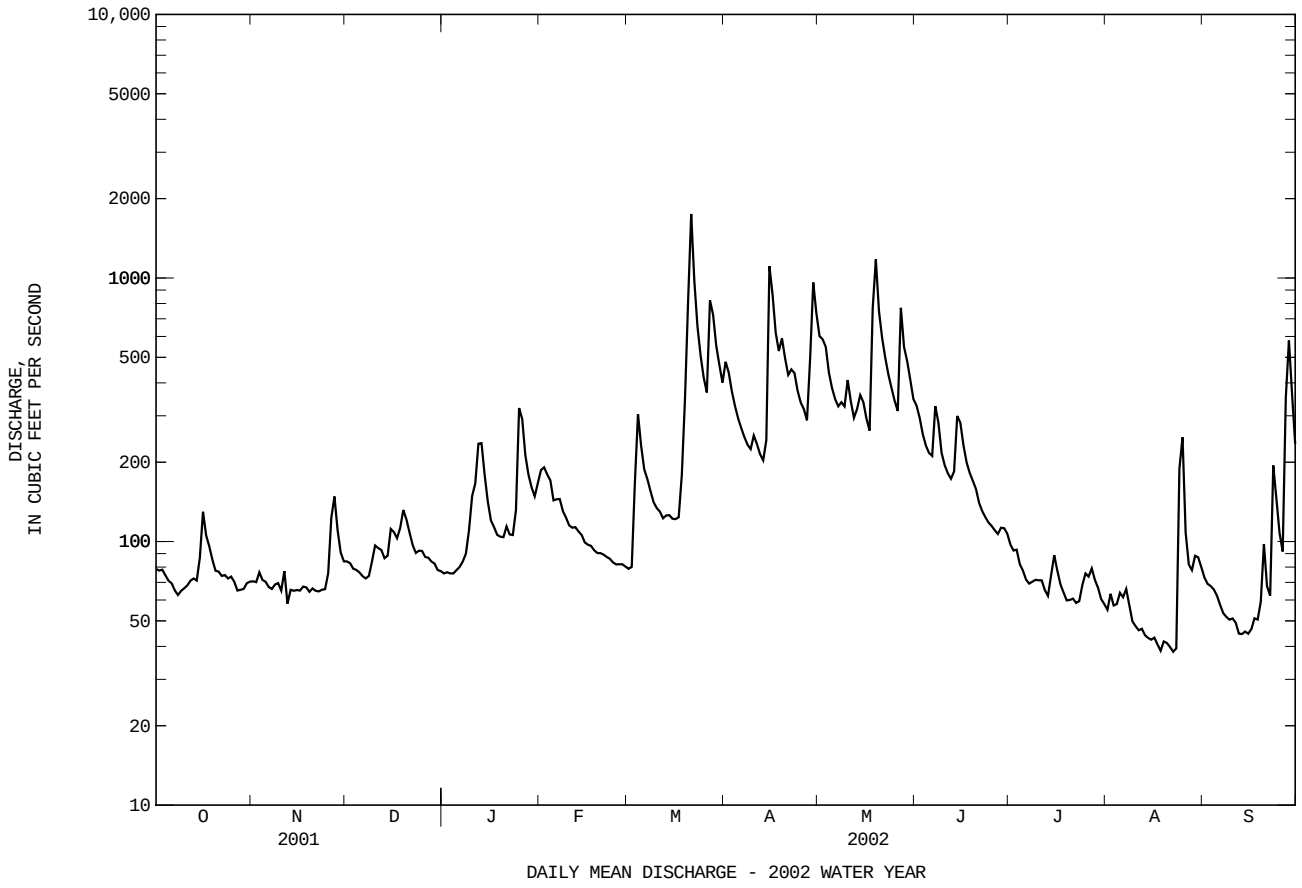
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	328	446	614	675	838	1186	1050	734	504	321	228	257
MAX	2177	1571	1926	2404	2473	3725	2991	1736	3278	1358	921	1886
(WY)	1977	1998	1997	1996	1998	1994	1993	1989	1972	1928	1942	1996
MIN	42.3	45.4	61.2	88.8	115	274	304	218	120	62.2	48.0	54.6
(WY)	1931	1931	1931	1931	2002	1990	1995	1941	1965	1966	1966	1930

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1928 - 2002	
ANNUAL TOTAL	125230		67300			
ANNUAL MEAN	343		184		594	
HIGHEST ANNUAL MEAN					1183	1996
LOWEST ANNUAL MEAN					184	2002
HIGHEST DAILY MEAN	3270	Jun 23	1750	Mar 21	26700	Jun 23 1972
LOWEST DAILY MEAN	58	Nov 12	38	Aug 22	25	Nov 28 1930
ANNUAL SEVEN-DAY MINIMUM	65	Nov 12	40	Aug 17	28	Sep 7 1966
MAXIMUM PEAK FLOW			2070	Mar 21	(a)32400	Jun 23 1972
MAXIMUM PEAK STAGE			5.10	Mar 21	(b)24.50	Jun 23 1972
INSTANTANEOUS LOW FLOW			35	(c)	21	(d)
ANNUAL RUNOFF (CFSM)	0.69		0.37		1.20	
ANNUAL RUNOFF (INCHES)	9.43		5.07		16.33	
10 PERCENT EXCEEDS	830		430		1310	
50 PERCENT EXCEEDS	205		97		330	
90 PERCENT EXCEEDS	71		59		102	

a From rating curve extended above 15,000 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
b From floodmarks.
c Aug. 18, 22, 23.
d Aug. 8, Sept. 12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS Personnel

Gage house at Conococheague Creek at Fairview, Md (01614500)

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-83, 1992 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: November 1966 to September 1980.
SUSPENDED SEDIMENT DISCHARGE: October 1966 to September 1980.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum daily, 30.0°C, July 17, 1969; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,050 mg/L, Oct. 25, 1971; minimum daily mean, 1 mg/L, on many days.
SEDIMENT LOAD: Maximum daily, 73,000 tons, June 23, 1972; minimum daily, 0.17 ton, Nov. 24, 26, 27, 1966.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
10...	*1430*	*REPLICATE*	--	--	--	--	--	--	--	--	*4.5*	*4.05*
10...	1445	ENVIRONMENTAL	64	526	8.7	21.5	10.8	761	16.1	146	4.3	3.97
NOV												
13...	1415	ENVIRONMENTAL	67	522	7.3	12.0	6.0	765	13.4	107	3.7	--
DEC												
04...	1349	ENVIRONMENTAL	76	494	7.8	14.0	6.3	762	13.7	111	3.5	3.12
JAN												
22...	*1415*	*REPLICATE*	--	--	--	--	--	--	--	--	*3.7*	*3.42*
22...	1430	ENVIRONMENTAL	105	438	7.7	11.5	2.9	761	16.0	119	3.7	3.36
FEB												
14...	1245	ENVIRONMENTAL	105	447	7.3	4.5	2.7	760	15.3	113	3.6	3.29
MAR												
03...	1900	ENVIRONMENTAL	257	448	8.1	--	--	--	--	--	3.8	3.13
04...	0308	ENVIRONMENTAL	309	438	7.9	--	--	--	--	--	3.9	3.29
04...	1128	ENVIRONMENTAL	316	390	7.9	--	--	--	--	--	3.6	2.95
04...	1908	ENVIRONMENTAL	303	361	7.9	--	--	--	--	--	3.3	2.64
05...	1443	ENVIRONMENTAL	221	326	7.9	--	--	--	--	--	2.9	2.39
06...	1345	ENVIRONMENTAL	189	373	7.7	14.0	5.3	759	14.2	113	3.2	2.84
20...	1424	ENVIRONMENTAL	692	326	6.9	--	--	--	--	--	4.8	2.71
20...	1905	ENVIRONMENTAL	1440	317	7.0	--	--	--	--	--	4.7	3.03
20...	2206	ENVIRONMENTAL	1800	297	7.1	--	--	--	--	--	5.8	3.16
21...	0039	ENVIRONMENTAL	2050	285	6.8	--	--	--	--	--	5.8	3.46
21...	0301	ENVIRONMENTAL	2070	280	6.9	--	--	--	--	--	6.7	3.81
21...	0526	ENVIRONMENTAL	1980	278	7.3	--	--	--	--	--	6.0	4.11
21...	0758	ENVIRONMENTAL	1900	266	6.8	--	--	--	--	--	6.4	4.10
21...	1036	ENVIRONMENTAL	1810	258	6.5	--	--	--	--	--	5.9	4.02
21...	1323	ENVIRONMENTAL	1720	260	--	--	--	--	--	--	5.7	3.98
21...	1656	ENVIRONMENTAL	1590	269	--	--	--	--	--	--	5.5	--
21...	2340	ENVIRONMENTAL	1330	262	--	--	--	--	--	--	5.6	4.27
22...	1307	ENVIRONMENTAL	922	275	--	--	--	--	--	--	5.2	--
22...	*1715*	*BLANK*	--	--	--	--	--	--	--	--	--	--
22...	*1730*	*BLANK*	--	--	--	--	--	--	--	--	--	--
APR												
11...	*1400*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.9*	*2.52*
11...	1445	ENVIRONMENTAL	233	357	8.5	19.0	17.0	767	12.8	132	2.8	2.45
MAY												
07...	1015	ENVIRONMENTAL	323	354	7.7	22.0	16.7	755	9.5	99	3.2	2.86
JUN												
10...	1230	ENVIRONMENTAL	194	389	8.0	28.0	23.5	754	8.5	100	3.4	3.02
JUL												
16...	*1200*	*REPLICATE*	--	--	--	--	--	--	--	--	*3.4*	*2.95*
16...	1215	ENVIRONMENTAL	75	498	8.4	29.5	25.4	756	10.2	126	3.4	2.88
AUG												
24...	2004	ENVIRONMENTAL	572	426	7.9	--	--	--	--	--	5.3	2.47
24...	2008	ENVIRONMENTAL	578	423	7.9	--	--	--	--	--	5.4	2.63
24...	2012	ENVIRONMENTAL	583	422	7.8	--	--	--	--	--	4.8	2.65
29...	*1200*	*BLANK*	--	--	--	--	--	--	--	--	--	--
29...	1230	ENVIRONMENTAL	83	464	8.1	20.0	19.9	756	8.2	91	3.5	2.98
SEP												
12...	1230	ENVIRONMENTAL	43	561	8.6	23.0	22.3	757	13.0	151	3.4	2.96
27...	1328	ENVIRONMENTAL	409	398	5.6	--	--	--	--	--	5.9	4.77
27...	2255	ENVIRONMENTAL	540	398	6.2	--	--	--	--	--	6.7	4.75
28...	0559	ENVIRONMENTAL	634	396	6.3	--	--	--	--	--	7.0	5.37
28...	1305	ENVIRONMENTAL	618	413	6.8	--	--	--	--	--	7.3	5.91
28...	2120	ENVIRONMENTAL	472	440	7.0	--	--	--	--	--	7.4	6.25
29...	0721	ENVIRONMENTAL	402	434	7.3	--	--	--	--	--	7.6	6.52

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT													
10...	*.009*	*4.06*	*<.04*	*.46*	*.26*	*4.3*	--	--	*.067*	*.059*	*.04*	*3.8*	*1.7*
10...	.008	3.98	<.04	.35	.29	4.3	--	--	.063	.058	.04	--	1.6
NOV													
13...	E.007	3.33	<.04	.35	.31	3.6	--	--	.053	.048	.03	--	2.7
DEC													
04...	.016	3.14	<.04	.34	.29	3.4	--	--	.174	.164	.14	--	2.5
JAN													
22...	*.011*	*3.43*	*<.04*	*.30*	*.24*	*3.7*	--	--	*.044*	*.039*	*.03*	*2.3*	*7.4*
22...	.012	3.38	E.02	.28	.25	3.6	--	--	.044	.040	.03	--	2.7
FEB													
14...	.019	3.31	<.04	.32	.24	3.6	--	--	.076	.066	.05	--	3.2
MAR													
03...	.019	3.15	E.02	.61	.34	3.5	--	--	.192	.136	.12	--	22
04...	.024	3.31	<.04	.62	.32	3.6	--	--	.187	.126	.10	--	22
04...	.031	2.98	E.04	.66	.42	3.4	--	--	.180	.116	.10	--	20
04...	.029	2.67	<.04	.67	.37	3.0	--	--	.150	.088	.07	--	20
05...	.018	2.41	E.02	.51	.30	2.7	--	--	.118	.064	.05	--	12
06...	.011	2.85	<.04	.36	.25	3.1	--	--	.096	.062	.05	--	4.2
20...	.023	2.73	.06	2.0	.45	3.2	2.0	.39	.47	.088	.07	--	210
20...	.026	3.05	.10	1.7	.51	3.6	1.6	.42	.70	.077	.06	--	501
20...	.029	3.19	.10	2.6	.64	3.8	2.5	.53	.75	.080	.06	--	529
21...	.027	3.49	.13	2.3	.75	4.2	2.1	.62	.77	.080	.06	--	488
21...	.029	3.84	.13	2.8	.77	4.6	2.7	.65	.65	.080	.06	--	413
21...	.028	4.14	.13	1.8	.80	4.9	1.7	.67	.57	.077	.06	--	358
21...	.022	4.13	.10	2.3	.95	5.1	2.2	.85	.43	.069	.05	--	285
21...	.020	4.04	.08	1.9	.61	4.6	1.8	.53	.34	.060	.04	--	220
21...	.019	3.99	.07	1.7	.51	4.5	1.6	.45	.34	.051	.04	--	183
21...	E.004	4.05	.05	1.5	.46	4.5	1.4	.41	.26	.049	.04	--	145
21...	.024	4.29	.05	1.3	.41	4.7	1.3	.36	.20	.050	.04	--	97
22...	<.008	4.33	.05	.83	.38	4.7	.78	.34	.144	.039	.03	--	54
22...	*<.008*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.02*	--	*<.1*
22...	*<.008*	*<.05*	*<.04*	*E.09*	*<.10*	--	--	--	*E.002*	*E.004*	*<.02*	--	--
APR													
11...	*.012*	*2.53*	*<.04*	*.35*	*.23*	*2.8*	--	--	*.064*	*.050*	*.04*	--	*5.4*
11...	.013	2.47	<.04	.38	.26	2.7	--	--	.066	.050	.04	--	5.0
MAY													
07...	.010	2.87	<.04	.29	.21	3.1	--	--	.054	.035	.02	--	9.5
JUN													
10...	.015	3.03	E.02	.37	.37	3.4	--	--	.105	.077	.06	--	14
JUL													
16...	*.021*	*2.97*	*<.04*	*.42*	*.30*	*3.3*	--	--	*.22*	*.23*	*.21*	--	*3.6*
16...	.021	2.90	<.04	.49	.34	3.2	--	--	.22	.21	.20	--	9.4
AUG													
24...	.016	2.48	<.04	2.8	.46	2.9	--	--	.64	.091	.06	--	399
24...	*.015*	*2.64*	*<.04*	*2.8*	*.42*	*3.1*	--	--	*.60*	*.120*	*.10*	--	*400*
24...	*.015*	*2.67*	*<.04*	*2.2*	*.38*	*3.0*	--	--	*.64*	*.122*	*.10*	--	*387*
29...	*<.008*	*<.05*	*<.04*	*<.10*	*<.10*	--	--	--	*E.002*	*<.004*	*<.02*	--	*.3*
29...	.018	2.99	E.03	.49	.34	3.3	--	--	.165	.149	.12	--	7.1
SEP													
12...	.015	2.97	<.04	.40	.37	3.3	--	--	.150	.140	.13	--	3.2
27...	.019	4.79	.07	1.2	.61	5.4	1.1	.54	.28	.132	.11	--	121
27...	.025	4.78	.07	1.9	.65	5.4	1.8	.58	.40	.131	.10	--	182
28...	.032	5.40	.07	1.6	.70	6.1	1.5	.63	.36	.124	.10	--	192
28...	.036	5.94	.07	1.3	.69	6.6	1.3	.62	.29	.117	.09	--	137
28...	.046	6.29	.09	1.1	.79	7.1	1.0	.70	.25	.128	.10	--	93
29...	.039	6.56	.06	1.1	.66	7.2	1.0	.61	.20	.104	.08	--	83

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

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT	
10...	--
10...	.28
NOV	
13...	.49
DEC	
04...	.51
JAN	
22...	--
22...	.77
FEB	
14...	.91
MAR	
03...	15.1
04...	18.4
04...	17.0
04...	16.5
05...	7.4
06...	2.1
20...	393
20...	1950
20...	2570
21...	2700
21...	2310
21...	1920
21...	1460
21...	1080
21...	851
21...	621
21...	349
22...	134
22...	--
22...	--
APR	
11...	--
11...	3.1
MAY	
07...	8.3
JUN	
10...	7.1
JUL	
16...	--
16...	1.9
AUG	
24...	617
24...	*624*
24...	*609*
29...	--
29...	1.6
SEP	
12...	.37
27...	133
27...	265
28...	330
28...	229
28...	118
29...	89.9

01617800 MARSH RUN AT GRIMES, MD

LOCATION.--Lat 39°30'52.4", long 77°46'38.0", Washington County, Hydrologic Unit 02070004, on right bank 220 ft up- stream from bridge on Sprecher Road, 0.1 mi downstream from unnamed tributary, 0.5 mi southwest of Grimes, 1.5 mi upstream from mouth, and 2.2 mi southwest of Fairplay.

DRAINAGE AREA.--18.9 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 354.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater, ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1530	*13	*1.23	No peak greater than base discharge.			

Minimum discharge, 0.01 ft^3/s, Aug. 19-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.65	e0.75	0.98	e0.94	1.6	0.89	3.9	1.2	1.7	1.1	0.64	0.40
2	0.56	e0.80	0.87	e0.90	1.3	1.2	3.1	1.6	1.2	1.0	0.60	0.52
3	0.50	e0.86	0.87	e0.86	1.4	2.3	2.7	1.3	0.88	0.98	0.58	0.44
4	0.42	e0.82	0.82	e0.83	1.3	1.3	2.6	1.3	0.94	0.87	0.58	0.32
5	0.38	e0.78	0.78	e1.0	1.7	0.91	2.5	1.4	0.95	0.74	0.62	0.23
6	0.33	e0.74	0.88	e1.2	2.7	1.2	2.4	1.4	1.3	0.68	0.91	0.24
7	0.33	e0.72	0.94	e1.4	1.5	1.2	2.4	1.5	1.8	0.71	0.65	0.24
8	0.38	e0.78	1.0	e1.3	1.5	1.1	2.1	1.5	1.2	0.76	0.66	0.26
9	0.48	e1.0	1.5	e1.3	1.5	1.1	2.0	1.5	0.94	0.74	0.46	0.36
10	0.53	e0.95	1.2	1.6	e1.3	1.2	2.4	1.4	0.85	0.64	0.11	0.37
11	0.70	e0.90	1.3	2.2	e1.4	1.4	2.0	1.3	0.79	0.24	0.12	0.29
12	0.58	e0.84	1.2	1.7	e1.6	1.5	2.0	1.4	0.71	0.18	0.14	0.09
13	0.49	e0.80	1.2	1.5	e1.4	1.8	2.1	2.1	1.3	0.25	0.11	0.30
14	0.47	e0.78	1.3	1.3	e1.3	1.5	2.5	2.5	4.1	0.95	0.19	0.27
15	e1.3	e0.80	1.3	1.2	e1.2	1.4	2.5	1.9	3.1	0.57	0.19	0.24
16	1.0	e0.86	1.2	1.2	e1.2	1.4	2.0	1.6	2.4	0.36	0.15	0.24
17	e0.86	e0.82	1.3	1.2	e1.1	1.4	1.7	1.4	2.0	0.26	0.07	0.04
18	e0.86	e0.76	1.6	1.1	e1.1	2.2	1.6	3.4	1.8	0.24	0.03	0.03
19	e0.80	e0.74	1.4	1.1	e1.1	1.4	1.5	2.9	1.8	0.32	0.04	0.04
20	e0.76	e0.80	1.3	1.2	e1.0	7.0	1.5	2.1	1.6	0.33	0.01	0.06
21	e0.74	e0.76	1.3	1.1	e0.98	6.1	1.6	2.1	1.6	0.33	0.01	0.07
22	e0.72	e0.75	1.4	1.0	0.96	3.4	2.1	1.9	1.5	0.24	0.02	0.18
23	e0.84	e0.75	1.4	1.1	0.98	2.7	1.8	1.9	1.4	0.61	0.10	0.69
24	e0.82	e0.80	1.9	1.8	0.85	2.3	1.6	1.8	1.3	1.1	0.53	0.27
25	e0.76	5.6	1.6	1.8	0.91	2.0	1.6	1.8	1.3	0.51	0.31	0.21
26	e0.72	4.3	1.5	1.4	0.90	2.3	1.5	1.8	1.1	0.94	0.20	0.55
27	e0.68	1.4	1.3	1.2	0.91	5.3	1.4	2.0	1.4	1.3	0.25	2.2
28	e0.68	1.1	1.4	1.1	0.79	3.6	3.5	2.0	1.5	1.5	0.48	1.5
29	e0.70	0.98	1.4	1.1	---	3.2	2.6	4.5	1.2	0.94	1.1	0.55
30	e0.72	0.99	e1.2	1.1	---	2.8	1.6	2.6	1.1	0.74	0.59	0.45
31	e0.75	---	e1.0	1.8	---	2.9	---	1.9	---	0.68	0.37	---
TOTAL	20.51	33.73	38.34	39.53	35.48	70.00	64.8	59.0	44.76	20.81	10.82	11.65
MEAN	0.66	1.12	1.24	1.28	1.27	2.26	2.16	1.90	1.49	0.67	0.35	0.39
MAX	1.3	5.6	1.9	2.2	2.7	7.0	3.9	4.5	4.1	1.5	1.1	2.2
MIN	0.33	0.72	0.78	0.83	0.79	0.89	1.4	1.2	0.71	0.18	0.01	0.03
CFSM	0.04	0.06	0.07	0.07	0.07	0.12	0.11	0.10	0.08	0.04	0.02	0.02
IN.	0.04	0.07	0.08	0.08	0.07	0.14	0.13	0.12	0.09	0.04	0.02	0.02

e Estimated

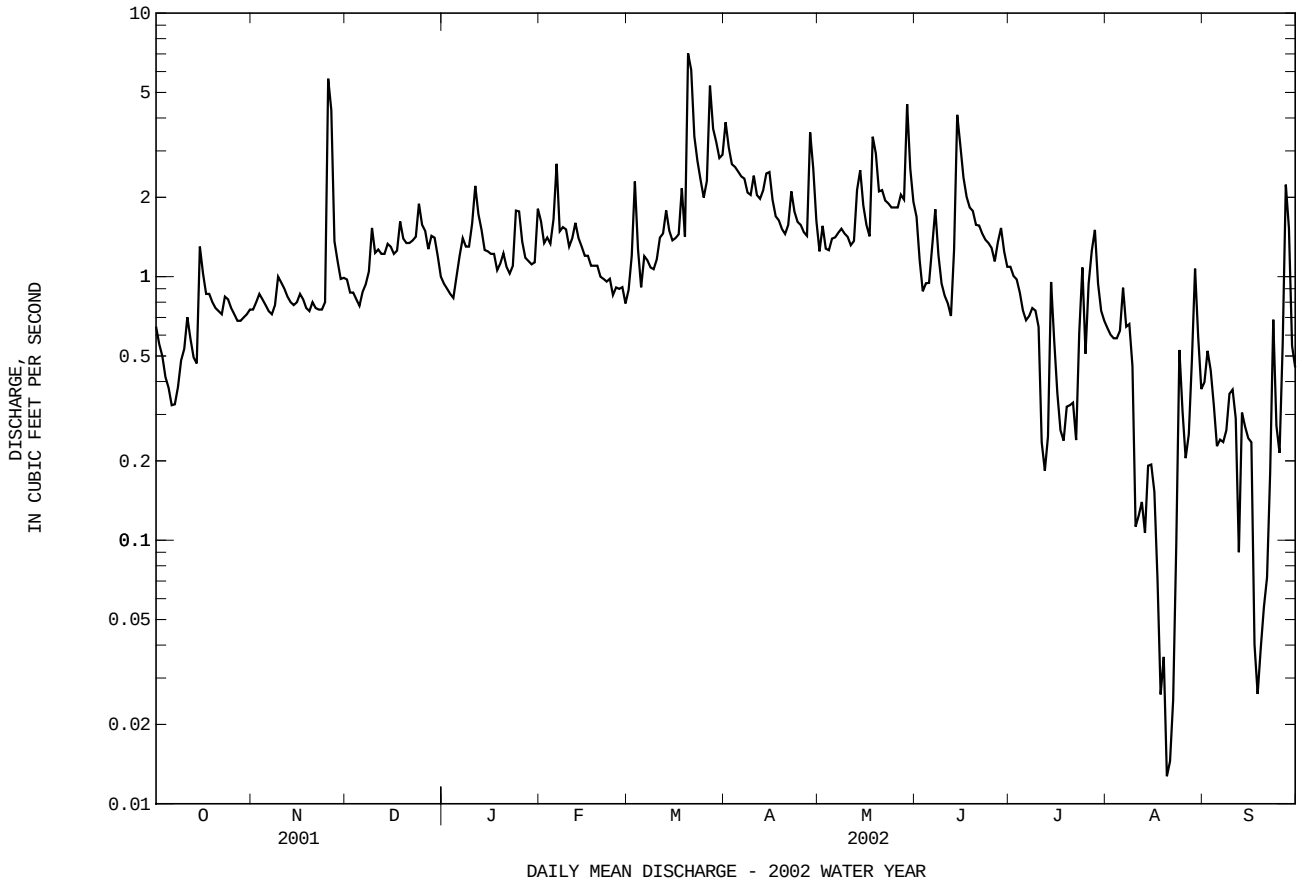
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

MEAN	7.64	7.64	10.4	12.2	14.6	18.6	18.6	15.3	12.7	9.36	7.28	6.28
MAX	39.5	29.3	39.9	30.1	33.3	48.6	49.8	36.2	48.2	32.4	24.2	31.8
(WY)	1977	1997	1997	1979	1998	1994	1984	1972	1972	1972	1996	1975
MIN	0.66	1.12	1.24	1.28	1.27	2.26	2.16	1.90	1.49	0.67	0.35	0.39
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

01617800 MARSH RUN AT GRIMES, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	1797.52		449.43			
ANNUAL MEAN	4.92		1.23		11.8	
HIGHEST ANNUAL MEAN					23.9	1972
LOWEST ANNUAL MEAN					1.23	2002
HIGHEST DAILY MEAN	23	Mar 30	7.0	Mar 20	223	Jun 23 1972
LOWEST DAILY MEAN	0.33	Oct 6	0.01	Aug 20	(a)0.00	Oct 1 1977
ANNUAL SEVEN-DAY MINIMUM	0.40	Oct 3	0.04	Aug 17	0.04	Aug 17 2002
MAXIMUM PEAK FLOW			13	Mar 20	(b)459	Feb 12 1985
MAXIMUM PEAK STAGE			1.23	Mar 20	4.45	Feb 12 1985
INSTANTANEOUS LOW FLOW			0.01	(c)	(a)0.00	Oct 1 1977
ANNUAL RUNOFF (CFSM)	0.26		0.065		0.63	
ANNUAL RUNOFF (INCHES)	3.54		0.88		8.52	
10 PERCENT EXCEEDS	9.9		2.2		24	
50 PERCENT EXCEEDS	4.8		1.1		8.7	
90 PERCENT EXCEEDS	0.77		0.27		2.4	

a Result of regulation caused by construction work upstream from station.
b From rating curve extended above 220 ft^3/s.
c Aug. 19-21.



01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV

LOCATION.--Lat 39°26'05.0", long 77°48'05.0", Jefferson County, Hydrologic Unit 02070004, on right bank, 0.1 mi downstream from Rumsey Bridge at Shepherdstown, 3.3 mi upstream from Antietam Creek, and at mile 184.

DRAINAGE AREA.--5,929 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1953. Annual maximums, water years 1954-64. July 1964 to September 1993. October 2000 to September 2001. Gage-height record and estimated discharges October 1953 to June 1964 available in files of the Maryland/Delaware/DC district office.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1929(M). OFR 95-0292: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 281.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record, ice effect), which are fair. Some regulation at low flow by power plants upstream from station, prior to July 1981 by Stony River Reservoir, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1889 and May 1924 reached stages of 39.2 ft and 29.8 ft respectively, from floodmarks, discharges, about 290,000 ft^3/s and 168,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22	0145	29,500	10.27	Apr 30	0645	33,100	11.07
Apr 23	2200	*38,100	*12.10	May 19	2145	23,900	8.96

Minimum discharge, 575 ft^3/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	922	752	1040	691	1790	1110	5820	21900	5010	1290	2650	922
2	916	761	1010	748	1840	1120	7270	16400	4450	1240	1960	873
3	859	783	942	831	1840	1250	9390	16800	4020	1100	1630	837
4	835	764	945	790	1900	1360	8880	17500	3620	1100	1480	826
5	848	e760	903	826	1780	1680	7410	12300	3070	977	1400	691
6	805	e760	879	860	1720	1920	5740	10200	2880	907	1450	675
7	756	760	869	860	1640	2020	4830	8650	2960	795	1370	649
8	e715	762	814	775	1570	2190	4510	7580	3280	814	1610	623
9	767	778	892	826	1520	1970	4060	8330	3390	853	e1200	600
10	950	748	936	1000	1480	1820	3720	13100	2950	860	e1050	589
11	1240	743	1020	1040	1470	1720	3590	13700	2540	808	947	644
12	918	722	1050	1120	1380	1590	3480	11400	2250	781	918	618
13	e710	719	1090	1240	1380	1580	3080	9450	2080	847	1000	687
14	e715	713	1090	1410	1380	1530	3100	8600	2530	1050	651	832
15	919	738	1120	1590	1330	1540	4140	8200	2780	1300	757	797
16	956	752	1140	1470	1500	1520	9350	7420	3360	1550	900	776
17	967	746	1270	1370	1420	1510	9550	6510	3570	2240	889	778
18	1000	748	1330	1180	1380	1650	e8200	6280	2850	1880	855	779
19	823	749	1230	1200	1370	1930	e7200	17000	2310	1440	852	754
20	916	751	1300	1140	1290	3020	e6200	20800	2100	1320	898	719
21	922	728	1150	1130	1300	13500	e5600	14300	1890	1390	1020	764
22	959	737	1190	1110	1320	24000	e11000	11200	1570	1910	924	824
23	880	739	1140	1070	1250	14100	24900	9680	1510	1420	759	934
24	892	744	1160	1160	1200	9540	28400	7810	1530	1320	1090	1010
25	850	817	1120	1290	1140	7330	17600	6510	1430	1500	1400	1080
26	770	958	1050	1700	1110	5870	12900	5590	1350	1510	1380	1130
27	781	980	1020	2060	1200	5380	9720	5410	1290	1920	1110	1390
28	765	1200	969	2580	1140	7090	7910	5910	1340	2280	1100	2080
29	750	1260	974	2440	---	7780	16000	6870	1350	5500	1090	3200
30	749	1090	896	2090	---	7110	30700	6670	1360	5450	951	4090
31	747	---	640	1900	---	6310	---	5920	---	3730	926	---
TOTAL	26602	24262	32179	39497	40640	142040	284250	327990	76620	51082	36217	31171
MEAN	858	809	1038	1274	1451	4582	9475	10580	2554	1648	1168	1039
MAX	1240	1260	1330	2580	1900	24000	30700	21900	5010	5500	2650	4090
MIN	710	713	640	691	1110	1110	3080	5410	1290	781	651	589
CFSM	0.14	0.14	0.17	0.21	0.24	0.77	1.60	1.78	0.43	0.28	0.20	0.18
IN.	0.17	0.15	0.20	0.25	0.25	0.89	1.78	2.06	0.48	0.32	0.23	0.20

e Estimated

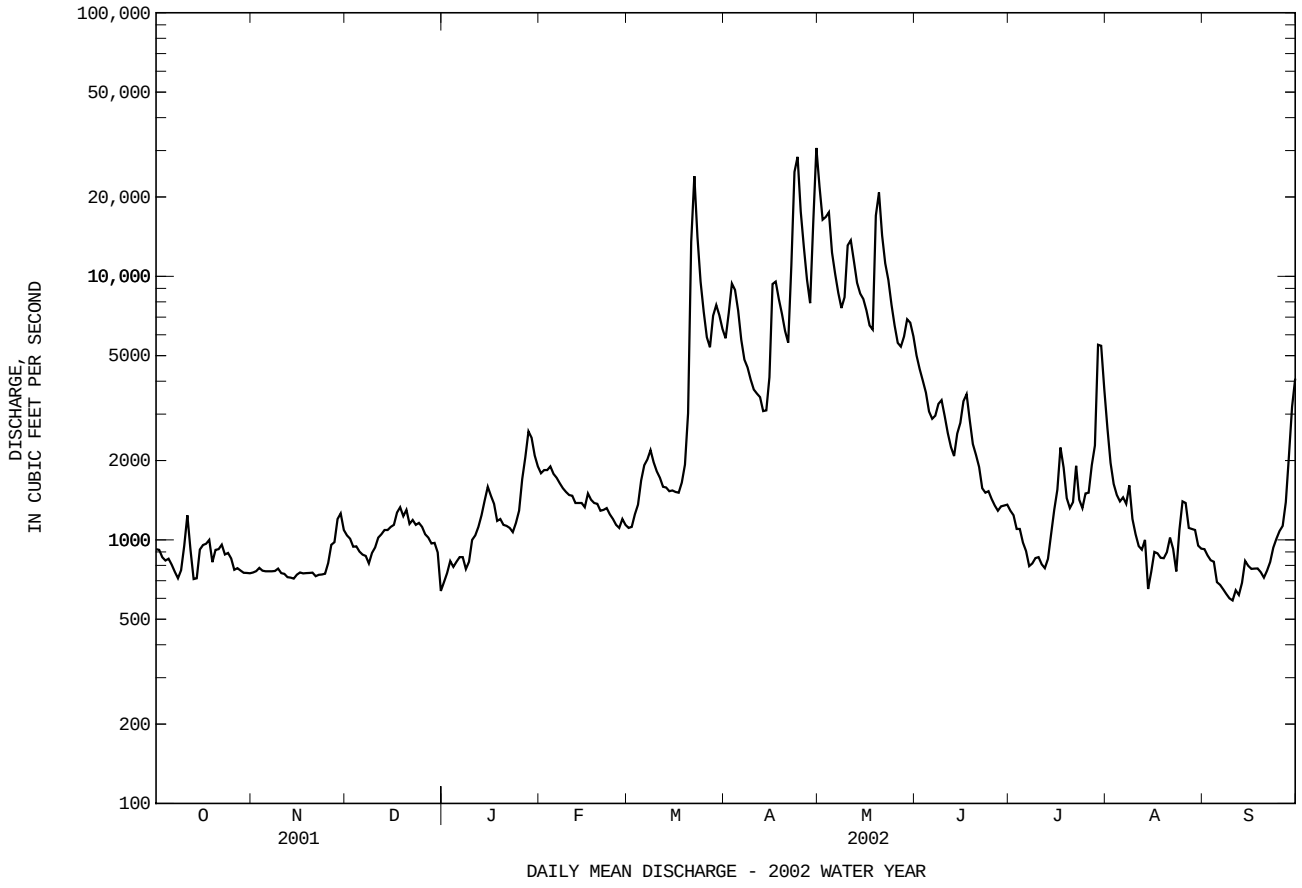
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1953, 1964 - 1993, 2001 - 2002, BY WATER YEAR (WY)

MEAN	3097	3627	5639	6807	9033	13110	11420	8081	4506	2463	2280	1963
MAX	20080	24780	22070	20480	23770	45990	30490	20450	22600	9529	12140	11750
(WY)	1977	1986	1973	1937	1971	1936	1993	1988	1972	1949	1955	1975
MIN	351	395	621	1009	1451	3081	4010	2049	970	556	429	378
(WY)	1931	1931	1931	1981	2002	1990	1969	1930	1969	1966	1930	1930

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1928 - 1953, 1964 - 1993, 2001 - 2002	
ANNUAL TOTAL	1516988		1112550			
ANNUAL MEAN	4156		3048		5984	
HIGHEST ANNUAL MEAN					10390	1994
LOWEST ANNUAL MEAN					2607	1969
HIGHEST DAILY MEAN	33300	Mar 23	30700	Apr 30	287000	Mar 19 1936
LOWEST DAILY MEAN	640	Dec 31	589	Sep 10	185	Jul 31 1966
ANNUAL SEVEN-DAY MINIMUM	733	Nov 11	628	Sep 6	294	Sep 4 1966
MAXIMUM PEAK FLOW			38100	Apr 23	(a)335000	Mar 19 1936
MAXIMUM PEAK STAGE			12.10	Apr 23	(b)42.10	Mar 19 1936
INSTANTANEOUS LOW FLOW			575	Sep 10	170	Aug 1 1966
ANNUAL RUNOFF (CFSM)	0.70		0.51		1.01	
ANNUAL RUNOFF (INCHES)	9.51		6.97		13.70	
10 PERCENT EXCEEDS	9650		8030		13400	
50 PERCENT EXCEEDS	2390		1290		3200	
90 PERCENT EXCEEDS	796		753		873	

a From rating curve extended above 200,000 ft^3/s, on the basis of slope-area measurement of peak flow.
b From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1965, 1979-93, 2001 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to September 1981.
WATER TEMPERATURE: October 1980 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE: Maximum, 670 microsiemens, Aug. 6, 10, 15, 30, Sept. 3, 1981; minimum,160 microsiemens, April 14-15, 1981.
WATER TEMPERATURE: Maximum, 30.0°C, July 17, 21, 25, 1981; minimum, 1.0°C, Feb. 13, 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
01...	0950	ENVIRONMENTAL	853	457	7.1	9.0	16.8	757	9.2	96	1.1	.83
NOV												
19...	1020	ENVIRONMENTAL	757	533	7.3	3.0	9.3	760	11.1	97	.84	--
DEC												
03...	*0915*	*BLANK*	--	--	--	--	--	--	--	--	--	--
03...	1025	ENVIRONMENTAL	924	558	7.0	--	8.6	773	10.1	85	1.1	.83
JAN												
07...	1220	ENVIRONMENTAL	853	464	7.7	4.0	.9	748	13.9	99	1.1	.85
FEB												
04...	1215	ENVIRONMENTAL	1870	412	7.8	3.0	5.4	748	10.5	85	1.1	.81
MAR												
04...	1215	ENVIRONMENTAL	1320	410	8.6	-2.0	6.6	760	11.6	95	.93	.59
20...	1745	ENVIRONMENTAL	3490	347	7.2	9.0	9.2	754	9.2	81	.95	.51
20...	*1746*	*REPLICATE*	--	--	--	--	--	--	--	--	*.92*	*.51*
21...	1615	ENVIRONMENTAL	15900	349	7.6	15.0	9.8	750	11.0	99	1.4	.71
22...	1145	ENVIRONMENTAL	24200	225	6.7	-2.0	8.0	760	11.6	98	2.3	1.08
25...	1300	ENVIRONMENTAL	7080	198	7.4	13.5	8.6	760	11.5	99	2.1	1.74
APR												
01...	1315	ENVIRONMENTAL	5880	262	7.8	13.0	11.5	758	10.6	98	1.4	1.19
16...	1220	ENVIRONMENTAL	9680	278	7.3	30.5	19.7	762	9.0	99	.92	.63
16...	*1221*	*REPLICATE*	--	--	--	--	--	--	--	--	*.96*	*.63*
22...	1345	ENVIRONMENTAL	6880	243	7.3	16.5	19.1	751	8.0	88	1.1	.75
23...	1445	ENVIRONMENTAL	32900	224	7.5	12.0	15.7	760	9.7	98	1.7	.51
26...	1530	ENVIRONMENTAL	12400	199	7.4	--	13.0	760	--	--	1.4	.98
29...	1350	ENVIRONMENTAL	17000	243	7.7	10.0	14.5	753	10.0	99	1.4	1.03
JUN												
03...	1330	ENVIRONMENTAL	3950	244	7.3	21.5	24.7	753	7.4	90	1.3	.89
JUL												
08...	1330	ENVIRONMENTAL	825	396	7.2	31.0	28.4	760	7.8	101	.83	.43
AUG												
05...	1330	ENVIRONMENTAL	1400	324	7.6	34.0	29.9	756	7.8	104	1.1	.78
SEP												
09...	1315	ENVIRONMENTAL	597	389	7.8	28.0	25.2	762	9.3	113	.92	.63

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
01...	.011	.838	.038	.31	.26	1.1	.27	.23	.050	.038	.028	5.9	13.6
NOV													
19...	E.002	.487	E.008	.35	.24	.73	--	--	.036	.018	.010	10	21.5
DEC													
03...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*.3*	--
03...	.004	.831	.025	.32	.28	1.1	.29	.25	.044	.037	.028	5.2	13.0
JAN													
07...	.004	.859	<.015	.29	.20	1.1	--	--	.032	.024	.015	4.7	10.8
FEB													
04...	.021	.834	.017	.30	.22	1.1	.28	.20	.058	.036	.028	21	108
MAR													
04...	.012	.602	.006	.33	.26	.86	.33	.25	.048	.034	.022	5.0	17.8
20...	.019	.526	.028	.42	.24	.77	.39	.21	.075	.048	.031	6.8	64.1
20...	*.020*	*.527*	*.030*	*.40*	*.24*	*.76*	*.37*	*.21*	*.073*	*.046*	*.032*	*6.0*	--
21...	.019	.728	.044	.66	.30	1.0	.61	.25	.172	.054	.037	100	4290
22...	.013	1.09	.036	1.3	.34	1.4	1.2	.31	.23	.020	.011	161	10500
25...	.011	1.75	.037	.33	.30	2.0	.29	.26	.054	.024	.016	10	199
APR													
01...	.007	1.19	.028	.25	.18	1.4	.22	.15	.042	.026	.019	7.5	119
16...	.006	.639	.017	.28	.21	.85	.26	.19	.054	.025	.017	20	523
16...	*.006*	*.633*	*.018*	*.32*	*.22*	*.85*	*.31*	*.20*	*.067*	*.024*	*.017*		--
22...	.009	.763	.051	.37	.25	1.0	.32	.20	.061	.037	.027	23	427
23...	.006	.512	.026	1.2	.20	.71	1.1	.17	.26	.026	.018	200	17800
26...	.005	.989	.022	.41	.19	1.2	.38	.17	.065	.021	.011	36	1210
29...	.007	1.03	.027	.37	.18	1.2	.35	.16	.064	.029	.021	26	1210
JUN													
03...	.013	.907	.045	.40	.26	1.2	.35	.22	.060	.028	.020	19	206
JUL													
08...	.006	.437	E.011	.39	.26	.70	--	--	.043	.024	.014	4.5	10.0
AUG													
05...	.006	.784	<.015	.29	.22	1.0	--	--	.048	.033	.024	1.9	7.2
SEP													
09...	.005	.631	.016	.29	.24	.87	.27	.23	.040	.028	.018	3.1	5.0

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
01...	--
NOV	
19...	--
DEC	
03...	--
03...	--
JAN	
07...	--
FEB	
04...	--
MAR	
04...	--
20...	--
20...	--
21...	83
22...	94
25...	--
APR	
01...	--
16...	87
16...	*50*
22...	70
23...	43
26...	89
29...	--
JUN	
03...	--
JUL	
08...	--
AUG	
05...	--
SEP	
09...	--

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

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD

LOCATION.--Lat 39°26'59.2", long 77°43'48.7", Washington County, Hydrologic Unit 02070004, on left bank 400 ft downstream from Burnside Bridge, 1.0 mi southeast of Sharpsburg, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--281 mi^2.

PERIOD OF RECORD.--June 1897 to September 1905, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 192: 1897-1905. WSP 726: Drainage area. WSP 1432: 1929-31(M), 1933, 1935(M), 1937(M), 1949(M), 1952(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 29, 1934. Datum of gage is 311.05 ft above National Geodetic Vertical Datum of 1929. June 24, 1897, to Aug. 25, 1905, nonrecording gage a few hundred feet downstream from Middle Bridge, 1.2 mi upstream at datum 12 ft higher. Aug. 21, 1928, to July 13, 1933, nonrecording gage at Burnside Bridge, 0.1 mi upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Some diurnal fluctuation caused by powerplant upstream from station. Since 1928 records include pumpage from the Potomac River for municipal supply of Hagerstown. This water later enters Antietam Creek upstream from station as sewage. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	2100	*339	*3.12	No peak greater than base discharge.			

Minimum discharge, 35 ft^3/s, Jan. 1 (result of freezeup).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	79	75	67	85	55	118	117	99	76	56	68
2	87	79	72	e67	77	57	114	128	102	71	53	67
3	87	78	69	e67	73	84	105	130	94	68	53	68
4	85	79	69	e67	70	76	100	121	91	67	51	66
5	83	77	69	66	70	75	96	109	90	63	55	60
6	80	77	68	68	67	63	92	104	111	60	60	58
7	78	77	68	e71	70	63	89	106	125	58	53	56
8	78	77	70	e72	69	60	86	106	110	58	51	56
9	77	78	85	72	68	59	89	103	95	63	48	55
10	78	77	78	72	68	58	97	100	88	65	46	54
11	79	76	77	80	70	57	95	98	85	68	44	52
12	82	75	75	85	71	56	88	93	81	61	45	49
13	80	77	73	81	68	62	87	117	96	57	47	48
14	77	79	74	73	66	63	100	163	167	75	45	49
15	91	78	82	75	65	61	125	155	138	81	47	50
16	88	78	76	70	67	59	152	122	115	70	46	51
17	89	79	73	69	65	58	121	112	101	63	44	53
18	88	77	88	68	63	70	108	149	95	58	43	51
19	84	76	95	69	63	79	102	174	97	58	43	50
20	83	78	85	71	61	155	100	140	93	58	42	58
21	82	76	77	70	63	215	97	127	85	57	42	58
22	80	74	73	69	62	156	106	118	82	55	41	56
23	80	74	71	70	59	120	101	113	78	61	43	101
24	79	74	80	79	58	105	96	111	75	69	112	119
25	78	89	78	102	58	99	92	108	75	57	131	79
26	76	161	73	94	58	99	89	104	74	81	82	75
27	76	107	73	80	58	160	88	107	75	94	66	203
28	77	84	70	75	57	166	121	107	82	95	68	226
29	77	76	70	72	---	129	162	127	90	68	96	166
30	80	75	69	74	---	112	140	110	89	64	89	115
31	80	---	e69	86	---	107	---	102	---	59	75	---
TOTAL	2524	2441	2324	2301	1849	2838	3156	3681	2878	2058	1817	2317
MEAN	81.4	81.4	75.0	74.2	66.0	91.5	105	119	95.9	66.4	58.6	77.2
MAX	91	161	95	102	85	215	162	174	167	95	131	226
MIN	76	74	68	66	57	55	86	93	74	55	41	48
(†)	-17.5	-16.6	-15.7	-16.9	-17.0	-16.8	-16.3	-16.1	-16.7	-16.7	-17.5	-16.4
MEAN ‡	63.9	64.8	59.3	57.3	49.0	74.7	88.7	103	79.2	49.7	41.1	60.8
CFSM ‡	0.23	0.23	0.21	0.20	0.17	0.27	0.32	0.37	0.28	0.18	0.15	0.22
IN ‡	0.26	0.26	0.24	0.23	0.18	0.31	0.36	0.43	0.31	0.21	0.17	0.24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2002, BY WATER YEAR (WY)

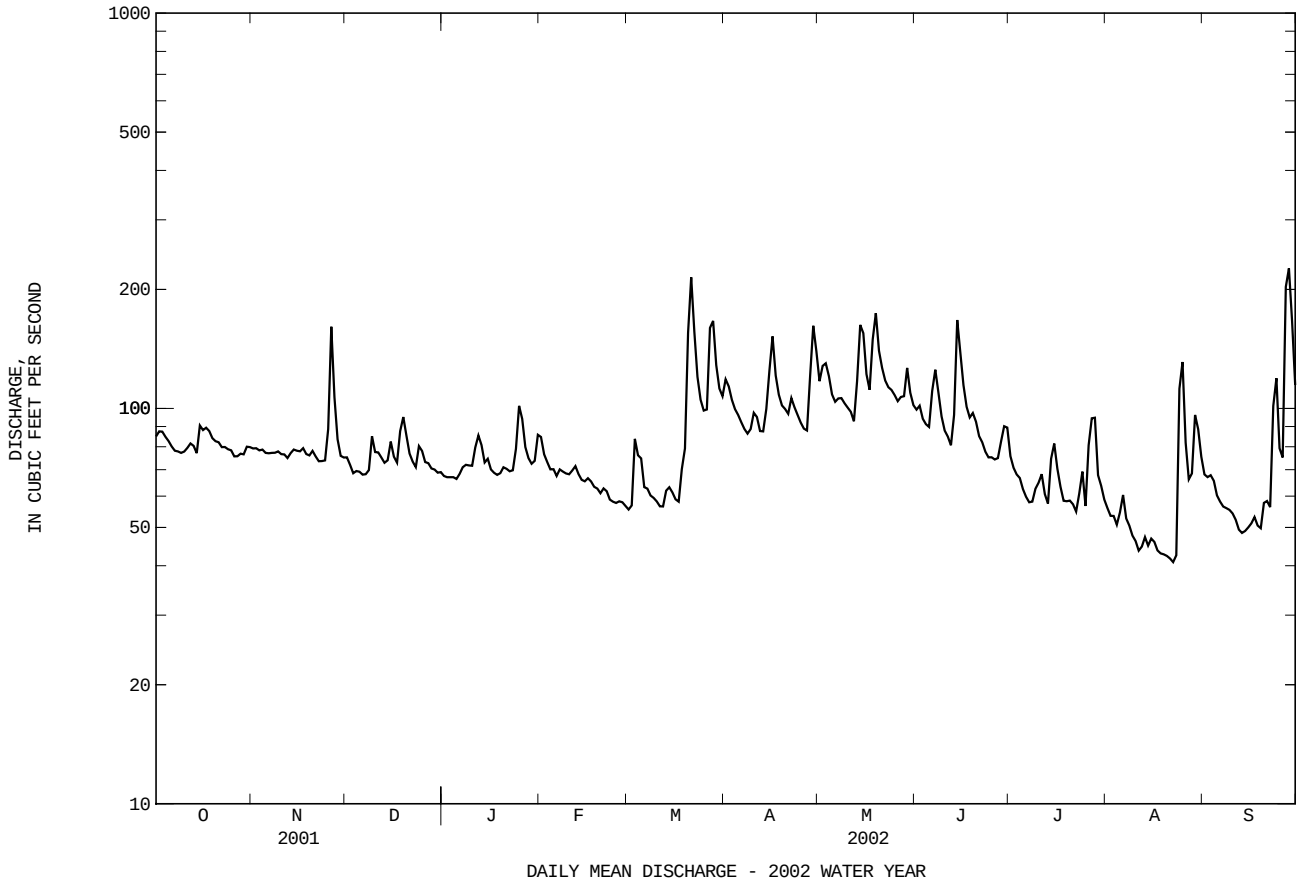
MEAN	176	192	254	299	357	465	462	371	286	212	172	171
MAX	916	628	964	943	1206	1299	1201	859	1278	604	531	1090
(WY)	1977	1997	1997	1996	1998	1994	1993	1998	1972	1996	1996	1975
MIN	65.5	65.6	61.5	57.3	66.0	91.5	105	119	95.9	66.4	58.6	69.4
(WY)	1964	1966	1966	1966	2002	2002	2002	2002	2002	2002	2002	1963

† Pumpage in cubic feet per second, from Potomac River for municipal supply of Hagerstown.
‡ Adjusted for pumpage.

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1931 - 2002	
ANNUAL TOTAL	66298		30184			
ANNUAL MEAN	182		82.7		284	
ANNUAL MEAN‡	166		66.0		275	
HIGHEST ANNUAL MEAN					554	1996
LOWEST ANNUAL MEAN					82.7	2002
HIGHEST DAILY MEAN	902	Mar 30	226	Sep 28	8970	Sep 26 1975
LOWEST DAILY MEAN	68	(a)	41	Aug 22	37	Jan 30 1966
ANNUAL SEVEN-DAY MINIMUM	69	Dec 2	43	Aug 17	43	Aug 17 2002
MAXIMUM PEAK FLOW			339	Mar 20	(b)12600	Jul 20 1956
MAXIMUM PEAK STAGE			3.12	Mar 20	16.73	Jul 20 1956
INSTANTANEOUS LOW FLOW			(c)35	Jan 1	(d)9.4	Nov 22 1957
ANNUAL RUNOFF (CFSM)	0.65		0.29		1.01	
ANNUAL RUNOFF (CFSM)‡	0.59		0.23		0.98	
ANNUAL RUNOFF (INCHES)	8.78		4.00		13.74	
ANNUAL RUNOFF (INCHES)‡	7.99		3.19		13.28	
10 PERCENT EXCEEDS	344		117		549	
50 PERCENT EXCEEDS	145		77		204	
90 PERCENT EXCEEDS	77		56		97	

‡ Adjusted for inflow since January 1930.
a Dec. 6, 7.
b From rating curve extended above 7,300 ft^3/s on basis of contracted-opening measurement of peak flow.
c Result of freezeup.
d Result of regulation caused by construction work upstream from station.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01621410 BLACKS RUN AT ROUTE 726 AT HARRISONBURG, VA

LOCATION.--Lat 38'25'19", long 78'52'15", City of Harrisonburg, Hydrologic unit 02070005, on left bank at upstream side of bridge on State Highway 726 at Harrisonburg, 4.0 mi upstream from North River and 3.5 mi north of Mt. Crawford.

DRAINAGE AREA.--11.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 2000 to September 2002 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 1,255 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Water-discharge records good except those for estimted daily discharges (ice effect), which is poor.

REVISIONS.--The maximum discharge for water year 2001 has been revised to 602 ft^3/s, Aug. 30, 2001, gage height, 6.79 ft. Revised figures of discharge for September 2001 superceding those published in the report of 2001 are given below.

DATE	DISCHARGE	DATE	DISCHARGE	DATE	DISCHARGE	DATE	DISCHARGE	DATE	DISCHARGE
Sept. 1	3.9	Sept. 7	2.3	Sept. 13	1.8	Sept. 19	1.6	Sept. 25	16
Sept. 2	3.1	Sept. 8	2.1	Sept. 14	2.0	Sept. 20	2.2	Sept. 26	2.2
Sept. 3	2.8	Sept. 9	2.1	Sept. 15	1.6	Sept. 21	1.7	Sept. 27	2.1
Sept. 4	3.0	Sept. 10	2.9	Sept. 16	1.5	Sept. 22	1.5	Sept. 28	1.9
Sept. 5	3.1	Sept. 11	2.1	Sept. 17	1.6	Sept. 23	1.4	Sept. 29	1.9
Sept. 6	2.6	Sept. 12	1.8	Sept. 18	1.7	Sept. 24	9.5	Sept. 30	1.8

SEPTEMBER 2001 TOTAL 85.8 MEAN 2.86 MAX 16 MIN 1.4 CFSM 0.26 IN. 0.28

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 22	0130	*829	*7.49	No peak greater than base discharge.			

Minimum discharge, 0.57 ft^3/s, Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.4	0.98	e1.2	1.4	0.77	3.5	4.6	3.0	2.2	1.4	1.0
2	1.7	1.4	0.90	e1.2	1.4	9.2	2.4	5.7	2.7	2.2	1.3	0.94
3	1.7	1.4	0.88	e1.2	1.3	6.6	2.4	4.2	2.7	2.1	66	1.2
4	1.7	1.2	0.92	e1.3	1.3	1.4	2.4	5.9	9.5	2.0	4.0	1.1
5	1.7	1.3	0.93	e1.4	1.3	1.1	2.1	3.8	4.6	2.0	2.5	0.94
6	1.8	1.2	0.98	e1.6	1.3	1.2	2.0	3.8	5.4	2.0	2.0	0.90
7	1.7	1.2	0.96	e2.0	2.6	1.0	2.0	22	3.2	1.9	1.7	0.86
8	1.5	1.1	1.8	e1.7	1.1	0.91	2.0	6.2	2.5	2.0	1.3	0.84
9	1.6	1.1	1.1	e1.6	0.94	0.89	8.7	18	2.4	1.9	1.0	0.81
10	1.6	1.1	1.2	e1.5	0.88	0.87	3.4	5.3	2.5	2.8	0.94	0.81
11	1.6	1.1	30	e1.5	0.92	0.91	2.2	3.9	2.3	2.1	0.95	0.92
12	1.7	1.0	2.4	e1.5	0.87	0.96	2.1	3.7	2.3	2.0	1.0	0.84
13	1.7	1.1	2.1	1.5	0.83	4.0	2.5	28	2.3	2.0	1.1	0.82
14	7.7	1.0	2.3	1.5	0.86	1.2	2.1	4.9	2.5	17	0.96	0.81
15	1.7	1.1	1.9	1.6	0.79	1.2	5.2	4.1	2.2	2.0	0.97	1.1
16	1.4	1.0	1.7	1.5	0.76	0.95	2.3	3.7	2.2	1.7	0.92	1.7
17	1.5	1.0	1.7	1.5	0.82	1.2	2.2	3.5	2.2	1.5	0.87	0.92
18	1.5	0.98	2.5	1.5	0.78	8.7	2.2	16	2.2	1.4	0.83	0.85
19	1.6	0.96	1.9	1.5	0.79	8.3	2.3	3.7	2.2	1.5	0.87	0.84
20	1.4	1.1	1.7	1.9	0.81	15	6.1	3.7	2.3	4.7	0.84	0.82
21	1.3	1.0	1.5	1.9	0.83	2.2	47	3.6	2.3	1.8	0.84	0.86
22	1.4	0.96	1.5	1.8	0.82	1.9	123	3.1	2.2	1.6	0.80	9.6
23	1.6	0.94	1.5	1.7	0.80	1.5	18	3.1	2.1	3.8	0.77	3.9
24	1.7	0.91	1.6	1.7	0.75	1.4	6.7	2.9	2.3	2.6	0.78	1.0
25	1.6	3.7	1.5	1.6	0.76	1.6	5.8	2.8	2.3	3.0	0.77	1.1
26	1.7	1.2	1.4	1.4	0.77	15	4.5	20	2.1	15	0.74	70
27	2.2	0.98	1.4	1.4	0.74	5.9	3.9	27	3.4	3.0	0.91	13
28	1.8	0.95	1.4	1.4	0.92	2.7	56	10	2.4	2.2	5.7	e3.2
29	1.7	0.95	1.4	1.5	---	2.4	13	3.8	2.2	2.0	5.4	e2.3
30	1.6	1.0	e1.4	1.5	---	2.2	5.3	3.2	2.1	1.7	1.2	e1.8
31	1.5	---	e1.3	1.5	---	8.2	---	3.0	---	1.5	1.1	---
TOTAL	56.7	35.33	74.75	47.6	28.14	111.36	343.3	237.2	84.6	95.2	110.46	125.78
MEAN	1.83	1.18	2.41	1.54	1.00	3.59	11.4	7.65	2.82	3.07	3.56	4.19
MAX	7.7	3.7	30	2.0	2.6	15	123	28	9.5	17	66	70
MIN	1.3	0.91	0.88	1.2	0.74	0.77	2.0	2.8	2.1	1.4	0.74	0.81
CFSM	0.16	0.11	0.22	0.14	0.09	0.32	1.02	0.68	0.25	0.27	0.32	0.37
IN.	0.19	0.12	0.25	0.16	0.09	0.37	1.14	0.79	0.28	0.32	0.37	0.42

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.83	1.18	3.36	2.75	1.21	5.41	8.64	6.07	3.92	4.32	6.25	3.53
MAX	1.83	1.18	4.30	3.96	1.41	7.23	11.4	7.65	5.01	5.57	8.94	4.19
(WY)	2002	2002	2001	2001	2001	2001	2002	2002	2001	2001	2001	2002
MIN	1.83	1.18	2.41	1.54	1.00	3.59	5.84	4.50	2.82	3.07	3.56	2.86
(WY)	2002	2002	2002	2002	2002	2002	2001	2001	2002	2002	2002	2001

01621410 BLACKS RUN AT ROUTE 726 AT HARRISONBURG, VA--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL	1553.91		1350.42			
ANNUAL MEAN	4.26		3.70		3.70	
HIGHEST ANNUAL MEAN					3.70	2002
LOWEST ANNUAL MEAN					3.70	2002
HIGHEST DAILY MEAN	89	Mar 21	123	Apr 22	123	Apr 22 2002
LOWEST DAILY MEAN	0.50	Jan 16	0.74	(a)	0.50	Jan 16 2001
ANNUAL SEVEN-DAY MINIMUM	0.52	Jan 12	0.78	Feb 21	0.52	Jan 12 2001
MAXIMUM PEAK FLOW			829	Apr 22	829	Apr 22 2002
MAXIMUM PEAK STAGE			7.49	Apr 22	7.49	Apr 22 2002
INSTANTANEOUS LOW FLOW			0.57	Sep 5	0.47	Dec 12 2000
ANNUAL RUNOFF (CFSM)	0.38		0.33		0.33	
ANNUAL RUNOFF (INCHES)	5.16		4.49		4.49	
10 PERCENT EXCEEDS	8.5		5.7		5.7	
50 PERCENT EXCEEDS	1.7		1.6		1.6	
90 PERCENT EXCEEDS	0.77		0.87		0.87	

a Feb. 27,Aug. 26.

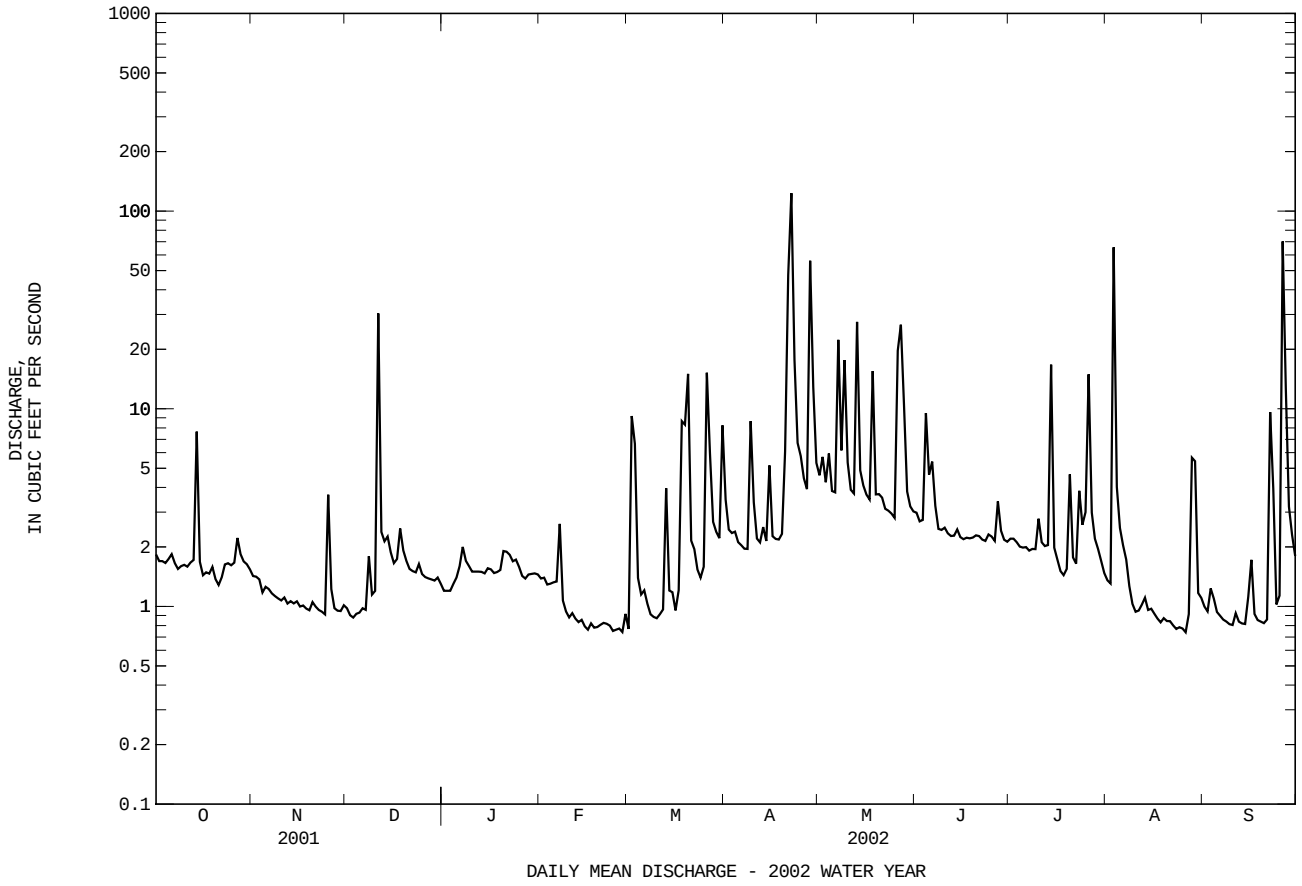


Photo by Jon Evans

Blacks Run at Route 726 at Harrisonberg, VA (01621410).

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD--Water years 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
23...	*1300*	*REPLICATE*	--	--	--	--	--	--	--	--	*.91*	*.67*
23...	1305	ENVIRONMENTAL	1.6	645	8.1	23.0	15.5	721	9.3	99	1.0	.68
NOV												
25...	1515	ENVIRONMENTAL	7.7	632	8.0	--	--	--	--	--	1.7	.56
25...	1730	ENVIRONMENTAL	15	508	8.0	--	--	--	--	--	1.8	.73
25...	1800	ENVIRONMENTAL	27	523	8.0	--	--	--	--	--	1.7	.76
DEC												
11...	0045	ENVIRONMENTAL	7.2	519	8.5	--	--	--	--	--	2.2	1.33
11...	0145	ENVIRONMENTAL	45	388	8.1	--	--	732	--	--	5.0	1.87
11...	0245	ENVIRONMENTAL	85	250	8.3	--	--	--	--	--	3.9	.78
11...	0345	ENVIRONMENTAL	149	228	8.3	--	--	--	--	--	4.8	1.10
11...	0445	ENVIRONMENTAL	110	274	8.4	--	--	--	--	--	2.0	.52
11...	1200	ENVIRONMENTAL	2.0	278	8.4	--	--	--	--	--	1.1	.60
19...	*1225*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	1230	ENVIRONMENTAL	1.9	770	7.6	13.0	7.1	720	10.4	91	2.3	2.08
JAN												
28...	1130	ENVIRONMENTAL	1.4	938	8.1	9.5	6.0	730	13.5	113	1.8	1.52
FEB												
19...	*1145*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	1200	ENVIRONMENTAL	.72	775	8.4	5.5	3.3	731	14.3	112	1.4	1.11
MAR												
02...	2000	ENVIRONMENTAL	9.0	635	7.2	--	2.0	--	--	--	3.2	1.03
02...	2200	ENVIRONMENTAL	67	348	7.7	--	--	--	--	--	5.7	1.14
03...	0001	ENVIRONMENTAL	45	340	7.7	--	--	--	--	--	2.3	.61
03...	0400	ENVIRONMENTAL	14	391	7.7	--	--	--	--	--	1.8	.75
07...	1145	ENVIRONMENTAL	.96	875	8.0	6.5	5.0	735	12.3	100	1.7	1.47
26...	1915	ENVIRONMENTAL	52	728	8.1	--	--	--	--	--	4.7	2.02
26...	2115	ENVIRONMENTAL	77	367	8.1	--	--	--	--	--	3.0	.69
26...	2315	ENVIRONMENTAL	34	364	8.0	--	--	--	--	--	2.1	.74
26...	*2320*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.0*	*.76*
27...	0315	ENVIRONMENTAL	13	384	8.0	--	--	--	--	--	2.1	1.06
APR												
10...	1145	ENVIRONMENTAL	2.6	--	8.1	19.0	14.9	737	11.6	--	2.0	1.44
MAY												
04...	1815	ENVIRONMENTAL	8.2	670	8.0	--	--	--	--	--	3.4	2.98
04...	2015	ENVIRONMENTAL	19	600	7.9	--	--	--	--	--	3.7	2.96
06...	1145	ENVIRONMENTAL	4.1	671	8.0	15.5	16.0	733	9.4	99	2.8	2.56
07...	1245	ENVIRONMENTAL	11	699	7.5	--	--	--	--	--	3.2	2.60
07...	1445	ENVIRONMENTAL	37	430	7.7	--	--	--	--	--	4.6	2.03
07...	1645	ENVIRONMENTAL	78	287	7.8	--	--	--	--	--	4.1	1.30
07...	2245	ENVIRONMENTAL	33	321	7.7	--	--	--	--	--	2.3	1.29
13...	1330	ENVIRONMENTAL	47	557	7.3	--	--	--	--	--	5.0	2.18
13...	1430	ENVIRONMENTAL	206	221	7.8	--	--	--	--	--	3.0	.69
13...	1530	ENVIRONMENTAL	88	278	7.2	--	--	--	--	--	2.0	.69
13...	1830	ENVIRONMENTAL	31	300	7.3	--	--	--	--	--	1.9	1.02
JUN												
26...	1200	ENVIRONMENTAL	2.1	650	7.8	32.0	24.5	732	9.8	123	.91	.59
JUL												
09...	1200	ENVIRONMENTAL	1.9	612	7.7	29.5	24.0	729	9.7	121	.46	.25
AUG												
20...	1200	ENVIRONMENTAL	.80	625	7.8	30.0	24.5	727	8.1	102	.61	.06
SEP												
10...	1215	ENVIRONMENTAL	.80	633	7.8	29.5	20.5	724	8.5	100	1.2	.98

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG,--Continued VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
23...	*.008*	*.679*	*.023*	*.23*	*.16*	*.84*	*.21*	*.14*	*.026*	*.021*	*.014*	*22*	--
23...	.009	.691	.037	.31	.21	.90	.28	.17	.032	.022	.014	34	.15
NOV													
25...	.017	.573	.025	1.1	.39	.96	1.1	.36	.111	.013	<.007	57	1.2
25...	.026	.752	E.013	1.1	.48	1.2	--	--	.184	.065	.020	44	1.8
25...	.009	.764	E.013	.97	.46	1.2	--	--	.160	.059	<.007	29	2.1
DEC													
11...	.024	1.36	.148	.83	.45	1.8	.69	.30	.134	.054	.044	136	2.6
11...	.040	1.91	.292	3.1	.70	2.6	2.8	.41	.64	.063	.051	358	43.5
11...	.022	.797	.230	3.1	.55	1.3	2.9	.32	.78	.079	.058	560	129
11...	.021	1.12	.080	3.6	.29	1.4	3.6	.21	.98	.059	.043	654	263
11...	.011	.526	.096	1.5	.31	.83	1.4	.21	.35	.060	.046	243	72.2
11...	.015	.616	.166	.53	.42	1.0	.37	.26	.104	.065	.050	85	.46
19...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*E.003*	*E.003*	*<.007*	*.8*	--
19...	.013	2.09	.042	.19	.17	2.3	.14	.12	.032	.023	.015	4.5	.02
JAN													
28...	.012	1.53	.030	.24	.18	1.7	.21	.15	.016	.010	E.006	14	.05
FEB													
19...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	--	--
19...	.007	1.12	.028	.25	.19	1.3	.22	.16	.020	.013	E.005	6.2	.01
MAR													
02...	.019	1.05	.100	2.1	.53	1.6	2.0	.43	.38	.031	.009	251	6.1
02...	.043	1.19	.486	4.5	1.1	2.3	4.1	.66	1.22	.084	.055	836	151
03...	.021	.627	.225	1.7	.64	1.3	1.5	.42	.36	.054	.035	189	23.0
03...	.026	.780	.165	1.0	.52	1.3	.85	.36	.158	.041	.023	66	2.5
07...	.010	1.48	.031	.19	.17	1.7	.16	.14	.027	.015	E.005	7.3	.02
26...	.021	2.04	.127	2.6	.37	2.4	2.5	.24	1.34	.014	.008	998	140
26...	.022	.711	.237	2.3	.68	1.4	2.0	.44	.51	.039	.027	362	75.3
26...	.022	.763	.189	1.3	.57	1.3	1.1	.38	.25	.028	.018	166	15.2
26...	*.022*	*.781*	*.191*	*1.3*	*.56*	*1.3*	*1.1*	*.37*	*.26*	*.027*	*.017*	*174*	--
27...	.035	1.09	.232	1.1	.62	1.7	.82	.39	.163	.038	.028	85	3.0
APR													
10...	.052	1.49	.100	.52	.49	2.0	.42	.39	.048	.024	.014	3.6	.03
MAY													
04...	.017	3.00	.032	.43	.31	3.3	.40	.28	.046	.019	.010	27	.60
04...	.029	2.98	.175	.76	.63	3.6	.58	.45	.098	.056	.042	18	.90
06...	.014	2.57	.020	.23	.21	2.8	.21	.19	.028	.018	.009	8.2	.09
07...	.024	2.63	.053	.54	.41	3.0	.48	.36	.082	.026	.018	39	1.2
07...	.050	2.08	.680	2.6	2.3	4.4	1.9	1.6	.35	.23	.245	61	6.1
07...	.044	1.35	.527	2.7	1.8	3.1	2.2	1.2	.51	.21	.195	193	40.6
07...	.032	1.32	.198	1.0	.82	2.1	.83	.62	.148	.070	.055	56	5.0
13...	.022	2.20	.061	2.8	.49	2.7	2.7	.43	.89	.144	.123	617	78.3
13...	.028	.715	.258	2.3	.68	1.4	2.0	.42	.55	.084	.070	376	209
13...	.032	.719	.131	1.3	.47	1.2	1.1	.34	.28	.049	.037	149	35.5
13...	.030	1.05	.102	.84	.42	1.5	.73	.32	.173	.059	.047	83	6.9
JUN													
26...	.008	.598	.029	.31	.18	.78	.28	.16	.018	.012	E.006	4.8	.03
JUL													
09...	.005	.251	.038	.21	.18	.43	.17	.15	.019	.011	E.005	4.0	.02
AUG													
20...	.003	.064	.065	.54	.37	.43	.48	.30	.042	.022	.011	3.7	.01
SEP													
10...	.007	.984	.047	.24	.19	1.2	.19	.14	.025	.020	.013	3.6	.01

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

01621410 BLACKS RUN AT RTE 726 AT HARRISONBURG,--Continued VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
23...	--
23...	--
NOV	
25...	41
25...	89
25...	92
DEC	
11...	99
11...	97
11...	95
11...	93
11...	94
11...	99
19...	--
19...	--
JAN	
28...	--
FEB	
19...	--
19...	--
MAR	
02...	--
02...	--
03...	--
03...	--
07...	--
26...	--
26...	95
26...	--
26...	--
27...	--
APR	
10...	--
MAY	
04...	--
04...	--
06...	--
07...	--
07...	--
07...	--
07...	--
13...	--
13...	--
13...	--
13...	--
JUN	
26...	--
JUL	
09...	--
AUG	
20...	--
SEP	
10...	--

01636500 SHENANDOAH RIVER AT MILLVILLE, WV

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi downstream from Cattail Run, 1.0 mi upstream from Millville, 5.0 mi upstream from Harpers Ferry, and at mile 4.7.

DRAINAGE AREA.--3,022 mi^2.

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

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-02, 1905, 1907-08, 1932(M), 1935(M). WDR WV-97-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 293.00 ft above National Geodetic Vertical Datum of 1929. April 15, 1895, to March 31, 1909, nonrecording gage at site 0.8 mi downstream at datum 0.32 ft higher.

REMARKS.--Records good except those for periods of estimated daily discharges (ice effect), which are poor. Some regulation by upstream hydroelectric plants, including that of Potomac Light and Power Company, 0.5 mi upstream from station. National Weather Service gage-height telemeter at station. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft, discharge, 151,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 23	1900	*16,200	*8.54	No other peak greater than base discharge.			

Minimum discharge, 275 ft^3/s, Sept. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	569	443	515	e400	519	409	1400	6130	1780	611	562	441
2	537	446	499	385	510	430	1400	4790	1410	585	487	447
3	536	439	495	e370	505	478	1460	4360	1300	498	485	476
4	534	432	486	e360	496	530	1540	3480	1180	489	424	498
5	521	432	483	e350	485	520	1500	2830	1010	460	498	527
6	489	423	475	e340	471	570	1440	2480	1260	414	518	462
7	484	417	463	e400	468	715	1230	2180	1450	394	635	425
8	479	435	477	493	468	757	1200	2010	1230	366	491	396
9	462	448	499	520	477	643	1090	1910	1010	343	522	396
10	422	431	505	509	483	597	1060	2380	951	340	441	370
11	422	418	501	551	496	571	1020	3100	800	328	391	395
12	433	421	516	534	507	539	968	2830	746	315	393	375
13	424	416	571	525	514	554	941	2540	729	321	384	362
14	437	413	608	519	475	597	969	2320	929	423	371	357
15	452	425	760	519	486	593	994	2150	1340	530	372	354
16	456	445	734	510	472	599	991	1920	1270	612	367	308
17	465	453	647	494	466	619	982	1690	1110	543	354	357
18	476	448	625	475	459	673	907	1660	902	467	379	383
19	469	447	590	479	454	720	991	2000	783	482	377	372
20	476	430	542	476	448	833	1100	2010	716	506	374	404
21	474	421	531	484	450	1360	1310	1850	659	455	351	401
22	455	437	518	483	447	2490	2680	1610	642	441	339	403
23	445	448	512	480	447	2190	13500	1440	643	401	319	446
24	449	451	e490	499	445	1820	12100	1260	591	408	338	925
25	447	486	e470	500	445	1750	7590	1200	568	408	310	724
26	440	531	e460	508	439	1530	5410	1100	521	501	302	635
27	429	517	e450	509	430	1510	4130	1280	508	522	324	760
28	425	522	e440	509	418	1480	3520	4210	505	588	360	1820
29	423	522	e430	513	---	1510	5600	3220	545	667	418	1820
30	419	530	e420	511	---	1510	7530	2360	678	618	417	1690
31	426	---	e410	527	---	1460	---	2200	---	589	436	---
TOTAL	14375	13527	16122	14732	13180	30557	86553	76500	27766	14625	12739	17729
MEAN	463.7	450.9	520.1	475.2	470.7	985.7	2885	2468	925.5	471.8	410.9	591.0
MAX	569	531	760	551	519	2490	13500	6130	1780	667	635	1820
MIN	419	413	410	340	418	409	907	1100	505	315	302	308
CFSM	0.15	0.15	0.17	0.16	0.16	0.33	0.95	0.82	0.31	0.16	0.14	0.20
IN.	0.18	0.17	0.20	0.18	0.16	0.38	1.07	0.94	0.34	0.18	0.16	0.22

e Estimated

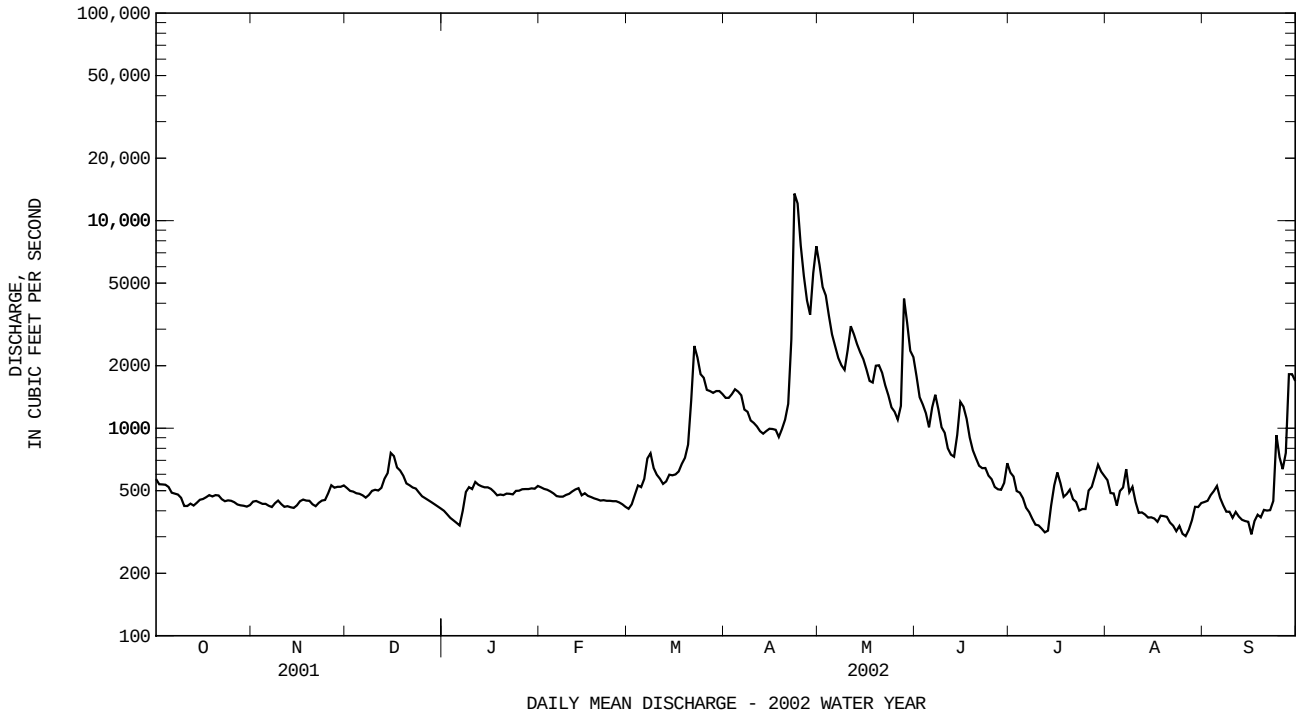
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 1909, 1928 - 2002, BY WATER YEAR (WY)

MEAN	1932	1837	2454	3202	3878	5001	4347	3320	2378	1429	1614	1460
MAX	16250	13350	8164	13470	18100	17540	12840	8701	10380	4809	10390	14780
(WY)	1943	1986	1973	1996	1998	1936	1901	1901	1972	1972	1955	1996
MIN	343	388	410	475	471	929	992	1001	643	402	388	411
(WY)	1931	1932	1966	2002	2002	1931	1981	1969	1999	1966	1930	1963

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1895 - 1909, 1928 - 2002	
ANNUAL TOTAL	639093		338405			
ANNUAL MEAN	1751		927.1		2731	
HIGHEST ANNUAL MEAN					5618	1996
LOWEST ANNUAL MEAN					927	2002
HIGHEST DAILY MEAN	19400	Mar 23	13500	Apr 23	192000	Oct 16 1942
LOWEST DAILY MEAN	(e)410	Dec 31	302	Aug 26	194	Jul 24 1930
ANNUAL SEVEN-DAY MINIMUM	424	Nov 10	326	Aug 21	240	Sep 7 1966
MAXIMUM PEAK FLOW			16200	Apr 23	230000	Oct 16 1942
MAXIMUM PEAK STAGE			8.54	Apr 23	(a)32.40	Oct 16 1942
INSTANTANEOUS LOW FLOW			275	Sep 16	59	Oct 4 1930
ANNUAL RUNOFF (CFSM)	0.58		0.31		0.90	
ANNUAL RUNOFF (INCHES)	7.87		4.17		12.28	
10 PERCENT EXCEEDS	3920		1820		5540	
50 PERCENT EXCEEDS	1140		505		1600	
90 PERCENT EXCEEDS	448		389		605	

e Estimated
a From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD

LOCATION.--Lat 39°25'38.1", long 77°33'22.2", Frederick County, Hydrologic Unit 02070008, on right bank 300 ft downstream from bridge on State Highway 17, 1.3 mi south of Middletown, 2.2 mi downstream from Little Catoctin Creek, and 14.8 mi upstream from mouth.

DRAINAGE AREA.--66.9 mi^2.

PERIOD OF RECORD.--August 1947 to current year.

REVISED RECORDS.--WSP 1432: 1947-48. WDR MD-DE-77-1: 1960(M), 1965(M), 1970(M), 1972(P), 1975(P).

GAGE.--Water-stage recorder and concrete control . Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, ice effect and plugged intake), which are poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1745	*380	*2.90	No peak greater than base discharge.			

Minimum discharge, 0.14 ft^3/s, Sept. 11, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	e3.2	5.6	e3.2	16	4.8	45	39	16	e5.5	1.5	4.0
2	2.4	e3.5	5.2	e3.2	15	5.8	36	52	15	e5.0	1.1	3.1
3	2.4	e3.6	4.9	e3.2	13	27	30	49	12	e4.2	0.78	2.4
4	1.9	e3.7	4.5	3.2	10	26	27	35	9.9	e3.3	0.53	1.8
5	1.8	e3.6	4.2	3.2	10	13	23	32	13	e2.4	e0.58	1.2
6	1.6	e3.5	3.9	3.9	8.9	12	21	29	13	1.4	e1.5	1.00
7	1.8	e3.7	3.9	5.8	9.1	9.9	20	28	22	1.1	e4.5	0.93
8	1.8	e4.2	4.7	5.5	8.5	9.1	19	28	16	0.97	e1.7	0.83
9	2.0	e4.1	6.9	6.0	7.7	8.2	20	25	11	3.4	e1.4	0.73
10	2.2	e4.2	8.4	7.1	7.8	7.9	22	24	9.4	14	e1.2	0.77
11	2.7	e4.0	9.0	12	8.3	8.0	20	20	8.1	23	e1.0	0.53
12	2.6	e3.7	7.8	19	9.0	8.6	17	19	7.3	16	e0.90	0.43
13	2.8	e3.4	7.1	15	9.3	12	18	45	19	12	e0.80	0.43
14	3.9	e3.4	8.2	9.8	8.0	13	36	100	37	23	e0.70	0.41
15	5.3	e3.5	9.7	8.7	7.2	12	52	46	32	31	e0.65	0.40
16	5.3	e3.8	9.7	7.8	7.2	11	43	34	18	32	e0.62	0.46
17	4.5	e3.4	8.1	7.1	6.9	9.7	32	30	13	22	e0.60	0.45
18	3.5	e3.3	10	6.3	6.3	14	28	68	11	14	e0.57	0.29
19	3.7	e3.2	16	5.7	6.3	23	25	56	9.9	9.9	e0.58	0.36
20	3.4	e3.3	11	6.8	6.1	140	23	39	8.4	7.5	e0.55	0.43
21	3.2	e3.3	8.1	6.3	6.3	119	22	34	7.2	2.1	e0.40	0.54
22	3.1	e3.3	6.8	6.9	6.2	54	29	30	6.1	1.5	e0.30	4.3
23	e3.5	e3.3	6.3	7.3	6.1	38	26	26	5.5	2.5	e0.24	33
24	e3.4	e6.0	7.1	14	5.4	31	20	24	4.7	3.7	e1.0	15
25	e3.2	e45	6.9	34	5.7	27	19	22	3.9	2.6	e10	6.2
26	e3.0	e50	6.9	19	5.6	32	19	20	3.7	7.6	e1.7	12
27	e2.8	e14	5.7	14	5.6	106	16	21	4.5	11	e0.80	67
28	e3.0	8.4	5.5	11	4.8	55	69	21	5.4	12	e0.20	65
29	e3.1	6.1	5.1	9.7	---	42	81	28	7.4	8.0	12	25
30	e3.2	6.0	4.2	9.1	---	36	48	24	e7.0	4.1	12	11
31	e3.2	---	e3.5	12	---	34	---	18	---	2.2	6.5	---
TOTAL	93.1	217.7	214.9	285.8	226.3	949.0	906	1066	356.4	288.97	66.90	259.99
MEAN	3.00	7.26	6.93	9.22	8.08	30.6	30.2	34.4	11.9	9.32	2.16	8.67
MAX	5.3	50	16	34	16	140	81	100	37	32	12	67
MIN	1.6	3.2	3.5	3.2	4.8	4.8	16	18	3.7	0.97	0.20	0.29
CFSM	0.04	0.11	0.10	0.14	0.12	0.46	0.45	0.51	0.18	0.14	0.03	0.13
IN.	0.05	0.12	0.12	0.16	0.13	0.53	0.50	0.59	0.20	0.16	0.04	0.14

e Estimated

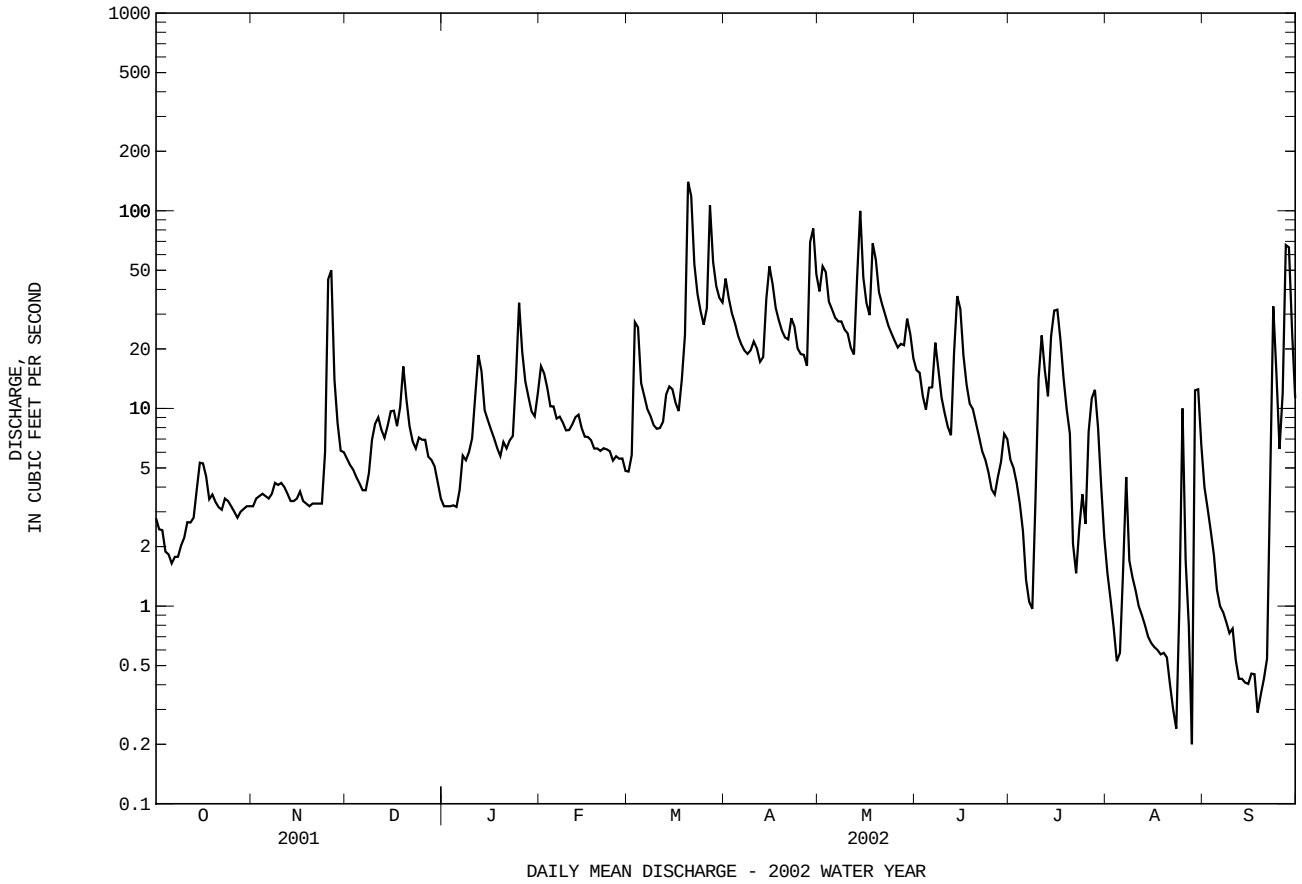
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)

MEAN	35.6	47.8	83.6	101	121	153	137	97.7	57.9	33.1	21.8	27.0
MAX	399	162	318	333	373	407	360	391	439	214	208	284
(WY)	1977	1986	1993	1998	1998	1994	1993	1988	1972	1949	1955	1975
MIN	2.62	3.61	3.80	4.25	8.08	30.6	30.2	29.2	11.5	4.86	2.04	1.68
(WY)	1964	1966	1966	1966	2002	2002	2002	1963	1999	1966	1966	1965

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1947 - 2002	
ANNUAL TOTAL	15272.44		4931.06			
ANNUAL MEAN	41.8		13.5		76.2	
HIGHEST ANNUAL MEAN					164	1996
LOWEST ANNUAL MEAN					13.5	2002
HIGHEST DAILY MEAN	534	Mar 30	140	Mar 20	4880	Oct 9 1976
LOWEST DAILY MEAN	0.54	Sep 18	0.20	Aug 28	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	1.0	Sep 14	0.40	Sep 13	0.00	Aug 27 1966
MAXIMUM PEAK FLOW			380	Mar 20	(b)12000	Oct 9 1976
MAXIMUM PEAK STAGE			2.90	Mar 20	14.13	Oct 9 1976
INSTANTANEOUS LOW FLOW			0.14	(c)	0.00	(a)
ANNUAL RUNOFF (CFSM)	0.63		0.20		1.14	
ANNUAL RUNOFF (INCHES)	8.49		2.74		15.48	
10 PERCENT EXCEEDS	114		32		174	
50 PERCENT EXCEEDS	14		7.2		37	
90 PERCENT EXCEEDS	2.3		1.1		5.2	

a Aug. 27 to Sept. 12, 1966.
b From rating curve extended above 2,600 ft^3/s on basis of slope-area measurement of peak flow.
c Sept. 11, 18.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'24.9", long 77°32'35.2", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi downstream from Catoctin Creek (Virginia), 6 mi upstream from Monocacy River, and at mile 159.5.

DRAINAGE AREA.--9,651 mi^2.

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

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

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

REMARKS.--Records good, except those for estimated saily discharges (ice effect) which are poor. Low flow affected slightly from 1913 to July 1981 by Stony River Reservoir; since December 1950 by Savage River Reservoir (see station 01597500); and since July 1981 by Jennings Randolph Lake. Low flow affected extensively at times by run-of-the-river hydroelectric plants. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks, discharge, about 460,000 ft^3/s from rating curve extended as explained in footnotes.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 24	0245	*52,300	*11.21	Apr 30	1245	38,800	9.14

Minimum discharge, 662 ft^3/s, Aug. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1630	1220	1770	e1300	2490	1540	7350	29200	7200	2070	3810	1880
2	1510	1250	1660	e1280	2460	1550	7590	23000	6220	2010	2640	1840
3	1490	1270	1570	e1220	2410	1830	10200	20600	5490	1800	2210	1760
4	1400	1270	1550	e1200	2460	1900	10300	22600	5040	1640	1880	1630
5	1400	1250	1490	e1200	2430	2090	9280	17100	4430	1600	1770	1640
6	1350	1230	1440	e1250	2230	2420	7520	14000	4080	1410	1930	1440
7	1260	1200	1410	e1350	2210	2610	6300	12300	4450	1320	2050	1200
8	1170	1220	1440	e1400	2140	2920	5680	10900	4500	1210	2040	1120
9	1180	1270	1470	e1480	2060	2860	5320	10600	4540	1190	2220	989
10	1210	1270	1560	1510	2050	2570	4890	14500	4150	1230	1720	925
11	1420	1230	1660	1710	2050	2400	4560	17400	3640	1140	1230	839
12	1680	1210	1730	1760	2000	2230	4510	15600	3160	1020	1100	873
13	1290	1200	1830	1800	1910	2280	4120	13400	2990	956	1060	934
14	1210	1190	1970	1910	1970	2210	4030	12100	3390	1210	1250	917
15	1350	1200	2010	2090	1840	2200	4300	11500	4580	1510	809	1260
16	1470	1240	2220	2170	1900	2180	8690	10700	4520	1800	771	1250
17	1420	1280	2120	2010	1970	2150	10200	9570	4960	2340	1100	1050
18	1510	1270	2290	1830	1870	2240	10300	9090	4270	2570	1140	1050
19	1470	1280	2240	1760	1840	2470	8860	14800	3470	1910	1130	1040
20	1320	1290	2160	1770	1800	3550	7510	23200	3000	1720	1080	936
21	1420	1250	2050	1680	1730	8390	6940	16900	2790	1510	1170	874
22	1390	1250	1940	1710	1800	26200	7750	12900	2440	1780	1430	839
23	1430	1280	1920	1680	1740	18000	26700	11300	2320	2190	1400	1120
24	1310	1310	1930	1740	1690	12300	44300	9530	2190	1490	1210	1030
25	1370	1450	1930	1870	1610	9520	27600	8030	2150	1470	1880	1370
26	1300	1860	1880	2040	1610	7840	20100	7050	2090	1990	2500	1070
27	1220	1770	1760	2470	1610	7150	15700	6750	1920	2010	2400	1340
28	1230	1760	1730	2820	1620	7830	13200	9050	1950	2280	2060	2080
29	1210	2000	1660	3260	---	9100	16400	10200	1890	3440	2240	3230
30	1170	1930	e1500	2830	---	8770	35600	9310	2130	7780	2210	5200
31	1170	---	e1400	2720	---	7960	---	8450	---	4880	1920	---
TOTAL	41960	40700	55290	56820	55500	169260	355800	421630	109950	62476	53360	42726
MEAN	1354	1357	1784	1833	1982	5460	11860	13600	3665	2015	1721	1424
MAX	1680	2000	2290	3260	2490	26200	44300	29200	7200	7780	3810	5200
MIN	1170	1190	1400	1200	1610	1540	4030	6750	1890	956	771	839
CFSM	0.14	0.14	0.18	0.19	0.21	0.57	1.23	1.41	0.38	0.21	0.18	0.15
IN.	0.16	0.16	0.21	0.22	0.21	0.65	1.37	1.63	0.42	0.24	0.21	0.16

e Estimated

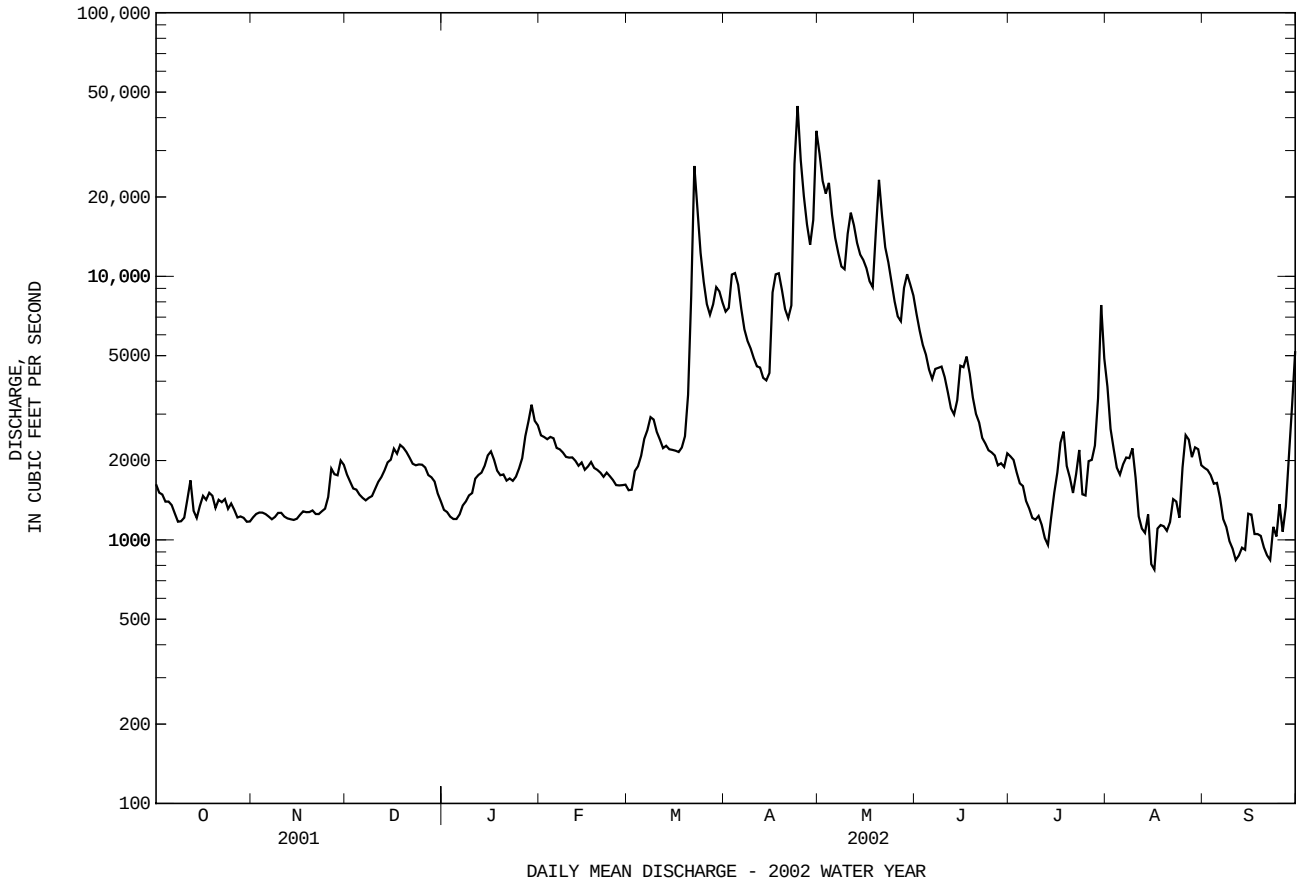
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 2002, BY WATER YEAR (WY)

MEAN	4992	5592	8477	11360	14320	19610	16420	12240	7925	4470	4262	3764
MAX	37030	39000	32610	42160	47870	68360	43840	41970	40400	16000	23580	38300
(WY)	1943	1986	1973	1996	1998	1936	1993	1924	1972	1949	1955	1996
MIN	706	840	1253	1703	1982	5400	4368	3276	1932	1056	771	834
(WY)	1931	1931	1966	1981	2002	1931	1915	1930	1969	1966	1930	1930

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

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1895 - 2002	
ANNUAL TOTAL	2267810		1465472			
ANNUAL MEAN	6213		4015		9437	
HIGHEST ANNUAL MEAN					18750	1996
LOWEST ANNUAL MEAN					4015	2002
HIGHEST DAILY MEAN	59000	Mar 23	44300	Apr 24	434000	Mar 19 1936
LOWEST DAILY MEAN	1170	Oct 8	771	Aug 16	540	Sep 10 1914
ANNUAL SEVEN-DAY MINIMUM	1210	Oct 27	942	Sep 8	593	Sep 6 1966
MAXIMUM PEAK FLOW			52300	Apr 24	(a)480000	Mar 19 1936
MAXIMUM PEAK STAGE			11.21	Apr 24	41.03	Mar 19 1936
INSTANTANEOUS LOW FLOW			662	(b)	530	(c)
ANNUAL RUNOFF (CFSM)	0.64		0.42		0.98	
ANNUAL RUNOFF (INCHES)	8.74		5.65		13.29	
10 PERCENT EXCEEDS	14400		10200		20600	
50 PERCENT EXCEEDS	3720		1910		5380	
90 PERCENT EXCEEDS	1310		1200		1670	

a From rating curve extended above 300,000 ft^3/s, on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow.
b Aug. 15, 16.
c Sept. 11, 12, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01639000 MONOCACY RIVER AT BRIDGEPORT, MD

LOCATION.--Lat 39°40'43.8", long 77°14'04.2", Frederick County, Hydrologic Unit 02070009, on right bank 60 ft downstream from bridge on State Highway 140 at Bridgeport, 0.9 mi upstream from Cattail Branch, 3.4 mi northwest of Taneytown, 4.8 mi downstream from confluence of Rock and Marsh Creeks at Pennsylvania-Maryland State line, and 52 mi upstream from mouth.

DRAINAGE AREA.--173 mi^2.

PERIOD OF RECORD.--May 1942 to current year.

REVISED RECORDS.--WSP 1382: 1944(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 15, 1947. Datum of gage is 340.83 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 3, 1946, nonrecording gage and crest-stage gages at site 0.3 mi downstream at datum 0.98 ft lower.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low flow from Lake Herrtage and other unknown sources upstream from station. U.S. Geological Survey gage-height telemeter and satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 24, 1933, reached a stage of about 25 ft, present site and datum, from floodmarks, discharge, 23,000 ft^3/s. Stage exceeded that of June 1889, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1830	*3,600	*9.06	No peak greater than base discharge.			

Minimum discharge, 0.20 ft^3/s, Aug. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	8.4	20	8.8	116	13	161	85	34	8.6	7.9	19
2	5.2	10	21	8.2	102	13	127	163	34	7.4	6.0	14
3	5.2	7.1	21	7.6	70	262	94	214	27	6.8	4.5	11
4	4.5	4.8	17	7.2	52	199	82	98	21	5.8	4.3	7.3
5	4.4	5.0	11	7.1	36	81	69	71	17	5.0	5.7	5.7
6	3.6	17	9.3	8.1	32	54	60	59	20	3.7	5.0	5.4
7	3.0	33	8.7	9.6	31	44	54	51	90	4.1	3.9	4.9
8	1.9	34	9.1	11	28	37	49	47	65	4.1	3.4	4.3
9	1.5	39	14	12	26	31	47	45	37	3.9	2.7	3.8
10	1.7	32	23	13	23	33	47	48	26	4.2	2.1	4.1
11	2.6	30	22	26	24	32	53	45	20	4.6	1.9	3.0
12	2.3	30	18	70	24	26	44	36	16	5.6	1.6	2.2
13	2.9	24	17	52	25	27	42	41	286	4.7	1.4	2.0
14	2.9	8.2	17	31	21	41	62	411	385	4.5	1.3	1.8
15	4.4	5.0	25	26	19	45	476	143	192	5.1	1.00	1.9
16	13	4.3	34	22	18	36	232	81	114	7.1	0.71	2.4
17	10	4.4	23	19	18	32	134	58	63	5.3	0.53	4.4
18	9.2	4.6	25	17	18	56	93	437	44	4.5	0.30	5.8
19	9.5	4.6	41	16	17	188	93	300	43	4.0	0.26	5.4
20	9.2	4.9	35	15	16	1290	72	129	31	3.7	0.32	5.0
21	8.4	5.5	22	16	16	856	58	90	25	4.0	0.27	5.0
22	6.8	5.8	17	18	17	294	57	70	20	4.1	1.5	5.9
23	5.5	5.7	15	18	15	172	64	57	17	4.3	3.4	30
24	5.1	6.1	15	74	14	126	49	48	15	4.2	52	51
25	5.3	15	15	305	14	102	41	42	13	3.6	99	20
26	5.4	103	16	105	14	104	41	36	11	4.7	32	16
27	4.6	52	14	64	14	1360	39	61	11	10	16	356
28	3.6	29	12	46	14	346	217	76	10	86	12	551
29	3.2	22	12	37	---	208	285	64	10	27	42	127
30	3.4	19	11	31	---	151	119	60	10	15	54	60
31	6.2	---	10	53	---	118	---	42	---	11	29	---
TOTAL	161.5	573.4	570.1	1153.6	834	6377	3061	3208	1707	276.6	395.99	1335.3
MEAN	5.21	19.1	18.4	37.2	29.8	206	102	103	56.9	8.92	12.8	44.5
MAX	13	103	41	305	116	1360	476	437	385	86	99	551
MIN	1.5	4.3	8.7	7.1	14	13	39	36	10	3.6	0.26	1.8
CFSM	0.03	0.11	0.11	0.22	0.17	1.19	0.59	0.60	0.33	0.05	0.07	0.26
IN.	0.03	0.12	0.12	0.25	0.18	1.37	0.66	0.69	0.37	0.06	0.09	0.29

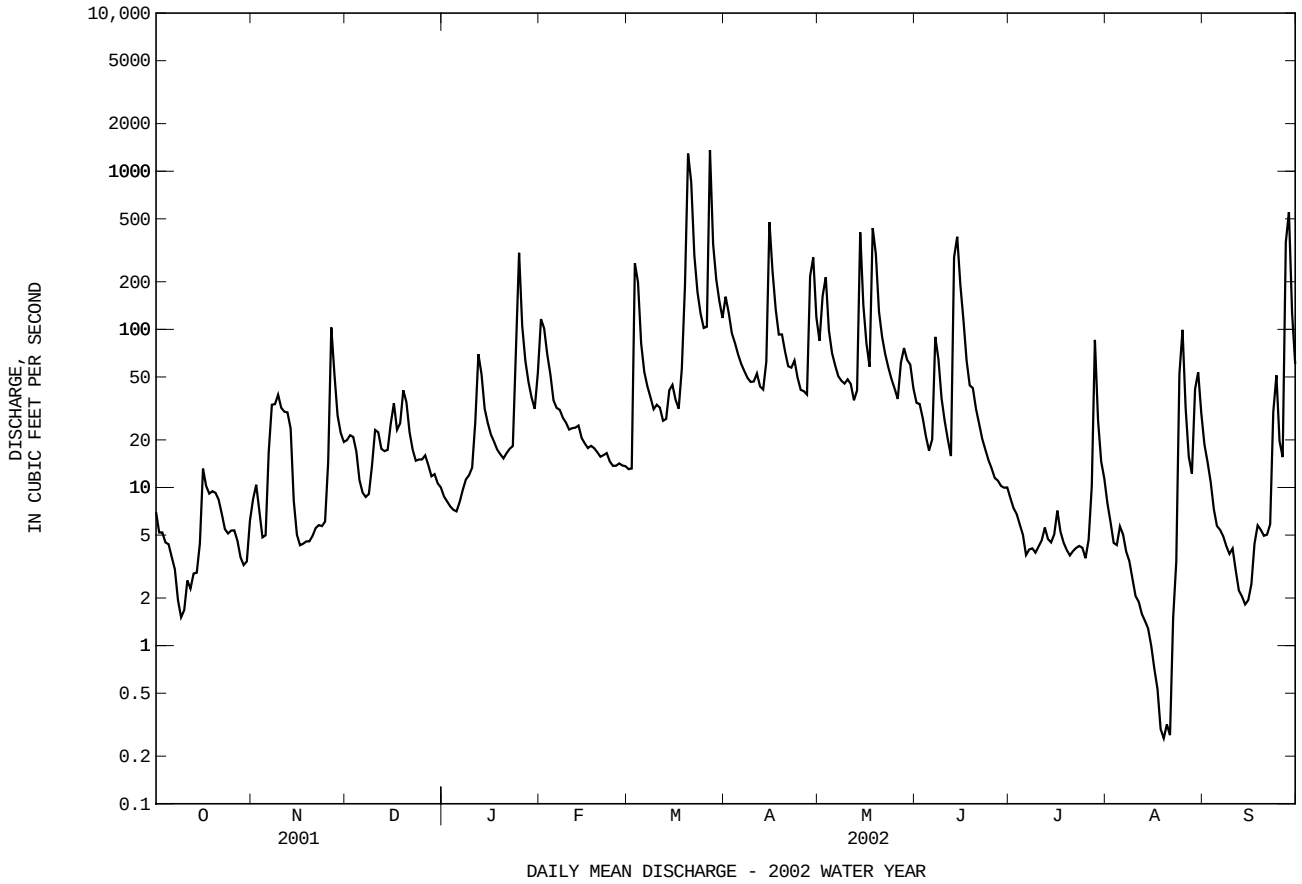
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2002, BY WATER YEAR (WY)

MEAN	92.8	174	264	298	373	453	295	206	129	78.9	57.2	84.7
MAX	906	513	780	1214	1029	1606	1029	964	1065	598	613	1027
(WY)	1977	1986	1997	1996	1961	1994	1983	1989	1972	1949	1942	1975
MIN	3.24	10.4	12.3	13.8	29.8	94.7	58.1	41.2	10.5	2.68	2.40	2.34
(WY)	1964	1954	1999	1981	2002	1949	1995	1969	1966	1966	1944	1943

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1942 - 2002	
ANNUAL TOTAL	36440.14		19653.49			
ANNUAL MEAN	99.8		53.8		207	
HIGHEST ANNUAL MEAN					447	1996
LOWEST ANNUAL MEAN					53.8	2002
HIGHEST DAILY MEAN	3460	Mar 30	1360	Mar 27	16700	Jun 22 1972
LOWEST DAILY MEAN	0.72	Sep 12	0.26	Aug 19	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.93	Sep 9	0.48	Aug 15	0.04	Jul 22 1966
MAXIMUM PEAK FLOW			3600	Mar 20	(b)24400	Jun 19 1996
MAXIMUM PEAK STAGE			9.06	Mar 20	25.42	Jun 19 1996
INSTANTANEOUS LOW FLOW			0.20	Aug 19	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.58		0.31		1.19	
ANNUAL RUNOFF (INCHES)	7.84		4.23		16.22	
10 PERCENT EXCEEDS	261		115		437	
50 PERCENT EXCEEDS	23		18		63	
90 PERCENT EXCEEDS	2.2		3.7		7.8	

a July 25-28, 1966.
b From rating curve extended above 14,000 ft^3/s on basis of slope-conveyance study.
c July 24-29, 1966.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01639140 PINEY CREEK NEAR TANEYTOWN, MD

LOCATION.--Lat 39°39'38.7", long 77°13'15.5", Carroll County, Hydrologic Unit 02070009, on left bank at downstream side of bridge on Roop Road, 2.4 mi west of Taneytown, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--31.3 mi^2.

PERIOD OF RECORD.--May 1990 to January 2002 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 383.22 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (backwater and ice effect), which are poor. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 12	0100	*21	*1.57	No peak greater than base discharge.			

Minimum discharge, Unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO JANUARY 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.86	e1.1	0.82	e1.2	---	---	---	---	---	---	---	---
2	0.74	e1.0	0.72	e1.1	---	---	---	---	---	---	---	---
3	0.74	e0.98	0.77	e1.0	---	---	---	---	---	---	---	---
4	0.73	e0.98	0.79	e1.0	---	---	---	---	---	---	---	---
5	e0.70	e0.98	0.72	1.1	---	---	---	---	---	---	---	---
6	e0.62	e1.1	0.68	e1.4	---	---	---	---	---	---	---	---
7	e0.56	e1.2	0.79	e1.7	---	---	---	---	---	---	---	---
8	e0.50	e1.1	0.99	e2.1	---	---	---	---	---	---	---	---
9	e0.44	e1.0	1.8	2.6	---	---	---	---	---	---	---	---
10	e0.54	e0.94	2.9	2.7	---	---	---	---	---	---	---	---
11	e0.66	e0.88	2.6	5.9	---	---	---	---	---	---	---	---
12	e0.62	0.79	2.0	12	---	---	---	---	---	---	---	---
13	e0.59	0.77	2.1	6.3	---	---	---	---	---	---	---	---
14	1.4	0.79	2.5	4.0	---	---	---	---	---	---	---	---
15	2.6	0.85	3.7	3.7	---	---	---	---	---	---	---	---
16	2.7	0.83	3.5	---	---	---	---	---	---	---	---	---
17	5.6	0.82	2.8	---	---	---	---	---	---	---	---	---
18	4.1	0.79	3.5	---	---	---	---	---	---	---	---	---
19	3.2	0.88	4.7	---	---	---	---	---	---	---	---	---
20	3.1	0.86	3.3	---	---	---	---	---	---	---	---	---
21	e2.4	1.00	2.7	---	---	---	---	---	---	---	---	---
22	e1.8	1.0	2.2	---	---	---	---	---	---	---	---	---
23	e1.5	0.80	1.9	---	---	---	---	---	---	---	---	---
24	e1.2	0.80	e1.9	---	---	---	---	---	---	---	---	---
25	e1.0	2.9	1.9	---	---	---	---	---	---	---	---	---
26	e1.1	8.1	2.1	---	---	---	---	---	---	---	---	---
27	e0.94	3.5	e1.7	---	---	---	---	---	---	---	---	---
28	e0.82	1.7	e1.5	---	---	---	---	---	---	---	---	---
29	e0.76	1.1	e1.4	---	---	---	---	---	---	---	---	---
30	e0.90	0.92	1.4	---	---	---	---	---	---	---	---	---
31	e1.0	---	e1.3	---	---	---	---	---	---	---	---	---
TOTAL	44.42	40.46	61.68	47.8	---	---	---	---	---	---	---	---
MEAN	1.43	1.35	1.99	3.19	---	---	---	---	---	---	---	---
MAX	5.6	8.1	4.7	12	---	---	---	---	---	---	---	---
MIN	0.44	0.77	0.68	1.0	---	---	---	---	---	---	---	---
CFSM	0.05	0.04	0.06	0.10	---	---	---	---	---	---	---	---
IN.	0.05	0.05	0.07	0.06	---	---	---	---	---	---	---	---

e Estimated

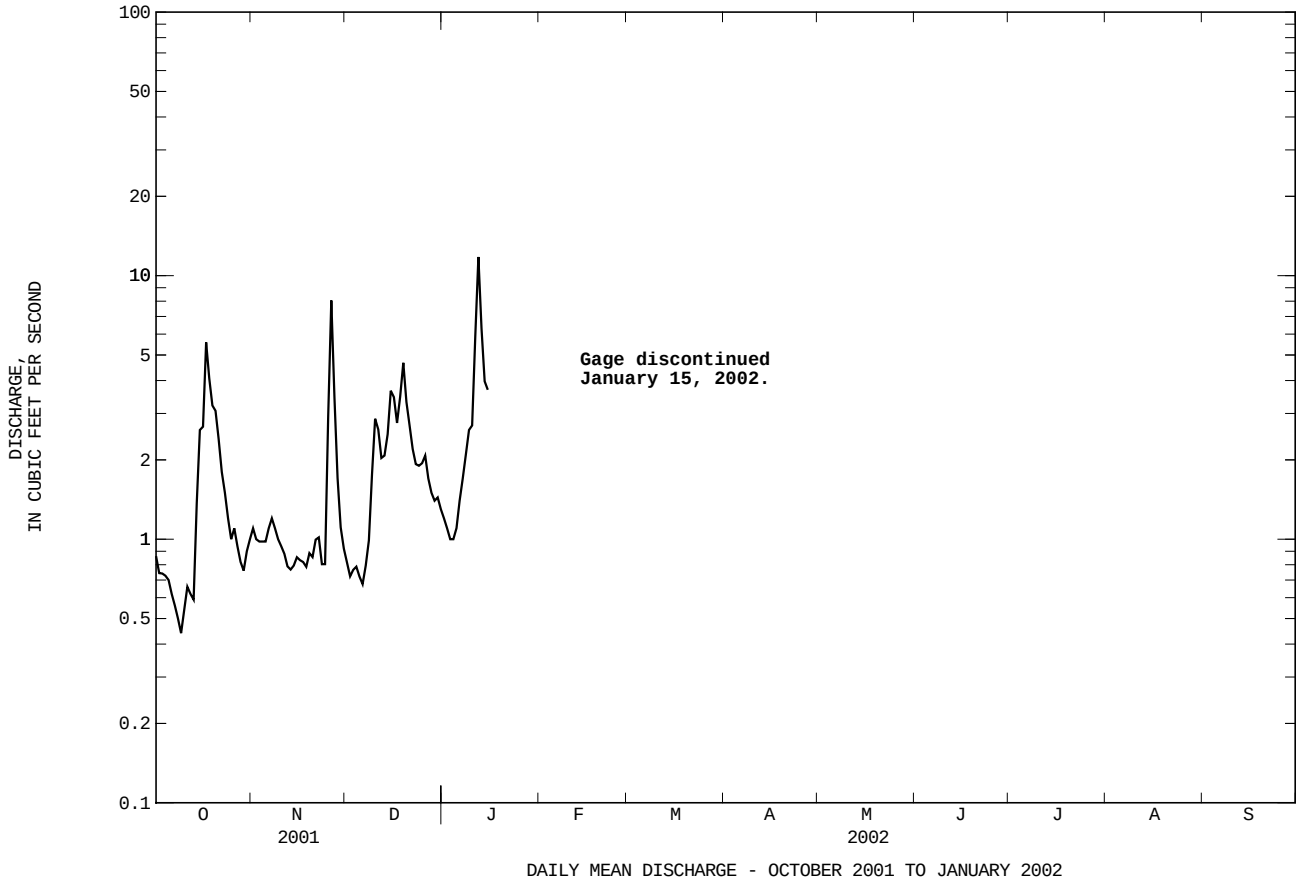
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

MEAN	17.6	30.2	53.0	69.2	51.7	97.2	53.5	23.9	14.5	18.1	9.16	14.9
MAX	73.2	73.3	134	200	123	237	183	63.8	62.0	101	43.5	77.3
(WY)	1997	1997	1997	1996	1998	1993	1993	1998	1996	1996	1996	1996
MIN	0.94	1.35	1.39	3.19	24.5	31.1	10.7	6.49	1.98	0.57	0.74	0.67
(WY)	1998	2002	1999	2002	1999	1995	1995	1999	1991	1991	1997	1997

01639140 PINEY CREEK NEAR TANEYTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR OCTOBER 2001 TO JANUARY 2002		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	5409.67		194.36			
ANNUAL MEAN	14.8		1.82		37.0	
HIGHEST ANNUAL MEAN					68.5	1996
LOWEST ANNUAL MEAN					1.82	2002
HIGHEST DAILY MEAN	489	Mar 30	12	Jan 12	2770	Jan 19 1996
LOWEST DAILY MEAN	0.24	Jul 26	(e)0.44	Oct 9	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.31	Jul 22	0.56	Oct 7	0.03	Aug 2 1991
MAXIMUM PEAK FLOW			21	Jan 12	(b)7520	Jan 19 1996
MAXIMUM PEAK STAGE			1.57	Jan 12	(c)11.41	Jan 19 1996
INSTANTANEOUS LOW FLOW			UNKNOWN		0.00	(d)
ANNUAL RUNOFF (CFSM)	0.47		0.058		1.18	
ANNUAL RUNOFF (INCHES)	6.43		0.23		16.06	
10 PERCENT EXCEEDS	39		3.5		78	
50 PERCENT EXCEEDS	3.7		1.1		12	
90 PERCENT EXCEEDS	0.44		0.72		1.2	

e Estimated
a Aug. 4, 5, Sept. 2, 3, 1991.
b From rating curve extended above 2,430 ft^3/s on basis of runoff comparisons with nearby stations.
c From floodmarks.
d Aug. 3-9, 17, Sept. 1-4, 1991.



DAILY MEAN DISCHARGE - OCTOBER 2001 TO JANUARY 2002

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD

LOCATION.--Lat 39°36'44.5", long 77°14'14.8", Carroll County, Hydrologic Unit 02070009, on left bank 300 ft downstream from bridge on State Highway 194, 800 ft downstream from Bruceville, 3.5 mi upstream from Detour and confluence with Little Pipe Creek.

DRAINAGE AREA.--102 mi^2.

PERIOD OF RECORD.--October 1947 to current year. Prior to December 1947, monthly discharge only, published in WSP 1302.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 336.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effectand intake out of water), which are fair. Occasional diversion for irrigation upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	2230	*372	*2.52	No peak greater than base discharge.			

Minimum discharge, 0.06 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	20	25	e19	42	20	50	41	23	9.7	5.9	16
2	19	21	23	e18	38	20	42	49	21	8.5	5.0	28
3	19	21	23	e18	33	36	38	60	19	7.5	3.9	18
4	18	21	22	e19	30	44	37	37	17	6.7	3.6	13
5	17	21	22	e20	32	28	33	33	16	5.8	2.9	10
6	18	20	22	22	30	26	31	31	17	e4.4	2.6	8.7
7	16	19	22	e23	29	25	29	28	35	e4.5	1.6	7.7
8	16	20	23	e24	27	24	28	28	23	e4.5	1.3	7.2
9	16	20	34	26	26	23	28	29	18	e4.5	1.1	6.9
10	18	19	35	27	25	25	30	30	16	e4.8	0.80	6.6
11	19	19	28	46	26	27	28	28	15	6.7	0.75	5.8
12	19	19	31	86	26	24	26	25	14	7.0	0.53	5.3
13	19	19	29	47	24	26	26	32	14	6.4	0.25	5.3
14	19	19	28	39	26	38	30	40	24	6.6	0.15	4.6
15	30	20	38	31	24	34	45	34	28	6.8	0.43	4.8
16	31	20	33	29	23	30	41	28	21	10	0.80	5.3
17	25	19	27	29	24	27	33	25	17	8.0	0.66	6.5
18	26	19	35	29	23	29	30	60	15	6.7	1.3	7.3
19	22	20	41	28	22	37	31	66	15	6.0	1.2	6.9
20	21	21	31	32	22	145	33	40	15	5.5	0.63	6.2
21	21	20	27	37	22	184	29	34	13	5.1	0.27	6.1
22	21	20	25	28	23	77	29	31	12	4.7	0.08	6.6
23	20	20	25	28	22	55	30	29	11	4.7	0.28	14
24	20	20	26	41	21	45	27	27	11	4.3	3.1	16
25	21	23	28	63	21	39	25	25	9.9	4.2	11	10
26	19	87	26	41	22	40	25	23	9.4	7.8	9.9	10
27	19	38	e24	34	22	106	24	23	8.9	19	6.7	113
28	19	28	e22	31	21	63	58	38	8.5	15	7.6	72
29	20	26	e21	29	---	49	81	34	8.4	9.0	48	35
30	19	24	20	28	---	44	50	28	11	8.1	42	20
31	20	---	e20	36	---	42	---	24	---	6.7	17	---
TOTAL	627	703	836	1008	726	1432	1047	1060	486.1	219.2	181.33	482.8
MEAN	20.2	23.4	27.0	32.5	25.9	46.2	34.9	34.2	16.2	7.07	5.85	16.1
MAX	31	87	41	86	42	184	81	66	35	19	48	113
MIN	16	19	20	18	21	20	24	23	8.4	4.2	0.08	4.6
CFSM	0.20	0.23	0.26	0.32	0.25	0.45	0.34	0.34	0.16	0.07	0.06	0.16
IN.	0.23	0.26	0.30	0.37	0.26	0.52	0.38	0.39	0.18	0.08	0.07	0.18

e Estimated

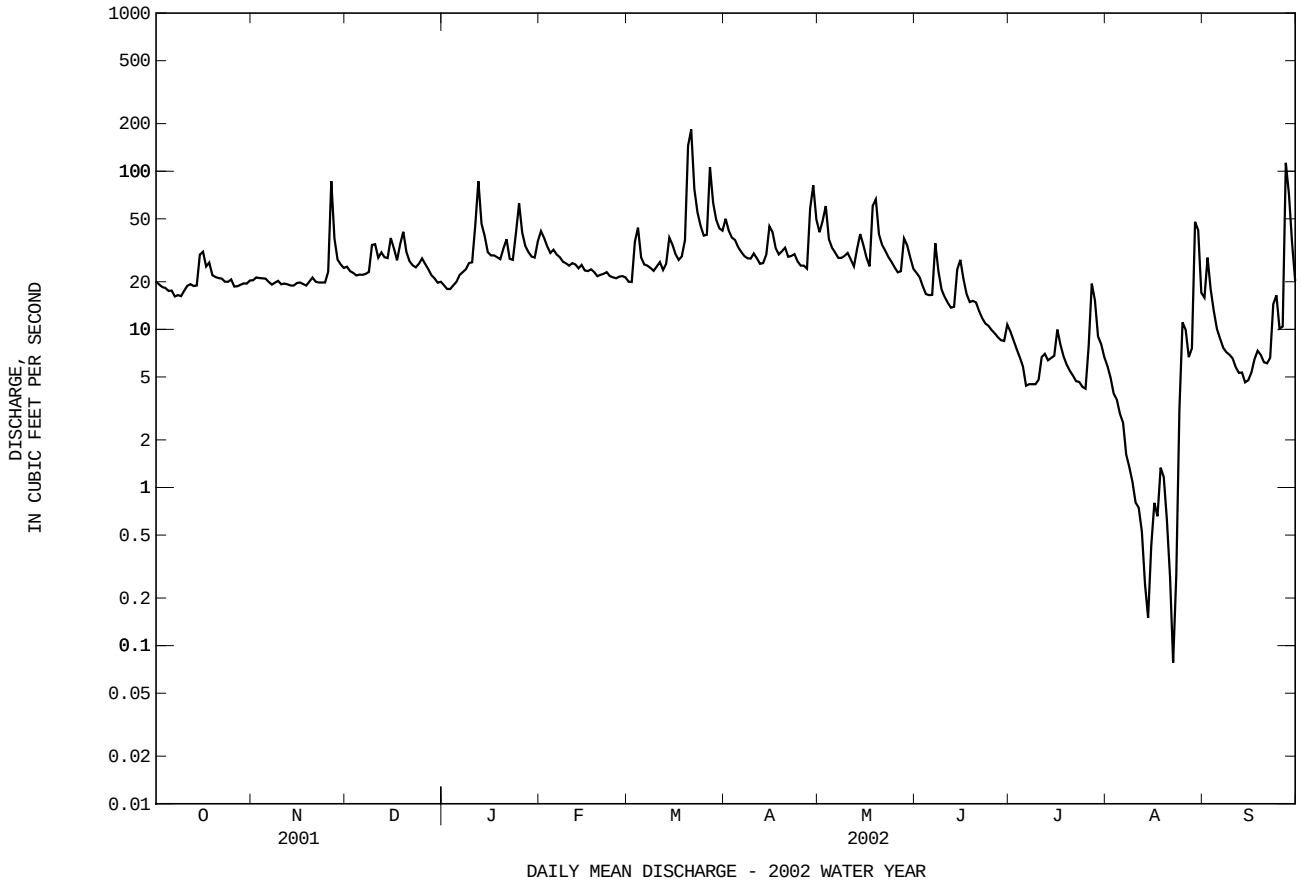
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	61.0	84.8	124	149	173	196	164	119	97.0	70.1	53.0	64.7
MAX	390	289	453	492	387	613	514	383	891	295	212	730
(WY)	1980	1948	1997	1996	1979	1994	1993	1989	1972	1949	1955	1975
MIN	14.9	16.7	18.9	22.5	25.9	46.2	34.9	34.2	16.2	7.07	4.39	13.0
(WY)	1964	1966	1966	1966	2002	2002	2002	2002	2002	2002	1966	1963

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 2002	
ANNUAL TOTAL	25660		8808.43			
ANNUAL MEAN	70.3		24.1		113	
HIGHEST ANNUAL MEAN					227	1972
LOWEST ANNUAL MEAN					24.1	2002
HIGHEST DAILY MEAN	1100	Mar 30	184	Mar 21	14400	Jun 22 1972
LOWEST DAILY MEAN	11	(a)	0.08	Aug 22	0.08	Aug 22 2002
ANNUAL SEVEN-DAY MINIMUM	12	Sep 13	0.51	Aug 11	0.51	Aug 11 2002
MAXIMUM PEAK FLOW			372	Mar 20	(b)28000	Sep 26 1975
MAXIMUM PEAK STAGE			2.52	Mar 20	18.98	Sep 26 1975
INSTANTANEOUS LOW FLOW			0.06	Aug 22	0.06	Aug 22 2002
ANNUAL RUNOFF (CFSM)	0.69		0.24		1.10	
ANNUAL RUNOFF (INCHES)	9.36		3.21		15.00	
10 PERCENT EXCEEDS	138		40		213	
50 PERCENT EXCEEDS	47		22		65	
90 PERCENT EXCEEDS	19		5.3		23	

a Sept. 14, 15
b From rating curve extended above 3,900 ft^3/s on the basis of contracted-opening measurement at gage height of 17.86 ft.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD

LOCATION.--Lat 39°24'10.2", long 77°21'57.9", Frederick County, Hydrologic Unit 02070009, on right bank 500 ft downstream from Interstate 70 highway bridge, 0.4 mi downstream from Linganore Creek, 2.0 mi east of Frederick, and 16.9 mi upstream from mouth.

DRAINAGE AREA.--817 mi^2.

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for October, November 1929, published in WSP 1302.

REVISED RECORDS.--WSP 711: 1930.

GAGE.--Water-stage recorder. Nonrecording gage at site 0.2 mile downstream. Datum of gage is 231.92 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flows since September 1972 by Linganore Reservoir, total capacity, 883,200,000 gal, 2.8 mi upstream from station. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 reached a stage of 30 ft, from floodmarks, discharge, 56,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 21	0530	*6,110	*8.79	No peak greater than base discharge.			

Minimum discharge, 19 ft^3/s, Aug. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	89	134	90	257	102	554	456	205	89	60	148
2	91	93	127	90	325	105	566	594	180	80	50	122
3	90	95	120	91	285	262	451	769	155	74	54	121
4	85	98	116	83	240	670	385	570	142	70	57	100
5	83	99	112	87	197	399	341	402	137	64	56	81
6	81	100	109	86	170	261	304	341	141	56	51	67
7	77	97	101	104	171	214	275	311	161	46	47	59
8	73	98	111	104	169	191	258	287	259	49	39	53
9	72	125	127	123	161	178	248	275	213	64	36	49
10	74	124	142	116	154	183	259	266	159	89	33	46
11	75	128	156	156	158	182	251	251	135	56	31	41
12	74	123	151	225	150	176	235	228	120	65	29	39
13	76	122	150	285	146	196	221	269	191	55	29	35
14	88	120	147	215	139	219	240	543	633	87	27	34
15	113	120	150	173	132	231	374	742	629	72	25	36
16	110	105	163	148	127	217	911	404	400	68	26	37
17	126	97	162	139	125	197	484	307	281	62	25	34
18	103	93	180	130	120	227	366	429	206	58	24	32
19	105	89	194	126	118	325	312	1140	170	56	24	35
20	98	89	199	121	114	1200	297	590	163	52	24	35
21	93	92	178	124	114	4060	266	403	144	47	26	40
22	95	91	148	128	113	1300	287	335	126	43	22	54
23	99	90	132	127	112	764	271	289	112	41	20	117
24	97	93	135	174	107	572	249	259	101	48	83	89
25	94	154	132	380	106	464	225	235	93	49	51	150
26	88	311	130	520	107	427	208	218	89	85	164	172
27	84	398	117	309	111	2200	198	231	96	79	122	359
28	85	220	103	238	105	1450	460	345	121	91	131	1170
29	86	163	117	202	---	805	1090	378	94	132	168	816
30	88	140	78	186	---	623	674	286	87	118	208	317
31	89	---	89	213	---	544	---	244	---	76	205	---
TOTAL	2788	3856	4210	5293	4333	18944	11260	12397	5743	2121	1947	4488
MEAN	89.9	129	136	171	155	611	375	400	191	68.4	62.8	150
MAX	126	398	199	520	325	4060	1090	1140	633	132	208	1170
MIN	72	89	78	83	105	102	198	218	87	41	20	32
CFSM	0.11	0.16	0.17	0.21	0.19	0.75	0.46	0.49	0.23	0.08	0.08	0.18
IN.	0.13	0.18	0.19	0.24	0.20	0.86	0.51	0.56	0.26	0.10	0.09	0.20

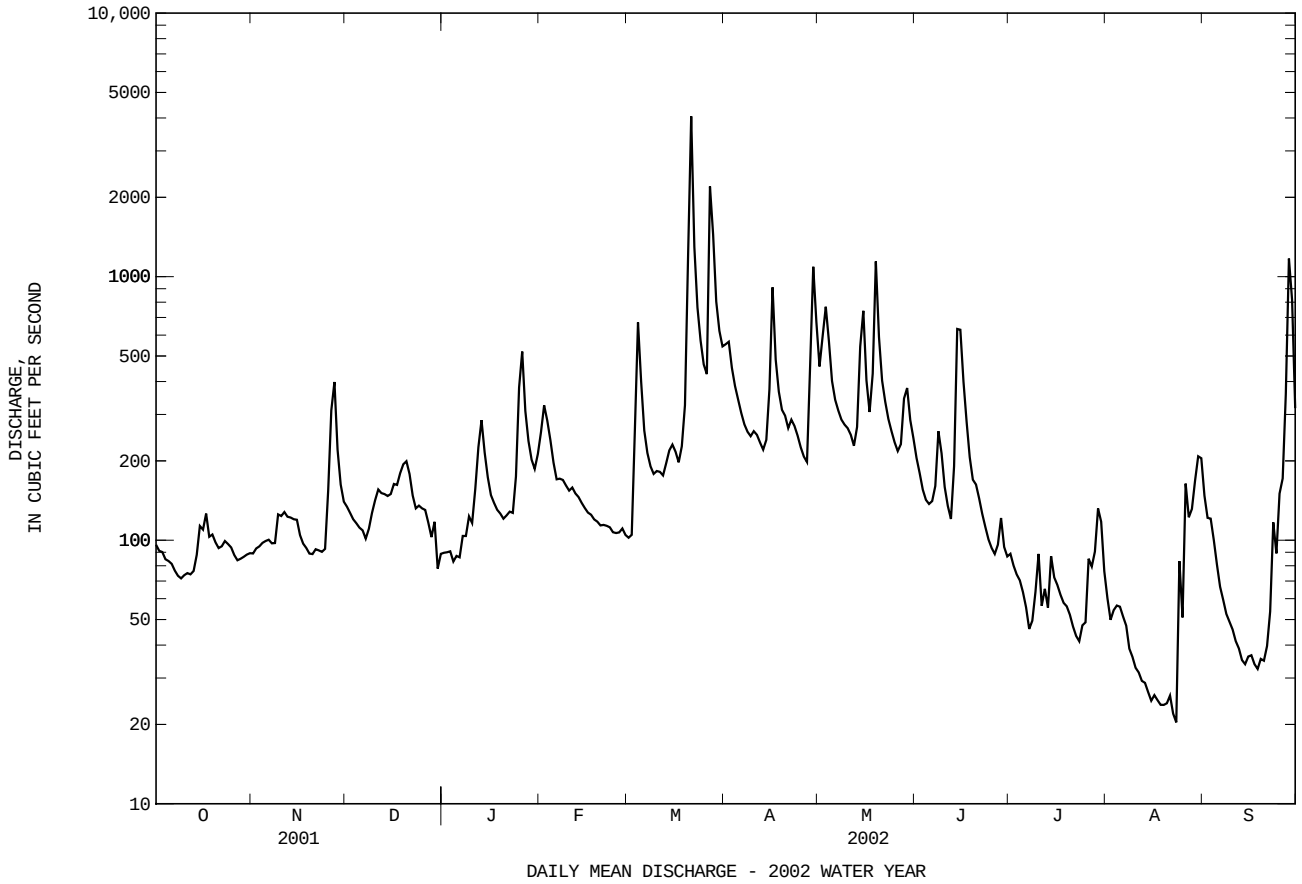
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

MEAN	507	707	1028	1210	1453	1815	1512	1002	701	450	399	482
MAX	3943	2504	3606	4159	4062	5851	4533	3773	6826	2571	3233	5165
(WY)	1977	1933	1997	1996	1984	1993	1983	1989	1972	1949	1933	1975
MIN	46.8	65.1	108	123	155	589	375	296	152	64.5	36.4	59.9
(WY)	1931	1931	1966	1981	2002	1981	2002	1963	1999	1966	1966	1963

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1930 - 2002	
ANNUAL TOTAL	187485		77380			
ANNUAL MEAN	514		212		936	
HIGHEST ANNUAL MEAN					1834	1972
LOWEST ANNUAL MEAN					212	2002
HIGHEST DAILY MEAN	9050	Mar 30	4060	Mar 21	74000	Jun 23 1972
LOWEST DAILY MEAN	46	Sep 16	20	Aug 23	19	(a)
ANNUAL SEVEN-DAY MINIMUM	50	Sep 13	24	Aug 17	19	Sep 7 1966
MAXIMUM PEAK FLOW			6110	Mar 21	81600	Jun 23 1972
MAXIMUM PEAK STAGE			8.79	Mar 21	(b)35.90	Jun 23 1972
INSTANTANEOUS LOW FLOW			19	Aug 23	17	(c)
ANNUAL RUNOFF (CFSM)	0.63		0.26		1.15	
ANNUAL RUNOFF (INCHES)	8.54		3.52		15.56	
10 PERCENT EXCEEDS	1200		403		1970	
50 PERCENT EXCEEDS	233		127		467	
90 PERCENT EXCEEDS	81		49		120	

a Sept. 7-13, 1966.
b From floodmarks.
c Sept. 11, 13, 1966.



01643500 BENNETT CREEK AT PARK MILLS, MD

LOCATION.--Lat 39°17'38.9", long 77°24'25.5", Frederick County, Hydrologic Unit 02070009, on left bank 75 ft downstream from highway bridge, 0.2 mi south of Park Mills, 1.8 mi upstream from mouth, and 3.7 mi southwest of Urbana.

DRAINAGE AREA.--62.8 mi^2.

PERIOD OF RECORD.--July 1948 to September 1958. Annual maximum, water years 1960-66. August 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 240 ft above National Geodetic Vertical Datum of 1929, from topographic maps.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	2330	*1,350	*4.65	No other peak greater than base discharge.			

Minimum discharge, 0.67 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	17	13	25	14	36	33	25	8.2	3.5	5.9
2	15	13	16	13	21	14	30	133	21	7.3	3.0	7.6
3	15	13	15	e13	20	48	29	70	18	6.6	2.7	6.5
4	15	13	15	e13	20	28	26	45	16	6.2	2.4	5.5
5	14	13	15	14	18	21	24	39	16	5.5	2.2	4.6
6	13	12	14	15	24	20	24	33	16	4.5	6.1	3.9
7	12	12	15	21	19	19	22	30	17	4.1	3.8	3.4
8	13	15	17	20	19	18	22	28	15	4.3	2.5	2.9
9	13	15	25	18	18	18	23	25	14	4.5	2.2	2.5
10	14	14	18	19	17	20	25	25	14	8.2	2.0	2.2
11	14	13	22	40	21	17	22	21	13	6.9	1.7	2.1
12	14	12	22	34	18	17	20	20	12	4.5	1.5	1.6
13	14	12	20	26	18	25	21	25	32	4.1	1.4	1.3
14	15	12	21	22	17	28	21	20	56	14	1.3	1.3
15	32	13	22	20	17	24	25	18	38	13	1.1	1.8
16	16	14	19	19	17	22	22	17	24	7.1	1.0	2.8
17	18	13	19	19	17	21	19	16	19	5.3	1.0	2.9
18	14	13	28	18	15	30	19	42	16	4.5	0.99	2.4
19	13	13	23	18	15	31	18	27	15	4.4	1.0	2.0
20	13	13	20	19	16	173	19	20	14	4.1	0.90	1.9
21	13	13	18	18	16	105	18	19	12	3.8	0.77	2.0
22	12	13	17	19	15	62	24	18	12	3.3	0.67	4.4
23	13	13	17	21	14	47	20	17	11	2.8	0.81	9.6
24	13	13	21	35	14	41	18	16	10	4.3	19	4.9
25	13	76	19	40	14	36	18	16	9.4	3.7	10	3.1
26	12	86	18	28	14	35	18	15	8.7	22	3.8	10
27	11	28	17	25	14	64	17	126	8.6	16	3.1	49
28	11	21	17	23	14	42	90	234	8.7	9.0	7.7	32
29	12	19	17	21	---	36	66	53	12	6.6	27	12
30	13	18	19	20	---	34	40	36	9.0	5.0	12	7.9
31	13	---	14	25	---	33	---	28	---	4.2	6.9	---
TOTAL	438	560	577	669	487	1143	796	1265	512.4	208.0	134.04	200.0
MEAN	14.1	18.7	18.6	21.6	17.4	36.9	26.5	40.8	17.1	6.71	4.32	6.67
MAX	32	86	28	40	25	173	90	234	56	22	27	49
MIN	11	12	14	13	14	14	17	15	8.6	2.8	0.67	1.3
CFSM	0.22	0.30	0.30	0.34	0.28	0.59	0.42	0.65	0.27	0.11	0.07	0.11
IN.	0.26	0.33	0.34	0.40	0.29	0.68	0.47	0.75	0.30	0.12	0.08	0.12

e Estimated

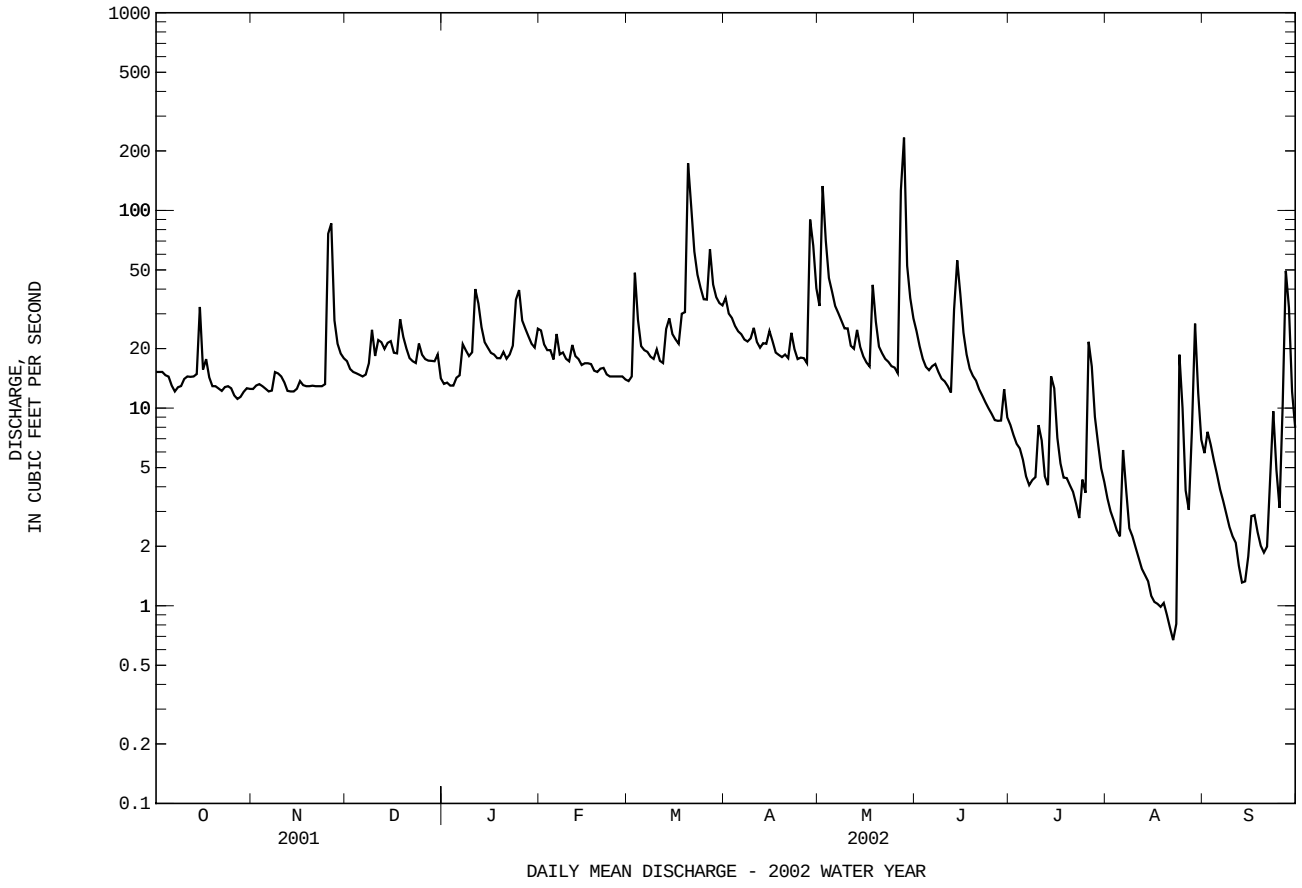
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1958, 1966 - 2002, BY WATER YEAR (WY)

MEAN	38.5	48.1	76.7	87.3	97.7	116	104	83.4	65.6	40.9	33.8	38.7
MAX	245	160	295	289	229	369	286	302	498	178	148	211
(WY)	1980	1997	1997	1996	1979	1993	1993	1988	1972	1987	1955	1971
MIN	8.21	12.5	14.6	15.5	17.4	36.9	26.5	25.8	13.9	4.65	4.32	6.67
(WY)	1987	1982	1999	1981	2002	2002	2002	1969	1999	1999	2002	2002

01643500 BENNETT CREEK AT PARK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1948 - 1958, 1966 - 2002	
ANNUAL TOTAL	15848.5		6989.44			
ANNUAL MEAN	43.4		19.1		69.0	
HIGHEST ANNUAL MEAN					141	1972
LOWEST ANNUAL MEAN					19.1	2002
HIGHEST DAILY MEAN	590	Mar 30	234	May 28	5500	Jun 22 1972
LOWEST DAILY MEAN	5.0	Sep 19	0.67	Aug 22	0.40	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	5.4	Sep 13	0.88	Aug 17	0.88	Aug 17 2002
MAXIMUM PEAK FLOW			1350	May 27	(a)32200	Jun 21 1972
MAXIMUM PEAK STAGE			4.65	May 27	(b)22.10	Jun 21 1972
INSTANTANEOUS LOW FLOW			0.67	(c)	0.30	Sep 8 1966
ANNUAL RUNOFF (CFSM)	0.69		0.30		1.10	
ANNUAL RUNOFF (INCHES)	9.39		4.14		14.93	
10 PERCENT EXCEEDS	88		33		130	
50 PERCENT EXCEEDS	26		16		42	
90 PERCENT EXCEEDS	12		3.1		14	

a From rating curve extended above 2,700 ft^3/s on basis of contracted-opening measurement at gage heights of 11.15, 14.33, and 22.1 ft.
b From floodmarks.
c Aug. 21-23.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01644000 GOOSE CREEK NEAR LEESBURG, VA

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

DRAINAGE AREA.--332 mi^2.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect, missing or doubtful gage-height record), which are fair. National Weather Service gage-height telemeter at station.

COOPERATION.--Records were provided by the Virginia Department of Environmental Quality - Water Division.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1889 reached a stage of about 29 ft, discharge, about 45,000 ft^3/s, site and datum in use 1930-38, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	2245	*1,850	*3.85	No peak greater than base discharge.			

Minimum discharge, 2.4 ft^3/s, Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	24	45	e29	45	34	158	352	137	38	18	8.6
2	39	26	41	e26	46	35	142	e800	113	33	14	11
3	35	32	40	e27	44	150	119	e720	90	30	11	11
4	33	25	39	28	41	178	105	289	79	27	10	9.1
5	32	21	36	27	37	99	94	252	79	24	10	8.2
6	30	21	35	29	35	77	89	217	114	20	23	7.2
7	37	21	33	39	37	67	83	187	113	17	32	6.2
8	40	21	38	45	42	60	78	183	89	16	16	5.7
9	39	21	56	43	44	56	77	e171	73	15	10	5.1
10	38	22	58	43	45	54	89	e150	65	17	7.6	4.8
11	38	23	70	46	45	51	87	e140	59	17	6.5	5.2
12	44	23	80	53	45	47	76	e130	53	20	5.6	5.7
13	43	23	78	57	44	57	76	e129	64	17	4.6	6.1
14	40	23	71	50	42	80	79	115	383	151	3.9	6.5
15	93	23	67	46	41	82	85	101	604	209	2.7	7.5
16	69	24	61	43	39	71	87	88	323	83	2.6	9.3
17	54	23	55	40	39	67	77	82	171	44	2.9	12
18	36	24	57	39	38	83	70	114	123	30	3.2	e10
19	28	24	56	39	37	97	69	149	e315	24	3.2	e9.0
20	22	24	53	40	35	447	120	106	e210	21	2.9	e7.8
21	21	24	48	42	36	522	149	87	156	22	2.6	e7.0
22	23	24	44	42	36	286	363	78	112	18	2.5	22
23	21	24	43	41	36	200	350	73	90	15	3.1	48
24	23	26	46	44	34	164	212	70	77	16	3.3	22
25	25	58	46	49	33	143	169	66	67	18	3.1	11
26	22	213	46	49	33	135	151	e63	60	25	3.1	10
27	20	124	43	47	35	331	124	e690	58	63	3.2	102
28	20	72	39	43	35	257	654	e450	58	175	5.5	141
29	20	57	39	42	---	189	1070	340	51	70	18	79
30	20	50	33	44	---	165	499	226	43	36	16	46
31	21	---	e32	43	---	151	---	171	---	24	9.3	---
TOTAL	1069	1140	1528	1275	1099	4435	5601	6789	4029	1335	259.4	644.0
MEAN	34.5	38.0	49.3	41.1	39.2	143	187	219	134	43.1	8.37	21.5
MAX	93	213	80	57	46	522	1070	800	604	209	32	141
MIN	20	21	32	26	33	34	69	63	43	15	2.5	4.8
CFSM	0.10	0.11	0.15	0.12	0.12	0.43	0.56	0.66	0.40	0.13	0.03	0.06
IN.	0.12	0.13	0.17	0.14	0.12	0.50	0.63	0.76	0.45	0.15	0.03	0.07

e Estimated

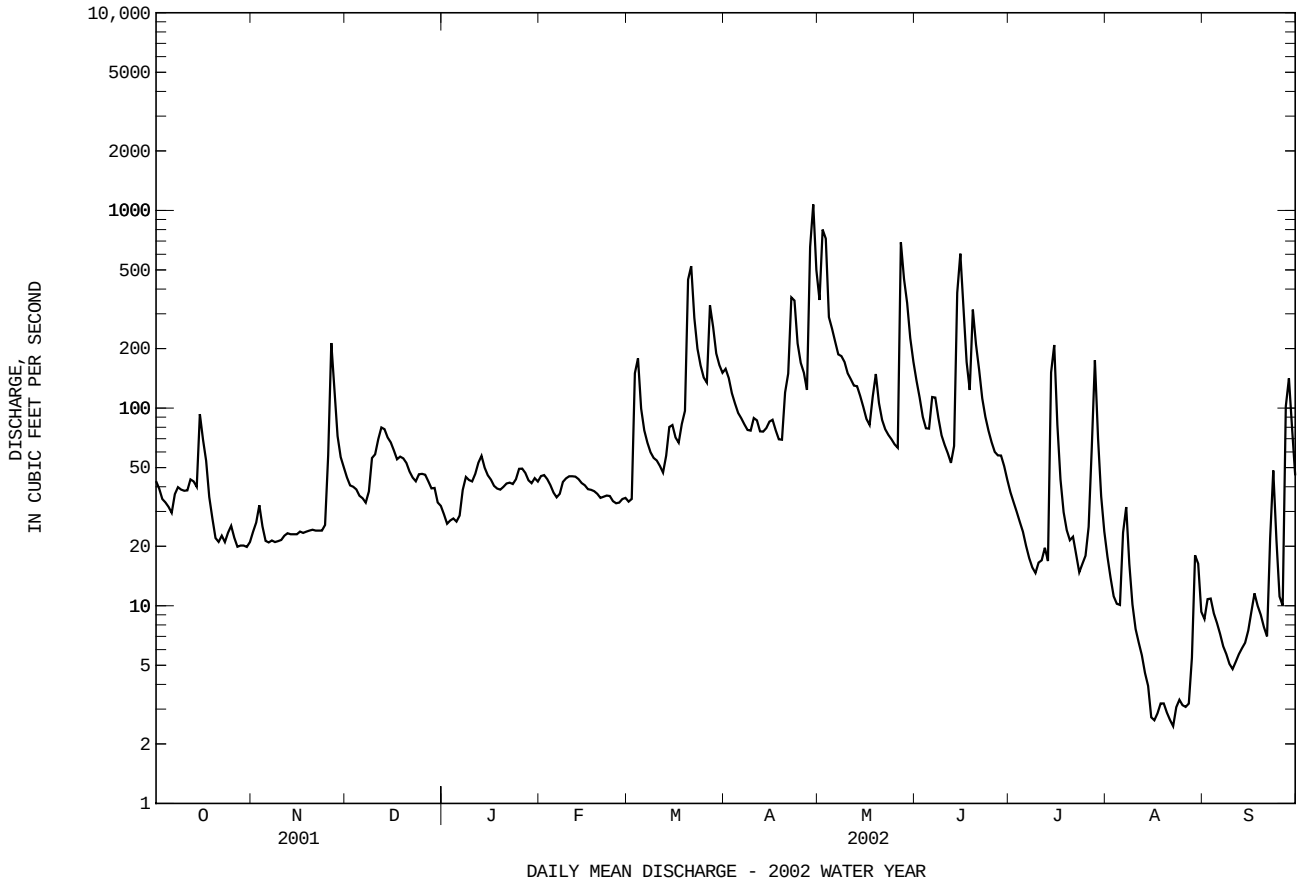
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1912, 1930 - 2002, BY WATER YEAR (WY)

MEAN	192	215	324	407	504	590	512	362	255	136	152	134
MAX	2265	1155	1316	1499	1621	1892	1766	1322	2887	1207	1188	1054
(WY)	1943	1933	1993	1996	1998	1993	1983	1989	1972	1956	1937	1945
MIN	2.12	3.83	14.8	25.8	26.3	83.6	141	85.5	24.8	6.46	1.86	1.38
(WY)	1931	1931	1966	1966	1931	1931	1981	1969	1999	1999	1930	1985

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1909 - 1912, 1930 - 2002	
ANNUAL TOTAL	77863.2		29203.4			
ANNUAL MEAN	213		80.0		317	
HIGHEST ANNUAL MEAN					664	1972
LOWEST ANNUAL MEAN					55.2	1931
HIGHEST DAILY MEAN	3700	Mar 30	1070	Apr 29	(e)53600	Jun 22 1972
LOWEST DAILY MEAN	5.7	Sep 19	2.5	Aug 22	0.40	(a)
ANNUAL SEVEN-DAY MINIMUM	6.5	Sep 13	2.8	Aug 16	0.45	Sep 19 1985
MAXIMUM PEAK FLOW			1850	Apr 28	(b)78100	Jun 22 1972
MAXIMUM PEAK STAGE			3.89	Apr 28	(c)30.59	Jun 22 1972
INSTANTANEOUS LOW FLOW			2.4	Aug 22	(d)	(f)
ANNUAL RUNOFF (CFSM)	0.64		0.24		0.96	
ANNUAL RUNOFF (INCHES)	8.72		3.27		12.99	
10 PERCENT EXCEEDS	503		171		700	
50 PERCENT EXCEEDS	89		43		157	
90 PERCENT EXCEEDS	23		9.3		17	

e Estimated.
a Sept. 27-30, 1941.
b From rating curve extended above 11,000 ft^3/s on basis of slope-area measurement of peak flow.
c From high-water mark in gage house.
d Not determined.
f Probably occurred Sept. 27-30, 1941.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

Photo by USGS Personal

Gage house at Goose Creek near Leesburg, VA (01644000).

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD--Water years 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
23...	*0930*	*REPLICATE*	--	--	--	--	--	--	--	--	*.31*	--
23...	0935	ENVIRONMENTAL	21	198	7.1	14.5	13.5	747	6.8	67	--	--
NOV												
25...	1800	ENVIRONMENTAL	59	193	7.7	--	--	--	--	--	.89	--
25...	1930	ENVIRONMENTAL	87	198	7.5	--	--	--	8.8	--	.38	--
25...	2330	ENVIRONMENTAL	163	196	7.6	--	--	--	--	--	.40	--
26...	1000	ENVIRONMENTAL	186	172	7.8	--	--	--	--	--	1.2	.33
26...	1100	ENVIRONMENTAL	186	179	7.6	--	--	--	--	--	1.0	.32
26...	1300	ENVIRONMENTAL	197	178	7.3	--	--	--	--	--	.91	.30
26...	1500	ENVIRONMENTAL	215	180	7.2	--	--	--	--	--	.90	.29
27...	1200	ENVIRONMENTAL	121	191	7.2	--	--	--	--	--	.74	.19
DEC												
19...	*0925*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	0930	ENVIRONMENTAL	62	187	7.5	5.5	6.2	750	10.1	83	.42	--
JAN												
28...	0900	ENVIRONMENTAL	43	198	6.8	2.0	2.8	754	13.4	100	.81	.27
FEB												
19...	*0845*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	0900	ENVIRONMENTAL	38	185	7.7	1.5	2.5	759	13.2	98	.43	.18
MAR												
02...	2330	ENVIRONMENTAL	51	190	7.5	--	--	--	--	--	.40	.12
03...	0230	ENVIRONMENTAL	85	185	7.4	--	--	--	--	--	.60	.17
03...	0530	ENVIRONMENTAL	166	175	7.5	--	--	--	--	--	.68	.23
03...	1430	ENVIRONMENTAL	160	182	7.3	--	--	--	--	--	1.0	.39
04...	1100	ENVIRONMENTAL	176	202	7.2	.0	6.4	758	13.5	110	.89	.42
07...	0915	ENVIRONMENTAL	68	192	7.3	5.5	4.4	759	11.1	86	.79	.47
26...	2115	ENVIRONMENTAL	151	182	7.6	--	--	--	--	--	1.0	.58
27...	0615	ENVIRONMENTAL	305	172	7.6	--	--	--	--	--	1.1	.53
27...	*0620*	*REPLICATE*	--	--	--	--	--	--	--	--	*1.2*	*.54*
27...	1900	ENVIRONMENTAL	382	172	7.6	--	--	--	--	--	1.3	.59
28...	1215	ENVIRONMENTAL	251	171	7.7	15.0	9.8	757	12.1	107	1.0	.56
APR												
10...	0945	ENVIRONMENTAL	91	181	7.5	13.8	12.0	762	9.4	87	.45	.19
MAY												
06...	0930	ENVIRONMENTAL	223	162	7.2	14.5	14.8	760	9.5	94	.83	.47
JUN												
26...	0930	ENVIRONMENTAL	60	183	7.0	26.0	24.1	752	6.1	73	.84	.42
JUL												
09...	0930	ENVIRONMENTAL	15	200	7.3	23.0	24.3	753	9.2	112	.49	.18
AUG												
20...	0900	ENVIRONMENTAL	2.8	227	7.0	28.0	26.1	756	7.4	92	1.1	.84
SEP												
10...	1000	ENVIRONMENTAL	4.9	219	7.2	23.0	21.4	751	8.5	97	.48	.09

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
23...	*<.002*	*.033*	*<.015*	*.28*	*.19*	*.22*	--	--	*.036*	*.016*	*.008*	*1.5*	--
23...	<.002	.034	E.010	--	--	--	--	--	.036	.017	.009	--	--
NOV													
25...	E.002	.062	<.015	.83	.68	.74	--	--	.053	.019	.009	10	1.6
25...	E.002	.041	<.015	.34	.21	.25	--	--	.042	.011	E.004	12	2.8
25...	<.002	.040	<.015	.36	.21	.25	--	--	.053	.011	E.004	18	7.9
26...	.007	.341	<.015	.85	.42	.77	--	--	.194	.067	.050	37	18.6
26...	.007	.330	<.015	.68	.32	.65	--	--	.169	.058	.045	26	13.1
26...	.007	.309	<.015	.60	.32	.63	--	--	.141	.047	.033	22	11.7
26...	.007	.297	<.015	.60	.29	.59	--	--	.126	.040	.027	16	9.3
27...	.005	.194	<.015	.54	.30	.49	--	--	.082	.030	.020	7.0	2.3
DEC													
19...	*<.002*	*<.013*	*<.015*	--	--	--	--	--	*<.004*	*<.004*	*<.007*	*1.3*	--
19...	E.002	.198	<.015	.22	.16	.36	--	--	.045	.017	.009	4.3	.72
JAN													
28...	.003	.274	<.015	.54	.17	.44	--	--	.028	.017	.013	3.8	.44
FEB													
19...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	--	--
19...	.003	.183	<.015	.24	.18	.37	--	--	.033	.015	.008	3.8	.39
MAR													
02...	.003	.124	<.015	.27	.29	.42	--	--	.034	.012	<.007	6.1	.84
03...	.003	.173	<.015	.43	.20	.38	--	--	.069	.011	<.007	36	8.2
03...	.003	.229	<.015	.45	.24	.47	--	--	.070	.013	<.007	35	15.9
03...	.007	.397	.051	.62	.42	.81	.57	.36	.080	.019	<.007	24	10.2
04...	.007	.431	<.015	.46	.29	.73	--	--	.060	.020	.011	15	7.2
07...	.005	.473	<.015	.32	.23	.70	--	--	.043	.017	.009	9.6	1.8
26...	.005	.587	.019	.44	.32	.91	.42	.30	.045	.013	.009	8.2	3.3
27...	.006	.533	.040	.54	.29	.82	.50	.25	.108	.024	.015	42	34.6
27...	*.006*	*.542*	*.037*	*.61*	*.31*	*.85*	*.58*	*.27*	*.111*	*.023*	*.014*	*34*	--
27...	.007	.596	.052	.66	.34	.94	.61	.29	.124	.024	.014	44	45.7
28...	.006	.570	.029	.46	.35	.92	.43	.32	.065	.015	.009	9.4	6.4
APR													
10...	.008	.200	E.009	.25	.24	.44	--	--	.035	.014	E.005	3.2	.79
MAY													
06...	.007	.477	.026	.35	.28	.76	.32	.26	.057	.024	.013	11	6.5
JUN													
26...	.009	.431	.053	.41	.32	.75	.35	.27	.069	.033	.022	15	2.4
JUL													
09...	.006	.184	.048	.31	.29	.48	.26	.24	.051	.028	.018	5.2	.21
AUG													
20...	.008	.844	.020	.22	.18	1.0	.20	.16	.016	.011	E.006	4.5	.03
SEP													
10...	.004	.098	.058	.38	.29	.39	.32	.24	.039	.023	.014	2.5	.03

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

01644000 GOOSE CREEK NEAR LEESBURG, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
23...	--
23...	--
NOV	
25...	84
25...	84
25...	90
26...	98
26...	94
26...	97
26...	88
27...	86
DEC	
19...	--
19...	--
JAN	
28...	--
FEB	
19...	--
19...	--
MAR	
02...	--
03...	--
03...	--
03...	--
04...	--
07...	--
26...	--
27...	97
27...	--
27...	--
28...	--
APR	
10...	--
MAY	
06...	--
JUN	
26...	--
JUL	
09...	--
AUG	
20...	--
SEP	
10...	--

01644600 GREAT SENECA CREEK NEAR QUINCE ORCHARD, MD

LOCATION.--Lat 39°07'58.3", long 77°16'05.2", Montgomery County, Hydrologic Unit 02060008, on left bank 10 ft downstream from bridge on Riffle Ford Road, 1.35 mi northwest of Quince Orchard, 1.75 mi southeast of the intersection of Maryland Route 118 and Riffle Ford Road, and 4.5 mi upstream from the confluence with Little Seneca Creek.

DRAINAGE AREA.--50.7 mi^2.

PERIOD OF RECORD.--July 1997 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 265 ft above National Geodetic Vertical Datum of 1929, from topographic maps.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Records include pumpage from a Washington Suburban Sanitary Commission wastewater facility located immediately upstream from station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 25	2315	*1,310	*8.25	No other peak greater than base discharge.			

Minimum discharge, 4.7 ft^3/s, Aug. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	28	36	30	41	28	50	45	39	19	15	84
2	30	29	35	29	36	32	40	326	34	17	14	40
3	28	29	34	30	34	121	31	96	31	15	44	26
4	28	29	33	30	35	49	37	58	30	16	56	21
5	27	28	32	28	32	37	34	53	28	16	38	19
6	26	29	32	44	32	35	34	48	28	14	78	16
7	27	29	31	69	36	34	34	44	31	14	26	15
8	27	28	46	49	36	32	33	40	27	15	19	15
9	27	26	62	38	32	32	39	38	25	21	16	14
10	28	26	41	37	32	34	51	37	24	43	15	14
11	28	28	60	61	39	31	37	32	23	20	14	13
12	28	27	47	50	34	30	34	33	22	15	14	13
13	28	27	42	40	32	58	34	38	104	15	13	12
14	37	27	45	37	30	47	34	33	93	151	12	12
15	92	28	44	34	30	38	46	31	161	44	12	13
16	42	28	37	25	30	35	38	28	50	25	13	14
17	47	28	38	33	30	37	34	29	36	20	12	14
18	34	28	67	32	29	60	31	110	30	16	12	13
19	32	28	46	33	29	45	30	51	27	16	12	12
20	31	29	39	41	29	195	30	37	26	15	12	13
21	31	29	37	38	30	95	30	31	24	14	10	12
22	30	28	35	37	29	57	76	28	23	14	11	12
23	30	28	34	37	28	47	39	27	22	30	11	24
24	30	29	47	51	27	44	27	26	21	75	18	16
25	29	243	39	51	28	42	35	27	20	23	19	13
26	28	294	36	40	28	52	33	66	20	101	13	105
27	28	62	34	37	25	106	30	403	20	48	15	178
28	28	46	33	36	28	53	309	313	20	28	121	216
29	29	40	33	35	---	46	102	76	26	22	139	40
30	71	38	31	33	---	43	57	52	21	19	39	26
31	28	---	31	45	---	44	---	43	---	16	25	---
TOTAL	1040	1396	1237	1210	881	1639	1469	2299	1086	917	868	1035
MEAN	33.5	46.5	39.9	39.0	31.5	52.9	49.0	74.2	36.2	29.6	28.0	34.5
MAX	92	294	67	69	41	195	309	403	161	151	139	216
MIN	26	26	31	25	25	28	27	26	20	14	10	12
(†)	-10.0	-9.9	-10.3	-9.7	-9.6	-10.1	-9.3	-9.5	-9.7	-9.7	-9.5	-9.7
MEAN‡	23.5	36.5	29.2	29.0	21.8	42.4	39.6	62.3	23.7	18.5	18.5	24.7
CFSM‡	.46	.72	.58	.57	.43	.84	.78	1.23	.47	.36	.36	.49
IN‡	.54	.80	.66	.66	.45	.96	.87	1.42	.52	.42	.42	.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

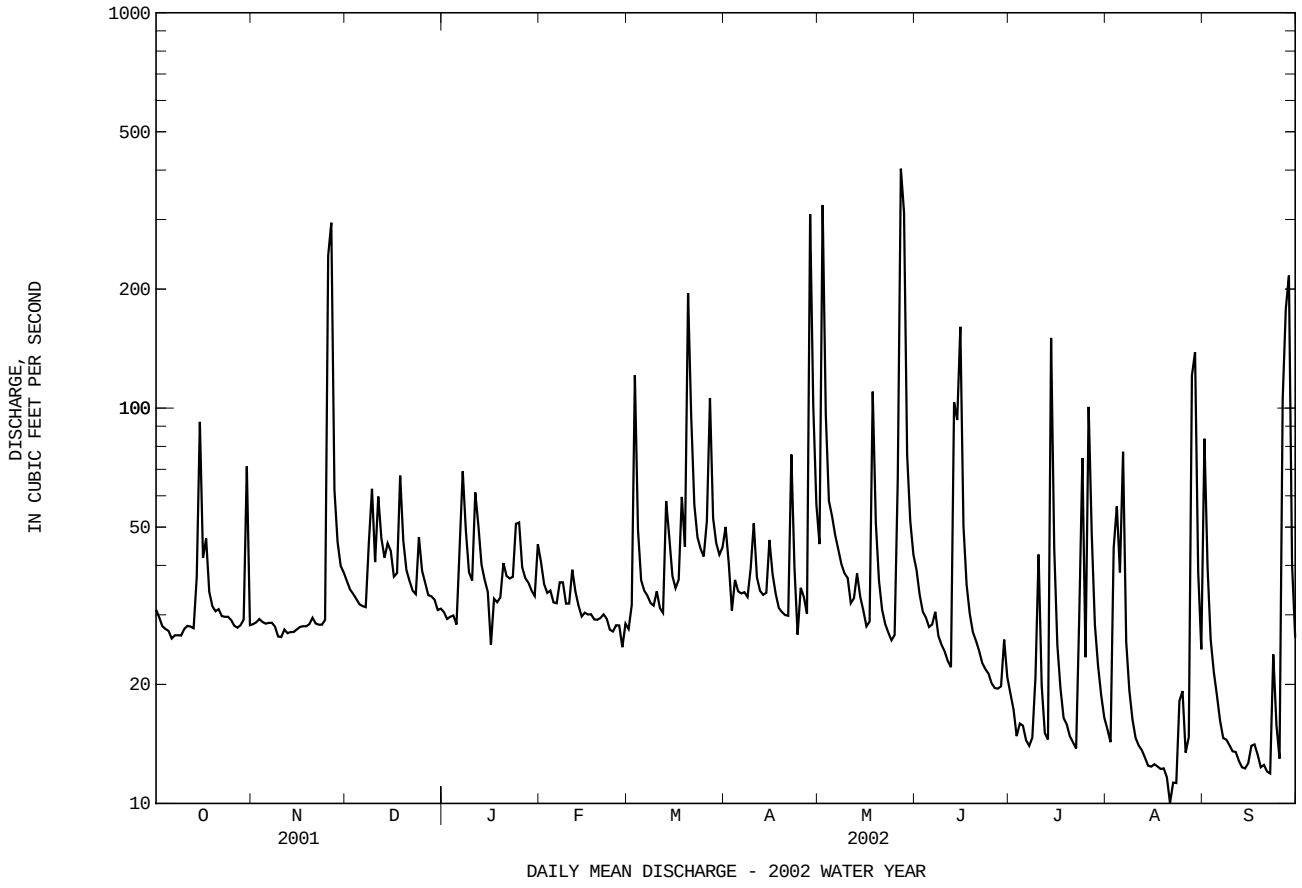
MEAN	39.3	52.5	49.8	72.9	78.0	103	81.3	74.5	65.1	37.1	49.9	62.8
MAX	60.5	91.2	75.5	116	155	175	123	121	111	56.6	88.5	137
(WY)	2000	1998	2000	1998	1998	1998	2000	1998	2001	2000	2000	1999
MIN	30.4	28.8	28.2	39.0	31.5	52.9	49.0	39.2	31.6	21.1	28.0	20.6
(WY)	1998	1999	1999	2002	2002	2002	2002	1999	1999	1999	2002	1998

† Pumpage in cubic feet per second, from Washington Suburban Sanitary Commission.
‡ Adjusted for pumpage.

01644600 GREAT SENECA CREEK NEAR QUINCE ORCHARD, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	23910		15077			
ANNUAL MEAN	65.5		41.3		64.7	
ANNUAL MEAN‡	55.4		30.9		55.6	
HIGHEST ANNUAL MEAN					83.0	1998
LOWEST ANNUAL MEAN					41.3	2002
HIGHEST DAILY MEAN	1190	Jun 7	403	May 27	1480	Mar 21 1998
LOWEST DAILY MEAN	22	(a)	10	Aug 21	10	Aug 21 2002
ANNUAL SEVEN-DAY MINIMUM	22	Sep 13	11	Aug 17	11	Aug 17 2002
MAXIMUM PEAK FLOW			1310	Nov 25	(b)2630	Aug 11 2001
MAXIMUM PEAK STAGE			8.25	Nov 25	10.54	Aug 11 2001
INSTANTANEOUS LOW FLOW			4.7	Aug 21	4.7	Aug 21 2002
ANNUAL RUNOFF (CFSM)	1.29		0.81		1.28	
ANNUAL RUNOFF (CFSM)‡	1.09		0.61		1.10	
ANNUAL RUNOFF (INCHES)	17.54		11.06		17.35	
ANNUAL RUNOFF (INCHES)‡	14.84		8.27		14.90	
10 PERCENT EXCEEDS	97		60		107	
50 PERCENT EXCEEDS	46		31		43	
90 PERCENT EXCEEDS	28		15		22	

‡ Adjusted for inflow.
a September 15-19.
b From rating curve extended above 500 ft^3/s.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01645000 SENECA CREEK AT DAWSONVILLE, MD

LOCATION.--Lat 39°07'41.1", long 77°20'08.8", Montgomery County, Hydrologic Unit 02070008, on right bank 60 ft downstream from bridge on State Highway 28, 150 ft downstream from mouth of Great Seneca Creek, 0.5 mi east of Dawsonville, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--101 mi^2.

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

REVISED RECORDS.--WSP 726: Drainage area. WSP 1232: 1930. WSP 1272: 1933. WSP 1432: 1934-35(M), 1941(M). WDR MD-DE-74-1: 1970(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 3, 1934. Datum of gage is 214.02 ft above National Geodetic Vertical Datum of 1929. Sept. 26 to Nov. 9, 1930, chain gage, and Nov. 10, 1930 to Apr. 6, 1934, water-stage recorder, at highway bridge 60 ft upstream at same datum.

REMARKS.--No estimated discharge records. Records good. Small diversion at times for irrigation upstream from station. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	2145	*5,730	*9.26	No other peak greater than base discharge.			

Minimum discharge, 14 ft^3/s, Sept. 21, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	41	57	42	66	41	73	75	67	28	23	109
2	45	41	53	42	62	43	63	430	61	26	21	56
3	43	42	51	42	55	170	53	229	58	24	27	36
4	41	41	49	43	56	86	57	126	52	23	82	29
5	41	40	48	40	55	64	55	82	49	23	45	26
6	38	41	47	50	50	58	54	71	49	22	109	24
7	38	41	46	94	54	56	53	66	50	21	37	22
8	37	41	55	75	57	53	52	63	45	22	28	22
9	38	39	90	60	51	52	55	65	42	24	25	72
10	39	38	65	57	51	56	72	67	41	56	22	214
11	39	40	84	84	62	51	57	56	38	30	21	175
12	40	38	73	83	54	47	53	53	37	24	21	87
13	39	38	66	68	52	77	52	58	103	105	25	121
14	41	39	69	60	48	75	53	52	127	201	69	114
15	121	40	66	57	47	61	68	49	212	65	70	50
16	57	40	57	48	49	57	61	46	109	37	83	20
17	66	39	55	52	50	56	63	45	59	30	101	19
18	50	39	94	52	49	84	60	139	51	26	27	19
19	45	39	75	51	44	70	59	77	47	25	20	16
20	44	39	66	60	44	281	53	57	44	24	133	17
21	44	39	59	59	46	197	47	52	41	23	141	17
22	42	38	54	57	47	118	103	48	39	22	57	17
23	42	39	52	58	44	92	62	54	37	21	43	29
24	42	39	66	74	42	80	51	54	36	90	21	23
25	41	177	59	85	43	73	55	48	31	33	26	18
26	40	384	53	67	44	113	51	63	30	107	19	66
27	39	93	50	62	42	237	47	1360	30	69	20	196
28	40	70	49	60	45	145	398	789	30	39	91	218
29	42	63	49	56	---	116	245	271	34	32	171	55
30	82	60	48	55	---	86	133	181	30	28	52	35
31	40	---	43	66	---	66	---	93	---	25	33	---
TOTAL	1443	1798	1848	1859	1409	2861	2358	4919	1679	1325	1663	1922
MEAN	46.5	59.9	59.6	60.0	50.3	92.3	78.6	159	56.0	42.7	53.6	64.1
MAX	121	384	94	94	66	281	398	1360	212	201	171	218
MIN	37	38	43	40	42	41	47	45	30	21	19	16
CFSM	0.46	0.59	0.59	0.59	0.50	0.91	0.78	1.57	0.55	0.42	0.53	0.63
IN.	0.53	0.66	0.68	0.68	0.52	1.05	0.87	1.81	0.62	0.49	0.61	0.71

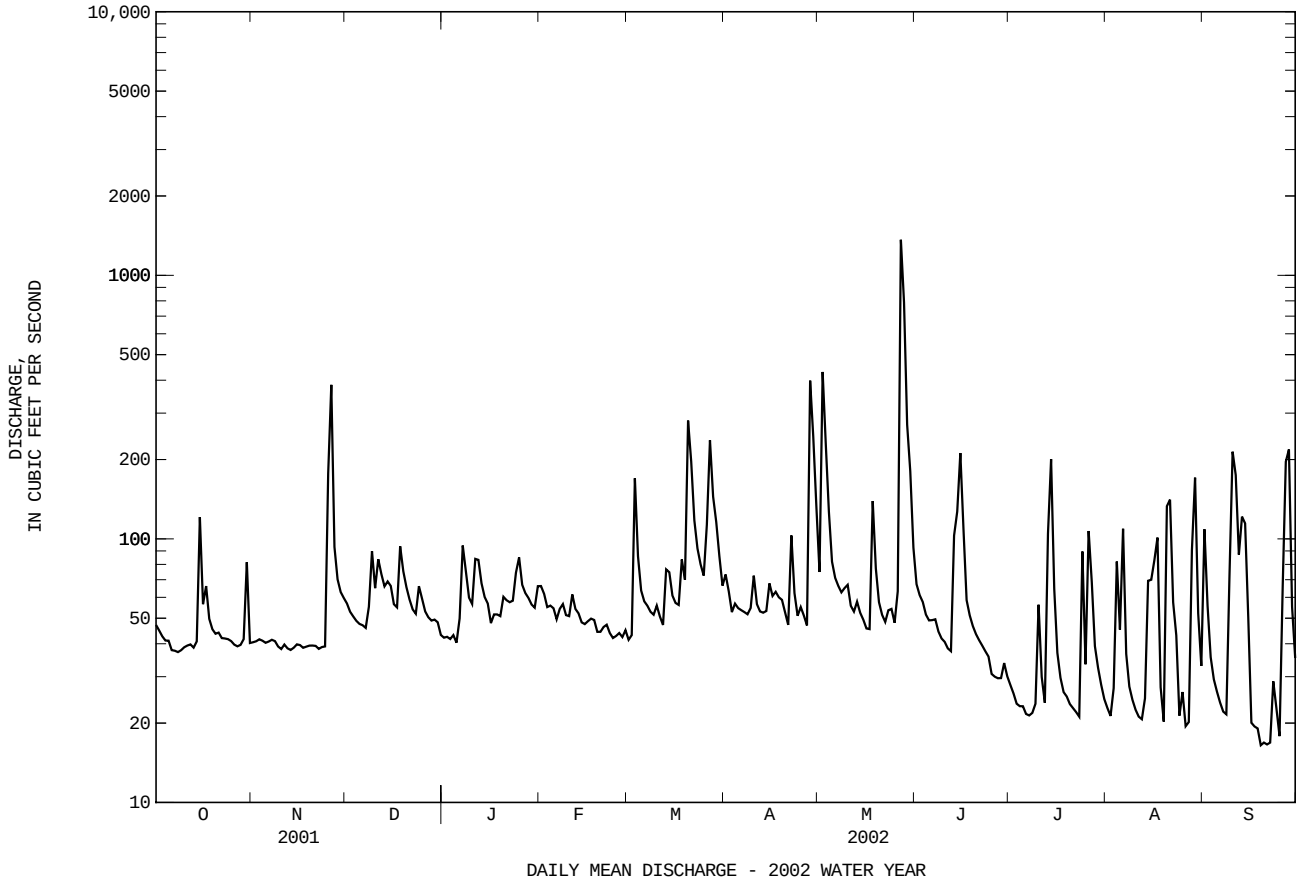
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

MEAN	68.1	84.1	109	129	146	162	148	127	105	75.3	68.5	78.8
MAX	479	290	452	440	484	511	457	510	747	273	248	566
(WY)	1980	1994	1997	1996	1979	1993	1993	1989	1972	1956	1971	1971
MIN	7.10	12.6	20.6	30.2	26.7	44.3	55.9	30.3	35.3	13.4	8.35	10.1
(WY)	1931	1932	1932	1966	1931	1931	1969	1931	1986	1955	1932	1931

01645000 SENECA CREEK AT DAWSONVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1930 - 2002	
ANNUAL TOTAL	37834		25084			
ANNUAL MEAN	104		68.7		108	
HIGHEST ANNUAL MEAN					251	1972
LOWEST ANNUAL MEAN					32.8	1931
HIGHEST DAILY MEAN	1870	Jun 7	1360	May 27	9900	Jun 22 1972
LOWEST DAILY MEAN	30	Sep 18	16	Sep 19	1.8	(a)
ANNUAL SEVEN-DAY MINIMUM	31	Sep 13	18	Sep 16	2.2	Sep 27 1930
MAXIMUM PEAK FLOW			5730	May 27	(b)26100	Jun 22 1972
MAXIMUM PEAK STAGE			9.26	May 27	(c)16.40	Jun 22 1972
INSTANTANEOUS LOW FLOW			14	(d)	1.7	(f)
ANNUAL RUNOFF (CFSM)	1.03		0.68		1.07	
ANNUAL RUNOFF (INCHES)	13.93		9.24		14.55	
10 PERCENT EXCEEDS	186		109		189	
50 PERCENT EXCEEDS	68		52		68	
90 PERCENT EXCEEDS	39		25		27	

a Sept. 29, 1930, Sept. 12, 1966.
b From rating curve extended above 3,000 ft^3/s on basis of contracted-opening and flow over-road measurement at gage height 12.17 ft at gage; and contracted-opening and flow-over-road measurement at gage height 16.32 ft at site 5.0 mi downstream, adjusted for flow from intervening area.
c From high-water mark in gage house.
d Sept. 21, 25.
f Sept. 28, 29, 1930.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'59.2", long 77°07'39.5", Montgomery County, Hydrologic Unit 02070008, on left bank just upstream from Little Falls Dam, 1 mi upstream from District of Columbia boundary line, 1.2 mi upstream from Chain Bridge, 1.8 mi east of Langley, Fairfax County, and at mile 117.4.

DRAINAGE AREA.--11,560 mi^2.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--No estimated daily discharges. Records good. Diversions at Great Falls through aqueducts, and since June 1959, from gage pool at Little Falls Dam, for municipal supply of Washington, D.C.; since October 1958, at Rockville Filtration Plant, for municipal supply of city of Rockville; since April 1961, at Potomac Filtration Plant for water supply of Washington Suburban Sanitary District; since October 1961, at Fairfax Water Treatment Plant for water supply of city of Fairfax (from Goose Creek); since April 1964, at Violets Lock to Chesapeake and Ohio Canal; and since October 1985, at Fairfax County Water Authority Treatment Plant for water supply of the county. Low flow affected slightly prior to July 1981 by Stony River Reservoir, since December 1950, by Savage River Reservoir (see station 01597500), and since July 1981, by Jennings Randolph Lake. National Weather Service gage-height telemeter at station. U.S. Geological Survey satellite collection platform at station.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 24	1230	*55,400	*6.97	No other peak greater than base discharge.			

Minimum discharge, 228 ft^3/s, Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1630	872	1780	945	2670	1360	8790	38300	8630	1360	4160	1940
2	1500	910	1630	943	2470	1400	7950	29300	6930	1390	3140	1740
3	1350	952	1440	919	2430	2210	9070	22900	5740	1250	2340	1250
4	1290	927	1380	1060	2370	2310	11000	23700	5100	1110	1840	1070
5	1180	881	1330	1010	2320	2370	10600	20600	4680	911	1600	944
6	1090	877	1320	1240	2280	2420	9240	15200	4250	809	1490	843
7	1150	909	1230	1520	2230	2460	7470	13000	3950	758	1320	788
8	1020	921	1280	1480	2140	2590	6280	11100	4140	549	1240	711
9	921	820	1520	1370	2060	2770	5880	9930	4220	386	1220	421
10	937	849	1420	1430	1980	2810	5720	10800	4160	480	1200	574
11	920	934	1610	1470	1910	2400	5030	15700	3610	580	1190	569
12	1050	888	1740	1640	1890	2290	4740	16200	3170	455	924	453
13	1340	893	1680	1800	1880	2490	4640	14000	2940	399	675	319
14	1270	884	1750	1750	1810	2500	4170	12100	3350	1340	448	398
15	1560	887	1840	1870	1760	2380	4120	11200	4990	1730	438	435
16	1470	864	1800	1970	1760	2280	4810	10700	5590	1340	378	373
17	1540	872	1890	2020	1690	2280	10400	9460	4800	1310	488	303
18	1430	873	1950	1900	1740	2470	10600	8870	4840	1560	372	394
19	1330	900	1990	1770	1680	2560	10200	9000	4530	2030	265	366
20	1410	867	2040	1720	1680	3830	8620	22800	3700	1660	258	409
21	1230	915	1870	1700	1650	8000	7560	21600	3000	1360	394	344
22	1160	883	1800	1600	1580	23200	7880	15400	2530	1150	330	351
23	1240	894	1640	1570	1540	25600	11000	12500	2170	1220	312	404
24	1130	971	1840	1660	1570	16400	48500	10900	1840	2000	358	566
25	1140	1120	1730	1820	1410	12000	35400	9180	1660	1640	620	745
26	1030	2610	1650	1940	1430	9800	23500	7920	1590	1310	408	1220
27	1070	2410	1600	2290	1450	9610	17700	11500	1540	1790	633	2630
28	945	2090	1510	2510	1330	10300	17400	11500	1490	1960	1630	2880
29	891	1800	1420	2710	---	10200	16200	11700	1550	2010	2550	3230
30	930	1760	1380	3130	---	10200	30800	11200	1430	2880	1730	4340
31	911	---	1200	2780	---	9480	---	9770	---	5920	1470	---
TOTAL	37065	33233	50260	53537	52710	192970	365270	458030	112120	44647	35421	31010
MEAN	1196	1108	1621	1727	1882	6225	12180	14780	3737	1440	1143	1034
MAX	1630	2610	2040	3130	2670	25600	48500	38300	8630	5920	4160	4340
MIN	891	820	1200	919	1330	1360	4120	7920	1430	386	258	303
(†)	615	598	558	566	554	561	629	642	730	786	806	700
MEAN ‡	1810	1706	2179	2292	2436	6784	12800	15410	4466	2227	1949	1734
CFSM ‡	0.16	0.15	0.19	0.20	0.21	0.59	1.11	1.33	0.39	0.19	0.17	0.15
IN ‡	0.18	0.16	0.22	0.23	0.22	0.68	1.24	1.54	0.43	0.22	0.19	0.17

† Diversions, in cubic feet per second, for municipal supply of Washington, D.C., Washington Suburban Sanitary District, city of Rockville, city of Fairfax (from Goose Creek), Fairfax County, and the Chesapeake and Ohio Canal (insignificant diversion to canal during current water year). Records provided by U.S. Army Corps of Engineers, Washington Suburban Sanitary Commission, city of Rockville, city of Fairfax, and Fairfax County Water Authority.

‡ Adjusted for diversion.

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1958, BY WATER YEAR (WY) (UNREGULATED)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6120	6496	9843	13570	16660	21060	19120	13610	7960	5135	5804	4419
MAX	44100	21040	30900	37190	36790	76510	36430	27780	19090	21040	28210	19940
(WY)	1943	1933	1951	1937	1939	1936	1933	1932	1951	1949	1955	1945
MIN	583	700	1536	2527	2982	6505	7202	3953	2867	1284	569	679
(WY)	1931	1931	1944	1956	1934	1931	1947	1930	1930	1930	1930	1930

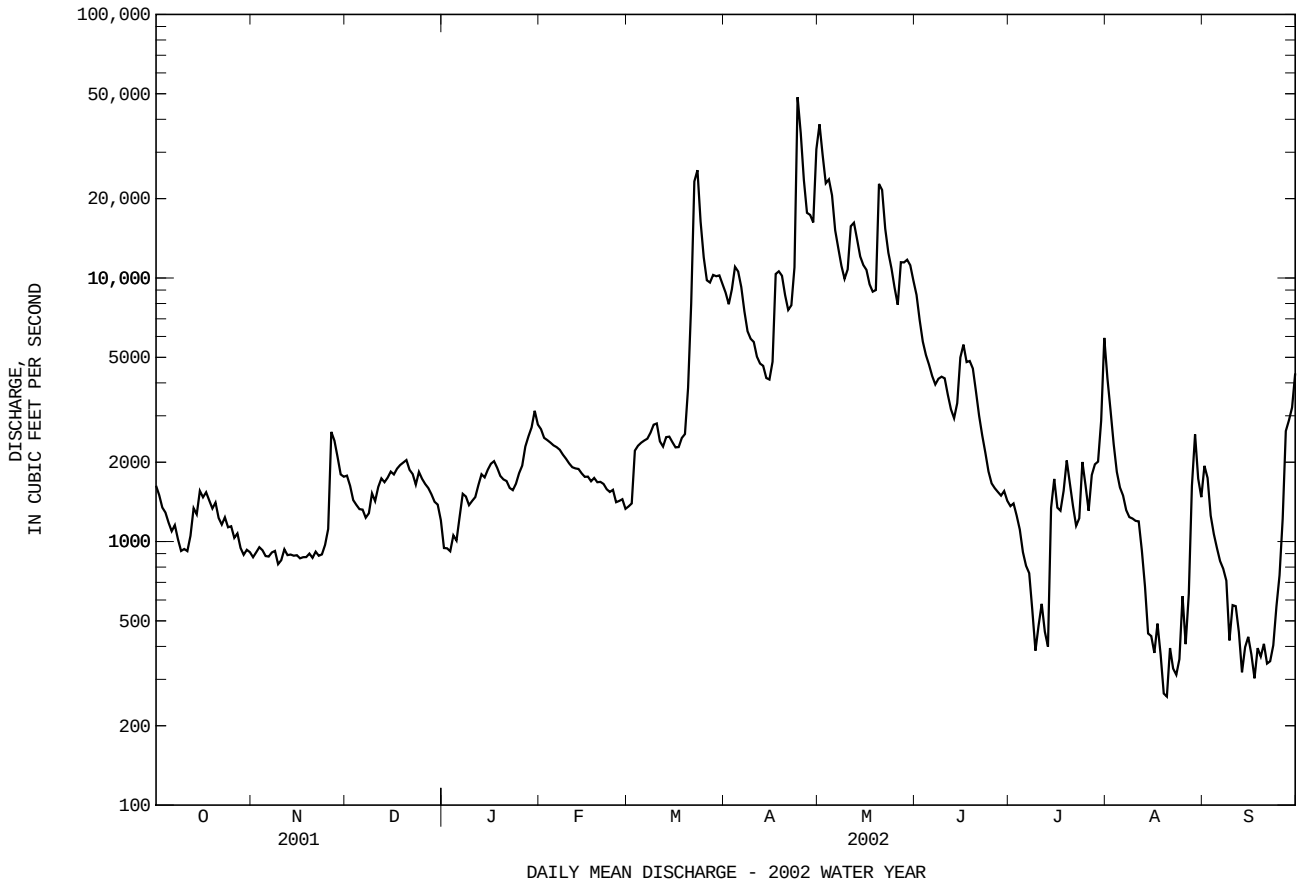
SUMMARY STATISTICS	WATER YEARS 1930 - 1958	
ANNUAL MEAN	10790	
HIGHEST ANNUAL MEAN	16100	1949
LOWEST ANNUAL MEAN	4525	1930
HIGHEST DAILY MEAN	426000	Mar 19 1936
LOWEST DAILY MEAN	448	Aug 25 1930
ANNUAL SEVEN-DAY MINIMUM	499	Aug 21 1930
INSTANTANEOUS PEAK FLOW	484000	Mar 19 1936
INSTANTANEOUS PEAK STAGE	(a)28.10	Mar 19 1936
INSTANTANEOUS LOW FLOW	430	Aug 24 1930
ANNUAL RUNOFF (CFSM)	.93	
ANNUAL RUNOFF (INCHES)	12.68	
10 PERCENT EXCEEDS	23600	
50 PERCENT EXCEEDS	6440	
90 PERCENT EXCEEDS	1810	

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY) (REGULATED, UNADJUSTED)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5879	7470	11070	13700	17250	24720	20480	14980	9141	4603	4053	4641
MAX	36790	42030	37630	52890	61040	67370	57850	40410	46630	17160	21720	44620
(WY)	1977	1986	1997	1996	1998	1994	1993	1989	1972	1972	1996	1996
MIN	908	1097	1038	1682	1883	6225	5810	3921	1536	599	538	791
(WY)	1964	1966	1966	1981	2002	2002	1995	1969	1999	1999	1966	1964

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1959 - 2002	
ANNUAL TOTAL	2573956		1466273			
ANNUAL MEAN	7052		4017		11470	
ANNUAL MEAN‡	7673		4662		11981	
HIGHEST ANNUAL MEAN					23760	1996
HIGHEST ANNUAL MEAN‡					24370	1996
LOWEST ANNUAL MEAN					4017	2002
LOWEST ANNUAL MEAN‡					4664	2002
HIGHEST DAILY MEAN	64600	Mar 23	48500	Apr 24	334000	Jun 24 1972
LOWEST DAILY MEAN	820	Nov 9	258	Aug 20	(b)121	Sep 9 1966
LOWEST DAILY MEAN‡	1450	Nov 10	994	Aug 13	(c)601	Sep 9 1966
ANNUAL SEVEN-DAY MINIMUM	878	Nov 14	327	Aug 18	181	Sep 7 1966
MAXIMUM PEAK FLOW			55400	Apr 24	359000	Jun 24 1972
MAXIMUM PEAK STAGE			6.97	Apr 24	22.03	Jun 24 1972
INSTANTANEOUS LOW FLOW			228	Aug 20	66	Sep 9 1966
ANNUAL RUNOFF (CFSM)	0.61		0.35		0.99	
ANNUAL RUNOFF (CFSM)‡	0.66		0.40		1.04	
ANNUAL RUNOFF (INCHES)	8.28		4.72		13.48	
ANNUAL RUNOFF (INCHES)‡	9.01		5.48		14.08	
10 PERCENT EXCEEDS	16900		10700		26200	
50 PERCENT EXCEEDS	4170		1730		6300	
90 PERCENT EXCEEDS	1060		658		1520	

a At previous site, 1 mi upstream at same datum.
‡ Adjusted for diversion.
b Minimum daily discharge observed at gaging station, does not include diversion of 489 ft^3/s.
c Includes diversion of 449 ft^3/s for municipal use.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1989 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1988 to current year.
WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor October 1988 to current year.

REMARKS.--No missing record. Records good.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE: Maximum, 747 microsiemens, Jan. 11, 1991; minimum, 68 microsiemens, Oct. 23, 1990.
WATER TEMPERATURE (water years 1989-93, 1995-99, 2001-02): Maximum, 33.5°C, July 11, 1993; minimum, 0.0°C, on many day during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 707 microsiemens/cm, Jan. 25; minimum, 144 microsiemens/cm, Apr. 28.
WATER TEMPERATURE: Maximum, 32.8°C, July 4; minimum, 0.5°C, Dec. 30.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	338	312	326	461	451	455	417	410	414	473	459	463
2	354	333	346	464	454	459	426	415	420	466	458	464
3	376	353	365	467	458	462	443	426	435	468	455	463
4	389	371	381	468	454	462	455	442	450	468	462	464
5	396	388	392	463	450	457	463	452	459	467	456	461
6	404	392	395	454	444	451	465	459	462	462	451	457
7	407	393	396	449	441	445	464	459	461	456	418	435
8	408	394	399	449	440	446	462	453	458	434	419	426
9	421	399	410	447	440	443	456	447	452	446	426	436
10	414	405	410	449	439	444	449	434	439	463	443	450
11	422	410	415	452	440	447	444	424	442	458	443	450
12	421	410	414	456	449	452	439	417	430	495	453	475
13	427	411	416	456	448	453	448	434	441	506	465	485
14	436	417	422	459	450	455	456	446	452	486	466	474
15	432	407	420	458	447	455	449	442	446	474	460	468
16	408	396	402	453	446	451	446	441	444	467	450	460
17	410	404	407	456	446	451	446	440	443	462	456	458
18	414	406	410	459	449	455	448	440	445	463	454	458
19	417	409	412	459	450	454	455	445	451	470	461	465
20	419	411	415	461	451	455	461	451	458	535	466	484
21	425	414	419	462	454	458	462	458	461	549	522	533
22	424	415	420	462	453	458	463	456	460	558	531	549
23	426	423	424	462	452	459	459	451	456	577	552	564
24	430	420	427	461	453	458	455	446	452	575	553	562
25	434	412	428	461	451	456	446	440	443	707	575	622
26	431	419	426	456	420	441	448	439	442	621	534	575
27	432	419	425	438	424	432	454	444	451	597	531	557
28	440	426	430	424	398	414	460	452	456	547	498	527
29	445	435	440	408	395	399	462	454	459	505	488	498
30	452	441	447	415	399	408	466	455	459	508	490	498
31	456	448	453	---	---	---	468	458	461	500	484	490
MONTH	456	312	409	468	395	448	468	410	448	707	418	489

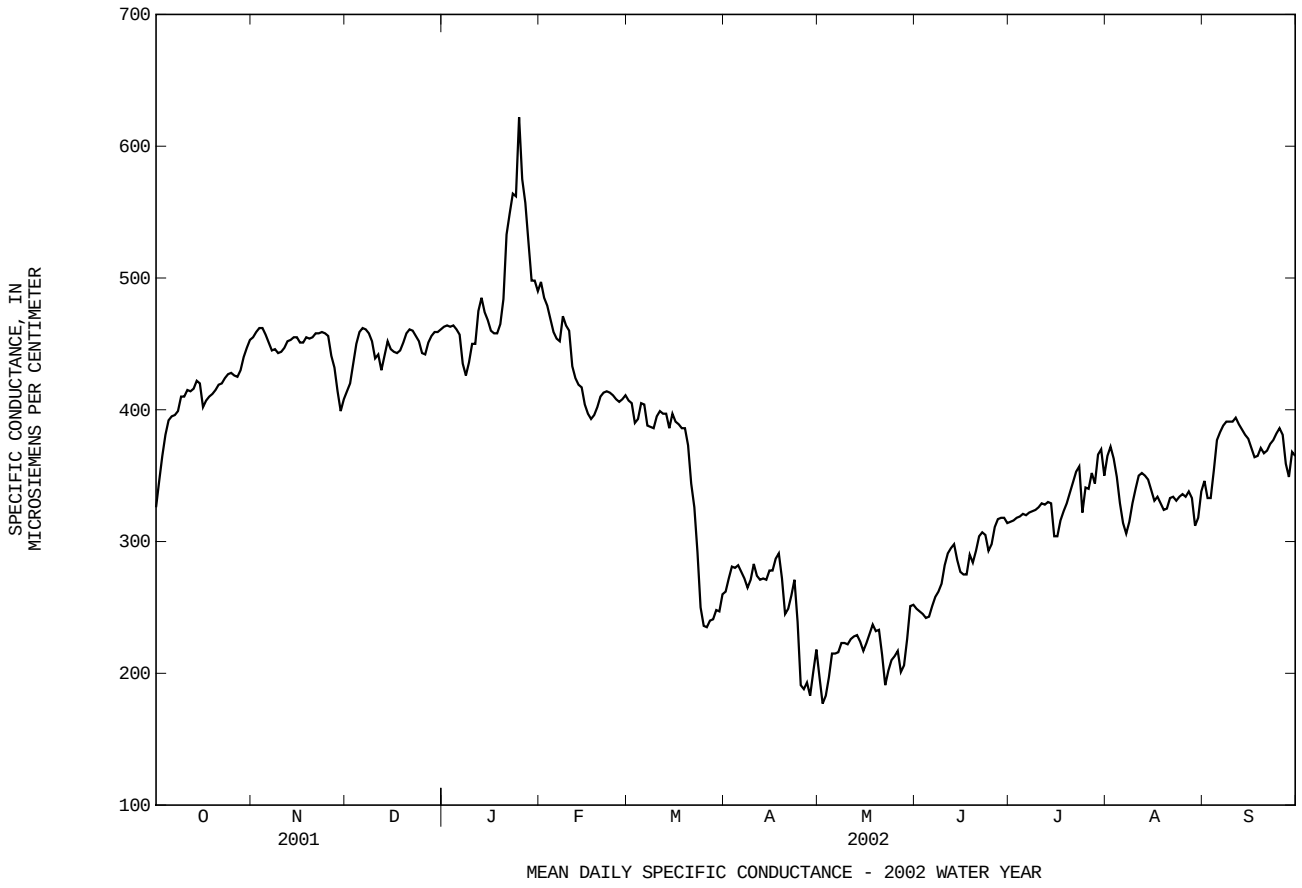
01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	509	478	497	409	403	407	270	256	262	232	181	197
2	493	473	485	409	401	405	280	260	272	189	145	177
3	485	473	479	406	366	390	285	279	281	189	177	183
4	477	448	469	403	383	393	283	278	280	208	189	197
5	466	448	459	410	401	405	287	279	282	219	208	215
6	460	446	454	409	393	404	281	272	277	217	213	215
7	458	448	452	393	383	388	280	265	272	220	213	216
8	484	458	471	395	381	387	271	260	265	226	220	223
9	471	459	464	391	380	386	290	263	271	224	222	223
10	467	453	460	400	389	395	300	268	283	224	221	222
11	453	420	433	403	395	399	281	267	274	230	222	226
12	429	416	424	402	394	397	276	268	271	230	226	228
13	423	416	419	407	391	397	276	270	272	232	224	229
14	425	406	417	397	381	386	274	267	271	225	222	224
15	409	400	404	401	382	397	289	269	278	222	215	217
16	401	393	397	396	388	391	281	274	278	230	218	223
17	395	392	393	393	385	389	293	281	287	233	228	230
18	399	392	396	389	383	386	296	286	291	244	232	237
19	406	395	402	388	384	386	287	252	272	234	230	232
20	417	406	410	393	311	373	252	242	245	236	230	233
21	417	412	413	355	315	344	259	243	249	236	193	214
22	417	411	414	347	304	326	264	254	259	194	189	191
23	416	410	413	347	262	292	276	262	271	208	194	202
24	413	407	411	262	243	250	269	199	239	211	207	210
25	411	404	408	243	233	236	199	187	191	216	209	213
26	412	403	406	243	230	235	191	186	188	222	214	217
27	416	402	408	252	234	240	198	190	193	228	165	201
28	416	404	411	244	239	241	215	144	183	214	200	206
29	---	---	---	257	240	248	207	186	201	240	209	226
30	---	---	---	254	242	247	232	207	218	265	240	251
31	---	---	---	267	253	260	---	---	---	258	247	252
MONTH	509	392	431	410	230	348	300	144	256	265	145	217

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	251	247	249	317	313	315	374	348	365	354	327	346
2	251	243	247	320	314	316	377	368	372	337	330	333
3	247	244	245	322	307	318	374	358	363	340	322	333
4	247	231	242	323	314	319	360	341	349	369	337	354
5	248	239	243	324	317	321	341	320	329	384	366	377
6	254	248	251	326	318	320	323	303	314	387	380	383
7	261	254	258	325	320	322	311	302	306	400	384	388
8	264	259	262	327	321	323	322	298	315	394	378	391
9	275	262	268	334	320	324	340	319	329	394	389	391
10	287	274	282	334	320	326	347	334	340	398	389	391
11	295	286	291	336	324	329	358	344	350	403	389	394
12	297	293	295	338	325	328	355	349	352	396	383	389
13	301	296	298	334	328	330	355	344	350	391	381	385
14	298	280	286	338	314	329	354	340	347	387	377	381
15	282	271	277	317	292	304	345	332	339	385	372	378
16	284	268	275	314	294	304	337	325	331	381	361	371
17	280	268	275	324	308	316	346	324	334	368	360	364
18	298	280	290	327	317	323	338	320	329	371	362	365
19	298	268	284	335	324	329	333	322	324	374	365	371
20	300	279	293	345	328	337	329	324	325	382	363	367
21	307	300	304	350	339	345	344	326	333	376	365	369
22	310	304	307	359	345	353	340	324	334	383	369	374
23	307	304	305	370	351	357	341	325	331	383	373	377
24	307	268	293	352	310	322	341	328	334	392	378	382
25	307	284	298	349	327	341	342	331	336	392	378	386
26	315	307	311	349	323	340	339	331	334	390	374	381
27	321	314	317	358	345	352	347	331	338	375	343	359
28	321	317	318	350	333	344	338	324	333	362	329	349
29	320	315	318	379	350	366	324	303	312	371	362	368
30	318	311	314	373	362	370	332	304	318	374	361	365
31	---	---	---	362	342	350	348	329	338	---	---	---
MONTH	321	231	283	379	292	331	377	298	336	403	322	372

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued



MEAN DAILY SPECIFIC CONDUCTANCE - 2002 WATER YEAR

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

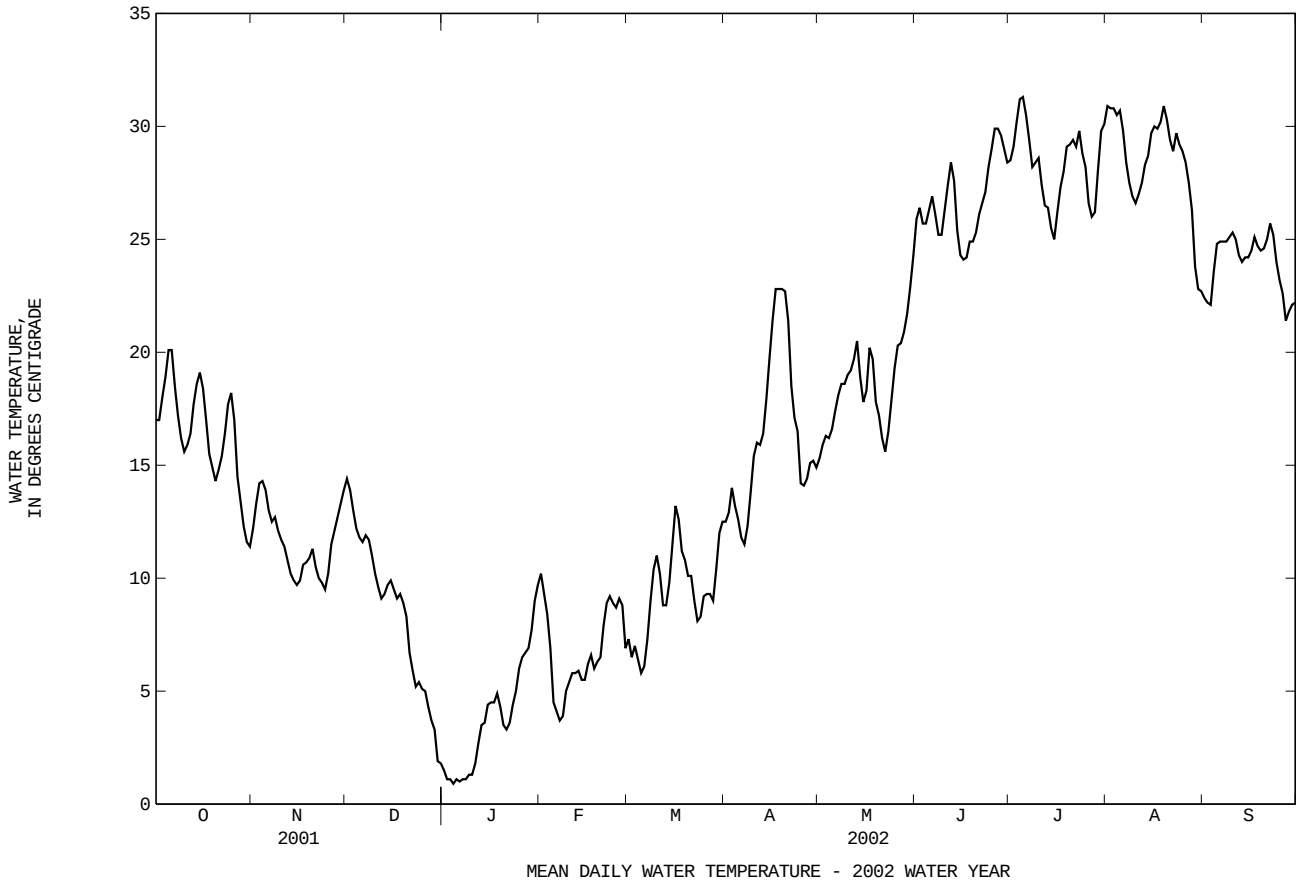
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.3	16.7	17.0	13.1	11.5	12.2	14.8	14.1	14.4	3.0	.7	1.5
2	17.8	16.4	17.0	14.6	12.5	13.3	14.5	13.5	13.9	1.5	.8	1.1
3	21.1	17.0	18.0	14.5	13.9	14.2	13.5	12.4	13.0	1.3	.8	1.1
4	20.5	18.0	18.9	14.8	13.9	14.3	12.9	11.8	12.2	1.1	.7	.9
5	21.3	19.0	20.1	14.7	13.6	13.9	12.0	11.3	11.8	1.3	.9	1.1
6	20.8	19.4	20.1	13.6	12.7	13.0	12.0	11.3	11.6	1.3	.7	1.0
7	19.4	18.0	18.5	12.8	12.2	12.5	12.0	11.7	11.9	1.2	1.0	1.1
8	18.0	16.8	17.2	13.0	12.3	12.7	12.0	11.3	11.7	1.5	.8	1.1
9	17.0	15.8	16.2	12.5	11.7	12.1	11.3	10.8	11.0	1.6	1.0	1.3
10	16.0	15.2	15.6	12.2	11.3	11.7	10.9	9.8	10.2	1.5	1.2	1.3
11	16.8	15.1	15.9	11.6	11.1	11.4	9.9	9.4	9.6	2.5	.8	1.8
12	17.2	15.6	16.4	11.3	10.3	10.8	9.5	8.9	9.1	3.1	2.1	2.7
13	19.0	16.7	17.7	10.6	9.7	10.2	9.6	9.1	9.3	3.9	3.0	3.5
14	19.2	18.0	18.6	10.2	9.8	9.9	10.1	9.5	9.7	3.9	3.4	3.6
15	19.6	18.5	19.1	10.2	9.5	9.7	10.1	9.8	9.9	4.8	3.9	4.4
16	19.0	17.9	18.4	10.5	9.5	9.9	9.8	9.3	9.5	5.4	4.1	4.5
17	18.2	16.0	17.0	11.4	10.3	10.6	9.5	9.0	9.1	4.9	4.1	4.5
18	16.0	14.9	15.5	11.2	10.4	10.7	9.4	9.1	9.3	5.0	4.8	4.9
19	15.5	14.2	14.9	11.6	10.6	10.9	9.3	8.5	8.9	4.9	3.5	4.3
20	15.0	13.7	14.3	11.8	10.9	11.3	9.2	7.6	8.3	3.9	3.3	3.5
21	15.8	13.9	14.8	10.9	10.1	10.5	7.7	6.3	6.7	3.9	2.7	3.3
22	16.7	14.8	15.4	10.2	9.8	10.0	6.4	5.5	5.9	4.6	2.9	3.6
23	17.4	15.4	16.4	10.5	9.4	9.8	5.5	5.1	5.2	4.9	3.9	4.4
24	18.8	16.5	17.7	9.7	9.3	9.5	5.8	5.1	5.4	5.8	4.6	5.0
25	18.6	17.8	18.2	10.7	9.7	10.2	5.7	4.8	5.1	6.7	5.5	6.0
26	18.0	16.1	17.0	12.2	10.7	11.5	5.2	4.7	5.0	7.1	5.6	6.5
27	16.1	13.9	14.5	12.4	11.8	12.1	4.8	3.8	4.3	7.1	6.3	6.7
28	14.2	13.1	13.4	13.3	12.4	12.7	4.0	3.2	3.7	7.4	6.4	6.9
29	13.2	11.8	12.3	13.5	13.0	13.3	3.7	2.8	3.3	8.5	7.1	7.7
30	12.2	11.2	11.6	14.5	13.4	13.9	2.9	.5	1.9	10.2	8.4	9.0
31	11.8	10.9	11.4	---	---	---	2.3	1.5	1.8	10.0	9.5	9.7
MONTH	21.3	10.9	16.4	14.8	9.3	11.6	14.8	.5	8.5	10.2	.7	3.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.8	9.7	10.2	8.0	6.4	7.3	13.8	11.8	12.5	16.0	14.8	15.3
2	10.5	8.8	9.3	7.7	6.1	6.5	14.3	12.0	12.9	16.8	15.1	15.9
3	9.1	7.9	8.4	7.6	6.2	7.0	15.4	12.9	14.0	16.9	15.7	16.3
4	8.0	5.5	6.9	7.6	6.0	6.4	13.9	12.6	13.2	16.7	15.5	16.2
5	5.5	3.9	4.5	6.3	5.1	5.8	12.9	12.0	12.6	17.7	15.5	16.6
6	4.7	3.5	4.1	7.0	5.4	6.1	12.2	10.9	11.8	18.0	16.8	17.4
7	4.0	3.5	3.7	8.5	6.4	7.3	12.8	10.5	11.5	18.3	17.9	18.1
8	4.6	3.3	3.9	10.3	8.2	9.0	14.1	10.8	12.3	19.4	17.9	18.6
9	5.2	4.6	5.0	11.7	9.7	10.4	14.8	12.7	13.8	19.2	18.2	18.6
10	5.6	5.2	5.4	11.7	10.5	11.0	16.9	14.3	15.4	20.1	18.2	19.0
11	6.1	5.5	5.8	10.8	9.3	10.2	17.7	14.3	16.0	19.8	18.3	19.2
12	6.1	5.5	5.8	10.1	8.3	8.8	16.7	14.9	15.9	20.5	18.9	19.7
13	6.1	5.7	5.9	8.9	8.5	8.8	17.5	15.4	16.4	20.7	20.1	20.5
14	5.8	5.1	5.5	11.3	8.7	9.8	19.6	16.5	17.9	20.1	17.7	18.9
15	5.8	5.3	5.5	13.0	10.5	11.5	21.4	18.1	19.7	18.4	17.2	17.8
16	7.3	5.5	6.2	13.5	13.0	13.2	23.3	19.6	21.4	19.2	17.5	18.3
17	7.3	6.1	6.6	13.3	11.7	12.6	24.1	21.5	22.8	21.2	19.0	20.2
18	6.9	5.3	6.0	11.7	10.7	11.2	23.6	22.4	22.8	20.6	18.3	19.7
19	6.9	5.6	6.3	11.2	10.4	10.8	23.2	22.3	22.8	18.9	17.0	17.8
20	7.3	5.9	6.5	11.1	9.1	10.1	23.0	22.0	22.7	17.7	16.6	17.2
21	9.2	6.9	7.9	11.7	9.2	10.1	22.0	19.7	21.4	17.4	15.4	16.2
22	9.7	8.3	8.9	9.9	8.3	9.0	19.7	17.6	18.5	16.3	14.8	15.6
23	9.7	8.6	9.2	8.7	7.2	8.1	17.7	16.5	17.1	17.2	15.7	16.5
24	9.6	8.2	8.9	8.8	7.6	8.3	17.1	15.2	16.5	18.9	17.1	17.9
25	9.4	7.9	8.7	10.1	8.7	9.2	15.2	13.9	14.2	20.1	18.5	19.3
26	9.9	8.2	9.1	9.6	9.1	9.3	14.8	13.2	14.1	21.6	19.3	20.3
27	9.9	7.8	8.8	9.8	8.7	9.3	15.2	13.7	14.4	21.4	19.1	20.4
28	8.0	5.6	6.9	10.0	8.1	9.0	15.8	14.2	15.1	21.7	20.4	20.9
29	---	---	---	11.6	9.2	10.4	15.8	14.7	15.2	22.6	21.0	21.7
30	---	---	---	13.2	10.7	12.0	15.7	14.2	14.9	23.9	21.9	22.9
31	---	---	---	12.7	11.8	12.5	---	---	---	25.4	23.3	24.3
MONTH	10.8	3.3	6.8	13.5	5.1	9.4	24.1	10.5	16.3	25.4	14.8	18.6

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.2	24.5	25.9	29.2	28.2	28.5	32.2	29.8	30.9	23.0	22.0	22.4
2	27.5	25.6	26.4	29.7	28.8	29.1	31.8	29.6	30.8	22.7	21.8	22.2
3	26.7	25.0	25.7	31.8	29.5	30.2	31.6	30.4	30.8	22.5	21.9	22.1
4	26.9	24.6	25.7	32.8	30.5	31.2	30.8	30.1	30.5	25.2	22.2	23.6
5	27.6	24.9	26.3	31.5	30.9	31.3	31.3	30.2	30.7	25.9	24.0	24.8
6	28.1	25.8	26.9	31.4	30.1	30.5	30.9	29.3	29.8	25.4	24.7	24.9
7	26.9	25.4	26.1	30.1	28.7	29.4	29.3	27.7	28.4	25.0	24.7	24.9
8	26.3	24.0	25.2	28.7	27.9	28.2	28.4	26.8	27.5	25.3	24.8	24.9
9	26.7	23.6	25.2	29.4	27.8	28.4	27.8	26.3	26.9	25.6	24.8	25.1
10	27.8	24.4	26.3	29.1	28.2	28.6	27.1	26.3	26.6	26.7	24.8	25.3
11	28.7	26.0	27.4	28.2	27.0	27.4	27.4	26.6	27.0	25.3	24.5	25.0
12	29.5	27.0	28.4	27.0	26.4	26.5	28.0	27.1	27.5	24.7	24.0	24.3
13	28.7	26.7	27.6	27.3	26.2	26.4	29.7	27.8	28.3	24.3	23.7	24.0
14	26.7	24.7	25.4	26.4	24.6	25.5	29.3	28.2	28.7	24.5	23.9	24.2
15	25.1	23.5	24.3	26.5	24.6	25.0	30.9	29.2	29.7	24.4	24.0	24.2
16	24.9	23.4	24.1	27.6	24.9	26.2	30.8	29.5	30.0	25.5	24.0	24.5
17	25.5	23.0	24.2	29.1	26.4	27.3	30.2	29.5	29.9	25.9	24.5	25.1
18	26.2	23.4	24.9	29.0	26.9	28.0	31.0	29.7	30.2	25.1	24.4	24.7
19	25.8	23.9	24.9	29.9	28.4	29.1	31.7	30.1	30.9	25.0	24.3	24.5
20	26.9	23.8	25.3	29.8	28.8	29.2	30.9	29.9	30.3	24.8	24.4	24.6
21	27.5	24.8	26.1	29.9	29.1	29.4	30.0	28.9	29.4	25.2	24.7	25.0
22	27.7	25.9	26.6	29.6	28.8	29.1	29.7	28.7	28.9	26.1	25.1	25.7
23	27.9	26.7	27.1	30.9	29.3	29.8	29.9	29.5	29.7	25.8	24.4	25.2
24	29.1	27.8	28.2	30.8	28.3	28.8	29.5	29.0	29.2	24.4	23.5	24.0
25	29.7	28.6	29.0	28.9	27.5	28.2	29.1	28.5	28.9	23.8	23.0	23.2
26	30.6	29.6	29.9	27.5	26.2	26.6	29.0	27.7	28.4	23.1	21.8	22.6
27	30.3	29.5	29.9	26.5	25.6	26.0	27.7	27.2	27.5	21.8	20.9	21.4
28	30.3	29.2	29.6	26.9	25.8	26.2	27.5	24.7	26.3	22.5	21.1	21.8
29	29.9	28.2	29.0	29.5	26.9	28.1	24.7	23.2	23.8	22.9	21.2	22.1
30	29.3	28.0	28.4	30.7	29.1	29.8	23.2	22.4	22.8	22.8	21.4	22.2
31	---	---	---	31.2	28.9	30.1	23.0	22.4	22.7	---	---	---
MONTH	30.6	23.0	26.7	32.8	24.6	28.3	32.2	22.4	28.5	26.7	20.9	24.0



MEAN DAILY WATER TEMPERATURE - 2002 WATER YEAR

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC

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

DRAINAGE AREA.--11,570 mi^2.

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1978 to September 1981.
pH: June 1978 to September 1981.
WATER TEMPERATURE: June 1978 to September 1981.
DISSOLVED OXYGEN: June 1978 to September 1981.
SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1981.

INSTRUMENTATION.--Water-quality monitor June 1978 to September 1981.

REMARKS--Extreme high flows are sampled from the George Mason Memorial Bridge (14th Street) located 6 mi downstream from Chain Bridge. On May 3 and Nov. 17, 1994 samples were collected and analyzed using ultraclean methodologies. Data on trace metals for these dates are available from the University of Delaware. Data on organics for these dates are available from George Mason University.

EXTREMES FOR PERIOD OF DAILY RECORD--
SPECIFIC CONDUCTANCE (water years 1979, 1981): Maximum, 598 microsiemens, Sept. 12, 1981; minimum, 116 microsiemens, Jan. 25, 1979.
pH (water years 1979, 1981): Maximum, 9.3 units, Mar. 29, 1981; minimum, 6.7 units, June 2, 1981.
WATER TEMPERATURE (water years 1979, 1981): Maximum, 31.0°C, July 23, 24, 1978; minimum, 0.0°C on many days during winter periods.
DISSOLVED OXYGEN (water years 1979, 1981): Maximum, 16.4 mg/L, on many days in 1979; minimum, 5.6 mg/L, June 2, 1981.
SEDIMENT CONCENTRATION: Maximum daily mean, 812 mg/L, Sept. 6, 1979; minimum daily mean, 1 mg/L on many days during winter periods.
SEDIMENT LOAD: Maximum daily, 281,000 tons, Feb. 27, 1979; minimum daily, 3.2 tons, Jan. 5, 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT												
30...	1130	ENVIRONMENTAL	987	431	8.6	19.0	12.5	774	11.9	110	112	137
NOV												
27...	1115	ENVIRONMENTAL	2400	418	8.3	12.5	12.5	763	--	--	114	139
DEC												
13...	1100	ENVIRONMENTAL	1640	454	8.4	13.0	9.5	764	11.9	104	122	148
JAN												
15...	1145	ENVIRONMENTAL	1810	439	8.6	12.0	4.5	760	14.0	109	--	--
FEB												
13...	1230	ENVIRONMENTAL	1940	398	8.7	7.0	5.5	765	--	--	106	130
13...	*1231*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAR												
14...	1115	ENVIRONMENTAL	2650	389	8.8	18.5	10.0	764	12.6	111	--	--
APR												
10...	*1159*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1200	ENVIRONMENTAL	5780	259	8.1	17.5	15.5	776	10.9	108	59	72
24...	1030	ENVIRONMENTAL	54400	235	7.8	15.5	16.5	770	10.4	106	--	--
24...	*1031*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
MAY												
06...	*1059*	*BLANK*	--	--	--	--	--	--	--	--	--	--
06...	1100	ENVIRONMENTAL	15200	204	7.8	22.0	17.5	772	10.1	104	40	49
JUN												
11...	1015	ENVIRONMENTAL	3740	278	8.4	33.0	27.5	760	8.6	109	64	78
11...	*1016*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
25...	1000	ENVIRONMENTAL	1600	287	8.5	30.5	29.5	763	7.8	102	84	102
JUL												
09...	1215	ENVIRONMENTAL	431	318	8.7	37.5	29.5	760	8.1	106	--	--
31...	0945	ENVIRONMENTAL	6390	332	8.9	32.5	30.0	760	7.9	105	--	89
AUG												
16...	0900	ENVIRONMENTAL	340	319	9.1	30.0	30.0	764	7.2	95	56	69
27...	1015	ENVIRONMENTAL	570	323	8.4	30.5	27.0	762	7.4	93	52	64
SEP												
10...	*1029*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1030	ENVIRONMENTAL	468	381	8.7	32.5	25.5	757	8.6	106	--	--
24...	0945	ENVIRONMENTAL	526	371	8.5	25.0	23.0	767	8.2	95	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOSPHORUS TOTAL (MG/L AS P) (00665)
OCT													
30...	3	53.0	29.2	.4	<10	.63	--	<.008	.29	<.04	.34	--	.028
NOV													
27...	--	51.9	30.1	.7	10	.87	--	<.008	.50	<.04	.37	--	.031
DEC													
13...	--	61.0	26.8	.8	<10	1.0	--	<.008	.75	<.04	.29	--	.028
JAN													
15...	--	44.0	28.3	E.1	<10	1.6	--	E.005	1.28	<.04	.28	--	.044
FEB													
13...	--	42.6	28.1	<.2	<10	1.1	.83	.008	.84	<.04	.24	--	.034
13...	--	--	--	--	<10	--	--	--	--	--	--	--	--
MAR													
14...	--	41.4	27.1	.3	<10	1.0	--	E.007	.65	<.04	.37	--	.037
APR													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	37.5	13.3	2.9	<10	1.2	.86	.009	.87	<.04	.33	--	.075
24...	--	--	--	4.6	416	2.8	.65	.018	.67	.09	2.2	2.1	.67
24...	--	--	--	4.6	448	2.5	.65	.017	.67	.09	1.8	1.7	.70
MAY													
06...	--	<.1	<.08	<.5	<10	--	--	<.006	<.05	<.04	E.04	--	<.004
06...	--	31.2	8.39	6.1	54	1.4	.88	.012	.89	E.04	.53	--	.117
JUN													
11...	--	31.4	13.4	4.1	<10	.92	--	E.005	.64	<.04	.28	--	.078
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	4.6	<10	.87	--	E.006	.40	<.04	.47	--	.072
JUL													
09...	--	34.9	21.1	7.6	34	.52	--	E.004	.09	<.04	.43	--	.082
31...	4	45.8	21.2	7.2	<10	.57	--	E.006	.18	<.04	.40	--	.089
AUG													
16...	7	58.4	17.3	6.9	<10	--	--	<.008	E.02	<.04	.51	--	.059
27...	3	--	--	5.9	<10	.48	--	E.004	.09	<.04	.39	--	.062
SEP													
10...	--	--	--	--	--	--	--	<.008	<.05	<.04	<.10	--	<.004
10...	--	61.2	28.2	2.7	<10	--	--	<.008	E.04	<.04	.33	--	.043
24...	--	--	--	.7	<10	--	--	<.008	E.03	<.04	.34	--	.035

Date	ORTHO-PHOSPHATE, DISSOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTICULATE TOTAL (MG/L AS C) (00689)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)
OCT													
30...	<.02	3.4	--	<.002	<.004	<.002	<.005	.029	<.010	<.002	<.041	<.020	<.005
NOV													
27...	<.02	3.4	--	<.002	<.004	<.002	<.005	.027	<.010	<.002	E.004	<.020	<.005
DEC													
13...	<.02	3.2	--	<.002	<.004	<.002	<.005	.028	<.010	<.002	<.041	<.020	<.005
JAN													
15...	.02	2.5	--	<.006	<.006	<.004	<.005	.022	<.010	<.002	<.041	<.020	<.005
FEB													
13...	E.01	2.6	.2	<.006	<.006	<.004	<.005	.021	<.010	<.002	<.041	<.020	<.005
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	<.02	3.4	.4	<.006	<.006	<.004	<.005	.021	<.010	<.002	<.041	<.020	<.005
APR													
10...	--	.3	<.1	<.002	<.004	<.002	<.005	<.007	<.010	<.002	<.041	<.020	<.005
10...	.04	2.7	.6	<.006	<.006	<.004	<.005	.009	<.010	<.002	<.041	<.020	<.005
24...	.04	--	--	<.006	<.006	<.004	<.005	.022	<.010	<.002	<.041	<.020	<.005
24...	.04	--	--	<.006	<.006	<.011	<.005	.024	<.010	<.002	E.008	<.020	<.005
MAY													
06...	<.02	--	--	--	--	--	--	--	--	--	--	--	--
06...	.04	3.4	2.2	<.006	<.006	<.004	<.005	.140	<.010	<.002	E.017	<.020	<.005
JUN													
11...	.05	3.3	.3	<.006	<.006	<.004	<.005	.182	<.010	<.002	<.041	<.020	<.005
11...	--	3.0	.2	--	--	--	--	--	--	--	--	--	--
25...	.04	--	--	<.006	<.006	<.004	<.005	.336	<.010	<.002	<.041	<.020	<.005
JUL													
09...	.05	--	--	<.006	<.006	<.004	<.005	.172	<.010	<.002	<.041	<.020	<.005
31...	.05	3.7	.4	<.006	<.006	<.004	<.005	.082	<.010	<.002	<.041	<.020	<.005
AUG													
16...	.03	4.1	--	<.006	<.006	<.004	<.005	.036	<.010	<.002	<.041	<.020	<.005
27...	.04	--	--	<.006	<.006	<.004	<.005	.049	<.010	<.002	<.041	<.020	<.005
SEP													
10...	<.02	--	--	--	--	--	--	--	--	--	--	--	--
10...	.02	3.9	.2	<.006	<.006	<.004	<.005	.045	<.010	<.002	<.041	<.020	<.005
24...	E.01	--	--	<.006	<.006	<.004	<.005	.050	<.010	<.002	<.041	<.020	<.005

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DISSOLVED (UG/L) (39341)
OCT													
30...	<.018	<.003	E.044	97.2	<.005	<.005	<.02	<.002	<.009	<.005	<.003	89.1	<.004
NOV													
27...	<.018	<.003	E.046	100	E.005	<.005	<.02	<.002	<.009	<.005	<.003	92.6	<.004
DEC													
13...	<.018	<.003	E.035	108	<.005	<.005	<.02	<.007	<.009	<.005	<.003	98.1	<.004
JAN													
15...	<.018	<.003	E.031	94.0	<.005	<.005	<.02	<.004	<.009	<.005	<.003	87.2	<.004
FEB													
13...	<.018	<.003	E.033	91.7	<.005	<.005	<.02	<.013	<.009	<.005	<.003	87.6	<.004
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	<.018	<.003	E.018	120	<.005	<.005	<.02	<.002	<.009	<.005	<.003	92.6	<.004
APR													
10...	<.018	<.003	<.006	121	<.005	<.005	<.02	<.002	<.009	<.005	<.003	108	<.004
10...	<.018	<.003	E.007	107	<.005	<.005	<.02	<.002	<.009	<.005	<.003	98.1	<.004
24...	<.018	<.003	E.009	105	<.005	<.005	<.02	<.002	<.009	<.005	<.003	100	<.004
24...	<.018	<.003	E.011	130	<.005	<.005	<.02	<.002	<.009	<.005	<.003	96.3	<.004
MAY													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.018	<.003	E.013	106	<.005	<.005	<.02	<.002	<.009	<.005	<.003	102	<.004
JUN													
11...	<.018	<.003	E.036	119	<.005	<.005	<.02	<.002	<.009	<.005	<.003	104	<.004
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.018	<.003	E.067	106	<.005	<.005	<.02	<.002	<.009	<.005	<.003	99.1	<.004
JUL													
09...	<.018	<.003	E.051	118	<.005	<.005	<.02	<.002	<.009	<.005	<.003	91.4	<.004
31...	<.018	<.003	E.038	101	<.005	<.005	<.02	<.002	<.009	<.005	<.003	103	<.004
AUG													
16...	<.018	<.003	E.026	121	<.005	<.005	<.02	<.002	<.009	<.005	<.003	99.0	<.004
27...	<.018	<.003	E.030	118	<.005	<.005	<.02	<.002	<.009	<.005	<.003	88.0	<.004
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.018	<.003	E.038	118	<.005	<.005	<.02	<.002	<.009	<.005	<.003	118	<.004
24...	<.018	<.003	E.038	109	<.005	<.005	<.02	<.002	<.009	<.005	<.003	102	<.004

Date	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)
OCT													
30...	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
NOV													
27...	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
DEC													
13...	<.035	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
JAN													
15...	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
FEB													
13...	<.035	<.027	<.050	<.006	E.008	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	<.035	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
APR													
10...	<.035	<.027	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006
10...	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
24...	<.035	<.027	<.050	<.006	E.011	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
24...	<.035	<.027	<.050	<.006	.016	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
MAY													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.035	<.027	<.050	<.006	.028	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
JUN													
11...	<.035	<.027	<.050	<.006	.034	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.035	<.027	<.050	<.006	.055	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
JUL													
09...	<.035	<.027	<.050	<.006	.018	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
31...	<.035	<.027	<.050	<.006	E.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
AUG													
16...	<.035	<.027	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
27...	<.035	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.035	<.027	<.050	<.006	E.009	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006
24...	<.035	<.027	<.050	<.006	E.008	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006

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

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
OCT													
30...	<.011	E.01	<.004	<.010	<.011	<.02	E.010	E.01	<.034	<.02	<.005	<.002	<.009
NOV													
27...	<.011	E.01	<.004	<.010	<.011	<.02	E.009	<.02	<.034	<.02	<.005	<.002	<.009
DEC													
13...	<.011	E.01	<.004	<.010	<.011	<.02	E.010	<.02	<.034	<.02	<.005	<.002	<.009
JAN													
15...	<.011	E.01	<.004	<.010	<.011	<.02	.008	<.02	<.034	<.02	<.005	<.002	<.009
FEB													
13...	<.011	M	<.004	<.010	<.011	<.02	.011	<.02	<.034	<.02	<.005	<.002	<.009
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	<.011	E.01	<.004	<.010	<.011	<.02	.009	<.02	<.034	<.02	<.005	<.002	<.009
APR													
10...	<.011	<.01	<.004	<.010	<.011	<.02	<.011	<.02	<.034	<.02	<.005	<.002	<.009
10...	<.011	M	<.004	<.010	<.011	<.02	.006	<.02	<.034	<.02	<.005	<.002	<.009
24...	<.011	E.01	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009
24...	<.011	E.01	<.004	<.010	<.011	<.02	.011	<.02	<.034	<.02	<.005	<.002	<.009
MAY													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.011	M	<.004	<.010	<.011	<.02	.052	<.02	<.034	<.02	<.005	<.002	<.009
JUN													
11...	<.011	<.01	<.004	<.010	<.011	<.02	.077	<.02	<.034	<.02	<.005	<.002	<.009
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<.011	.02	<.004	<.010	<.011	<.02	.103	<.02	<.034	<.02	<.005	<.002	<.009
JUL													
09...	<.011	E.01	<.004	<.010	<.011	<.02	.058	<.02	<.034	<.02	<.005	<.002	<.009
31...	<.011	.02	<.004	<.010	<.011	<.02	.036	<.02	<.034	<.02	<.005	<.002	<.009
AUG													
16...	<.011	E.01	<.004	<.010	<.011	<.02	.015	M	<.034	<.02	<.005	<.002	<.009
27...	<.011	E.01	<.004	<.010	<.011	<.02	.022	M	<.034	<.02	<.005	<.002	<.009
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.011	.02	<.004	<.010	<.011	<.02	.016	<.02	<.034	<.02	<.005	<.002	<.009
24...	<.011	.02	<.004	<.010	<.011	<.02	.019	E.01	<.034	<.02	<.005	<.002	<.009

Date	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT			
30...	5.6	14.9	--
NOV			
27...	8.0	51.8	--
DEC			
13...	4.7	20.8	--
JAN			
15...	4.0	19.5	--
FEB			
13...	5.0	26.2	87
13...	--	--	--
MAR			
14...	2.9	20.7	--
APR			
10...	--	--	--
10...	5.5	85.8	--
24...	479	70400	90
24...	485	--	90
MAY			
06...	<.1	--	--
06...	48	1970	--
JUN			
11...	5.2	52.5	--
11...	--	--	--
25...	2.8	12.1	--
JUL			
09...	3.6	4.2	--
31...	10	181	--
AUG			
16...	2.7	2.5	--
27...	2.1	3.2	--
SEP			
10...	--	--	--
10...	1.0	1.3	--
24...	.6	.85	--

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC

LOCATION.--Lat 38°58'21.0", long 77°02'24.0", District of Columbia, Hydrologic Unit 02070010, on left bank 125 ft downstream from Sherrill Drive Bridge in Rock Creek Park in Washington, and 7.5 mi upstream from mouth.

DRAINAGE AREA.--62.2 mi^2.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 1432: 1933(M).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 148.87 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow affected by two upstream reservoirs which control flow from about 25 mi^2, Needwood Lake on Rock Creek since Sept. 1966 and Bernard Frank Lake on North Branch Rock Creek since February 1968. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	1245	*1,100	*5.38	No peak greater than base discharge.			

Minimum discharge, 0.97 ft^3/s, Aug. 18-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	10	18	13	18	14	51	49	21	6.4	5.6	264
2	10	11	16	13	18	38	28	302	18	6.2	4.9	33
3	9.7	12	15	14	18	235	25	122	16	5.8	152	16
4	9.7	11	13	15	17	41	24	81	14	5.6	93	11
5	8.9	12	13	16	18	28	22	64	15	5.3	38	8.3
6	10	10	13	76	17	24	27	40	53	4.1	42	6.5
7	8.5	9.6	13	69	28	20	20	33	38	4.3	16	5.8
8	6.9	11	53	30	21	19	20	28	14	3.4	10	4.8
9	6.8	9.9	60	24	18	18	46	24	12	3.9	7.1	4.0
10	6.6	10	27	20	17	25	76	23	12	36	5.3	3.6
11	7.3	11	83	50	19	19	27	20	12	8.6	4.1	3.3
12	7.7	10	28	29	17	18	24	34	11	6.1	3.6	2.2
13	6.8	11	22	23	16	90	23	47	96	4.5	2.9	2.4
14	18	11	31	20	16	33	22	36	72	234	2.2	3.0
15	91	12	24	18	15	24	22	23	69	35	1.9	9.4
16	21	12	18	18	15	22	22	20	34	17	1.5	6.7
17	32	13	17	18	15	32	21	20	22	11	1.2	4.4
18	12	13	34	17	15	70	20	104	124	8.4	1.2	2.7
19	11	12	21	20	15	33	19	34	68	7.3	0.97	2.3
20	10	13	19	36	15	222	18	23	15	6.3	0.97	2.1
21	8.6	13	18	26	16	91	20	20	11	5.4	1.7	2.7
22	8.0	13	17	24	16	57	125	17	10	4.8	2.4	3.2
23	8.4	13	16	22	15	40	30	16	9.1	34	2.2	4.8
24	8.2	18	60	36	15	31	23	15	8.4	98	9.8	4.8
25	8.1	69	21	33	15	26	27	14	7.8	64	9.4	2.9
26	7.7	144	18	22	15	39	21	14	7.8	55	3.2	129
27	8.4	59	17	20	22	132	18	405	15	51	3.2	153
28	8.4	36	16	18	16	46	521	109	20	27	260	114
29	8.7	26	15	18	---	35	124	50	17	13	151	34
30	9.8	21	14	18	---	29	73	34	7.7	9.3	29	20
31	9.8	---	14	18	---	42	---	25	---	6.9	16	---
TOTAL	399.0	636.5	764	794	478	1593	1539	1846	849.8	787.6	882.34	863.9
MEAN	12.9	21.2	24.6	25.6	17.1	51.4	51.3	59.5	28.3	25.4	28.5	28.8
MAX	91	144	83	76	28	235	521	405	124	234	260	264
MIN	6.6	9.6	13	13	15	14	18	14	7.7	3.4	0.97	2.1
CFSM	0.21	0.34	0.40	0.41	0.27	0.83	0.82	0.96	0.46	0.41	0.46	0.46
IN.	0.24	0.38	0.46	0.47	0.29	0.95	0.92	1.10	0.51	0.47	0.53	0.52

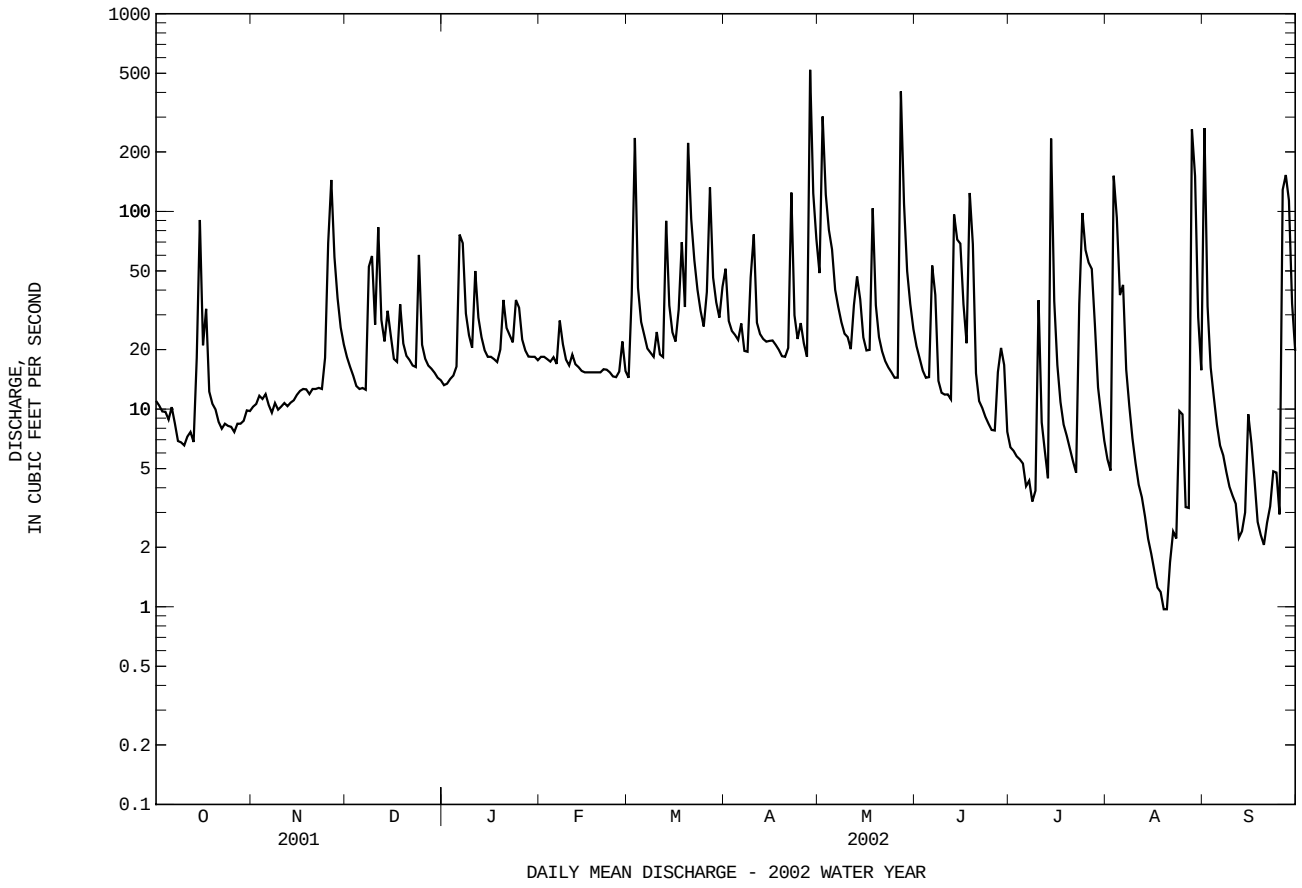
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

MEAN	40.1	51.7	60.9	72.2	82.0	91.3	83.9	73.7	60.3	48.4	47.2	46.6
MAX	196	165	184	201	210	221	215	232	456	192	174	348
(WY)	1980	1953	1973	1978	1979	1993	1973	1989	1972	1945	1955	1979
MIN	2.63	4.57	8.75	11.8	11.9	23.4	29.2	24.3	18.3	7.09	1.72	2.04
(WY)	1931	1932	1931	1931	1931	1931	1969	1955	1986	1930	1930	1930

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1930 - 2002	
ANNUAL TOTAL	20455.7		11433.14			
ANNUAL MEAN	56.0		31.3		63.1	
HIGHEST ANNUAL MEAN					142	1972
LOWEST ANNUAL MEAN					16.1	1931
HIGHEST DAILY MEAN	783	Jun 23	521	Apr 28	5000	Jun 22 1972
LOWEST DAILY MEAN	6.6	Oct 10	0.97	(a)	0.50	(b)
ANNUAL SEVEN-DAY MINIMUM	7.2	Oct 7	1.3	Aug 15	0.50	Oct 1 1930
MAXIMUM PEAK FLOW			1100	Apr 28	(c)12500	Jun 22 1972
MAXIMUM PEAK STAGE			5.38	Apr 28	(d)16.20	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.97	(f)	0.50	Oct 1 1930
ANNUAL RUNOFF (CFSM)	0.90		0.50		1.01	
ANNUAL RUNOFF (INCHES)	12.23		6.84		13.78	
10 PERCENT EXCEEDS	131		69		122	
50 PERCENT EXCEEDS	29		18		37	
90 PERCENT EXCEEDS	10		4.8		12	

a Aug. 18, 19.
b Oct. 1-7, 1930.
c From rating curve extended above 5,640 ft^3/s on basis of contracted-opening measurement at gage heights of 13.19 and 16.2 ft.
d From floodmarks.
f Aug. 18-21.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD

LOCATION.--Lat 38°57'36.9", long 76°55'33.5", Prince Georges County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on Riverdale Road, 1.8 mi downstream from Indian Creek, and 1.8 mi upstream from confluence with Northwest Branch.

DRAINAGE AREA.--72.8 mi^2.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WDR MD-DE-75-1: 1972(M).

GAGE.--Water-stage recorders, crest-stage gage, and concrete control. Datum of gage is 12.68 ft above National Geodetic Vertical Datum of 1929 (Washington Suburban Sanitary Commission bench mark). Prior to June 12, 1942, nonrecording gage; June 12, 1942 to Mar. 22, 1966, and Apr. 12, 1967 to Sept. 3, 1969, water-stage recorder, all at bridge at datum 14.00 ft above mean sea level. Mar. 23, 1966 to Apr. 11, 1967, nonrecording gage 600 ft downstream from bridge at datum 9.25 ft above mean sea level.

REMARKS.--No estimated daily discharges. Records good. Some regulation at low flow by sand and gravel plants upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 23 or 24, 1933, reached a stage of about 15.5 ft at datum 14.00 ft above sea level, from floodmarks, discharge, 10,500 ft^3/s, from rating curve extended above 3,000 ft^3/s on basis of velocity-area study.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 3	1600	2,660	5.72	Sep 1	0815	*3,470	*6.49

Minimum discharge, 3.1 ft^3/s, Aug. 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	16	19	20	23	16	58	39	15	9.5	6.3	720
2	18	17	18	23	22	50	32	501	14	7.9	5.1	77
3	16	16	18	19	20	226	27	112	12	7.1	183	25
4	15	16	18	20	19	49	29	50	12	6.4	39	15
5	15	16	18	19	19	29	22	44	12	5.6	15	12
6	17	16	18	100	19	25	21	32	72	4.7	22	10
7	15	16	18	98	36	21	21	28	48	4.5	13	9.4
8	14	16	68	40	27	19	19	25	17	5.2	8.2	9.7
9	14	17	72	29	21	19	48	22	14	5.2	6.9	7.9
10	14	16	28	26	19	38	90	22	13	30	5.7	7.1
11	14	16	109	63	19	23	32	20	12	12	5.1	6.7
12	14	16	41	40	19	22	25	49	12	8.1	4.7	6.0
13	13	16	29	28	19	117	24	55	57	7.1	4.7	5.8
14	31	16	35	24	18	51	22	24	52	206	4.3	18
15	64	16	29	22	18	31	22	20	49	33	4.0	20
16	26	19	22	20	18	26	20	17	20	15	4.0	25
17	35	18	21	20	18	34	18	25	14	11	4.0	11
18	17	18	41	20	17	81	20	177	19	9.8	3.8	8.8
19	16	18	25	28	16	43	59	42	82	8.6	3.5	7.2
20	15	18	23	46	16	299	28	24	18	8.2	3.4	6.9
21	15	18	20	33	18	111	25	20	13	22	3.3	6.2
22	14	18	19	33	18	47	156	18	11	12	3.1	5.8
23	14	17	19	31	18	33	38	18	9.7	24	3.5	7.8
24	15	18	73	46	17	28	24	17	9.4	62	5.3	6.4
25	15	104	31	46	16	25	27	15	9.1	20	4.6	5.2
26	14	109	24	30	17	46	24	15	8.2	59	3.6	114
27	14	32	21	25	22	115	20	103	25	24	3.6	136
28	14	23	20	24	17	42	805	35	27	16	299	113
29	14	21	22	22	---	31	181	20	14	12	129	20
30	15	20	19	21	---	27	59	17	9.5	9.6	24	13
31	16	---	21	21	---	46	---	16	---	7.8	14	---
TOTAL	564	713	959	1037	546	1770	1996	1622	699.9	673.3	838.7	1435.9
MEAN	18.2	23.8	30.9	33.5	19.5	57.1	66.5	52.3	23.3	21.7	27.1	47.9
MAX	64	109	109	100	36	299	805	501	82	206	299	720
MIN	13	16	18	19	16	16	18	15	8.2	4.5	3.1	5.2
CFSM	0.25	0.33	0.42	0.46	0.27	0.78	0.91	0.72	0.32	0.30	0.37	0.66
IN.	0.29	0.36	0.49	0.53	0.28	0.90	1.02	0.83	0.36	0.34	0.43	0.73

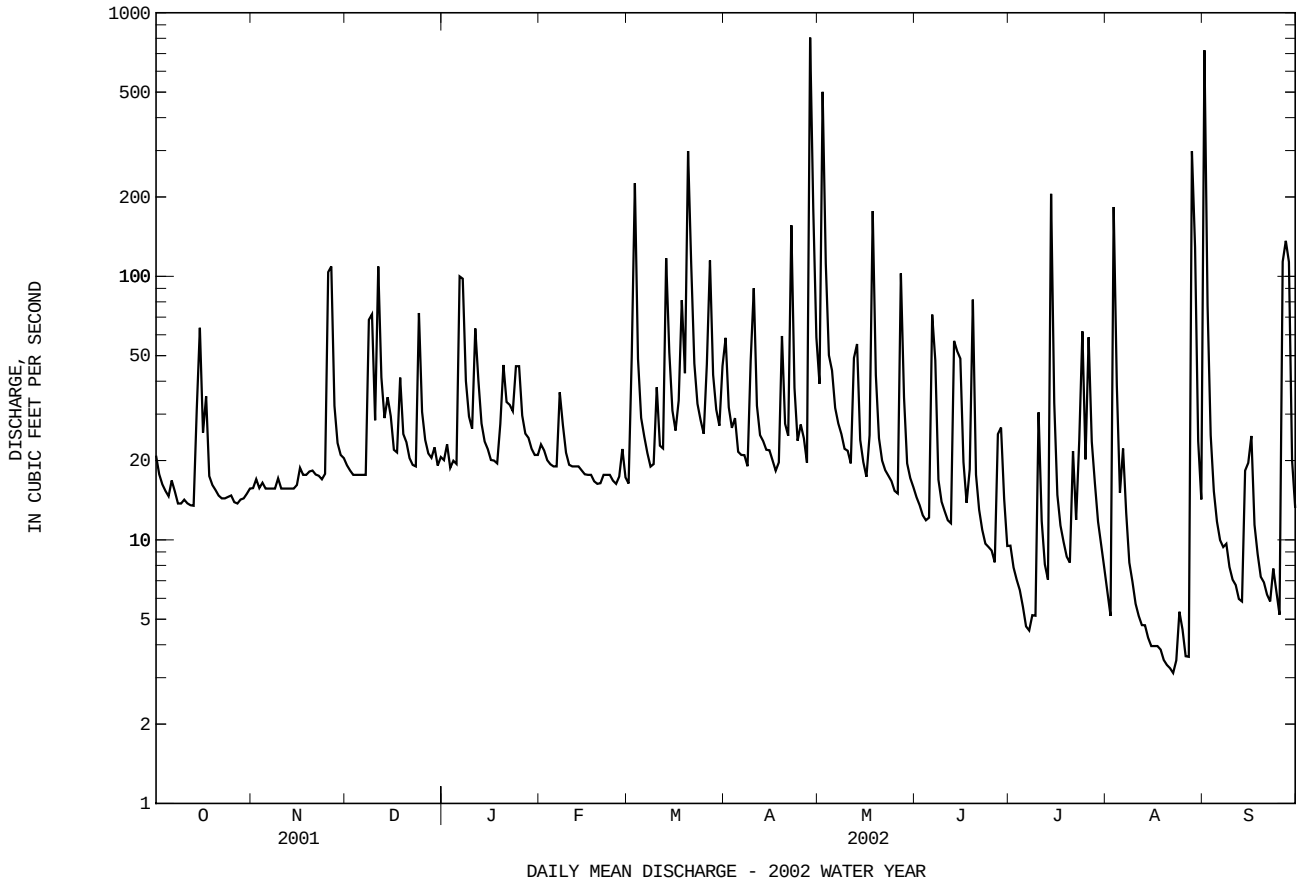
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	53.5	73.7	92.3	104	113	133	109	93.6	68.8	60.1	62.9	62.3
MAX	234	205	275	325	265	339	322	329	353	335	243	449
(WY)	1943	1973	1997	1979	1972	1994	1983	1989	1972	1945	1955	1975
MIN	9.37	15.9	19.8	25.6	19.5	37.0	32.4	23.9	20.3	8.72	7.94	8.32
(WY)	1942	1942	1966	1955	2002	1981	1985	1941	1965	1999	1962	1941

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	24951.3		12854.8			
ANNUAL MEAN	68.4		35.2		85.4	
HIGHEST ANNUAL MEAN					150	1972
LOWEST ANNUAL MEAN					35.2	2002
HIGHEST DAILY MEAN	1560	Jun 7	805	Apr 28	6830	Sep 26 1975
LOWEST DAILY MEAN	9.3	Aug 9	3.1	Aug 22	1.4	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	14	Oct 7	3.5	Aug 17	1.7	Sep 7 1966
MAXIMUM PEAK FLOW			3470	Sep 1	(a)12000	Jun 22 1972
MAXIMUM PEAK STAGE			6.49	Sep 1	12.93	Oct 16 1942
INSTANTANEOUS LOW FLOW			3.1	(b)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	0.94		0.48		1.17	
ANNUAL RUNOFF (INCHES)	12.75		6.57		15.94	
10 PERCENT EXCEEDS	142		60		165	
50 PERCENT EXCEEDS	29		19		43	
90 PERCENT EXCEEDS	15		7.1		16	

a From rating curve extended above 3,800 ft^3/s on basis of average of contracted-opening and slope-area measurements at gage height 9.52 ft.
b Aug. 21-23.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01650500 NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD

LOCATION.--Lat 39°03'56.4", long 77°01'45.6", Montgomery County, Hydrologic Unit 02070010, on right bank 400 ft upstream from bridge on State Highway 183, 1.5 mi southwest of Colesville, 3 mi upstream from Burnt Mills, 10 mi upstream from Sligo Creek, and 12.5 mi upstream from confluence with Northeast Branch.

DRAINAGE AREA.--21.1 mi^2.

PERIOD OF RECORD.--October 1923 to September 1983, November 1997 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1942(M), 1925-26, 1929-30(M), 1933(M), 1939(P), 1940(M), 1943-46, 1948-49(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 264.75 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 22, 1932, nonrecording gages in same general vicinity at different datums. Apr. 22, 1932 to Apr. 11, 1934, nonrecording gages at present site and datum.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. Diversions at low flow since 1962 for irrigation of golf courses upstream from station. Records include pumpage from the Patuxent River to augment water supply for Washington Suburban Sanitary District, Aug. 12, 1939 to Aug. 1960. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug 3	1800	*821	*6.13	No other peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, Aug. 20-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.3	e4.6	e4.5	4.2	6.2	4.4	14	11	4.5	1.2	0.59	83
2	e3.1	e3.2	e3.7	4.4	5.8	15	8.9	135	3.8	1.1	0.48	9.0
3	e3.2	e2.6	e2.8	4.7	5.7	72	8.3	27	3.3	0.98	135	4.1
4	e3.1	e3.4	e3.5	4.7	6.0	13	7.1	13	3.2	0.78	24	3.0
5	e3.0	e3.1	e4.1	4.7	5.9	8.6	6.7	12	3.3	0.61	8.6	2.1
6	e4.4	e3.7	e4.1	20	5.4	7.4	6.6	9.4	10	0.47	4.8	1.6
7	e3.2	e3.2	e4.6	20	7.8	6.4	6.0	8.3	6.0	0.44	2.1	1.8
8	e2.5	e4.0	e18	11	5.9	5.8	6.1	7.1	3.6	0.43	1.5	1.9
9	e2.7	e4.4	e15	7.1	5.2	5.9	13	6.6	3.3	4.4	1.2	1.9
10	e3.1	e6.0	e7.4	6.4	5.1	9.3	17	6.4	3.0	12	1.0	1.8
11	e3.0	e4.3	e23	18	5.6	5.9	7.8	5.5	2.6	1.6	0.81	1.3
12	e2.5	e3.7	e8.2	11	5.1	5.9	6.7	8.6	2.4	1.0	0.60	0.77
13	e2.4	e3.3	e4.7	7.0	5.1	20	6.7	12	29	0.74	0.48	0.73
14	e2.4	e3.5	e7.1	6.3	5.0	12	6.7	8.5	13	38	0.43	0.74
15	e8.8	e3.5	e6.1	6.2	4.7	7.7	6.8	6.0	14	4.1	0.40	3.1
16	e12	e4.2	e4.5	5.8	4.7	6.9	6.2	5.1	4.8	1.7	0.36	1.9
17	e10	e4.3	e4.7	5.9	4.7	9.2	5.5	8.1	3.4	1.2	0.32	1.5
18	e3.3	e4.0	e9.6	5.5	4.7	22	5.3	23	2.9	0.97	0.25	1.2
19	e2.6	e3.8	5.1	6.5	4.7	12	4.8	7.2	2.5	0.85	0.18	1.1
20	e2.4	e3.5	4.5	9.6	4.8	100	4.9	5.7	3.4	0.73	0.02	1.1
21	e2.4	e3.1	4.4	7.7	4.8	27	5.1	5.2	2.1	0.56	0.00	0.91
22	e2.5	e4.1	4.2	8.2	4.7	14	25	4.8	1.8	0.49	0.00	0.61
23	e2.8	e4.2	4.2	8.6	4.7	11	6.7	4.9	1.6	4.0	0.00	0.72
24	e3.0	e4.7	15	14	4.4	9.8	5.4	4.4	1.4	12	0.01	0.66
25	e3.3	e28	6.1	11	4.4	8.4	6.9	4.0	1.4	7.4	0.50	0.54
26	e2.2	e25	5.1	7.0	4.7	19	5.6	18	1.3	8.4	3.7	34
27	e2.6	e7.4	4.8	6.6	5.8	35	5.1	112	2.1	5.7	1.6	32
28	e2.1	e4.5	4.7	6.3	4.5	12	149	19	6.8	2.4	60	27
29	e3.1	e4.1	4.7	6.0	---	9.4	31	8.5	3.0	1.4	30	3.5
30	e3.7	e4.2	4.4	5.8	---	8.5	14	5.8	1.5	1.2	4.1	1.9
31	e3.1	---	4.4	5.9	---	12	---	5.2	---	0.85	2.5	---
TOTAL	111.8	165.6	207.2	256.1	146.1	515.5	408.9	517.3	145.0	117.70	285.53	225.48
MEAN	3.61	5.52	6.68	8.26	5.22	16.6	13.6	16.7	4.83	3.80	9.21	7.52
MAX	12	28	23	20	7.8	100	149	135	29	38	135	83
MIN	2.1	2.6	2.8	4.2	4.4	4.4	4.8	4.0	1.3	0.43	0.00	0.54
CFSM	0.17	0.26	0.32	0.39	0.25	0.79	0.65	0.79	0.23	0.18	0.44	0.36
IN.	0.20	0.29	0.37	0.45	0.26	0.91	0.72	0.91	0.26	0.21	0.50	0.40

e Estimated

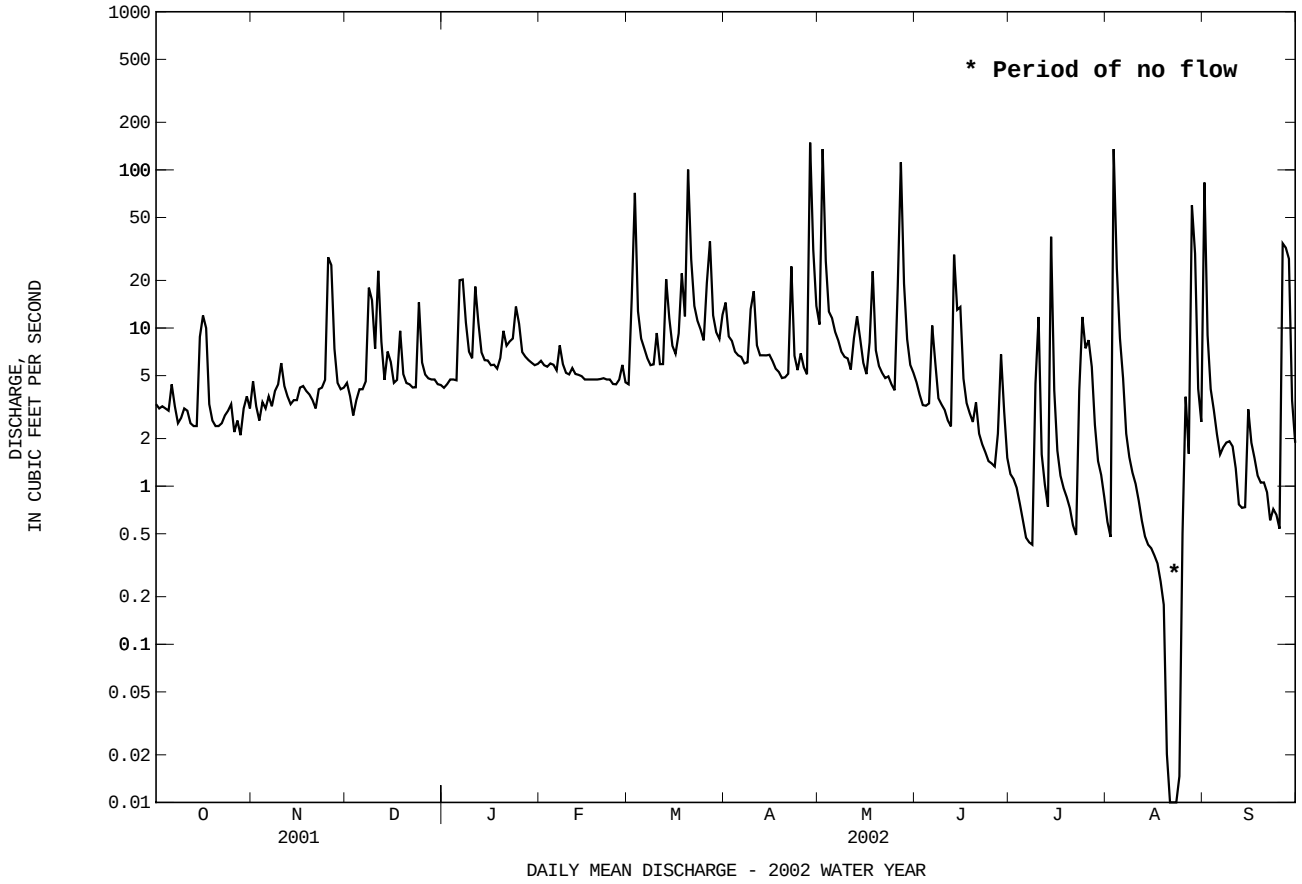
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1983, 1998 - 2002, BY WATER YEAR (WY)

MEAN	14.3	18.5	21.6	26.4	33.0	32.3	29.8	23.9	20.2	15.0	16.3	17.2
MAX	56.3	55.6	57.0	81.0	97.0	68.0	78.5	62.5	141	73.7	60.9	118
(WY)	1980	1927	1973	1979	1936	1953	1952	1978	1972	1975	1955	1979
MIN	1.79	2.37	3.50	5.93	4.52	7.46	11.3	7.37	4.03	0.92	0.72	1.40
(WY)	1932	1932	1932	1931	1931	1931	1969	1999	1999	1999	1930	1930

01650500 NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 1983, 1998 - 2002	
ANNUAL TOTAL	6432.8		3102.21			
ANNUAL MEAN	17.6		8.50		22.2	
HIGHEST ANNUAL MEAN					45.7	1972
LOWEST ANNUAL MEAN					8.45	1931
HIGHEST DAILY MEAN	535	Jun 7	149	Apr 28	2370	Jun 22 1972
LOWEST DAILY MEAN	1.9	Aug 9	0.00	(a)	0.00	(b)
ANNUAL SEVEN-DAY MINIMUM	2.6	Aug 4	0.07	Aug 18	0.00	Sep 5 1966
MAXIMUM PEAK FLOW			821	Aug 3	(c)11000	Jun 22 1972
MAXIMUM PEAK STAGE			6.13	Aug 3	15.89	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.00	(d)	0.00	(f)
ANNUAL RUNOFF (CFSM)	0.84		0.40		1.05	
ANNUAL RUNOFF (INCHES)	11.34		5.47		14.31	
10 PERCENT EXCEEDS	28		15		36	
50 PERCENT EXCEEDS	8.4		4.7		13	
90 PERCENT EXCEEDS	3.1		0.95		4.6	

a Aug. 21-23.
b Aug. 30, 31, Sept. 1, 3, 5-11, 1966, July 27-31, Aug. 1-12, 19, 20, 1999, Aug. 21-23, 2002.
c From rating curve extended above 1,200 ft^3/s on basis of contracted-opening and flow-over-road measurement at gage height 10.99 ft and computation of flow ove Burnt Mills Dam, 3 mi downstream, adjusted for flow from intervening area, at gage height 15.89 ft.
d Aug. 20-24.
f Aug. 29-31, Sept. 1-12, 1966, July 18, 19, 24-31, Aug. 1-14, 18-20, 1999, Aug. 20-24, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD

LOCATION.--Lat 38°57'08.4", long 76°57'57.8", Prince Georges County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on Queens Chapel Road (State Highway 500), 0.8 mi downstream from Sligo Branch, 1.0 mi west of Hyattsville, and 1.6 mi upstream from confluence with Northeast Branch.

DRAINAGE AREA.--49.4 mi^2.

PERIOD OF RECORD.--July 1938 to current year. Monthly discharge only for July 1938 published in WSP 1302.

REVISED RECORDS.--WSP 971: 1942(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 17.10 ft above National Geodetic Vertical Datum of 1929 (Washington Suburban Sanitary Commission bench mark). Prior to Oct. 22, 1938, nonrecording gage; Oct. 22, 1938 to Sept. 17, 1951, water-stage recorder; Sept. 17, 1951 to Aug. 29, 1952, nonrecording gage and crest-stage gage.

REMARKS.--Records good. Prior to June 1961, low flow regulated by storage at Burnt Mills Dam, 7.0 mi upstream from station. Inflow pumped from Patuxent River to augment water supply for Washington Suburban Sanitary District, August 1939 to August 1960. Small diversion since 1962 for irrigation of golf courses upstream from station. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 1	0845	*1,710	*3.68	No other peak greater than base discharge.			

Minimum discharge, 0.95 ft^3/s, Aug. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	9.5	6.4	17	9.7	36	23	12	5.1	2.7	348
2	8.7	11	8.8	6.4	13	51	19	324	9.9	4.2	2.3	30
3	8.9	7.9	7.5	7.0	12	180	17	63	8.4	3.6	173	13
4	7.9	11	8.1	7.0	11	30	14	29	8.3	3.4	86	7.7
5	7.7	9.8	8.5	7.6	9.5	14	13	29	8.3	3.1	16	6.2
6	11	12	8.5	77	9.2	13	12	21	37	2.6	21	e5.4
7	7.3	10	9.0	50	23	14	12	20	28	2.1	6.5	6.9
8	5.1	13	48	18	15	13	12	18	8.6	2.3	4.0	5.1
9	5.2	15	42	11	11	13	43	17	6.0	2.6	3.0	5.1
10	6.1	23	16	9.5	11	23	58	17	5.8	24	2.8	4.5
11	6.3	12	68	36	13	13	19	14	5.8	10	2.1	3.9
12	7.1	12	20	21	11	14	15	61	5.6	4.8	1.9	4.3
13	6.9	10	10	11	10	88	14	32	40	2.8	1.8	4.3
14	27	11	17	9.5	10	27	14	17	46	203	1.7	8.8
15	50	11	14	9.5	10	16	15	13	35	26	1.7	21
16	21	14	9.3	8.7	11	15	15	12	13	10	1.7	19
17	18	14	10	8.5	11	28	14	18	6.9	4.9	1.4	6.6
18	8.3	13	23	9.3	10	54	21	110	35	3.5	1.3	4.2
19	7.5	12	12	18	10	26	17	21	66	3.1	1.2	3.3
20	7.0	12	9.1	25	11	223	11	10	11	2.9	1.3	2.9
21	6.9	12	7.7	16	13	66	15	9.5	9.0	2.6	1.4	2.6
22	7.1	13	7.4	13	13	26	101	9.5	6.8	2.5	1.2	2.7
23	8.2	14	7.9	15	12	19	19	9.9	6.0	7.6	1.2	5.6
24	9.0	20	47	26	11	18	10	11	5.8	26	6.8	3.4
25	10	89	13	22	11	17	16	10	6.3	19	2.9	2.7
26	5.9	75	8.8	12	13	39	13	9.5	5.2	44	1.6	102
27	8.0	16	8.1	11	15	83	11	200	21	20	1.2	108
28	6.0	9.4	8.5	11	11	24	481	50	18	16	244	71
29	8.1	8.5	7.7	12	---	17	79	24	16	6.7	101	16
30	12	8.7	6.7	16	---	17	33	15	6.9	4.5	16	8.3
31	9.5	---	6.5	28	---	39	---	12	---	3.1	9.3	---
TOTAL	328.7	515.3	487.6	538.4	337.7	1229.7	1169	1229.4	497.6	476.0	720.0	832.5
MEAN	10.6	17.2	15.7	17.4	12.1	39.7	39.0	39.7	16.6	15.4	23.2	27.8
MAX	50	89	68	77	23	223	481	324	66	203	244	348
MIN	5.1	7.9	6.5	6.4	9.2	9.7	10	9.5	5.2	2.1	1.2	2.6
CFSM	0.21	0.35	0.32	0.35	0.24	0.80	0.79	0.80	0.34	0.31	0.47	0.56
IN.	0.25	0.39	0.37	0.41	0.25	0.93	0.88	0.93	0.37	0.36	0.54	0.63

e Estimated

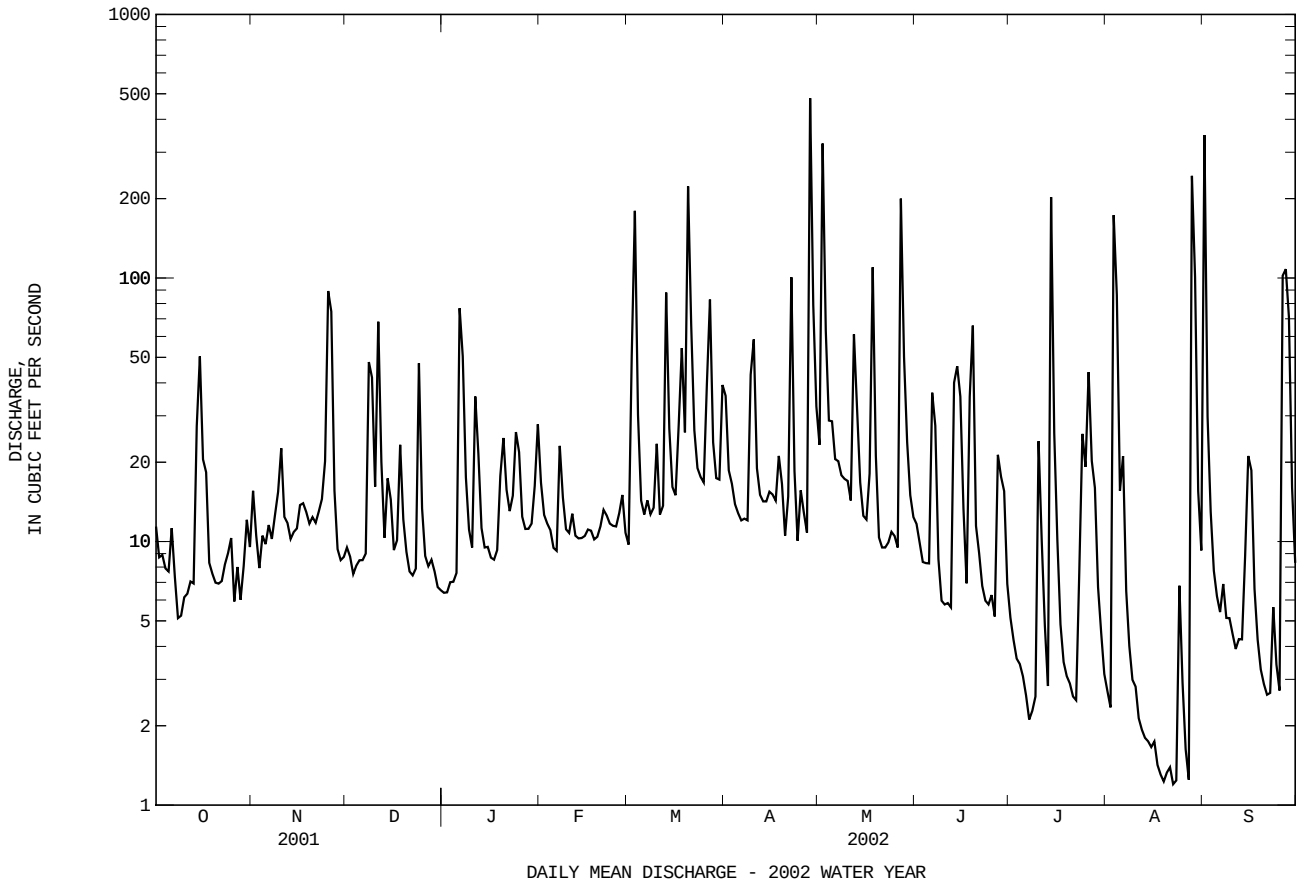
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	28.7	41.0	49.0	55.0	63.3	72.0	61.3	55.3	42.8	34.2	37.2	39.5
MAX	129	128	144	173	183	176	167	198	237	159	193	327
(WY)	1980	1994	1997	1979	1979	1994	1952	1989	1972	1945	1955	1975
MIN	2.44	4.30	11.4	8.04	12.1	23.5	15.3	9.91	10.1	4.07	3.61	2.58
(WY)	1942	1942	1966	1955	2002	1981	1950	1941	1940	1944	1943	1941

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	15629.5		8361.9			
ANNUAL MEAN	42.8		22.9		48.3	
HIGHEST ANNUAL MEAN					96.9	1979
LOWEST ANNUAL MEAN					20.8	1947
HIGHEST DAILY MEAN	853	Jun 7	481	Apr 28	5050	Sep 26 1975
LOWEST DAILY MEAN	5.1	Oct 8	1.2	(a)	0.40	(b)
ANNUAL SEVEN-DAY MINIMUM	6.3	Oct 7	1.3	Aug 17	0.60	Sep 7 1966
MAXIMUM PEAK FLOW			1710	Sep 1	(c)18000	Jun 22 1972
MAXIMUM PEAK STAGE			3.68	Sep 1	14.47	Jun 22 1972
INSTANTANEOUS LOW FLOW			0.95	Aug 27	0.20	Sep 11 1966
ANNUAL RUNOFF (CFSM)	0.87		0.46		0.98	
ANNUAL RUNOFF (INCHES)	11.77		6.30		13.27	
10 PERCENT EXCEEDS	86		45		92	
50 PERCENT EXCEEDS	20		11		24	
90 PERCENT EXCEEDS	8.1		3.4		6.6	

a Aug. 19, 22, 23, 27.
b Sept. 8, 11, 1966.
c From rating curve extended above 4,000 ft^3/s on basis of the average of slope-area and step-backwater measurements of peak flow.



01651800 WATTS BRANCH AT WASHINGTON, D.C.

LOCATION.--Lat 38°54'04.0", long 76°56'31.9", District of Columbia, Hydrologic Unit 02070010, on right bank 5 ft downstream from footbridge, 200 ft upstream from Minnesota Ave., and 1.0 mi upstream from mouth.

DRAINAGE AREA.-- 3.28 mi^2.

PERIOD OF RECORD.--June 1992 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and cobblestone control. Datum of gage is 16.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0740	*413	*4.27	May 18	0550	383	4.14

Minimum discharge, 0.24 ft^3/s, Sept. 6-9, 11-13, 18-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.97	0.87	0.83	0.60	1.2	0.49	1.8	0.99	0.66	0.36	1.6	36
2	0.59	0.86	0.67	0.60	0.83	11	1.1	27	0.62	0.59	1.6	0.69
3	0.59	0.78	0.69	0.60	0.76	5.6	0.90	1.6	0.92	0.68	14	0.36
4	0.60	0.78	0.69	0.56	1.1	0.69	0.86	1.4	1.0	1.5	0.82	0.31
5	0.60	0.79	0.60	0.48	0.82	0.81	0.86	1.0	1.0	0.56	2.9	0.28
6	1.8	0.79	0.67	9.6	0.78	0.51	0.83	0.74	5.2	0.38	1.2	0.27
7	0.64	0.91	0.56	1.3	3.0	0.48	0.86	0.67	0.68	0.30	0.44	0.24
8	0.60	0.89	6.8	0.69	0.56	0.48	0.83	0.62	0.43	0.36	0.62	0.26
9	0.60	0.85	1.3	0.61	0.48	0.52	4.1	0.74	0.41	0.61	0.78	0.28
10	0.62	0.86	0.66	0.60	0.47	3.1	2.3	0.71	0.40	0.67	0.87	0.31
11	0.67	0.89	6.9	3.2	0.53	0.37	0.46	0.60	1.7	0.57	1.6	0.28
12	0.76	0.89	0.62	0.65	0.46	2.0	0.43	1.5	2.0	0.34	1.5	0.24
13	0.78	0.89	0.61	0.56	0.46	7.1	0.52	0.72	8.1	0.35	0.77	0.41
14	6.1	1.1	1.0	0.71	0.47	0.71	0.49	0.60	1.9	18	0.55	5.5
15	1.6	0.93	0.56	0.75	0.46	0.58	1.0	0.61	2.5	0.48	0.36	0.65
16	1.9	1.0	0.53	0.74	0.46	0.57	0.48	1.2	0.45	0.45	0.37	0.44
17	1.0	0.95	0.89	0.57	0.46	3.2	0.51	5.2	0.98	0.44	0.39	0.32
18	0.79	1.00	1.5	0.57	0.46	4.6	9.3	26	1.3	0.44	0.36	0.30
19	0.80	1.0	0.61	3.0	0.46	1.7	5.5	1.00	5.1	0.49	0.62	0.26
20	0.77	1.2	0.60	2.3	0.46	15	0.83	0.66	0.54	0.61	0.47	0.24
21	0.68	1.5	0.60	1.1	0.45	1.7	1.6	0.60	0.59	0.47	0.47	0.27
22	0.78	1.4	0.60	0.76	0.41	0.85	8.7	0.60	0.81	1.2	0.65	0.28
23	0.78	1.3	0.60	1.8	0.41	0.79	0.72	0.60	1.0	0.79	0.39	0.32
24	0.78	2.8	6.7	1.2	0.44	0.92	0.58	0.62	1.8	0.91	1.8	0.33
25	0.72	9.0	1.1	1.5	0.46	0.91	1.8	0.66	2.2	0.66	0.36	0.31
26	0.77	1.8	0.97	0.75	2.2	8.5	0.55	0.61	1.5	3.0	0.34	7.5
27	0.73	0.85	0.89	0.63	1.2	3.7	0.52	1.5	7.6	0.57	0.32	1.6
28	0.78	0.94	0.95	0.60	0.54	1.6	38	0.82	1.5	1.2	18	1.4
29	0.80	0.89	1.0	0.60	---	1.5	2.2	0.46	0.80	1.7	3.2	0.30
30	0.82	0.91	1.0	0.61	---	1.1	1.2	0.46	0.72	1.8	0.47	0.28
31	0.83	---	0.91	0.60	---	3.9	---	0.46	---	1.3	0.41	---
TOTAL	31.25	39.62	42.61	38.84	20.79	84.98	89.83	80.95	54.41	41.78	58.23	60.23
MEAN	1.01	1.32	1.37	1.25	0.74	2.74	2.99	2.61	1.81	1.35	1.88	2.01
MAX	6.1	9.0	6.9	9.6	3.0	15	38	27	8.1	18	18	36
MIN	0.59	0.78	0.53	0.48	0.41	0.37	0.43	0.46	0.40	0.30	0.32	0.24
CFSM	0.31	0.40	0.42	0.38	0.23	0.84	0.91	0.80	0.55	0.41	0.57	0.61
IN.	0.35	0.45	0.48	0.44	0.24	0.96	1.02	0.92	0.62	0.47	0.66	0.68

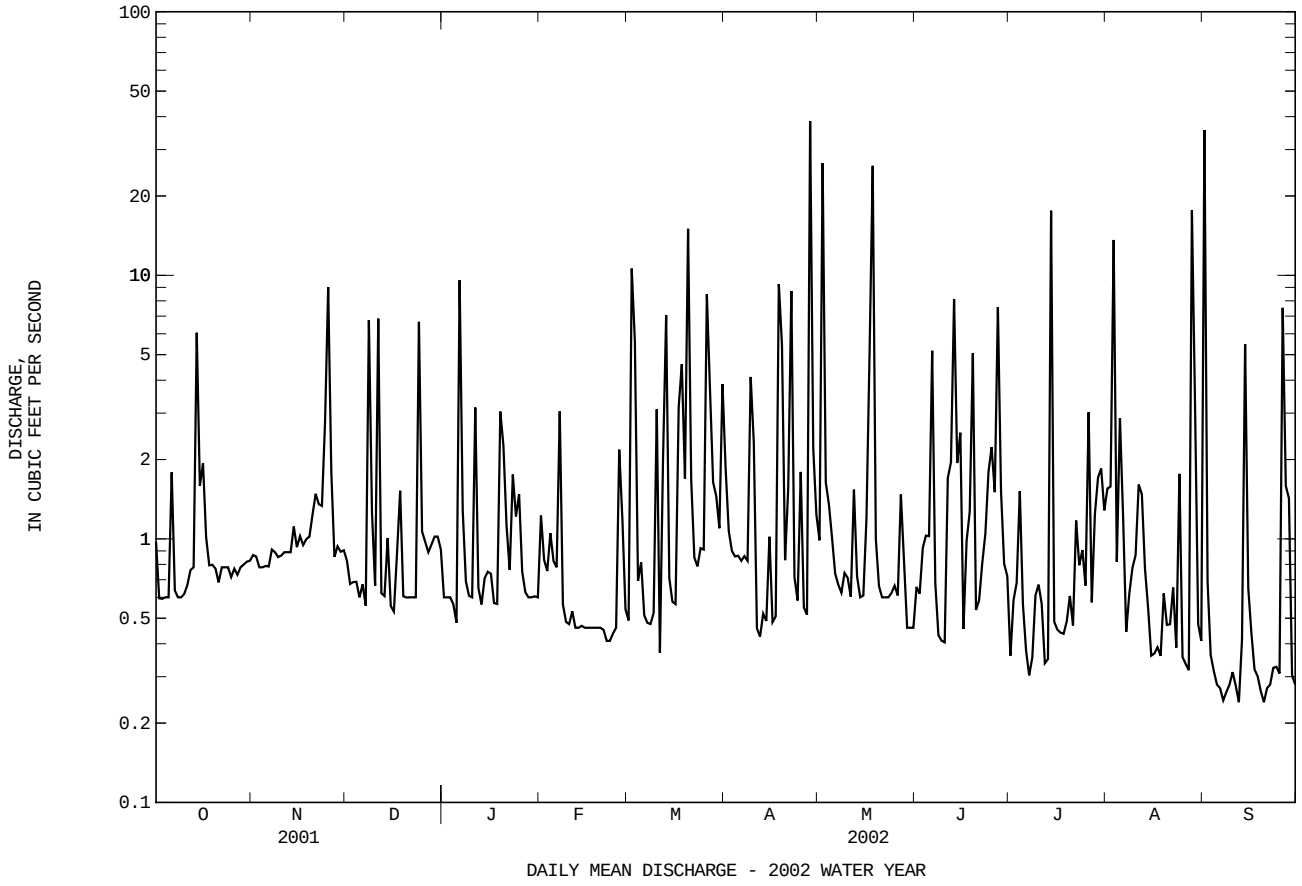
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

MEAN	2.82	3.73	3.76	5.62	4.75	7.90	4.51	4.40	3.36	3.14	2.80	3.61
MAX	9.08	6.74	9.57	9.71	11.3	15.7	6.55	6.73	6.54	5.72	4.39	13.0
(WY)	1996	1998	1997	1996	1998	1994	1996	2001	2001	2000	1999	1999
MIN	0.73	1.32	1.37	1.25	0.74	2.74	2.36	1.59	1.81	1.35	1.23	1.37
(WY)	1999	2002	2002	2002	2002	2002	1995	1999	2002	2002	1998	1998

01651800 WATTS BRANCH AT WASHINGTON, D.C.--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	1278.38		643.52			
ANNUAL MEAN	3.50		1.76		4.21	
HIGHEST ANNUAL MEAN					5.87	1996
LOWEST ANNUAL MEAN					1.76	2002
HIGHEST DAILY MEAN	63	May 22	38	Apr 28	204	Sep 16 1999
LOWEST DAILY MEAN	0.53	Dec 16	0.24	(a)	0.24	(a)
ANNUAL SEVEN-DAY MINIMUM	0.64	Sep 3	0.27	Sep 6	0.27	Sep 6 2002
MAXIMUM PEAK FLOW			413	May 2	(b)1510	Sep 26 1994
MAXIMUM PEAK STAGE			4.27	May 2	7.36	Sep 26 1994
INSTANTANEOUS LOW FLOW			0.24	(c)	0.24	(c)
ANNUAL RUNOFF (CFSM)	1.07		0.54		1.28	
ANNUAL RUNOFF (INCHES)	14.50		7.30		17.43	
10 PERCENT EXCEEDS	6.4		3.0		8.9	
50 PERCENT EXCEEDS	1.7		0.76		1.8	
90 PERCENT EXCEEDS	0.67		0.40		0.67	

a Sept. 7, 12, 20, 2002.
b From rating curve extended above 260 ft^3/s.
c Sept. 6-9, 11-13, 18-21, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD

LOCATION.--Lat 38°42'20.8", long 76°57'58.3", Prince Georges County, Hydrologic Unit 02070010, on left bank 75 ft downstream from bridge on State Highway 223, at Piscataway, 0.4 mi upstream from Tinker Creek, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--39.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 18	1330	*325	*5.35	No peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.93	1.4	4.4	4.7	8.6	5.6	29	20	3.3	0.48	0.00	22
2	1.1	1.6	4.6	4.6	8.5	5.5	18	51	2.4	0.17	0.00	22
3	1.0	2.3	4.1	4.7	9.1	70	15	41	1.5	0.04	0.00	4.5
4	1.1	1.7	3.6	4.9	8.1	25	13	18	0.96	0.03	0.00	1.8
5	0.83	1.7	3.3	4.8	7.2	13	11	20	0.80	0.02	0.00	2.7
6	0.99	1.6	3.6	11	7.0	11	11	15	22	0.02	0.00	1.5
7	2.4	1.6	3.8	49	11	9.2	10	12	38	0.01	0.00	0.48
8	1.7	1.7	5.3	21	16	8.5	10	11	10	0.00	0.00	0.23
9	1.1	1.8	23	12	11	8.1	10	11	5.1	0.00	0.00	0.12
10	0.93	1.9	11	10	9.0	9.7	40	11	3.1	0.00	0.00	0.06
11	0.99	1.8	27	10	8.6	9.3	21	8.7	2.4	0.00	0.00	0.03
12	1.00	2.0	25	13	7.9	8.1	14	7.6	1.6	0.00	0.00	0.01
13	1.2	2.0	11	9.6	7.8	19	13	7.0	4.2	0.00	0.00	0.00
14	1.3	1.9	8.4	7.4	7.0	25	12	6.3	50	0.00	0.00	0.00
15	7.1	2.1	6.9	6.8	6.9	14	11	5.4	18	5.6	0.00	0.00
16	5.7	2.4	6.1	6.6	6.7	11	11	4.6	12	1.4	0.00	0.00
17	3.6	2.7	5.8	6.3	6.6	10	11	4.2	5.7	0.23	0.00	0.00
18	2.7	2.4	8.2	6.4	6.0	37	9.2	168	3.5	0.03	0.00	0.00
19	2.2	3.4	7.8	6.4	5.8	32	19	64	11	0.02	0.00	0.00
20	1.9	2.3	6.7	15	5.7	57	22	21	7.7	0.01	0.00	0.00
21	1.8	2.5	5.9	18	6.2	56	14	13	4.1	0.00	0.00	0.00
22	1.8	2.3	5.1	17	5.9	25	44	10	2.3	0.00	0.00	0.00
23	1.8	2.5	4.8	14	5.6	17	21	8.8	1.6	0.00	0.00	0.00
24	1.7	2.6	16	13	5.6	14	13	7.3	0.90	0.00	0.00	0.00
25	1.6	5.0	16	22	5.4	14	13	6.7	0.52	0.00	0.00	0.00
26	1.4	30	8.6	18	5.6	13	13	6.0	0.30	0.00	0.00	0.00
27	1.1	11	6.9	12	6.4	66	11	5.4	0.20	0.00	0.00	0.00
28	1.1	6.4	6.5	10	7.2	29	120	5.3	0.64	0.00	0.00	0.00
29	1.1	4.5	6.0	9.6	---	19	81	4.9	3.6	0.00	3.9	0.00
30	1.2	4.4	5.6	9.2	---	17	32	4.2	1.2	0.00	5.3	0.00
31	1.4	---	5.0	8.8	---	16	---	4.0	---	0.00	0.77	---
TOTAL	55.77	111.5	266.0	365.8	212.4	674.0	672.2	582.4	218.62	8.06	9.97	55.43
MEAN	1.80	3.72	8.58	11.8	7.59	21.7	22.4	18.8	7.29	0.26	0.32	1.85
MAX	7.1	30	27	49	16	70	120	168	50	5.6	5.3	22
MIN	0.83	1.4	3.3	4.6	5.4	5.5	9.2	4.0	0.20	0.00	0.00	0.00
CFSM	0.05	0.09	0.22	0.30	0.19	0.55	0.57	0.48	0.18	0.01	0.01	0.05
IN.	0.05	0.11	0.25	0.34	0.20	0.63	0.63	0.55	0.21	0.01	0.01	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2002, BY WATER YEAR (WY)

MEAN	27.0	32.0	49.8	62.0	68.7	83.5	65.2	46.8	29.7	18.3	19.9	29.6
MAX	177	95.8	153	217	188	268	218	189	173	92.7	88.8	256
(WY)	1980	1973	1973	1978	1972	1994	1983	1989	1972	1975	1971	1975
MIN	1.31	1.27	5.26	5.96	7.59	17.5	18.1	9.28	1.42	0.14	0.006	0.000
(WY)	1987	1992	1966	1981	2002	1981	1985	1999	1986	1966	1966	1977

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1966 - 2002	
ANNUAL TOTAL	10528.47		3232.15			
ANNUAL MEAN	28.8		8.86		44.2	
HIGHEST ANNUAL MEAN					85.9	1972
LOWEST ANNUAL MEAN					8.86	2002
HIGHEST DAILY MEAN	560	Jul 27	168	May 18	4500	Sep 6 1979
LOWEST DAILY MEAN	0.42	Jul 25	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.97	Sep 29	0.00	Jul 8	0.00	Jul 9 1966
MAXIMUM PEAK FLOW			325	May 18	(b)8540	Sep 6 1979
MAXIMUM PEAK STAGE			5.35	May 18	11.21	Sep 6 1979
INSTANTANEOUS LOW FLOW			0.00	(a)	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.73		0.22		1.12	
ANNUAL RUNOFF (INCHES)	9.92		3.04		15.22	
10 PERCENT EXCEEDS	55		20		89	
50 PERCENT EXCEEDS	15		5.0		22	
90 PERCENT EXCEEDS	1.7		0.00		1.3	

a Many days.
b From rating curve extended above 1,700 ft^3/s on basis of contracted-opening measurement of peak flow at bridge 100 ft upstream.
c No flow at times in 1966, 1970, 1977, 1980-83, 1985-89, 1991-95, 1997-99, 2002.

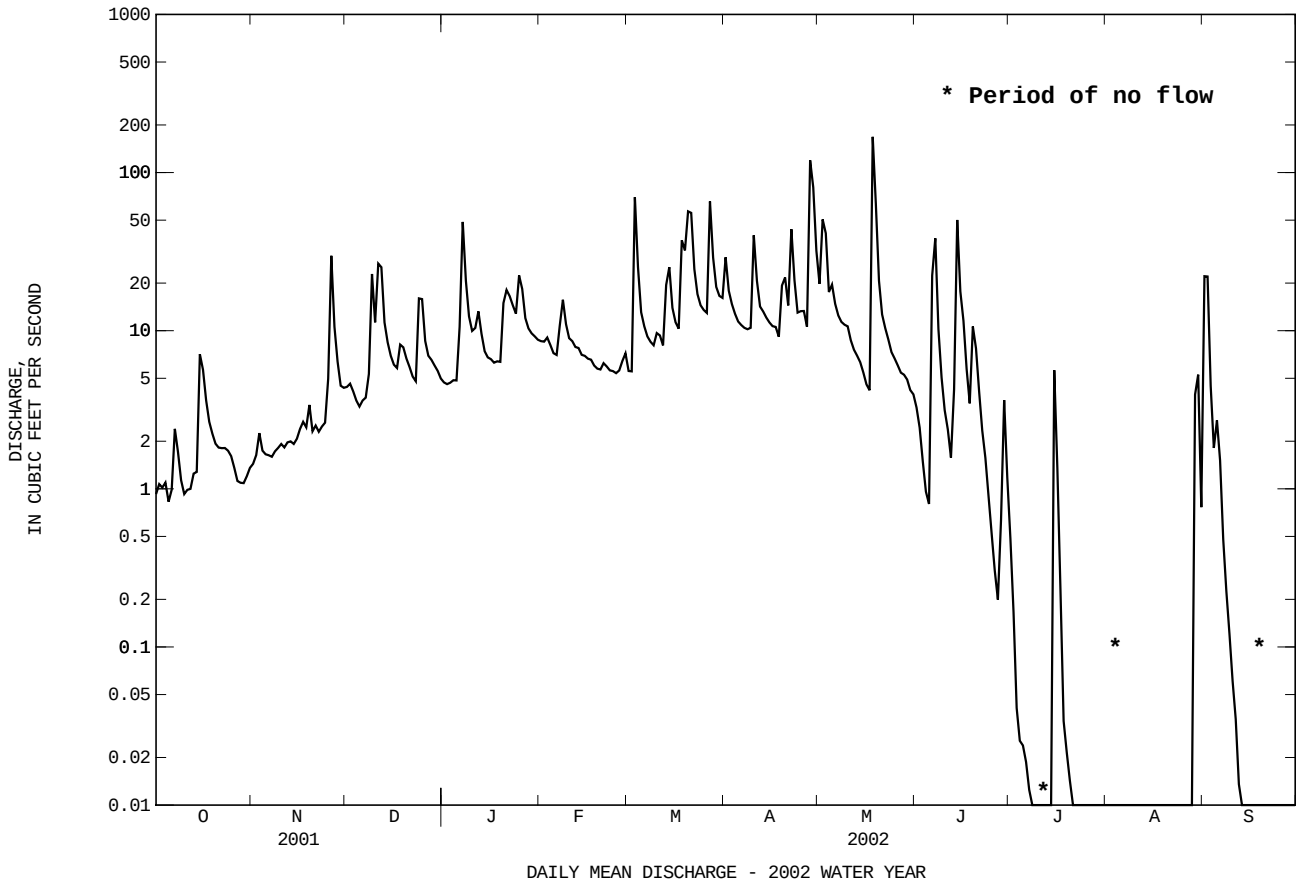


Photo by USGS personnel

Gaging and water-quality station at Piscataway Creek at Piscataway, MD (01653600)

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
10...	1330	ENVIRONMENTAL	.86	136	6.7	19.0	9.8	772	--	--	.37	--
NOV												
06...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
07...	1015	ENVIRONMENTAL	1.6	178	6.4	--	7.3	764	7.9	65	--	--
25...	1530	ENVIRONMENTAL	5.2	--	--	--	--	--	--	--	--	--
25...	2130	ENVIRONMENTAL	6.7	--	--	--	--	--	--	--	--	--
26...	0330	ENVIRONMENTAL	37	--	--	--	--	--	--	--	--	--
26...	*0331*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
26...	0930	ENVIRONMENTAL	30	--	--	--	--	--	--	--	--	--
26...	1430	ENVIRONMENTAL	33	--	--	--	--	--	--	--	--	--
DEC												
05...	1430	ENVIRONMENTAL	3.3	190	7.0	21.0	9.1	766	10.1	87	--	--
JAN												
03...	1430	ENVIRONMENTAL	5.0	178	7.5	.0	.3	761	13.5	93	.24	--
FEB												
13...	1345	ENVIRONMENTAL	7.6	238	7.2	11.0	4.7	764	13.5	104	--	--
MAR												
07...	1000	ENVIRONMENTAL	9.3	202	6.8	19.0	5.3	767	11.3	89	.40	--
20...	1415	ENVIRONMENTAL	60	--	--	--	--	--	--	--	.74	.21
20...	2015	ENVIRONMENTAL	107	--	--	--	--	--	--	--	1.0	.25
21...	0215	ENVIRONMENTAL	87	--	--	--	--	--	--	--	1.0	.35
21...	0815	ENVIRONMENTAL	60	--	--	--	--	--	--	--	.92	.34
21...	2015	ENVIRONMENTAL	38	--	--	--	--	--	--	--	.79	.25
26...	2015	ENVIRONMENTAL	13	--	--	--	--	--	--	--	.47	.13
27...	0215	ENVIRONMENTAL	39	--	--	--	--	--	--	--	.68	.18
27...	0815	ENVIRONMENTAL	86	--	--	--	--	--	--	--	.79	.21
27...	1415	ENVIRONMENTAL	81	--	--	--	--	--	--	--	.83	.28
28...	0215	ENVIRONMENTAL	38	--	--	--	--	--	--	--	.74	.29
APR												
03...	1200	ENVIRONMENTAL	15	201	7.2	26.0	15.1	754	10.8	109	.35	--
23...	0915	ENVIRONMENTAL	20	175	6.8	13.0	12.8	764	8.6	81	.73	.12
28...	1145	ENVIRONMENTAL	116	--	--	--	--	--	--	--	1.7	.15
28...	1745	ENVIRONMENTAL	226	--	--	--	--	--	--	--	2.0	.22
28...	*1746*	*REPLICATE*	--	--	--	--	--	--	--	--	*2.2*	*.23*
28...	2345	ENVIRONMENTAL	194	--	--	--	--	--	--	--	1.6	.25
29...	0545	ENVIRONMENTAL	108	--	--	--	--	--	--	--	1.1	.23
29...	1745	ENVIRONMENTAL	52	153	--	--	--	--	--	--	.97	.19
30...	0545	ENVIRONMENTAL	37	162	--	--	--	--	--	--	.84	.18
MAY												
08...	0845	ENVIRONMENTAL	12	174	6.7	22.5	16.2	763	7.7	78	.67	.18
JUN												
19...	1000	ENVIRONMENTAL	15	152	6.8	22.0	20.3	766	7.2	79	.77	.27
JUL												
16...	1115	ENVIRONMENTAL	1.4	170	6.8	32.0	22.8	--	6.2	--	.78	.22
AUG												
29...	1715	ENVIRONMENTAL	.47	--	--	--	--	--	--	--	2.5	.12
29...	2300	ENVIRONMENTAL	12	--	--	--	--	--	--	--	1.2	.68
30...	0500	ENVIRONMENTAL	8.3	--	--	--	--	--	--	--	1.1	.58
31...	0400	ENVIRONMENTAL	1.4	--	--	--	--	--	--	--	1.2	.69

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
10...	E.002	.020	.022	.35	.27	.29	.33	.24	.154	.028	.023	1.8	<.01
NOV													
06...	<.002	<.013	<.015	<.10	<.10	--	--	--	E.003	<.004	<.007	.5	--
07...	<.002	<.013	E.014	.32	.23	--	--	--	.154	.026	.018	2.4	.01
25...	<.002	<.013	<.015	.26	.23	--	--	--	.099	.030	.024	3.0	.04
25...	<.002	E.012	<.015	.29	.21	--	--	--	.119	.038	.033	3.2	.06
26...	<.002	<.013	<.015	.83	.26	--	--	--	.44	.075	.062	57	5.7
26...	<.002	<.013	<.015	.69	.27	--	--	--	.44	.075	.061	56	--
26...	<.002	<.013	<.015	.47	.23	--	--	--	.21	.037	.030	28	2.3
26...	<.002	<.013	<.015	.53	.28	--	--	--	.191	.080	.064	13	1.2
DEC													
05...	<.002	<.013	E.011	.27	.21	--	--	--	.135	.046	.040	3.6	.03
JAN													
03...	<.002	.056	E.009	.19	.18	.23	--	--	.065	.027	.022	2.9	.04
FEB													
13...	<.002	E.009	E.013	.19	.14	--	--	--	.043	.012	.009	1.9	.04
MAR													
07...	<.002	.142	<.015	.26	.19	.33	--	--	.059	.015	.009	4.5	.11
20...	.004	.211	.019	.53	.22	.43	.51	.20	.173	.025	.017	49	8.0
20...	.005	.258	.042	.78	.28	.54	.74	.24	.28	.027	.018	126	36.4
21...	.007	.354	.060	.68	.37	.72	.61	.31	.179	.029	.019	74	17.4
21...	.006	.341	.046	.58	.33	.67	.53	.29	.127	.026	.017	37	5.9
21...	.004	.257	.021	.54	.25	.51	.52	.23	.118	.026	.016	30	3.0
26...	.003	.137	.020	.33	.26	.40	.31	.24	.109	.018	.015	24	.86
27...	.004	.181	.050	.49	.33	.51	.45	.28	.192	.022	.017	48	5.1
27...	.005	.220	.034	.57	.30	.52	.53	.27	.20	.022	.016	77	17.8
27...	.006	.289	.035	.54	.37	.66	.51	.34	.169	.022	.014	56	12.2
28...	.005	.293	.028	.45	.32	.61	.42	.29	.123	.019	.012	30	3.1
APR													
03...	E.002	.043	E.008	.30	.20	.24	--	--	.079	.026	.019	8.8	.36
23...	.006	.126	.089	.60	.51	.63	.52	.42	.153	.055	.039	11	.60
28...	.005	.157	.059	1.5	.41	.56	1.5	.35	.64	.034	.022	280	87.7
28...	.010	.234	.080	1.7	.51	.75	1.7	.43	.88	.033	.019	611	373
28...	.010	.239	.082	1.9	.48	.72	1.9	.40	.83	.042	.027	584	--
28...	.008	.255	.048	1.3	.51	.76	1.3	.46	.55	.032	.019	345	181
29...	.006	.233	.050	.89	.48	.71	.84	.43	.26	.047	.029	117	34.2
29...	.006	.197	.063	.77	.49	.69	.71	.42	.22	.044	.029	85	12.0
30...	.006	.185	.075	.66	.49	.67	.58	.41	.180	.042	.029	40	4.0
MAY													
08...	.009	.194	.092	.47	.44	.64	.38	.35	.144	.053	.041	6.3	.20
JUN													
19...	.012	.279	.060	.49	.44	.72	.43	.38	.21	.095	.079	13	.52
JUL													
16...	.007	.230	.069	.55	.42	.65	.48	.35	.165	.069	.052	5.3	.02
AUG													
29...	.020	.138	1.26	2.4	1.9	2.1	1.2	.67	.35	.042	.021	25	.03
29...	.009	.687	.089	.55	.44	1.1	.46	.35	.132	.059	.042	15	.49
30...	.007	.591	.071	.46	.40	.99	.39	.33	.108	.056	.041	8.1	.18
31...	.009	.695	.089	.52	.43	1.1	.43	.34	.088	.039	.027	5.7	.02

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

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
10...	--
NOV	
06...	--
07...	--
25...	92
25...	--
26...	79
26...	86
26...	74
26...	87
DEC	
05...	--
JAN	
03...	--
FEB	
13...	--
MAR	
07...	--
20...	83
20...	78
21...	77
21...	83
21...	--
26...	--
27...	95
27...	38
27...	--
28...	--
APR	
03...	--
23...	--
28...	71
28...	49
28...	57
28...	60
29...	--
29...	--
30...	--
MAY	
08...	--
JUN	
19...	--
JUL	
16...	--
AUG	
29...	85
29...	86
30...	--
31...	--

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD

LOCATION.--Lat 38°35'46.1", long 77°03'21.7", Charles County, Hydrologic Unit 02070010, on bank at left downstream side of bridge on State Highway 227, 30 ft downstream from Old Womans Run, 1.2 mi southeast of Pomonkey, and 12.6 mi upstream from mouth.

DRAINAGE AREA.--57.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1949 to September 1972, January 2001 to September 2002.

REVISED RECORDS.--WDR MD-DE-02-1.

GAGE.--Water-stage recorder and concrete control. Datum of gage 40 feet above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. Low flow affected by groundwater diversions from municipal well fields Waldorf and St. Charles. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 22, 2001	1445	*1,270	*6.08	May 27, 2001	1030	586	5.33
Mar 31, 2001	0715	693	5.48				
Apr 29, 2002	0715	*260	*4.42	No peak greater than base discharge.			

2001 Water Year Minimum discharge, 0.00 ft^3/s, on many days.
2002 Water Year Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, JANUARY TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	60	50	198	18	27	1.1	36	3.5
2	---	---	---	---	51	47	114	16	60	2.3	15	1.5
3	---	---	---	---	42	43	82	14	45	7.4	6.3	0.87
4	---	---	---	---	37	42	66	11	27	6.3	4.1	0.52
5	---	---	---	---	85	60	56	11	44	4.3	4.5	0.42
6	---	---	---	---	173	63	53	10	42	7.2	4.9	0.32
7	---	---	---	---	106	52	52	7.7	29	6.2	2.7	0.17
8	---	---	---	---	70	46	50	8.3	28	16	1.5	0.04
9	---	---	---	---	57	39	48	6.9	22	27	0.86	0.03
10	---	---	---	---	51	34	60	6.3	15	9.1	3.2	0.00
11	---	---	---	---	43	31	83	5.8	11	4.4	55	0.00
12	---	---	---	---	37	29	119	6.3	8.7	2.1	131	0.00
13	---	---	---	---	43	56	82	6.3	7.6	1.1	78	0.00
14	---	---	---	---	46	58	65	6.2	6.2	0.87	43	0.00
15	---	---	---	---	49	50	54	5.6	6.8	0.30	24	0.00
16	**Period prior to gage reactivation**				53	81	57	4.4	49	0.11	13	0.00
17	---	---	---	---	141	68	72	3.8	104	0.01	7.7	0.00
18	---	---	---	---	130	53	71	3.7	e49	e0.00	5.9	0.00
19	---	---	---	---	78	43	55	33	e19	e0.00	4.7	0.00
20	---	---	---	---	61	36	50	46	12	e0.00	3.5	0.00
21	---	---	---	---	53	333	47	31	7.6	e0.00	2.2	0.00
22	---	---	---	---	48	1010	41	43	5.7	e0.00	1.3	0.00
23	---	---	---	---	50	536	35	51	24	e0.00	0.81	0.00
24	---	---	---	81	59	146	33	30	19	e0.00	8.1	0.00
25	---	---	---	66	65	98	35	30	11	e0.00	13	0.00
26	---	---	---	54	77	75	32	328	6.8	e1.9	4.5	0.00
27	---	---	---	51	63	59	29	508	4.5	e180	1.2	0.00
28	---	---	---	46	55	51	25	165	3.1	205	0.63	0.00
29	---	---	---	41	---	60	21	65	3.2	90	0.41	0.00
30	---	---	---	55	---	505	19	41	1.5	147	0.36	0.00
31	---	---	---	78	---	585	---	28	---	64	2.5	---
TOTAL	---	---	---	---	1883	4439	1804	1550.3	698.7	783.69	479.87	7.37
MEAN	---	---	---	---	67.2	143	60.1	50.0	23.3	25.3	15.5	0.25
MAX	---	---	---	---	173	1010	198	508	104	205	131	3.5
MIN	---	---	---	---	37	29	19	3.7	1.5	0.00	0.36	0.00
CFSM	---	---	---	---	1.23	2.61	1.10	0.91	0.42	0.46	0.28	0.00
IN.	---	---	---	---	1.28	3.01	1.22	1.05	0.47	0.53	0.33	0.01

e Estimated

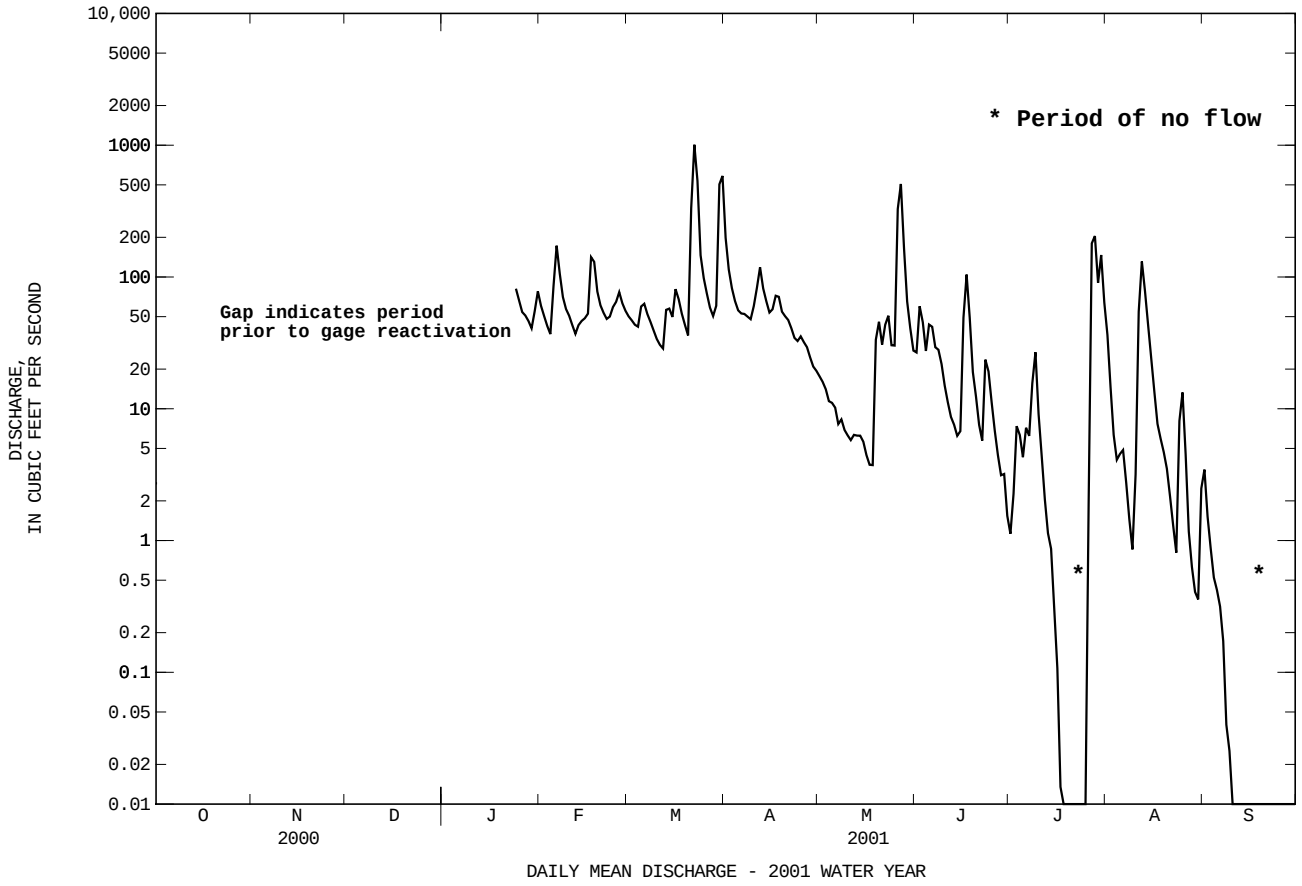
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1972, 2001, BY WATER YEAR (WY)

MEAN	20.6	33.9	60.9	74.8	107	125	87.0	42.6	34.3	12.4	29.2	15.8
MAX	142	101	188	151	276	305	203	99.1	325	59.2	411	127
(WY)	1956	1953	1958	1952	1961	1958	1970	1972	1972	1972	1955	1960
MIN	0.000	0.023	3.28	11.4	34.4	55.6	29.6	7.16	0.53	0.000	0.000	0.000
(WY)	1955	1955	1966	1955	1968	1959	1950	1957	1954	1957	1954	1954

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

SUMMARY STATISTICS	WATER YEARS 1950 - 1972 2001	
ANNUAL MEAN	54.2	
HIGHEST ANNUAL MEAN	113	1972
LOWEST ANNUAL MEAN	22.6	1966
HIGHEST DAILY MEAN	5610	Aug 13 1955
LOWEST DAILY MEAN	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 29 1950
MAXIMUM PEAK FLOW	(b)9300	Aug 13 1955
MAXIMUM PEAK STAGE	7.52	Aug 13 1955
INSTANTANEOUS LOW FLOW	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.99	
ANNUAL RUNOFF (INCHES)	13.44	
10 PERCENT EXCEEDS	124	
50 PERCENT EXCEEDS	22	
90 PERCENT EXCEEDS	0.00	

a Many dats.
b From rating curve extended above 6,000 ft^3/s for the period 1950-1972.
c No flow at times in each year.



01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	e0.50	1.5	9.2	3.4	34	41	0.04	0.00	0.00	0.00
2	0.00	0.00	e0.54	1.4	8.1	4.2	33	38	0.02	0.00	0.00	0.00
3	0.00	0.00	e0.50	1.5	7.1	47	27	46	0.00	0.00	e0.00	14
4	0.00	0.00	e0.44	1.6	6.7	59	23	29	0.00	0.00	e0.00	21
5	0.00	0.00	0.40	1.5	5.3	27	19	28	0.00	0.00	e0.00	10
6	0.00	0.00	0.34	4.8	5.1	20	16	25	0.00	0.00	e0.00	0.89
7	0.00	0.00	1.2	40	8.4	13	15	20	0.00	0.00	0.00	0.12
8	0.00	0.00	2.7	33	12	14	16	16	0.33	0.00	0.00	0.00
9	0.00	0.00	9.2	17	11	14	16	14	2.3	0.00	0.00	0.00
10	0.00	0.00	13	12	9.6	14	27	13	0.15	0.00	0.00	0.00
11	0.00	0.00	19	11	9.3	12	29	11	0.04	0.00	0.00	0.00
12	0.00	0.00	29	11	9.4	11	24	8.7	0.01	0.00	0.00	0.00
13	0.00	0.00	14	10	12	19	22	6.0	0.02	0.00	0.00	0.00
14	e0.01	0.00	6.7	8.4	11	35	19	3.9	0.03	0.00	0.00	0.00
15	e3.0	0.00	3.6	6.9	11	29	18	2.8	0.07	0.00	0.00	0.00
16	e0.40	0.00	2.1	5.6	9.3	23	15	2.0	1.7	0.00	0.00	0.00
17	e0.06	0.00	2.0	5.5	7.6	20	13	1.5	4.1	0.00	0.00	0.00
18	e0.01	0.00	3.2	5.1	6.2	27	11	70	1.3	0.00	0.00	0.00
19	0.00	0.00	3.3	5.7	5.4	51	11	131	0.20	0.00	0.00	0.00
20	0.00	0.00	3.2	10	5.3	63	19	40	0.05	0.00	0.00	0.00
21	0.00	0.00	2.1	18	5.6	106	18	23	0.02	0.00	e0.00	0.00
22	0.00	0.00	1.5	18	5.1	53	53	16	0.01	0.00	e0.00	0.00
23	0.00	0.00	1.6	17	4.9	34	48	11	0.00	0.00	e0.00	0.00
24	0.00	e0.01	4.2	15	4.6	28	25	8.1	0.00	0.00	0.00	0.00
25	0.00	e0.43	8.6	20	4.4	25	20	5.4	0.00	0.00	0.00	0.00
26	0.00	e13	6.2	22	4.5	23	17	3.4	0.00	0.00	0.00	0.00
27	0.00	e6.6	3.5	16	4.5	67	15	2.3	0.00	0.00	0.00	0.00
28	0.00	e2.0	2.5	13	4.0	58	78	1.2	0.00	0.00	0.00	0.00
29	0.00	e0.50	2.1	11	---	40	229	0.74	0.00	0.00	e0.00	0.00
30	0.00	e0.48	1.9	9.8	---	31	81	0.58	0.00	0.00	0.00	0.00
31	0.00	---	1.6	9.4	---	27	---	0.21	---	0.00	0.00	---
TOTAL	3.48	23.02	150.72	362.7	206.6	997.6	991	618.83	10.39	0.00	0.00	46.01
MEAN	0.11	0.77	4.86	11.7	7.38	32.2	33.0	20.0	0.35	0.000	0.000	1.53
MAX	3.0	13	29	40	12	106	229	131	4.1	0.00	0.00	21
MIN	0.00	0.00	0.34	1.4	4.0	3.4	11	0.21	0.00	0.00	0.00	0.00
CFSM	0.00	0.01	0.09	0.21	0.13	0.59	0.60	0.36	0.01	0.00	0.00	0.03
IN.	0.00	0.02	0.10	0.25	0.14	0.68	0.67	0.42	0.01	0.00	0.00	0.03

e Estimated

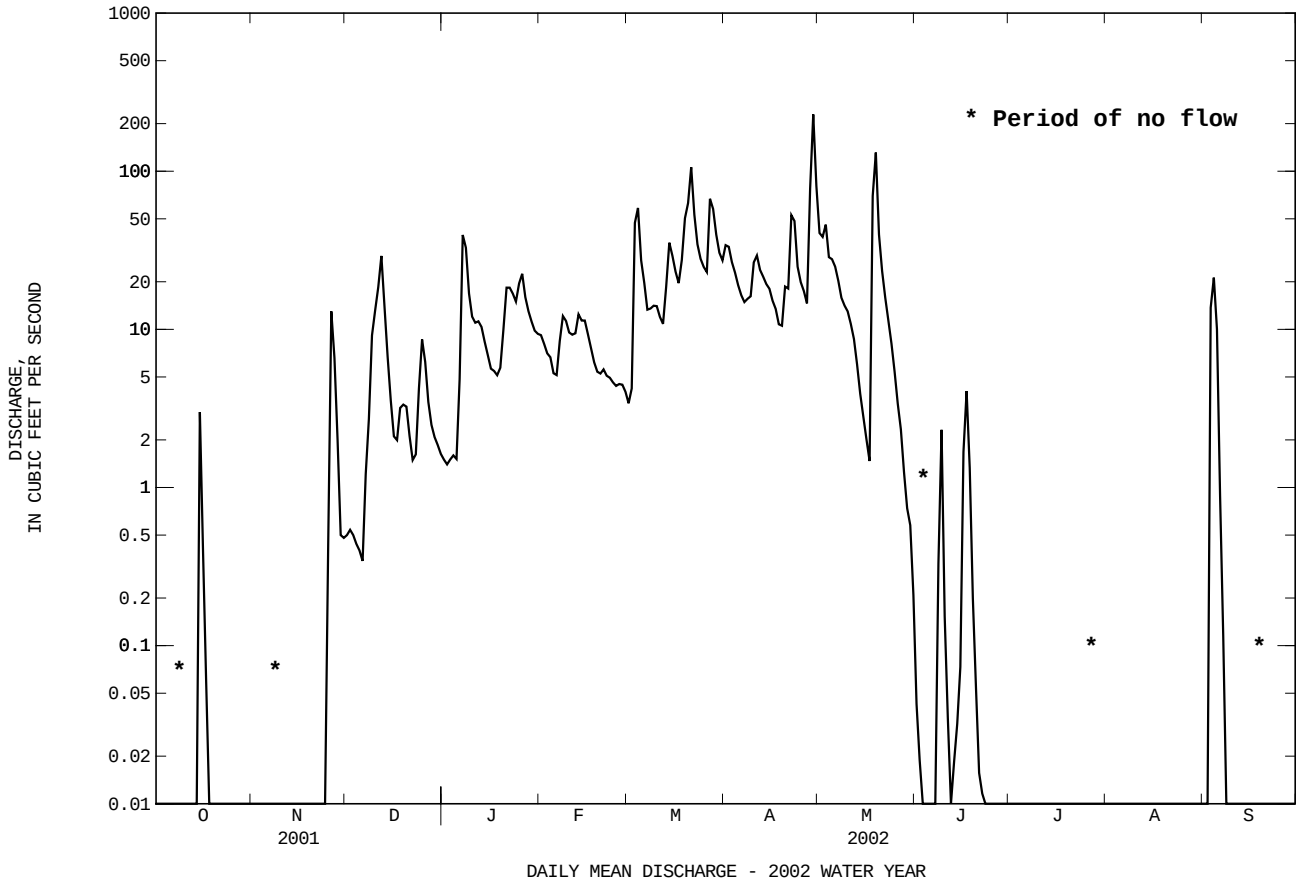
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1972, 2001 - 2002, BY WATER YEAR (WY)

MEAN	19.7	32.5	58.6	72.2	103	121	84.8	41.6	33.0	11.9	28.0	15.3
MAX	142	101	188	151	276	305	203	99.1	325	59.2	411	127
(WY)	1956	1953	1958	1952	1961	1958	1970	1972	1972	1972	1955	1960
MIN	0.000	0.023	3.28	11.4	7.38	32.2	29.6	7.16	0.35	0.000	0.000	0.000
(WY)	1955	1955	1966	1955	2002	2002	1950	1957	2002	1957	1954	1954

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1950 - 1972, 2001 - 2002	
ANNUAL TOTAL	3410.35			
ANNUAL MEAN	9.34		52.3	
HIGHEST ANNUAL MEAN			113	1972
LOWEST ANNUAL MEAN			9.34	2002
HIGHEST DAILY MEAN	229	Apr 29	5610	Aug 13 1955
LOWEST DAILY MEAN	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	0.00	Jun 29 1950
MAXIMUM PEAK FLOW	260	Apr 29	(b)9300	Aug 13 1955
MAXIMUM PEAK STAGE	4.42	Apr 29	7.52	Aug 13 1955
INSTANTANEOUS LOW FLOW	0.00	(a)	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.17		0.95	
ANNUAL RUNOFF (INCHES)	2.32		12.96	
10 PERCENT EXCEEDS	27		121	
50 PERCENT EXCEEDS	1.2		21	
90 PERCENT EXCEEDS	0.00		0.00	

a Many days.
b From rating curve extended above 6,000 ft^3/s for the period 1950-1972.
c No flow at times in each year.



01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1964, 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
NOV												
06...	*0945*	*BLANK*	--	--	--	--	--	--	--	--	--	--
DEC												
05...	1615	ENVIRONMENTAL	.40	175	5.8	22.0	10.4	766	5.2	46	.44	--
JAN												
03...	1530	ENVIRONMENTAL	1.6	149	7.0	.0	1.1	--	11.9	--	--	--
FEB												
13...	1100	ENVIRONMENTAL	12	243	6.6	4.0	3.8	764	11.8	89	--	--
MAR												
07...	1100	ENVIRONMENTAL	13	203	7.3	19.0	6.6	767	11.0	89	.30	--
19...	*1044*	*BLANK*	--	--	--	--	--	--	--	--	--	--
19...	1045	ENVIRONMENTAL	54	189	6.6	10.0	9.1	769	9.5	82	.39	--
20...	2230	ENVIRONMENTAL	102	--	--	--	--	--	--	--	.56	--
21...	0430	ENVIRONMENTAL	125	--	--	--	--	--	--	--	.68	.14
21...	1030	ENVIRONMENTAL	119	--	--	--	--	--	--	--	.64	.16
21...	1630	ENVIRONMENTAL	94	--	--	--	--	--	--	--	.57	.17
22...	0430	ENVIRONMENTAL	60	--	--	--	--	--	--	--	.54	--
26...	2030	ENVIRONMENTAL	24	--	--	--	--	--	--	--	.29	--
27...	0230	ENVIRONMENTAL	43	--	--	--	--	--	--	--	.33	--
27...	0830	ENVIRONMENTAL	68	--	--	--	--	--	--	--	.44	--
APR												
03...	1100	ENVIRONMENTAL	26	173	6.2	25.0	14.9	754	8.7	87	--	--
23...	1030	ENVIRONMENTAL	50	148	6.8	14.0	14.1	765	8.6	83	.58	.06
MAY												
08...	1000	ENVIRONMENTAL	17	148	6.8	--	17.7	763	7.5	79	.65	.09
JUN												
19...	1115	ENVIRONMENTAL	.24	146	6.4	24.0	21.0	766	5.3	59	.59	.08
SEP												
03...	0845	ENVIRONMENTAL	3.6	--	--	--	--	--	--	--	.90	.23

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV													
06...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*E.002*	*<.004*	*<.007*	*.3*	--
DEC													
05...	E.002	.017	E.011	.42	.31	.32	--	--	.047	.019	.009	6.6	.01
JAN													
03...	<.002	<.013	<.015	.23	.17	--	--	--	.024	.008	E.004	2.9	.01
FEB													
13...	<.002	E.009	<.015	.35	.11	--	--	--	.010	E.004	<.007	1.0	.03
MAR													
07...	<.002	.030	.079	.27	.20	.23	.19	.12	.028	.007	<.007	5.3	.19
19...	*<.002*	*<.013*	*<.015*	*E.07*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*.3*	--
19...	<.002	.019	<.015	.37	.22	.24	--	--	.043	.012	<.007	8.5	1.2
20...	E.002	.121	<.015	.44	.19	.31	--	--	.064	.016	E.006	24	6.6
21...	.003	.142	E.010	.53	.23	.37	--	--	.085	.017	.007	40	13.5
21...	.003	.167	<.015	.48	.25	.42	--	--	.071	.018	.007	23	7.4
21...	.003	.168	<.015	.41	.24	.41	--	--	.060	.015	E.006	19	4.8
22...	E.002	.145	<.015	.39	.22	.36	--	--	.052	.015	E.005	12	1.9
26...	<.002	.072	E.011	.22	.22	.29	--	--	.030	.009	E.005	8.0	.52
27...	<.002	.104	E.009	.23	.21	.32	--	--	.035	.009	E.005	10	1.2
27...	<.002	.127	E.008	.31	.24	.37	--	--	.043	.010	E.005	15	2.8
APR													
03...	<.002	E.012	E.008	.35	.26	--	--	--	.031	.012	E.005	3.0	.21
23...	.003	.059	.032	.52	.52	.58	.49	.49	.089	.032	.013	8.7	1.2
MAY													
08...	.005	.096	.075	.55	.47	.57	.47	.39	.066	.027	.013	8.7	.40
JUN													
19...	.004	.084	.040	.50	.43	.51	.46	.39	.073	.024	.011	10	.01
SEP													
03...	.003	.230	.090	.67	.52	.75	.58	.43	.069	.024	.012	12	.12

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

01658000 MATTAWOMAN CREEK NEAR POMONKEY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV	
06...	--
DEC	
05...	--
JAN	
03...	--
FEB	
13...	--
MAR	
07...	--
19...	--
19...	--
20...	91
21...	89
21...	89
21...	92
22...	--
26...	--
27...	--
27...	--
APR	
03...	--
23...	--
MAY	
08...	--
JUN	
19...	--
SEP	
03...	79

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD

LOCATION.--Lat 38°29'26.1", long 76°55'37.5", Charles County, Hydrologic Unit 02070011, on left-center downstream side of bridge on State Highway 6, 1.0 mi southeast of Newtown, and 1.7 mi downstream from Kerrick Swamp.

DRAINAGE AREA.--79.9 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 34.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Low flow affected by ground-water diversions from municipal well fields at Waldorf and St. Charles, and occasional farm irrigation upstream from station during summer months. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 30	0230	*222	*2.85	No peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.3	15	11	18	10	64	60	1.1	0.00	0.00	0.11
2	2.1	1.4	11	10	16	13	60	35	0.85	0.00	0.00	1.9
3	1.4	1.5	9.7	10	13	94	44	39	0.33	0.00	0.00	1.6
4	1.3	1.2	9.1	12	12	115	36	33	0.08	0.00	0.00	1.5
5	0.84	1.3	8.1	14	11	63	29	22	0.02	0.00	0.00	1.4
6	5.7	1.5	8.0	33	10	40	22	21	0.44	0.00	0.00	0.80
7	7.2	1.5	8.7	101	21	31	16	14	4.0	0.00	0.00	0.25
8	3.9	1.2	15	99	39	26	13	8.5	6.1	0.00	0.00	0.01
9	2.5	2.6	28	68	35	23	13	5.6	3.3	0.00	0.00	0.00
10	1.3	3.0	32	38	27	25	26	5.2	1.8	0.00	0.00	0.00
11	1.2	3.1	51	31	23	25	35	4.4	1.3	0.00	0.00	0.00
12	2.6	3.4	66	31	21	22	26	3.1	0.81	0.00	0.00	0.00
13	2.1	3.3	49	28	18	34	18	2.3	0.66	0.00	0.00	0.00
14	3.5	3.4	35	21	16	60	15	2.5	1.1	0.00	0.00	0.00
15	9.9	3.3	27	17	14	48	12	2.1	2.7	0.00	0.00	e0.00
16	5.1	3.5	21	14	14	35	9.3	1.1	4.3	0.00	0.00	e0.00
17	8.7	3.5	18	13	15	28	6.7	0.88	3.8	0.00	0.00	e0.00
18	8.4	3.8	33	12	14	49	5.0	11	3.1	0.00	0.00	e0.00
19	5.9	3.3	36	14	13	78	4.7	69	2.6	0.00	0.00	e0.00
20	4.0	3.5	28	34	13	91	8.7	46	1.8	0.00	0.00	e0.00
21	2.9	3.5	21	50	15	151	14	16	1.1	0.00	0.00	e0.00
22	2.1	3.5	16	49	17	96	66	7.1	0.45	0.00	0.00	e0.00
23	1.4	3.5	14	42	16	58	69	5.3	0.17	0.00	0.00	e0.00
24	2.3	4.3	35	39	13	44	31	4.5	0.02	0.00	0.00	0.00
25	0.70	8.8	51	42	12	37	17	4.0	0.00	0.00	0.00	0.00
26	0.58	30	38	43	11	34	17	4.0	0.00	0.00	0.00	0.00
27	0.57	39	29	34	11	100	10	3.5	0.00	0.00	0.00	0.00
28	0.52	29	23	27	11	101	68	2.8	0.00	0.00	0.00	0.00
29	0.54	21	22	23	---	62	166	2.1	0.00	0.00	0.00	0.00
30	1.1	17	16	20	---	47	171	1.8	0.00	0.00	0.00	0.00
31	1.3	---	14	19	---	45	---	1.4	---	0.00	0.00	---
TOTAL	93.65	210.2	787.6	999	469	1685	1092.4	438.18	41.93	0.00	0.00	7.57
MEAN	3.02	7.01	25.4	32.2	16.8	54.4	36.4	14.1	1.40	0.000	0.000	0.25
MAX	9.9	39	66	101	39	151	171	69	6.1	0.00	0.00	1.9
MIN	0.52	1.2	8.0	10	10	10	4.7	0.88	0.00	0.00	0.00	0.00
CFSM	0.04	0.09	0.32	0.40	0.21	0.68	0.46	0.18	0.02	0.00	0.00	0.00
IN.	0.04	0.10	0.37	0.47	0.22	0.78	0.51	0.20	0.02	0.00	0.00	0.00

e Estimated

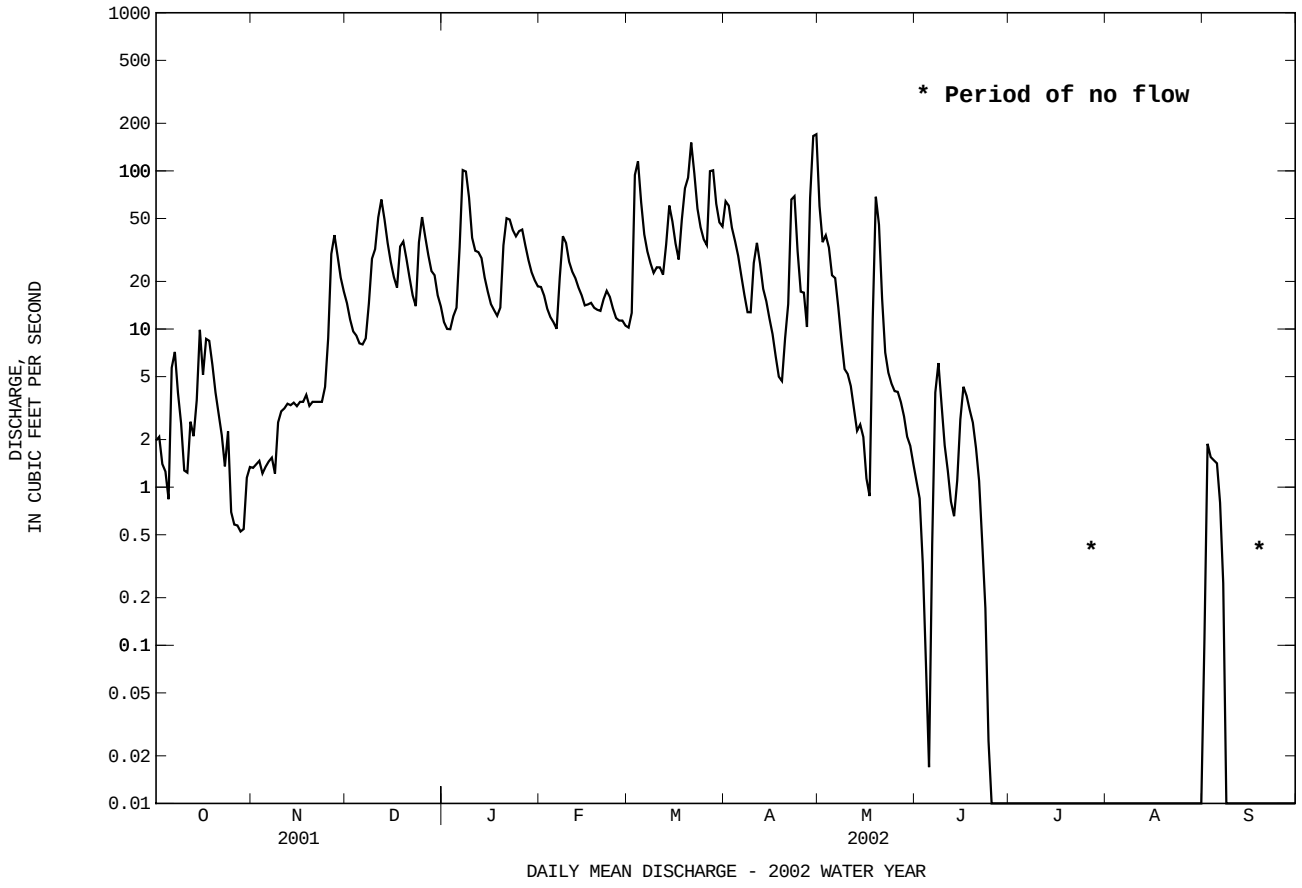
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

MEAN	42.4	68.8	98.9	126	140	184	126	95.9	56.1	32.7	31.8	39.2
MAX	163	139	236	268	375	491	277	334	311	129	115	175
(WY)	1990	1986	1997	1996	1998	1994	1993	1989	1989	2000	2000	1999
MIN	0.000	0.000	14.0	32.2	16.8	54.4	30.5	14.1	1.40	0.000	0.000	0.000
(WY)	1999	1999	1999	2002	2002	2002	1985	2002	2002	2002	2002	1995

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	22879.55		5824.53			
ANNUAL MEAN	62.7		16.0		86.9	
HIGHEST ANNUAL MEAN					137	1990
LOWEST ANNUAL MEAN					16.0	2002
HIGHEST DAILY MEAN	840	Mar 30	171	Apr 30	2570	Mar 29 1994
LOWEST DAILY MEAN	0.52	Oct 28	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	0.76	Oct 25	0.00	Jun 25	0.00	Jul 20 1987
MAXIMUM PEAK FLOW			222	Apr 30	(b)4080	Sep 17 1999
MAXIMUM PEAK STAGE			2.85	Apr 30	5.51	Sep 17 1999
INSTANTANEOUS LOW FLOW			0.00	(a)	0.00	(c)
ANNUAL RUNOFF (CFSM)	0.78		0.20		1.09	
ANNUAL RUNOFF (INCHES)	10.65		2.71		14.78	
10 PERCENT EXCEEDS	126		44		197	
50 PERCENT EXCEEDS	33		4.4		49	
90 PERCENT EXCEEDS	2.1		0.00		1.1	

a Many days.
b From rating curve extended above 1,500 ft^3/s.
c No flow at times in 1983, 1985-89, 1991, 1993, 1995-1999, 2002.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2000 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
10...	1215	ENVIRONMENTAL	1.2	86	6.6	20.0	9.8	772	--	--	.37	--
NOV												
07...	1330	ENVIRONMENTAL	1.5	113	6.5	21.0	8.8	764	7.1	61	--	--
DEC												
06...	1215	ENVIRONMENTAL	8.4	114	6.5	19.0	10.1	766	8.8	78	--	--
10...	*1259*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1300	ENVIRONMENTAL	32	103	7.1	--	6.1	766	--	--	--	--
JAN												
03...	1245	ENVIRONMENTAL	9.8	114	6.9	.0	.1	761	11.2	77	.33	--
FEB												
12...	*1144*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	1145	ENVIRONMENTAL	21	168	6.9	10.0	2.9	762	11.9	88	.33	--
MAR												
07...	1345	ENVIRONMENTAL	32	139	7.8	19.5	9.6	767	10.7	93	.33	--
19...	1245	ENVIRONMENTAL	81	137	6.9	14.0	9.4	769	10.8	93	.46	--
APR												
23...	1315	ENVIRONMENTAL	69	113	6.9	15.0	15.0	764	8.9	88	.66	.04
MAY												
08...	1300	ENVIRONMENTAL	8.4	111	6.9	23.0	19.9	763	7.0	77	.70	.09
JUN												
19...	1400	ENVIRONMENTAL	2.5	126	6.6	22.0	21.4	766	6.1	69	.72	.18

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
10...	<.002	.025	E.013	.35	.26	.29	--	--	.067	.013	.007	2.7	.01
NOV													
07...	<.002	<.013	<.015	.40	.32	--	--	--	.102	.020	.010	7.0	.03
DEC													
06...	<.002	<.013	E.010	.33	.28	--	--	--	.071	.019	.012	7.5	.17
10...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*.3*	--
10...	E.002	<.013	E.009	.39	.29	--	--	--	.074	.019	.013	11	.97
JAN													
03...	<.002	.082	.022	.25	.20	.28	.23	.18	.034	.010	.007	3.6	.10
FEB													
12...	*<.002*	*<.013*	*<.015*	*E.05*	*<.10*	--	--	--	*.004*	*<.004*	*<.007*	*<.1*	--
12...	<.002	.023	E.014	.31	.19	.22	--	--	.028	.007	<.007	5.0	.28
MAR													
07...	<.002	.024	.259	.30	.22	.25	.05	--	.037	.007	<.007	5.0	.43
19...	<.002	.030	<.015	.43	.25	.28	--	--	.053	.014	E.005	9.5	2.1
APR													
23...	.003	.046	.032	.61	.50	.55	.58	.47	.098	.029	.012	15	2.8
MAY													
08...	.008	.102	.105	.60	.55	.65	.50	.44	.087	.032	.017	10	.24
JUN													
19...	.008	.185	.055	.53	.52	.71	.48	.47	.111	.046	.031	4.6	.03

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

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
10...	--
NOV	
07...	--
DEC	
06...	--
10...	--
10...	95
JAN	
03...	--
FEB	
12...	--
12...	--
MAR	
07...	--
19...	--
APR	
23...	--
MAY	
08...	--
JUN	
19...	--

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD

LOCATION.--Lat 38°19'59.9", long 76°43'30.0", St. Marys County, Hydrologic Unit 02070011, on left bank 60 ft downstream from bridge on State Highway 242, 0.5 mi north of Clements, 2.3 mi upsteam from mouth, and 5.7 mi northwest of Leonardtown.

DRAINAGE AREA.--18.5 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 8 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record), which are fair. Occasional from unknown source upstream from station. U.S. Geological Survey gage-height telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 6	1930	*93	*2.10	No peak greater than base discharge.			

Minimum discharge, 0.00 ft^3/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	4.1	5.0	6.6	7.4	4.2	17	9.2	0.84	0.55	0.00	0.00
2	3.8	4.5	4.8	5.8	6.6	5.6	12	8.7	0.79	0.19	0.00	0.00
3	3.3	4.6	4.5	6.3	5.7	43	11	7.9	0.43	0.02	0.00	1.5
4	2.8	4.8	4.5	7.7	5.8	16	9.7	6.0	0.35	0.00	0.00	0.72
5	2.2	4.1	4.5	7.8	5.3	9.3	8.9	9.5	0.89	0.00	0.00	0.03
6	4.4	3.7	11	30	5.1	8.6	8.6	8.1	3.9	0.00	0.00	0.00
7	6.1	3.5	6.7	51	14	7.9	8.1	e5.4	8.1	0.00	0.00	0.00
8	3.4	3.5	7.2	17	15	7.1	7.7	e4.7	2.8	0.00	0.00	0.00
9	3.0	3.9	9.5	13	9.8	6.6	8.1	3.2	1.7	0.00	0.00	0.00
10	3.0	8.2	7.3	12	8.6	7.3	9.7	3.8	1.1	0.00	0.00	0.00
11	3.0	4.5	23	13	8.5	6.1	8.4	2.9	0.76	0.00	0.00	0.00
12	10	3.6	21	12	7.2	5.6	7.7	2.5	0.48	0.00	0.00	0.00
13	3.2	3.5	10	10	6.6	11	8.1	3.9	0.98	0.00	0.00	0.00
14	2.6	3.5	8.2	8.4	6.1	11	8.2	16	3.2	0.00	0.00	0.00
15	5.0	3.7	7.3	7.7	5.9	8.4	9.2	5.1	3.0	0.00	0.00	0.00
16	5.2	3.6	6.3	9.3	6.2	7.5	8.0	3.3	1.9	0.00	0.00	0.00
17	3.7	4.1	6.5	7.8	6.3	7.5	6.3	2.7	1.1	0.00	0.00	0.00
18	2.7	3.1	18	7.4	5.5	21	5.6	8.8	0.59	0.00	0.00	0.00
19	2.8	3.4	16	7.8	5.3	16	5.7	8.6	12	0.00	0.00	0.00
20	3.4	3.7	9.1	19	5.4	23	6.6	4.1	8.1	0.00	0.00	0.00
21	3.5	9.6	7.5	15	5.7	23	6.7	3.3	3.3	0.00	0.00	0.00
22	3.5	4.9	8.4	13	5.8	12	29	3.1	2.1	0.00	0.00	0.00
23	4.0	5.4	7.4	12	5.4	9.7	13	3.0	1.5	0.00	0.00	0.00
24	4.3	5.3	14	10	5.4	9.2	8.2	2.8	1.1	0.00	0.00	0.00
25	3.7	7.1	12	12	5.1	8.5	14	2.4	0.61	0.00	0.00	0.00
26	3.2	7.2	9.0	10	5.1	8.4	12	2.3	0.30	0.78	0.00	0.00
27	6.7	9.9	8.2	8.8	5.3	50	8.5	2.2	0.18	7.8	0.00	0.00
28	4.1	5.7	7.6	8.6	4.6	18	49	1.9	3.3	8.5	0.00	0.00
29	3.3	5.1	7.4	8.5	---	13	28	1.6	2.4	2.4	0.00	0.00
30	4.1	5.0	7.1	8.2	---	11	12	1.3	1.3	0.86	0.00	0.00
31	4.1	---	5.9	7.5	---	22	---	1.2	---	0.12	0.00	---
TOTAL	121.5	146.8	284.9	373.2	188.7	417.5	355.0	149.5	69.10	21.22	0.00	2.25
MEAN	3.92	4.89	9.19	12.0	6.74	13.5	11.8	4.82	2.30	0.68	0.000	0.075
MAX	10	9.9	23	51	15	50	49	16	12	8.5	0.00	1.5
MIN	2.2	3.1	4.5	5.8	4.6	4.2	5.6	1.2	0.18	0.00	0.00	0.00
CFSM	0.21	0.26	0.50	0.65	0.36	0.73	0.64	0.26	0.12	0.04	0.00	0.00
IN.	0.24	0.30	0.57	0.75	0.38	0.84	0.71	0.30	0.14	0.04	0.00	0.00

e Estimated

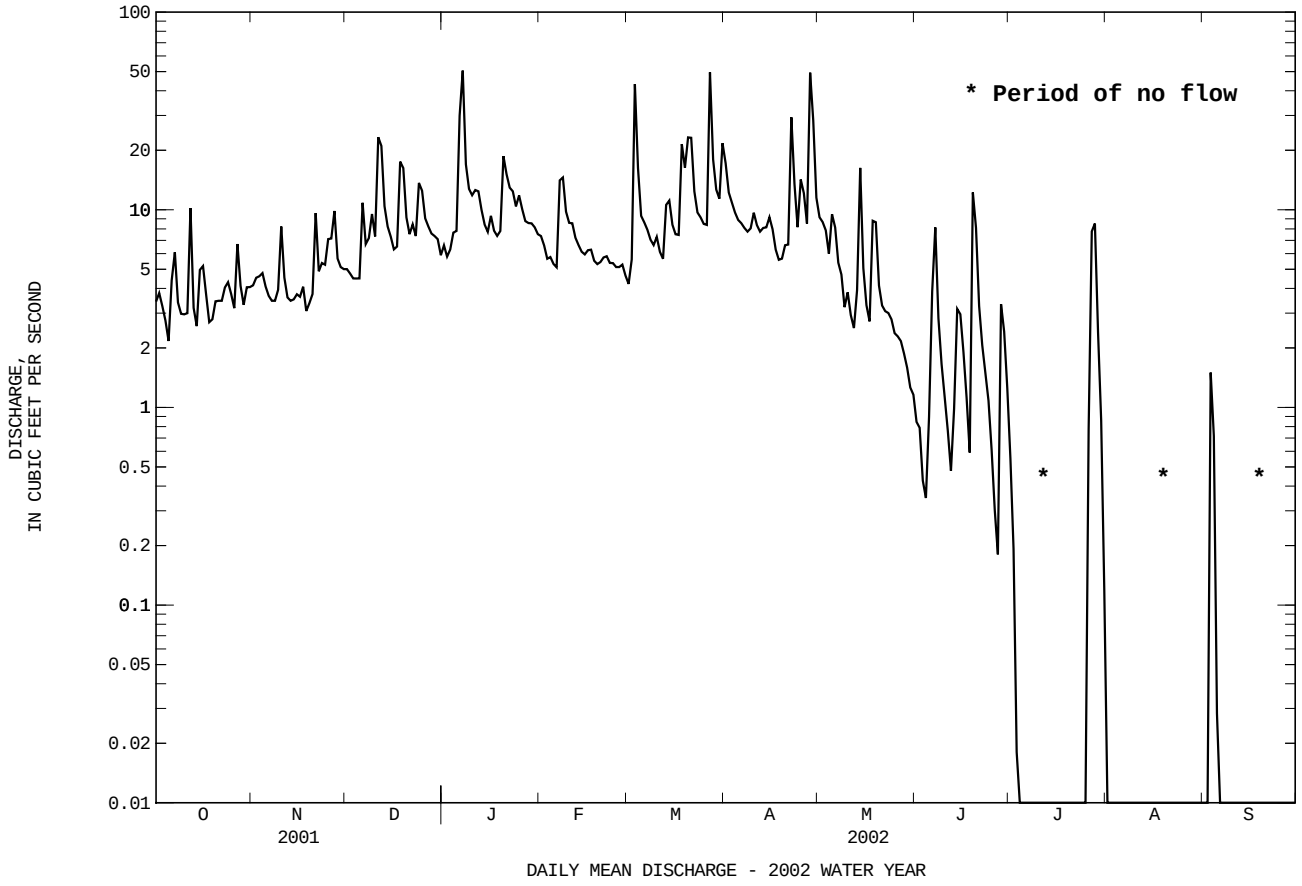
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002, BY WATER YEAR (WY)

MEAN	9.95	14.5	20.3	26.3	29.2	34.0	26.0	20.6	15.4	12.0	10.6	12.4
MAX	46.8	45.3	48.9	77.4	89.7	115	54.7	57.9	116	56.4	45.0	75.2
(WY)	1980	1980	1997	1978	1998	1994	1983	1978	1972	1975	1985	1979
MIN	0.73	3.10	5.01	5.30	6.74	10.1	9.05	3.59	1.04	0.46	0.000	0.000
(WY)	1989	1999	1989	1981	2002	1981	1985	1999	1999	1999	2002	1988

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002	
ANNUAL TOTAL	6259.6		2129.67			
ANNUAL MEAN	17.1		5.83		19.2	
HIGHEST ANNUAL MEAN					34.5	1972
LOWEST ANNUAL MEAN					5.83	2002
HIGHEST DAILY MEAN	230	May 26	51	Jan 7	1580	Jun 22 1972
LOWEST DAILY MEAN	1.6	Jul 23	0.00	(a)	0.00	(a)
ANNUAL SEVEN-DAY MINIMUM	3.1	Sep 29	0.00	Jul 4	0.00	Aug 31 1980
MAXIMUM PEAK FLOW			93	Jan 6	(b)4500	Sep 6 1979
MAXIMUM PEAK STAGE			2.10	Jan 6	(c)6.96	Sep 6 1979
INSTANTANEOUS LOW FLOW			0.00	(a)	0.00	(d)
ANNUAL RUNOFF (CFSM)	0.93		0.32		1.04	
ANNUAL RUNOFF (INCHES)	12.59		4.28		14.11	
10 PERCENT EXCEEDS	29		12		37	
50 PERCENT EXCEEDS	10		4.5		11	
90 PERCENT EXCEEDS	3.5		0.00		1.2	

a Many days.
b From rating curve extended above 480 ft^3/s on basis of contracted-opening and flow-over-road measurement of peak flow.
c Backwater from tide; maximum gage height unaffected by backwater, 6.55 ft, June 22, 1972.
d No flow at times in 1977, 1980, 1981, 1983, 1985-89, 1991, 1993, 1995, 1999, 2002.



01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT												
10...	1030	ENVIRONMENTAL	3.3	97	6.9	18.0	9.3	772	--	--	.56	--
NOV												
06...	*1315*	*BLANK*	--	--	--	--	--	--	--	--	--	--
07...	1200	ENVIRONMENTAL	3.5	129	7.0	21.0	7.8	764	9.3	78	--	--
DEC												
06...	1045	ENVIRONMENTAL	18	131	7.0	19.0	8.8	766	9.8	84	.63	.21
JAN												
03...	1115	ENVIRONMENTAL	6.3	127	8.7	-2.0	.0	761	12.2	84	.88	.59
FEB												
12...	*0929*	*BLANK*	--	--	--	--	--	--	--	--	--	--
12...	0930	ENVIRONMENTAL	7.4	122	7.5	8.0	3.0	762	11.9	88	.79	.41
MAR												
02...	2215	ENVIRONMENTAL	12	--	--	--	--	--	--	--	.94	.53
03...	0415	ENVIRONMENTAL	53	--	--	--	--	--	--	--	.87	.28
03...	1015	ENVIRONMENTAL	43	--	--	--	--	--	--	--	1.2	.42
04...	0415	ENVIRONMENTAL	20	--	--	--	--	--	--	--	1.6	.51
04...	1615	ENVIRONMENTAL	13	--	--	--	--	--	--	--	.77	.29
07...	1245	ENVIRONMENTAL	7.7	113	7.5	20.0	7.1	767	11.8	97	.73	.43
19...	1345	ENVIRONMENTAL	15	112	7.2	14.0	9.0	769	10.0	86	.69	.25
27...	0115	ENVIRONMENTAL	50	--	--	--	--	--	--	--	1.2	.33
27...	0715	ENVIRONMENTAL	59	--	--	--	--	--	--	--	1.1	.33
27...	1315	ENVIRONMENTAL	50	--	--	--	--	--	--	--	.91	.25
27...	1915	ENVIRONMENTAL	41	--	--	--	--	--	--	--	.77	.20
28...	0715	ENVIRONMENTAL	19	--	--	--	--	--	--	--	.68	.24
APR												
23...	1200	ENVIRONMENTAL	11	99	7.1	15.0	13.1	764	9.2	88	.75	.18
MAY												
08...	1145	ENVIRONMENTAL	1.8	117	7.2	--	18.3	763	6.6	70	.81	.40
JUN												
19...	1230	ENVIRONMENTAL	.37	126	6.8	21.0	19.9	766	4.3	47	.72	.34
SEP												
03...	1100	ENVIRONMENTAL	1.9	248	6.6	--	19.8	762	6.9	75	.76	.23

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
10...	E.002	.308	<.015	.25	.18	.49	--	--	.035	.010	<.007	1.4	.01
NOV													
06...	*<.002*	*<.013*	*<.015*	*E.05*	*E.05*	--	--	--	*E.003*	*<.004*	*<.007*	*1.0*	--
07...	<.002	<.013	E.010	.32	.21	--	--	--	.039	.011	<.007	4.1	.04
DEC													
06...	.004	.211	.035	.42	.28	.49	.39	.24	.080	.015	.009	18	.90
JAN													
03...	.008	.601	.096	.28	.25	.85	.19	.15	.033	.010	.007	4.2	.07
FEB													
12...	*<.002*	*<.013*	*<.015*	*<.10*	*<.10*	--	--	--	*<.004*	*<.004*	*<.007*	*<.1*	--
12...	.009	.419	.153	.37	.34	.76	.21	.18	.046	.012	.008	10	.20
MAR													
02...	.011	.545	.066	.40	.31	.85	.33	.24	.054	.018	.009	16	.50
03...	.005	.281	E.014	.59	.36	.64	--	--	.086	.017	E.006	123	17.6
03...	.008	.429	.021	.76	.42	.85	.74	.40	.138	.020	E.005	47	5.5
04...	.010	.518	.047	1.1	.56	1.1	1.1	.52	.23	.027	.008	24	1.3
04...	.005	.295	.028	.48	.35	.65	.45	.33	.066	.013	.007	9.0	.32
07...	.006	.435	.034	.29	.21	.65	.26	.18	.044	.012	E.006	4.6	.10
19...	.006	.259	.039	.43	.26	.52	.39	.23	.062	.012	E.006	9.6	.39
27...	.008	.333	.070	.87	.37	.70	.80	.30	.25	.028	.018	197	26.9
27...	.006	.335	.052	.75	.43	.77	.70	.38	.180	.024	.013	126	20.1
27...	.005	.254	.035	.66	.39	.64	.62	.35	.136	.018	.009	57	7.7
27...	.004	.209	.027	.56	.38	.59	.53	.35	.121	.023	.011	51	5.7
28...	.006	.244	.052	.44	.39	.64	.39	.34	.086	.020	.010	23	1.2
APR													
23...	.011	.187	.096	.56	.50	.69	.47	.40	.085	.030	.016	9.5	.28
MAY													
08...	.017	.415	.068	.40	.38	.79	.33	.31	.068	.027	.016	8.9	.04
JUN													
19...	.004	.339	.065	.38	.36	.70	.32	.30	.082	.029	.020	4.1	<.01
SEP													
03...	.004	.231	.109	.53	.39	.62	.42	.28	.081	.022	.012	6.2	.03

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

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT	
10...	--
NOV	
06...	--
07...	--
DEC	
06...	--
JAN	
03...	--
FEB	
12...	--
12...	--
MAR	
02...	97
03...	96
03...	--
04...	--
04...	--
07...	--
19...	--
27...	96
27...	94
27...	--
27...	--
28...	--
APR	
23...	--
MAY	
08...	--
JUN	
19...	--
SEP	
03...	--

01661500 ST. MARYS RIVER AT GREAT MILLS, MD

LOCATION.--Lat 38°14'30.3", long 76°30'13.2", St. Marys County, Hydrologic Unit 02070011, on left bank at downstream side of bridge on State Highway 471 in Great Mills, 0.3 mi downstream from Western Branch, and 12.0 mi upstream from mouth.

DRAINAGE AREA.--24.0 mi^2.

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

REVISED RECORDS.--WSP 1702: 1946, 1948-49, 1955, 1957-58. WDR MD-DE-83-1: 1981-82(M).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Occasional regulation by reservoir on Western Branch of St. Marys River, 2.0 mi upstream since 1975, total capacity, 3,200 acre feet. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 28	1500	*242	*3.29	No peak greater than base discharge.			

Minimum discharge, 0.15 ft^3/s, Aug. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	4.1	6.2	6.0	8.5	5.0	36	22	2.2	1.5	1.1	26
2	4.6	4.3	5.8	5.6	7.7	6.1	22	17	2.1	1.2	0.82	25
3	4.5	4.2	5.6	6.8	6.8	39	18	14	1.8	1.2	0.68	9.8
4	4.2	4.2	5.6	7.7	7.0	20	15	11	1.8	1.2	0.65	4.9
5	3.8	4.2	5.6	7.5	6.8	13	13	15	1.8	1.1	0.59	3.1
6	6.2	4.2	6.9	35	5.9	11	11	12	3.1	0.90	0.67	2.2
7	7.3	4.1	6.9	44	15	10	10	10	6.7	0.74	0.57	1.8
8	5.2	4.2	6.4	22	14	8.8	9.8	8.7	3.6	0.67	0.44	1.7
9	4.3	4.2	8.4	15	11	8.3	9.4	7.7	2.7	0.70	0.43	1.5
10	4.0	4.7	7.2	13	9.4	8.4	12	8.6	2.4	0.68	0.43	1.9
11	4.0	4.2	30	12	9.7	7.0	11	6.9	1.9	0.73	0.40	2.4
12	3.9	4.0	22	11	8.2	6.7	10	5.5	1.8	0.62	0.37	1.5
13	3.9	4.0	14	10	7.8	14	9.6	6.3	1.9	0.70	0.35	1.3
14	3.7	4.1	11	8.9	7.4	13	9.4	16	3.4	1.4	0.32	1.3
15	8.7	4.1	9.7	8.6	7.0	10	9.1	8.9	3.8	1.7	0.29	2.0
16	6.5	4.4	8.2	7.8	7.2	9.6	8.4	6.3	2.8	1.5	0.31	15
17	5.4	4.5	7.8	7.7	7.2	9.1	7.8	4.9	2.3	1.2	0.35	7.0
18	4.2	5.0	21	8.0	6.6	32	7.6	15	1.9	1.1	0.37	3.8
19	3.9	4.9	15	9.6	6.2	23	8.1	14	1.8	0.97	0.34	2.7
20	3.9	5.0	11	24	6.3	34	8.6	9.8	1.8	0.80	0.34	2.0
21	3.9	5.0	9.0	16	6.8	36	8.1	7.3	1.7	0.69	0.28	1.8
22	4.0	4.8	7.8	13	6.4	21	33	5.5	1.6	0.63	0.30	1.7
23	3.9	4.8	7.3	11	6.2	15	19	4.7	1.4	0.66	0.30	1.6
24	4.0	5.5	11	11	6.0	13	13	4.1	1.4	1.5	2.2	1.5
25	4.2	7.2	10	14	5.9	11	21	3.6	1.3	1.7	5.3	1.5
26	3.8	7.2	9.0	11	6.1	11	18	3.3	1.4	2.2	2.1	2.0
27	3.7	6.7	8.4	10	6.1	60	13	3.1	1.8	3.6	1.5	4.4
28	3.5	7.0	7.5	9.4	5.7	28	113	3.0	1.9	4.1	2.5	3.2
29	3.5	8.6	7.3	9.1	---	19	61	2.8	1.9	2.8	21	2.7
30	3.9	6.8	7.0	8.8	---	16	33	2.6	1.8	1.8	7.8	3.0
31	4.0	---	6.1	8.3	---	28	---	2.3	---	1.4	3.9	---
TOTAL	139.1	150.2	304.7	391.8	214.9	546.0	577.9	261.9	67.8	41.69	57.00	140.3
MEAN	4.49	5.01	9.83	12.6	7.67	17.6	19.3	8.45	2.26	1.34	1.84	4.68
MAX	8.7	8.6	30	44	15	60	113	22	6.7	4.1	21	26
MIN	3.5	4.0	5.6	5.6	5.7	5.0	7.6	2.3	1.3	0.62	0.28	1.3
CFSM	0.19	0.21	0.41	0.53	0.32	0.73	0.80	0.35	0.09	0.06	0.08	0.19
IN.	0.22	0.23	0.47	0.61	0.33	0.85	0.90	0.41	0.11	0.06	0.09	0.22

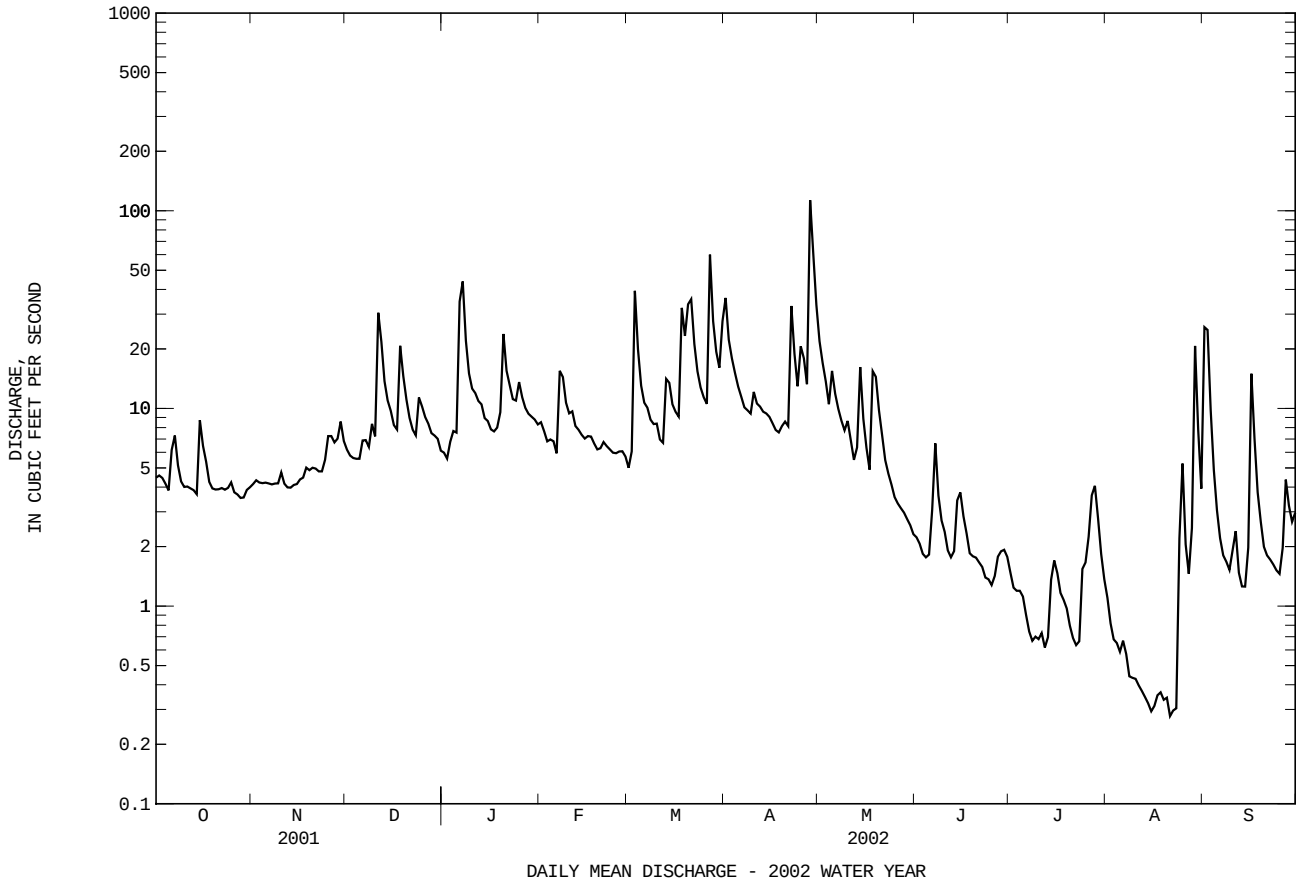
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	12.3	18.7	28.0	34.3	36.9	45.1	32.3	24.6	15.5	15.4	17.5	15.3
MAX	70.3	84.4	98.6	125	213	166	95.9	97.4	68.4	82.4	118	150
(WY)	1997	1957	1997	1978	1998	1994	1983	1990	1972	2000	1955	1999
MIN	2.58	4.29	5.27	6.45	7.67	8.52	6.82	3.71	2.01	1.22	1.29	2.02
(WY)	1969	1982	1966	1955	2002	1981	1985	1999	1999	1999	1995	1988

01661500 ST. MARYS RIVER AT GREAT MILLS, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	8328.6		2893.29			
ANNUAL MEAN	22.8		7.93		24.6	
HIGHEST ANNUAL MEAN					50.9	1998
LOWEST ANNUAL MEAN					7.93	2002
HIGHEST DAILY MEAN	430	Aug 13	113	Apr 28	2650	Sep 16 1999
LOWEST DAILY MEAN	3.0	Sep 19	0.28	Aug 21	0.17	Aug 11 1999
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 13	0.33	Aug 15	0.22	Aug 7 1999
MAXIMUM PEAK FLOW			242	Apr 28	(a)7950	Aug 20 1969
MAXIMUM PEAK STAGE			3.29	Apr 28	13.34	Aug 20 1969
INSTANTANEOUS LOW FLOW			0.15	Aug 21	0.13	(b)
ANNUAL RUNOFF (CFSM)	0.95		0.33		1.03	
ANNUAL RUNOFF (INCHES)	12.91		4.48		13.93	
10 PERCENT EXCEEDS	42		15		48	
50 PERCENT EXCEEDS	11		5.7		12	
90 PERCENT EXCEEDS	4.0		1.1		3.1	

a From rating curve extended above 1,500 ft^3/s on basis of contracted-opening measurement at gage height 12.08 ft.
b Aug. 10-14, 1999.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD

LOCATION.--Lat 39°25'17.9", long 79°25'29.6", Garrett County, Hydrologic Unit 05020006, on left bank 200 ft downstream from Baltimore and Ohio Railroad bridge, 250 ft downstream from Little Youghiogheny River, 1.2 mi northwest of Oakland, and 1.5 mi upstream from Dunkard Lick Run.

DRAINAGE AREA.--134 mi^2.

PERIOD OF RECORD.--August 1941 to current year.

REVISED RECORDS.--WSP 1113: 1947(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,353.61 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1946, nonrecording gage at bridge 200 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Town of Oakland diverted an average of 0.4 ft^3/s for water supply. The diversion is returned upstream from station as sewage. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 15.3 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 24	1915	2,420	5.49	Apr 28	1615	*3,610	*6.57
Mar 20	2200	3,260	6.27	May 2	1600	2,160	5.23
Apr 22	0615	2,500	5.57	May 18	1215	2,750	5.81

Minimum discharge, 7.5 ft^3/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	18	33	67	223	142	1210	703	138	28	101	17
2	17	19	29	58	196	161	792	1610	115	25	80	16
3	18	21	26	58	167	217	592	1260	91	23	68	15
4	17	26	25	55	158	211	446	729	114	21	106	14
5	17	27	23	53	152	194	339	535	114	57	70	13
6	17	25	22	55	205	224	279	434	138	29	119	13
7	18	23	29	64	139	156	235	700	235	20	68	12
8	19	22	49	65	141	140	200	850	133	17	49	11
9	17	21	232	61	136	128	186	870	103	15	40	10
10	16	20	131	108	134	122	290	829	89	379	34	9.9
11	14	20	97	686	319	102	206	590	77	182	31	11
12	14	19	82	536	265	101	176	455	67	70	28	9.0
13	13	18	70	337	244	104	177	493	106	48	26	8.5
14	15	18	85	247	198	109	224	756	170	299	24	7.8
15	43	18	117	228	184	93	1390	759	167	164	21	9.6
16	35	18	84	198	174	133	1070	543	115	90	21	14
17	30	18	87	174	166	158	693	447	90	62	22	17
18	31	18	597	157	143	308	498	2080	76	50	20	18
19	24	18	412	133	133	339	384	1450	64	55	26	36
20	21	19	275	178	155	2090	664	897	55	86	56	16
21	19	22	202	154	260	2310	827	647	49	61	35	13
22	18	23	154	160	225	1170	2150	466	42	43	23	15
23	18	22	137	121	192	783	1290	355	37	35	19	46
24	17	20	174	1350	168	613	835	278	34	34	86	32
25	17	28	141	1650	157	479	676	268	31	35	71	19
26	17	92	131	825	154	528	514	206	28	265	39	31
27	17	52	101	502	158	1020	394	169	27	1060	28	202
28	18	52	98	335	130	684	2240	159	48	742	25	290
29	18	44	91	264	---	522	1750	166	49	294	25	97
30	18	36	74	241	---	433	986	219	33	185	25	56
31	18	---	74	263	---	460	---	148	---	135	20	---
TOTAL	612	797	3882	9383	5076	14234	21713	20071	2635	4609	1406	1078.8
MEAN	19.7	26.6	125	303	181	459	724	647	87.8	149	45.4	36.0
MAX	43	92	597	1650	319	2310	2240	2080	235	1060	119	290
MIN	13	18	22	53	130	93	176	148	27	15	19	7.8
CFSM	0.15	0.20	0.93	2.26	1.35	3.43	5.40	4.83	0.66	1.11	0.34	0.27
IN.	0.17	0.22	1.08	2.60	1.41	3.95	6.03	5.57	0.73	1.28	0.39	0.30

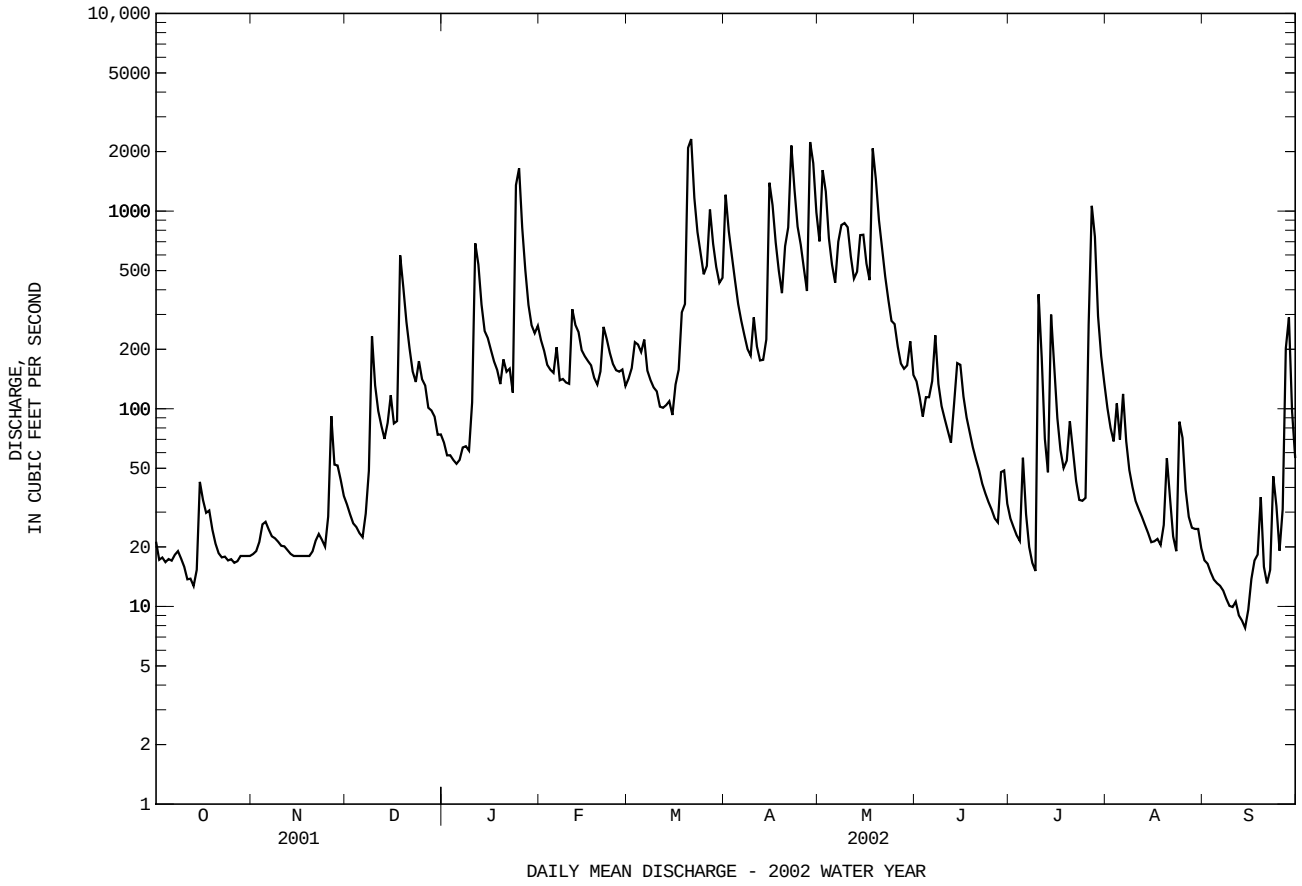
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)

MEAN	112	235	396	428	501	606	454	333	203	166	129	85.2
MAX	608	1152	1027	973	1100	1477	879	995	730	629	586	600
(WY)	1955	1986	1973	1996	1986	1963	1973	1996	1981	1978	1956	1996
MIN	4.45	7.08	62.2	63.2	127	168	121	76.0	22.9	10.3	10.5	5.99
(WY)	1954	1954	1944	1977	1978	1990	1946	1982	1999	1953	1944	1953

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1941 - 2002	
ANNUAL TOTAL	93686		85496.8			
ANNUAL MEAN	257		234		303	
HIGHEST ANNUAL MEAN					518	1996
LOWEST ANNUAL MEAN					193	1947
HIGHEST DAILY MEAN	2220	Feb 15	2310	Mar 21	8740	Jan 19 1996
LOWEST DAILY MEAN	13	Oct 13	7.8	Sep 14	2.5	Oct 4 1953
ANNUAL SEVEN-DAY MINIMUM	15	Oct 8	9.4	Sep 9	2.7	Oct 2 1953
MAXIMUM PEAK FLOW			3610	Apr 28	(a)14100	Jan 19 1996
MAXIMUM PEAK STAGE			6.57	Apr 28	13.06	Jan 19 1996
INSTANTANEOUS LOW FLOW			7.5	(b)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.92		1.75		2.26	
ANNUAL RUNOFF (INCHES)	26.01		23.73		30.75	
10 PERCENT EXCEEDS	678		685		726	
50 PERCENT EXCEEDS	105		97		162	
90 PERCENT EXCEEDS	18		18		24	

a From rating curve extended above 7,000 ft^3/s.
b Sept. 13, 14.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

03076000 DEEP CREEK RESERVOIR NEAR OAKLAND, MD

LOCATION.--Lat 39°30'34", long 79°23'28", Garrett County, Hydrologic Unit 05020006, on Deep Creek at dam, 1.8 mi upstream from mouth and 7.0 mi north of Oakland.

DRAINAGE AREA.--64.7 mi2.

PERIOD OF RECORD.--July 1925 to current year. Prior to October 1950, monthend contents published in WSP 1305, and October 1950 to September 1955, monthend contents published in WSP 1385.

GAGE.--Water-stage recorder at right end of spillway. Datum of gage is at sea level, unadjusted.

REMARKS.--Reservoir is formed by an earthfill dam completed January 1925, with storage beginning at that time. Usable capacity, 92,975 acre-ft between elevations 2,425 ft, top of intake to outlet tunnel, and 2,462 ft, crest of spillway. Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power.

COOPERATION.--Elevations and capacity table furnished by Pennsylvania Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,800 acre-ft, July 14, 1990, elevation, 2,462.25 ft; minimum observed, 11,763 acre-ft, Sept. 30, 1925, elevation, 2,433.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 90,000 acre-ft, April 29, elevation, 2,461.2 ft; minimum, 70,500 acre-ft, Nov. 19, elevation, 2,455.8 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2457.4	76100	
Oct. 31	2456.3	72200	-3900
Nov. 30	2455.8	70500	-1700
Dec. 31	2455.8	70500	0
CAL YR 2001			+400
Jan. 31	2457.6	76800	+6300
Feb. 28	2457.8	77500	+700
Mar. 31	2459.5	83700	+6200
Apr. 30	2461.2	90000	+6300
May 31	2460.9	88900	-1100
June 30	2460.1	85900	-3000
July 31	2459.3	83000	-2900
Aug. 31	2458.2	78900	-4100
Sept. 30	2457.4	76100	-2800
WTR YR 2002			0

Photo by Jeff Griffith

03076000 Deep Creek Reservoir near Oakland, MD.

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13.0", long 79°24'29.9", Garrett County, Hydrologic Unit 05020006, on left bank 0.7 mi upstream from bridge on State Highway 42 at Friendsville, and 1.5 mi upstream from Bear Creek.

DRAINAGE AREA.--295 mi^2.

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-3l, 1940, published in WSP 1675. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: Drainage area at former site, 1898-1905, 1941(M), 1942, 1944-45, 1948-49, 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,487.33 ft above National Geodetic Vertical Datum of 1929. Aug. 17, 1898, to Dec. 31, 1904, and Sept. 1, 1922, to Sept. 30, 1926, nonrecording gages at bridge 0.7 mi downstream at datum 16.24 ft and 16.29 ft lower, respectively.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Low and medium flow regulated since July 1925 by Deep Creek Reservoir, 12 mi upstream from station (see station 03076000). U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,270 ft^3/s, Apr. 28, gage height, 5.83 ft; minimum discharge, 36 ft^3/s, Oct. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	78	126	e165	715	269	1770	1670	583	181	294	53
2	64	68	113	e200	517	299	1210	2650	324	143	286	120
3	57	72	102	149	425	402	921	2740	397	128	223	93
4	53	74	95	e160	446	524	729	1920	388	122	160	59
5	144	77	92	131	472	452	575	1190	342	225	221	54
6	154	125	142	e140	389	384	510	724	428	188	164	124
7	54	63	147	133	326	343	446	977	580	95	164	58
8	155	67	197	125	360	316	383	1800	335	150	113	56
9	77	197	420	174	305	294	448	1720	260	140	169	125
10	122	123	413	186	307	281	473	1200	345	328	132	54
11	53	81	282	922	691	252	401	953	307	429	101	55
12	127	60	263	959	666	236	341	1470	282	250	160	54
13	58	130	205	648	651	236	323	1080	251	116	146	127
14	64	79	224	503	603	246	400	1280	460	260	139	55
15	153	99	286	440	465	226	1580	1290	343	430	145	60
16	97	60	252	418	385	276	1650	1120	283	189	136	132
17	90	85	262	351	371	342	1140	856	358	186	104	54
18	83	53	801	324	351	477	920	3450	205	262	86	118
19	77	53	1010	288	390	647	767	2980	197	188	140	122
20	69	61	655	281	335	2610	1020	1660	164	219	89	136
21	61	61	541	294	485	3480	1030	1140	217	208	125	56
22	59	60	387	263	506	1920	3360	840	123	241	118	58
23	61	59	337	255	408	1320	2270	885	157	161	134	138
24	144	64	367	1610	365	1170	1410	679	255	145	81	76
25	127	101	e310	2610	370	850	1610	651	236	95	175	63
26	64	182	e280	1370	360	942	906	522	147	182	182	62
27	90	243	e200	917	387	1520	769	459	143	1360	77	292
28	93	233	e190	691	340	1520	3230	402	177	1330	64	417
29	87	163	e180	572	---	1060	3440	634	123	648	59	224
30	153	141	e170	536	---	796	2120	549	157	434	129	204
31	99	---	e170	628	---	662	---	611	---	254	130	---
TOTAL	2943	3012	9219	16443	12391	24352	36152	40102	8567	9287	4446	3299
MEAN	94.9	100	297	530	443	786	1205	1294	286	300	143	110
MAX	155	243	1010	2610	715	3480	3440	3450	583	1360	294	417
MIN	53	53	92	125	305	226	323	402	123	95	59	53
(†)	-63.4	-28.6	-0	102	12.6	101	106	-17.9	-50.4	-47.2	-66.7	-47.1
MEAN‡	31.5	71.4	297	632	456	887	1311	1276	236	253	76.3	62.9
CFSM‡	0.11	0.24	1.01	2.14	1.55	3.01	4.44	4.33	0.80	0.86	0.26	0.21
IN‡	0.13	0.27	1.16	2.47	1.61	3.47	4.95	4.99	0.89	0.99	0.30	0.23

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1905, 1941 - 2002, BY WATER YEAR (WY)

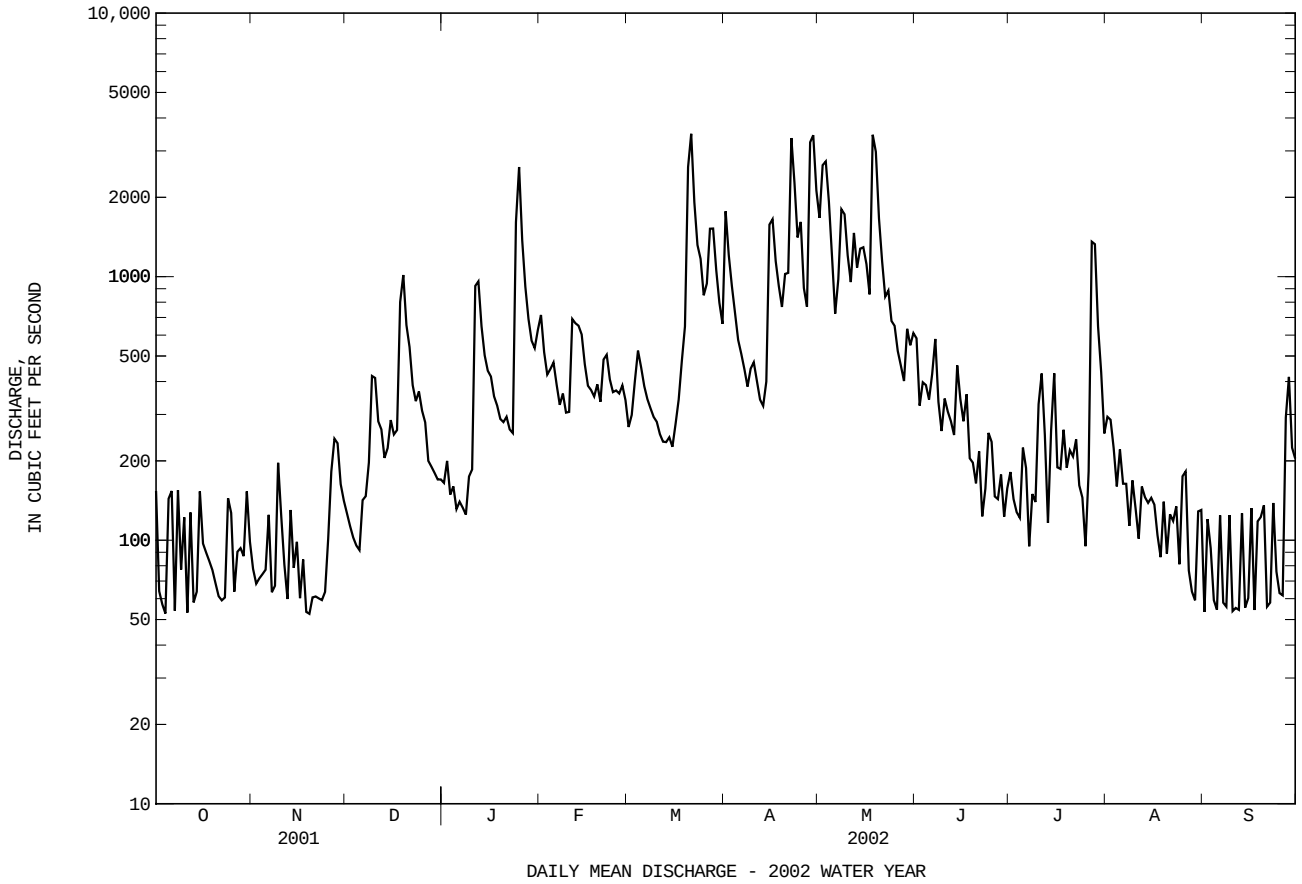
MEAN	275	489	832	867	992	1210	942	694	479	370	295	235
MAX	1103	2190	2147	1886	2277	2644	2231	1888	1823	1335	1319	1059
(WY)	1955	1986	1903	1996	1903	1963	1901	1996	1903	1990	1956	1996
MIN	50.2	55.7	145	140	337	285	327	176	84.2	64.6	51.0	49.8
(WY)	1992	1905	1944	1981	1954	1990	1995	1982	1969	1991	1991	1991

† Change in contents in Deep Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Electric Company.
‡ Adjusted for change in reservoir contents.

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1898 - 1905, 1941 - 2002	
ANNUAL TOTAL	181667		170213			
ANNUAL MEAN	498		466		636	
ANNUAL MEAN‡	498		466		640	
HIGHEST ANNUAL MEAN					1052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	3550	Feb 15	3480	Mar 21	11200	Jan 19 1996
LOWEST DAILY MEAN	53	(a)	53	(b)	8.2	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	59	Nov 18	59	Nov 18	29	Sep 21 1972
MAXIMUM PEAK FLOW			5270	Apr 28	(c)16100	Jan 19 1996
MAXIMUM PEAK STAGE			5.83	Apr 28	(d)14.20	Mar 29 1924
INSTANTANEOUS LOW FLOW			36	Oct 5	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.69		1.58		2.16	
ANNUAL RUNOFF (CFSM)‡	1.69		1.58		2.17	
ANNUAL RUNOFF (INCHES)	22.91		21.46		29.31	
ANNUAL RUNOFF (INCHES)‡	22.94		21.47		29.46	
10 PERCENT EXCEEDS	1030		1180		1410	
50 PERCENT EXCEEDS	290		252		403	
90 PERCENT EXCEEDS	77		64		104	

‡ Adjusted for change in reservoir contents since October 1940.
a Oct. 4, 11, Nov. 18, 19.
b Oct. 4, 11, Nov. 18, 19, Sept. 1.
c From rating curve extended above 5,800 ft^3/s on basis of slope-area measurement of peak flow.
d From floodmarks.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

03076600 BEAR CREEK AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'22.1", long 79°23'38.8", Garrett County, Hydrologic Unit 05020006, on right bank 0.2 mi downstream from bridge on Accident-Friendsville Road, 0.6 mi downstream from South Branch Bear Creek, 0.8 mi southeast of Friendsville, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--48.9 mi^2.

PERIOD OF RECORD.--October 1964 to current year.

REVISED RECORDS.--WDR MD-DE-94-1: 1993

GAGE.--Water-stage recorder. Datum of gage is 1,551.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1730	680	3.86	May 28	1930	*1,850	*5.40
May 18	0500	740	3.96				

Minimum discharge, 3.0 ft^3/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	5.6	18	e25	95	51	207	251	179	15	18	6.3
2	7.3	5.5	15	e23	88	46	172	250	123	14	28	6.4
3	6.9	15	13	e24	81	74	147	230	101	14	14	6.2
4	6.6	11	12	e22	77	70	119	191	90	13	13	5.7
5	6.2	7.7	11	e21	68	78	101	152	73	15	22	5.0
6	6.9	6.7	11	21	65	67	90	132	107	12	38	4.9
7	6.9	6.4	13	21	58	61	80	160	105	11	18	4.6
8	6.1	6.2	17	18	55	56	69	170	82	11	14	4.2
9	5.9	6.2	41	18	50	53	68	224	68	11	12	4.0
10	6.0	6.0	32	41	53	49	69	206	59	71	10	3.8
11	6.0	5.7	28	193	124	45	57	162	52	27	9.3	3.4
12	6.0	5.5	24	135	113	44	54	165	46	16	8.7	3.2
13	6.1	5.4	23	104	107	43	55	194	64	14	8.1	3.2
14	7.4	5.4	33	81	93	41	63	245	64	24	7.6	3.1
15	12	5.4	39	72	86	40	109	227	52	19	6.9	4.6
16	8.5	5.4	35	61	80	55	104	187	49	13	6.7	6.3
17	10	5.3	39	57	73	51	98	163	42	11	6.6	4.9
18	8.4	5.1	100	52	62	101	90	573	39	11	11	4.2
19	7.3	5.1	94	48	58	121	81	378	35	19	19	4.0
20	6.7	7.2	76	45	57	399	85	278	31	16	9.1	4.5
21	6.4	6.9	60	42	68	388	101	233	28	12	7.5	4.0
22	6.2	5.9	50	40	63	258	281	183	25	11	6.6	4.6
23	6.1	5.6	45	42	60	192	235	147	23	10	9.2	5.9
24	6.0	5.4	46	205	58	152	178	130	21	12	35	4.8
25	6.0	23	40	215	56	123	147	121	20	10	21	3.9
26	5.5	23	36	162	56	141	117	99	18	17	12	9.0
27	5.5	29	38	126	54	182	101	84	18	54	9.4	43
28	6.0	34	35	104	49	158	337	353	24	36	8.3	29
29	6.1	24	30	90	---	137	290	391	21	23	8.2	13
30	5.9	20	e29	90	---	117	250	252	16	16	7.8	9.3
31	5.7	---	e27	99	---	132	---	201	---	14	7.0	---
TOTAL	210.3	308.6	1110	2297	2007	3525	3955	6732	1675	572	412.0	219.0
MEAN	6.78	10.3	35.8	74.1	71.7	114	132	217	55.8	18.5	13.3	7.30
MAX	12	34	100	215	124	399	337	573	179	71	38	43
MIN	5.5	5.1	11	18	49	40	54	84	16	10	6.6	3.1
CFSM	0.14	0.21	0.73	1.52	1.47	2.33	2.70	4.44	1.14	0.38	0.27	0.15
IN.	0.16	0.23	0.84	1.75	1.53	2.68	3.01	5.12	1.27	0.44	0.31	0.17

e Estimated

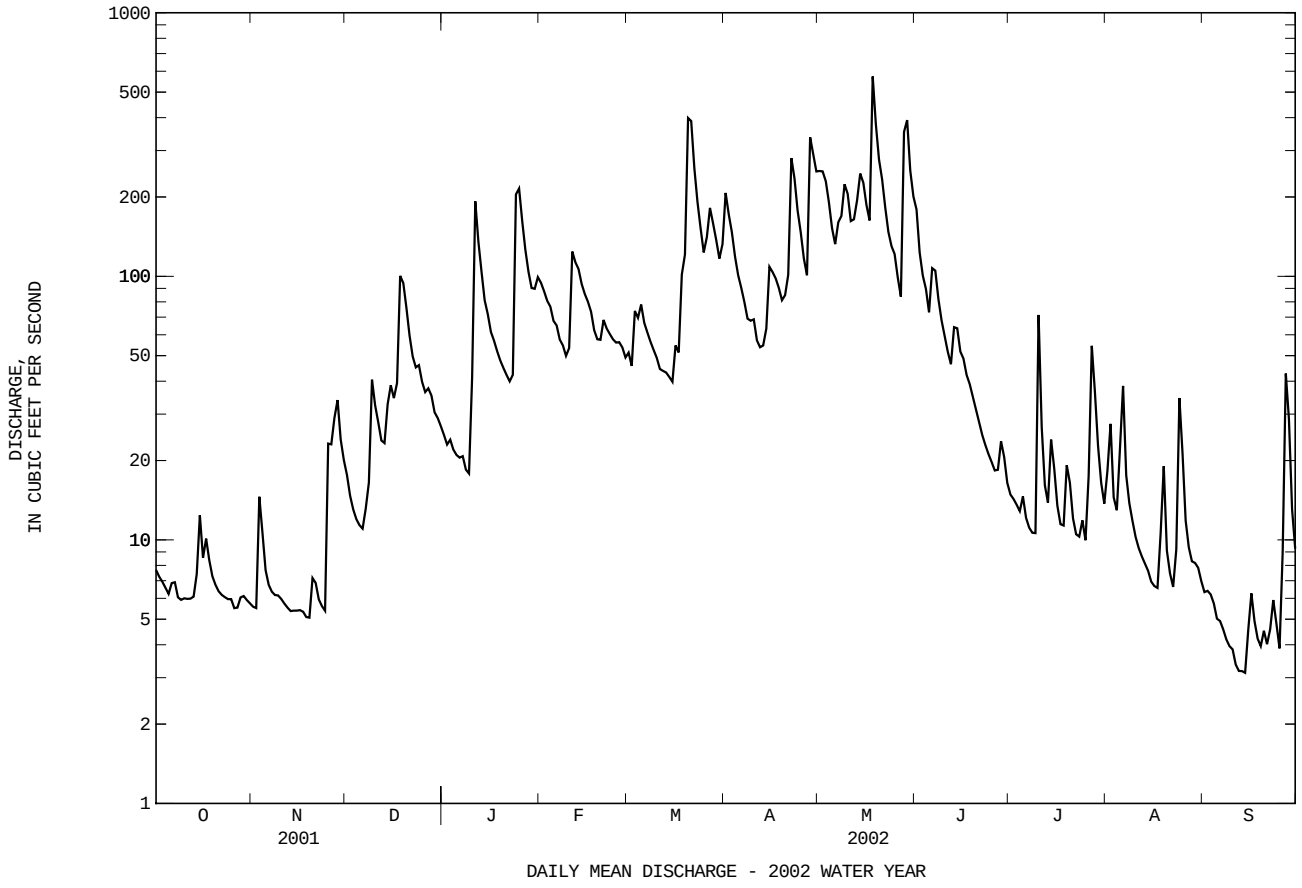
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	32.7	66.0	115	113	150	186	152	104	53.9	47.5	30.9	30.2
MAX	187	341	293	296	387	413	293	223	154	274	117	256
(WY)	1980	1986	1991	1996	1986	1994	1984	1996	1981	1990	1980	1971
MIN	4.05	6.71	11.3	19.1	39.8	45.5	59.4	23.5	10.6	6.35	4.32	2.98
(WY)	1992	1999	1999	1977	1993	1990	1995	1982	1991	1965	1966	1991

03076600 BEAR CREEK AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002	
ANNUAL TOTAL	21510.8		23022.9			
ANNUAL MEAN	58.9		63.1		89.9	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					53.4	1966
HIGHEST DAILY MEAN	928	Jun 7	573	May 18	3100	Sep 14 1971
LOWEST DAILY MEAN	5.1	Nov 18	3.1	Sep 14	1.6	(a)
ANNUAL SEVEN-DAY MINIMUM	5.3	Nov 13	3.6	Sep 8	2.0	Sep 7 1966
MAXIMUM PEAK FLOW			1850	May 28	(b)4650	Sep 14 1971
MAXIMUM PEAK STAGE			5.40	May 28	(c)9.60	Sep 14 1971
INSTANTANEOUS LOW FLOW			3.0	(d)	1.5	Sep 12 1966
ANNUAL RUNOFF (CFSM)	1.21		1.29		1.84	
ANNUAL RUNOFF (INCHES)	16.36		17.51		24.98	
10 PERCENT EXCEEDS	141		171		222	
50 PERCENT EXCEEDS	31		34		49	
90 PERCENT EXCEEDS	6.4		5.8		8.2	

a Sept. 12, 13, 1966.
b From rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow.
c From floodmarks.
d Sept. 13, 14.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'07.9", long 79°08'11.0", Garrett County, Hydrologic Unit 05020006, on left bank at downstream side of highway bridge, 0.3 mi upstream from Slaubaugh Run, 0.7 mi downstream from U.S. Highway 40, and 1.0 mi northeast of Grantsville.

DRAINAGE AREA.--62.5 mi^2.

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WSP 1143: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,088.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. U.S. Army Corps of Engineers satellite collection platform at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 20	1715	*1,400	*3.89	May 18	0930	1,280	3.71
Apr 28	1330	1,270	3.69				

Minimum discharge, 3.4 ft^3/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	9.8	30	e37	138	70	462	422	185	13	11	6.3
2	6.5	8.9	23	e35	113	76	257	478	120	12	28	6.1
3	6.5	20	19	e33	97	178	200	336	96	11	13	5.8
4	6.2	23	18	e32	93	134	164	237	93	10	13	5.6
5	6.1	14	16	e31	87	98	140	193	80	9.6	14	5.1
6	6.0	11	15	e32	112	94	126	157	121	9.1	43	4.8
7	6.0	10	18	e33	77	81	112	247	145	8.5	17	4.6
8	6.1	9.4	35	e35	78	73	100	314	86	7.9	11	4.4
9	6.1	9.7	111	72	77	69	99	388	68	7.7	8.8	4.1
10	6.3	9.2	59	163	82	63	118	244	58	50	7.9	3.9
11	6.3	8.8	45	395	250	54	90	179	49	35	7.3	3.7
12	6.4	8.4	39	185	152	54	79	194	44	14	6.6	3.6
13	6.8	8.3	38	123	130	54	80	310	123	10	6.5	3.5
14	12	8.0	e50	103	108	52	93	353	153	36	6.3	3.6
15	37	8.1	e64	86	99	47	263	248	95	31	5.9	4.1
16	18	8.2	e50	76	93	92	161	185	82	16	5.8	4.7
17	18	8.1	69	70	90	87	121	174	62	11	5.7	4.9
18	15	8.1	285	66	81	263	103	928	51	9.6	8.1	4.6
19	11	8.3	168	84	77	251	94	463	43	13	19	5.2
20	9.8	9.2	122	97	89	992	92	313	37	11	9.2	4.7
21	9.4	11	91	81	121	679	145	245	32	9.4	7.3	4.9
22	8.6	9.6	77	71	98	368	526	197	27	8.0	6.3	5.5
23	8.2	8.9	68	63	83	279	274	160	24	7.1	9.6	11
24	8.1	8.5	78	546	75	239	194	139	21	6.8	39	7.9
25	8.2	38	67	438	71	203	168	144	19	7.3	20	5.8
26	7.9	54	e62	223	70	271	142	116	17	22	11	12
27	8.3	50	e56	164	69	400	121	99	16	156	8.1	113
28	9.3	66	e52	138	61	244	807	268	20	59	7.1	82
29	9.6	37	e47	123	---	196	512	418	19	24	7.0	27
30	9.7	30	e43	128	---	167	316	188	15	15	7.1	14
31	10	---	e40	184	---	223	---	139	---	11	6.6	---
TOTAL	300.3	521.5	1955	3947	2771	6151	6159	8476	2001	651.0	376.2	376.4
MEAN	9.69	17.4	63.1	127	99.0	198	205	273	66.7	21.0	12.1	12.5
MAX	37	66	285	546	250	992	807	928	185	156	43	113
MIN	6.0	8.0	15	31	61	47	79	99	15	6.8	5.7	3.5
CFSM	0.15	0.28	1.01	2.04	1.58	3.17	3.28	4.37	1.07	0.34	0.19	0.20
IN.	0.18	0.31	1.16	2.35	1.65	3.66	3.67	5.04	1.19	0.39	0.22	0.22

e Estimated

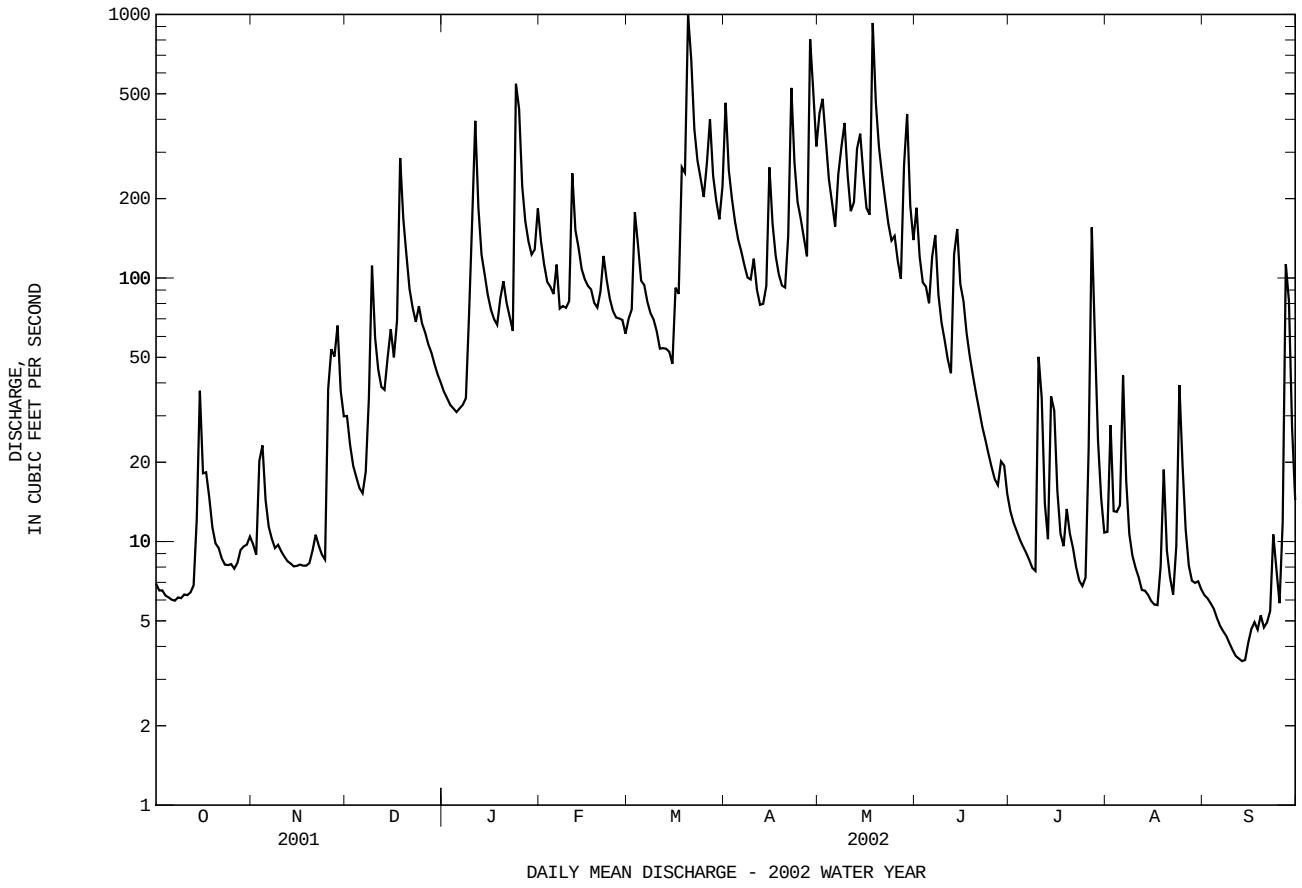
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2002, BY WATER YEAR (WY)

MEAN	44.7	85.9	144	160	197	261	211	137	74.9	48.6	38.2	33.5
MAX	288	449	341	376	414	582	468	312	200	175	202	290
(WY)	1955	1986	1973	1996	1956	1963	1970	1996	1951	1996	1956	1996
MIN	1.65	3.38	13.8	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58
(WY)	1954	1954	1999	1977	1964	1990	1968	1976	1965	1965	1991	1991

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1947 - 2002	
ANNUAL TOTAL	37299.9		33685.4			
ANNUAL MEAN	102		92.3		119	
HIGHEST ANNUAL MEAN					203	1996
LOWEST ANNUAL MEAN					64.2	1954
HIGHEST DAILY MEAN	1340	Jun 7	992	Mar 20	(e)3600	Jan 19 1996
LOWEST DAILY MEAN	6.0	Oct 6	3.5	Sep 13	(a)0.00	Aug 31 1962
ANNUAL SEVEN-DAY MINIMUM	6.1	Oct 4	3.8	Sep 9	0.89	Aug 27 1962
MAXIMUM PEAK FLOW			1400	Mar 20	(b)8400	Oct 15 1954
MAXIMUM PEAK STAGE			3.89	Mar 20	10.70	Oct 15 1954
INSTANTANEOUS LOW FLOW			3.4	(c)	(a)0.00	(d)
ANNUAL RUNOFF (CFSM)	1.64		1.48		1.91	
ANNUAL RUNOFF (INCHES)	22.20		20.05		25.94	
10 PERCENT EXCEEDS	264		244		279	
50 PERCENT EXCEEDS	45		50		66	
90 PERCENT EXCEEDS	8.3		6.4		8.1	

e Estimated
a Result of regulation from unknown source.
b From rating curve extended above 1,600 ft^3/s on basis of contracted-opening measurement at gage height of 8.13 ft.
c Sept. 13, 14.
d Aug. 31, Sept. 1, 1962.



DAILY MEAN DISCHARGE - 2002 WATER YEAR

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of annual maximum stage for tidal crest-stage stations.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 2002 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
POTOMAC RIVER BASIN								
North Branch Potomac River at Kitzmiller, Md. (01595500)	Lat 39°23'38", long 79°10'55", Garrett County, Hydrologic Unit 02070002, on left bank 0.6 mi downstream from bridge on State Highway 38 in Kitzmiller. Drainage area is 225 mi^2.	1950-85≠, 1986-99, 2000-02	07-27-02	8.64	9,230	10-15-54	**a**13.73	33,400
North Branch Potomac River at Barnum, W. Va. (01595800)	Lat 39°26'44", long 79°06'39", Garrett County, Hydrologic Unit 02070002, on right bank at highway bridge at Barnum. Drainage area is 266 mi^2.	1967-85≠, 1986-99, 2000-02	07-27-02	7.23	4,800	7-03-78	13.37	27,100
North Branch Potomac River at Pinto, Md. (01600000)	Lat 39°26'44", long 79°06'39", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank at downstream side of Western Maryland railroad bridge at Pinto, 2.8 mi downstream from Mill Run. Drainage area is 596 mi^2.	1939-85≠, 1986-99, 2000-02	05-02-02	7.70	5,800	10-16-54	23.23	37,000

≠ Operated as a continuous-record station.
a From floodmark

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Tidal crest-stage partial-record stations

The following table contains annual maximum stages for tidal crest-stage stations. The information is obtained from a crest-stage gage or a water-stage recorder located at each site. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. All stages are elevations above National Geodetic Vertical Datum of l929. Only the maximum stage is given. Information on some other high stages may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum stage at tidal crest-stage partial-record stations during water year 2002

Station No.	Station Name	Location	Period of Record	Annual Maximum Date	Annual Maximum Elevation, in feet NGVD
		DELAWARE RIVER BASIN			
01480065	Christina River at Newport, De.	Lat 39°42'38", long 75°36'33", New Castle County, Hydrologic Unit 02040205, on downstream side of bridge on James Street, at Newport and 7.5 mi upstream from the confluence with Delaware River.	1995-99, 2000-02	5-26-02	5.79
01481602	Delaware River below Christina River, at Wilmington, De.	Lat 39°43'00", long 75°31'03", New Castle County, Hydrologic Unit 02040205, on right bank, 1,000 ft from mouth of Christina River at the Wilmington Marine Terminal, 2.0 mi upstream of Delaware Memorial Bridge, and at river mi 69.70.	1983-91, 1995-99, 2000-02	10-14-01	5.63
		MURDERKILL RIVER BASIN			
01484085	Murderkill River at Bowers, De.	Lat 39°03'30", long 75°23'51", Kent County, Hydrologic Unit 02040207, at Faulkner's Landing in Bowers, on left bank 10 ft southeast of southwest corner of Faulkner's Pier nr near public boat ramp.	1966-86, 1997-99, 2000-02	10-14-01	5.62
		INDIAN RIVER BASIN			
01484540	Indian River at Rosedale Beach, De.	Lat 38°35'29", long 75°12'44", Sussex County, Hydrologic Unit 02060010, on left bank attached to privately owned fishing pier, at Seals Point, 1.9 mi west of Oak Orchard.	1992-99 2000-02	9- 1-02	4.06
01484670	Rehoboth Bay at Dewey Beach, De.	Lat 38°41'40", long 75°05'05", Sussex County, Hydrologic Unit 02060010, on north shore of Rehoboth Bay at Head of Bay Cove, at Dewey Beach and at south end of Ventian Drive on bulkhead of a boat slip.	1985-97 2001-02	10- 1-01	3.07
01484683	Indian River Bay at Indian River Inlet near Bethany Beach, De.	Lat 38°36'35", long 75°04'06", Sussex County, Hydrologic Unit 02060010, 0.3 mi northwest of the Indian River Inlet, 0.2 mi west of State Highway 1, 4.9 mi north of Bethany Beach and at the Indian River Coast guard station.	1992-99 2000-02	**10**- 1-01	4.45
		ASSAWOMAM BAY BASIN			
01484696	Jefferson Creek at South Bethany, De.	Lat 38°31'18", long 75°03'46", Sussex County, Hydrologic Unit 02060010, near mouth of canal off Jefferson Creek, at bulkhead at the end of West 1st Street at South Bethany.	2000-02	10- 1-01	2.62
01484701	Little Assawoman Bay at Fenwick Island, De.	Lat 38°27'18", long 75°03'31", Sussex County, Hydrologic Unit 02060010, at bulkhead at end of Madison Ave at Fenwick Island.	2000-02	10- 1-01	2.59

Water-Quality partial-records stations are particular sites where chemical-quality, biological, and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly. Samples colleted at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin are referred to as miscellaneous sites.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

NANTICOKE RIVER BASIN

01486800 NANTICOKE RIVER NEAR GREENWOOD, DE

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT 09...	1245	ENVIRONMENTAL	109	6.3	21.5	11.0	4.8	<10	26	6.95	2.07	9.44

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
OCT 09...	1.83	7.3	9.94	<.1	27.3	4	3.2	3.02	.005	3.02	.020	.17	<.07

Date	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT 09...	.15	.034	.008	<.004	17	2.1	1.9	<20	289	52.0	4.9

01486815 NANTICOKE RIVER AT GREENWOOD, DE

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 09...	1145	ENVIRONMENTAL	25	119	6.2	18.0	12.0	3.1	<10	29	7.21	2.59

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 09...	9.57	2.08	7.6	12.0	<.1	26.4	1	3.7	3.72	.004	3.72	.017	.01

Date	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 09...	.01	3.7	.018	<.004	.008	17	1.9	1.8	<20	206	49.9	1.3	.09

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

NANTICOKE RIVER BASIN--Continued

01486820 CART BRANCH AT GREENWOOD, DE

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN DEMAND, CHEM-ICAL (LOW LEVEL) (MG/L) (00335)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT												
09...	0930	ENVIRONMENTAL	1.4	193	6.0	12.5	9.3	5.4	<10	35	8.65	3.17
09...	*0931*	*REPLICATE*	*1.4*	--	--	--	--	*5.4*	*<10*	*35*	*8.60*	*3.19*

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT													
09...	22.3	2.51	11.7	27.1	<.1	23.8	5	3.8	3.66	.006	3.67	.037	.08
09...	*21.9*	*2.28*	*11.5*	*28.0*	*<.1*	*24.6*	*4*	*3.7*	*3.54*	*.006*	*3.55*	*.035*	*.13*

Date	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT													
09...	.07	3.7	.04	.03	.042	.024	.009	38	1.9	1.8	<20	46	67.6
09...	*<.04*	--	*.10*	--	*.043*	*.016*	*.009*	--	*1.7*	*1.3*	*<20*	*43*	*67.3*

Date	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT		
09...	3.0	.01
09...	*3.3*	*.01*

01487100 DEEP CREEK AT OLD FURNACE, DE

Date	Time	Sample Type	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
MAY					
22...	1000	ENVIRONMENTAL	4.2	1.4	3.0

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

SUSQUEHANNA RIVER BASIN

01578309 SUSQUEHANNA RIVER NEAR CONOWINGO, MD

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
MAY												
23...	1200	ENVIRONMENTAL	151	7.6	23.0	15.0	764	2.4	.7	<1	<.5	<.5

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
MAY		
23...	M	<.5

GUNPOWDER RIVER BASIN

01583978 GUNPOWDER FALLS NEAR GLEN ARM, MD

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
MAY												
22...	1200	ENVIRONMENTAL	268	8.8	18.0	19.5	760	1.8	.6	<1	<.5	<.5

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
MAY		
22...	M	<.5

< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158397935 MINEBANK RUN AT TOWSON, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR 06...	1505	ENVIRONMENTAL	.01	608	8.2	13.0	11.4	12.4	100	25.5	8.82	83.2

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR 06...	2.46	15.4	107	.2	3.4	<.008	.55	E.03	.20	.76	<.06	<.02	1.5

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR 06...	30	16.8

0158397940 MINEBANK RUN TRIBUTARY AT TOWSON, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR 07...	0940	ENVIRONMENTAL	.02	486	7.3	12.0	5.9	13.1	130	31.0	12.9	31.5

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
MAR 07...	4.59	18.5	96.4	.3	7.8	1.75	.011	1.76	.10	.20	2.0	.10	<.06

Date	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR 07...	<.02	4.7	25	402

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

0158397960 MINEBANK RUN NEAR TOWSON, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
07...	1220	ENVIRONMENTAL	.28	1190	8.4	17.0	9.3	15.1	320	74.4	33.3	93.6
07...	*1222*	*BLANK*	--	--	--	--	--	--	--	*E.01*	*<.008*	*<.09*

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR													
07...	3.67	24.7	253	.1	7.1	<.008	1.06	<.04	E.09	<.06	<.02	1.3	<10
07...	*<.10*	*<.1*	*<.30*	*<.1*	*<.2*	*<.008*	*<.05*	*<.04*	*<.10*	*<.06*	*<.02*	--	*<10*

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR	
07...	4.7
07...	*<2.0*

0158397965 HARTS RUN NEAR TOWSON, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
07...	1040	ENVIRONMENTAL	.21	653	7.8	16.0	8.5	12.4	270	83.9	15.3	15.7

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR													
07...	2.99	18.7	69.3	.1	13.3	<.008	1.37	<.04	E.06	<.06	<.02	6.0	E7

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR	
07...	6.2

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158397968 MINEBANK RUN AT TRANSECT 3 NEAR GLEN ARM, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1145	ENVIRONMENTAL	.49	858	8.0	3.0	5.1	12.9	270	69.9	23.7	60.8
MAY												
20...	1055	ENVIRONMENTAL	.71	762	7.8	16.0	15.2	10.2	--	--	--	--
JUL												
15...	1015	ENVIRONMENTAL	.21	768	7.8	28.0	22.8	7.7	260	64.4	23.1	45.3
SEP												
03...	1000	ENVIRONMENTAL	.18	580	7.7	23.4	20.1	9.5	--	--	--	--

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR													
05...	3.08	22.1	153	.1	8.5	<.008	1.16	<.04	E.05	--	<.06	<.02	3.6
MAY													
20...	--	--	--	--	--	<.008	.90	<.04	.10	1.0	<.06	<.02	--
JUL													
15...	3.37	19.7	119	.17	8.8	<.008	.56	<.04	.10	.66	<.06	<.02	4.7
SEP													
03...	--	--	--	--	--	<.008	.44	<.04	.12	.56	<.06	E.01	--

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR		
05...	<10	4.2
MAY		
20...	--	--
JUL		
15...	<10	5.6
SEP		
03...	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158397969 MINEBANK RUN AT TRANSECT 2 NEAR GLEN ARM, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1240	ENVIRONMENTAL	.49	858	8.1	3.0	6.3	12.7	270	69.4	23.6	60.9
MAY												
20...	1130	ENVIRONMENTAL	.71	769	7.9	16.0	16.0	10.4	--	--	--	--
20...	*1131*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
JUL												
15...	1050	ENVIRONMENTAL	.21	768	7.9	29.0	24.1	7.8	260	64.3	23.3	45.6
SEP												
03...	1100	ENVIRONMENTAL	.17	579	7.9	26.6	21.5	10.2	--	--	--	--

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR													
05...	3.04	22.1	154	.1	8.4	<.008	1.14	<.04	E.07	--	<.06	<.02	2.5
MAY													
20...	--	--	--	--	--	<.008	.87	<.04	.11	.98	<.06	<.02	--
20...	--	--	--	--	--	*<.008*	*.87*	*<.04*	*E.10*	--	*<.06*	*<.02*	--
JUL													
15...	3.39	19.5	119	.17	8.8	<.008	.51	<.04	.11	.62	<.06	<.02	4.0
SEP													
03...	--	--	--	--	--	<.008	.38	<.04	E.08	--	<.06	E.01	--

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR		
05...	<10	4.2
MAY		
20...	--	--
20...	--	--
JUL		
15...	<10	3.2
SEP		
03...	--	--

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

0158397971 MINEBANK RUN AT TRANSECT 1 NEAR GLEN ARM, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1420	ENVIRONMENTAL	.50	851	8.3	3.0	7.8	12.8	270	67.9	23.4	60.4
MAY												
20...	1255	ENVIRONMENTAL	.63	761	7.8	17.0	17.1	10.5	--	--	--	--
JUL												
15...	1200	ENVIRONMENTAL	.13	767	7.9	32.0	23.8	8.1	260	63.7	23.5	46.6
SEP												
03...	1200	ENVIRONMENTAL	.14	572	7.9	27.1	22.4	9.7	--	--	--	--
03...	*1201*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR													
05...	3.17	21.9	154	.1	8.4	<.008	1.12	<.04	.10	1.2	<.06	<.02	1.8
MAY													
20...	--	--	--	--	--	<.008	.83	<.04	.11	.94	<.06	<.02	--
JUL													
15...	3.38	19.6	121	.17	8.6	<.008	.45	<.04	E.10	--	<.06	<.02	4.1
SEP													
03...	--	--	--	--	--	<.008	.35	<.04	E.08	--	<.06	<.02	--
03...	--	--	--	--	--	*<.008*	*.35*	*<.04*	*E.09*	--	*<.06*	*<.02*	--

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR		
05...	<10	3.5
MAY		
20...	--	--
JUL		
15...	<10	4.7
SEP		
03...	--	--
03...	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158397973 MINEBANK RUN BELOW TRANSECT 1 NEAR PARKVILLE, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
05...	1515	ENVIRONMENTAL	.40	841	8.3	3.0	7.5	12.6	260	66.2	23.4	61.4
MAY												
20...	1410	ENVIRONMENTAL	.48	740	8.0	16.0	17.7	11.1	--	--	--	--
20...	*1412*	*BLANK*	--	--	--	--	--	--	--	--	--	--
JUL												
15...	1245	ENVIRONMENTAL	.07	768	8.0	32.0	25.6	8.4	250	61.7	23.1	44.1
15...	*1247*	*BLANK*	--	--	--	--	--	--	--	*.02*	*<.008*	*<.09*
SEP												
03...	1255	ENVIRONMENTAL	.01	552	8.2	29.0	26.4	9.8	--	--	--	--
03...	*1257*	*BLANK*	--	--	--	--	--	--	--	--	--	--

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
MAR													
05...	3.20	21.7	149	.1	7.6	<.008	1.09	<.04	E.09	--	<.06	<.02	1.6
MAY													
20...	--	--	--	--	--	<.008	.77	<.04	.12	.89	<.06	<.02	--
20...	--	--	--	--	--	*<.008*	*<.05*	*<.04*	*<.10*	--	*<.06*	*<.02*	--
JUL													
15...	3.32	19.7	121	.14	8.1	<.008	.46	--	<.10	--	<.06	<.02	3.4
15...	*<.10*	*<.1*	*<.30*	*<.10*	*<.2*	*<.008*	*<.05*	*<.04*	*E.06*	--	*<.06*	*<.02*	--
SEP													
03...	--	--	--	--	--	<.008	.32	<.04	.12	.44	<.06	<.02	--
03...	--	--	--	--	--	*<.008*	*<.05*	*<.04*	*<.10*	--	*<.06*	*<.02*	--

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR		
05...	<10	E2.1
MAY		
20...	--	--
20...	--	--
JUL		
15...	<10	3.2
15...	*<10*	*<2.0*
SEP		
03...	--	--
03...	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158397975 MINEBANK RUN NEAR PARKVILLE, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR 06...	0940	ENVIRONMENTAL	.29	860	7.9	7.0	3.7	13.6	270	68.9	24.1	62.1

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR 06...	2.87	21.9	152	.1	8.0	<.008	1.13	<.04	E.08	<.06	<.02	4.6	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR 06...	E2.8

0158397985 MINEBANK RUN TRIBUTARY NEAR CARNEY, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR 06...	1040	ENVIRONMENTAL	.05	255	7.7	13.0	3.9	12.8	100	27.1	8.47	8.16

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR 06...	1.98	11.0	18.6	E.1	13.3	<.008	.68	<.04	E.05	<.06	<.02	3.5	E7

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR 06...	3.4

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

GUNPOWDER RIVER BASIN--Continued

0158398050 MINEBANK RUN AT OUTLET NEAR CARNEY, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR												
06...	1355	ENVIRONMENTAL	.58	907	7.9	16.0	11.3	11.7	270	61.9	27.1	67.6
06...	*1356*	*REPLICATE*	--	--	--	--	--	--	*270*	*62.9*	*27.4*	*68.9*

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR													
06...	2.77	17.2	170	E.1	7.7	<.008	1.19	<.04	<.10	<.06	<.02	4.1	<10
06...	*2.85*	*17.3*	*166*	*.1*	*8.0*	*<.008*	*1.21*	*<.04*	*E.05*	*<.06*	*<.02*	--	*<10*

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR	
06...	4.7
06...	*5.0*

PATAPSCO RIVER BASIN

01586955 NORTH BRANCH PATAPSCO RIVER NEAR OAKLAND, MD

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
MAY												
22...	0830	ENVIRONMENTAL	186	8.1	18.5	18.0	760	2.0	.4	<1	<.5	<.5

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
MAY		
22...	M	<.5

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN

01621050 MUDDY CREEK AT MOUNT CLINTON, VA

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT												
22...	1430	ENVIRONMENTAL	1.0	459	8.4	26.5	16.6	729	14.2	153	221	245
NOV												
06...	1200	ENVIRONMENTAL	.74	465	8.0	12.5	6.9	730	12.9	111	221	270
DEC												
11...	1215	ENVIRONMENTAL	7.4	456	7.8	6.0	6.2	731	10.2	86	190	232
JAN												
08...	1245	ENVIRONMENTAL	.87	453	8.3	.0	.2	727	13.6	98	210	256
FEB												
05...	1215	ENVIRONMENTAL	.60	508	7.9	.5	1.5	733	12.2	90	258	312
MAR												
05...	*0915*	*BLANK*	--	--	--	--	--	--	--	--	--	--
05...	1045	ENVIRONMENTAL	.40	508	8.1	1.5	1.2	733	12.4	91	231	282
APR												
02...	1245	ENVIRONMENTAL	1.2	444	8.8	19.5	16.1	726	17.9	190	211	223
09...	1145	ENVIRONMENTAL	.87	413	8.4	17.5	14.0	729	13.6	138	--	--
16...	1215	ENVIRONMENTAL	1.0	384	9.0	29.0	23.5	732	18.5	227	--	--
23...	1200	ENVIRONMENTAL	9.3	455	8.0	10.0	11.8	730	9.6	93	--	--
30...	1100	ENVIRONMENTAL	3.2	485	8.4	16.5	14.3	724	12.9	133	--	--
MAY												
07...	1130	ENVIRONMENTAL	1.2	463	7.8	17.5	15.3	728	8.5	89	194	235
07...	*1131*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
14...	1145	ENVIRONMENTAL	1.2	469	8.1	13.0	16.0	721	11.6	124	--	--
22...	1115	ENVIRONMENTAL	.60	459	8.0	14.0	14.1	736	11.9	120	--	--
29...	1130	ENVIRONMENTAL	10	414	7.7	26.0	19.9	730	9.0	104	--	--
JUN												
04...	1215	ENVIRONMENTAL	2.1	474	8.3	30.0	25.1	727	11.7	149	185	219
04...	*1216*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1115	ENVIRONMENTAL	.87	486	8.0	29.0	23.3	729	10.5	129	--	--
17...	1730	ENVIRONMENTAL	5.6	527	8.4	25.5	22.2	727	9.1	109	--	--
25...	1115	ENVIRONMENTAL	1.8	508	8.1	30.5	25.1	729	11.9	152	--	--
JUL												
01...	1130	ENVIRONMENTAL	5.2	535	8.0	28.5	25.2	730	10.1	129	--	--
08...	*1315*	*BLANK*	--	--	--	--	--	--	--	--	--	--
08...	1400	ENVIRONMENTAL	2.5	475	8.5	31.5	26.4	732	13.5	175	202	214
08...	*1401*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
18...	1145	ENVIRONMENTAL	.73	482	8.2	28.5	25.5	727	11.3	145	--	--
22...	1700	9 L	--	--	--	--	--	--	--	--	--	--
23...	1030	9 L	--	--	--	--	--	--	--	--	--	--
23...	1600	9 L	--	--	--	--	--	--	--	--	--	--
AUG												
05...	1245	ENVIRONMENTAL	1.6	478	8.6	32.0	27.9	728	14.9	199	213	222
05...	*1247*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
21...	1145	ENVIRONMENTAL	.49	472	8.1	26.0	21.6	734	9.6	114	--	--
SEP												
09...	1130	ENVIRONMENTAL	.38	450	8.0	27.5	19.5	730	9.2	105	205	248
24...	0945	ENVIRONMENTAL	.42	469	7.8	18.0	16.0	733	8.7	92	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)
OCT													
22...	12	10.4	9.72	2.8	2.30	.025	2.33	<.04	.48	--	.076	.04	3.0
NOV													
06...	0	10.2	11.0	3.2	2.59	.032	2.62	<.04	.60	--	.067	.02	4.2
DEC													
11...	0	17.9	14.8	6.1	3.81	.130	3.94	.42	2.2	1.8	.60	.37	--
JAN													
08...	0	10.8	9.02	4.3	3.84	.021	3.86	.11	.47	.36	.085	.05	13.2
FEB													
05...	0	12.0	10.7	3.7	3.01	.017	3.03	<.04	.64	--	.121	.05	4.5
MAR													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	0	16.2	14.5	4.0	3.12	.021	3.15	.08	.85	.78	.186	.07	7.8
APR													
02...	14	13.7	13.0	3.6	1.94	.032	1.97	<.04	1.6	--	.24	.06	5.5
09...	--	--	--	1.4	.71	.024	.73	<.04	.66	--	.044	.03	--
16...	--	--	--	1.3	.28	.028	.31	<.04	.99	--	.24	.10	--
23...	--	--	--	8.1	6.97	.051	7.02	.12	1.1	.94	.22	.10	--
30...	--	--	--	6.8	6.13	.046	6.18	<.04	.60	--	.123	.06	--
MAY													
07...	0	14.0	9.52	4.7	4.03	.050	4.08	E.03	.63	--	.102	.03	4.2
07...	--	--	--	4.8	4.03	.050	4.08	E.03	.68	--	.103	.03	--
14...	--	--	--	4.7	4.06	.051	4.12	<.04	.59	--	.13	.05	--
22...	--	--	--	4.4	3.90	.039	3.94	<.04	.49	--	.076	.03	--
29...	--	--	--	7.8	6.81	.046	6.86	.05	.97	.92	.21	.10	--
JUN													
04...	3	14.7	10.9	7.7	7.05	.090	7.14	<.04	.58	--	.112	.05	3.9
04...	--	--	--	--	--	<.008	<.05	<.04	<.10	--	<.004	<.02	--
10...	--	--	--	5.9	5.34	.084	5.43	<.04	.49	--	.103	.05	--
17...	--	--	--	11	9.89	.063	9.95	E.02	.78	--	.123	.07	--
25...	--	--	--	7.3	6.71	.107	6.82	<.04	.50	--	.121	.07	--
JUL													
01...	--	--	--	9.2	8.35	.146	8.50	E.03	.74	--	.152	.09	--
08...	--	<.1	<.30	--	--	<.008	<.05	<.04	<.10	--	<.004	<.02	.4
08...	15	13.2	11.6	6.4	5.86	.065	5.92	<.04	.52	--	.114	.07	3.1
08...	--	--	--	6.4	5.88	.066	5.95	<.04	.46	--	.114	.07	--
18...	--	--	--	3.6	3.04	.065	3.10	<.04	.50	--	.109	.06	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	18	11.0	9.97	3.4	2.83	.050	2.88	<.04	.51	--	.132	.08	3.8
05...	--	--	--	--	--	--	--	--	--	--	--	--	3.5
21...	--	--	--	1.7	1.09	.029	1.12	<.04	.53	--	.119	.07	--
SEP													
09...	1	8.7	9.20	.83	.40	.009	.41	<.04	.42	--	.111	.06	4.5
24...	--	--	--	2.8	2.02	.025	2.05	<.04	.78	--	.140	.09	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)
OCT													
22...	.5	<.002	<.004	<.002	<.005	.063	<.010	<.002	<.041	<.020	<.005	<.018	<.003
NOV													
06...	.5	<.002	<.004	<.002	<.005	.056	<.010	<.002	<.041	<.020	<.005	<.018	<.003
DEC													
11...	.4	<.002	<.004	<.002	<.005	.040	<.010	<.002	<.041	<.020	<.005	<.018	<.003
JAN													
08...	.4	<.002	<.004	<.002	<.005	.048	<.010	<.002	<.041	<.020	<.005	<.018	<.003
FEB													
05...	1.1	<.006	<.006	<.004	<.005	.065	<.010	<.002	<.041	<.020	<.005	<.018	<.003
MAR													
05...	--	<.006	<.006	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003
05...	1.4	<.006	<.006	<.004	<.005	.053	<.010	<.002	<.041	<.020	<.005	<.018	<.003
APR													
02...	2.5	<.006	<.006	<.004	<.005	.043	<.010	<.002	<.041	<.020	<.005	<.018	<.003
09...	--	<.006	<.006	<.004	<.005	.045	<.010	<.002	<.041	<.020	<.005	<.018	<.003
16...	--	<.006	<.006	<.004	<.005	.049	<.010	<.002	<.041	<.020	<.005	<.018	<.003
23...	--	<.006	<.006	<.004	<.005	.536	<.010	<.002	<.041	<.020	<.005	<.018	<.003
30...	--	<.006	<.006	<.004	<.005	.351	<.010	<.002	<.041	<.020	<.005	<.018	<.003
MAY													
07...	1.6	<.006	<.006	<.004	<.005	.189	<.010	<.002	<.041	<.020	<.005	<.018	<.003
07...	1.0	<.006	<.006	<.004	<.005	.182	<.010	<.002	<.041	<.020	<.005	<.018	<.003
14...	--	<.006	<.006	<.004	<.005	.328	<.010	<.002	<.041	<.020	<.005	<.018	<.003
22...	--	<.006	<.006	<.004	<.005	.184	<.010	<.002	<.041	<.020	<.005	<.018	<.003
29...	--	<.006	<.006	<.004	<.005	2.87	<.010	<.002	<.041	<.020	.009	<.018	<.003
JUN													
04...	.8	<.006	<.006	<.007	<.005	1.35	<.010	<.002	<.041	<.020	.005	<.018	<.003
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	<.006	<.006	<.004	<.005	.658	<.010	<.002	<.041	<.020	E.004	<.018	<.003
17...	--	<.006	<.006	<.004	<.005	.980	<.010	<.002	<.041	<.020	.008	<.018	<.003
25...	--	<.006	<.006	<.004	<.005	.504	<.010	<.002	<.041	<.020	<.005	<.018	<.003
JUL													
01...	--	<.006	<.006	<.004	<.005	.712	<.010	<.002	<.041	<.020	E.002	<.018	<.003
08...	<.1	<.006	<.006	<.004	<.005	<.007	<.010	<.002	<.041	<.020	<.005	<.018	<.003
08...	.5	<.006	<.006	<.004	<.005	.432	<.010	<.002	<.041	<.020	<.005	<.018	<.003
08...	--	<.006	<.006	<.004	<.005	.428	<.010	<.002	<.041	<.020	<.005	<.018	<.003
18...	--	<.006	<.006	<.004	<.005	.287	<.010	<.002	<.041	<.020	<.005	<.018	<.003
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	.3	<.006	<.006	<.004	<.005	.943	<.010	<.002	<.041	<.020	<.005	<.018	<.003
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	<.006	<.006	<.004	<.005	.162	<.010	<.002	<.041	<.020	<.005	<.018	<.003
SEP													
09...	.5	<.006	<.006	<.004	<.005	.119	<.010	<.002	<.041	<.020	<.005	<.018	<.003
24...	--	<.006	<.006	<.004	<.005	.087	<.010	<.002	<.041	<.020	<.005	<.018	<.003

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)
OCT													
22...	E.073	93.0	<.005	<.005	<.02	<.002	<.009	<.005	<.003	77.9	<.004	<.035	<.027
NOV													
06...	E.065	96.3	<.005	<.005	<.02	<.002	<.009	<.005	<.003	86.9	<.004	<.035	<.027
DEC													
11...	E.046	105	<.005	<.005	<.02	<.002	<.009	<.005	<.003	78.5	<.004	<.035	<.027
JAN													
08...	E.067	104	<.005	<.005	<.02	<.031	<.009	<.005	<.003	90.5	<.004	<.035	<.027
FEB													
05...	E.093	135	<.005	<.005	<.02	<.002	<.009	<.005	<.003	117	<.004	<.035	<.027
MAR													
05...	<.006	109	<.005	<.005	<.02	<.002	<.009	<.005	<.003	104	<.004	<.035	<.027
05...	E.063	109	<.005	<.005	<.02	<.002	<.009	<.005	<.003	91.6	<.004	<.035	<.027
APR													
02...	E.032	113	<.005	<.005	<.02	<.002	<.009	<.005	<.003	91.7	<.004	<.035	<.027
09...	E.037	100	<.005	<.005	<.02	<.035	<.009	<.005	<.003	95.5	<.004	<.035	<.027
16...	E.034	99.1	<.005	<.005	<.02	<.002	<.009	<.005	<.003	91.1	<.004	<.035	<.027
23...	E.040	109	<.005	<.005	<.02	<.002	<.009	<.005	<.003	103	<.004	<.035	<.027
30...	E.118	152	<.005	<.005	<.02	<.002	<.009	<.005	<.003	112	<.004	<.035	<.027
MAY													
07...	E.093	96.3	<.005	<.005	<.02	<.002	<.009	<.005	<.003	102	<.004	<.035	<.027
07...	E.087	98.1	<.005	<.005	<.02	<.002	<.009	<.005	<.003	108	<.004	<.035	<.027
14...	E.125	96.5	<.005	<.005	<.02	<.002	<.009	<.005	<.003	111	<.004	<.035	<.027
22...	E.074	102	<.005	<.005	<.02	<.002	<.009	<.005	<.003	101	<.004	<.035	<.027
29...	E.394	136	<.005	<.005	<.02	<.002	<.009	<.005	<.003	105	<.004	<.035	<.027
JUN													
04...	E.290	121	<.005	<.005	<.02	<.050	<.009	<.005	<.003	108	<.004	<.035	<.027
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	E.212	114	<.005	<.005	<.02	<.002	<.009	<.005	<.003	98.2	<.004	<.035	<.027
17...	E.397	103	<.005	<.005	<.02	<.002	<.009	<.005	<.003	102	<.004	<.035	<.027
25...	E.262	103	<.005	<.005	<.02	<.002	<.009	<.005	<.003	97.3	<.004	<.035	<.027
JUL													
01...	E.272	105	<.005	<.005	<.02	<.002	<.009	<.005	<.003	100	<.004	<.035	<.027
08...	<.006	115	<.005	<.005	<.02	<.002	<.009	<.005	<.003	95.5	<.004	<.035	<.027
08...	E.237	127	<.005	<.005	<.02	<.002	<.009	<.005	<.003	100	<.004	<.035	<.027
08...	E.222	121	<.005	<.005	<.02	<.002	<.009	<.005	<.003	95.5	<.004	<.035	<.027
18...	E.193	99.1	<.005	<.005	<.02	<.002	<.009	<.005	<.003	94.4	<.004	<.035	<.027
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	E.162	117	<.005	<.005	<.02	<.150	<.009	<.005	<.003	106	<.004	<.035	<.027
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	E.152	88.5	<.005	<.005	<.02	<.085	<.009	<.005	<.003	103	<.004	<.035	<.027
SEP													
09...	E.152	113	<.005	<.005	<.02	<.002	<.009	<.005	<.003	120	<.004	<.035	<.027
24...	E.086	119	<.005	<.005	<.02	<.002	<.009	<.005	<.003	110	<.004	<.035	<.027

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
OCT													
22...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01
NOV													
06...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01
DEC													
11...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01
JAN													
08...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.01
FEB													
05...	<.050	<.006	E.006	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
MAR													
05...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
05...	<.050	<.006	E.003	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
APR													
02...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
09...	<.050	<.006	E.004	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
16...	<.050	<.006	E.002	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
23...	<.050	<.006	.039	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
30...	<.050	<.006	.017	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
MAY													
07...	<.050	<.006	.019	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
07...	<.050	<.006	.018	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
14...	<.050	<.006	.031	<.006	<.002	<.007	<.003	<.010	<.004	E.013	<.006	<.011	<.01
22...	<.050	<.006	E.012	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
29...	<.050	<.006	.480	<.006	<.002	<.007	<.003	<.010	<.004	E.014	<.006	<.011	E.01
JUN													
04...	<.050	<.006	.098	<.006	<.002	<.007	<.003	<.010	<.004	E.007	<.006	<.011	E.01
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.050	<.006	.033	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01
17...	<.050	<.006	.074	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
25...	<.050	<.006	.016	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
JUL													
01...	<.050	<.006	.022	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
08...	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
08...	<.050	<.006	E.008	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01
08...	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01
18...	<.050	<.006	E.008	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	<.050	<.006	E.012	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	E.01
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.050	<.006	E.007	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M
SEP													
09...	<.050	<.006	E.005	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.01
24...	<.050	<.006	E.005	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	M

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT													
22...	<.004	<.010	<.011	<.02	.026	<.02	<.034	<.02	<.005	<.002	<.009	8.0	.02
NOV													
06...	<.004	<.010	<.011	<.02	.022	<.02	<.034	<.02	<.005	<.002	<.009	6.5	.01
DEC													
11...	<.004	<.010	<.011	<.02	.018	<.02	<.034	<.02	<.005	<.002	<.009	35	.70
JAN													
08...	<.004	<.010	<.011	<.02	.019	<.02	<.034	<.02	<.005	<.002	<.009	10	.02
FEB													
05...	<.004	<.010	<.011	<.02	.026	<.02	<.034	<.02	<.005	<.002	<.009	12	.02
MAR													
05...	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	--	--
05...	<.004	<.010	<.011	<.02	.019	<.02	<.034	<.02	<.005	<.002	<.009	9.3	.01
APR													
02...	<.004	<.010	<.011	<.02	.019	E.01	<.034	<.02	<.005	<.002	<.009	35	.11
09...	<.004	<.010	<.011	<.02	.019	<.02	<.034	<.02	<.005	<.002	<.009	8.4	.02
16...	<.004	<.010	<.011	<.02	.020	<.02	<.034	<.02	<.005	<.002	<.009	20	.05
23...	<.004	<.010	<.011	<.02	.297	E.01	<.034	<.02	<.005	<.002	<.009	27	.68
30...	<.004	<.010	<.011	<.02	.146	<.02	<.034	<.02	<.005	<.002	<.009	12	.11
MAY													
07...	<.004	<.010	<.011	<.02	.084	E.01	<.034	<.02	<.005	<.002	<.009	16	.05
07...	<.004	<.010	<.011	<.02	.079	E.01	<.034	<.02	<.005	<.002	<.009	18	--
14...	<.004	<.010	<.011	<.02	.158	E.01	<.034	<.02	<.005	<.002	<.009	17	.06
22...	<.004	<.010	<.011	<.02	.081	<.02	<.034	<.02	<.005	<.002	<.009	16	.03
29...	<.004	<.010	<.011	<.02	2.31	E.02	<.034	<.02	<.005	<.002	<.009	31	.83
JUN													
04...	<.004	<.010	<.011	<.04	.743	E.02	<.034	<.02	<.005	<.002	<.009	11	.06
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.004	<.010	<.011	<.02	.408	E.01	<.034	<.02	<.005	<.002	<.009	6.0	.01
17...	<.004	<.010	<.011	<.02	.628	.02	<.034	<.02	<.005	<.002	<.009	8.7	.13
25...	<.004	<.010	<.011	<.02	.324	E.01	<.034	<.02	<.005	<.002	<.009	4.5	.02
JUL													
01...	<.004	<.010	<.011	<.02	.370	.04	<.034	<.02	<.005	<.002	<.009	7.9	.11
08...	<.004	<.010	<.011	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	.0	--
08...	<.004	<.010	<.011	<.02	.220	.02	<.034	<.02	<.005	<.002	<.009	4.6	.03
08...	<.004	<.010	<.011	<.02	.224	.02	<.034	<.02	<.005	<.002	<.009	3.3	--
18...	<.004	<.010	<.011	<.02	.144	E.01	<.034	<.02	<.005	<.002	<.009	5.1	.01
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	<.004	<.010	<.011	<.02	.548	E.02	<.075	<.02	<.005	<.002	<.009	1.3	.01
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<.004	<.010	<.011	<.02	.082	E.01	<.034	<.02	<.005	<.002	<.009	25	.03
SEP													
09...	<.004	<.010	<.011	<.02	.063	<.02	<.034	<.02	<.005	<.002	<.009	1.5	.0
24...	<.004	<.010	<.011	<.02	.041	E.01	<.034	<.02	<.005	<.002	<.009	2.4	.0

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002--Continued

POTOMAC RIVER BASIN--Continued

01621050 MUDDY CREEK AT MOUNT CLINTON, VA--Continued

Date	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PHEO-PHYTIN A, PERI-PHYTON (MG/M2) (62359)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)
OCT				
22...	--	--	--	--
NOV				
06...	--	--	--	--
DEC				
11...	--	--	--	--
JAN				
08...	--	--	--	--
FEB				
05...	--	--	--	--
MAR				
05...	--	--	--	--
05...	--	--	--	--
APR				
02...	--	--	--	--
09...	--	--	--	--
16...	--	--	--	--
23...	--	--	--	--
30...	--	--	--	--
MAY				
07...	--	--	--	--
07...	--	--	--	--
14...	--	--	--	--
22...	--	--	--	--
29...	--	--	--	--
JUN				
04...	--	--	--	--
04...	--	--	--	--
10...	--	--	--	--
17...	--	--	--	--
25...	--	--	--	--
JUL				
01...	--	--	--	--
08...	--	--	--	--
08...	--	--	--	--
08...	--	--	--	--
18...	--	--	--	--
22...	160	173.5	28	86.7
23...	210	244.2	63	120
23...	210	267.8	32	89.8
AUG				
05...	--	--	--	--
05...	--	--	--	--
21...	--	--	--	--
SEP				
09...	--	--	--	--
24...	--	--	--	--

01638595 POTOMAC RIVER AT TUSCARORA, MD

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)
MAY 13...	1230	ENVIRONMENTAL	13100	202	7.6	28.0	20.0	750	3.1	1.5	<1	<.5

Date	DI-AZINON, DIS-SOLVED (UG/L) (39572)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
MAY 13...	<.5	M	<.5

01645295 POTOMAC RIVER BELOW WATTS BRANCH NEAR POTOMAC, MD

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)
JUN 18...	1130	ENVIRONMENTAL	307	8.0	27.0	765	4.0	.4	<1	<.5	<.5	.7

Date	PRO-METON, WATER, DISS, REC (UG/L) (04037)
JUN 18...	<.5

01648010 ROCK CREEK AT JOYCE RD WASHINGTON, DC

Date	Time	Sample Type	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
JUN 12...	1100	ENVIRONMENTAL	395	7.8	26.0	23.0	8.2	25.6	4.4	3.0

< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	Sample Type	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
OCT												
23...	1300	ENVIRONMENTAL	3.6	202	6.7	24.5	14.1	758	6.7	66	38	46
30...	1145	ENVIRONMENTAL	7.4	235	6.7	--	9.1	769	6.2	53	--	--
NOV												
07...	1200	ENVIRONMENTAL	3.6	285	6.9	19.5	9.9	761	7.5	66	--	--
20...	1115	ENVIRONMENTAL	9.8	307	6.8	9.5	9.2	757	8.1	71	--	--
DEC												
12...	1115	ENVIRONMENTAL	6.7	114	6.9	8.5	7.3	769	10.2	84	24	29
27...	1200	ENVIRONMENTAL	2.8	170	6.9	2.0	1.4	751	12.4	89	--	--
JAN												
09...	1215	ENVIRONMENTAL	4.1	220	7.3	3.0	.7	752	12.5	88	26	32
23...	1100	ENVIRONMENTAL	4.3	4900	6.9	7.0	3.7	762	11.1	86	--	--
FEB												
04...	*1345*	*BLANK*	--	--	--	--	--	--	--	--	--	--
04...	*1400*	*BLANK*	--	--	--	--	--	--	--	--	--	--
06...	*1030*	*BLANK*	--	--	--	--	--	--	--	--	--	--
06...	1230	ENVIRONMENTAL	3.6	912	7.2	6.5	1.7	765	13.4	96	41	50
21...	1200	ENVIRONMENTAL	3.2	585	7.2	17.0	7.8	753	11.3	96	--	--
MAR												
06...	1245	ENVIRONMENTAL	2.2	345	7.1	14.5	5.5	767	11.9	94	60	73
19...	1430	ENVIRONMENTAL	5.2	257	7.3	11.0	10.3	764	12.3	109	--	--
APR												
03...	1230	ENVIRONMENTAL	3.0	240	7.5	24.5	16.0	752	10.7	110	41	50
10...	1030	ENVIRONMENTAL	23	210	7.0	19.0	14.5	769	8.6	84	--	--
17...	1030	ENVIRONMENTAL	2.2	332	7.0	30.0	20.9	760	7.1	80	--	--
24...	1030	ENVIRONMENTAL	2.2	183	6.9	14.5	12.2	765	8.6	80	--	--
MAY												
01...	1100	ENVIRONMENTAL	7.8	243	6.8	18.5	14.7	755	8.2	82	--	--
08...	1045	ENVIRONMENTAL	6.4	245	6.9	22.0	17.1	760	8.0	83	45	55
08...	*1046*	*REPLICATE*	--	--	--	--	--	--	--	--	*43*	*53*
15...	1015	ENVIRONMENTAL	3.4	314	6.9	16.5	14.3	760	8.1	80	--	--
23...	0945	ENVIRONMENTAL	3.2	206	6.9	17.0	12.1	763	8.8	82	--	--
29...	1000	ENVIRONMENTAL	4.1	--	--	--	--	--	--	--	--	--
30...	1000	ENVIRONMENTAL	3.0	216	6.7	24.5	19.9	756	6.0	66	--	--
JUN												
05...	1015	ENVIRONMENTAL	1.3	243	6.8	27.0	22.2	756	5.5	63	46	56
11...	0930	ENVIRONMENTAL	1.0	190	6.5	26.5	21.7	756	5.4	62	--	--
18...	0930	ENVIRONMENTAL	2.5	185	6.6	25.5	19.4	762	6.0	65	--	--
26...	1000	ENVIRONMENTAL	1.8	204	6.5	29.0	23.9	757	5.9	71	--	--
JUL												
02...	0945	ENVIRONMENTAL	1.3	156	6.4	27.5	23.5	758	5.4	64	--	--
10...	*1100*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1200	ENVIRONMENTAL	.48	204	6.6	24.5	24.0	757	5.1	62	37	45
10...	*1201*	*REPLICATE*	--	--	--	--	--	--	--	--	--	--
17...	0945	ENVIRONMENTAL	1.1	132	6.8	25.5	22.4	760	6.1	71	--	--
18...	1030	ENVIRONMENTAL	.76	--	--	--	--	--	--	--	--	--
18...	1250	ENVIRONMENTAL	.76	--	--	--	--	--	--	--	--	--
18...	1500	ENVIRONMENTAL	.76	--	--	--	--	--	--	--	--	--
AUG												
06...	*1130*	*BLANK*	--	--	--	--	--	--	--	--	--	--
06...	1215	ENVIRONMENTAL	4.1	164	6.9	25.0	25.0	757	6.3	77	27	
26...	1230	ENVIRONMENTAL	.76	178	6.7	25.0	23.1	756	4.3	51	--	--
SEP												
10...	*0945*	*BLANK*	--	--	--	--	--	--	--	--	--	--
10...	1000	ENVIRONMENTAL	.19	166	6.8	26.5	20.4	754	5.4	60	32	39
25...	1115	ENVIRONMENTAL	.42	187	7.1	22.0	18.0	765	7.3	77	--	--

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT													
23...	7.2	31.4	--	--	<.04	.37	--	.07	--	--	<.008	--	.44
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	6.6	46.7	--	--	<.04	.29	--	<.05	--	--	<.008	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	5.3	13.0	--	--	E.02	.40	.31	.33	1.39	.036	.011	--	.73
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	9.2	45.1	--	.24	.19	.49	.66	.67	2.93	.033	.010	.31	1.2
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	9.8	244	--	--	<.04	.23	--	.61	--	--	E.004	--	.84
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	9.0	78.8	E7.83	--	<.04	.26	--	.65	--	--	E.006	--	.91
19...	--	--	--	--	<.04	.35	.56	.57	2.50	.033	.010	--	.92
APR													
03...	8.6	43.0	--	--	<.04	.34	--	.32	--	--	<.008	--	.66
10...	--	--	--	.09	.07	.73	.58	.60	2.55	.085	.026	.66	1.3
17...	--	--	--	--	<.04	.34	--	.05	--	--	<.008	--	.39
24...	--	--	--	.05	.04	.41	--	.32	--	--	E.007	.37	.73
MAY													
01...	--	--	--	.36	.28	.73	.48	.49	2.12	.036	.011	.45	1.2
08...	9.5	36.8	--	.07	.05	.34	.48	.49	2.13	.043	.013	.29	.84
08...	9.0	39.2	--	.07	.06	.34	.48	.50	2.15	.043	.013	.28	.84
15...	--	--	--	--	<.04	.27	.43	.44	1.89	.033	.010	--	.71
23...	--	--	--	--	E.03	.32	.46	.47	2.02	.030	.009	--	.78
29...	8.1	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	.12	.10	.46	.46	.49	2.05	.085	.026	.36	.95
JUN													
05...	6.3	38.2	--	--	E.03	.39	.31	.33	1.38	.062	.019	--	.72
11...	--	--	--	.07	.06	.45	.32	.34	1.42	.053	.016	.39	.79
18...	--	--	--	.05	.04	.44	.61	.62	2.69	.049	.015	.40	1.1
26...	--	--	--	--	<.04	.35	--	.28	--	--	E.005	--	.62
JUL													
02...	--	--	--	--	<.04	.36	--	.29	--	--	E.004	--	.66
10...	--	--	--	--	<.04	<.10	--	<.05	--	--	<.008	--	--
10...	5.2	28.3	--	--	<.04	.33	--	E.04	--	--	<.008	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	<.04	.39	--	.34	--	--	E.005	--	.72
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	9.7	19.4	--	--	E.03	.49	.69	.72	3.07	.085	.026	--	1.2
26...	--	--	--	.08	.06	.68	.76	.78	3.35	.089	.027	.62	1.5
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	7.2	21.3	--	--	<.04	.27	--	.11	--	--	<.008	--	.38
25...	--	--	--	--	<.04	.42	.09	.10	.381	.033	.010	--	.51

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN,PAR TICULTE WAT FLT SUSP (MG/L AS N) (49570)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L AS C) (00694)	CARBON, INOR-GANIC, PARTIC. TOTAL (MG/L AS C) (00688)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	2,4,5-T SURROG WATER FLTRD REC PERCENT (99958)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
OCT													
23...	.11	<.02	.030	.7	<.1	5.7	.7	--	102	<.009	.14	<.02	<.002
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	.10	<.02	.035	.5	<.1	4.7	.5	--	124	<.009	<.02	<.02	<.002
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	.13	E.01	.065	1.1	<.1	5.8	1.1	--	80.6	.863	E1.12	<.02	<.002
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	.09	E.01	.045	.5	<.1	8.3	.5	--	103	<.009	.19	<.02	<.006
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	97.4	<.009	<.02	<.02	<.006
06...	<.02	<.02	.017	.5	<.1	3.1	.4	--	88.4	<.009	<.02	<.02	<.006
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	.05	<.02	.033	.6	<.1	9.8	.6	E53	80.1	.307	E1.12	<.02	<.006
19...	--	<.02	.036	--	--	--	--	--	67.8	<.009	.57	<.02	<.006
APR													
03...	.03	<.02	.028	.5	<.1	4.5	.4	--	49.6	<.009	.36	<.02	<.006
10...	--	<.02	.060	--	--	--	--	--	48.3	<.009	E1.28	<.02	<.006
17...	--	<.02	.027	--	--	--	--	--	74.3	.066	E1.25	<.02	<.006
24...	--	<.02	.047	--	--	--	--	--	79.1	.194	E1.00	<.02	<.006
MAY													
01...	--	E.01	.065	--	--	--	--	--	79.9	.059	.75	<.02	<.006
08...	.05	<.02	.036	.3	<.1	5.8	.3	--	68.8	<.009	.30	<.02	<.006
08...	.04	<.02	.038	.2	<.1	--	.2	--	70.4	<.009	.30	<.02	<.006
15...	--	<.02	.028	--	--	--	--	--	88.2	<.009	.07	<.02	<.006
23...	--	<.02	.038	--	--	--	--	--	86.6	.054	.35	<.02	<.006
29...	--	--	--	--	--	5.3	--	--	--	--	--	--	--
30...	--	E.01	.047	--	--	--	--	--	75.8	E.857	.92	<.02	<.006
JUN													
05...	.05	<.02	.045	.5	<.1	4.6	.5	--	76.0	<.009	.11	<.02	<.006
11...	--	<.02	.055	--	--	--	--	--	56.1	<.009	.46	<.02	<.006
18...	--	E.01	.052	--	--	--	--	--	109	<.009	.33	<.02	<.006
26...	--	<.02	.043	--	--	--	--	--	78.2	<.009	.10	<.02	<.006
JUL													
02...	--	<.02	.048	--	--	--	--	--	62.4	<.009	.21	<.02	<.006
10...	.13	<.02	E.002	.2	<.1	.5	.2	--	88.3	<.009	<.02	<.02	<.006
10...	.09	<.02	.046	.4	<.1	4.3	.4	--	78.9	<.009	<.02	<.02	<.006
10...	--	--	--	--	--	4.5	--	--	73.6	<.009	<.02	<.02	<.006
17...	--	<.02	.050	--	--	--	--	--	69.9	<.009	.17	<.02	<.006
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	.08	<.02	.056	.5	<.1	6.3	.5	--	35.5	<.009	<.02	<.02	<.006
26...	--	<.02	.056	--	--	--	--	--	40.7	<.009	.55	<.02	<.006
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	.10	<.02	.044	.9	<.1	4.0	.9	--	54.6	<.009	<.02	<.02	<.006
25...	--	<.02	.047	--	--	--	--	--	67.2	<.009	<.02	<.02	<.006

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	BARBAN SURROG-ATE WTR FLT SCD 2060, 9060 RE PERCENT (90640)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
OCT													
23...	<.006	<2	<.004	<.007	<.002	<.02	<.008	<.04	<.005	<.009	E32.6	<.03	<.010
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.006	<2	<.004	<.007	<.002	<.02	<.008	<.04	<.005	<.007	E12.9	<.03	<.010
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.006	<2	<.004	<.007	<.002	<.02	<.008	<.04	<.005	<.007	53.4	<.03	<.010
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	90.6	<.03	<.010
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	98.2	<.03	<.010
06...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	43.4	<.03	<.010
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	69.2	<.03	<.010
19...	<.006	<2	<.006	<.200	<.004	<.02	<.008	<.04	<.005	E.005	17.9	<.03	E.006
APR													
03...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.011	E23.2	<.03	<.010
10...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.019	E53.8	<.03	E.004
17...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.007	24.5	<.03	<.010
24...	<.006	<2	.027	<.007	.026	<.02	<.008	<.04	<.005	1.02	60.0	<.03	<.010
MAY													
01...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.021	30.8	<.03	<.010
08...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.063	E46.0	<.03	<.010
08...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.064	E45.5	<.03	<.010
15...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.044	44.6	<.03	<.010
23...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.043	46.4	<.03	<.010
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.047	E32.6	<.03	<.010
JUN													
05...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.034	17.7	<.03	<.010
11...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.069	54.4	<.03	<.010
18...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.050	66.0	<.03	<.010
26...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.029	30.4	<.03	<.010
JUL													
02...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.026	E20.9	<.03	<.010
10...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	103	<.03	<.010
10...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.013	80.0	<.03	<.010
10...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.015	E7.0	<.03	<.010
17...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	E.007	E28.3	<.03	<.010
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.008	E13.5	<.03	<.010
26...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.019	E.0	<.03	<.010
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.010	E27.7	<.03	<.010
25...	<.006	<2	<.006	<.007	<.004	<.02	<.008	<.04	<.005	.008	E39.7	<.03	<.010

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BRO-MACIL, WATER, DISS, REC (UG/L) (04029)	BRO-MOXYNIL WATER, FLTRD, GF 0.7U REC (UG/L) (49311)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAF-FEINE-C13 SURROG, WAT FLT REC PERCENT (99959)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)
OCT													
23...	<.004	<.02	E.02	<.03	<.02	<.002	E.047	E125	E.02	E.032	<.006	<.020	<.02
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.004	<.02	E.02	<.03	<.02	<.002	<.010	E26.5	<.03	E.008	<.006	<.020	<.02
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.004	<.02	E.02	<.03	<.02	<.050	.402	108	E.01	E.073	<.006	<.020	<.02
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.004	<.02	E.01	<.03	<.02	<.002	.309	79.0	E.01	E.012	<.006	<.020	<.02
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	122	<.03	<.041	<.006	<.020	<.02
06...	.007	<.02	<.01	<.03	<.02	<.002	<.010	83.0	<.03	<.041	<.006	<.020	<.02
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.004	<.02	<.01	<.03	<.02	<.002	.111	83.8	M	E.008	<.006	<.020	<.02
19...	<.004	<.02	<.01	<.03	<.02	<.002	.396	114	E.01	E.018	<.006	<.020	<.02
APR													
03...	<.004	<.02	<.01	<.03	<.02	<.002	E.234	E120	E.01	E.010	<.006	<.020	<.02
10...	<.004	<.02	<.01	<.03	<.02	<.002	E3.14	E278	E.02	E.041	<.006	<.020	<.02
17...	.014	<.02	<.01	<.03	<.02	<.002	.034	76.6	<.03	<.041	<.006	<.020	<.02
24...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	101	.03	E.016	<.006	<.020	<.02
MAY													
01...	<.004	<.02	<.01	<.03	<.02	<.002	.862	75.6	.03	E.058	<.006	<.020	<.02
08...	<.004	<.02	<.01	<.03	<.02	<.002	E.084	E99.6	E.02	E.045	E.004	<.020	<.02
08...	<.004	<.02	<.01	<.03	<.02	<.002	E.086	E109	E.02	E.040	E.004	<.020	<.02
15...	.012	<.02	<.01	<.03	<.02	<.002	<.010	64.4	E.01	E.037	<.006	<.020	<.02
23...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	74.2	E.02	E.045	<.006	<.020	<.02
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.004	<.02	<.01	<.03	<.02	<.002	E.198	E99.2	E.02	E.053	<.006	<.020	<.02
JUN													
05...	.017	<.02	<.01	<.03	<.02	<.002	<.010	72.8	M	E.015	<.006	<.020	<.02
11...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	121	.03	E.072	<.006	<.020	<.02
18...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	102	E.01	E.027	<.006	<.020	<.02
26...	.024	<.02	<.01	<.03	<.02	<.002	<.010	100	E.01	E.019	<.006	<.020	<.02
JUL													
02...	<.004	<.02	<.01	<.03	<.02	<.002	E.054	E88.2	E.04	E.124	<.006	<.020	<.02
10...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	127	<.03	<.041	<.006	<.020	<.02
10...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	83.6	M	<.041	<.006	<.020	<.02
10...	<.004	<.02	<.01	<.03	<.02	<.002	<.010	E98.6	<.03	<.041	<.006	<.020	<.02
17...	.035	<.02	<.01	<.03	<.02	<.002	.066	80.8	E.02	E.037	<.006	<.020	<.02
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.004	<.02	E.01	<.03	<.02	<.002	E.317	E229	E.01	E.028	<.006	<.020	<.02
26...	<.004	<.02	<.01	E.10	<.02	<.002	E.967	E181	E.08	E.187	<.006	E.011	<.02
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.004	<.02	<.01	E.04	<.02	<.002	<.010	E213	<.03	E.007	<.006	<.020	<.02
25...	<.004	<.02	<.01	<.03	<.02	<.002	.105	E193	<.03	<.041	<.006	<.020	<.02

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DIAZ-INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT (91063)	DI-AZINON, DIS-SOLVED (UG/L) (39572)
OCT													
23...	<.010	<.04	<.005	<.01	<.018	<.01	--	<.003	<.03	<.01	<.04	97.3	.015
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	99.1	.006
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.010	--	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	94.5	.028
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	105	.026
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	102	<.005
06...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	120	<.005
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	115	.011
19...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	119	.017
APR													
03...	<.010	<.04	<.005	<.01	<.018	<.01	--	<.003	<.006	<.01	<.04	122	.018
10...	<.010	<.04	<.025	<.01	<.018	<.01	<.01	<.003	<.006	E.05	E.28	103	.020
17...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	E.25	100	.006
24...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.034	<.01	E.04	114	.122
MAY													
01...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.009	<.01	E.01	129	.080
08...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.019	E.02	E.01	125	.045
08...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.018	E.03	E.01	120	.045
15...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	E.11	104	.022
23...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.015	<.01	<.04	110	.042
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.014	<.01	<.04	133	.029
JUN													
05...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.015	<.01	E.02	106	.016
11...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.025	<.01	<.04	111	.058
18...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.019	<.01	<.04	121	.021
26...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.010	<.01	<.04	110	.033
JUL													
02...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.010	<.01	<.04	107	.021
10...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	85.1	<.005
10...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	83.3	<.005
10...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.010	<.01	<.04	78.6	.006
17...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	91.5	.029
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.010	<.04	<.020	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	105	.034
26...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.007	<.01	<.04	107	.007
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	E.01	<.04	124	E.005
25...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.005	<.01	<.04	109	.005

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLORPROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DIELDRIN DISSOLVED (UG/L) (39381)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHENAMID, WATER, DISS, REC (UG/L) (04033)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FENURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMETSULAM WATER FLTRD REC (UG/L) (61694)	FLUOMETURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)
OCT													
23...	.06	<.01	<.005	<.01	E.03	<.02	E.07	<.002	<.009	<.005	<.03	<.01	<.03
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.01	<.01	<.005	<.01	<.03	<.02	E.01	<.002	<.009	<.005	<.03	<.01	<.03
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	.15	<.01	<.005	<.01	.03	<.02	.05	<.030	<.009	<.005	<.03	<.01	<.03
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	.04	<.01	<.005	<.01	E.02	<.02	.04	<.002	<.009	<.005	<.03	<.01	E.01
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03
06...	<.01	<.01	<.005	<.01	<.03	<.02	.03	<.002	<.009	<.005	<.03	<.01	<.03
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	.08	<.01	<.005	<.01	E.02	<.02	.05	<.002	<.009	<.005	<.03	<.01	<.03
19...	<.01	<.01	<.005	<.01	<.03	<.02	.03	<.002	<.009	<.005	<.03	<.01	<.03
APR													
03...	<.01	<.01	<.005	<.01	E.01	<.02	E.03	<.002	<.009	<.005	<.03	<.01	<.03
10...	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03
17...	<.01	<.01	<.005	<.01	<.03	<.02	E.01	<.002	<.009	<.005	<.03	<.01	<.03
24...	.14	<.01	<.005	<.01	E.02	<.02	.03	<.002	<.009	<.005	<.03	<.01	<.03
MAY													
01...	<.01	<.01	<.005	<.01	<.03	<.02	.58	<.002	<.009	<.005	<.03	<.01	<.03
08...	<.01	<.01	<.005	<.01	<.03	<.02	E1.92	<.002	<.009	<.005	<.03	<.01	<.03
08...	<.01	<.01	<.005	<.01	<.03	<.02	E1.98	<.002	<.009	<.005	<.03	<.01	<.03
15...	<.01	<.01	<.005	<.01	<.03	<.02	E1.11	<.002	<.009	<.005	<.03	<.01	<.03
23...	<.01	<.01	<.005	<.01	<.03	<.02	E4.30	<.002	<.009	<.005	<.03	<.01	<.03
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.01	<.01	<.005	<.01	E.04	<.02	E9.31	<.002	<.009	<.005	<.03	<.01	<.03
JUN													
05...	<.01	<.01	<.005	<.01	<.03	<.02	E3.88	<.002	<.009	<.005	<.03	<.01	<.03
11...	<.01	<.01	<.005	<.01	<.03	<.02	E4.35	<.002	<.009	<.005	<.03	<.01	<.03
18...	<.01	<.01	<.005	<.01	<.03	<.02	E3.03	<.002	<.009	<.005	<.03	<.01	<.03
26...	<.01	<.01	<.005	<.01	<.03	<.02	E1.43	<.002	<.009	<.005	<.03	<.01	<.03
JUL													
02...	<.01	<.01	<.005	<.01	<.03	<.02	E.90	<.002	<.009	<.005	<.03	<.01	<.03
10...	<.01	<.01	<.005	<.01	<.03	<.02	<.01	<.010	<.009	<.005	<.03	<.01	<.03
10...	<.01	<.01	<.005	<.01	E.01	<.02	E1.08	<.002	<.009	<.005	<.03	<.01	<.03
10...	<.01	<.01	<.005	<.01	<.03	<.02	E.75	<.002	<.009	<.005	<.03	<.01	<.03
17...	.10	<.01	<.005	<.01	<.03	<.02	E.49	<.002	<.009	<.005	<.03	<.01	<.03
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.01	<.01	<.005	<.01	<.03	<.02	E.26	<.002	<.009	<.005	<.03	<.01	<.03
26...	<.01	<.01	<.005	<.01	E.02	<.02	E.10	<.002	<.009	<.005	<.03	<.01	<.03
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.01	<.01	<.005	<.01	<.03	<.02	E.18	<.002	<.009	<.005	<.03	<.01	<.03
25...	<.01	<.01	<.005	<.01	<.03	<.02	.15	<.002	<.009	<.005	<.03	<.01	<.03

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	FONOFOS WATER DISS REC (UG/L) (04095)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT (91065)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)
OCT													
23...	<.003	83.4	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	E.01	<.01	<.02
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.003	85.2	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.003	79.0	<.008	E.15	<.02	<.007	<.004	<.01	<.035	<.027	.02	<.01	<.02
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.003	87.5	<.008	E1.77	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.003	94.4	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
06...	<.003	109	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.003	102	<.008	E.08	<.02	<.007	<.004	<.01	<.035	<.027	E.01	<.01	<.02
19...	<.003	84.6	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.20	<.01	<.02
APR													
03...	<.003	85.2	<.008	E.06	<.02	E.054	<.004	<.01	<.035	<.027	.17	<.01	<.02
10...	<.003	92.7	<.008	<.02	<.02	<.007	<.004	<.01	--	E.010	.42	<.01	<.02
17...	<.003	78.2	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	.02	<.01	<.02
24...	<.003	89.3	<.008	E.02	<.02	.033	<.004	<.01	<.035	<.027	.13	<.01	<.02
MAY													
01...	<.003	98.1	<.008	<.02	<.02	.058	<.004	<.01	<.035	<.027	.10	<.01	<.02
08...	<.003	104	E.034	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
08...	<.003	96.4	E.036	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
15...	<.003	99.1	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
23...	<.003	104	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.003	109	<.008	E.03	<.02	<.007	<.004	<.01	<.035	<.027	.02	<.01	<.02
JUN													
05...	<.003	99.1	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
11...	<.003	107	E.035	<.02	<.02	.111	<.004	<.01	<.035	<.027	.07	<.01	<.02
18...	<.003	90.4	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
26...	<.003	98.2	<.008	<.02	<.02	.129	<.004	<.01	<.035	<.027	<.02	<.01	<.02
JUL													
02...	<.003	93.5	E.014	<.02	<.02	E.117	<.004	<.01	<.035	<.027	<.02	<.01	<.02
10...	<.003	95.4	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
10...	<.003	81.3	E.014	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
10...	<.003	85.0	E.017	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02
17...	<.003	72.7	<.008	<.02	<.02	.116	<.004	<.01	<.035	<.027	<.02	<.01	<.02
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	.034	97.3	<.008	<.02	<.02	E.085	<.004	<.01	<.035	.106	<.02	<.01	E.01
26...	<.003	107	<.008	E.05	<.02	<.007	.084	<.01	<.035	.117	<.02	<.01	<.02
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.003	118	<.008	<.02	<.02	E.062	<.004	<.01	<.035	<.027	<.02	<.01	<.02
25...	<.003	94.4	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL OXIME WATER FLTRD REC (UG/L) (61696)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)
OCT													
23...	<.008	<.01	<.004	<.050	<.006	E.004	<.006	E.27	<.002	<.007	<.01	<.01	<.02
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.008	<.01	<.004	<.050	<.006	E.004	<.006	<.03	<.002	<.007	<.01	<.01	<.02
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.008	--	<.004	<.050	<.006	.015	<.006	<.03	<.005	<.007	<.01	<.01	<.02
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.008	--	<.004	<.050	<.006	E.007	<.006	E.59	<.002	<.007	<.01	<.01	<.02
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.008	--	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
06...	<.008	--	<.004	<.050	<.006	E.010	<.006	<.03	<.002	<.007	<.01	<.01	<.02
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.008	--	<.004	<.050	<.006	.022	<.006	E.27	<.002	<.007	<.01	<.01	<.02
19...	<.008	--	<.004	<.050	<.006	.014	<.006	<.03	<.002	<.007	<.01	<.01	<.02
APR													
03...	<.008	--	<.004	<.050	<.006	E.011	<.006	E.61	<.002	<.007	<.01	<.01	<.02
10...	<.008	--	<.004	<.050	<.006	.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
17...	<.008	--	<.004	<.050	<.006	E.006	<.006	<.03	<.002	<.007	<.01	<.01	<.02
24...	<.008	--	<.004	<.050	<.006	.098	<.006	E.34	<.002	<.007	<.01	<.01	<.02
MAY													
01...	<.008	--	<.004	<.050	<.006	.020	<.006	<.03	<.002	<.007	<.01	<.01	<.02
08...	<.008	--	<.004	<.050	<.006	.028	<.006	<.03	<.002	<.007	<.01	<.01	<.02
08...	<.008	--	<.004	<.050	<.006	.027	<.006	<.03	<.002	<.007	<.01	<.01	<.02
15...	<.008	--	<.004	<.050	<.006	.019	<.006	<.03	<.002	<.007	<.01	<.01	<.02
23...	<.008	--	<.004	<.050	<.006	.035	<.006	<.03	<.002	<.007	<.01	<.01	<.02
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.008	--	<.004	<.050	<.006	.024	<.006	E1.30	<.002	<.007	<.01	<.01	<.02
JUN													
05...	<.008	--	<.004	<.050	<.006	.018	<.006	<.03	<.002	<.007	<.01	<.01	<.02
11...	<.008	--	<.004	<.050	<.006	.024	<.006	E.43	<.002	<.007	<.01	<.01	<.02
18...	<.008	--	<.004	<.050	<.006	.016	<.006	<.03	<.002	<.007	<.01	<.01	<.02
26...	<.008	--	<.004	<.050	<.006	E.010	<.006	<.03	<.002	<.007	<.01	<.01	<.02
JUL													
02...	<.008	--	<.004	<.050	<.006	E.011	<.006	<.03	<.002	<.007	<.01	<.01	<.02
10...	<.008	--	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
10...	<.008	--	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
10...	<.008	--	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
17...	<.008	--	<.004	<.050	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.008	--	<.004	<.050	<.006	E.005	<.006	<.03	<.002	<.007	<.01	<.01	<.02
26...	<.008	--	<.004	<.050	<.006	E.007	<.006	E2.09	<.002	<.007	<.01	<.01	<.02
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.008	--	<.004	<.050	<.006	E.006	<.006	<.03	<.002	<.007	<.01	<.01	<.02
25...	<.008	--	<.004	<.050	<.006	E.006	<.006	<.03	<.002	<.007	<.01	<.01	<.02

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-METON, WATER, DISS, REC (UG/L) (04037)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)
OCT													
23...	<.02	<.01	<.01	<.003	<.007	<.002	<.010	<.006	<.011	<.02	.05	<.008	<.010
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.02	<.01	<.01	<.003	<.007	<.002	<.010	<.006	<.011	<.02	<.03	<.004	<.010
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.02	--	<.01	<.003	<.007	<.002	<.010	<.006	<.011	<.02	.03	<.004	<.010
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	E.01	<.004	<.010
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	<.01	<.004	<.010
06...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	<.01	<.004	<.010
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	E.01	<.004	<.010
19...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.02	<.004	<.010
APR													
03...	<.02	--	<.01	<.003	<.010	<.004	.034	<.006	<.011	<.02	<.01	<.004	<.010
10...	<.02	--	<.01	<.003	<.010	<.004	.047	<.006	<.011	<.02	.03	<.040	<.010
17...	<.02	--	<.01	<.003	<.010	<.004	E.014	<.006	<.011	<.02	.02	<.004	<.010
24...	<.02	--	<.01	<.003	<.010	<.004	.026	<.006	<.011	<.02	.02	E.016	<.010
MAY													
01...	<.02	--	<.01	<.003	<.010	<.004	.029	<.006	<.011	<.02	.03	<.004	<.010
08...	<.02	--	<.01	<.003	<.010	<.004	.023	<.006	<.011	<.02	.03	<.004	<.010
08...	<.02	--	<.01	<.003	<.010	<.004	.022	<.006	<.011	<.02	.03	<.004	<.010
15...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	E.01	<.004	<.010
23...	<.02	--	<.01	<.003	<.010	<.004	E.014	<.006	<.011	<.02	.08	<.004	<.010
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.72	<.004	<.010
JUN													
05...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.20	<.004	<.010
11...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.35	<.004	<.010
18...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.21	<.004	<.010
26...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.10	<.004	<.010
JUL													
02...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.12	<.004	<.010
10...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	<.01	<.004	<.010
10...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.06	<.004	<.010
10...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.07	<.004	<.010
17...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.14	<.013	<.010
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.07	<.004	<.010
26...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.26	<.041	<.010
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.09	<.021	<.010
25...	<.02	--	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	.07	<.011	<.010

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)
OCT													
23...	<.011	<.02	<.010	<.02	<.008	E.01	E.006	<.009	<.006	<.010	<.034	<.02	<.005
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	<.011	<.02	<.010	<.02	<.008	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	<.011	<.02	<.010	<.02	<.008	<.02	.011	<.009	<.02	<.010	<.034	<.02	<.005
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	<.011	<.02	<.010	<.02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.011	<.02	<.010	<.02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
06...	<.011	<.02	<.010	<.02	<.008	<.02	.008	<.009	E.01	<.010	<.034	<.02	<.005
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	<.011	<.02	<.010	<.02	<.008	<.02	.010	<.009	<.02	<.010	<.034	<.02	<.005
19...	<.011	<.02	<.010	<.02	<.008	.03	.007	<.009	<.02	<.010	<.034	<.02	<.005
APR													
03...	<.011	<.02	<.010	<.02	<.008	E.05	.009	<.009	<.02	<.010	<.034	<.02	<.005
10...	<.011	<.02	<.010	<.02	<.008	E.08	3.38	<.009	<.02	<.010	<.034	<.02	<.005
17...	<.011	<.02	<.010	<.02	<.008	<.02	1.74	<.009	<.02	<.010	<.034	<.02	<.005
24...	<.011	<.02	<.010	<.02	E.005	.09	.417	<.009	E.01	<.010	<.034	<.02	<.005
MAY													
01...	<.011	<.02	<.010	<.02	<.008	.07	.139	.049	<.02	<.010	<.034	<.02	<.005
08...	<.011	<.02	<.010	<.02	<.008	E.05	.087	E.167	<.02	<.010	<.034	<.02	<.005
08...	<.011	<.02	<.010	<.02	<.008	E.05	.087	E.175	<.02	<.010	<.034	<.02	<.005
15...	<.011	<.02	<.010	<.02	<.008	<.02	.358	.103	<.02	<.010	<.034	<.02	<.005
23...	<.011	<.02	<.010	<.02	<.008	<.02	.062	1.00	<.02	<.010	<.034	<.02	<.005
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.011	<.02	<.010	<.02	E.004	<.02	.037	E.858	<.02	<.010	<.034	<.02	<.005
JUN													
05...	<.011	<.02	<.010	<.02	<.008	<.02	.048	.407	<.02	<.010	<.034	<.02	<.005
11...	<.011	<.02	<.010	<.02	E.005	<.02	.044	E.480	<.02	<.010	<.034	<.02	<.005
18...	<.011	<.02	<.010	<.02	E.005	<.02	.028	.257	<.02	<.010	<.034	<.02	<.005
26...	<.011	<.02	<.010	E.02	<.008	<.02	.024	.146	<.02	<.010	<.034	<.02	<.005
JUL													
02...	<.011	<.02	<.010	<.02	<.008	<.02	.021	E.042	<.02	<.010	<.034	<.02	<.005
10...	<.011	<.02	<.010	<.02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02	<.005
10...	<.011	<.02	<.010	<.02	E.004	<.02	.021	.070	<.02	<.010	<.034	<.02	<.005
10...	<.011	<.02	<.010	<.02	E.004	<.02	.024	<.009	<.02	<.010	<.034	<.02	<.005
17...	<.011	<.02	<.010	<.02	<.008	<.02	<.013	E.040	<.02	<.010	<.034	<.02	<.005
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.011	<.02	<.010	<.02	E.015	<.02	.008	<.009	<.02	<.010	<.034	<.02	<.005
26...	<.011	<.02	<.010	<.02	<.008	<.02	.012	<.009	<.02	<.010	<.034	<.02	<.005
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.011	<.02	<.010	E.01	<.008	<.02	.009	E.011	<.02	<.010	<.034	<.02	<.005
25...	<.011	<.02	<.010	M	<.008	<.02	<.008	<.009	<.02	<.010	<.034	<.02	<.005

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L) (34506)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L) (34511)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L) (34496)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L) (34501)	1,1-DI CHLORO-PRO-PENE, WAT, WH TOTAL (UG/L) (77168)	123-TRI CHLORO-PROPANE WATER WHOLE TOTAL (UG/L) (77443)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L) (32103)
OCT													
23...	<.002	<.009	.09	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
30...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.03	<.16	<.04	<.1
NOV													
07...	<.002	<.009	<.02	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
20...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
DEC													
12...	<.002	--	<.02	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
27...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
JAN													
09...	<.002	--	.41	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
23...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
FEB													
04...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
04...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
06...	<.002	--	<.02	<.009	<.02	--	--	--	--	--	--	--	--
06...	<.002	--	<.02	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
21...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
MAR													
06...	<.002	--	<.02	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
19...	<.002	--	<.06	E.007	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
APR													
03...	<.002	--	.07	E.004	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
10...	<.002	--	<.02	E.004	<.02	--	--	--	--	--	--	--	--
17...	<.002	--	.16	<.009	<.02	--	--	--	--	--	--	--	--
24...	<.002	--	.35	<.009	<.02	--	--	--	--	--	--	--	--
MAY													
01...	<.002	--	.25	E.002	<.02	--	--	--	--	--	--	--	--
08...	<.002	--	.09	E.002	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
08...	<.002	--	.10	E.002	<.02	--	--	--	--	--	--	--	--
15...	<.002	--	.06	<.009	<.02	--	--	--	--	--	--	--	--
23...	<.002	--	.19	E.001	<.02	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.002	--	.24	<.009	<.02	--	--	--	--	--	--	--	--
JUN													
05...	<.002	--	.08	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
11...	<.002	--	.13	<.009	<.02	--	--	--	--	--	--	--	--
18...	<.002	--	.09	<.009	<.02	--	--	--	--	--	--	--	--
26...	<.002	--	<.02	<.009	<.02	--	--	--	--	--	--	--	--
JUL													
02...	<.002	--	.10	E.002	<.02	--	--	--	--	--	--	--	--
10...	<.002	--	<.02	<.009	<.02	--	--	--	--	--	--	--	--
10...	<.002	--	.03	<.009	E.01	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
10...	<.002	--	.03	<.009	E.01	--	--	--	--	--	--	--	--
17...	<.002	--	E.10	<.009	<.02	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
06...	<.002	--	.09	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
26...	<.002	--	.07	<.009	<.02	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
10...	<.002	--	<.02	<.009	<.02	<.03	<.06	<.04	<.04	<.05	<.16	<.04	<.1
25...	<.002	--	<.02	<.009	<.02	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	1,2-DI-CHLORO-PROPANE TOTAL (UG/L) (34541)	TRANS-1,2-DI-CHLORO-ETHENE TOTAL (UG/L) (34546)	2,2-DI CHLORO-PRO-PANE WAT, WH TOTAL (UG/L) (77170)	2BUTENE TRANS-1 4-DI-CHLORO UNFLTRD RECOVER (UG/L) (73547)	2-HEXA-NONE WATER WHOLE TOTAL (UG/L) (77103)	ACETONE WATER WHOLE TOTAL (UG/L) (81552)	ACRYLO-NITRILE TOTAL (UG/L) (34215)	1,2,3-TRI-CHLORO BENZENE WAT, WH REC (UG/L) (77613)	BENZENE 123-TRI METHYL-WATER UNFLTRD RECOVER (UG/L) (77221)	BENZENE 1,2,4-TRI-CHLORO-WAT UNF REC (UG/L) (34551)	BENZENE 124-TRI METHYL UNFILT RECOVER (UG/L) (77222)	BENZENE 135-TRI METHYL WATER UNFLTRD REC (UG/L) (77226)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34566)
OCT													
23...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
30...	<.03	<.03	<.05	<.7	<.7	8	<1	<.3	<.1	<.2	<.06	<.04	<.03
NOV													
07...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
20...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
DEC													
12...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
27...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
JAN													
09...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
23...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
FEB													
04...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
04...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
21...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
MAR													
06...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
19...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
APR													
03...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
06...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
10...	<.03	<.03	<.05	<.7	<.7	<7	<1	<.3	<.1	<.1	<.06	<.04	<.03
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	BENZENE 14BRFL-SURROG VOC UNFLTRD REC PERCENT (99834)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34571)	ISO-PROPYL-BENZENE WATER WHOLE REC (UG/L) (77223)	BENZENE N-BUTYL WATER UNFLTRD REC (UG/L) (77342)	BENZENE N-PROPY WATER UNFLTRD REC (UG/L) (77224)	BENZENE O-DI-CHLORO-WATER UNFLTRD REC (UG/L) (34536)	BENZENE SEC BUTYL-WATER UNFLTRD REC (UG/L) (77350)	BENZENE TERT-BUTYL-WATER UNFLTRD REC (UG/L) (77353)	BENZENE TOTAL (UG/L) (34030)	BROMO-BENZENE WATER, WHOLE, TOTAL (UG/L) (81555)	BROMO-ETHENE WATER UNFLTRD RECOVER (UG/L) (50002)	BROMO-FORM TOTAL (UG/L) (32104)	CARBON DI-SULFIDE WATER WHOLE TOTAL (UG/L) (77041)
OCT													
23...	99.6	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
30...	98.2	<.05	<.03	<.2	<.04	<.03	<.03	<.06	E.01	<.04	<.1	<.06	<.07
NOV													
07...	90.6	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
20...	95.9	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
DEC													
12...	90.8	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.02	<.04	<.1	<.06	<.07
27...	86.2	E.01	<.06	<.2	<.04	<.03	<.03	<.05	E.01	<.04	<.1	<.06	<.07
JAN													
09...	90.7	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.02	<.04	<.1	<.06	<.07
23...	104	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.01	<.04	<.1	<.06	<.07
FEB													
04...	101	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	E.01
04...	104	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.01	<.04	<.1	<.06	E.02
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	107	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.02	<.04	<.1	<.06	<.07
21...	109	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
MAR													
06...	109	<.05	<.06	<.2	<.04	<.03	<.03	<.05	E.01	<.04	<.1	<.06	<.07
19...	115	E.09	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
APR													
03...	106	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	70.8	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	109	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	77.9	E.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	87.0	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
06...	82.9	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	89.8	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
10...	85.0	<.05	<.06	<.2	<.04	<.03	<.03	<.05	<.04	<.04	<.1	<.06	<.07
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBON TETRA-CHLO-RIDE TOTAL (UG/L) (32102)	CHLORO-BENZENE TOTAL (UG/L) (34301)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L) (32105)	CHLORO-ETHANE TOTAL (UG/L) (34311)	CHLORO-FORM TOTAL (UG/L) (32106)	CIS-1,2-DI-CHLORO-ETHENE WATER TOTAL (UG/L) (77093)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34704)	DIBROMO CHLORO-PROPANE WATER WHOLE TOT.REC (UG/L) (82625)	DI-BROMO-METHANE WATER WHOLE RECOVER (UG/L) (30217)	BROMO-DI-CHLORO-METHANE TOTAL (UG/L) (32101)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L) (34668)	DI-ISO-PROPYL-ETHER, WATER, UNFLTRD RECOVER (UG/L) (81577)	ETHANE, 1112-TETRA-CHLORO-WAT UNF REC (UG/L) (77562)
OCT													
23...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
30...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.27	<.10	<.03
NOV													
07...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
20...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
DEC													
12...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
27...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
JAN													
09...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
23...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
FEB													
04...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
04...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
21...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
MAR													
06...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
19...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
APR													
03...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.06	<.03	<.2	<.1	E.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
06...	<.06	<.03	<.2	<.1	E.03	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<.06	<.03	<.2	<.1	<.02	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
10...	<.06	<.03	<.2	<.1	E.01	<.04	<.09	<.5	<.05	<.05	<.18	<.10	<.03
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L) (34516)	ETHANE 12DICL SURROG VOC UNFLTRD REC PERCENT (99832)	ETHANE HEXA-CHLORO-WATER UNFLTRD RECOVER (UG/L) (34396)	ETHER ETHYL WATER UNFLTRD RECOVER (UG/L) (81576)	ETHER TERT-BUTYL ETHYL UNFLTRD RECOVER (UG/L) (50004)	ETHER TERT-PENTYL METHYL UNFLTRD RECOVER (UG/L) (50005)	ETHYL-BENZENE TOTAL (UG/L) (34371)	FREON-113 WATER UNFLTRD REC (UG/L) (77652)	FURAN, TETRA-HYDRO-WATER UNFLTRD RECOVER (UG/L) (81607)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L) (39702)	ISO-DURENE WATER UNFLTRD RECOVER (UG/L) (50000)	METHAC-RYLATE ETHYL-WATER UNFLTRD RECOVER (UG/L) (73570)	METHAC-RYLATE METHYL WATER UNFLTRD RECOVER (UG/L) (81597)
OCT													
23...	<.09	109	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
30...	<.09	110	<.2	<.2	<.05	<.11	<.03	<.06	<2	<.1	<.2	<.2	<.3
NOV													
07...	<.09	119	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
20...	<.09	102	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
DEC													
12...	<.09	125	<.2	<.2	<.05	E.09	E.01	<.06	<2	<.1	<.2	<.2	<.3
27...	<.09	109	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
JAN													
09...	<.09	123	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
23...	<.09	122	<.2	<.2	<.05	E.05	<.03	<.06	<2	<.1	<.2	<.2	<.3
FEB													
04...	<.09	110	<.2	<.2	<.05	<.08	E.01	<.06	<2	<.1	<.2	<.2	<.3
04...	<.09	107	<.2	<.2	<.05	<.08	E.01	<.06	<2	<.1	<.2	<.2	<.3
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.09	111	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
21...	<.09	108	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
MAR													
06...	<.09	109	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
19...	<.09	123	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
APR													
03...	<.09	118	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	<.09	99.0	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.09	103	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.09	124	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	<.09	116	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
06...	<.09	124	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<.09	113	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
10...	<.09	119	<.2	<.2	<.05	<.08	<.03	<.06	<2	<.1	<.2	<.2	<.3
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METH-ACRYLO-NITRILE WATER UNFLTRD RECOVER (UG/L) (81593)	METHANE BROMO CHLORO-WAT UNFLTRD REC (UG/L) (77297)	METHYL ACRY-LATE WATER UNFLTRD RECOVER (UG/L) (49991)	METHYL IODIDE WATER UNFLTRD RECOVER (UG/L) (77424)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	METHYL-BROMIDE TOTAL (UG/L) (34413)	METHYL-CHLO-RIDE TOTAL (UG/L) (34418)	METHYL ENE CHLO-RIDE TOTAL (UG/L) (34423)	METHYL-ETHYL-KETONE WATER WHOLE TOTAL (UG/L) (81595)	METHYL ISO-BUTYL KETONE WAT.WH. TOTAL (UG/L) (78133)	META/ PARA-XYLENE WATER UNFLTRD REC (UG/L) (85795)	NAPHTH-ALENE TOTAL (UG/L) (34696)	O-CHLORO-TOLUENE WATER WHOLE TOTAL (UG/L) (77275)
OCT													
23...	<.6	<.07	<2.0	<.25	.2	<.3	<.2	<.2	<5.0	<.4	E.01	<.5	<.03
30...	<.6	<.04	<1.4	<.12	E.1	<.3	<.2	<.2	<1.6	<.4	<.06	<.5	<.03
NOV													
07...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
20...	<.6	<.07	<2.0	<.25	.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
DEC													
12...	<.6	<.07	<2.0	<.25	1.4	<.3	<.2	<.2	<5.0	<.4	E.02	<.5	<.03
27...	<.6	<.07	<2.0	<.25	.3	<.3	<.2	<.2	<5.0	<.4	E.02	<.5	<.03
JAN													
09...	<.6	<.07	<2.0	<.25	.6	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
23...	<.6	<.07	<2.0	<.25	.7	<.3	<.2	<.2	<5.0	E.4	<.06	<.5	<.03
FEB													
04...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	E.02	<.5	<.03
04...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	E.02	<.5	<.03
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.6	<.07	<2.0	<.25	.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
21...	<.6	<.07	<2.0	<.25	.3	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
MAR													
06...	<.6	<.07	<2.0	<.25	.4	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
19...	<.6	<.07	<2.0	<.25	.7	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
APR													
03...	<.6	<.07	<2.0	<.25	E.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	<.6	<.07	<2.0	<.25	E.1	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.6	<.07	<2.0	<.25	E.1	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
06...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<.6	<.07	<2.0	<.25	<.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
10...	<.6	<.07	<2.0	<.25	E.2	<.3	<.2	<.2	<5.0	<.4	<.06	<.5	<.03
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	O-XYLENE WATER WHOLE TOTAL (UG/L) (77135)	P-ISO-PROPYL-TOLUENE WATER WHOLE REC (UG/L) (77356)	1234-TETRA METHYL BENZENE UNFLTRD REC (UG/L) (49999)	1,3-DI-CHLORO-PROPANE WAT. WH TOTAL (UG/L) (77173)	PROPENE 3-CHLORO-WATER UNFLTRD RECOVER (UG/L) (78109)	STYRENE TOTAL (UG/L) (77128)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L) (34475)	TOLUENE D8 SURROG VOC UNFLTRD REC PERCENT (99833)	TOLUENE O-ETHYL WATER UNFLTRD RECOVER (UG/L) (77220)	TOLUENE P-CHLOR WATER UNFLTRD REC (UG/L) (77277)	TOLUENE TOTAL (UG/L) (34010)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L) (34699)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L) (39180)
OCT													
23...	<.07	M	<.2	<.1	<.07	E.05	<.03	101	<.06	<.05	.11	<.09	<.04
30...	<.04	E.02	<.2	<.1	<.07	E.09	<.10	102	<.06	<.06	.19	<.09	<.04
NOV													
07...	<.07	E.01	<.2	<.1	<.07	E.02	<.03	103	<.06	<.05	.21	<.09	<.04
20...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	96.7	<.06	<.05	.17	<.09	<.04
DEC													
12...	<.07	E.01	<.2	<.1	<.07	<.04	E.01	105	<.06	<.05	.12	<.09	<.04
27...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	97.7	<.06	<.05	.12	<.09	<.04
JAN													
09...	<.07	E.01	<.2	<.1	<.07	<.04	E.01	102	<.06	<.05	.10	<.09	<.04
23...	<.07	<.07	<.2	<.1	<.07	<.04	E.01	103	<.06	<.05	.20	<.09	<.04
FEB													
04...	<.07	<.07	<.2	<.1	<.07	E.01	<.03	101	<.06	<.05	.19	<.09	<.04
04...	<.07	<.07	<.2	<.1	<.07	E.02	<.03	101	<.06	<.05	.19	<.09	<.04
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<.07	<.07	<.2	<.1	<.07	<.04	E.01	100	<.06	<.05	E.10	<.09	E.01
21...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	101	<.06	<.05	E.08	<.09	<.04
MAR													
06...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	102	<.06	<.05	E.08	<.09	E.02
19...	<.07	<.07	<.2	<.1	<.07	<.04	E.02	105	<.06	<.05	E.07	<.09	<.04
APR													
03...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	101	<.06	<.05	.11	<.09	E.01
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	93.1	<.06	<.05	E.06	<.09	<.04
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.07	E.01	<.2	<.1	<.07	<.04	<.03	102	<.06	<.05	E.06	<.09	<.04
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	99.9	<.06	<.05	E.08	<.09	<.04
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	98.2	<.06	<.05	E.03	<.09	<.04
06...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	100	<.06	<.05	E.04	<.09	<.04
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	98.2	<.06	<.05	E.09	<.09	<.04
10...	<.07	<.07	<.2	<.1	<.07	<.04	<.03	99.5	<.06	<.05	.15	<.09	<.04
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
M Presence of material verified but not quantified.

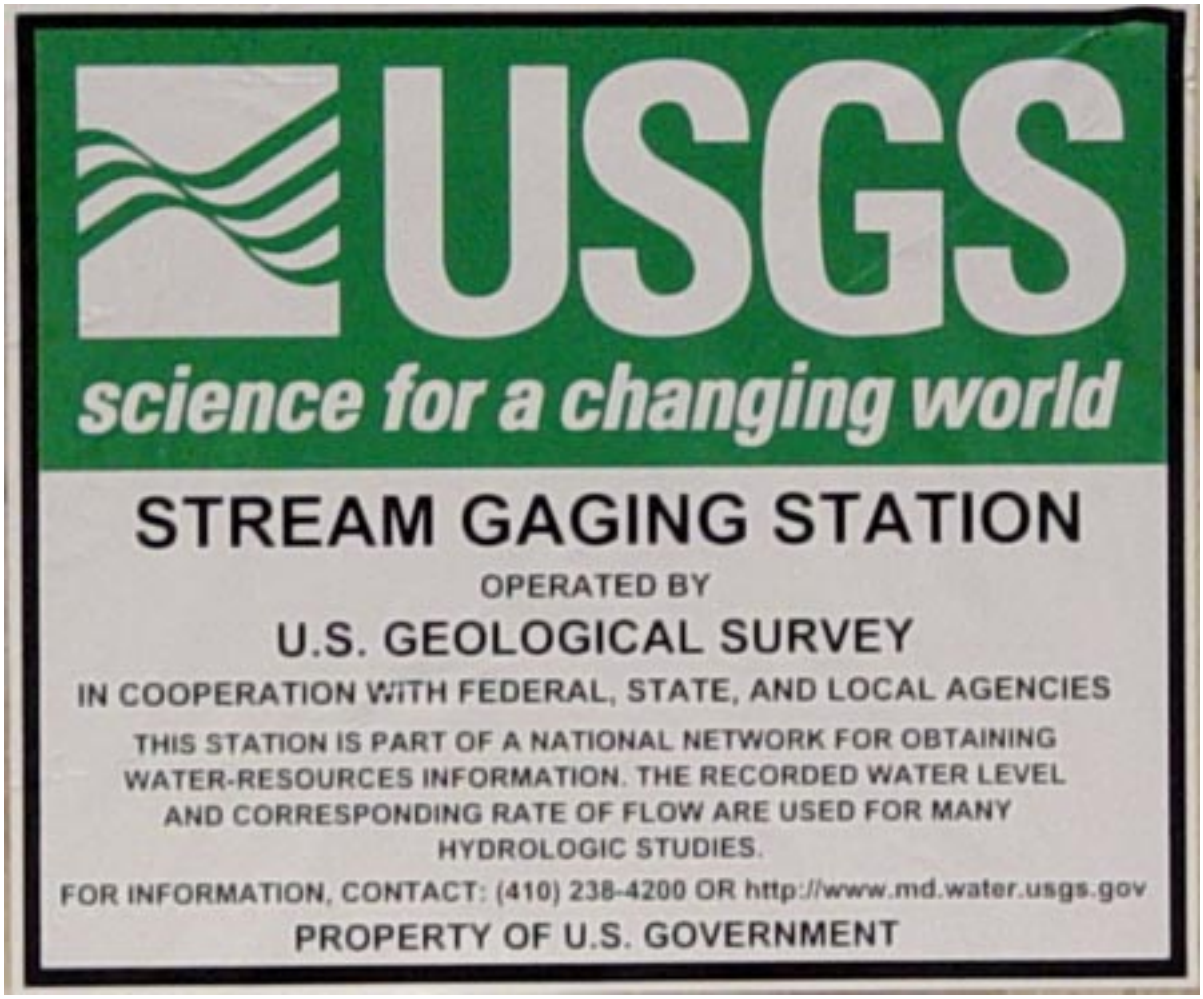
01654000 ACCOTINK CREEK NEAR ANNANDALE, VA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L) (34488)	VINYL CHLO-RIDE TOTAL (UG/L) (39175)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PHEO-PHYTIN A, PERI-PHYTON (MG/M2) (62359)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)
OCT									
23...	<.09	<.1	12	.11	--	--	--	--	--
30...	<.09	<.1	--	--	--	--	--	--	--
NOV									
07...	<.09	<.1	3.5	.03	--	--	--	--	--
20...	<.09	<.1	--	--	--	--	--	--	--
DEC									
12...	<.09	<.1	12	.22	--	--	--	--	--
27...	<.09	<.1	--	--	--	--	--	--	--
JAN									
09...	<.09	<.1	9.6	.11	--	--	--	--	--
23...	<.09	<.1	--	--	--	--	--	--	--
FEB									
04...	<.09	<.1	--	--	--	--	--	--	--
04...	<.09	<.1	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
06...	<.09	<.1	5.1	.05	--	--	--	--	--
21...	<.09	<.1	--	--	--	--	--	--	--
MAR									
06...	<.09	<.1	3.0	.02	--	--	--	--	--
19...	<.09	<.1	3.9	.05	--	--	--	--	--
APR									
03...	<.09	<.1	4.1	.03	--	--	--	--	--
10...	--	--	31	1.9	--	--	--	--	--
17...	--	--	3.4	.02	--	--	--	--	--
24...	--	--	4.0	.02	--	--	--	--	--
MAY									
01...	--	--	6.0	.13	--	--	--	--	--
08...	<.09	<.1	5.8	.10	--	--	--	--	--
08...	--	--	6.0	--	--	--	--	--	--
15...	--	--	8.2	.08	--	--	--	--	--
23...	--	--	5.2	.04	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
30...	--	--	7.6	.06	--	--	--	--	--
JUN									
05...	<.09	<.1	3.9	.01	--	--	--	--	--
11...	--	--	5.5	.01	--	--	--	--	--
18...	--	--	4.4	.03	--	--	--	--	--
26...	--	--	2.0	.01	--	--	--	--	--
JUL									
02...	--	--	5.0	.02	--	--	--	--	--
10...	--	--	.0	--	--	--	--	--	--
10...	<.09	<.1	4.8	.01	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
17...	--	--	5.9	.02	--	--	--	--	--
18...	--	--	--	--	110	120.3	2.4	1340	4.9
18...	--	--	--	--	94	99.60	4.7	430	14.0
18...	--	--	--	--	65	70.30	2.8	464	11.4
AUG									
06...	<.09	<.1	--	--	--	--	--	--	--
06...	<.09	<.1	3.3	.04	--	--	--	--	--
26...	--	--	2.9	.01	--	--	--	--	--
SEP									
10...	<.09	<.1	--	--	--	--	--	--	--
10...	<.09	<.1	3.5	.0	--	--	--	--	--
25...	--	--	3.2	.0	--	--	--	--	--

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

INDEX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CONVERSION FACTORS

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \cdot °C) + 32$$