



# Water Resources Data Maryland and Delaware Water Year 1997

Volume 1. Surface-Water Data



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT  
MD-DE-97-1

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



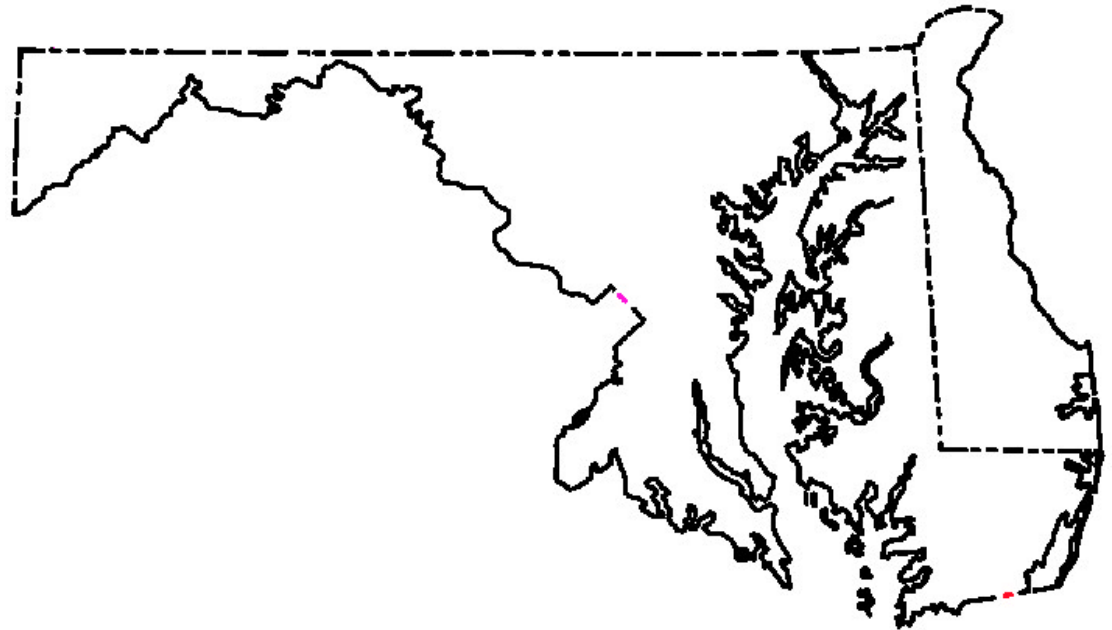




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Volume 1. Surface-Water Data

by R.W. James, B.M. Helinsky, and A.J. Tallman



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UNITED STATES DEPARTMENT OF THE INTERIOR

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U.S. GEOLOGICAL SURVEY

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\*\*\*\*\*  
\*  
\* Dedicated to the Memory of Bernard M. Helinsky (1943-1998) \*  
\* for his exemplary service with the U.S. Geological Survey (1961-1997) \*  
\* in surface-water studies. Bernie, as the Senior Hydrologic Technician, \*  
\* spent his entire career in the Maryland, Delaware, and \*  
\* Washington, D.C., Water Resources Division District. He trained and \*  
\* mentored almost everyone who worked in the surface-water field in the \*  
\* district, and was loved by all. In 1989, Bernie was instrumental in \*  
\* proposing the Maryland Bridge Scour Project that was responsible for \*  
\* identifying bridges in danger of collapse. His stream-gage designs and \*  
\* their construction will endure for decades, and his life-long legacy of \*  
\* only giving and doing the best job possible will forever be his epitaph.\*  
\*  
\*\*\*\*\*

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## PREFACE

This volume of the annual hydrologic data report for Maryland and Delaware 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 the District of Columbia 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:

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# REPORT DOCUMENTATION PAGE

*Form Approved*  
*OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>	2. REPORT DATE <b>March 1998</b>	3. REPORT TYPE AND DATES COVERED <b>Annual - Oct. 1, 1996, to Sept. 30, 1997</b>
4. TITLE AND SUBTITLE <b>Water Resources Data - Maryland and Delaware, Water Year 1997</b>  <b>Volume 1. Surface-Water Data</b>		5. FUNDING NUMBERS
6. AUTHOR(S) <b>R. W. James, Jr., B. M. Helinsky, and A. J. Tallman</b>		8. PERFORMING ORGANIZATION REPORT NUMBER <b>USGS-WDR-MD-DE-97-1</b>
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>U.S. Geological Survey, Water Resources Division</b> <b>8987 Yellow Brick Road</b> <b>Baltimore, MD 21237</b>		10. SPONSORING / MONITORING AGENCY REPORT NUMBER <b>USGS-WDR-MD-DE-97-1</b>
11. SUPPLEMENTARY NOTES  <b>Prepared in cooperation with the states of Maryland and Delaware and with other agencies.</b>		
12a. DISTRIBUTION / AVAILABILITY STATEMENT  <b>No restriction on distribution. This report may be purchased from the National Technical Information Service, Springfield, VA 22161</b>		12b. DISTRIBUTION CODE
13. ABSTRACT <i>(Maximum 200 words)</i>  <b>Water resources data for the 1997 water year for Maryland and Delaware 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 101 gaging stations; stage and contents of 1 reservoir; and water quality at 17 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations, discharge only for 9 low-flow partial-record stations, and stage only for 7 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 and Delaware.</b>		
14. SUBJECT TERMS <b>*Maryland, *Delaware, *District of Columbia, * Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses.</b>		15. NUMBER OF PAGES <b>369</b>
17. SECURITY CLASSIFICATION OF REPORT <b>Unclassified</b>		16. PRICE CODE
18. SECURITY CLASSIFICATION OF THIS PAGE <b>Unclassified</b>	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT

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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]

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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]

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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]

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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.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS</u>			
<u>DELAWARE RIVER BASIN</u>			
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
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 near Middletown, DE (d)	01483153	8.85	1993-94
Drawyer Creek tributary near Odessa, MD	01483170	4.68	1978-80
<u>LEIPSIC RIVER BASIN</u>			
Leipsic River near Cheswold, DE	01483500	9.35	1931-33 1943-57
<u>ST. JONES RIVER BASIN</u>			
Fork Branch (head of St. Jones River)			
Mudstone Branch at Chestnut Grove, DE (d)	01483670	8.96	1993-94
<u>BROADKILL RIVER BASIN</u>			
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
<u>INDIAN RIVER BASIN</u>			
Cow Bridge Branch (head of Indian River):			
Vines Creek at Omar, DE	01484548	13.6	1985-88
<u>WICOMICO RIVER BASIN</u>			
Andrews Branch (head of Wicomico River):			
Beaverdam Creek near Salisbury, MD	01486500	19.5	1930-32 1938-75
<u>NANTICOKE RIVER BASIN</u>			
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 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
<u>TRANSQUAKING RIVER BASIN</u>			
Transquaking River:			
Chicamacomico River near Salem, MD	01490000	15.0	1951-80
<u>CHOPTANK RIVER BASIN</u>			
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:			
Tuckahoe Creek near Ruthsburg, MD	01491500	85.2	1951-56
Kings Creek:			
Beaverdam Branch at Matthews, MD	01492000	5.85	1950-81
<u>WYE RIVER BASIN</u>			
Wye River:			
Wye East River:			
Sallie Harris Creek near Carmichael, MD	01492500	4.60	1951-56
<u>CHESTER RIVER BASIN</u>			
Chester River:			
Southeast Creek at Church Hill, MD	01494000	12.5	1951-56
<u>SASSAFRAS RIVER BASIN</u>			
Sassafras River:			
Jacobs Creek near Sassafras, MD	01494500	5.39	1951-56
<u>ELK RIVER BASIN</u>			
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

## DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>NORTHEAST RIVER BASIN</u>			
Northeast Creek (head of Northeast River) at Leslie, MD .....	01496000	24.3	1949-84
<u>PRINCIPIO CREEK BASIN</u>			
Principio Creek near Principio Furnace, MD .....	01496200	9.03	1967-92
<u>SUSQUEHANNA RIVER BASIN</u>			
Susquehanna River:			
Broad Creek at Mill Creek, MD .....	01578000	16.4	1905-09
Octoraro Creek near Rising Sun, MD .....	01578500	193	1932-58 1969-77 1949-58
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
<u>BUSH RIVER BASIN</u>			
Bynum Run (head of Bush River) near Bel Air, MD .....	01581000	7.50	1951-55
Bynum Run at Bel Air, MD .....	01581500	8.52	1944-51 1955-70
Church Creek:			
Cranberry Run at Aberdeen, MD .....	01581657	4.16	1988-89
Cranberry Run at Perryman, MD .....	01581658	5.22	1987-89
<u>GUNPOWDER RIVER BASIN</u>			
Gunpowder Falls (head of Gunpowder River):			
Western Run:			
Delaware Run:			
Slade Run near Glyndon, MD .....	01583000	2.09	1947-81
Beaverdam Run:			
Baisman Run:			
Pond Branch at Oregon Ridge, MD .....	01583570	0.16	1983-86
Baisman Run at Broadmoor, MD .....	01583580	1.47	1964-69
Gunpowder Falls near Carney, MD .....	01584000	314	1949-64
Little Gunpowder Falls at Laurel Brook, MD .....	01584500	36.1	1927-70
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
<u>BACK RIVER BASIN</u>			
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
<u>PATAPSCO RIVER BASIN</u>			
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
Patapsco River at Hollofield, MD .....	01589000	285	1944-92 1994-95
West Branch Herbert Run:			
East Branch Herbert Run at Arbutus, MD .....	01589100	2.47	1957-89
Gwynns Falls near Owings Mills, MD .....	01589200	4.90	1958-75
Dead Run at Franklinton, MD .....	01589330	5.52	1960-87
Jones Falls at Maryland Avenue at Baltimore, MD .....	01589478	58.3	1981-82
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
<u>SOUTH RIVER BASIN</u>			
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
<u>RHODE RIVER BASIN</u>			
Rhode River:			
Muddy Creek:			
North Fork Muddy Creek at South River, MD .....	01590700	0.88	1972-76

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>PATUXENT RIVER BASIN</u>			
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
St. Leonard Creek near St. Leonard, MD .....	01594800	6.73	1957-68
<u>POTOMAC RIVER BASIN</u>			
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
Town Creek near Oldtown, MD .....	01609000	148	1928-35 1967-81
Sawpit Run near Oldtown, MD .....	01609500	5.08	1948-58
Sideling Hill Creek at Bellegrave, MD .....	01610155	102	1967-77
Little Tonoloway Creek near Hancock, MD .....	01612500	16.9	1947-63
Potomac River at Shepherdstown, WV .....	01618000	5,936	1928-53 (c)1954-63 1964-93
Antietam Creek near Waynesboro, PA .....	01619000	93.5	1948-51 1966-81
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:			
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, M .....	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	(a)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
Rock Creek at Q Street, Washington, DC .....	01649000	75.8	1892-94 1929-33

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN--Continued</u>			
Potomac River--Continued			
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
Northwest Branch Anacostia River near Colesville, MD .....	01650500	21.1	1924-83
Anacostia River:			
Beaverdam Branch Anacostia River at Kenilworth Avenue, Washington, D.C.....	01652000	14	1911-12
Henson Creek (head of Broad Creek) at Oxon Hill, MD .....	01653500	16.7	1948-78
Mattawoman Creek near Pomonkey, MD .....	01658000	54.8	1959-72
Wicomico River:			
Chaptico Creek at Chaptico, MD .....	01661000	10.4	1947-72
 <u>OHIO RIVER BASIN</u>			
<u>MONONGAHELA RIVER BASIN</u>			
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

\* Currently operated as a crest-stage partial-record station.

a Daily values data unpublished, available at Towson, MD office.

b Approximately.

c Estimated daily discharges October 1953 to June 1964.

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.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS</u>			
<u>DELAWARE RIVER BASIN</u>			
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	a4.19	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	b1.2	1966-75
<u>SMYRNA RIVER BASIN</u>			
Providence Creek (head of Smyrna River):			
Paw Paw Branch:			
Paw Paw Branch tributary near Clayton, DE.....	01483290	b1.3	1966-75
Smyrna River:			
Sawmill Branch:			
Sawmill Branch tributary near Blackbird, DE.....	01483400	b0.6	1966-75
<u>LEIPSIC RIVER BASIN</u>			
Leipsic River near Cheswold, DE.....	01483500	9.35	1958-75
<u>ST. JONES RIVER BASIN</u>			
St. Jones River:			
Puncheon Branch at Dover, DE.....	01483720	b2.3	1966-75
<u>MURDERKILL RIVER BASIN</u>			
Murderkill River:			
Murderkill River tributary near Felton, DE.....	01484002	b1.0	1966-75
Hudson Branch (head of Spring Creek):			
Pratt Branch near Felton, DE.....	01484050	3.29	1966-75
<u>BROADKILL RIVER BASIN</u>			
Broadkill River:			
Beaverdam Creek near Milton, DE.....	01484270	6.10	1966-75
<u>INDIAN RIVER BASIN</u>			
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
<u>WICOMICO RIVER BASIN</u>			
Andrews Branch (head of Wicomico River) near Delmar, MD.....	01486100	b4.1	1966-76
<u>NANTICOKE RIVER BASIN</u>			
Nanticoke River:			
Bridgeville Branch:			
Bridgeville Branch tributary at Bridgeville, DE.....	01486900	b0.8	1966-68
Gum Branch:			
Toms Dam Branch near Greenwood, DE.....	01486980	b6.4	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	b3.9	1967-75
Holly Ditch near Laurel, DE.....	01488000	2.19	1959-75
<u>CHOPTANK RIVER BASIN</u>			
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	b2.3	1966-75
Culbreth Marsh Ditch (Shades Branch) near Chapeltown, DE.....	c01490500	11.6	1957-68
Cow Marsh:			
Meredith Branch near Sandtown, DE.....	01490600	b8.4	1966-75
Broadway Branch:			
Oldtown Branch at Goldsboro, MD.....	01490800	3.9	1967-76
Gravelly Branch:			
Sangston Prong near Whiteleysburg, DE.....	01491010	b1.9	1966-75
Spring Branch near Greensboro, MD.....	01491050	b3.8	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 <sup>2</sup> )	Period of record
<u>WYE RIVER BASIN</u>			
Wye River:			
Wye East River:			
Sallie Harris Creek near Carmichael, MD.....	01492500	8.09	1957-81
Skipton Creek:			
Mill Creek near Skipton, MD.....	01492550	b4.6	1966-76
<u>CHESTER RIVER BASIN</u>			
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	b1.7	1971-78
<u>NORTHEAST RIVER BASIN</u>			
Northeast Creek (head of Northeast River):			
Northeast River tributary near Charlestown, MD.....	01496080	b1.7	1967-76
<u>SUSQUEHANNA RIVER BASIN</u>			
Susquehanna River:			
Broad Creek:			
Broad Creek tributary at Whiteford, MD.....	01577940	0.77	1971-86
Octoraro Creek:			
Basin Run at West Nottinham, MD.....	01578800	b1.3	1967-76
Basin Run at Liberty Grove, MD.....	01579000	5.31	1965-76
<u>Bush River Basin</u>			
Bynum Run (head of Bush River) at Bel Air, MD.....	01581500	8.52	1971-72
<u>GUNPOWDER RIVER BASIN</u>			
Gunpowder Falls (head of Gunpowder River):			
Piney Creek near Hereford, MD.....	01582510	b1.5	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
<u>PATAPSCO RIVER BASIN</u>			
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
<u>PATUXENT RIVER BASIN</u>			
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	b1.1	1967-76
<u>POTOMAC RIVER BASIN</u>			
North Branch Potomac River:			
Savage River near Frostburg, MD.....	01596005	b1.5	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	b4.8	1965-86
Potomac River tributary near Hancock, MD.....	01613160	b1.2	1965-76
Antietam Creek:			
Little Antietam Creek:			
Dog Creek:			
Dog Creek tributary near Locust Grove, MD.....	01619475	0.10	1966-76

b Approximately.



<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>POTOMAC RIVER BASIN --Continued</u>			
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	b1.2	1967-77
Linganore Creek:			
Dollyhyde Creek at Libertytown, MD.....	01642400	b2.7	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	b4.1	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	b2.3	1966-80
Clark Run near Bel Alton, MD.....	01660930	10.4	1966-76
Herring Creek:			
Glebe Branch at Valley Lee, MD.....	01661430	b0.3	1968-78
<u>OHIO RIVER BASIN</u>			
<u>MONONGAHELA RIVER BASIN</u>			
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	b1.0	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.

	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record
<u>NORTH ATLANTIC SLOPE BASINS</u>				
<u>DELAWARE RIVER BASIN</u>				
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 1947-80
<u>CHOPTANK RIVER BASIN</u>				
Choptank River near Greensboro, MD .....	01491000	113	SC, T SED	1975-91 1981-91
<u>SUSQUEHANNA RIVER BASIN</u>				
Susquehanna River at Conowingo, MD .....	01578310	27,100	SC, T SED	1979-81 1984-92 1980-81 1984-92
<u>RHODE RIVER BASIN</u>				
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
<u>PATUXENT RIVER BASIN</u>				
Patuxent River near Bowie, MD .....	01594440	348	SC, T SED	1978-80 1986-91 1986-91
Patuxent River at Benedict, MD .....	01594700	742	T	1964-69
<u>POTOMAC RIVER BASIN</u>				
North Branch Potomac River:				
Laurel Run at Dobbin Road near Wilson, MD .....	01594930	8.23	SC, T pH	1981-88 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 pH	1981-88 1985-88
North Branch Potomac River at Kitzmiller, MD .....	01595500	225	SC, pH, DO T	1981-85 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
Potomac River at Chain Bridge at Washington, DC .....	01646580	11,570	SC, pH, T, DO SED	1978-81 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
<u>OHIO RIVER BASIN</u>				
<u>MONONGAHELA RIVER BASIN</u>				
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.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS</u>			
<u>DELAWARE RIVER BASIN</u>			
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
West Branch Christina River near Newark, DE .....	01477860	4.20	1981-83
Belltown Run near Glasgow, DE .....	01478009	3.35	1978-81
Muddy Run at Glasgow, DE .....	01478024	5.43	1978-81
Muddy Run near Cooches Bridge, DE .....	01478028	8.21	1978-80
White Clay Creek:			
White Clay Creek tributary near Ogletown, DE .....	01478878	3.68	1978-80
Brandywine Creek:			
Rocky Run at Talleyville, DE .....	01481350	1.76	1957-59 1966
Wilson Run at Guyencort, DE .....	01481400	1.62	1957-59
North Fork Wilson Run at Guyencort, DE .....	01481430	1.12	1957-59
Wilson Run at Rockland, DE .....	01481440	3.05	1957-63
Husbands Run at Rockland, DE .....	01481460	1.28	1957-59
Squirrel Run at Montchanin, DE .....	01481480	1.67	1957-59
Alapocas Run at Concord, DE .....	01481530	0.81	1957-59
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
Drawyer Creek tributary near Armstrong, DE .....	01483165	4.68	1979-80
Drawyer Creek tributary near Odessa, DE .....	01483170	4.68	1978-80
<u>SMYRNA RIVER BASIN</u>			
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
<u>ST. JONES RIVER BASIN</u>			
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
<u>MURDERKILL RIVER BASIN</u>			
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
<u>MISSPILLION RIVER BASIN</u>			
Beaverdam Branch (head of Misspillion River):			
Cedar Creek near Lincoln, DE .....	01484200	7.21	1955-60 1962-63 1966, 1968-69

\* Also a crest-stage partial-record station.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>BROADKILL RIVER BASIN</u>			
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
<u>INDIAN RIVER BASIN</u>			
Indian River:			
Sheep Pen Ditch near Shortly, DE .....	01484510	a5.4	1986-88 1997
Iron Branch at Millsboro, DE .....	01484530	a8.0	1985-88 1997
Whartons Branch near Millsboro, DE .....	01484531*	a5.8	1968-69 1971, 1985-88
Swan Creek near Warwick, DE .....	01484535	a7.2	1985-88 1997
Pepper Creek at Dagsboro, DE .....	01484550*	8.78	1955-71 1985-88 1997
Blackwater Creek near Clarkesville, DE .....	01484600*	a3.5	1968-69 1971, 1985-88 1997
Love Creek at Robinsonville, DE .....	01484655	a12	1985-88 1997
Chapel Branch at Angola, DE .....	01484677	a8.0	1985-88 1997 1997
<u>MILLER CREEK BASIN</u>			
Beaverdam Ditch near Millville, DE .....	01484695	2.2	1997
<u>DIRICKSON CREEK BASIN</u>			
Bearhole Ditch (head of Dirickson Creek) at Bunting, DE .....	01484700	a6.4	1968-71 1985-88 1997
<u>WICOMICO RIVER BASIN</u>			
Andrews Branch (head of Wicomico River):			
Leonard Pond Run near Delmar, MD .....	01486200	13.4	1950-51 1964, 1969-71
<u>NANTICOKE RIVER BASIN</u>			
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
<u>CHOPTANK RIVER BASIN</u>			
Choptank River near Choptank Mills, DE .....	01490550	a58	1985-87
Forge Branch at Greensboro, MD .....	01491060	9.84	1952-53
Watts Creek near Denton, MD .....	01491180	a11	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
<u>WYE RIVER BASIN</u>			
Wye River:			
Wye East River:			
Skipton Creek:			
Mill Creek near Wye Mills, MD .....	01492560	5.72	1952-53

a Approximately.

\* Also a crest-stage partial-record station.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>CHESTER RIVER BASIN</u>			
Andover Branch (head of Chester River):			
Cypress Branch at Millington, MD .....	01492980	a38	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
<u>SASSAFRAS RIVER BASIN</u>			
Sassafras River:			
Sassafras River tributary at Ginns Corner, MD .....	01494450	3.81	1982-83
Duffy Creek near Cecilton, MD .....	01494480	1.45	1968-71 1982
<u>WORTON CREEK BASIN</u>			
Mill Creek (head of Worton Creek) at Hanesville, MD .....	01494600	4.63	1953-54 1968-71
<u>ELK RIVER BASIN</u>			
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	a6.0	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
<u>NORTHEAST RIVER BASIN</u>			
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	a14	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
<u>PRINCIPIO CREEK BASIN</u>			
Principio Creek:			
Principio Creek tributary at Belvedere, MD .....	01496225	2.08	1982-83
<u>MILL CREEK BASIN</u>			
Mill Creek at Jackson, MD .....	01496250	3.73	1982-83
<u>SUSQUEHANNA RIVER BASIN</u>			
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	a25	1975-79
Big Branch at Harkins, MD .....	01579900	6.39	1975-79
Little Deer Creek near Federal Hill, MD .....	01579925	14.0	1975-79
Stout Bottle Branch near Ady, MD .....	01580170	7.13	1980-82

a Approximately.

\* Also a crest-stage partial-record station.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>SWAN CREEK BASIN</u>			
Swan Creek at Swan Creek, MD .....	01580700	13.2	1956-59 1962-63 1966
<u>BUSH RIVER BASIN</u>			
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
<u>GUNPOWDER RIVER BASIN</u>			
Gunpowder Falls (head of Gunpowder River):			
Grave Run near Beckleysville, MD .....	01581830	7.68	1977-82
Georges Run at Armacost, MD .....	01581850	13.0	1956-59 1962, 1966
Georges Run near Beckleysville, MD.....	01581870	15.8	1977-82
Little Falls:			
Beetree Run at Bently Springs, MD .....	01581960	9.72	1975-79
Third Mine Branch near Stablersville, MD .....	01581980	5.27	1975-79
Green Branch at Phoenix, MD .....	01582900	4.45	1973, 1975-79
Western Run:			
Piney Run at Dover, MD .....	01583100@	12.3	1975-79
Blackrock Run at Coopersville, MD .....	01583200	9.38	1956-59 1962-63 1966
Beaverdam Run at Cockeysville, MD .....	01583600@	20.9	1956-59 1962-63 1966
Little Gunpowder Falls at Hess, MD .....	01584200	16.5	1956-59 1962-63 1966
<u>PATAPSCO RIVER BASIN</u>			
North Branch Patapsco River:			
Deep Run at Lawndale, MD .....	01585700	6.70	1975-82
Beaver Run at Finksburg, MD .....	01586200	12.7	1957-59 1961-63 1966
Middle Run near Finksburg, MD .....	01586550	6.18	1973, 1975-79
Morgan Run near Gamber, MD .....	01586600	26.0	1957-59 1961-63 1966
Little Morgan Run near Eldersburg, MD .....	01586650	7.13	1973, 1975-79
South Branch Patapsco River at Woodbine, MD .....	01587070	11.4	1975-79 1988-90
Gillis Falls at Woodbine, MD .....	01587170	19.4	1957-59
Patapsco River:			
Rockburn Branch at Elkridge, MD .....	01589040	3.69	1988-90
Deep Run at Hanover, MD .....	01589080	18.0	1975-79 1988-90
Stony Run at Elkridge, MD .....	01589090	a9.4	1955, 1964-67
Gwynns Falls:			
Red Run near Owings Mills, MD .....	01589230	7.39	1975-79
Gwynns Falls at Baltimore, MD.....	01589345	50.7	1980-82
Jones Falls at Eccleston, MD .....	01589370	2.86	1976-79
<u>SEVERN RIVER BASIN</u>			
Severn Run (head of Severn River) at Benfield, MD .....	01589800	a24	1964-67

a Approximately.

@ Currently a surface-water discharge station.

NORTH ATLANTIC SLOPE BASINS--Continued	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>PATUXENT RIVER BASIN</u>			
Patuxent River at Mullinix, MD .....	01590800	10.7	1988-90
Cabin Branch near Florence, MD .....	01590900	8.36	1975-79 1988-90
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
Dorsey Branch near Knollwood, MD .....	01591475	3.78	1964, 1988-90
Hawlings River near Unity, MD .....	01591650	5.08	1977-82
Little Patuxent River at Pine Orchard, MD .....	01593200	7.03	1956-59 1961-64 1966, 1988-90
Red Hill Branch at Columbia, MD .....	01593300	5.98	1988-90
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
Hammond Branch at Scaggsville, MD .....	01594100	3.01	1956-59 1962-64 1966, 1988-90
Hammond Branch near Laurel, MD .....	01594200	6.83	1988-90
Towers Branch at Conoways, MD .....	01594300	5.69	1975-80
Dorsey Run at Jessup, MD .....	01594395	6.59	1964, 1989-91
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	a14	1964-66 1982
Lyons Creek at Lyons Creek, MD .....	01594545	a15	1964-67
<u>POTOMAC RIVER BASIN</u>			
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	a12	1964-74
Jennings Run at Corriganville, MD .....	01601325	37.7	1975-79
Collier Run at Spring Gap, MD .....	01604150	a11	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

a Approximately.

\* Also a crest-stage partial-record station.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN--Continued</u>			
Potomac River--Continued			
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 Conococheague 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	a31	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
Little Antietam Creek at Keedysville, MD .....	01619480	a24	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
Piney Creek near Keysville, MD .....	01639150	34.4	1982-83
Toms Creek:			
Friends Creek near Emmitsburg, MD .....	01639325	12.2	1977-83
Toms Creek near Keysville, MD .....	01639390	88.1	1982-83
Double Pipe Creek:			
Big Pipe Creek (head of Double Pipe Creek) at Bachman Mills, MD .....	01639400	9.39	1956-59 1961-63 1966
Deep Run at Union Mills, MD .....	01639420	5.46	1975-79
Silver Run near Silver Run, MD .....	01639440	8.77	1975-82
Big Pipe Creek near Mayberry, MD .....	01639450	51.6	1956-59 1962-63 1966
Bear Branch near Mayberry, MD .....	01639465	13.9	1975-82
Meadow Branch near Uniontown, MD .....	01639470	12.6	1956-59 1961-63 1966

a Approximately.



	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN--Continued</u>			
Monocacy River--Continued:			
Big Pipe Creek--Continued:			
Little Pipe Creek:			
Wolfpit Branch at Linwood, MD .....	01640100	2.01	1956-59 1961-63 1966
Little Pipe Creek at Union Bridge, MD .....	01640150	40.4	1956-59 1962-63 1966
Beaver Dam Creek near Union Bridge, MD .....	01640160	7.04	1977-82
Little Pipe Creek at Keymar, MD .....	01640200	80.0	1982-83
Owens Creek near Thurmont, MD .....	01640600	14.4	1975-79
Little Owens Creek near Thurmont, MD .....	01640650	6.16	1975-79
Beaver Branch at Rocky Ridge, MD .....	01640720	6.53	1977-82
Owens Creek near Rocky Ridge, MD .....	01640750	38.8	1982-83
Fishing Creek near Utica, MD .....	01641600	17.9	1982-83
Tuscarora Creek near Frederick, MD .....	01641900	16.5	1975-79 1982-83
Israel Creek near Walkersville, MD .....	01642050	a29	1964-66 1975-79 1982-83
Linganore Creek near New London, MD .....	01642430	45.2	1980-82
Bens Branch near New Market, MD .....	01642450	11.8	1975-82
Bush Creek at Ijamsville, MD .....	01643100	a17.5	1964-66
Bush Creek at Reels, MD .....	01643110	29.7	1982-83
Ballenger Creek near Lime Kiln, MD.....	01643125	20.2	1975-83
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	a21	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	a4.8	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	a5.6	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	a32	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

a Approximately.

	Station number	Drainage area (mi <sup>2</sup> )	Period of record
<u>OHIO RIVER BASIN</u>			
<u>MONONGAHELA RIVER BASIN</u>			
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

WATER RESOURCES DATA - MARYLAND AND DELAWARE, 1997

VOLUME 1. SURFACE WATER SURFACE-WATER-QUALITY 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 and Delaware."**

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 101 gaging stations; stage and contents at 1 reservoir; and water quality at 17 gaging stations. Also included are stage and discharge for 3 crest-stage partial-record stations, discharge only for 9 low-flow partial-record stations, and stage only for 7 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 involved in 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 and Delaware.

This series of annual reports for Maryland and Delaware began with the 1961 water year with a report 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 1975 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 thru 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 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 Branch of Information Services, Federal Center, Bldg. 41, Box 25286, Denver, CO 80225.

Publications similar to this report are published annually by the 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-97-1."** For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

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

COOPERATION

The U.S. Geological Survey and agencies of the State of Maryland have 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 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, Douglas R. Rose, Administrator.

Assistance with funds or services was given by the U.S. Army Corps of Engineers for collecting records at 13 gaging stations and 6 water-quality stations throughout Maryland and Delaware.

The following organizations 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, Upper Potomac River Commission, Baltimore County, Baltimore City,  
Prince Georges County.

Organizations that provided data are acknowledged in station descriptions.

#### SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow at the start of the 1997 water year was in the excessive range (upper 25 percent of the record) throughout the bi-state area following above normal rainfall (1.0 to 4.5 inches) during September 1996. During October-December 1996 flows remained in the excessive range throughout the bi-state area following above normal rainfall (1.0 to 5.9 inches). In January 1997, flows returned to the normal range except for central Maryland where flows remained in the excessive range. In February 1997 flows were in the normal range except for the Eastern Shore where flows moved into the excessive range following above normal rainfall (0.5 to 1.0 inches). During March 1997, flows were in the normal range except for central and southern Maryland where flows were in the excessive range following above normal rainfall (1.0 to 2.8 inches). In April 1997 flows were in the normal range throughout the bi-state area except for southern Maryland which moved into the deficient range (lower 25 percent of the record) following below normal rainfall (1.0 to 3.0 inches). Flows for May 1997 were unchanged except for the Eastern Shore where flows moved into the excessive range following above normal rainfall (0.8 inches). Flows in June 1997 were in the normal range throughout the bi-state area except for western Maryland where flows moved into the excessive range following above normal rainfall (1.5 to 3.0 inches). Flows in July, August, and September 1997 were in the normal range throughout the bi-state area, except for central Maryland where flows fell into the deficient range following below normal rainfall (1.0 to 3.1 inches) during July and August.

During the 1997 water year, flows were in the normal range at all four index stations: Potomac River at Paw Paw, W.Va. in western Maryland, Seneca Creek at Dawsonville in central Maryland, Choptank River at Greensboro on the Eastern Shore of Maryland, and Potomac River near Washington, D.C. in central Maryland. Record monthly means were set at all of the index stations during the 1997 water year except for Potomac River at Paw Paw, W.Va. At the Seneca Creek at Dawsonville, Md. site a new maximum monthly mean was set in December. The new record monthly mean was 57 percent greater than the record set in 1972. At the Choptank River at Greensboro, Md. site a new maximum monthly mean was set in December. The new record monthly mean was 44 percent greater than the record set in 1972. A new maximum daily mean also was set in December. The new record daily mean was 20 percent greater than the previous record set in 1951. At the Potomac River near Washington, D.C. site, a new maximum monthly mean was set in December. The new record monthly mean was 6 percent greater than the previous record set in 1972.

Monthly and annual mean discharges in water year 1997 are compared to long-term averages (reference period 1961-90) 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<sup>2</sup> (square mile) area, of which 21.6 mi<sup>2</sup> is in Delaware in the central part of the Delmarva Peninsula.

Average freshwater inflow to the Chesapeake Bay was estimated to be 88,600 ft<sup>3</sup>/s (cubic feet per second), on the basis of flows of the James, Potomac, and Susquehanna Rivers. This is 114 percent of the long-term average during the reference period 1951-97. Flows for October averaged 57 percent below normal. During November flows averaged 35 percent above normal. For December flows averaged 33 percent below normal. For January flows averaged 130 percent above normal following heavy rains. Flows in February averaged 126 percent above normal. Inflow during February set a new record maximum monthly mean. The new record was 9 percent greater than the record set in 1984. Flows in March were normal. Flows in April and May were 44 and 37 percent below normal. Flows for June were normal. July flows were 31 percent below normal. The months August and September were below normal with 39 and 36 percent respectively.

The combined storage in the three major water-supply reservoirs in the Baltimore City Municipal System (combined usable capacity of 85,340 million gallons) decreased from 100 percent of capacity from September 1996, to 75 percent of capacity at the end of September 1997.

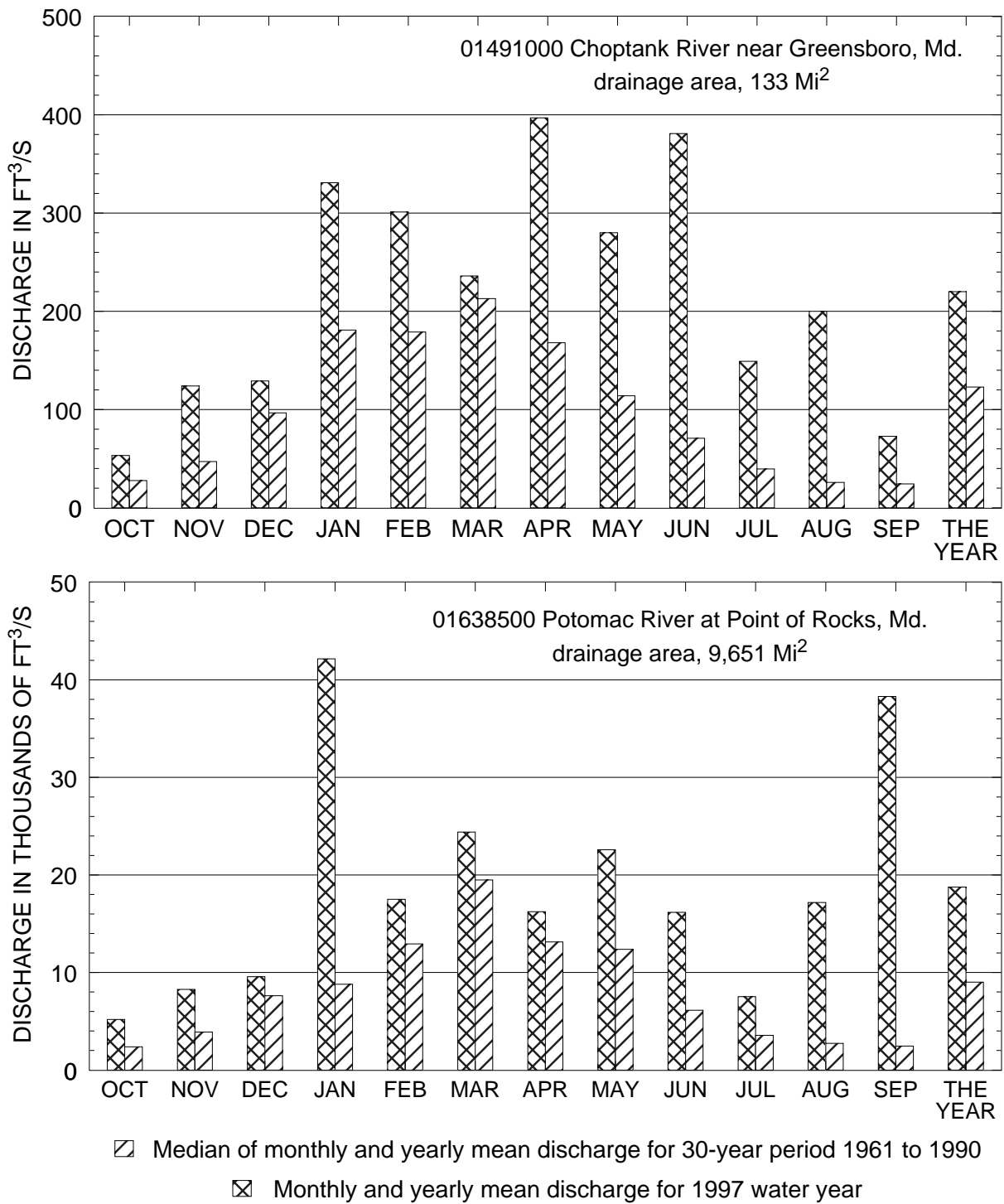


FIGURE 1. COMPARISON OF DISCHARGE AT TWO LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 1997 WATER YEAR WITH MEDIAN DISCHARGE FOR INDICATED PERIOD.

### SPECIAL NETWORKS AND PROGRAMS

National Stream Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado and Rio Grande. The network consists of 39 stations. 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.

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 53 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 collaborate efforts among agencies.

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

[http://www.rvares.er.usgs.gov/nawqa/nawqa\\_home.html](http://www.rvares.er.usgs.gov/nawqa/nawqa_home.html)

### EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1997 water year that began October 1, 1995, and ended September 30, 1997. 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, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figure 3. The following sections of the 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, whether streamsite or well, 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 and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Maryland and Delaware, 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.)

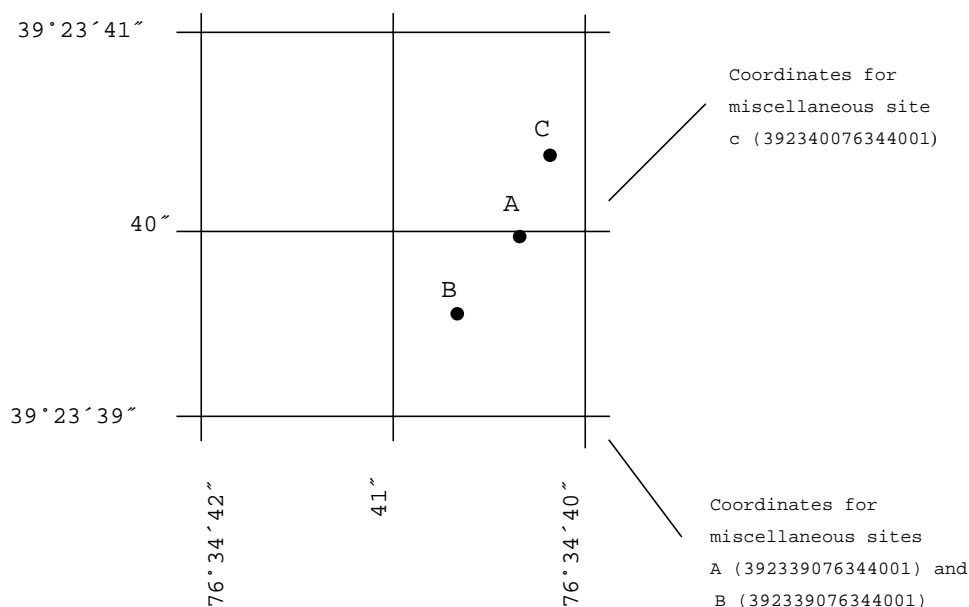


Figure 2. --System for numbering miscellaneous sites (latitude and longitude)

### 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 daily mean 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 as partial records, but they are presented separately in this report. Location 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 relationships 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 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, Chapter 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 from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as 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, under various headings, descriptive information, 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 to 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 with respect to the cultural and physical features in the vicinity and with respect 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 type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise 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 at it can 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, 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 here 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 occurring during the current year is given as well as any secondary peaks. 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, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published 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. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by 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 noncontributing 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 will be expressed as "**FOR WATER YEARS \_\_\_\_-\_\_\_\_, BY WATER YEAR (WY),**" and will list the first and last water years of the range of years selected from the **PERIOD OF RECORD** paragraph in the station manuscript. It 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 will be 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 will be 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 to follow 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 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.)

**INSTANTANEOUS PEAK FLOW**--The maximum instantaneous discharge occurring for the water year or for the designated period.

**INSTANTANEOUS PEAK STAGE**--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, 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)** 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)** 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.

**Inches (INCHES)** 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 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.

### 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 for values less than 1 ft<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to 3 significant figures for more than 1,000 ft<sup>3</sup>/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 incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

### Other 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. Also, 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 at 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 needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite 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 onsite 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. C2; Book 5, Chap. A1, A3, and A4. These references are listed under "**PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS**" 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 Geological Survey Maryland and Delaware offices.

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

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

### 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 the 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 represent conditions only at the time of observations, 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 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 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 that follow clarify 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 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 to the Water-Quality File in the U.S. Geological Survey's computerized data system, **WATSTORE**, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's **STORET** system. 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 the appropriate computer file to insure the most recent updates.

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:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
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.

#### 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 collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. 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:

**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**

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 ensure 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 such that the samples are thought 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 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

**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 most current or discontinued gaging stations through 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 through 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 on back of the title page).



## DEFINITION OF TERMS

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

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

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

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

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

**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.

**Total coliform bacteria** are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as 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.

**Fecal coliform bacteria** are bacteria that 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.

**Fecal streptococcal bacteria** are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C 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.

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

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

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

**Ash mass** is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square mile ( $\text{g}/\text{mi}^2$ ).

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

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

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

**Bottom material:** See Bed material.

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

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

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

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

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

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

Cubic feet per second per square mile [(ft<sup>3</sup>/s)/mi<sup>2</sup>] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic-foot-per-second day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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

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

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

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

Dissolved-solids concentration of water 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 of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO<sub>3</sub>).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

Methylene blue active 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 ( $\mu\text{g/g}$ ) 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 liter ( $\mu\text{g/L}$ ,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

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

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

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, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in more than one-third of the study units and ultimately will be conducted in 60 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.

Organism is any living entity.

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 ( $\text{m}^2$ ), 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.

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

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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.

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.

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

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

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

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

**Recoverable from 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.

**Return period** is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

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

**Sea level:** In this report "sea level" refers to the National Geodetic Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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

**Bed load** is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

**Bed load discharge (tons per day)** is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

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

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

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

**Suspended-sediment discharge (tons/day)** is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft<sup>3</sup>/s) x 0.0027.

**Suspended-sediment load** is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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

**Total-sediment load** or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

**7-day 10-year low flow ( $Q_{10}$ )** is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

**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. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

**Solute** is any substance that is dissolved in water.

**Specific conductance** is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in 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.

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

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

**Substrate** is the physical surface upon which an organism lives.

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

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

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

**Surficial bed material** is the part (0.1 to 0.2 ft) of the bed material that 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 associated with 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 water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "**total**" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures 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 analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) **dissolved** and (2) **total recoverable** concentrations of the constituent.

**Suspended, total** is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "**suspended, total.**"

Determinations of "**suspended, total**" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) **dissolved** and (2) **total** concentrations of the constituent.

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

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

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**Thermograph** is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings 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 that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

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

**Tons per day (T/DAY)** is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

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

**Total discharge** is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

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

**Water year** in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1985, is called the "1985 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.

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

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. **Water temperature--influential factors, field 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.
- 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.
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- 3-A3. **Measurement of peak discharge at culverts by indirect methods**, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
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- 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.
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- 3-A11. **Measurement of discharge by moving-boat method**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. **Fluometric 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.



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- 3-A17. **Acoustic velocity meter systems**, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
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- 3-A19. **Levels of streamflow gaging stations**, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.
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- 7-C3. **A model for simulation of flow in singular and interconnected channels**, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. **Methods of measuring water levels in deep wells**, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. **Installation and service manual for U. S. Geological Survey manometers**, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. **Calibration and maintenance of vertical-axis type current meters**, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

## 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.

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- 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\* Sigafos, 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.
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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 Catocctin 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)

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

## WATER-RESOURCES INVESTIGATIONS REPORTS--Continued

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.

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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.

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OFR 97-777 Doheny, E.J., Flood tracking chart for the Potomac River basin, 1 p.

OFR 95-560 Olsen, L.D., Lorah, M.M., Marchand, E.H., Smith, B.L., Johnson, M.A., Hydrogeologic, Water-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 Catoclin 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 Catoclin 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 submersed 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 data 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.

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## OPEN-FILE REPORTS--Continued

- 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).
- 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.

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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.

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- 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.T.Cecil 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.
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- 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.
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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.

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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.

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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.

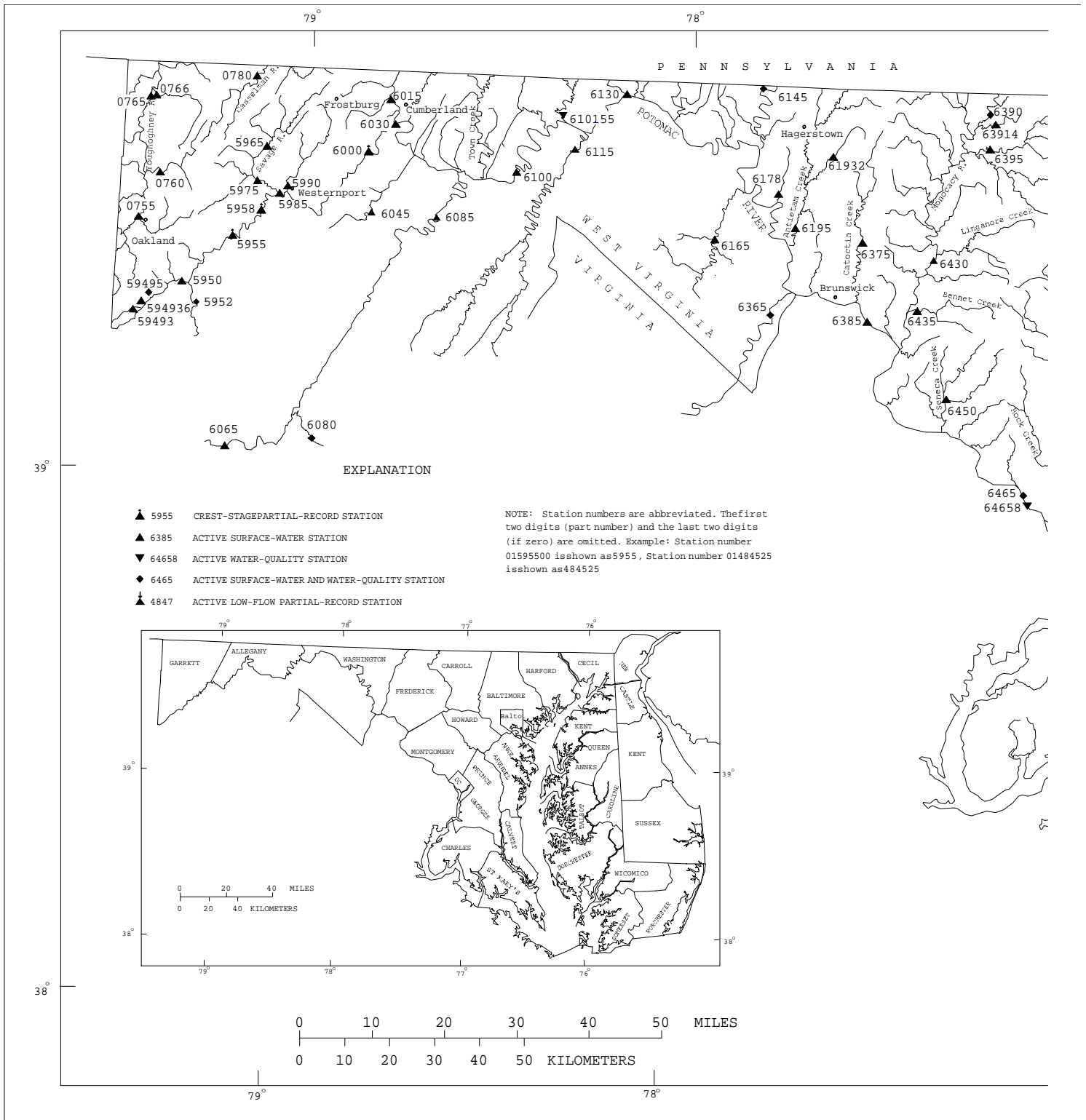
MGS BDR 2 Slaughter, T.H., and Laughlin, C.P., 1966, **Records of wells and springs in Charles County, Maryland**, 93 p.

MGS BDR 1 Laughlin, C.P., 1966, **Records of wells and springs in Baltimore County, Maryland**, 406 p.

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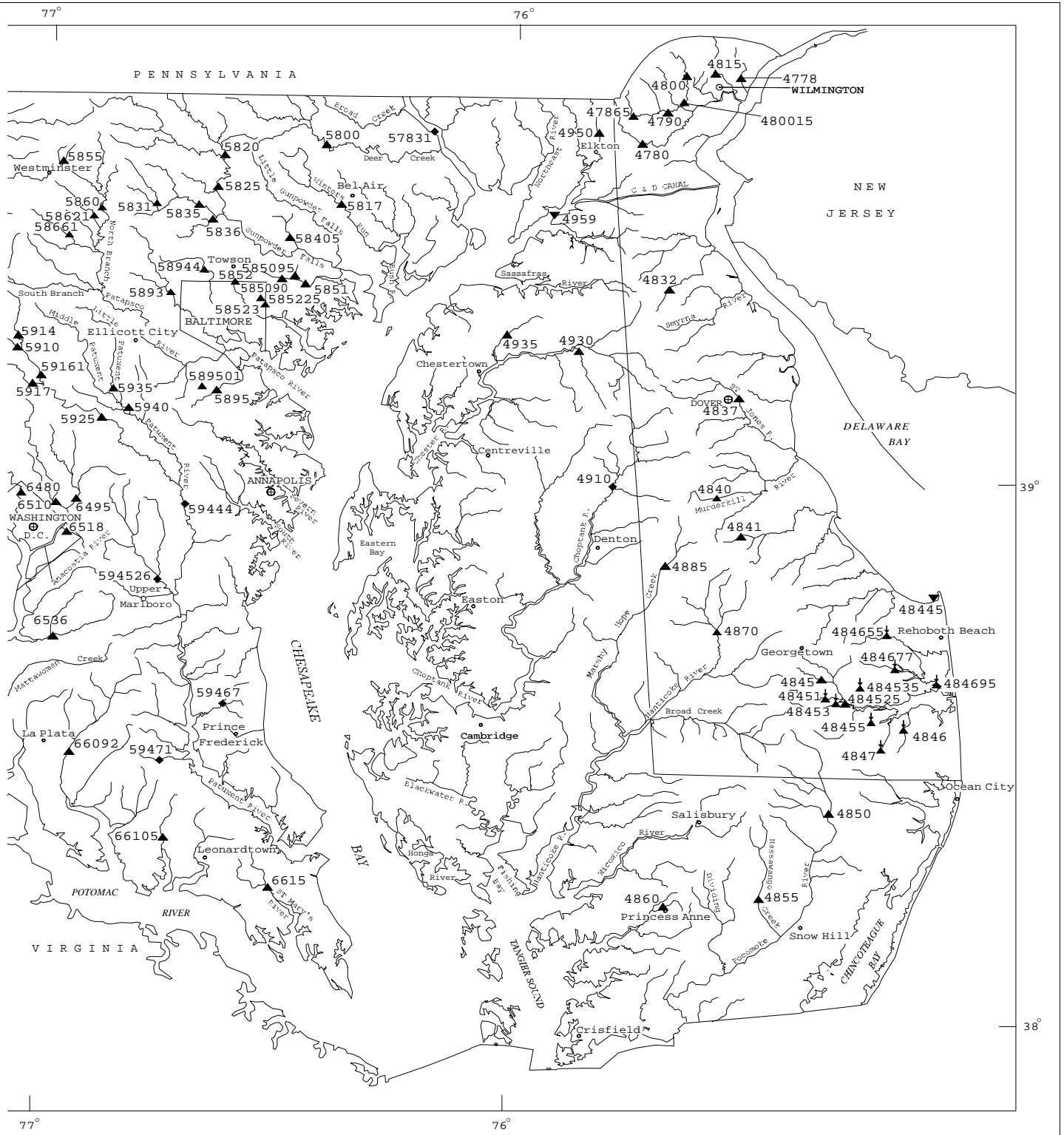
MGS IC 12 Taylor, K.R., and Solley, W.B., 1972, **Traveltime and concentration attenuation of a soluble dye in Antietam and Conococheague Creeks, Maryland**, 25 p.

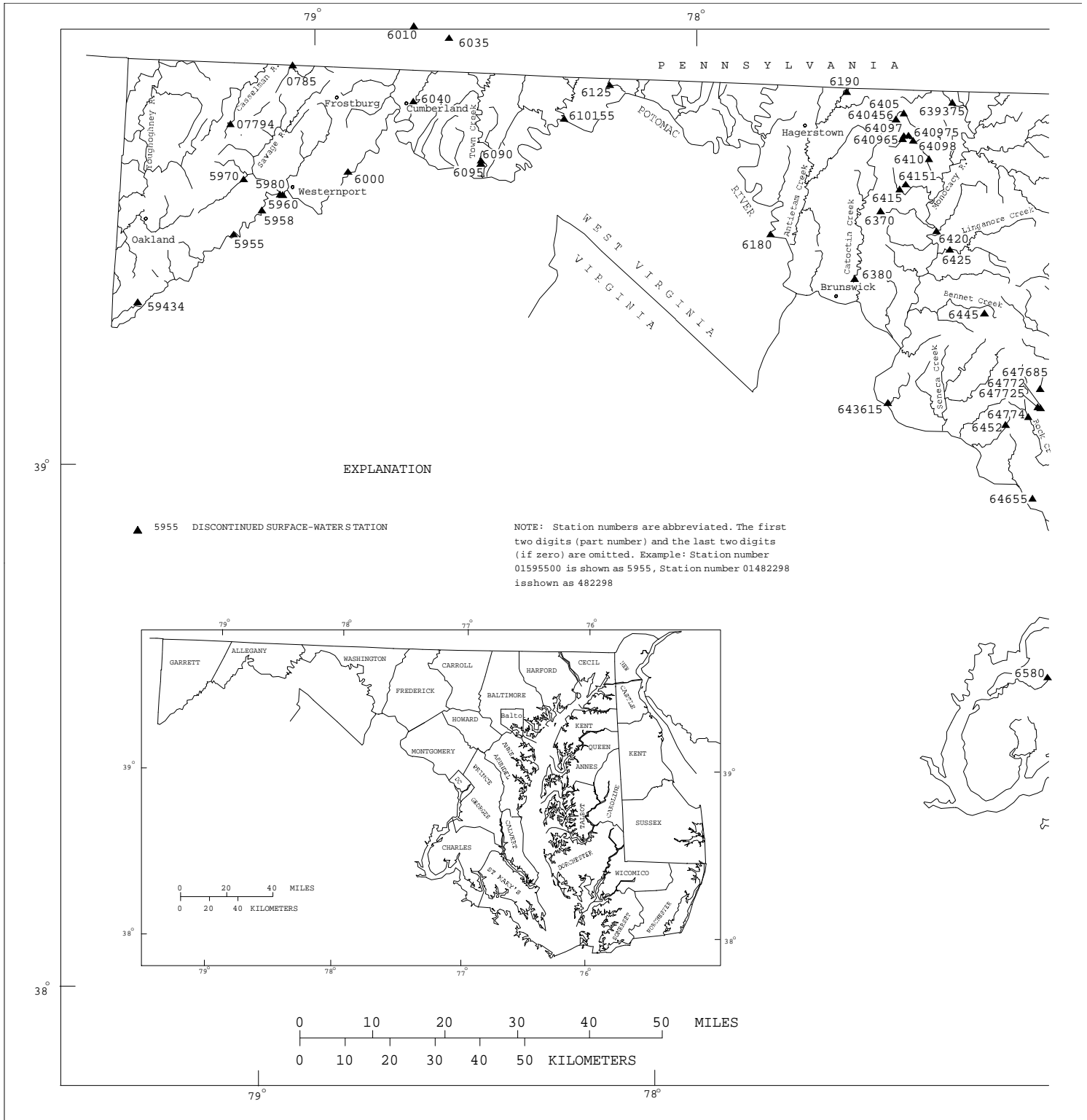
MGS IC 9 Taylor, K.R., 1970, **Traveltime and concentration attenuation of a soluble dye in the Monocacy River, Maryland**, 23 p.



Base map modified from US Geological Survey 1:100 000 DLG

Figure 3. Map of Maryland and Delaware showing location of surface-water, water-quality, low-flow and crest-stage partial-record stations.

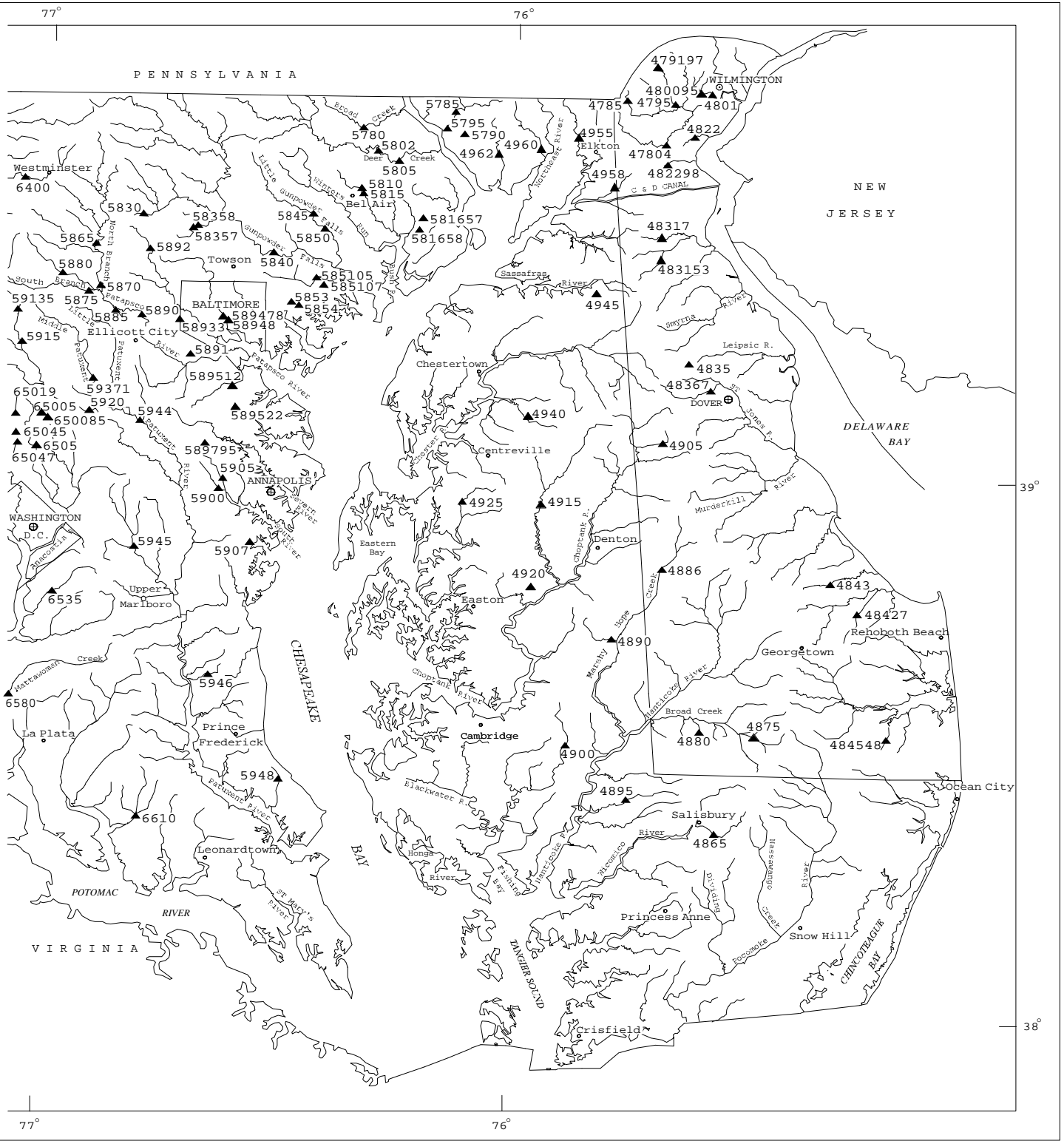




Base map modified from US Geological Survey 1:100 000 DLG

Figure 4. Map of Maryland and Delaware showing location of discontinued surface-water stations.





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**SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS**

**REMARK CODES**

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
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.

**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).

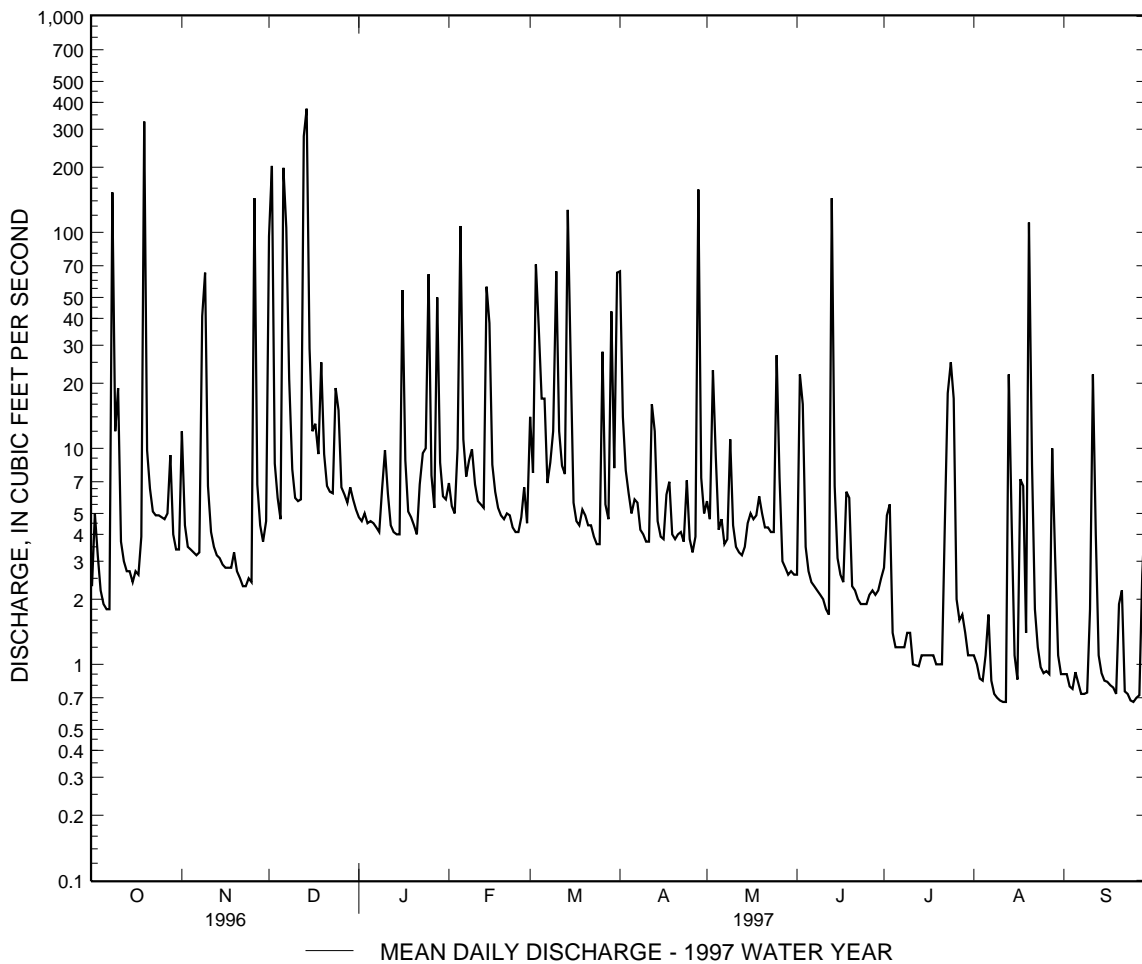


DELAWARE RIVER BASIN

01477800 SHELLPOT CREEK AT WILMINGTON, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1946 - 1997	
ANNUAL TOTAL	6991.5		4988.09			
ANNUAL MEAN	19.1		13.7		10.0	
HIGHEST ANNUAL MEAN					16.2	1989
LOWEST ANNUAL MEAN					5.52	1963
HIGHEST DAILY MEAN	497	Jan 19	374	Dec 14	1310	Jul 5 1989
LOWEST DAILY MEAN	1.5	Sep 15	.67	(a)	.09	(b)
ANNUAL SEVEN-DAY MINIMUM	1.8	Aug 25	.79	Sep 3	.10	Aug 27 1966
INSTANTANEOUS PEAK FLOW			1720	Jun 13	(c)8040	Jul 5 1989
INSTANTANEOUS PEAK STAGE			5.60	Jun 13	13.76	Jul 5 1989
INSTANTANEOUS LOW FLOW			.67	(d)	.09	Oct 2 1968
ANNUAL RUNOFF (CFSM)	2.56		1.83		1.34	
ANNUAL RUNOFF (INCHES)	34.86		24.87		18.27	
10 PERCENT EXCEEDS	37		22		18	
50 PERCENT EXCEEDS	5.3		4.4		2.9	
90 PERCENT EXCEEDS	2.2		.98		.80	

- a Aug. 11, 12, Sept. 25.
- b Oct. 2, 4, 1968.
- c From rating curve extended above 200 ft<sup>3</sup>/s on basis of culvert and flow-over-road measurements at gage heights 9.10 and 11.91 ft.
- d Aug. 8-13, Sept. 4, 6, 7, 24-28.





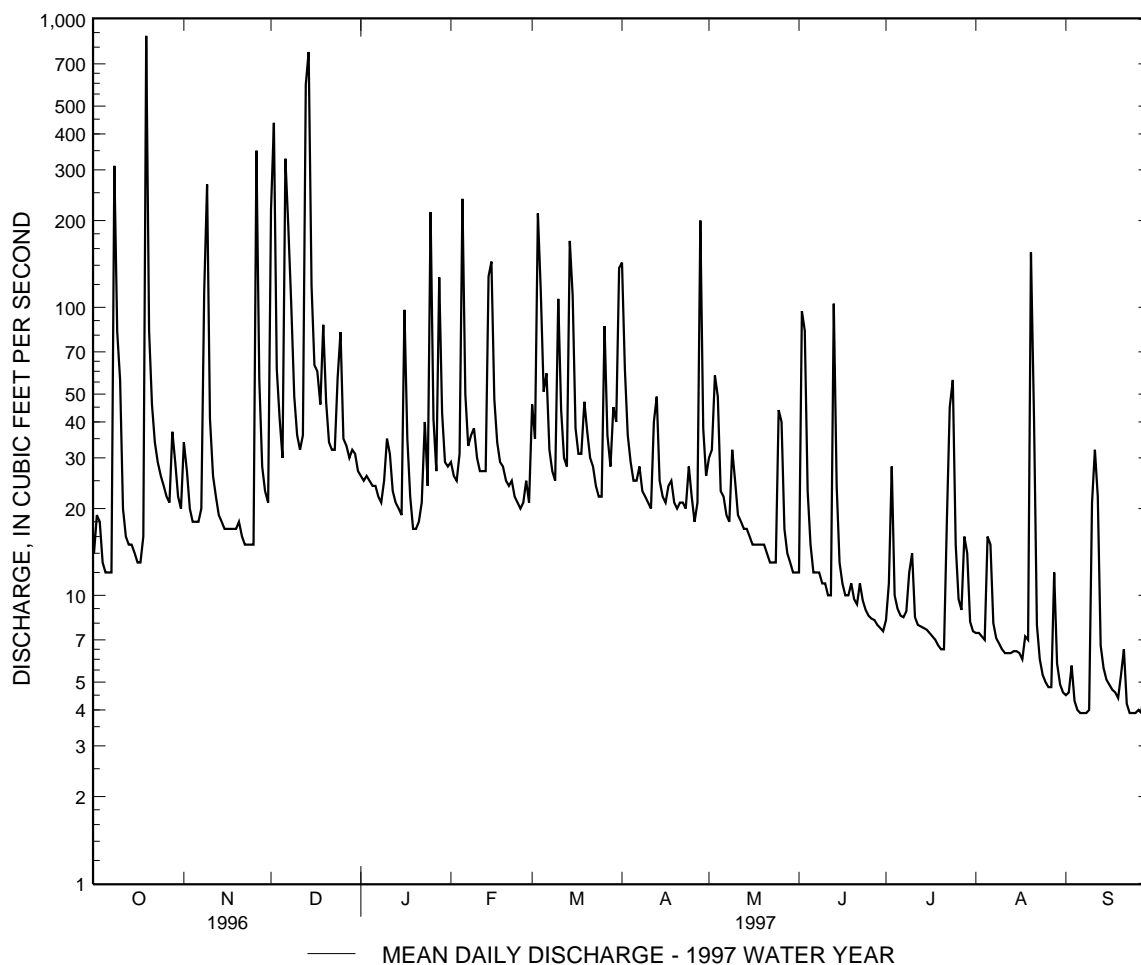
## DELAWARE RIVER BASIN

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1943 - 1997	
ANNUAL TOTAL	18644.0		14566.0			
ANNUAL MEAN	50.9		39.9		29.1	
HIGHEST ANNUAL MEAN					53.4 1978	
LOWEST ANNUAL MEAN					14.2 1981	
HIGHEST DAILY MEAN	1000	Jan 19	876	Oct 19	2000	Jul 5 1989
LOWEST DAILY MEAN	8.3	Sep 11	3.9	(a)	.20	(b)
ANNUAL SEVEN-DAY MINIMUM	8.9	Sep 6	4.1	Sep 22	.50	Aug 25 1966
INSTANTANEOUS PEAK FLOW			1840	Oct 19	5530	Jul 5 1989
INSTANTANEOUS PEAK STAGE			11.71	Oct 19	13.12	Jul 5 1989
INSTANTANEOUS LOW FLOW			3.8	Sep 28	UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.48		1.95		1.42	
ANNUAL RUNOFF (INCHES)	33.83		26.43		19.30	
10 PERCENT EXCEEDS	95		71		49	
50 PERCENT EXCEEDS	20		21		13	
90 PERCENT EXCEEDS	11		6.3		4.4	

a Sept. 6-8, 23-25, 27.

b Aug. 7, 14, 18, 21, 27, 28, 1966.







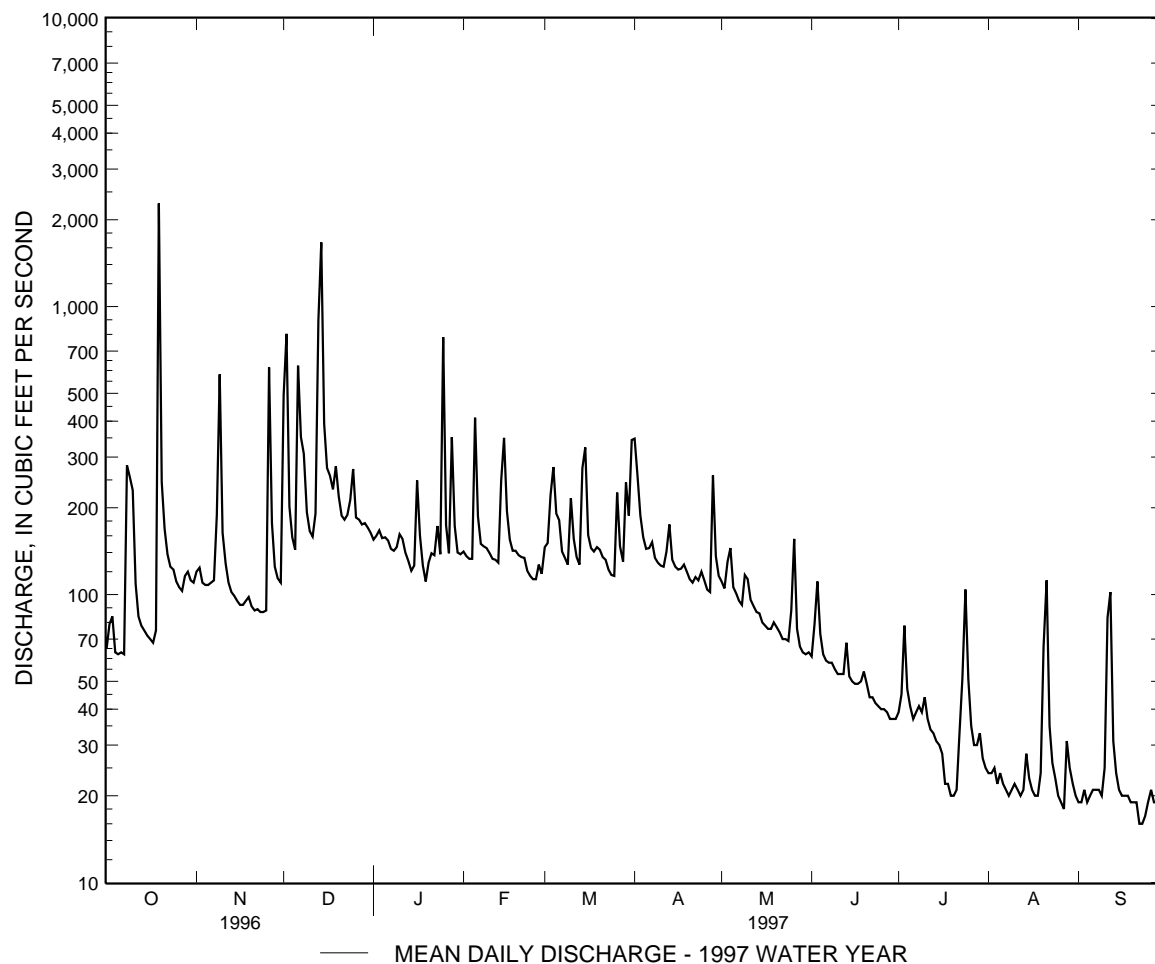
## DELAWARE RIVER BASIN

01478650 WHITE CLAY CREEK AT NEWARK, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1994 - 1997	
ANNUAL TOTAL	57639		47079			
ANNUAL MEAN	157		129		96.8	
HIGHEST ANNUAL MEAN					129	1997
LOWEST ANNUAL MEAN					42.0	1995
HIGHEST DAILY MEAN	(e)3000	Jan 19	2280	Oct 19	(e)3000	Jan 19 1996
LOWEST DAILY MEAN	40	Jan 7	16	(a)	4.5	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	50	Sep 5	18	Sep 19	6.1	Sep 1 1995
INSTANTANEOUS PEAK FLOW			4780	Oct 19	(b)7540	Jan 19 1996
INSTANTANEOUS PEAK STAGE			10.98	Oct 19	13.35	Jan 19 1996
INSTANTANEOUS LOW FLOW			7.5	Aug 18	2.6	Sep 13 1995
ANNUAL RUNOFF (CFSM)	2.28		1.87		1.40	
ANNUAL RUNOFF (INCHES)	31.07		25.38		19.06	
10 PERCENT EXCEEDS	274		220		176	
50 PERCENT EXCEEDS	99		110		58	
90 PERCENT EXCEEDS	58		21		21	

e Estimated.

a Sept. 22, 23.

b From rating curve extended above 2,500 ft<sup>3</sup>/s on basis of runoff comparison with White Clay Creek above Newark, DE (01478500).

## DELAWARE RIVER BASIN

01479000 WHITE CLAY CREEK NEAR NEWARK, DE

LOCATION.--Lat 39°41'47", long 75°40'31", 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<sup>2</sup>.

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 sea level. 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 (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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0900	*5,540	*14.88	Dec. 14	0500	3,780	13.89
Dec. 2	0315	2,300	12.09				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	136	573	204	162	167	487	130	82	53	33	29
2	90	132	1150	206	157	190	332	120	175	61	33	29
3	95	117	193	212	152	354	227	173	156	100	34	31
4	75	114	159	201	153	351	195	172	102	58	33	27
5	73	113	139	201	550	237	178	121	85	49	36	26
6	72	113	825	197	229	236	172	116	81	46	33	26
7	71	114	425	185	178	182	183	111	80	45	29	27
8	476	259	352	180	174	165	159	107	79	48	27	26
9	333	805	172	191	175	157	151	134	76	48	29	26
10	242	183	167	206	161	299	147	132	74	57	29	51
11	114	146	162	198	152	211	145	112	72	45	28	99
12	95	128	171	178	149	170	172	106	71	41	26	143
13	90	120	1070	e167	149	156	225	103	241	39	28	43
14	86	116	2180	e156	310	392	165	102	89	38	32	34
15	81	111	507	e161	428	434	148	100	77	37	30	31
16	79	108	344	e320	233	220	142	97	72	36	28	29
17	78	108	326	e216	184	188	142	96	70	34	25	28
18	80	109	298	e168	167	179	149	96	71	32	33	27
19	2970	113	353	e145	163	188	145	97	78	31	27	26
20	393	106	281	e160	158	188	141	96	70	29	224	33
21	215	102	244	e176	153	176	138	92	67	28	147	30
22	168	102	237	e176	155	168	141	89	69	58	47	24
23	155	100	242	e200	148	159	137	87	64	110	36	24
24	147	98	280	e243	142	151	147	87	60	157	33	24
25	134	98	340	830	139	147	145	132	59	78	30	27
26	128	849	237	223	138	301	137	188	58	49	29	28
27	125	200	234	175	150	190	132	96	57	44	29	26
28	139	133	225	406	143	173	429	86	54	43	70	35
29	138	122	228	222	---	318	167	83	53	44	38	43
30	123	116	222	171	---	243	130	84	52	37	33	33
31	120	---	212	161	---	466	---	85	---	34	29	---
TOTAL	7265	5171	12548	6835	5352	7156	5508	3430	2494	1609	1318	1085
MEAN	234	172	405	220	191	231	184	111	83.1	51.9	42.5	36.2
MAX	2970	849	2180	830	550	466	487	188	241	157	224	143
MIN	71	98	139	145	138	147	130	83	52	28	25	24
CFSM	2.63	1.93	4.54	2.47	2.15	2.59	2.06	1.24	.93	.58	.48	.41
IN.	3.03	2.16	5.24	2.85	2.23	2.99	2.30	1.43	1.04	.67	.55	.45

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1997, BY WATER YEAR (WY)

	66.7	93.4	117	149	162	174	152	129	98.3	96.7	79.7	72.2
MEAN	66.7	93.4	117	149	162	174	152	129	98.3	96.7	79.7	72.2
MAX	234	221	405	493	542	402	342	265	311	540	301	231
(WY)	1997	1973	1997	1979	1979	1994	1983	1989	1972	1975	1967	1979
MIN	17.6	28.4	28.1	32.8	52.4	57.5	59.7	42.3	33.7	16.6	13.6	15.0
(WY)	1964	1966	1966	1966	1934	1981	1963	1955	1995	1963	1966	1932

## DELAWARE RIVER BASIN

01479000 WHITE CLAY CREEK NEAR NEWARK, DE--Continued

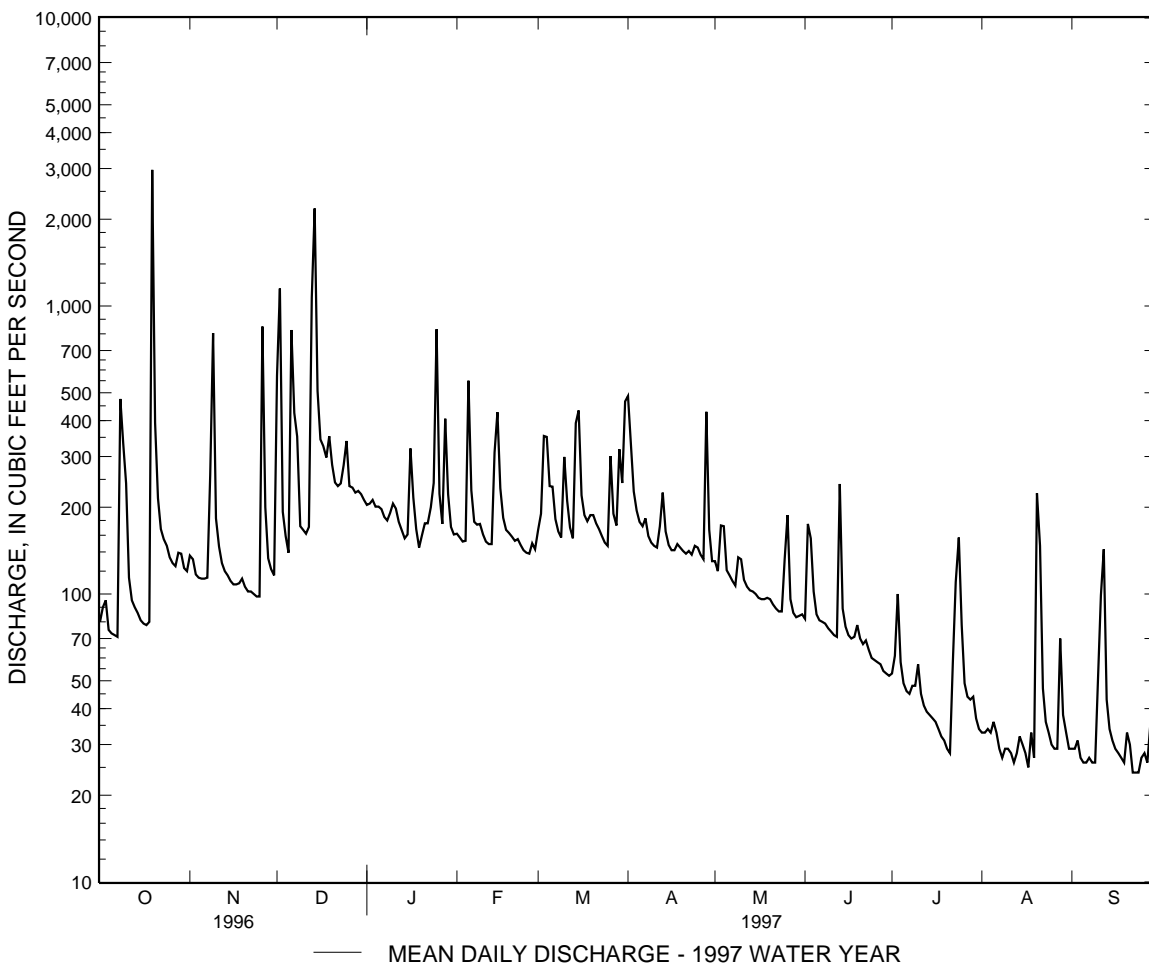
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1932 - 1997	
ANNUAL TOTAL	76828		59771			
ANNUAL MEAN	210		164		116	
HIGHEST ANNUAL MEAN					193	
LOWEST ANNUAL MEAN					55.9	
HIGHEST DAILY MEAN	3900	Jan 19	2970	Oct 19	5220	Jan 26 1978
LOWEST DAILY MEAN	(e)54	Jan 7	24	(a)	5.0	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	64	Sep 5	26	Sep 21	5.7	Sep 7 1966
INSTANTANEOUS PEAK FLOW			5540	Oct 19	(b)11600	Jul 5 1989
INSTANTANEOUS PEAK STAGE			14.88	Oct 19	(c)17.74	Jun 22 1972
INSTANTANEOUS LOW FLOW			15	Aug 19	4.7	Sep 11 1966
ANNUAL RUNOFF (CFSM)	2.36		1.84		1.30	
ANNUAL RUNOFF (INCHES)	32.08		24.95		17.67	
10 PERCENT EXCEEDS	357		288		193	
50 PERCENT EXCEEDS	123		132		77	
90 PERCENT EXCEEDS	76		31		33	

e Estimated

a Sept. 22-24.

b From rating curve extended above 6,700 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow.

c At previous site and datum.



## DELAWARE RIVER BASIN

01480000 RED CLAY CREEK AT WOODDALE, DE

LOCATION.--Lat 39°45'52", long 75°38'08", 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<sup>2</sup>.

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 sea level. Prior to Sept. 21, 1950, nonrecording gage at site 10 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	1045	*2,670	*6.98	Dec. 6	0800	1,210	4.58
Nov. 26	1030	1,220	4.61	Dec. 14	0300	1,880	5.73
Dec. 2	0530	1,340	4.82				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	63	268	102	88	97	213	76	48	28	21	25
2	53	63	563	103	84	95	154	72	54	30	21	26
3	53	57	125	106	82	139	110	90	73	65	21	23
4	43	55	100	99	81	173	99	107	56	32	20	18
5	42	56	89	101	264	118	91	73	49	28	21	19
6	41	55	416	97	115	115	91	70	47	26	20	23
7	41	56	241	91	94	89	95	66	46	33	19	24
8	237	93	199	87	92	84	83	63	45	30	24	25
9	157	308	122	90	92	81	80	81	43	26	25	25
10	120	92	106	101	85	160	77	72	41	30	25	24
11	65	74	105	95	81	103	77	64	40	25	25	50
12	56	68	127	86	81	87	87	60	40	24	25	53
13	53	65	509	82	79	82	117	58	46	23	25	22
14	51	63	1020	80	169	193	83	58	42	22	33	19
15	48	61	275	79	205	222	78	57	38	22	21	17
16	47	59	187	169	113	107	76	55	36	22	20	16
17	48	59	181	96	95	96	79	54	37	21	24	16
18	47	60	161	75	89	94	87	55	38	20	20	15
19	1090	63	203	73	88	95	77	56	40	21	22	18
20	140	59	151	78	84	92	74	54	36	19	87	23
21	102	57	130	76	83	87	73	51	34	21	89	23
22	82	56	126	78	85	85	75	50	33	27	26	21
23	73	55	128	105	79	79	74	49	32	44	22	20
24	70	55	147	84	78	76	81	49	31	82	20	21
25	67	55	190	416	76	77	74	70	30	60	19	22
26	63	388	122	105	77	145	70	117	30	32	22	19
27	62	102	120	86	84	93	67	58	29	27	25	19
28	67	74	114	225	76	83	183	51	28	25	29	21
29	64	70	116	106	---	102	93	49	27	26	22	25
30	61	68	111	87	---	99	79	50	27	22	21	16
31	59	---	107	85	---	204	---	50	---	21	25	---
TOTAL	3248	2509	6559	3343	2799	3452	2797	1985	1196	934	839	688
MEAN	105	83.6	212	108	100	111	93.2	64.0	39.9	30.1	27.1	22.9
MAX	1090	388	1020	416	264	222	213	117	73	82	89	53
MIN	41	55	89	73	76	76	67	49	27	19	19	15
(†)	---	---	---	---	---	---	---	---	---	-0.2	-2.6	-4.4
MEAN#	---	---	---	---	---	---	---	---	---	29.9	24.5	18.5
CFSM#	---	---	---	---	---	---	---	---	---	0.64	0.52	0.39
IN#	---	---	---	---	---	---	---	---	---	0.74	0.60	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1997, BY WATER YEAR (WY)

	MEAN	37.1	50.3	65.0	78.5	88.1	93.2	85.8	74.1	56.9	51.8	44.0	40.3
MAX	129	115	212	232	237	209	167	156	147	279	180	180	
(WY)	1972	1973	1997	1979	1979	1994	1958	1958	1972	1975	1955	1971	
MIN	11.1	18.8	18.9	16.8	33.3	27.3	33.8	24.2	21.7	12.7	9.79	13.7	
(WY)	1964	1966	1966	1981	1969	1981	1995	1955	1966	1963	1966	1964	

† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.  
# Adjusted for inflow.

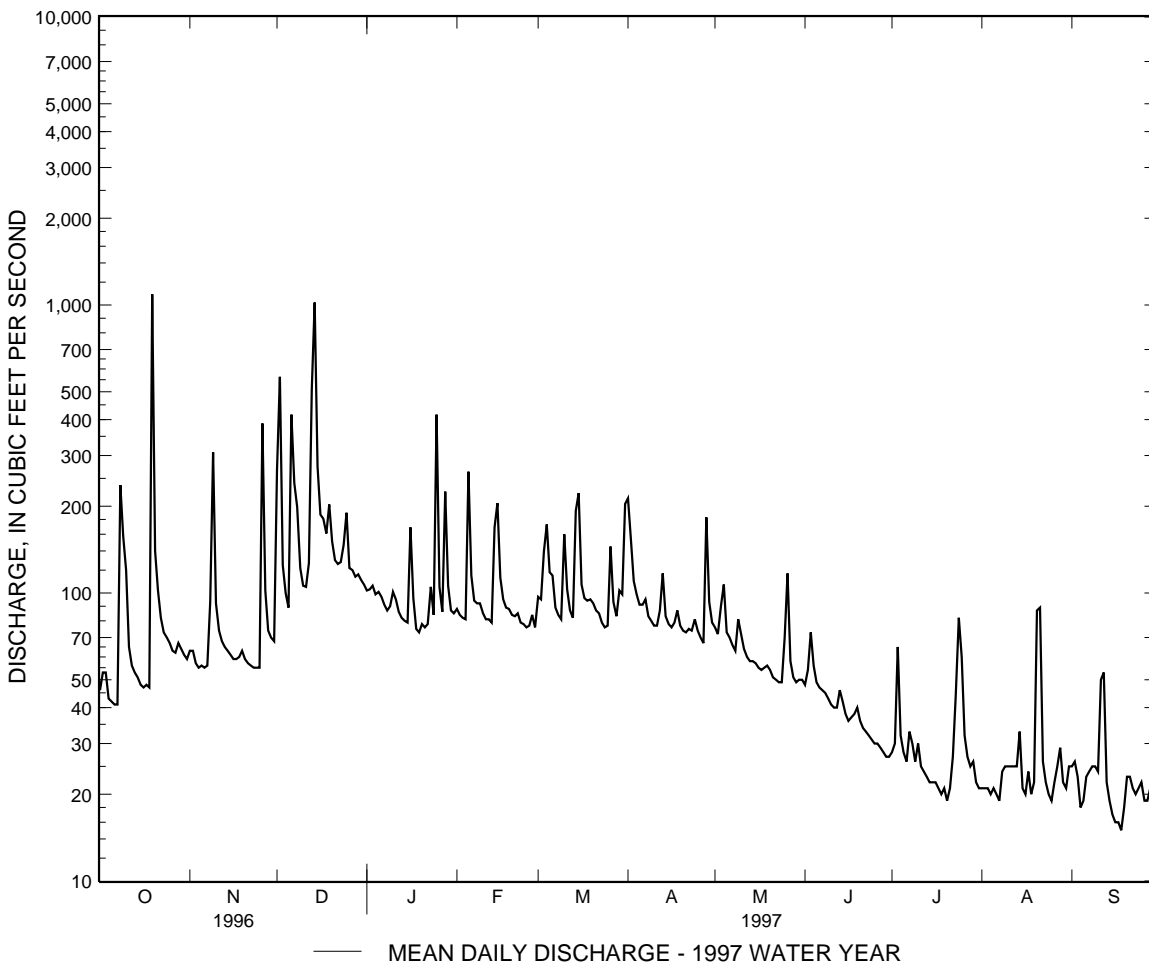
## DELAWARE RIVER BASIN

01480000 RED CLAY CREEK AT WOODDALE, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1943 - 1997	
ANNUAL TOTAL	38479		30349			
ANNUAL MEAN	105		83.1		63.6	
ANNUAL MEAN <sup>a</sup>	105		82.5		63.6	
HIGHEST ANNUAL MEAN					104 1975	
LOWEST ANNUAL MEAN					32.3 1995	
HIGHEST DAILY MEAN	1790	Jan 19	1090	Oct 19	2430	Sep 12 1960
LOWEST DAILY MEAN	24	Jan 7	15	Sep 18	4.5	Sep 4 1966
ANNUAL SEVEN-DAY MINIMUM	41	Jan 5	18	Sep 13	4.9	Sep 7 1966
INSTANTANEOUS PEAK FLOW			2670	Oct 19	(a)5010	Jul 21 1975
INSTANTANEOUS PEAK STAGE			6.98	Oct 19	10.32	Jul 21 1975
INSTANTANEOUS LOW FLOW			12	Sep 27	2.9	Sep 4 1966
ANNUAL RUNOFF (CFSM)	2.24		1.77		1.35	
ANNUAL RUNOFF (CFSM) <sup>a</sup>	2.24		1.76		1.35	
ANNUAL RUNOFF (INCHES)	30.46		24.02		18.40	
ANNUAL RUNOFF (INCHES) <sup>a</sup>	30.46		23.95		18.40	
10 PERCENT EXCEEDS	175		139		108	
50 PERCENT EXCEEDS	66		68		44	
90 PERCENT EXCEEDS	47		22		20	

<sup>a</sup> Adjusted for inflow since June 1994.

a From rating curve extended above 3,900 ft<sup>3</sup>/s on basis of contracted-opening measurement at gage height 9.93 ft.



DELAWARE RIVER BASIN

01480015 RED CLAY CREEK NEAR STANTON, DE

LOCATION.--Lat 39°42'55", long 75°38'28", 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<sup>2</sup>.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.00 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, 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. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	1130	*2,980	*16.78	Dec. 14	0500	2,180	15.78
Dec. 2	0245	1,640	14.65				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	73	298	110	103	109	247	85	51	31	27	e30
2	54	72	714	111	98	110	171	79	63	34	27	e31
3	56	64	136	114	95	167	121	106	79	70	27	e27
4	47	62	106	107	97	203	109	118	57	38	26	e22
5	46	63	93	108	298	137	100	80	52	31	28	e23
6	46	62	488	105	135	133	101	77	50	30	28	25
7	45	63	273	98	109	101	104	71	49	31	26	26
8	281	100	233	94	108	96	91	69	48	37	32	27
9	201	382	131	98	107	91	87	91	46	30	33	26
10	133	99	112	110	98	188	84	79	45	34	32	27
11	67	79	107	104	93	119	85	70	44	28	31	47
12	57	71	137	93	93	99	101	66	43	26	31	68
13	54	67	601	e90	91	92	128	64	98	25	32	27
14	53	65	1220	e88	189	223	91	64	47	24	41	23
15	51	63	311	e87	234	253	85	62	43	24	26	21
16	50	61	211	190	130	120	83	60	42	24	25	19
17	50	61	198	110	109	108	86	59	43	23	31	19
18	50	62	173	e83	102	106	94	59	43	22	32	18
19	1290	64	217	e80	100	107	84	62	44	21	29	20
20	167	60	163	e85	95	103	81	59	41	21	105	26
21	115	58	139	e84	94	98	80	56	40	23	e106	27
22	90	58	134	e86	97	95	82	55	39	32	e31	25
23	81	57	137	109	88	89	80	54	36	53	e28	24
24	78	57	157	90	86	86	90	54	34	99	e25	22
25	74	56	205	432	84	85	81	83	35	67	e23	27
26	70	436	132	125	85	169	76	127	34	38	e22	23
27	69	112	129	102	94	104	75	60	32	32	e27	23
28	75	77	124	248	85	91	225	54	31	29	e34	26
29	73	71	126	126	---	169	102	52	30	33	e32	32
30	67	69	121	102	---	115	86	53	29	29	e25	21
31	67	---	115	100	---	238	---	53	---	28	e29	---
TOTAL	3706	2744	7441	3669	3197	4004	3110	2181	1368	1067	1051	802
MEAN	120	91.5	240	118	114	129	104	70.4	45.6	34.4	33.9	26.7
MAX	1290	436	1220	432	298	253	247	127	98	99	106	68
MIN	45	56	93	80	84	85	75	52	29	21	22	18
(†)	--	--	--	--	--	--	--	--	--	-0.2	-2.6	-4.4
MEAN#	--	--	--	--	--	--	--	--	--	34.2	31.3	22.3
CFSM#	--	--	--	--	--	--	--	--	--	.65	.60	.43
IN#	--	--	--	--	--	--	--	--	--	.75	.69	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	52.1	59.9	80.7	106	79.0	114	96.0	82.7	63.1
MAX	120	91.5	240	220	151	223	191	138	104
(WY)	1997	1997	1997	1996	1994	1994	1993	1989	1996
MIN	23.0	32.1	36.5	37.9	40.8	65.0	38.6	39.7	27.2
(WY)	1995	1995	1995	1992	1992	1990	1995	1995	1995

e Estimated  
† Inflow in cubic feet per second, from Hoopes Reservoir for municipal supply.  
# Adjusted for inflow.

## DELAWARE RIVER BASIN

01480015 RED CLAY CREEK NEAR STANTON, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	44881		34340			
ANNUAL MEAN	123		94.1		74.9	
ANNUAL MEAN <sup>#</sup>	123		93.5		74.4	
HIGHEST ANNUAL MEAN					98.2	
LOWEST ANNUAL MEAN					37.2	
HIGHEST DAILY MEAN	2180	Jan 19	1290	Oct 19	2480	Jul 5 1989
LOWEST DAILY MEAN	39	Jan 1	18	Sep 18	(e)7.0	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	47	Aug 31	21	Sep 14	10	Sep 6 1995
INSTANTANEOUS PEAK FLOW			2890	Oct 19	5330	Jan 19 1996
INSTANTANEOUS PEAK STAGE			16.78	Oct 19	19.38	Jan 19 1996
INSTANTANEOUS LOW FLOW			18	(a)	(b)	(c)
ANNUAL RUNOFF (CFSM)	2.34		1.80		1.43	
ANNUAL RUNOFF (CFSM) <sup>#</sup>	2.34		1.78		1.42	
ANNUAL RUNOFF (INCHES)	31.86		24.38		19.42	
ANNUAL RUNOFF (INCHES) <sup>#</sup>	31.86		24.16		19.29	
10 PERCENT EXCEEDS	208		165		126	
50 PERCENT EXCEEDS	75		75		52	
90 PERCENT EXCEEDS	51		26		24	

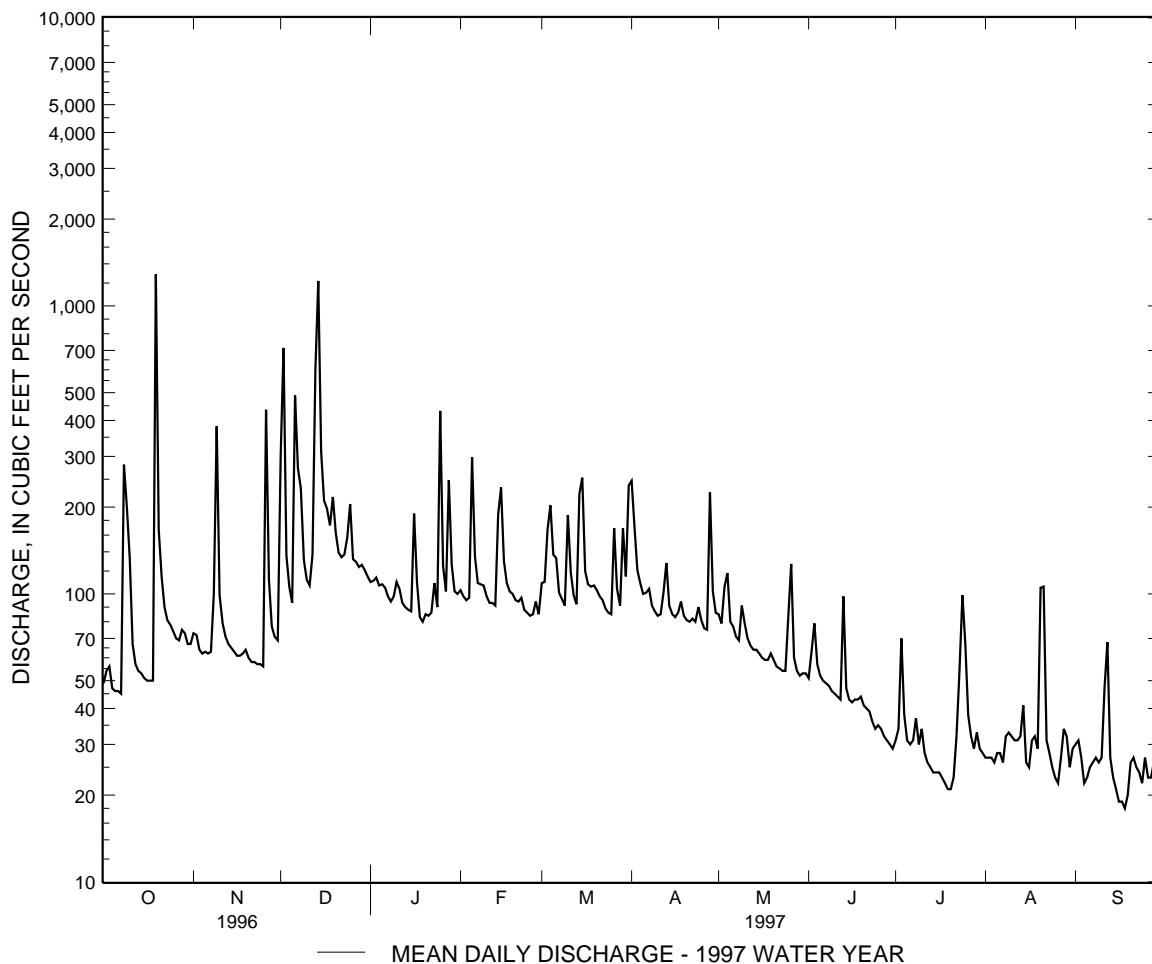
<sup>#</sup> Adjusted for inflow since June 1994.

e Estimated.

a Sept. 24, 28.

b Minimum recordable flow was 10 ft<sup>3</sup>/s, may have been less during periods of doubtful or no gage-height record.

c Late Aug. and early Sept. 1995.



## DELAWARE RIVER BASIN

01481500 BRANDYWINE CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°46'09", long 75°34'25", 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<sup>2</sup>.

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 sea level.

REMARKS.--No estimated daily discharges. Records good. 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 13, 1960. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	2145	*15,200	*11.91	Dec. 6	1600	4,730	7.51
Nov. 9	1245	5,020	7.69	Dec. 14	1500	10,800	10.34
Nov. 26	1745	4,580	7.42	Jan. 25	1600	6,080	8.27
Dec. 2	0315	6,720	8.59				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	452	551	1300	891	833	662	1480	505	323	192	167	145
2	444	562	4990	875	846	750	1400	496	358	209	161	141
3	531	562	1590	859	963	782	1510	581	510	399	169	142
4	441	534	1150	838	776	931	904	818	413	228	151	143
5	416	529	991	829	1660	908	803	607	331	202	159	131
6	410	524	3200	852	1150	962	722	555	304	185	159	127
7	404	503	1980	758	838	765	732	521	298	180	144	121
8	1010	578	2350	728	791	691	662	447	300	192	140	121
9	1380	3760	1420	729	775	659	639	582	281	171	132	118
10	1050	1190	1420	764	730	913	620	558	276	227	125	128
11	708	914	1340	765	697	852	614	458	264	200	126	326
12	571	797	1520	709	684	709	646	430	261	164	122	601
13	503	731	2440	676	680	675	794	413	396	157	146	235
14	488	699	8430	661	901	1040	660	409	293	155	212	176
15	458	668	3620	655	1350	1990	653	396	255	148	156	155
16	444	644	2360	1040	1130	920	617	375	246	143	138	146
17	444	637	2080	945	869	807	622	367	244	137	154	143
18	443	585	1870	622	841	775	654	367	248	134	162	133
19	7080	609	1670	660	953	749	602	377	257	130	182	132
20	5000	585	1450	680	746	687	578	377	251	124	276	125
21	1580	559	1190	695	700	664	561	348	234	124	672	120
22	1260	556	1110	674	708	670	550	333	227	204	258	115
23	957	545	1150	847	679	656	527	327	217	260	176	114
24	802	533	1380	711	644	637	554	324	204	594	156	115
25	711	530	1480	4020	625	632	498	473	199	501	150	116
26	661	2610	1070	1280	612	832	470	1150	193	290	142	118
27	632	1710	1020	864	668	714	458	553	192	249	137	112
28	628	980	993	1770	640	633	980	440	187	236	184	116
29	615	779	1050	1280	---	695	666	375	188	209	285	169
30	592	706	1190	862	---	667	539	341	181	186	189	161
31	578	---	930	853	---	1240	---	327	---	168	153	---
TOTAL	31693	25670	59734	29392	23489	25267	21715	14630	8131	6698	5683	4745
MEAN	1022	856	1927	948	839	815	724	472	271	216	183	158
MAX	7080	3760	8430	4020	1660	1990	1510	1150	510	594	672	601
MIN	404	503	930	622	612	632	458	324	181	124	122	112
(+)	-1.5	-2.2	-31.7	+16.4	-3.8	+22.3	-2.4	-2.3	+1.8	-1.3	-2.1	-2.9
MEAN#	1020	854	1895	964	835	837	722	470	273	215	181	155
CFSM#	3.25	2.72	6.04	3.07	2.66	2.67	2.30	1.50	0.87	0.68	0.58	0.49
IN#	3.75	3.04	6.96	3.54	2.77	3.08	2.57	1.73	0.97	0.78	0.67	0.55

† 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.



## DELAWARE RIVER BASIN

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 - 1997, BY WATER YEAR (WY)

MEAN	312	380	561	651	648	753	729	608	450	407	271	295
MAX	1022	856	1927	1868	1610	1839	1773	1168	1079	1243	572	1095
(WY)	1997	1997	1997	1979	1979	1994	1983	1989	1975	1975	1996	1979
MIN	125	157	145	119	246	230	223	304	172	161	103	108
(WY)	1987	1982	1981	1981	1992	1981	1985	1977	1985	1986	1995	1980

## SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1974 - 1997

ANNUAL TOTAL	334387	256847	
ANNUAL MEAN	914	704	505
ANNUAL MEAN≠	914	703	506
HIGHEST ANNUAL MEAN			835 1984
LOWEST ANNUAL MEAN			228 1981
HIGHEST DAILY MEAN	10300 Jan 20	8430 Dec 14	12100 Jan 25 1979
LOWEST DAILY MEAN	121 Jan 8	112 Sep 27	52 Sep 13 1995
ANNUAL SEVEN-DAY MINIMUM	(e)259 Jan 6	115 Sep 22	55 Sep 1 1995
INSTANTANEOUS PEAK FLOW		15200 Oct 19	22400 Jan 25 1979
INSTANTANEOUS PEAK STAGE		11.91 Oct 19	13.22 Jan 25 1979
INSTANTANEOUS LOW FLOW		80 Aug 4	40 Aug 26 1995
ANNUAL RUNOFF (CFSM)	2.91	2.24	1.61
ANNUAL RUNOFF (CFSM)≠	2.91	2.24	1.61
ANNUAL RUNOFF (INCHES)	39.62	30.43	21.84
ANNUAL RUNOFF (INCHES)≠	39.62	30.41	21.88
10 PERCENT EXCEEDS	1540	1280	937
50 PERCENT EXCEEDS	631	581	355
90 PERCENT EXCEEDS	367	145	142

a From rating curve extended above 18,000 ft<sup>3</sup>/s.

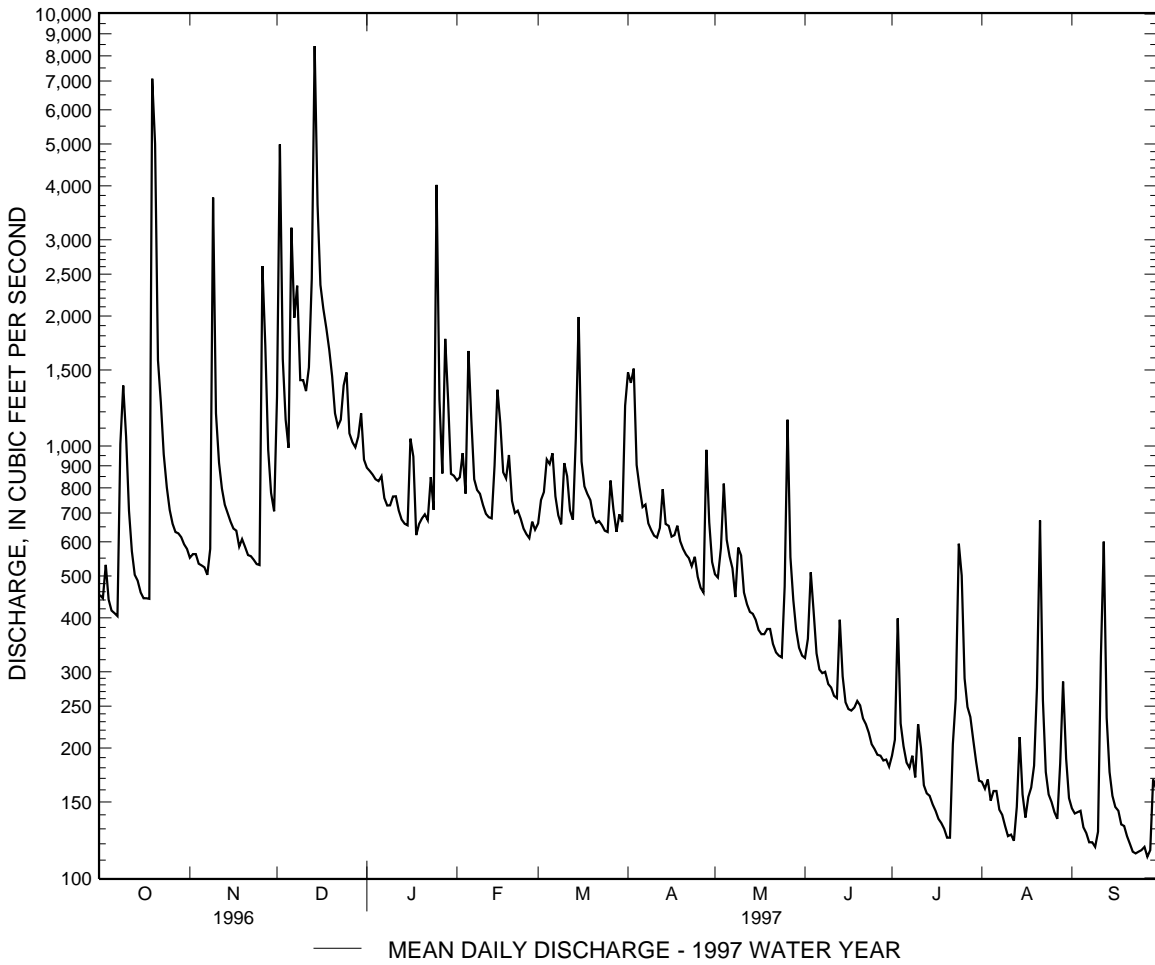
b During period of ice effect.

≠ Adjusted for change in reservoir contents since November 1973.

e Estimated.

DELAWARE RIVER BASIN

01481500 BRANDYWINE CREEK AT WILMINGTON, DE--Continued



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## DELAWARE RIVER BASIN

01483200 BLACKBIRD CREEK AT BLACKBIRD, DE

LOCATION.--Lat 39°21'58", long 75°40'10", 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<sup>2</sup>.

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 sea level. 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.--No estimated daily discharges. Records good. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	1115	123	3.25	Mar. 4	0015	102	2.94
Dec. 2	0845	136	3.38	Apr. 28	0915	50	2.13
Dec. 14	0800	*334	*4.90				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.8	7.0	7.5	6.3	19	19	6.0	2.0	1.3	.62	.71
2	2.1	2.7	66	7.1	5.6	19	12	5.0	3.2	1.2	.59	.66
3	2.2	2.6	15	7.1	5.2	33	8.9	7.6	4.1	1.0	.53	.62
4	1.8	2.6	9.1	6.9	5.8	46	7.9	6.0	2.9	.95	.48	.56
5	1.8	2.6	7.2	8.0	33	16	6.6	4.4	2.2	1.0	.46	.49
6	1.8	2.7	31	6.1	18	13	7.2	4.4	2.0	.96	.46	.45
7	1.8	2.8	23	5.3	9.9	11	8.0	3.7	1.9	.89	.46	.39
8	15	4.3	30	5.1	9.2	10	5.7	3.5	1.9	.82	.44	.30
9	22	18	12	6.3	9.7	9.4	5.2	4.6	1.9	.68	.43	.24
10	6.9	6.4	9.8	11	8.8	17	5.0	4.2	2.7	1.1	.42	.19
11	3.4	3.6	9.6	9.6	7.7	13	4.9	3.4	1.8	1.5	.43	.17
12	2.4	3.0	9.8	5.9	7.3	9.6	7.1	3.2	1.5	1.2	.39	.30
13	2.3	2.8	49	4.9	6.7	8.6	10	3.1	1.9	1.0	.35	.37
14	2.3	3.0	201	4.7	18	13	5.9	3.1	1.9	.91	.34	.37
15	2.3	2.8	44	4.7	36	16	5.1	3.0	1.7	.82	.24	.35
16	2.4	2.8	22	19	17	9.7	4.8	2.8	1.4	.78	.15	.37
17	2.4	2.8	17	13	11	8.0	5.7	2.6	1.4	.70	.16	.37
18	3.1	2.9	14	5.5	9.3	8.7	7.2	2.5	1.5	.63	.17	.37
19	67	3.3	19	4.0	8.8	13	4.9	2.5	1.6	.58	.13	.37
20	15	3.1	15	4.1	8.1	11	4.6	2.3	1.3	.56	.58	.37
21	7.3	2.8	11	4.8	8.8	9.2	4.5	2.2	1.2	.58	14	.35
22	5.2	2.8	10	5.9	11	8.1	4.9	2.0	1.0	.57	1.9	.31
23	4.6	2.7	11	9.8	9.2	6.4	4.9	2.0	1.2	.48	.96	.29
24	4.1	2.7	11	7.0	8.5	5.8	11	2.0	1.4	.39	.85	.28
25	3.9	2.7	15	11	8.4	5.5	7.1	2.3	1.5	.23	.77	.25
26	3.7	7.8	11	8.2	8.5	14	4.9	5.6	1.6	.33	.70	.23
27	3.7	6.5	12	5.3	9.7	11	5.2	2.6	1.9	.45	.66	.21
28	3.8	3.8	10	13	8.7	7.3	36	2.1	1.9	.57	.64	.21
29	3.7	3.4	9.6	11	---	7.4	12	2.0	1.7	.61	.64	.16
30	3.1	3.5	9.2	6.5	---	7.7	7.4	2.1	1.5	.67	.65	.15
31	2.8	---	8.8	6.1	---	20	---	2.1	---	.67	.73	---
TOTAL	206.1	116.3	729.1	234.4	314.2	406.4	243.6	104.9	55.7	24.13	30.33	10.46
MEAN	6.65	3.88	23.5	7.56	11.2	13.1	8.12	3.38	1.86	.78	.98	.35
MAX	67	18	201	19	36	46	36	7.6	4.1	1.5	14	.71
MIN	1.8	2.6	7.0	4.0	5.2	5.5	4.5	2.0	1.0	.23	.13	.15
CFSM	1.73	1.01	6.11	1.96	2.91	3.41	2.11	.88	.48	.20	.25	.09
IN.	1.99	1.12	7.04	2.26	3.04	3.93	2.35	1.01	.54	.23	.29	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1997, BY WATER YEAR (WY)

MEAN	2.49	3.49	5.25	6.35	7.21	8.64	7.56	5.47	3.70	2.98	2.04	2.10
MAX	8.83	10.4	23.5	18.1	19.2	20.3	21.0	13.9	24.4	17.0	6.80	12.2
(WY)	1972	1957	1997	1978	1979	1958	1983	1989	1972	1989	1971	1960
MIN	.30	.73	.71	1.51	2.44	1.98	2.16	1.26	.54	.077	.013	.21
(WY)	1969	1966	1966	1981	1992	1966	1966	1977	1966	1966	1966	1968

## DELAWARE RIVER BASIN

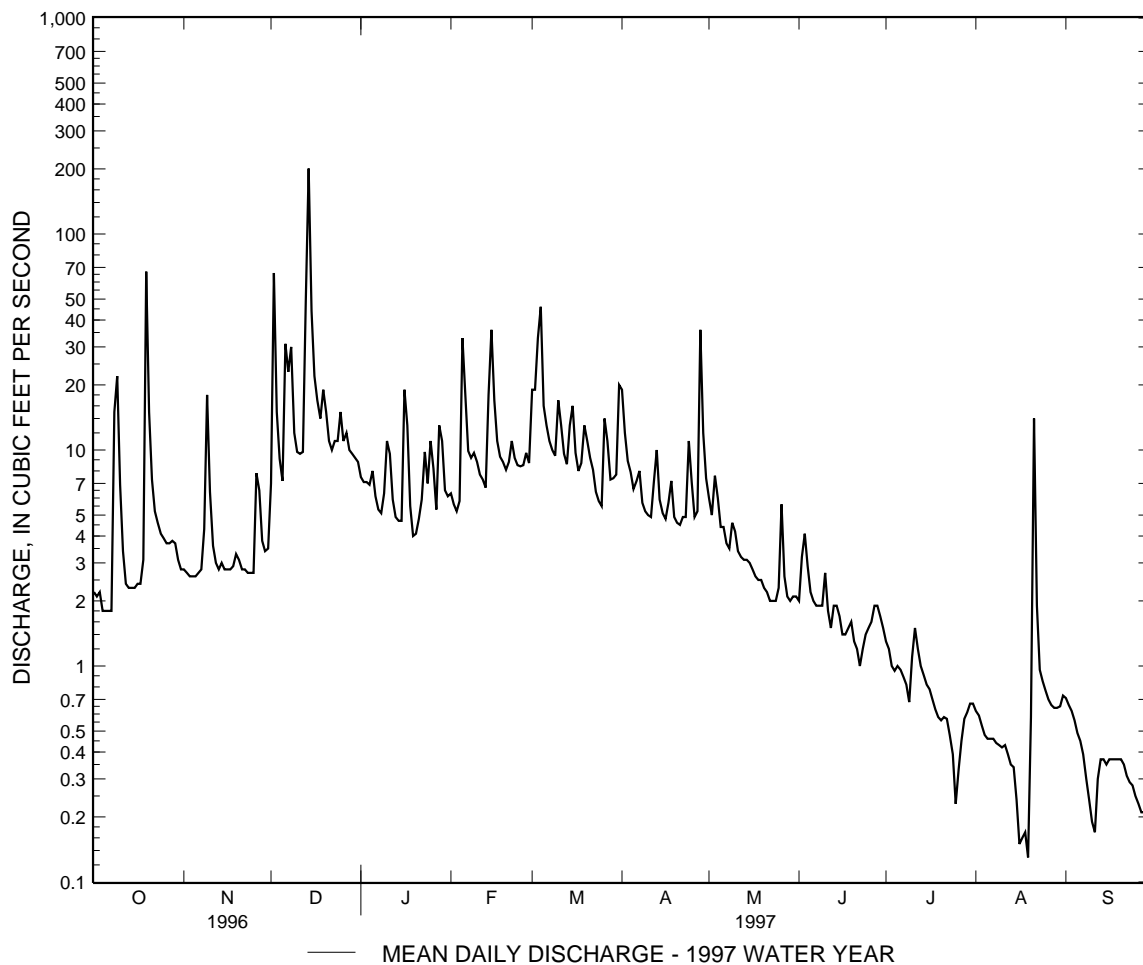
01483200 BLACKBIRD CREEK AT BLACKBIRD, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1957 - 1997	
ANNUAL TOTAL	3422.1		2475.62			
ANNUAL MEAN	9.35		6.78		4.76	
HIGHEST ANNUAL MEAN					9.05 1972	
LOWEST ANNUAL MEAN					1.40 1966	
HIGHEST DAILY MEAN	201	Dec 14	201	Dec 14	338	Jun 22 1972
LOWEST DAILY MEAN	1.4	Sep 15	.13	Aug 19	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 4	.21	Sep 24	.00	Jul 17 1966
INSTANTANEOUS PEAK FLOW			334	Dec 14	(b)712	Jun 22 1972
INSTANTANEOUS PEAK STAGE			4.90	Dec 14	5.04	Jun 22 1972
INSTANTANEOUS LOW FLOW			.13	Aug 19	.00	(c)
ANNUAL RUNOFF (CFSM)	2.43		1.76		1.24	
ANNUAL RUNOFF (INCHES)	33.07		23.92		16.80	
10 PERCENT EXCEEDS	16		14		9.8	
50 PERCENT EXCEEDS	5.6		3.7		2.7	
90 PERCENT EXCEEDS	2.3		.43		.55	

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 200 ft<sup>3</sup>/s on basis of Type III culvert measurement of peak flow.

c No flow at times during 1964-66, 1969.





## ST. JONES RIVER BASIN

01483700 ST. JONES RIVER AT DOVER, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1958 - 1997	
ANNUAL TOTAL	26373.1		18850.9		37.1	
ANNUAL MEAN	72.1		51.6		69.3	
HIGHEST ANNUAL MEAN					1972	
LOWEST ANNUAL MEAN					1966	
HIGHEST DAILY MEAN	878	Jun 20	690	Dec 14	1460	Sep 13 1960
LOWEST DAILY MEAN	(e)7.4	Sep 9	1.9	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	8.0	Sep 4	2.6	Sep 21	.40	Sep 30 1963
INSTANTANEOUS PEAK FLOW			890	Dec 14	1900	Sep 13 1960
INSTANTANEOUS PEAK STAGE			7.24	Dec 14	(c)9.45	Sep 13 1960
INSTANTANEOUS LOW FLOW			1.6	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	2.26		1.62		1.16	
ANNUAL RUNOFF (INCHES)	30.75		21.98		15.78	
10 PERCENT EXCEEDS	146		114		85	
50 PERCENT EXCEEDS	46		35		21	
90 PERCENT EXCEEDS	14		3.9		3.8	

e Estimated

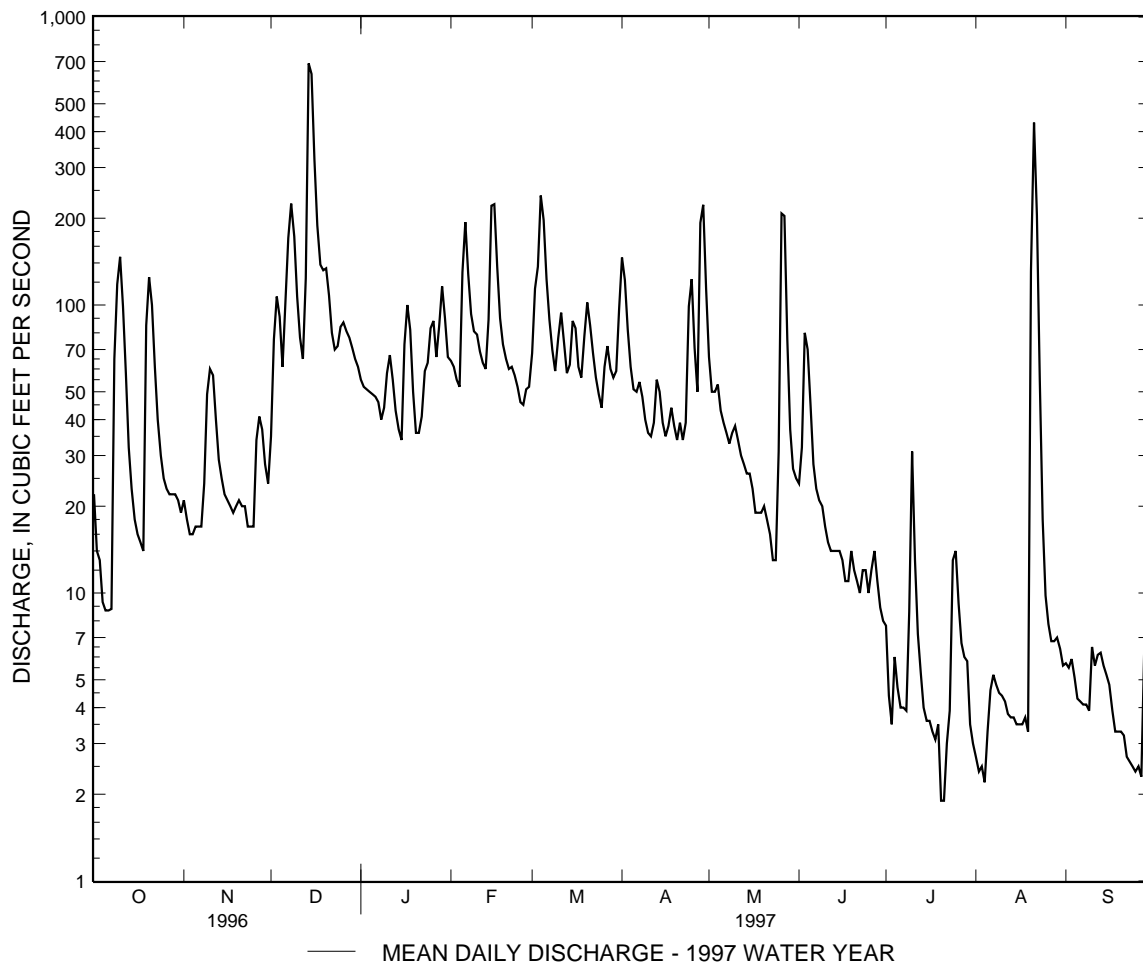
a July 20, 21.

b July 9, 1959, May 9, 10, 1961.

c From floodmarks.

d July 2, 20, 21.

f No flow at times in 1959, 1961, 1962.



## MURDERKILL RIVER BASIN

01484000 MURDERKILL RIVER NEAR FELTON, DE

LOCATION.--Lat 38°58'33", long 75°34'03", Kent County, Hydrologic Unit 02040207, on left bank 30 ft downstream from northbound lane of bridge on U.S. Highway 13, 400 ft downstream from Black Swamp Creek, 1.3 mi upstream from Killen Pond, 2.2 mi south of Felton, and 17.6 mi upstream from mouth.

DRAINAGE AREA.--13.6 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1931 to October 1933. Monthly discharges only for July to September 1931, published in WSP 1302. Annual maximum, water years 1952-60, and occasional low-flow measurements, water years 1952-53, 1955-57, 1959-60. June 1960 to September 1985. October 1996 to September 1997.

REVISED RECORDS.--WSP 1432: 1932.

GAGE.--Water-stage recorder. Datum of gage is 21.87 ft above sea level. July 1931 to October 1933, nonrecording gage at bridge 200 ft upstream at datum 2.00 ft higher. March 1951 to May 1960, nonrecording gage and crest-stage gage at bridge 200 ft upstream at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair. Several measurements of water temperature were made during this year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 4, 1967, is believed to have been the highest since that of 1935, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 14	1130	*385	*6.02	Aug. 21	0645	371	5.97
May 26	1000	203	5.23				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.2	9.1	14	27	35	24	55	24	12	3.9	2.3	7.3
2	e5.5	9.1	38	26	30	30	38	20	14	4.1	2.3	7.2
3	4.8	8.6	33	25	27	34	27	19	27	4.1	2.4	6.7
4	4.1	8.2	22	24	25	68	23	18	23	3.6	2.4	6.2
5	4.1	8.2	17	23	90	44	20	14	15	3.3	2.7	6.0
6	4.0	8.1	46	22	87	43	20	13	12	3.3	2.9	5.9
7	4.0	8.3	55	20	50	32	21	12	11	3.4	2.4	5.7
8	19	9.5	88	18	42	26	17	11	10	3.2	2.4	5.6
9	48	25	57	20	44	23	15	13	9.5	3.2	2.5	5.8
10	49	19	38	32	42	30	14	13	8.8	4.0	2.7	7.9
11	28	14	30	28	35	29	14	11	8.3	3.3	2.8	8.4
12	14	11	27	21	32	23	16	10	8.0	3.1	2.7	6.4
13	11	10	49	18	31	20	22	10	8.0	2.9	2.7	6.7
14	9.6	9.7	308	16	45	25	16	9.8	8.2	2.7	2.5	5.7
15	8.6	9.3	226	16	99	38	14	9.2	7.8	2.6	2.4	5.4
16	8.2	8.8	120	40	79	27	13	8.7	6.9	2.6	2.7	4.8
17	7.9	8.6	75	51	48	21	15	8.4	6.7	2.5	2.9	4.6
18	7.3	8.7	56	33	37	20	17	8.2	8.2	2.4	2.8	4.6
19	35	9.6	60	20	32	33	14	8.0	19	3.7	2.8	4.6
20	40	9.1	63	15	29	36	13	7.8	8.9	2.7	43	4.4
21	23	8.7	42	16	27	28	13	7.4	7.0	2.6	286	4.0
22	17	8.4	35	18	28	24	13	6.9	5.9	2.8	81	3.8
23	14	8.0	34	26	24	20	14	6.7	5.2	3.6	23	3.9
24	12	7.9	34	23	21	17	36	6.6	4.6	8.4	13	3.9
25	11	7.8	47	59	20	16	31	8.9	4.3	5.2	9.9	3.9
26	10	15	38	50	20	26	20	153	4.4	3.6	8.9	3.8
27	9.9	15	45	31	24	25	17	70	5.5	3.2	8.3	3.6
28	9.9	11	43	55	22	19	84	26	4.3	2.9	8.3	5.9
29	9.7	9.6	37	75	---	20	68	16	4.0	2.7	8.7	7.6
30	9.5	9.3	33	42	---	22	33	14	3.9	2.4	7.8	3.9
31	9.5	---	30	35	---	44	---	13	---	2.4	7.2	---
TOTAL	453.8	312.6	1840	925	1125	887	733	576.6	281.4	104.4	554.4	164.2
MEAN	14.6	10.4	59.4	29.8	40.2	28.6	24.4	18.6	9.38	3.37	17.9	5.47
MAX	49	25	308	75	99	68	84	153	27	8.4	286	8.4
MIN	4.0	7.8	14	15	20	16	13	6.6	3.9	2.4	2.3	3.6
CFSM	1.08	.77	4.36	2.19	2.95	2.10	1.80	1.37	.69	.25	1.31	.40
IN.	1.24	.86	5.03	2.53	3.08	2.43	2.00	1.58	.77	.29	1.52	.45

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1985, 1997, BY WATER YEAR (WY)

	1960	1966	1966	1966	1966	1966	1985	1977	1976	1977	1966	1982
MEAN	9.14	12.5	22.1	25.4	30.1	32.6	27.2	17.4	12.6	11.2	13.4	8.84
MAX	34.9	43.4	59.4	72.7	75.6	76.6	66.4	45.6	30.7	71.4	138	39.9
(WY)	1972	1973	1997	1978	1979	1978	1983	1984	1979	1975	1967	1960
MIN	2.28	3.58	4.15	3.83	10.5	10.2	7.77	5.05	4.36	2.41	2.19	2.38
(WY)	1966	1966	1966	1966	1966	1966	1985	1977	1976	1977	1966	1982



## MURDERKILL RIVER BASIN

01484000 MURDERKILL RIVEWR NEAR FELTON, DE--Continued

## SUMMARY STATISTICS

FOR 1997 WATER YEAR

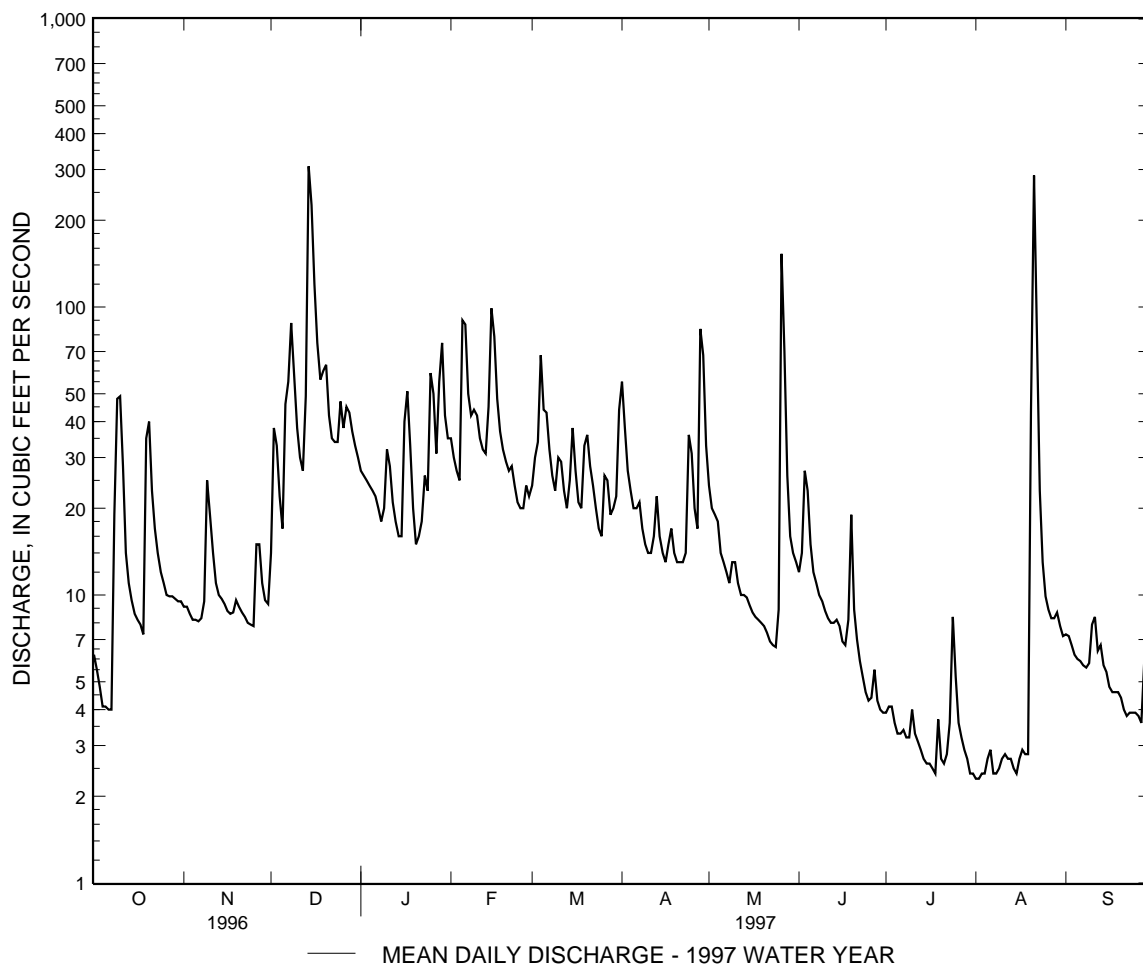
WATER YEARS 1960 - 1985  
1997

ANNUAL TOTAL	7957.4		
ANNUAL MEAN	21.8		18.4
HIGHEST ANNUAL MEAN			28.3
LOWEST ANNUAL MEAN			6.24
HIGHEST DAILY MEAN	308	Dec 14	1270
LOWEST DAILY MEAN	2.3	(a)	1.1
ANNUAL SEVEN-DAY MINIMUM	2.4	Jul 29	1.5
INSTANTANEOUS PEAK FLOW	385	Dec 14	2090
INSTANTANEOUS PEAK STAGE	6.02	Dec 14	8.83
INSTANTANEOUS LOW FLOW	2.1	(b)	.80
ANNUAL RUNOFF (CFSM)	1.60		1.36
ANNUAL RUNOFF (INCHES)	21.77		18.41
10 PERCENT EXCEEDS	44		35
50 PERCENT EXCEEDS	13		10
90 PERCENT EXCEEDS	3.3		3.4

a Aug. 1, 2.

b July 18, Aug. 1, 2.

c Aug. 28, Sept. 11, 1966.





## MISPILLION RIVER BASIN

01484100 BEAVERDAM BRANCH AT HOUSTON, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1958 - 1997	
ANNUAL TOTAL	1921.0		1740.49			
ANNUAL MEAN	5.25		4.77		3.59	
HIGHEST ANNUAL MEAN					5.86 1961	
LOWEST ANNUAL MEAN					1.20 1966	
HIGHEST DAILY MEAN	35	Dec 14	80	Aug 21	98	May 30 1984
LOWEST DAILY MEAN	1.5	(a)	.99	Aug 16	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 4	1.1	Aug 10	.06	Jul 19 1977
INSTANTANEOUS PEAK FLOW			(c)128	Aug 21	(d)176	Sep 12 1960
INSTANTANEOUS PEAK STAGE			5.47	Aug 21	5.55	Sep 12 1960
INSTANTANEOUS LOW FLOW			.90	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	1.85		1.68		1.27	
ANNUAL RUNOFF (INCHES)	25.25		22.88		17.25	
10 PERCENT EXCEEDS	9.6		7.7		6.6	
50 PERCENT EXCEEDS	4.3		3.8		2.8	
90 PERCENT EXCEEDS	1.8		1.6		.83	

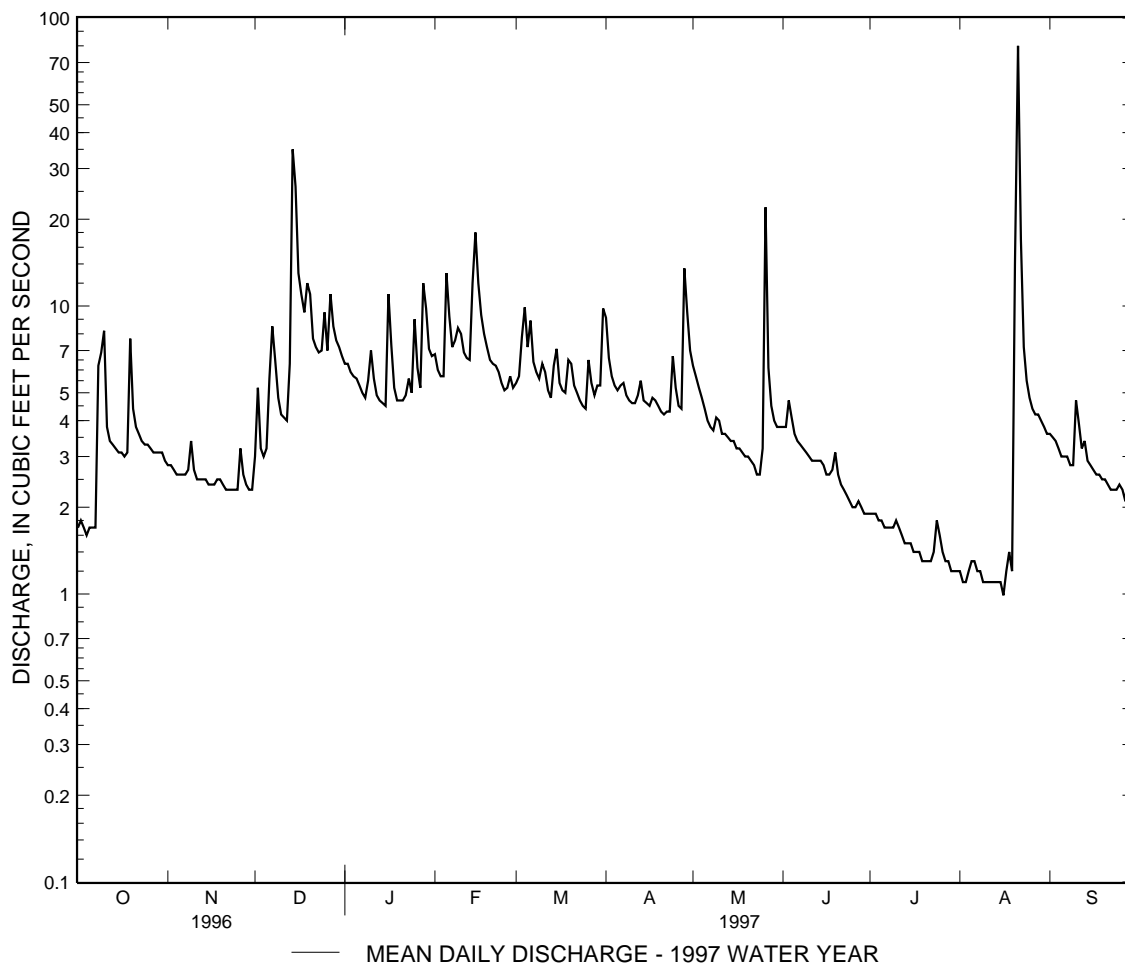
a Sept. 8-10, 15.

b Result of pumpage for irrigation.

c From rating curve extended above 35 ft<sup>3</sup>/s on basis of Type III curvvert measurement at gage height of 5.47 ft.d From rating curve extended above 75 ft<sup>3</sup>/s.

f Aug. 16, 17.

g July 18-30, 1977.



## DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE

LOCATION.--Lat 38°47'30", long 75°06'17", Sussex County, Hydrologic Unit 02040204, at east end of fishing pier at Cape Henlopen State Park, in Breakwater Harbor, 2.4 mi southeast of Lewes, and 1.1 mi southwest from mouth of the Delaware Bay.

PERIOD OF DAILY RECORD.--January 1993 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1993 to current year.

WATER TEMPERATURE: January 1993 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good. Interruption of the daily specific conductance January to March and May-June due to battery and conductivity probe failure. Interruption of the daily temperature record was caused by equipment malfunction or battery failure for periods in November and January-May.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 53,900 microsiemens, Aug. 2, 3, 1995; minimum, 23,700 microsiemens, Aug. 18, 1994.

WATER TEMPERATURE: Maximum, 27.1°C, July 25, 1995; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 48,400 microsiemens, July 7; minimum, 28,600 microsiemens, Dec. 16.

WATER TEMPERATURE: Maximum, 25.4°C, July 30, Aug. 17; minimum, 3.6°C, on Dec. 30, but may have been lower during period of missing record..

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	41200	40300	40700	43300	42200	42600	45000	41900	42800	39400	33600	35100
2	41400	40500	40900	42500	41900	42200	45000	41900	43400	39400	32900	34700
3	42700	40800	41600	42000	40100	41200	42900	40800	41400	40500	33500	35700
4	40900	39500	40400	41100	40100	40500	41300	39200	40600	39800	34200	37100
5	40500	39200	39800	42400	40500	41100	40700	36500	38100	41200	34800	38100
6	40600	39200	39800	42500	40700	41400	43700	36000	39200	41100	37400	38400
7	41700	39200	40200	43600	41700	42400	42100	35500	39200	37700	34900	36600
8	42100	39900	41200	45600	42900	44500	38400	36100	37300	37400	34500	36000
9	40800	37600	39000	45400	37200	43200	37900	36300	37200	41500	37200	39200
10	39600	37600	38400	42400	38500	42000	39300	36000	37400	41000	38800	39900
11	40000	38500	39400	42100	33200	40400	41000	36900	38900	41100	38700	39800
12	41200	38300	39500	43700	38900	41800	40800	37700	38900	---	---	---
13	41900	39200	40700	43200	42300	42800	41900	38100	39800	---	---	---
14	42600	40900	41800	42900	42100	42400	38400	31700	34600	---	---	---
15	42200	40000	41300	42600	41600	42100	36800	30000	32100	---	---	---
16	43400	40900	42000	42600	41600	42100	39200	28600	33300	---	---	---
17	43300	41800	42400	43300	41400	42100	38300	29700	33800	---	---	---
18	44200	41900	42900	43200	41400	42400	37000	29300	33300	---	---	---
19	44200	43100	43600	43200	41700	42200	35900	30900	32300	---	---	---
20	44200	43100	43700	42200	41100	41600	33100	30300	31400	---	---	---
21	43900	43200	43600	41600	40400	40900	36700	31100	33400	---	---	---
22	43600	43000	43400	41500	39400	40700	39300	32200	36800	---	---	---
23	43600	43000	43300	43000	39400	40600	38600	35600	37500	---	---	---
24	43900	39100	42500	43400	41100	42100	40600	37800	39200	---	---	---
25	43600	42400	43100	43600	41200	42400	40300	37700	38800	---	---	---
26	43100	42500	42800	44300	40200	43200	39700	37600	38200	---	---	---
27	43300	42600	42900	41200	37200	38900	38600	37100	37600	---	---	---
28	43600	42600	43000	40000	37500	38900	39900	36200	38000	---	---	---
29	42900	41500	42600	41800	39100	40400	39700	37100	38200	---	---	---
30	44800	41500	43500	43100	39600	41400	37800	35500	36800	---	---	---
31	44200	42400	43500	---	---	---	37800	34400	36200	---	---	---
MONTH	44800	37600	41700	45600	33200	41700	45000	28600	37300	---	---	---

## DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

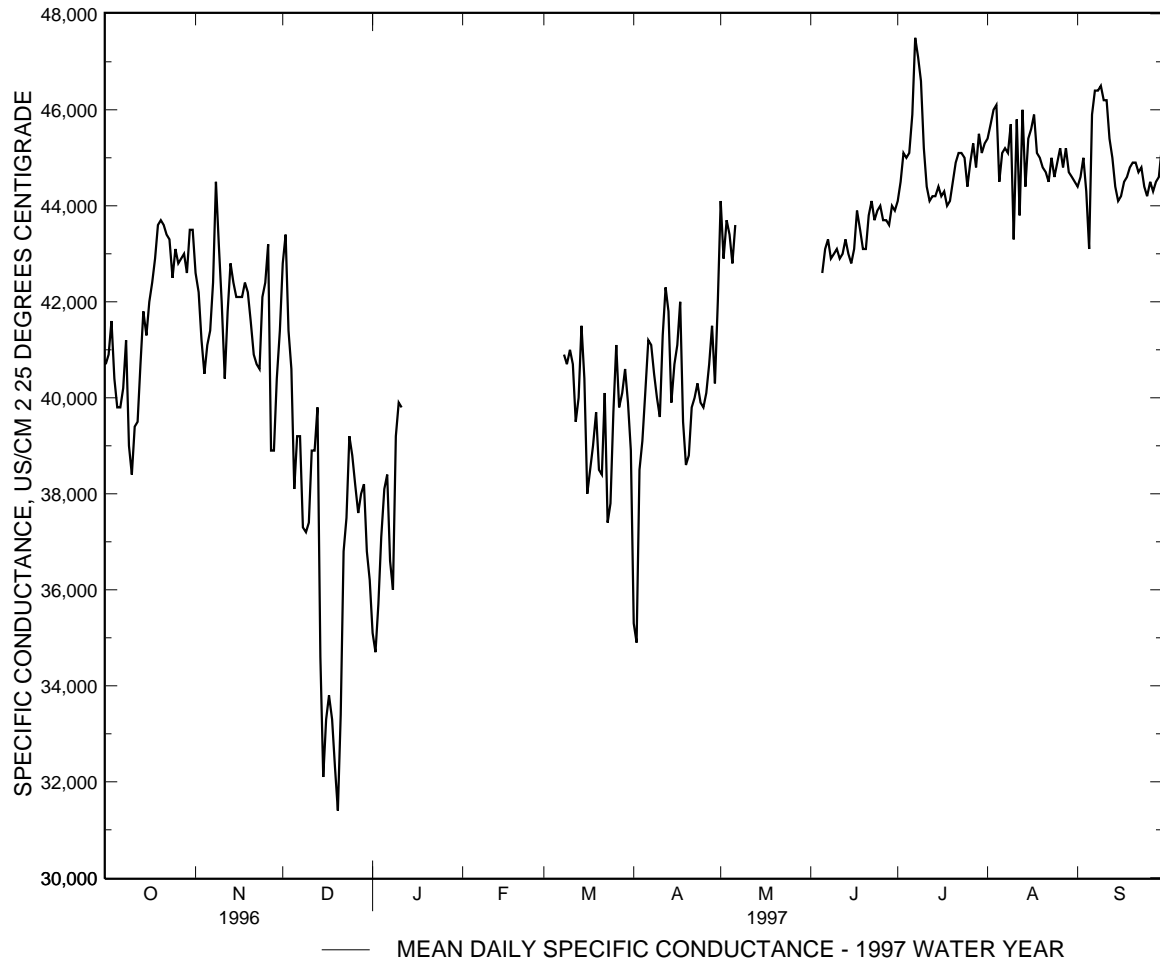
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	36800	33200	35300	45400	43200	44100
2	---	---	---	---	---	---	37100	33400	34900	44200	41900	42900
3	---	---	---	---	---	---	40300	35300	38500	45400	42300	43700
4	---	---	---	---	---	---	40600	37300	39100	45400	42600	43400
5	---	---	---	---	---	---	41800	38100	40100	43900	42100	42800
6	---	---	---	---	---	---	42200	39500	41200	44500	42700	43600
7	---	---	---	---	---	---	42000	40300	41100	---	---	---
8	---	---	---	42200	38000	40900	42000	39500	40500	---	---	---
9	---	---	---	42000	39300	40700	42500	38300	40000	---	---	---
10	---	---	---	41800	40000	41000	41900	38200	39600	---	---	---
11	---	---	---	41600	40000	40700	42800	39400	41300	---	---	---
12	---	---	---	40700	38500	39500	43600	41700	42300	---	---	---
13	---	---	---	40500	39000	40000	43100	40700	41800	---	---	---
14	---	---	---	43100	39900	41500	40900	39100	39900	---	---	---
15	---	---	---	41700	38500	40400	41500	39900	40700	---	---	---
16	---	---	---	39100	36700	38000	42100	40600	41100	---	---	---
17	---	---	---	40800	37800	38500	44000	40700	42000	---	---	---
18	---	---	---	39700	38200	39000	40900	37900	39500	---	---	---
19	---	---	---	41100	38900	39700	41000	37000	38600	---	---	---
20	---	---	---	39600	38000	38500	40300	38200	38800	---	---	---
21	---	---	---	40600	36900	38400	40400	38900	39800	---	---	---
22	---	---	---	41100	38400	40100	40700	37700	40000	---	---	---
23	---	---	---	39800	36800	37400	41100	38800	40300	---	---	---
24	---	---	---	39800	36300	37800	41100	37800	39900	---	---	---
25	---	---	---	41400	36500	39700	42300	38100	39800	---	---	---
26	---	---	---	42500	39400	41100	41700	39200	40100	---	---	---
27	---	---	---	40400	39300	39800	42000	39500	40700	---	---	---
28	---	---	---	42000	39700	40100	42200	40900	41500	---	---	---
29	---	---	---	41700	39400	40600	41900	38800	40300	---	---	---
30	---	---	---	40700	39200	39900	44100	40100	42000	---	---	---
31	---	---	---	40500	36800	38900	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	44100	33200	40000	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	44800	43500	44100	46200	41500	45400	44600	44200	44400
2	---	---	---	45300	43900	44500	46400	41300	45700	45300	39000	44600
3	---	---	---	46100	44500	45100	46400	45700	46000	45400	42000	45000
4	---	---	---	45800	43400	45000	46300	45900	46100	45300	40600	44300
5	43500	41900	42600	45600	43500	45100	46400	41100	44500	46400	34100	43100
6	43600	42300	43100	47800	44100	45900	46600	41000	45100	46800	41600	45900
7	43900	42300	43300	48400	46400	47500	46600	41200	45200	47000	45500	46400
8	43400	42100	42900	47900	46000	47100	46600	39200	45100	46800	44900	46400
9	43600	42300	43000	47500	45700	46600	46600	40600	45700	46700	45400	46500
10	44000	42700	43100	46700	41800	45200	46900	37100	43300	46900	42300	46200
11	44100	42500	42900	45100	44200	44400	47000	40500	45800	46900	44200	46200
12	44300	42400	43000	45100	42200	44100	46700	33600	43800	46500	43600	45400
13	44000	42600	43300	45000	43900	44200	46400	43200	46000	45200	44400	45000
14	43800	42200	43000	45100	42700	44200	46300	40400	44400	45000	43600	44400
15	43600	42200	42800	45000	43700	44400	46300	36400	45400	44800	43600	44100
16	44000	41700	43100	44800	43100	44200	46400	40000	45600	44800	43400	44200
17	44600	42700	43900	45100	43900	44300	46300	45400	45900	45000	44100	44500
18	44600	42900	43500	45000	42200	44000	45800	39100	45100	45000	44200	44600
19	44200	42100	43100	45000	41200	44100	45600	44300	45000	45200	44400	44800
20	44400	42400	43100	45100	44000	44500	45100	44500	44800	45200	44600	44900
21	44500	42900	43800	45400	44500	44900	45100	44100	44700	45300	44400	44900
22	44600	43600	44100	45400	44600	45100	45800	43600	44500	45400	44200	44700
23	44500	43000	43700	45500	44600	45100	45800	43300	45000	45400	44400	44800
24	44600	43200	43900	45800	42100	45000	45000	38000	44600	44800	43700	44400
25	44600	43500	44000	45000	42000	44400	45300	44600	44900	44900	43500	44200
26	44300	43400	43700	45500	44300	44900	45400	44500	45200	45000	44000	44500
27	44300	43400	43700	45900	43800	45300	45500	40400	44800	44500	44000	44300
28	44400	43100	43600	45800	41800	44800	45500	44700	45200	44800	43900	44500
29	44600	43500	44000	45700	45300	45500	45300	44100	44700	44900	44100	44600
30	44500	43600	43900	45800	43800	45100	44900	44200	44600	45500	44700	45200
31	---	---	---	45800	42700	45300	44900	44200	44500	---	---	---
MONTH	---	---	---	48400	41200	45000	47000	33600	45100	47000	34100	44900

## DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997





## DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

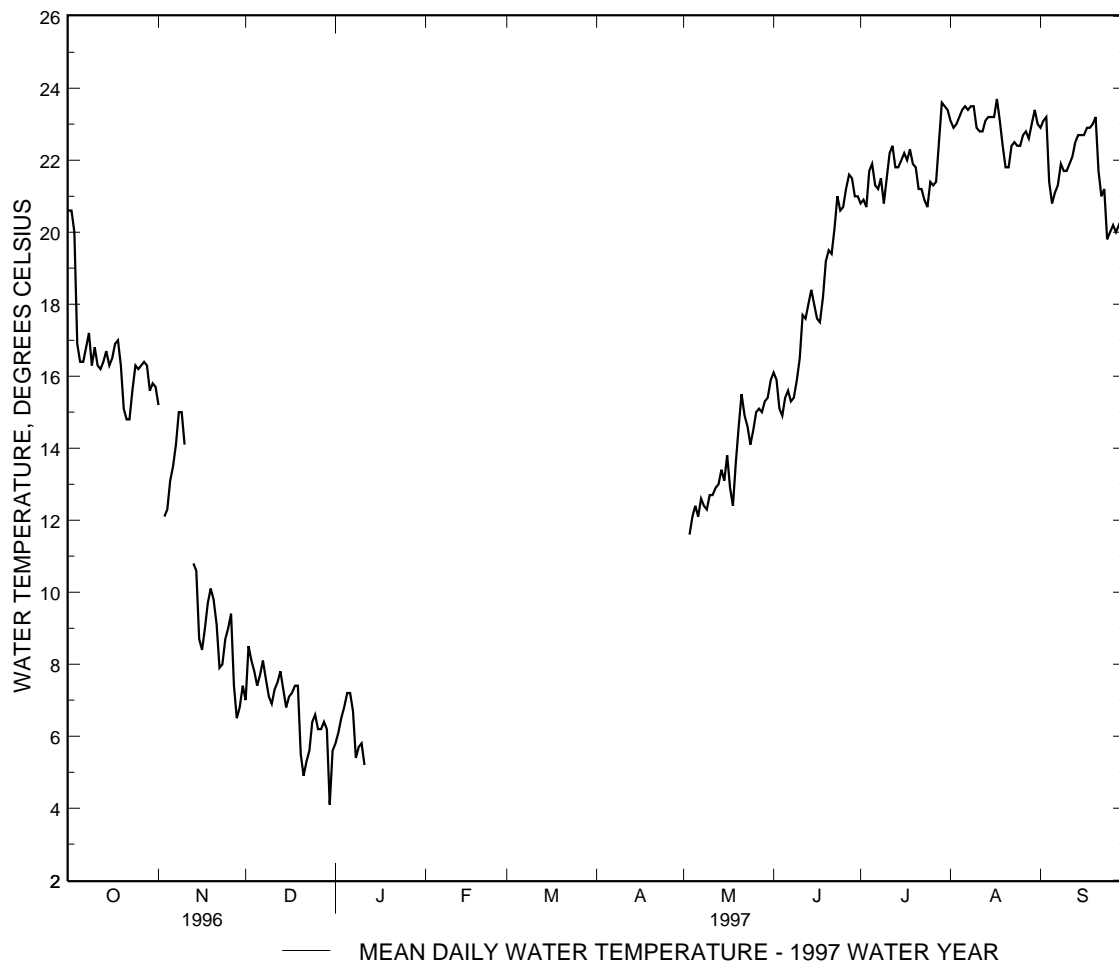
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	16.7	15.3	16.1	21.4	19.8	20.8	24.1	22.2	23.1	23.4	22.4	22.9
2	16.5	15.4	15.9	21.3	19.7	20.9	23.3	22.3	22.9	24.0	22.5	23.1
3	15.6	14.6	15.1	21.9	19.7	20.7	23.9	22.3	23.0	23.6	22.4	23.2
4	15.4	14.5	14.9	22.9	19.8	21.7	23.8	22.5	23.2	22.4	20.8	21.4
5	16.5	14.5	15.4	23.3	20.8	21.9	24.6	22.6	23.4	21.5	19.9	20.8
6	15.9	15.3	15.6	22.0	20.1	21.3	24.8	22.5	23.5	21.3	20.8	21.1
7	15.6	15.0	15.3	22.3	19.5	21.2	24.1	22.5	23.4	22.0	20.8	21.3
8	16.1	14.8	15.4	22.3	19.4	21.5	24.8	22.8	23.5	22.1	21.6	21.9
9	16.9	15.4	15.9	21.6	18.7	20.8	24.1	21.9	23.5	21.9	21.6	21.7
10	17.8	15.5	16.5	22.6	19.6	21.5	23.3	21.4	22.9	22.2	21.4	21.7
11	18.6	16.3	17.7	23.3	19.3	22.2	23.6	21.4	22.8	22.2	21.7	21.9
12	18.5	16.1	17.6	24.0	19.3	22.4	23.6	21.4	22.8	22.7	21.7	22.1
13	18.8	16.7	18.0	22.9	19.3	21.8	23.9	21.6	23.1	23.2	22.0	22.5
14	18.9	17.2	18.4	23.2	18.8	21.8	23.8	21.8	23.2	23.2	22.2	22.7
15	19.0	17.0	18.0	23.5	19.2	22.0	24.0	22.1	23.2	23.2	22.3	22.7
16	18.9	16.7	17.6	23.8	19.2	22.2	24.8	21.4	23.2	23.5	22.2	22.7
17	17.9	16.7	17.5	24.2	19.4	22.0	25.4	22.1	23.7	23.2	22.6	22.9
18	19.3	17.5	18.2	24.0	20.2	22.3	24.2	22.3	23.1	23.1	22.6	22.9
19	20.5	18.0	19.2	24.0	20.2	21.9	23.6	21.5	22.4	23.5	22.5	23.0
20	20.7	18.0	19.5	24.5	20.2	21.8	22.4	20.9	21.8	23.6	22.7	23.2
21	21.1	18.1	19.4	22.0	20.3	21.2	22.6	20.9	21.8	22.9	20.6	21.7
22	21.6	18.8	20.1	22.1	20.0	21.2	23.1	22.0	22.4	21.8	20.1	21.0
23	23.7	19.6	21.0	21.7	20.1	20.9	23.0	22.1	22.5	21.8	20.8	21.2
24	22.0	19.4	20.6	21.7	19.6	20.7	22.8	21.9	22.4	20.9	19.2	19.8
25	22.3	19.6	20.7	22.2	20.7	21.4	22.8	21.9	22.4	20.7	19.4	20.0
26	22.1	19.9	21.2	21.8	20.6	21.3	23.1	22.3	22.7	20.6	19.6	20.2
27	23.0	19.9	21.6	22.2	20.5	21.4	23.5	22.0	22.8	20.4	19.6	20.0
28	22.7	19.7	21.5	23.2	21.5	22.5	23.0	22.0	22.6	20.5	19.9	20.2
29	22.3	19.9	21.0	24.5	22.6	23.6	23.7	22.3	23.0	20.6	20.1	20.4
30	21.9	19.9	21.0	25.4	22.3	23.5	24.2	22.7	23.4	20.4	19.8	20.1
31	---	---	---	25.3	22.0	23.4	23.6	22.1	23.0	---	---	---
MONTH	23.7	14.5	18.2	25.4	18.7	21.7	25.4	20.9	22.9	24.0	19.2	21.7



## DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



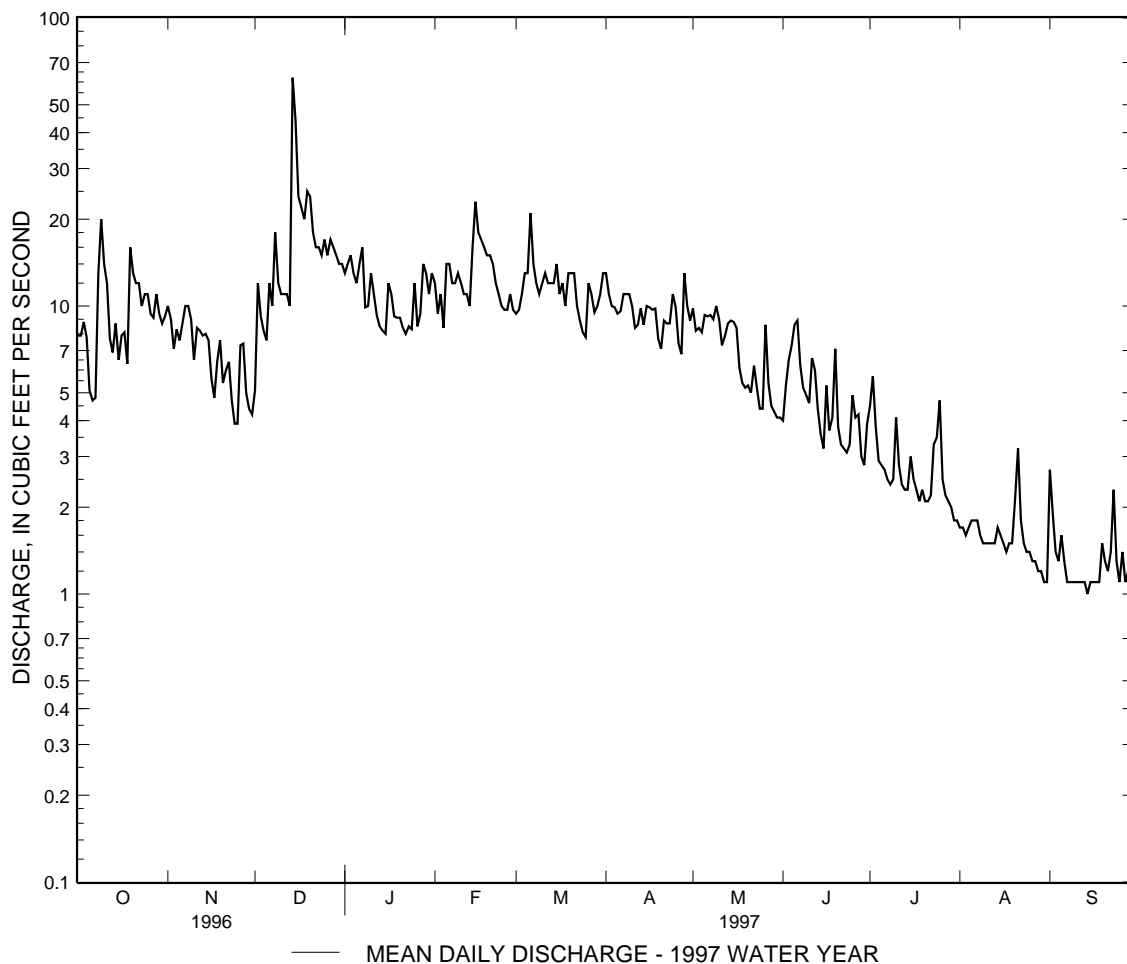


INDIAN RIVER BASIN

01484500 STOCKLEY BRANCH AT STOCKLEY, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1943 - 1997	
ANNUAL TOTAL	3841.0		2925.87			
ANNUAL MEAN	10.5		8.02		6.93	
HIGHEST ANNUAL MEAN					12.0	1958
LOWEST ANNUAL MEAN					3.24	1966
HIGHEST DAILY MEAN	62	Dec 14	62	Dec 14	195	Mar 3 1994
LOWEST DAILY MEAN	2.4	Sep 8	.97	Sep 30	.13	(a)
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 27	1.1	Sep 8	.13	Sep 2 1944
INSTANTANEOUS PEAK FLOW			93	Dec 14	(b)303	Mar 3 1994
INSTANTANEOUS PEAK STAGE			3.83	Dec 14	5.52	Mar 3 1994
INSTANTANEOUS LOW FLOW			.91	(c)	.13	(d)
ANNUAL RUNOFF (CFSM)	2.00		1.53		1.32	
ANNUAL RUNOFF (INCHES)	27.27		20.77		17.97	
10 PERCENT EXCEEDS	18		14		14	
50 PERCENT EXCEEDS	9.2		8.2		5.0	
90 PERCENT EXCEEDS	4.4		1.5		1.5	

- a Sept. 2-11, 1944.
- b From rating curve extended above 150 ft<sup>3</sup>/s.
- c Sept. 14, 30.
- d Sept. 1-11, 1944.



## INDIAN RIVER BASIN

01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE

LOCATION.--Lat 38°35'40", long 75°17'29", Sussex County, 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<sup>2</sup>.

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 sea level.

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. Several measurements of water temperature were made during the period.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 679 ft<sup>3</sup>/s, Dec. 15, gage height, 4.00 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	86	73	169	143	141	180	122	72	46	27	30
2	77	89	101	163	138	141	168	115	71	51	25	49
3	74	87	102	161	131	144	153	116	79	55	28	38
4	70	85	91	156	124	157	145	120	82	51	28	32
5	68	97	83	154	144	156	137	104	74	49	33	28
6	67	90	108	152	155	179	133	104	69	45	34	28
7	64	85	121	145	150	196	138	101	67	40	34	25
8	106	88	154	140	153	164	132	94	65	44	32	23
9	171	95	166	139	166	148	120	110	62	44	29	25
10	200	89	140	153	164	150	113	130	60	47	27	27
11	161	82	122	152	156	149	109	108	56	47	28	25
12	135	78	113	141	147	145	115	96	55	43	28	25
13	112	77	122	129	141	134	137	93	54	40	26	23
14	101	77	273	121	162	138	128	91	55	36	29	23
15	96	76	618	118	234	167	114	90	56	34	29	23
16	91	74	426	143	276	160	110	86	53	34	26	23
17	88	74	302	154	227	143	107	80	52	40	25	22
18	90	74	253	138	193	137	111	75	54	39	27	22
19	136	76	255	121	178	144	107	76	81	46	25	24
20	165	76	302	113	169	154	99	76	71	38	32	25
21	163	73	273	113	162	153	95	73	57	36	46	26
22	142	72	218	115	161	146	100	70	53	35	33	23
23	126	70	192	129	153	133	103	69	52	48	30	21
24	111	70	192	121	144	122	128	67	49	67	27	21
25	107	70	198	132	137	115	125	67	46	50	25	22
26	102	82	195	130	136	143	111	107	52	45	25	22
27	100	84	200	116	149	160	100	104	69	40	24	22
28	98	76	201	136	145	149	153	79	59	36	23	27
29	98	71	194	164	---	144	162	70	51	29	24	27
30	95	68	185	157	---	158	138	67	46	33	24	24
31	89	---	176	146	---	173	---	69	---	33	25	---
TOTAL	3386	2391	6149	4321	4538	4643	3771	2829	1822	1321	878	775
MEAN	109	79.7	198	139	162	150	126	91.3	60.7	42.6	28.3	25.8
MAX	200	97	618	169	276	196	180	130	82	67	46	49
MIN	64	68	73	113	124	115	95	67	46	29	23	21
CFSM	1.65	1.21	3.01	2.11	2.46	2.27	1.90	1.38	.92	.65	.43	.39
IN.	1.91	1.35	3.47	2.44	2.56	2.62	2.13	1.59	1.03	.74	.49	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	53.0	52.5	86.1	108	133	169	132	98.2	64.0	49.6	48.3	46.4
MAX	109	79.7	198	144	238	373	184	151	85.6	75.8	85.6	106
(WY)	1997	1997	1997	1993	1994	1994	1994	1996	1993	1996	1992	1992
MIN	20.8	24.3	33.2	53.7	77.4	94.1	69.1	47.3	34.0	23.2	25.5	20.1
(WY)	1987	1988	1988	1988	1992	1992	1995	1986	1986	1986	1988	1986

## INDIAN RIVER BASIN

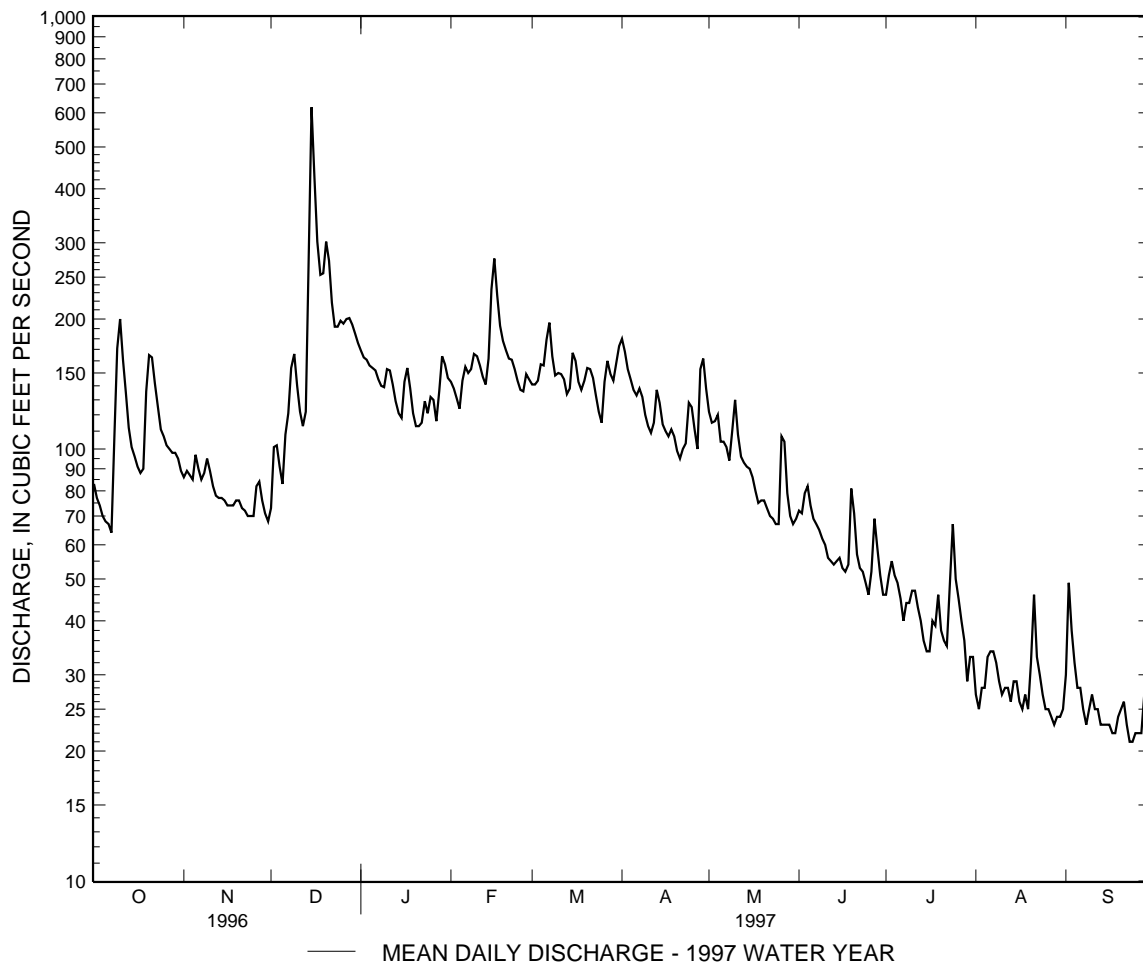
01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1986 - 1997	
ANNUAL TOTAL	43883		36824			
ANNUAL MEAN	120		101		88.1	
HIGHEST ANNUAL MEAN					124	
LOWEST ANNUAL MEAN					55.0	
HIGHEST DAILY MEAN	618	Dec 15	618	Dec 15	1260	Mar 4 1994
LOWEST DAILY MEAN	45	Jul 11	21	(a)	13	Oct 7 1986
ANNUAL SEVEN-DAY MINIMUM	48	Jul 5	22	Sep 21	15	Oct 5 1986
INSTANTANEOUS PEAK FLOW			679	Dec 15	1770	Mar 3 1994
INSTANTANEOUS PEAK STAGE			4.00	Dec 15	4.94	Mar 3 1994
INSTANTANEOUS LOW FLOW			20	(b)	11	(c)
ANNUAL RUNOFF (CFSM)	1.82		1.53		1.34	
ANNUAL RUNOFF (INCHES)	24.73		20.76		18.15	
10 PERCENT EXCEEDS	192		164		156	
50 PERCENT EXCEEDS	107		95		70	
90 PERCENT EXCEEDS	60		27		26	

a Sept. 23, 24.

b Sept. 17, 18, 22-27, 29.

c Sept. 12, Oct. 6, 1986, Nov. 6, 1987.



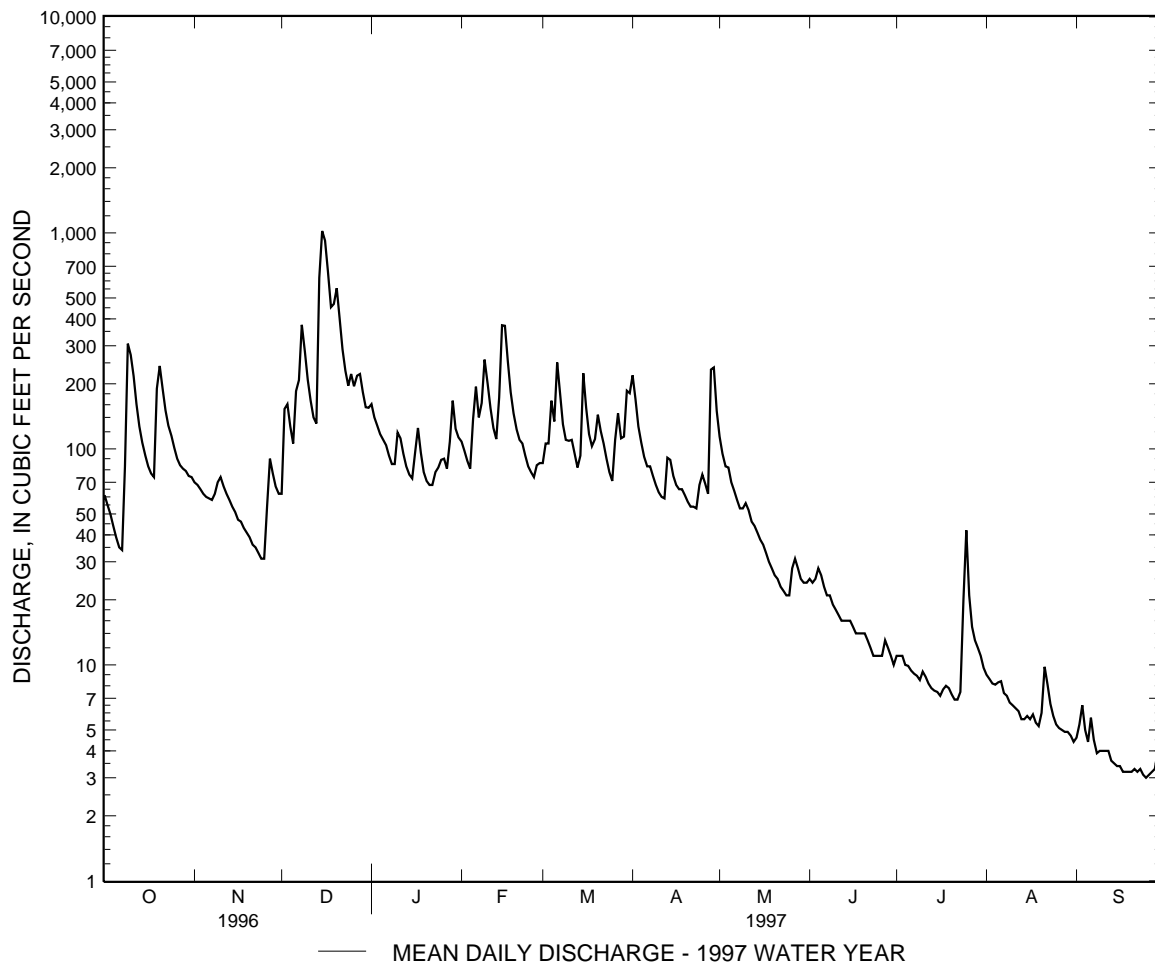


POCOMOKE RIVER BASIN

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1950 - 1997	
ANNUAL TOTAL	42648		31270.5			
ANNUAL MEAN	117		85.7		72.5	
HIGHEST ANNUAL MEAN					130	1979
LOWEST ANNUAL MEAN					24.8	1981
HIGHEST DAILY MEAN	1020	Dec 15	1020	Dec 15	2580	Aug 20 1989
LOWEST DAILY MEAN	12	Jul 11	3.0	Sep 25	1.3	Sep 15 1995
ANNUAL SEVEN-DAY MINIMUM	14	Jul 6	3.2	Sep 20	1.8	Sep 10 1995
INSTANTANEOUS PEAK FLOW			1050	Dec 15	(a)2820	Aug 20 1989
INSTANTANEOUS PEAK STAGE			11.67	Dec 15	15.41	Aug 20 1989
INSTANTANEOUS LOW FLOW			2.9	Sep 25	1.2	(b)
ANNUAL RUNOFF (CFSM)	1.93		1.42		1.20	
ANNUAL RUNOFF (INCHES)	26.22		19.23		16.28	
10 PERCENT EXCEEDS	216		188		158	
50 PERCENT EXCEEDS	83		62		40	
90 PERCENT EXCEEDS	31		5.4		8.8	

a From rating curve extended above 1,600 ft<sup>3</sup>/s.  
 b Sept. 12, 15, 16, 1995.







## POCOMOKE RIVER BASIN

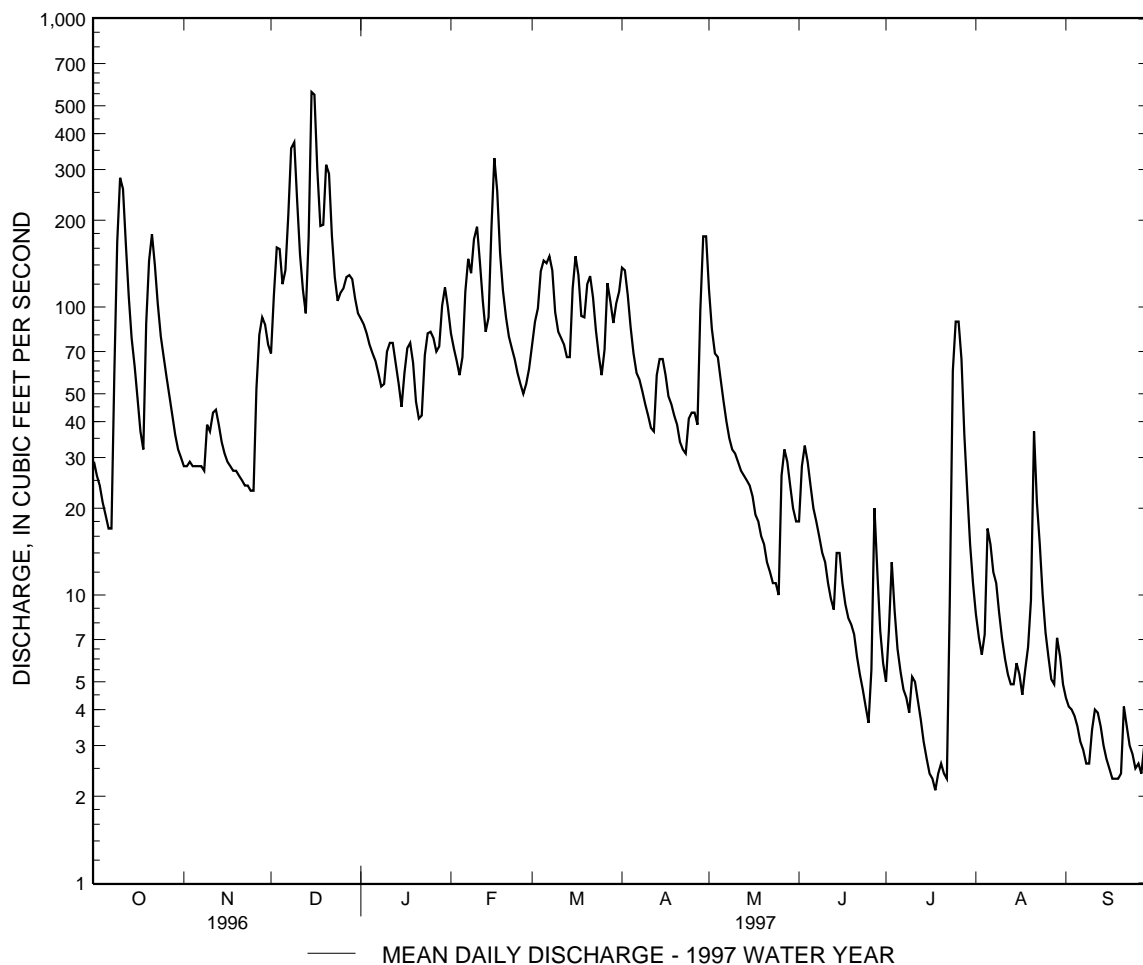
01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1950 - 1997	
ANNUAL TOTAL	28928.6		22472.5			
ANNUAL MEAN	79.0		61.6		53.9	
HIGHEST ANNUAL MEAN					116	1979
LOWEST ANNUAL MEAN					20.8	1981
HIGHEST DAILY MEAN	641	Aug 14	558	Dec 15	2590	Aug 19 1989
LOWEST DAILY MEAN	5.6	Jul 11	2.1	Jul 18	.80	(a)
ANNUAL SEVEN-DAY MINIMUM	7.6	Jul 5	2.4	Jul 16	.86	Sep 7 1966
INSTANTANEOUS PEAK FLOW			660	Dec 15	(b)3930	Aug 19 1989
INSTANTANEOUS PEAK STAGE			6.40	Dec 15	9.07	Aug 19 1989
INSTANTANEOUS LOW FLOW			2.1	(c)	.80	Sep 8 1966
ANNUAL RUNOFF (CFSM)	1.76		1.37		1.20	
ANNUAL RUNOFF (INCHES)	23.97		18.62		16.32	
10 PERCENT EXCEEDS	167		141		125	
50 PERCENT EXCEEDS	52		39		26	
90 PERCENT EXCEEDS	17		4.0		3.4	

a Sept. 8-10, 1966.

b From rating curve extended above 1,300 ft<sup>3</sup>/s on basis of contracted-opening measurement at gage height 9.07 ft.

c July 18, 19, 22.





## MANOKIN RIVER BASIN

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD--Continued

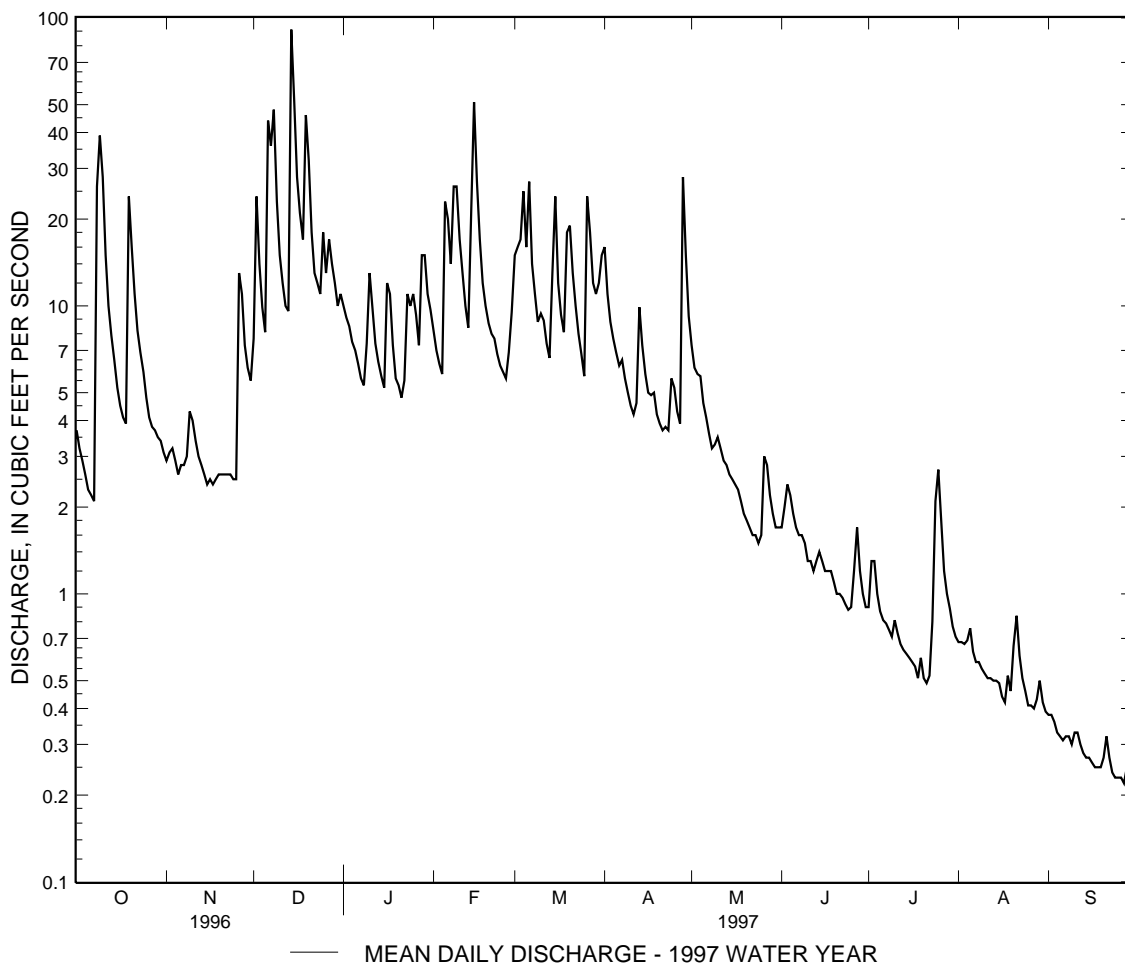
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1951 - 1997	
ANNUAL TOTAL	3314.26		2555.64			
ANNUAL MEAN	9.06		7.00		4.87	
HIGHEST ANNUAL MEAN					10.3 1979	
LOWEST ANNUAL MEAN					1.41 1981	
HIGHEST DAILY MEAN	91	Dec 14	91	Dec 14	251	Aug 20 1969
LOWEST DAILY MEAN	.96	Jul 11	.22	Sep 27	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	1.1	Jul 5	.24	Sep 22	.00	Aug 23 1963
INSTANTANEOUS PEAK FLOW			122	Dec 14	(b)547	Aug 20 1969
INSTANTANEOUS PEAK STAGE			3.57	Dec 14	(c)7.08	Aug 19 1985
INSTANTANEOUS LOW FLOW			.22	(d)	.00	(a)
ANNUAL RUNOFF (CFSM)	1.89		1.46		1.01	
ANNUAL RUNOFF (INCHES)	25.69		19.81		13.78	
10 PERCENT EXCEEDS	19		17		11	
50 PERCENT EXCEEDS	5.9		3.7		2.1	
90 PERCENT EXCEEDS	1.8		.43		.32	

a No flow during 1954, 1963, 1964, 1966.

b From rating curve extended above 27 ft<sup>3</sup>/s on basis of channel-conveyance study.

c Gage height of 5.44 ft occurred on Aug. 20, 1969 following ditching of stream channel.

d Sept. 25, 25, 27, 28, 30.





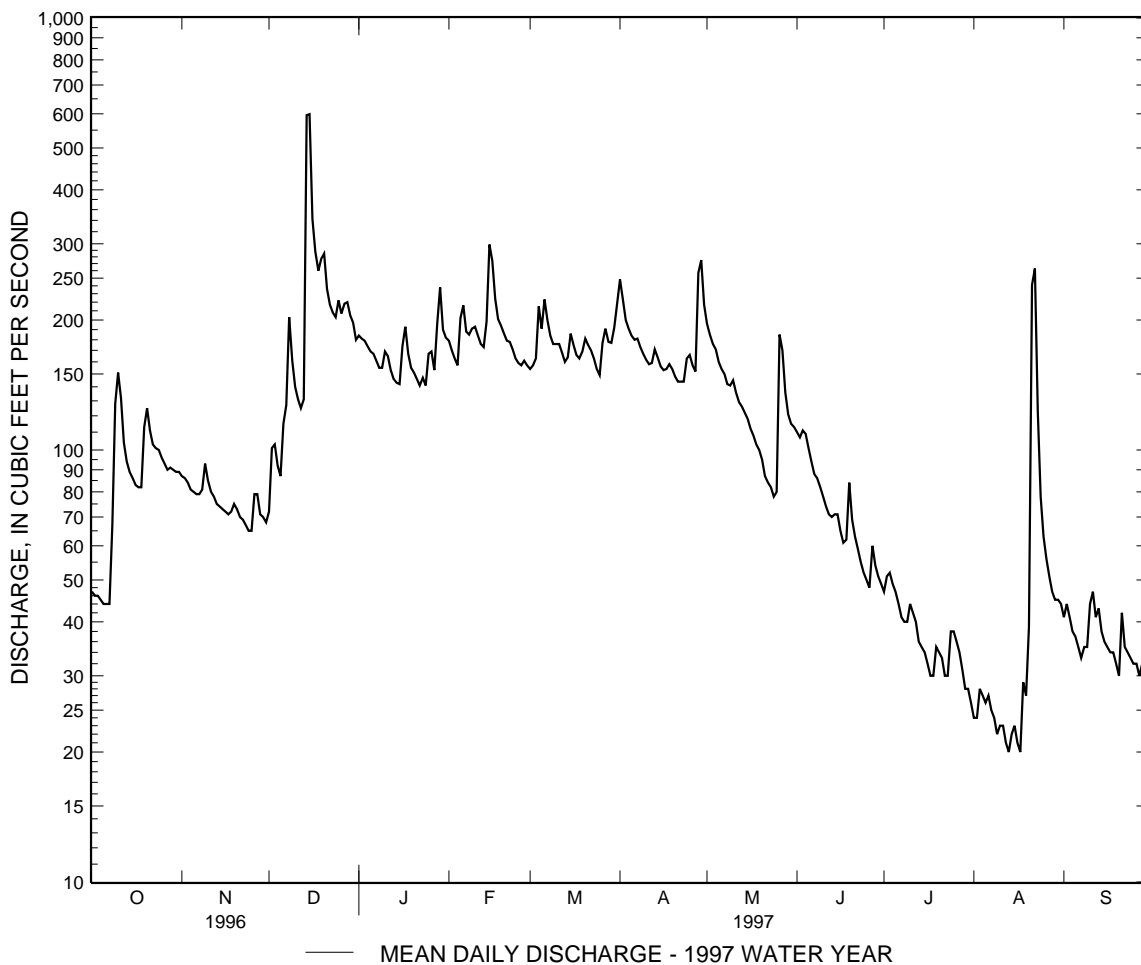
## NANTICOKE RIVER BASIN

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1943 - 1997	
ANNUAL TOTAL	45806		42781			
ANNUAL MEAN	125		117		90.8	
HIGHEST ANNUAL MEAN					170	1958
LOWEST ANNUAL MEAN					43.8	1985
HIGHEST DAILY MEAN	599	Dec 15	599	Dec 15	2880	Feb 26 1979
LOWEST DAILY MEAN	37	Sep 8	20	(a)	6.6	Sep 29 1943
ANNUAL SEVEN-DAY MINIMUM	39	Sep 3	21	Aug 11	7.8	Sep 23 1943
INSTANTANEOUS PEAK FLOW			802	Dec 14	3020	Feb 26 1979
INSTANTANEOUS PEAK STAGE			7.62	Dec 14	10.31	Feb 26 1979
INSTANTANEOUS LOW FLOW			18	Aug 13	(b)6.3	Sep 29 1943
ANNUAL RUNOFF (CFSM)	1.66		1.55		1.20	
ANNUAL RUNOFF (INCHES)	22.60		21.11		16.36	
10 PERCENT EXCEEDS	208		199		174	
50 PERCENT EXCEEDS	113		104		66	
90 PERCENT EXCEEDS	49		33		26	

a Aug. 13, 17.

b Minimum discharge observed.



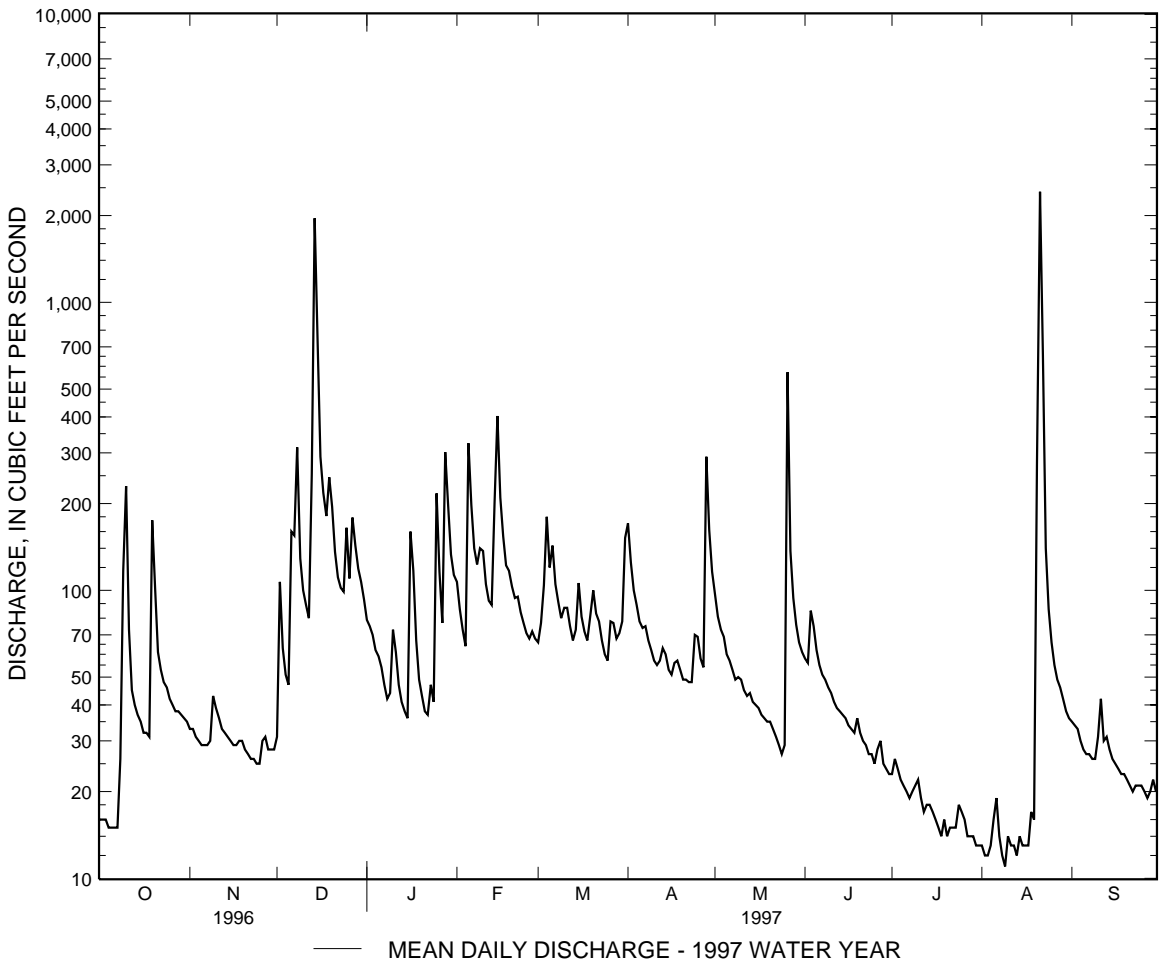


NANTICOKE RIVER BASIN

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1943 - 1997	
ANNUAL TOTAL	32392		29481			
ANNUAL MEAN	88.5		80.8		55.0	
HIGHEST ANNUAL MEAN					111	1958
LOWEST ANNUAL MEAN					16.2	1966
HIGHEST DAILY MEAN	1960	Dec 14	2420	Aug 21	2710	Aug 5 1967
LOWEST DAILY MEAN	15	(a)	11	Aug 9	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	15	Oct 1	13	Aug 7	1.3	Sep 5 1964
INSTANTANEOUS PEAK FLOW			2780	Aug 21	(c)3700	Jul 13 1975
INSTANTANEOUS PEAK STAGE			11.61	Aug 21	13.98	Aug 5 1967
INSTANTANEOUS LOW FLOW			10	Aug 9	1.0	(d)
ANNUAL RUNOFF (CFSM)	2.02		1.84		1.25	
ANNUAL RUNOFF (INCHES)	27.45		24.98		17.01	
10 PERCENT EXCEEDS	172		141		114	
50 PERCENT EXCEEDS	60		46		29	
90 PERCENT EXCEEDS	20		16		7.4	

- a Sept. 9, Oct. 4-7.
- b Sept. 9, 10, 1964.
- c From rating curve extended above 3,300 ft<sup>3</sup>/s.
- d Sept. 9, 10, 1964; Aug. 20, 1965.



## CHOPTANK RIVER BASIN

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD

LOCATION.--Lat 38°59'50", long 75°47'10", Caroline County, Hydrologic Unit 02060005, on left bank at highway bridge, 0.1 mi upstream from Gravelly Branch, 2.0 mi northeast of Greensboro, and 60 mi upstream from mouth.

DRAINAGE AREA.--113 mi<sup>2</sup>.

## 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 sea level.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair. Diversions for irrigation of about 500 acres upstream from 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 8	1845	1,080	6.75	Apr. 29	0445	1,110	6.83
Dec. 14	2300	*5,120	*12.52	May 26	2230	2,020	8.63

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	104	105	222	254	165	468	346	145	44	9.8	28
2	75	101	451	203	240	256	499	253	153	46	8.2	30
3	69	95	665	196	208	329	355	212	190	46	11	27
4	63	90	402	185	186	666	253	200	301	42	10	23
5	56	86	255	179	424	609	210	182	256	39	17	24
6	54	85	440	173	762	451	184	158	178	36	31	24
7	53	85	695	160	517	366	180	143	142	35	21	24
8	84	87	929	145	390	264	173	137	128	32	15	17
9	193	140	762	141	349	221	151	133	119	30	13	20
10	412	184	493	170	344	222	139	133	106	43	12	29
11	411	162	369	197	293	272	132	127	97	38	9.7	37
12	258	134	288	182	246	249	131	118	90	31	7.8	39
13	176	121	358	156	230	201	148	110	85	24	11	33
14	146	111	3250	e140	270	186	153	105	85	24	11	27
15	133	103	3760	e136	659	259	139	100	81	22	8.2	25
16	122	99	1370	223	853	287	129	95	73	18	8.3	24
17	112	90	749	449	533	218	125	88	67	22	7.7	23
18	107	85	613	442	395	184	131	84	66	18	9.4	22
19	438	86	577	356	301	207	129	80	130	20	10	20
20	724	92	618	e165	256	345	122	76	99	16	35	19
21	481	92	500	149	224	322	117	73	72	17	469	20
22	283	87	380	145	210	247	129	66	63	19	577	18
23	200	84	314	168	198	207	116	66	57	23	223	15
24	166	82	294	174	176	175	164	63	54	31	84	17
25	148	79	388	230	162	156	266	65	50	35	53	19
26	136	92	412	331	154	159	239	1270	52	30	45	20
27	127	118	373	242	158	176	180	1250	93	25	38	18
28	120	116	394	300	163	174	551	507	74	19	35	19
29	118	103	341	561	---	164	923	292	53	19	35	29
30	113	98	292	413	---	173	518	202	48	13	34	25
31	107	---	251	283	---	227	---	163	---	14	33	---
TOTAL	5777	3091	21088	7216	9155	8137	7154	6897	3207	871	1892.1	715
MEAN	186	103	680	233	327	262	238	222	107	28.1	61.0	23.8
MAX	724	184	3760	561	853	666	923	1270	301	46	577	39
MIN	53	79	105	136	154	156	116	63	48	13	7.7	15
CFSM	1.65	.91	6.02	2.06	2.89	2.32	2.11	1.97	.95	.25	.54	.21
IN.	1.90	1.02	6.94	2.38	3.01	2.68	2.36	2.27	1.06	.29	.62	.24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1997, BY WATER YEAR (WY)

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997											
MEAN	54.7	88.6	154	200	220	264	202	136	96.0	59.1	84.7	46.2	40.2	476	680	559	646	826	649	457	381	421	829	323	1972	1957	1997	1978	1979	1994	1983	1989	1996	1975	1967	1960	9.85	10.9	13.3	17.9	42.8	43.7	47.2	30.3	19.5	9.49	5.31	9.38	1966	1966	1966	1966	1966	1966	1966	1966	1977	1986	1977	1966	1987

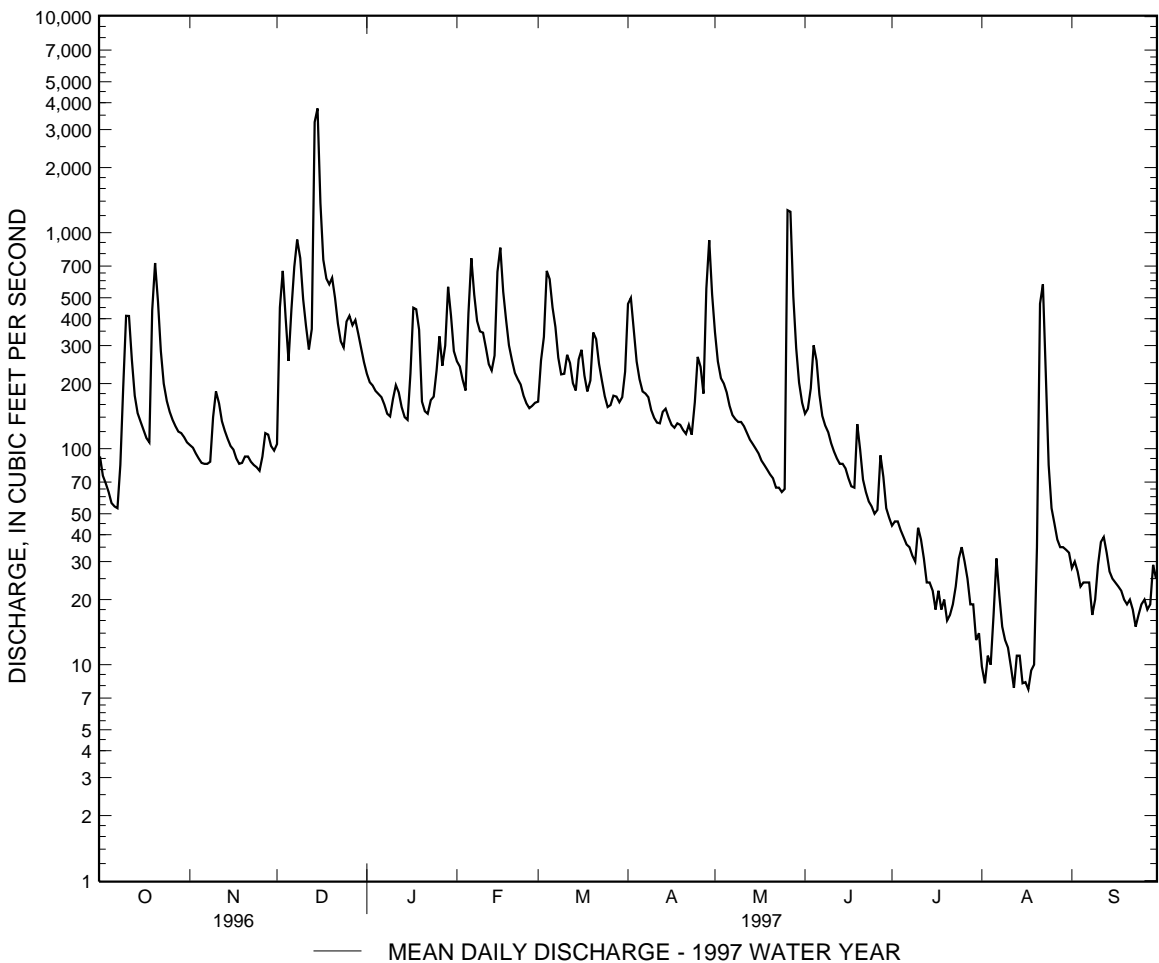


CHOPTANK RIVER BASIN

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1948 - 1997	
ANNUAL TOTAL	101276		75200.1			
ANNUAL MEAN	277		206		133	
HIGHEST ANNUAL MEAN					237	1972
LOWEST ANNUAL MEAN					26.6	1966
HIGHEST DAILY MEAN	3760	Dec 15	3760	Dec 15	6160	Aug 4 1967
LOWEST DAILY MEAN	41	Sep 10	7.7	Aug 17	1.5	Aug 29 1966
ANNUAL SEVEN-DAY MINIMUM	46	Sep 4	9.1	Aug 12	2.2	Aug 26 1966
INSTANTANEOUS PEAK FLOW			5120	Dec 14	(a)6970	Aug 4 1967
INSTANTANEOUS PEAK STAGE			12.52	Dec 14	14.47	Aug 4 1967
INSTANTANEOUS LOW FLOW			5.2	Aug 12	1.2	(b)
ANNUAL RUNOFF (CFSM)	2.45		1.82		1.17	
ANNUAL RUNOFF (INCHES)	33.34		24.76		15.94	
10 PERCENT EXCEEDS	541		445		288	
50 PERCENT EXCEEDS	172		133		73	
90 PERCENT EXCEEDS	75		20		16	

a From rating curve extended above 3,600 ft<sup>3</sup>/s.  
 b Aug. 29, 1966, Sept. 3, 1987.



## CHOPTANK RIVER BASIN

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.

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: Maximum 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 1996 TO SEPTEMBER 1997

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (PER- CENT SATUR- ATION) (00301)
OCT 1996									
24...	1130	187	124	6.7	15.0	20.0	760	6.6	66
NOV									
06...	1045	85	147	6.6	10.0	17.5	759	9.1	81
DEC									
02...	1500	596	104	6.6	7.5	10.0	762	8.3	69
09...	1200	737	81	6.2	5.5	5.0	758	9.8	78
14...	1500	4220	56	6.1	6.5	6.0	767	9.9	80
15...	1400	3450	46	--	6.0	7.0	771	9.7	77
17...	1145	739	76	6.3	8.0	11.0	758	9.5	81
JAN 1997									
23...	1430	173	128	--	4.0	12.0	762	--	--
FEB									
06...	1315	793	95	6.7	6.5	7.5	766	10.5	85
MAR									
15...	1530	274	112	7.0	10.0	7.0	765	--	--
APR									
16...	1415	129	121	7.0	14.5	19.5	763	9.6	94
MAY									
14...	1415	104	126	6.6	17.0	22.0	757	8.4	87
JUN									
25...	0830	52	136	7.1	25.0	29.0	763	5.4	66
JUL									
22...	1230	20	155	6.6	24.0	25.0	764	6.4	76
AUG									
14...	1030	11	159	6.4	24.0	27.0	760	6.2	73
SEP									
16...	1030	24	159	7.0	20.0	24.0	764	7.3	80

## CHOPTANK RIVER BASIN

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 1996									
24...	15	18	19	1.4	4.8	0.006	1.10	0.030	0.30
NOV									
06...	18	23	22	1.7	6.6	0.008	1.50	0.060	0.20
DEC									
02...	12	14	10	2.0	4.3	0.007	0.970	0.050	1.0
09...	--	--	11	1.3	--	<0.001	0.700	0.030	0.60
14...	--	--	6.3	2.6	--	<0.001	1.50	0.060	1.1
15...	--	--	5.2	1.0	--	<0.001	0.320	0.030	0.70
17...	--	--	12	1.5	--	<0.001	0.920	0.040	0.60
JAN 1997									
23...	--	--	19	2.1	8.3	0.006	1.88	0.083	0.18
FEB									
06...	10	13	10	1.8	4.3	0.006	0.970	0.070	0.80
MAR									
15...	12	15	14	2.0	7.0	0.010	1.60	0.060	0.40
APR									
16...	15	18	11	1.2	--	<0.001	0.875	0.027	0.30
MAY									
14...	15	--	16	1.5	4.9	0.019	1.12	0.068	0.37
JUN									
25...	--	--	20	1.6	5.3	0.009	1.20	0.027	0.43
JUL									
22...	23	--	15	1.6	5.4	0.010	1.22	0.050	0.37
AUG									
14...	--	--	13	1.7	6.2	0.003	1.41	0.032	0.25
SEP									
16...	21	--	12	1.7	6.3	0.002	1.42	<0.015	0.23

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, TOTAL (MG/L AS C) (00680)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996								
24...	0.30	0.020	0.017	0.003	7.6	4	2.0	--
NOV								
06...	<0.20	0.030	0.011	0.004	4.0	3	0.69	--
DEC								
02...	0.40	0.260	0.041	0.021	12	69	111	96
09...	0.40	0.080	0.041	0.011	13	16	32	98
14...	0.40	0.240	0.060	0.027	13	76	866	94
15...	0.40	0.120	0.079	0.051	16	31	289	91
17...	0.50	0.080	0.044	0.021	13	10	20	85
JAN 1997								
23...	0.27	0.007	0.007	0.007	3.4	4	1.9	--
FEB								
06...	0.40	0.140	0.031	0.013	10	18	39	67
MAR								
15...	0.40	<0.010	0.019	0.011	4.7	4	3.0	73
APR								
16...	<0.20	0.036	0.011	0.010	5.8	4	1.4	--
MAY								
14...	0.22	0.026	0.019	0.018	5.2	3	0.84	100
JUN								
25...	0.32	0.057	0.026	0.023	6.1	4	0.52	--
JUL								
22...	0.31	0.056	0.023	0.004	4.7	2	0.10	--
AUG								
14...	0.21	0.014	0.016	0.012	3.6	1	0.02	--
SEP								
16...	<0.20	0.015	0.014	0.010	3.0	2	0.14	--



## CHESTER RIVER BASIN

01493000 UNICORN BRANCH NEAR MILLINGTON, MD--Continued

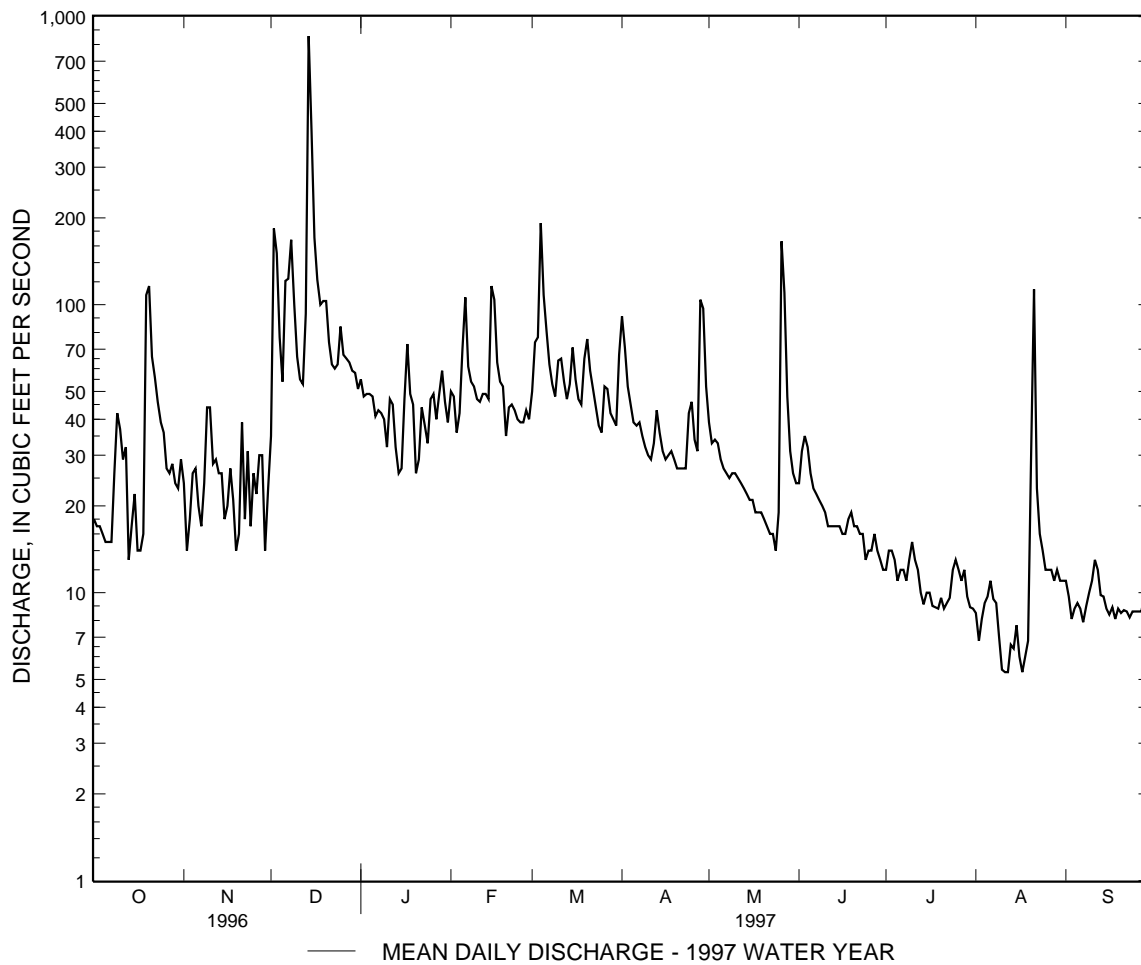
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1948 - 1997	
ANNUAL TOTAL	19128.8		14204.8			
ANNUAL MEAN	52.3		38.9		25.2	
HIGHEST ANNUAL MEAN					51.8	1972
LOWEST ANNUAL MEAN					7.08	1966
HIGHEST DAILY MEAN	856	Dec 14	856	Dec 14	856	Dec 14 1996
LOWEST DAILY MEAN	7.7	Sep 24	5.3	(a)	.10	Jun 9 1965
ANNUAL SEVEN-DAY MINIMUM	16	Oct 1	6.1	Aug 11	.14	Jun 8 1965
INSTANTANEOUS PEAK FLOW			(b)1160	Dec 14	(b)1160	Dec 14 1996
INSTANTANEOUS PEAK STAGE			6.09	Dec 14	7.17	Sep 12 1960
INSTANTANEOUS LOW FLOW			.00	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	2.66		1.98		1.28	
ANNUAL RUNOFF (INCHES)	36.16		26.85		17.37	
10 PERCENT EXCEEDS	90		71		48	
50 PERCENT EXCEEDS	37		27		16	
90 PERCENT EXCEEDS	21		8.9		7.3	

a Aug. 11, 12, 13.

b From rating curve extended above 600 ft<sup>3</sup>/s.

c No flow for part of each day Jan. 6, 7, 10, 13-16, 20, 21, 23, 24, 27, 31, Feb. 2, 3, 14, 20, caused by regulation at Unicorn Lake Dam.

d 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.





CHESTER RIVER BASIN

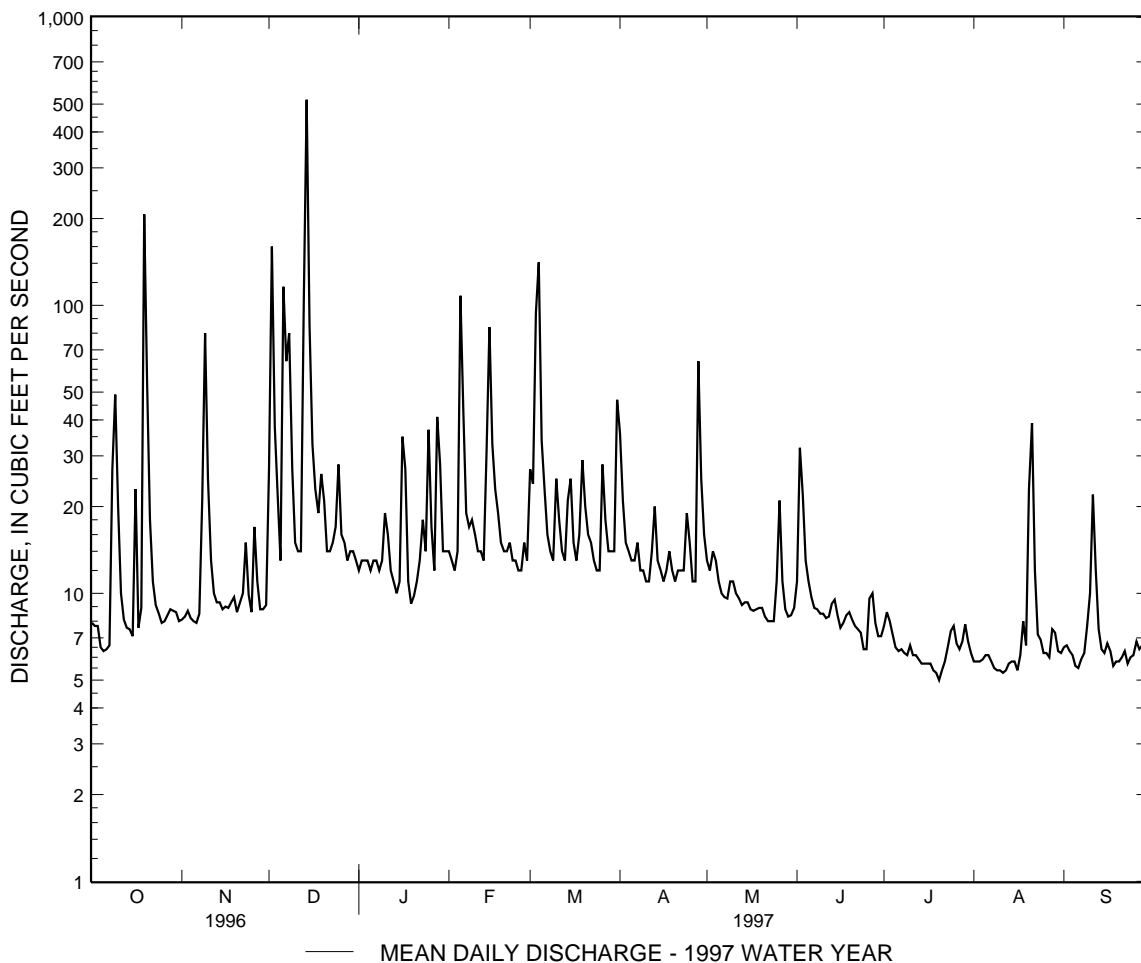
01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1951 - 1997	
ANNUAL TOTAL	7420.4		6273.3			
ANNUAL MEAN	20.3		17.2		10.8	
HIGHEST ANNUAL MEAN					24.2	1972
LOWEST ANNUAL MEAN					3.67	1966
HIGHEST DAILY MEAN	518	Dec 14	518	Dec 14	2810	(a)
LOWEST DAILY MEAN	5.5	Jan 7	5.0	Jul 20	.70	Jul 21 1966
ANNUAL SEVEN-DAY MINIMUM	5.9	Sep 3	5.5	Jul 15	.71	Sep 7 1966
INSTANTANEOUS PEAK FLOW			825	Dec 14	(b)7500	Jun 22 1972
INSTANTANEOUS PEAK STAGE			7.35	Dec 14	13.07	Jun 22 1972
INSTANTANEOUS LOW FLOW			4.7	Jul 20	.60	(c)
ANNUAL RUNOFF (CFSM)	1.60		1.35		.85	
ANNUAL RUNOFF (INCHES)	21.74		18.38		11.61	
10 PERCENT EXCEEDS	28		27		16	
50 PERCENT EXCEEDS	9.5		11		6.3	
90 PERCENT EXCEEDS	7.1		6.1		3.2	

a July 21, Aug. 28-31, Sept. 4, 8-13, 1966.

b From rating curve extended above 640 ft<sup>3</sup>/s on basis of culvert and flow-over-road measurement of peak flow.

c Aug. 28, 29, 1966.





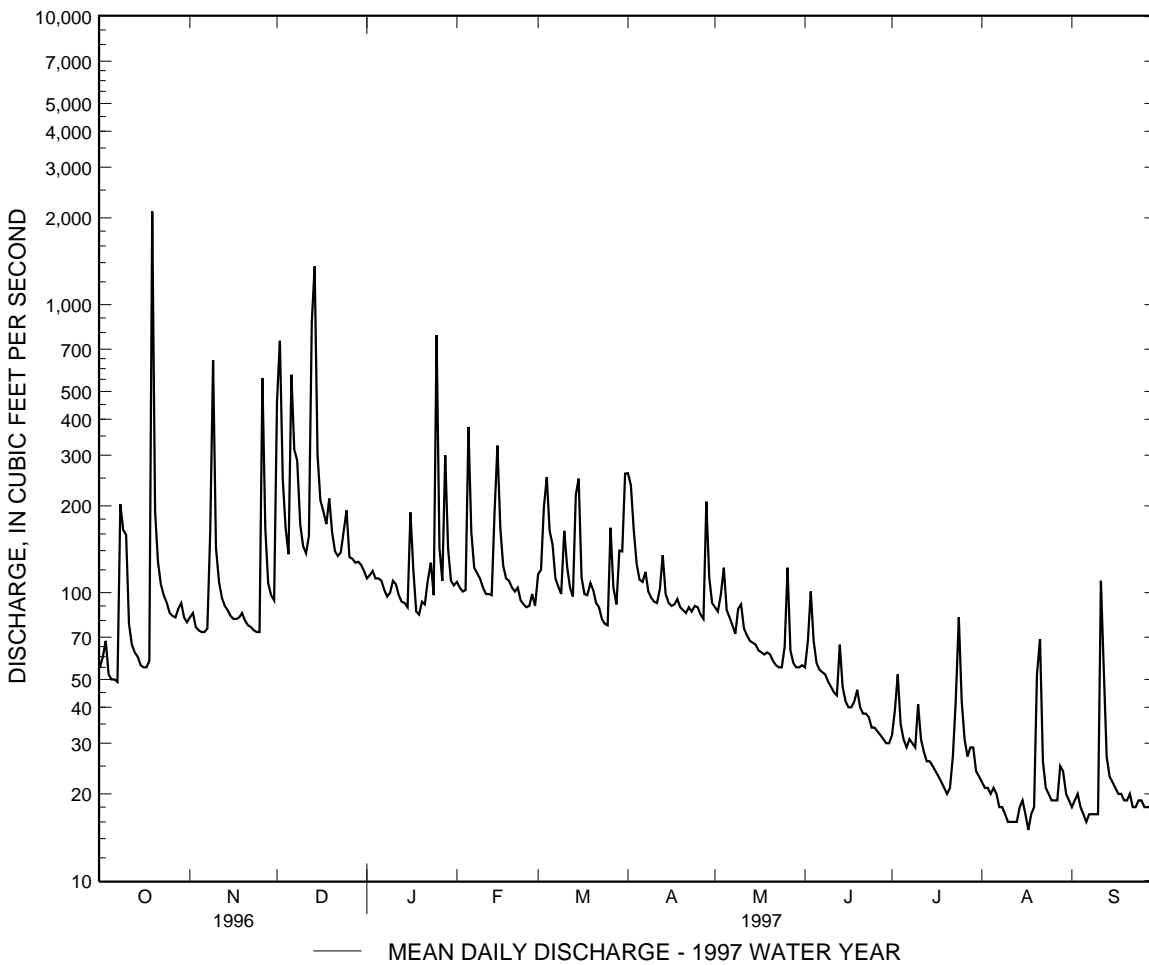


ELK RIVER BASIN

01495000 BIG ELK CREEK AT ELK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1932 - 1997	
ANNUAL TOTAL	46687		38390			
ANNUAL MEAN	128		105		69.8	
HIGHEST ANNUAL MEAN					109	1972
LOWEST ANNUAL MEAN					35.4	1966
HIGHEST DAILY MEAN	3260	Jan 19	2110	Oct 19	3260	Jan 19 1996
LOWEST DAILY MEAN	32	Jan 7	15	Aug 17	4.8	(a)
ANNUAL SEVEN-DAY MINIMUM	38	Jul 6	17	Aug 7	4.9	Sep 7 1966
INSTANTANEOUS PEAK FLOW			5110	Oct 19	(b)10600	Jul 5 1937
INSTANTANEOUS PEAK STAGE			9.12	Oct 19	(c)14.50	Jul 5 1937
INSTANTANEOUS LOW FLOW			14	Aug 17	4.5	(d)
ANNUAL RUNOFF (CFSM)	2.43		2.00		1.33	
ANNUAL RUNOFF (INCHES)	33.02		27.15		18.02	
10 PERCENT EXCEEDS	192		167		115	
50 PERCENT EXCEEDS	76		84		47	
90 PERCENT EXCEEDS	49		20		20	

- a Sept. 8-10, 1966.
- b From rating curve extended above 1,700 ft<sup>3</sup>/s on basis of velocity-area and conveyance studies.
- c From floodmarks.
- d Result of freezeup.



## ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD

LOCATION.--Lat 39°30'09", long 75°54'58", Cecil County, Hydrologic Unit 02060001, at site of Old Town Point Wharf, at the Corps of Engineers substation, on left bank of Elk River, 0.7 mi west of Port Herman, 1.1 mi northwest of Town Point, and 1.8 mi downstream from mouth of Back Creek.

PERIOD OF RECORD.--Water years 1982 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1981 to November 1985, October 1986 to current year.

WATER TEMPERATURE: October 1981 to November 1985, October 1986 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1981.

REMARKS.--Records good except those below 500 microsiemens, which are fair. Interruption of the daily specific conductance was caused by probe being out of water during extreme low tide. Probes are attached to southeast side of bulkhead of wharf; prior to Oct. 1986, probes were attached to bulkhead on the north side of the wharf.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1982-85, 1987-89, 1991-97): Maximum, 19,900 microsiemens, Oct. 26, 1982; minimum, 117 microsiemens, July 21-23, 28, 1984.

WATER TEMPERATURE (water years 1982-85, 1987-97): Maximum, 33.0°C, Aug. 6, 1988; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 10,700 microsiemens, July 25; minimum, 134 microsiemens, Dec. 14.

WATER TEMPERATURE: Maximum, 32.3°C, July 17; minimum, 0.3°C on Jan. 12.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1200	1020	1140	790	623	701	334	267	304	202	180	181
2	1180	1000	1080	711	624	665	335	223	269	203	180	181
3	1070	912	970	928	519	656	357	290	332	203	180	186
4	3440	820	1370	740	478	605	312	245	280	202	180	193
5	3240	1980	2450	635	393	481	335	268	305	202	179	191
6	2360	1880	2110	768	438	534	313	246	279	202	179	194
7	2300	2010	2120	506	332	424	335	246	292	223	179	201
8	2160	1780	1970	354	289	322	290	246	262	223	178	202
9	4330	2060	3210	424	289	333	268	223	248	223	200	207
10	3530	2220	2760	561	314	435	290	223	262	222	200	212
11	2390	1940	2090	473	314	379	268	223	243	222	199	214
12	2360	2050	2220	634	294	438	246	224	243	221	177	211
13	2340	1890	2200	637	296	423	246	179	216	243	177	219
14	2110	1690	1840	342	274	292	179	134	160	243	220	225
15	1710	1580	1660	322	275	300	179	157	159	242	220	222
16	1640	1260	1510	347	299	320	179	157	170	242	219	222
17	1360	1160	1290	349	324	337	202	179	185	263	219	240
18	3930	1250	1730	349	289	321	202	179	183	263	219	239
19	4770	1830	2780	311	289	301	202	179	189	284	240	253
20	6250	3740	5150	333	289	302	202	179	185	262	240	245
21	5400	3530	4110	444	289	345	202	179	184	261	239	245
22	3960	2900	3320	333	267	305	202	157	180	239	217	237
23	3040	2710	2850	400	289	337	180	157	165	239	217	233
24	2740	1990	2350	378	289	334	180	157	167	909	216	357
25	2250	1730	1940	334	289	318	180	157	172	2380	823	1760
26	1840	1570	1690	312	267	284	180	157	173	1340	690	1020
27	1680	1500	1620	334	245	276	180	157	174	690	539	590
28	1550	1340	1490	267	245	259	180	157	175	774	494	609
29	1410	1240	1330	357	267	321	180	157	178	623	493	529
30	1360	891	1200	379	334	352	180	157	179	600	492	516
31	1190	740	953	---	---	---	202	180	181	790	578	658
MONTH	6250	740	2080	928	245	390	357	134	216	2380	177	355

## ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

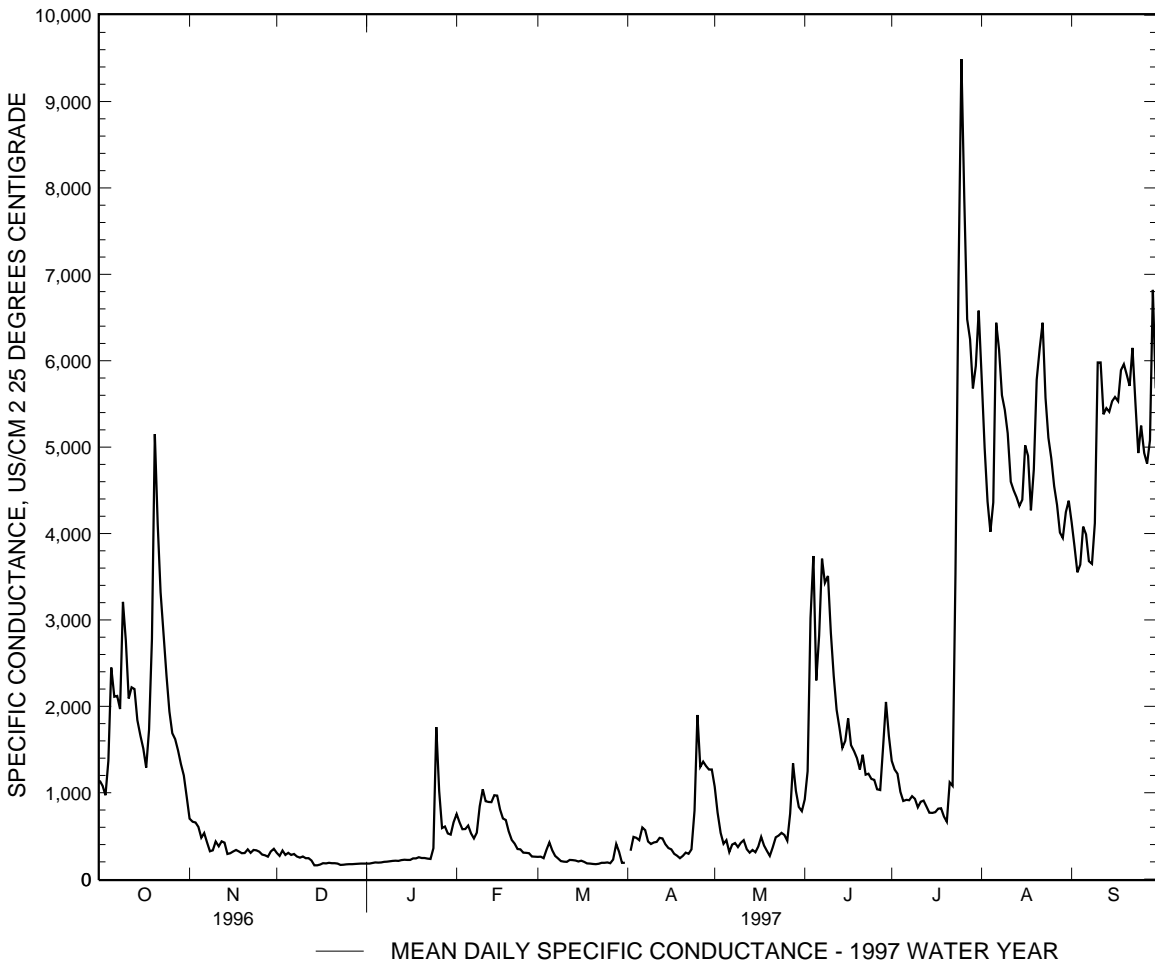
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	811	683	753	271	250	257	---	---	---	1300	851	1070
2	725	617	658	272	251	261	488	305	329	877	653	772
3	639	532	577	272	210	242	588	406	490	697	429	536
4	615	552	579	462	231	340	605	400	478	486	349	408
5	657	593	620	484	379	424	538	398	452	634	330	452
6	635	401	529	421	253	333	672	497	597	359	267	313
7	528	442	470	317	233	268	631	469	567	546	281	399
8	631	484	538	275	191	241	489	387	436	527	351	418
9	1160	610	843	212	191	209	442	384	407	416	333	371
10	1170	818	1040	213	191	202	458	384	424	604	333	419
11	984	711	902	213	192	201	492	361	430	604	353	451
12	1020	586	893	256	192	222	509	450	478	395	291	346
13	1020	605	891	236	214	220	506	445	471	332	291	307
14	1080	854	971	236	193	216	465	369	404	541	312	338
15	1080	852	967	236	193	204	386	347	359	395	291	312
16	1020	622	806	237	194	214	364	289	345	541	270	377
17	766	662	703	216	173	199	325	251	294	561	270	488
18	703	660	685	195	173	182	321	231	272	541	270	388
19	681	473	553	195	173	180	248	229	242	540	270	327
20	535	411	454	195	173	176	367	228	269	270	249	269
21	451	349	410	174	174	174	382	260	306	540	270	366
22	390	308	349	196	174	177	343	257	294	623	269	485
23	371	329	345	197	175	188	407	273	345	602	311	505
24	350	269	307	197	175	189	1600	389	794	664	332	535
25	331	289	304	196	173	193	3300	906	1900	643	414	511
26	352	270	299	195	172	185	1560	914	1300	643	394	444
27	291	249	263	555	171	227	1490	1100	1360	1160	456	759
28	271	250	259	574	191	407	1620	1100	1310	2050	746	1340
29	---	---	---	485	189	315	1470	1060	1270	1430	912	1020
30	---	---	---	210	187	190	1450	1140	1270	932	767	835
31	---	---	---	208	187	190	---	---	---	849	725	786
MONTH	1170	249	606	574	171	233	---	---	---	2050	249	527
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1060	828	922	1560	1250	1370	6570	5180	5830	4320	3870	4130
2	1970	870	1250	1330	1210	1270	5450	4280	4990	4070	3570	3850
3	4350	1740	3020	1330	1080	1220	4810	2730	4370	3770	3380	3550
4	4920	2280	3740	1190	807	1010	4510	2210	4020	4280	3380	3640
5	3290	1200	2300	978	830	905	5800	2190	4360	4730	3780	4080
6	3970	1140	2820	979	787	918	8370	4660	6440	4220	3710	3990
7	3930	2830	3710	961	895	913	6980	5160	6130	3780	3600	3680
8	3990	1140	3430	1050	875	959	5840	5080	5600	3880	3590	3650
9	3720	3040	3510	1070	770	928	5520	5320	5430	5790	3700	4120
10	3200	1670	2850	944	730	832	5320	4850	5160	8710	4870	5980
11	2690	1450	2350	988	837	896	4850	4370	4600	8710	5260	5980
12	2330	909	1960	1030	860	908	4750	4410	4500	5620	5090	5380
13	2070	908	1750	1190	733	841	4490	4370	4420	5610	5200	5450
14	1670	970	1520	1010	669	768	4390	4260	4320	5560	5290	5410
15	2040	1490	1600	1120	628	767	4680	4260	4390	5760	5360	5530
16	2270	1240	1860	1280	563	775	8480	4360	5020	5810	5420	5580
17	1770	1340	1550	1260	607	816	9920	4350	4900	5860	4710	5530
18	1570	1400	1480	1330	609	820	4350	4190	4270	6710	5570	5890
19	1570	1100	1400	980	653	725	6090	4190	4740	7130	5420	5960
20	1510	828	1270	764	633	664	7230	4900	5780	6270	5440	5840
21	1600	1160	1440	2250	677	1120	7050	5520	6150	7190	5050	5710
22	1370	1020	1210	1490	897	1080	7450	5740	6440	7060	5730	6150
23	1330	1080	1220	5900	1180	3530	6070	5170	5570	6890	4970	5520
24	1310	1060	1160	9290	4980	6970	5660	4840	5110	5020	4860	4930
25	1550	962	1150	10700	8780	9490	5620	4530	4870	5360	4980	5250
26	1260	879	1040	9110	6910	7870	4940	4410	4550	5380	4690	4930
27	1260	859	1030	7220	6020	6480	4690	4140	4330	4910	4680	4810
28	3110	1090	1530	7140	5700	6250	4230	3890	4010	5670	4840	5080
29	3130	1730	2050	6380	5430	5680	4100	3790	3950	8950	5670	6820
30	1920	1470	1660	6650	4870	5940	4440	4040	4250	6350	4970	5680
31	---	---	---	7970	5760	6580	4460	4250	4380	---	---	---
MONTH	4920	828	1930	10700	563	2560	9920	2190	4930	8950	3380	5070

ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



## ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	20.8	19.0	19.9	13.5	12.4	13.0	6.0	4.8	5.4	3.2	1.9	2.5
2	19.9	19.5	19.6	12.4	10.2	11.8	6.6	5.8	6.2	3.8	3.0	3.4
3	19.5	14.7	18.5	11.3	9.6	10.5	6.3	5.5	5.9	4.4	3.7	4.0
4	18.8	13.1	16.4	11.6	9.9	10.6	6.2	5.6	5.8	5.4	4.2	4.8
5	18.3	16.9	17.6	11.6	10.1	10.9	5.8	5.2	5.5	5.8	4.9	5.3
6	18.3	15.9	17.1	11.7	10.8	11.3	5.8	5.4	5.6	5.9	4.8	5.2
7	18.6	16.4	17.4	12.7	11.4	12.0	5.5	5.2	5.3	4.9	3.3	4.2
8	18.0	15.3	16.6	13.5	12.3	12.8	5.9	4.8	5.3	3.3	1.3	2.2
9	17.8	15.3	16.7	13.4	12.1	12.9	5.4	4.3	4.8	2.5	1.4	2.0
10	17.4	15.1	16.7	12.1	10.7	11.6	4.9	3.6	4.2	3.2	2.1	2.8
11	15.8	14.1	14.9	10.7	8.8	9.5	5.1	4.7	4.9	3.1	.5	1.7
12	16.1	13.8	15.2	9.3	7.6	8.3	6.1	5.0	5.5	.5	.3	.3
13	16.5	15.0	15.9	8.1	6.9	7.5	6.8	6.0	6.5	.4	.4	.4
14	17.3	15.6	16.4	8.1	6.6	7.6	6.2	5.5	5.9	.6	.4	.4
15	16.7	14.7	15.9	6.8	4.8	6.1	6.1	4.9	5.6	.8	.4	.5
16	17.1	15.5	16.3	7.6	6.1	6.8	6.3	5.9	6.1	.9	.4	.4
17	17.9	16.1	17.1	7.7	6.4	7.1	6.6	6.2	6.4	.4	.4	.4
18	17.1	15.9	16.8	7.9	7.0	7.4	6.8	6.5	6.7	.7	.4	.4
19	15.9	15.0	15.3	8.7	7.7	8.1	6.7	4.9	6.2	.8	.5	.5
20	15.7	15.0	15.3	8.1	7.0	7.7	4.9	2.1	3.0	.5	.5	.5
21	15.8	14.6	15.1	7.3	6.4	6.8	2.5	1.4	1.9	.7	.5	.5
22	15.3	14.8	15.1	6.5	5.3	5.8	2.9	1.7	2.2	.6	.5	.5
23	15.8	14.7	15.3	6.2	4.7	5.5	3.8	2.4	2.9	.7	.5	.5
24	15.9	14.5	15.2	6.4	5.7	6.0	4.5	3.2	3.8	.6	.5	.5
25	15.0	14.3	14.7	6.7	5.9	6.3	4.3	2.2	2.8	1.3	.6	.8
26	15.7	14.1	14.9	7.7	6.2	7.0	2.7	2.1	2.5	.6	.6	.6
27	15.9	14.8	15.4	6.2	2.9	4.5	3.9	2.7	3.2	.6	.6	.6
28	15.7	14.4	15.2	3.9	2.3	3.0	4.1	3.5	3.7	.9	.6	.6
29	14.8	13.3	14.3	4.7	3.5	4.1	4.6	4.0	4.3	.9	.6	.6
30	14.8	14.2	14.5	4.8	4.1	4.5	5.0	4.1	4.5	.8	.6	.6
31	14.5	13.3	13.9	---	---	---	4.7	3.2	4.3	1.1	.7	.8
MONTH	20.8	13.1	16.1	13.5	2.3	8.2	6.8	1.4	4.7	5.9	.3	1.6
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.0	.8	1.4	8.8	8.1	8.5	8.3	3.5	6.7	17.3	15.6	16.4
2	2.7	1.3	2.0	9.5	8.5	9.0	10.5	7.3	9.0	18.7	14.2	16.4
3	3.5	2.1	2.6	8.7	5.9	7.1	11.8	9.2	10.2	17.6	16.2	16.9
4	2.6	1.8	2.3	7.5	5.9	6.8	13.7	10.3	11.8	18.1	15.7	16.9
5	3.6	2.4	2.9	7.6	7.1	7.3	12.8	11.2	12.1	18.5	15.4	16.8
6	4.1	2.7	3.4	8.1	6.2	7.4	12.7	11.4	12.0	17.8	16.2	16.9
7	4.0	2.8	3.5	8.1	4.9	6.4	14.7	12.2	13.4	17.2	14.2	15.9
8	3.5	1.3	2.3	7.4	5.8	6.6	13.9	11.1	12.7	17.3	15.0	16.2
9	3.2	1.0	2.1	7.7	3.9	5.9	12.5	9.3	10.9	16.8	15.7	16.3
10	2.9	2.1	2.5	8.0	6.0	6.9	11.8	6.7	9.6	15.8	13.9	14.9
11	2.8	1.0	2.0	7.8	6.6	7.2	12.1	10.0	10.9	17.1	12.9	15.2
12	3.0	2.1	2.5	8.0	5.7	6.8	11.8	10.8	11.2	17.2	15.6	16.4
13	3.3	1.2	2.4	8.1	6.0	7.1	13.6	11.1	12.4	16.6	15.2	16.2
14	2.9	2.0	2.5	7.6	6.9	7.2	13.8	9.8	11.8	17.6	14.8	16.2
15	4.0	2.8	3.2	8.3	5.8	7.3	14.1	11.2	12.5	18.5	16.2	17.2
16	4.6	2.0	3.2	7.3	4.6	5.8	14.2	11.7	12.9	17.4	15.4	16.4
17	4.4	1.9	3.3	6.7	4.9	5.9	13.5	12.2	13.0	17.0	15.4	16.2
18	4.6	2.8	3.7	8.1	6.1	7.0	12.2	10.1	11.0	18.9	15.4	16.8
19	6.5	3.4	4.8	7.2	5.9	6.3	11.0	8.3	9.7	19.5	16.7	17.8
20	7.9	4.7	6.2	7.1	6.0	6.4	13.3	10.0	11.6	20.5	18.0	19.0
21	7.8	6.0	6.8	8.6	5.9	7.3	12.6	11.4	12.1	19.0	17.0	18.0
22	7.9	6.8	7.2	8.5	7.3	7.9	14.2	11.4	12.7	18.3	15.6	17.0
23	8.0	5.3	6.8	8.9	5.5	7.2	13.1	12.2	12.7	19.2	15.6	17.5
24	7.8	6.0	6.9	9.1	6.3	7.8	13.7	11.7	12.5	20.1	17.4	18.7
25	6.6	3.6	5.4	8.5	7.7	8.2	14.6	12.2	13.3	19.3	18.6	18.9
26	7.2	5.5	6.3	9.6	8.5	8.9	15.6	13.0	14.3	20.4	17.9	19.0
27	9.4	7.1	8.3	10.4	7.7	9.2	15.6	13.7	14.5	19.5	16.7	18.3
28	10.0	8.8	9.3	11.4	9.4	10.3	15.5	14.2	14.7	19.8	17.4	18.6
29	---	---	---	10.9	10.1	10.6	17.1	14.0	15.2	20.8	18.0	19.2
30	---	---	---	13.1	10.6	11.8	17.6	15.2	16.1	20.5	18.8	19.4
31	---	---	---	12.1	7.3	10.2	---	---	---	22.2	18.9	20.1
MONTH	10.0	.8	4.1	13.1	3.9	7.7	17.6	3.5	12.1	22.2	12.9	17.3

## ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

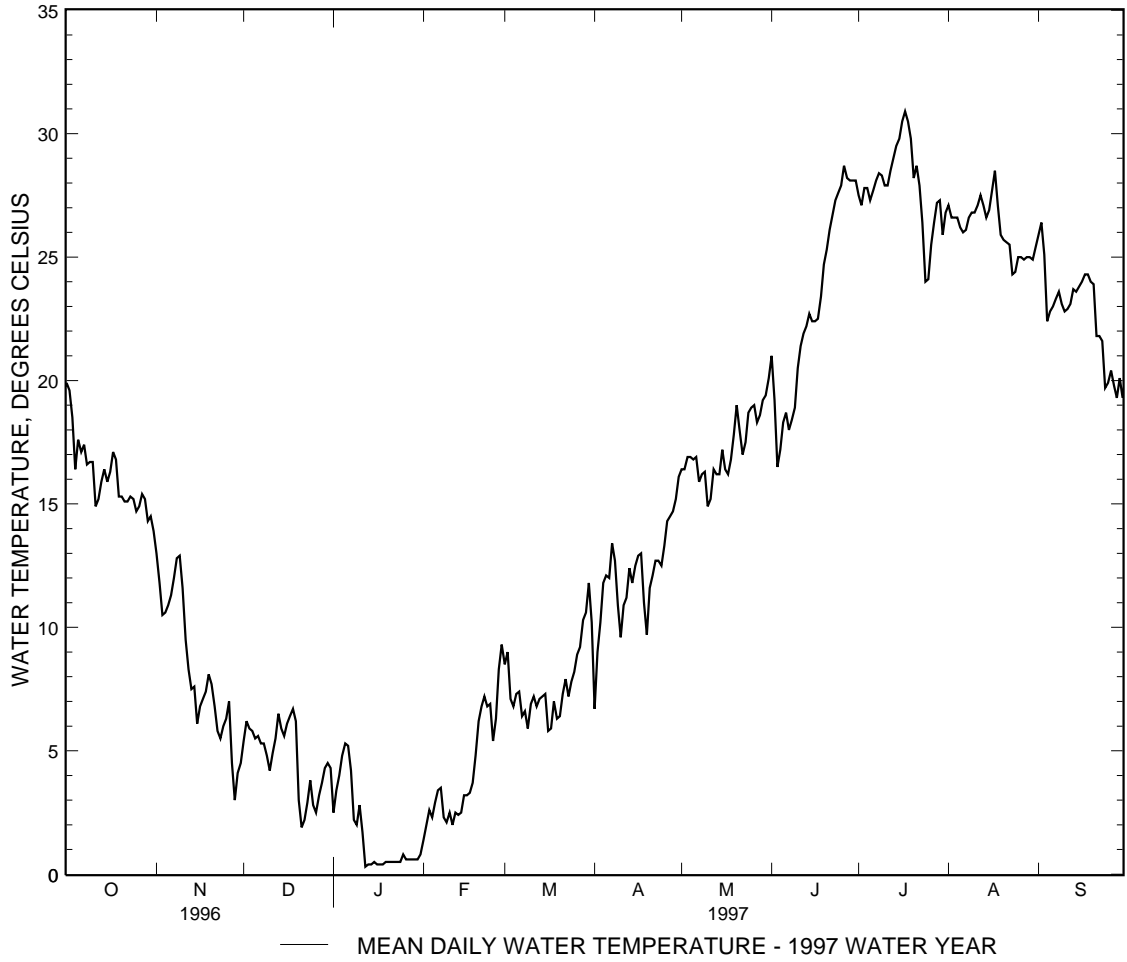
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	22.8	19.6	21.0	28.0	26.7	27.5	28.2	26.0	27.1	27.0	24.9	25.9
2	20.9	17.4	19.2	27.9	26.5	27.1	27.2	26.1	26.6	27.4	25.5	26.4
3	17.4	16.1	16.5	29.1	26.7	27.8	28.0	25.2	26.6	26.6	22.5	25.1
4	18.7	15.8	17.2	29.1	26.9	27.8	27.1	25.8	26.6	23.3	20.2	22.4
5	19.8	17.0	18.3	28.8	25.9	27.3	27.5	25.0	26.2	24.0	21.4	22.8
6	19.6	17.9	18.7	28.8	26.3	27.7	27.0	24.7	26.0	23.5	22.5	23.0
7	18.5	17.5	18.0	29.4	26.9	28.1	27.3	24.9	26.1	24.3	22.2	23.3
8	19.9	17.1	18.4	29.7	27.2	28.4	27.9	25.3	26.6	24.2	22.9	23.6
9	20.2	17.6	18.9	29.3	27.5	28.3	27.9	25.5	26.8	23.5	22.6	23.1
10	22.1	19.1	20.5	29.1	26.4	27.9	27.9	26.1	26.8	23.1	22.3	22.8
11	22.4	20.4	21.4	29.4	26.4	27.9	28.2	25.8	27.1	23.2	22.7	22.9
12	23.1	21.2	21.9	29.9	27.2	28.5	29.1	26.3	27.5	24.5	22.2	23.1
13	23.2	21.6	22.2	30.7	27.7	29.0	27.6	26.6	27.1	25.1	22.7	23.7
14	23.5	22.0	22.7	31.0	28.3	29.5	27.3	25.9	26.6	24.6	22.5	23.6
15	24.6	20.8	22.4	31.6	28.5	29.8	28.1	25.7	26.9	25.0	22.7	23.8
16	23.8	21.5	22.4	32.2	29.2	30.5	29.2	26.8	27.7	25.1	22.8	24.0
17	23.7	21.6	22.5	32.3	29.6	30.9	29.9	27.3	28.5	25.6	23.2	24.3
18	25.0	22.0	23.4	31.7	29.2	30.5	28.5	26.0	27.1	25.0	23.8	24.3
19	26.1	23.5	24.7	31.1	28.4	29.8	27.3	24.1	25.9	25.2	22.9	24.0
20	26.5	23.9	25.3	29.5	25.1	28.2	26.5	25.0	25.7	24.5	22.5	23.9
21	27.2	25.0	26.1	29.9	27.8	28.7	26.7	24.9	25.6	22.7	20.1	21.8
22	27.6	25.7	26.7	28.9	27.1	27.9	26.6	24.5	25.5	22.9	20.7	21.8
23	28.5	25.9	27.3	27.7	24.9	26.4	24.8	23.7	24.3	22.4	20.3	21.6
24	28.9	26.2	27.6	25.7	22.4	24.0	25.7	23.2	24.4	20.6	18.6	19.7
25	28.9	27.0	27.9	25.4	22.6	24.1	26.1	23.9	25.0	21.0	18.9	19.9
26	29.9	27.8	28.7	26.8	24.3	25.5	26.3	24.2	25.0	21.6	19.5	20.4
27	29.7	26.9	28.2	28.1	25.3	26.4	25.9	24.3	24.9	21.1	18.5	19.8
28	29.9	27.0	28.1	28.8	26.2	27.2	26.3	24.3	25.0	19.9	19.0	19.3
29	29.6	26.9	28.1	28.8	25.8	27.3	26.2	24.2	25.0	20.9	19.4	20.1
30	29.5	27.0	28.1	27.5	24.1	25.9	26.0	23.4	24.9	20.0	18.6	19.3
31	---	---	---	28.3	25.4	26.8	26.2	24.4	25.4	---	---	---
MONTH	29.9	15.8	23.1	32.3	22.4	27.8	29.9	23.2	26.1	27.4	18.5	22.7

ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997





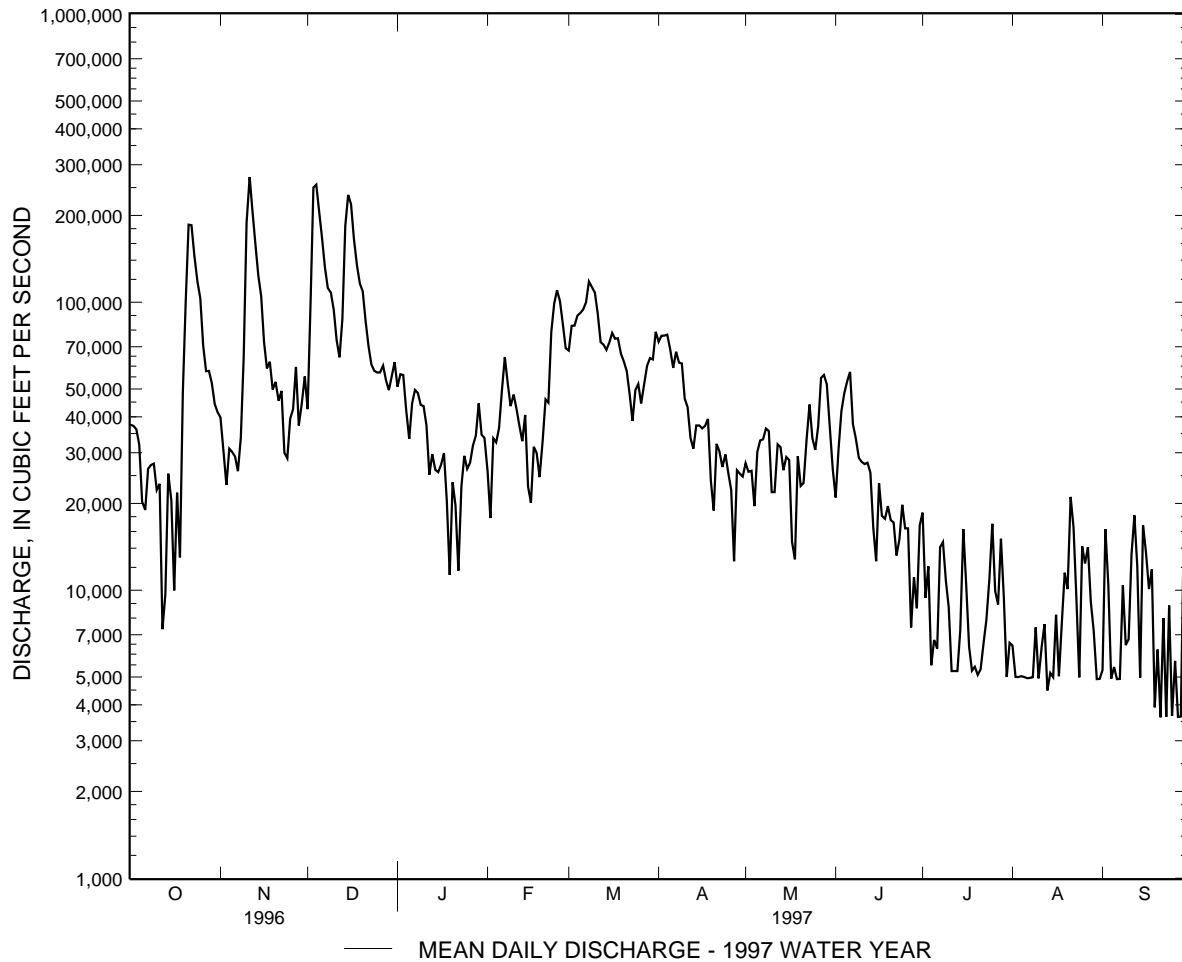


SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1968 - 1997	
ANNUAL TOTAL	23228860		15661740		41270	
ANNUAL MEAN	63470		42910		61090	
HIGHEST ANNUAL MEAN					1978	
LOWEST ANNUAL MEAN					1981	
HIGHEST DAILY MEAN	622000	Jan 21	272000	Nov 11	1120000	Jun 24 1972
LOWEST DAILY MEAN	5270	Sep 1	3620	Sep 21	269	Jul 13 1969
ANNUAL SEVEN-DAY MINIMUM	9530	Aug 30	4990	Aug 2	1810	Sep 24 1980
INSTANTANEOUS PEAK FLOW			303000	Nov 11	1130000	Jun 24 1972
INSTANTANEOUS PEAK STAGE			24.04	Nov 11	36.83	Jun 24 1972
INSTANTANEOUS LOW FLOW			967	(a)	144	Mar 2 1969
ANNUAL RUNOFF (CFSM)	2.34		1.58		1.52	
ANNUAL RUNOFF (INCHES)	31.89		21.50		20.69	
10 PERCENT EXCEEDS	142000		92600		85800	
50 PERCENT EXCEEDS	43700		30200		27600	
90 PERCENT EXCEEDS	15100		5600		6030	

a Feb. 19,20.



## SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

## 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: Maximum 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 1996 TO SEPTEMBER 1997

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, 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 1996											
22...	1100	214000	160	7.3	12.0	15.0	761	10.0	93	--	--
23...	1030	164000	158	7.5	12.0	20.0	758	10.4	97	--	--
NOV											
11...	1300	281000	144	7.0	10.5	4.5	765	12.0	107	--	--
13...	1300	164000	128	7.1	8.0	6.5	759	12.5	106	--	--
DEC											
03...	1345	262000	186	--	6.0	8.0	764	13.1	105	--	--
04...	1430	255000	127	7.1	6.5	7.5	765	13.1	106	--	--
06...	1230	160000	125	7.2	6.0	6.0	--	--	--	--	--
15...	1830	231000	143	7.2	6.5	7.0	771	--	--	--	--
JAN 1997											
22...	1130	6960	268	8.0	2.5	4.5	765	14.9	108	--	--
FEB											
25...	1415	100000	233	7.8	5.5	2.0	769	13.3	105	--	--
MAR											
18...	1145	74200	187	7.4	6.0	11.0	768	--	--	--	--
APR											
01...	1200	74200	184	7.7	9.5	10.5	759	11.2	98	69	19
30...	1230	11800	236	8.0	16.5	17.5	759	8.9	92	87	24
MAY											
20...	1300	58400	221	8.1	19.0	19.5	756	9.2	100	--	--
JUN											
10...	1245	50500	205	7.7	--	--	763	9.0	--	71	19
JUL											
11...	0815	5290	287	7.5	28.5	25.0	767	6.1	78	100	27
AUG											
06...	1015	4910	337	7.0	28.5	24.0	764	5.9	75	120	32
SEP											
10...	1100	5830	363	7.2	24.5	21.0	759	4.9	59	130	32

## SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, TOTAL (MG/L AS N) (00600)
OCT 1996											
22...	--	--	--	27	32	--	--	--	4.8	--	2.2
23...	--	--	--	24	29	--	--	--	4.9	--	1.2
NOV											
11...	--	--	--	--	--	--	--	--	4.8	--	1.6
13...	--	--	--	25	30	--	--	--	5.5	--	1.3
DEC											
03...	--	--	--	--	--	--	--	--	5.0	--	1.7
04...	--	--	--	--	--	--	--	--	4.8	--	1.9
06...	--	--	--	--	--	--	--	--	--	--	1.3
15...	--	--	--	--	--	--	--	--	5.8	--	2.2
JAN 1997											
22...	--	--	--	51	63	--	--	--	6.0	--	2.0
FEB											
25...	--	--	--	39	48	--	--	--	4.1	--	--
MAR											
18...	--	--	--	34	41	--	--	--	4.7	--	1.8
APR											
01...	5.3	6.9	1.2	33	40	29	12	0.15	3.2	104	1.3
30...	6.6	9.1	1.4	44	53	35	15	<0.10	0.27	133	1.3
MAY											
20...	--	--	--	--	--	--	--	--	0.16	--	0.81
JUN											
10...	5.4	7.0	1.5	33	--	27	11	<0.10	3.5	115	1.5
JUL											
11...	8.1	11	1.9	58	--	43	17	<0.10	2.4	182	1.2
AUG											
06...	10	15	2.4	61	--	53	23	0.10	2.4	187	1.2
SEP											
10...	11	16	2.6	54	--	65	23	0.12	1.8	211	1.3

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	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)	PHOS- PHORUS PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
OCT 1996											
22...	--	<0.001	1.60	0.020	0.60	0.30	0.120	0.020	0.009	--	--
23...	--	<0.001	1.00	<0.020	0.20	0.20	0.040	0.011	<0.001	--	--
NOV											
11...	4.2	0.009	0.960	0.040	0.60	0.20	0.150	0.017	0.005	--	--
13...	3.6	0.013	0.830	0.020	0.50	<0.20	0.130	0.014	0.007	--	--
DEC											
03...	5.3	0.010	1.20	0.060	0.50	0.20	0.120	0.032	0.017	--	--
04...	5.3	0.004	1.20	0.070	0.70	<0.20	0.150	0.019	0.006	--	--
06...	--	<0.001	0.920	0.020	0.40	<0.20	0.070	0.013	<0.001	--	--
15...	--	<0.001	1.60	0.050	0.60	<0.20	0.110	0.039	0.021	--	--
JAN 1997											
22...	7.9	0.009	1.79	0.078	0.17	0.04	0.030	0.008	0.014	--	--
FEB											
25...	5.7	0.011	1.30	0.040	<0.20	<0.20	<0.010	0.006	0.003	--	--
MAR											
18...	6.6	0.008	1.50	0.040	0.30	<0.20	0.030	0.013	0.005	--	--
APR											
01...	4.6	0.006	1.05	<0.015	0.35	<0.20	0.046	0.003	0.002	72	155
30...	4.5	0.010	1.02	0.023	0.25	<0.20	<0.010	0.002	0.002	47	26
MAY											
20...	2.6	0.010	0.604	0.041	0.21	0.21	0.018	0.004	0.002	--	--
JUN											
10...	5.1	0.020	1.16	0.044	0.32	<0.20	0.011	0.006	<0.001	8.0	9.9
JUL											
11...	3.3	0.059	0.808	0.080	0.41	0.24	0.016	0.009	0.003	3.0	22
AUG											
06...	3.2	0.050	0.784	0.067	0.43	0.27	<0.010	0.004	0.002	6.4	6.3
SEP											
10...	3.8	0.104	0.965	0.048	0.32	0.25	<0.010	0.007	<0.001	3.4	60

## SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	STRONTIUM, DIS- SOLVED (UG/L AS SR) (01080)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C) (00689)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	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)
OCT 1996											
22...	--	6.4	--	--	--	--	--	--	--	--	--
23...	--	5.4	--	--	--	--	--	--	--	--	--
NOV											
11...	--	8.4	--	--	--	--	--	--	--	--	--
13...	--	5.9	--	--	--	--	--	--	--	--	--
DEC											
03...	--	5.7	--	--	--	--	--	--	--	--	--
04...	--	7.0	--	--	--	--	--	--	--	--	--
06...	--	5.3	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JAN 1997											
22...	--	1.8	--	--	<0.004	<0.002	E0.009	<0.002	<0.003	<0.002	<0.002
FEB											
25...	--	2.3	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	<0.002
MAR											
18...	--	2.7	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	E0.003
APR											
01...	88	--	1.7	0.10	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	<0.002
30...	121	2.2	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	E0.002
MAY											
20...	--	3.5	--	--	--	--	--	--	--	--	--
JUN											
10...	110	2.8	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	0.017	0.017
JUL											
11...	156	2.9	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	0.006
AUG											
06...	183	3.2	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	<0.002
SEP											
10...	220	2.6	--	--	<0.004	<0.002	<0.007	<0.002	<0.003	<0.002	<0.002
DATE	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 P,P' DDE DISSOLV (UG/L) (34653)	ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)
OCT 1996											
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JAN 1997											
22...	0.030	<0.002	<0.002	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	E0.060	<0.002
FEB											
25...	0.017	<0.002	<0.002	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	E0.011	<0.002
MAR											
18...	0.020	<0.002	<0.002	<0.003	<0.003	<0.004	0.008	<0.002	<0.006	E0.025	<0.002
APR											
01...	0.016	<0.002	<0.002	<0.003	<0.003	<0.004	<0.004	<0.002	<0.006	E0.025	<0.002
30...	0.021	<0.002	<0.002	<0.003	<0.003	E0.002	<0.004	<0.002	<0.006	E0.025	<0.002
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	0.437	<0.002	<0.002	<0.003	<0.003	<0.004	0.054	<0.002	<0.006	E0.028	<0.002
JUL											
11...	0.130	<0.002	<0.002	<0.003	<0.003	<0.004	0.033	<0.002	<0.006	E0.030	<0.002
AUG											
06...	0.077	<0.002	<0.002	<0.003	<0.003	<0.004	0.009	E0.001	<0.006	E0.020	<0.002
SEP											
10...	0.058	<0.002	<0.002	<0.003	<0.003	<0.004	0.006	<0.002	<0.006	E0.031	0.007

E Estimated value

## SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	DI-ELDRIN DIS- (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U (UG/L) (82677)	EPTC WATER FLTRD 0.7 U (UG/L) (82668)	ETHO- PROP WATER FLTRD 0.7 U (UG/L) (82672)	FONOFOS WATER DISS (UG/L) (04095)	LINDANE DIS- (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U (UG/L) (82666)	MALA- THION, DIS- (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT 0.7 U (UG/L) (82686)	METHYL PARA- THION WAT FLT 0.7 U (UG/L) (82667)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)
OCT 1996											
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JAN 1997											
22...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.023
FEB											
25...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.011
MAR											
18...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.017
APR											
01...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.014
30...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.015
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.254
JUL											
11...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.057
AUG											
06...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.024
SEP											
10...	<0.001	<0.017	<0.002	<0.003	<0.003	<0.004	<0.002	<0.005	<0.001	<0.006	0.022
DATE	METRI- BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	PEB- ULATE WATER FILTRD 0.7 U (UG/L) (82669)	PARA- THION, DIS- (UG/L) (39542)	PENDI- METH- ALIN WAT FLT 0.7 U (UG/L) (82683)	PER- METHRIN CIS WAT FLT 0.7 U (UG/L) (82687)	PRO- METON, WATER, DISS, (UG/L) (04037)	PRON- AMIDE WATER FLTRD 0.7 U (UG/L) (82676)	PROP- CHLOR, WATER, DISS, (UG/L) (04024)	PRO- PARGITE WATER FLTRD 0.7 U (UG/L) (82685)
OCT 1996											
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JAN 1997											
22...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.007	<0.003	<0.007	<0.013
FEB											
25...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.005	<0.003	<0.007	<0.013
MAR											
18...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.003	<0.003	<0.007	<0.013
APR											
01...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	<0.018	<0.003	<0.007	<0.013
30...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.004	<0.003	<0.007	<0.013
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.010	<0.003	<0.007	<0.013
JUL											
11...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	E0.016	<0.003	<0.007	<0.013
AUG											
06...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	0.020	<0.003	<0.007	<0.013
SEP											
10...	<0.004	<0.004	<0.003	<0.004	<0.004	<0.004	<0.005	0.030	<0.003	<0.007	<0.013

E Estimated value

## SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	SI- MAZINE, WATER, FLTRD DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	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)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	SEDI- MENT, DIS- CHARGE, SUS- SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996										
22...	--	--	--	--	--	--	--	61	35200	97
23...	--	--	--	--	--	--	--	34	15100	98
NOV										
11...	--	--	--	--	--	--	--	126	95600	96
13...	--	--	--	--	--	--	--	100	44300	99
DEC										
03...	--	--	--	--	--	--	--	88	62300	97
04...	--	--	--	--	--	--	--	123	84700	97
06...	--	--	--	--	--	--	--	105	45400	98
15...	--	--	--	--	--	--	--	73	45500	96
JAN 1997										
22...	<0.004	0.008	<0.010	<0.013	<0.002	<0.001	<0.002	2	38	--
FEB										
25...	<0.004	E0.004	<0.010	<0.013	<0.002	<0.001	<0.002	16	4320	72
MAR										
18...	<0.004	0.006	<0.010	<0.013	<0.002	<0.001	<0.002	6	1200	96
APR										
01...	<0.004	0.008	<0.010	<0.013	<0.002	<0.001	<0.002	23	4610	--
30...	<0.004	0.014	<0.010	<0.013	<0.002	<0.001	<0.002	10	319	100
MAY										
20...	--	--	--	--	--	--	--	4	631	100
JUN										
10...	<0.004	0.043	<0.010	<0.013	<0.002	<0.001	<0.002	9	1240	--
JUL										
11...	<0.004	0.039	<0.010	<0.013	<0.002	<0.001	<0.002	8	107	--
AUG										
06...	<0.004	0.024	<0.010	<0.013	<0.002	<0.001	<0.002	59	776	--
SEP										
10...	<0.004	0.020	E0.004	<0.013	<0.002	<0.001	<0.002	6	94	--

E Estimated value

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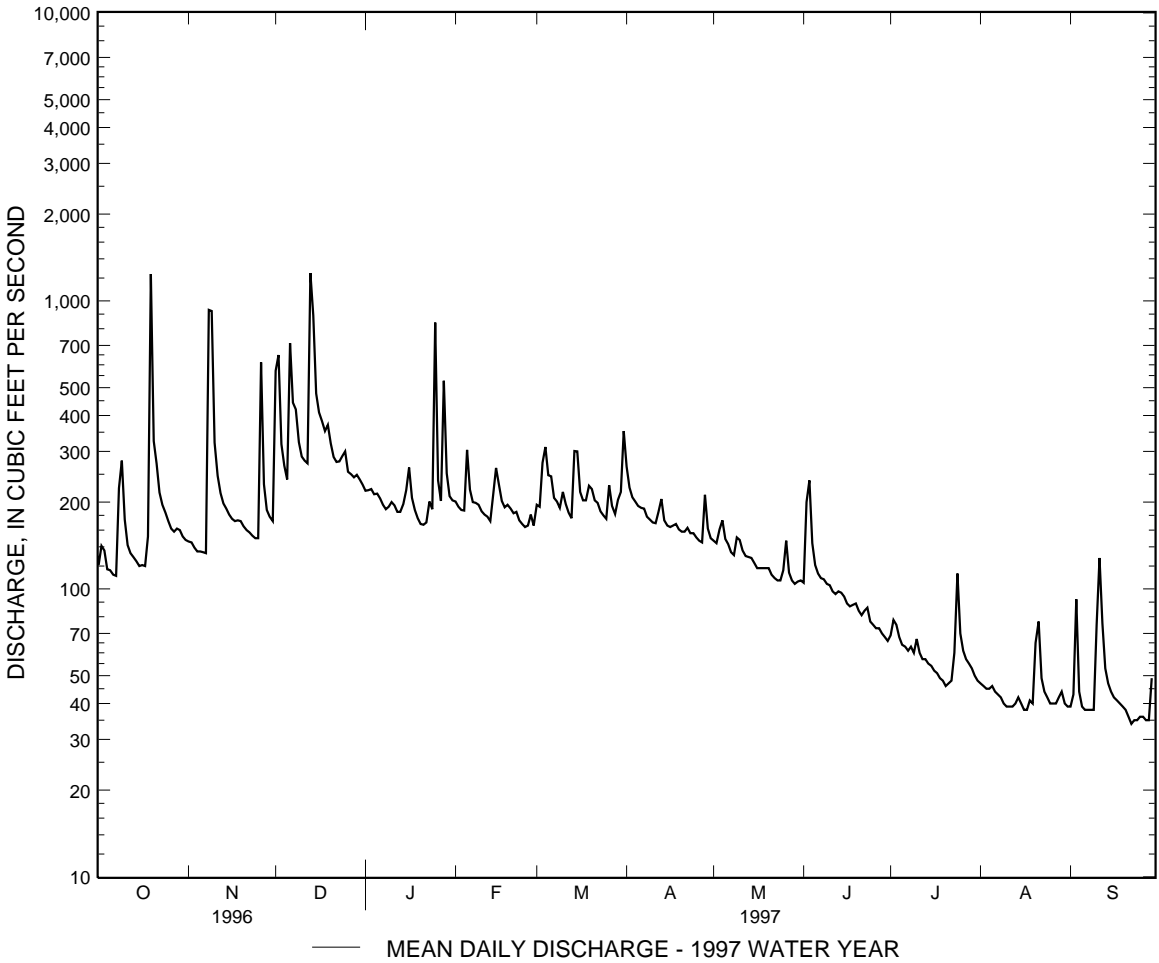


SUSQUEHANNA RIVER BASIN

01580000 DEER CREEK AT ROCKS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1927 - 1997	
ANNUAL TOTAL	84193		61913			
ANNUAL MEAN	230		170		126	
HIGHEST ANNUAL MEAN					224	1972
LOWEST ANNUAL MEAN					58.2	1966
HIGHEST DAILY MEAN	4020	Jan 19	1250	Dec 13	6610	Jun 22 1972
LOWEST DAILY MEAN	89	Jul 11	34	Sep 22	8.6	(a)
ANNUAL SEVEN-DAY MINIMUM	95	Jul 6	35	Sep 22	9.0	Sep 7 1966
INSTANTANEOUS PEAK FLOW			3750	Nov 8	(b)13600	Aug 23 1933
INSTANTANEOUS PEAK STAGE			8.59	Nov 8	(c)17.70	Aug 23 1933
INSTANTANEOUS LOW FLOW			34	(d)	8.0	(f)
ANNUAL RUNOFF (CFSM)	2.44		1.80		1.34	
ANNUAL RUNOFF (INCHES)	33.18		24.40		18.16	
10 PERCENT EXCEEDS	340		275		212	
50 PERCENT EXCEEDS	173		157		94	
90 PERCENT EXCEEDS	113		42		45	

- a Sept. 11, 12 1966.
- b From rating curve extended above 3,000 ft<sup>3</sup>/s, on basis of slope-area measurements at gage heights 13.3 ft and 17.7 ft.
- c From floodmarks.
- d Sept. 22, 23, 27, 28.
- f Dec. 16, 1930, Jan. 26, 1939, result of regulation.



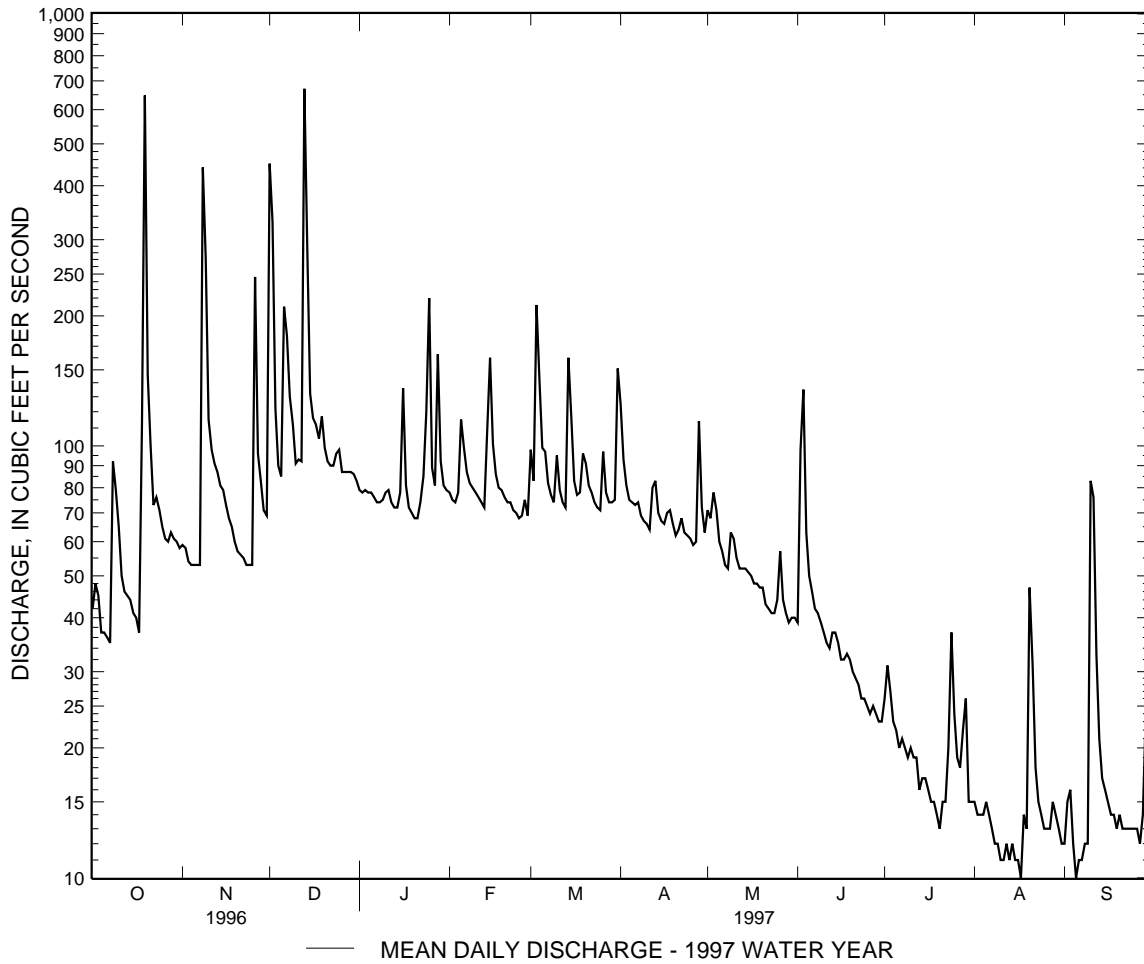


BUSH RIVER BASIN

01581700 WINTERS RUN NEAR BENSON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1967 - 1997	
ANNUAL TOTAL	32008		24459			
ANNUAL MEAN	87.5		67.0		53.7	
HIGHEST ANNUAL MEAN					86.0	1972
LOWEST ANNUAL MEAN					22.9	1981
HIGHEST DAILY MEAN	2060	Jan 19	671	Dec 13	3000	Jun 22 1972
LOWEST DAILY MEAN	25	Jul 11	10	(a)	6.3	(b)
ANNUAL SEVEN-DAY MINIMUM	29	Jul 5	11	Aug 11	7.5	Sep 2 1995
INSTANTANEOUS PEAK FLOW			2090	Nov 8	7600	Jun 22 1972
INSTANTANEOUS PEAK STAGE			6.13	Nov 8	11.60	Jun 22 1972
INSTANTANEOUS LOW FLOW			10	(c)	(d)3.0	Jan 10 1982
ANNUAL RUNOFF (CFSM)	2.51		1.93		1.54	
ANNUAL RUNOFF (INCHES)	34.22		26.15		20.99	
10 PERCENT EXCEEDS	131		102		89	
50 PERCENT EXCEEDS	61		63		39	
90 PERCENT EXCEEDS	37		14		16	

- a Aug. 17, Sept. 5.
- b Aug. 28, 29, 1981, Sept. 7, 1995.
- c Aug. 12, 17, Sept. 5-7.
- d Result of freezeup.



## GUNPOWDER RIVER BASIN

01582000 LITTLE FALLS AT BLUE MOUNT, MD

LOCATION.--Lat 39°36'16", long 76°37'16", 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<sup>2</sup>.

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 sea level, 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. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 8	1800	*2,580	*7.24	Jan. 25	0030	1,170	4.42
Dec. 13	1345	1,340	4.80				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	78	312	128	110	112	129	78	57	38	23	19
2	78	76	287	130	104	101	115	76	104	40	22	24
3	70	74	158	130	103	166	109	90	94	39	22	29
4	64	73	137	127	104	159	104	85	71	35	21	19
5	62	73	126	127	159	135	101	76	62	34	23	18
6	61	72	318	124	118	134	101	75	59	33	21	18
7	61	73	224	119	109	115	99	73	58	33	20	18
8	151	637	187	116	109	110	94	72	56	31	20	19
9	115	320	158	120	106	103	92	83	54	31	19	20
10	87	166	144	123	100	117	90	77	52	33	18	29
11	75	137	141	118	98	104	90	73	51	30	18	73
12	71	125	135	113	97	99	103	71	51	30	19	34
13	69	118	616	e111	94	95	104	70	52	29	21	26
14	67	109	334	e113	117	180	91	70	51	28	21	24
15	64	104	232	e123	139	144	88	67	48	27	20	24
16	63	101	208	151	120	117	86	65	46	27	20	23
17	63	101	200	112	107	111	89	65	47	26	21	23
18	80	101	188	e109	103	112	88	64	48	25	24	22
19	430	98	202	e108	105	128	85	66	47	24	24	20
20	147	95	174	e107	101	118	84	65	44	24	42	20
21	121	93	160	107	98	111	86	61	43	25	36	20
22	106	91	157	106	100	107	86	60	42	25	25	19
23	97	89	159	118	93	101	84	59	42	33	24	20
24	92	88	169	148	90	98	83	58	40	46	22	20
25	87	87	164	324	89	96	80	66	39	33	20	20
26	83	264	146	123	90	128	78	75	39	30	20	20
27	82	115	144	112	96	104	80	61	39	29	20	19
28	85	102	141	265	89	99	112	58	37	27	24	20
29	82	97	146	128	---	118	84	56	36	26	23	32
30	81	96	139	115	---	111	79	59	36	24	20	23
31	78	---	134	112	---	185	---	58	---	23	20	---
TOTAL	2937	3853	6140	4067	2948	3718	2794	2132	1545	938	693	715
MEAN	94.7	128	198	131	105	120	93.1	68.8	51.5	30.3	22.4	23.8
MAX	430	637	616	324	159	185	129	90	104	46	42	73
MIN	61	72	126	106	89	95	78	56	36	23	18	18
CFSM	1.79	2.43	3.74	2.48	1.99	2.27	1.76	1.30	.97	.57	.42	.45
IN.	2.07	2.71	4.32	2.86	2.07	2.61	1.96	1.50	1.09	.66	.49	.50

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1997, BY WATER YEAR (WY)

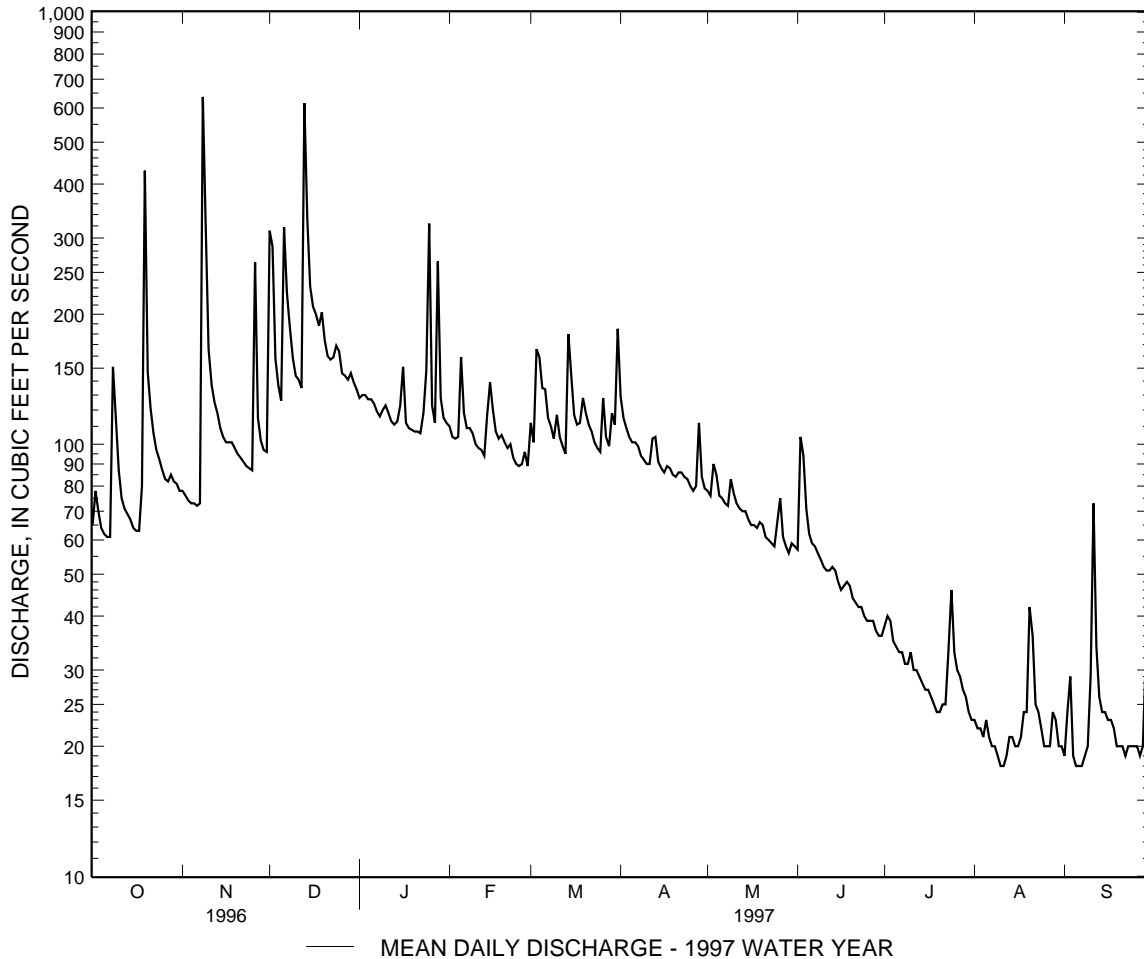
	46.3	56.9	66.8	77.8	88.8	93.7	92.1	84.2	70.2	57.9	47.6	47.8
MEAN	46.3	56.9	66.8	77.8	88.8	93.7	92.1	84.2	70.2	57.9	47.6	47.8
MAX	203	129	198	190	187	261	194	202	353	158	159	227
(WY)	1980	1972	1997	1996	1979	1994	1952	1952	1972	1972	1971	1975
MIN	16.7	22.8	20.9	22.1	37.9	40.3	38.4	29.4	24.3	12.2	9.44	17.2
(WY)	1964	1982	1966	1981	1967	1981	1963	1969	1966	1966	1966	1986

GUNPOWDER RIVER BASIN

01582000 LITTLE FALLS AT BLUE MOUNT, MD--Continued

SUMMARY STATISTICS	1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1944 -1997	
ANNUAL TOTAL	43579		32480			
ANNUAL MEAN	119		89.0		69.1	
HIGHEST ANNUAL MEAN					132 1972	
LOWEST ANNUAL MEAN					31.8 1966	
HIGHEST DAILY MEAN	1730	Jan 19	637	Nov 8	4730	Jun 22 1972
LOWEST DAILY MEAN	52	Jul 11	18	(a)	4.5	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	58	Jul 6	19	Aug 6	4.8	Sep 6 1966
INSTANTANEOUS PEAK FLOW			2580	Nov 8	(b)8280	Jun 22 1972
INSTANTANEOUS PEAK STAGE			7.24	Nov 8	18.54	Jun 22 1972
INSTANTANEOUS LOW FLOW			16	(c)	1.9	Aug 26 1966
ANNUAL RUNOFF (CFSM)	2.25		1.68		1.31	
ANNUAL RUNOFF (INCHES)	30.65		22.84		17.76	
10 PERCENT EXCEEDS	170		146		118	
50 PERCENT EXCEEDS	96		84		52	
90 PERCENT EXCEEDS	64		22		25	

- a Aug. 10, 11, Sept. 5-7.
- b From rating curve extended above 1,300 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.
- c Sept. 5, 6.



## GUNPOWDER RIVER BASIN

01582500 GUNPOWDER FALLS AT GLENCOE, MD

LOCATION.--Lat 39°32'59", long 76°38'11", 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<sup>2</sup>.

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 sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. 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). Several measurements of water temperature were made during the year.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 3,430 ft<sup>3</sup>/s, Nov. 8, gage height, 10.54 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	216	629	364	319	302	431	240	160	123	193	175
2	204	213	1040	360	306	312	353	236	258	127	196	170
3	195	203	653	363	299	401	328	243	315	126	196	177
4	183	194	500	355	296	489	318	267	258	120	195	156
5	180	193	419	353	406	428	304	233	212	117	197	135
6	179	194	810	348	362	434	297	226	189	116	195	122
7	178	195	675	331	323	362	303	214	176	115	208	122
8	279	1060	661	316	318	330	290	201	169	114	230	120
9	289	1160	534	314	319	312	277	220	161	114	190	85
10	234	601	461	333	300	332	262	235	155	118	188	100
11	213	440	435	326	289	316	259	213	150	113	196	170
12	200	363	420	301	283	299	274	201	147	111	226	107
13	193	315	1410	288	278	282	316	197	148	110	240	94
14	190	297	1510	278	315	408	287	196	148	109	259	93
15	184	280	864	273	367	481	264	193	144	108	259	91
16	182	266	682	365	358	382	259	190	142	114	259	92
17	182	261	611	334	331	341	260	180	142	152	259	126
18	195	260	564	310	304	330	268	178	142	151	259	126
19	1050	262	581	e290	307	372	255	180	143	150	216	127
20	598	255	530	e275	301	371	239	186	139	149	223	141
21	461	244	466	271	288	343	240	182	136	150	212	141
22	376	243	443	271	300	337	250	173	135	150	183	140
23	325	232	441	318	284	308	246	163	135	158	179	132
24	299	227	456	317	270	293	245	159	132	187	178	85
25	273	226	503	801	261	285	245	167	130	164	176	85
26	257	569	432	434	259	357	239	206	129	159	176	102
27	246	414	415	349	281	332	233	183	126	156	176	137
28	240	319	402	566	271	310	311	170	122	169	183	139
29	227	285	406	426	---	318	271	163	121	194	181	157
30	220	269	400	355	---	353	249	163	119	191	178	137
31	228	---	382	329	---	491	---	162	---	194	176	---
TOTAL	8445	10256	18735	10914	8595	11011	8373	6120	4783	4329	6382	3784
MEAN	272	342	604	352	307	355	279	197	159	140	206	126
MAX	1050	1160	1510	801	406	491	431	267	315	194	259	177
MIN	178	193	382	271	259	282	233	159	119	108	176	85
(†)	19870	19954	20087	19973	19950	19977	19934	19888	19805	19140	16672	14660

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1980, 1983 - 1997, BY WATER YEAR (WY)

	1978	1979	1980	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	167	176	206	247	249	284	275	264	185	176	155	167						
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	81.6	101	63.3	85.8	127	114	85.5	82.4	94.8	70.8	69.6						
(WY)	1987	1993	1993	1983	1983	1992	1992	1992	1992	1985	1985	1983						

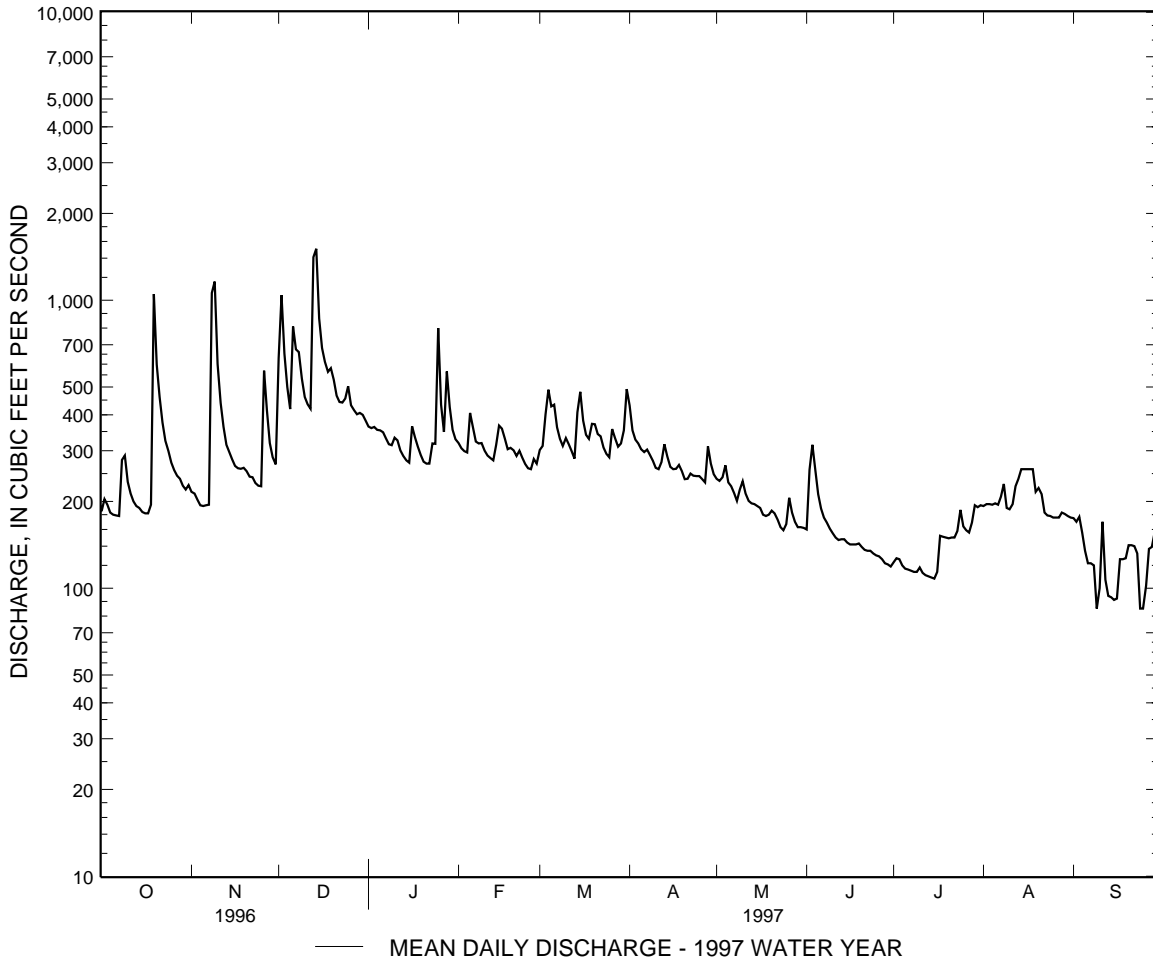
(†) Month-end contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 1996, 19,785,000,000 gal). Records furnished by Baltimore Department of Public Works.

GUNPOWDER RIVER BASIN

01582500 GUNPOWDER FALLS AT GLENCOE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1978 - 1980		1983 - 1997	
	ANNUAL TOTAL	120979		101727				
ANNUAL MEAN	331		279		214			
HIGHEST ANNUAL MEAN					314		1980	
LOWEST ANNUAL MEAN					118		1987	
HIGHEST DAILY MEAN	2480	Jan 19	1510	Dec 14	4500	Sep 6	1979	
LOWEST DAILY MEAN	129	Jul 11	85	(a)	38	Oct 25	1977	
ANNUAL SEVEN-DAY MINIMUM	150	Aug 30	104	Sep 12	42	Oct 20	1977	
INSTANTANEOUS PEAK FLOW			3430	Nov 8	6110	Sep 6	1979	
INSTANTANEOUS PEAK STAGE			10.54	Nov 8	15.30	Sep 6	1979	
INSTANTANEOUS LOW FLOW			85	(b)	(c)35	Jan 4	1983	
ANNUAL RUNOFF (CFSM)	2.07		1.74		1.33			
ANNUAL RUNOFF (INCHES)	28.13		23.65		18.14			
10 PERCENT EXCEEDS	530		434		370			
50 PERCENT EXCEEDS	278		246		169			
90 PERCENT EXCEEDS	183		128		83			

- a Sept. 9, 24, 25.
- b Sept. 9,10, 24-26.
- c Result of freezeup.



## GUNPOWDER RIVER BASIN

01583100 PINEY RUN AT DOVER, MD

LOCATION.--Lat 39°31'15", long 76°46'02", 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<sup>2</sup>.

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 sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (ice effect, ADR malfunction), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0230	469	4.82	Dec. 13	1230	*506	*4.95
Nov. 8	1645	446	4.74	Jan. 24	2315	486	4.88
Dec. 1	1515	435	4.70				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	20	111	30	25	29	25	20	14	9.4	5.6	5.5
2	21	20	91	31	24	25	23	19	36	9.9	5.6	5.6
3	18	19	37	31	24	53	23	22	23	9.5	5.5	5.5
4	17	19	31	30	25	39	22	20	17	e9.0	5.8	5.3
5	16	19	29	30	39	32	22	19	15	e8.5	6.6	5.2
6	16	19	91	29	27	31	22	18	14	e8.5	5.9	5.2
7	16	19	58	28	25	26	22	18	14	e8.2	5.6	5.1
8	52	137	42	27	25	25	21	17	14	7.8	5.5	5.2
9	30	64	34	29	25	24	21	20	13	7.8	5.4	5.2
10	23	34	31	29	24	25	20	18	13	8.1	5.3	18
11	20	28	31	28	23	24	20	17	12	7.6	5.3	20
12	19	26	30	27	23	23	23	17	12	7.3	5.6	9.3
13	18	24	223	e26	22	22	23	17	12	7.0	6.6	6.6
14	18	24	73	e25	28	42	21	17	12	6.8	5.9	6.3
15	17	23	50	27	36	31	20	16	12	6.6	5.7	6.0
16	17	22	44	37	28	25	20	16	12	6.4	5.5	5.6
17	17	22	42	32	25	25	20	15	11	6.5	5.6	5.6
18	41	22	39	e28	25	25	20	15	12	6.2	8.3	5.5
19	129	22	44	e26	25	31	19	16	12	6.1	5.8	5.4
20	34	21	38	e25	24	28	19	15	11	5.8	19	5.4
21	28	21	35	25	23	26	20	14	11	6.1	10	5.3
22	26	21	34	27	24	25	20	14	11	6.2	7.0	5.2
23	25	20	35	30	22	24	19	14	10	7.0	6.3	5.2
24	23	20	39	57	22	23	20	13	9.7	8.6	6.2	5.3
25	22	20	36	62	21	23	19	15	9.4	7.7	6.2	5.4
26	21	62	33	27	22	29	18	17	9.5	6.9	6.0	5.3
27	21	26	33	25	23	24	19	14	9.5	6.7	5.9	5.2
28	23	23	33	58	22	23	26	14	8.9	6.4	7.5	5.4
29	21	23	34	28	---	23	21	13	8.7	6.3	6.5	8.0
30	21	22	32	25	---	23	20	14	8.8	6.0	5.7	5.6
31	20	---	31	25	---	36	---	13	---	5.8	5.6	---
TOTAL	807	862	1544	964	701	864	628	507	387.5	226.7	203.0	197.4
MEAN	26.0	28.7	49.8	31.1	25.0	27.9	20.9	16.4	12.9	7.31	6.55	6.58
MAX	129	137	223	62	39	53	26	22	36	9.9	19	20
MIN	16	19	29	25	21	22	18	13	8.7	5.8	5.3	5.1
CFSM	2.12	2.34	4.05	2.53	2.04	2.27	1.70	1.33	1.05	.59	.53	.53
IN.	2.44	2.61	4.67	2.92	2.12	2.61	1.90	1.53	1.17	.69	.61	.60

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1997, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	11.1	14.9	20.3	16.0	21.9	19.2	21.8	17.6	12.9	11.1	7.87	8.66				
MAX	26.0	28.7	49.8	31.1	37.9	27.9	36.1	27.0	17.5	25.7	18.2	21.3				
(WY)	1997	1997	1997	1997	1985	1997	1983	1984	1982	1984	1984	1987				
MIN	4.68	7.98	7.89	8.26	11.4	12.5	11.7	8.82	5.57	4.91	5.05	3.95				
(WY)	1987	1983	1983	1983	1987	1985	1985	1986	1986	1986	1986	1986				



GUNPOWDER RIVER BASIN

01583100 PINEY RUN AT DOVER, MD--Continued

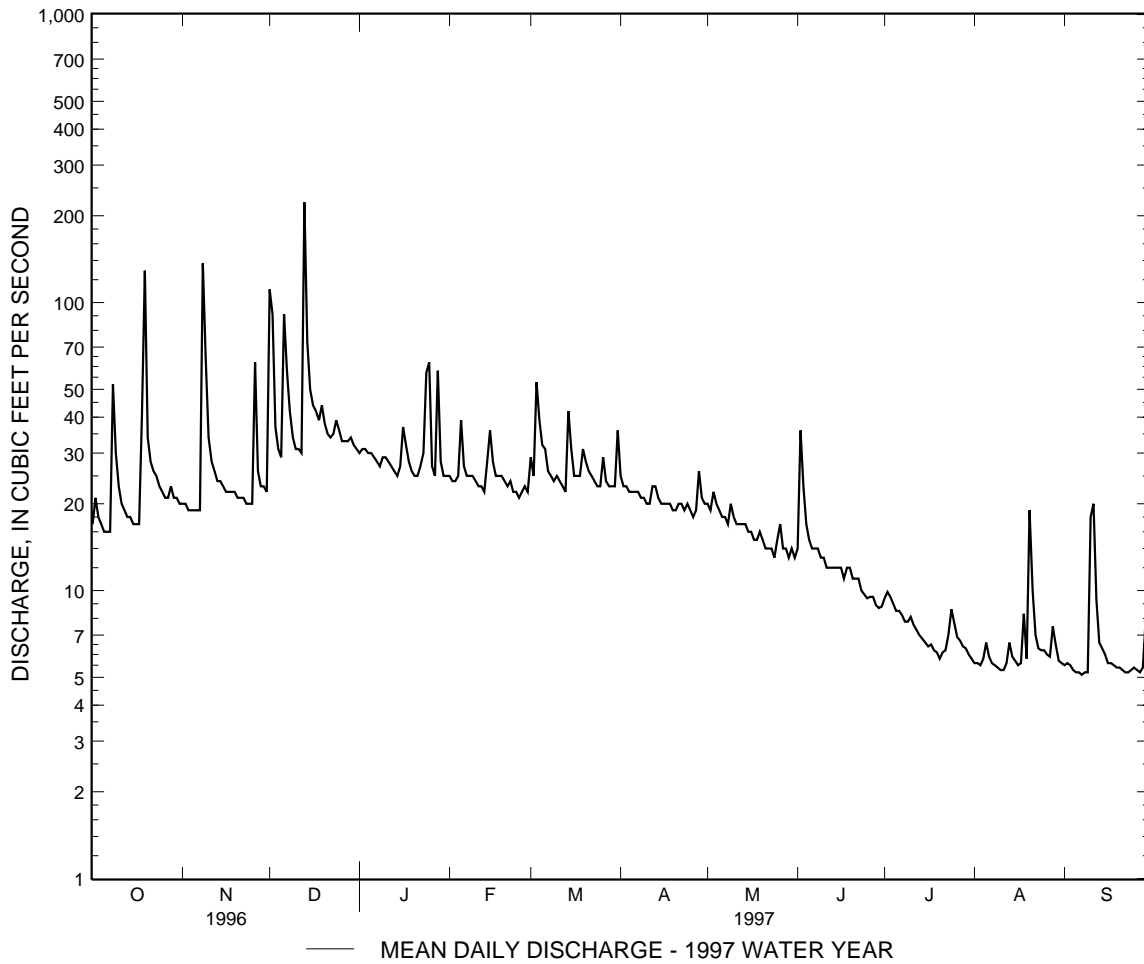
SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1982 - 1997

ANNUAL TOTAL	7891.6		
ANNUAL MEAN	21.6		15.4
HIGHEST ANNUAL MEAN			21.6 1997
LOWEST ANNUAL MEAN			9.56 1986
HIGHEST DAILY MEAN	223	Dec 13	599 Feb 12 1985
LOWEST DAILY MEAN	5.1	Sep 7	2.6 Aug 15 1986
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 3	3.0 Aug 9 1986
INSTANTANEOUS PEAK FLOW	506	Dec 13	3220 Sep 8 1987
INSTANTANEOUS PEAK STAGE	4.95	Dec 13	8.28 Sep 8 1987
INSTANTANEOUS LOW FLOW	4.9	(a)	2.4 Aug 15 1986
ANNUAL RUNOFF (CFSM)	1.76		1.25
ANNUAL RUNOFF (INCHES)	23.87		17.01
10 PERCENT EXCEEDS	34		26
50 PERCENT EXCEEDS	20		11
90 PERCENT EXCEEDS	5.7		5.4

a Aug. 17, Sept. 5, 7-9, 28.



## GUNPOWDER RIVER BASIN

01583500 WESTERN RUN AT WESTERN RUN, MD

LOCATION.--Lat 39°30'38", long 76°40'37", 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<sup>2</sup>.

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 sea level (Baltimore County bench mark).

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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0515	1,350	4.95	Dec. 13	1700	2,200	6.27
Nov. 8	2115	*2,770	*7.02	Jan. 25	0215	1,140	4.56
Dec. 1	1800	1,190	4.64				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	80	395	130	114	128	119	86	61	43	23	23
2	97	78	361	131	109	115	108	83	157	47	23	22
3	95	76	174	132	108	228	106	93	117	44	22	23
4	89	75	152	128	109	195	103	88	82	39	23	20
5	90	74	140	128	162	146	101	80	71	36	26	20
6	85	74	351	124	123	146	102	79	67	36	24	20
7	83	75	237	120	114	123	101	76	66	35	22	20
8	171	886	199	117	115	117	96	75	64	34	21	21
9	145	419	171	122	113	112	94	82	61	34	20	21
10	101	166	156	125	108	121	93	79	58	36	20	43
11	88	140	154	120	105	112	93	75	57	33	20	93
12	84	126	152	114	104	106	104	73	56	32	20	39
13	82	118	1040	e110	102	103	108	72	57	31	24	30
14	80	114	340	e106	126	180	95	72	56	30	24	27
15	77	109	201	110	161	152	91	71	54	29	22	26
16	77	106	179	151	136	122	89	69	52	28	21	25
17	76	104	171	121	120	116	91	68	52	28	20	24
18	95	104	168	e114	114	118	90	67	52	27	32	24
19	554	102	196	e107	113	150	87	68	52	26	24	23
20	156	99	168	e105	108	138	86	67	50	25	68	23
21	129	96	157	107	106	124	89	64	49	26	53	22
22	114	95	154	109	106	118	91	63	49	27	30	22
23	106	93	155	127	100	111	87	62	48	32	26	22
24	97	92	161	129	98	107	90	61	45	40	25	22
25	91	92	165	352	96	104	89	65	44	35	25	22
26	87	257	144	129	98	128	84	77	43	32	24	22
27	85	127	143	116	105	110	85	63	44	29	24	21
28	90	110	141	227	96	105	125	61	42	27	28	22
29	86	106	143	132	---	105	92	60	40	27	28	33
30	83	104	139	118	---	103	86	62	40	24	24	23
31	80	---	135	116	---	161	---	61	---	24	23	---
TOTAL	3455	4297	6742	4077	3169	4004	2875	2222	1786	996	809	798
MEAN	111	143	217	132	113	129	95.8	71.7	59.5	32.1	26.1	26.6
MAX	554	886	1040	352	162	228	125	93	157	47	68	93
MIN	76	74	135	105	96	103	84	60	40	24	20	20
CFSM	1.86	2.40	3.64	2.20	1.89	2.16	1.60	1.20	1.00	.54	.44	.44
IN.	2.15	2.67	4.19	2.54	1.97	2.49	1.79	1.38	1.11	.62	.50	.50

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1997, BY WATER YEAR (WY)

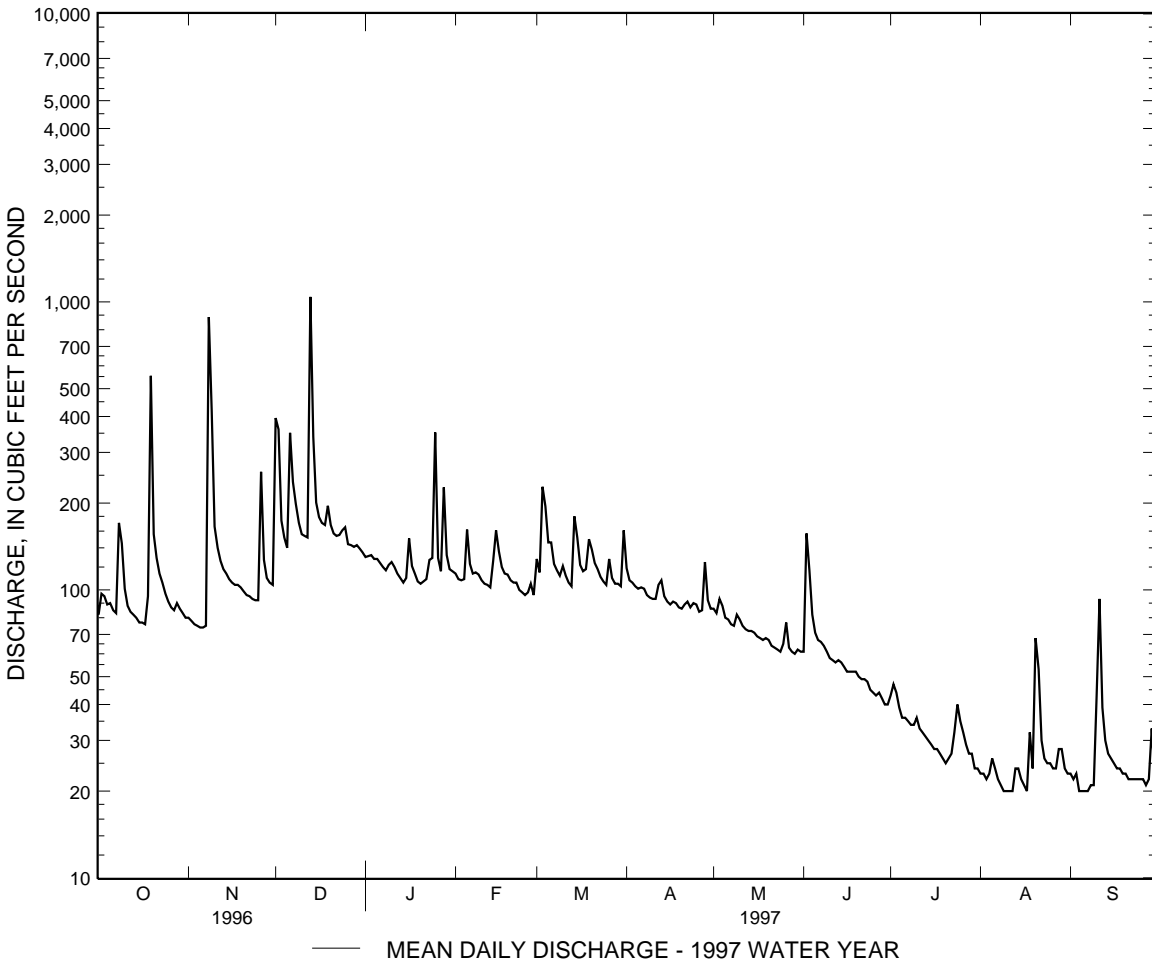
	MEAN	46.5	57.6	69.5	82.2	92.7	96.1	90.3	82.5	71.1	56.5	49.2	47.7
MAX	209	143	217	222	241	237	209	227	395	164	183	261	
(WY)	1980	1997	1997	1979	1979	1994	1952	1952	1972	1972	1971	1975	
MIN	16.4	20.4	19.0	20.5	34.4	45.9	39.8	31.5	21.1	11.3	7.78	14.8	
(WY)	1964	1966	1966	1966	1967	1981	1963	1963	1966	1966	1966	1963	

GUNPOWDER RIVER BASIN

01583500 WESTERN RUN AT WESTERN RUN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1944 - 1997	
ANNUAL TOTAL	47222		35230			
ANNUAL MEAN	129		96.5		70.1	
HIGHEST ANNUAL MEAN					138	1972
LOWEST ANNUAL MEAN					28.9	1966
HIGHEST DAILY MEAN	2130	Jan 19	1040	Dec 13	7000	Jun 22 1972
LOWEST DAILY MEAN	57	Jan 1	20	(a)	2.5	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	67	Jan 12	21	Sep 3	3.8	Sep 6 1966
INSTANTANEOUS PEAK FLOW			2770	Nov 8	(b)38000	Jun 22 1972
INSTANTANEOUS PEAK STAGE			7.02	Nov 8	(c)26.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			19	Aug 17	2.4	Sep 12 1966
ANNUAL RUNOFF (CFSM)	2.16		1.61		1.17	
ANNUAL RUNOFF (INCHES)	29.38		21.92		15.92	
10 PERCENT EXCEEDS	176		154		118	
50 PERCENT EXCEEDS	96		90		52	
90 PERCENT EXCEEDS	74		24		23	

- a Aug. 9-12,17,Sept. 4-7.
- b From rating curve extended above 3,200 ft<sup>3</sup>/s, on basis of slope-area measurement and contracted-opening measurement of peak flow.
- c From floodmarks.



## GUNPOWDER RIVER BASIN

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD

LOCATION.--Lat 39°29'08", long 76°38'45", 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<sup>2</sup>.

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 sea level. 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.--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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0230	707	5.37	Dec. 13	1345	1,020	6.84
Nov. 8	1900	*1,270	*7.96	Jan. 25	0045	652	5.10

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	33	234	46	39	68	50	37	39	24	11	11
2	46	33	166	46	43	37	40	30	140	15	9.3	32
3	32	32	52	47	41	180	38	52	61	14	8.9	16
4	28	29	45	39	52	76	36	33	31	14	9.2	9.7
5	28	28	45	45	78	58	37	25	25	13	11	11
6	27	29	192	43	45	55	40	26	24	11	10	12
7	25	29	114	43	42	45	34	26	24	11	9.7	14
8	98	425	66	42	46	44	30	25	23	11	10	13
9	47	210	52	46	46	43	29	33	21	11	9.9	12
10	35	52	44	48	38	56	28	28	19	12	8.9	37
11	29	42	64	40	32	36	31	25	18	11	8.6	107
12	29	37	54	32	35	33	58	23	17	13	8.1	17
13	30	35	533	33	38	32	40	23	18	13	8.4	13
14	27	37	188	37	74	103	31	24	19	10	8.7	12
15	27	34	82	43	84	55	31	23	18	9.7	8.5	12
16	26	31	66	89	51	42	32	24	16	9.8	8.6	12
17	28	31	61	45	41	36	39	23	17	10	20	11
18	97	31	59	e40	36	48	31	23	18	10	13	10
19	273	31	73	e36	38	78	28	23	17	11	9.5	12
20	53	29	57	e34	40	53	27	22	17	11	134	13
21	42	29	50	33	40	46	35	19	16	11	23	12
22	39	29	53	41	37	43	32	20	15	12	12	11
23	37	29	53	44	31	41	30	21	15	16	11	11
24	35	30	66	96	32	34	41	21	14	25	12	11
25	33	29	56	177	36	32	31	31	15	14	11	11
26	34	134	50	46	41	53	28	30	15	14	9.6	11
27	33	36	50	40	36	38	41	21	15	13	10	12
28	39	35	50	100	30	34	79	21	15	11	15	18
29	34	38	53	53	---	36	33	20	15	11	11	21
30	33	35	48	47	---	35	31	23	13	10	9.7	11
31	32	---	46	41	---	94	---	22	---	9.4	9.9	---
TOTAL	1405	1662	2822	1592	1222	1664	1091	797	730	390.9	459.5	515.7
MEAN	45.3	55.4	91.0	51.4	43.6	53.7	36.4	25.7	24.3	12.6	14.8	17.2
MAX	273	425	533	177	84	180	79	52	140	25	134	107
MIN	25	28	44	32	30	32	27	19	13	9.4	8.1	9.7
CFSM	2.17	2.65	4.36	2.46	2.09	2.57	1.74	1.23	1.16	.60	.71	.82
IN.	2.50	2.96	5.02	2.83	2.18	2.96	1.94	1.42	1.30	.70	.82	.92

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

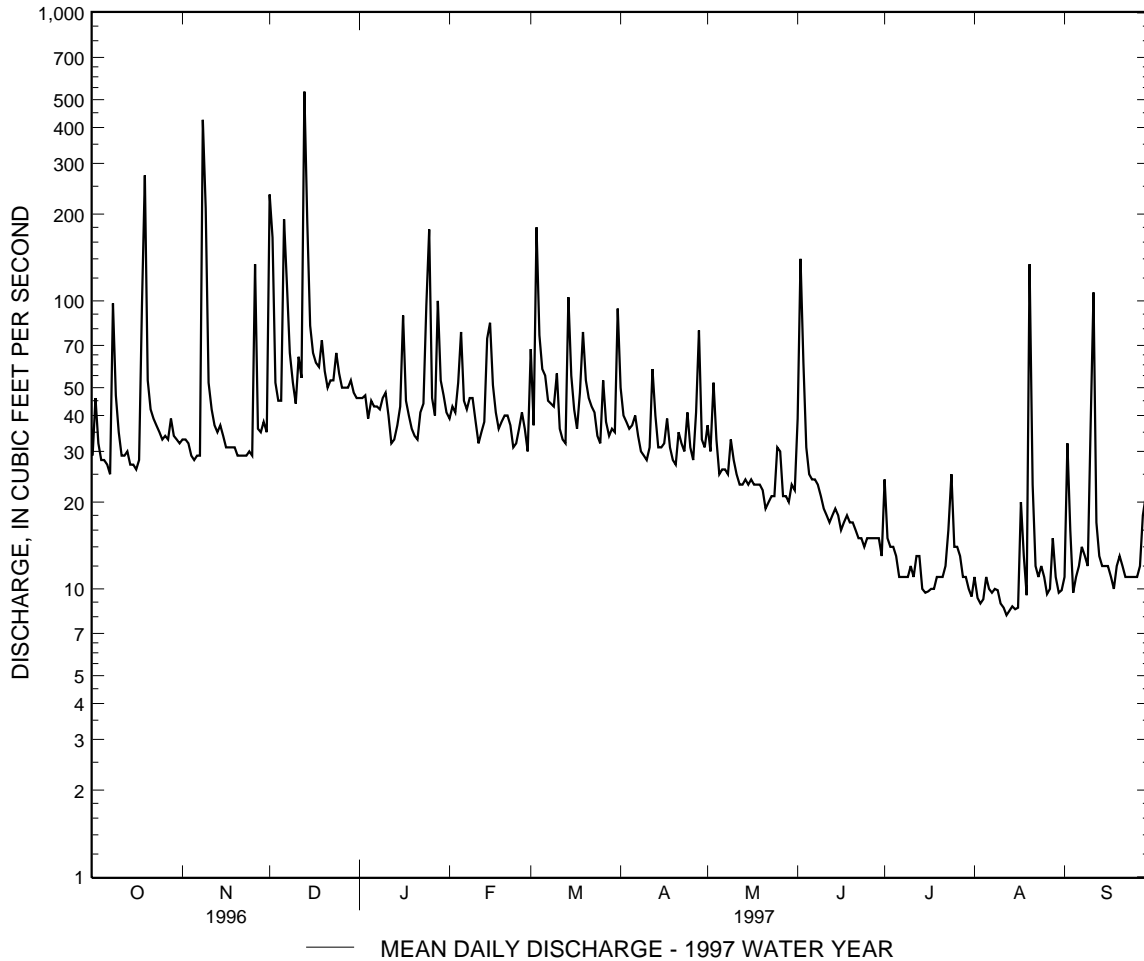
	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983	1983
MEAN	21.4	30.6	33.2	33.3	33.7	42.6	38.5	38.3	26.5	27.8	21.0	20.9
MAX	45.3	55.4	91.0	69.5	57.5	90.2	81.6	80.5	50.7	72.7	46.0	40.9
(WY)	1997	1997	1997	1996	1994	1994	1983	1989	1996	1996	1996	1996
MIN	10.4	14.8	15.0	16.9	18.5	21.4	18.5	14.5	9.23	8.94	10.0	7.29
(WY)	1983	1983	1983	1992	1992	1985	1985	1986	1986	1986	1985	1986

GUNPOWDER RIVER BASIN

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1983 - 1997	
ANNUAL TOTAL	19581		14351.1			
ANNUAL MEAN	53.5		39.3		30.6	
HIGHEST ANNUAL MEAN					45.8	1996
LOWEST ANNUAL MEAN					17.2	1986
HIGHEST DAILY MEAN	903	Jan 19	533	Dec 13	903	Jan 19 1996
LOWEST DAILY MEAN	(e)20	(a)	8.1	Aug 12	5.5	(b)
ANNUAL SEVEN-DAY MINIMUM	22	Jan 11	8.5	Aug 10	5.8	Aug 10 1986
INSTANTANEOUS PEAK FLOW			1270	Nov 8	(c)3360	Jul 1 1984
INSTANTANEOUS PEAK STAGE			7.96	Nov 8	(d)12.10	Jul 1 1984
INSTANTANEOUS LOW FLOW			7.5	(f)	4.1	Oct 1 1986
ANNUAL RUNOFF (CFSM)	2.56		1.88		1.47	
ANNUAL RUNOFF (INCHES)	34.85		25.54		19.92	
10 PERCENT EXCEEDS	80		61		52	
50 PERCENT EXCEEDS	36		31		22	
90 PERCENT EXCEEDS	27		11		11	

e Estimated  
a Jan. 6, 13-15.  
b Aug. 16, 1986, Sept. 1, 1992.  
c From rating curve extended above 1,000 ft<sup>3</sup>/s.  
d From floodmarks.  
f Aug. 12,13,16,17.



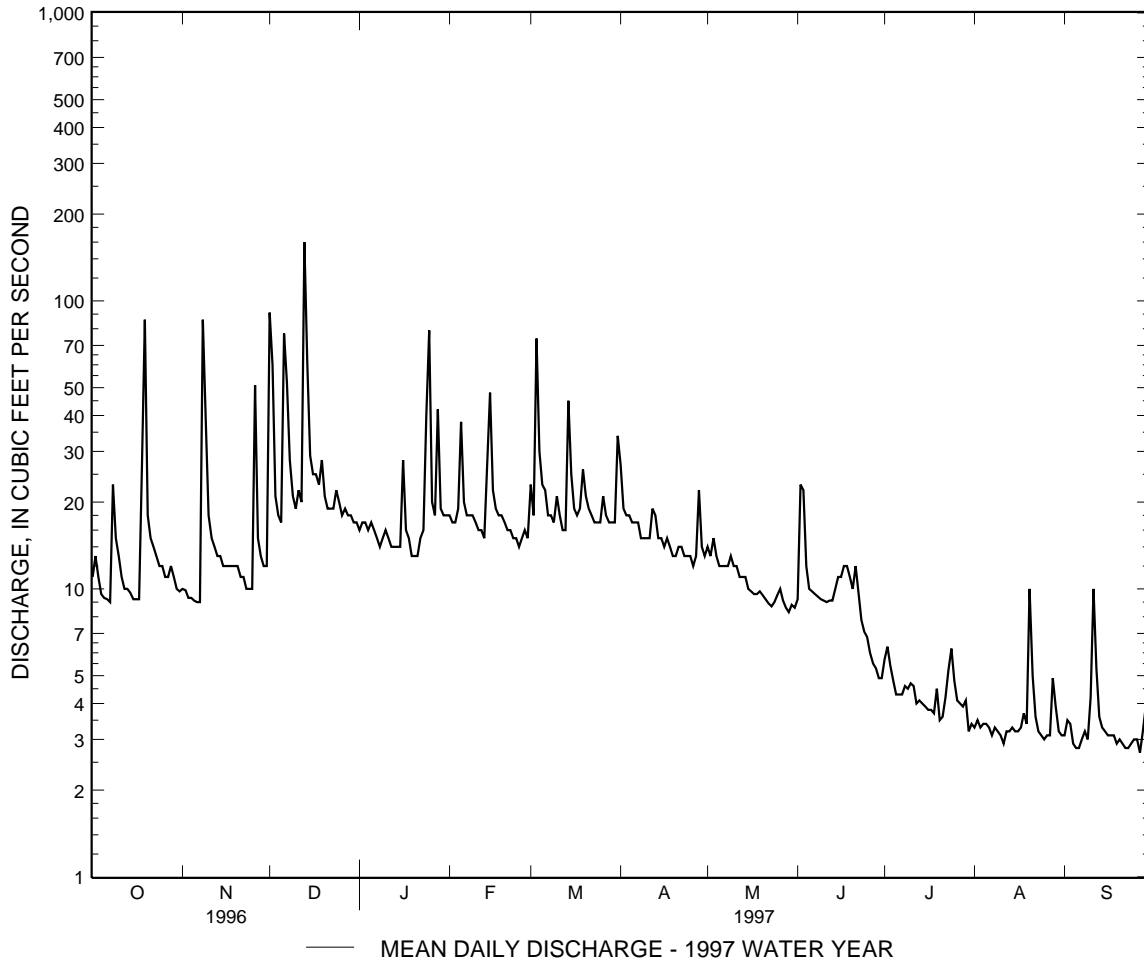


GUNPOWDER RIVER BASIN

01584050 LONG GREEN CREEK AT GLEN ARM, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1976 - 1997	
ANNUAL TOTAL	6933.9		5264.9			
ANNUAL MEAN	18.9		14.4		11.7	
HIGHEST ANNUAL MEAN					18.1	1979
LOWEST ANNUAL MEAN					5.33	1981
HIGHEST DAILY MEAN	393	Jan 19	160	Dec 13	408	Jan 26 1978
LOWEST DAILY MEAN	8.3	(a)	2.7	Sep 27	1.5	Aug 15 1986
ANNUAL SEVEN-DAY MINIMUM	8.7	Aug 30	2.9	Sep 21	1.6	Aug 10 1986
INSTANTANEOUS PEAK FLOW			431	Jan 24	(b)3250	Jul 1 1984
INSTANTANEOUS PEAK STAGE			3.88	Jan 24	6.70	Jul 1 1984
INSTANTANEOUS LOW FLOW			2.5	(c)	(d)1.0	Jan 29 1977
ANNUAL RUNOFF (CFSM)	2.02		1.53		1.24	
ANNUAL RUNOFF (INCHES)	27.44		20.84		16.87	
10 PERCENT EXCEEDS	28		22		18	
50 PERCENT EXCEEDS	13		12		8.5	
90 PERCENT EXCEEDS	9.6		3.2		3.6	

- a Sept. 2, 3.
- b From rating curve extended above 1,300 ft<sup>3</sup>/s.
- c Aug. 11,12,16,17.
- d Result of freezeup.



## GUNPOWDER RIVER BASIN

01585090 WHITEMARSH RUN NEAR FULLERTON, MD

LOCATION.--Lat 39°22'46", long 76°29'46", 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<sup>2</sup>.

PERIOD OF RECORD.--January 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 125 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, missing record), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 750 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep. 2	1900	*904	*4.16	No other peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	2.9	58	1.7	2.5	15	11	3.0	6.9	1.0	.29	.72
2	8.2	1.6	23	1.8	2.3	3.2	3.3	1.7	26	.90	.29	37
3	1.7	1.5	3.6	2.0	2.3	65	2.7	7.5	18	.56	1.3	1.9
4	1.3	1.5	2.7	1.8	11	8.9	2.4	2.1	2.0	.38	.70	.34
5	1.2	1.5	3.9	2.2	18	6.4	2.3	1.5	1.3	.33	.37	.22
6	1.2	1.5	45	1.8	3.6	4.4	3.5	1.5	1.1	.38	.26	.19
7	1.1	1.5	25	1.7	2.9	2.7	2.6	1.4	1.1	.32	.23	.71
8	23	74	6.0	1.6	5.9	2.4	1.9	1.5	1.0	.29	.22	.43
9	6.2	11	3.3	4.0	5.7	2.2	1.9	5.4	.94	.31	.21	.24
10	3.5	3.1	2.6	4.0	3.2	11	2.6	1.7	.86	.35	.20	3.5
11	1.7	2.0	8.7	2.7	2.8	2.6	2.2	1.3	.86	.32	.27	20
12	1.9	1.7	4.1	1.8	2.8	2.2	12	1.3	.81	.34	.30	1.4
13	1.5	1.8	136	e1.6	2.5	2.0	3.2	1.3	2.1	.36	.28	.47
14	1.4	1.7	18	e1.5	22	41	2.2	1.2	.94	.37	.30	.37
15	1.5	1.5	4.5	1.6	26	6.3	2.1	1.2	.72	.40	.27	.35
16	1.5	1.5	3.4	18	4.4	3.2	1.9	1.1	.63	e.35	.23	.46
17	1.5	1.5	3.6	3.9	3.3	2.7	4.6	1.1	.67	e.34	11	.31
18	34	1.5	2.9	2.0	3.0	7.0	2.1	1.1	.72	.29	2.6	.31
19	50	1.5	7.7	e1.7	2.8	19	1.8	1.1	.79	.30	.49	.28
20	3.1	1.4	2.6	e1.6	2.6	4.3	1.7	1.2	.58	.29	48	.32
21	2.1	1.3	2.1	1.6	2.5	3.1	2.3	1.0	.94	.32	3.3	.51
22	1.8	1.3	2.1	4.6	2.5	2.7	2.1	.94	.51	e.40	.72	.42
23	1.7	1.4	2.1	3.1	2.3	2.4	2.0	.92	.47	e.60	.41	.47
24	1.6	1.4	5.5	41	2.3	2.2	1.9	.91	.54	e.95	.34	.46
25	1.6	1.4	2.8	25	2.1	2.1	1.8	1.2	.50	e.40	.32	.48
26	1.6	29	2.0	3.5	3.8	11	1.5	2.0	.86	e.33	.33	.46
27	1.5	2.3	1.9	2.9	2.6	2.7	7.6	.95	.69	e.32	.35	.41
28	2.7	1.8	1.9	20	2.1	2.4	19	.87	.43	e.32	6.7	2.1
29	1.6	1.6	2.1	3.5	---	7.0	2.4	.78	.41	e.26	.95	1.6
30	1.5	3.2	1.8	2.7	---	2.6	2.0	1.3	.42	.23	.45	.33
31	1.5	---	1.7	2.7	---	25	---	.86	---	.30	.35	---
TOTAL	166.1	160.9	390.6	169.6	149.8	274.7	110.6	50.93	73.79	12.61	82.03	76.76
MEAN	5.36	5.36	12.6	5.47	5.35	8.86	3.69	1.64	2.46	.41	2.65	2.56
MAX	50	74	136	41	26	65	19	7.5	26	1.0	48	37
MIN	1.1	1.3	1.7	1.5	2.1	2.0	1.5	.78	.41	.23	.20	.19
CFSM	1.96	1.96	4.62	2.00	1.96	3.25	1.35	.60	.90	.15	.97	.94
IN.	2.26	2.19	5.32	2.31	2.04	3.74	1.51	.69	1.01	.17	1.12	1.05

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1997, BY WATER YEAR (WY)

	1995	1996	1997	1995	1996	1997	1995	1996	1997	1995	1996	1997
MEAN	8.06	5.86	7.94	8.52	4.27	6.21	4.08	4.26	5.81	3.03	2.88	3.52
MAX	10.8	6.36	12.6	13.2	5.35	8.86	6.58	6.88	13.5	7.22	5.04	5.61
(WY)	1996	1996	1997	1996	1997	1997	1996	1996	1996	1996	1996	1996
MIN	5.36	5.36	3.28	5.47	2.95	4.61	1.99	1.64	1.44	.41	.96	2.41
(WY)	1997	1997	1996	1997	1995	1995	1995	1997	1995	1997	1995	1995



GUNPOWDER RIVER BASIN

01585090 WHITEMARSH RUN NEAR FULLERTON, MD--Continued

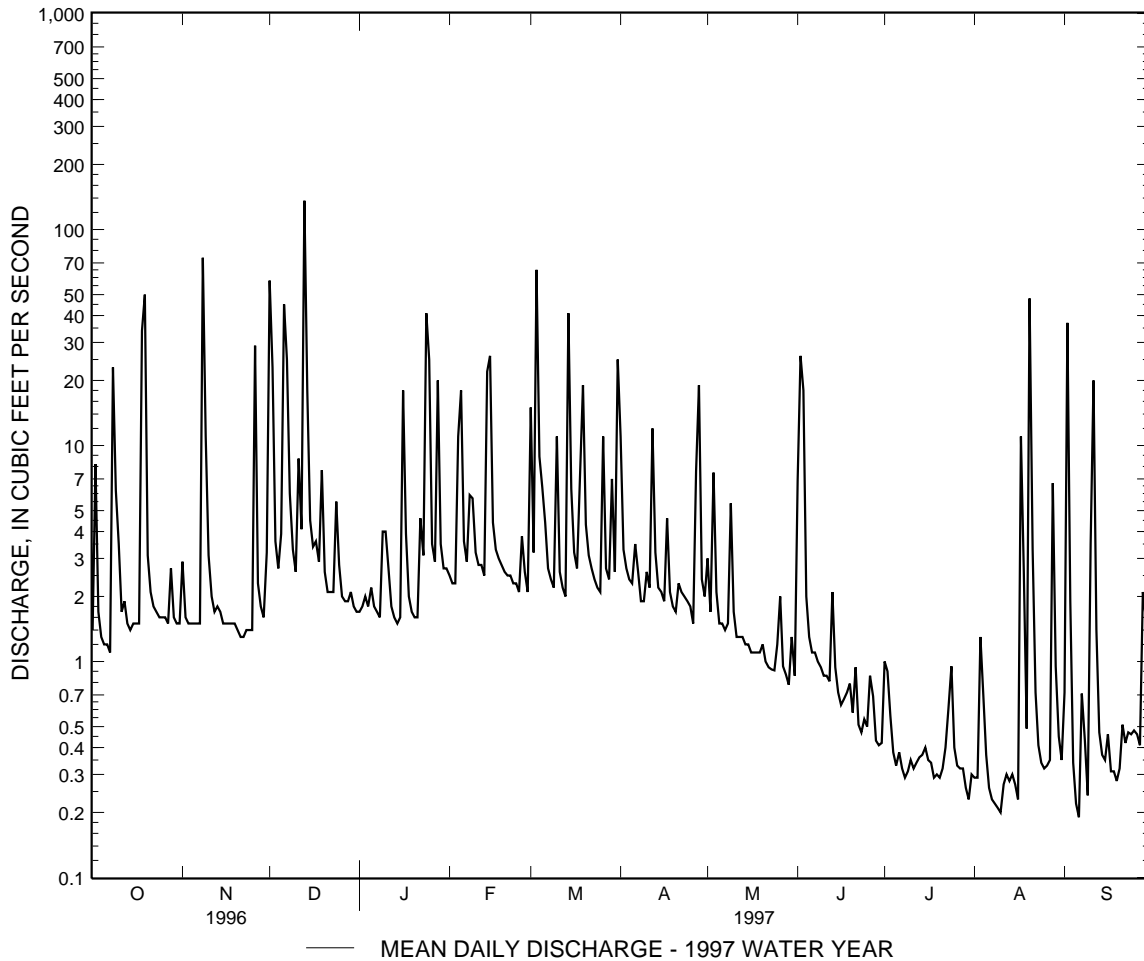
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1995 - 1997	
ANNUAL TOTAL	2782.4		1718.42			
ANNUAL MEAN	7.60		4.71		6.03	
HIGHEST ANNUAL MEAN					7.35 1996	
LOWEST ANNUAL MEAN					4.71 1997	
HIGHEST DAILY MEAN	201	Jan 19	136	Dec 13	201	Jan 19 1996
LOWEST DAILY MEAN	1.0	Jun 16	.19	Sep 6	.01	(a)
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 28	.24	Aug 6	.02	Aug 23 1995
INSTANTANEOUS PEAK FLOW			904	Sep 2	(b)2960	Jun 17 1996
INSTANTANEOUS PEAK STAGE			4.16	Sep 2	5.75	Jun 17 1996
INSTANTANEOUS LOW FLOW			.18	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	2.78		1.72		2.21	
ANNUAL RUNOFF (INCHES)	37.91		23.42		30.02	
10 PERCENT EXCEEDS	17		9.7		11	
50 PERCENT EXCEEDS	2.4		1.7		1.8	
90 PERCENT EXCEEDS	1.3		.33		.36	

a Aug. 25-27, 1995.

b From rating curve extended above 120 ft<sup>3</sup>/s

c July 30, Aug. 8-11, 16, 17, Sept. 5.

d Aug. 26, 27, 1995.



## GUNPOWDER RIVER BASIN

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°23'07", long 76°28'09", 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<sup>2</sup>.

PERIOD OF RECORD.--April 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 75 ft above sea level.

REMARKS.--Records good above 0.5 ft<sup>3</sup>/s and fair below except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 13	1115	*250	*3.22	No peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	1.6	32	.50	1.0	7.4	7.1	1.6	3.6	.27	.04	.07
2	5.6	.33	12	.42	.89	1.2	1.2	.60	18	.30	.06	9.4
3	.83	.33	1.4	.55	.86	34	.92	4.3	11	.17	1.2	.58
4	.63	.34	1.0	.50	5.7	4.0	.80	.94	.84	.17	.21	.21
5	.57	.33	2.2	.80	10	3.5	.72	.62	.56	.17	.17	.17
6	.53	.33	22	.59	3.0	2.1	1.2	.56	.42	.17	.09	.17
7	.58	.36	12	.52	1.0	.96	.75	.50	.42	.15	.08	.62
8	14	41	3.0	.53	2.8	.80	.65	.71	.42	.14	.05	.29
9	4.5	6.1	1.4	2.1	2.7	.77	.50	2.7	.42	.14	.05	.17
10	2.0	1.6	1.0	2.3	1.0	5.5	.50	.66	.42	.14	.05	2.5
11	.70	1.0	4.8	1.1	.86	.94	.50	.51	.42	.10	.05	5.7
12	.63	.84	2.6	.66	.99	.69	4.9	.42	.34	.08	.05	.56
13	.59	.68	64	.52	.78	.62	1.0	.42	1.1	.06	.05	.20
14	.59	.65	7.8	.50	13	20	.61	.42	.50	.05	.05	.16
15	.59	.65	1.7	.50	13	2.3	.58	.42	.32	.05	.04	.13
16	.59	.65	1.2	9.7	1.5	.89	.58	.42	.32	.05	.03	.10
17	.59	.65	1.3	.98	.99	.72	2.2	.42	.32	.05	2.2	.15
18	13	.65	1.0	.71	.86	3.2	.62	.42	.30	.05	.67	.15
19	25	.65	3.9	e.58	.79	9.1	.50	.42	.28	.05	.07	.14
20	.95	.65	.96	e.53	.71	1.4	.50	.43	.28	.05	17	.14
21	.62	.65	.70	.67	.65	.85	.78	.42	.28	.09	.64	.17
22	.50	.65	.65	2.7	.69	.69	.68	.42	.28	.08	.21	.13
23	.52	.65	.65	1.5	.72	.57	.65	.42	.28	.37	.09	.14
24	.65	.73	2.9	22	.72	.53	.75	.44	.26	.79	.07	.16
25	.62	.77	.97	13	.72	.50	.59	.68	.23	.16	.08	.12
26	.53	14	.65	1.5	1.9	5.2	.54	.86	.35	.08	.07	.11
27	.56	.92	.65	1.3	.84	.83	3.8	.42	.24	.08	.07	.07
28	1.2	.67	.65	12	.60	.72	9.7	.42	.23	.08	4.1	1.3
29	.41	.65	.73	1.6	---	3.0	.87	.42	.23	.07	.34	.86
30	.37	1.8	.58	1.1	---	.78	.69	.68	.23	.05	.12	.06
31	.54	---	.58	1.1	---	12	---	.42	---	.05	.07	---
TOTAL	79.58	80.88	186.97	83.06	69.27	125.76	45.38	23.09	42.89	4.31	28.07	24.73
MEAN	2.57	2.70	6.03	2.68	2.47	4.06	1.51	.74	1.43	.14	.91	.82
MAX	25	41	64	22	13	34	9.7	4.3	18	.79	17	9.4
MIN	.37	.33	.58	.42	.60	.50	.50	.42	.23	.05	.03	.06
CFSM	1.92	2.01	4.50	2.00	1.85	3.03	1.13	.56	1.07	.10	.68	.62
IN.	2.21	2.25	5.19	2.31	1.92	3.49	1.26	.64	1.19	.12	.78	.69

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

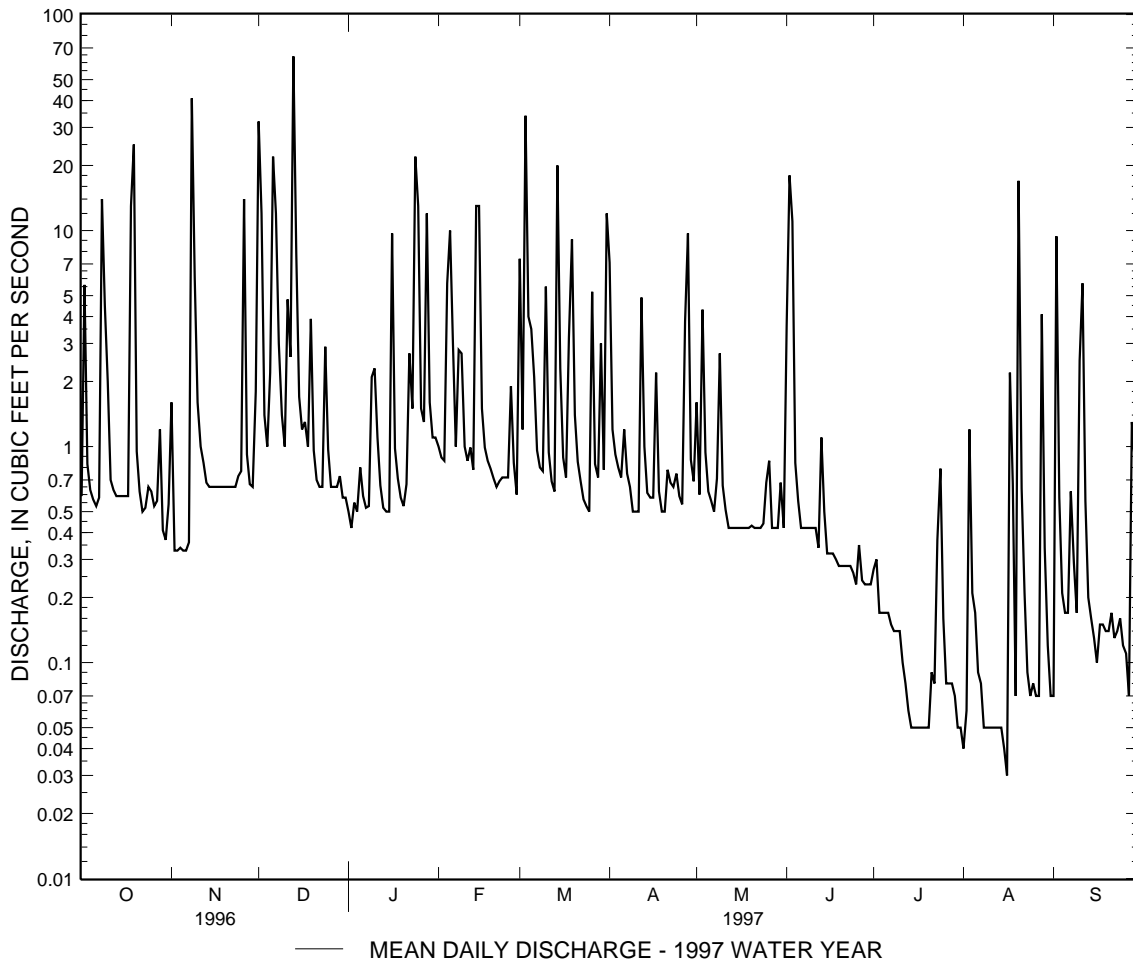
	1992	1993	1994	1995	1996	1997
MEAN	2.02	2.69	3.33	3.65	2.54	4.49
MAX	4.75	3.42	6.03	5.39	4.54	6.79
(WY)	1996	1996	1997	1996	1993	1996
MIN	.77	1.94	1.52	2.25	1.53	2.38
(WY)	1995	1995	1996	1993	1995	1996

GUNPOWDER RIVER BASIN

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	1292.16		793.99			
ANNUAL MEAN	3.53		2.18		2.48	
HIGHEST ANNUAL MEAN					3.39 1996	
LOWEST ANNUAL MEAN					1.63 1995	
HIGHEST DAILY MEAN	80	Jan 19	64	Dec 13	80	Jan 19 1996
LOWEST DAILY MEAN	.30	Jul 11	.03	Aug 16	.03	Aug 16 1997
ANNUAL SEVEN-DAY MINIMUM	.45	Jul 1	.05	Aug 10	.05	Aug 10 1997
INSTANTANEOUS PEAK FLOW			250 Dec 13		502 Jun 19 1996	
INSTANTANEOUS PEAK STAGE			3.22 Dec 13		5.05 Jun 19 1996	
INSTANTANEOUS LOW FLOW			.02 (a)		.02 (a)	
ANNUAL RUNOFF (CFSM)	2.63		1.62		1.85	
ANNUAL RUNOFF (INCHES)	35.87		22.04		25.16	
10 PERCENT EXCEEDS	8.7		4.8		5.3	
50 PERCENT EXCEEDS	.90		.63		.69	
90 PERCENT EXCEEDS	.55		.08		.19	

a Aug. 16, 17, 1997.



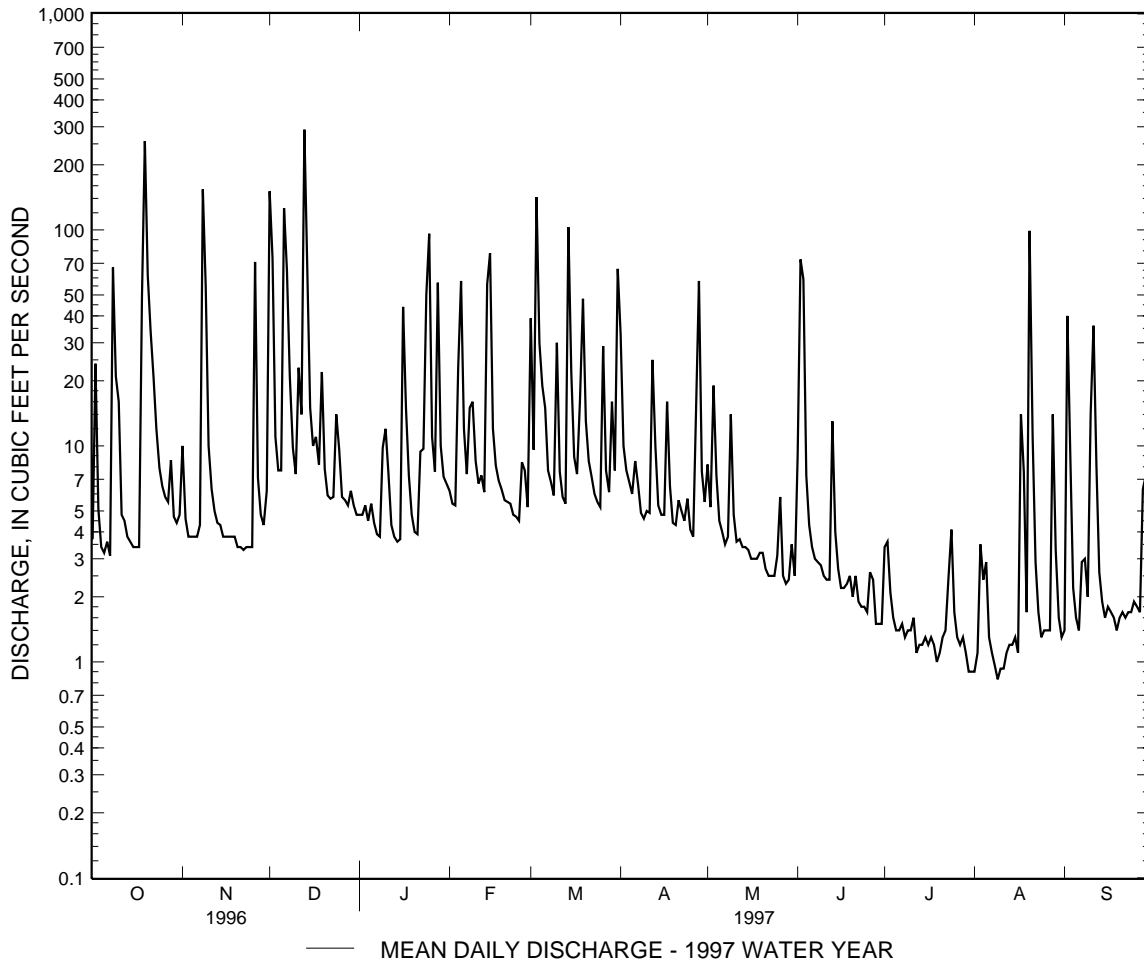


GUNPOWDER RIVER BASIN

01585100 WHITEMARSH RUN AT WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1959 - 1988	
					1992 - 1997	
ANNUAL TOTAL	7625.4		4670.45			
ANNUAL MEAN	20.8		12.8		12.0	
HIGHEST ANNUAL MEAN					21.0	1971
LOWEST ANNUAL MEAN					4.27	1969
HIGHEST DAILY MEAN	472	Jan 19	291	Dec 13	820	Jun 22 1972
LOWEST DAILY MEAN	1.6	Jul 28	.83	Aug 9	.10	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	2.5	Aug 29	1.0	Aug 7	.39	Sep 1 1966
INSTANTANEOUS PEAK FLOW			694	Dec 13	(a)8000	Aug 1 1971
INSTANTANEOUS PEAK STAGE			4.12	Dec 13	14.05	Aug 1 1971
INSTANTANEOUS LOW FLOW			.70	(b)	(c).00	Mar 20 1965
ANNUAL RUNOFF (CFSM)	2.74		1.68		1.58	
ANNUAL RUNOFF (INCHES)	37.28		22.83		21.46	
10 PERCENT EXCEEDS	50		27		21	
50 PERCENT EXCEEDS	6.7		4.8		4.1	
90 PERCENT EXCEEDS	3.4		1.4		1.5	

- a From rating curve extended above 1,300 ft<sup>3</sup>/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 July 30, 31, Aug. 9
- c Result of construction work upstream from station.



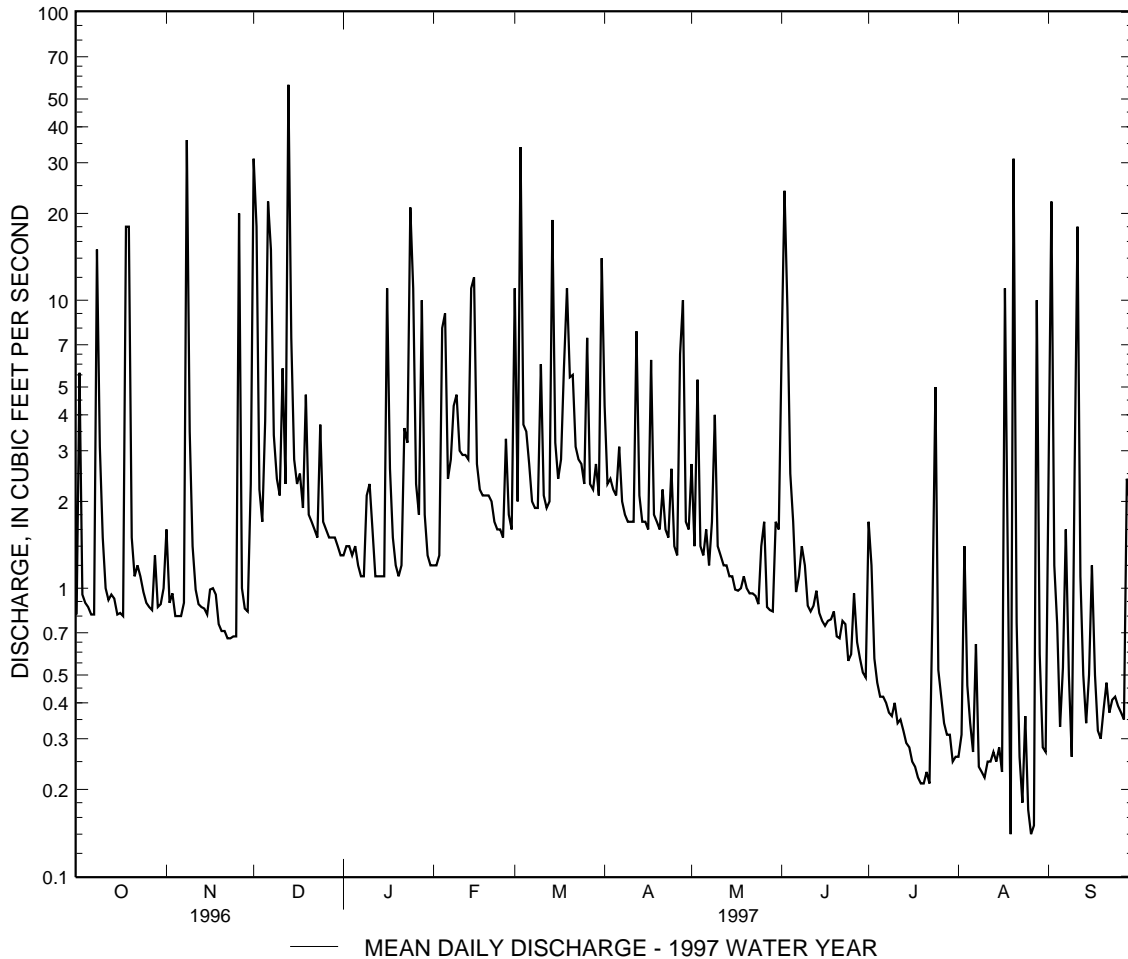


BACK RIVER BASIN

01585200 WEST BRANCH HERRING RUN AT IDLEWYLDE, MD--Continued

SUMMARY STATISTICS	FOR 1997 WATER YEAR		WATER YEARS 1957 - 1987 1997	
ANNUAL TOTAL	1076.83			
ANNUAL MEAN	2.95		2.60	
HIGHEST ANNUAL MEAN			4.26	1972
LOWEST ANNUAL MEAN			1.42	1959
HIGHEST DAILY MEAN	56	Dec 13	137	Jun 22 1972
LOWEST DAILY MEAN	.14	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	.22	Jul 16	.00	Aug 14 1957
INSTANTANEOUS PEAK FLOW	990	Sep 2	(c)1740	Sep 11 1971
INSTANTANEOUS PEAK STAGE	5.46	Sep 2	6.80	Sep 11 1971
INSTANTANEOUS LOW FLOW	.10	(d)	.00	(b)
ANNUAL RUNOFF (AC-FT)	2140		1890	
ANNUAL RUNOFF (CFSM)	1.39		1.22	
ANNUAL RUNOFF (INCHES)	18.81		16.60	
10 PERCENT EXCEEDS	6.3		5.1	
50 PERCENT EXCEEDS	1.3		1.1	
90 PERCENT EXCEEDS	.32		.40	

- a Aug. 19, 26.
- b Aug. 14-24, 1957.
- c From rating curve extended above 90 ft<sup>3</sup>/s on the basis of a slope-area measurement at a gage height of 6.37 ft.
- d Aug. 19, 20.



## BACK RIVER BASIN

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD

LOCATION.--Lat 39°20'12", long 76°32'27", 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<sup>2</sup>.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above sea level, 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.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Sep. 6, 1996	2020	65	2.12	June 13, 1996	1045	52	1.90
Nov. 8, 1996	1510	81	2.38	Aug. 17, 1996	1910	*93	*2.39

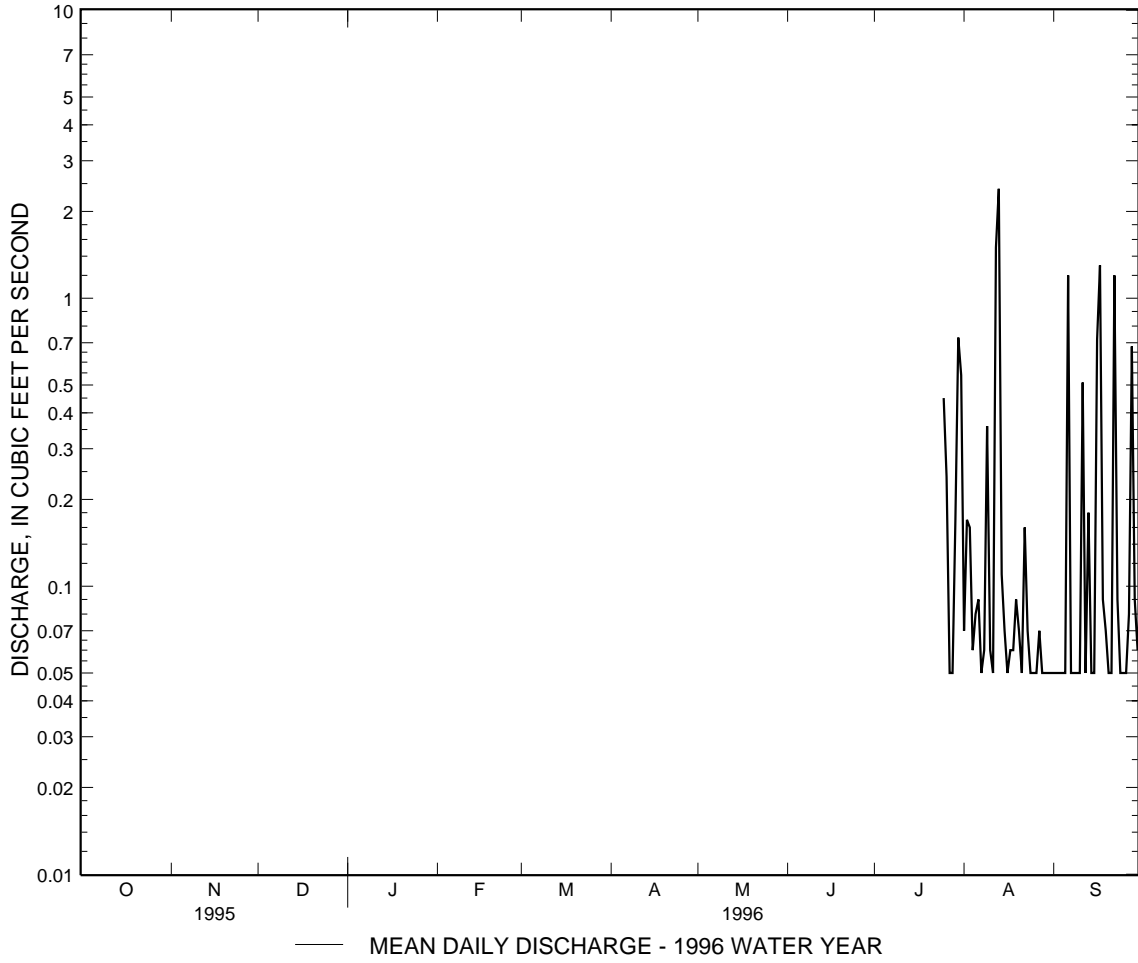
DISCHARGE, IN CUBIC FEET PER SECOND, JULY 1996 TO SEPTEMBER 1996  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	.07	.05
2	---	---	---	---	---	---	---	---	---	---	.17	.05
3	---	---	---	---	---	---	---	---	---	---	.16	.05
4	---	---	---	---	---	---	---	---	---	---	.06	.05
5	---	---	---	---	---	---	---	---	---	---	.08	.05
6	---	---	---	---	---	---	---	---	---	---	.09	1.2
7	---	---	---	---	---	---	---	---	---	---	.05	.05
8	---	---	---	---	---	---	---	---	---	---	.06	.05
9	---	---	---	---	---	---	---	---	---	---	.36	.05
10	---	---	---	---	---	---	---	---	---	---	.06	.05
11	---	---	---	---	---	---	---	---	---	---	.05	.51
12	---	---	---	---	---	---	---	---	---	---	1.5	.05
13	---	---	---	---	---	---	---	---	---	---	2.4	.18
14	---	---	---	---	---	---	---	---	---	---	.11	.05
15	---	---	---	---	---	---	---	---	---	---	.07	.05
16	---	---	---	---	---	---	---	---	---	---	.05	.72
17	---	---	---	---	---	---	---	---	---	---	.06	1.3
18	---	---	---	---	---	---	---	---	---	---	.06	.09
19	---	---	---	---	---	---	---	---	---	---	.09	.07
20	---	---	---	---	---	---	---	---	---	---	.07	.05
21	---	---	---	---	---	---	---	---	---	---	.05	.05
22	---	---	---	---	---	---	---	---	---	---	.16	1.2
23	---	---	---	---	---	---	---	---	---	---	.07	.09
24	---	---	---	---	---	---	---	---	---	---	.05	.05
25	---	---	---	---	---	---	---	---	---	.45	.05	.05
26	---	---	---	---	---	---	---	---	---	.24	.05	.05
27	---	---	---	---	---	---	---	---	---	.05	.07	.08
28	---	---	---	---	---	---	---	---	---	.05	.05	.68
29	---	---	---	---	---	---	---	---	---	.17	.05	.09
30	---	---	---	---	---	---	---	---	---	.73	.05	.06
31	---	---	---	---	---	---	---	---	---	.54	.05	---
TOTAL	---	---	---	---	---	---	---	---	---	---	6.32	7.12
MEAN	---	---	---	---	---	---	---	---	---	---	.20	.24
MAX	---	---	---	---	---	---	---	---	---	---	2.4	1.3
MIN	---	---	---	---	---	---	---	---	---	---	.05	.05
CFSM	---	---	---	---	---	---	---	---	---	---	.97	1.13
IN.	---	---	---	---	---	---	---	---	---	---	1.12	1.26



BACK RIVER BASIN

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD--Continued



## BACK RIVER BASIN

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.23	1.7	.09	.09	.82	.24	.09	.66	.10	.02	.20
2	.54	.09	.96	.10	.09	.09	.09	.05	.93	.01	.01	.01
3	.08	.09	.14	.09	.09	2.9	.09	.50	.85	.01	.26	.00
4	.09	.07	.10	.09	.77	.28	.09	.14	.11	.01	.05	.00
5	.07	.05	.52	.10	.59	.35	.08	.08	.05	.01	.13	.00
6	.07	.07	1.4	.09	.14	.17	.20	.05	.05	.00	.05	.00
7	.19	.09	.97	.09	.11	.14	.13	.05	.05	.00	.01	.09
8	e1.0	3.0	.18	.09	.25	.14	.09	.10	.05	.00	.01	.03
9	e.20	.25	.12	.20	.22	.15	.09	.32	.05	.00	.01	.00
10	.10	.09	.09	.24	.11	.54	.09	.07	.05	.01	.01	.31
11	.09	.08	.33	.16	.10	.14	.09	.05	.05	.01	.01	1.1
12	.09	.05	.18	.10	.10	.09	.65	.05	.05	.01	.01	.02
13	.09	.05	4.4	.09	.09	.11	.12	.05	.84	.01	.03	.02
14	.09	.05	.43	.09	1.2	1.9	.09	.05	.04	.01	.05	.02
15	.09	.05	.15	.09	.89	.28	.09	.05	.01	.01	.03	.02
16	.08	.05	.09	.82	.14	.20	.09	.05	.01	.01	.01	.02
17	.05	.05	.13	.14	.11	.14	.41	.05	.01	.01	1.1	.02
18	1.3	.05	.12	.12	.10	.44	.14	.06	.22	.01	.16	.02
19	1.2	.07	.27	.09	.09	.74	.14	.06	.08	.01	.03	.02
20	.13	.07	.09	e.09	.09	.21	.09	.08	.05	.03	3.4	.15
21	.09	.05	.09	.09	.09	.14	.16	.05	.05	.02	.04	e.02
22	.09	.07	e.09	.28	.10	.14	.07	.06	.05	.03	.00	e.02
23	.11	.09	e.09	.11	.09	.09	.05	.05	.05	.08	.00	e.02
24	.09	.09	.30	1.7	.09	.09	.18	.07	.05	.08	.00	e.02
25	.09	.11	.10	.55	.10	.09	.07	.14	.05	.04	.00	e.02
26	.09	1.2	.09	.14	.24	.51	.05	.13	.15	.02	.00	e.02
27	.09	.09	.09	.16	.09	.09	.71	.07	.07	.01	.00	e.02
28	.14	.09	.09	.74	.09	.09	.85	.06	.06	.16	.59	.30
29	.09	.09	.14	.12	---	.24	.13	.05	.05	.04	.05	.21
30	.09	.23	.09	.09	---	.12	.07	.09	.05	.01	.02	.07
31	.09	---	.09	.09	---	.98	---	.05	---	.01	.02	---
TOTAL	6.67	6.71	13.63	7.04	6.26	12.41	5.44	2.82	4.84	0.77	6.11	2.77
MEAN	.22	.22	.44	.23	.22	.40	.18	.091	.16	.025	.20	.092
MAX	1.3	3.0	4.4	1.7	1.2	2.9	.85	.50	.93	.16	3.4	1.1
MIN	.05	.05	.09	.09	.09	.09	.05	.05	.01	.00	.00	.00
CFSM	1.02	1.07	2.09	1.08	1.06	1.91	.86	.43	.77	.12	.94	.44
IN.	1.18	1.19	2.41	1.25	1.11	2.20	.96	.50	.86	.14	1.08	.49

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

	1996	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
MEAN	.22	.22	.44	.23	.22	.40	.18	.091	.16	.025	.20	.16
MAX	.22	.22	.44	.23	.22	.40	.18	.091	.16	.025	.20	.24
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1996	1996
MIN	.22	.22	.44	.23	.22	.40	.18	.091	.16	.025	.20	.092
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1996 - 1997

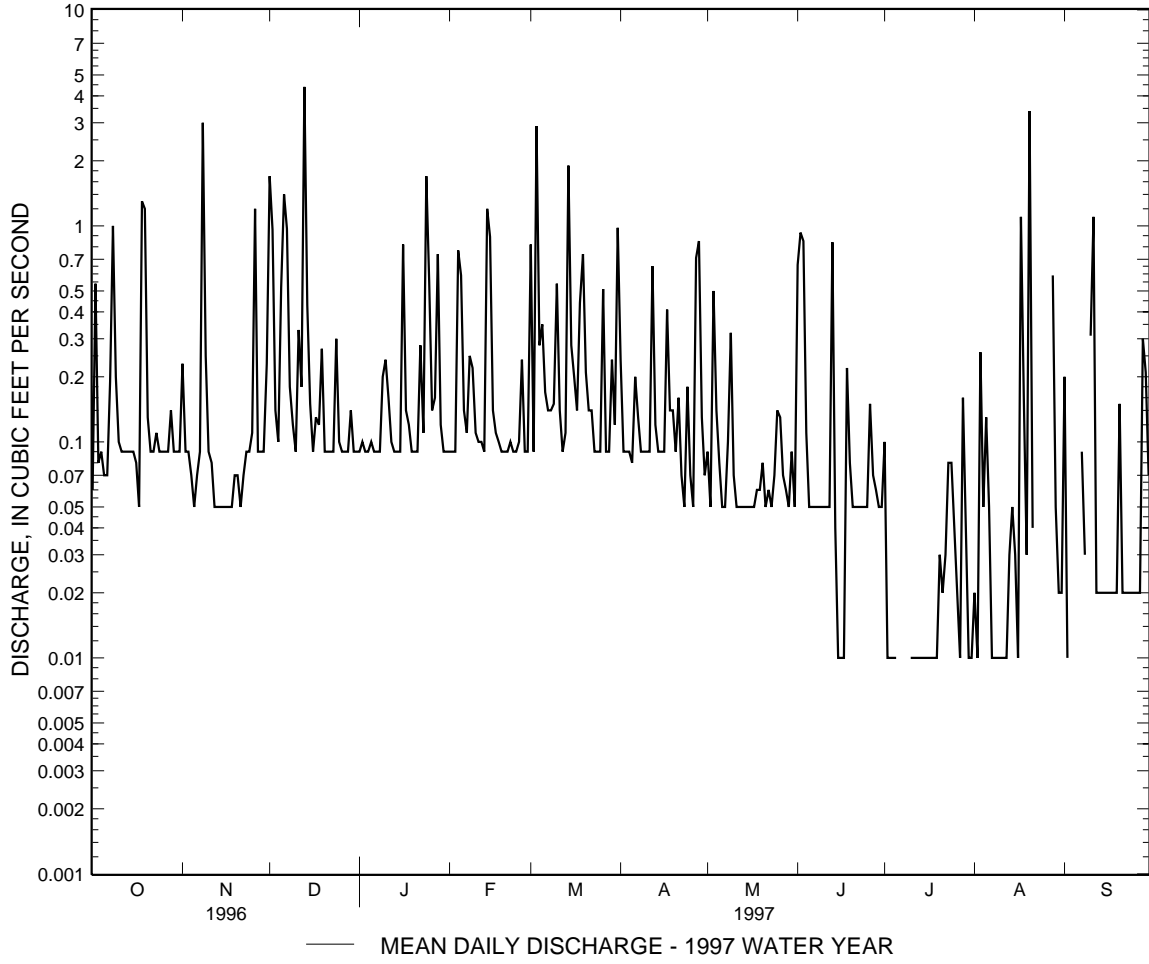
ANNUAL TOTAL	75.47	
ANNUAL MEAN	.21	.21
HIGHEST ANNUAL MEAN		.21 1997
LOWEST ANNUAL MEAN		.21 1997
HIGHEST DAILY MEAN	4.4 Dec 13	4.4 Dec 13 1996
LOWEST DAILY MEAN	.00 (a)	.00 (a)
ANNUAL SEVEN-DAY MINIMUM	.00 Jul 3	.00 Jul 3 1997
INSTANTANEOUS PEAK FLOW	93 Aug 17	93 Aug 17 1997
INSTANTANEOUS PEAK STAGE	2.39 Aug 17	2.39 Aug 17 1997
INSTANTANEOUS LOW FLOW	.00 (b)	.00 (b)
ANNUAL RUNOFF (CFSM)	.98	.98
ANNUAL RUNOFF (INCHES)	13.37	13.38
10 PERCENT EXCEEDS	.53	.54
50 PERCENT EXCEEDS	.09	.09
90 PERCENT EXCEEDS	.01	.01

a July 6-9, Aug. 22-27, Sept. 3-6, 9, 1997.

b Aug. 17, 21-28, Sept. 2-10, 19, 1997.

BACK RIVER BASIN

01585225 MOORES RUN TRIBUTARY NEAR TODD AVE AT BALTIMORE, MD--Continued



BACK RIVER BASIN

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD

LOCATION.--Lat 39°19'49", long 76°32'07", 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<sup>2</sup>.

PERIOD OF RECORD.--July 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft above sea level, 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.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 600 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug. 13, 1996	0145	812	5.37	Nov. 8, 1996	1515	875	5.48
Sep. 6, 1996	2155	1,010	5.70	Dec. 13, 1996	1050	654	5.07
Sep. 17, 1996	0250	835	5.41	Aug. 17, 1997	1920	*1,200	*6.00

DISCHARGE, IN CUBIC FEET PER SECOND, JULY 1996 TO SEPTEMBER 1996  
MEAN DAILY VALUES

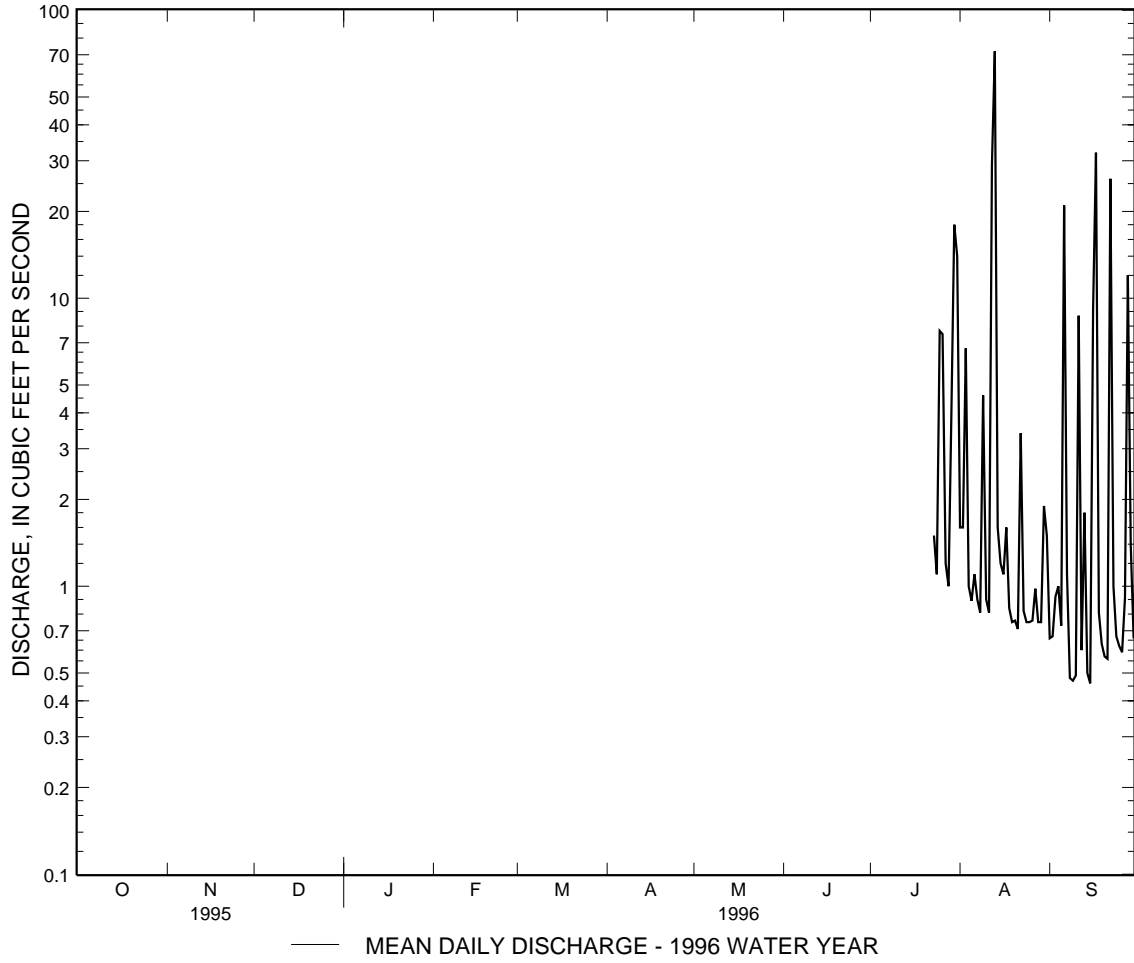
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	1.6	.66
2	---	---	---	---	---	---	---	---	---	---	1.6	.67
3	---	---	---	---	---	---	---	---	---	---	6.7	.92
4	---	---	---	---	---	---	---	---	---	---	1.0	1.0
5	---	---	---	---	---	---	---	---	---	---	.89	.73
6	---	---	---	---	---	---	---	---	---	---	1.1	21
7	---	---	---	---	---	---	---	---	---	---	.90	1.1
8	---	---	---	---	---	---	---	---	---	---	.81	.48
9	---	---	---	---	---	---	---	---	---	---	4.6	.47
10	---	---	---	---	---	---	---	---	---	---	.90	.49
11	---	---	---	---	---	---	---	---	---	---	.81	8.7
12	---	---	---	---	---	---	---	---	---	---	29	.60
13	---	---	---	---	---	---	---	---	---	---	72	1.8
14	---	---	---	---	---	---	---	---	---	---	1.6	.50
15	---	---	---	---	---	---	---	---	---	---	1.2	.46
16	---	---	---	---	---	---	---	---	---	---	1.1	9.2
17	---	---	---	---	---	---	---	---	---	---	1.6	32
18	---	---	---	---	---	---	---	---	---	---	.84	.81
19	---	---	---	---	---	---	---	---	---	---	.75	.63
20	---	---	---	---	---	---	---	---	---	---	.76	.57
21	---	---	---	---	---	---	---	---	---	---	.71	.56
22	---	---	---	---	---	---	---	---	---	---	3.4	26
23	---	---	---	---	---	---	---	---	---	1.5	.82	1.0
24	---	---	---	---	---	---	---	---	---	1.1	.75	.67
25	---	---	---	---	---	---	---	---	---	7.7	.75	.62
26	---	---	---	---	---	---	---	---	---	7.5	.76	.59
27	---	---	---	---	---	---	---	---	---	1.2	.98	.91
28	---	---	---	---	---	---	---	---	---	1.0	.75	12
29	---	---	---	---	---	---	---	---	---	4.0	.75	1.4
30	---	---	---	---	---	---	---	---	---	18	1.9	.66
31	---	---	---	---	---	---	---	---	---	14	1.5	---
TOTAL	---	---	---	---	---	---	---	---	---	---	142.83	127.20
MEAN	---	---	---	---	---	---	---	---	---	---	4.61	4.24
MAX	---	---	---	---	---	---	---	---	---	---	72	32
MIN	---	---	---	---	---	---	---	---	---	---	.71	.46
CFSM	---	---	---	---	---	---	---	---	---	---	1.31	1.20
IN.	---	---	---	---	---	---	---	---	---	---	1.51	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1996, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
MEAN	---	---	---	---	---
MAX	---	---	---	---	---
(WY)	---	---	---	---	---
MIN	---	---	---	---	---
(WY)	---	---	---	---	---

BACK RIVER BASIN

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD--Continued



BACK RIVER BASIN

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	2.5	47	.77	1.1	16	5.1	1.9	10	1.6	.19	2.1
2	8.8	.66	24	.86	.93	1.5	1.6	.65	19	.53	.19	8.2
3	.77	.62	1.7	.92	.89	71	1.2	7.9	14	.46	2.9	.32
4	.62	.61	1.2	.81	13	3.9	1.1	.90	.67	.20	.27	.20
5	.58	.63	6.4	1.0	13	4.7	.97	.60	.53	.20	.55	.19
6	.58	.66	39	.78	1.6	2.2	2.2	.58	.48	.19	.19	.19
7	.59	.67	23	.75	1.2	1.3	1.0	.57	.47	.21	.21	1.1
8	26	76	3.1	.70	3.6	1.2	.81	1.2	.44	e.50	.19	.22
9	5.9	4.8	1.9	2.6	3.7	1.3	.77	4.7	.46	e.30	.22	.20
10	1.5	1.4	1.2	2.8	1.5	9.6	.75	.63	.44	e.25	.19	4.9
11	.84	.95	7.2	1.7	1.3	1.3	.71	.57	.43	.19	.19	19
12	.77	.77	2.9	.89	1.3	.96	9.9	.57	.43	.19	.19	.43
13	.73	.75	131	.84	1.0	.92	1.2	.55	11	.19	.27	.23
14	.70	.78	9.5	.75	24	40	.74	.54	.48	.19	.19	.23
15	.68	.71	2.1	.74	23	3.1	.70	.54	.36	.19	.21	.21
16	.67	.69	1.6	15	2.1	1.6	.70	.53	.31	.19	.19	.21
17	1.2	.71	1.9	1.1	1.5	1.3	4.6	.54	.25	.19	18	.23
18	32	.72	1.4	1.0	1.3	6.2	.78	.52	2.7	.19	1.6	.21
19	34	.71	4.9	.82	1.2	16	.70	.56	.54	.19	.24	e.21
20	1.5	.72	1.2	.82	1.1	2.4	.67	.69	.32	.19	58	e1.1
21	1.0	.74	.99	.78	1.1	1.8	1.5	.49	.34	.24	.70	.23
22	.91	.72	.95	4.0	1.1	1.5	.64	.51	.33	.25	.51	.20
23	.96	.77	.96	1.4	.96	1.1	.60	.53	.47	.62	.29	.19
24	.87	.81	4.8	42	.93	.93	1.9	.57	.27	.71	.27	.19
25	.85	.89	1.2	14	.91	.96	.60	1.2	.19	.20	.28	.20
26	.83	26	.91	1.5	3.5	9.8	.55	1.5	1.3	.19	.28	.22
27	.79	.96	.91	1.7	1.1	1.3	11	.45	.30	.19	.27	.24
28	1.3	.81	.86	16	.92	1.1	18	.43	.29	1.9	8.7	3.4
29	.67	.75	1.3	1.5	---	4.5	.90	.43	.27	.22	.37	2.0
30	.73	3.0	.90	1.2	---	1.2	.72	.97	.26	.19	.25	.27
31	1.1	---	.85	1.2	---	22	---	.45	---	.19	.26	---
TOTAL	129.02	131.51	326.83	120.93	108.84	232.67	72.61	32.77	67.33	11.24	96.36	46.82
MEAN	4.16	4.38	10.5	3.90	3.89	7.51	2.42	1.06	2.24	.36	3.11	1.56
MAX	34	76	131	42	24	71	18	7.9	19	1.9	58	19
MIN	.58	.61	.85	.70	.89	.92	.55	.43	.19	.19	.19	.19
CFSM	1.18	1.25	3.00	1.11	1.10	2.13	.69	.30	.64	.10	.88	.44
IN.	1.36	1.39	3.45	1.28	1.15	2.46	.77	.35	.71	.12	1.02	.49

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
MEAN	4.16	4.38	10.5	3.90	3.89	7.51	2.42	1.06	2.24	.36	3.86	2.90
MAX	4.16	4.38	10.5	3.90	3.89	7.51	2.42	1.06	2.24	.36	4.61	4.24
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1996	1996
MIN	4.16	4.38	10.5	3.90	3.89	7.51	2.42	1.06	2.24	.36	3.11	1.56
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS

FOR 1997 WATER YEAR

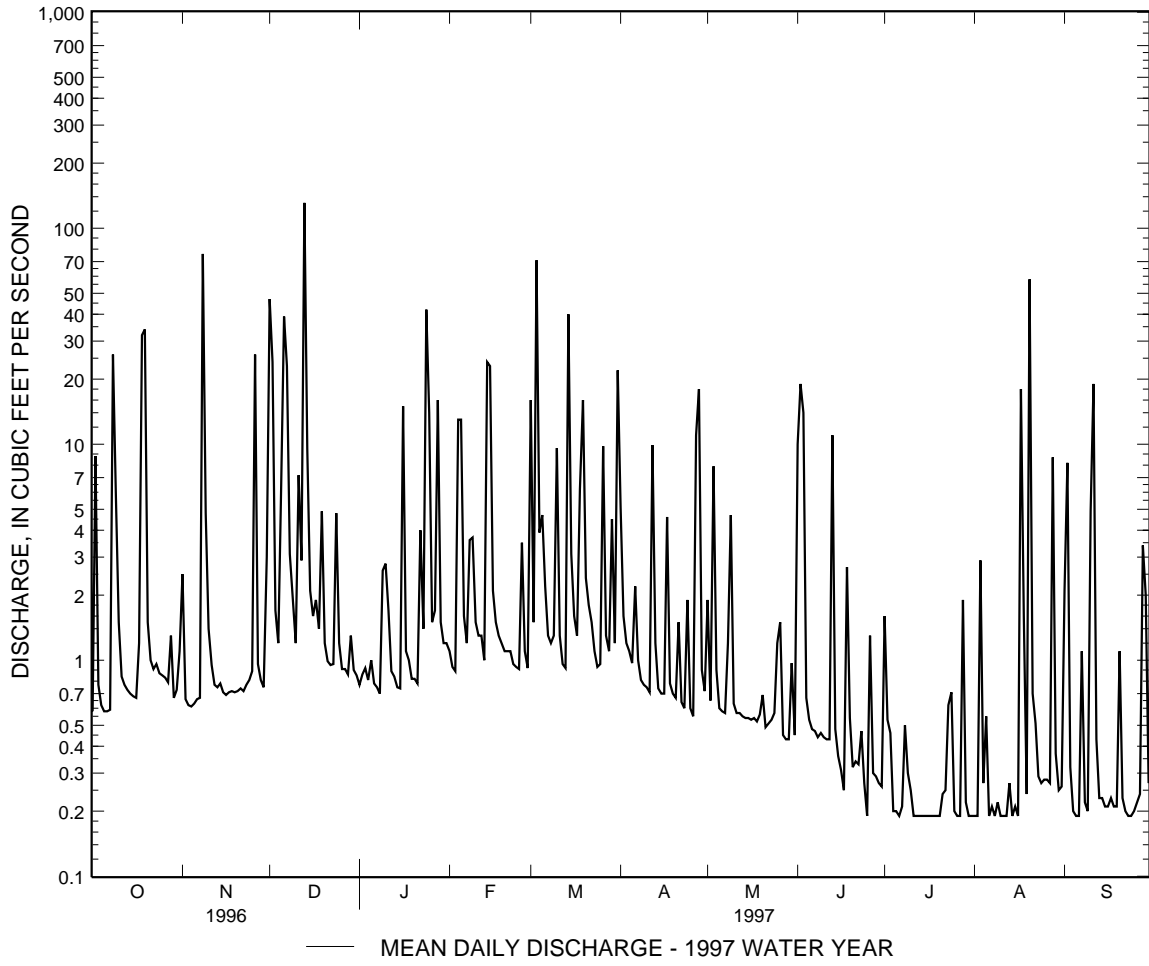
WATER YEARS 1996 - 1997

ANNUAL TOTAL	1376.93	
ANNUAL MEAN	3.77	3.77
HIGHEST ANNUAL MEAN		3.77 1997
LOWEST ANNUAL MEAN		3.77 1997
HIGHEST DAILY MEAN	131	Dec 13 1996
LOWEST DAILY MEAN	.19	(a) .19 (a)
ANNUAL SEVEN-DAY MINIMUM	.19	Jul 11 1997
INSTANTANEOUS PEAK FLOW	1200	Aug 17 1997
INSTANTANEOUS PEAK STAGE	6.00	Aug 17 1997
INSTANTANEOUS LOW FLOW	.17	Sep 8 1997
ANNUAL RUNOFF (CFSM)	1.07	1.07
ANNUAL RUNOFF (INCHES)	14.55	14.56
10 PERCENT EXCEEDS	9.1	9.5
50 PERCENT EXCEEDS	.82	.85
90 PERCENT EXCEEDS	.21	.22

a Many days in 1997 water year.

BACK RIVER BASIN

01585230 MOORES RUN AT RADECKE AVE AT BALTIMORE, MD--Continued





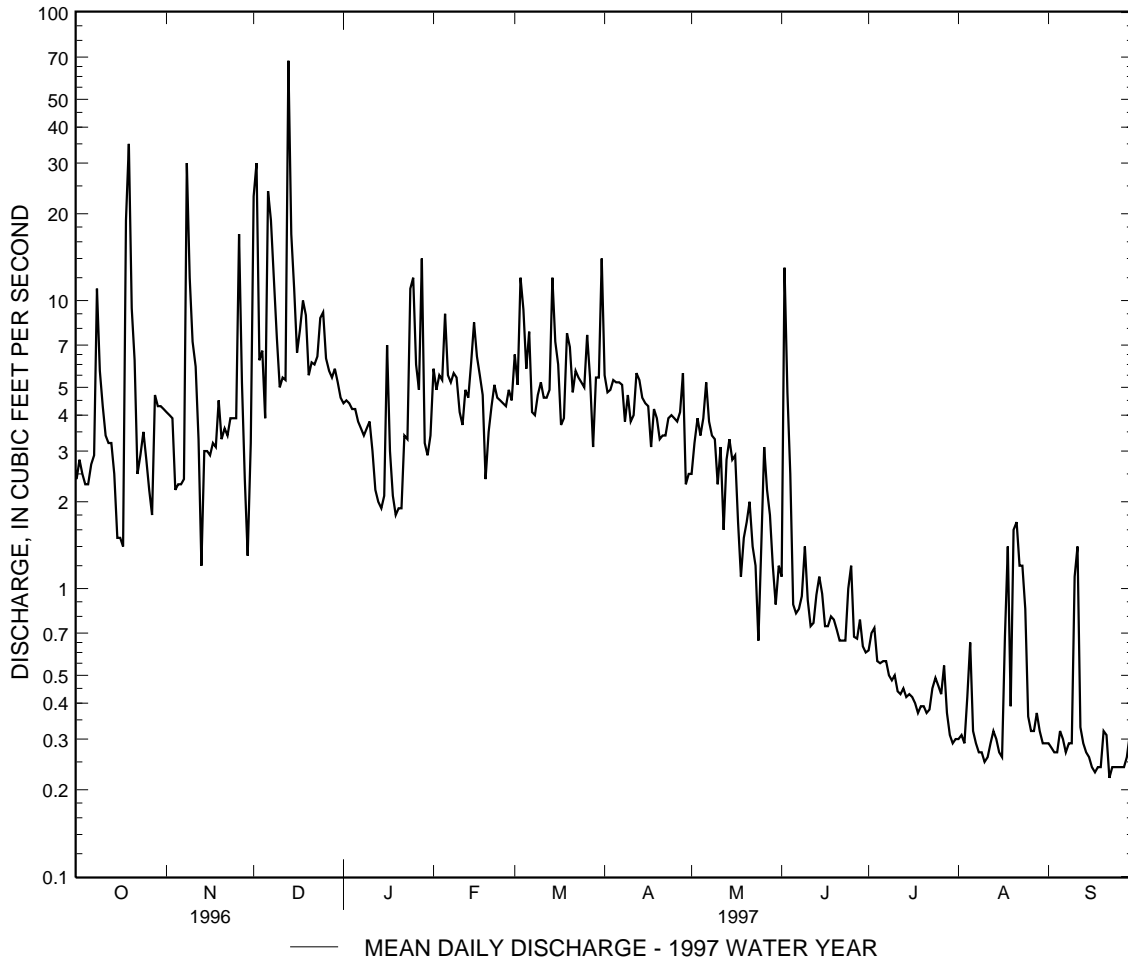


PATAPSCO RIVER BASIN

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1950 - 1997	
ANNUAL TOTAL	2114.21		1417.15			
ANNUAL MEAN	(a)5.78		(a)3.88		(a)3.37	
HIGHEST ANNUAL MEAN					7.82	1972
LOWEST ANNUAL MEAN					.86	1992
HIGHEST DAILY MEAN	242	Jan 19	68	Dec 13	440	Jun 22 1972
LOWEST DAILY MEAN	(e).55	Jan 7	.22	Sep 22	.01	(b)
ANNUAL SEVEN-DAY MINIMUM	1.2	Jan 5	.24	Sep 22	.01	Sep 6 1995
INSTANTANEOUS PEAK FLOW			151	Dec 13	(c)2220	Sep 26 1975
INSTANTANEOUS PEAK STAGE			3.15	Dec 13	7.47	Sep 26 1975
INSTANTANEOUS LOW FLOW			(d).20	(f)	(d).00	(g)
ANNUAL RUNOFF (CFSM)	1.76		1.18		1.02	
ANNUAL RUNOFF (INCHES)	23.91		16.02		13.90	
10 PERCENT EXCEEDS	9.2		7.1		5.9	
50 PERCENT EXCEEDS	3.5		3.1		2.3	
90 PERCENT EXCEEDS	1.9		.30		.76	

- a Unadjusted for storage and diversions.
- e Estimated.
- b Sept. 6-16, 1995
- c From rating curve extended above 200 ft<sup>3</sup>/s on the basis of culvert measurements at gage heights 5.54 ft and 7.47 ft.
- d Result of regulation.
- f Sept. 17, 22.
- g Sept. 5-11, 13-16, 1995.



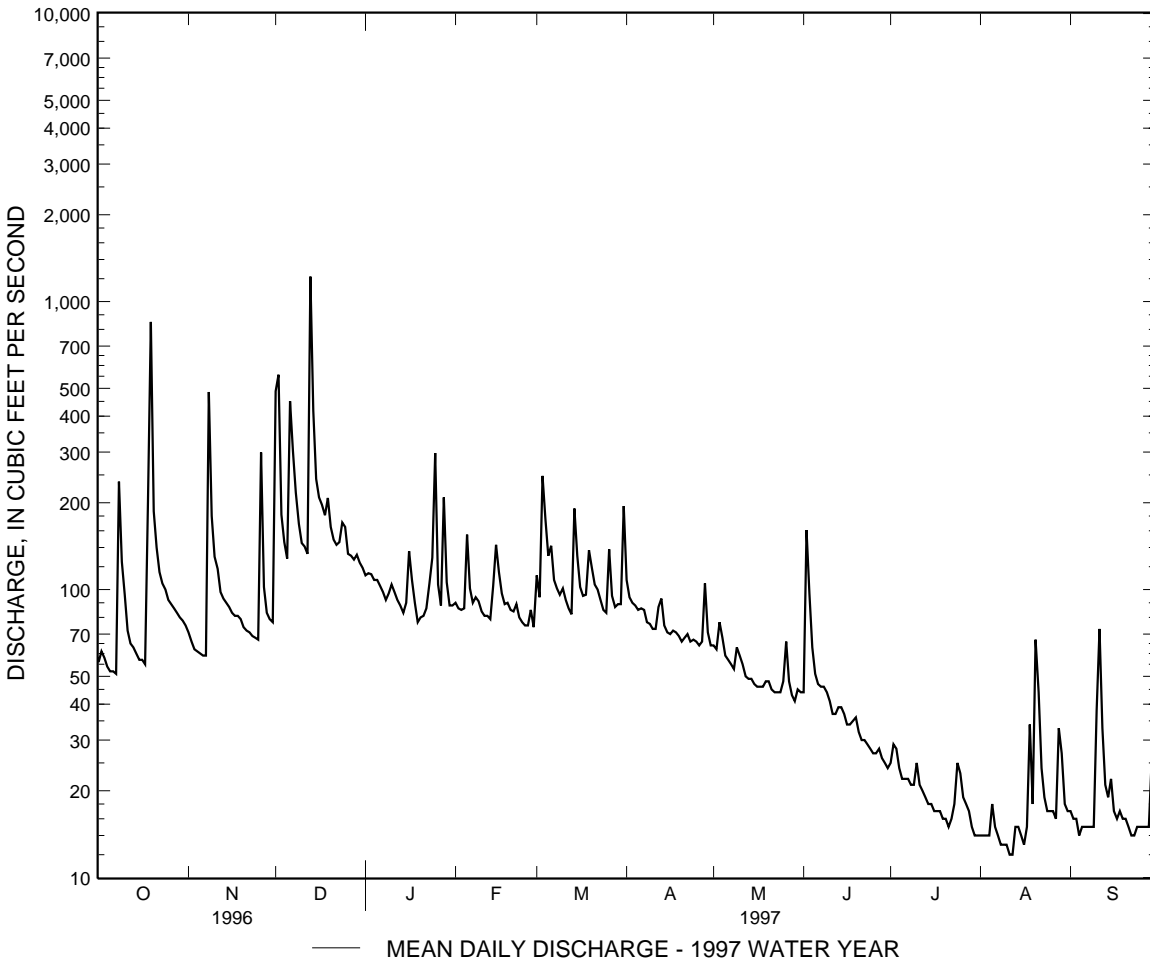


PATAPSCO RIVER BASIN

01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1945 - 1997	
ANNUAL TOTAL	46017		30639			
ANNUAL MEAN	126		83.9		64.4	
HIGHEST ANNUAL MEAN					121	1972
LOWEST ANNUAL MEAN					30.1	1966
HIGHEST DAILY MEAN	2500	Jan 19	1220	Dec 13	6000	Jun 22 1972
LOWEST DAILY MEAN	38	Jan 7	12	(a)	3.1	(b)
ANNUAL SEVEN-DAY MINIMUM	52	Aug 29	13	Aug 6	3.5	Sep 7 1966
INSTANTANEOUS PEAK FLOW			2270	Dec 13	(c)27800	Jun 22 1972
INSTANTANEOUS PEAK STAGE			6.45	Dec 13	(d)20.75	Jun 22 1972
INSTANTANEOUS LOW FLOW			4.8	Jul 12	(f)1.3	(g)
ANNUAL RUNOFF (CFSM)	2.22		1.48		1.14	
ANNUAL RUNOFF (INCHES)	30.24		20.14		15.46	
10 PERCENT EXCEEDS	199		144		114	
50 PERCENT EXCEEDS	83		71		44	
90 PERCENT EXCEEDS	57		16		19	

- a Aug. 11, 12.
- b Sept. 10, 12, 1996.
- c From rating curve extended above 4,100 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.
- d From high-water mark in well.
- f Result of regulation.
- g Sept. 17, 1983 and Aug. 10, 1985.



## PATAPSCO RIVER BASIN

01586210 BEAVER RUN NEAR FINKSBURG, MD

LOCATION.--Lat 39°29'22", long 76°54'12", 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<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 428.70 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect, backwater from leaves), 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 18	2330	576	3.49	Dec. 13	1600	546	3.42
Dec. 13	1045	*617	*3.59				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	23	91	29	25	30	27	18	13	7.3	3.8	3.5
2	18	22	116	29	24	25	25	18	35	8.2	3.8	5.4
3	17	21	44	29	24	59	25	20	19	8.1	3.7	4.1
4	15	20	38	28	24	41	24	18	16	7.2	3.6	3.2
5	15	20	34	28	32	33	24	17	14	6.5	4.0	3.0
6	15	20	89	27	26	33	23	17	14	6.3	3.8	2.9
7	15	19	67	26	24	28	23	16	13	6.1	3.8	2.9
8	53	101	50	26	25	27	22	16	13	6.1	3.5	2.9
9	27	53	43	27	24	26	22	17	13	5.9	3.4	3.0
10	23	36	38	27	23	27	21	16	12	6.7	e3.4	9.1
11	19	30	37	26	23	26	21	16	11	6.0	e3.3	13
12	18	28	35	e24	23	24	23	15	11	5.6	e3.3	4.7
13	18	26	262	23	22	24	24	15	11	5.2	e4.0	3.9
14	17	26	88	24	26	42	21	15	11	5.1	e4.0	3.6
15	16	24	64	25	33	30	20	15	11	4.9	e3.4	3.5
16	16	23	57	34	27	26	20	15	10	4.6	e3.2	3.0
17	16	22	53	26	25	26	20	14	9.9	4.5	e6.5	3.0
18	81	22	48	e24	24	27	20	14	10	4.3	e6.5	3.3
19	161	22	54	e21	25	34	20	14	10	4.2	4.6	3.0
20	44	21	43	e22	24	30	20	14	9.6	4.1	5.6	2.9
21	36	20	38	e23	24	28	20	14	9.4	4.2	e4.6	2.9
22	34	20	37	25	24	27	20	14	9.2	4.3	e4.0	2.9
23	31	19	37	26	23	26	20	14	9.2	5.6	e3.9	2.9
24	30	19	42	46	22	25	20	14	8.4	6.3	e3.8	2.9
25	28	18	39	52	22	24	19	14	8.2	6.3	3.7	3.0
26	26	59	34	27	22	31	18	16	7.9	5.5	3.7	3.1
27	26	26	33	25	23	25	18	14	8.0	5.0	3.9	2.9
28	26	23	32	47	22	24	23	13	7.7	4.6	4.3	3.2
29	25	21	33	27	---	25	19	13	7.3	4.3	3.9	5.1
30	24	21	31	25	---	24	18	13	7.2	4.0	3.6	e3.7
31	23	---	30	25	---	41	---	13	---	4.0	3.5	---
TOTAL	929	825	1737	873	685	918	640	472	349.0	171.0	124.7	116.5
MEAN	30.0	27.5	56.0	28.2	24.5	29.6	21.3	15.2	11.6	5.52	4.00	3.88
MAX	161	101	262	52	33	59	27	20	35	8.2	6.5	13
MIN	15	18	30	21	22	24	18	13	7.2	4.0	3.2	2.9
CFSM	2.14	1.96	4.00	2.01	1.75	2.12	1.52	1.09	.83	.39	.29	.28
IN.	2.47	2.19	4.62	2.32	1.82	2.44	1.70	1.25	.93	.45	.33	.31

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

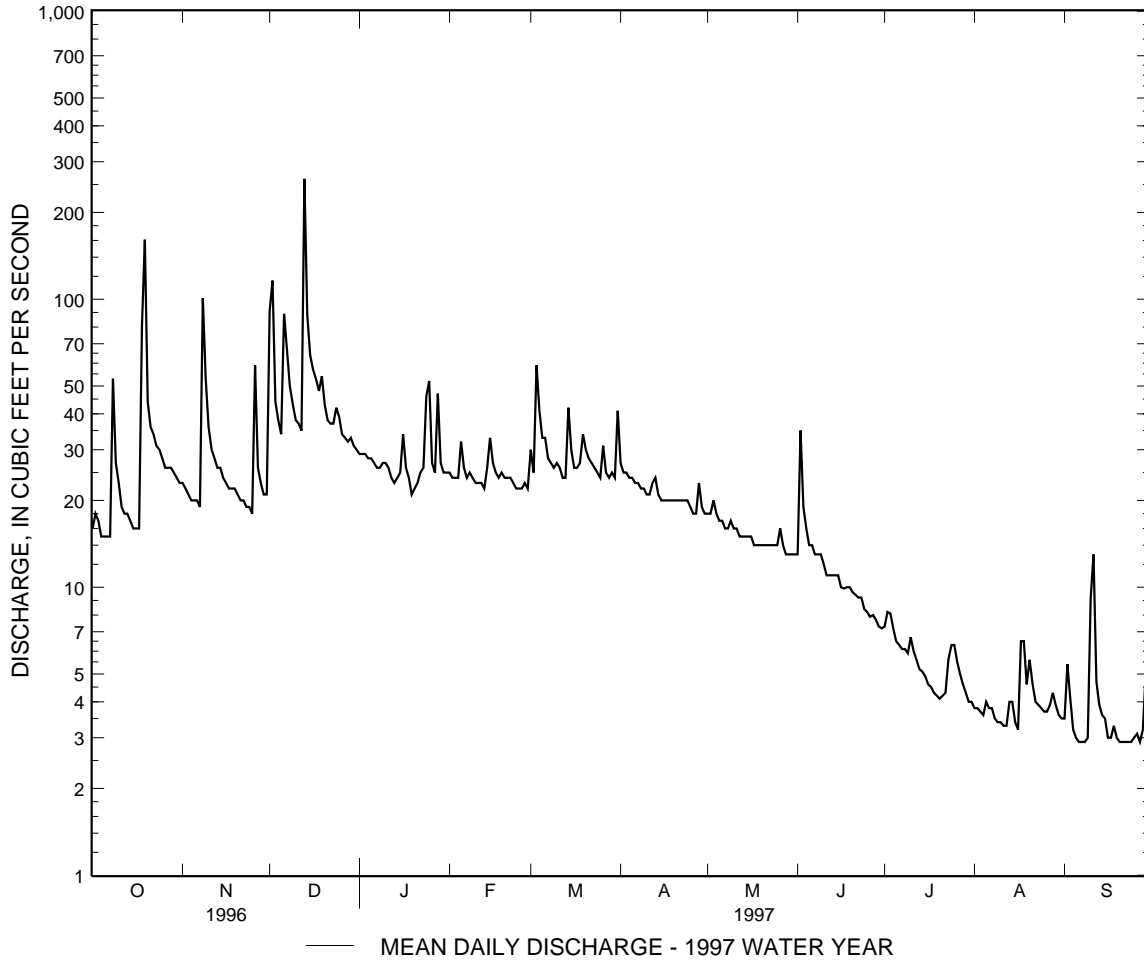
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	10.6	15.0	19.8	20.5	22.5	26.5	25.4	22.4	13.2	11.1	10.3	8.40			
MAX	30.0	27.5	56.0	49.6	41.4	62.0	54.7	51.9	25.3	32.4	29.9	25.1			
(WY)	1997	1997	1997	1996	1994	1993	1993	1989	1989	1996	1984	1996			
MIN	3.73	7.75	8.20	8.41	10.7	13.8	11.9	10.1	5.50	4.30	4.00	2.78			
(WY)	1987	1983	1983	1983	1992	1990	1985	1986	1986	1991	1997	1986			

PATAPSCO RIVER BASIN

01586210 BEAVER RUN NEAR FINKSBURG, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1983 - 1997	
ANNUAL TOTAL	11501		7839.6			
ANNUAL MEAN	31.4		21.5		17.1	
HIGHEST ANNUAL MEAN					25.2	1996
LOWEST ANNUAL MEAN					9.92	1986
HIGHEST DAILY MEAN	528	Jan 19	262	Dec 13	528	Jan 19 1996
LOWEST DAILY MEAN	11	Jan 7	2.9	(a)	2.1	(b)
ANNUAL SEVEN-DAY MINIMUM	13	Jun 10	2.9	Sep 19	2.2	Sep 15 1986
INSTANTANEOUS PEAK FLOW			617	Dec 13	(c) 2150	May 6 1989
INSTANTANEOUS PEAK STAGE			3.59	Dec 13	(d) 5.70	May 6 1989
INSTANTANEOUS LOW FLOW			2.9	(f)	2.0	(g)
ANNUAL RUNOFF (CFSM)	2.24		1.53		1.22	
ANNUAL RUNOFF (INCHES)	30.56		20.83		16.60	
10 PERCENT EXCEEDS	48		37		30	
50 PERCENT EXCEEDS	23		20		13	
90 PERCENT EXCEEDS	16		3.8		5.2	

- a Sept. 6-8, 20-24, 27.
- b Sept. 17, 18, 1986.
- c From rating curve extended above 600 ft<sup>3</sup>/s.
- d From floodmarks.
- f Sept. 4-9, 16, 17, 19-28.
- g Sept. 12, 1983, Sept. 17, 18, 1986.



## PATAPSCO RIVER BASIN

01586610 MORGAN RUN NEAR LOUISVILLE, MD

LOCATION.--Lat 39°27'07", long 76°57'20", 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<sup>2</sup>.

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 sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0145	893	4.54	Dec. 13	1445	*1,200	*5.17
Nov. 8	1915	836	4.41				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e36	47	183	67	55	62	64	35	23	13	8.7	7.3
2	e41	45	293	67	52	53	59	33	59	15	8.6	7.8
3	e38	42	108	67	50	147	57	36	35	15	8.6	8.0
4	36	41	86	65	53	106	55	33	28	13	8.7	6.8
5	35	40	77	65	72	82	52	32	26	12	10	6.5
6	34	40	202	61	57	82	51	30	24	12	9.4	6.6
7	31	40	174	58	53	70	51	29	24	12	8.5	6.7
8	113	260	136	55	55	67	48	29	23	11	8.0	6.9
9	70	145	107	58	53	62	47	31	22	11	7.7	6.9
10	57	86	90	59	50	62	46	29	21	13	7.7	12
11	46	69	86	56	49	59	44	28	21	11	7.6	17
12	42	62	79	52	48	56	52	28	21	11	7.5	9.6
13	40	58	586	e51	46	54	51	28	22	19	8.3	8.3
14	39	57	227	e49	57	87	43	28	21	33	8.6	7.7
15	38	55	159	55	74	69	41	27	20	19	7.9	7.5
16	37	53	139	71	64	59	41	27	19	11	7.4	7.3
17	37	51	128	53	57	57	41	26	19	10	13	6.9
18	95	51	113	e48	55	59	41	26	19	10	13	7.6
19	392	50	128	e46	55	76	39	26	19	9.8	8.4	6.8
20	114	48	105	e48	52	70	38	26	18	9.5	29	6.7
21	85	46	92	e48	48	64	39	25	17	9.8	15	6.3
22	78	45	89	50	49	62	39	24	17	9.9	10	6.2
23	70	43	89	57	44	58	38	23	16	12	9.1	6.4
24	64	42	96	75	43	56	37	23	15	14	8.6	6.4
25	59	42	84	107	42	53	36	26	14	13	8.3	6.5
26	57	129	74	59	44	68	35	29	14	12	8.2	6.5
27	53	58	74	55	48	58	36	24	15	11	8.1	6.1
28	52	50	71	87	43	55	48	23	14	11	8.8	6.4
29	50	48	73	60	---	56	37	22	13	11	8.5	9.0
30	50	48	69	55	---	54	35	24	13	9.4	7.6	6.5
31	48	---	69	56	---	98	---	23	---	8.9	7.5	---
TOTAL	2037	1891	4086	1860	1468	2121	1341	853	632	392.3	296.3	227.2
MEAN	65.7	63.0	132	60.0	52.4	68.4	44.7	27.5	21.1	12.7	9.56	7.57
MAX	392	260	586	107	74	147	64	36	59	33	29	17
MIN	31	40	69	46	42	53	35	22	13	8.9	7.4	6.1
CFSM	2.35	2.25	4.71	2.14	1.87	2.44	1.60	.98	.75	.45	.34	.27
IN.	2.71	2.51	5.43	2.47	1.95	2.82	1.78	1.13	.84	.52	.39	.30

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

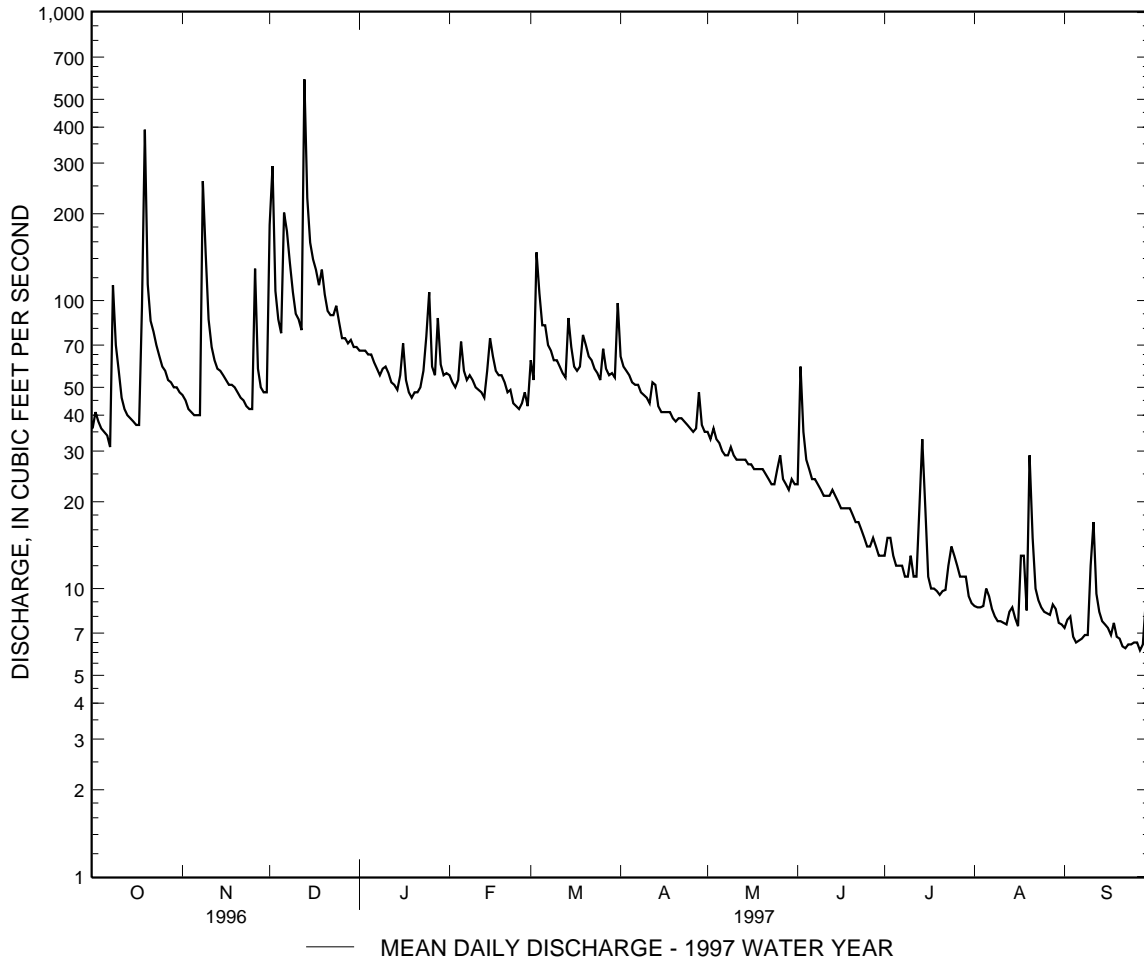
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	21.1	29.0	42.0	43.9	45.6	59.8	56.9	46.4	29.3	22.5	19.5	17.9			
MAX	65.7	63.0	132	117	91.2	154	141	111	71.4	71.8	59.0	77.8			
(WY)	1997	1997	1997	1996	1984	1993	1993	1989	1996	1996	1996	1996			
MIN	5.69	13.7	15.5	17.0	20.6	29.1	27.0	20.5	11.5	7.47	6.48	5.15			
(WY)	1987	1992	1983	1992	1992	1985	1985	1986	1986	1986	1986	1986			

PATAPSCO RIVER BASIN

01586610 MORGAN RUN NEAR LOUISVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1983 - 1997	
ANNUAL TOTAL	26805		17204.8			
ANNUAL MEAN	73.2		47.1		36.1	
HIGHEST ANNUAL MEAN					58.3	1996
LOWEST ANNUAL MEAN					19.5	1986
HIGHEST DAILY MEAN	1370	Jan 19	586	Dec 13	1370	Jan 19 1996
LOWEST DAILY MEAN	(e)20	Jan 7	6.1	Sep 27	4.0	(a)
ANNUAL SEVEN-DAY MINIMUM	30	Jun 10	6.3	Sep 21	4.2	Sep 17 1986
INSTANTANEOUS PEAK FLOW			1200	Dec 13	(b)3550	Jan 19 1996
INSTANTANEOUS PEAK STAGE			5.17	Dec 13	8.45	Jan 19 1996
INSTANTANEOUS LOW FLOW			5.9	(c)	4.2	Aug 18 1991
ANNUAL RUNOFF (CFSM)	2.62		1.68		1.29	
ANNUAL RUNOFF (INCHES)	35.61		22.86		17.53	
10 PERCENT EXCEEDS	109		85		67	
50 PERCENT EXCEEDS	50		41		25	
90 PERCENT EXCEEDS	36		8.3		9.8	

- e Estimated.
- a Sept. 18-20, 1986.
- b From rating curve extended above 1,900 ft<sup>3</sup>/s.
- c Sept. 21, 22, 27, 28.







PATAPSCO RIVER BASIN

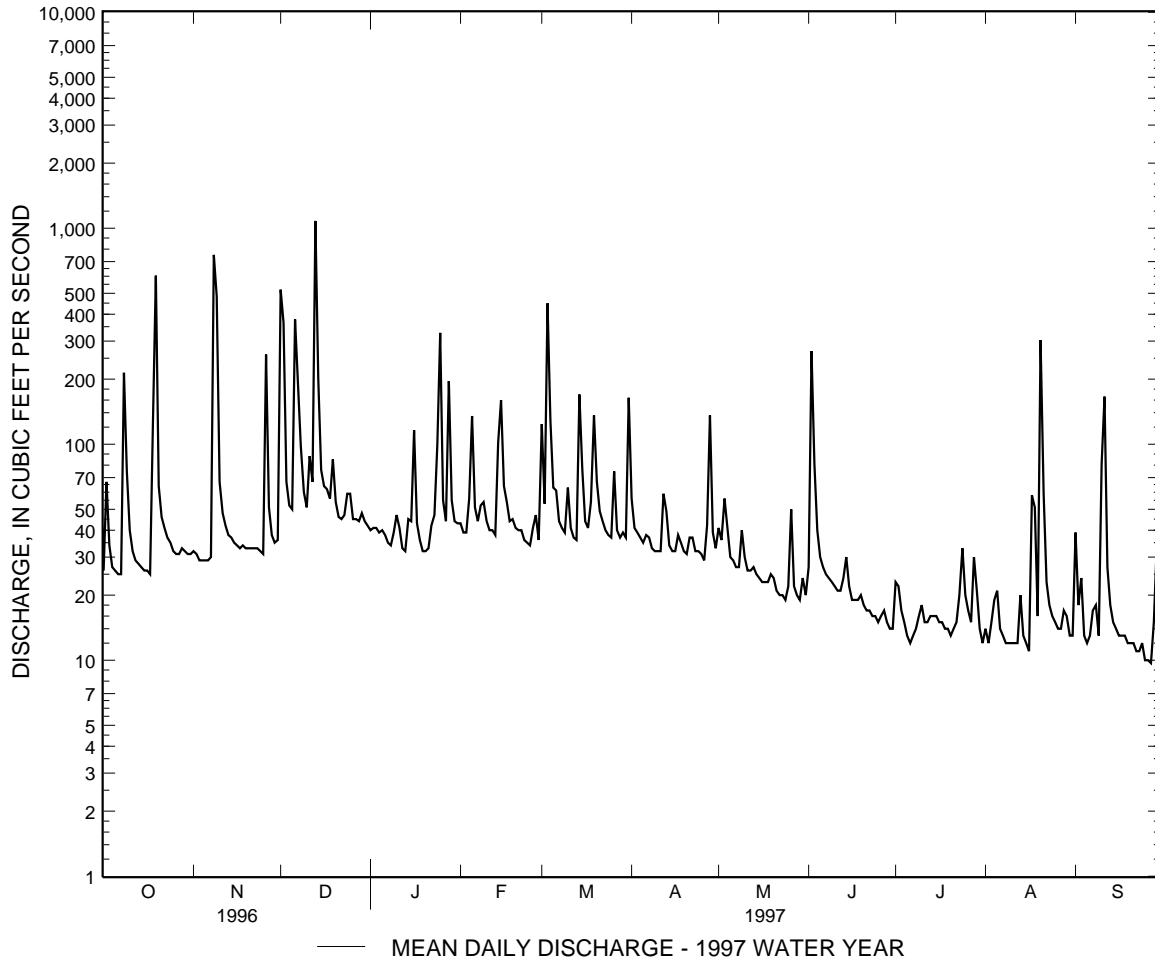
01589300 GWYNNS FALLS AT VILLA NOVA, MD--Continued

SUMMARY STATISTICS	FOR 1997 WATER YEAR		WATER YEARS 1957 - 1988	
			1997	
ANNUAL TOTAL	19343.7			
ANNUAL MEAN	53.0		39.1	
HIGHEST ANNUAL MEAN			76.8	1972
LOWEST ANNUAL MEAN			20.5	1959
HIGHEST DAILY MEAN	1080	Dec 13	5000	Jun 22 1972
LOWEST DAILY MEAN	9.7	Sep 27	1.7	(a)
ANNUAL SEVEN-DAY MINIMUM	11	Sep 21	2.1	Sep 6 1966
INSTANTANEOUS PEAK FLOW	3040	Nov 9	(b)16200	Jun 22 1972
INSTANTANEOUS PEAK STAGE	9.53	Nov 9	(c)21.50	Jun 22 1972
INSTANTANEOUS LOW FLOW	7.5	Sep 27	1.7	Sep 7 1966
ANNUAL RUNOFF (CFSM)	1.63		1.20	
ANNUAL RUNOFF (INCHES)	22.14		16.34	
10 PERCENT EXCEEDS	75		65	
50 PERCENT EXCEEDS	33		22	
90 PERCENT EXCEEDS	14		9.5	

a Sept. 7, 8, 1966.

b From rating curve extended above 4,200 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

c From floodmark.



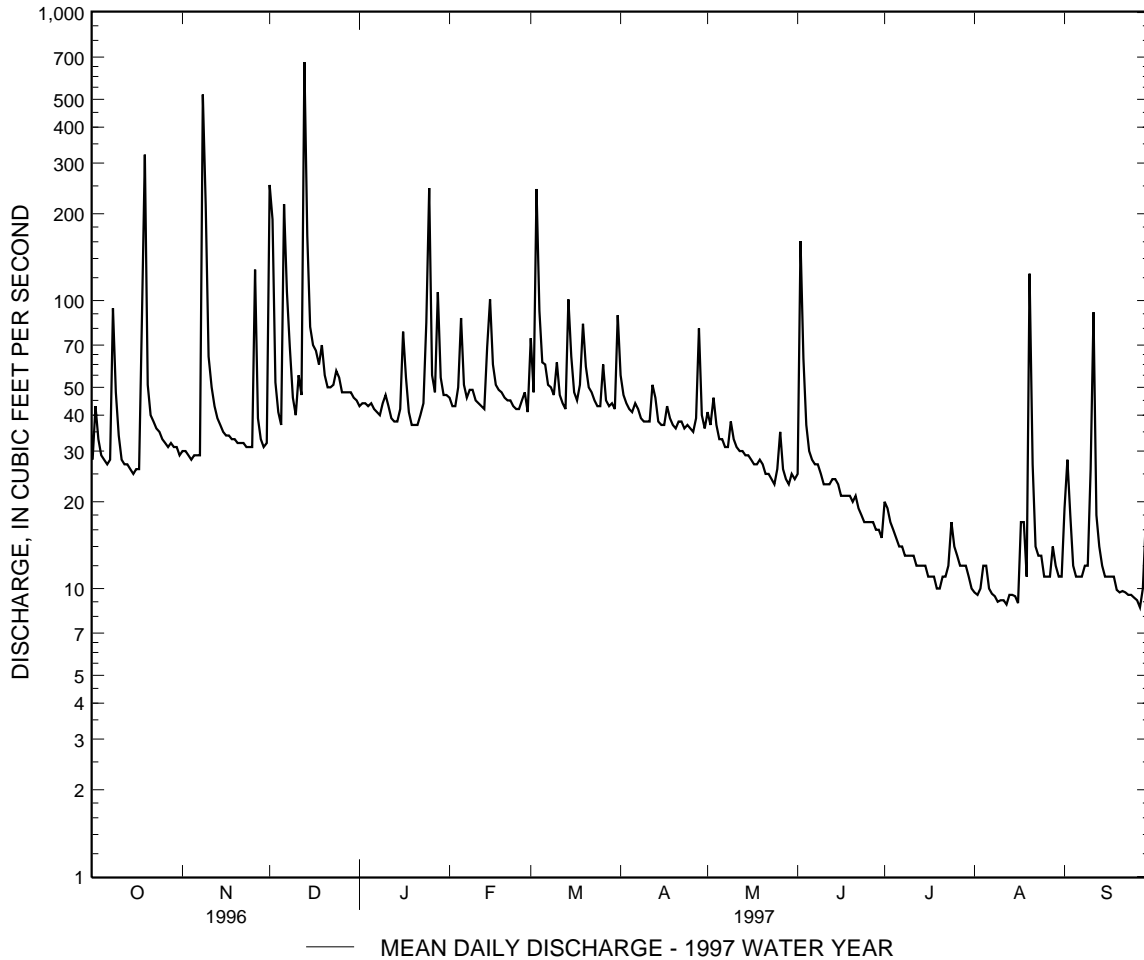


PATAPSCO RIVER BASIN

01589440 JONES FALLS AT SORRENTO, MD--Continued

SUMMARY STATISTICS	FOR 1997 WATER YEAR		WATER YEARS 1966 - 1988	
			1997	
ANNUAL TOTAL	15513.6			
ANNUAL MEAN	42.5		32.7	
HIGHEST ANNUAL MEAN			62.5	1972
LOWEST ANNUAL MEAN			17.0	1986
HIGHEST DAILY MEAN	673	Dec 13	2600	Jun 22 1972
LOWEST DAILY MEAN	8.6	Sep 27	2.1	(a)
ANNUAL SEVEN-DAY MINIMUM	9.2	Aug 10	2.2	Aug 28 1966
INSTANTANEOUS PEAK FLOW	1620	Nov 8	(b)13800	Jun 22 1972
INSTANTANEOUS PEAK STAGE	8.71	Nov 8	(c)18.11	Jun 22 1972
INSTANTANEOUS LOW FLOW	8.0	Aug 17	1.8	(d)
ANNUAL RUNOFF (CFSM)	1.69		1.30	
ANNUAL RUNOFF (INCHES)	22.90		17.62	
10 PERCENT EXCEEDS	63		53	
50 PERCENT EXCEEDS	34		22	
90 PERCENT EXCEEDS	11		9.6	

- a Sept. 2, 3, 7, 1966
- b From rating curve extended above 1,400 ft<sup>3</sup>/s on the basis of slope-area measurement of peak flow.
- c From floodmarks.
- d Sept. 7, 8, 1966.



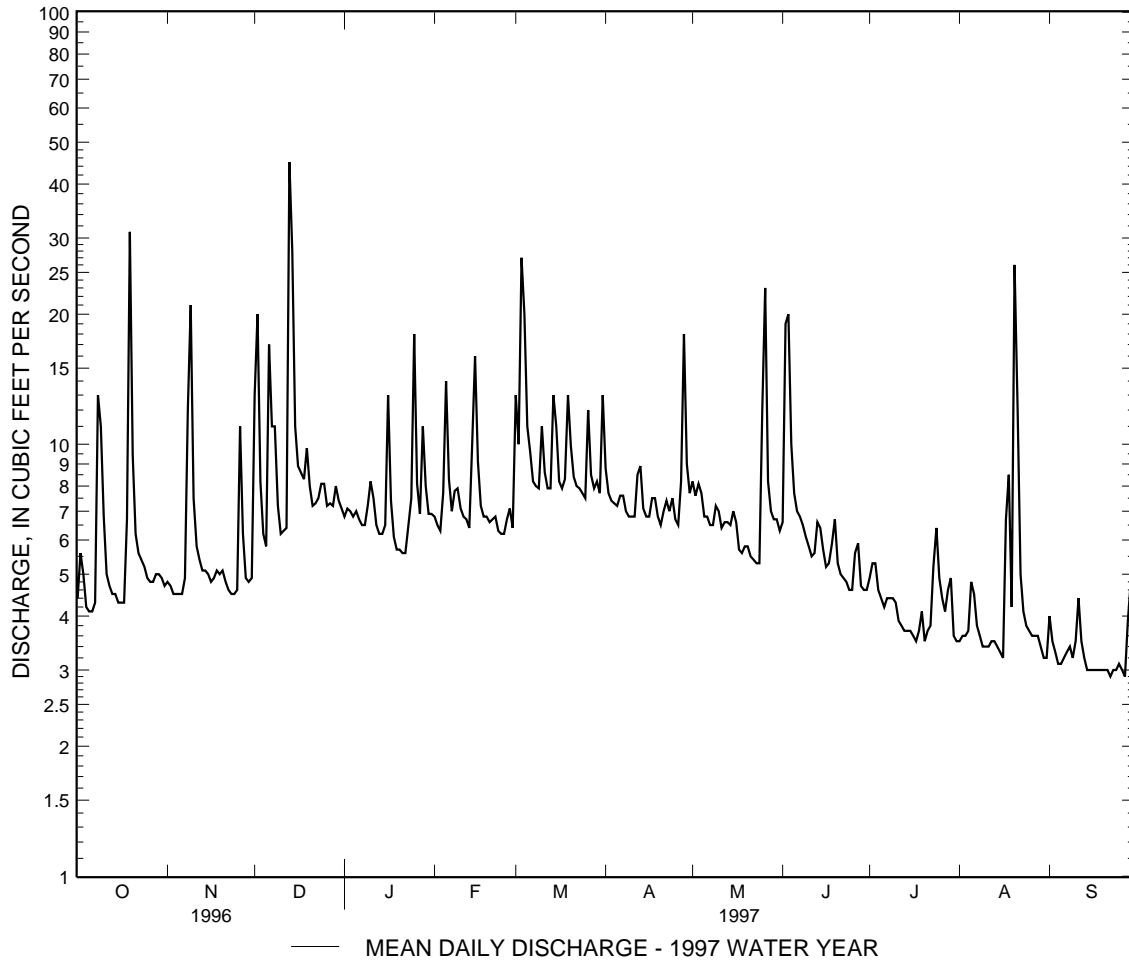


PATAPSCO RIVER BASIN

01589500 SAWMILL CREEK AT GLEN BURNIE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1944 - 1997	
					1983 - 1997	
ANNUAL TOTAL	2330.5		2514.7			
ANNUAL MEAN	6.37		6.89		4.88	
HIGHEST ANNUAL MEAN					11.0 1949	
LOWEST ANNUAL MEAN					.43 1986	
HIGHEST DAILY MEAN	54	Jan 19	45	Dec 13	84	Sep 1 1952
LOWEST DAILY MEAN	1.9	Jan 7	2.9	(a)	.01	(b)
ANNUAL SEVEN-DAY MINIMUM	3.3	Jan 11	3.0	Sep 16	.01	Jul 25 1986
INSTANTANEOUS PEAK FLOW			84	Dec 13	(c)178	Aug 29 1989
INSTANTANEOUS PEAK STAGE			3.51	Dec 13	5.12	Aug 29 1989
INSTANTANEOUS LOW FLOW			2.9	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.28		1.39		.98	
ANNUAL RUNOFF (INCHES)	17.44		18.82		13.33	
10 PERCENT EXCEEDS	9.1		10		9.4	
50 PERCENT EXCEEDS	4.9		6.4		4.3	
90 PERCENT EXCEEDS	3.8		3.5		.41	

- a Sept. 22, 27.
- b Many days in 1985-87.
- c From rating curve extended above 157 ft<sup>3</sup>/s, on basis of contracted-opening measurement at gage height 4.77 ft.
- d Sept. 16-23, 26-28.
- f Part of each day Sept. 6, 7, 1985, July 29, Aug. 2, 1986.



## PATAPSCO RIVER BASIN

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD

LOCATION.--Lat 39°10'39", long 76°39'05", Anne Arundel County, Hydrologic Unit 02060003, on right bank 2,000 ft upstream from culvert on Hammond Ferry Road, 1.2 mi southwest of Ferndale.

DRAINAGE AREA.--0.58 mi<sup>2</sup>.

PERIOD OF RECORD.--Nonvember 1994 to September 1995. October 1996 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 100 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record, backwater), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft<sup>3</sup>/s and maximum (\*):

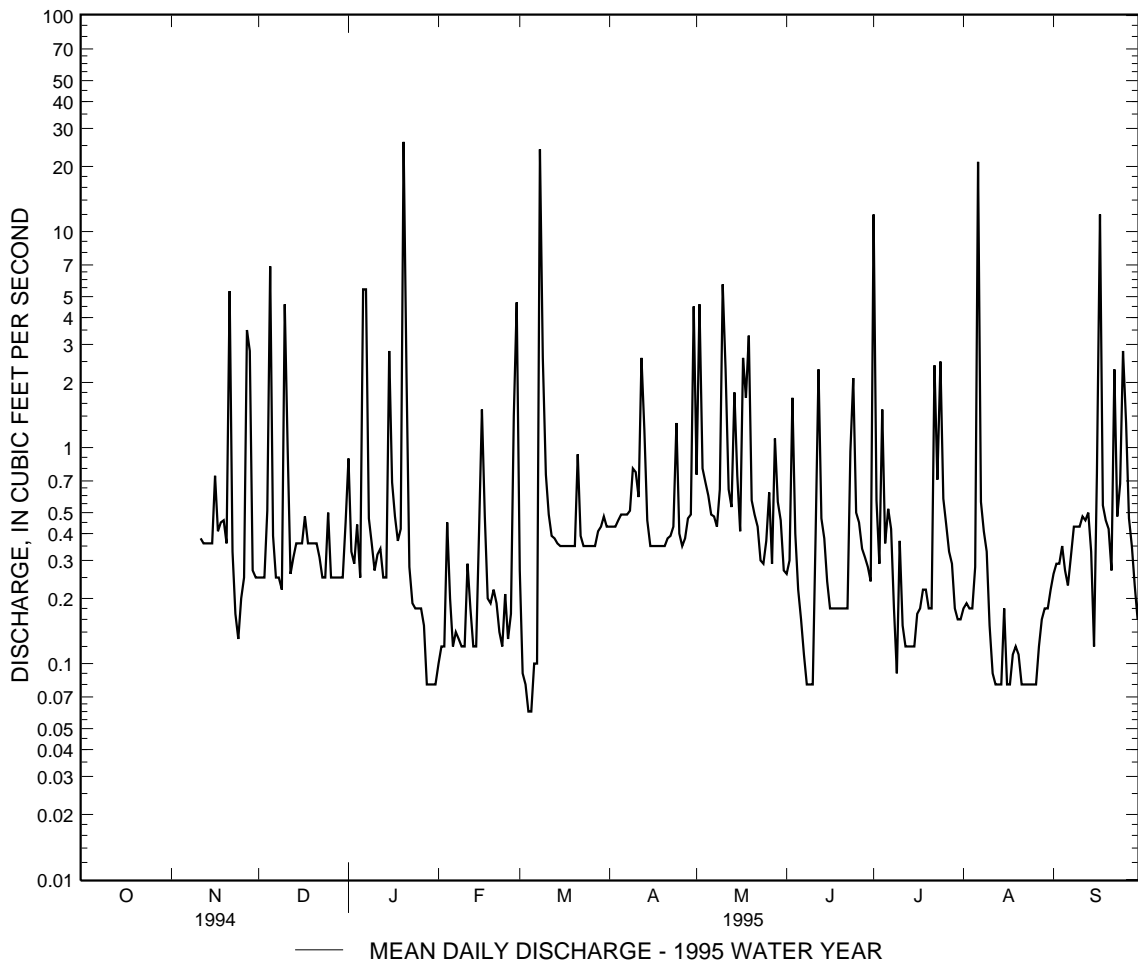
Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 20, 1995	0530	136	2.55	Sep. 17, 1995	0445	69	2.03
Mar. 8, 1995	1600	73	2.07				
July 1, 1995	1500	70	2.04	Dec. 13, 1996	1515	*53	*1.83
Aug. 6, 1995	0930	*147	*2.62	Aug. 20, 1997	1515	51	1.80

DISCHARGE, IN CUBIC FEET PER SECOND, NOVEMBER 1994 TO SEPTEMBER 1995  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.25	.89	.10	.27	.43	.75	.26	12	.18	.26
2	---	---	.25	.33	.12	.09	.43	4.6	.30	.57	.19	.29
3	---	---	.25	.29	.12	.08	.43	.80	1.7	.29	.18	.29
4	---	---	.51	.44	.45	.06	.46	.69	.40	1.5	.18	.35
5	---	---	6.9	.25	.20	.06	.49	.60	.22	.36	.28	.27
6	---	---	.39	5.4	.12	.10	.49	.49	.16	.52	21	.23
7	---	---	.25	5.4	.14	.10	.49	.48	.11	.42	.56	.31
8	---	---	.25	.47	.13	24	.51	.43	.08	.18	.41	.43
9	---	---	.22	.36	.12	2.6	.80	.64	.08	.09	.33	.43
10	---	---	4.6	.27	.12	.75	.77	5.7	.08	.37	.15	.43
11	---	.38	1.0	.32	.29	.49	.59	2.3	.40	.15	.09	.48
12	---	.36	.26	.34	.18	.39	2.6	.64	2.3	.12	.08	.46
13	---	.36	.31	.25	.12	.38	1.2	.53	.47	.12	.08	.50
14	---	.36	.36	.25	.12	.36	.46	1.8	.38	.12	.08	.33
15	---	.36	.36	2.8	.41	.35	.35	.74	.24	.12	.18	.12
16	---	.74	.36	.69	1.5	.35	.35	.41	.18	.17	.08	.76
17	---	.41	.48	.48	.48	.35	.35	2.6	.18	.18	.08	12
18	---	.45	.36	.37	.20	.35	.35	1.7	.18	.22	.11	.54
19	---	.46	.36	.42	.19	.35	.35	3.3	.18	.22	.12	.46
20	---	.36	.36	26	.22	.35	.35	.57	.18	.18	.11	.42
21	---	5.3	.36	2.2	.19	.93	.38	.49	.18	.18	.08	.27
22	---	.33	.31	.28	.14	.39	.39	.43	.18	2.4	.08	2.3
23	---	.17	.25	.19	.12	.35	.43	.30	.96	.71	.08	.48
24	---	.13	.25	.18	.21	.35	1.3	.29	2.1	2.5	.08	.68
25	---	.20	.50	.18	.13	.35	.40	.37	.50	.58	.08	2.8
26	---	.25	.25	.18	.17	.35	.35	.62	.45	.44	.08	1.3
27	---	3.5	.25	.15	1.4	.35	.38	.29	.34	.33	.12	.47
28	---	2.8	.25	.08	4.7	.41	.47	1.1	.31	.29	.16	.35
29	---	.27	.25	.08	---	.43	.49	.56	.28	.18	.18	.23
30	---	.25	.25	.08	---	.48	4.5	.46	.24	.16	.18	.16
31	---	---	.45	.08	---	.43	---	.27	---	.16	.22	---
TOTAL	---	---	21.45	49.70	12.39	36.65	21.34	34.95	13.62	25.83	25.81	28.40
MEAN	---	---	.69	1.60	.44	1.18	.71	1.13	.45	.83	.83	.95
MAX	---	---	6.9	26	4.7	24	4.5	5.7	2.3	12	21	12
MIN	---	---	.22	.08	.10	.06	.35	.27	.08	.09	.08	.12
CFSM	---	---	1.19	2.76	.76	2.04	1.23	1.94	.78	1.44	1.44	1.63
IN.	---	---	1.38	3.19	.79	2.35	1.37	2.24	.87	1.66	1.66	1.82

PATAPSCO RIVER BASIN

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD--Continued



PATAPSCO RIVER BASIN

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDAL, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.21	.66	11	.25	.35	8.0	1.2	1.3	.83	.47	.21	3.2
2	e.70	e.28	13	.24	.35	2.4	.42	.79	9.4	.72	.19	.25
3	e.32	e.27	.38	.24	.35	14	.39	1.7	13	.29	.23	.24
4	.19	e.27	.29	.24	2.9	13	.38	.60	4.2	.26	.24	.24
5	.19	e.27	1.1	.27	6.9	1.2	.35	.29	.35	.24	.38	.28
6	.19	e.27	12	.24	.46	.72	.92	.29	.32	.25	.26	.24
7	.24	e.55	6.4	.24	.38	.37	.43	.29	.30	.24	.24	.70
8	12	11	.96	.24	2.1	.38	.35	.30	.29	.24	.24	.25
9	5.6	15	.39	1.1	1.5	.42	.35	1.1	.29	.26	.24	.19
10	1.1	.20	.29	1.8	.49	3.6	.35	.38	.29	.24	.24	.64
11	.26	.18	1.9	.54	.45	.39	.35	.29	.29	.24	.24	.43
12	.24	.18	.78	.29	.51	.35	3.1	.29	.28	.25	.29	.21
13	.24	.18	25	.25	.37	.35	.76	.29	.29	.27	.31	.19
14	.24	.49	16	.24	6.0	6.9	.29	.27	.29	.29	.29	.19
15	.24	.68	.45	.29	7.8	2.2	.29	.30	.29	.24	.29	.19
16	.24	.18	.41	5.8	.52	.39	.29	.26	.29	.24	.32	.19
17	.29	.18	.54	.35	.37	.35	1.4	.24	.29	.27	1.8	.19
18	4.0	.25	.41	.29	.35	1.5	.48	.29	1.2	.42	6.2	.28
19	23	.24	2.8	.29	.38	5.5	.35	.29	.93	.22	.43	.23
20	.83	.24	.31	.29	.36	.59	.35	.34	.24	.19	16	.24
21	.30	.24	.29	.29	.38	.41	1.1	.29	.24	.19	13	.24
22	.29	.24	.29	1.7	.41	.41	.52	.29	.27	.19	1.3	.24
23	.29	.26	.29	.94	.41	.41	.35	.29	.29	1.1	.41	.29
24	.33	.29	1.9	2.4	.41	.36	.86	.35	.29	1.1	.40	.41
25	.29	.29	.49	13	.41	.35	.35	3.7	.32	.31	.35	.49
26	.29	8.0	.29	.32	1.1	3.8	.35	11	1.9	.26	.35	.41
27	.35	.26	.40	.29	.53	.41	1.9	.44	1.4	.24	.35	.36
28	.63	.24	.29	6.2	.35	.35	11	.29	.24	2.4	.37	2.4
29	.30	.24	.95	.34	---	1.1	.61	.27	.24	1.2	.32	1.3
30	.38	.62	.31	.30	---	.46	.35	.44	.24	.24	.32	.19
31	.48	---	.29	.35	---	7.2	---	.29	---	.24	.31	---
TOTAL	54.25	42.25	100.20	39.62	36.89	77.87	30.19	27.55	39.09	13.31	46.12	14.90
MEAN	1.75	1.41	3.23	1.28	1.32	2.51	1.01	.89	1.30	.43	1.49	.50
MAX	23	15	25	13	7.8	14	11	11	13	2.4	16	3.2
MIN	.19	.18	.29	.24	.35	.35	.29	.24	.24	.19	.19	.19
CFSM	3.02	2.43	5.57	2.20	2.27	4.33	1.74	1.53	2.25	.74	2.57	.86
IN.	3.48	2.71	6.43	2.54	2.37	4.99	1.94	1.77	2.51	.85	2.96	.96

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995, 1997, BY WATER YEAR (WY)

MEAN	1.75	1.41	1.96	1.44	.88	1.85	.86	1.01	.88	.63	1.16	.72
MAX	1.75	1.41	3.23	1.60	1.32	2.51	1.01	1.13	1.30	.83	1.49	.95
(WY)	1997	1997	1997	1995	1997	1997	1997	1995	1997	1995	1997	1995
MIN	1.75	1.41	.69	1.28	.44	1.18	.71	.89	.45	.43	.83	.50
(WY)	1997	1997	1995	1997	1995	1995	1995	1997	1995	1997	1995	1997

SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1995, 1997

ANNUAL TOTAL	522.24		
ANNUAL MEAN	1.43	1.43	
HIGHEST ANNUAL MEAN		1.43	1997
LOWEST ANNUAL MEAN		1.43	1997
HIGHEST DAILY MEAN	25	Dec 13	26
LOWEST DAILY MEAN	.18	(a)	.06
ANNUAL SEVEN-DAY MINIMUM	.21	Sep 12	.08
INSTANTANEOUS PEAK FLOW	53	Dec 13	147
INSTANTANEOUS PEAK STAGE	1.83	Dec 13	2.62
INSTANTANEOUS LOW FLOW	.13	Nov 13	.06
ANNUAL RUNOFF (CFSM)	2.47		2.47
ANNUAL RUNOFF (INCHES)	33.50		33.52
10 PERCENT EXCEEDS	3.4		2.3
50 PERCENT EXCEEDS	.35		.35
90 PERCENT EXCEEDS	.24		.18

a Nov. 11-13, 16, 17.

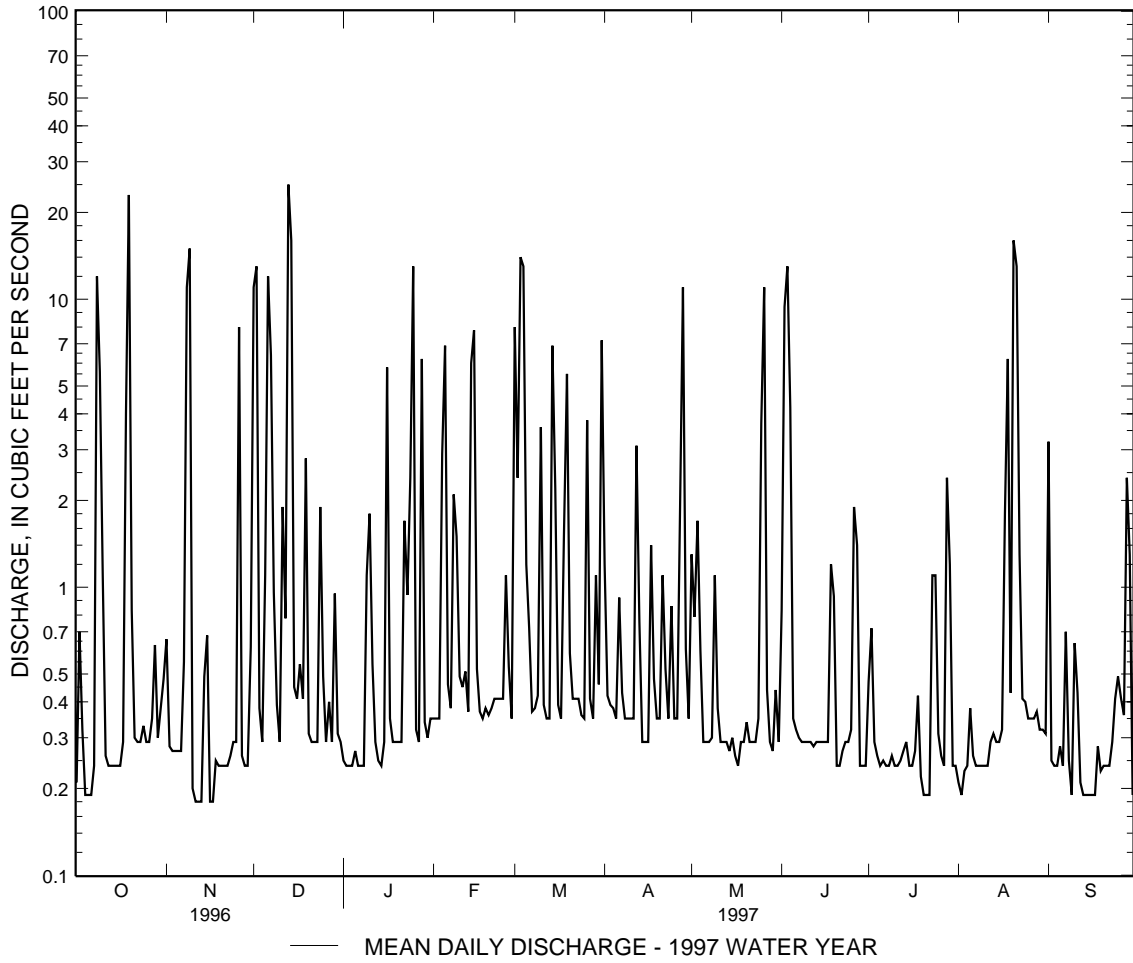
b Mar. 4, 5, 1995.

c Mar. 4-6, 1995.



PATAPSCO RIVER BASIN

01589501 SAWMILL CREEK TRIBUTARY AT BWI AIRPORT NEAR FERNDALE, MD--Continued



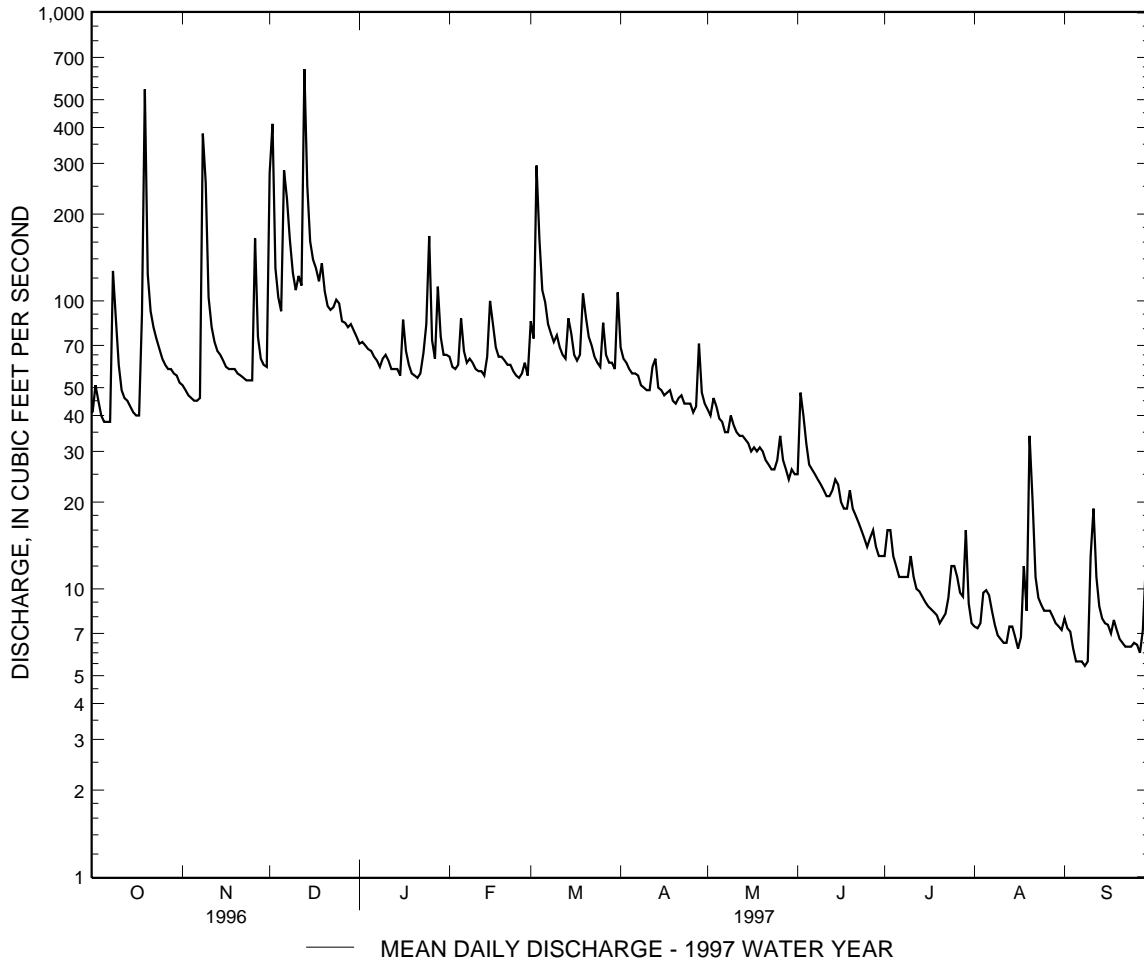


PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1944 - 1997	
ANNUAL TOTAL	31309		20178.1			
ANNUAL MEAN	85.5		55.3		39.8	
HIGHEST ANNUAL MEAN					82.3	1972
LOWEST ANNUAL MEAN					19.8	1981
HIGHEST DAILY MEAN	1840	Jan 19	638	Dec 13	2590	Sep 26 1975
LOWEST DAILY MEAN	28	Jan 1	5.4	Sep 8	.20	(a)
ANNUAL SEVEN-DAY MINIMUM	36	Aug 28	5.9	Sep 3	.40	Sep 6 1966
INSTANTANEOUS PEAK FLOW			1290	Dec 13	(b)21800	Sep 11 1971
INSTANTANEOUS PEAK STAGE			6.60	Dec 13	18.60	Sep 11 1971
INSTANTANEOUS LOW FLOW			5.4	(c)	.20	(d)
ANNUAL RUNOFF (CFSM)	2.46		1.59		1.14	
ANNUAL RUNOFF (INCHES)	33.47		21.57		15.55	
10 PERCENT EXCEEDS	126		98		72	
50 PERCENT EXCEEDS	58		48		26	
90 PERCENT EXCEEDS	40		7.6		9.0	

- a Sept. 10, 11, 1966.
- b From rating curve extended above 1,500 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 13.00 ft.
- c Sept. 5-9.
- d Sept. 10-12, 1966.



## PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1985 to current year.

REMARKS.--Water-quality data available through September 1996 only at time of publication.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)
OCT 1995										
11...	1130	6.6	12	6.7	15.0	21.0	2.1	9.9	--	--
21...	1115	296	--	--	--	--	82	--	21	--
26...	1400	11	124	6.6	10.5	13.0	3.4	--	<10	<2.0
NOV										
07...	1100	14	13	7.1	6.0	7.0	2.1	11.3	--	--
14...	1615	437	--	--	--	--	--	--	--	--
14...	1945	448	--	--	--	--	--	--	--	--
14...	2300	549	--	--	--	--	--	--	--	--
15...	0200	457	--	--	--	--	--	--	--	--
28...	1245	25	122	--	9.0	12.0	2.7	--	<10	<2.0
DEC										
04...	1255	25	12	7.2	8.0	12.0	1.9	12.1	--	--
13...	1415	20	127	6.2	0.5	-0.5	1.2	--	<10	<2.0
JAN 1996										
17...	0910	38	11	6.9	1.0	4.0	3.2	12.9	--	--
19...	1700	4310	--	--	--	--	310	--	13	--
19...	1805	4310	--	--	--	--	270	--	<10	--
19...	1910	3850	--	--	--	--	260	--	<10	--
19...	2015	3020	--	--	--	--	220	--	<10	--
19...	2210	1330	--	--	--	--	120	--	<10	--
FEB										
07...	1100	46	12	7.0	1.0	-1.0	4.2	13.4	--	--
MAR										
05...	1040	44	12	7.8	3.5	11.0	7.6	13.1	--	--
25...	1715	56	117	6.3	8.0	18.5	4.5	--	<10	0.8
APR										
02...	1050	146	11	7.3	7.0	8.0	69	11.4	--	--
22...	1600	59	109	6.8	18.0	28.0	2.3	--	<10	1.0
MAY										
01...	1120	58	11	7.1	14.0	20.0	5.8	10.5	--	--
20...	0700	57	110	6.7	17.0	18.0	5.8	--	<10	<0.4
JUN										
19...	0710	934	--	--	--	--	1700	--	120	--
19...	1045	2490	--	--	--	--	430	--	40	--
19...	1600	331	--	--	--	--	87	--	20	--
20...	0100	609	--	--	--	--	270	--	21	--
20...	0300	929	--	--	--	--	930	--	67	--
24...	1145	57	11	7.0	20.5	30.0	13	8.5	--	--
27...	1030	47	116	6.5	17.5	23.0	8.1	--	<10	<0.7
JUL										
15...	0930	53	12	7.2	20.0	26.0	7.3	8.2	--	--
22...	0930	48	118	6.7	18.0	19.5	6.2	--	<10	2.1
31...	1230	566	--	--	--	--	250	--	38	--
31...	1825	171	--	--	--	--	40	--	17	--
AUG										
14...	0930	90	11	7.0	17.5	22.0	9.9	8.7	--	--
26...	0830	39	119	6.7	17.5	22.0	2.2	--	<10	--
SEP										
06...	1730	728	--	--	--	--	750	--	120	--
06...	2100	2930	--	--	--	--	480	--	65	--
06...	2135	3900	--	--	--	--	690	--	84	--
06...	2200	4400	--	--	--	--	640	--	74	--
11...	0945	505	--	--	--	--	1200	--	260	--
11...	1105	744	--	--	--	--	340	--	50	--
13...	1045	165	--	--	--	--	60	--	16	--
17...	0445	167	--	--	--	--	25	--	13	--
22...	1100	218	--	--	--	--	120	--	21	--
23...	1010	63	11	7.2	16.5	18.0	7.8	9.0	--	--
24...	0900	53	117	6.7	14.0	17.0	3.9	--	<10	0.8

## PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

01591000 - PATUXENT R NR UNITY, MD

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	ALKA-LINITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEDED (MG/L) (00530)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L) (32218)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L) (32230)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L) (32231)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L) (32232)	NITRO- GEN, NITRO- GEN, DIS- SOLVED (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)	
OCT 1995											
11...	27	--	5	--	--	--	--	1.7	--	<0.001	1.40
21...	--	11	100	--	--	--	--	2.7	7.3	0.004	1.65
26...	22	9.8	3	0.028	0.062	0.00	0.00	2.2	8.8	0.002	1.99
NOV											
07...	23	--	3	--	--	--	--	2.0	--	<0.001	1.83
14...	--	--	--	--	--	--	--	--	--	<0.001	--
14...	--	--	--	--	--	--	--	--	--	<0.001	--
14...	--	--	--	--	--	--	--	--	--	<0.001	--
15...	--	--	--	--	--	--	--	--	--	<0.001	--
28...	--	8.3	1	0.007	0.053	0.00	0.00	3.1	13	0.005	2.84
DEC											
04...	17	--	2	--	--	--	--	3.0	--	<0.001	2.75
13...	14	7.4	1	0.013	0.068	0.008	0.00	3.3	14	0.005	3.12
JAN 1996											
17...	14	--	8	--	--	--	--	3.0	--	<0.001	2.73
19...	--	4.4	580	--	--	--	--	2.3	4.1	0.010	0.928
19...	--	4.4	250	--	--	--	--	2.2	4.1	0.018	0.954
19...	--	4.4	255	--	--	--	--	2.0	3.7	0.054	0.884
19...	--	4.7	230	--	--	--	--	2.0	4.2	0.050	0.993
19...	--	6.6	112	--	--	--	--	2.2	6.6	0.047	1.53
FEB											
07...	13	--	18	--	--	--	--	3.7	--	<0.001	3.54
MAR											
05...	13	--	4	--	--	--	--	3.7	--	<0.001	3.25
25...	11	6.6	2	0.029	0.198	0.024	0.00	3.4	14	0.002	3.13
APR											
02...	14	--	82	--	--	--	--	2.8	--	<0.001	2.16
22...	12	4.4	11	0.068	0.901	0.056	0.268	2.8	12	0.011	2.65
MAY											
01...	17	--	10	--	--	--	--	2.7	--	<0.001	2.39
20...	14	7.6	11	0.161	0.289	0.046	0.00	3.0	12	0.012	2.78
JUN											
19...	--	4.7	1380	--	--	--	--	7.6	8.6	0.020	1.96
19...	--	5.8	240	--	--	--	--	3.9	8.6	0.021	1.97
19...	--	9.0	120	--	--	--	--	2.5	6.9	0.013	1.58
20...	--	8.1	630	--	--	--	--	3.1	7.4	0.008	1.67
20...	--	5.2	750	--	--	--	--	3.7	4.6	0.014	1.06
24...	17	--	14	--	--	--	--	3.3	--	<0.001	3.06
27...	15	8.5	11	--	0.075	0.00	0.00	3.1	13	0.007	2.98
JUL											
15...	20	--	9	--	--	--	--	3.0	--	<0.001	2.61
22...	18	8.8	6	0.025	0.103	0.024	0.019	3.0	12	0.009	2.75
31...	--	8.9	405	--	--	--	--	2.8	5.2	0.007	1.18
31...	--	10	68	--	--	--	--	1.8	5.2	0.005	1.18
AUG											
14...	20	--	15	--	--	--	--	2.0	--	<0.001	1.71
26...	16	8.1	1	0.182	0.200	0.005	0.00	4.0	17	0.006	3.83
SEP											
06...	--	5.1	1430	--	--	--	--	6.2	7.1	0.017	1.62
06...	--	6.2	740	--	--	--	--	3.5	5.4	0.012	1.23
06...	--	3.4	850	--	--	--	--	3.7	4.2	0.014	0.973
06...	--	--	570	--	--	--	--	--	--	<0.001	--
11...	--	5.2	1310	--	--	--	--	8.4	6.4	0.012	1.47
11...	--	5.9	460	--	--	--	--	3.5	6.0	0.013	1.37
13...	--	10	128	--	--	--	--	2.1	7.4	0.005	1.68
17...	--	10	63	--	--	--	--	1.9	6.9	0.005	1.57
22...	--	8.9	168	--	--	--	--	2.4	7.4	0.008	1.68
23...	21	--	3	--	--	--	--	3.4	--	<0.001	2.90
24...	18	8.7	3	--	--	--	--	3.0	13	0.005	2.84

## PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	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. TOTAL (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 1995										
11...	--	0.28	--	0.020	--	--	2.8	--	--	--
21...	0.013	1.0	0.44	0.167	0.013	0.004	7.3	6.3	142	114
26...	0.012	0.16	0.26	0.010	0.081	0.009	2.4	--	2	0.05
NOV										
07...	--	0.17	--	0.020	--	--	2.3	--	--	--
14...	--	--	--	--	--	--	--	--	289	341
14...	--	--	--	--	--	--	--	--	14	17
14...	--	--	--	--	--	--	--	--	30	45
15...	--	--	--	--	--	--	--	--	2	2.0
28...	0.008	0.26	0.26	<0.010	<0.010	0.010	1.5	--	4	0.25
DEC										
04...	--	0.20	--	0.013	--	--	1.5	--	--	--
13...	0.010	0.15	0.15	<0.010	<0.010	0.007	1.2	--	3	0.18
JAN 1996										
17...	--	0.26	--	0.012	--	--	3.5	--	--	--
19...	0.115	1.4	0.42	0.483	0.048	0.027	7.3	--	309	3600
19...	0.112	1.2	0.41	0.398	0.034	0.027	7.9	--	238	2760
19...	0.107	1.1	0.41	0.349	0.035	0.027	7.2	7.5	222	2310
19...	0.093	0.97	0.30	0.292	0.028	0.028	7.0	--	198	1610
19...	0.107	0.66	0.29	0.196	0.052	0.042	6.8	6.6	99	354
FEB										
07...	--	0.14	--	0.025	--	--	1.3	--	--	--
MAR										
05...	--	0.43	--	0.120	--	--	2.1	--	--	--
25...	0.013	0.26	0.21	<0.006	<0.003	0.011	1.7	--	4	0.54
APR										
02...	--	0.68	--	0.128	--	--	3.9	--	--	--
22...	0.012	0.16	0.22	0.026	0.017	0.009	1.9	2.0	1	0.21
MAY										
01...	--	0.30	--	0.034	--	--	3.4	--	--	--
20...	0.025	0.24	0.22	0.015	<0.002	0.009	2.0	1.6	9	1.4
JUN										
19...	0.148	5.6	0.78	1.90	0.054	<0.003	9.3	--	2480	6260
19...	0.090	1.9	0.72	0.497	0.067	0.023	9.5	9.7	466	3130
19...	0.026	0.89	0.39	0.158	0.039	0.008	6.6	6.4	136	122
20...	0.044	1.4	0.22	0.406	0.016	0.012	4.3	4.6	707	1160
20...	0.043	2.7	0.49	0.882	0.062	0.028	7.2	7.4	1150	2880
24...	--	0.29	--	0.044	--	--	2.1	--	--	--
27...	0.022	0.12	0.11	0.090	0.061	<0.003	1.5	--	11	1.5
JUL										
15...	--	0.36	--	<0.010	--	--	2.2	--	--	--
22...	0.018	0.21	0.18	0.018	0.013	0.015	1.7	--	8	0.98
31...	0.042	1.6	0.38	0.460	0.048	0.052	4.9	4.8	543	830
31...	0.034	0.61	0.32	0.109	0.032	--	3.8	--	80	37
AUG										
14...	--	0.33	--	0.045	--	--	2.8	--	--	--
26...	0.010	0.16	0.10	0.013	<0.004	<0.004	2.4	2.0	2	0.20
SEP										
06...	0.041	4.6	0.58	1.50	0.066	0.023	8.5	8.4	1490	2930
06...	0.052	2.2	0.53	0.900	0.077	0.027	7.9	7.8	690	5460
06...	0.061	2.8	0.57	1.10	0.083	0.028	9.2	8.8	875	9210
06...	--	--	--	--	--	--	9.2	--	601	7150
11...	0.149	6.9	0.56	2.20	0.042	0.014	7.7	6.6	2790	3810
11...	0.108	2.1	0.46	0.647	0.060	0.027	6.9	--	732	1470
13...	0.017	0.46	0.24	0.130	0.021	0.017	3.2	2.8	118	52
17...	0.015	0.33	0.20	0.080	0.030	0.016	3.3	3.7	56	25
22...	0.015	0.74	0.25	0.222	0.064	0.041	3.4	3.2	183	108
23...	--	0.47	--	0.050	--	--	2.8	--	--	--
24...	0.009	0.21	0.20	0.033	0.015	0.022	1.8	--	2	0.24

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PATUXENT RIVER BASIN

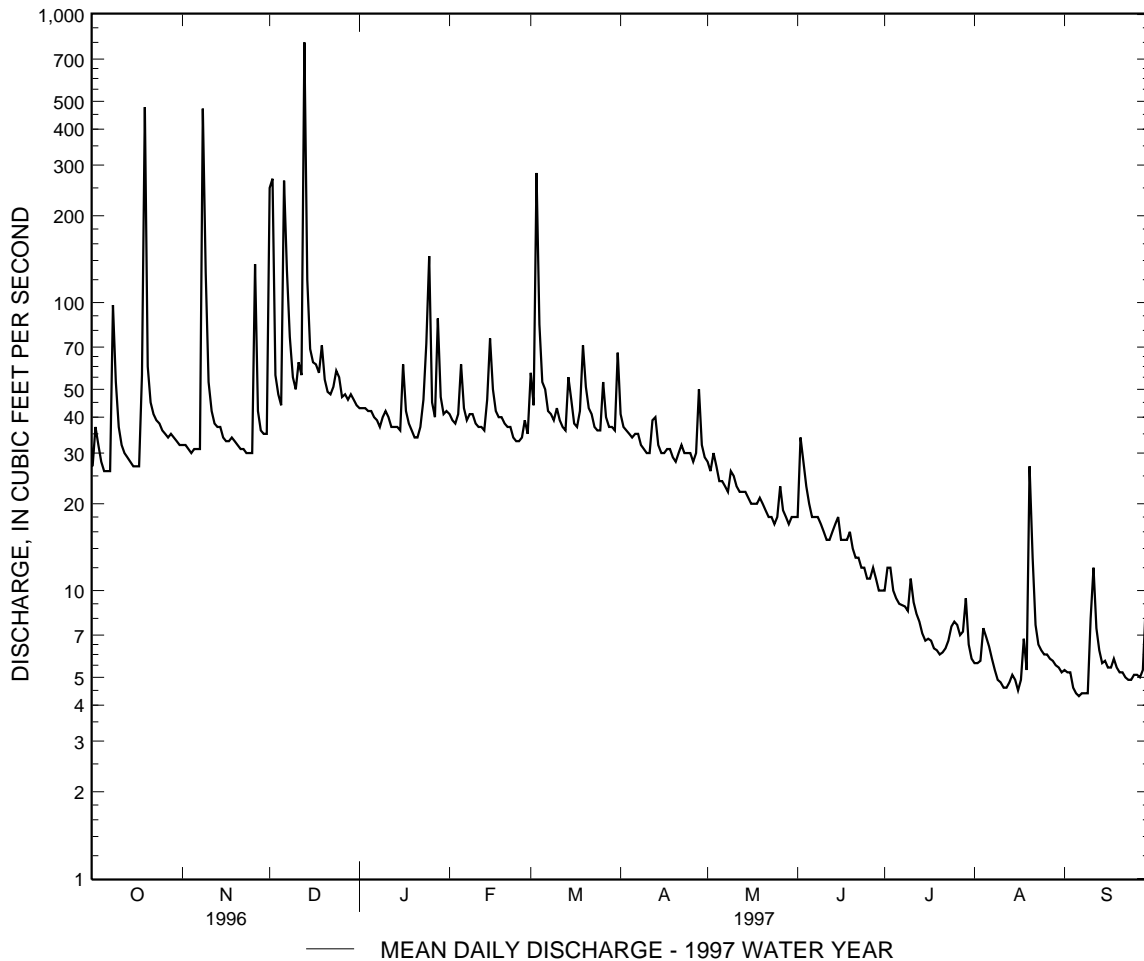
01591400 CATTAIL CREEK NEAR GLENWOOD, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1978 - 1997	
ANNUAL TOTAL	21151		13437.0			
ANNUAL MEAN	57.8		36.8		27.4	
HIGHEST ANNUAL MEAN					45.7	1996
LOWEST ANNUAL MEAN					13.1	1981
HIGHEST DAILY MEAN	2100	Jan 19	800	Dec 13	2100	Jan 19 1996
LOWEST DAILY MEAN	(e)17	Jan 7	4.3	Sep 6	1.9	Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	22	Aug 28	4.5	Sep 3	2.0	Sep 2 1995
INSTANTANEOUS PEAK FLOW			1890	Dec 13	(a)5210	Jan 19 1996
INSTANTANEOUS PEAK STAGE			6.17	Dec 13	8.96	Jan 19 1996
INSTANTANEOUS LOW FLOW			4.1	(b)	1.7	Aug 19 1991
ANNUAL RUNOFF (CFSM)	2.52		1.61		1.20	
ANNUAL RUNOFF (INCHES)	34.36		21.83		16.25	
10 PERCENT EXCEEDS	72		55		42	
50 PERCENT EXCEEDS	32		31		18	
90 PERCENT EXCEEDS	23		5.6		6.5	

e Estimated.

a From rating curve extended above 175 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement at gage height of 8.41 ft.

b Sept. 6, 8.



## PATUXENT RIVER BASIN

01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD

LOCATION.--Lat 39°11'32", long 77°00'17", 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<sup>2</sup>.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 310 ft above sea level, 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. 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<sup>3</sup>/s. Data provided by Washington Suburban Sanitary Commission.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 481 ft<sup>3</sup>/s, Dec. 15, gage height, 3.09 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	141	234	79	148	231	205	97	11	56	50	258
2	104	147	314	79	95	198	143	165	27	55	50	180
3	117	151	370	77	95	108	237	245	51	55	50	115
4	135	151	360	77	96	243	232	242	44	55	50	111
5	135	152	383	77	92	243	185	137	41	55	51	101
6	135	152	368	75	89	339	87	93	24	55	51	74
7	163	149	373	176	88	383	88	93	16	55	50	74
8	246	176	365	270	89	295	66	93	16	55	50	75
9	138	387	300	252	89	178	21	90	16	55	50	67
10	139	451	141	251	187	87	28	92	16	55	75	47
11	142	378	175	165	246	87	85	90	15	55	96	47
12	139	181	237	93	150	86	234	90	15	53	96	47
13	148	90	296	91	99	181	258	90	16	54	97	47
14	156	90	355	90	195	239	208	90	16	55	103	46
15	137	90	366	90	248	239	102	90	16	55	126	46
16	137	91	281	141	246	199	103	90	37	54	127	46
17	138	79	233	246	245	93	103	90	56	53	125	46
18	105	92	227	178	147	91	103	90	56	54	127	46
19	186	89	227	90	97	184	97	90	56	50	127	45
20	227	88	231	89	96	244	96	93	56	46	127	46
21	214	88	223	100	196	144	96	93	56	46	126	46
22	185	80	219	99	161	93	98	93	56	46	125	46
23	159	61	138	142	92	93	100	93	56	47	125	46
24	152	61	85	252	90	92	100	92	56	48	125	46
25	152	163	85	251	90	191	100	72	55	47	124	46
26	152	252	179	260	147	246	100	63	62	47	185	46
27	88	245	229	239	238	190	100	77	57	47	245	44
28	50	235	226	257	236	90	97	109	56	48	292	44
29	52	234	223	250	---	90	96	65	56	48	272	44
30	52	232	148	239	---	88	96	15	56	49	284	44
31	100	---	79	235	---	188	---	11	---	50	280	---
TOTAL	4287	4976	7670	5010	4087	5453	3664	3033	1167	1603	3861	2016
MEAN	138	166	247	162	146	176	122	97.8	38.9	51.7	125	67.2
MAX	246	451	383	270	248	383	258	245	62	56	292	258
MIN	50	61	79	75	88	86	21	11	11	46	50	44
(†)	6380	6280	6180	6130	6180	6400	6300	5900	6230	5700	3800	2700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1997, BY WATER YEAR (WY)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	64.9	59.3	92.5	82.4	86.8	120	130	96.5	75.6	60.0	68.8	82.3					
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	10.1	8.90	8.49	8.63	22.4	30.3	18.1	26.1					
(WY)	1987	1989	1992	1982	1987	1981	1981	1981	1981	1995	1987	1991					

† Monthend contents, in millions of gallons, in Triadelphia Reservoir (contents on Sept. 30, 1996, 6,175,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

PATUXENT RIVER BASIN

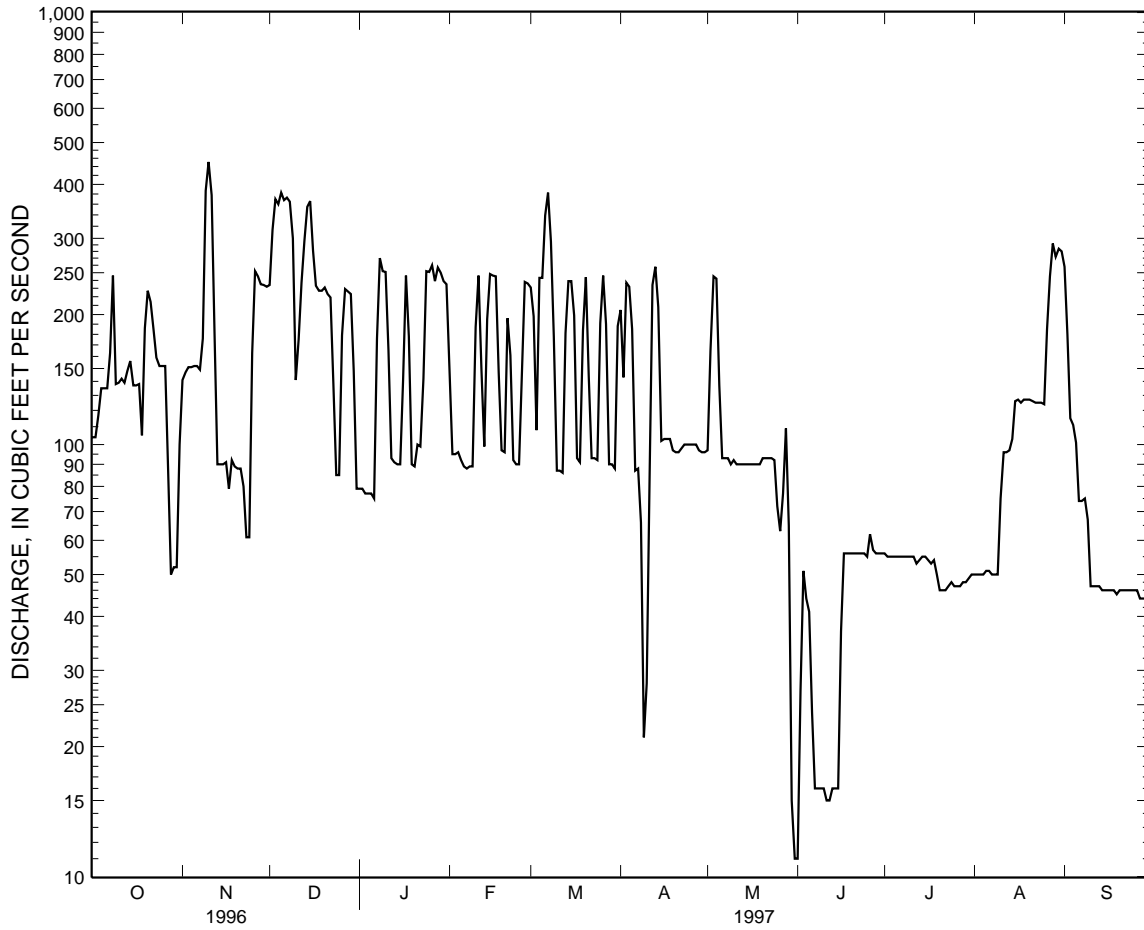
01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1981 - 1997	
ANNUAL TOTAL	55750.7		46827			
ANNUAL MEAN	152		128		84.9	
ANNUAL MEAN <sup>#</sup>	163		113		83.5	
HIGHEST ANNUAL MEAN					134	
LOWEST ANNUAL MEAN					47.5	
HIGHEST DAILY MEAN	1300	Sep 7	451	Nov 10	1730	May 6 1989
LOWEST DAILY MEAN	8.1	Jan 18	11	(a)	2.1	(b)
ANNUAL SEVEN-DAY MINIMUM	11	Jan 12	16	Jun 7	4.0	Oct 16 1980
INSTANTANEOUS PEAK FLOW			481	Dec 15	2650	May 6 1989
INSTANTANEOUS PEAK STAGE			3.09	Dec 15	10.26	May 6 1985
INSTANTANEOUS LOW FLOW			11	May 31	1.2	Dec 3 1985
ANNUAL RUNOFF (CFSM)	1.94		1.44		1.08	
ANNUAL RUNOFF (CFSM) <sup>#</sup>	2.07		1.63		1.06	
ANNUAL RUNOFF (INCHES)	26.39		22.16		14.68	
ANNUAL RUNOFF (INCHES) <sup>#</sup>	28.16		19.53		14.43	
10 PERCENT EXCEEDS	278		246		187	
50 PERCENT EXCEEDS	127		96		55	
90 PERCENT EXCEEDS	50		46		9.4	

<sup>#</sup> Adjusted for change in reservoir contents.

a May 31, June 1.

b Jan. 27, 28, 1983.



— MEAN DAILY DISCHARGE - 1997 WATER YEAR

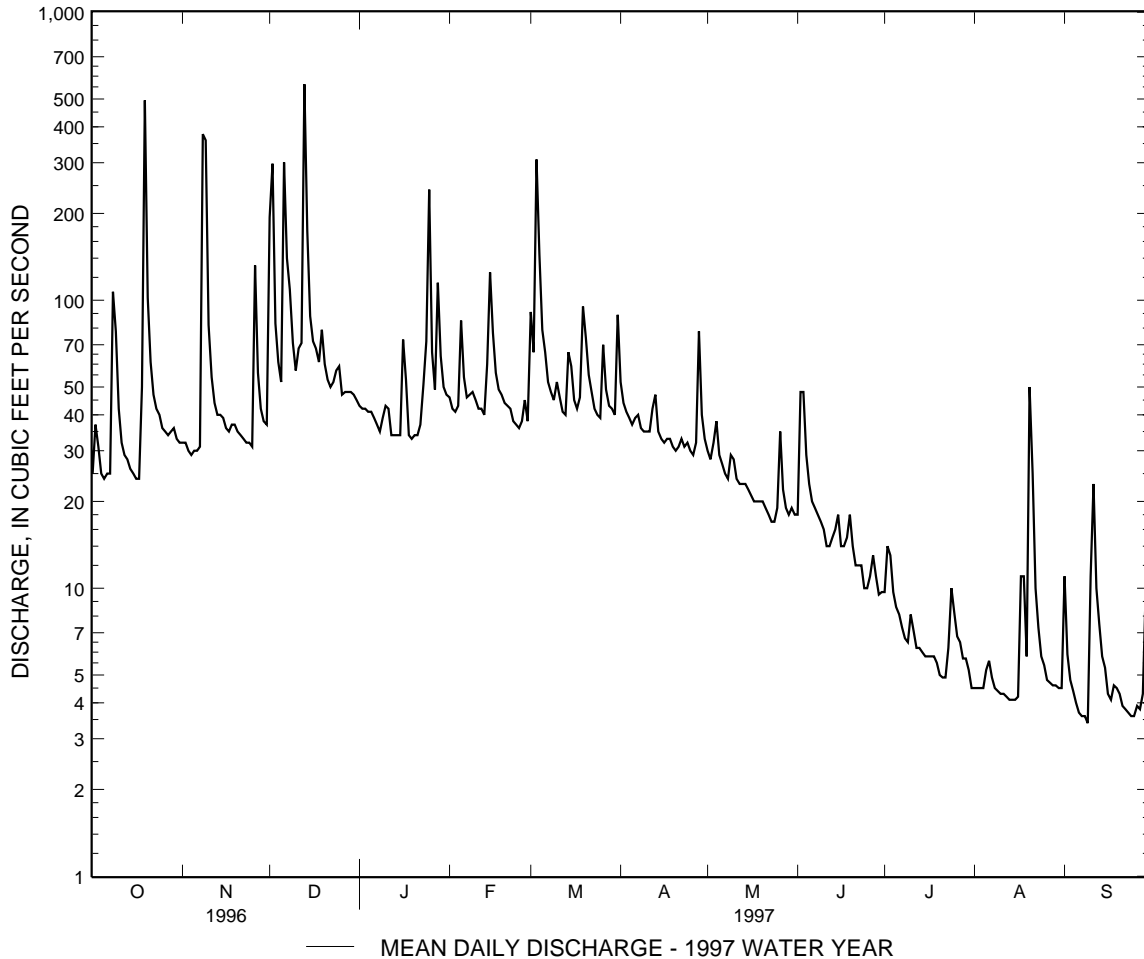


PATUXENT RIVER BASIN

01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1978 - 1997	
ANNUAL TOTAL	23249		14884.0			
ANNUAL MEAN	63.5		40.8		31.0	
HIGHEST ANNUAL MEAN					52.9	1996
LOWEST ANNUAL MEAN					16.0	1986
HIGHEST DAILY MEAN	1840	Jan 19	562	Dec 13	1840	Jan 19 1996
LOWEST DAILY MEAN	15	Sep 2	(e)3.4	Sep 9	1.7	(a)
ANNUAL SEVEN-DAY MINIMUM	18	Aug 28	3.8	Sep 21	1.8	Sep 10 1995
INSTANTANEOUS PEAK FLOW			1370	Nov 8	(b)5180	Jan 19 1996
INSTANTANEOUS PEAK STAGE			6.18	Nov 8	9.24	Jan 19 1996
INSTANTANEOUS LOW FLOW			UNKNOWN		(c).75	Jan 30 1981
ANNUAL RUNOFF (CFSM)	2.35		1.51		1.15	
ANNUAL RUNOFF (INCHES)	32.03		20.51		15.58	
10 PERCENT EXCEEDS	97		70		51	
50 PERCENT EXCEEDS	36		33		19	
90 PERCENT EXCEEDS	23		4.6		5.7	

- e Estimated.
- a Sept. 11-13, 1995.
- b From rating curve extended above 1,200 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow.
- c Result of freezeup.



## PATUXENT RIVER BASIN

01592500 PATUXENT RIVER NEAR LAUREL, MD

LOCATION.--Lat 39°06'56", long 76°52'27", 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<sup>2</sup>.

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 sea level (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. 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. Several measurements of water temperature were made during the year.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 1,210 ft<sup>3</sup>/s, Dec. 16, gage height, 7.91 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	152	300	152	326	158	204	158	23	20	20	20
2	153	154	700	149	324	92	207	158	31	19	20	20
3	155	154	828	121	211	532	206	159	131	19	20	21
4	155	144	803	150	152	584	192	159	152	20	20	21
5	152	154	556	150	151	607	203	159	153	20	20	21
6	152	153	283	153	151	332	206	159	153	20	20	21
7	188	153	738	152	150	154	226	127	121	21	20	21
8	365	228	1060	152	152	159	207	91	84	20	20	21
9	154	733	610	140	150	160	159	49	53	20	20	21
10	156	612	153	152	151	115	159	23	20	21	20	20
11	154	424	265	151	115	90	159	23	20	21	21	20
12	154	242	345	152	114	234	159	24	20	21	20	20
13	152	156	557	152	275	322	157	24	20	20	20	20
14	153	156	1050	152	341	359	161	24	20	20	20	20
15	154	156	1090	152	341	383	160	24	20	19	20	20
16	154	156	840	152	346	324	125	24	20	19	20	20
17	154	157	469	150	221	161	159	24	21	20	20	20
18	155	159	390	152	157	160	157	24	21	20	21	20
19	306	144	154	152	243	159	156	24	21	20	21	20
20	316	156	154	151	247	159	157	24	21	20	21	20
21	315	156	154	151	247	160	159	24	21	20	21	20
22	224	156	152	152	202	161	159	24	21	19	21	20
23	151	157	152	151	157	161	159	24	21	19	21	20
24	154	156	293	153	157	161	159	24	21	19	21	20
25	131	150	342	178	158	197	141	24	19	20	21	20
26	80	156	338	349	161	208	159	23	20	20	21	20
27	80	154	336	349	156	208	160	23	20	20	20	20
28	127	129	336	346	154	208	158	23	20	20	20	20
29	160	154	335	346	---	208	158	23	20	20	20	20
30	155	154	226	336	---	208	159	23	20	20	20	20
31	150	---	152	328	---	208	---	23	---	20	20	---
TOTAL	5361	6065	14161	5826	5710	7332	5090	1739	1328	617	630	607
MEAN	173	202	457	188	204	237	170	56.1	44.3	19.9	20.3	20.2
MAX	365	733	1090	349	346	607	226	159	153	21	21	21
MIN	80	129	152	121	114	90	125	23	19	19	20	20
(+)	11920	12080	11680	12000	11720	12080	11930	11870	11720	10590	9480	7690
(#)	75.6	73.6	78.0	77.5	76.0	73.4	74.9	72.0	71.3	81.2	89.0	102

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1997, BY WATER YEAR (WY)

MEAN	45.6	50.7	80.5	108	119	137	140	113	86.3	60.6	50.4	65.9
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, 1996, 11,120,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

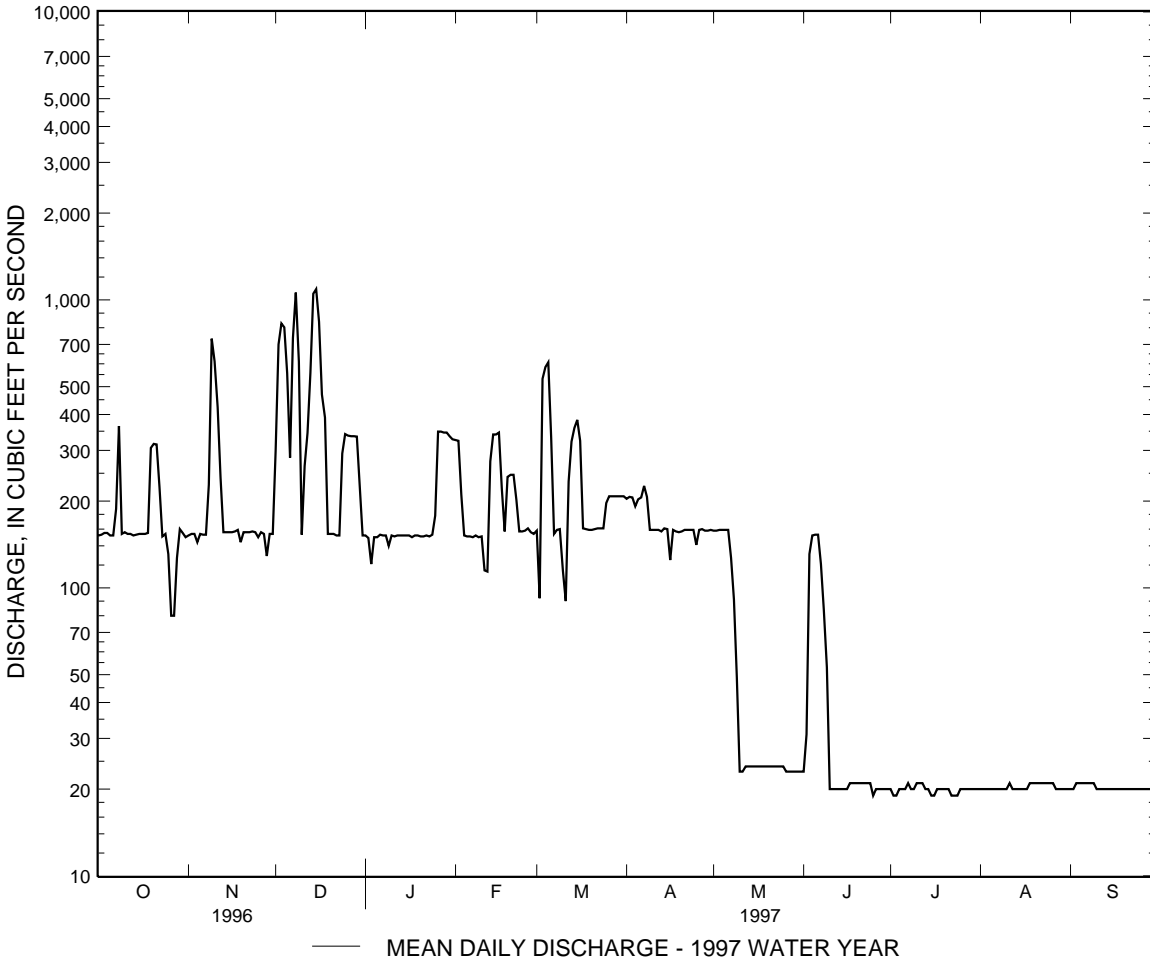
# Diversions, in cubic feet per second, upstream from station at Patuxent (formerly Willis School) filtration plant for supply of Washington Suburban Sanitary District. Records provided by Washington Suburban Sanitary Commission.

PATUXENT RIVER BASIN

01592500 PATUXENT RIVER NEAR LAUREL, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1945 - 1997	
ANNUAL TOTAL	77682		54466			
ANNUAL MEAN	212		149		87.9	
ANNUAL MEAN#	283		222			
HIGHEST ANNUAL MEAN					241	1972
LOWEST ANNUAL MEAN					9.09	1966
HIGHEST DAILY MEAN	1420	Sep 7	1090	Dec 15	13000	Jun 22 1972
LOWEST DAILY MEAN	21	Feb 6	19	(a)	1.1	Jun 26 1956
ANNUAL SEVEN-DAY MINIMUM	23	Jan 1	20	Jul 18	3.7	Aug 29 1966
INSTANTANEOUS PEAK FLOW			1210	Dec 16	(b)26000	Jun 22 1972
INSTANTANEOUS PEAK STAGE			7.91	Dec 16	(c)25.00	Jun 22 1972
INSTANTANEOUS LOW FLOW			4.9	Sep 17	(d).05	Jul 18 1985
ANNUAL RUNOFF (CFSM)	1.61		1.13		.67	
ANNUAL RUNOFF (INCHES)	21.89		15.35		9.05	
10 PERCENT EXCEEDS	354		333		192	
50 PERCENT EXCEEDS	156		152		23	
90 PERCENT EXCEEDS	89		20		11	

- # Adjusted for diversions.
- a June 25, July 2, 3, 15, 16, 22-24.
- b From rating curve extended above 6,600 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.
- c From floodmarks.
- d Valve closed for repair.





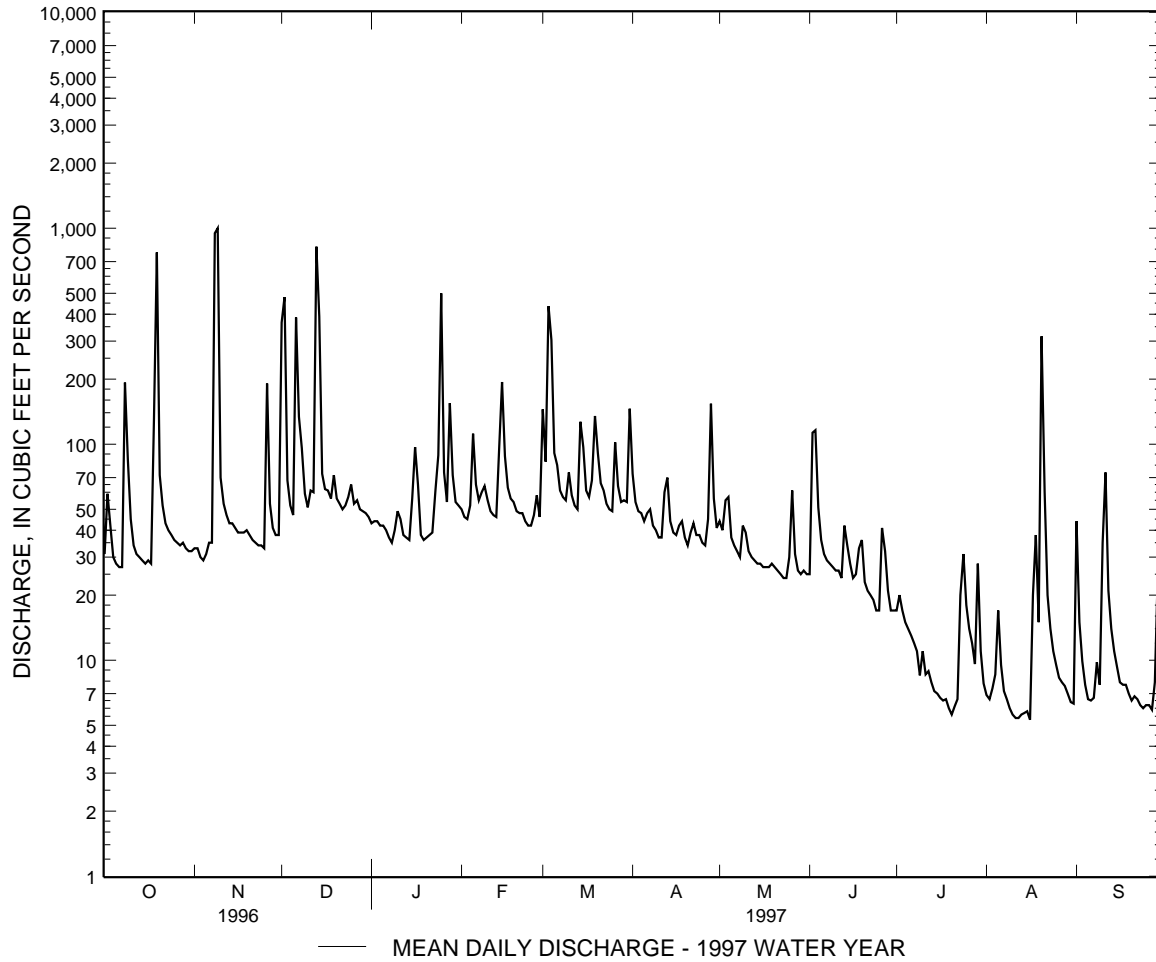


PATUXENT RIVER BASIN

01593500 LITTLE PATUXENT RIVER AT GUILDFORD, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1932 - 1997	
ANNUAL TOTAL	29427		21042.0			
ANNUAL MEAN	80.4		57.6		43.8	
HIGHEST ANNUAL MEAN					93.7	1972
LOWEST ANNUAL MEAN					17.7	1932
HIGHEST DAILY MEAN	1380	Jan 19	1000	Nov 9	4680	Jun 22 1972
LOWEST DAILY MEAN	17	Aug 26	5.3	Aug 16	.00	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	19	Aug 20	5.5	Aug 10	.73	Sep 6 1966
INSTANTANEOUS PEAK FLOW			3950	Nov 8	(a)12400	Jun 22 1972
INSTANTANEOUS PEAK STAGE			12.19	Nov 8	(b)18.38	Jun 22 1972
INSTANTANEOUS LOW FLOW			5.2	Aug 17	.00	(c)
ANNUAL RUNOFF (CFSM)	2.12		1.52		1.15	
ANNUAL RUNOFF (INCHES)	28.81		20.60		15.64	
10 PERCENT EXCEEDS	118		84		72	
50 PERCENT EXCEEDS	40		38		26	
90 PERCENT EXCEEDS	26		7.3		10	

- a From rating curve extended above 1,800 ft<sup>3</sup>/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 Sept. 6-12, 1966.





PATUXENT RIVER BASIN

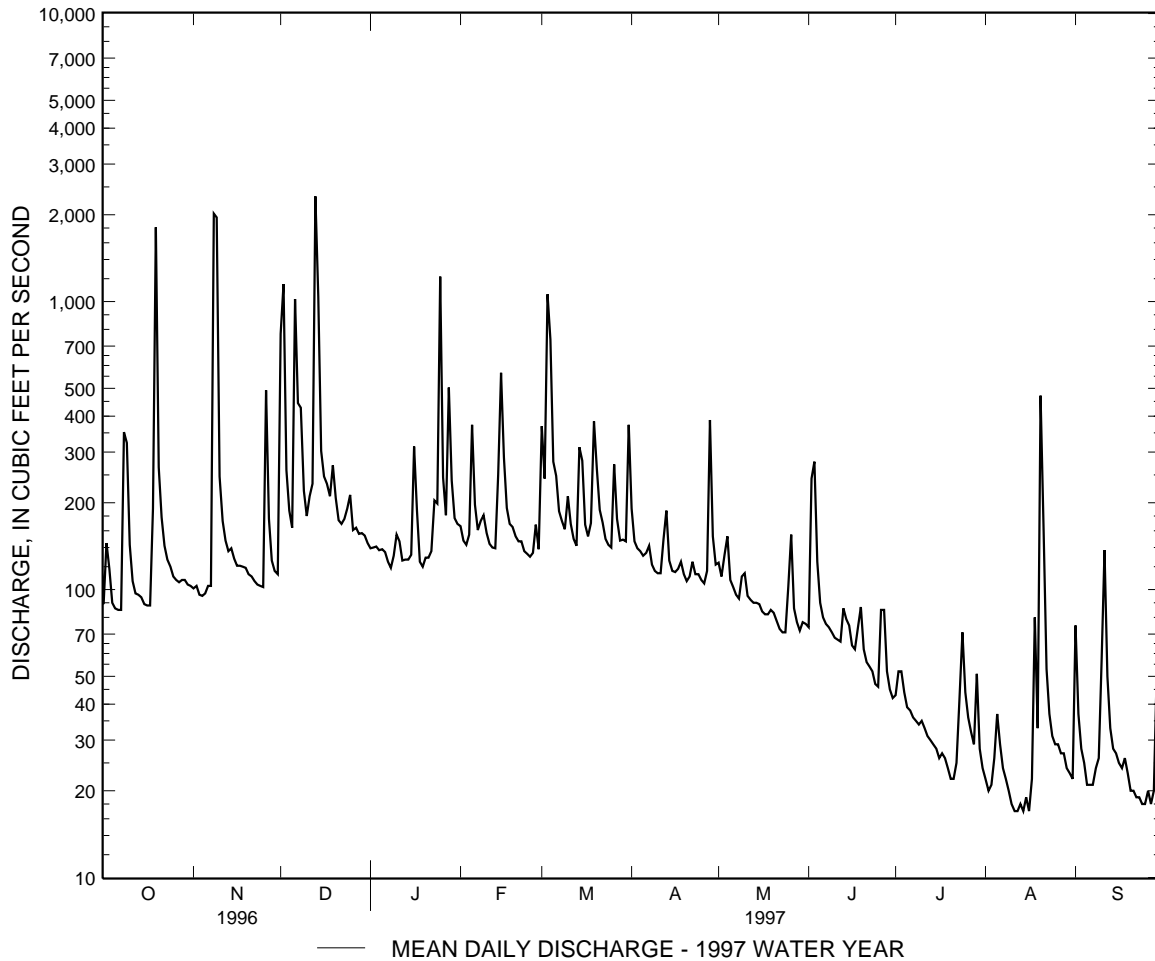
01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1958		1985 - 1997
	ANNUAL TOTAL	77807		57894		111	
ANNUAL MEAN	213		159		196		1979
HIGHEST ANNUAL MEAN					59.3		1942
LOWEST ANNUAL MEAN					7.0		Sep 19 1943
HIGHEST DAILY MEAN	3700	Jan 19	2320	Dec 13	5250	Sep 6 1979	
LOWEST DAILY MEAN	67	Aug 26	17	(a)	8.7		Oct 6 1986
ANNUAL SEVEN-DAY MINIMUM	71	Aug 20	18	Aug 10	(b)35400		Jun 22 1972
INSTANTANEOUS PEAK FLOW			7440	Nov 8	(c)25.40		Jun 22 1972
INSTANTANEOUS PEAK STAGE			13.89	Nov 8	1.6		Aug 26 1944
INSTANTANEOUS LOW FLOW			15	Aug 17	1.13		
ANNUAL RUNOFF (CFSM)	2.16		1.61		15.29		
ANNUAL RUNOFF (INCHES)	29.41		21.89		188		
10 PERCENT EXCEEDS	346		254		73		
50 PERCENT EXCEEDS	116		114		28		
90 PERCENT EXCEEDS	81		25				

a Aug. 11, 12, 14, 16.

b From rating curve extended above 11,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

c From floodmarks.



## PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1985-92, October 1992 to current year.

REMARKS.--Water-quality data available through September 1996 only at time of publication.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	ALKA- LITY WAT WH TOT IT FIELD CACO3 (00419)
OCT 1995										
15...	0010	354	--	--	--	--	110	20	--	--
21...	0940	892	--	--	--	--	750	33	--	--
21...	1450	844	--	--	--	--	250	31	--	--
26...	1230	48	259	7.1	11.5	13.0	1.7	<10	<2.0	58
28...	1200	326	--	--	--	--	52	60	--	--
NOV										
12...	0215	1190	--	--	--	--	400	24	--	--
12...	0600	1090	--	--	--	--	310	28	--	--
12...	1045	719	--	--	--	--	160	23	--	--
14...	1530	1190	--	--	--	--	--	--	--	--
14...	1845	1330	--	--	--	--	--	--	--	--
15...	0115	1320	--	--	--	--	--	--	--	--
15...	0430	1220	--	--	--	--	--	--	--	--
28...	0930	65	264	--	8.0	12.0	3.3	<10	<2.0	--
DEC										
13...	1215	68	359	6.9	0.0	-2.0	1.9	<10	3.0	54
JAN 1996										
19...	0745	985	--	--	--	--	700	18	--	--
19...	1530	6400	--	--	--	--	750	10	--	--
MAR										
25...	1600	112	299	7.1	11.0	19.5	3.4	<10	1.0	44
29...	0340	805	--	--	--	--	210	<10	--	--
APR										
02...	0630	610	--	--	--	--	120	13	--	--
16...	0415	1070	--	--	--	--	400	26	--	--
16...	0815	1010	--	--	--	--	340	33	--	--
16...	1350	578	--	--	--	--	220	28	--	--
22...	1445	112	264	8.1	21.0	30.0	1.9	<10	0.9	48
MAY										
20...	0830	103	267	7.5	19.0	22.5	2.8	<10	<0.8	50
29...	2245	382	--	--	--	--	130	<10	--	--
JUN										
13...	0330	362	--	--	--	--	430	12	--	--
18...	0145	1220	--	--	--	--	820	110	--	--
18...	0345	2580	--	--	--	--	1500	150	--	--
18...	1100	1040	--	--	--	--	510	60	--	--
19...	0730	576	--	--	--	--	160	31	--	--
27...	0645	79	262	7.1	19.0	17.0	4.0	<10	--	55
JUL										
13...	1015	3810	--	--	--	--	570	86	--	--
22...	1200	89	251	7.3	20.0	20.5	3.7	<10	0.9	56
31...	0630	551	--	--	--	--	360	58	--	--
31...	1330	1030	--	--	--	--	470	69	--	--
31...	1815	730	--	--	--	--	330	60	--	--
AUG										
13...	0345	1730	--	--	--	--	420	62	--	--
26...	1030	65	267	7.5	21.0	26.0	0.80	<10	--	57
27...	2100	1170	--	--	--	--	1000	130	--	--
SEP										
06...	2200	1800	--	--	--	--	1200	230	--	--
11...	1020	874	--	--	--	--	270	60	--	--
11...	1315	950	--	--	--	--	200	50	--	--
11...	1825	707	--	--	--	--	120	32	--	--
17...	0315	1470	--	--	--	--	370	65	--	--
17...	0900	1180	--	--	--	--	330	65	--	--
17...	1200	920	--	--	--	--	190	41	--	--
24...	1015	91	242	7.0	16.0	19.0	2.7	11	0.9	54

## PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L) (32218)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L) (32230)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L) (32231)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L) (32232)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
OCT 1995										
15...	8.5	536	--	--	--	--	3.2	4.2	0.011	0.953
21...	5.0	1330	--	--	--	--	5.3	2.5	0.009	0.584
21...	5.6	410	--	--	--	--	2.4	3.7	0.012	0.841
26...	15	2	0.043	0.056	0.001	0.00	2.0	7.8	0.002	1.76
28...	9.1	250	--	--	--	--	1.8	5.0	0.010	1.15
NOV										
12...	6.2	750	--	--	--	--	3.1	3.1	0.010	0.700
12...	6.9	660	--	--	--	--	3.0	4.2	0.011	0.961
12...	6.8	225	--	--	--	--	2.5	4.1	0.010	0.928
14...	--	--	--	--	--	--	--	--	<0.001	--
14...	--	--	--	--	--	--	--	--	<0.001	--
15...	--	--	--	--	--	--	--	--	<0.001	--
15...	--	--	--	--	--	--	--	--	<0.001	--
28...	15	2	0.047	0.254	0.020	0.055	2.4	9.4	0.006	2.14
DEC										
13...	14	1	--	0.432	0.00	0.056	2.7	11	0.013	2.56
JAN 1996										
19...	7.1	1670	--	--	--	--	8.3	4.7	0.011	1.08
19...	3.6	1880	--	--	--	--	6.0	2.4	0.004	0.548
MAR										
25...	13	3	0.118	0.441	0.090	0.063	2.5	10	0.004	2.26
29...	7.8	376	--	--	--	--	3.2	6.0	0.001	1.35
APR										
02...	8.9	312	--	--	--	--	2.5	6.9	0.008	1.56
16...	5.7	680	--	--	--	--	3.6	4.8	0.014	1.11
16...	5.9	695	--	--	--	--	3.1	5.2	0.015	1.19
16...	6.8	--	--	--	--	--	2.7	5.2	0.014	1.19
22...	6.8	13	0.205	0.873	0.079	0.241	1.6	6.4	0.010	1.46
MAY										
20...	13	7	0.184	0.539	0.103	0.124	2.1	8.2	0.014	1.87
29...	11	330	--	--	--	--	2.8	6.4	0.018	1.47
JUN										
13...	8.8	590	--	--	--	--	4.4	8.0	0.040	1.84
18...	5.5	1640	--	--	--	--	5.7	4.4	0.029	1.02
18...	4.0	1820	--	--	--	--	7.8	7.1	0.034	1.64
18...	5.3	870	--	--	--	--	4.2	4.9	0.028	1.12
19...	8.9	330	--	--	--	--	2.3	4.6	0.023	1.05
27...	3.6	7	0.137	0.214	0.051	0.00	2.3	8.8	0.010	2.00
JUL										
13...	4.8	1160	--	--	--	--	3.2	2.0	0.012	0.468
22...	15	4	0.125	0.286	0.015	0.00	2.2	8.9	0.006	2.01
31...	8.8	470	--	--	--	--	3.7	6.5	0.012	1.48
31...	6.1	640	--	--	--	--	3.4	3.5	0.012	0.809
31...	7.1	470	--	--	--	--	3.0	3.4	0.013	0.776
AUG										
13...	6.6	905	--	--	--	--	3.3	4.0	0.012	0.918
26...	14	2	0.217	0.383	0.043	0.114	2.6	11	0.007	2.42
27...	5.8	1400	--	--	--	--	6.3	6.2	0.020	1.41
SEP										
06...	7.1	1320	--	--	--	--	6.4	4.5	0.012	1.04
11...	8.2	540	--	--	--	--	2.9	2.9	0.011	0.674
11...	6.3	370	--	--	--	--	2.7	3.6	0.016	0.826
11...	6.9	186	--	--	--	--	2.3	3.5	0.015	0.797
17...	--	630	--	--	--	--	3.5	5.0	0.053	1.18
17...	6.4	660	--	--	--	--	3.1	3.7	0.016	0.856
17...	6.8	285	--	--	--	--	2.2	3.4	0.015	0.792
24...	14	3	--	--	--	--	2.2	8.1	0.006	1.84

## PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 1995										
15...	<0.008	2.3	0.73	0.411	0.064	0.048	7.3	7.1	463	442
21...	0.019	4.7	0.49	1.70	0.045	0.028	15	5.6	1640	3960
21...	0.047	1.6	0.45	0.511	0.033	0.025	11	6.9	339	773
26...	0.008	0.24	0.17	0.013	<0.010	0.017	3.9	4.1	2	0.27
28...	0.009	0.68	0.34	0.165	0.037	0.034	6.1	6.2	174	153
NOV										
12...	<0.008	2.4	0.39	0.700	0.071	0.052	6.9	6.8	806	2590
12...	0.009	2.0	0.53	0.600	0.098	0.066	7.9	--	543	1600
12...	0.009	1.5	0.48	0.489	0.094	0.073	9.0	--	262	508
14...	--	--	--	--	--	--	--	--	479	1540
14...	--	--	--	--	--	--	--	--	592	2130
15...	--	--	--	--	--	--	--	--	515	1840
15...	--	--	--	--	--	--	--	--	499	1640
28...	<0.008	0.26	0.22	<0.010	<0.010	0.011	2.2	2.4	5	0.86
DEC										
13...	0.008	<0.10	<0.10	<0.010	<0.010	0.007	1.8	1.8	4	0.64
JAN 1996										
19...	0.152	7.2	0.68	2.20	0.017	0.015	6.8	--	2830	7530
19...	0.190	5.5	0.53	2.00	0.019	0.017	7.5	--	2620	45300
MAR										
25...	0.010	0.26	0.18	<0.008	<0.007	0.011	2.4	2.7	3	0.79
29...	0.060	1.8	0.29	0.547	0.021	0.020	5.4	4.3	839	1820
APR										
02...	0.035	0.95	0.67	0.164	0.014	0.016	4.8	--	272	448
16...	0.109	2.5	0.51	0.763	0.023	0.016	4.6	--	836	2410
16...	0.107	2.0	0.60	0.621	0.025	0.020	6.2	--	680	1860
16...	0.109	1.5	0.46	0.371	0.024	0.023	6.6	6.5	347	541
22...	<0.006	0.18	0.09	<0.009	<0.009	0.009	2.7	--	3	0.76
MAY										
20...	<0.008	0.23	0.16	0.044	0.040	0.008	2.3	2.7	3	0.89
29...	0.093	1.3	0.40	0.284	0.017	0.010	6.0	6.0	171	176
JUN										
13...	0.079	2.5	0.42	0.749	0.039	0.022	17	6.9	645	630
18...	0.101	4.7	0.43	1.60	0.029	<0.003	6.9	7.0	1630	5350
18...	0.157	6.2	0.62	2.60	0.037	0.006	7.6	7.7	2950	20600
18...	0.100	3.1	0.63	1.10	0.049	0.013	9.2	9.4	1040	2910
19...	0.054	1.3	0.38	0.315	0.043	0.034	6.6	6.3	290	451
27...	0.012	0.29	0.23	0.078	0.083	<0.003	2.0	--	9	2.0
JUL										
13...	0.098	2.8	0.58	1.10	0.061	0.035	7.8	7.6	1950	20100
22...	0.010	0.19	0.16	0.022	0.013	0.018	2.9	--	8	1.9
31...	0.035	2.2	0.33	0.800	0.017	--	5.3	5.2	788	1170
31...	0.037	2.6	0.45	0.800	0.042	--	6.2	6.4	782	2170
31...	0.045	2.3	0.53	0.700	0.072	0.050	6.7	7.1	602	1190
AUG										
13...	0.034	2.4	0.41	0.800	0.057	0.018	5.6	5.9	850	3970
26...	<0.005	0.20	0.18	0.016	<0.003	<0.004	2.2	--	4	0.65
27...	0.058	4.9	0.52	2.20	0.059	0.026	7.1	--	1750	5520
SEP										
06...	0.058	5.4	0.43	1.90	0.139	0.017	7.2	--	2080	10100
11...	0.065	2.3	0.36	0.630	0.060	0.024	5.9	5.5	684	1620
11...	0.138	1.9	0.57	0.574	0.103	0.035	7.0	--	452	1160
11...	0.091	1.5	0.56	0.373	0.099	0.037	7.0	7.0	254	484
17...	--	2.3	--	0.900	--	--	5.6	--	81	320
17...	0.066	2.3	0.57	0.900	0.091	0.036	7.2	7.0	558	1780
17...	0.065	1.4	0.57	0.450	0.102	0.036	6.7	--	262	650
24...	<0.005	0.33	0.22	0.033	0.012	0.021	3.0	--	2	0.42

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## PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD

LOCATION.--Lat 38°57'21", long 76°41'36", 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 west 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<sup>2</sup>.

## 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 sea level. Prior to June 27, 1977, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges (orifice line leak and missing record), which are fair. Flow regulated by T. Howard Duckett Reservoir, usable capacity 5,600,000,000 gal, 21 mi upstream from station.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 6,900 ft<sup>3</sup>/s, Jan. 20, gage height, 15.00 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	356	373	657	502	764	653	e1300	456	233	157	104	147
2	374	381	2730	489	725	1310	e700	475	652	170	102	191
3	489	371	2290	472	691	867	e550	436	1220	205	106	166
4	350	365	1390	465	525	3330	e500	542	1070	165	109	129
5	318	354	1250	477	1030	1910	481	423	526	150	113	120
6	313	369	1930	478	932	1420	499	393	420	143	143	114
7	310	376	1850	442	599	936	547	371	385	142	113	117
8	583	534	1820	e410	574	594	519	321	329	139	106	121
9	1690	4190	1660	437	670	549	441	315	292	140	101	120
10	830	3360	1310	535	e620	647	399	318	246	140	101	136
11	481	1460	669	e560	538	565	393	255	209	131	100	285
12	396	1200	851	e470	e460	450	426	235	203	127	101	205
13	373	683	1570	e420	e480	615	696	228	231	125	101	145
14	e362	511	5220	e400	761	749	486	224	243	125	103	130
15	351	487	2800	e410	1540	1190	420	222	220	119	101	125
16	340	454	1880	e650	e1430	e870	396	213	197	116	102	121
17	339	443	1650	e870	e930	e680	398	208	188	112	116	117
18	356	445	1030	e510	e660	525	460	207	247	113	186	122
19	2030	450	1050	e590	579	868	407	209	430	110	150	123
20	2860	414	e790	e590	619	1030	389	208	228	107	568	116
21	1020	412	e600	e430	598	690	387	200	190	105	1300	113
22	786	407	e560	e430	600	e600	441	190	179	110	260	113
23	575	397	568	642	498	e550	409	187	173	119	164	115
24	474	396	591	569	448	e500	438	190	167	227	142	110
25	439	399	862	1680	e436	e480	406	257	168	164	135	111
26	386	713	808	e1540	e436	e800	379	2690	165	132	132	112
27	338	1070	776	889	515	e1100	393	1050	264	127	127	112
28	e334	527	768	976	473	e600	1210	345	182	122	132	115
29	387	439	762	e1270	---	e500	948	272	158	141	138	178
30	407	435	780	e840	---	e470	529	252	156	129	122	154
31	390	---	587	779	---	e950	---	251	---	108	118	---
TOTAL	19037	22415	42059	20222	19131	26998	15947	12143	9571	4220	5496	4083
MEAN	614	747	1357	652	683	871	532	392	319	136	177	136
MAX	2860	4190	5220	1680	1540	3330	1300	2690	1220	227	1300	285
MIN	310	354	560	400	436	450	379	187	156	105	100	110
CFSM	1.76	2.15	3.90	1.87	1.96	2.50	1.53	1.13	.92	.39	.51	.39
IN.	2.03	2.40	4.50	2.16	2.05	2.89	1.70	1.30	1.02	.45	.59	.44

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1997, BY WATER YEAR (WY)

MEAN	258	310	425	509	471	604	515	479	332	218	209	238
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	136	119	228	173	167	154	115	102	86.1	65.2
(WY)	1987	1982	1981	1981	1995	1981	1985	1986	1991	1986	1987	1986

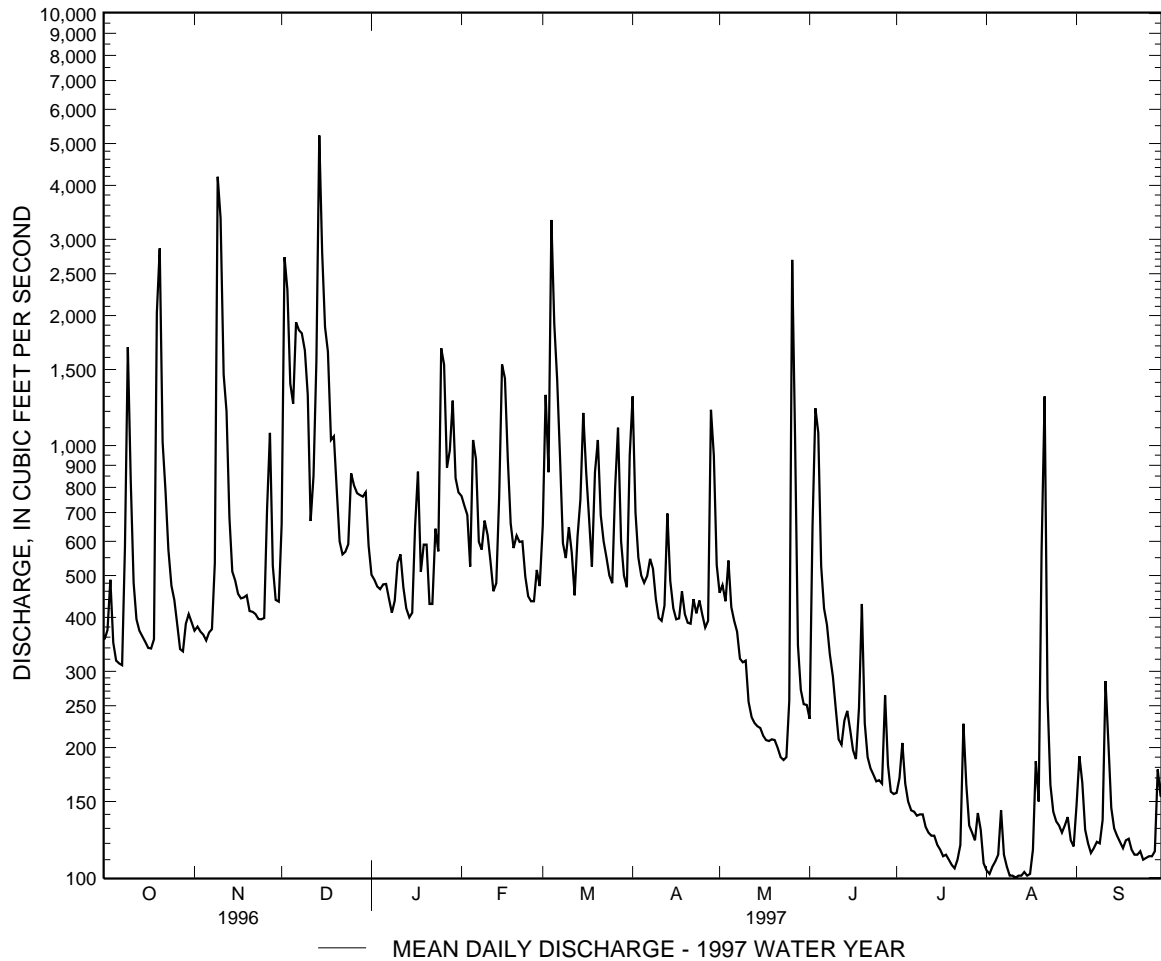


PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1977 - 1997	
ANNUAL TOTAL	258243		201322			
ANNUAL MEAN	706		552		382	
HIGHEST ANNUAL MEAN					637 1979	
LOWEST ANNUAL MEAN					175 1981	
HIGHEST DAILY MEAN	6350	Jan 20	5220	Dec 14	8860	Jan 27 1978
LOWEST DAILY MEAN	211	Jan 8	100	Aug 11	56	(a)
ANNUAL SEVEN-DAY MINIMUM	248	Jun 6	101	Aug 9	57	Sep 15 1986
INSTANTANEOUS PEAK FLOW			6900	Nov 9	(b)31100	Jun 22 1972
INSTANTANEOUS PEAK STAGE			15.00	Nov 9	(c)27.90	Jun 22 1972
INSTANTANEOUS LOW FLOW			97	Aug 17	32	Aug 9 1966
ANNUAL RUNOFF (CFSM)	2.03		1.58		1.10	
ANNUAL RUNOFF (INCHES)	27.61		21.52		14.91	
10 PERCENT EXCEEDS	1450		1140		792	
50 PERCENT EXCEEDS	446		412		224	
90 PERCENT EXCEEDS	289		118		101	

- a Sept. 17-19, 1986.
- b On basis of contracted-opening measurement of peak flow.
- c From floodmarks.



## PATUXENT RIVER BASIN

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: Maximum 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 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- PER ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE OF (MM HG) (00025)	OXYGEN, DIS- SOLVED OXYGEN, OF (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
OCT 1996									
24...	1600	467	224	7.3	15.0	20.0	759	9.2	92
28...	1130	329	243	7.1	15.5	19.5	758	6.4	65
NOV									
09...	1030	3340	109	6.4	13.0	15.0	759	6.0	57
26...	1030	635	217	7.1	9.0	15.0	754	10	87
DEC									
02...	1030	2900	147	7.3	8.5	8.5	761	9.5	81
14...	1800	5870	99	6.8	7.5	8.0	768	--	--
17...	1515	1680	151	7.3	7.0	10.0	756	10.9	91
JAN 1997									
30...	1215	841	213	7.4	2.5	3.0	772	13.1	95
FEB									
05...	1415	1170	243	7.3	6.0	9.0	760	11.6	94
APR									
03...	1045	--	222	7.3	11.5	21.5	766	10	91
MAY									
13...	0930	225	284	7.2	15.5	15.5	754	7.8	79
JUN									
03...	1215	1170	178	7.2	15.5	14.0	762	7.7	78
JUL									
15...	1000	116	316	7.1	24.0	32.5	760	6.2	73
AUG									
13...	1030	98	325	7.1	24.0	27.0	759	5.9	70
20...	1500	825	183	7.1	20.5	22.0	756	6.7	75
21...	1330	1470	--	7.0	20.5	29.0	755	6.4	--
SEP									
17...	1115	115	312	7.3	20.5	28.0	761	6.2	69

## PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	NITRO- GEN, NITRO- NITRATE DIS- SOLVED (MG/L AS N) (00600)	NITRO- GEN, NITRO- NITRITE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NITRO- 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 1996								
24...	45	54	10	1.8	6.1	0.020	1.40	0.40
28...	51	62	11	1.8	6.1	0.020	1.40	0.40
NOV								
09...	22	27	4.8	1.1	2.3	0.020	0.530	0.60
26...	38	47	8.7	1.9	6.1	0.030	1.40	0.50
DEC								
02...	27	33	5.9	1.5	3.1	0.020	0.730	0.80
14...	--	--	5.2	1.3	2.8	0.020	0.650	0.70
17...	--	--	7.5	2.0	6.5	0.040	1.50	0.50
JAN 1997								
30...	30	36	6.8	1.9	7.0	0.020	1.60	0.30
FEB								
05...	30	37	6.7	2.0	5.7	0.025	1.32	0.67
APR								
03...	35	43	5.4	--	--	<0.010	1.60	<0.20
MAY								
13...	46	56	7.6	1.9	6.3	0.036	1.46	0.44
JUN								
03...	--	--	6.4	1.6	2.8	0.019	0.655	0.94
JUL								
15...	56	69	8.3	1.9	6.6	0.016	1.51	0.41
AUG								
13...	55	--	7.5	1.7	5.5	0.015	1.26	0.47
20...	--	--	5.3	1.2	3.5	0.030	0.826	0.39
21...	26	--	5.8	1.5	3.4	0.025	0.799	0.68
SEP								
17...	52	--	8.1	1.7	--	<0.010	1.21	0.46

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996								
24...	0.30	0.040	<0.010	0.010	4.5	10	13	--
28...	0.40	0.050	<0.010	<0.010	4.4	9	8.0	--
NOV								
09...	0.30	0.150	0.030	0.040	7.8	146	1320	87
26...	0.40	0.120	<0.010	0.020	5.5	33	57	--
DEC								
02...	0.40	0.210	0.030	0.030	8.9	97	760	88
14...	0.30	0.230	0.010	0.020	--	99	1570	96
17...	0.30	0.090	<0.010	0.010	3.6	14	64	92
JAN 1997								
30...	0.30	0.080	0.010	<0.010	4.4	22	50	--
FEB								
05...	0.33	0.153	0.012	0.006	6.0	81	257	--
APR								
03...	<0.20	0.020	<0.010	<0.010	3.2	7	--	--
MAY								
13...	0.29	0.038	<0.010	0.013	3.9	12	7.3	100
JUN								
03...	0.55	0.202	0.017	0.032	11	56	178	90
JUL								
15...	0.23	0.080	0.010	0.032	4.9	11	3.4	--
AUG								
13...	0.37	0.063	0.012	0.021	4.1	11	3.0	--
20...	0.29	0.125	0.055	0.047	9.3	183	408	--
21...	0.39	0.126	0.034	0.031	6.8	33	131	59
SEP								
17...	0.32	0.064	0.015	0.030	3.8	9	2.9	--

## PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD

LOCATION.--Lat 38°48'50", long 76°44'50", 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<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to April 1989, April 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	1645	1,020	8.97	Dec. 14	0030	1,990	11.92
Nov. 9	1000	1,160	9.66	May 26	1815	*2,030	*11.98

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	49	233	88	104	237	147	87	55	24	8.2	18
2	66	49	725	87	90	333	102	72	317	57	8.1	19
3	59	45	394	87	84	320	89	72	489	47	8.5	30
4	37	43	153	83	94	701	85	67	288	29	8.0	20
5	30	44	116	82	507	256	79	59	109	22	9.0	15
6	29	46	528	80	308	186	83	62	78	20	8.7	14
7	27	48	379	73	151	137	92	57	66	19	8.5	13
8	251	198	420	69	159	121	75	50	59	17	8.1	13
9	599	1010	188	85	175	106	70	62	52	17	8.2	13
10	183	435	134	140	148	139	67	76	46	14	7.9	25
11	92	137	117	135	127	119	67	55	41	14	7.9	40
12	65	97	112	97	113	100	89	49	39	14	8.7	24
13	55	83	648	e80	108	92	146	44	75	12	8.5	27
14	47	79	1270	e77	215	147	87	43	81	11	10	17
15	42	75	493	e75	581	159	73	43	72	10	9.9	15
16	38	70	211	184	371	107	69	39	43	9.0	8.0	14
17	37	67	167	e130	173	92	83	37	36	8.7	28	13
18	47	70	144	e90	139	97	110	37	65	8.2	179	18
19	824	75	211	e75	126	317	75	35	294	14	37	16
20	494	67	164	e70	113	244	68	32	80	8.3	456	13
21	158	62	120	e67	105	143	70	29	49	7.9	584	19
22	102	60	109	e70	104	120	80	27	38	7.9	103	13
23	83	56	110	123	94	98	70	26	32	12	51	11
24	74	57	117	97	88	88	98	26	28	35	34	11
25	66	56	169	399	85	85	77	49	24	24	26	11
26	63	274	116	181	86	195	66	1310	137	16	21	11
27	60	164	130	110	105	147	65	833	91	14	20	8.6
28	59	91	110	201	88	107	553	147	39	11	22	8.2
29	56	76	101	169	---	102	262	81	29	15	26	29
30	55	69	99	111	---	104	114	64	25	11	23	17
31	53	---	95	102	---	233	---	59	---	9.3	20	---
TOTAL	3896	3752	8083	3517	4641	5432	3211	3729	2877	538.3	1766.2	515.8
MEAN	126	125	261	113	166	175	107	120	95.9	17.4	57.0	17.2
MAX	824	1010	1270	399	581	701	553	1310	489	57	584	40
MIN	27	43	95	67	84	85	65	26	24	7.9	7.9	8.2
CFSM	1.40	1.39	2.91	1.26	1.85	1.95	1.19	1.34	1.07	.19	.64	.19
IN.	1.62	1.56	3.35	1.46	1.92	2.25	1.33	1.55	1.19	.22	.73	.21

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

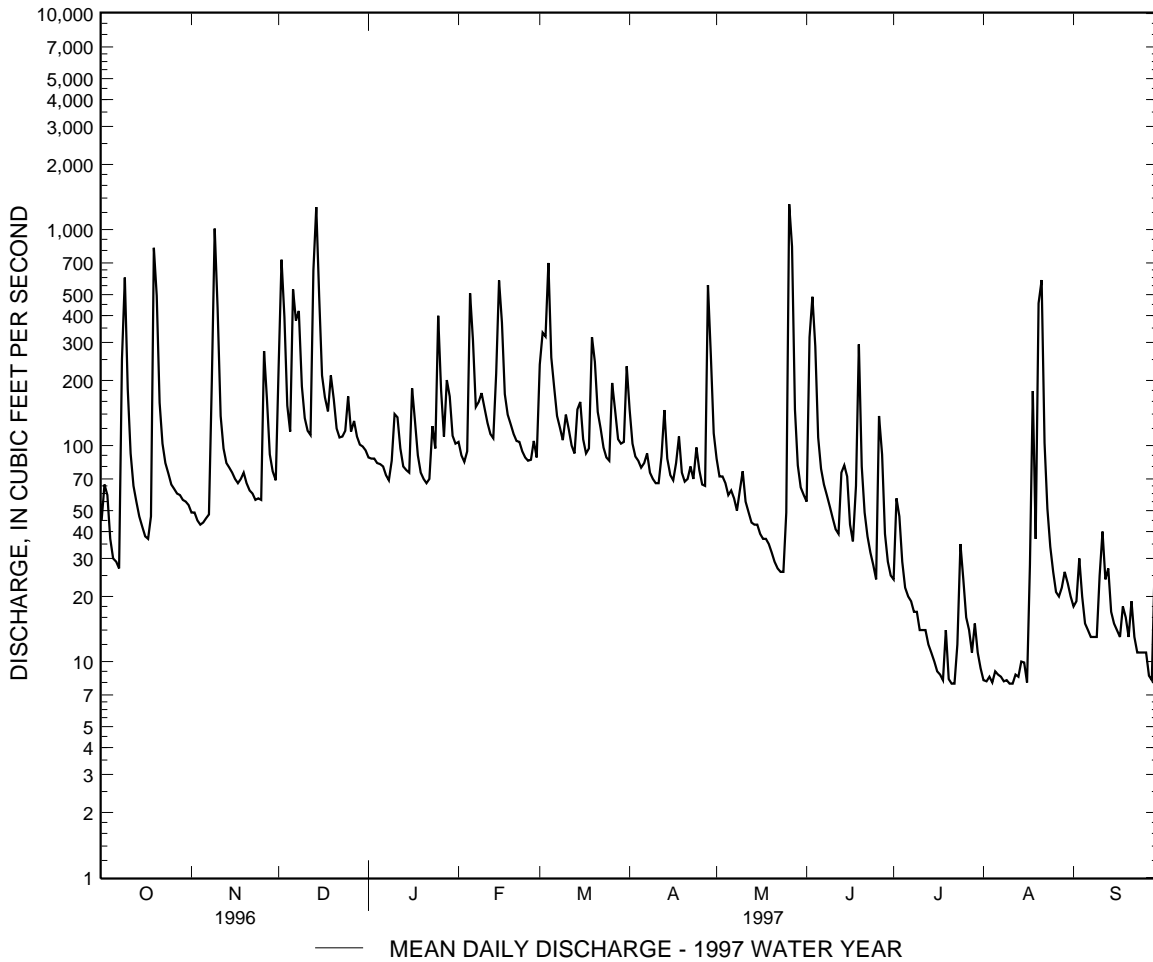
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	53.4	89.2	108	125	129	185	112	87.6	51.0	49.1	43.0	38.1
MAX	145	125	261	260	220	445	191	164	118	108	95.5	90.4
(WY)	1996	1996	1997	1996	1994	1994	1993	1996	1996	1996	1994	1996
MIN	10.9	37.9	38.4	54.5	71.0	76.8	49.1	23.3	9.42	12.3	9.74	9.35
(WY)	1987	1995	1989	1986	1995	1986	1995	1986	1986	1987	1995	1986

PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1986 - 1997	
ANNUAL TOTAL	53241		41958.3			
ANNUAL MEAN	145		115		92.0	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					54.8	1986
HIGHEST DAILY MEAN	1960	Jan 20	1310	May 26	2100	Mar 3 1994
LOWEST DAILY MEAN	13	Sep 3	7.9	(a)	2.1	(b)
ANNUAL SEVEN-DAY MINIMUM	22	Aug 20	8.3	Aug 7	2.4	Sep 7 1995
INSTANTANEOUS PEAK FLOW			2030	May 26	3630	Jan 19 1996
INSTANTANEOUS PEAK STAGE			11.98	May 26	13.20	Jan 19 1996
INSTANTANEOUS LOW FLOW			6.3	Aug 16	1.9	(b)
ANNUAL RUNOFF (CFSM)	1.62		1.28		1.03	
ANNUAL RUNOFF (INCHES)	22.08		17.40		13.93	
10 PERCENT EXCEEDS	322		240		186	
50 PERCENT EXCEEDS	90		72		52	
90 PERCENT EXCEEDS	32		13		11	

a July 21, 22, Aug. 10, 11.  
 b Sept. 11, 12, 1995.



## PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

REMARKS.--Water-quality records available through September 1996 only at time of publication.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)
OCT 1995										
06...	0020	147	--	--	--	--	56	--	14	--
10...	0920	10	30	7.3	16.5	22.0	--	8.3	--	--
14...	2345	663	--	--	--	--	580	--	28	--
15...	1145	1000	--	--	--	--	110	--	30	--
15...	1845	855	--	--	--	--	100	--	26	--
21...	1600	1000	--	--	--	--	190	--	24	--
21...	2130	1240	--	--	--	--	120	--	19	--
22...	0315	1080	--	--	--	--	98	--	25	--
26...	0810	34	27	7.4	12.0	8.5	--	9.2	--	--
26...	1015	33	276	6.8	12.0	10.0	11	--	19	<2.0
28...	0545	627	--	--	--	--	220	--	25	--
28...	1040	679	--	--	--	--	140	--	23	--
28...	2125	513	--	--	--	--	83	--	22	--
NOV										
12...	0615	503	--	--	--	--	190	--	20	--
27...	1055	52	24	7.6	6.5	16.0	--	11.4	--	--
27...	1545	52	262	--	6.0	15.0	8.7	--	10	<2.0
DEC										
12...	1055	50	40	7.1	1.5	3.0	--	13.1	--	--
13...	1000	45	388	6.5	1.0	-0.5	9.2	--	<10	3.0
JAN 1996										
19...	0445	690	--	--	--	--	290	--	11	--
23...	0940	143	33	7.8	1.5	-1.0	--	12.7	--	--
FEB										
20...	1000	103	80	7.2	3.5	6.0	--	12.5	--	--
MAR										
07...	1225	149	42	6.9	8.0	5.0	--	10.5	--	--
20...	0045	637	--	--	--	--	460	--	16	--
20...	1115	614	--	--	--	--	210	--	10	--
21...	0935	187	34	6.9	6.5	8.0	--	10.7	--	--
25...	1115	81	330	6.5	8.0	20.5	9.6	--	10	1.1
29...	0100	542	--	--	--	--	200	--	<10	--
29...	0640	610	--	--	--	--	110	--	<10	--
APR										
02...	1215	575	--	--	--	--	100	--	22	--
04...	1200	138	--	--	--	--	--	--	--	--
16...	1400	823	--	--	--	--	210	--	85	--
16...	1735	845	--	--	--	--	160	--	21	--
17...	0200	753	--	--	--	--	140	--	27	--
18...	1110	150	25	7.4	11.5	19.0	--	10.0	--	--
22...	0930	87	270	6.7	15.5	19.0	6.8	--	10	0.9
MAY										
06...	1035	618	18	6.9	16.5	17.5	--	7.6	--	--
20...	1000	72	266	7.2	20.0	29.0	7.8	--	<10	<0.5
20...	1140	72	26	7.1	22.0	32.0	--	8.2	--	--
JUN										
03...	1120	54	26	7.0	16.5	21.0	--	9.0	--	--
17...	0935	21	28	7.7	24.0	31.0	--	9.9	--	--
18...	1225	490	--	--	--	--	270	--	35	--
19...	0030	527	--	--	--	--	220	--	33	--
20...	1930	439	--	--	--	--	560	--	71	--
26...	1430	103	192	6.6	23.0	30.0	38	--	20	<0.3
JUL										
02...	1020	70	21	7.2	24.0	30.0	--	7.0	--	--
13...	1045	774	--	--	--	--	350	--	66	--
13...	2145	1010	--	--	--	--	120	--	26	--
14...	0945	644	--	--	--	--	100	--	29	--
16...	0955	82	22	7.2	24.0	29.0	--	7.2	--	--
24...	0830	37	270	7.1	21.0	24.0	11	--	14	0.3
AUG										
01...	0955	97	21	7.2	22.5	20.0	--	7.2	--	--
19...	1005	36	25	7.3	23.0	28.0	--	8.0	--	--
26...	1200	16	304	7.7	23.5	29.0	9.3	--	12	--

## PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	ALKA-LINITY WAT WH TOT IT FIELD MG/L AS CAC03 (00419)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L) (32218)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L) (32230)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L) (32231)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L) (32232)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00631)
OCT 1995											
06...	--	6.8	72	--	--	--	--	1.2	1.4	0.017	0.328
10...	--	12	6	--	--	--	--	--	--	<0.001	0.176
14...	--	5.0	127	--	--	--	--	4.8	1.8	0.012	0.429
15...	--	5.9	146	--	--	--	--	2.1	2.8	0.015	0.639
15...	--	6.7	146	--	--	--	--	2.0	2.6	0.010	0.600
21...	--	4.8	258	--	--	--	--	1.7	2.1	0.010	0.495
21...	--	5.1	184	--	--	--	--	1.4	1.8	0.009	0.419
22...	--	5.6	132	--	--	--	--	1.4	1.9	0.008	0.448
26...	--	14	7	--	--	--	--	--	--	<0.001	0.253
26...	47	13	10	--	0.354	0.029	0.002	0.63	1.1	0.002	0.259
28...	--	7.0	450	--	--	--	--	2.0	1.6	0.009	0.366
28...	--	6.2	320	--	--	--	--	1.6	1.7	0.014	0.396
28...	--	7.8	214	--	--	--	--	1.1	1.5	0.007	0.337
NOV											
12...	--	6.1	315	--	--	--	--	1.8	1.2	0.008	0.273
27...	--	14	4	--	--	--	--	--	--	<0.001	0.380
27...	--	15	<1	0.074	0.179	0.019	0.00	0.69	1.7	0.005	0.383
DEC											
12...	--	15	6	--	--	--	--	--	--	<0.001	0.478
13...	43	15	9	0.012	0.144	0.001	0.00	0.71	1.9	0.008	0.430
JAN 1996											
19...	--	6.5	330	--	--	--	--	3.5	2.8	0.014	0.656
23...	--	12	16	--	--	--	--	--	--	<0.001	0.851
FEB											
20...	--	13	6	--	--	--	--	--	--	<0.001	0.927
MAR											
07...	--	9.7	19	--	--	--	--	--	--	<0.001	0.594
20...	--	5.7	600	--	--	--	--	3.2	2.1	0.012	0.487
20...	--	6.5	220	--	--	--	--	1.6	2.4	0.012	0.543
21...	--	9.8	53	--	--	--	--	--	--	<0.001	0.591
25...	28	13	8	0.019	0.292	0.075	0.00	0.91	2.8	0.010	0.647
29...	--	6.7	376	--	--	--	--	1.8	2.2	0.005	0.508
29...	--	6.5	216	--	--	--	--	1.7	2.1	0.004	0.488
APR											
02...	--	6.7	138	--	--	--	--	1.4	2.3	0.010	0.521
04...	--	--	--	--	--	--	--	--	--	<0.001	--
16...	--	5.5	625	--	--	--	--	2.5	2.3	0.015	0.528
16...	--	5.7	172	--	--	--	--	1.5	2.2	0.022	0.524
17...	--	6.0	116	--	--	--	--	1.3	2.2	0.012	0.499
18...	--	11	24	--	--	--	--	--	--	<0.001	0.506
22...	31	11	19	0.354	0.815	0.039	0.201	0.55	1.6	0.006	0.362
MAY											
06...	--	6.9	200	--	--	--	--	--	--	<0.001	0.384
20...	36	16	12	0.025	0.309	0.095	0.070	0.82	2.0	0.018	0.470
20...	--	14	9	--	--	--	--	--	--	<0.001	0.462
JUN											
03...	--	16	5	--	--	--	--	--	--	<0.001	0.554
17...	--	15	6	--	--	--	--	--	--	<0.001	0.410
18...	--	6.5	420	--	--	--	--	2.2	2.1	0.034	0.515
19...	--	6.1	370	--	--	--	--	1.9	1.9	0.024	0.461
20...	--	7.2	800	--	--	--	--	3.1	2.2	0.022	0.519
26...	33	11	33	0.059	0.701	0.171	0.174	0.93	1.3	0.015	0.318
JUL											
02...	--	11	16	--	--	--	--	--	--	<0.001	0.361
13...	--	6.7	600	--	--	--	--	2.2	1.2	0.010	0.290
13...	--	6.8	152	--	--	--	--	1.1	1.0	0.010	0.244
14...	--	7.7	140	--	--	--	--	1.1	0.92	0.009	0.217
16...	--	13	18	--	--	--	--	--	--	<0.001	0.304
24...	56	16	7	0.010	0.217	0.016	0.00	0.69	1.4	0.011	0.321
AUG											
01...	--	11	61	--	--	--	--	--	--	<0.001	0.313
19...	--	13	4	--	--	--	--	--	--	<0.001	0.292
26...	66	14	5	0.121	0.672	0.075	0.163	0.57	0.68	0.007	0.160

## PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 1995										
06...	0.065	0.83	0.38	0.252	0.034	0.030	7.0	7.3	83	33
10...	0.023	--	--	0.082	0.039	0.027	--	--	--	--
14...	0.065	4.4	0.77	2.00	0.049	0.027	6.2	--	1230	2200
15...	0.040	1.4	0.74	0.363	0.031	0.022	7.6	7.6	289	779
15...	0.037	1.3	0.76	0.290	0.031	0.022	7.8	7.9	165	382
21...	0.028	1.2	0.41	0.635	0.034	0.020	9.1	6.3	295	796
21...	0.034	0.93	0.44	0.403	0.021	0.012	7.5	--	133	444
22...	0.024	0.91	0.43	0.269	0.025	0.008	7.9	6.5	100	293
26...	0.038	--	--	0.069	0.022	0.015	--	--	--	--
26...	0.030	0.37	0.29	0.072	<0.010	0.012	5.3	--	7	0.61
28...	0.011	1.7	0.41	1.20	0.024	0.029	9.5	5.6	446	755
28...	0.013	1.2	0.41	0.543	0.046	0.027	7.7	7.6	421	772
28...	0.014	0.77	0.35	0.285	0.021	0.022	7.6	7.6	215	297
NOV										
12...	<0.008	1.5	0.35	0.800	0.039	0.028	7.5	--	385	523
27...	0.042	--	--	0.045	0.021	0.011	--	--	--	--
27...	0.047	0.30	0.27	0.039	<0.010	0.013	3.6	--	5	0.63
DEC										
12...	0.071	--	--	0.045	0.010	0.006	--	--	--	--
13...	0.067	0.28	0.26	0.043	<0.010	0.011	3.4	--	8	0.92
JAN 1996										
19...	0.254	2.8	1.1	1.20	0.013	0.015	5.5	--	905	1690
23...	0.109	--	--	0.068	0.019	0.012	--	--	--	--
FEB										
20...	0.138	--	--	0.035	0.010	0.005	--	--	--	--
MAR										
07...	0.076	--	--	0.079	0.023	0.011	--	--	--	--
20...	0.169	2.7	0.56	1.40	0.028	0.017	6.6	5.0	915	1570
20...	0.131	1.1	0.50	0.368	0.011	0.011	6.0	6.1	271	449
21...	0.067	--	--	0.121	0.027	0.014	--	--	--	--
25...	0.035	0.26	<0.10	0.024	<0.003	0.016	3.3	--	8	1.7
29...	0.112	1.3	0.30	0.717	0.015	0.023	6.7	6.0	565	827
29...	0.117	1.2	0.42	0.389	0.025	0.021	6.9	7.2	308	507
APR										
02...	0.067	0.89	0.60	0.257	0.015	0.013	6.8	6.0	159	247
04...	--	--	--	--	--	--	--	--	--	--
16...	0.114	2.0	0.50	1.10	0.043	0.027	6.9	6.1	1020	2270
16...	0.106	1.0	0.49	0.380	0.045	0.021	7.0	6.6	215	491
17...	0.084	0.81	0.50	0.254	0.030	0.020	7.5	7.5	165	336
18...	0.044	--	--	0.096	0.028	0.010	--	--	--	--
22...	0.016	0.19	0.12	0.031	0.016	0.017	4.9	4.4	9	2.1
MAY										
06...	0.102	--	--	0.360	0.048	0.023	--	--	--	--
20...	0.058	0.35	0.29	0.059	0.015	0.019	4.1	4.2	15	2.9
20...	0.065	--	--	0.088	0.053	0.027	--	--	--	--
JUN										
03...	0.053	--	--	0.061	0.031	0.020	--	--	--	--
17...	0.031	--	--	0.065	0.031	0.021	--	--	--	--
18...	0.140	1.7	0.53	0.900	0.047	<0.003	8.2	--	366	484
19...	0.081	1.5	0.53	0.491	0.043	0.005	8.8	8.5	31	44
20...	0.040	2.6	0.42	1.40	0.038	0.017	8.1	8.2	866	1030
26...	0.047	0.62	0.37	0.216	0.111	0.009	6.5	--	37	10
JUL										
02...	0.060	--	--	0.108	0.049	0.032	--	--	--	--
13...	0.099	1.9	0.45	1.30	0.035	0.026	7.4	7.6	833	1740
13...	0.076	0.82	0.47	0.327	0.036	0.020	7.7	--	226	616
14...	0.062	0.89	0.41	0.266	0.024	0.017	7.6	--	172	299
16...	0.058	--	--	0.125	0.052	0.029	--	--	--	--
24...	0.040	0.37	0.31	0.087	0.018	0.027	5.6	--	8	0.80
AUG										
01...	0.048	--	--	0.281	0.067	0.044	--	--	--	--
19...	0.050	--	--	0.085	0.039	0.024	--	--	--	--
26...	0.015	0.41	0.31	0.081	0.018	0.011	5.2	5.3	6	0.27



## PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)
SEP 1996									
03...	1110	13	29	7.8	21.5	27.0	--	9.5	--
11...	1745	475	--	--	--	--	250	--	57
12...	0045	494	--	--	--	--	150	--	43
12...	0730	443	--	--	--	--	150	--	30
16...	1200	32	23	7.3	18.5	18.0	--	8.1	--
17...	1045	358	--	--	--	--	190	--	53
24...	1200	49	219	6.9	17.0	20.0	16	--	20
DATE	5 DAY (MG/L) (00310)	ALKA- LINITY WAT WH TOT IT ICAL, FIELD MG/L AS CACO3 (00419)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00600)	NITRO- GEN, 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)	
SEP 1996									
03...	--	--	14	2	--	--	<0.001	0.217	0.029
11...	--	--	6.6	360	2.3	1.7	0.016	0.400	0.051
12...	--	--	6.8	172	1.8	2.0	0.019	0.480	0.075
12...	--	--	7.2	124	1.5	1.2	0.013	0.276	0.057
16...	--	--	13	4	--	--	<0.001	0.263	0.059
17...	--	--	6.8	270	2.0	1.3	0.015	0.305	0.050
24...	1.2	46	11	3	0.71	1.2	0.007	0.272	0.034
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	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)
SEP 1996									
03...	--	--	0.067	0.029	0.016	--	--	--	--
11...	1.9	0.43	1.00	0.050	0.020	8.2	--	566	725
12...	1.3	0.51	0.531	0.070	0.020	8.6	--	280	373
12...	1.3	0.67	0.371	0.052	0.021	8.6	--	223	267
16...	--	--	0.089	0.046	0.031	--	--	--	--
17...	1.7	0.38	0.800	0.047	0.023	7.8	7.3	432	418
24...	0.44	0.33	0.085	0.019	0.021	5.6	--	7	0.93

PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD

LOCATION.--Lat 38°35'02", long 76°36'20", Calvert County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on MD Rte. 263, 200 ft east of intersection of MD Rte. 4, 2.4 mi south of Huntingtown, and 0.1 mi upstream from Sewell Branch.

DRAINAGE AREA.--9.38 mi<sup>2</sup>.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder and timber control. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good above 1.0 ft<sup>3</sup>/s and poor below due to leakage around and under control except those for estimated daily discharges (ice effect, missing record), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Aug. 20	1830	*124	*7.18	No peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	7.4	17	13	13	23	21	12	7.8	1.9	.46	.44
2	2.9	7.4	63	13	12	24	19	11	18	12	.31	.83
3	3.4	7.5	22	12	12	31	18	11	16	7.7	.32	8.6
4	2.7	7.1	15	12	12	37	18	9.7	11	3.1	1.9	2.8
5	2.4	6.9	13	12	36	24	18	8.7	6.7	2.2	2.1	1.4
6	2.3	7.7	29	12	24	27	19	e8.3	4.9	1.9	8.3	.87
7	2.3	8.6	23	11	20	21	21	e8.1	4.3	1.6	2.1	.74
8	43	11	31	11	22	21	16	e7.8	4.1	1.5	1.3	.54
9	41	28	19	13	23	20	15	e9.0	3.6	1.5	.68	.45
10	22	14	16	20	21	22	14	e11	3.1	5.7	.32	.38
11	10	9.4	15	16	19	21	15	e9.0	2.7	2.3	.17	.36
12	7.2	8.2	14	12	18	19	18	e8.0	2.4	1.6	.06	1.1
13	6.2	7.7	45	11	18	18	22	e7.2	8.4	1.3	.06	1.1
14	5.7	7.5	52	10	26	21	17	e6.7	13	.75	.43	.58
15	4.9	7.8	22	11	40	21	15	e6.3	7.0	.53	.40	.42
16	4.2	7.6	20	22	26	17	15	e6.0	3.7	.40	.24	.38
17	4.2	7.4	19	17	22	16	16	e5.7	2.9	.36	.19	.32
18	5.0	7.4	17	e10	21	17	19	e5.3	3.7	.43	.17	.42
19	59	8.3	e21	9.7	21	36	15	e5.0	22	.70	.27	.51
20	23	8.0	e17	9.8	20	26	14	e4.7	7.5	.63	54	.56
21	16	7.3	15	11	20	21	14	e4.4	3.8	.57	39	2.7
22	11	7.1	15	13	21	20	15	e4.2	2.6	.44	8.9	1.6
23	10	6.6	15	18	19	19	17	e4.1	2.2	.70	3.2	.90
24	9.3	6.4	15	14	18	17	28	e4.1	1.9	4.3	2.1	.47
25	8.4	6.4	18	15	17	17	20	e4.6	1.6	3.5	1.5	.44
26	7.9	16	14	12	17	33	16	e21	6.0	2.1	1.3	.41
27	7.8	14	17	11	22	24	16	e8.0	16	1.6	1.2	.36
28	7.8	8.8	15	20	19	21	36	4.9	3.8	1.3	.96	1.3
29	7.8	7.8	14	18	---	20	18	3.9	2.3	2.4	1.1	3.6
30	7.8	7.6	13	13	---	21	14	3.6	1.9	1.3	.98	1.5
31	7.7	---	14	13	---	25	---	3.6	---	.74	.68	---
TOTAL	355.9	272.9	655	415.5	579	700	539	226.9	194.9	67.05	134.70	36.08
MEAN	11.5	9.10	21.1	13.4	20.7	22.6	18.0	7.32	6.50	2.16	4.35	1.20
MAX	59	28	63	22	40	37	36	21	22	12	54	8.6
MIN	2.3	6.4	13	9.7	12	16	14	3.6	1.6	.36	.06	.32
CFSM	1.22	.97	2.25	1.43	2.20	2.41	1.92	.78	.69	.23	.46	.13
IN.	1.41	1.08	2.60	1.65	2.30	2.78	2.14	.90	.77	.27	.53	.14

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

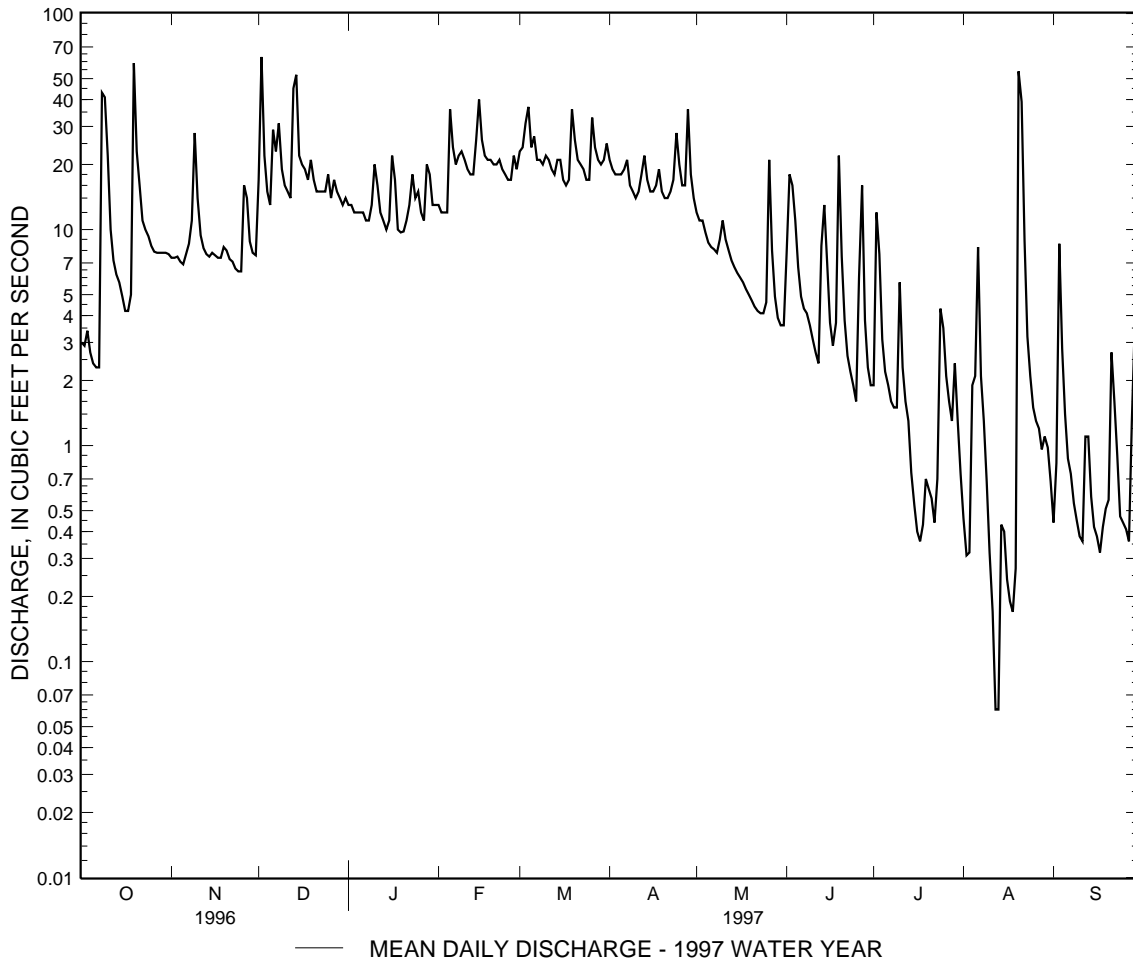
MEAN	5.19	6.90	9.12	12.5	12.8	21.0	16.8	14.3	11.1	7.05	5.36	4.36
MAX	11.5	11.4	21.1	18.6	22.8	45.5	27.4	28.8	31.0	24.0	14.2	12.8
(WY)	1997	1990	1997	1990	1994	1994	1993	1990	1989	1989	1990	1994
MIN	.52	1.43	3.80	4.77	5.54	9.66	7.74	6.82	2.19	.93	.20	.068
(WY)	1989	1992	1989	1992	1992	1995	1995	1992	1991	1993	1995	1995

PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	4582.8		4176.93			
ANNUAL MEAN	12.5		11.4		10.5	
HIGHEST ANNUAL MEAN					14.7	1990
LOWEST ANNUAL MEAN					5.79	1992
HIGHEST DAILY MEAN	137	Jan 19	63	Dec 2	274	Mar 3 1994
LOWEST DAILY MEAN	1.1	Sep 3	.06	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug 29	.22	Aug 11	.00	Aug 27 1993
INSTANTANEOUS PEAK FLOW			124	Aug 20	568	Jun 15 1990
INSTANTANEOUS PEAK STAGE			7.18	Aug 20	9.54	Jun 15 1990
INSTANTANEOUS LOW FLOW			.05	(a)	.00	(c)
ANNUAL RUNOFF (CFSM)	1.33		1.22		1.12	
ANNUAL RUNOFF (INCHES)	18.17		16.57		15.24	
10 PERCENT EXCEEDS	22		22		22	
50 PERCENT EXCEEDS	10		9.0		7.0	
90 PERCENT EXCEEDS	2.6		.66		.79	

- a Aug. 12, 13.
- b Sept. 12, 16, 17, 19-23, 1991, Aug. 31, Sept. 1-16, 21, 1995.
- c Sept. 10-24, 1991, Aug. 26, 27, 31, Sept. 1-16, 21, 22, 1995.



## PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986, 1988 to current year.

REMARKS.--Water-quality data available through September 1996 only at time of publication.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- PER ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	ALKA- LITY WAT WH TOT IT FIELD CACO3 (00419)
OCT 1995										
15...	0330	65	--	--	--	--	46	29	--	--
15...	0745	57	--	--	--	--	37	25	--	--
15...	1415	40	--	--	--	--	20	22	--	--
19...	1100	1.1	211	6.4	11.0	15.0	8.7	26	<2.0	10
NOV										
27...	1245	4.2	153	--	7.0	17.0	2.4	<10	<2.0	--
27...	1545	4.3	153	--	7.0	17.0	--	--	--	--
DEC										
12...	1400	3.4	167	6.2	2.0	1.5	3.0	<10	2.6	16
JAN 1996										
19...	1100	117	--	--	--	--	210	16	--	--
19...	1300	167	--	--	--	--	20	11	--	--
19...	1555	221	--	--	--	--	67	14	--	--
19...	1820	236	--	--	--	--	94	14	--	--
19...	2100	201	--	--	--	--	59	14	--	--
20...	0450	103	--	--	--	--	31	13	--	--
MAR										
20...	0100	49	--	--	--	--	29	<10	--	--
20...	0755	38	--	--	--	--	20	<10	--	--
25...	1400	13	133	6.6	12.0	22.0	2.7	<10	1.1	18
APR										
16...	0915	41	--	--	--	--	10	30	--	--
16...	1300	45	--	--	--	--	13	25	--	--
22...	1245	14	137	6.6	19.5	31.5	3.6	73	0.7	24
MAY										
21...	0800	5.1	166	6.8	23.0	23.0	7.6	16	<0.8	48
JUN										
19...	0130	89	--	--	--	--	220	28	--	--
19...	0430	92	--	--	--	--	120	22	--	--
19...	0845	60	--	--	--	--	72	21	--	--
20...	1700	51	--	--	--	--	37	19	--	--
20...	1930	84	--	--	--	--	76	18	--	--
26...	0800	5.9	164	6.1	21.5	24.0	23	21	<0.8	50
JUL										
13...	0245	56	--	--	--	--	--	--	--	--
13...	0600	104	--	--	--	--	43	22	--	--
13...	0805	122	--	--	--	--	47	22	--	--
13...	1015	123	--	--	--	--	45	26	--	--
13...	1230	111	--	--	--	--	--	--	--	--
13...	1500	99	--	--	--	--	--	--	--	--
13...	1815	77	--	--	--	--	26	26	--	--
13...	2245	48	--	--	--	--	--	--	--	--
24...	1000	5.3	168	6.7	21.0	25.5	24	17	0.3	51
AUG										
13...	0215	45	--	--	--	--	67	23	--	--
13...	0600	74	--	--	--	--	33	15	--	--
13...	0915	69	--	--	--	--	40	12	--	--
13...	1300	57	--	--	--	--	27	16	--	--
26...	1330	1.8	205	6.7	23.0	29.0	54	22	--	66
SEP										
24...	1500	2.6	176	6.6	17.5	19.0	26	19	1.2	56

## PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L) (32218)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L) (32230)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L) (32231)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L) (32232)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED NITRATE (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED NITRITE (MG/L AS N) (00613)	NITRO- GEN, DIS- SOLVED NO2+NO3 (MG/L AS N) (00631)
OCT 1995										
15...	13	100	--	--	--	--	1.3	0.74	0.003	0.170
15...	14	34	--	--	--	--	1.0	--	<0.002	0.135
15...	16	21	--	--	--	--	0.84	--	<0.002	0.057
19...	23	9	0.006	0.335	0.024	0.020	0.63	0.07	0.003	0.018
NOV										
27...	16	3	0.024	0.074	0.006	0.00	0.26	0.14	0.003	0.035
27...	--	--	--	--	--	--	--	--	--	--
DEC										
12...	17	1	--	0.052	0.00	0.00	0.15	0.18	0.009	0.050
JAN 1996										
19...	8.7	28	--	--	--	--	0.49	0.75	0.053	0.223
19...	8.1	41	--	--	--	--	0.60	0.65	0.061	0.207
19...	7.4	64	--	--	--	--	0.73	0.92	0.001	0.208
19...	6.7	49	--	--	--	--	0.70	--	<0.001	0.181
19...	7.3	33	--	--	--	--	0.68	--	<0.001	0.204
20...	8.8	151	--	--	--	--	0.53	--	<0.001	0.181
MAR										
20...	12	28	--	--	--	--	0.52	0.46	0.004	0.107
20...	11	13	--	--	--	--	0.36	0.27	0.003	0.064
25...	14	2	0.058	0.256	0.065	0.018	0.29	--	<0.001	0.040
APR										
16...	12	17	--	--	--	--	0.42	0.27	0.004	0.066
16...	13	17	--	--	--	--	0.38	0.25	0.003	0.060
22...	14	14	0.110	0.391	0.086	0.074	0.35	0.10	0.004	0.027
MAY										
21...	17	5	0.164	0.450	0.119	0.063	0.55	0.15	0.009	0.044
JUN										
19...	9.1	130	--	--	--	--	1.3	1.1	0.019	0.259
19...	9.5	48	--	--	--	--	--	0.82	0.018	0.204
19...	11	34	--	--	--	--	0.82	0.60	0.015	0.150
20...	14	34	--	--	--	--	0.69	0.41	0.008	0.101
20...	12	36	--	--	--	--	0.78	0.53	0.010	0.130
26...	19	11	0.122	0.241	0.093	0.00	0.46	0.11	0.006	0.031
JUL										
13...	--	--	--	--	--	--	--	--	<0.001	--
13...	11	28	--	--	--	--	0.57	0.23	0.006	0.059
13...	9.9	27	--	--	--	--	0.53	0.23	0.006	0.058
13...	9.9	23	--	--	--	--	0.59	0.24	0.006	0.060
13...	--	--	--	--	--	--	--	--	<0.001	--
13...	--	--	--	--	--	--	--	--	<0.001	--
13...	11	12	--	--	--	--	0.49	0.16	0.007	0.043
13...	--	--	--	--	--	--	--	--	<0.001	--
24...	19	6	--	0.135	0.004	0.00	0.40	0.21	0.006	0.053
AUG										
13...	13	72	--	--	--	--	0.86	0.67	0.012	0.164
13...	11	20	--	--	--	--	0.55	0.41	0.009	0.101
13...	12	21	--	--	--	--	0.61	0.45	0.007	0.108
13...	13	15	--	--	--	--	0.49	0.18	0.007	0.048
26...	19	15	--	0.198	0.008	0.00	0.55	0.29	0.008	0.074
SEP										
24...	2.7	6	--	--	--	--	0.39	0.33	0.005	0.079

## PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 -- Continued

DATE	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 1995										
15...	0.010	1.1	0.67	0.207	0.026	0.017	7.9	7.8	--	--
15...	0.011	0.89	0.66	0.143	0.018	0.014	7.8	7.5	--	--
15...	0.014	0.79	0.61	0.088	0.015	0.010	7.2	6.8	--	--
19...	0.061	0.61	0.54	0.050	0.015	0.013	4.5	4.0	25	0.07
NOV										
27...	0.018	0.22	0.21	<0.010	0.011	0.012	3.4	--	6	0.07
27...	--	--	--	--	--	--	--	--	--	--
DEC										
12...	0.022	<0.10	<0.10	<0.010	<0.010	0.011	3.4	--	7	0.07
JAN 1996										
19...	0.029	0.26	0.20	0.050	0.013	0.011	5.1	--	60	19
19...	0.029	0.39	0.17	0.107	0.014	0.013	5.2	5.4	93	42
19...	0.033	0.52	0.21	0.190	0.017	0.011	6.3	6.0	128	76
19...	0.036	0.52	0.20	0.204	<0.007	0.011	6.9	6.4	85	54
19...	0.030	0.47	0.22	0.144	0.017	0.012	7.4	7.7	45	24
20...	0.021	0.35	0.22	0.097	0.013	0.010	8.0	7.8	20	5.6
MAR										
20...	0.019	0.41	0.25	0.097	0.012	0.010	4.8	5.0	50	6.6
20...	0.013	0.30	0.25	0.058	<0.007	0.009	5.3	5.2	16	1.6
25...	0.017	0.25	0.14	0.012	0.010	0.013	3.8	3.6	2	0.05
APR										
16...	0.025	0.36	0.46	0.058	0.025	0.016	5.0	--	20	2.3
16...	0.021	0.32	0.27	0.053	0.019	0.015	5.5	5.8	19	2.4
22...	0.009	0.32	0.20	0.028	<0.090	0.013	5.5	--	6	0.22
MAY										
21...	0.033	0.51	0.36	0.060	<0.005	0.014	7.4	7.5	13	0.17
JUN										
19...	0.084	1.0	0.41	0.404	0.046	0.006	9.2	8.4	139	33
19...	0.052	--	--	0.278	0.026	<0.003	8.8	8.1	73	18
19...	0.039	0.67	0.29	0.199	0.024	<0.003	8.9	8.9	42	6.8
20...	0.020	0.59	0.30	0.193	0.063	0.016	8.1	8.1	56	7.8
20...	0.030	0.65	0.42	0.203	0.039	0.011	9.0	8.0	58	13
26...	0.035	0.43	0.30	0.137	0.053	0.007	8.4	8.1	17	0.28
JUL										
13...	--	--	--	--	--	--	--	--	65	9.9
13...	0.036	0.51	0.25	0.185	0.037	0.022	8.2	7.5	100	28
13...	0.039	0.47	0.26	0.169	0.012	0.016	8.1	7.1	38	12
13...	0.037	0.52	0.18	0.153	0.002	0.010	9.5	7.5	50	17
13...	--	--	--	--	--	--	--	--	55	17
13...	--	--	--	--	--	--	--	--	32	8.7
13...	0.025	0.45	0.26	0.136	0.015	0.011	9.5	8.7	38	7.8
13...	--	--	--	--	--	--	--	--	31	4.0
24...	0.026	0.35	0.28	0.115	0.043	0.045	6.9	--	16	0.22
AUG										
13...	0.021	0.70	0.28	0.371	0.039	0.011	7.3	6.6	103	12
13...	0.021	0.45	0.33	0.154	0.031	0.010	7.9	--	33	6.7
13...	0.022	0.50	0.28	0.189	0.032	0.010	7.6	--	26	4.9
13...	0.016	0.45	0.29	0.139	0.038	0.010	8.4	7.4	17	2.7
26...	0.033	0.47	0.42	0.214	0.088	0.030	9.3	9.0	24	0.12
SEP										
24...	0.030	0.31	0.28	0.173	0.094	0.042	6.3	--	13	0.09

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## PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD

LOCATION.--Lat 38°28'37", long 76°44'08", St Marys County, Hydrologic Unit 02060006, on left bank at private footbridge, 600 ft upstream from culvert on All Faith Church Road, 0.65 mi north of Huntersville, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--3.26 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

REVISED RECORDS.--WRD MD-DE-95: Drainage area.

GAGE.--Water-stage recorder and concrete block control. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect, missing record, backwater), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 14, 1995	2145	145	3.70	July 13, 1996	0400	*217	*5.12
Oct. 21, 1995	0715	110	3.04	July 19, 1996	1830	141	3.62
Oct. 28, 1995	0315	156	3.90				
Jan. 19, 1996	1415	184	4.48	Nov. 8, 1996	1845	*117	*3.17
June 24, 1996	1945	115	3.12				

REVISIONS.--The maximum discharge for water year 1995 has been revised to 137 ft<sup>3</sup>/s, Jan. 20, 1995, gage height, 3.55 ft, superseding figure published in the report for 1995. Peak discharge for Sept. 22, 1994 (2100 hours) has been revised to 181 ft<sup>3</sup>/s, gage height 4.41 ft, superseding figure published in the report for 1994. Peak discharge for Mar. 8, 1995 (2230 hours) has been revised to 137 ft<sup>3</sup>/s, gage height 3.25 ft.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.49	2.4	2.6	3.7	4.5	e3.8	11	5.7	3.7	3.4	4.2	1.6
2	.49	2.4	2.5	6.2	e4.5	e4.4	9.5	5.0	3.5	2.7	3.4	1.4
3	.49	3.0	2.4	7.0	e4.4	e4.4	7.6	4.7	3.5	2.9	3.2	1.4
4	.61	3.2	2.4	4.8	e4.4	e3.7	7.0	7.3	4.9	2.7	3.0	2.1
5	3.9	2.4	2.4	3.6	e4.3	e3.8	6.1	11	5.6	2.5	2.9	1.7
6	2.1	2.3	2.4	3.4	e4.3	e6.0	5.9	7.2	3.6	2.3	2.6	4.2
7	1.0	4.7	2.7	e3.3	e4.3	e9.7	5.8	6.3	3.4	2.1	2.5	2.8
8	.80	3.4	3.0	e3.3	e10	e7.2	5.5	6.8	3.2	3.8	2.4	4.5
9	.66	3.1	4.1	e3.3	e12	e6.5	6.2	8.4	6.9	5.8	3.0	3.1
10	.64	2.9	3.0	e3.3	e8.1	e6.0	6.1	6.0	4.7	4.1	3.0	2.3
11	.57	7.7	2.5	3.3	e7.0	e5.6	5.4	5.6	3.9	2.9	2.4	2.9
12	.57	12	2.4	3.6	e6.0	e5.3	5.1	5.3	3.9	8.9	6.8	2.5
13	.57	3.6	2.4	3.6	e5.5	e5.1	5.1	4.4	3.5	56	13	3.6
14	23	12	2.4	3.5	e5.0	e5.1	4.7	4.4	3.0	7.8	4.5	2.5
15	7.1	7.6	2.4	4.3	e4.8	4.8	4.5	4.5	2.8	8.4	3.5	2.1
16	1.7	4.2	5.6	4.4	e4.6	4.8	14	11	2.6	6.0	3.2	2.6
17	1.3	3.1	3.2	5.4	e4.5	7.2	7.3	6.1	2.5	4.1	3.3	3.4
18	1.1	2.9	3.2	15	e4.4	6.1	6.1	5.3	8.5	4.4	2.9	2.4
19	1.1	2.7	12	68	e4.4	11	6.3	4.6	5.9	23	2.6	1.9
20	1.0	2.4	5.9	11	e5.9	8.4	5.9	4.0	4.9	8.8	2.4	1.7
21	18	2.4	3.9	7.5	e9.2	6.3	5.7	3.8	4.0	5.2	2.4	1.7
22	2.7	2.4	3.4	6.1	e6.9	5.7	5.5	5.6	3.1	4.8	2.7	3.2
23	1.9	2.2	3.4	5.5	e7.1	5.4	5.4	3.5	2.5	4.7	2.7	2.0
24	1.6	2.6	3.1	8.8	e6.0	5.1	5.2	3.3	11	3.9	2.1	1.7
25	1.4	2.6	2.9	6.1	e4.9	5.3	5.1	3.3	5.0	4.3	1.9	1.6
26	1.2	2.2	2.7	5.2	e4.5	5.3	5.1	3.7	2.7	4.9	1.7	1.6
27	5.8	2.2	2.6	8.7	e4.4	5.1	5.0	5.4	2.3	3.4	2.0	1.6
28	38	2.2	2.6	6.3	e4.3	13	4.8	7.6	2.2	3.2	2.5	3.7
29	3.6	3.5	2.5	5.4	e4.1	13	4.8	6.2	2.4	3.3	2.1	5.1
30	2.6	2.8	2.5	5.1	---	8.1	6.9	4.9	3.0	4.3	1.9	2.2
31	2.3	---	2.8	4.6	---	7.0	---	4.0	---	3.9	1.7	---
TOTAL	128.29	113.1	101.9	233.3	164.3	198.2	188.6	174.9	122.7	208.5	98.5	75.1
MEAN	4.14	3.77	3.29	7.53	5.67	6.39	6.29	5.64	4.09	6.73	3.18	2.50
MAX	38	12	12	68	12	13	14	11	11	56	13	5.1
MIN	.49	2.2	2.4	3.3	4.1	3.7	4.5	3.3	2.2	2.1	1.7	1.4
CFSM	1.27	1.16	1.01	2.31	1.74	1.96	1.93	1.73	1.25	2.06	.97	.77
IN.	1.46	1.29	1.16	2.66	1.87	2.26	2.15	2.00	1.40	2.38	1.12	.86

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1996, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
MEAN	2.38	3.22	3.62	4.78	4.89	6.67	5.33	4.68	3.20	2.71	2.12	2.04
MAX	4.83	7.20	5.92	7.53	8.07	14.1	7.81	9.43	8.10	6.73	4.49	5.46
(WY)	1990	1986	1987	1996	1994	1994	1990	1990	1990	1996	1990	1992
MIN	.83	.94	2.09	2.45	2.27	3.71	2.97	1.93	.98	.76	.42	.50
(WY)	1989	1992	1989	1992	1992	1995	1992	1986	1986	1991	1995	1995

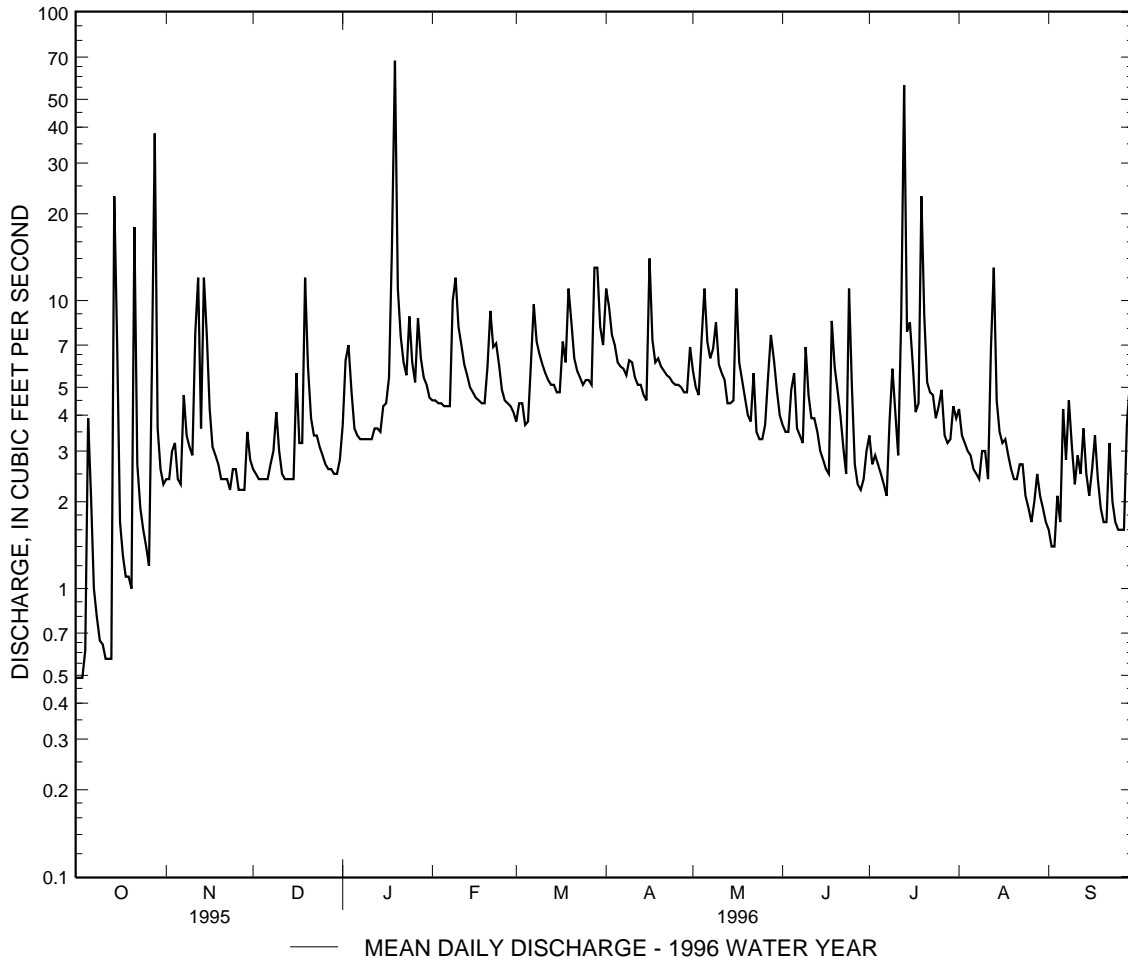


PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR	FOR 1996 WATER YEAR	WATER YEARS 1986 - 1996	
ANNUAL TOTAL	971.88	1807.39		
ANNUAL MEAN	2.66	4.94	3.80	
HIGHEST ANNUAL MEAN			5.33	1990
LOWEST ANNUAL MEAN			2.30	1995
HIGHEST DAILY MEAN	38 Oct 28	68 Jan 19	86 Mar 4	1993
LOWEST DAILY MEAN	.22 Sep 6	.49 (a)	.22 (b)	
ANNUAL SEVEN-DAY MINIMUM	.28 Sep 1	.69 Oct 7	.28 Sep 1	1995
INSTANTANEOUS PEAK FLOW		217 Jul 13	255 May 29	1990
INSTANTANEOUS PEAK STAGE		5.12 Jul 13	5.50 May 29	1990
INSTANTANEOUS LOW FLOW		.49 (c)	.13 (d)	
ANNUAL RUNOFF (CFSM)	.82	1.51	1.17	
ANNUAL RUNOFF (INCHES)	11.09	20.62	15.83	
10 PERCENT EXCEEDS	4.2	7.7	7.0	
50 PERCENT EXCEEDS	2.5	3.9	2.9	
90 PERCENT EXCEEDS	.45	2.0	.81	

- a Oct. 1-3.
- b Sept. 6, 15, 1995.
- c Oct. 1-4.
- d Sept. 14-16, 1995.



## PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	3.3	16	6.3	5.4	8.1	7.1	5.8	3.0	1.7	.51	1.3
2	2.7	3.5	19	5.9	5.1	6.4	6.7	5.4	3.6	12	.46	1.2
3	2.4	3.6	7.0	5.8	4.7	18	6.7	5.6	7.9	3.6	1.2	1.3
4	1.9	3.1	5.9	5.5	6.7	10	6.3	5.3	4.4	2.0	1.3	1.0
5	1.9	3.0	5.7	5.5	14	8.9	5.9	5.1	3.4	1.6	1.1	.83
6	1.9	3.0	14	5.4	6.6	9.0	7.0	5.0	3.2	1.3	.98	.83
7	1.9	3.0	18	5.1	5.8	7.2	6.3	4.7	3.3	1.3	.98	.83
8	20	21	9.8	5.1	7.4	7.0	5.9	4.3	3.2	.94	.94	.91
9	9.7	11	6.9	7.5	6.9	6.7	5.7	5.4	3.1	2.3	.75	.98
10	7.2	6.1	6.4	8.4	5.8	6.8	5.5	4.8	2.9	2.9	.60	.98
11	4.1	5.3	6.2	6.6	5.5	6.1	5.5	4.4	2.7	1.5	.57	1.7
12	3.5	4.9	5.9	5.6	5.2	5.9	9.0	4.2	2.5	1.3	.53	1.9
13	3.3	4.8	27	5.5	5.0	5.9	7.5	4.2	6.5	1.4	.49	1.7
14	3.2	4.8	11	5.2	10	7.5	6.3	4.2	4.2	1.2	.50	1.4
15	3.0	4.2	7.9	5.1	16	6.3	6.1	4.4	3.3	1.1	.48	1.4
16	3.0	4.3	6.8	10	7.3	5.8	5.9	3.8	2.6	1.1	.50	1.2
17	3.0	4.2	6.7	6.1	6.1	5.5	7.2	3.8	2.6	1.1	.46	1.1
18	8.2	4.2	6.4	e5.7	5.7	7.1	6.6	3.7	4.8	.86	.92	3.7
19	23	4.3	10	e5.3	5.5	17	6.1	3.5	4.0	.83	.57	1.4
20	6.6	4.2	6.7	5.1	5.5	8.9	5.7	3.2	2.6	.83	e20	3.1
21	4.9	3.9	5.9	4.9	5.5	7.2	6.0	3.1	2.4	.83	4.6	2.0
22	4.1	3.8	5.5	5.4	5.9	6.3	6.1	2.7	2.3	.86	2.4	1.3
23	3.9	3.6	5.5	6.2	5.4	5.7	6.8	2.7	2.0	3.5	1.9	1.1
24	3.9	3.7	6.7	5.5	5.1	5.1	8.7	2.6	1.8	4.2	1.7	.83
25	3.9	3.8	6.5	5.9	5.1	5.1	6.1	2.7	1.7	2.1	1.4	.93
26	3.6	9.5	5.9	5.3	5.7	21	5.3	6.5	3.1	1.6	1.4	.99
27	3.6	5.0	6.5	5.1	6.3	8.4	7.0	3.8	2.4	1.2	1.4	.98
28	3.5	4.2	5.5	11	5.5	7.4	21	3.0	1.7	1.2	2.2	1.2
29	3.6	4.0	5.5	6.7	---	12	7.5	2.8	1.3	1.2	1.8	1.4
30	3.5	3.9	5.1	5.6	---	7.9	5.9	2.9	1.4	.83	1.4	1.3
31	3.3	---	7.6	5.5	---	11	---	2.9	---	.75	1.4	---
TOTAL	154.0	151.2	269.5	187.8	184.7	261.2	209.4	126.5	93.9	59.13	55.44	40.79
MEAN	4.97	5.04	8.69	6.06	6.60	8.43	6.98	4.08	3.13	1.91	1.79	1.36
MAX	23	21	27	11	16	21	21	6.5	7.9	12	20	3.7
MIN	1.7	3.0	5.1	4.9	4.7	5.1	5.3	2.6	1.3	.75	.46	.83
CFSM	1.52	1.55	2.67	1.86	2.02	2.58	2.14	1.25	.96	.59	.55	.42
IN.	1.76	1.73	3.08	2.14	2.11	2.98	2.39	1.44	1.07	.67	.63	.47

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

MEAN	2.59	3.37	4.05	4.89	5.03	6.82	5.47	4.63	3.20	2.64	2.09	1.98
MAX	4.97	7.20	8.69	7.53	8.07	14.1	7.81	9.43	8.10	6.73	4.49	5.46
(WY)	1997	1986	1997	1996	1994	1994	1994	1990	1990	1996	1990	1992
MIN	.83	.94	2.09	2.45	2.27	3.71	2.97	1.93	.98	.76	.42	.50
(WY)	1989	1992	1989	1992	1992	1995	1992	1986	1986	1991	1995	1995

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1986 - 1997

ANNUAL TOTAL	2038.8	1793.56		
ANNUAL MEAN	5.57	4.91	3.89	
HIGHEST ANNUAL MEAN			5.33	1990
LOWEST ANNUAL MEAN			2.30	1995
HIGHEST DAILY MEAN	68	Jan 19	86	Mar 4 1993
LOWEST DAILY MEAN	1.4	(a)	.46	(b)
ANNUAL SEVEN-DAY MINIMUM	1.7	Aug 30	.50	Aug 11
INSTANTANEOUS PEAK FLOW			117	Nov 8
INSTANTANEOUS PEAK STAGE			3.17	Nov 8
INSTANTANEOUS LOW FLOW			.39	Aug 3
ANNUAL RUNOFF (CFSM)	1.71		1.51	
ANNUAL RUNOFF (INCHES)	23.26		20.47	16.22
10 PERCENT EXCEEDS	8.7		8.1	7.1
50 PERCENT EXCEEDS	4.5		4.6	3.0
90 PERCENT EXCEEDS	2.4		1.1	.84

a Sept. 2, 3.

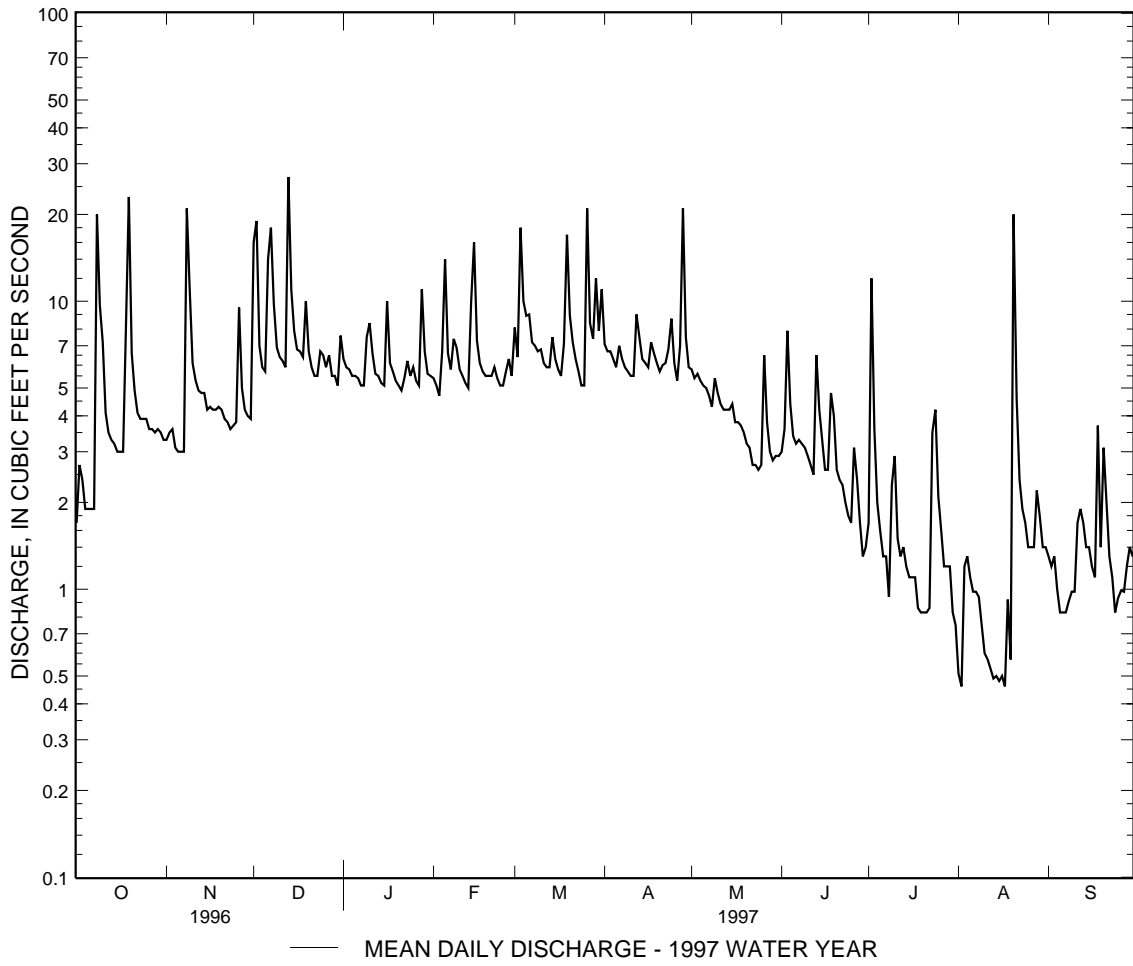
b Aug. 2, 17.

c Sept. 6, 15, 1995.

d Sept. 14-16, 1995.

PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued



PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year.

REMARKS.--Water-quality data available through September 1996 only at time of publication.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	TIME	CHARGE, INST. CUBIC FEET PER SECOND (000061)	SPE- CIFIC CON- DUCT- PER ANCE (US/CM) (000095)	WATER WHOLE FIELD (STAND- ARD UNITS) (000400)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	TUR- BID- ITY (NTU) (00076)	DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L) (00335)	ALKA-	
									DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	LINITY WAT WH TOT IT FIELD CACO3 (00419)
OCT 1995										
14...	1815	12	--	--	--	--	650	26	--	--
14...	2115	142	--	--	--	--	1200	39	--	--
14...	2330	65	--	--	--	--	450	42	--	--
21...	0800	73	--	--	--	--	320	41	--	--
26...	0845	1.3	240	6.8	10.0	9.0	3.6	11	<2.0	28
27...	2130	43	--	--	--	--	1300	30	--	--
28...	0030	115	--	--	--	--	450	33	--	--
28...	0330	153	--	--	--	--	250	39	--	--
NOV										
27...	0915	2.2	194	--	7.0	12.0	3.6	<10	<2.0	--
DEC										
12...	1130	2.4	192	6.1	2.5	2.0	4.3	<10	<2.0	23
JAN 1996										
18...	2330	61	--	--	--	--	390	<10	--	--
19...	1200	139	--	--	--	--	1200	23	--	--
19...	1315	163	--	--	--	--	860	19	--	--
19...	1410	183	--	--	--	--	630	23	--	--
19...	1530	114	--	--	--	--	430	19	--	--
MAR										
25...	1245	5.5	167	6.4	11.0	21.0	4.9	<10	0.9	17
APR										
22...	1115	5.5	159	6.6	17.5	28.0	4.8	13	0.7	20
MAY										
21...	1100	3.9	172	6.7	19.0	31.0	7.9	<10	<0.9	25
JUN										
26...	1130	3.0	175	6.4	19.0	28.0	8.3	<10	<2.8	26
JUL										
13...	0045	50	--	--	--	--	--	--	--	--
13...	0230	162	--	--	--	--	1100	130	--	--
13...	0330	199	--	--	--	--	--	--	--	--
13...	0400	216	--	--	--	--	690	64	--	--
13...	0445	196	--	--	--	--	470	63	--	--
13...	0650	75	--	--	--	--	--	--	--	--
24...	1200	4.2	177	6.8	19.5	29.0	9.3	10	0.1	28
AUG										
26...	1500	1.7	212	6.8	21.0	26.5	4.2	<10	--	32
SEP										
24...	1330	1.7	199	6.8	16.0	18.5	3.5	11	1.1	32

## PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEd (MG/L) (00530)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L) (32218)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L) (32230)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L) (32231)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L) (32232)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED NITRATE (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED NITRITE (MG/L AS N) (00613)	NITRO- GEN, DIS- SOLVED NO2+NO3 (MG/L AS N) (00631)
OCT 1995										
14...	6.4	187	--	--	--	--	6.2	3.6	0.012	0.830
14...	3.7	256	--	--	--	--	7.9	2.3	0.035	0.545
14...	4.9	1070	--	--	--	--	3.9	2.4	0.008	0.539
21...	4.1	805	--	--	--	--	3.1	1.6	0.011	0.381
26...	11	4	--	0.119	0.00	0.029	2.2	8.3	0.004	1.88
27...	3.5	2430	--	--	--	--	8.5	2.9	0.020	0.669
28...	3.7	990	--	--	--	--	3.2	1.6	0.014	0.377
28...	4.1	770	--	--	--	--	2.0	1.3	0.008	0.302
NOV										
27...	11	<1	0.001	0.029	0.024	0.00	2.1	7.6	0.008	1.73
DEC										
12...	3.8	3	0.007	0.157	0.00	0.00	1.9	7.7	0.009	1.74
JAN 1996										
18...	4.4	745	--	--	--	--	2.8	--	<0.001	0.461
19...	3.6	2270	--	--	--	--	5.8	1.4	0.004	0.323
19...	3.0	730	--	--	--	--	4.3	1.2	0.010	0.292
19...	2.9	810	--	--	--	--	2.5	0.93	0.049	0.259
19...	3.6	940	--	--	--	--	2.3	1.1	0.052	0.309
MAR										
25...	8.7	5	0.047	0.253	0.034	0.016	2.0	7.5	0.006	1.71
APR										
22...	8.4	16	0.076	0.526	0.055	0.114	1.7	6.1	0.015	1.40
MAY										
21...	9.9	5	0.032	0.153	0.030	0.00	2.0	7.2	0.016	1.65
JUN										
26...	10	8	--	0.297	0.026	0.047	1.9	7.4	0.013	1.68
JUL										
13...	--	--	--	--	--	--	--	--	<0.001	--
13...	3.5	1310	--	--	--	--	4.1	0.95	0.009	0.223
13...	--	--	--	--	--	--	--	--	<0.001	--
13...	3.1	480	--	--	--	--	2.1	0.68	0.009	0.163
13...	3.8	400	--	--	--	--	2.0	0.73	0.007	0.173
13...	--	--	--	--	--	--	--	--	<0.001	--
24...	11	5	0.049	0.074	0.004	0.00	2.0	7.3	0.018	1.66
AUG										
26...	10	4	0.007	0.052	0.00	0.00	2.2	8.2	0.024	1.88
SEP										
24...	10	3	--	--	--	--	2.0	8.1	0.008	1.85

## PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DATE	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)
OCT 1995										
14...	0.314	5.4	1.1	2.70	0.058	0.054	9.1	8.9	2200	71
14...	0.255	7.4	1.6	3.20	0.068	0.044	9.7	9.6	3710	1420
14...	0.032	3.3	0.88	1.00	0.042	0.030	10	11	1050	184
21...	0.164	2.7	0.65	1.20	0.055	0.050	15	8.4	--	--
26...	0.027	0.29	0.35	0.031	0.023	0.020	3.9	--	2	0.01
27...	0.096	7.8	0.96	3.50	0.091	0.078	13	13	4620	537
28...	0.020	2.8	0.44	1.30	0.101	0.060	12	10	2390	743
28...	0.015	1.7	0.50	0.800	0.078	0.062	13	11	1330	547
NOV										
27...	0.044	0.35	0.28	0.035	<0.010	0.016	3.1	3.3	6	0.04
DEC										
12...	0.055	0.14	0.13	0.126	0.022	0.018	2.7	--	6	0.04
JAN 1996										
18...	0.071	2.3	0.36	1.10	0.029	0.018	7.0	--	1470	243
19...	0.058	5.5	0.37	2.50	0.044	0.026	8.9	8.9	4310	1620
19...	0.059	4.0	0.47	1.70	0.122	0.035	10	10	2300	1010
19...	0.059	2.2	0.63	0.900	0.062	0.036	11	--	1040	514
19...	0.043	2.0	0.41	0.800	0.043	0.028	11	11	1640	506
MAR										
25...	0.054	0.26	0.23	0.028	0.010	0.021	3.1	3.4	5	0.07
APR										
22...	0.016	0.31	0.18	0.042	<0.009	0.021	3.7	--	5	0.07
MAY										
21...	0.050	0.31	0.27	0.067	0.106	0.021	3.5	--	8	0.08
JUN										
26...	0.057	0.27	0.21	0.070	0.047	0.008	4.3	--	7	0.06
JUL										
13...	--	--	--	--	--	--	--	--	2900	392
13...	0.056	3.9	0.35	2.10	0.051	0.029	11	11	3310	1450
13...	--	--	--	--	--	--	--	--	700	376
13...	0.099	2.0	0.49	1.00	0.055	0.030	12	12	580	338
13...	0.049	1.8	0.48	0.778	0.047	0.024	12	--	811	429
13...	--	--	--	--	--	--	--	--	1490	301
24...	0.056	0.30	0.29	0.066	0.027	0.033	4.3	--	13	0.14
AUG										
26...	0.025	0.27	0.23	0.060	0.034	0.018	4.1	4.2	5	0.02
SEP										
24...	0.031	0.18	0.17	0.050	0.036	0.032	3.2	3.6	3	0.01

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## POTOMAC RIVER BASIN

01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD

LOCATION.--Lat 39°14'37", long 79°25'43", 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<sup>2</sup>.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above sea level, 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 170 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 8	1600	191	3.93	Mar. 2	1415	210	4.08
Nov. 26	0630	233	4.26	Mar. 26	0745	180	3.84
Dec. 2	0145	*338	*5.06	May 26	0130	304	4.81
Mar. 1	1530	206	4.05				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	24	112	21	26	88	30	21	e18	e5.5	e2.2	e3.1
2	e14	22	185	20	22	145	29	17	e22	e4.6	e1.8	e2.9
3	e13	20	68	19	21	121	26	17	e26	e3.8	e1.5	e3.0
4	e12	19	47	18	26	127	23	29	31	e3.4	e7.0	e3.0
5	e11	18	37	18	52	98	21	21	e21	e3.0	e6.0	e3.2
6	e11	18	33	16	37	102	20	19	e17	e3.2	e3.0	e3.6
7	e10	18	29	15	30	62	18	17	e15	e2.8	e2.5	e2.3
8	e10	101	26	13	27	49	16	18	e14	e2.7	e2.3	e1.8
9	e11	77	24	14	23	42	15	31	e13	e5.0	e2.2	e2.1
10	30	48	22	15	20	46	15	40	e12	e6.0	e1.7	e6.0
11	15	38	43	15	19	40	14	40	e11	e4.0	e1.4	e5.5
12	13	33	42	14	17	34	14	32	e11	e2.5	e1.5	e3.0
13	e12	28	50	13	16	29	14	34	e32	e2.0	e2.9	e2.7
14	e11	25	42	13	16	30	17	29	18	e1.7	e3.8	e2.1
15	e10	22	36	14	18	40	16	25	e13	e1.9	e2.5	e1.9
16	e9.7	20	31	21	15	29	14	25	e11	e2.0	e2.1	e1.8
17	e9.4	19	27	18	15	25	18	21	e8.5	e2.1	e20	e1.9
18	e9.0	26	24	e15	16	31	20	19	e10	e3.6	e30	e3.6
19	e13	32	22	e13	32	71	19	17	12	e4.0	e10	e3.0
20	88	26	20	e12	59	49	18	34	e8.0	e3.4	e15	e3.8
21	86	24	23	e11	39	40	19	24	e6.0	e3.0	e21	e4.2
22	82	22	16	e10	34	34	19	21	e5.0	e6.0	e15	e2.5
23	54	20	27	45	26	29	17	19	e4.2	e13	e11	e2.2
24	41	19	38	26	23	24	16	17	e4.6	23	e8.0	e2.0
25	34	19	38	44	20	22	20	42	e4.8	e9.0	e6.0	e1.9
26	30	124	29	35	19	87	18	155	28	e5.0	e5.0	e1.9
27	31	56	26	28	19	43	18	53	20	e3.4	e4.0	6.7
28	37	41	24	85	16	35	34	38	e10	e3.0	e18	19
29	34	34	26	46	---	33	27	31	e8.5	e3.6	e9.0	35
30	30	51	24	35	---	27	23	26	e7.0	e2.6	e5.0	e9.0
31	26	---	22	30	---	35	---	22	---	e2.1	e3.9	---
TOTAL	812.1	1044	1213	712	703	1667	588	954	421.6	140.9	225.3	144.7
MEAN	26.2	34.8	39.1	23.0	25.1	53.8	19.6	30.8	14.1	4.55	7.27	4.82
MAX	88	124	185	85	59	145	34	155	32	23	30	35
MIN	9.0	18	16	10	15	22	14	17	4.2	1.7	1.4	1.8
CFSM	3.18	4.23	4.75	2.79	3.05	6.53	2.38	3.74	1.71	.55	.88	.59
IN.	3.67	4.72	5.48	3.22	3.18	7.53	2.66	4.31	1.91	.64	1.02	.65

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1997, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	10.5	20.4	31.0	26.7	36.4	40.9	31.4	30.3	18.5	18.0	12.7	8.74						
MAX	26.2	42.8	51.9	51.2	68.5	71.6	61.0	69.8	62.8	42.8	40.2	41.3						
(WY)	1997	1987	1985	1996	1994	1994	1984	1996	1981	1992	1980	1996						
MIN	3.27	6.21	16.8	8.85	7.24	13.9	9.60	9.35	6.36	2.88	2.30	2.99						
(WY)	1992	1992	1990	1981	1993	1990	1995	1991	1991	1988	1993	1991						



POTOMAC RIVER BASIN

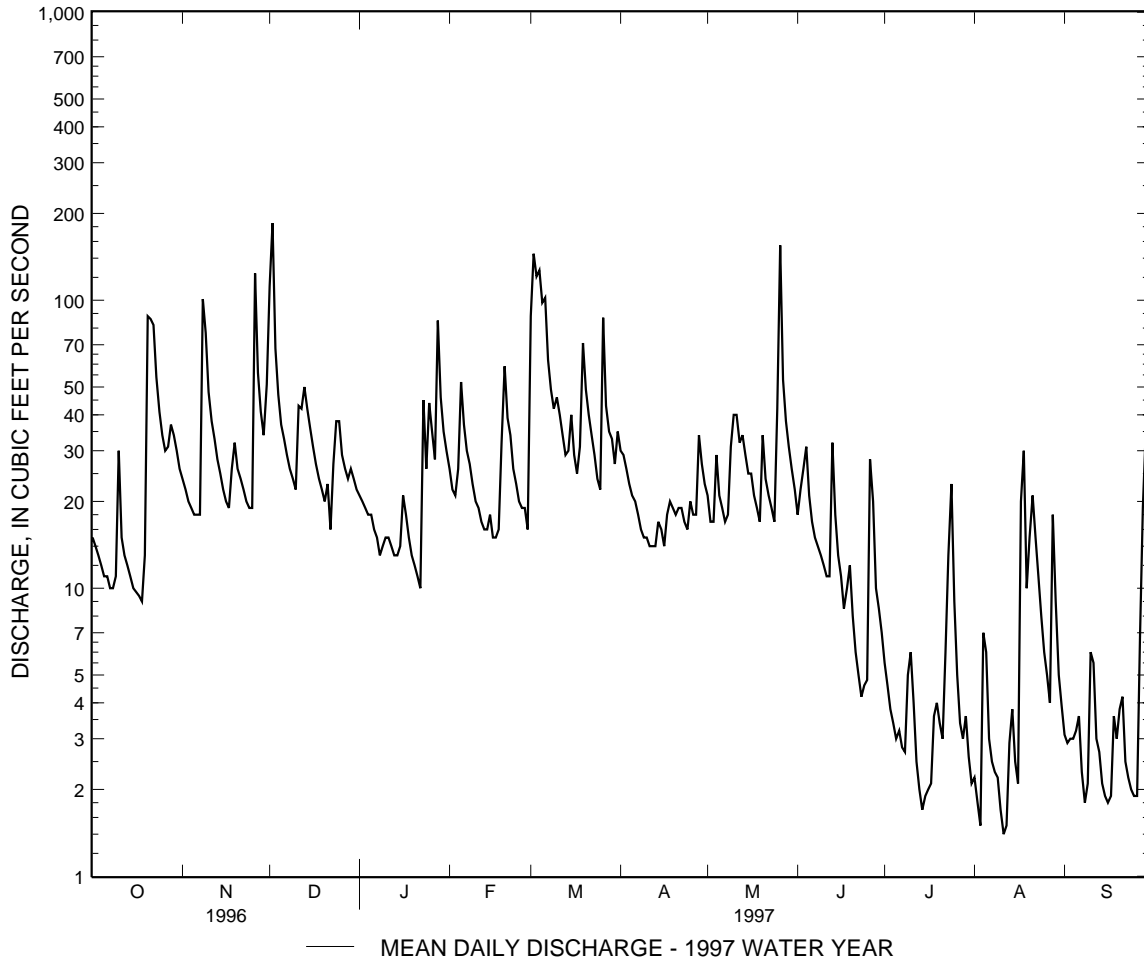
01594930 LAUREL RUN AT DOBBIN ROAD NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1980 - 1997	
ANNUAL TOTAL	14504.0		8625.6			
ANNUAL MEAN	39.6		23.6		23.5	
HIGHEST ANNUAL MEAN					35.6 1996	
LOWEST ANNUAL MEAN					16.2 1995	
HIGHEST DAILY MEAN	443	Jan 19	185	Dec 2	492	Feb 9 1994
LOWEST DAILY MEAN	(e)3.5	Jul 14	(e)1.4	Aug 11	1.1	(a)
ANNUAL SEVEN-DAY MINIMUM	4.6	Jul 11	2.1	Aug 7	1.3	Aug 23 1993
INSTANTANEOUS PEAK FLOW			338	Dec 2	(b)863	Nov 5 1985
INSTANTANEOUS PEAK STAGE			5.06	Dec 2	10.10	Nov 5 1985
INSTANTANEOUS LOW FLOW			UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	4.82		2.87		2.85	
ANNUAL RUNOFF (INCHES)	65.56		38.99		38.77	
10 PERCENT EXCEEDS	77		43		49	
50 PERCENT EXCEEDS	27		19		16	
90 PERCENT EXCEEDS	10		3.0		4.0	

e Estimated.

a Aug. 15, 27, 1993.

b From rating curve extended above 450 ft<sup>3</sup>/s on basis of runoff comparisons with nearby stations.



## POTOMAC RIVER BASIN

01594936 NORTH FORK SAND RUN NEAR WILSON, MD

LOCATION.--Lat 39°15'36", long 79°24'36", 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<sup>2</sup>.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder and steel weir plate. Elevation of gage is 2,515 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good above 0.5 ft<sup>3</sup>/s and fair below. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 26	0430	50	3.39	Mar. 1	1145	42	3.27
Dec. 1	2345	*85	*3.85	May 25	2300	84	3.83

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	3.6	25	3.7	4.9	18	6.0	4.0	3.2	1.2	.41	.57
2	2.3	3.3	31	3.6	3.8	25	5.4	3.7	5.0	.94	.37	.50
3	2.0	3.0	13	3.5	3.8	19	4.7	3.4	7.3	.70	.28	.56
4	1.9	2.7	9.4	3.2	5.2	24	4.0	4.3	7.3	.62	1.3	.56
5	1.8	2.6	7.0	3.2	11	20	3.8	3.2	4.6	.56	1.1	.59
6	1.2	2.4	5.8	3.0	6.7	18	3.3	3.3	4.0	.61	.55	.62
7	1.2	2.2	5.1	2.8	5.5	13	3.1	3.2	3.5	.53	.47	.41
8	1.5	18	4.2	2.3	4.8	11	2.9	3.6	3.0	.52	.42	.32
9	2.0	14	3.7	2.5	3.9	8.2	2.7	5.4	2.7	.88	.40	.38
10	3.5	9.3	3.4	2.5	3.6	9.7	2.5	7.1	2.4	1.0	.34	1.1
11	2.5	6.9	8.4	2.1	3.4	7.4	2.4	6.1	2.2	.63	.26	.98
12	2.5	5.5	7.7	1.6	3.2	5.9	2.3	5.0	2.1	.48	.27	.57
13	2.4	4.5	9.2	1.6	2.9	4.8	2.2	6.4	3.6	.37	.57	.50
14	2.2	4.0	7.1	1.5	3.0	8.2	1.9	5.1	2.8	.33	.64	.42
15	1.9	3.7	5.6	1.4	3.3	6.8	1.7	4.7	1.7	.36	.42	.33
16	1.5	3.3	4.8	4.2	2.6	4.6	1.6	4.9	1.4	.37	.37	.32
17	1.4	3.1	4.3	2.6	2.5	4.1	2.0	4.0	1.5	.39	4.5	.33
18	1.7	3.9	3.8	1.9	3.7	5.8	2.5	3.3	1.6	.46	6.0	.57
19	4.2	4.9	3.6	1.6	8.6	12	2.3	3.2	1.8	.92	1.8	.40
20	15	3.9	3.2	1.5	11	8.8	2.6	6.0	1.3	.63	3.1	.67
21	15	3.7	3.1	1.7	7.5	7.3	2.7	3.7	1.1	.53	4.0	.72
22	14	3.3	2.7	3.2	6.5	6.1	2.5	3.4	1.0	1.2	2.4	.40
23	10	3.1	5.3	10	4.6	4.8	2.3	3.2	.73	1.2	1.4	.38
24	7.8	3.0	7.7	6.5	3.9	4.0	2.4	3.0	.79	4.3	.89	.37
25	6.0	2.8	6.8	9.4	3.7	3.8	3.7	12	.86	1.7	.83	.34
26	5.0	22	4.6	6.5	3.6	17	3.2	24	5.6	.93	.86	.34
27	5.3	9.4	4.2	4.9	3.5	8.4	3.3	9.4	2.9	.62	.70	.41
28	5.8	6.7	4.0	16	3.1	6.6	7.9	6.5	1.7	.53	3.3	4.0
29	5.2	4.9	5.1	8.2	---	6.2	5.3	4.9	1.4	.64	1.5	9.0
30	4.2	9.6	5.0	6.1	---	5.2	4.2	4.3	1.3	.48	.98	2.2
31	3.8	---	3.9	5.1	---	6.6	---	3.6	---	.38	.72	---
TOTAL	137.2	173.3	217.7	127.9	133.8	310.3	97.4	167.9	80.38	25.01	41.15	28.86
MEAN	4.43	5.78	7.02	4.13	4.78	10.0	3.25	5.42	2.68	.81	1.33	.96
MAX	15	22	31	16	11	25	7.9	24	7.3	4.3	6.0	9.0
MIN	1.2	2.2	2.7	1.4	2.5	3.8	1.6	3.0	.73	.33	.26	.32
CFSM	2.32	3.02	3.68	2.16	2.50	5.24	1.70	2.84	1.40	.42	.69	.50
IN.	2.67	3.38	4.24	2.49	2.61	6.04	1.90	3.27	1.57	.49	.80	.56

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1997, BY WATER YEAR (WY)

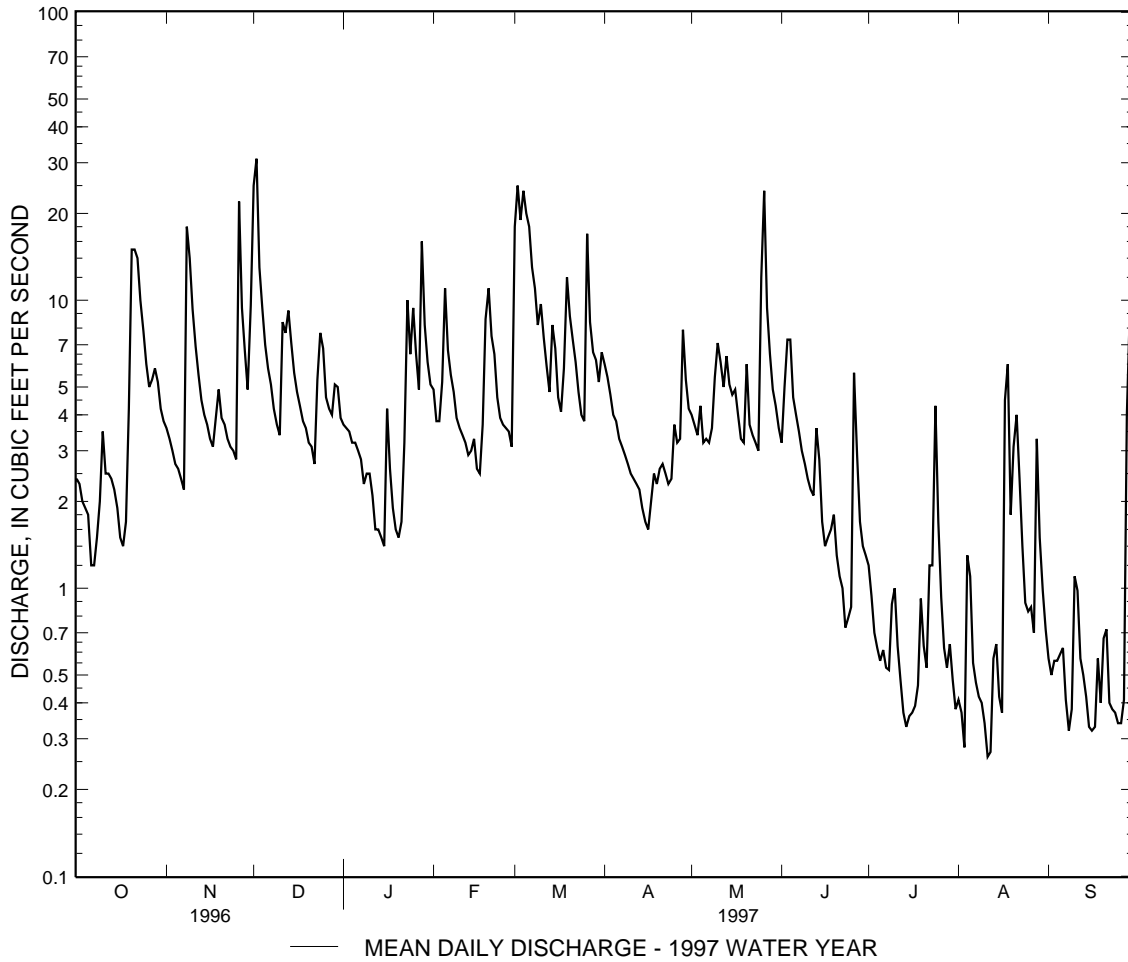
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997						
MEAN	1.59	4.38	5.84	5.55	7.57	8.71	6.51	6.00	3.31	3.26	2.18	1.61	1.59	12.9	15.9	16.1	13.4	13.5	12.7	8.97	8.09	1996	1996	
MAX	4.43	17.5	8.67	12.9	15.9	16.1	13.4	13.5	12.7	8.97	8.09	1996	1996	1996	1996	1994	1984	1996	1981	1996	1996	1996	1996	
(WY)	1997	1986	1991	1996	1986	1994	1984	1996	1981	1996	1996	1996	1996	1996	1996	1996	1984	1996	1981	1996	1996	1996	1996	
MIN	.21	.62	2.83	1.29	1.37	2.52	2.22	1.58	.63	.28	.30	.19	.21	.62	2.83	1.29	1.37	2.52	2.22	1.58	.63	.28	.30	.19
(WY)	1992	1992	1990	1981	1993	1990	1995	1991	1991	1988	1983	1991	1992	1992	1990	1981	1993	1990	1995	1991	1991	1988	1983	1991

POTOMAC RIVER BASIN

01594936 NORTH FORK SAND RUN NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1980 - 1997	
ANNUAL TOTAL	3008.33		1540.90			
ANNUAL MEAN	8.22		4.22		4.65	
HIGHEST ANNUAL MEAN					7.72 1996	
LOWEST ANNUAL MEAN					3.43 1983	
HIGHEST DAILY MEAN	140	Jan 19	31	Dec 2	141	Feb 9 1994
LOWEST DAILY MEAN	.52	Jul 14	.26	Aug 11	.09	(a)
ANNUAL SEVEN-DAY MINIMUM	.72	Jul 11	.39	Aug 6	.12	Aug 12 1988
INSTANTANEOUS PEAK FLOW			85	Dec 1	(b)895	May 31 1985
INSTANTANEOUS PEAK STAGE			3.85	Dec 1	10.47	May 31 1985
INSTANTANEOUS LOW FLOW			.24	(c)	.01	(d)
ANNUAL RUNOFF (CFSM)	4.30		2.21		2.43	
ANNUAL RUNOFF (INCHES)	58.59		30.01		33.06	
10 PERCENT EXCEEDS	16		8.7		10	
50 PERCENT EXCEEDS	5.1		3.2		2.8	
90 PERCENT EXCEEDS	1.7		.51		.46	

- a Aug. 22, 1985, Aug. 24, 1993.
- b From rating curve extended above 90 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.
- c Aug. 3, 4, 11, 12.
- d July 18 and Aug. 9, 1988, result of beaver activity upstream.



## POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD

LOCATION.--Lat 39°16'36", long 79°23'26", Garrett County, Hydrologic Unit 02070002, on left bank upstream side of culvert on private driveway off Wilson-Corona Road, 1.7 mi southwest of Fort Pendleton, 1.0 mi south of Bayard, WV, and 200 ft upstream from mouth.

DRAINAGE AREA.--2.30 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

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 sea level (Garrett County bench mark).

REMARKS.--Water-discharge records good except those for estimated daily discharges (ice effect), which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 26	0345	46	2.37	May 25	2215	74	2.99
Dec. 1	2330	*100	*3.45				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.8	27	3.6	5.1	17	5.7	3.4	3.5	.32	.04	.26
2	1.9	2.5	36	3.5	4.4	27	5.4	2.7	4.8	.31	.04	.19
3	1.7	2.1	16	3.3	4.3	22	4.9	2.8	6.2	.26	.04	.19
4	1.4	1.8	10	3.0	5.0	29	4.4	3.7	7.1	.21	.22	.16
5	1.2	1.5	7.8	3.0	11	25	3.9	2.7	5.0	.18	.16	.12
6	1.1	1.4	6.5	2.7	7.2	23	3.6	3.3	4.2	.17	.07	.08
7	.89	1.2	5.6	2.3	5.9	15	3.1	2.8	3.5	.16	.05	.06
8	1.1	1.6	5.0	2.3	5.3	12	2.7	3.1	3.0	.14	.04	.04
9	1.5	1.2	4.4	2.1	4.6	9.3	2.5	5.2	2.5	.16	.04	.04
10	2.7	8.0	4.0	e2.0	4.0	10	2.2	6.2	2.1	.23	.04	.36
11	1.6	6.3	8.0	e1.9	3.6	7.9	2.0	6.0	1.8	.14	.04	.35
12	1.2	5.1	8.4	e1.8	3.3	6.4	2.0	5.2	1.6	.12	.03	.16
13	1.0	4.4	9.2	e1.7	3.8	5.5	1.9	5.6	3.1	.11	.11	.09
14	.87	4.0	7.5	e1.6	2.8	7.8	1.6	4.8	1.9	.11	.08	.06
15	.77	3.6	6.2	e1.5	2.8	6.9	1.4	4.4	1.4	.11	.04	.03
16	.70	3.2	5.5	e2.5	2.8	5.6	1.2	4.3	1.1	.11	.03	.03
17	.66	3.0	4.9	e2.0	2.8	5.1	1.4	3.6	.97	.09	1.3	.03
18	1.2	3.4	4.3	e1.7	3.0	6.1	1.5	3.2	.95	.11	2.2	.03
19	3.6	3.8	3.9	e1.5	9.1	11	1.3	3.0	.97	.13	.44	.03
20	16	3.3	4.1	e1.4	12	8.9	1.1	5.0	.65	.09	1.4	.08
21	16	3.1	3.9	e1.3	8.4	8.1	1.3	3.6	.58	.08	1.8	.14
22	13	2.8	2.7	e1.3	7.2	7.0	1.2	3.1	.50	.20	1.0	.05
23	8.9	2.5	4.5	19	5.6	5.9	1.1	2.7	.43	.11	.59	.03
24	6.5	2.4	6.9	4.8	4.8	5.1	1.1	2.4	.36	3.6	.37	.03
25	5.0	2.4	6.4	7.3	4.1	4.5	2.0	11	.32	.88	.27	.03
26	4.4	22	5.0	5.6	3.9	18	2.2	25	2.6	.29	.25	.03
27	4.4	9.3	4.5	4.6	3.7	9.7	2.4	11	1.5	.18	.19	.03
28	4.6	6.8	4.1	16	3.2	7.6	5.7	7.4	.57	.13	3.9	2.9
29	4.1	5.6	4.6	8.3	---	7.0	4.6	5.7	.40	.13	1.1	6.2
30	3.6	9.4	4.4	6.5	---	6.0	3.6	4.8	.32	.08	.59	1.4
31	3.2	---	4.0	5.6	---	6.7	---	4.0	---	.05	.37	---
TOTAL	116.99	155.7	235.3	125.7	143.7	346.1	79.0	161.7	63.92	8.99	16.84	13.23
MEAN	3.77	5.19	7.59	4.05	5.13	11.2	2.63	5.22	2.13	.29	.54	.44
MAX	16	22	36	19	12	29	5.7	25	7.1	3.6	3.9	6.2
MIN	.66	1.2	2.7	1.3	2.8	4.5	1.1	2.4	.32	.05	.03	.03
CFSM	1.64	2.26	3.30	1.76	2.23	4.85	1.14	2.27	.93	.13	.24	.19
IN.	1.89	2.52	3.81	2.03	2.32	5.60	1.28	2.62	1.03	.15	.27	.21

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

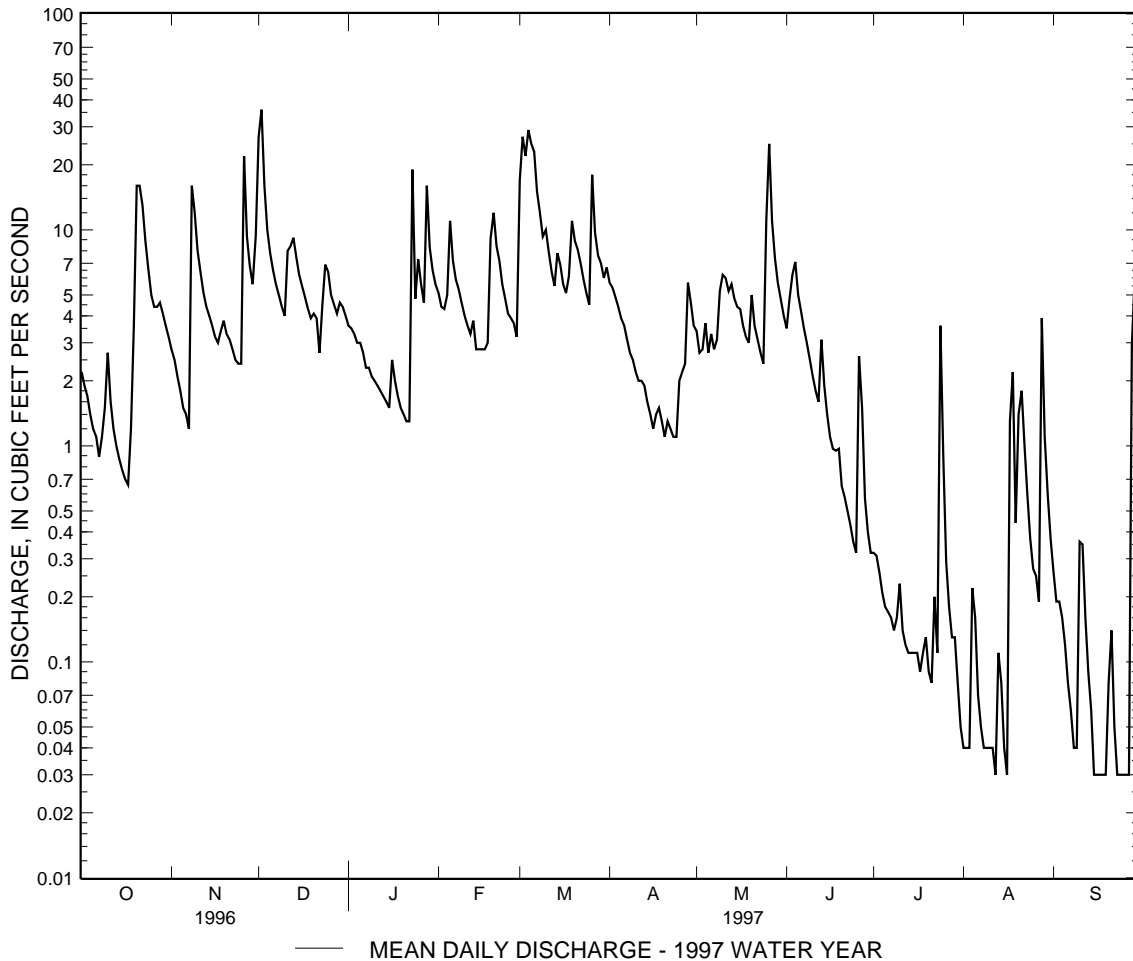
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	
MEAN	1.51	3.45	6.03	7.18	7.32	9.35	6.15	6.75	2.00	2.71	2.06	1.71
MAX	4.57	10.2	10.0	11.5	14.7	17.6	11.3	13.9	5.29	8.23	9.26	9.25
(WY)	1990	1987	1991	1990	1994	1994	1987	1996	1989	1996	1996	1996
MIN	.060	.30	3.92	4.05	1.27	3.34	1.27	1.12	.23	.14	.065	.12
(WY)	1995	1992	1990	1992	1993	1990	1995	1993	1993	1993	1993	1991

POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1987 - 1997	
ANNUAL TOTAL	2954.38		1467.17			
ANNUAL MEAN	8.07		4.02		4.68	
HIGHEST ANNUAL MEAN					7.49	1996
LOWEST ANNUAL MEAN					2.91	1995
HIGHEST DAILY MEAN	(e)90	Jan 19	36	Dec 2	110	May 26 1990
LOWEST DAILY MEAN	.15	Jul 17	.03	(a)	.02	(b)
ANNUAL SEVEN-DAY MINIMUM	.19	Jul 11	.04	Sep 14	.03	Aug 23 1993
INSTANTANEOUS PEAK FLOW			100	Dec 1	340	Feb 9 1994
INSTANTANEOUS PEAK STAGE			3.45	Dec 1	7.23	Feb 9 1994
INSTANTANEOUS LOW FLOW			.03	(c)	.01	(b)
ANNUAL RUNOFF (CFSM)	3.51		1.75		2.03	
ANNUAL RUNOFF (INCHES)	47.78		23.73		27.64	
10 PERCENT EXCEEDS	17		8.6		11	
50 PERCENT EXCEEDS	4.9		2.8		3.0	
90 PERCENT EXCEEDS	1.2		.10		.14	

e Estimated.  
a Aug. 12, 16, Sept. 15-19, 23-27.  
b Aug. 4, 5, Oct. 11-13, 1995.  
c Aug. 16, 17, Sept. 19, 20, 27, 28.



## POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1987 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1986 to September 1997 (Discontinued).

pH: November 1986 to September 1997 (Discontinued).

WATER TEMPERATURE: November 1986 to September 1997 (Discontinued).

INSTRUMENTATION.--Water-quality monitor since November 1986. Digital recorder set for one-hour-interval punches.

REMARKS.--Periods of missing record due to monitor/probe malfunction or dead batteries.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 366 microsiemens, July 16, 1996; minimum, 54 microsiemens, Feb. 9, 1994.

pH: Maximum, 9.4 units, Sept. 15, 1993; minimum, 4.9 units, Nov. 21, 22, 1988.

WATER TEMPERATURE: Maximum, 25.6°C, Aug. 16, 1997; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 355 microsiemens, July 29; minimum, 72 microsiemens, Nov. 26, Jan. 28.

WATER TEMPERATURE: Maximum, 25.6°C, Aug. 16; minimum, 0.0°C, on many days during winter periods.

pH: Maximum, 8.4 units, July 21, Sept., 16, 18; minimum, 5.6 units, May 26.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	211	136	152	154	147	149	97	77	88	127	125	126
2	143	138	140	149	147	148	89	77	82	129	126	128
3	188	140	147	150	149	149	101	89	94	129	126	127
4	143	140	142	215	147	176	108	99	102	137	127	130
5	149	143	144	210	204	207	112	108	110	135	127	131
6	149	145	147	230	159	196	120	111	116	135	128	133
7	230	146	154	241	169	201	121	118	119	137	134	135
8	150	143	147	190	102	151	121	119	120	142	134	137
9	162	138	146	106	90	95	128	120	125	137	134	136
10	142	132	137	136	92	117	130	128	129	137	133	136
11	159	128	134	101	95	98	130	108	121	142	133	136
12	201	134	153	109	101	105	111	108	109	142	141	141
13	201	138	158	114	108	111	111	107	108	145	141	143
14	218	141	167	119	114	116	111	107	109	145	142	143
15	252	142	167	123	119	121	116	108	111	144	140	143
16	264	144	171	131	123	126	120	116	118	140	115	122
17	286	147	166	139	123	129	126	118	121	131	122	126
18	214	130	158	128	124	125	129	125	127	133	130	131
19	145	105	130	124	120	122	129	126	128	133	130	132
20	126	74	92	123	120	122	134	126	128	132	124	130
21	98	81	87	129	123	127	137	134	136	138	124	131
22	123	92	99	132	129	130	139	136	138	137	102	125
23	124	94	101	133	130	131	138	126	131	122	91	102
24	136	104	111	133	132	133	129	100	116	92	80	89
25	142	119	131	137	119	133	108	101	103	88	78	85
26	212	141	156	119	72	84	112	108	110	92	83	89
27	185	155	162	92	81	88	120	109	115	93	89	91
28	229	156	165	102	90	97	122	119	121	89	72	78
29	209	141	163	112	99	106	122	116	120	93	80	86
30	220	146	160	112	89	104	121	118	119	103	90	97
31	231	151	163	---	---	---	127	118	121	111	100	106
MONTH	286	74	144	241	72	130	139	77	116	145	72	121

POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

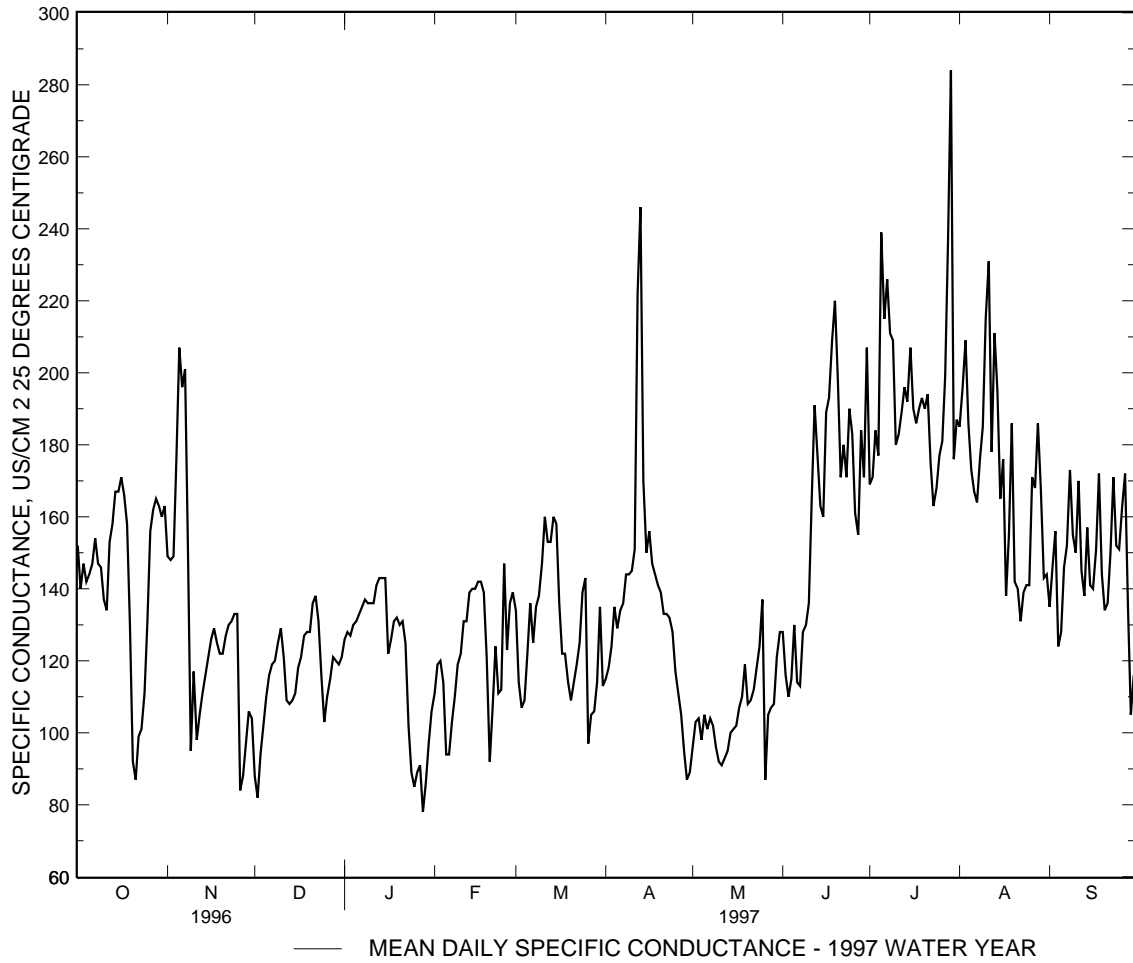
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	113	110	111	190	110	134	121	112	115	103	94	96
2	121	112	119	142	100	114	143	113	118	106	98	103
3	121	119	120	113	100	107	163	115	124	106	97	104
4	119	103	114	143	90	109	186	122	135	103	94	98
5	103	90	94	143	100	122	142	125	129	140	102	105
6	101	91	94	153	113	136	137	133	134	105	93	101
7	109	100	103	150	90	125	137	134	136	105	102	104
8	113	109	110	152	122	135	168	136	144	112	92	102
9	123	112	119	153	122	138	174	136	144	102	92	96
10	128	120	122	179	140	147	147	142	145	95	90	92
11	133	128	131	193	143	160	229	144	151	93	89	91
12	133	130	131	171	120	153	239	147	222	94	91	93
13	143	132	139	180	120	153	292	225	246	99	91	95
14	141	139	140	181	150	160	241	145	170	106	97	100
15	141	139	140	199	132	158	166	147	150	106	99	101
16	143	140	142	170	122	136	208	148	156	107	99	102
17	143	140	142	123	120	122	158	141	147	109	105	107
18	148	128	139	123	120	122	148	139	144	115	107	110
19	142	90	121	122	108	114	142	139	141	162	107	119
20	99	90	92	133	102	109	141	137	139	135	104	108
21	162	90	107	153	110	114	139	127	133	121	103	109
22	139	98	124	123	112	119	137	128	133	132	109	112
23	138	101	111	140	120	125	137	127	132	152	111	118
24	118	110	112	174	131	139	129	119	128	161	112	124
25	188	118	147	182	139	143	119	109	117	153	90	137
26	128	120	123	139	90	97	116	107	111	110	73	87
27	190	122	136	144	91	105	113	94	105	132	80	105
28	193	131	139	113	101	106	99	88	95	153	90	107
29	---	---	---	155	103	114	89	86	87	150	100	108
30	---	---	---	195	112	135	95	86	89	160	110	121
31	---	---	---	114	112	113	---	---	---	182	120	128
MONTH	193	90	122	199	90	128	292	86	137	182	73	106
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	150	120	128	242	153	169	249	165	185	220	118	135
2	159	102	116	242	159	171	263	166	196	220	126	146
3	119	100	110	253	160	184	274	172	209	219	121	156
4	158	100	115	219	167	177	274	132	186	163	116	124
5	202	100	130	321	218	239	258	131	173	160	122	128
6	153	110	114	269	176	215	248	151	167	224	129	146
7	122	110	113	282	216	226	235	151	164	343	129	152
8	179	112	128	260	187	211	245	159	176	223	138	173
9	191	120	130	284	177	209	243	160	185	258	136	155
10	192	129	136	242	158	180	264	167	215	216	127	150
11	240	130	165	273	175	183	329	169	231	250	120	170
12	222	142	191	272	178	189	273	166	178	216	125	145
13	223	129	177	272	179	196	276	138	211	204	123	138
14	209	130	163	230	187	192	241	145	195	213	130	157
15	231	138	160	284	187	207	239	146	165	218	129	141
16	241	141	189	191	179	190	263	155	176	210	122	140
17	251	151	193	219	128	186	188	92	138	337	127	151
18	240	158	209	201	181	190	216	106	155	292	127	172
19	252	158	220	283	178	193	228	137	186	180	126	144
20	270	159	198	276	178	190	186	123	142	194	109	134
21	252	160	171	296	181	194	206	123	140	168	116	136
22	251	168	180	232	148	175	197	125	131	240	116	150
23	173	168	171	211	150	163	205	123	139	257	138	171
24	211	170	190	291	113	168	203	122	141	153	150	152
25	191	180	183	250	155	177	199	121	141	153	148	151
26	193	109	161	235	160	181	192	113	171	231	149	163
27	213	140	155	282	167	199	278	120	168	233	151	172
28	293	141	184	281	168	237	280	119	186	161	80	135
29	251	152	171	355	186	284	198	121	168	113	92	105
30	342	158	207	288	157	176	176	116	143	153	108	116
31	---	---	---	285	165	187	195	118	144	---	---	---
MONTH	342	100	162	355	113	195	329	92	171	343	80	147

POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997





POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.4	7.2	7.3	7.5	7.3	7.3	6.5	6.1	6.4	7.4	7.3	7.4
2	7.6	7.3	7.5	7.3	7.1	7.2	6.5	6.1	6.3	7.6	7.4	7.5
3	7.6	7.4	7.6	7.1	6.9	7.0	6.8	6.5	6.7	7.7	7.5	7.7
4	7.4	7.3	7.4	7.0	6.9	6.9	6.8	6.8	6.8	7.9	7.7	7.8
5	7.4	7.3	7.4	7.1	7.0	7.0	6.9	6.8	6.8	7.8	7.7	7.8
6	7.5	7.3	7.4	7.2	7.0	7.1	6.9	6.8	6.9	7.7	7.5	7.5
7	7.5	7.3	7.4	7.4	7.2	7.3	7.0	6.9	6.9	7.5	7.2	7.3
8	7.5	7.4	7.5	7.5	6.7	7.1	6.9	6.8	6.9	7.3	7.2	7.2
9	7.5	7.3	7.4	6.7	6.5	6.6	6.8	6.7	6.8	7.3	7.1	7.2
10	7.3	7.1	7.1	6.6	6.6	6.6	6.9	6.8	6.8	7.3	7.2	7.2
11	7.2	7.1	7.1	6.7	6.6	6.6	6.9	6.8	6.9	7.3	7.1	7.2
12	7.3	7.1	7.2	6.7	6.6	6.6	6.9	6.7	6.8	7.2	7.2	7.2
13	7.4	7.2	7.3	6.7	6.6	6.7	6.8	6.6	6.7	7.2	7.1	7.2
14	7.4	7.3	7.3	6.7	6.6	6.7	6.8	6.6	6.7	7.2	7.1	7.1
15	7.3	7.1	7.2	6.6	6.4	6.6	6.9	6.7	6.8	7.2	7.0	7.1
16	7.3	7.1	7.2	6.8	6.5	6.6	7.0	6.8	6.8	7.1	7.0	7.0
17	7.3	7.1	7.2	6.8	6.6	6.7	7.1	6.9	7.0	7.0	6.9	6.9
18	7.3	7.0	7.2	7.0	6.8	6.9	7.0	6.9	7.0	6.9	6.9	6.9
19	7.0	6.3	6.7	7.1	6.9	7.0	6.9	6.7	6.8	6.9	6.8	6.8
20	6.3	6.1	6.2	7.3	7.1	7.2	6.7	6.6	6.7	7.0	6.8	6.9
21	6.4	6.2	6.3	7.3	7.2	7.3	6.7	6.6	6.7	7.0	6.9	7.0
22	6.7	6.3	6.5	7.3	7.3	7.3	6.8	6.6	6.7	7.1	6.9	7.0
23	6.8	6.6	6.7	7.4	7.3	7.3	7.0	6.7	6.8	6.9	6.4	6.6
24	6.9	6.8	6.8	7.4	7.3	7.3	7.2	6.7	7.0	7.0	6.7	6.9
25	7.0	6.7	6.8	7.4	7.3	7.3	6.9	6.7	6.8	7.0	6.9	6.9
26	7.1	7.0	7.1	7.3	6.2	6.5	7.1	6.8	7.0	7.1	6.9	7.0
27	7.3	7.1	7.2	6.5	6.3	6.4	7.3	7.1	7.2	7.3	7.1	7.2
28	7.4	7.3	7.4	6.7	6.5	6.6	7.5	7.2	7.4	7.2	6.7	6.7
29	7.5	7.3	7.4	6.7	6.5	6.6	7.6	7.4	7.5	7.0	6.7	6.8
30	7.8	7.5	7.7	6.8	6.4	6.6	7.6	7.4	7.5	7.1	6.8	7.0
31	7.7	7.5	7.6	---	---	---	7.5	7.4	7.5	7.3	7.0	7.2
MONTH	7.8	6.1	7.2	7.5	6.2	6.9	7.6	6.1	6.9	7.9	6.4	7.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.3	7.2	7.3	7.8	6.8	7.2	7.1	6.8	6.9	6.9	6.6	6.7
2	7.4	7.2	7.3	6.9	6.8	6.8	7.2	6.8	7.0	7.0	6.6	6.8
3	7.4	7.2	7.3	6.8	6.6	6.7	7.3	6.9	7.1	7.1	6.7	6.9
4	7.3	7.2	7.2	6.8	6.7	6.7	7.6	7.2	7.3	6.8	6.5	6.7
5	7.3	6.8	6.9	7.0	6.7	6.9	7.5	7.2	7.3	7.1	6.6	6.8
6	7.1	6.9	7.0	6.9	6.7	6.9	7.5	7.3	7.4	6.9	6.8	6.9
7	7.2	7.0	7.1	7.2	6.9	7.1	7.6	7.3	7.4	7.1	6.7	6.9
8	7.2	7.0	7.1	7.2	7.3	7.1	7.5	7.3	7.4	7.1	6.7	6.9
9	7.2	7.1	7.2	7.6	7.2	7.4	7.4	7.2	7.3	6.8	6.6	6.7
10	7.2	7.1	7.2	7.6	7.3	7.4	7.3	7.1	7.3	6.6	6.4	6.5
11	7.2	7.1	7.2	7.7	7.4	7.5	7.5	7.2	7.3	6.9	6.3	6.6
12	7.3	7.2	7.2	7.7	7.5	7.6	7.4	7.3	7.4	7.1	6.5	6.8
13	7.2	7.1	7.1	7.8	7.5	7.7	7.4	7.3	7.4	6.9	6.7	6.8
14	7.2	7.1	7.2	7.7	7.4	7.6	7.5	7.2	7.3	7.0	6.6	6.8
15	7.3	7.2	7.2	7.6	7.3	7.4	7.5	7.2	7.4	7.3	6.8	7.0
16	7.3	7.2	7.2	7.7	7.4	7.5	7.4	7.2	7.3	7.2	6.8	7.0
17	7.3	7.2	7.2	7.8	7.6	7.7	7.2	7.1	7.1	7.3	6.9	7.1
18	7.4	7.1	7.3	7.8	7.3	7.7	7.3	7.1	7.2	7.6	7.0	7.2
19	7.2	6.8	7.1	7.3	7.0	7.1	7.3	7.1	7.2	7.7	7.2	7.4
20	7.0	6.7	6.8	7.5	7.2	7.3	7.3	7.2	7.2	7.3	6.3	6.8
21	7.3	6.8	7.0	7.6	7.3	7.4	7.2	7.1	7.2	7.1	6.2	6.7
22	7.2	7.0	7.1	7.5	7.4	7.5	7.3	7.1	7.2	7.2	6.9	7.1
23	7.2	6.9	7.1	7.7	7.5	7.6	7.3	7.2	7.2	7.2	6.9	7.1
24	7.2	7.1	7.2	7.9	7.5	7.7	7.3	7.1	7.2	7.2	6.9	7.0
25	7.2	7.0	7.2	7.6	7.4	7.5	7.1	6.8	7.0	6.9	5.8	6.7
26	7.4	7.1	7.2	7.4	6.6	6.7	7.0	6.6	6.8	6.1	5.6	5.8
27	7.8	7.4	7.7	7.1	6.6	6.8	6.8	6.5	6.7	6.4	5.9	6.1
28	7.8	7.6	7.7	7.2	6.8	7.0	6.5	6.2	6.4	6.7	6.1	6.4
29	---	---	---	7.2	7.0	7.1	6.7	6.1	6.4	6.9	6.5	6.7
30	---	---	---	7.4	7.1	7.2	6.9	6.2	6.6	7.2	6.7	7.0
31	---	---	---	7.2	6.8	6.9	---	---	---	7.2	6.9	7.1
MONTH	7.8	6.7	7.2	7.9	6.6	7.3	7.6	6.1	7.1	7.7	5.6	6.8

## POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

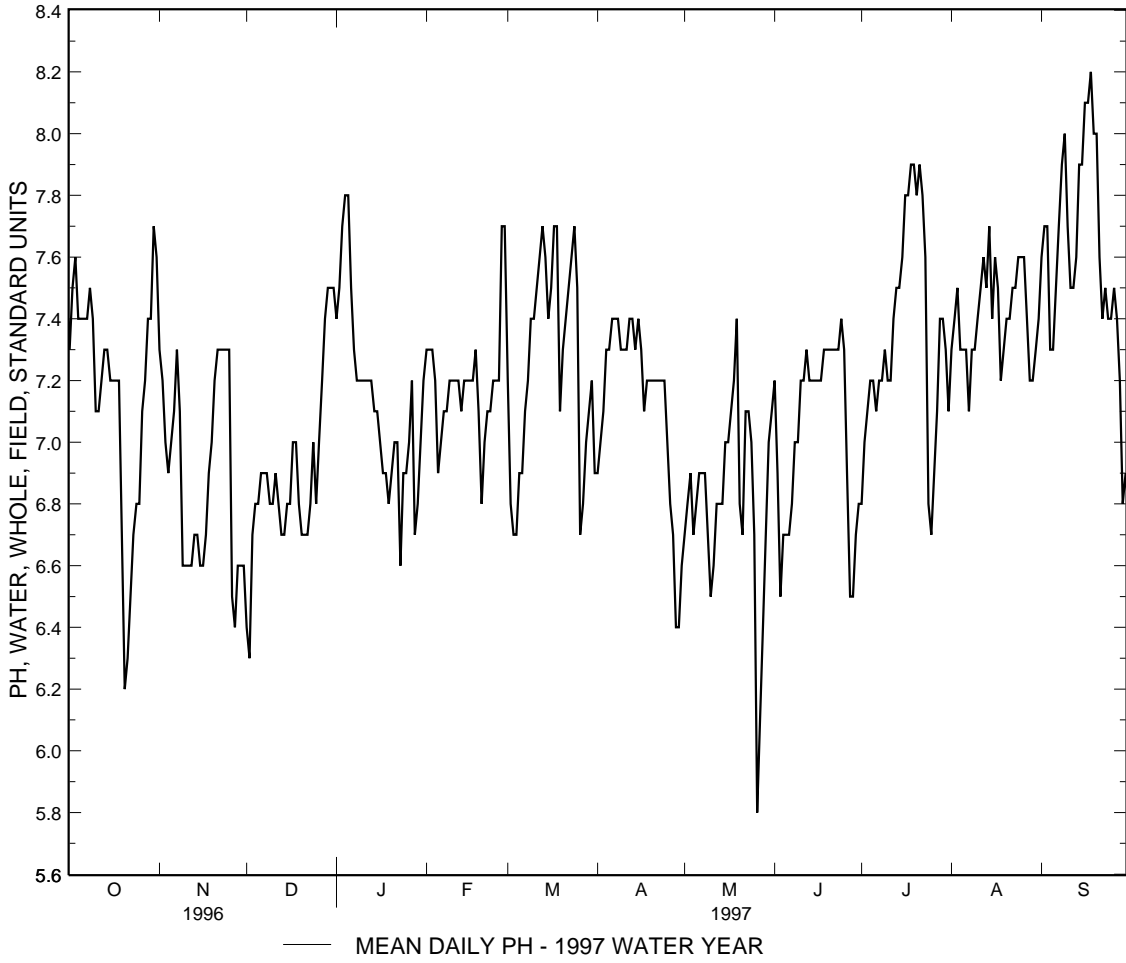
PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.3	6.9	7.2	7.0	6.7	6.8	7.6	6.9	7.3	7.8	7.4	7.6
2	7.2	6.7	6.9	7.2	6.7	7.0	7.8	7.1	7.4	8.0	7.5	7.7
3	6.8	6.0	6.5	7.4	6.9	7.1	7.9	7.2	7.5	7.8	7.4	7.7
4	6.8	6.4	6.7	7.3	7.0	7.2	7.5	7.2	7.3	7.4	7.1	7.3
5	6.9	6.6	6.7	7.4	7.0	7.2	7.5	7.1	7.3	7.6	7.1	7.3
6	6.8	6.6	6.7	7.5	6.8	7.1	7.6	6.9	7.3	7.9	7.2	7.5
7	6.8	6.6	6.8	7.5	6.9	7.2	7.6	6.8	7.1	8.0	7.4	7.7
8	7.1	6.7	7.0	7.7	6.9	7.2	7.8	6.8	7.3	8.2	7.7	7.9
9	7.1	6.9	7.0	7.6	7.1	7.3	7.6	7.0	7.3	8.3	7.8	8.0
10	7.3	7.0	7.2	7.5	7.0	7.2	7.8	7.1	7.4	8.0	7.5	7.7
11	7.3	7.2	7.2	7.7	6.9	7.2	7.9	7.1	7.5	7.7	7.4	7.5
12	7.4	7.2	7.3	7.8	7.0	7.4	8.0	7.4	7.6	7.7	7.3	7.5
13	7.3	7.1	7.2	7.8	7.1	7.5	7.7	7.4	7.5	7.9	7.3	7.6
14	7.3	7.1	7.2	7.9	7.2	7.5	7.9	7.4	7.7	8.1	7.6	7.9
15	7.3	7.1	7.2	8.0	7.2	7.6	7.7	7.2	7.4	8.1	7.7	7.9
16	7.4	6.9	7.2	8.1	7.4	7.8	7.8	7.4	7.6	8.4	7.8	8.1
17	7.3	7.1	7.2	8.2	7.5	7.8	7.7	7.3	7.5	8.3	7.9	8.1
18	7.4	7.2	7.3	8.3	7.6	7.9	7.3	7.1	7.2	8.4	8.0	8.2
19	7.3	7.2	7.3	8.2	7.6	7.9	7.5	7.2	7.3	8.3	7.7	8.0
20	7.4	7.2	7.3	8.3	7.4	7.8	7.5	7.2	7.4	8.2	7.8	8.0
21	7.3	7.2	7.3	8.4	7.5	7.9	7.5	7.2	7.4	7.8	7.3	7.6
22	7.4	7.2	7.3	8.0	7.6	7.8	7.6	7.4	7.5	7.8	7.2	7.4
23	7.4	7.3	7.3	7.8	7.2	7.6	7.6	7.5	7.5	7.9	7.3	7.5
24	7.5	7.3	7.4	7.2	6.5	6.8	7.7	7.6	7.6	7.7	7.1	7.4
25	7.5	7.3	7.3	6.8	6.5	6.7	7.7	7.6	7.6	7.8	7.2	7.4
26	7.3	6.4	6.9	7.1	6.8	6.9	7.7	7.2	7.6	7.9	7.2	7.5
27	6.6	6.4	6.5	7.5	6.9	7.1	7.7	7.1	7.4	7.9	7.1	7.4
28	6.7	6.3	6.5	7.5	7.3	7.4	7.4	7.0	7.2	7.6	6.4	7.2
29	7.0	6.4	6.7	7.7	7.3	7.4	7.3	7.1	7.2	6.9	6.5	6.8
30	7.0	6.6	6.8	7.5	7.0	7.3	7.4	7.1	7.3	7.0	6.8	6.9
31	---	---	---	7.4	6.8	7.1	7.6	7.2	7.4	---	---	---
MONTH	7.5	6.0	7.0	8.4	6.5	7.3	8.0	6.8	7.4	8.4	6.4	7.6

POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



## POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.9	9.3	10.8	7.4	5.8	6.5	7.2	4.6	6.2	5.6	3.5	4.3
2	12.4	10.2	11.4	5.8	4.0	4.9	6.2	4.6	5.3	6.6	4.1	5.7
3	12.4	8.4	10.7	4.1	3.5	3.8	5.7	4.1	4.9	8.1	6.6	7.6
4	8.4	6.6	7.3	5.3	2.5	4.0	5.4	4.0	4.6	9.2	7.7	8.4
5	7.8	5.9	6.8	6.7	4.6	5.6	4.2	3.0	3.6	8.7	6.5	8.2
6	8.5	5.6	7.1	8.1	5.3	6.7	4.1	3.4	3.7	6.5	3.0	4.4
7	8.8	6.0	7.4	10.8	7.7	9.2	4.6	3.5	4.1	3.0	.0	1.3
8	9.7	7.9	9.0	10.9	7.7	9.6	4.0	2.0	3.2	.5	.0	.1
9	9.8	8.9	9.4	7.7	5.7	6.7	2.0	1.1	1.5	.6	.0	.2
10	9.3	8.0	8.5	5.7	4.2	5.1	3.4	1.5	2.4	.6	.0	.2
11	8.0	6.3	7.6	4.2	3.3	3.8	5.2	3.4	4.3	.0	.0	.0
12	7.4	4.7	6.2	3.4	2.7	3.0	7.1	5.2	6.1	.0	.0	.0
13	9.1	6.6	7.8	3.3	2.0	2.7	6.1	4.9	5.6	.0	.0	.0
14	10.8	8.7	9.9	3.0	1.5	2.6	4.9	3.2	4.4	.0	.0	.0
15	9.7	7.4	8.7	1.6	.0	.8	3.7	2.0	3.0	.0	.0	.0
16	10.9	7.7	9.3	2.6	.3	1.4	4.2	2.5	3.4	.0	.0	.0
17	10.6	8.2	9.4	3.1	.7	2.0	5.9	3.7	4.8	.0	.0	.0
18	10.9	8.3	9.4	5.2	3.0	4.2	5.1	3.0	4.2	.0	.0	.0
19	8.3	6.4	7.2	5.2	4.0	4.7	3.2	.0	1.7	.0	.0	.0
20	8.1	6.1	7.2	4.1	2.5	3.4	.0	.0	.0	.0	.0	.0
21	8.9	7.5	8.2	3.0	2.5	2.6	.1	.0	.0	.0	.0	.0
22	10.4	8.8	9.5	2.5	2.0	2.2	1.1	.0	.6	.2	.0	.0
23	10.8	8.8	9.7	2.7	1.0	2.0	3.0	1.0	1.8	.1	.0	.0
24	9.6	8.1	8.8	4.7	2.2	3.6	4.7	2.0	3.7	.2	.0	.1
25	9.2	7.3	8.3	5.5	3.5	4.4	2.0	.4	.9	.7	.0	.5
26	10.4	8.7	9.5	6.5	3.5	5.3	2.2	.1	1.1	.2	.0	.0
27	11.2	9.9	10.5	3.5	2.0	2.7	4.1	2.0	3.1	1.6	.2	.9
28	11.8	9.6	11.1	3.0	1.5	2.2	6.1	3.5	4.7	2.0	.6	1.5
29	9.8	7.5	8.9	3.2	1.1	2.1	7.7	5.0	6.5	1.6	.0	.7
30	11.9	9.4	10.7	4.6	2.5	3.4	6.7	5.2	6.1	2.2	.0	1.0
31	10.2	7.4	8.4	---	---	---	6.7	5.2	6.1	3.2	1.0	2.2
MONTH	12.4	4.7	8.9	10.9	.0	4.0	7.7	.0	3.6	9.2	.0	1.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.2	2.0	2.7	6.2	4.5	5.2	6.2	1.6	3.6	12.1	8.4	10.0
2	3.6	1.6	2.6	7.5	5.6	6.6	7.6	2.5	4.9	11.1	6.9	8.9
3	4.2	2.5	3.2	5.7	2.6	4.3	8.6	3.5	5.9	12.6	8.8	10.5
4	3.0	2.0	2.5	6.1	4.0	4.8	10.7	6.2	8.2	8.8	6.8	7.7
5	3.0	1.6	2.5	6.2	4.2	5.3	10.4	7.5	8.9	10.8	5.8	8.2
6	2.2	1.5	1.8	6.1	3.5	4.1	10.9	8.5	9.7	9.9	7.9	8.8
7	3.2	1.5	2.3	5.0	2.5	3.5	9.7	6.2	8.4	10.5	6.4	8.2
8	2.7	1.0	1.4	5.7	3.5	4.5	7.6	4.1	5.8	9.5	5.8	7.8
9	1.6	1.1	1.3	5.7	3.5	4.5	5.0	1.9	3.1	10.0	6.9	8.9
10	1.5	.6	1.0	6.5	4.0	5.2	4.6	.4	2.4	7.0	5.9	6.4
11	.9	.0	.4	5.7	3.5	4.4	7.1	2.9	4.7	10.9	4.9	7.5
12	1.1	.1	.5	5.1	2.5	3.6	6.9	3.9	5.5	11.0	6.3	8.5
13	.1	.0	.0	5.1	2.2	3.6	6.8	3.5	5.4	9.3	6.8	8.0
14	1.1	.0	.7	6.5	4.0	5.1	5.9	3.0	4.1	8.0	5.5	7.1
15	1.5	.0	1.0	5.0	1.5	2.8	6.8	1.9	4.3	10.4	7.0	8.2
16	.9	.0	.2	3.1	.5	1.6	8.0	2.4	5.4	9.0	5.5	7.0
17	.7	.0	.1	3.7	1.0	2.4	6.9	3.1	5.4	9.9	6.3	7.8
18	2.5	.0	1.0	4.4	3.5	3.9	5.4	2.0	3.5	13.4	7.3	10.3
19	4.2	1.5	2.9	3.6	2.0	2.9	6.1	2.5	4.2	15.0	11.3	12.8
20	5.2	2.5	3.6	5.8	3.0	4.1	6.8	2.5	4.6	13.4	10.0	11.9
21	7.7	3.5	5.5	8.0	3.1	5.3	5.3	3.1	4.2	10.6	7.9	9.1
22	6.5	2.7	5.0	6.7	3.7	5.5	8.0	3.5	5.8	10.9	6.4	8.6
23	3.7	1.6	2.6	5.2	3.1	4.0	7.0	5.5	6.2	11.6	6.5	9.0
24	3.4	1.6	2.4	6.0	2.1	3.9	7.1	5.4	6.0	13.1	6.9	10.3
25	2.7	.6	1.5	8.7	3.6	5.8	7.5	5.1	6.3	12.4	10.9	11.6
26	3.7	1.0	2.3	7.7	4.1	5.4	9.0	4.4	6.7	12.6	9.8	10.9
27	8.7	3.5	6.4	8.6	3.9	5.8	6.8	5.0	6.0	12.8	8.5	10.2
28	6.7	4.6	5.5	8.7	4.5	6.6	7.9	6.0	7.0	12.1	8.0	9.8
29	---	---	---	8.5	6.5	7.3	10.6	4.4	7.3	10.3	8.4	9.4
30	---	---	---	8.6	6.5	7.3	11.5	5.1	8.4	13.7	9.5	11.4
31	---	---	---	6.6	2.5	4.3	---	---	---	12.7	9.5	11.2
MONTH	8.7	.0	2.2	8.7	.5	4.6	11.5	.4	5.7	15.0	4.9	9.2

## POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

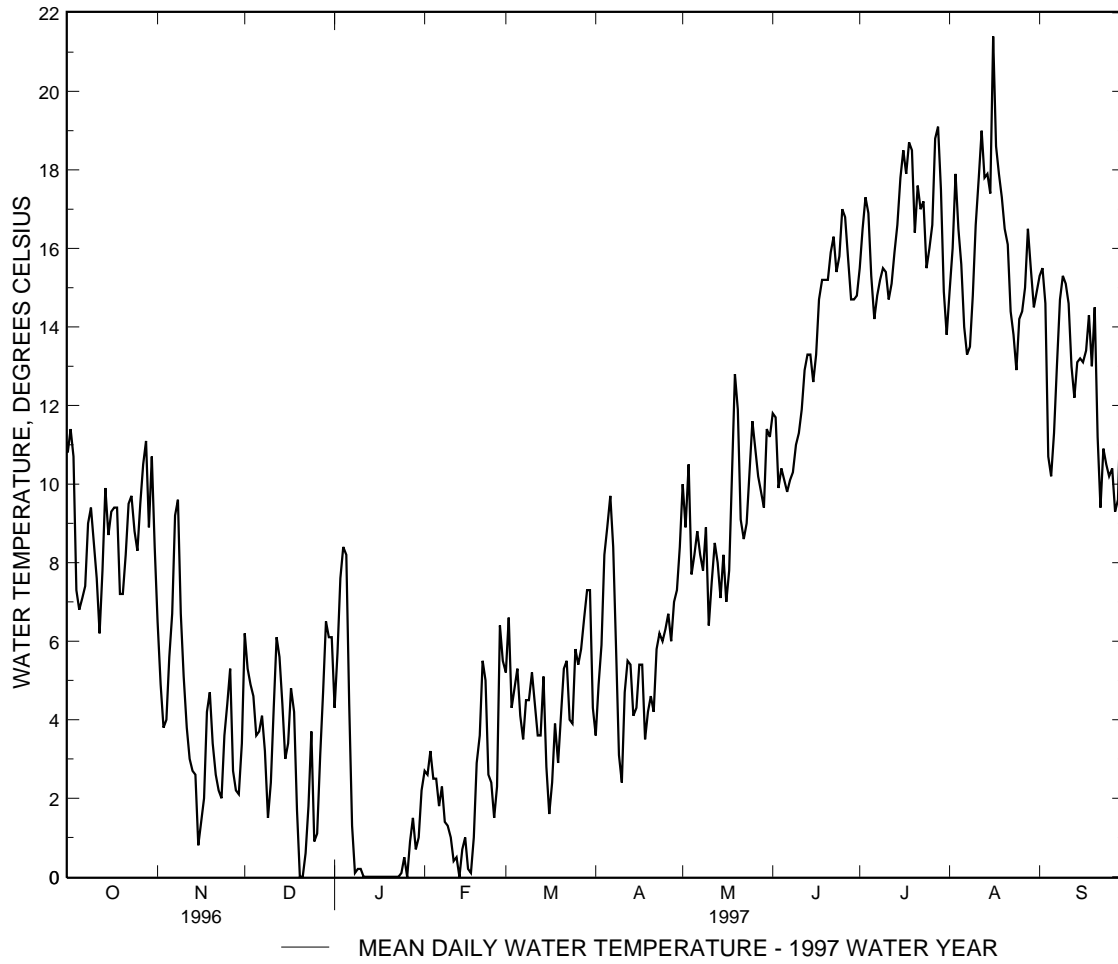
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	12.2	11.2	11.8	17.0	14.6	15.5	19.2	11.3	14.9	17.1	13.7	15.3
2	12.2	11.0	11.7	18.5	15.1	16.5	19.2	13.7	16.0	17.2	13.8	15.5
3	11.1	9.0	9.9	19.3	15.7	17.3	20.8	15.3	17.9	15.8	12.3	14.6
4	12.5	8.9	10.4	18.3	15.8	16.9	18.2	15.5	16.5	12.3	9.6	10.7
5	12.2	8.1	10.1	16.7	13.6	15.3	17.3	13.7	15.6	12.6	8.3	10.2
6	10.9	8.4	9.8	17.2	11.6	14.2	17.8	11.6	14.0	13.9	9.1	11.3
7	11.1	9.2	10.1	17.7	12.6	14.8	17.2	10.3	13.3	15.9	10.3	13.0
8	11.7	9.0	10.3	19.0	12.6	15.2	18.3	9.2	13.5	16.8	12.7	14.7
9	13.0	9.1	11.0	17.9	13.6	15.5	19.1	11.1	14.8	18.1	13.2	15.3
10	13.6	9.0	11.3	17.0	13.9	15.4	20.3	13.1	16.6	15.3	14.7	15.1
11	13.4	10.2	11.9	18.4	12.0	14.7	21.8	14.2	17.8	15.3	13.1	14.6
12	14.2	12.1	12.9	19.0	12.1	15.1	23.2	15.6	19.0	14.2	11.7	13.0
13	14.1	12.5	13.3	19.5	13.1	15.9	18.8	16.6	17.8	13.8	10.2	12.2
14	14.1	12.6	13.3	20.5	13.5	16.6	20.3	15.7	17.9	15.1	11.1	13.1
15	14.5	10.6	12.6	21.5	14.6	17.8	21.6	14.2	17.4	15.3	11.0	13.2
16	15.2	11.2	13.3	21.1	16.4	18.5	25.6	17.7	21.4	15.7	11.1	13.1
17	16.2	13.7	14.7	21.6	15.0	17.9	20.8	17.1	18.6	16.8	10.1	13.4
18	16.7	14.1	15.2	22.0	16.4	18.7	18.4	17.4	17.9	15.3	11.8	14.3
19	16.3	14.3	15.2	21.1	15.6	18.5	18.2	16.8	17.3	16.6	9.7	13.0
20	17.2	13.2	15.2	20.6	13.1	16.4	16.9	16.2	16.5	16.0	13.2	14.5
21	18.1	13.8	15.9	21.6	14.1	17.6	16.7	15.6	16.1	13.2	9.0	11.2
22	17.8	15.0	16.3	18.1	16.1	17.0	15.6	13.7	14.4	12.3	7.2	9.4
23	17.6	13.3	15.4	19.0	15.9	17.2	14.7	13.1	13.8	12.6	9.1	10.9
24	18.3	13.6	15.8	16.1	14.6	15.5	14.1	11.3	12.9	12.7	8.5	10.5
25	19.2	14.7	17.0	17.1	15.1	16.0	15.4	12.8	14.2	12.4	8.0	10.2
26	17.8	15.7	16.8	18.1	15.0	16.6	16.1	12.7	14.4	12.6	8.1	10.4
27	17.2	14.6	15.7	21.5	17.0	18.8	16.8	13.1	15.0	12.9	7.5	9.3
28	16.7	12.6	14.7	21.6	18.1	19.1	17.7	15.6	16.5	11.9	7.1	9.6
29	17.1	12.6	14.7	19.6	15.1	17.5	16.3	14.6	15.5	13.0	11.6	12.2
30	15.8	13.6	14.8	18.1	12.5	14.9	15.7	13.3	14.5	12.2	11.6	11.9
31	---	---	---	18.1	10.4	13.8	16.3	13.3	14.9	---	---	---
MONTH	19.2	8.1	13.4	22.0	10.4	16.5	25.6	9.2	16.0	18.1	7.1	12.5

POTOMAC RIVER BASIN

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



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POTOMAC RIVER BASIN

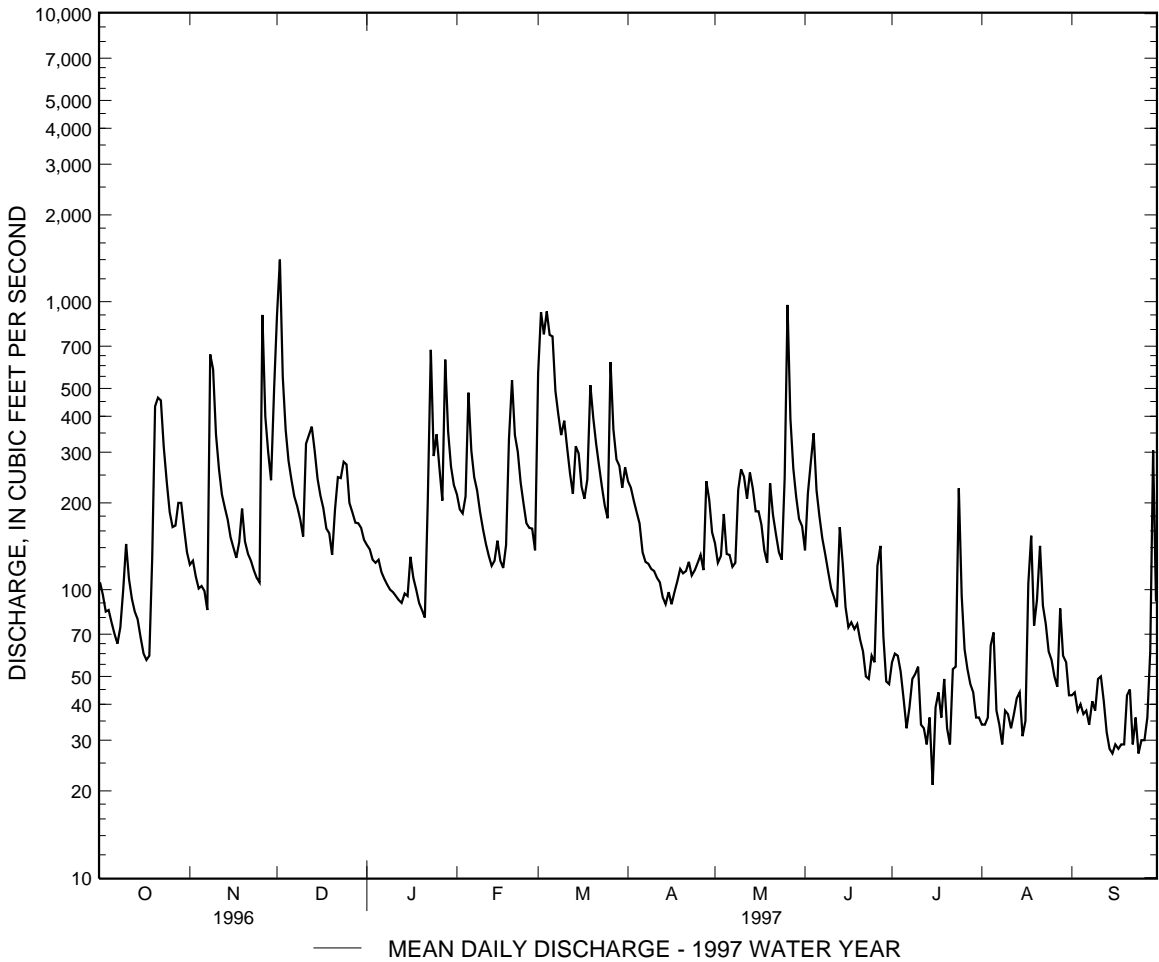
01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1956 - 1997	
ANNUAL TOTAL	116924		64232			
ANNUAL MEAN	319		176		175	
HIGHEST ANNUAL MEAN					297	1996
LOWEST ANNUAL MEAN					115	1959
HIGHEST DAILY MEAN	4380	Jan 19	1400	Dec 2	4530	Feb 9 1994
LOWEST DAILY MEAN	41	(a)	21	Jul 15	3.1	Sep 9 1965
ANNUAL SEVEN-DAY MINIMUM	52	Jul 11	29	Sep 13	3.6	Sep 23 1959
INSTANTANEOUS PEAK FLOW			2780	Dec 2	(b)11500	Nov 5 1985
INSTANTANEOUS PEAK STAGE			6.80	Dec 2	13.14	Nov 5 1985
INSTANTANEOUS LOW FLOW			16	(c)	2.9	Sep 10 1965
ANNUAL RUNOFF (CFSM)	4.38		2.41		2.40	
ANNUAL RUNOFF (INCHES)	59.58		32.73		32.56	
10 PERCENT EXCEEDS	626		345		386	
50 PERCENT EXCEEDS	208		127		105	
90 PERCENT EXCEEDS	84		38		21	

a July 13, 14.

b From rating curve extended above 3,000 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 10.30 ft.

c July 15, 16, Aug. 8.



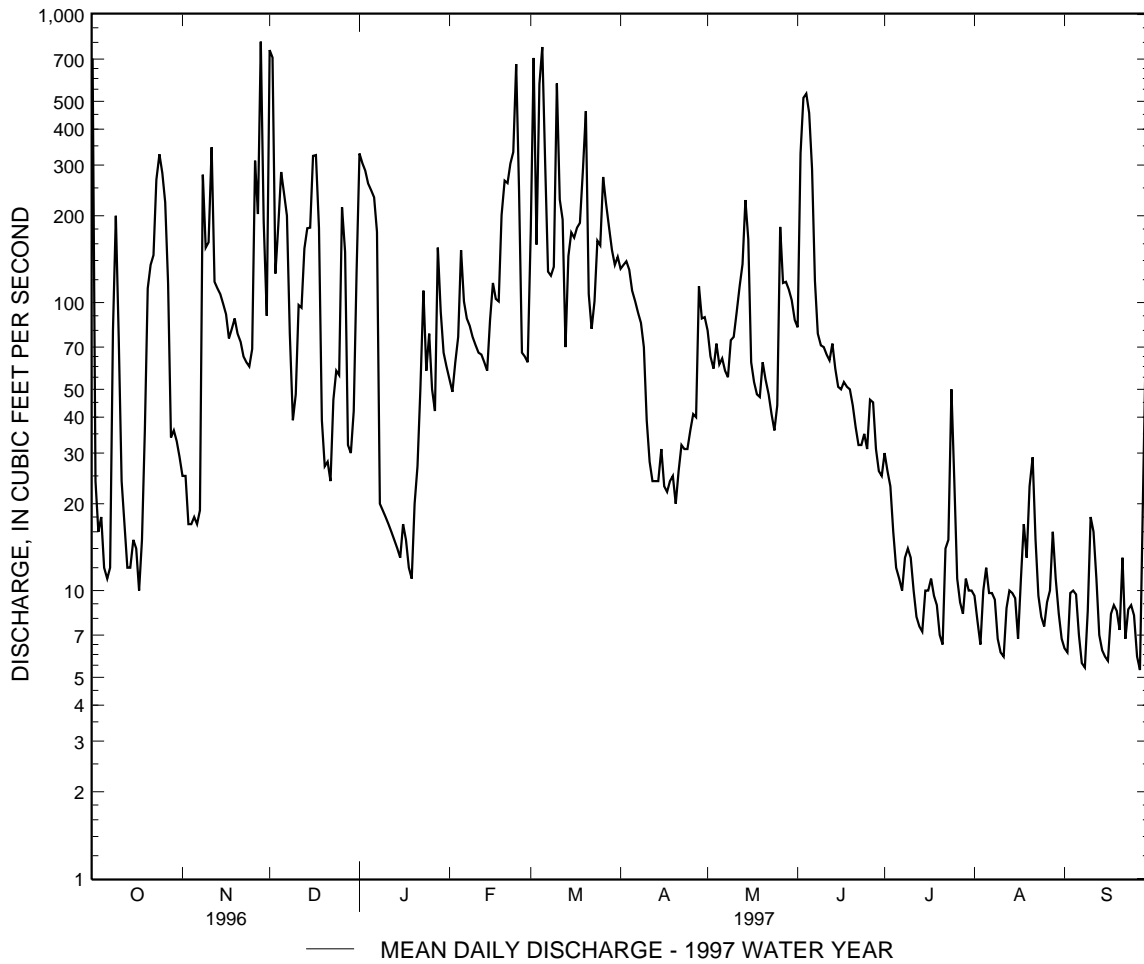


POTOMAC RIVER BASIN

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1962 - 1997	
ANNUAL TOTAL	67389		35187.8			
ANNUAL MEAN	184		(a)96.4		(a)99.6	
HIGHEST ANNUAL MEAN					166	1996
LOWEST ANNUAL MEAN					42.0	1964
HIGHEST DAILY MEAN	2900	Sep 6	806	Nov 28	9880	Nov 5 1985
LOWEST DAILY MEAN	10	Oct 17	5.3	Sep 27	1.3	Aug 28 1988
ANNUAL SEVEN-DAY MINIMUM	14	Oct 12	7.2	Sep 13	1.7	Aug 28 1988
INSTANTANEOUS PEAK FLOW			1900	Dec 1	(b)14000	Nov 5 1985
INSTANTANEOUS PEAK STAGE			6.95	Dec 1	(c)16.41	Nov 5 1985
INSTANTANEOUS LOW FLOW			5.1	Sep 28	1.3	(d)
10 PERCENT EXCEEDS	379		245		233	
50 PERCENT EXCEEDS	107		51		49	
90 PERCENT EXCEEDS	27		8.9		8.7	

- a Unadjusted.
- b From rating curve extended above 7,500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.
- c From floodmarks.
- d Aug. 22, 23, 28, 29, 1988.



## POTOMAC RIVER BASIN

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) since December 1961.

REMARKS.--Upstream reservoir regulation defined on the discharge manuscript. No temperature record Oct. 16, 1995, to Apr. 23, 1996, due to equipment removal, and Aug. 19 to Sept. 24 1996 due to equipment malfunction. No temperature record Oct. 12, to Nov. 18, 1996, due to equipment malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 27.5°C, Aug. 14, 1984, July 19, 1990; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES.--

(1996 WATER YEAR).--Maximum recorded, 25.0°C, Aug. 13; minimum recorded, 10.0°C, May 1.

(1997 WATER YEAR).--Maximum, 25.0°C, July 18; minimum, 0.0°C, Jan. 11-31.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996  
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	---	---	---	---	---	13.5	21.0	21.5	21.0	---
2	16.0	---	---	---	---	---	---	12.5	21.5	21.5	20.0	---
3	15.0	---	---	---	---	---	---	13.5	22.0	21.0	22.0	---
4	15.0	---	---	---	---	---	---	15.0	20.5	18.5	22.5	---
5	15.0	---	---	---	---	---	---	16.0	19.0	17.5	22.0	---
6	16.5	---	---	---	---	---	---	18.0	20.0	19.0	22.0	---
7	16.5	---	---	---	---	---	---	17.0	21.5	19.0	23.0	---
8	15.5	---	---	---	---	---	---	14.5	21.5	19.0	23.0	---
9	14.0	---	---	---	---	---	---	15.5	21.5	19.0	21.5	---
10	12.5	---	---	---	---	---	---	17.5	20.5	19.0	21.0	---
11	13.0	---	---	---	---	---	---	17.0	20.5	18.5	20.5	---
12	12.5	---	---	---	---	---	---	16.0	20.5	18.5	20.5	---
13	12.5	---	---	---	---	---	---	15.0	20.0	19.5	25.0	---
14	13.5	---	---	---	---	---	---	14.5	21.0	20.5	20.5	---
15	13.0	---	---	---	---	---	---	17.0	21.0	20.5	22.0	---
16	---	---	---	---	---	---	---	18.0	21.0	20.5	22.0	---
17	---	---	---	---	---	---	---	16.0	22.0	20.5	22.5	---
18	---	---	---	---	---	---	---	20.0	22.0	20.5	22.5	---
19	---	---	---	---	---	---	---	20.5	22.0	18.5	---	---
20	---	---	---	---	---	---	---	21.0	21.5	20.5	---	---
21	---	---	---	---	---	---	---	21.0	21.0	21.5	---	---
22	---	---	---	---	---	---	---	19.0	21.0	21.5	---	---
23	---	---	---	---	---	---	---	19.5	22.0	21.5	---	---
24	---	---	---	---	---	---	---	14.5	19.5	22.0	22.0	---
25	---	---	---	---	---	---	---	14.5	19.0	21.5	22.0	17.0
26	---	---	---	---	---	---	---	14.5	18.0	20.0	19.5	17.0
27	---	---	---	---	---	---	---	14.0	17.0	20.0	19.5	18.0
28	---	---	---	---	---	---	---	14.0	16.5	19.5	19.5	18.0
29	---	---	---	---	---	---	---	14.5	17.5	20.5	19.5	18.0
30	---	---	---	---	---	---	---	14.5	20.5	21.5	19.5	22.0
31	---	---	---	---	---	---	---	20.5	---	20.5	---	---
MAX	16.5	---	---	---	---	---	14.5	21.0	22.0	22.0	25.0	22.0

WTR YR 1996 MAX 25.0

## POTOMAC RIVER BASIN

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

## WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996  
DAILY MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	---	---	---	---	---	---	10.0	20.0	21.0	19.5	---
2	13.5	---	---	---	---	---	---	10.5	21.0	21.0	19.5	---
3	14.5	---	---	---	---	---	---	13.0	20.5	18.5	20.0	---
4	15.0	---	---	---	---	---	---	13.5	19.0	15.5	22.0	---
5	15.0	---	---	---	---	---	---	13.0	17.5	15.5	22.0	---
6	15.0	---	---	---	---	---	---	16.0	17.0	16.5	22.0	---
7	15.5	---	---	---	---	---	---	13.0	19.5	16.5	22.0	---
8	14.0	---	---	---	---	---	---	13.0	20.5	17.5	21.5	---
9	12.5	---	---	---	---	---	---	14.5	20.0	18.5	21.0	---
10	12.5	---	---	---	---	---	---	15.0	19.5	18.5	20.5	---
11	12.5	---	---	---	---	---	---	16.0	20.5	18.5	20.5	---
12	12.5	---	---	---	---	---	---	14.5	19.5	18.5	20.5	---
13	12.5	---	---	---	---	---	---	14.5	19.0	18.5	20.5	---
14	12.5	---	---	---	---	---	---	12.5	19.0	18.5	20.5	---
15	12.0	---	---	---	---	---	---	14.0	19.5	19.0	20.5	---
16	---	---	---	---	---	---	---	16.0	19.5	18.5	21.5	---
17	---	---	---	---	---	---	---	14.5	20.0	18.5	22.0	---
18	---	---	---	---	---	---	---	15.0	22.0	18.5	22.5	---
19	---	---	---	---	---	---	---	19.5	19.5	18.5	---	---
20	---	---	---	---	---	---	---	19.5	20.5	18.5	---	---
21	---	---	---	---	---	---	---	19.0	21.0	20.5	---	---
22	---	---	---	---	---	---	---	18.0	20.5	19.5	---	---
23	---	---	---	---	---	---	---	18.0	21.0	20.0	---	---
24	---	---	---	---	---	---	13.0	19.0	21.5	21.5	---	---
25	---	---	---	---	---	---	13.5	18.0	20.0	19.5	---	17.0
26	---	---	---	---	---	---	14.0	17.0	19.5	19.5	---	17.0
27	---	---	---	---	---	---	13.5	15.0	19.5	19.5	---	17.0
28	---	---	---	---	---	---	13.5	15.0	19.0	19.5	---	18.0
29	---	---	---	---	---	---	13.5	16.5	19.5	19.5	---	18.0
30	---	---	---	---	---	---	13.5	17.5	20.5	19.5	---	18.0
31	---	---	---	---	---	---	---	19.0	---	19.5	---	---
MIN	12.0	---	---	---	---	---	13.0	10.0	17.0	15.5	19.5	17.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.5	---	14.0	9.0	1.0	8.0	9.0	16.5	17.0	20.0	20.0	19.5
2	19.5	---	11.5	9.0	1.5	12.5	10.0	16.0	17.0	23.0	20.0	19.5
3	18.0	---	9.5	9.0	2.5	8.0	12.5	16.5	17.0	24.5	21.0	19.0
4	18.0	---	8.0	10.0	2.5	9.5	13.5	15.5	17.5	23.0	20.5	16.0
5	18.0	---	8.5	9.5	1.0	12.5	13.0	15.5	18.0	21.0	19.5	15.0
6	18.5	---	8.5	8.5	1.0	12.0	13.5	15.0	18.0	20.0	19.0	14.5
7	18.5	---	9.5	7.5	3.0	6.5	13.5	15.0	17.0	21.0	19.5	17.5
8	18.5	---	9.5	4.0	3.0	6.0	12.0	13.5	16.0	21.5	19.0	17.0
9	19.0	---	5.5	.5	3.0	6.0	10.5	14.0	17.5	20.5	18.0	16.0
10	19.0	---	4.0	.5	3.0	11.0	9.0	12.5	17.5	21.0	19.5	15.5
11	18.5	---	5.0	.5	3.0	10.0	10.0	15.5	17.0	22.5	20.0	15.0
12	---	---	6.0	.0	3.0	9.0	9.0	16.0	17.0	23.5	20.0	15.0
13	---	---	6.5	.0	2.5	8.0	9.0	15.0	17.0	23.5	19.5	14.0
14	---	---	7.0	.0	2.5	7.0	10.0	15.0	17.0	24.5	19.0	14.0
15	---	---	7.0	.0	4.5	7.0	10.0	16.5	18.5	24.5	19.0	13.5
16	---	---	10.0	.0	5.0	6.0	11.5	13.5	18.5	24.5	23.5	14.5
17	---	---	10.0	.0	5.0	8.0	11.0	14.5	19.5	24.5	23.0	14.5
18	---	---	10.0	.0	5.0	8.0	10.0	16.5	20.5	25.0	21.0	15.0
19	---	11.0	6.0	.5	5.0	8.5	11.0	18.5	20.5	24.0	20.5	14.5
20	---	11.0	2.0	.0	5.0	11.0	11.5	18.0	20.5	23.0	20.0	14.5
21	---	11.0	1.5	.0	7.5	8.5	10.0	16.0	22.5	24.5	18.0	14.0
22	---	11.0	1.5	.0	7.5	7.0	11.5	14.5	22.5	23.0	18.0	12.5
23	---	10.5	2.0	.0	9.0	6.0	11.0	15.5	22.5	21.0	17.0	12.5
24	---	10.5	3.5	.0	9.5	10.0	12.0	17.5	23.0	19.5	16.5	12.0
25	---	11.0	2.5	.0	8.0	11.5	11.5	17.0	23.0	18.5	15.5	14.5
26	---	11.0	7.0	.0	6.0	11.5	13.0	15.5	23.0	21.0	16.0	16.0
27	---	10.5	7.5	.0	7.5	11.5	12.0	17.0	21.0	24.0	19.0	15.0
28	---	14.5	7.0	.0	7.5	11.5	13.5	16.5	22.0	24.5	19.0	14.5
29	---	13.0	6.0	.0	---	11.5	14.0	16.0	21.5	23.0	18.5	13.5
30	---	9.5	6.0	.0	---	11.5	15.5	17.5	20.5	21.0	18.5	12.5
31	---	---	8.0	.5	---	11.0	---	17.5	---	20.0	18.0	---
MAX	21.5	14.5	14.0	10.0	9.5	12.5	15.5	18.5	23.0	25.0	23.5	19.5

## POTOMAC RIVER BASIN

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

## WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
DAILY MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.5	---	9.5	8.0	.5	6.0	6.5	15.5	17.0	20.0	19.0	15.5
2	18.0	---	9.5	9.0	1.0	8.0	8.0	13.5	16.0	20.0	19.0	16.0
3	18.0	---	7.0	9.0	1.5	4.0	10.0	15.0	16.0	21.5	18.5	16.0
4	18.0	---	6.5	9.0	1.0	4.0	11.0	13.5	16.0	21.0	18.5	13.0
5	18.0	---	8.0	8.5	1.0	9.5	12.5	12.0	17.5	20.0	19.0	11.5
6	18.0	---	8.5	7.5	1.0	6.5	13.0	14.0	17.0	17.5	18.5	12.5
7	18.5	---	8.5	4.0	1.0	4.0	12.0	12.0	15.0	19.5	18.5	13.5
8	18.5	---	5.5	.5	2.5	4.0	9.5	12.0	15.0	20.0	15.5	15.5
9	18.5	---	4.0	.5	2.5	5.5	8.5	13.5	15.0	19.5	15.5	15.5
10	18.5	---	4.0	.5	3.0	6.0	6.0	12.0	15.0	19.5	16.5	15.0
11	18.5	---	4.0	.0	2.0	9.0	7.0	11.5	15.5	19.5	16.5	15.0
12	---	---	5.0	.0	2.0	8.0	8.5	13.0	17.0	19.5	18.5	13.0
13	---	---	6.0	.0	1.0	5.5	7.0	14.0	17.0	19.5	19.0	12.0
14	---	---	6.5	.0	1.0	5.0	6.0	13.5	16.5	19.5	18.5	12.0
15	---	---	6.5	.0	2.5	6.0	7.0	15.0	16.0	19.0	18.0	12.0
16	---	---	7.0	.0	4.5	5.5	7.0	11.5	17.5	21.5	19.0	11.5
17	---	---	10.0	.0	4.0	6.0	8.0	11.5	18.5	20.5	20.5	11.5
18	---	---	6.0	.0	4.0	7.0	7.0	13.0	19.0	21.5	20.0	14.5
19	---	11.0	2.0	.0	3.0	5.0	7.0	16.0	20.0	21.5	20.0	12.5
20	---	11.0	1.5	.0	3.5	8.0	7.0	16.0	19.0	19.0	18.0	14.0
21	---	11.0	1.5	.0	5.0	5.5	8.0	13.5	20.0	18.5	18.0	12.5
22	---	10.5	1.5	.0	7.5	5.5	8.0	11.5	21.0	21.0	17.0	12.5
23	---	10.5	1.5	.0	7.5	5.0	9.5	11.5	19.0	19.5	15.0	12.0
24	---	10.5	2.0	.0	7.0	6.0	9.5	13.0	20.0	18.0	12.5	12.0
25	---	10.5	1.0	.0	6.0	9.0	10.0	16.0	20.0	17.5	15.0	11.5
26	---	10.5	1.0	.0	3.5	9.0	10.0	14.0	20.0	18.5	15.0	12.5
27	---	10.0	6.0	.0	4.0	9.0	10.5	14.0	19.0	20.5	15.0	10.5
28	---	10.0	5.0	.0	6.0	10.5	10.0	14.0	19.0	21.5	18.5	11.5
29	---	9.5	5.0	.0	---	11.5	11.0	14.0	19.0	20.5	17.5	11.5
30	---	9.5	4.5	.0	---	11.0	12.5	14.0	19.0	19.5	15.0	12.0
31	---	---	4.0	.0	---	8.0	---	15.5	---	18.5	15.5	---
MIN	18.0	9.5	1.0	.0	.5	4.0	6.0	11.5	15.0	17.5	12.5	10.5

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POTOMAC RIVER BASIN

01596500 SAVAGE RIVER NEAR BARTON, MD--Continued

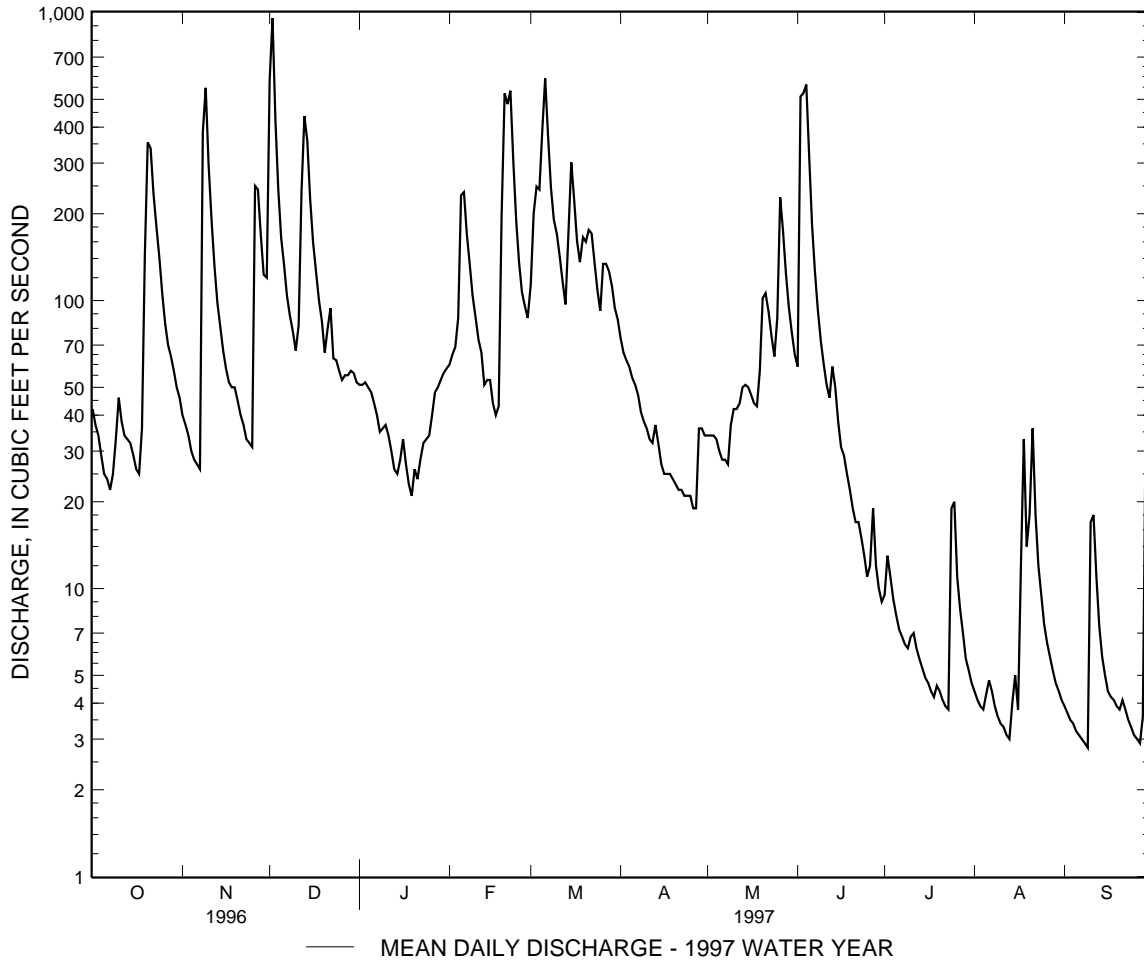
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1948 - 1997	
ANNUAL TOTAL	57750.1		29302.4		76.3	
ANNUAL MEAN	158		80.3		138	
HIGHEST ANNUAL MEAN					34.9	
LOWEST ANNUAL MEAN					2180	
HIGHEST DAILY MEAN	(e)2000	Jan 19	957	Dec 2		Nov 5 1985
LOWEST DAILY MEAN	8.1	Sep 3	(e)2.8	Sep 9	.50	(a)
ANNUAL SEVEN-DAY MINIMUM	11	Jul 11	3.1	Sep 3	.63	Aug 29 1966
INSTANTANEOUS PEAK FLOW			1380	Dec 2	(b)7510	Oct 15 1954
INSTANTANEOUS PEAK STAGE			4.07	Dec 2	8.45	Oct 15 1954
INSTANTANEOUS LOW FLOW			UNKNOWN		.40	(c)
ANNUAL RUNOFF (CFSM)	3.21		1.64		1.55	
ANNUAL RUNOFF (INCHES)	43.75		22.20		21.10	
10 PERCENT EXCEEDS	361		197		188	
50 PERCENT EXCEEDS	86		38		34	
90 PERCENT EXCEEDS	27		4.2		4.0	

e Estimated.

a Sept. 2, 3, 12, 1966

b From rating curve extended above 1,600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.

c Sept. 3, 4, 1966.



## POTOMAC RIVER BASIN

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD

LOCATION.--Lat 39°30'05", long 79°07'25", 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<sup>2</sup>.

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 sea level.

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 telemeter 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.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 1,610 ft<sup>3</sup>/s, June 4, gage height, 3.93 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	200	241	155	170	214	179	53	158	73	60	58
2	118	822	862	123	170	217	137	53	633	65	60	58
3	112	850	1210	134	170	220	124	53	1150	61	60	58
4	102	161	1200	151	173	390	124	53	1410	61	60	57
5	102	160	1180	151	177	715	124	53	812	61	60	56
6	101	152	1160	101	204	1070	124	53	466	61	59	200
7	101	165	1150	105	272	1070	107	53	344	61	59	134
8	102	174	1130	104	303	1060	99	53	343	62	59	55
9	102	178	590	105	302	1040	99	54	228	60	59	55
10	101	265	271	105	299	761	99	53	142	62	59	55
11	101	314	269	103	216	275	99	53	124	62	59	55
12	101	312	272	105	170	196	99	54	90	61	59	54
13	101	310	504	105	170	168	99	54	78	61	59	54
14	101	310	821	105	147	154	82	54	109	61	59	54
15	101	309	939	105	109	157	60	81	124	68	59	54
16	101	306	925	105	109	158	53	122	112	61	59	54
17	101	304	681	105	109	177	53	122	96	61	59	54
18	102	302	271	107	109	212	53	123	80	61	59	54
19	103	300	269	107	111	242	53	154	74	61	59	54
20	104	297	198	107	118	291	53	198	73	61	59	54
21	226	295	158	106	475	351	53	279	73	61	59	54
22	283	293	157	105	777	374	53	263	73	61	59	54
23	285	291	157	101	777	371	53	192	73	61	58	54
24	285	289	157	98	580	243	53	170	73	61	58	54
25	284	200	157	95	306	180	53	161	73	61	58	54
26	282	155	157	92	214	180	53	438	74	61	58	54
27	282	156	156	92	214	229	53	388	74	61	58	53
28	243	157	155	97	214	256	53	254	73	61	58	54
29	221	157	155	103	---	193	53	180	73	60	58	54
30	207	158	155	148	---	192	53	157	73	60	58	54
31	200	---	155	172	---	211	---	157	---	60	58	---
TOTAL	4861	8342	15862	3497	7165	11567	2450	4185	7378	1913	1825	1866
MEAN	157	278	512	113	256	373	81.7	135	246	61.7	58.9	62.2
MAX	285	850	1210	172	777	1070	179	438	1410	73	60	200
(†)	17930	15200	9110	8620	13240	18000	17880	19510	18480	15640	13020	9950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1997, BY WATER YEAR (WY)

MEAN	109	123	217	220	275	340	216	203	115	69.8	73.2	94.0
MAX	446	641	655	713	596	842	813	563	329	329	262	472
(WY)	1955	1986	1973	1952	1956	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, 1996, 18,690 acre-feet). Records furnished by U.S. Army Corps of Engineers.

POTOMAC RIVER BASIN

01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1951 - 1997	
ANNUAL TOTAL	130719		70911			
ANNUAL MEAN	357		194		171	
ANNUAL MEAN <sup>≠</sup>	357		182		171	
HIGHEST ANNUAL MEAN					300	1996
LOWEST ANNUAL MEAN					69.7	1954
HIGHEST DAILY MEAN	4320	Sep 7	1410	Jun 4	4320	Sep 7 1996
LOWEST DAILY MEAN	61	(a)	53	(b)	.60	(c)
ANNUAL SEVEN-DAY MINIMUM	62	Jul 12	53	Apr 16	.64	Aug 4 1951
INSTANTANEOUS PEAK FLOW			1610	Jun 4	9190	Sep 7 1996
INSTANTANEOUS PEAK STAGE			3.93	Jun 4	10.09	Sep 7 1996
INSTANTANEOUS LOW FLOW			(d)23	Oct 2	.35	Oct 27 1966
ANNUAL RUNOFF (CFSM)	3.37		1.83		1.61	
ANNUAL RUNOFF (INCHES)	45.87		24.89		21.90	
10 PERCENT EXCEEDS	908		347		421	
50 PERCENT EXCEEDS	215		106		85	
90 PERCENT EXCEEDS	97		54		23	

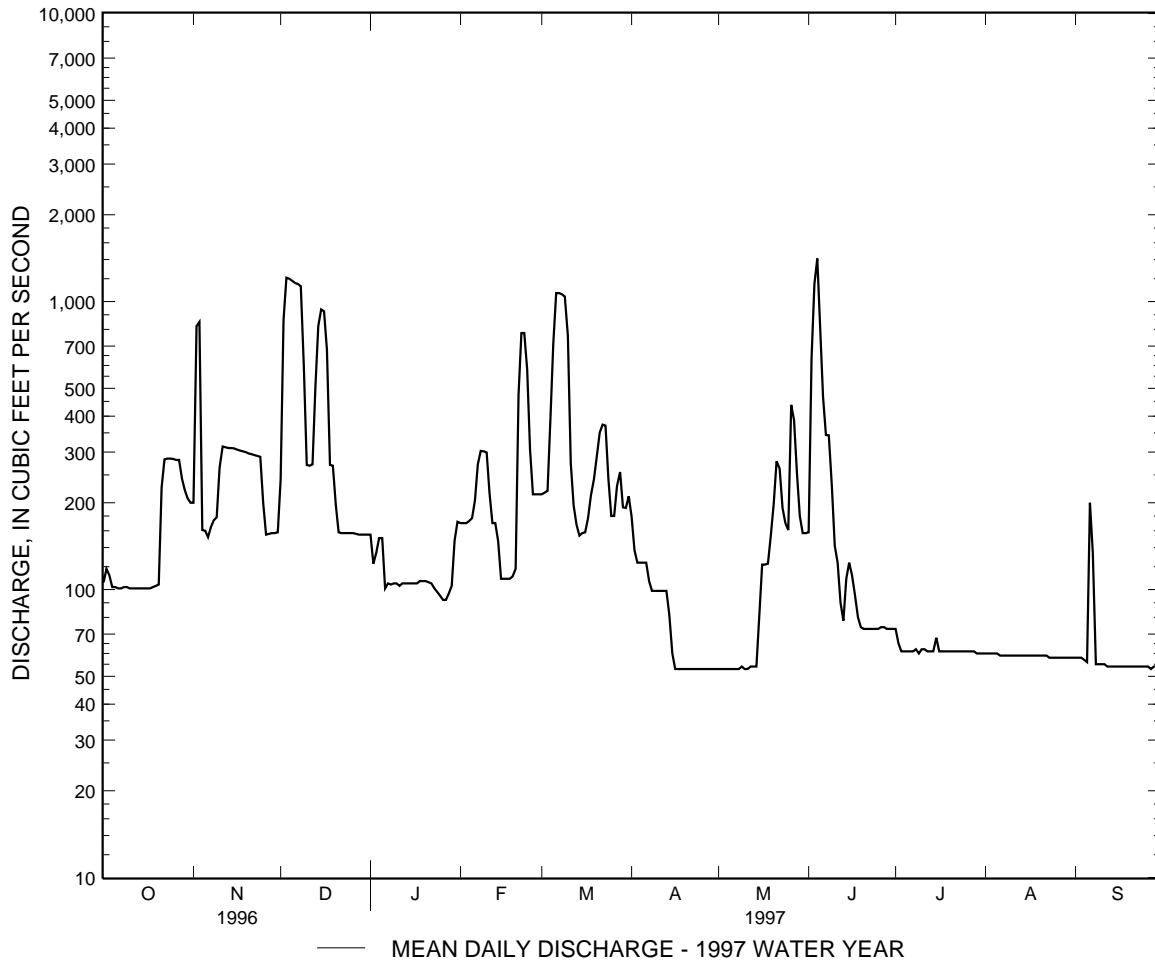
≠ Adjusted for change in reservoir contents since December 1950.

a July 13-17.

b Apr. 16-30, May 1-11, Sept. 27.

c July 27-31, Aug. 5, 6, 9, 10, 1951.

d May have been lower during period of missing gage height record on Oct. 2.





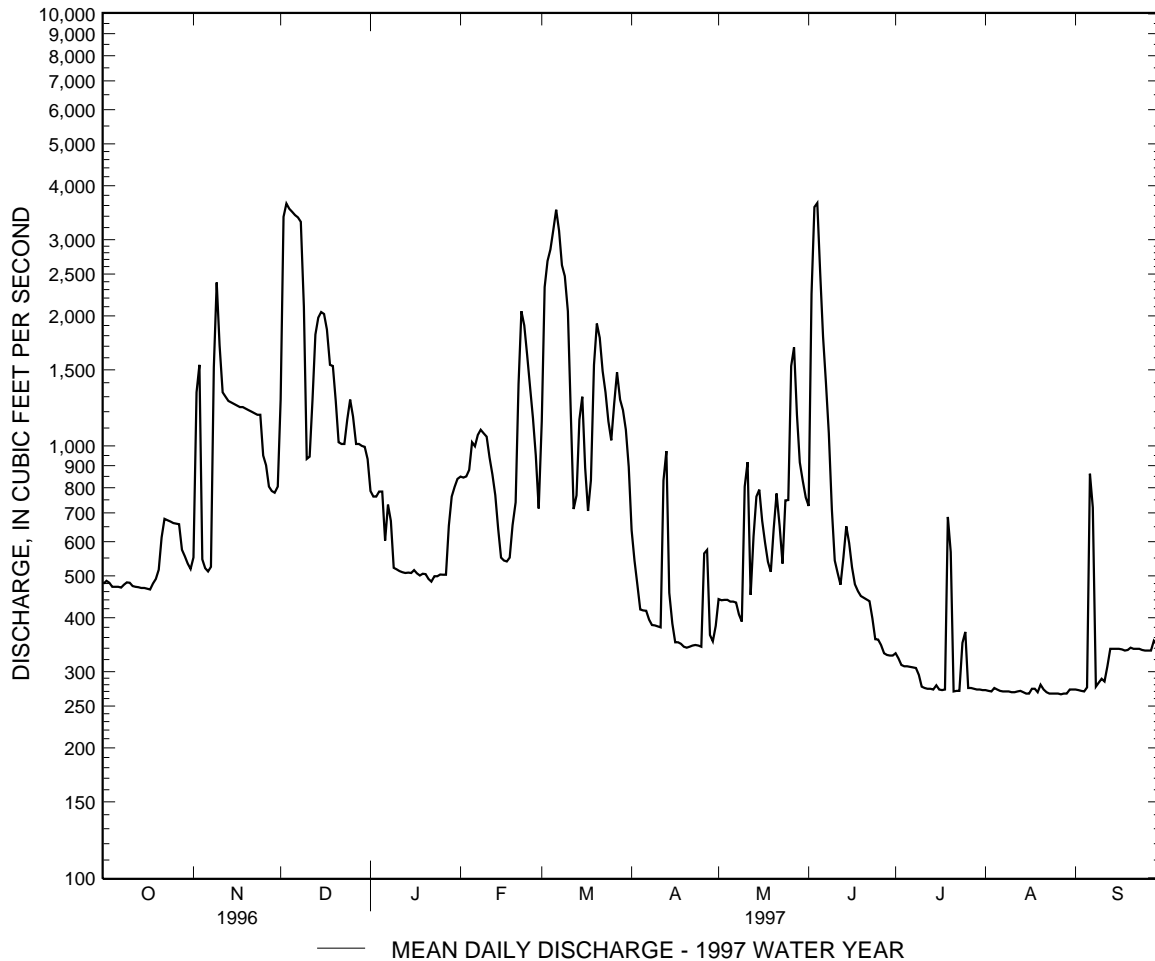
POTOMAC RIVER BASIN

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1899 - 1906 1950 - 1997	
ANNUAL TOTAL	556165		293617			
ANNUAL MEAN	1520		804		734	
ANNUAL MEAN <sup>a</sup>	1525		766		735	
HIGHEST ANNUAL MEAN					1342	
LOWEST ANNUAL MEAN					412	
HIGHEST DAILY MEAN	9130	Sep 8	3650	Jun 4	18400	Aug 18 1955
LOWEST DAILY MEAN	285	Jul 17	266	Aug 27	6.0	Sep 4 1904
ANNUAL SEVEN-DAY MINIMUM	295	Jul 12	267	Aug 23	11	Aug 29 1904
INSTANTANEOUS PEAK FLOW			3970		Jun 4	(a)39400
INSTANTANEOUS PEAK STAGE			6.68		Jun 4	17.15
INSTANTANEOUS LOW FLOW			216		Jul 15	UNKNOWN
ANNUAL RUNOFF (CFSM)	3.76		1.99		1.82	
ANNUAL RUNOFF (CFSM) <sup>a</sup>	3.77		3.46		1.82	
ANNUAL RUNOFF (INCHES)	51.21		27.04		24.68	
ANNUAL RUNOFF (INCHES) <sup>a</sup>	51.25		25.75		24.71	
10 PERCENT EXCEEDS	3380		1540		1650	
50 PERCENT EXCEEDS	1020		525		411	
90 PERCENT EXCEEDS	426		273		110	

<sup>a</sup> Adjusted for change in reservoir contents since October 1949.

a From rating curve extended above 25,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.



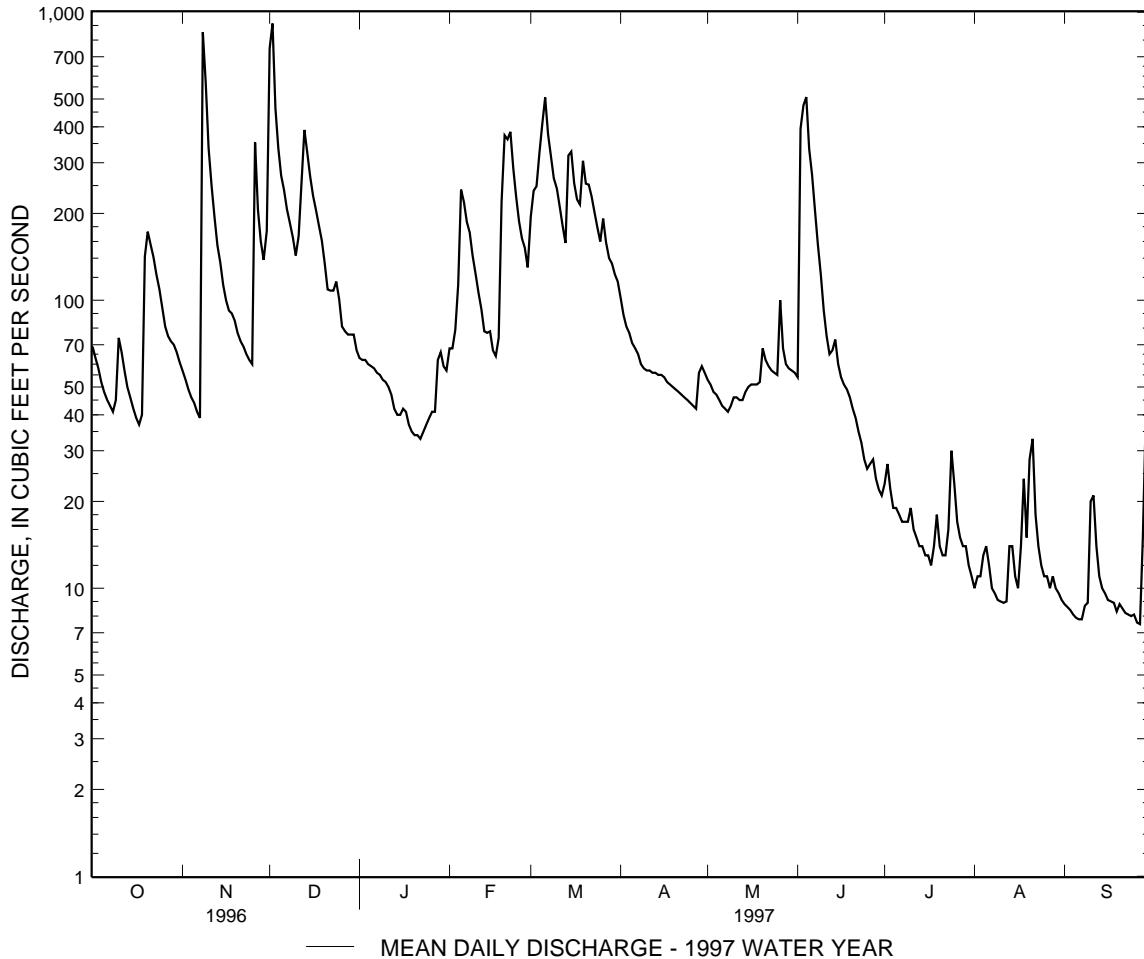


POTOMAC RIVER BASIN

01599000 GEORGES CREEK AT FRANKLIN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1905 - 1906 1930 - 1997	
ANNUAL TOTAL	59713		35638.0			
ANNUAL MEAN	163		97.6		82.8	
HIGHEST ANNUAL MEAN					136 1996	
LOWEST ANNUAL MEAN					30.7 1969	
HIGHEST DAILY MEAN	1970	Sep 6	913	Dec 2	4130	Mar 17 1936
LOWEST DAILY MEAN	17	Jul 17	7.5	Sep 27	1.6	(a)
ANNUAL SEVEN-DAY MINIMUM	19	Jul 11	8.0	Sep 21	1.6	Sep 29 1930
INSTANTANEOUS PEAK FLOW			1640	Dec 1	(b)8500	Mar 17 1936
INSTANTANEOUS PEAK STAGE			7.12	Dec 1	(c)9.60	Mar 17 1936
INSTANTANEOUS LOW FLOW			7.2	(d)	1.6	(f)
ANNUAL RUNOFF (CFSM)	2.25		1.35		1.14	
ANNUAL RUNOFF (INCHES)	30.68		18.31		15.55	
10 PERCENT EXCEEDS	328		246		200	
50 PERCENT EXCEEDS	109		56		38	
90 PERCENT EXCEEDS	39		11		7.2	

- a Sept. 29, 30, 1930.
- b From rating curve extended above 2,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.
- c At site then in use.
- d Sept. 8, 26-28.
- f Sept. 29 to Oct. 13, 1930.







POTOMAC RIVER BASIN

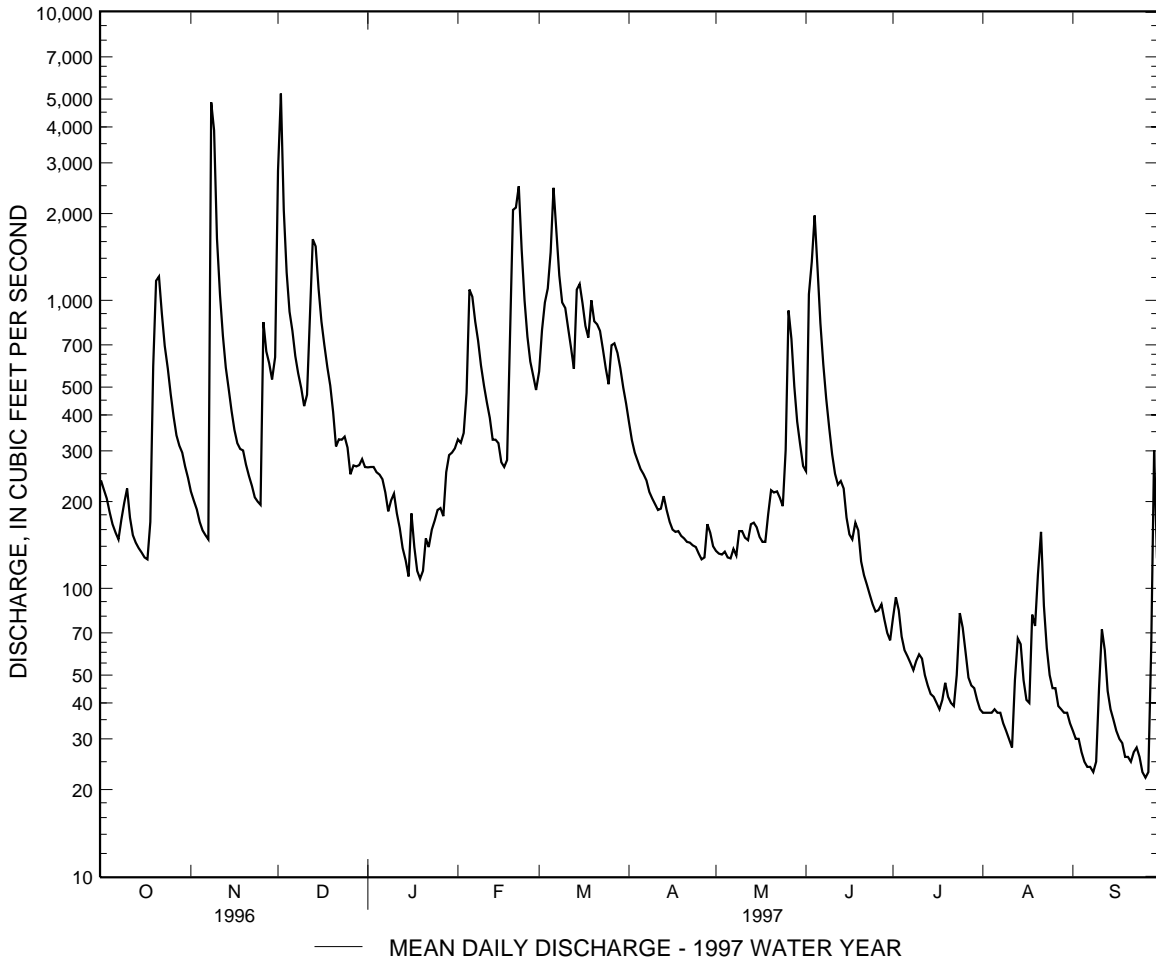
01601500 WILLS CREEK NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1905 - 1906	
					1930 - 1997	
ANNUAL TOTAL	253891		142311			
ANNUAL MEAN	694		390		338	
HIGHEST ANNUAL MEAN					599 1996	
LOWEST ANNUAL MEAN					122 1954	
HIGHEST DAILY MEAN	19200	Jan 19	5220	Dec 2	19200	Jan 19 1996
LOWEST DAILY MEAN	45	Sep 3	22	Sep 26	10	(a)
ANNUAL SEVEN-DAY MINIMUM	53	Aug 28	25	Sep 21	10	Oct 8 1930
INSTANTANEOUS PEAK FLOW			8390	Nov 8	(b)45900	Jan 19 1996
INSTANTANEOUS PEAK STAGE			8.87	Nov 8	(c)23.11	Jan 19 1996
INSTANTANEOUS LOW FLOW			22	Sep 25	9.0	Oct 14 1930
ANNUAL RUNOFF (CFSM)	2.81		1.58		1.37	
ANNUAL RUNOFF (INCHES)	38.24		21.43		18.57	
10 PERCENT EXCEEDS	1350		929		800	
50 PERCENT EXCEEDS	356		195		150	
90 PERCENT EXCEEDS	112		38		30	

a Oct. 8-10, 1930.

b From rating curve extended above 11,000 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights of 13.45 and 20.2 ft.

c From floodmarks at present site.



## POTOMAC RIVER BASIN

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD

LOCATION.--Lat 39°37'18", long 78°46'24", 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.--875 mi<sup>2</sup>.

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).

GAGE.--Water-stage recorder. Datum of gage is 585.22 ft above sea level. 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 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, 29.2 ft June 1, 1889, discharge, about 89,000 ft<sup>3</sup>/s. Flood of Mar. 29, 1924, reached a stage of 28.4 ft, discharge, about 82,000 ft<sup>3</sup>/s.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 14,800 ft<sup>3</sup>/s, Dec. 2, gage height, 12.91 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	974	993	5800	1320	1480	1830	1490	710	1140	604	335	323
2	927	1240	12400	1280	1490	3520	1230	735	3230	601	335	320
3	921	2480	7620	1230	1500	4730	1120	733	6290	532	336	322
4	857	1310	5990	1260	1740	5280	991	756	8080	482	342	313
5	821	890	5220	1240	2970	6090	939	751	5670	458	367	306
6	803	887	4960	1200	2910	7850	912	748	3750	452	343	366
7	787	867	4640	983	2550	6580	888	774	2780	444	334	1310
8	834	7210	4430	1070	2420	5010	813	761	2190	437	326	414
9	914	9630	3970	961	2180	4310	784	789	1700	441	320	326
10	983	5140	1860	914	2020	4090	757	855	1320	434	320	398
11	871	3340	1830	859	1870	2860	737	1490	1130	394	317	449
12	810	2790	2480	797	1640	2030	782	956	1060	380	353	402
13	788	2490	4340	757	1520	1790	1530	959	1060	372	408	416
14	774	2330	4520	e720	1390	2890	1020	1150	1220	368	392	424
15	764	2190	3980	e750	1260	3650	765	1280	1140	362	353	419
16	758	2100	3530	841	1150	2780	655	1150	974	361	334	413
17	750	2040	3280	758	1120	2210	636	1010	899	346	344	405
18	797	2010	2620	e610	1110	2110	635	976	929	360	452	405
19	1560	2000	2450	e580	1790	3290	609	917	959	403	409	396
20	2130	1940	2220	e600	3860	3680	599	1000	792	1120	495	403
21	2320	1890	1660	796	3860	3610	594	1180	751	421	592	400
22	2090	1840	1660	726	5510	3080	603	1160	725	350	442	398
23	1840	1800	1650	772	4260	2570	597	957	710	391	378	399
24	1690	1770	1690	836	3260	2320	600	946	619	480	352	395
25	1530	1720	1850	876	2670	2030	586	1180	584	694	339	392
26	1430	3130	1730	953	2180	2280	593	2180	580	471	334	388
27	1380	2520	1540	894	2060	2700	816	2880	592	388	329	385
28	1320	2150	1520	1090	1620	2290	941	1950	534	378	330	507
29	1160	1960	1520	1400	---	2200	708	1530	509	374	321	1000
30	1110	2050	1520	1370	---	2010	645	1370	494	351	325	591
31	1030	---	1480	1430	---	1810	---	1220	---	342	326	---
TOTAL	35723	74707	105960	29873	63390	103480	24575	35053	52411	13991	11283	13385
MEAN	1152	2490	3418	964	2264	3338	819	1131	1747	451	364	446
MAX	2320	9630	12400	1430	5510	7850	1530	2880	8080	1120	592	1310
MIN	750	867	1480	580	1110	1790	586	710	494	342	317	306
CFSM	1.32	2.85	3.91	1.10	2.59	3.81	.94	1.29	2.00	.52	.42	.51
IN.	1.52	3.18	4.50	1.27	2.69	4.40	1.04	1.49	2.23	.59	.48	.57

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1997, BY WATER YEAR (WY)

MEAN	605	781	1322	1588	1995	2916	2341	1739	909	528	463	444
MAX	3791	5350	4652	5115	4125	8763	5866	4070	2375	2270	2152	4117
(WY)	1943	1986	1973	1937	1961	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

POTOMAC RIVER BASIN

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD--Continued

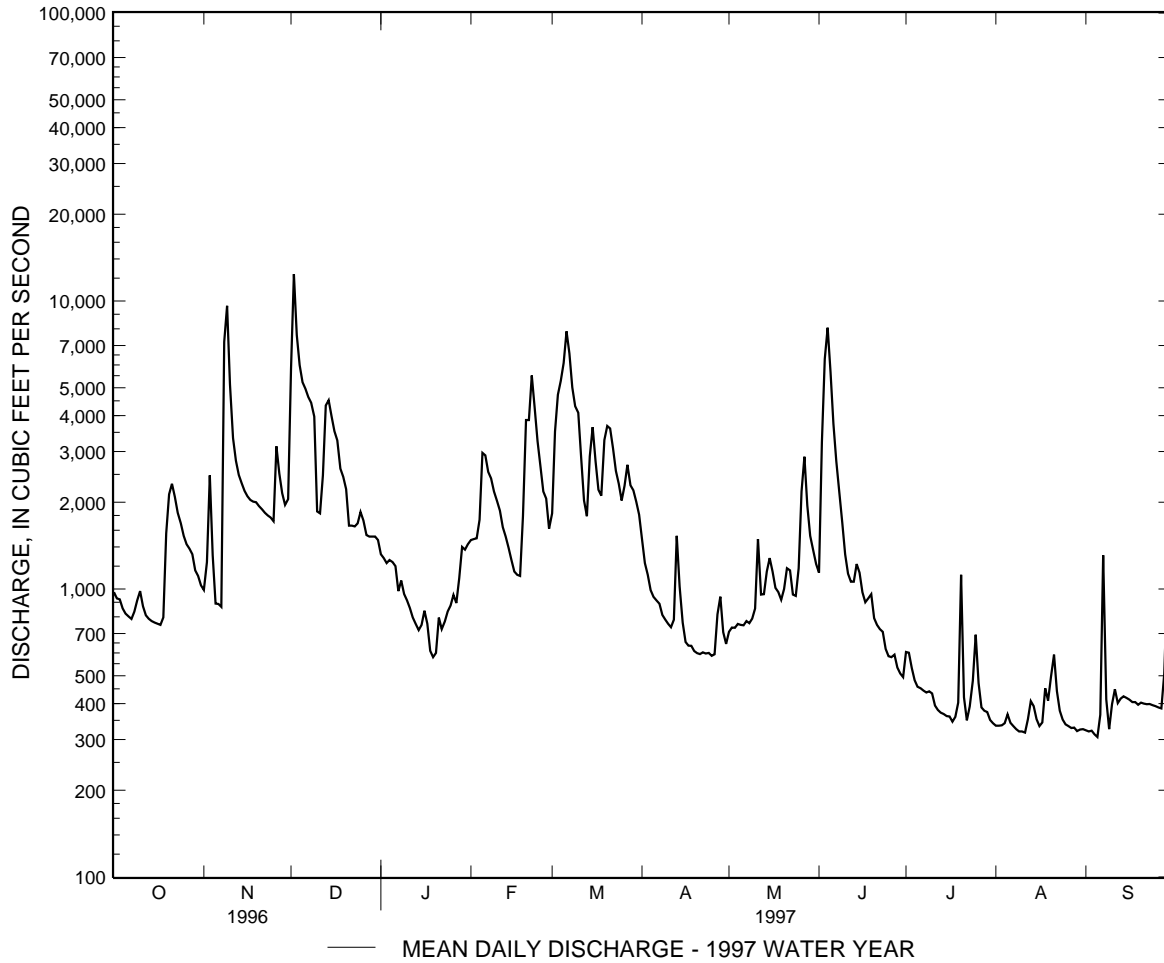
SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1929 - 1997	
ANNUAL TOTAL	1012039		563831			
ANNUAL MEAN	2765		1545		1301	
ANNUAL MEAN <sup>≠</sup>	2770		1506		1301	
HIGHEST ANNUAL MEAN					2390 1996	
LOWEST ANNUAL MEAN					632 1969	
HIGHEST DAILY MEAN	29400	Jan 19	12400	Dec 2	47400	Mar 18 1936
LOWEST DAILY MEAN	446	Jul 17	306	Sep 5	13	(a)
ANNUAL SEVEN-DAY MINIMUM	464	Jul 11	319	Aug 30	16	Sep 20 1932
INSTANTANEOUS PEAK FLOW			14800	Dec 2	(b)88200	Mar 17 1936
INSTANTANEOUS PEAK STAGE			12.91	Dec 2	29.10	Mar 17 1936
INSTANTANEOUS LOW FLOW			302	(c)	12	Sep 22 1932
ANNUAL RUNOFF (CFSM)	3.16		1.77		1.49	
ANNUAL RUNOFF (CFSM) <sup>≠</sup>	3.17		1.72		1.49	
ANNUAL RUNOFF (INCHES)	43.03		23.97		20.20	
ANNUAL RUNOFF (INCHES) <sup>≠</sup>	42.99		23.38		20.20	
10 PERCENT EXCEEDS	5860		3410		3000	
50 PERCENT EXCEEDS	1810		976		684	
90 PERCENT EXCEEDS	775		367		169	

<sup>≠</sup> Adjusted for change in reservoir contents since October 1981.

a Sept. 21-24, 1932.

b From rating curve extended above 33,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.

c Aug. 12, Sept. 4-6.



## POTOMAC RIVER BASIN

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<sup>2</sup>, revised.

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 951: 1939-40.

GAGE.--Water-stage recorder. Datum of gage is 624.90 ft above sea level (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 estimated daily discharges (doubtful gage heights, ice effect), which are poor. The flow from 115 mi<sup>2</sup> 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. 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 PERIOD OF RECORD.--Maximum discharge, 16,000 ft<sup>3</sup>/s, Aug. 19, 1955, gage height, 12.20 ft, from rating curve extended above 4,900 ft<sup>3</sup>/s, on basis of contracted-opening measurement at gage height 11.53 ft; minimum daily discharge, 1.2 ft<sup>3</sup>/s, Aug. 18, 1988.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 2,460 ft<sup>3</sup>/s, Dec. 2, gage height, 8.77 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	86	1140	155	267	363	237	84	62	32	18	12
2	85	82	1790	154	253	568	214	80	218	37	16	12
3	79	78	976	154	237	1060	194	78	438	42	15	11
4	72	73	759	151	240	1280	172	76	791	37	15	11
5	68	69	656	150	496	907	155	75	586	32	22	11
6	64	73	616	143	546	934	143	73	498	29	22	10
7	60	85	569	139	492	803	133	71	422	27	20	10
8	67	583	528	130	450	672	123	69	365	24	17	9.7
9	80	1070	489	126	411	591	115	76	302	23	16	11
10	105	543	436	140	381	559	110	76	249	25	15	13
11	92	420	398	137	354	518	105	74	212	22	14	17
12	81	344	401	114	323	464	105	72	180	21	14	20
13	75	292	647	e100	292	413	109	75	154	19	15	20
14	70	259	632	e85	282	578	105	77	137	18	16	18
15	65	223	530	e75	281	647	99	79	113	18	15	16
16	62	182	469	e80	286	545	94	75	94	16	14	15
17	60	158	419	e75	289	496	91	72	82	16	14	14
18	63	141	375	e65	300	463	88	70	72	15	20	13
19	104	133	345	e60	425	951	86	72	71	15	19	12
20	132	144	285	e55	489	948	83	68	61	16	21	12
21	163	127	242	e50	454	742	82	64	54	16	26	11
22	184	86	214	99	424	640	84	61	49	15	26	11
23	171	72	208	129	381	554	83	56	45	17	24	11
24	152	70	216	159	345	502	83	53	40	23	22	11
25	132	74	212	190	302	450	81	52	37	36	20	11
26	122	1040	189	254	278	437	78	76	36	38	18	11
27	118	748	176	243	266	391	79	78	44	33	17	10
28	117	593	173	320	244	359	90	73	41	28	16	10
29	106	524	171	340	---	334	91	67	36	25	15	36
30	99	508	168	296	---	292	88	64	33	22	14	45
31	93	---	161	273	---	266	---	60	---	20	13	---
TOTAL	3037	8880	14590	4641	9788	18727	3400	2196	5522	757	549	434.7
MEAN	98.0	296	471	150	350	604	113	70.8	184	24.4	17.7	14.5
MAX	184	1070	1790	340	546	1280	237	84	791	42	26	45
MIN	60	69	161	50	237	266	78	52	33	15	13	9.7
CFSM	.46	1.40	2.23	.71	1.66	2.86	.54	.34	.87	.12	.08	.07
IN.	.54	1.57	2.57	.82	1.73	3.30	.60	.39	.97	.13	.10	.08

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997, BY WATER YEAR (WY)

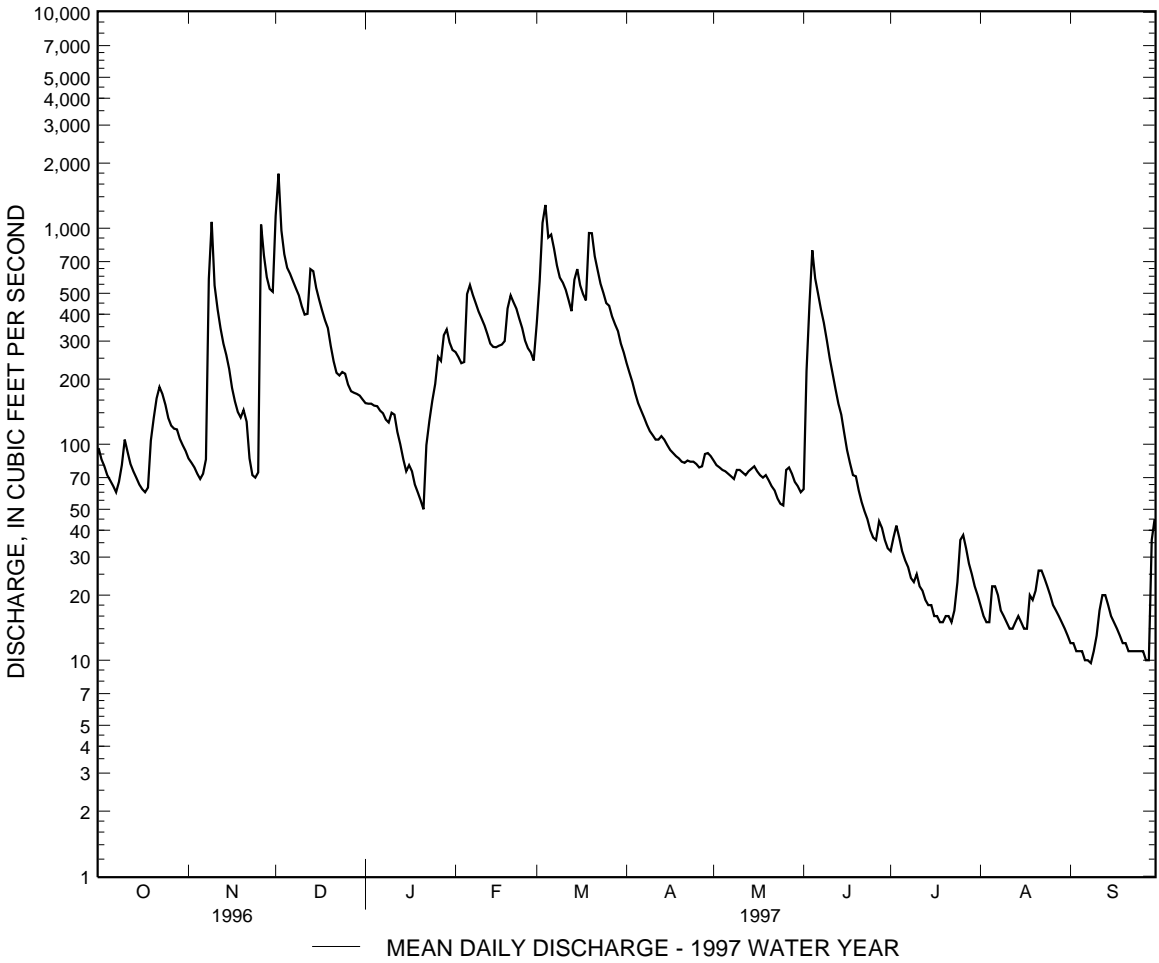
MEAN	75.6	83.9	168	210	307	432	314	225	109	60.6	58.8	50.1
MAX	745	901	825	908	893	1346	1085	763	379	415	586	767
(WY)	1943	1986	1973	1996	1994	1963	1993	1988	1940	1989	1996	1996
MIN	2.24	4.39	9.70	22.0	30.8	58.3	54.1	21.2	13.4	4.45	5.20	2.80
(WY)	1992	1992	1944	1981	1954	1990	1969	1969	1969	1966	1966	1991

POTOMAC RIVER BASIN

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997	
ANNUAL TOTAL	158451		72521.7			
ANNUAL MEAN	433		199		174	
HIGHEST ANNUAL MEAN					387	
LOWEST ANNUAL MEAN					35.1	
HIGHEST DAILY MEAN	7330	Jan 19	1790	Dec 2	11100	Oct 15 1942
LOWEST DAILY MEAN	30	Jul 17	9.7	Sep 8	1.2	Aug 18 1988
ANNUAL SEVEN-DAY MINIMUM	36	Jul 12	11	Sep 3	1.7	Sep 5 1965
INSTANTANEOUS PEAK FLOW			2460	Dec 2	(a)16000	Aug 19 1955
INSTANTANEOUS PEAK STAGE			8.77	Dec 2	12.20	Aug 19 1955
INSTANTANEOUS LOW FLOW			9.7	Sep 8	1.1	(b)
ANNUAL RUNOFF (CFSM)	2.05		.94		.82	
ANNUAL RUNOFF (INCHES)	27.94		12.79		11.20	
10 PERCENT EXCEEDS	842		529		443	
50 PERCENT EXCEEDS	288		88		60	
90 PERCENT EXCEEDS	72		15		10	

a From rating curve extended above 4,900 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.  
 b Aug. 18, 19, 1988.



## POTOMAC RIVER BASIN

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<sup>2</sup>, revised.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 951: 1939-41. WSP 1141: 1932, 1933(M), 1936-38.

GAGE.--Water-stage recorder. Datum of gage is 968.34 ft above sea level. 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 October, which are fair, and those for periods of estimated daily discharges (doubtful or missing gage-height record), which are poor. 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 in 1877 reached a stage of 21.2 ft, from floodmarks at previous site and datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
Nov. 8	2100	*13,000	*8.63	Mar. 2	0200	7,270	6.90
Nov. 26	1500	7,180	6.87	Mar. 3	2200	9,680	7.68
Dec. 2	0600	9,990	7.77				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	433	448	2880	693	e1200	2660	1110	794	535	211	146	117
2	416	429	7760	656	e1000	6480	1030	708	2330	225	139	113
3	404	409	4870	642	e900	6410	1000	627	2890	227	135	110
4	384	387	3340	612	e850	7650	961	618	3730	196	144	106
5	366	368	2480	580	1250	5480	885	582	2660	181	153	104
6	359	357	2090	575	1470	5050	811	524	1830	171	155	100
7	358	347	1690	531	1340	4040	750	491	1350	164	144	100
8	388	4100	1530	481	1300	3240	661	454	1050	158	133	98
9	492	7870	1310	473	1160	2570	598	524	849	151	129	98
10	526	4120	1120	510	1020	2270	553	640	705	161	123	112
11	484	2710	1150	523	920	1940	513	750	597	169	119	146
12	439	1920	2250	e450	845	1600	511	774	536	155	117	163
13	421	1440	3320	e400	770	1330	592	765	526	144	120	134
14	409	1190	3560	e380	752	1350	555	784	508	138	122	119
15	376	1000	2810	e340	887	1660	483	716	456	135	124	112
16	362	857	2230	e360	927	1410	450	696	398	135	126	108
17	345	772	1840	e330	894	1280	438	647	361	144	122	104
18	359	738	1520	e310	859	1250	451	634	344	141	120	102
19	430	778	1320	e290	1120	3270	451	585	336	136	119	99
20	439	760	1070	e270	2200	4160	439	587	315	127	140	100
21	468	700	817	e250	2260	3440	427	575	286	124	447	101
22	528	679	809	e240	2530	2780	430	524	274	135	315	102
23	e640	607	808	e600	2220	2160	439	492	251	177	209	102
24	845	568	884	e1100	1710	1720	494	458	234	552	171	98
25	735	562	987	e1600	1370	1400	505	443	219	571	152	97
26	654	4210	905	e1400	1170	1500	483	1070	219	308	145	95
27	600	4230	859	e1200	1070	1470	481	1210	256	223	143	93
28	563	2890	841	e2000	959	1270	868	888	282	190	143	103
29	543	2150	804	e1700	---	1180	968	730	225	187	136	445
30	515	1730	762	e1500	---	1100	873	655	203	178	130	413
31	478	---	708	e1300	---	1140	---	580	---	159	122	---
TOTAL	14759	49326	59324	22296	34953	84260	19210	20525	24755	6073	4743	3894
MEAN	476	1644	1914	719	1248	2718	640	662	825	196	153	130
MAX	845	7870	7760	2000	2530	7650	1110	1210	3730	571	447	445
MIN	345	347	708	240	752	1100	427	443	203	124	117	93
CFSM	.70	2.43	2.83	1.06	1.85	4.02	.95	.98	1.22	.29	.23	.19
IN.	.81	2.71	3.26	1.23	1.92	4.64	1.06	1.13	1.36	.33	.26	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1997, BY WATER YEAR (WY)

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	330	492	720	930	1150	1632	1265	1014	538	296	293	257																																																										
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	399	233	128	70.5	54.1	52.3																																																										
(WY)	1931	1931	1966	1981	1934	1990	1986	1930	1991	1930	1930	1930																																																										

POTOMAC RIVER BASIN

01606500 SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1928 - 1997	
ANNUAL TOTAL	682886		344118			
ANNUAL MEAN	1866		943		741	
HIGHEST ANNUAL MEAN					1619 1996	
LOWEST ANNUAL MEAN					365 1969	
HIGHEST DAILY MEAN	(e)35000	Jan 19	7870	Nov 9	77000	Nov 5 1985
LOWEST DAILY MEAN	259	Jul 15	93	Sep 27	43	(a)
ANNUAL SEVEN-DAY MINIMUM	290	Jul 12	98	Sep 21	44	Sep 6 1966
INSTANTANEOUS PEAK FLOW			13000	Nov 8	(b)130000	Nov 5 1985
INSTANTANEOUS PEAK STAGE			8.63	Nov 8	(c)25.40	Nov 5 1985
INSTANTANEOUS LOW FLOW			92	Sep 28	42	(d)
ANNUAL RUNOFF (CFSM)	2.76		1.39		1.10	
ANNUAL RUNOFF (INCHES)	37.58		18.94		14.89	
10 PERCENT EXCEEDS	3540		2240		1660	
50 PERCENT EXCEEDS	1110		553		380	
90 PERCENT EXCEEDS	417		125		96	

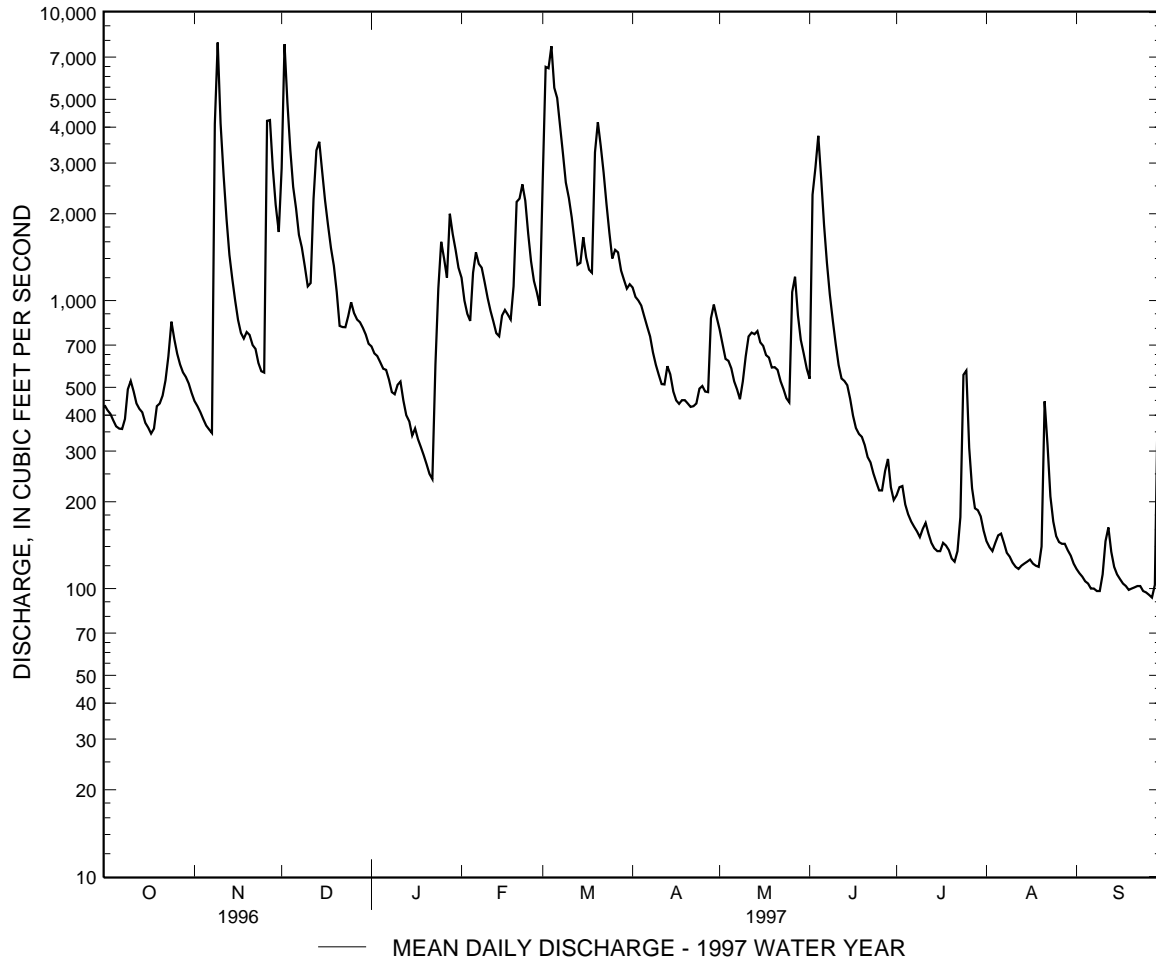
e Estimated.

a Sept. 27-29, 1959, Sept. 11, 12, 1966.

b From rating curve extended above 63,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.

c From floodmarks at former site at gage datum 962.00 ft.

d Sept. 28, 29, 1959, Sept. 11, 12, 1966.



## POTOMAC RIVER BASIN

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<sup>2</sup>, revised.

## 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: 1931(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 861.51 ft above sea level (U.S. Army Corps of Engineers datum). Prior to Mar. 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 estimated daily discharges (doubtful gage-height record, ice effect), which are poor. The flow from 92.7 mi<sup>2</sup> 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.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 5,160 ft<sup>3</sup>/s, Mar. 4, gage height, 6.63 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	92	547	238	345	482	260	143	93	56	53	27
2	133	89	1870	222	299	1420	229	142	932	52	47	25
3	123	85	1320	213	258	2030	215	137	1900	47	43	24
4	113	80	976	201	239	3860	207	133	1390	44	45	24
5	104	76	742	192	264	2240	199	126	849	41	46	24
6	96	74	536	187	308	1500	191	119	556	38	39	24
7	89	71	462	176	333	1050	184	112	399	37	36	25
8	86	667	490	162	348	793	173	105	302	34	32	25
9	90	2640	490	160	331	627	163	106	240	33	29	25
10	103	1270	451	164	295	528	152	106	197	34	28	26
11	114	701	391	158	271	451	144	102	169	32	27	27
12	119	470	381	e135	254	382	143	96	151	30	26	28
13	121	348	949	e115	238	326	151	95	148	30	29	28
14	130	286	493	e100	235	304	152	98	134	30	29	28
15	148	240	425	e90	270	319	138	97	126	30	29	28
16	143	203	351	e80	327	292	129	91	115	30	29	28
17	137	180	278	e90	352	264	126	89	103	30	27	28
18	131	169	258	e80	336	259	124	86	96	30	26	28
19	141	167	e250	e75	357	615	119	84	90	30	25	27
20	167	158	e245	e70	507	1260	115	87	83	30	28	27
21	197	148	e240	e65	595	966	112	85	76	30	53	27
22	199	147	e240	e80	530	741	110	82	73	30	88	27
23	173	136	247	128	458	571	111	76	67	31	64	26
24	155	129	291	166	384	456	116	73	63	558	50	26
25	141	126	375	244	330	376	115	72	58	523	42	26
26	131	1330	380	408	295	357	109	97	56	239	43	26
27	123	1660	358	390	272	325	105	110	57	139	41	25
28	116	942	335	393	246	288	115	109	63	103	38	25
29	110	638	308	593	---	267	128	98	64	88	34	34
30	104	486	280	476	---	254	136	94	56	74	30	39
31	99	---	254	396	---	277	---	91	---	63	28	---
TOTAL	3980	13808	15213	6247	9277	23880	4471	3141	8706	2596	1184	807
MEAN	128	460	491	202	331	770	149	101	290	83.7	38.2	26.9
MAX	199	2640	1870	593	595	3860	260	143	1900	558	88	39
MIN	86	71	240	65	235	254	105	72	56	30	25	24
CFSM	.46	1.66	1.77	.73	1.20	2.78	.54	.37	1.05	.30	.14	.10
IN.	.53	1.85	2.04	.84	1.25	3.21	.60	.42	1.17	.35	.16	.11

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1935, 1938 - 1997, BY WATER YEAR (WY)

MEAN	130	177	211	267	324	488	404	329	169	85.3	108	93.0
MAX	776	2951	879	1267	902	1327	1787	946	1071	510	801	1341
(WY)	1977	1986	1974	1996	1994	1993	1987	1988	1949	1949	1955	1996
MIN	12.8	17.1	17.4	21.3	25.2	72.2	91.7	51.2	28.1	13.7	10.4	10.2
(WY)	1992	1932	1966	1981	1934	1981	1981	1930	1977	1966	1965	1968

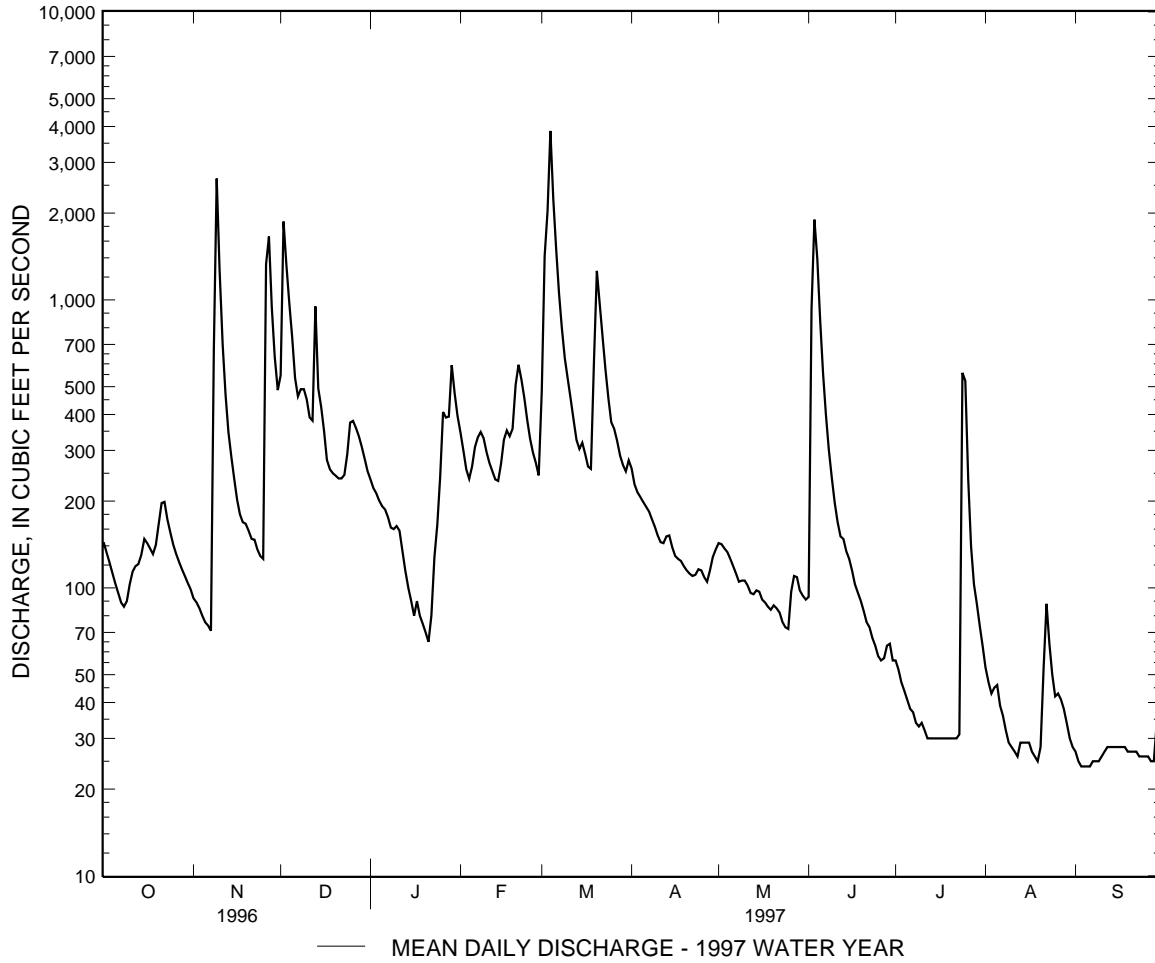


POTOMAC RIVER BASIN

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1928 - 1935 1938 - 1997	
	199031		93310			
ANNUAL TOTAL	199031		93310		232	
ANNUAL MEAN	544		256		480	1996
HIGHEST ANNUAL MEAN					85.9	1934
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	10700	Sep 7	3860	Mar 4	28000	Nov 5 1985
LOWEST DAILY MEAN	42	Jul 17	24	(a)	4.4	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	44	Jul 12	24	Sep 2	5.3	Sep 5 1966
INSTANTANEOUS PEAK FLOW			5160	Mar 4	(b)110000	Nov 5 1985
INSTANTANEOUS PEAK STAGE			6.63	Mar 4	(c)19.99	Nov 5 1985
INSTANTANEOUS LOW FLOW			24	(d)	4.4	(f)
ANNUAL RUNOFF (CFSM)	1.96		.92		.84	
ANNUAL RUNOFF (INCHES)	26.73		12.53		11.36	
10 PERCENT EXCEEDS	1160		532		506	
50 PERCENT EXCEEDS	259		130		97	
90 PERCENT EXCEEDS	98		29		21	
90 PERCENT EXCEEDS	24		49		21	

- a Sept. 3-6.
- b From rating curve extended above 39,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.
- c From floodmarks.
- d Aug. 11, 12, Sept. 2-7.
- f Sept. 10, 11, 1965, Sept. 9-11, 1966.



## POTOMAC RIVER BASIN

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	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)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	
NOV 1995 28...	1035	114	122	7.4	9.0	736	9.3	83
JAN 1996 23...	1400	1170	100	7.5	4.0	736	11.7	92
MAR 12...	1400	329	126	6.5	6.0	742	11.9	98
JUL 24...	0830	136	90	6.8	20.0	737	7.9	90

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## POTOMAC RIVER BASIN

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<sup>2</sup>, revised.

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).

GAGE.--Water-stage recorder. Datum of gage is 562.02 ft above sea level. 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 estimated daily discharges (ice effect), which are poor. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers 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 OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 34 ft, from floodmarks, discharge, 140,000 ft<sup>3</sup>/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 9	1100	*18,500	13.78	Mar. 4	1100	17,400	13.26
Nov. 27	0400	10,800	9.98				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	841	3600	1410	2360	1730	1910	1240	889	419	265	192
2	1010	802	8040	1370	2060	7140	1760	1160	2170	470	230	174
3	915	769	8620	1320	1780	8050	1650	1080	5950	456	207	158
4	857	740	5720	1280	1640	15200	1590	994	6410	418	204	152
5	811	710	4210	1230	2210	10500	1530	981	5040	383	254	140
6	766	687	3490	1180	2650	8080	1450	935	3400	348	262	133
7	732	670	3100	1130	2460	6620	1360	871	2500	327	224	131
8	723	1310	2830	1060	2310	5130	1260	832	1990	304	207	134
9	859	14300	2700	1010	2240	4130	1150	811	1620	318	181	124
10	1350	8010	2410	1040	2020	3490	1070	863	1360	323	162	189
11	1370	4730	2170	1040	1850	3130	1010	956	1170	293	149	219
12	1210	3360	2360	e870	1710	2700	972	1040	1030	292	139	239
13	1070	2590	3020	e740	1610	2340	1010	1070	966	286	144	278
14	980	2170	4370	e660	1530	2380	1060	1100	962	263	140	265
15	908	1890	4980	e610	1630	2880	995	1100	899	241	135	222
16	853	1640	3980	e570	1840	2580	908	1010	824	237	135	188
17	815	1460	3300	e530	1910	2260	863	980	752	239	164	170
18	802	1360	2840	e550	1860	2120	834	938	693	220	185	162
19	1030	1340	2520	e500	1950	4230	830	931	759	232	135	153
20	1370	1350	2240	e470	2490	7280	827	886	682	217	147	141
21	1730	1280	1840	e430	3250	5920	812	867	618	210	198	139
22	1670	1210	1580	e400	3150	4720	800	852	567	199	416	140
23	1630	1170	1560	908	3110	3750	800	804	534	206	571	135
24	1490	1080	1680	1710	2620	3040	820	769	494	290	417	131
25	1330	1030	1920	1990	2220	2560	865	741	460	1250	334	137
26	1200	4170	1950	2530	1940	2340	866	834	444	1080	284	130
27	1110	8640	1810	2500	1790	2430	837	1480	472	671	263	124
28	1040	5220	1750	2360	1670	2200	882	1420	473	480	249	128
29	983	3800	1680	4000	---	2020	1270	1170	511	381	241	256
30	945	3040	1610	3450	---	1910	1320	1030	456	330	226	480
31	891	---	1500	2770	---	1880	---	953	---	301	207	---
TOTAL	33610	81369	95380	41618	59860	134740	33311	30698	45095	11684	7075	5364
MEAN	1084	2712	3077	1343	2138	4346	1110	990	1503	377	228	179
MAX	1730	14300	8620	4000	3250	15200	1910	1480	6410	1250	571	480
MIN	723	670	1500	400	1530	1730	800	741	444	199	135	124
CFSM	.73	1.83	2.07	.90	1.44	2.92	.75	.67	1.01	.25	.15	.12
IN.	.84	2.04	2.39	1.04	1.50	3.37	.83	.77	1.13	.29	.18	.13

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1899 - 1906, 1928 - 1997, BY WATER YEAR (WY)

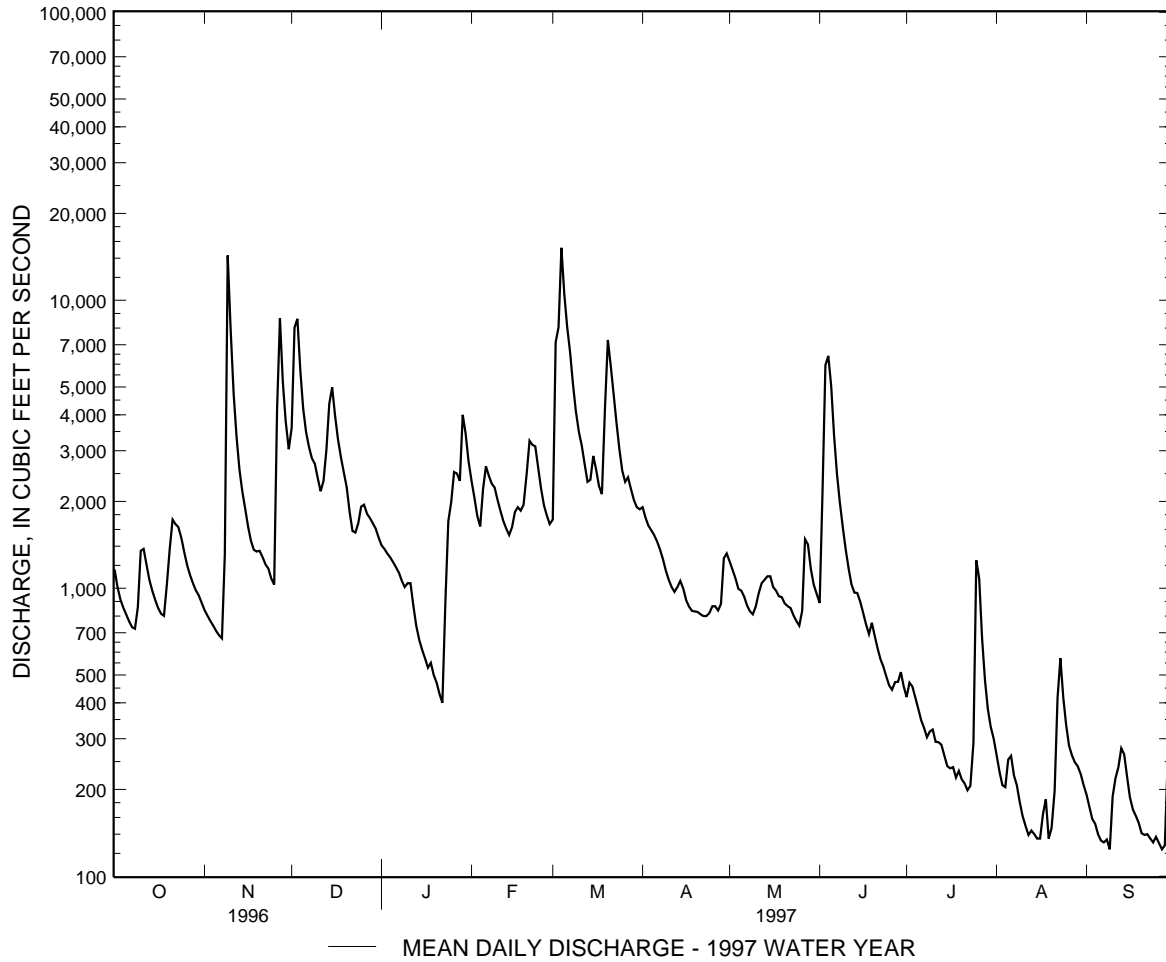
	630	861	1254	1639	2022	3005	2362	1829	1028	531	548	467
MEAN	630	861	1254	1639	2022	3005	2362	1829	1028	531	548	467
MAX	4629	12850	5000	6928	6150	10490	6421	5785	5231	2638	3923	6538
(WY)	1977	1986	1973	1996	1994	1936	1987	1996	1949	1949	1955	1996
MIN	79.4	82.2	147	271	362	791	829	366	225	105	73.5	76.6
(WY)	1931	1905	1966	1981	1934	1981	1976	1977	1991	1930	1930	1930

POTOMAC RIVER BASIN

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1899 - 1906 1928 - 1997	
ANNUAL TOTAL	1238287		579804		1345	
ANNUAL MEAN	3383		1589		2975	
HIGHEST ANNUAL MEAN					1996	
LOWEST ANNUAL MEAN					1969	
HIGHEST DAILY MEAN	93900	Sep 7	15200	Mar 4	145000	Nov 5 1985
LOWEST DAILY MEAN	354	Jul 17	124	Sep 9	52	(a)
ANNUAL SEVEN-DAY MINIMUM	384	Jul 12	132	Sep 22	54	Sep 7 1966
INSTANTANEOUS PEAK FLOW			18500	Nov 9	(b)240000	Nov 5 1985
INSTANTANEOUS PEAK STAGE			13.78	Nov 9	(c)44.22	Nov 5 1985
INSTANTANEOUS LOW FLOW			114	(d)	29	(f)
ANNUAL RUNOFF (CFSM)	2.28		1.07		.90	
ANNUAL RUNOFF (INCHES)	31.00		14.51		12.29	
10 PERCENT EXCEEDS	5870		3380		3010	
50 PERCENT EXCEEDS	1860		1030		650	
90 PERCENT EXCEEDS	764		199		154	

- a Sept. 11, 12, 1966.
- b From rating curve extended above 145,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.
- c From floodmarks.
- d Sept. 9, 27, 28.
- f Jan. 28, 1956 (result of freeze-up), July 30, 1966 (result of temporary dam).



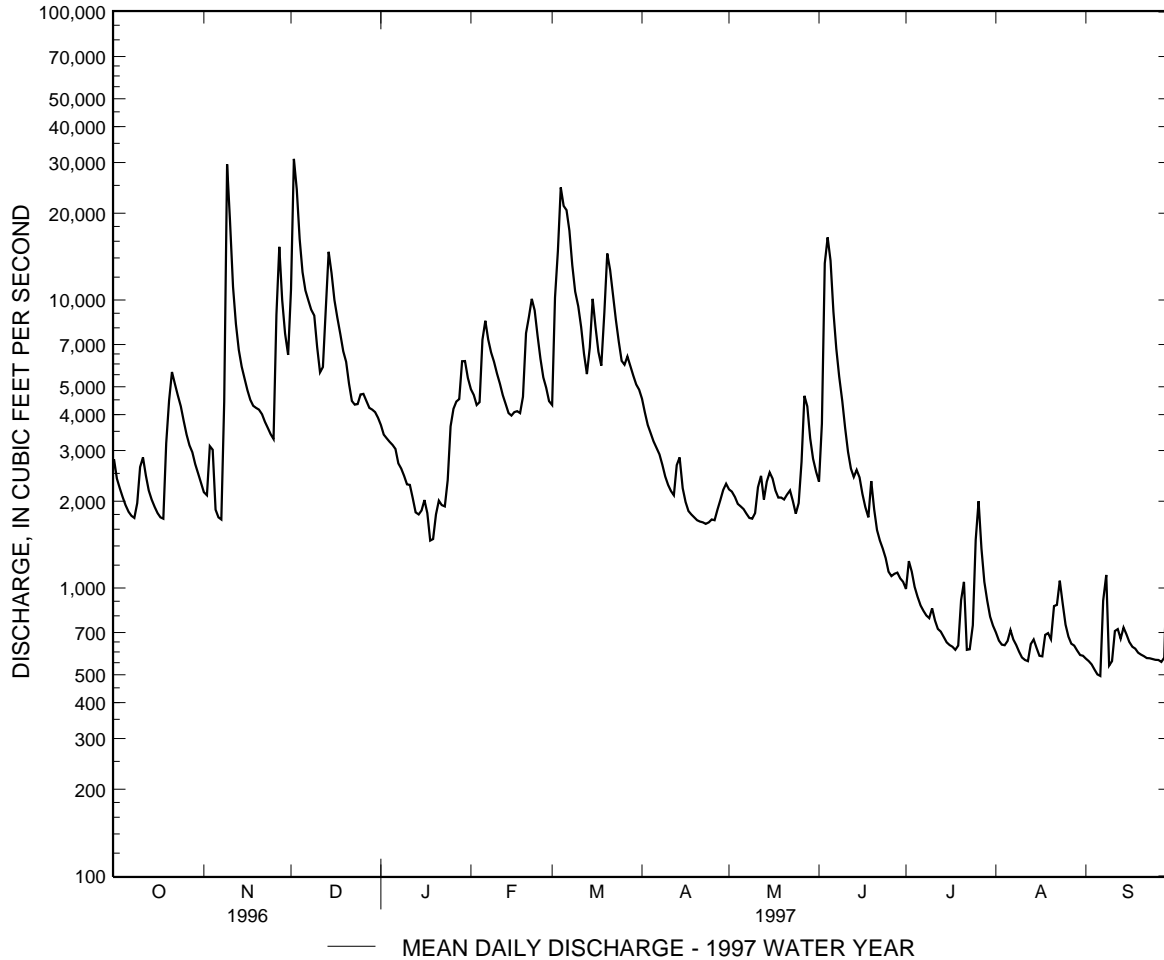


POTOMAC RIVER BASIN

01610000 POTOMAC RIVER AT PAW PAW, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1939 - 1997	
ANNUAL TOTAL	2726444		1443540			
ANNUAL MEAN	7449		3955		3380	
HIGHEST ANNUAL MEAN					6433	1996
LOWEST ANNUAL MEAN					1499	1969
HIGHEST DAILY MEAN	103000	Jan 20	30900	Dec 2	125000	Nov 6 1985
LOWEST DAILY MEAN	933	Jul 17	495	Sep 6	172	(a)
ANNUAL SEVEN-DAY MINIMUM	982	Jul 12	538	Aug 31	179	Sep 7 1966
INSTANTANEOUS PEAK FLOW			36100	Dec 2	(b)235000	Nov 5 1985
INSTANTANEOUS PEAK STAGE			20.99	Dec 2	53.58	Nov 5 1985
INSTANTANEOUS LOW FLOW			492	(c)	164	(d)
ANNUAL RUNOFF (CFSM)	2.40		1.27		1.09	
ANNUAL RUNOFF (INCHES)	32.62		17.27		14.77	
10 PERCENT EXCEEDS	15100		9090		7660	
50 PERCENT EXCEEDS	4710		2370		1810	
90 PERCENT EXCEEDS	1860		632		443	

- a Sept. 10, 12, 13, 1966.
- b From rating curve extended above 85,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.
- c Sept. 5-7.
- d Sept. 10, 11, 1966.



## POTOMAC RIVER BASIN

01610155 SIDELING HILL CREEK NEAR BELLEGROVE, MD

LOCATION.--Lat 39°38'58", long 78°20'40", Washington County, Hydrologic Unit 02070003, on left bank at bridge on Pearre Road, 1.2 mi upstream from mouth, 4.0 mi south of Bellegrove.

DRAINAGE AREA.--102 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1985, 1986, October 1996 to September 1997.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1996 tTO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
JUN 1997				
04...	1200	780	47	99
JUL				
01...	1330	6.6	2	0.03
SEP				
15...	1245	1.5	1	0.01



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POTOMAC RIVER BASIN

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

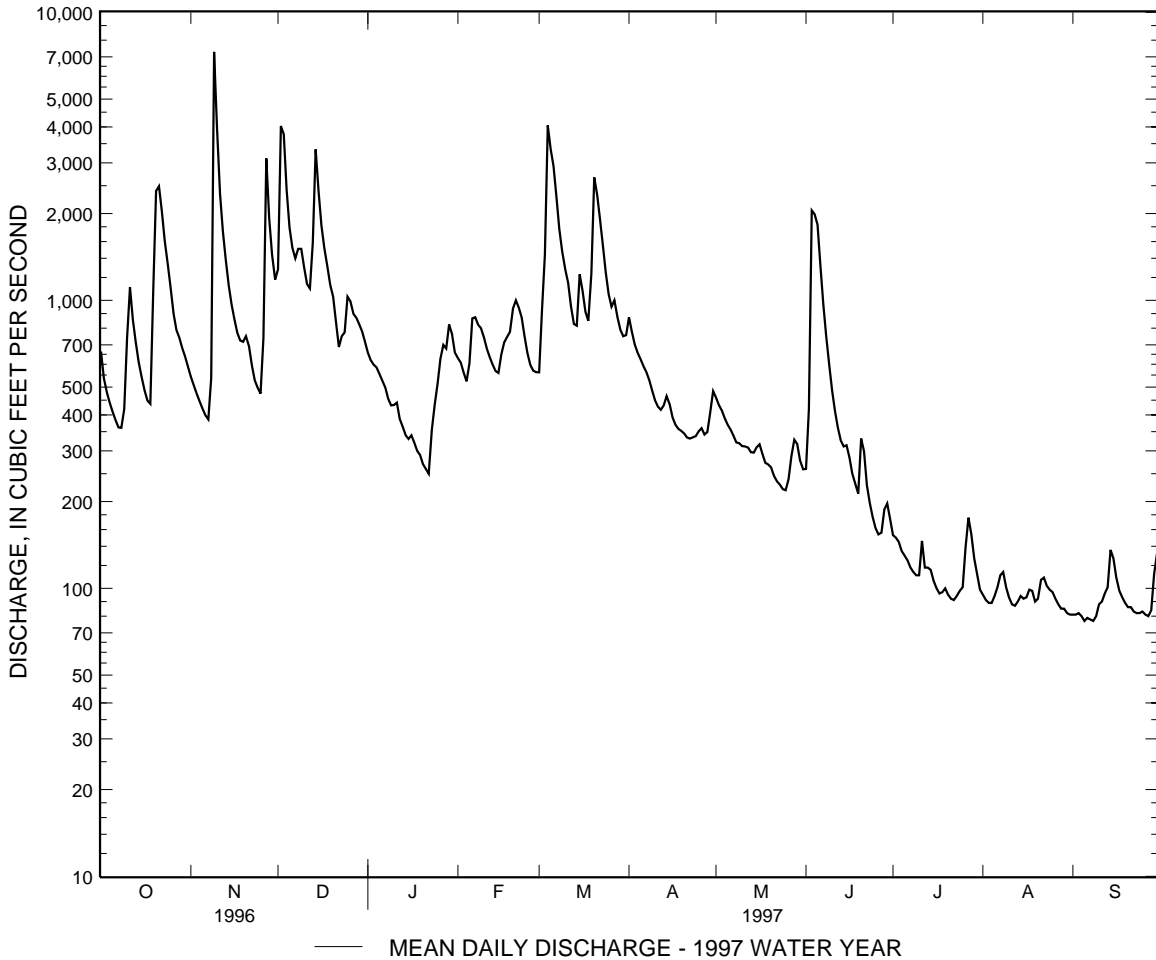
SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1923 - 1995  
1997

ANNUAL TOTAL	238005		
ANNUAL MEAN	652		590
HIGHEST ANNUAL MEAN			1135
LOWEST ANNUAL MEAN			180
HIGHEST DAILY MEAN	7290	Nov 9	67900
LOWEST DAILY MEAN	77	(a)	26
ANNUAL SEVEN-DAY MINIMUM	79	Sep 3	28
INSTANTANEOUS PEAK FLOW	10900	Nov 9	(b) 87600
INSTANTANEOUS PEAK STAGE	11.20	Nov 9	30.10
INSTANTANEOUS LOW FLOW	77	(c)	26
ANNUAL RUNOFF (CFSM)	.97		.87
ANNUAL RUNOFF (INCHES)	13.12		11.87
10 PERCENT EXCEEDS	1440		1330
50 PERCENT EXCEEDS	433		245
90 PERCENT EXCEEDS	92		67

- a Sept. 5, 8.
- b From rating curve extended above 52,000 ft<sup>3</sup>/s.
- c Sept. 5-9.
- d Sept. 11-13, 1966.



## POTOMAC RIVER BASIN

01613000 POTOMAC RIVER AT HANCOCK, MD

LOCATION.--Lat 39°41'49", long 78°10'39", 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.--4,073 mi<sup>2</sup>.

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). WSP 801: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 383.68 ft above sea level. 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 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 prior to 1932, about 40 ft in May 1889, discharge, about 220,000 ft<sup>3</sup>/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 9	1800	41,200	18.05	Mar. 4	2030	29,300	14.99
Dec. 2	2230	*41,400	*18.10				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3710	2930	10600	4300	5790	4830	5570	2880	2830	1230	828	648
2	3230	2740	32000	3990	5490	7080	5110	2780	3560	1270	789	633
3	2890	2800	32300	3880	5160	15000	4600	2710	12100	1470	747	624
4	2690	3950	19800	3800	5100	24200	4330	2550	16900	1310	726	600
5	2490	2880	14800	3730	7540	25700	4100	2430	17100	1160	735	575
6	2340	2310	12600	3610	10600	23500	3890	2370	11600	1060	777	558
7	2230	2240	11500	3450	9180	20900	3710	2290	8430	986	819	554
8	2200	2650	10700	3100	8010	16000	3520	2200	6650	943	785	1030
9	2300	29600	10300	3070	7400	12800	3230	2170	5440	920	734	1080
10	2940	26800	8880	2960	6710	11000	3010	2160	4490	920	693	678
11	3970	15000	6860	2900	6110	9850	2850	2240	3740	965	659	672
12	3580	10500	6670	2750	5610	8050	2750	2860	3260	903	641	801
13	3130	8330	10500	2560	5150	6660	2790	2650	3000	825	656	808
14	2820	7080	19000	2190	4840	6600	3540	2530	2910	816	729	789
15	2610	6290	15900	2360	4610	12200	3130	2780	2990	785	754	862
16	2440	5670	12500	2540	4690	10500	2690	2890	2730	758	706	807
17	2310	5170	10500	e2200	4830	8360	2460	2700	2400	727	690	753
18	2310	4860	9160	e2000	4860	7220	2330	2510	2300	719	729	718
19	4960	4730	7850	e1800	5090	8060	2270	2450	2990	787	770	695
20	7700	4670	7150	e2200	7730	16000	2230	2420	2840	730	822	676
21	8760	4540	6140	e2500	10100	15900	2180	2360	2280	1050	798	659
22	7920	4290	5050	e2400	10500	13200	2150	2440	1920	1070	996	643
23	6860	4070	4890	e2350	10600	10800	2150	2440	1720	729	988	633
24	6030	3900	4850	e2700	8860	8920	2150	2200	1590	770	1150	634
25	5280	3750	5290	e3400	7360	7650	2170	2090	1450	883	969	629
26	4620	6640	5570	e4600	6370	6960	2210	2500	1330	1900	838	626
27	4170	18500	5250	e5000	5650	7170	2170	3890	1310	2040	765	622
28	3900	13600	4930	e5500	5320	7170	2380	5030	1330	1500	727	645
29	3690	9890	4820	8080	---	6390	2630	4030	1350	1170	702	806
30	3380	8120	4720	7610	---	6040	2940	3350	1290	1010	678	1500
31	3160	---	4550	6400	---	5740	---	3000	---	889	654	---
TOTAL	120620	228500	325630	109930	189260	350450	91240	83900	133830	32295	24054	21958
MEAN	3891	7617	10500	3546	6759	11300	3041	2706	4461	1042	776	732
MAX	8760	29600	32300	8080	10600	25700	5570	5030	17100	2040	1150	1500
MIN	2200	2240	4550	1800	4610	4830	2150	2090	1290	719	641	554
CFSM	.96	1.87	2.58	.87	1.66	2.78	.75	.66	1.10	.26	.19	.18
IN.	1.10	2.09	2.97	1.00	1.73	3.20	.83	.77	1.22	.29	.22	.20

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1997, BY WATER YEAR (WY)

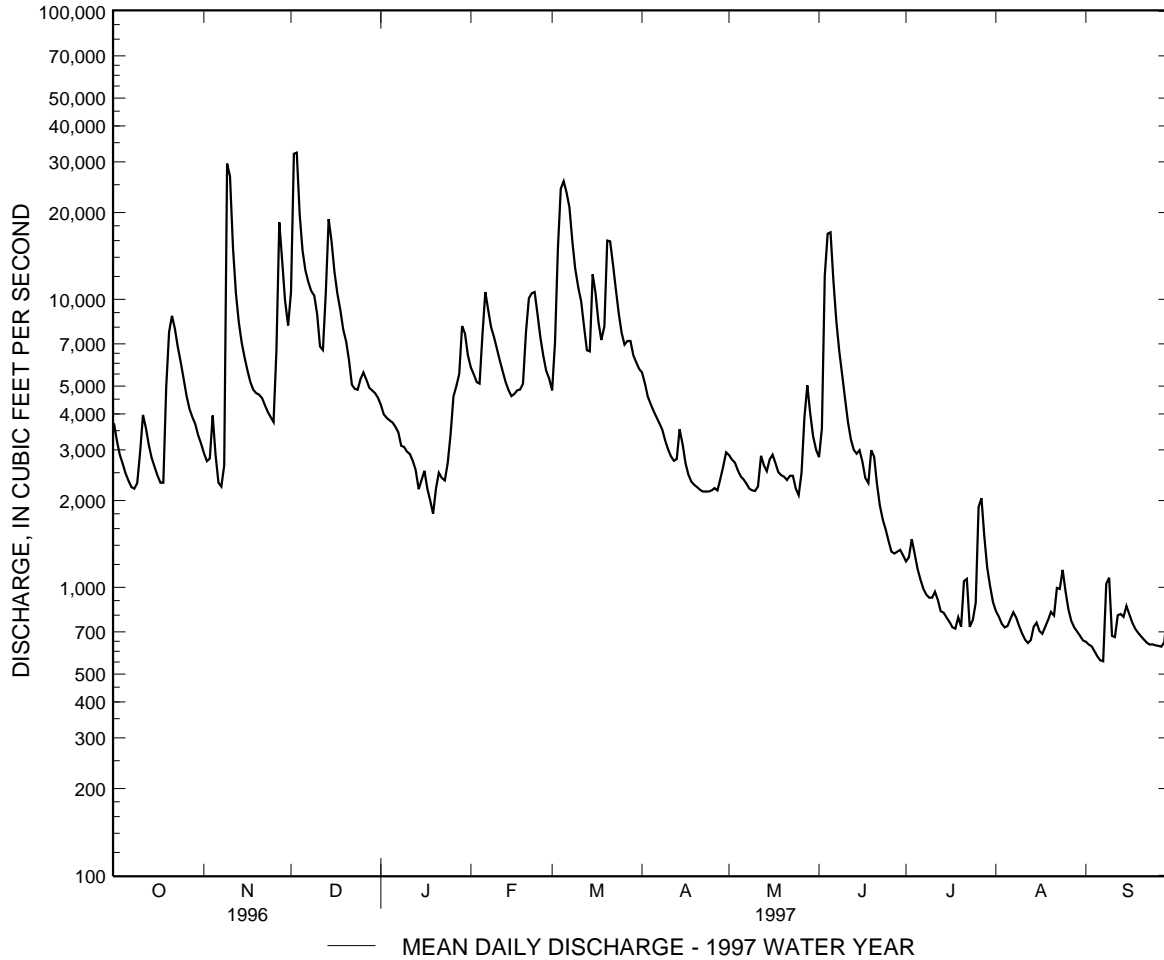
MEAN	2055	2505	4081	5168	6532	9437	7632	5567	3127	1597	1608	1451
MAX	13270	20090	15160	17180	16720	32280	19170	13260	13390	6677	9479	15100
(WY)	1977	1986	1973	1996	1971	1936	1993	1988	1972	1949	1955	1996
MIN	309	399	463	751	1041	2311	2286	1344	622	357	342	329
(WY)	1942	1966	1966	1956	1934	1990	1995	1941	1969	1966	1944	1946

POTOMAC RIVER BASIN

01613000 POTOMAC RIVER AT HANCOCK, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1933 - 1997	
ANNUAL TOTAL	3330960		1711667			
ANNUAL MEAN	9101		4689		4219	
HIGHEST ANNUAL MEAN					7932	
LOWEST ANNUAL MEAN					1770	
HIGHEST DAILY MEAN	138000	Jan 20	32300	Dec 3	261000	Mar 18 1936
LOWEST DAILY MEAN	1080	Jul 18	554	Sep 7	184	Oct 3 1932
ANNUAL SEVEN-DAY MINIMUM	1150	Jul 12	599	Sep 1	215	Sep 7 1966
INSTANTANEOUS PEAK FLOW			41400	Dec 2	(a)340000	Mar 18 1936
INSTANTANEOUS PEAK STAGE			18.10	Dec 2	47.60	Mar 18 1936
INSTANTANEOUS LOW FLOW			554	(b)	180	Oct 4 1932
ANNUAL RUNOFF (CFSM)	2.23		1.15		1.04	
ANNUAL RUNOFF (INCHES)	30.42		15.63		14.07	
10 PERCENT EXCEEDS	18700		10500		9610	
50 PERCENT EXCEEDS	5700		2910		2190	
90 PERCENT EXCEEDS	2320		730		540	

a From rating curve extended above 120,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.  
 b Sept. 6-8.



## POTOMAC RIVER BASIN

01614500 CONOCOCHIEGUE CREEK AT FAIRVIEW, MD

LOCATION.--Lat 39°42'57", long 77°49'28", 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<sup>2</sup>.

## 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 sea level. 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 (missing record), which are fair. Low flow partly regulated by small powerplants near Mercersburg, Pennsylvania. 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<sup>3</sup>/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 20	1100	6,280	9.14	Dec. 2	1145	*6,340	*9.18
Nov. 8	0430	4,600	7.78	Dec. 14	0730	6,230	9.10

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e700	720	1600	790	698	773	755	312	295	165	124	104
2	e650	684	5710	766	745	869	663	298	505	304	125	103
3	e600	621	3750	760	787	936	623	292	613	272	118	99
4	e575	578	2280	734	876	1250	601	286	584	215	119	95
5	e540	555	1800	713	1720	1480	582	280	491	185	138	102
6	e520	538	1760	708	1890	2450	561	271	421	174	140	91
7	e500	1220	1880	647	1440	1930	548	264	380	174	131	85
8	e580	3960	1950	595	1250	1530	520	257	356	166	118	87
9	e570	2050	1790	593	1110	1320	496	282	332	157	112	89
10	e550	e1600	1540	607	992	1200	477	312	309	160	108	113
11	513	e1300	1420	582	899	1100	466	287	286	156	105	596
12	466	e1150	1470	514	837	985	469	263	276	148	102	526
13	441	e1050	3900	544	771	885	535	254	279	144	107	256
14	427	948	5610	554	744	1760	504	254	270	140	115	191
15	414	865	3370	515	743	2970	448	250	256	135	112	164
16	398	798	2430	527	762	1870	424	236	235	128	106	154
17	386	753	2020	504	731	1510	413	229	226	126	109	143
18	396	728	1750	419	721	1360	408	226	241	126	132	134
19	3810	720	1580	423	922	1540	395	247	720	123	135	127
20	5670	684	1400	576	1260	1490	381	258	387	118	138	122
21	3090	640	1190	467	1180	1330	370	234	299	118	263	114
22	2210	607	1080	440	1110	1210	368	215	263	165	215	110
23	1760	571	1040	469	997	1080	360	208	243	169	164	109
24	1510	547	1040	539	886	971	363	203	229	258	139	110
25	1300	530	1070	830	810	893	363	214	211	273	128	108
26	1140	1360	935	1190	767	927	341	604	201	213	122	106
27	1020	1400	868	811	760	913	327	524	206	176	122	102
28	957	1010	856	1090	718	802	367	375	190	164	121	107
29	921	873	869	1110	---	756	373	331	181	154	117	321
30	840	799	907	821	---	728	334	305	179	140	111	367
31	777	---	837	735	---	749	---	286	---	131	105	---
TOTAL	34231	29859	59702	20573	27126	39567	13835	8857	9664	5277	4001	4935
MEAN	1104	995	1926	664	969	1276	461	286	322	170	129	165
MAX	5670	3960	5710	1190	1890	2970	755	604	720	304	263	596
MIN	386	530	837	419	698	728	327	203	179	118	102	85
CFM	2.24	2.01	3.90	1.34	1.96	2.58	.93	.58	.65	.34	.26	.33
IN.	2.58	2.25	4.50	1.55	2.04	2.98	1.04	.67	.73	.40	.30	.37

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1997, BY WATER YEAR (WY)

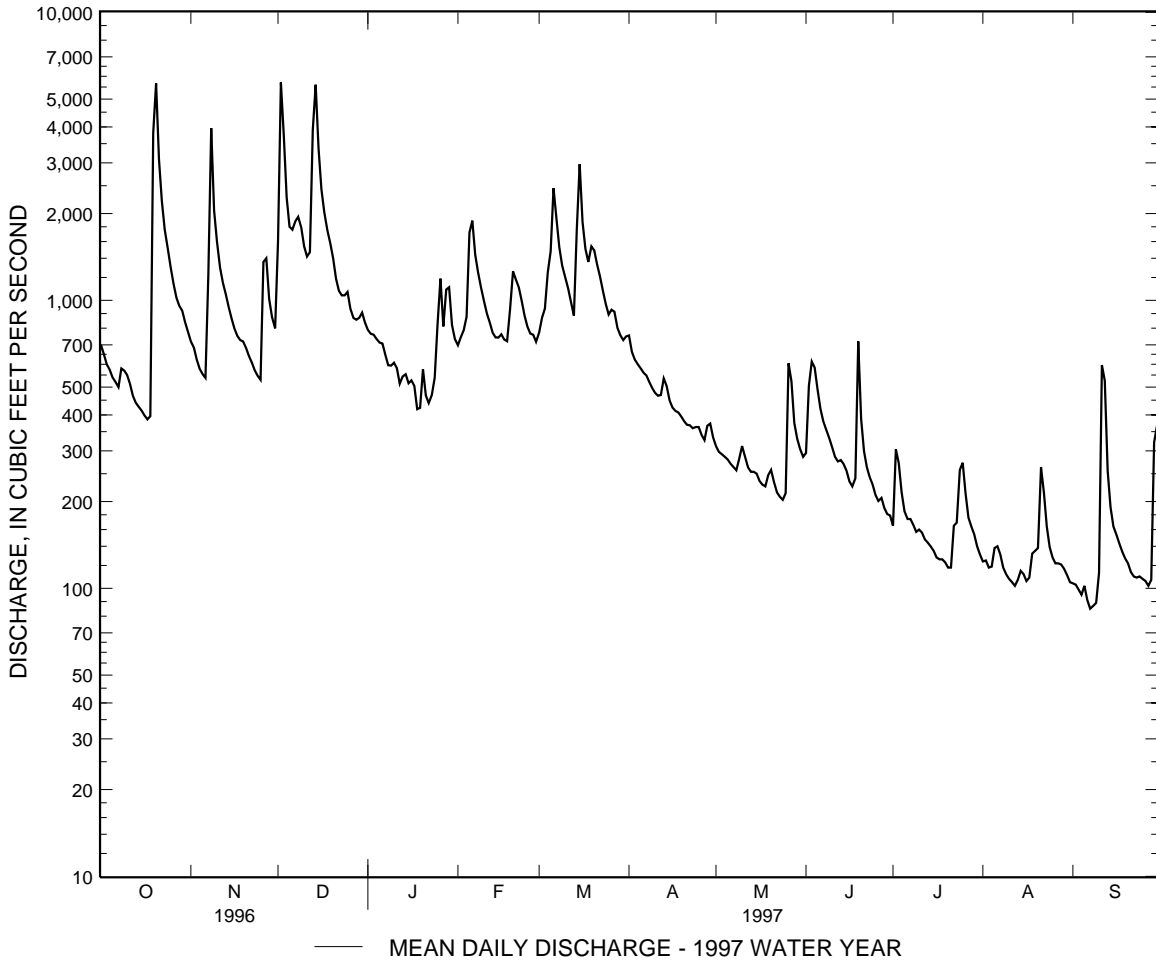
	337	446	636	679	838	1191	1061	736	513	330	233	264
MEAN	337	446	636	679	838	1191	1061	736	513	330	233	264
MAX	2177	1453	1926	2404	2446	3725	2991	1736	3278	1358	921	1886
(WY)	1977	1933	1997	1996	1984	1994	1993	1989	1972	1928	1942	1996
MIN	42.3	45.4	61.2	88.8	151	274	304	218	120	62.2	48.0	54.6
(WY)	1931	1931	1931	1931	1931	1990	1995	1941	1965	1966	1966	1930

POTOMAC RIVER BASIN

01614500 CONOCOHEAGUE CREEK AT FAIRVIEW, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1928 - 1997	
ANNUAL TOTAL	507817		257627			
ANNUAL MEAN	1387		706		604	
HIGHEST ANNUAL MEAN					1183	
LOWEST ANNUAL MEAN					301	
HIGHEST DAILY MEAN	14600	Jan 20	5710	Dec 2	26700	Jun 23 1972
LOWEST DAILY MEAN	234	Sep 3	85	Sep 7	25	Nov 28 1930
ANNUAL SEVEN-DAY MINIMUM	261	Aug 29	93	Sep 3	28	Sep 7 1966
INSTANTANEOUS PEAK FLOW			6340	Dec 2	(a)32400	Jun 23 1972
INSTANTANEOUS PEAK STAGE			9.18	Dec 2	(b)24.50	Jun 23 1972
INSTANTANEOUS LOW FLOW			83	Sep 7	21	(c)
ANNUAL RUNOFF (CFSM)	2.81		1.43		1.22	
ANNUAL RUNOFF (INCHES)	38.24		19.40		16.60	
10 PERCENT EXCEEDS	2640		1500		1320	
50 PERCENT EXCEEDS	942		514		336	
90 PERCENT EXCEEDS	447		122		103	

- a From rating curve extended above 15,000 ft<sup>3</sup>/s on basis of contracted-opening and flow-over-road measurement of peak flow.
- b From floodmark.
- c Aug. 8, Sept. 12, 1966.



## POTOMAC RIVER BASIN

01614500 CONOCOCHIEGUE 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 1996 TO SEPTEMBER 1997

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L) AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L) AS NO3) (71851)
OCT 1996											
09...	1245	567	400	7.8	13.0	17.0	728	10.7	106	--	20
NOV											
13...	1530	1030	330	7.7	6.0	4.0	768	12.2	97	--	18
DEC											
01...	1638	1840	--	--	--	--	--	--	--	4.0	14
01...	2057	2790	270	--	--	--	--	--	--	--	--
01...	2355	3590	--	--	--	--	--	--	--	4.2	11
02...	0212	4430	216	--	--	--	--	--	--	--	--
02...	0404	5050	--	--	--	--	--	--	--	4.3	11
02...	0543	5490	201	--	--	--	--	--	--	--	--
02...	0713	5810	--	--	--	--	--	--	--	4.1	11
02...	0838	6030	193	--	--	--	--	--	--	--	--
02...	0959	6240	--	--	--	--	--	--	--	4.1	11
02...	1118	6310	188	--	--	--	--	--	--	--	--
02...	1236	6320	--	--	--	--	--	--	--	3.9	11
02...	1353	6190	186	--	--	--	--	--	--	--	--
02...	1512	6160	--	--	--	--	--	--	--	3.6	11
02...	1633	6040	189	--	--	--	--	--	--	--	--
02...	1754	6000	--	--	--	--	--	--	--	3.5	11
02...	1916	5980	192	--	--	--	--	--	--	--	--
02...	2039	5980	--	--	--	--	--	--	--	3.5	12
02...	2201	5960	189	--	--	--	--	--	--	--	--
02...	2324	5900	--	--	--	--	--	--	--	3.5	12
03...	0048	5820	188	--	--	--	--	--	--	--	--
03...	0214	5600	--	--	--	--	--	--	--	3.4	11
13...	0626	2030	--	--	--	--	--	--	--	3.6	15
13...	1025	3450	262	--	--	--	--	--	--	--	--
13...	1250	4540	--	--	--	--	--	--	--	3.4	12
13...	1446	5130	222	--	--	--	--	--	--	--	--
13...	1630	5490	--	--	--	--	--	--	--	3.4	12
13...	1808	5730	208	--	--	--	--	--	--	--	--
13...	1942	5870	--	--	--	--	--	--	--	4.0	13
13...	2115	5960	204	--	--	--	--	--	--	--	--
13...	2247	5960	--	--	--	--	--	--	--	7.1	11
14...	0018	6000	207	--	--	--	--	--	--	--	--
14...	0149	6060	--	--	--	--	--	--	--	3.4	12
14...	0318	6120	210	--	--	--	--	--	--	--	--
14...	0447	6190	--	--	--	--	--	--	--	3.2	12
14...	0615	6190	212	--	--	--	--	--	--	--	--
14...	0742	6200	--	--	--	--	--	--	--	3.5	13
14...	0910	6160	212	--	--	--	--	--	--	--	--
14...	1039	6110	--	--	--	--	--	--	--	3.4	13
14...	1209	5960	213	--	--	--	--	--	--	--	--
16...	1500	2350	273	7.7	7.0	5.5	758	10.8	89	3.8	16
JAN 1997											
23...	1600	443	380	8.3	3.0	5.5	757	15.4	115	--	21
FEB											
13...	1500	754	338	8.5	3.5	-2.0	770	--	--	--	17



## POTOMAC RIVER BASIN

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)
OCT 1996											
09...	0.010	4.60	<0.015	<0.20	<0.20	0.050	0.050	0.050	2.8	4	6.4
NOV											
13...	0.030	4.10	0.030	<0.20	<0.20	0.040	0.030	0.040	1.9	5	13
DEC											
01...	0.020	3.20	0.060	0.80	0.30	0.140	0.040	0.040	--	--	--
01...	--	--	--	--	--	--	--	--	--	96	720
01...	0.020	2.60	0.120	1.6	0.50	0.410	0.110	0.110	--	--	--
02...	--	--	--	--	--	--	--	--	--	213	2550
02...	0.030	2.50	0.190	1.8	0.50	0.490	0.150	0.130	--	--	--
02...	--	--	--	--	--	--	--	--	--	240	3550
02...	0.020	2.40	0.120	1.7	0.50	0.480	0.140	0.140	--	--	--
02...	--	--	--	--	--	--	--	--	--	222	3620
02...	0.020	2.40	0.090	1.7	0.40	0.480	0.130	0.130	--	--	--
02...	--	--	--	--	--	--	--	--	--	171	2910
02...	0.010	2.40	0.070	1.5	0.40	0.410	0.110	0.110	--	--	--
02...	--	--	--	--	--	--	--	--	--	134	2240
02...	0.030	2.50	0.070	1.1	0.40	0.300	0.090	0.100	--	--	--
02...	--	--	--	--	--	--	--	--	--	105	1720
02...	0.020	2.60	0.050	0.90	0.30	0.240	0.080	0.080	--	--	--
02...	--	--	--	--	--	--	--	--	--	86	1390
02...	0.010	2.70	0.050	0.80	0.30	0.170	0.050	0.060	--	--	--
02...	--	--	--	--	--	--	--	--	--	91	1460
02...	0.020	2.70	0.040	0.80	0.30	0.200	0.060	0.050	--	--	--
03...	--	--	--	--	--	--	--	--	--	95	1490
03...	0.020	2.60	0.040	0.80	0.30	0.200	0.050	0.050	--	--	--
13...	0.020	3.30	<0.015	0.30	0.20	0.070	0.050	0.060	--	--	--
13...	--	--	--	--	--	--	--	--	--	113	1060
13...	0.020	2.80	0.060	0.60	0.40	0.140	0.110	0.100	--	--	--
13...	--	--	--	--	--	--	--	--	--	172	2390
13...	0.020	2.70	0.070	0.70	0.40	0.140	0.110	0.110	--	--	--
13...	--	--	--	--	--	--	--	--	--	148	2290
13...	0.020	2.90	0.030	1.1	0.20	0.260	0.050	0.050	--	--	--
13...	--	--	--	--	--	--	--	--	--	121	1940
13...	0.020	2.60	0.110	4.5	0.40	0.130	0.100	0.100	--	--	--
14...	--	--	--	--	--	--	--	--	--	89	1440
14...	0.020	2.70	0.060	0.70	0.30	0.170	0.090	0.080	--	--	--
14...	--	--	--	--	--	--	--	--	--	84	1390
14...	0.020	2.80	0.050	0.40	0.30	0.090	0.090	0.070	--	--	--
14...	--	--	--	--	--	--	--	--	--	82	1370
14...	0.020	2.90	0.040	0.60	0.30	0.130	0.060	0.050	--	--	--
14...	--	--	--	--	--	--	--	--	--	78	1300
14...	0.020	2.90	0.030	0.50	0.20	0.120	0.040	0.040	--	--	--
14...	--	--	--	--	--	--	--	--	--	67	1070
16...	0.015	3.55	<0.015	0.22	<0.20	0.026	0.021	0.023	2.4	22	138
JAN 1997											
23...	0.030	4.80	<0.015	<0.20	0.20	0.030	0.040	0.040	2.2	2	2.6
FEB											
13...	0.020	3.80	<0.015	<0.20	0.40	0.020	<0.010	0.020	2.2	2	4.3

## POTOMAC RIVER BASIN

01614500 CONOCOCHAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED OXYGEN, (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED CENT SATUR- ATION) (MG/L) (00301)	NITRO- GEN, NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS NO3) (71851)
MAR 1997											
05...	2240	1700	--	--	--	--	--	--	--	5.2	16
06...	0319	2330	287	--	--	--	--	--	--	--	--
06...	0656	2590	--	--	--	--	--	--	--	5.0	15
06...	1023	2610	269	--	--	--	--	--	--	--	--
06...	1349	2600	--	--	--	--	--	--	--	4.7	15
06...	1720	2520	263	--	--	--	--	--	--	--	--
06...	2102	2380	--	--	--	--	--	--	--	4.4	15
07...	0100	2240	271	--	--	--	--	--	--	--	--
07...	0513	2110	--	--	--	--	--	--	--	4.1	16
07...	0949	1960	272	--	--	--	--	--	--	--	--
14...	1542	1930	--	--	--	--	--	--	--	4.4	--
14...	1930	3300	267	--	--	--	--	--	--	--	--
14...	2217	3580	--	--	--	--	--	--	--	5.0	12
15...	0100	3530	229	--	--	--	--	--	--	--	--
15...	0347	3430	--	--	--	--	--	--	--	4.4	12
15...	0642	3310	231	--	--	--	--	--	--	--	--
15...	0944	3150	--	--	--	--	--	--	--	4.0	14
15...	1300	2950	240	--	--	--	--	--	--	--	--
15...	1635	2710	--	--	--	--	--	--	--	3.9	14
15...	2036	2430	250	--	--	--	--	--	--	--	--
16...	0111	2180	--	--	--	--	--	--	--	3.8	15
16...	0626	1990	275	--	--	--	--	--	--	--	--
17...	1615	1460	287	7.8	5.5	10.5	758	13.5	108	--	--
APR											
16...	1415	413	354	8.3	14.5	20.0	755	13.3	132	4.0	16
MAY											
15...	1400	252	400	8.2	18.5	20.5	747	11.6	126	4.4	18
JUN											
20...	1230	377	340	7.8	23.0	30.0	755	8.4	99	4.6	18
JUL											
08...	1515	164	417	8.3	27.0	31.0	756	9.7	123	4.0	16
AUG											
21...	1115	347	451	7.7	20.0	24.5	748	7.6	85	5.0	18
SEP											
09...	1600	86	491	7.9	20.0	22.0	753	7.3	81	4.8	20

## POTOMAC RIVER BASIN

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)
MAR 1997											
05...	0.010	3.60	<0.015	1.6	0.20	0.260	<0.010	0.020	--	--	--
06...	--	--	--	--	--	--	--	--	--	129	811
06...	0.020	3.40	0.110	1.6	0.40	0.280	0.030	0.050	--	--	--
06...	--	--	--	--	--	--	--	--	--	179	1260
06...	0.020	3.40	0.070	1.3	0.30	0.220	0.030	0.040	--	--	--
06...	--	--	--	--	--	--	--	--	--	106	723
06...	0.010	3.50	0.030	0.90	0.20	0.170	0.010	0.030	--	--	--
07...	--	--	--	--	--	--	--	--	--	67	404
07...	0.010	3.60	0.030	0.50	<0.20	0.070	0.010	0.020	--	--	--
07...	--	--	--	--	--	--	--	--	--	52	276
14...	<0.010	3.20	<0.015	1.2	<0.20	0.180	<0.010	0.020	--	--	--
14...	--	--	--	--	--	--	--	--	--	280	2490
14...	0.020	2.70	0.250	2.3	0.60	0.480	0.050	0.070	--	--	--
15...	--	--	--	--	--	--	--	--	--	251	2390
15...	0.020	2.80	0.090	1.6	0.40	0.310	0.030	0.050	--	--	--
15...	--	--	--	--	--	--	--	--	--	147	1320
15...	0.020	3.10	0.070	0.90	0.30	0.150	0.020	0.030	--	--	--
15...	--	--	--	--	--	--	--	--	--	92	733
15...	0.010	3.20	0.050	0.70	0.30	0.100	0.020	0.030	--	--	--
15...	--	--	--	--	--	--	--	--	--	62	406
16...	0.010	3.30	<0.015	0.50	0.20	0.060	0.010	0.020	--	--	--
16...	--	--	--	--	--	--	--	--	--	46	244
17...	<0.010	3.70	<0.015	<0.20	<0.20	0.030	<0.010	0.020	6.9	6	25
APR											
16...	0.023	3.68	0.020	0.34	<0.20	0.069	0.031	0.045	2.2	2	2.6
MAY											
15...	0.041	4.21	0.025	0.23	<0.20	0.134	0.085	0.085	5.8	3	2.0
JUN											
20...	0.067	4.04	0.062	0.56	0.42	0.176	0.117	0.108	6.4	22	23
JUL											
08...	0.019	3.65	0.020	0.38	0.26	0.146	0.133	0.115	4.6	5	2.1
AUG											
21...	0.033	4.03	0.087	0.94	0.42	0.288	0.216	0.190	3.7	38	36
SEP											
09...	0.020	4.46	0.029	0.29	0.35	0.187	0.177	0.183	2.7	7	1.5



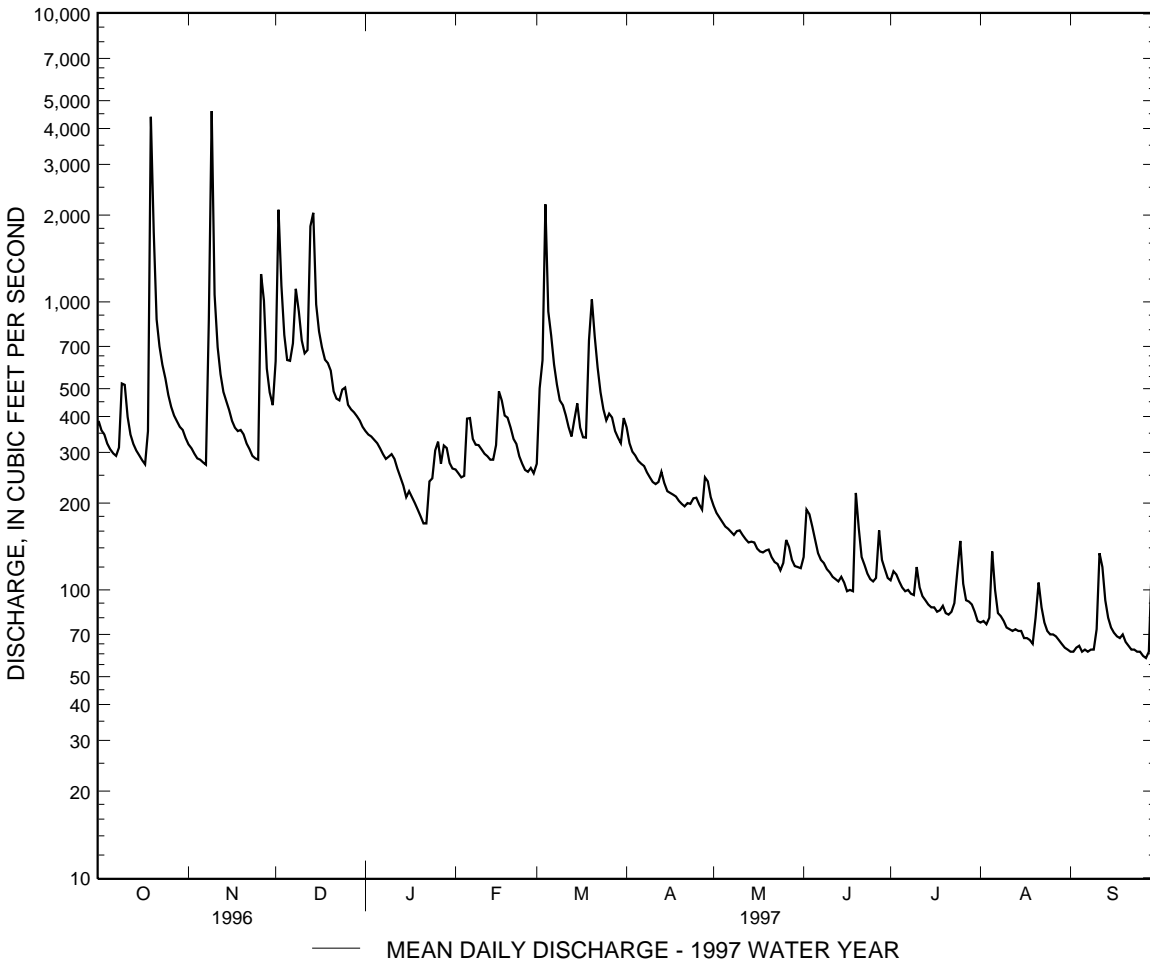
POTOMAC RIVER BASIN

01616500 OPEQUON CREEK NEAR MARTINSBURG, WV--Continued

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1947 - 1996	
ANNUAL TOTAL	249905		117080			
ANNUAL MEAN	683		321		243	
HIGHEST ANNUAL MEAN					581	1996
LOWEST ANNUAL MEAN					85.7	1954
HIGHEST DAILY MEAN	(e)15000	Jan 20	4600	Nov 9	(e)15000	Jan 20 1996
LOWEST DAILY MEAN	182	Jul 7	58	Sep 27	26	Oct 25 1947
ANNUAL SEVEN-DAY MINIMUM	195	Jul 12	61	Sep 22	27	Sep 7 1966
INSTANTANEOUS PEAK FLOW			6110	Nov 9	(a)23400	Jan 20 1996
INSTANTANEOUS PEAK STAGE			12.53	Nov 9	18.76	Jan 20 1996
INSTANTANEOUS LOW FLOW			56	Sep 27	25	Oct 25 1947
ANNUAL RUNOFF (CFSM)	2.50		1.17		.89	
ANNUAL RUNOFF (INCHES)	34.05		15.95		12.10	
10 PERCENT EXCEEDS	1060		609		473	
50 PERCENT EXCEEDS	439		244		140	
90 PERCENT EXCEEDS	268		72		56	

e Estimated.

a From rating curve extended above 7,100 ft<sup>3</sup>/s.



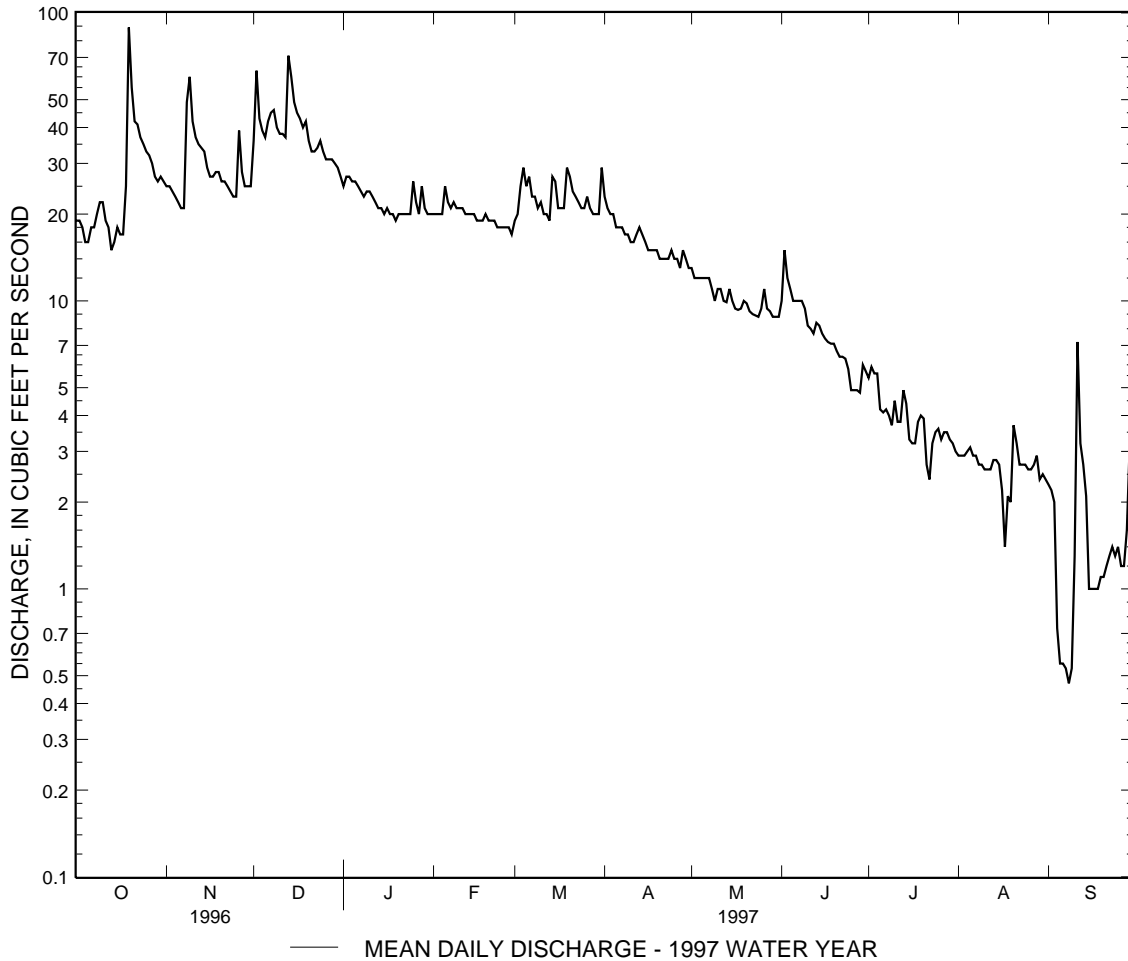


POTOMAC RIVER BASIN

01617800 MARSH RUN AT GRIMES, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	9404.5		6197.66			
ANNUAL MEAN	25.7		17.0		12.5	
HIGHEST ANNUAL MEAN					23.9	1972
LOWEST ANNUAL MEAN					4.31	1969
HIGHEST DAILY MEAN	90	Jul 19	89	Oct 19	223	Jun 23 1972
LOWEST DAILY MEAN	(e)6.0	Jan 8	.47	Sep 8	(a).00	Oct 1 1977
ANNUAL SEVEN-DAY MINIMUM	7.1	Jan 8	.67	Sep 4	.60	Oct 21 1986
INSTANTANEOUS PEAK FLOW			104	Oct 19	(b)459	Feb 12 1985
INSTANTANEOUS PEAK STAGE			2.36	Oct 19	4.45	Feb 12 1985
INSTANTANEOUS LOW FLOW			.47	(c)	(a).00	Oct 1 1977
ANNUAL RUNOFF (CFSM)	1.36		.90		.66	
ANNUAL RUNOFF (INCHES)	18.51		12.20		9.00	
10 PERCENT EXCEEDS	40		33		25	
50 PERCENT EXCEEDS	23		18		9.2	
90 PERCENT EXCEEDS	16		2.6		3.0	

- e Estimated.
- a Result of regulation caused by construction work upstream from station.
- b From rating curve extended above 220 ft<sup>3</sup>/s.
- c Sept. 8, 9.



## POTOMAC RIVER BASIN

01619320 ALBERT POWELL FISH HATCHERY SPRING AT BEAVER CREEK, MD

LOCATION.--Lat 39°35'22", long 77°38'19", Washington County, Hydrologic Unit 02070004, on left bank at spring outlet, 0.2 mi upstream from Beaver Creek, and 0.4 mi north of the town of Beaver Creek.

PERIOD OF RECORD.--April 1987 to current year.

GAGE.--Water-stage recorder and steel weir plate. Datum of gage is 505 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 19 ft<sup>3</sup>/s, Oct. 19, gage height, 1.73 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	11	11	10	9.2	11	9.2	8.2	7.2	6.4	6.5
2	11	11	13	11	9.7	9.2	11	9.2	8.2	7.2	6.5	6.4
3	11	11	12	11	9.7	9.3	11	9.1	8.1	7.1	6.5	6.2
4	11	11	12	11	9.7	9.5	11	9.0	7.9	7.0	6.5	6.2
5	11	11	12	11	9.7	9.5	11	9.0	7.7	7.0	6.5	6.2
6	11	11	12	10	9.7	9.7	10	9.0	7.7	7.0	6.5	6.2
7	11	11	12	10	9.7	9.7	10	8.8	7.7	7.0	6.5	6.2
8	11	11	12	10	9.7	9.7	10	8.7	7.7	7.0	6.5	6.2
9	11	12	12	10	9.7	9.7	9.8	8.7	7.7	7.0	6.5	6.2
10	11	11	12	10	9.7	9.7	9.7	8.7	7.7	7.0	6.5	6.3
11	11	11	11	10	9.7	9.7	9.7	8.7	7.5	7.0	6.5	9.5
12	11	11	11	10	9.7	9.5	9.7	8.7	7.5	7.0	6.4	8.4
13	11	11	13	10	9.7	9.5	9.6	8.7	7.5	7.0	6.2	7.7
14	11	11	13	10	9.7	9.6	9.5	8.7	7.5	6.9	6.2	7.5
15	10	11	13	10	9.7	9.8	9.5	8.6	7.4	6.7	6.2	7.3
16	10	11	13	10	9.7	9.7	9.5	8.5	7.2	6.7	6.2	7.1
17	10	11	12	10	9.7	9.7	9.5	8.5	7.2	6.6	6.2	6.7
18	11	11	12	10	9.5	9.7	9.5	8.5	7.2	6.6	6.3	6.5
19	16	11	12	10	9.5	9.7	9.5	8.5	7.2	6.5	6.3	6.5
20	14	11	12	10	9.3	9.7	9.5	8.5	7.2	6.5	6.2	6.5
21	13	11	11	10	9.2	9.7	9.5	8.5	7.2	6.5	6.6	6.4
22	13	10	11	10	9.4	9.7	9.5	8.3	7.2	6.5	6.6	6.2
23	12	10	11	10	9.5	9.7	9.3	8.2	7.2	6.5	6.6	6.2
24	12	10	11	10	9.5	9.7	9.2	8.2	7.3	6.5	6.5	6.2
25	12	10	11	10	9.4	9.5	9.2	8.2	7.5	6.5	6.5	6.2
26	12	11	11	10	9.2	9.7	9.3	8.2	7.4	6.5	6.5	6.2
27	12	11	11	10	9.2	9.7	9.2	8.2	7.2	6.5	6.5	6.2
28	12	11	11	10	9.2	9.7	9.2	8.2	7.2	6.5	6.5	6.2
29	12	11	11	10	---	9.9	9.2	8.2	7.2	6.5	6.5	6.3
30	12	11	11	10	---	10	9.2	8.2	7.2	6.5	6.5	6.3
31	11	---	11	10	---	11	---	8.2	---	6.5	6.5	---
TOTAL	358	327	363	315	268.1	300.1	292.8	265.9	224.6	209.5	199.4	198.7
MEAN	11.5	10.9	11.7	10.2	9.57	9.68	9.76	8.58	7.49	6.76	6.43	6.62
MAX	16	12	13	11	10	11	11	9.2	8.2	7.2	6.6	9.5
MIN	10	10	11	10	9.2	9.2	9.2	8.2	7.2	6.5	6.2	6.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	
MEAN	7.13	6.85	7.97	8.44	8.42	9.31	9.33	9.17	8.65	7.88	7.35	7.15
MAX	11.5	10.9	11.7	10.8	10.8	14.1	13.4	11.9	11.1	10.6	10.7	11.7
(WY)	1997	1997	1997	1996	1994	1994	1993	1993	1996	1996	1996	1996
MIN	5.64	5.32	5.30	5.63	5.54	6.40	6.14	7.17	7.49	6.76	6.22	6.08
(WY)	1989	1988	1989	1989	1989	1988	1988	1990	1997	1997	1991	1988

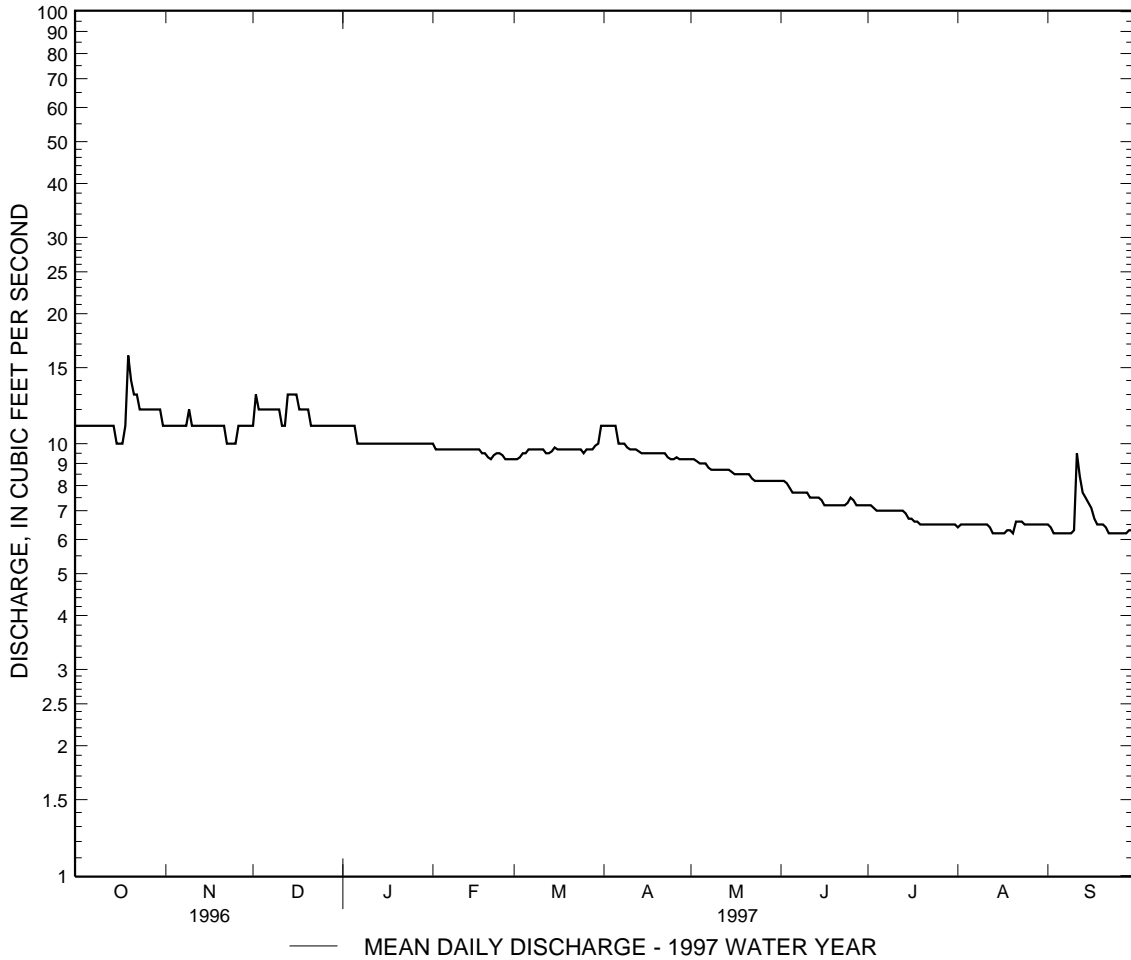


POTOMAC RIVER BASIN

01619320 ALBERT POWELL FISH HATCHERY SPRING AT BEAVER CREEK, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1987 - 1997	
ANNUAL TOTAL	3989.7		3322.1			
ANNUAL MEAN	10.9		9.10		7.99	
HIGHEST ANNUAL MEAN					9.68 1996	
LOWEST ANNUAL MEAN					6.51 1988	
HIGHEST DAILY MEAN	25	Jan 19	16	Oct 19	25	Jan 19 1996
LOWEST DAILY MEAN	7.5	(a)	6.2	(b)	5.0	(c)
ANNUAL SEVEN-DAY MINIMUM	7.9	Jan 1	6.2	Sep 3	5.1	Dec 13 1988
INSTANTANEOUS PEAK FLOW			19	Oct 19	(d)20	Apr 22 1992
INSTANTANEOUS PEAK STAGE			1.73	Oct 19	(f)2.45	Jan 19 1996
INSTANTANEOUS LOW FLOW			6.0	Sep 10	4.9	(c)
10 PERCENT EXCEEDS	12		11		11	
50 PERCENT EXCEEDS	11		9.5		7.6	
90 PERCENT EXCEEDS	10		6.5		5.9	

- a Jan. 1, 2.
- b Aug. 13-18, 20, Sept. 3-9, 22-28.
- c Dec. 18, 19, 1988.
- d May have been greater during period of backwater from Beaver Creek on Jan. 19, 1996.
- f Affected by backwater from Beaver Creek.





POTOMAC RIVER BASIN

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1931 - 1997	
ANNUAL TOTAL	257365		152086			
ANNUAL MEAN	703		417		287	
ANNUAL MEAN $\neq$	687		401		278	
HIGHEST ANNUAL MEAN					554 1996	
LOWEST ANNUAL MEAN					124 1966	
HIGHEST DAILY MEAN	5390	Jan 20	2520	Oct 19	8970	Sep 26 1975
LOWEST DAILY MEAN	(e)180	Jan 8	97	(a)	37	Jan 30 1966
ANNUAL SEVEN-DAY MINIMUM	228	Jan 8	99	Sep 3	49	Jan 26 1966
INSTANTANEOUS PEAK FLOW			3080	Oct 19	(b)12600	Jul 20 1956
INSTANTANEOUS PEAK STAGE			7.57	Oct 19	16.73	Jul 20 1956
INSTANTANEOUS LOW FLOW			93	(a)	(c)9.4	Nov 22 1957
ANNUAL RUNOFF (CFSM)	2.50		1.48		1.02	
ANNUAL RUNOFF (CFSM) $\neq$	2.44		1.43		0.98	
ANNUAL RUNOFF (INCHES)	34.07		20.13		13.86	
ANNUAL RUNOFF (INCHES) $\neq$	33.22		19.39		13.44	
10 PERCENT EXCEEDS	1090		758		550	
50 PERCENT EXCEEDS	575		382		208	
90 PERCENT EXCEEDS	399		120		98	

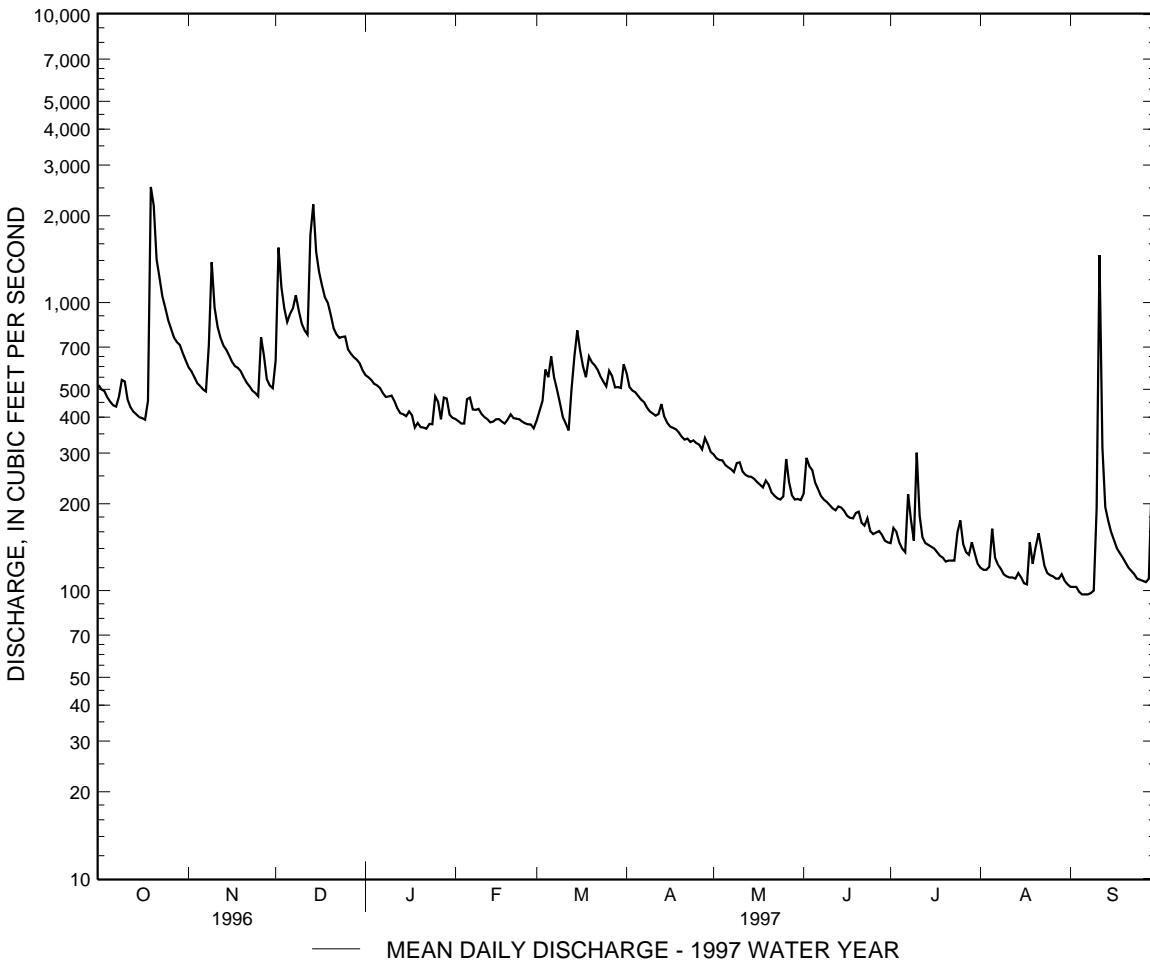
$\neq$  Adjusted for inflow since January 1930.

e Estimated.

a Sept. 5-7.

b From rating curve extended above 7,300 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

c Result of regulation caused by construction work upstream from station.



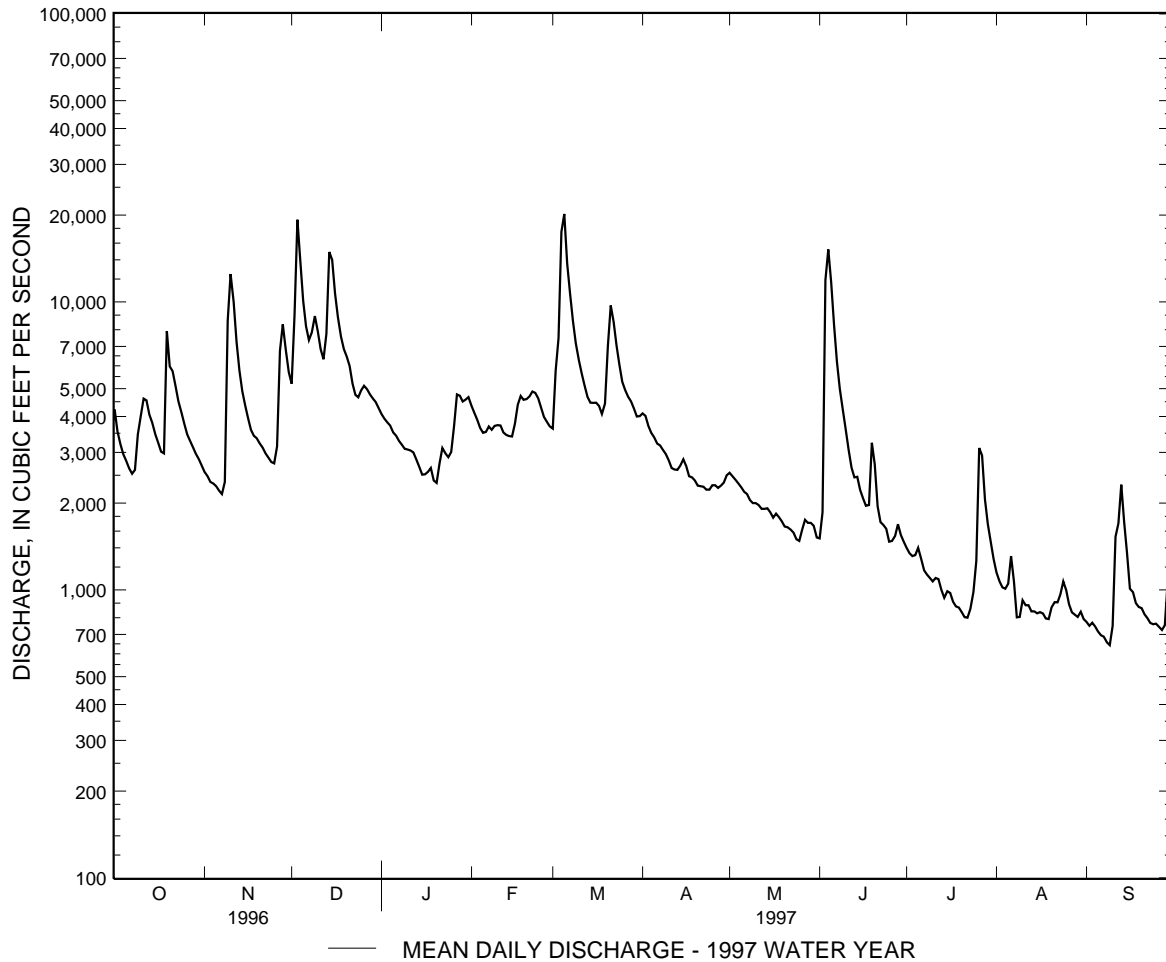


POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1895 - 1909 1928 - 1997	
ANNUAL TOTAL	2286220		1271149			
ANNUAL MEAN	6247		3483		2757	
HIGHEST ANNUAL MEAN					5618	1996
LOWEST ANNUAL MEAN					1111	1981
HIGHEST DAILY MEAN	133000	Sep 8	20200	Mar 5	192000	Oct 16 1942
LOWEST DAILY MEAN	1390	Jul 28	643	Sep 9	194	Jul 24 1930
ANNUAL SEVEN-DAY MINIMUM	1530	Jul 13	700	Sep 4	240	Sep 7 1966
INSTANTANEOUS PEAK FLOW			23300	Mar 5	230000	Oct 16 1942
INSTANTANEOUS PEAK STAGE			10.24	Mar 5	(a)32.40	Oct 16 1942
INSTANTANEOUS LOW FLOW			633	(b)	59	Oct 4 1930
ANNUAL RUNOFF (CFSM)	2.07		1.15		.91	
ANNUAL RUNOFF (INCHES)	28.14		15.65		12.39	
10 PERCENT EXCEEDS	10100		6930		5560	
50 PERCENT EXCEEDS	4120		2810		1620	
90 PERCENT EXCEEDS	2180		862		610	

a From floodmarks.  
b Sept. 9, 10.



## POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

## WATER-QUALITY RECORDS

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

INSTRUMENTATION.--Water-quality monitor October 1980 to September 1983.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURES: October 1980 to September 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (water years 1981-82): Maximum, 778 microsiemens, Dec. 29, 1980; minimum, 212 microsiemens, Jan. 17, 1982.

WATER TEMPERATURE: Maximum, 30.0°C, July 20, 21, 1981; minimum, 0.0°C on many days during winter periods.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	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 (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, OXYGEN, DIS- SOLVED (MG/L) SATUR- ATION (00300)	OXYGEN, DIS- SOLVED (PER- CENT AS CACO3) (00301)	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)
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FEB	19...	1345	4560	294	8.8	6.5	20.5	758	13.4	110	140	38	9.6
MAR	18...	1230	4030	290	8.2	8.0	12.5	762	11.9	101	140	40	10

DATE	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)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L AS (70300)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
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FEB	19...	6.5	1.7	107	118	6	15	11	0.10	0.32	164	5.4	0.101
MAR	18...	4.7	1.7	120	139	4	13	7.7	0.10	3.4	161	7.9	0.010

DATE	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L) (49295)
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FEB	19...	1.33	<0.015	<0.20	<0.20	<0.010	<0.010	<0.010	27	3.7	3.5	0.50	<0.007
MAR	18...	1.80	<0.015	0.50	<0.20	0.140	0.020	0.020	10	4.0	1.6	0.30	<0.007

DATE	2,4,5-T DIS- SOLVED (UG/L) (39742)	2,4-D, DIS- SOLVED (UG/L) (39732)	ACIFL- 2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA- CHLOR, WATER, FLTRD, DISS, REC (UG/L) (46342)	ALDI- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	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)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)
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FEB	19...	<0.035	<0.035	<0.035	<0.035	<0.002	<0.016	<0.016	<0.021	0.021	E0.026	<0.001
MAR	18...	<0.035	<0.035	<0.035	<0.035	<0.002	<0.016	<0.016	<0.021	0.031	E0.015	<0.001

E Denotes concentration is less than the method detection limit (MDL).

## POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	BEN- FLUR- ALIN WAT FLD 0.7 U GF (UG/L) (82673)	BENTA- ZON, WATER, FLTRD, 0.7U GF (UG/L) (38711)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	BRO- MOXYNIL WATER, FLTRD, 0.7U GF (UG/L) (49311)	BUTYL- ATE, WATER, DISS, REC (UG/L) (04028)	CAR- BARYL, WATER, FLTRD, 0.7U GF (UG/L) (49310)	CAR- BARYL WATER, FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN, WATER, FLTRD, 0.7U GF (UG/L) (49309)	CARBO- FURAN WATER, FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO- FURAN WAT,FLT 0.7U GF (UG/L) (49308)	CHLOR- AMBEN, WATER, FLTRD, 0.7U GF (UG/L) (49307)
FEB											
MAR											
19...	<0.002	<0.014	<0.035	<0.035	<0.002	<0.008	<0.003	<0.028	<0.003	<0.014	<0.011
18...	<0.002	<0.014	<0.035	<0.035	<0.002	<0.008	<0.003	<0.028	<0.003	<0.014	<0.011
DATE	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)	DACTHAL MONO- ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	P, P' DDE DISSOLV (UG/L) (34653)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLO- BENIL, WATER, FLTRD, GF 0.7U REC (UG/L) (49303)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)
FEB											
MAR											
19...	<0.035	<0.004	<0.050	<0.004	<0.017	<0.002	<0.006	<0.002	<0.035	<0.020	<0.032
18...	<0.035	<0.004	<0.050	<0.004	<0.017	<0.002	<0.006	<0.002	<0.035	<0.020	<0.032
DATE	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DISUL- FOTON WATER, FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	DNOC WAT,FLT GF 0.7U REC (UG/L) (49299)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ESFEN- VAL- ERATE, WAT,FLT GF 0.7U REC (UG/L) (49298)	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)	FEN- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)
FEB											
MAR											
19...	<0.001	<0.003	<0.035	<0.017	<0.020	<0.035	<0.002	<0.019	<0.004	<0.003	<0.013
18...	<0.001	<0.003	<0.035	<0.017	<0.020	<0.035	<0.002	<0.019	<0.004	<0.003	<0.013
DATE	FLUO- METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	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)	METHIO- CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH- OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)
FEB											
MAR											
19...	<0.035	<0.003	<0.002	<0.004	<0.018	<0.002	<0.005	<0.050	<0.035	<0.026	<0.017
18...	<0.035	<0.003	<0.002	<0.004	<0.018	<0.002	<0.005	<0.050	<0.035	<0.026	<0.017

## POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO- LACHLOR WATER (UG/L) (39415)	METRI- BUZIN SENCOR WATER (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	NEB- URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY- ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER FILTRD 0.7 U (UG/L) (82669)
FEB 19...	<0.006	0.016	<0.004	<0.004	<0.003	<0.015	<0.024	<0.019	<0.018	<0.004	<0.004
MAR 18...	<0.006	0.012	<0.004	<0.004	<0.003	<0.015	<0.024	<0.019	<0.018	<0.004	<0.004
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)	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)	PROP- 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)	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PRO- POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
FEB 19...	<0.004	<0.005	<0.002	<0.050	E0.006	<0.003	<0.007	<0.004	<0.013	<0.035	<0.035
MAR 18...	<0.004	<0.005	<0.002	<0.050	E0.006	<0.003	<0.007	<0.004	<0.013	<0.035	<0.035
DATE	SILVEX, DIS- SOLVED (UG/L) (39762)	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- CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
FEB 19...	<0.021	0.008	<0.010	<0.007	<0.013	<0.002	<0.001	<0.050	<0.002	8	101
MAR 18...	<0.021	0.008	E0.004	<0.007	<0.013	<0.002	<0.001	<0.050	<0.002	79	864

E Denotes concentration is less than the method detection limit (MDL).



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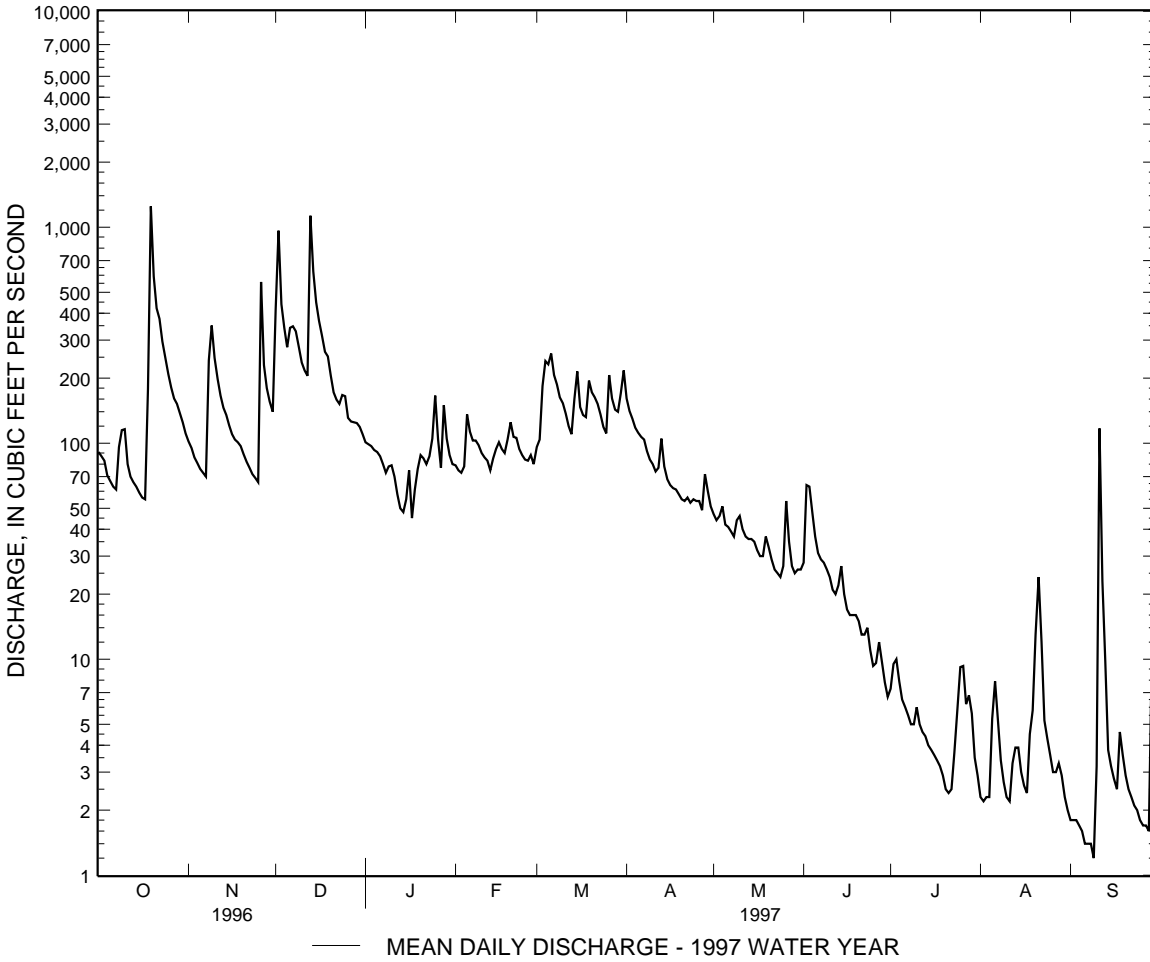
POTOMAC RIVER BASIN

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1947 - 1997	
ANNUAL TOTAL	75141		34629.0			
ANNUAL MEAN	205		94.9		77.8	
HIGHEST ANNUAL MEAN					164	1996
LOWEST ANNUAL MEAN					29.7	1954
HIGHEST DAILY MEAN	3940	Jan 19	1250	Oct 19	4880	Oct 9 1976
LOWEST DAILY MEAN	43	Jul 12	1.2	Sep 9	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	47	Jan 10	1.5	Sep 3	.00	Aug 27 1966
INSTANTANEOUS PEAK FLOW			1900	Dec 2	(b)12000	Oct 9 1976
INSTANTANEOUS PEAK STAGE			5.52	Dec 2	14.13	Oct 9 1976
INSTANTANEOUS LOW FLOW			UNKNOWN		.00	(a)
ANNUAL RUNOFF (CFSM)	3.07		1.42		1.16	
ANNUAL RUNOFF (INCHES)	41.78		19.26		15.79	
10 PERCENT EXCEEDS	378		207		176	
50 PERCENT EXCEEDS	125		69		39	
90 PERCENT EXCEEDS	63		2.9		5.7	

a Aug. 27 to Sept. 12, 1966.

b From rating curve extended above 2,600 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.



## POTOMAC RIVER BASIN

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'25", long 77°32'35", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi downstream from Catoctin Creek (Virginia), 6 mi upstream from Monocacy River, and at mile 159.5.

DRAINAGE AREA.--9,651 mi<sup>2</sup>.

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 sea level. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft higher.

REMARKS.--No estimated daily discharges. Records good. 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<sup>3</sup>/s from rating curve extended as explained in footnotes.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 20	0830	36,800	8.81	Dec. 14	2100	62,100	12.61
Nov. 10	1000	70,900	13.81	Mar. 5	1000	62,100	12.61
Nov. 28	0500	35,800	8.65	Mar. 21	1400	35,500	8.60
Dec. 3	1030	*85,200	*15.65				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11800	8920	19000	12000	14700	12000	13600	6960	5630	3290	2540	1750
2	10300	8420	40700	11400	13400	13500	13100	6860	5890	3200	2340	1690
3	9250	7930	79900	11000	12500	21200	12000	6620	15100	3220	2230	1670
4	8410	7660	56200	10600	12000	40700	11100	6460	31700	3660	2160	1650
5	7860	8580	38900	10400	12500	59100	10500	6180	33900	3450	2220	1560
6	7420	7850	31700	10000	18800	50100	10000	5960	28300	3140	2430	1570
7	7050	6950	28900	9700	20900	46100	9650	5760	20500	2810	2290	1600
8	7330	7540	29000	9250	18400	37600	9170	5590	15800	2920	2140	1570
9	8310	24300	28900	8690	16700	30100	8730	5450	12700	2660	1900	1560
10	9110	64800	26800	8640	15500	25400	8200	5420	10600	2690	2050	2050
11	10200	44000	23000	8480	14300	22500	7760	5380	8920	2680	1970	5730
12	11000	30000	20100	8170	13200	20000	7620	5320	7620	2530	1840	3900
13	10000	23300	27400	7460	12500	17100	7630	5620	6820	2410	1840	3970
14	9130	19200	53400	6920	11800	15500	7620	5780	6530	2290	1810	3460
15	8370	16400	52100	6570	11500	19900	8210	5420	6150	2270	1820	2830
16	7760	14400	38600	6580	11600	25600	7940	5530	5930	2440	1840	2430
17	7350	13000	31200	6960	12400	21200	7160	5660	5570	2200	1880	2290
18	7480	12000	26700	6100	13000	18100	6800	5520	5290	1980	1850	2210
19	21200	11400	23800	5650	12900	17500	6490	5350	5570	1960	1920	2030
20	34600	11100	21300	5920	13700	23800	6320	5180	7770	1950	2040	1950
21	29900	10800	19200	5940	17900	34500	6230	5030	6100	1940	2390	1710
22	25500	10300	16500	7090	20200	31700	6170	4860	5120	1940	2320	1780
23	21400	9770	14600	7660	20600	26700	6110	4770	4520	2370	2290	1830
24	18200	9330	14300	7690	19500	22500	6060	4790	4220	2430	2460	1730
25	16000	9030	14500	8450	16900	19200	6090	4620	3700	2490	2460	1740
26	14100	10900	14900	9870	14800	17500	6110	4720	3770	3730	2400	1700
27	12600	22300	14700	12900	13500	16400	6080	5400	3620	4900	2160	1700
28	11500	33800	14000	13700	12400	16100	6270	6680	3660	4850	2060	1740
29	10800	25600	13400	14300	---	15400	6370	7980	3500	4000	1930	2340
30	10300	20500	13100	14900	---	14200	6650	7040	3400	3360	1820	2890
31	9520	---	12700	16500	---	14000	---	6110	---	2720	1810	---
TOTAL	393750	510080	859500	289490	418100	765200	241740	178020	287900	88480	65210	66630
MEAN	12700	17000	27730	9338	14930	24680	8058	5743	9597	2854	2104	2221
MAX	34600	64800	79900	16500	20900	59100	13600	7980	33900	4900	2540	5730
MIN	7050	6950	12700	5650	11500	12000	6060	4620	3400	1940	1810	1560
CFSM	1.32	1.76	2.87	.97	1.55	2.56	.83	.60	.99	.30	.22	.23
IN.	1.52	1.97	3.31	1.12	1.61	2.95	.93	.69	1.11	.34	.25	.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 1997, BY WATER YEAR (WY)

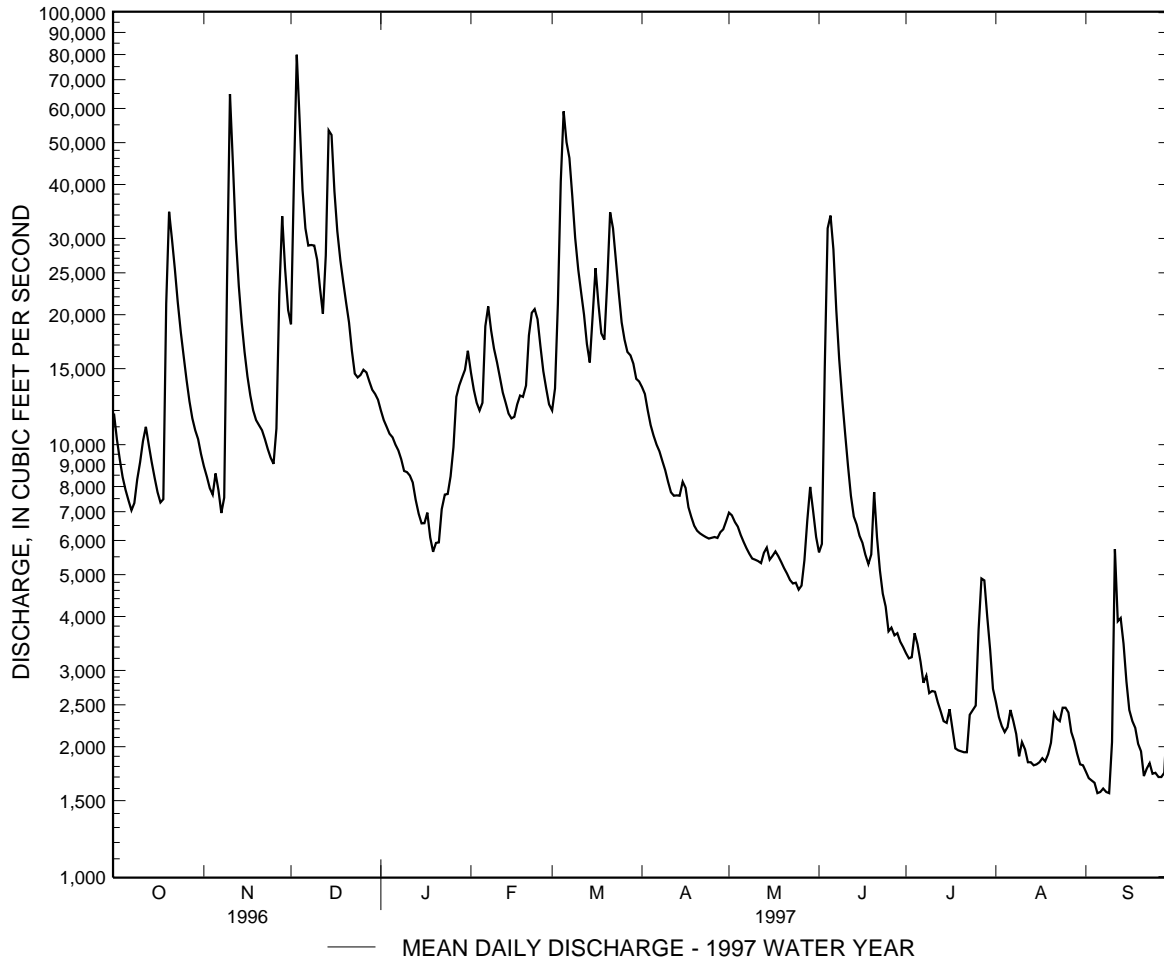
	5085	5635	8677	11480	14280	19750	16480	12330	8031	4549	4314	3793
MEAN	37030	39000	32610	42160	42640	68360	43840	41970	40400	16000	23580	38300
(WY)	1943	1986	1973	1996	1897	1936	1993	1924	1972	1949	1955	1996
MIN	706	840	1253	1703	2661	5400	4368	3276	1932	1056	771	834
(WY)	1931	1931	1966	1981	1934	1931	1915	1930	1969	1966	1930	1930

POTOMAC RIVER BASIN

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

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1895 - 1997	
ANNUAL TOTAL	7920860		4164100			
ANNUAL MEAN	21640		11410		9520	
HIGHEST ANNUAL MEAN					18750 1996	
LOWEST ANNUAL MEAN					4366 1969	
HIGHEST DAILY MEAN	288000	Sep 8	79900	Dec 3	434000	Mar 19 1936
LOWEST DAILY MEAN	3930	Jul 18	1560	(a)	540	Sep 10 1914
ANNUAL SEVEN-DAY MINIMUM	4410	Jul 12	1600	Sep 3	593	Sep 6 1966
INSTANTANEOUS PEAK FLOW			85200	Dec 3	(b)480000	Mar 19 1936
INSTANTANEOUS PEAK STAGE			15.65	Dec 3	41.03	Mar 19 1936
INSTANTANEOUS LOW FLOW			1500	Sep 5	530	(c)
ANNUAL RUNOFF (CFSM)	2.24		1.18		.99	
ANNUAL RUNOFF (INCHES)	30.53		16.05		13.40	
10 PERCENT EXCEEDS	38900		25400		20700	
50 PERCENT EXCEEDS	14600		7850		5400	
90 PERCENT EXCEEDS	7340		2010		1680	

- a September 5, 9.
- b From rating curve extended above 300,000 ft<sup>3</sup>/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.
- c September 11, 12, 1966.



## POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD

LOCATION.--Lat 39°40'43", long 77°14'06", 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<sup>2</sup>.

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 sea level (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.--Records good except those for estimated daily discharges (ice effect), which are fair. Occasional regulation at low flow from unknown source upstream from station. 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, about 23,000 ft<sup>3</sup>/s. Stage exceeded that of June 1889, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0900	8,330	14.02	Dec. 13	1830	*8,930	*14.56
Nov. 9	0215	6,830	12.61	Mar. 14	1945	5,520	11.28
Dec. 2	0730	7,110	12.88				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	102	1370	140	161	141	285	58	32	11	4.2	5.2
2	96	96	4190	130	172	286	170	54	112	11	3.4	4.4
3	102	90	711	136	173	430	140	51	419	20	3.1	4.1
4	83	82	469	129	197	933	125	70	236	18	3.2	3.7
5	73	77	350	125	982	861	114	57	122	13	4.1	3.3
6	68	75	596	142	481	1020	106	46	89	10	5.2	3.0
7	65	74	1000	106	292	397	103	42	71	13	5.0	2.8
8	194	849	1060	90	254	283	92	40	67	14	4.5	2.6
9	675	3130	698	88	236	232	81	45	62	12	4.4	2.4
10	658	724	396	102	212	220	78	68	54	12	4.2	15
11	224	375	333	92	208	202	74	54	49	20	3.9	585
12	143	263	336	e80	168	162	77	43	44	15	3.2	147
13	115	211	5080	e68	151	139	174	39	42	11	3.5	64
14	102	184	2170	e65	147	2020	111	37	45	8.8	3.8	39
15	87	158	676	65	232	1210	87	37	41	7.2	3.8	26
16	79	162	500	83	408	401	76	34	36	6.4	4.6	18
17	75	156	446	100	313	291	73	31	33	5.5	7.8	14
18	127	155	400	70	304	262	71	31	31	4.8	8.0	12
19	5610	166	504	54	513	556	70	32	36	4.4	4.7	9.6
20	977	147	427	52	380	552	63	41	44	3.8	6.8	8.6
21	753	132	246	63	241	326	58	32	25	2.9	71	7.1
22	474	122	227	62	214	257	59	28	26	2.6	44	6.6
23	358	100	206	112	166	198	59	24	22	3.9	19	6.1
24	316	93	252	140	137	166	58	23	18	22	11	5.9
25	237	92	403	711	121	145	61	27	15	66	8.2	5.6
26	193	1490	216	506	112	220	57	123	13	34	6.9	6.2
27	166	476	189	195	130	199	53	74	12	20	5.8	6.1
28	153	267	183	1050	121	145	88	44	12	14	4.7	6.3
29	176	219	198	487	---	140	99	33	12	11	5.8	25
30	139	170	200	237	---	152	69	31	11	8.4	6.8	57
31	120	---	162	172	---	574	---	32	---	6.0	5.9	---
TOTAL	12750	10437	24194	5652	7226	13120	2831	1381	1831	411.7	280.5	1101.6
MEAN	411	348	780	182	258	423	94.4	44.5	61.0	13.3	9.05	36.7
MAX	5610	3130	5080	1050	982	2020	285	123	419	66	71	585
MIN	65	74	162	52	112	139	53	23	11	2.6	3.1	2.4
CFSM	2.38	2.01	4.51	1.05	1.49	2.45	.55	.26	.35	.08	.05	.21
IN.	2.74	2.24	5.20	1.22	1.55	2.82	.61	.30	.39	.09	.06	.24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1997, BY WATER YEAR (WY)

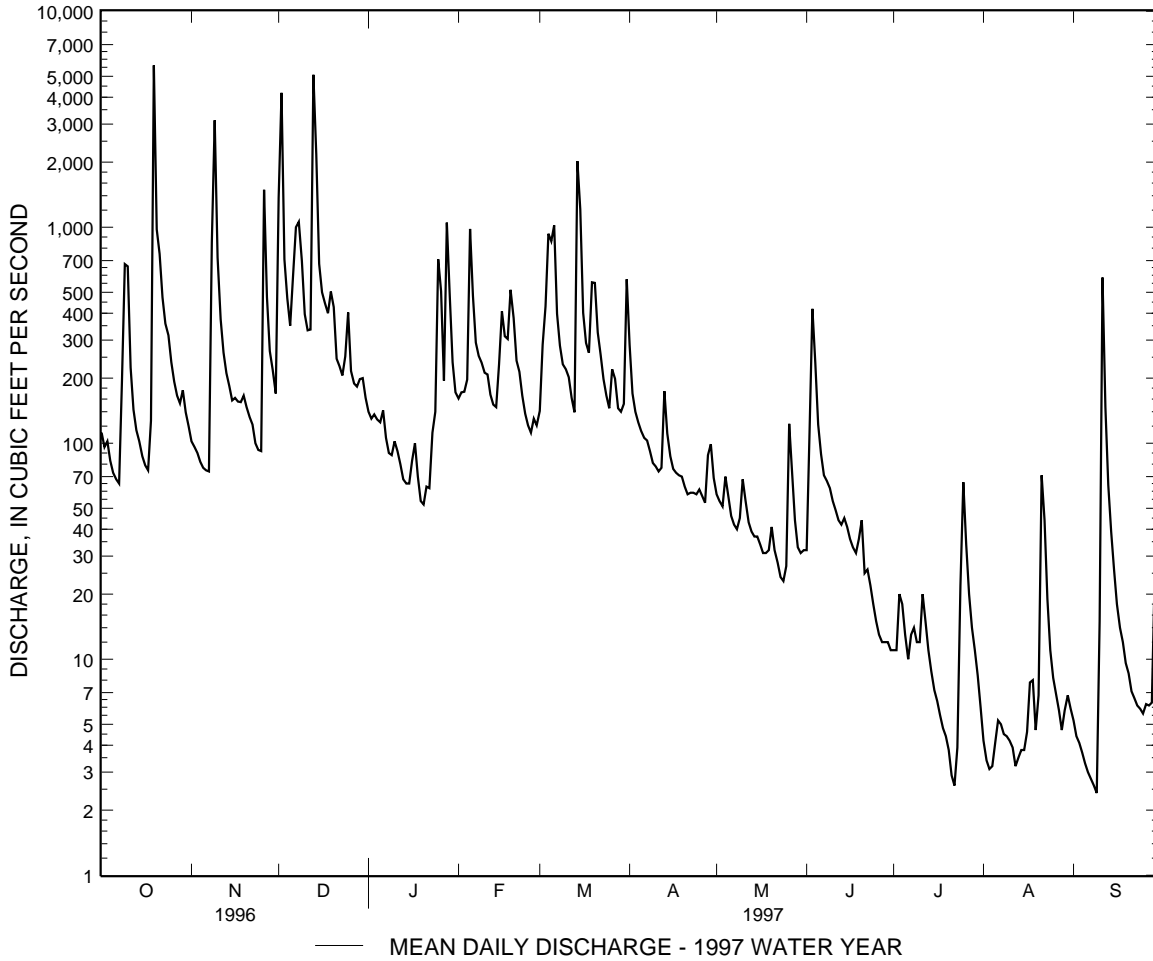
MEAN	96.5	183	276	298	377	455	298	210	136	83.5	60.4	84.9
MAX	906	513	780	1214	1029	1606	1029	964	1065	598	613	1027
(WY)	1977	1986	1997	1996	1961	1994	1983	1989	1972	1949	1942	1975
MIN	3.24	10.4	13.7	13.8	51.0	94.7	58.1	41.2	10.5	2.68	2.40	2.34
(WY)	1964	1954	1966	1981	1980	1949	1995	1969	1966	1966	1944	1943

POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1942 - 1997	
ANNUAL TOTAL	191889		81215.8			
ANNUAL MEAN	524		223		212	
HIGHEST ANNUAL MEAN					447 1996	
LOWEST ANNUAL MEAN					76.8 1954	
HIGHEST DAILY MEAN	13700	Jun 19	5610	Oct 19	16700	Jun 22 1972
LOWEST DAILY MEAN	28	Sep 4	2.4	Sep 9	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	35	Aug 30	3.1	Sep 3	.04	Jul 22 1966
INSTANTANEOUS PEAK FLOW			8930	Dec 13	(b)24400	Jun 19 1996
INSTANTANEOUS PEAK STAGE			14.56	Dec 13	25.42	Jun 19 1996
INSTANTANEOUS LOW FLOW			2.4	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	3.03		1.29		1.22	
ANNUAL RUNOFF (INCHES)	41.26		17.46		16.62	
10 PERCENT EXCEEDS	1090		483		448	
50 PERCENT EXCEEDS	192		87		65	
90 PERCENT EXCEEDS	75		5.8		8.2	

- a July 25-28, 1966.
- b From rating curve extended above 14,000 ft<sup>3</sup>/s on basis of slope-conveyance study.
- c July 22, Sept. 8-10.
- d July 24-29, 1966



## POTOMAC RIVER BASIN

01639140 PINEY CREEK NEAR TANEYTOWN, MD

LOCATION.--Lat 39°39'38", long 77°13'16", 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<sup>2</sup>.

PERIOD OF RECORD.--May 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 383.22 ft above sea level.

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. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s (revised) and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0315	1,730	6.57	Dec. 2	0515	1,020	5.03
Nov. 8	2115	1,340	5.82	Dec. 13	1445	*1,980	*6.95
Nov. 26	0745	1,480	6.16				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	26	262	29	33	37	64	11	e5.0	e1.6	.24	e.36
2	20	26	454	28	31	41	49	10	e21	e2.2	.21	e.36
3	21	23	109	28	32	112	43	19	e26	e2.3	.17	e.29
4	16	21	78	26	36	140	38	30	e14	e1.6	.37	e.29
5	14	20	62	27	132	98	34	12	e8.0	e1.3	.54	e.20
6	13	19	116	26	60	95	31	10	e6.6	e1.2	.30	e.23
7	13	18	197	21	47	54	29	9.1	e6.0	e3.6	.17	e.17
8	85	336	164	18	45	47	24	8.3	e5.6	e4.0	.19	e.24
9	79	299	106	19	43	41	21	11	e5.2	1.6	.08	e.36
10	50	101	75	22	38	40	19	12	e4.8	1.2	.17	e.55
11	33	65	68	20	34	36	17	9.5	e4.6	1.4	.20	e4.7
12	26	51	63	e16	32	31	24	8.6	e4.4	.98	.20	e4.9
13	25	43	1080	e13	29	27	45	e8.3	e4.6	.83	.32	e.90
14	23	40	256	e11	31	272	24	e8.2	e5.0	.61	.34	e.55
15	20	34	120	e12	65	118	18	e7.7	e4.4	.55	.27	e.50
16	19	30	94	22	71	62	16	e7.2	e3.9	.48	.27	e.46
17	19	28	86	29	57	52	16	e6.6	e3.6	.31	.41	e.46
18	102	27	71	e13	61	50	15	e6.5	e3.8	.23	e1.5	e.36
19	877	27	117	e9.0	66	107	14	e7.0	e4.2	.30	e.70	e.42
20	166	25	69	e8.5	53	75	13	e7.3	e3.4	.22	e2.5	e.34
21	117	22	51	e11	45	55	12	e6.5	e3.0	.18	e7.0	e.34
22	96	20	44	23	42	47	13	e5.9	e2.9	.17	e1.5	e.28
23	73	18	45	45	34	39	12	e5.4	e2.9	.35	e.65	e.28
24	63	17	69	46	30	35	13	e5.2	e2.4	.63	e.44	e.28
25	50	16	71	135	26	32	13	e5.7	e2.2	1.8	e.44	e.32
26	44	603	42	49	25	68	11	e14	e2.0	1.7	e.40	e.34
27	40	93	41	31	31	42	11	e7.0	e2.3	1.0	e.36	e.38
28	41	59	41	126	25	35	27	e5.5	e1.9	.86	e.70	e.25
29	40	49	42	48	---	73	16	e4.9	e1.8	.66	e1.2	e.38
30	33	44	39	36	---	57	12	e5.3	e1.6	.48	e.65	e.55
31	30	---	33	32	---	162	---	e5.5	---	.32	e.32	---
TOTAL	2269	2200	4165	979.5	1254	2180	694	280.2	167.1	34.66	22.81	20.04
MEAN	73.2	73.3	134	31.6	44.8	70.3	23.1	9.04	5.57	1.12	.74	.67
MAX	877	603	1080	135	132	272	64	30	26	4.0	7.0	4.9
MIN	13	16	33	8.5	25	27	11	4.9	1.6	.17	.08	.17
CFSM	2.34	2.34	4.29	1.01	1.43	2.25	.74	.29	.18	.04	.02	.02
IN.	2.70	2.61	4.95	1.16	1.49	2.59	.82	.33	.20	.04	.03	.02

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	25.2	46.8	76.8	76.1	44.6	109	55.3	23.3	17.2	23.6	11.6	15.8
MAX	73.2	73.3	134	200	93.0	237	183	59.1	62.0	101	43.5	77.3
(WY)	1997	1997	1997	1996	1994	1993	1993	1990	1996	1996	1996	1996
MIN	3.27	7.84	37.0	18.8	27.1	31.1	10.7	9.04	1.99	.57	.74	.67
(WY)	1992	1992	1996	1992	1991	1995	1995	1997	1991	1991	1997	1997

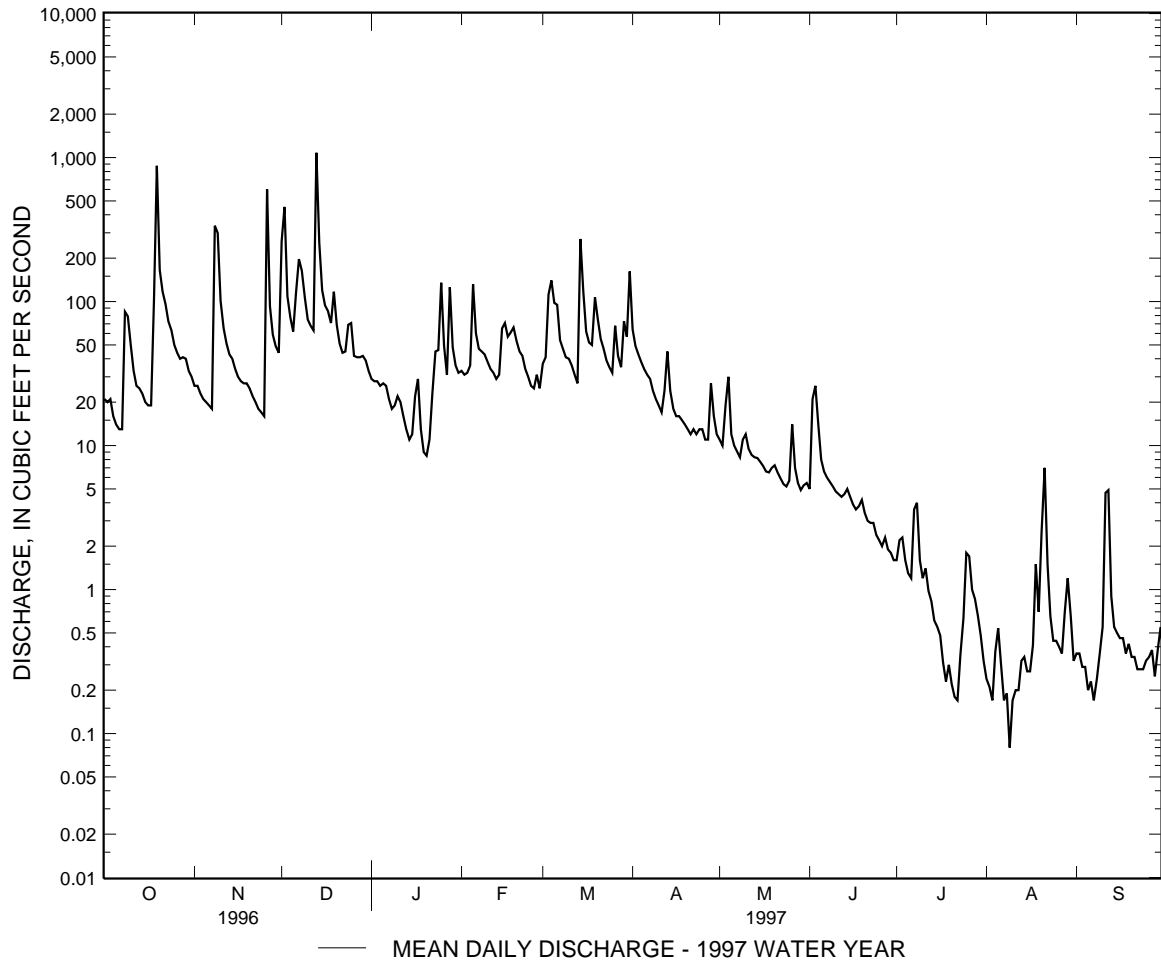


POTOMAC RIVER BASIN

01639140 PINEY CREEK NEAR TANEYTOWN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	30530.8		14266.31			
ANNUAL MEAN	83.4		39.1		43.6	
HIGHEST ANNUAL MEAN					68.5	1996
LOWEST ANNUAL MEAN					24.3	1992
HIGHEST DAILY MEAN	2770	Jan 19	1080	Dec 13	2770	Jan 19 1996
LOWEST DAILY MEAN	8.6	Sept 3	.08	Aug 9	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	10	Aug 29	.19	Aug 6	.03	Aug 2 1991
INSTANTANEOUS PEAK FLOW			1980	Dec 13	7520	Jan 19 1996
INSTANTANEOUS PEAK STAGE			6.95	Dec 13	(b)11.41	Jan 19 1996
INSTANTANEOUS LOW FLOW			.06	Aug 9	.00	(c)
ANNUAL RUNOFF (CFSM)	2.67		1.25		1.39	
ANNUAL RUNOFF (INCHES)	36.29		16.96		18.92	
10 PERCENT EXCEEDS	177		78		86	
50 PERCENT EXCEEDS	39		19		16	
90 PERCENT EXCEEDS	17		.35		1.9	

- a Aug. 4, 5, Sept. 2, 3, 1991.
- b From floodmark.
- c Aug. 3-9, 17, Sept. 1-4, 1991.



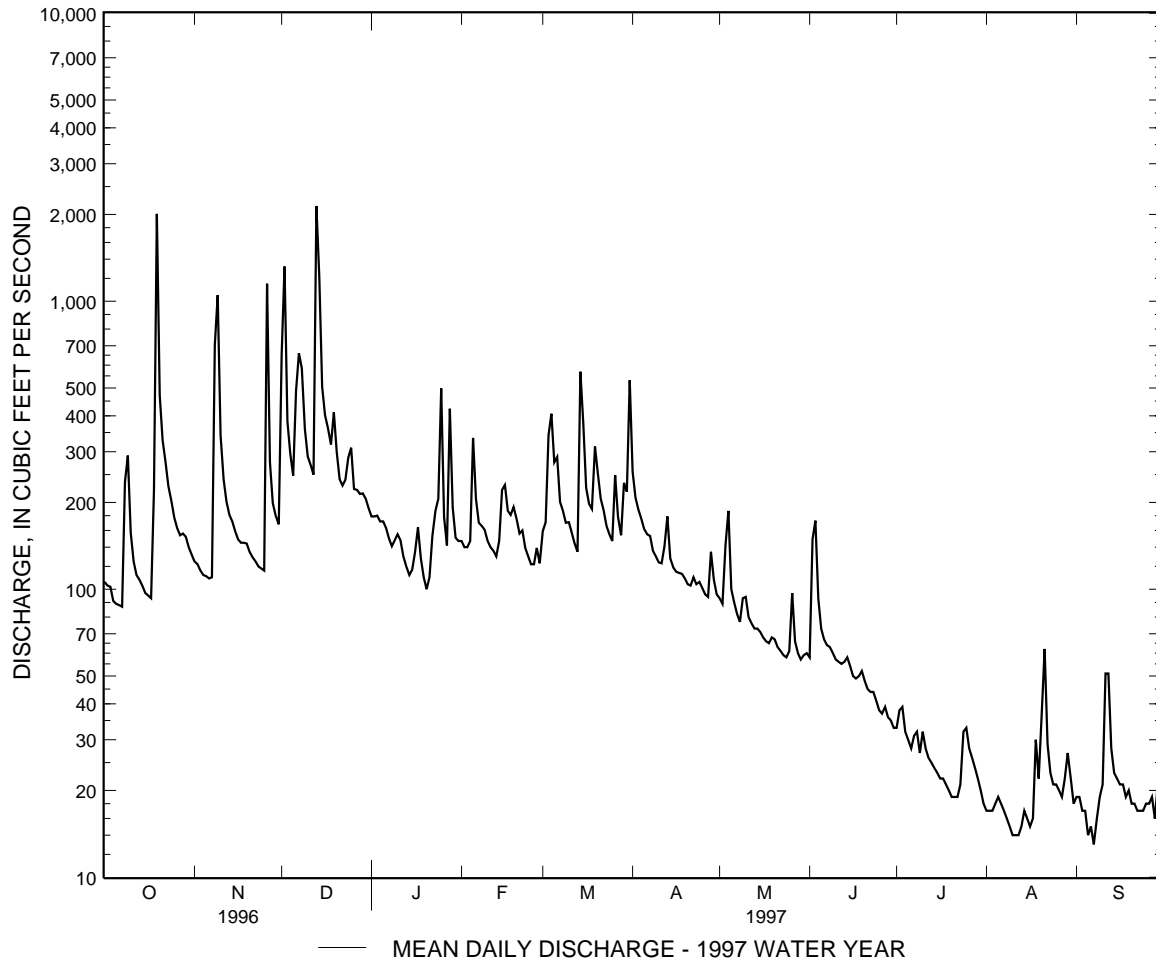


POTOMAC RIVER BASIN

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1948 - 1997	
ANNUAL TOTAL	92685		55631			
ANNUAL MEAN	253		152		115	
HIGHEST ANNUAL MEAN					227	
LOWEST ANNUAL MEAN					50.8	
HIGHEST DAILY MEAN	4960	Jan 19	2140	Dec 13	14400	Jun 22 1972
LOWEST DAILY MEAN	(e)65	Jan 8	13	Sep 7	1.0	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	73	Aug 29	15	Aug 7	1.4	Sep 7 1966
INSTANTANEOUS PEAK FLOW			3580		(a)28000	Sep 26 1975
INSTANTANEOUS PEAK STAGE			8.81		18.98	Sep 26 1975
INSTANTANEOUS LOW FLOW			12		(b)	1.0
ANNUAL RUNOFF (CFSM)	2.48		1.49		1.13	
ANNUAL RUNOFF (INCHES)	33.80		20.29		15.29	
10 PERCENT EXCEEDS	494		287		215	
50 PERCENT EXCEEDS	154		114		67	
90 PERCENT EXCEEDS	92		19		24	

e Estimated.  
a From rating curve extended above 3,900 ft<sup>3</sup>/s on the basis of contracted-opening measurement at gage height of 17.86 ft.  
b Sept. 5, 7.



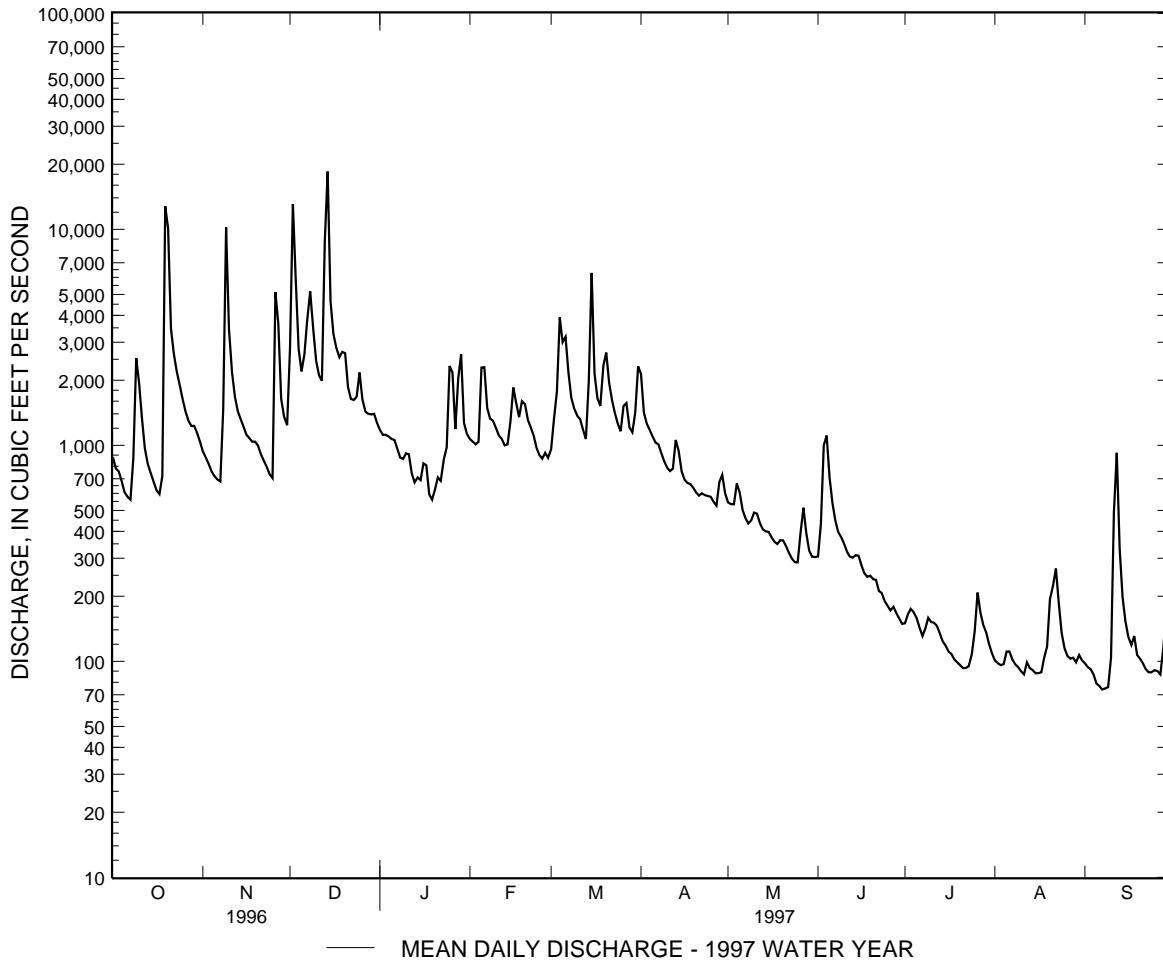


POTOMAC RIVER BASIN

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1930 - 1997	
ANNUAL TOTAL	817654		410862			
ANNUAL MEAN	2234		1126		951	
HIGHEST ANNUAL MEAN					1834	1972
LOWEST ANNUAL MEAN					345	1931
HIGHEST DAILY MEAN	33200	Jan 20	18500	Dec 14	74000	Jun 23 1972
LOWEST DAILY MEAN	367	Sep 3	74	Sep 7	19	(a)
ANNUAL SEVEN-DAY MINIMUM	441	Aug 30	80	Sep 3	19	Sep 7 1966
INSTANTANEOUS PEAK FLOW			22600	Dec 14	81600	Jun 23 1972
INSTANTANEOUS PEAK STAGE			18.15	Dec 14	(b)35.90	Jun 23 1972
INSTANTANEOUS LOW FLOW			73	(c)	17	(d)
ANNUAL RUNOFF (CFSM)	2.73		1.38		1.16	
ANNUAL RUNOFF (INCHES)	37.23		18.71		15.81	
10 PERCENT EXCEEDS	4280		2290		2000	
50 PERCENT EXCEEDS	1300		719		480	
90 PERCENT EXCEEDS	691		101		124	

- a Sept. 7-13, 1966.
- b From floodmark.
- c Sept. 7, 8.
- d Sept. 11 and 13, 1966.



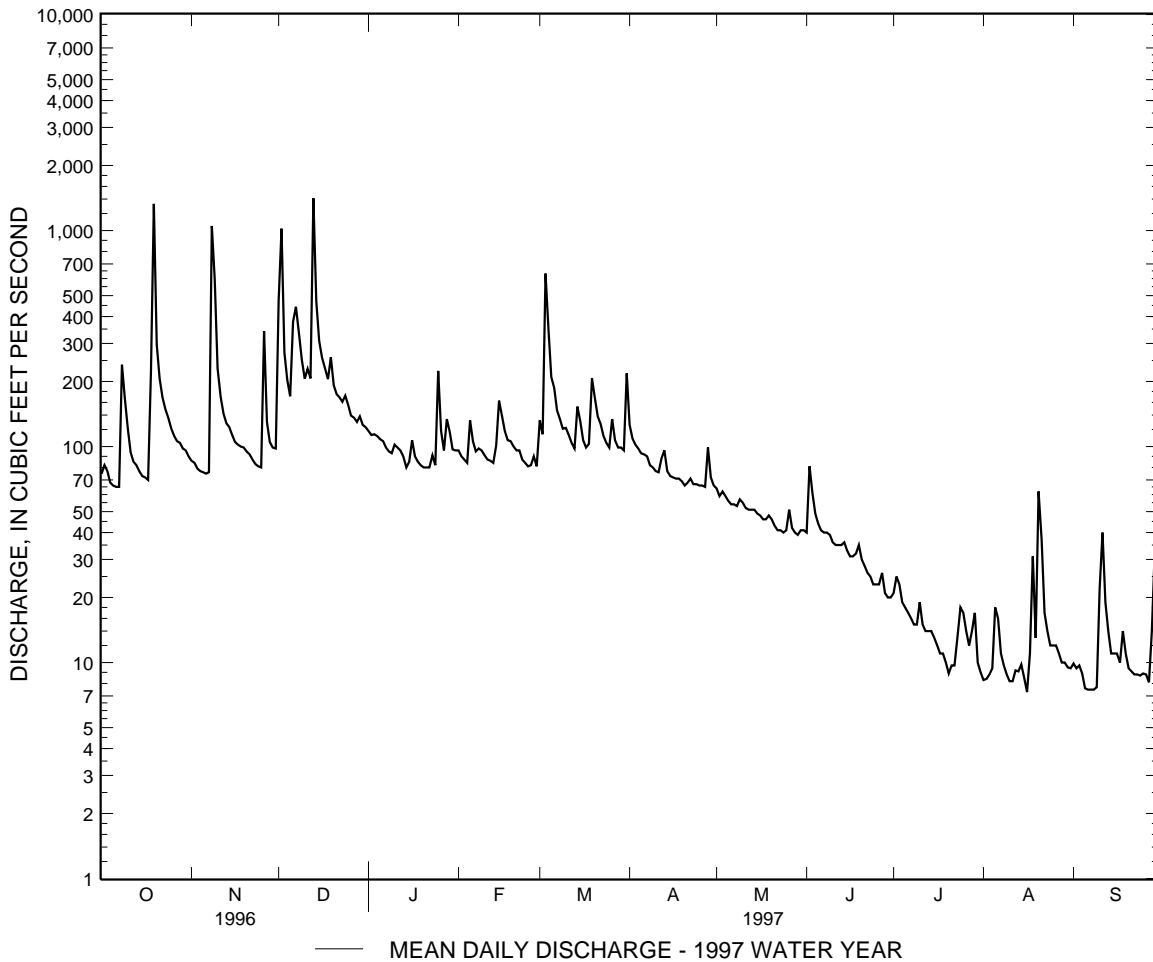


POTOMAC RIVER BASIN

01643500 BENNETT CREEK AT PARK MILLS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1948 - 1997	
ANNUAL TOTAL	61057		35704.2			
ANNUAL MEAN	167		97.8		71.4	
HIGHEST ANNUAL MEAN					141	1972
LOWEST ANNUAL MEAN					32.0	1981
HIGHEST DAILY MEAN	3500	Jan 19	1410	Dec 13	5500	Jun 22 1972
LOWEST DAILY MEAN	47	Sep 2	7.3	Aug 16	.40	Sep 8 1966
ANNUAL SEVEN-DAY MINIMUM	51	Aug 29	8.1	Sep 3	.91	Sep 3 1966
INSTANTANEOUS PEAK FLOW			3230	Nov 8	(a)32200	Jun 21 1972
INSTANTANEOUS PEAK STAGE			7.06	Nov 8	(b)22.10	Jun 21 1972
INSTANTANEOUS LOW FLOW			6.3	(c)	.30	Sep 8 1966
ANNUAL RUNOFF (CFSM)	2.66		1.56		1.14	
ANNUAL RUNOFF (INCHES)	36.17		21.15		15.45	
10 PERCENT EXCEEDS	277		173		133	
50 PERCENT EXCEEDS	98		77		44	
90 PERCENT EXCEEDS	65		10		14	

- a From rating curve extended above 2,700 ft<sup>3</sup>/s on basis of contracted-opening measurements at gage heights of 11.15, 14.33, and 22.1 ft.
- b From floodmark.
- c Aug. 16, 17.



## POTOMAC RIVER BASIN

01645000 SENECA CREEK AT DAWSONVILLE, MD

LOCATION.--Lat 39°07'41", long 77°20'13", 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<sup>2</sup>.

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 sea level. 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.--Records good except those for estimated daily discharges (ice effect), which are fair. Small diversion at times 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. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	1130	*3,880	*8.49	Dec. 7	2300	1,310	5.58
Nov. 9	0445	3,620	8.33	Dec. 13	1300	3,210	8.06
Dec. 2	0245	2,550	7.52	Mar. 3	1845	2,430	7.40
Dec. 6	0745	1,720	6.49				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	100	668	163	165	275	188	116	79	56	25	40
2	131	102	1720	163	157	229	166	120	161	58	24	35
3	117	102	445	163	153	986	162	129	160	59	25	27
4	97	104	292	160	157	950	157	151	103	52	28	25
5	94	105	242	160	255	391	154	117	89	48	36	23
6	92	106	1110	155	192	254	154	107	82	45	31	23
7	92	121	689	149	166	196	135	98	80	45	28	23
8	320	1070	586	145	177	182	125	94	79	45	25	23
9	332	1880	335	151	183	171	119	107	77	46	24	23
10	173	356	278	163	167	179	116	104	74	59	24	99
11	148	234	262	158	156	167	115	91	69	48	23	124
12	143	185	261	146	149	156	133	87	68	43	23	54
13	126	160	2090	139	144	144	180	83	73	42	23	38
14	117	189	1010	e125	191	198	150	84	74	41	24	32
15	100	148	410	e130	302	178	143	86	70	38	24	30
16	100	131	316	220	246	157	116	82	67	38	23	28
17	98	131	285	181	198	168	116	80	64	34	23	27
18	304	131	259	e140	178	176	117	79	67	34	35	38
19	2920	132	323	e135	174	340	110	80	89	33	28	31
20	613	124	257	e130	172	260	106	80	69	31	163	28
21	264	117	220	e125	181	210	111	77	64	31	106	25
22	203	116	209	136	175	194	139	75	64	32	47	24
23	184	112	208	156	168	177	141	75	63	33	35	24
24	171	111	220	191	166	157	131	75	58	37	30	24
25	130	110	231	623	149	142	117	85	51	38	29	25
26	135	645	194	230	146	255	111	208	244	35	28	25
27	128	235	189	178	156	203	115	127	182	33	27	25
28	131	163	181	283	146	179	219	99	78	32	28	30
29	137	142	184	212	---	177	137	80	63	33	28	80
30	130	137	179	174	---	166	119	85	57	28	25	42
31	116	---	168	169	---	287	---	82	---	25	24	---
TOTAL	7944	7499	14021	5553	4969	7904	4102	3043	2618	1252	1066	1095
MEAN	256	250	452	179	177	255	137	98.2	87.3	40.4	34.4	36.5
MAX	2920	1880	2090	623	302	986	219	208	244	59	163	124
MIN	92	100	168	125	144	142	106	75	51	25	23	23
CFSM	2.54	2.47	4.48	1.77	1.76	2.52	1.35	.97	.86	.40	.34	.36
IN.	2.93	2.76	5.16	2.05	1.83	2.91	1.51	1.12	.96	.46	.39	.40

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1997, BY WATER YEAR (WY)

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
MEAN	69.0	85.2	112	130	147	160	148	127	105	76.7	67.9	76.7
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

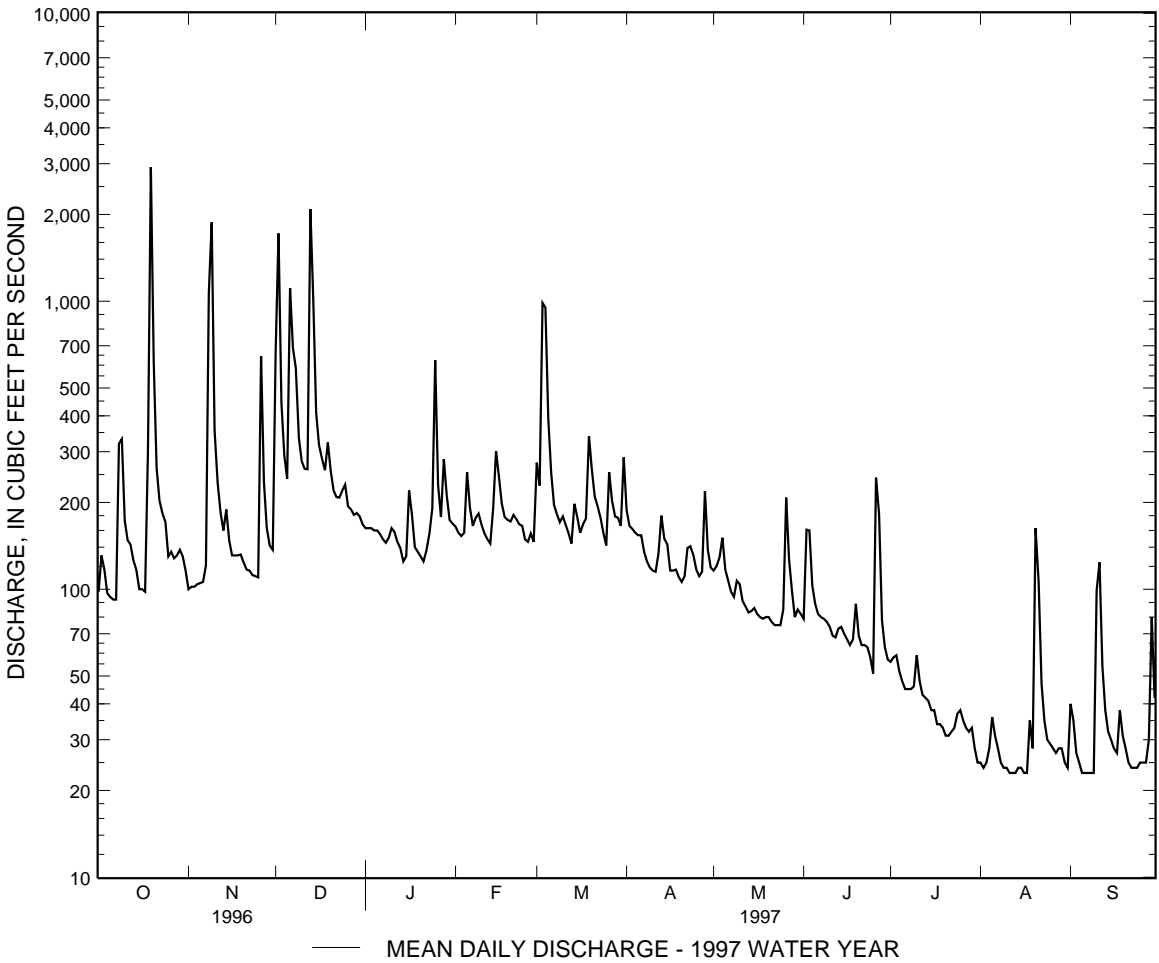


POTOMAC RIVER BASIN

01645000 SENECA CREEK AT DAWSONVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1930 - 1997	
ANNUAL TOTAL	98549		61066			
ANNUAL MEAN	269		167		108	
HIGHEST ANNUAL MEAN					251 1972	
LOWEST ANNUAL MEAN					32.8 1931	
HIGHEST DAILY MEAN	5310	Jan 19	2920	Oct 19	9900	Jun 22 1972
LOWEST DAILY MEAN	76	Sep 3	23	(a)	1.8	(b)
ANNUAL SEVEN-DAY MINIMUM	86	Jul 6	23	Aug 11	2.2	Sep 27 1930
INSTANTANEOUS PEAK FLOW			3880	Oct 19	(c)26100	Jun 22 1972
INSTANTANEOUS PEAK STAGE			8.49	Oct 19	(d)16.40	Jun 22 1972
INSTANTANEOUS LOW FLOW			22	(f)	1.7	(g)
ANNUAL RUNOFF (CFSM)	2.67		1.66		1.07	
ANNUAL RUNOFF (INCHES)	36.30		22.49		14.59	
10 PERCENT EXCEEDS	405		260		189	
50 PERCENT EXCEEDS	149		125		69	
90 PERCENT EXCEEDS	92		28		26	

- a Aug. 11-13, 16, 17, Sept. 5-9.
- b Sept. 29, 1930, Sept. 12, 1966.
- c From rating curve extended above 3,000 ft<sup>3</sup>/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.
- d From high-water mark in gage house.
- f Aug. 16, 17, Sept. 5-9.
- g Sept. 28, 29, 1930.



## POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'58", long 77°07'40", 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<sup>2</sup>.

## 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 sea level. 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. Water-discharge 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. Satellite telemeter at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 20	1445	61,400	7.26	Dec. 15	0045	91,100	8.52
Nov. 10	1800	84,200	8.25	Mar. 5	1645	75,400	7.89
Dec. 3	1500	*105,000	*9.02				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14100	11800	25300	15500	18600	16600	19300	8970	6540	3360	2310	1560
2	13600	11100	51000	14700	16700	17800	17300	8910	7060	3350	2020	1600
3	12000	10500	95800	14200	15400	24400	16000	8560	9390	3320	1820	1650
4	10700	10000	79400	13700	14700	52900	14700	8400	28000	3160	1650	1500
5	9780	9970	52400	13300	15400	69500	13700	8080	37600	3540	1780	1400
6	9160	10800	45400	12900	19500	65600	13100	7580	35000	3370	1760	1320
7	8680	9540	40100	12300	25400	58000	12600	7090	25900	2940	1890	1290
8	9630	12400	42600	11700	23300	49200	12000	6750	19500	2590	1840	1240
9	13300	31700	39200	11200	21000	39200	11400	6730	15500	2640	1610	1240
10	13400	72300	35900	11100	19400	32600	10900	6630	12900	2450	1300	1780
11	13100	62400	31500	11100	17900	28300	10400	6420	10800	2440	1350	2470
12	13200	40100	27800	10600	16600	25600	10200	6250	9200	2390	1340	6430
13	13200	29500	42000	9770	15700	22300	10600	6070	8140	2240	1340	4990
14	11900	24100	76100	8820	15200	20100	10600	6430	7530	2030	1380	4350
15	10900	20800	77600	8420	16700	24800	10500	6410	7140	1840	1350	3570
16	10200	18400	53800	8800	16700	32800	10900	6010	6590	1760	1360	2900
17	9470	16700	42200	9180	16500	28800	10200	6050	6320	1890	1400	2400
18	10000	15400	35700	7900	16600	24200	9470	6150	6380	1640	2150	2470
19	35500	14500	32300	5810	16500	24200	8920	6000	6810	1530	1760	2280
20	55900	14000	29500	6820	16800	27700	8550	5670	7080	1320	2730	1890
21	42500	13400	25700	8020	18500	39000	8320	5360	7980	1420	2960	1760
22	34500	12900	22400	8460	23200	40900	8410	5250	6250	1390	2630	1470
23	28800	12300	19600	9700	23600	34500	8330	5020	5280	1550	2360	1510
24	24100	11700	18500	10300	23800	29100	8210	4870	4630	1910	2330	1560
25	21000	11200	18700	14700	21300	24700	8170	5590	4240	2110	2260	1480
26	18600	14700	19100	13800	18700	22500	8250	7910	3700	2120	2280	1450
27	16400	24700	18700	14900	17000	21700	8180	5700	4510	3390	2200	1440
28	14900	38600	17900	16600	15700	20200	9720	6400	3860	4500	1920	1500
29	13800	34200	17200	19100	---	19600	9280	7630	3710	4530	1900	1930
30	13200	26500	16800	18400	---	18400	8910	8630	3470	3570	1640	2360
31	12700	---	16200	18600	---	19100	---	7500	---	2870	1550	---
TOTAL	538220	646210	1166400	370400	516400	974300	327120	209020	321010	79160	58170	64790
MEAN	17360	21540	37630	11950	18440	31430	10900	6743	10700	2554	1876	2160
MAX	55900	72300	95800	19100	25400	69500	19300	8970	37600	4530	2960	6430
MIN	8680	9540	16200	5810	14700	16600	8170	4870	3470	1320	1300	1240
(†)	597	557	544	562	550	551	568	615	608	754	718	589
MEAN#	17957	22097	38174	12512	18990	31981	11468	7358	11308	3308	2594	2749
CFSM#	1.55	1.91	3.30	1.08	1.64	2.77	0.99	0.64	0.98	0.29	0.22	0.24
IN#	1.79	2.13	3.81	1.25	1.71	3.19	1.11	0.73	1.09	0.33	0.26	0.27

† 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.

## POTOMAC RIVER BASIN

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 - 1997, BY WATER YEAR (WY)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
MEAN	6227	7767	11870	14010	17080	25190	20790	15360	9523	4852	4188	4842							
MAX	36790	42030	37630	52890	39460	67370	57850	40410	46630	17160	21720	44620							
(WY)	1977	1986	1997	1996	1984	1994	1993	1989	1972	1972	1996	1996							
MIN	908	1097	1038	1682	5703	7403	5810	3921	2216	695	538	791							
(WY)	1964	1966	1966	1981	1963	1990	1995	1969	1969	1966	1966	1964							

## SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1959 - 1997

ANNUAL TOTAL	10175720	5271200	
ANNUAL MEAN	27800	14440	11780
ANNUAL MEAN#	28410	15040	11851
HIGHEST ANNUAL MEAN			23760 1996
HIGHEST ANNUAL MEAN#			24370 1996
LOWEST ANNUAL MEAN			4900 1969
LOWEST ANNUAL MEAN#			5306 1969
HIGHEST DAILY MEAN	326000 Jan 21	95800 Dec 3	334000 Jun 24 1972
LOWEST DAILY MEAN	5500 Jul 18	1240 (b)	(c)121 Sep 9 1966
LOWEST DAILY MEAN#	6210 Jul 18	1810 Sep 9	(d)601 Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	7180 Jul 6	1350 Aug 10	181 Sep 7 1966
INSTANTANEOUS PEAK FLOW		105000 Dec 3	484000 Mar 19 1936
INSTANTANEOUS PEAK STAGE		9.02 Dec 3	28.10 Mar 19 1936
INSTANTANEOUS LOW FLOW		1090 Sep 8	66 Sep 9 1966
ANNUAL RUNOFF (CFSM)	2.41	1.25	1.02
ANNUAL RUNOFF (CFSM)#	2.46	1.30	1.03
ANNUAL RUNOFF (INCHES)	32.75	16.96	13.85
ANNUAL RUNOFF (INCHES)#	33.46	17.67	14.43
10 PERCENT EXCEEDS	50800	32700	26600
50 PERCENT EXCEEDS	19200	10400	6540
90 PERCENT EXCEEDS	9600	1760	1620

a At previous site, 1 mi upstream at same datum.

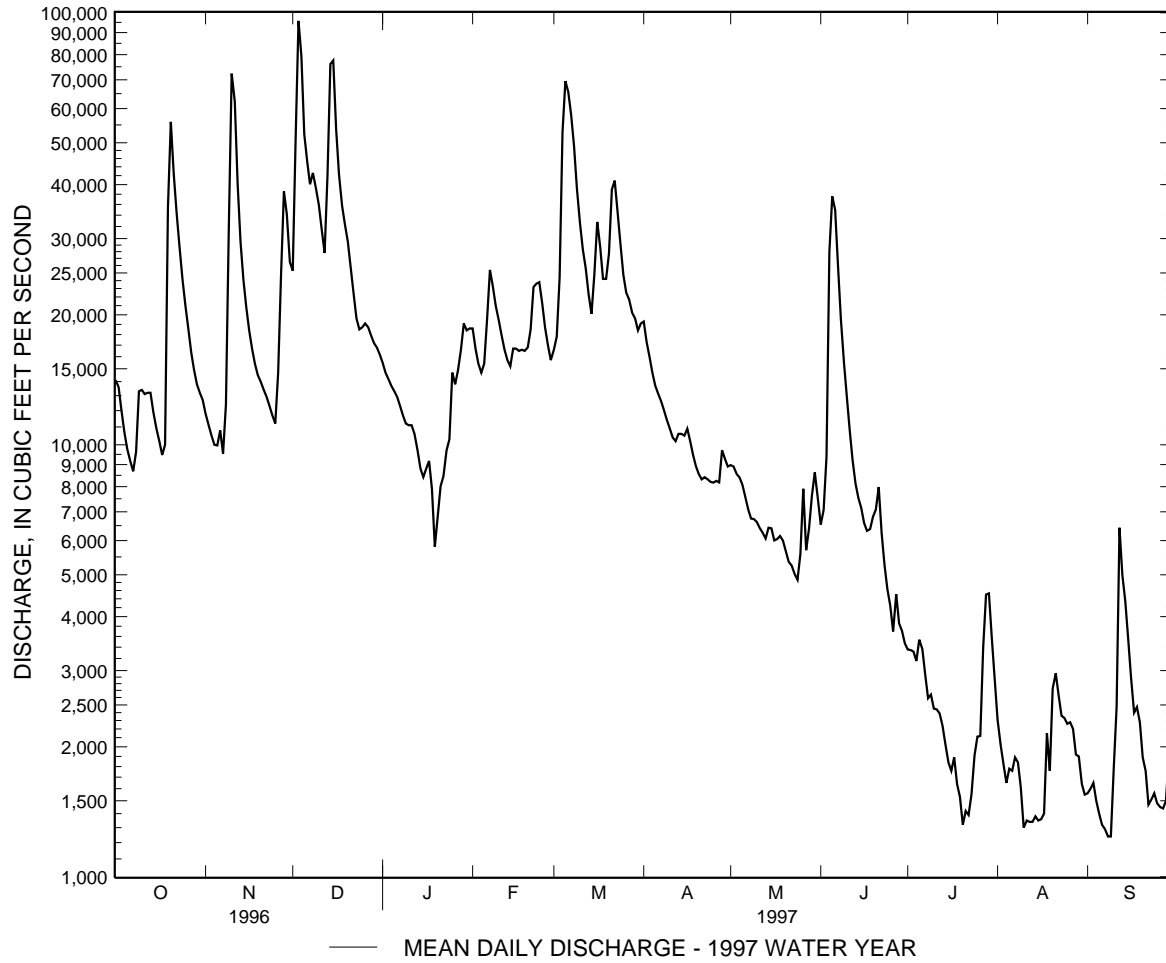
# Adjusted for diversion.

b Sept. 8, 9.

c Minimum daily discharge observed at gaging station, does not include diversion of 489 ft<sup>3</sup>/s.d Includes diversion of 449 ft<sup>3</sup>/s for municipal use.

POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued



POTOMAC RIVER BASIN

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.

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, 1995-97): Maximum, 33.5°C, July 11, 1993; minimum, 0.0°C, on many day during winter periods.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 711 microsiemens, Feb. 14; minimum, 112 microsiemens, Nov. 8.  
 WATER TEMPERATURE: Maximum, 32.5°C, July 17; minimum, 0.0°C, Jan. 22, 23.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	324	308	317	301	295	297	223	175	207	302	300	301
2	323	283	313	307	301	302	204	169	191	301	297	300
3	323	317	321	312	307	309	207	174	192	299	297	298
4	324	316	322	314	307	311	183	171	177	299	298	299
5	329	321	325	315	308	312	194	183	188	303	299	301
6	332	324	328	322	313	316	195	155	181	306	302	303
7	333	328	330	323	315	319	212	195	203	308	305	306
8	335	222	306	322	112	275	217	207	210	310	307	308
9	305	252	294	248	151	231	231	217	223	436	310	323
10	304	291	298	280	216	257	237	231	235	544	415	464
11	323	304	312	216	190	201	244	235	240	544	451	480
12	329	322	324	215	205	209	245	241	243	484	434	455
13	337	328	332	225	214	218	255	149	212	450	422	437
14	355	337	345	231	225	229	214	176	193	449	396	417
15	384	354	371	236	230	233	212	189	199	396	363	378
16	357	325	345	246	236	240	209	204	206	593	360	473
17	326	314	321	256	246	251	217	209	214	485	389	416
18	317	199	310	263	256	260	224	217	221	415	380	393
19	243	142	211	271	263	268	230	224	227	415	391	399
20	249	194	224	279	271	275	240	230	234	---	---	---
21	252	218	237	286	279	283	253	240	247	---	---	---
22	231	221	225	293	286	290	259	252	256	369	363	365
23	243	231	238	298	293	295	269	259	263	380	359	366
24	251	242	246	300	298	298	280	268	273	383	361	364
25	257	251	255	305	300	302	286	279	282	383	250	312
26	263	257	260	308	197	273	294	286	292	326	322	324
27	272	263	268	273	231	257	299	288	295	337	324	328
28	278	272	276	302	234	278	297	294	296	351	337	344
29	284	278	281	262	217	226	295	293	294	341	310	330
30	289	283	286	221	217	219	298	291	295	315	291	297
31	296	289	292	---	---	---	301	298	300	295	290	292
MONTH	384	142	294	323	112	268	301	149	235	---	---	---

## POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

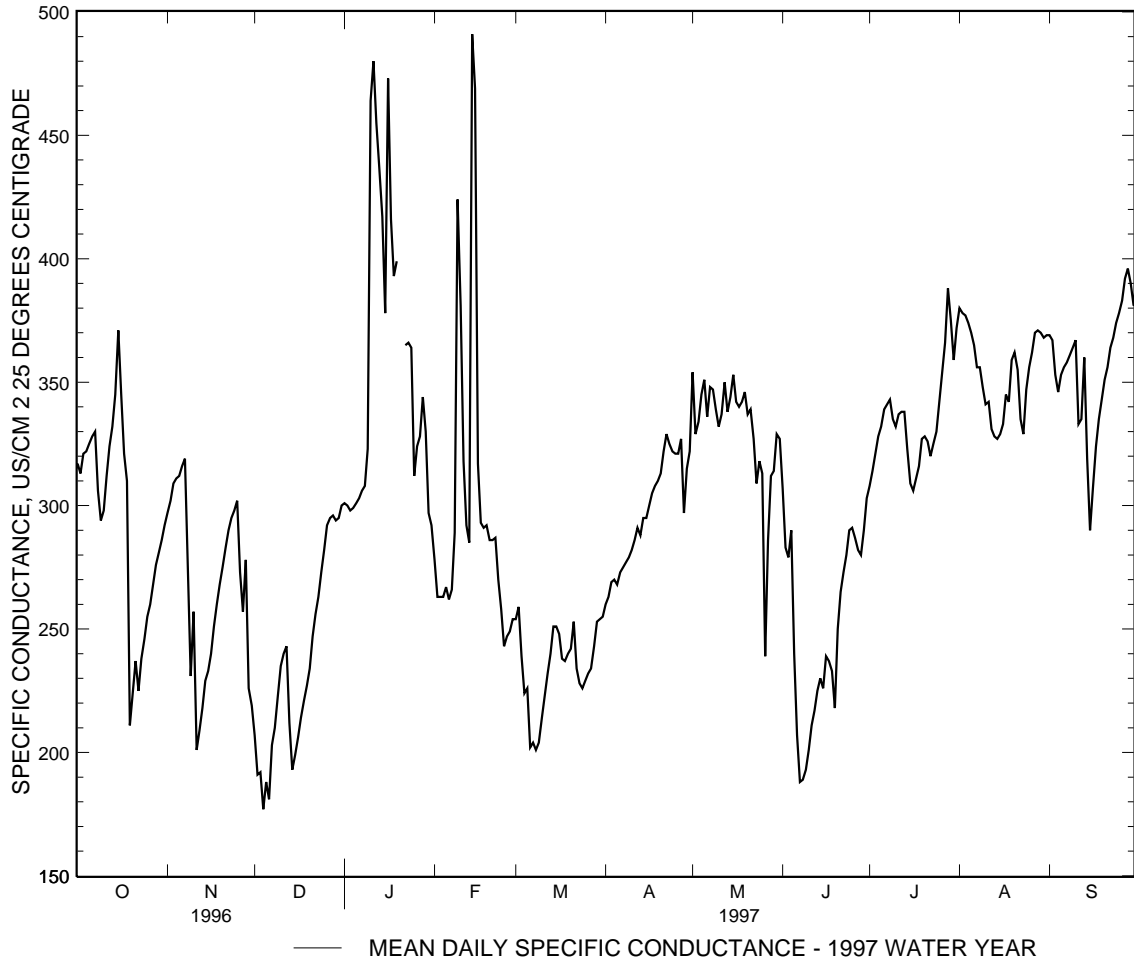
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	290	267	278	275	239	254	263	255	260	379	328	354
2	267	260	263	263	254	259	264	260	263	337	324	329
3	266	260	263	284	178	239	273	264	269	340	331	334
4	272	260	263	233	218	224	273	266	270	350	340	345
5	273	261	267	252	207	226	272	264	268	354	345	351
6	263	261	262	207	201	202	278	268	273	347	332	336
7	269	261	266	206	201	204	279	273	275	355	333	348
8	390	260	289	205	198	201	281	275	277	356	341	347
9	475	390	424	210	201	204	286	274	279	347	333	339
10	451	343	381	218	210	214	290	277	282	339	330	332
11	343	299	318	227	218	223	291	280	286	348	333	337
12	299	287	292	236	227	232	296	286	291	355	340	350
13	289	283	285	243	236	240	293	283	288	341	335	338
14	711	287	491	258	243	251	299	290	295	358	337	344
15	618	344	469	253	249	251	300	290	295	358	351	353
16	344	301	317	254	241	248	306	296	300	357	336	342
17	301	290	293	255	225	238	309	301	305	345	337	340
18	294	289	291	242	231	237	312	305	308	346	336	342
19	294	290	292	247	238	240	312	307	310	354	335	346
20	291	285	286	246	241	242	316	310	313	345	332	337
21	288	281	286	257	246	253	329	316	322	345	332	339
22	300	280	287	247	231	234	336	325	329	338	310	327
23	287	259	270	233	223	228	326	323	325	321	298	309
24	263	247	258	228	223	226	325	318	322	325	310	318
25	248	239	243	230	227	229	324	318	321	325	270	313
26	252	242	247	241	229	232	323	318	321	270	205	239
27	255	247	249	237	232	234	332	323	327	304	249	286
28	257	250	254	249	237	243	332	280	297	326	303	312
29	---	---	---	255	249	253	318	307	315	326	309	314
30	---	---	---	256	251	254	334	318	322	336	323	329
31	---	---	---	267	250	255	---	---	---	336	316	327
MONTH	711	239	299	284	178	235	336	255	297	379	205	331
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	318	300	307	312	303	308	383	376	380	371	368	369
2	300	275	283	320	312	314	380	376	378	370	361	367
3	289	267	279	323	320	321	380	374	377	364	347	353
4	310	256	290	330	322	328	380	372	374	353	340	346
5	256	218	240	337	330	332	373	367	370	356	351	353
6	229	186	207	341	333	339	369	359	365	358	354	356
7	189	186	188	345	336	341	362	348	356	360	355	358
8	192	187	189	346	340	343	362	344	356	364	358	361
9	198	188	193	340	330	335	355	343	348	367	361	364
10	206	198	201	337	330	332	358	336	341	369	364	367
11	217	203	211	340	331	337	351	335	342	364	301	333
12	225	211	217	340	336	338	351	324	331	361	302	335
13	233	220	225	341	336	338	337	320	328	373	332	360
14	236	209	230	336	316	323	333	320	327	332	305	319
15	238	203	226	319	303	309	333	326	329	305	281	290
16	242	233	239	308	303	306	342	327	333	317	293	307
17	244	231	237	316	307	311	351	339	345	330	317	324
18	238	188	233	327	311	316	356	331	342	341	328	335
19	240	189	218	331	320	327	364	356	359	347	339	343
20	261	240	250	341	320	328	367	353	362	354	347	351
21	272	258	265	342	321	326	358	353	355	359	352	356
22	278	265	273	325	316	320	361	320	335	368	359	364
23	290	273	280	329	321	325	341	322	329	370	365	368
24	295	283	290	333	327	330	354	339	347	378	368	374
25	299	284	291	361	333	342	362	351	356	382	373	378
26	294	277	287	364	348	354	368	357	362	389	377	383
27	287	274	282	378	358	366	379	362	370	400	385	392
28	288	272	280	391	378	388	379	368	371	400	393	396
29	300	278	290	389	357	375	372	369	370	397	377	390
30	307	297	303	361	357	359	369	365	368	383	376	381
31	---	---	---	379	361	372	371	367	369	---	---	---
MONTH	318	186	250	391	303	335	383	320	354	400	281	356

POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



## POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.5	17.7	18.1	14.2	13.1	13.8	7.4	4.7	5.8	6.2	5.2	5.6
2	18.7	17.8	18.3	13.1	11.3	12.4	8.2	6.6	7.2	5.6	5.0	5.3
3	19.1	17.5	18.4	11.3	10.0	10.8	7.3	6.3	6.7	6.2	5.5	5.7
4	17.5	16.0	17.0	10.7	9.5	10.0	7.1	6.9	7.0	7.7	6.2	7.0
5	16.7	15.4	16.0	10.9	9.5	10.1	6.9	6.3	6.5	9.0	7.7	8.4
6	16.5	15.0	15.6	10.8	10.1	10.5	6.3	5.5	5.7	8.9	8.1	8.6
7	16.2	14.9	15.4	12.3	10.6	11.4	5.7	5.3	5.5	8.2	6.2	7.4
8	15.9	14.6	15.3	16.0	12.0	13.5	5.3	4.9	5.1	6.2	4.6	5.3
9	15.6	14.6	15.1	14.1	12.6	13.1	5.1	4.7	4.9	4.7	3.6	4.2
10	15.5	14.7	15.1	12.6	11.2	11.7	5.0	4.5	4.7	4.4	3.5	3.8
11	14.8	14.1	14.4	11.2	9.7	10.5	5.1	4.7	4.8	4.0	2.4	3.3
12	14.4	13.5	13.9	9.7	8.2	8.9	5.6	4.9	5.1	2.6	1.3	2.1
13	14.6	13.7	14.1	8.2	7.1	7.5	7.7	5.6	6.5	1.4	.3	.9
14	15.5	14.2	14.7	7.1	6.2	6.6	6.9	6.5	6.7	1.2	.3	.5
15	15.5	14.3	14.8	6.2	5.3	5.6	6.8	6.4	6.5	1.4	.3	.6
16	16.1	14.4	15.1	5.7	4.9	5.2	6.7	6.5	6.6	2.2	.6	1.3
17	16.9	15.1	15.9	5.2	4.5	4.9	6.7	6.5	6.6	1.2	.3	.5
18	17.0	15.5	16.3	5.6	5.0	5.2	7.0	6.7	6.8	.3	.3	.3
19	15.5	13.0	13.7	6.5	5.6	6.0	6.7	5.5	6.3	.3	.3	.3
20	13.0	12.4	12.7	6.7	6.1	6.3	5.5	4.2	4.6	.3	.3	.3
21	12.6	12.2	12.4	6.4	5.7	5.9	4.2	3.4	3.7	.3	.3	.3
22	12.4	12.0	12.2	5.7	5.3	5.5	3.6	2.9	3.2	.3	.2	.3
23	12.9	12.2	12.5	5.8	5.1	5.3	3.5	3.1	3.2	.8	.2	.4
24	13.3	12.3	12.7	5.9	5.3	5.6	4.6	3.3	3.8	1.5	.6	.8
25	13.3	12.7	13.0	6.4	5.6	6.0	4.6	3.5	3.9	2.6	1.5	2.1
26	13.5	12.9	13.2	9.0	6.2	7.4	3.6	3.0	3.2	2.2	1.1	1.5
27	14.5	13.3	13.8	7.3	5.9	6.5	4.1	3.0	3.5	1.4	1.1	1.2
28	14.5	14.2	14.3	5.9	5.1	5.3	4.7	3.9	4.2	2.8	1.4	2.0
29	14.4	13.5	14.0	5.2	4.8	5.0	5.5	4.7	5.0	2.2	1.4	1.9
30	15.0	14.1	14.5	5.0	4.6	4.8	5.9	5.1	5.5	2.2	1.3	1.7
31	15.1	14.0	14.6	---	---	---	6.3	5.8	6.0	2.6	1.9	2.2
MONTH	19.1	12.0	14.7	16.0	4.5	8.0	8.2	2.9	5.3	9.0	.2	2.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.3	2.2	2.8	9.3	8.8	9.1	11.4	9.7	10.6	18.7	16.7	17.6
2	3.2	2.8	3.0	9.7	9.1	9.3	11.8	9.8	10.8	18.6	16.5	17.4
3	4.2	3.1	3.6	9.6	6.9	8.4	13.1	11.3	12.2	18.8	17.1	17.9
4	4.2	3.8	3.9	7.8	7.3	7.5	14.6	12.7	13.6	18.5	16.7	17.5
5	4.7	4.1	4.4	8.2	7.6	7.9	14.8	14.1	14.4	18.7	16.3	17.3
6	5.2	4.2	4.7	7.8	7.2	7.6	14.5	14.2	14.3	19.0	17.1	18.1
7	5.2	4.4	4.6	7.6	6.9	7.2	16.3	14.5	15.2	18.7	16.8	17.7
8	4.6	3.5	3.9	7.9	7.0	7.4	15.4	14.1	14.7	18.3	16.5	17.4
9	3.9	3.1	3.5	7.8	6.8	7.3	14.3	12.0	13.5	17.4	16.5	16.9
10	3.9	3.4	3.6	8.3	6.9	7.6	12.9	11.1	11.9	16.7	15.3	15.8
11	4.1	3.3	3.7	8.7	7.2	7.9	12.8	11.2	11.9	17.0	14.0	15.4
12	4.0	3.5	3.8	8.5	7.2	7.9	12.4	11.5	12.0	18.7	15.0	16.8
13	3.9	3.2	3.5	8.5	7.3	7.9	14.4	12.1	13.0	17.7	16.5	17.1
14	3.5	2.9	3.2	8.5	7.5	7.8	13.6	12.1	12.8	17.2	15.5	16.4
15	4.4	3.5	3.9	7.8	7.1	7.4	14.8	12.3	13.4	18.6	16.0	17.3
16	4.5	3.3	3.9	7.4	6.0	6.7	15.7	13.2	14.2	18.2	16.1	17.0
17	4.5	3.6	4.0	6.9	5.7	6.4	14.6	13.4	14.3	17.4	15.7	16.7
18	5.3	3.6	4.3	7.2	6.3	6.6	13.4	11.4	12.3	19.0	16.1	17.5
19	6.7	5.0	5.7	7.2	6.5	6.7	12.6	10.1	11.2	21.3	17.9	19.6
20	7.4	6.3	6.9	7.0	6.2	6.5	14.4	11.2	12.6	22.6	20.1	21.1
21	8.5	6.8	7.5	8.2	6.5	7.3	13.0	12.3	12.6	21.2	19.7	20.5
22	9.2	8.3	8.8	9.0	7.5	8.2	13.3	12.1	12.6	20.5	18.3	19.4
23	8.9	7.8	8.3	8.9	7.7	8.4	13.3	12.7	13.0	20.7	17.7	19.3
24	8.6	7.6	8.2	9.6	7.8	8.7	14.5	12.4	13.3	21.9	18.4	20.3
25	8.5	7.3	7.9	9.5	8.5	9.0	15.8	13.3	14.5	22.2	20.2	21.3
26	8.0	7.0	7.6	10.1	9.0	9.5	17.0	14.0	15.3	21.4	19.9	20.6
27	9.6	7.9	8.6	11.3	9.2	10.3	16.4	15.0	15.6	21.1	19.5	20.4
28	9.6	9.2	9.3	12.0	10.4	11.2	15.4	14.1	14.8	21.9	19.0	20.5
29	---	---	---	12.6	11.6	12.2	16.8	14.5	15.4	22.3	19.7	20.9
30	---	---	---	13.7	12.0	12.8	18.3	15.2	16.6	21.6	20.5	21.1
31	---	---	---	13.7	11.4	12.7	---	---	---	22.9	20.3	21.5
MONTH	9.6	2.2	5.3	13.7	5.7	8.4	18.3	9.7	13.4	22.9	14.0	18.5



POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

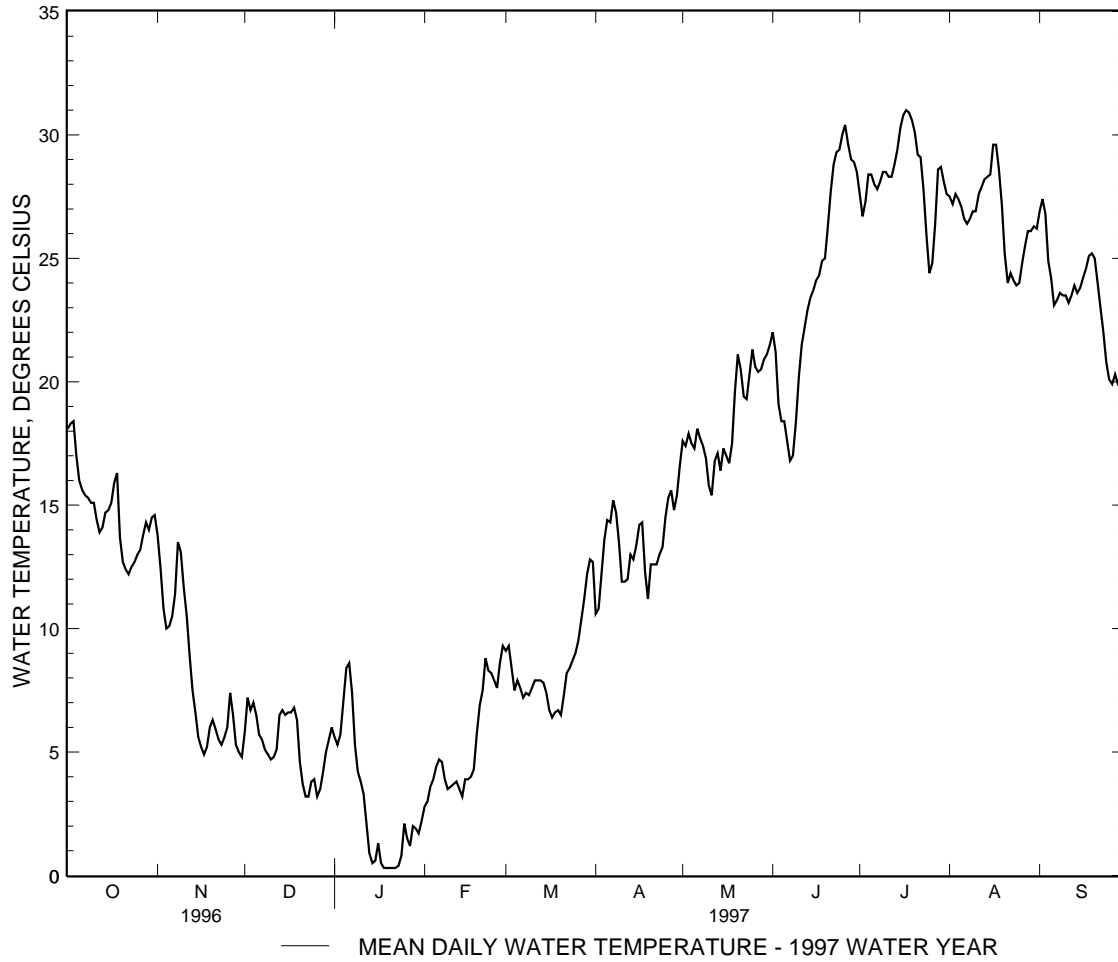
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	22.3	21.6	22.0	28.7	27.0	27.6	29.0	26.3	27.5	28.9	25.9	26.9
2	21.8	20.6	21.2	27.3	26.0	26.7	27.7	26.8	27.2	29.0	26.3	27.4
3	20.6	18.0	19.1	29.0	25.9	27.3	28.7	26.7	27.6	27.4	26.3	26.8
4	19.2	17.7	18.4	29.8	26.9	28.4	27.8	27.1	27.4	26.3	24.2	24.9
5	19.0	17.8	18.4	29.0	27.4	28.4	27.8	26.3	27.1	25.2	23.3	24.2
6	18.3	17.3	17.6	29.3	26.5	28.0	27.8	25.6	26.6	24.4	22.4	23.1
7	17.3	16.5	16.8	28.7	26.8	27.8	27.8	25.6	26.4	25.3	22.2	23.3
8	18.0	16.1	17.0	29.3	26.7	28.1	28.3	25.7	26.6	24.4	22.9	23.6
9	19.5	17.4	18.4	29.3	27.4	28.5	28.6	25.9	26.9	24.0	23.3	23.5
10	21.1	19.4	20.2	29.3	27.4	28.5	27.5	26.1	26.9	24.0	23.1	23.5
11	22.1	20.9	21.5	29.4	27.2	28.3	29.2	26.4	27.6	23.7	22.9	23.2
12	22.9	21.4	22.2	29.8	27.3	28.3	29.9	26.9	27.9	24.7	22.3	23.5
13	24.2	21.8	22.9	30.3	27.9	28.8	29.0	27.5	28.2	25.0	23.0	23.9
14	23.8	22.4	23.4	30.7	28.4	29.4	28.9	27.6	28.3	24.4	22.5	23.6
15	25.0	22.4	23.7	32.2	29.2	30.3	29.1	27.6	28.4	24.9	22.8	23.8
16	25.2	23.0	24.1	32.0	29.9	30.8	31.1	28.0	29.6	25.7	23.0	24.2
17	25.5	23.1	24.3	32.5	30.0	31.0	30.8	28.6	29.6	25.5	23.8	24.6
18	26.0	23.8	24.9	31.9	30.3	30.9	29.5	28.2	28.6	25.5	24.8	25.1
19	26.5	23.7	25.0	31.4	29.6	30.6	28.2	26.6	27.2	26.3	24.3	25.2
20	27.8	24.8	26.3	31.1	28.9	30.1	26.6	24.0	25.2	25.4	24.7	25.0
21	29.0	26.4	27.7	30.0	28.8	29.2	25.1	23.0	24.0	24.7	23.6	24.0
22	30.1	27.5	28.8	29.6	28.4	29.1	24.9	23.7	24.4	23.8	22.1	23.0
23	30.4	28.1	29.3	28.9	26.9	27.8	24.6	23.4	24.1	23.0	21.6	22.0
24	30.6	27.7	29.4	26.9	25.0	25.9	25.1	23.2	23.9	21.8	20.5	20.8
25	31.7	28.3	30.0	25.0	23.9	24.4	24.5	23.7	24.0	20.6	19.6	20.1
26	31.5	29.2	30.4	26.7	23.7	24.8	25.7	24.1	24.8	20.6	19.2	19.9
27	30.6	28.3	29.6	27.9	25.4	26.4	26.3	24.7	25.5	21.2	19.4	20.3
28	30.3	27.3	29.0	29.9	26.9	28.6	26.9	25.4	26.1	20.7	19.8	19.9
29	29.8	27.4	28.9	29.7	27.7	28.7	26.6	25.5	26.1	20.5	19.4	20.0
30	29.4	27.2	28.5	29.0	26.7	28.1	27.6	25.2	26.3	19.9	19.1	19.4
31	---	---	---	28.8	26.0	27.6	26.8	25.5	26.2	---	---	---
MONTH	31.7	16.1	24.0	32.5	23.7	28.3	31.1	23.0	26.7	29.0	19.1	23.3

POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997



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## POTOMAC RIVER BASIN

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<sup>2</sup>.

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 1996 TO SEPTEMBER 1997

DATE	TIME	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)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED SATUR- ATION (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
MAR 1997											
25...	0930	25000	214	7.6	8.5	4.0	774	12.3	103	90	26
APR											
29...	0900	9340	308	7.9	15.0	12.0	759	9.5	94	140	40
MAY											
29...	1100	7500	298	8.5	21.0	24.0	767	8.4	94	130	36
JUN											
25...	0830	3580	289	7.8	29.0	27.5	760	7.3	95	120	33
JUL											
21...	0930	1510	304	7.4	28.5	25.0	764	5.8	75	120	30
AUG											
28...	0830	1890	363	7.8	25.5	23.0	757	7.0	86	150	40
SEP											
30...	0830	2400	380	7.9	19.5	21.0	748	8.1	90	150	41

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)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3 (00452)	SULFATE 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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
MAR 1997											
25...	6.0	5.1	1.7	65	79	--	23	8.4	<0.10	6.2	129
APR											
29...	9.7	8.7	2.0	99	120	--	27	14	<0.10	1.1	179
MAY											
29...	9.3	9.1	2.3	97	106	6	31	14	0.11	0.89	182
JUN											
25...	8.1	8.0	2.6	84	102	--	29	12	0.11	5.1	169
JUL											
21...	11	12	2.9	77	94	--	32	19	0.17	7.4	185
AUG											
28...	12	15	3.2	106	129	--	38	22	0.15	4.9	222
SEP											
30...	12	14	3.1	104	127	--	45	21	0.16	3.5	224

## POTOMAC RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	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)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAR 1997											
25...	2.0	--	<0.010	1.40	<0.015	0.60	<0.20	0.640	<0.010	0.010	21
APR											
29...	1.7	5.8	0.012	1.32	<0.015	0.40	0.22	0.087	0.017	<0.010	27
MAY											
29...	1.2	3.1	0.016	0.723	<0.015	0.49	0.27	0.037	<0.010	<0.010	18
JUN											
25...	1.0	2.7	0.013	0.618	0.038	0.38	<0.20	0.048	<0.010	<0.010	8.7
JUL											
21...	0.67	0.93	0.010	0.220	0.041	0.45	0.35	0.028	<0.010	0.015	18
AUG											
28...	1.2	4.1	0.012	0.937	0.038	0.29	0.27	0.056	0.028	0.034	6.8
SEP											
30...	1.3	4.3	0.010	0.986	0.019	0.28	0.24	0.046	0.034	0.029	12

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	1-NAPH THOL, WATER, FLTRD, GF 0.7U REC (UG/L) (49295)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	2,4,5-T DIS- SOLVED (UG/L) (39742)
MAR 1997										
25...	12	2.0	1.1	<0.004	<0.002	<0.007	<0.002	<0.007	<0.035	<0.035
APR										
29...	2.6	--	--	<0.004	<0.002	<0.007	<0.002	--	--	--
MAY										
29...	1.4	2.7	0.80	<0.004	<0.002	<0.007	<0.002	--	--	--
JUN										
25...	1.2	3.2	0.50	<0.004	<0.002	<0.007	<0.002	--	--	--
JUL										
21...	2.8	--	--	<0.004	<0.002	E0.003	<0.002	--	--	--
AUG										
28...	8.0	--	--	<0.004	<0.002	<0.007	<0.002	--	--	--
SEP										
30...	7.5	--	--	<0.004	<0.002	<0.007	<0.002	--	--	--

DATE	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	3HYDRXY CARBO- FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	ACETO- CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA- CHLOR, WATER, DISS, REC, (UG/L) (46342)	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)	BRO- MACIL, WATER, DISS, REC (UG/L) (04029)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CAR- BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)
MAR 1997											
25...	<0.003	<0.014	<0.002	<0.002	0.029	<0.002	<0.002	<0.035	<0.003	<0.003	<0.008
APR											
29...	<0.003	--	<0.002	<0.002	0.073	<0.002	<0.002	--	<0.003	<0.003	--
MAY											
29...	<0.003	--	<0.002	E0.003	0.110	<0.002	<0.002	--	<0.003	<0.003	--
JUN											
25...	<0.003	--	<0.002	E0.003	0.215	<0.002	<0.002	--	<0.003	<0.003	--
JUL											
21...	<0.003	--	<0.002	<0.002	0.136	<0.002	<0.002	--	E0.005	<0.003	--
AUG											
28...	<0.003	--	<0.002	<0.002	0.063	<0.002	<0.002	--	<0.003	<0.003	--
SEP											
30...	<0.003	--	<0.002	<0.002	0.051	<0.002	<0.002	--	E0.015	<0.003	--

E Estimated value

## POTOMAC RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	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)	P,P' DDE DISSOLV (UG/L) (34653)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	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)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)
	MAR 1997										
25...	<0.004	<0.004	<0.002	<0.006	E0.017	<0.002	<0.035	<0.001	<0.017	<0.002	<0.003
APR											
29...	<0.004	<0.004	<0.002	<0.006	E0.058	0.005	--	<0.001	<0.017	<0.002	<0.003
MAY											
29...	<0.004	<0.004	<0.002	<0.006	E0.046	E0.003	--	<0.001	<0.017	<0.002	<0.003
JUN											
25...	<0.004	0.007	<0.002	<0.006	E0.044	<0.002	--	<0.001	<0.017	<0.002	<0.003
JUL											
21...	<0.004	0.034	<0.002	<0.006	E0.057	<0.002	--	<0.001	<0.017	<0.002	<0.003
AUG											
28...	<0.004	<0.004	<0.002	<0.006	E0.060	<0.002	--	<0.001	<0.017	<0.002	<0.003
SEP											
30...	<0.004	<0.004	<0.002	<0.006	E0.024	<0.002	--	<0.001	<0.017	<0.002	<0.003
DATE	FONOFOS WATER DISS REC (UG/L) (04095)	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)	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 WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)
MAR 1997											
25...	<0.003	<0.004	<0.018	<0.002	<0.005	<0.017	<0.001	<0.006	0.012	<0.004	<0.004
APR											
29...	<0.003	<0.004	--	<0.002	<0.005	--	<0.001	<0.006	0.025	<0.004	<0.004
MAY											
29...	<0.003	<0.004	--	<0.002	<0.005	--	<0.001	<0.006	0.052	<0.004	<0.004
JUN											
25...	<0.003	<0.004	--	<0.002	<0.005	--	--	<0.006	0.083	<0.004	<0.004
JUL											
21...	<0.003	<0.004	--	<0.002	<0.005	--	<0.001	<0.006	0.037	<0.004	<0.004
AUG											
28...	<0.003	<0.004	--	<0.002	<0.005	--	<0.001	<0.006	0.015	<0.004	<0.004
SEP											
30...	<0.003	<0.004	--	<0.002	<0.005	--	<0.001	<0.006	0.013	<0.004	<0.004

E Estimated value

## POTOMAC RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PARA- THION, DIS- SOLVED (UG/L) (39542)	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)	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)	PROP- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)
MAR 1997											
25...	<0.003	<0.004	<0.004	<0.004	<0.005	<0.050	E0.005	<0.003	<0.007	<0.013	<0.004
APR											
29...	<0.003	<0.004	<0.004	<0.004	<0.005	--	E0.009	<0.003	<0.007	<0.013	<0.004
MAY											
29...	<0.003	<0.004	<0.004	0.004	<0.005	--	E0.013	<0.003	<0.007	<0.013	<0.004
JUN											
25...	<0.003	<0.004	<0.004	<0.004	<0.005	--	E0.017	<0.003	<0.007	<0.013	<0.004
JUL											
21...	<0.003	<0.004	<0.004	<0.004	<0.005	--	0.020	<0.003	<0.007	<0.013	<0.004
AUG											
28...	<0.003	<0.004	<0.004	<0.004	<0.005	--	E0.017	<0.003	<0.007	<0.013	<0.004
SEP											
30...	<0.003	<0.004	<0.004	<0.004	<0.005	--	0.020	<0.003	<0.007	<0.013	<0.004

DATE	PRO- PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	SILVEX, DIS- SOLVED (UG/L) (39762)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	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)	ALPHA BHC DIS- SOLVED (UG/L) (34253)	SEDI- MENT, CHARGE, SUS- PENDED (MG/L) (80154)	SEDI- DIS- SUS- PENDED (T/DAY) (80155)
MAR 1997										
25...	<0.035	<0.021	0.015	<0.010	<0.013	<0.002	<0.001	<0.002	30	1990
APR										
29...	--	--	0.040	<0.010	<0.013	<0.002	<0.001	<0.002	4	96
MAY										
29...	--	--	0.045	E0.003	<0.013	<0.002	<0.001	<0.002	16	316
JUN										
25...	--	--	0.201	E0.007	<0.013	<0.002	<0.001	<0.002	7	63
JUL										
21...	--	--	0.037	E0.015	<0.013	<0.002	<0.001	<0.002	6	22
AUG										
28...	--	--	0.020	E0.008	<0.013	<0.002	<0.001	<0.002	2	11
SEP										
30...	--	--	0.019	<0.010	<0.013	<0.002	<0.001	<0.002	--	--

E Estimated value

## POTOMAC RIVER BASIN

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC

LOCATION.--Lat 38°58'21", long 77°02'25", 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<sup>2</sup>.

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 sea level.

REMARKS.--Records good except those for estimated daily discharges (sluggish intake), which are fair. Flow affected by two upstream reservoirs which control flow from about 25 mi<sup>2</sup>, 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0645	1,670	7.08	Mar. 3	1945	1,530	6.73
Nov. 9	0045	*2,130	*8.13	May 25	2045	1,400	6.32
Dec. 6	0400	1,440	6.44	May 26	0530	1,470	6.55
Dec. 13	1415	1,620	6.95	June 18	2200	1,220	5.75
Jan. 25	0145	1,430	6.41				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	e49	404	62	77	357	98	57	43	31	13	10
2	146	e49	494	60	69	138	77	63	178	76	11	43
3	64	e46	e80	60	65	698	70	54	143	32	11	28
4	48	e44	e70	59	91	317	66	74	65	25	15	11
5	42	e42	e63	59	171	203	61	53	50	23	20	9.3
6	38	40	625	58	97	e95	69	48	42	22	13	8.6
7	38	47	326	56	80	e90	66	46	37	22	11	8.6
8	289	659	e170	54	106	e80	59	43	35	22	9.9	15
9	166	691	e100	66	106	e75	55	74	34	21	9.5	10
10	119	254	e72	89	80	97	53	58	33	22	9.1	52
11	e50	e100	e82	74	70	82	53	46	32	21	8.9	94
12	e46	e70	e73	61	66	74	98	42	31	19	9.2	26
13	e43	e62	787	57	63	67	85	40	35	17	13	18
14	e41	e58	298	53	157	152	62	40	88	17	9.4	14
15	40	e56	e150	53	303	104	56	40	75	17	8.9	13
16	39	e55	e80	177	138	81	53	38	37	17	8.6	11
17	38	e54	e78	93	110	72	59	36	33	16	43	11
18	168	e53	e76	66	92	94	57	35	237	35	18	27
19	885	e53	e93	57	81	232	51	37	167	21	9.7	14
20	263	e54	e80	55	73	126	49	35	40	14	357	11
21	e80	53	e75	54	68	100	65	33	34	14	71	10
22	e65	49	e70	59	65	85	70	31	30	15	32	9.4
23	e58	47	e68	73	60	73	63	33	36	17	22	9.0
24	e55	46	e75	152	59	67	71	32	28	35	18	8.6
25	e53	46	90	529	57	63	60	207	27	18	15	8.6
26	e52	280	74	e85	64	159	52	554	38	15	14	8.5
27	e50	108	75	e75	79	83	88	85	74	14	13	8.4
28	e49	80	69	223	63	72	254	56	41	27	13	26
29	e48	64	73	128	---	75	86	44	32	24	15	64
30	e47	60	69	102	---	69	67	48	28	13	11	16
31	e48	---	66	85	---	204	---	38	---	13	10	---
TOTAL	3214	3369	5005	2934	2610	4284	2173	2120	1803	695	842.2	603.0
MEAN	104	112	161	94.6	93.2	138	72.4	68.4	60.1	22.4	27.2	20.1
MAX	885	691	787	529	303	698	254	554	237	76	357	94
MIN	38	40	63	53	57	63	49	31	27	13	8.6	8.4
CFSM	1.67	1.81	2.60	1.52	1.50	2.22	1.16	1.10	.97	.36	.44	.32
IN.	1.92	2.01	2.99	1.75	1.56	2.56	1.30	1.27	1.08	.42	.50	.36

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1997, BY WATER YEAR (WY)

MEAN	41.3	52.8	62.7	73.1	82.6	91.1	84.9	74.3	59.9	49.3	47.9	45.7
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

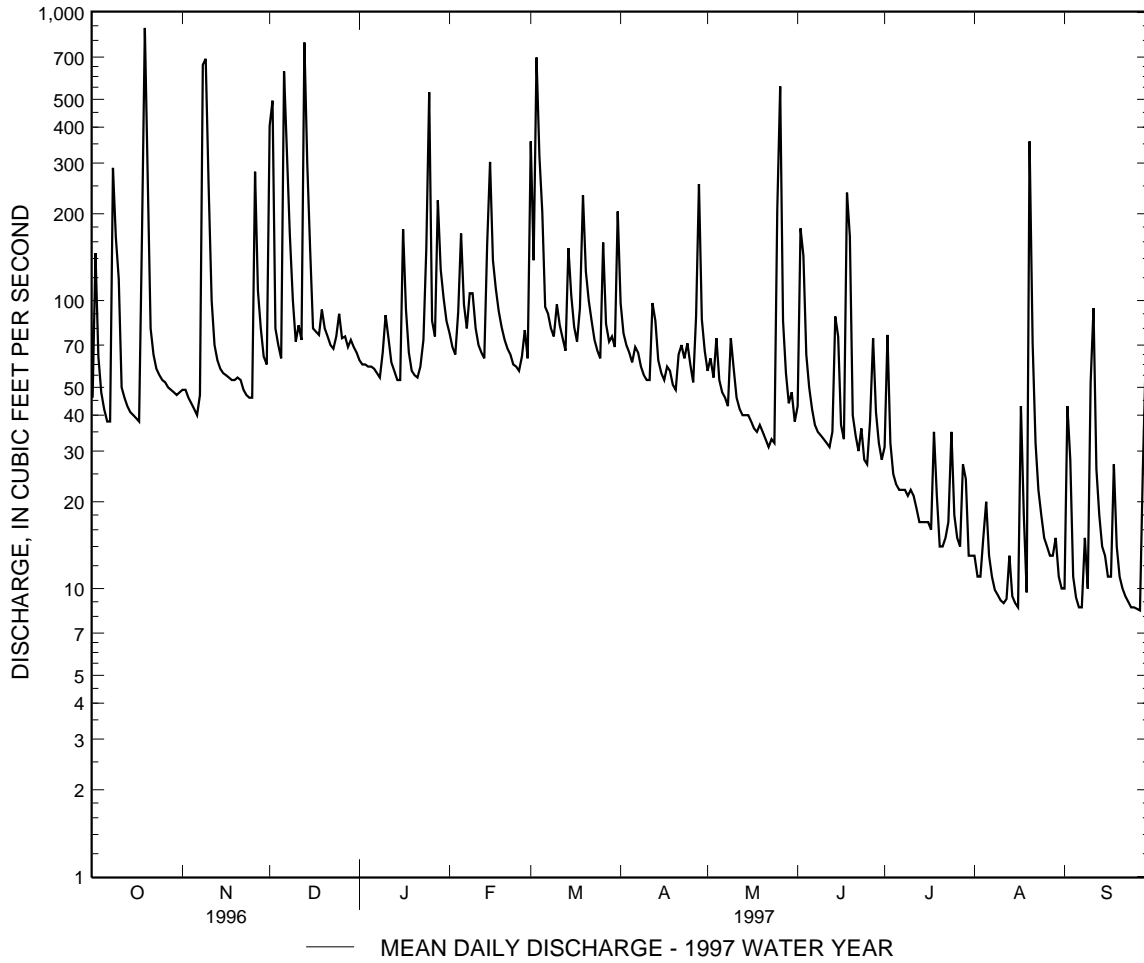


POTOMAC RIVER BASIN

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1930 - 1997	
ANNUAL TOTAL	42591		29652.2			
ANNUAL MEAN	116		81.2		63.7	
HIGHEST ANNUAL MEAN					142	1972
LOWEST ANNUAL MEAN					16.1	1931
HIGHEST DAILY MEAN	1600	Jan 19	885	Oct 19	5000	Jun 22 1972
LOWEST DAILY MEAN	22	(a)	8.4	Sep 27	.50	(b)
ANNUAL SEVEN-DAY MINIMUM	30	Aug 20	8.9	Sep 21	.50	Oct 1 1930
INSTANTANEOUS PEAK FLOW			2130	Nov 9	(c)12500	Jun 22 1972
INSTANTANEOUS PEAK STAGE			8.13	Nov 9	(d)16.20	Jun 22 1972
INSTANTANEOUS LOW FLOW			8.0	(f)	.50	(b)
ANNUAL RUNOFF (CFSM)	1.87		1.31		1.02	
ANNUAL RUNOFF (INCHES)	25.47		17.73		13.92	
10 PERCENT EXCEEDS	241		154		122	
50 PERCENT EXCEEDS	68		56		38	
90 PERCENT EXCEEDS	40		13		13	

- a Sept. 2, 3.
- b Oct. 1-7, 1930.
- c From rating curve extended above 5,640 ft<sup>3</sup>/s on basis of contracted-opening measurements at gage heights of 13.19 ft and 16.2 ft.
- d From floodmark.
- f Aug. 17, Sept. 7, 26-28.



EPOTOMAC RIVER BASIN

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD

LOCATION.--Lat 38°57'37", long 76°55'34", 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<sup>2</sup>.

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 sea level (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.--Records good except those for estimated daily discharge (ice effect), which are fair. 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 mean sea level, from floodmarks, discharge, 10,500 ft<sup>3</sup>/s, from rating curve extended above 3,000 ft<sup>3</sup>/s on basis of velocity-area study.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 19	0200	3,110	6.15	Jan. 25	0030	2,670	5.73
Nov. 8	1800	*7,090	*9.05	Mar. 1	1215	2,200	5.26
Dec. 2	0245	2,000	5.04	Mar. 3	1645	2,990	6.04
Dec. 13	1330	4,180	7.10	May 25	2045	6,570	8.77

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	32	615	64	83	583	104	72	66	33	13	19
2	92	32	933	63	70	233	77	67	340	63	13	53
3	54	29	177	63	66	1210	73	75	522	45	14	26
4	36	28	112	60	133	557	70	76	140	28	14	15
5	34	28	106	59	354	178	66	57	81	23	48	13
6	33	30	844	56	138	154	79	55	63	21	43	13
7	32	29	382	52	91	107	77	49	55	21	21	13
8	486	2130	280	50	134	96	64	46	51	20	15	15
9	224	1230	138	81	136	85	59	76	47	19	13	15
10	116	177	100	109	106	122	58	60	44	29	12	53
11	60	106	98	95	88	91	57	47	41	30	11	90
12	47	79	95	63	82	79	122	45	40	18	33	25
13	42	67	2140	59	79	73	112	43	45	17	16	18
14	38	62	800	62	255	215	71	42	103	17	13	16
15	34	59	179	61	680	154	63	40	68	17	13	15
16	33	54	129	278	192	93	59	38	38	17	13	14
17	32	53	115	e65	116	81	83	37	32	14	97	13
18	285	52	99	e50	93	108	70	36	172	18	33	28
19	1290	52	166	e60	84	360	59	37	139	13	17	16
20	191	49	108	71	75	177	54	36	55	9.9	656	14
21	92	46	80	57	72	114	68	32	39	11	119	12
22	74	45	75	78	71	91	68	31	33	13	42	12
23	54	42	74	110	63	77	59	31	31	61	27	12
24	47	42	102	246	59	73	68	30	26	87	23	12
25	41	41	111	901	57	68	60	1020	26	30	20	12
26	37	324	76	150	66	225	56	1310	59	21	20	11
27	35	102	82	97	78	108	127	130	48	19	19	11
28	35	65	71	295	61	85	514	74	26	40	24	35
29	34	57	96	141	---	85	126	56	23	30	19	71
30	32	55	81	92	---	77	81	56	22	15	16	17
31	32	---	70	85	---	225	---	47	---	14	15	---
TOTAL	3710	5197	8534	3773	3582	5984	2704	3851	2475	813.9	1452	689
MEAN	120	173	275	122	128	193	90.1	124	82.5	26.3	46.8	23.0
MAX	1290	2130	2140	901	680	1210	514	1310	522	87	656	90
MIN	32	28	70	50	57	68	54	30	22	9.9	11	11
CFSM	1.64	2.38	3.78	1.67	1.76	2.65	1.24	1.71	1.13	.36	.64	.32
IN.	1.90	2.66	4.36	1.93	1.83	3.06	1.38	1.97	1.26	.42	.74	.35

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997, BY WATER YEAR (WY)

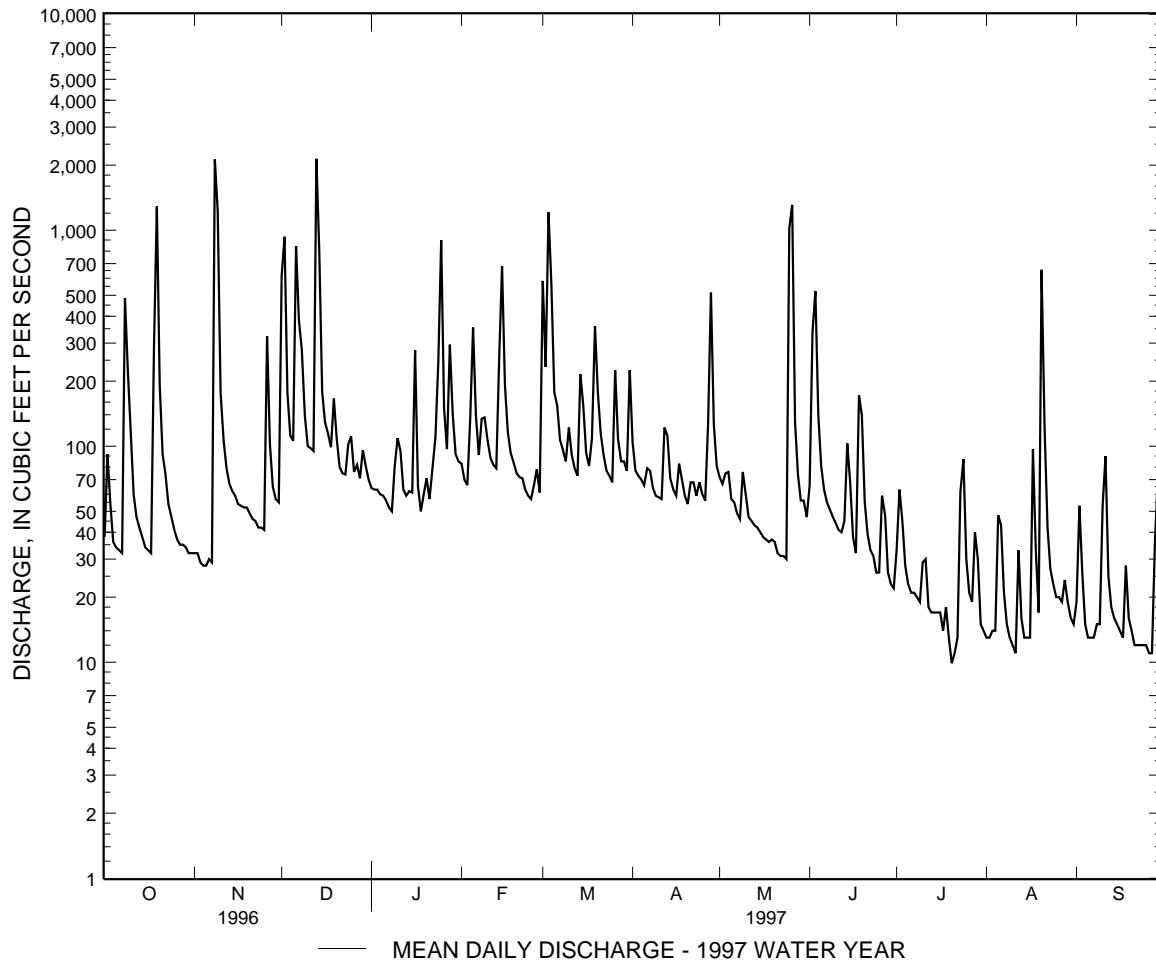
MEAN	55.1	75.2	95.3	104	113	132	111	95.2	69.3	61.2	64.8	58.8
MAX	234	205	275	325	265	339	322	329	353	335	243	449
(WY)	1943	1973	1997	1979	1972	1994	1983	1989	1972	1945	1955	1975
MIN	9.37	15.9	19.8	25.6	39.3	37.0	32.4	23.9	20.3	9.14	7.94	8.32
(WY)	1942	1942	1966	1955	1947	1981	1985	1941	1965	1966	1962	1941

POTOMAC RIVER BASIN

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997	
ANNUAL TOTAL	55303		42764.9			
ANNUAL MEAN	151		117		86.2	
HIGHEST ANNUAL MEAN					150	1972
LOWEST ANNUAL MEAN					49.3	1981
HIGHEST DAILY MEAN	3670	Jan 19	2140	Dec 13	6830	Sep 26 1975
LOWEST DAILY MEAN	16	Sep 2	9.9	Jul 20	1.4	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	21	Aug 20	12	Sep 21	1.7	Sep 7 1966
INSTANTANEOUS PEAK FLOW			7090	Nov 8	(a)12000	Jun 22 1972
INSTANTANEOUS PEAK STAGE			9.05	Nov 8	12.93	Oct 16 1942
INSTANTANEOUS LOW FLOW			9.0	(b)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.08		1.61		1.18	
ANNUAL RUNOFF (INCHES)	28.26		21.85		16.09	
10 PERCENT EXCEEDS	286		191		166	
50 PERCENT EXCEEDS	71		59		44	
90 PERCENT EXCEEDS	32		16		16	

- a From rating curve extended above 3,800 ft<sup>3</sup>/s on basis of the average of contracted-opening and slope-area measurements at gage height 9.52 ft.
- b July 20, 21.



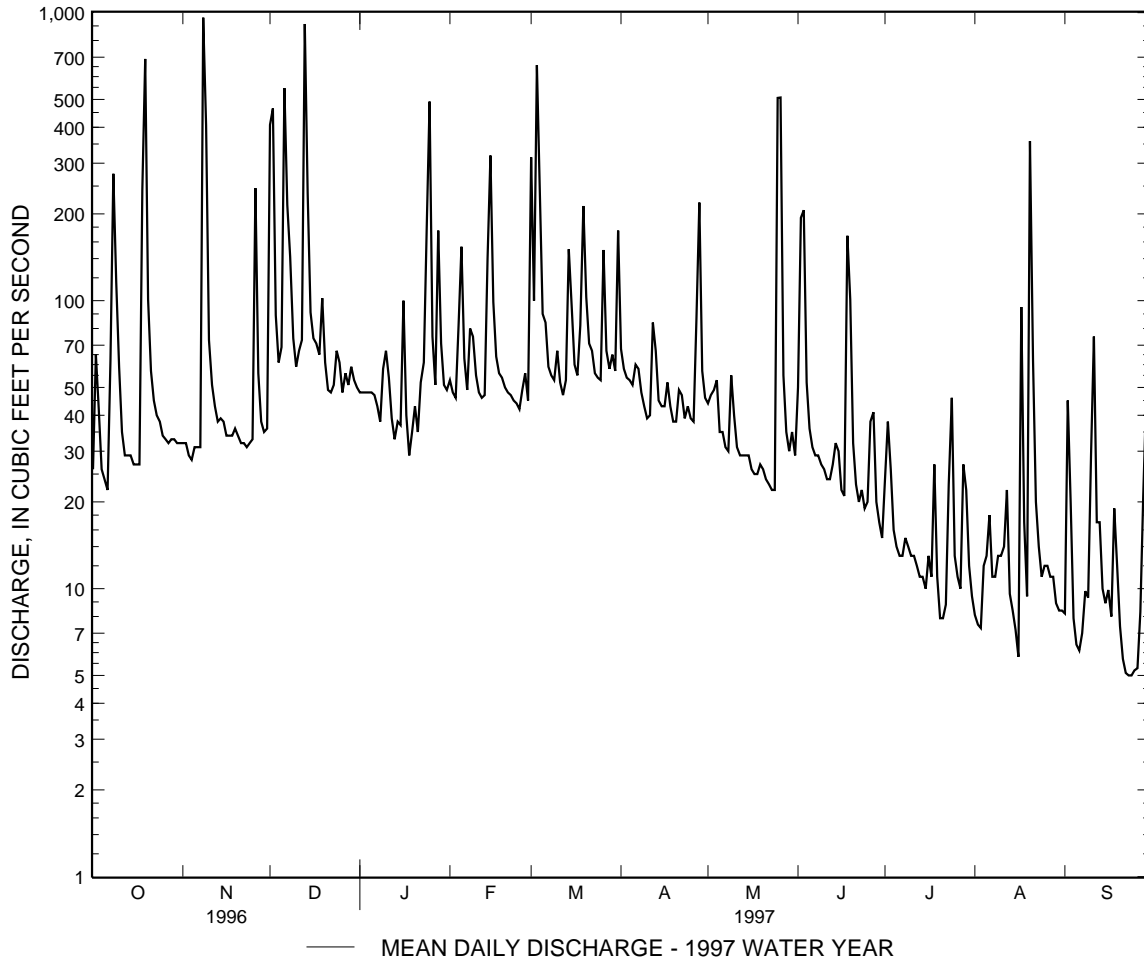


POTOMAC RIVER BASIN

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997	
ANNUAL TOTAL	32796		24050.5			
ANNUAL MEAN	(a)89.6		(a)65.9		(a)48.5	
HIGHEST ANNUAL MEAN					96.9	1979
LOWEST ANNUAL MEAN					20.8	1947
HIGHEST DAILY MEAN	1860	Jan 19	961	Nov 8	5050	Sep 26 1975
LOWEST DAILY MEAN	12	Aug 26	5.0	(b)	.40	(c)
ANNUAL SEVEN-DAY MINIMUM	14	Aug 20	5.5	Sep 20	.60	Sep 7 1966
INSTANTANEOUS PEAK FLOW			5500	May 25	(d)18000	Jun 22 1972
INSTANTANEOUS PEAK STAGE			6.31	May 25	14.47	Jun 22 1972
INSTANTANEOUS LOW FLOW			5.0	(f)	.20	Sep 11 1966
ANNUAL RUNOFF (CFSM)	1.81		1.33		.98	
ANNUAL RUNOFF (INCHES)	24.70		18.11		13.34	
10 PERCENT EXCEEDS	189		101		92	
50 PERCENT EXCEEDS	46		39		24	
90 PERCENT EXCEEDS	25		11		6.6	

- a Unadjusted.
- b Sept. 23, 24.
- c Sept. 8, 11, 1966.
- d From rating curve extended above 4,000 ft<sup>3</sup>/s on the basis of the average of slope-area and step-backwater measurements of peak flow.
- f Sept. 21-28.



## POTOMAC RIVER BASIN

01651800 WATTS BRANCH AT WASHINGTON, D.C.

LOCATION.--Lat 38°54'04", long 76°56'33", 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<sup>2</sup>.

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 sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 350 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 8	1645	*944	*6.07	May 25	2300	923	6.01

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.1	28	2.7	2.7	17	2.5	2.0	5.7	1.1	1.0	.98
2	6.0	1.9	23	2.8	1.7	3.6	2.2	1.9	7.3	7.1	.96	3.1
3	1.8	e1.7	4.6	2.7	1.7	33	2.0	2.4	9.8	1.4	.90	1.2
4	1.5	e1.7	3.6	2.7	12	6.8	1.9	2.0	2.2	.81	.94	.99
5	1.5	e1.7	9.5	2.7	16	4.7	1.8	2.0	1.8	.53	1.0	.93
6	1.6	e1.7	23	2.4	3.4	4.6	2.8	4.8	1.6	.58	.91	.89
7	1.6	e1.7	17	2.2	2.5	3.0	1.9	1.7	1.6	.55	.83	1.1
8	38	92	6.5	2.5	7.6	2.8	1.8	1.6	1.5	.65	.84	.97
9	6.6	9.9	4.2	6.3	4.9	2.2	1.8	4.5	1.4	1.0	.68	1.0
10	3.2	4.3	3.7	5.0	2.9	4.4	1.8	1.9	1.4	.77	.57	2.5
11	2.1	3.4	3.5	4.2	2.3	2.1	1.8	1.7	1.4	.86	.75	3.5
12	1.8	2.9	2.7	2.6	2.1	1.8	7.0	1.7	1.4	.66	.97	.89
13	1.7	2.7	86	2.5	1.8	1.7	2.6	1.7	9.2	.67	.86	.98
14	1.7	2.7	9.8	2.6	15	8.1	2.0	1.7	17	1.3	1.0	.94
15	1.6	2.7	5.5	2.6	22	2.8	1.9	1.6	2.8	1.8	.81	e.90
16	1.6	2.7	4.6	14	4.8	2.0	1.9	1.6	1.8	1.8	1.1	e1.0
17	1.6	2.5	4.4	e2.1	3.5	1.9	7.5	1.5	1.6	2.6	13	e.90
18	26	2.8	3.9	e3.0	3.0	5.0	2.4	1.4	6.2	5.8	1.7	2.6
19	28	2.9	8.9	e3.6	2.9	15	1.9	1.5	2.7	2.3	.74	1.1
20	6.8	2.6	3.9	e2.5	2.5	4.1	1.9	1.3	2.3	.75	41	e.65
21	2.8	2.4	3.4	e3.4	2.2	2.9	3.5	1.1	2.6	.67	2.5	e.62
22	2.4	2.3	3.3	6.9	2.1	2.5	2.0	1.1	2.1	.67	1.2	e.59
23	2.1	2.2	3.3	4.6	1.9	2.1	2.0	1.1	2.2	2.0	1.1	e.57
24	2.0	2.2	6.8	21	1.7	2.0	3.9	1.3	1.7	4.5	1.1	e.56
25	1.9	2.5	3.7	12	1.8	2.0	2.2	66	2.7	1.2	.96	e.56
26	1.9	19	2.9	3.5	3.0	9.8	2.1	35	2.8	.92	.98	e.55
27	1.6	3.1	4.2	2.9	1.9	2.4	13	3.0	1.6	1.6	1.0	1.4
28	1.9	2.7	2.9	11	1.6	1.9	21	2.2	1.2	5.4	1.0	7.4
29	1.9	2.7	3.8	3.4	---	6.4	3.0	1.8	1.3	1.4	.89	2.7
30	2.1	3.6	2.9	2.9	---	2.2	2.2	1.8	.80	.99	.94	.97
31	2.1	---	3.1	2.9	---	11	---	1.6	---	1.1	.82	---
TOTAL	159.5	189.3	296.6	146.2	131.5	171.8	106.3	156.5	99.70	53.48	83.05	43.04
MEAN	5.15	6.31	9.57	4.72	4.70	5.54	3.54	5.05	3.32	1.73	2.68	1.43
MAX	38	92	86	21	22	33	21	66	17	7.1	41	7.4
MIN	1.5	1.7	2.7	2.1	1.6	1.7	1.8	1.1	.80	.53	.57	.55
CFSM	1.57	1.92	2.92	1.44	1.43	1.69	1.08	1.54	1.01	.53	.82	.44
IN.	1.81	2.15	3.36	1.66	1.49	1.95	1.21	1.77	1.13	.61	.94	.49

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

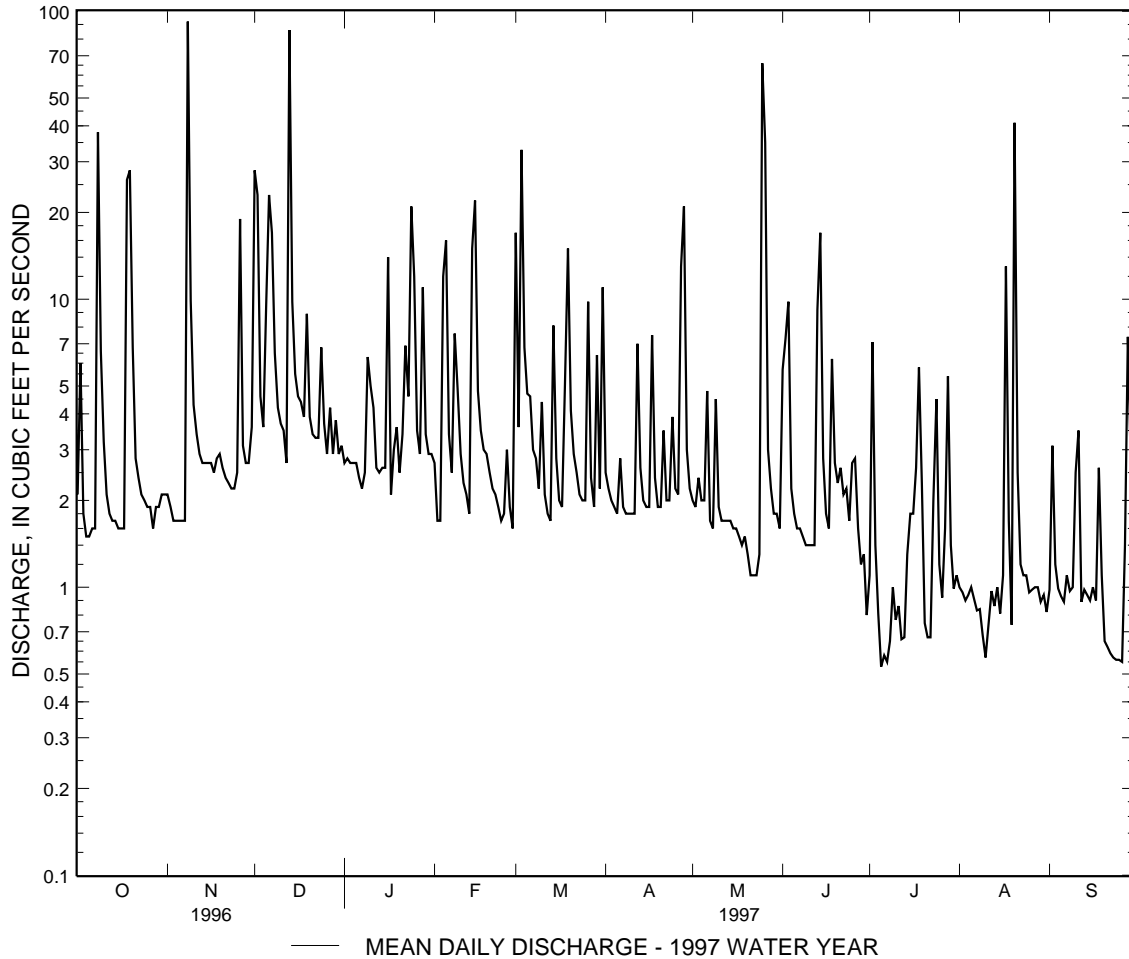
	1992	1993	1994	1995	1996	1997
MEAN	3.89	4.55	4.92	6.69	5.07	9.48
MAX	9.08	6.31	9.57	9.71	8.48	15.7
(WY)	1996	1997	1997	1996	1994	1994
MIN	1.43	1.73	2.44	4.72	2.80	5.25
(WY)	1993	1995	1995	1997	1995	1995

POTOMAC RIVER BASIN

01651800 WATTS BRANCH AT WASHINGTON, D.C.--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	2214.18		1636.97			
ANNUAL MEAN	6.05		4.48		4.66	
HIGHEST ANNUAL MEAN					5.87	1996
LOWEST ANNUAL MEAN					2.84	1995
HIGHEST DAILY MEAN	107	Jan 19	92	Nov 8	109	Mar 17 1993
LOWEST DAILY MEAN	.81	Sep 2	.53	Jul 5	.37	Jul 23 1993
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 20	.59	Sep 20	.45	Jul 30 1993
INSTANTANEOUS PEAK FLOW			944	Nov 8	1510	Sep 26 1994
INSTANTANEOUS PEAK STAGE			6.07	Nov 8	7.36	Sep 26 1994
INSTANTANEOUS LOW FLOW			.53	(a)	.36	(b)
ANNUAL RUNOFF (CFSM)	1.84		1.37		1.42	
ANNUAL RUNOFF (INCHES)	25.11		18.57		19.30	
10 PERCENT EXCEEDS	14		8.4		10	
50 PERCENT EXCEEDS	2.9		2.2		2.0	
90 PERCENT EXCEEDS	1.4		.92		.82	

a July 5-8, 13, 14, Aug. 9, 10, 15-17.  
b July 22-26, 28-31, Aug. 1, 2, 1993.



## POTOMAC RIVER BASIN

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD

LOCATION.--Lat 38°42'20", long 76°58'00", 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<sup>2</sup>.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (backwater from beaver activity), 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct. 8	2130	502	6.00	Dec. 2	0830	559	6.25
Oct. 19	1930	590	6.38	Dec. 14	0530	*1,080	*7.44
Nov. 9	0830	742	6.79	June 27	1230	660	6.60

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	122	51	56	114	72	40	11	9.3	.17	1.2
2	22	22	428	50	47	101	55	34	18	29	.21	1.1
3	26	21	119	49	47	187	52	33	58	36	.12	.80
4	13	20	75	47	49	241	50	31	32	14	.10	.69
5	12	20	63	47	297	102	47	28	17	8.3	.08	.41
6	11	20	310	45	126	98	50	27	13	6.5	.07	.22
7	11	21	180	41	80	74	54	25	12	5.4	1.1	.15
8	176	168	214	39	88	69	43	23	11	4.8	.86	.09
9	247	600	100	50	90	60	40	28	10	4.0	1.1	.15
10	71	96	78	78	80	71	38	35	8.3	3.6	.24	.15
11	37	60	69	70	68	61	38	25	7.4	3.3	.10	.91
12	28	50	63	48	64	54	48	22	7.1	e3.0	.07	e.40
13	24	43	477	41	60	51	66	21	17	e2.7	.04	e.14
14	22	41	691	39	116	73	41	20	26	e2.4	.02	e.05
15	19	39	160	39	341	73	38	19	17	e2.2	.00	e.04
16	17	36	121	94	142	53	37	16	10	e2.0	.00	e.03
17	16	35	105	57	97	49	41	15	8.0	e1.8	.01	e.02
18	23	35	92	39	81	52	53	15	10	e1.5	17	e.30
19	537	40	139	37	75	172	38	14	32	13	6.1	8.0
20	161	33	95	42	67	109	34	12	11	3.4	182	4.0
21	73	30	74	45	65	74	34	12	8.4	1.2	126	8.9
22	51	29	70	47	63	65	37	9.6	9.2	.98	19	e4.0
23	43	29	72	62	55	55	35	8.6	14	2.4	8.6	e2.0
24	38	27	75	48	53	52	46	8.3	8.2	17	5.7	e1.2
25	33	26	105	143	52	51	36	9.4	5.4	11	4.4	e.65
26	31	144	68	62	51	107	32	81	76	4.6	4.0	.41
27	29	63	83	49	62	70	34	32	319	3.1	3.5	.22
28	30	40	67	126	51	57	180	17	32	2.5	3.1	.30
29	27	35	63	86	---	56	67	12	15	3.0	2.6	2.2
30	26	33	58	58	---	55	46	12	9.7	2.1	2.0	13
31	25	---	55	55	---	129	---	11	---	.65	1.3	---
TOTAL	1894	1879	4491	1784	2523	2635	1482	695.9	832.7	204.73	389.59	51.73
MEAN	61.1	62.6	145	57.5	90.1	85.0	49.4	22.4	27.8	6.60	12.6	1.72
MAX	537	600	691	143	341	241	180	81	319	36	182	13
MIN	11	20	55	37	47	49	32	8.3	5.4	.65	.00	.02
CFSM	1.55	1.59	3.67	1.46	2.28	2.15	1.25	.57	.70	.17	.32	.04
IN.	1.78	1.77	4.23	1.68	2.38	2.48	1.40	.66	.78	.19	.37	.05

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
MEAN	29.3	33.7	53.6	63.8	69.3	81.8	66.6	48.8	31.4	19.0	19.9	27.5
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	23.6	17.5	18.1	11.1	1.42	.14	.006	.000
(WY)	1987	1992	1966	1981	1977	1981	1985	1986	1986	1966	1966	1977

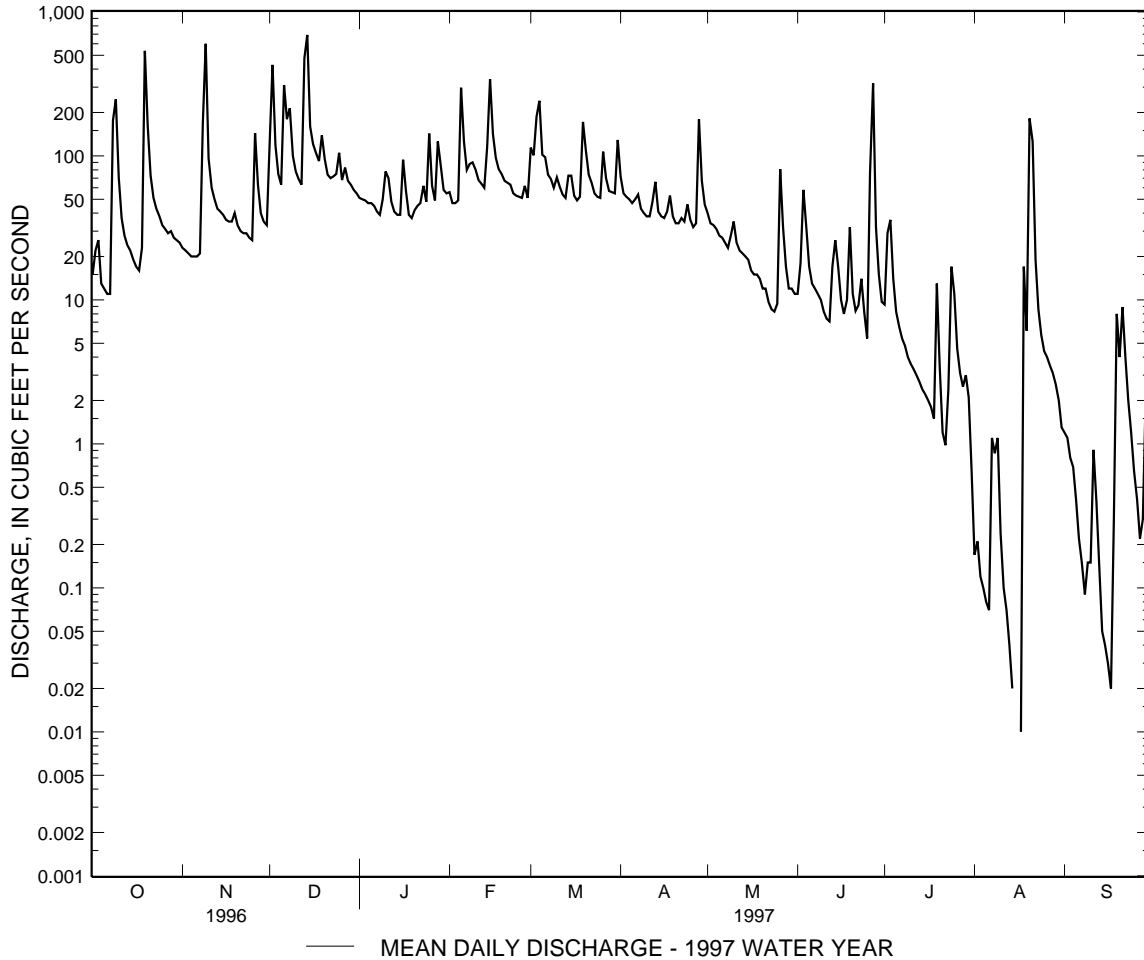


POTOMAC RIVER BASIN

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	26549.6		18862.65			
ANNUAL MEAN	72.5		51.7		45.3	
HIGHEST ANNUAL MEAN					85.9 1972	
LOWEST ANNUAL MEAN					13.4 1981	
HIGHEST DAILY MEAN	918	Jan 19	691	Dec 14	4500	Sep 6 1979
LOWEST DAILY MEAN	4.0	Sep 3	.00	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	6.3	Aug 20	.03	Aug 11	.00	Jul 9 1966
INSTANTANEOUS PEAK FLOW			1080	Dec 14	(c)8540	Sep 6 1979
INSTANTANEOUS PEAK STAGE			7.44	Dec 14	11.21	Sep 6 1979
INSTANTANEOUS LOW FLOW			.00	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.84		1.31		1.15	
ANNUAL RUNOFF (INCHES)	25.00		17.76		15.57	
10 PERCENT EXCEEDS	155		106		90	
50 PERCENT EXCEEDS	48		34		24	
90 PERCENT EXCEEDS	11		.95		1.6	

- a Aug. 15, 16.
- b Many days.
- c From rating curve extended above 1,700 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow at bridge 100 ft upstream.
- d Aug. 15-17.
- f No flow at times in 1966, 1970, 1977, 1980-83, 1985-89, 1991-1995, 1997.



## POTOMAC RIVER BASIN

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD

LOCATION.--Lat 38°29'26", long 76°55'37", Charles County, Hydrologic Unit 02070011, on left-center downstream side of bridge on Maryland Route 6, 1.0 mi southeast of Newtown, and 1.7 mi downstream from Kerrick Swamp.

DRAINAGE AREA.--79.9 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 34.88 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. 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. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 14	1800	*863	*3.90	No other peak greater than base discharge			

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997  
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	54	93	114	102	124	186	101	24	7.1	2.6	5.3
2	36	52	320	103	93	198	127	82	27	41	2.0	4.4
3	46	52	378	99	86	228	104	74	62	133	1.8	4.7
4	42	50	217	95	84	422	96	70	75	60	4.4	4.9
5	30	47	126	92	238	355	90	61	49	22	4.3	4.5
6	23	48	262	89	348	228	89	55	33	12	4.8	4.3
7	19	48	364	81	218	177	111	50	28	7.3	4.2	3.7
8	114	66	439	75	161	138	97	47	25	5.0	3.7	2.8
9	439	285	371	82	175	122	81	50	21	3.8	3.6	2.3
10	411	314	206	137	166	119	72	78	16	15	3.4	1.9
11	167	156	144	169	143	118	69	75	13	16	2.7	1.6
12	90	91	123	136	125	108	79	56	11	7.2	2.1	1.4
13	65	72	256	111	116	101	144	48	21	4.1	1.7	1.2
14	54	64	791	89	165	109	117	45	62	2.6	1.3	e.60
15	46	61	583	83	404	156	85	45	45	1.7	.94	1.8
16	41	59	292	126	464	130	75	41	27	1.3	e.50	2.6
17	39	57	208	204	278	107	75	37	17	1.1	e.10	2.5
18	41	56	176	127	176	102	102	36	18	.94	e.00	2.0
19	340	59	205	79	154	236	91	33	103	1.1	e.00	1.5
20	550	60	234	71	138	351	74	29	57	1.1	27	e.90
21	342	56	192	e72	124	231	67	25	26	1.2	153	5.3
22	173	54	152	e77	125	151	73	21	15	1.1	102	8.1
23	109	52	131	e85	116	120	76	19	9.9	1.2	23	7.8
24	87	50	131	e100	104	104	111	18	6.4	11	9.4	6.4
25	77	49	160	e85	98	97	118	18	4.9	22	6.3	4.3
26	67	72	155	119	94	165	86	43	4.4	9.1	5.0	4.6
27	60	116	134	92	112	225	76	70	99	4.0	4.6	4.0
28	59	94	132	123	110	145	233	44	54	4.4	4.2	3.8
29	57	67	122	194	---	120	272	30	21	16	5.1	4.3
30	55	58	113	138	---	120	143	26	9.9	7.2	8.5	4.1
31	55	---	116	108	---	164	---	26	---	3.5	6.2	---
TOTAL	3777	2419	7326	3355	4717	5271	3219	1453	984.5	424.04	398.44	107.60
MEAN	122	80.6	236	108	168	170	107	46.9	32.8	13.7	12.9	3.59
MAX	550	314	791	204	464	422	272	101	103	133	153	8.1
MIN	19	47	93	71	84	97	67	18	4.4	.94	.00	.60
CFSM	1.52	1.01	2.96	1.35	2.11	2.13	1.34	.59	.41	.17	.16	.04
IN.	1.76	1.13	3.41	1.56	2.20	2.45	1.50	.68	.46	.20	.19	.05

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

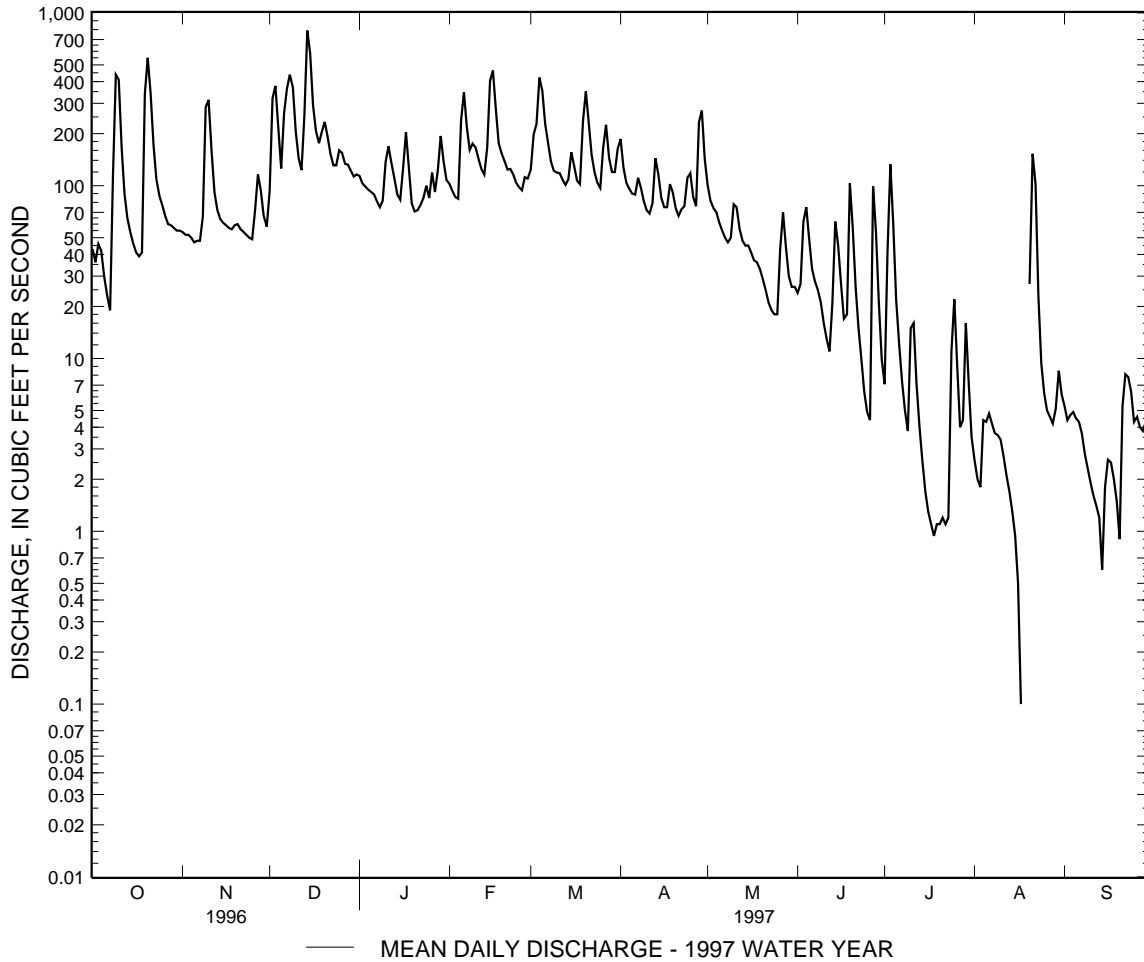
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	48.7	75.7	110	133	139	183	133	107	61.5	32.2	30.9	30.6			
MAX	163	139	236	268	261	491	277	334	311	93.5	113	127			
(WY)	1990	1986	1997	1996	1994	1994	1993	1989	1989	1989	1990	1992			
MIN	7.93	7.35	38.1	49.1	57.6	57.0	30.5	25.5	2.07	4.47	.39	.000			
(WY)	1992	1992	1995	1985	1992	1985	1985	1986	1986	1987	1995	1995			

POTOMAC RIVER BASIN

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1983 - 1997	
ANNUAL TOTAL	48532.6		33451.58			
ANNUAL MEAN	133		91.6		90.5	
HIGHEST ANNUAL MEAN					137	1990
LOWEST ANNUAL MEAN					43.5	1995
HIGHEST DAILY MEAN	1500	Jan 20	791	Dec 14	2570	Mar 29 1994
LOWEST DAILY MEAN	5.6	Jul 7	(e).00	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	9.5	Jul 6	.65	Aug 13	.00	Jul 20 1987
INSTANTANEOUS PEAK FLOW			863	Dec 14	3380	Mar 29 1994
INSTANTANEOUS PEAK STAGE			3.90	Dec 14	5.26	Mar 29 1994
INSTANTANEOUS LOW FLOW			.00	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	1.66		1.15		1.13	
ANNUAL RUNOFF (INCHES)	22.60		15.57		15.40	
10 PERCENT EXCEEDS	294		207		200	
50 PERCENT EXCEEDS	97		69		52	
90 PERCENT EXCEEDS	23		3.5		2.1	

- e Estimated.
- a Aug. 18, 19.
- b Many days.
- c Aug. 17-19.
- d No flow at times in 1983, 1985-89, 1991, 1993, 1995-97.



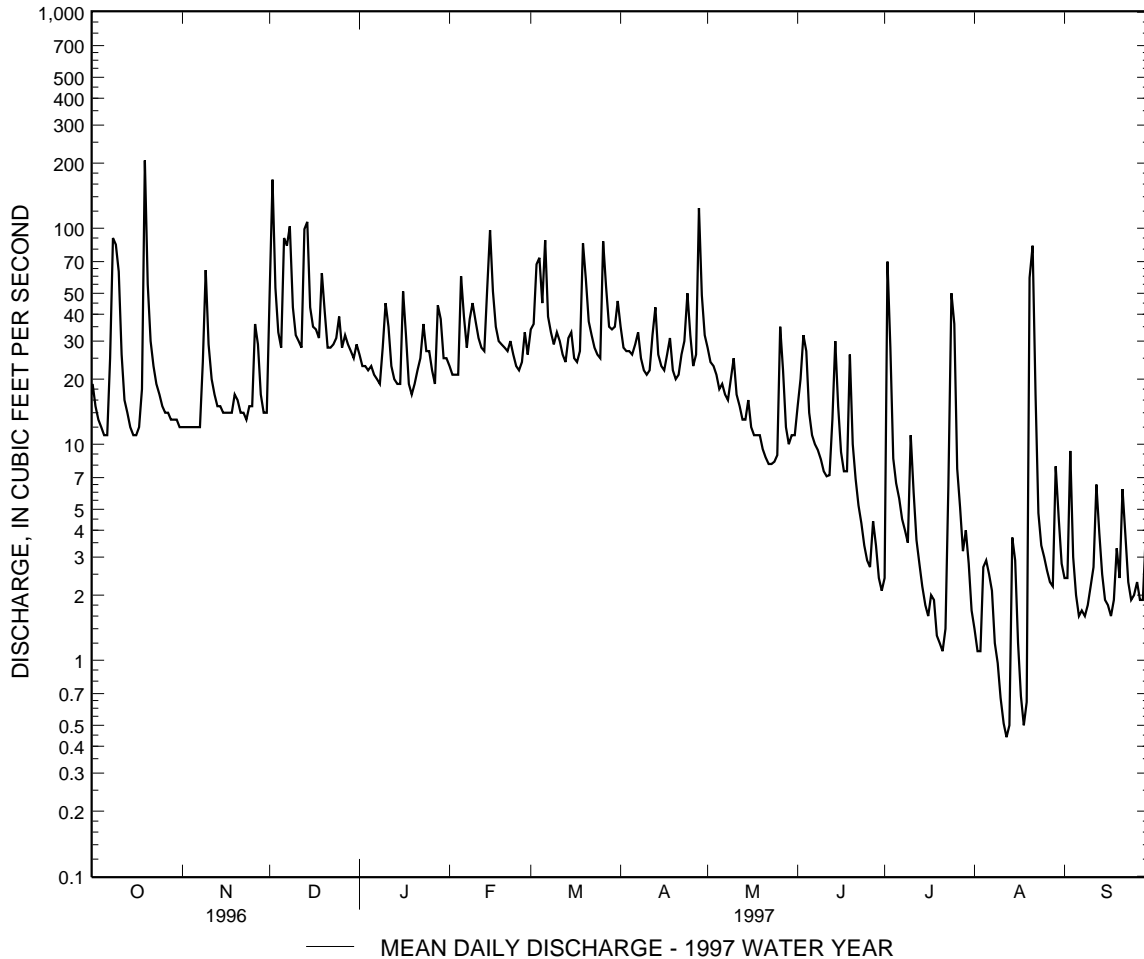


POTOMAC RIVER BASIN

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	10217.9		8362.51			
ANNUAL MEAN	27.9		22.9		19.6	
HIGHEST ANNUAL MEAN					34.5 1972	
LOWEST ANNUAL MEAN					9.19 1981	
HIGHEST DAILY MEAN	347	Jan 19	206	Oct 19	1580	Jun 22 1972
LOWEST DAILY MEAN	5.0	Jul 7	.44	Aug 12	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	7.1	Aug 30	.91	Aug 7	.00	Aug 31 1980
INSTANTANEOUS PEAK FLOW			305	Oct 19	(b)4500	Sep 6 1979
INSTANTANEOUS PEAK STAGE			4.09	Oct 19	(c)6.96	Sep 6 1979
INSTANTANEOUS LOW FLOW			.37	Aug 12	.00	(d)
ANNUAL RUNOFF (CFSM)	1.51		1.24		1.06	
ANNUAL RUNOFF (INCHES)	20.55		16.82		14.41	
10 PERCENT EXCEEDS	50		45		38	
50 PERCENT EXCEEDS	20		19		12	
90 PERCENT EXCEEDS	9.6		2.1		1.3	

- a Many days
- b From rating curve extended above 480 ft<sup>3</sup>/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.



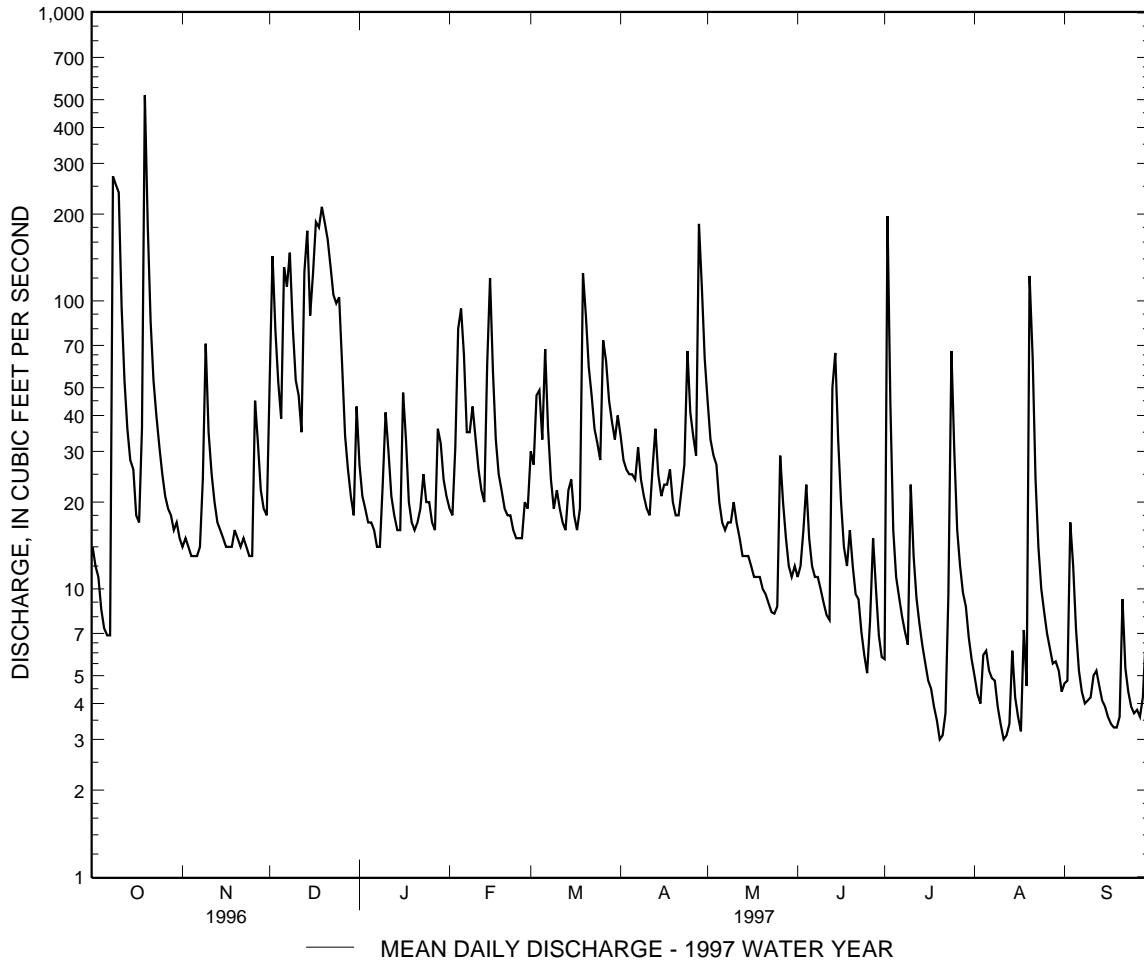


POTOMAC RIVER BASIN

01661500 ST. MARYS RIVER AT GREAT MILLS, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1946 - 1997	
ANNUAL TOTAL	15813.2		11862.8			
ANNUAL MEAN	43.2		32.5		24.3	
HIGHEST ANNUAL MEAN					49.1 1958	
LOWEST ANNUAL MEAN					11.1 1966	
HIGHEST DAILY MEAN	709	Jul 13	518	Oct 19	2260	Aug 13 1955
LOWEST DAILY MEAN	4.6	Sep 3	3.0	(a)	.30	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	5.3	Aug 30	3.6	Sep 14	.39	Sep 3 1966
INSTANTANEOUS PEAK FLOW			803	Oct 19	(b)7950	Aug 20 1969
INSTANTANEOUS PEAK STAGE			6.96	Oct 19	13.34	Aug 20 1969
INSTANTANEOUS LOW FLOW			2.7	(c)	.20	Sep 7 1966
ANNUAL RUNOFF (CFSM)	1.80		1.35		1.01	
ANNUAL RUNOFF (INCHES)	24.51		18.39		13.74	
10 PERCENT EXCEEDS	106		72		48	
50 PERCENT EXCEEDS	18		18		12	
90 PERCENT EXCEEDS	8.7		4.7		3.3	

a July 20, Aug. 11.  
 b From rating curve extended above 1,500 ft<sup>3</sup>/s on basis of contracted-opening measurement at gage height 12.08 ft.  
 c July 20, 21.





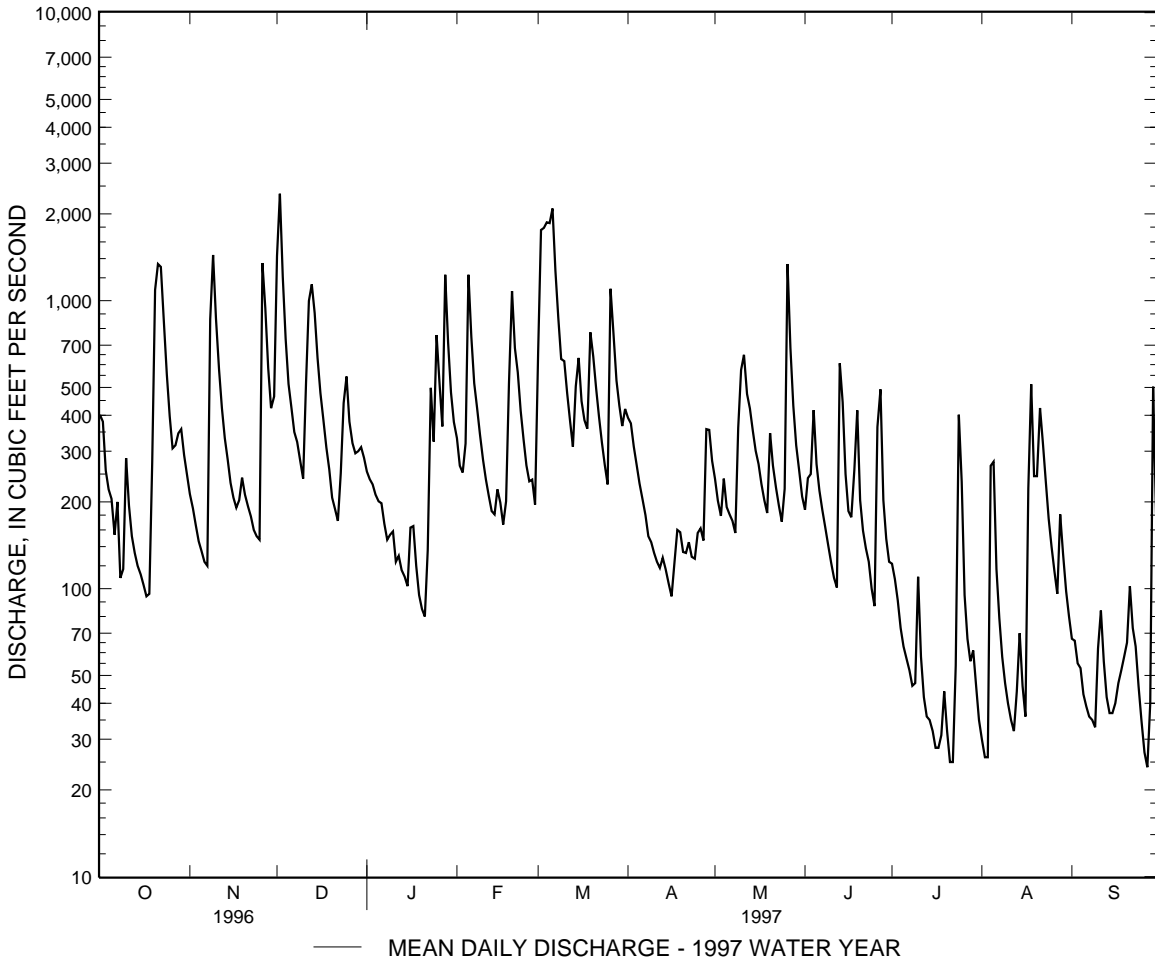


MONONGAHELA RIVER BASIN

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	207990		114730			
ANNUAL MEAN	568		314		306	
HIGHEST ANNUAL MEAN					518 1996	
LOWEST ANNUAL MEAN					193 1947	
HIGHEST DAILY MEAN	8740	Jan 19	2350	Dec 2	8740	Jan 19 1996
LOWEST DAILY MEAN	25	(a)	24	Sep 27	2.5	Oct 4 1953
ANNUAL SEVEN-DAY MINIMUM	33	Jul 11	30	Jul 16	2.7	Oct 2 1953
INSTANTANEOUS PEAK FLOW			2740	Dec 2	(b)14100	Jan 19 1996
INSTANTANEOUS PEAK STAGE			6.02	Dec 2	13.06	Jan 19 1996
INSTANTANEOUS LOW FLOW			20	Sep 28	UNKNOWN	
ANNUAL RUNOFF (CFSM)	4.24		2.35		2.28	
ANNUAL RUNOFF (INCHES)	57.74		31.85		31.02	
10 PERCENT EXCEEDS	1330		653		722	
50 PERCENT EXCEEDS	332		207		166	
90 PERCENT EXCEEDS	112		46		24	

a July 13, 14.  
 b From rating curve extended above 7,000 ft<sup>3</sup>/s.



## MONONGAHELA RIVER BASIN

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 mi<sup>2</sup>.

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, 89,260 acre-ft, June 2, 3, 5-7, 12-15, elevation, 2,461.0 ft; minimum, 70,460 acre-ft, Dec. 21-24, elevation, 2,455.8 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30 . . . . .	2458.7	80800	
Oct. 31 . . . . .	2457.9	77900	-2900
Nov. 30 . . . . .	2457.3	75700	-2200
Dec. 31 . . . . .	2456.3	72200	-3500
CAL YR 1996 . . . . .			-1400
Jan. 31 . . . . .	2456.8	73900	+1700
Feb. 28 . . . . .	2457.9	77900	+4000
Mar. 31 . . . . .	2459.0	81900	+4000
Apr. 30 . . . . .	2459.1	82200	+300
May 31 . . . . .	2460.8	88500	+6300
June 30 . . . . .	2460.6	87800	-700
July 31 . . . . .	2459.2	82600	-5200
Aug. 31 . . . . .	2458.7	80800	-1800
Sept. 30 . . . . .	2457.5	76400	-4400
WTR YR 1997 . . . . .			-4400

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MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1898 - 1905 1941 - 1997	
	ANNUAL TOTAL	413669		243420		
ANNUAL MEAN	1130		667		645	
ANNUAL MEAN $\neq$	1128		661		649	
HIGHEST ANNUAL MEAN					1052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	11200	Jan 19	3780	Mar 6	11200	Jan 19 1996
LOWEST DAILY MEAN	90	Jul 11	61	(a)	8.2	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	152	Jul 7	108	Sep 14	29	Sep 21 1972
INSTANTANEOUS PEAK FLOW			4320	Dec 2	(b)16100	Jan 19 1996
INSTANTANEOUS PEAK STAGE			5.39	Dec 2	(c)14.20	Mar 29 1924
INSTANTANEOUS LOW FLOW			55	(d)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	3.83		2.26		2.19	
ANNUAL RUNOFF (CFSM) $\neq$	3.82		2.24		2.20	
ANNUAL RUNOFF (INCHES)	52.16		30.70		29.73	
ANNUAL RUNOFF (INCHES) $\neq$	51.94		30.42		29.88	
10 PERCENT EXCEEDS	2390		1440		1430	
50 PERCENT EXCEEDS	818		480		410	
90 PERCENT EXCEEDS	256		155		107	

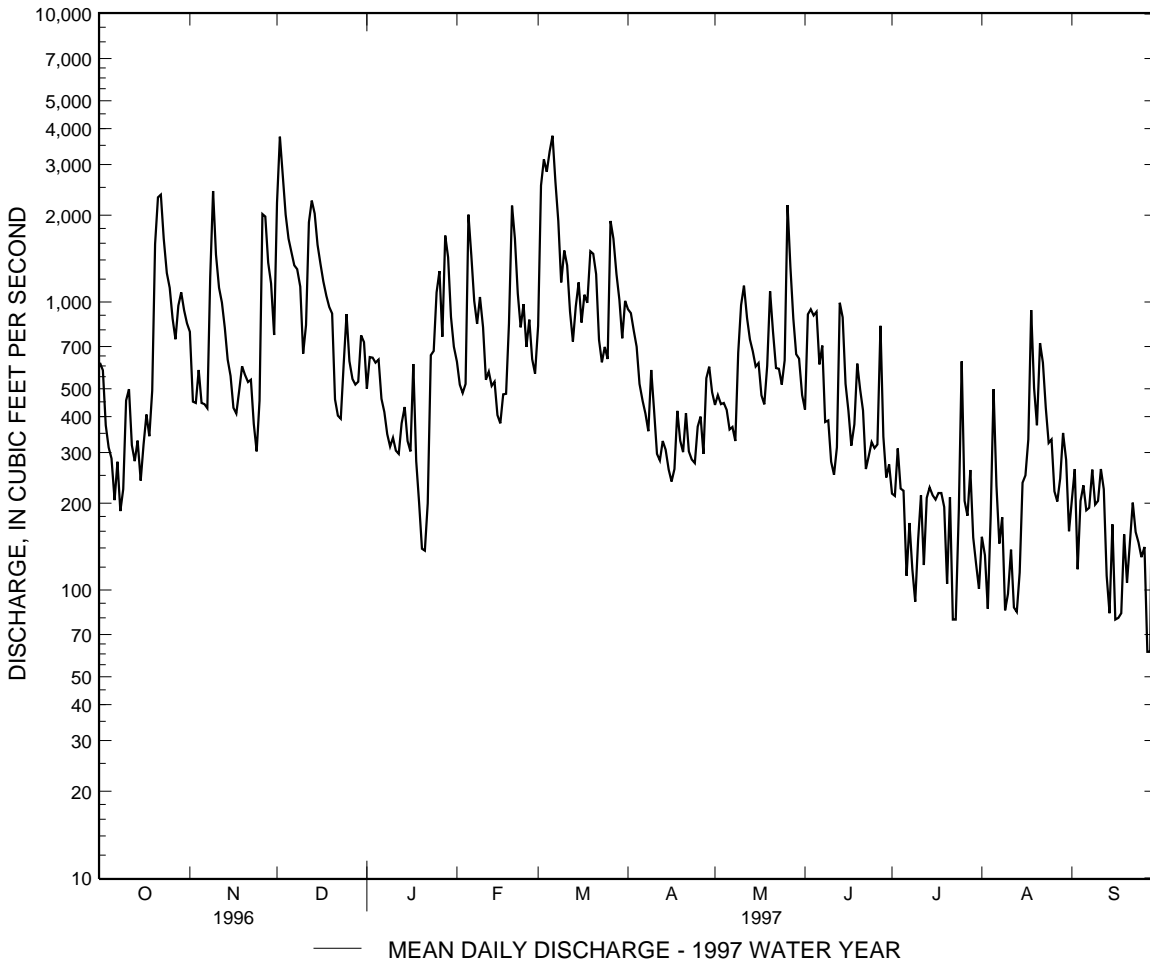
$\neq$  Adjusted for change in reservoir contents since October 1940.

a Sept. 27, 28.

b From rating curve extended above 5,800 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.

c From floodmarks, site and datum then in use.

d Aug. 3, Sept. 27, 28.



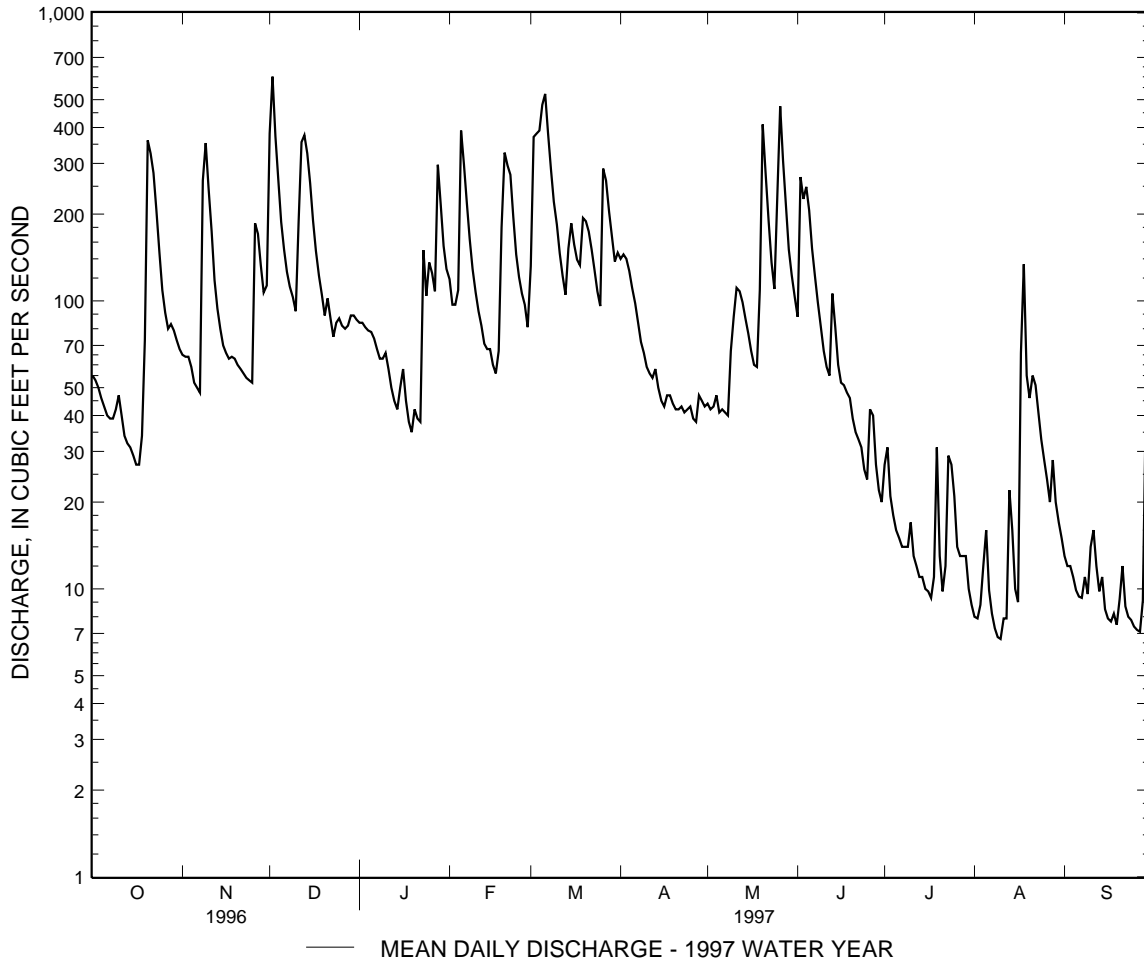


MONONGAHELA RIVER BASIN

03076600 BEAR CREEK AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1965 - 1997	
ANNUAL TOTAL	55511		34854.4			
ANNUAL MEAN	152		95.5		92.9	
HIGHEST ANNUAL MEAN					133	1996
LOWEST ANNUAL MEAN					53.4	1966
HIGHEST DAILY MEAN	2400	Jan 19	601	Dec 2	3100	Sep 14 1971
LOWEST DAILY MEAN	14	(a)	6.7	Aug 10	1.6	(b)
ANNUAL SEVEN-DAY MINIMUM	16	Aug 30	7.8	Aug 6	2.0	Sep 7 1966
INSTANTANEOUS PEAK FLOW			774	Dec 2	(c) 4650	Sep 14 1971
INSTANTANEOUS PEAK STAGE			3.94	Dec 2	(d) 9.60	Sep 14 1971
INSTANTANEOUS LOW FLOW			6.7	(f)	1.5	Sep 12 1966
ANNUAL RUNOFF (CFSM)	3.10		1.95		1.90	
ANNUAL RUNOFF (INCHES)	42.23		26.52		25.80	
10 PERCENT EXCEEDS	354		227		229	
50 PERCENT EXCEEDS	92		63		50	
90 PERCENT EXCEEDS	34		11		8.7	

- a Sept. 2, 3.
- b Sept. 12, 13, 1966.
- c From rating curve extended above 2,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.
- d From floodmarks.
- f Aug. 9-11.





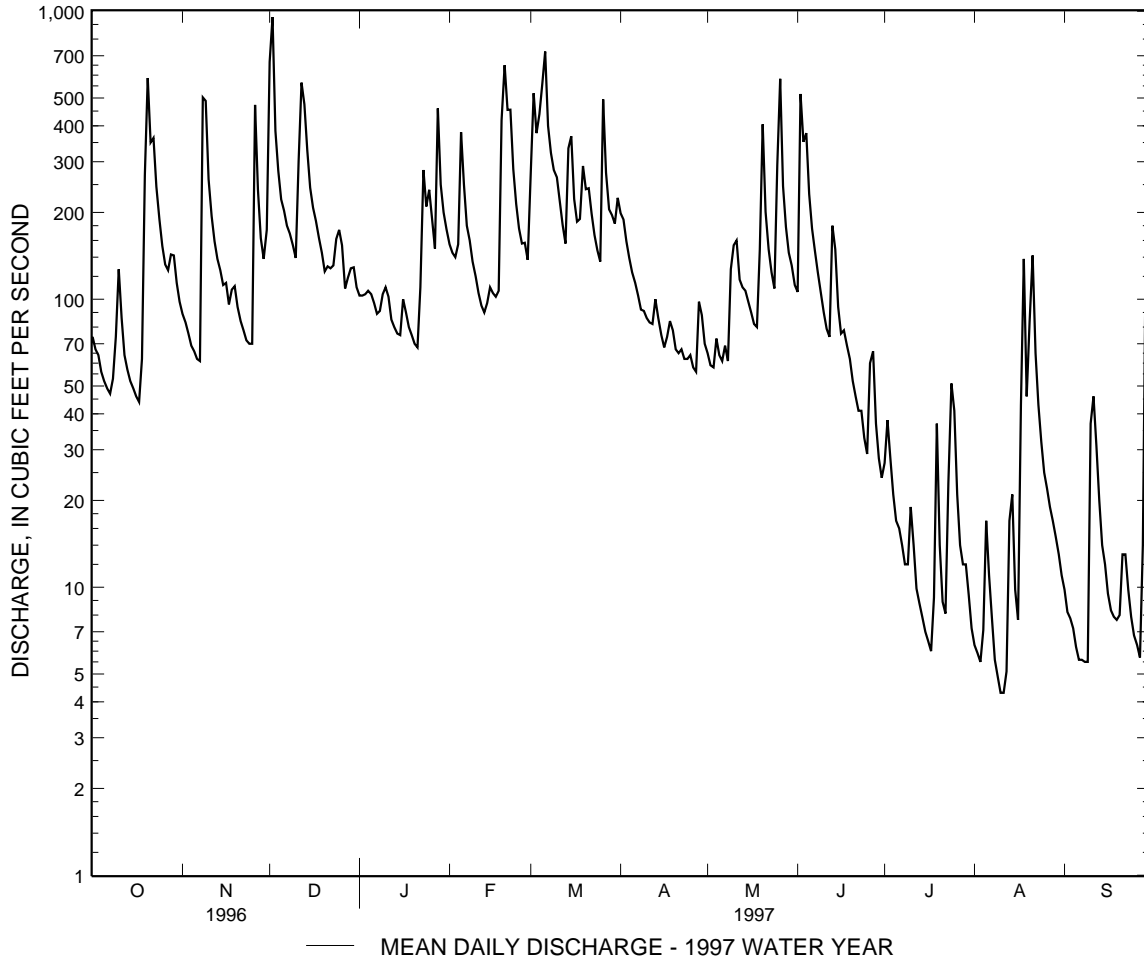


MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1947 - 1997	
ANNUAL TOTAL	82745		47815.5			
ANNUAL MEAN	226		131		121	
HIGHEST ANNUAL MEAN					203 1996	
LOWEST ANNUAL MEAN					64.2 1954	
HIGHEST DAILY MEAN	(e)3600	Jan 19	954	Dec 2	(e)3600	Jan 19 1996
LOWEST DAILY MEAN	19	Sep 3	4.3	(a)	(b).00	Aug 31 1962
ANNUAL SEVEN-DAY MINIMUM	25	Jul 11	6.1	Aug 6	.89	Aug 27 1962
INSTANTANEOUS PEAK FLOW			1490	Dec 2	(c)8400	Oct 15 1954
INSTANTANEOUS PEAK STAGE			(d)4.72	Feb 5	10.70	Oct 15 1954
INSTANTANEOUS LOW FLOW			3.8	(a)	(b).00	(f)
ANNUAL RUNOFF (CFSM)	3.62		2.10		1.93	
ANNUAL RUNOFF (INCHES)	49.25		28.46		26.24	
10 PERCENT EXCEEDS	476		286		281	
50 PERCENT EXCEEDS	151		95		68	
90 PERCENT EXCEEDS	54		9.3		8.4	

- e Estimated
- a Aug. 10, 11.
- b Result of regulation from unknown source.
- c From rating curve extended above 1,600 ft<sup>3</sup>/s on basis of contracted-opening measurement at gage height 8.13 ft.
- d Ice jam.
- f Aug. 31, Sept. 1, 1962.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in three tables. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of annual maximum stage for tidal crest-stage stations.

## Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream when continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1997

Station No.	Station Name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
INDIAN RIVER BASIN						
01484510	Sheep Pen Ditch near Shortly, De.	Lat 38°36'21", long 75°21'29", Sussex County, Hydrologic Unit 02060010 at bridge on road no. 432, 2.0 mi east of Shortly, and 3.8 mi upstream from mouth at Millsboro Pond.	5.4	1986-88, 1997	2-20-97 5-22-97 8-12-97	15.2 7.04 1.71
01484530	Iron Branch at Millsboro, De.	Lat 38°34'40", long 75°17'19", Sussex County, Hydrologic Unit 02060010, at bridge on U.S. Highway 113, at Millsboro, 1.1 mi upstream from Whartons Branch, and 1.4 mi upstream from mouth.	8.0	1985-88, 1997	2-20-97 5-22-97 8-12-97	15.5 4.68 1.32
01484535	Swan Creek near Warwick, De.	Lat 38°36'49", long 75°15'19", Sussex County, Hydrologic Unit 02060010, at bridge on road No. 304, 0.6 mi upstream from Waples Pond, 1.5 mi northwest of Warwick, and 2.3 miles upstream from mouth.	7.2	1985-88, 1997	2-20-97 5-22-97 8-12-97	10.0 5.85 2.79
01484550	Pepper Creek at Dagsboro, De.	Lat 38°32'50", long 75°14'40", Sussex County, Hydrologic Unit 02060010, at bridge on State Highway 26, at Dagsboro, and 3.5 mi upstream from mouth.	8.78	1955-71, 1985-88, 1997	2-20-97 5-22-97 8-12-97	17.0 4.24 1.86
01484600	Blackwater Creek near Clarksville, De.	Lat 38°32'43", long 75°09'49", Sussex County, Hydrologic Unit 02060010, at bridge on State Highway 54, 1.0 mi west of Clarksville, and 3.1 mi upstream from mouth.	3.5	1968-69*, 1971*, 1985-88, 1997	2-20-97 5-22-97 8-12-97	6.10 1.03 0.10
01484655	Love Creek at Robinsonville, De.	Lat 38°43'03", long 75°11'14", Sussex County, Hydrologic Unit 02060010, at bridge on road No. 277, 0.4 mi northeast of Robinsonville, and about 2.8 mi upstream from mouth.	12	1985-88, 1997	2-20-97 5-22-97 8-12-97	12.0 11.2 6.49

\* Drainage area was published as 4.5 sq mi.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1997

Station No.	Station Name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
INDIAN RIVER BASIN--Continued						
01484677	Chapel Branch at Angola, De.	Lat 38°40'18", long 75°11'10", Sussex County, Hydrologic Unit 02060010, at bridge on State Highway 24, at Angola, and 0.3 mi upstream from mouth.	8.0	1985-88, 1997	2-20-97	7.13
					5-22-97	7.17
					8-12-97	2.00
MILLER CREEK BASIN						
01484695	Beaverdam Ditch near Millville, De.	Lat 38°31'17", long 75°08'02", Sussex County, Hydrologic Unit 02060010, at culverts on road No. 368, 2.1 mi southwest of Millville, and 1.6 mi upstream from mouth.	2.2	1997	2-20-97	5.78
					5-22-97	1.00
					8-12-97	0.09
DIRICKSON CREEK BASIN						
01484700	Bearhole Ditch at Bunting, De.	Lat 38°28'17", long 75°09'22", Sussex County, Hydrologic Unit 02060010, at culverts on road No. 390A, 0.6 mi north of Bunting, 3.7 mi east of Selbyville, and 1.5 mi upstream from mouth.	6.4	1968-71*, 1985-88, 1997	2-20-97	15.5
					5-22-97	3.65
					8-12-97	0.75

\* Drainage area was published as 6.2 sq mi.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## 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 1997 maximum		Period of record maximum		Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
			Date	Gage height (ft)	Date	Gage height (ft)			
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 Kitz- miller. Drainage area is 225 mi <sup>2</sup> .	1950-85 <sup>≠</sup> , 1986-97	12-02-96	8.26	8,000	10-15-54	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 <sup>2</sup> .	1967-85 <sup>≠</sup> , 1986-97	12-18-96	8.27	7,100	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 down- stream from Mill Run. Drain- age area is 596 mi <sup>2</sup> .	1939-85 <sup>≠</sup> , 1986-97	12-02-96	8.98	7,440	10-16-54	23.23	37,000	

<sup>≠</sup> Operated as a continuous-record station.  
a From floodmark

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## 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 1929. 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 1997

Station No.	Station Name	Location	Period of Record	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.	1995-97	12-13-96	6.26
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, 1995-97	12-13-96	5.96
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 south- west corner of Faulkner's Pier nr near public boat ramp.	1966-86, 1997	12-13-96	6.63
INDIAN RIVER BASIN					
01484549	Vines Creek near Dagsboro, De.	Lat 38°33'23", long 75°12'13", Sussex County, Hydrologic Unit 02060010, on right bank at upstream side of bridge on State Highway 26, 2.4 mi east of Dagsboro and 3.8 mi up- stream from the confluence with Indian River at Indian River Bay.	1985-97 (Discontinued)	10- 8-96	4.42
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 a privately owned fishing pier, at Seals Point, 1.9 mi west of Oak Orchard.	1992-97	10- 8-96	4.46
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 (Discontinued)	4-24-97	2.96
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.	1992-97	10- 8-96	4.63

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Water-quality partial-record 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 collected 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 1996 TO SEPTEMBER 1997

## CHESTER RIVER BASIN

01493112 CHESTER RIVER TRIBUTARY NEAR CRUMPTON, MARYLAND

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	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 1996												
09...	1330	139	6.9	14.5	21.0	755	--	--	44	11	4.0	3.8
28...	1515	165	6.9	15.5	19.5	758	7.9	80	--	--	--	--
NOV												
19...	1200	167	6.9	9.5	15.0	758	10.1	89	--	--	--	--
26...	1400	163	6.7	11.0	12.5	753	9.6	88	--	--	--	--
DEC												
02...	1630	92	6.7	10.0	6.0	764	6.8	60	--	--	--	--
09...	1515	123	6.6	6.0	--	758	10.1	82	--	--	--	--
14...	1230	37	6.3	5.0	5.0	767	11.3	88	10	2.3	0.98	0.60
JAN 1997												
23...	1230	161	--	6.5	13.5	762	--	--	--	--	--	--
FEB												
27...	1115	165	7.0	20.0	12.0	755	10.7	119	--	--	--	--
MAR												
15...	1300	157	6.9	10.0	9.0	764	--	--	53	13	5.0	5.3
APR												
16...	1115	164	6.8	13.5	18.0	765	12.2	117	--	--	--	--
MAY												
14...	1200	169	7.0	15.5	21.5	758	9.5	96	--	--	--	--
JUN												
26...	0930	169	6.9	23.0	34.5	760	6.0	70	56	15	4.6	5.2
JUL												
22...	1000	167	6.5	20.5	24.5	764	6.4	71	--	--	--	--
AUG												
15...	1000	172	6.6	20.0	32.0	760	7.1	78	--	--	--	--
21...	1000	100	6.7	20.5	25.0	756	5.5	61	29	7.3	2.6	2.5
SEP												
12...	1000	158	6.8	24.5	30.0	764	6.0	72	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

CHESTER RIVER BASIN--Continued

01493112 - CHESTER RIVER TRIBUTARY NEAR CRUMPTON, MARYLAND -- Continued

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT DIS TOT IT FIELD AS CACO3 (39086)	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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
OCT 1996											
09...	5.2	19	6.6	10	<0.10	6.7	84	5.0	20	0.030	4.50
28...	--	27	--	--	--	--	--	7.1	30	0.040	6.80
NOV											
19...	--	22	--	--	--	--	--	7.1	30	0.020	6.80
26...	--	23	--	--	--	--	--	7.1	30	0.050	6.90
DEC											
02...	--	15	--	--	--	--	--	3.2	6.9	0.030	1.60
09...	--	--	--	--	--	--	--	5.4	21	0.020	4.80
14...	3.1	--	2.0	1.4	<0.10	1.1	25	1.3	1.7	0.010	0.390
JAN 1997											
23...	--	--	--	--	--	--	--	7.5	32	0.040	7.36
FEB											
27...	--	19	--	--	--	--	--	8.6	36	0.030	8.20
MAR											
15...	4.3	20	10	13	<0.10	6.4	111	7.1	27	0.060	6.10
APR											
16...	--	21	--	--	--	--	--	7.7	33	0.021	7.42
MAY											
14...	--	20	--	--	--	--	--	7.7	32	0.050	7.35
JUN											
26...	3.4	30	3.5	12	<0.10	10	113	6.1	25	0.031	5.70
JUL											
22...	--	30	--	--	--	--	--	6.4	27	0.022	6.07
AUG											
15...	--	32	--	--	--	--	--	6.3	27	0.024	6.04
21...	5.9	14	6.6	6.8	0.36	4.6	81	3.0	8.4	0.038	1.92
SEP											
12...	--	29	--	--	--	--	--	4.9	19	0.033	4.34

DATE	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. TOTAL (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996												
09...	0.050	0.50	0.40	0.100	0.020	0.010	20	67	74	4.7	27	--
28...	0.050	0.30	0.30	0.030	<0.010	<0.010	--	--	--	--	8	--
NOV												
19...	0.030	0.30	<0.20	0.040	<0.010	0.010	--	--	--	--	5	--
26...	0.040	0.22	0.25	0.040	<0.010	0.020	--	--	--	--	10	--
DEC												
02...	0.110	1.6	0.60	0.870	0.120	0.130	--	--	--	--	167	98
09...	0.120	0.60	0.40	0.190	0.020	0.030	--	--	--	--	23	--
14...	0.050	0.90	0.30	0.640	0.190	0.160	--	86	48	11	161	99
JAN 1997												
23...	0.081	0.18	0.22	<0.001	0.004	<0.002	--	--	--	--	8	--
FEB												
27...	0.020	0.40	<0.20	0.080	0.005	0.010	--	--	--	1.7	6	--
MAR												
15...	0.220	1.0	0.60	0.090	0.015	<0.010	--	100	140	4.7	32	--
APR												
16...	<0.015	0.28	<0.20	0.051	0.008	<0.010	--	--	--	--	11	100
MAY												
14...	0.071	0.38	0.23	0.021	0.008	<0.010	--	--	--	--	8	100
JUN												
26...	0.032	0.39	0.22	0.018	0.013	<0.010	--	27	99	2.7	7	--
JUL												
22...	0.061	0.35	0.26	0.055	0.009	0.080	--	--	--	--	4	--
AUG												
15...	0.034	0.30	0.23	0.010	0.008	<0.010	--	--	--	1.8	4	--
21...	0.111	1.1	0.57	0.562	0.181	0.159	--	100	148	8.4	38	64
SEP												
12...	0.065	0.55	0.40	0.112	0.019	<0.010	--	--	--	5.6	28	--

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## CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	$2.54 \times 10^1$	millimeter
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter
mile (mi)	$1.609 \times 10^0$	kilometer
<i>Area</i>		
acre	$4.047 \times 10^3$	square meter
	$4.047 \times 10^{-1}$	square hectometer
	$4.047 \times 10^{-3}$	square kilometer
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer
<i>Volume</i>		
gallon (gal)	$3.785 \times 10^0$	liter
	$3.785 \times 10^0$	cubic decimeter
	$3.785 \times 10^{-3}$	cubic meter
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter
	$3.785 \times 10^{-3}$	cubic hectometer
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeter
	$2.832 \times 10^{-2}$	cubic meter
cubic-foot-per-second day [(ft <sup>3</sup> /s) d]	$2.447 \times 10^3$	cubic meter
	$2.447 \times 10^{-3}$	cubic hectometer
acre-foot (acre-ft)	$1.233 \times 10^3$	cubic meter
	$1.233 \times 10^{-3}$	cubic hectometer
	$1.233 \times 10^{-6}$	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter per second
	$2.832 \times 10^1$	cubic decimeter per second
	$2.832 \times 10^{-2}$	cubic meter per second
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second
	$6.309 \times 10^{-2}$	cubic decimeter per second
	$6.309 \times 10^{-5}$	cubic meter per second
million gallons per day (Mgal/d)	$4.381 \times 10^1$	cubic decimeter per second
	$4.381 \times 10^{-2}$	cubic meter per second
<i>Mass</i>		
ton (short)	$9.072 \times 10^{-1}$	megagram or metric ton

*Sea level.* In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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