

Water Resources Data Maryland and Delaware Water Year 1993

Volume 1. Surface-Water Data



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MD-DE-93-1
Prepared in cooperation with the States of Maryland and Delaware
and with other agencies

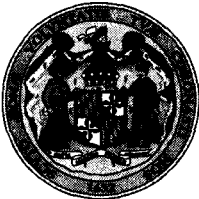
CALENDAR FOR WATER YEAR 1993

1992

OCTOBER							NOVEMBER							DECEMBER						
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1993

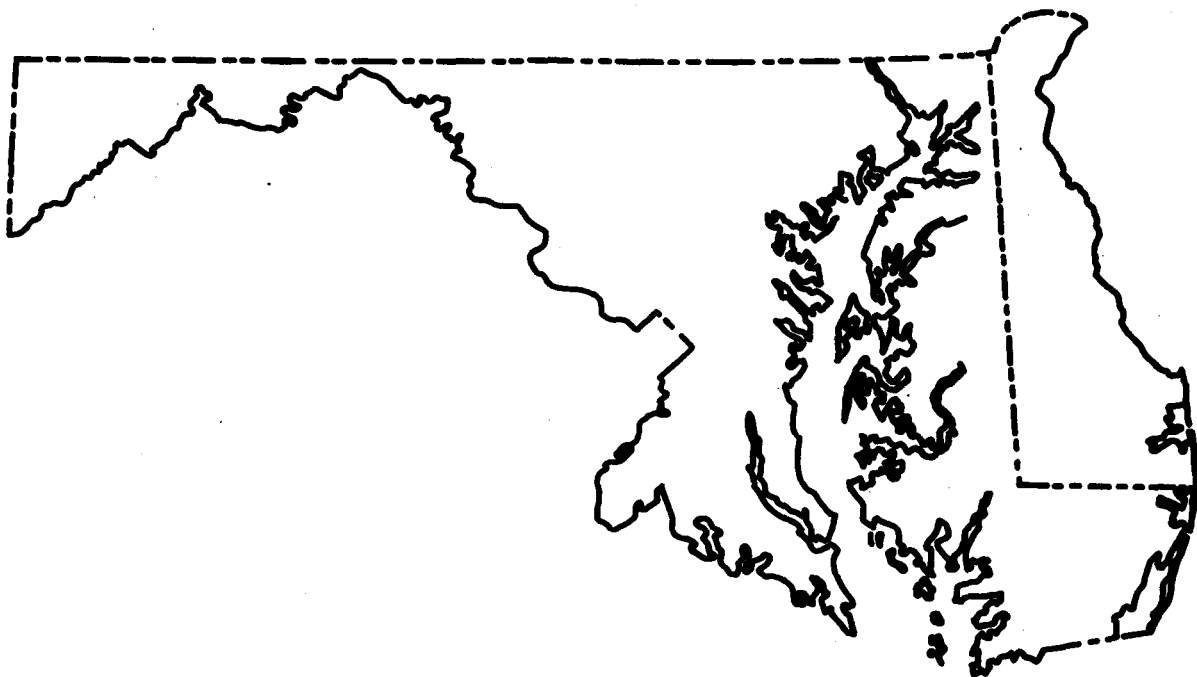
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31																				
APRIL							MAY							JUNE						
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11	12	13	14	15	16	17	15	16	17	18	19	20	21	12	13	14	15	16	17	18
18	19	20	21	22	23	24	22	23	24	25	26	27	28	19	20	21	22	23	24	25
25	26	27	28	29	30	31	29	30	31					26	27	28	29	30		



Water Resources Data Maryland and Delaware Water Year 1993

Volume 1. Surface-Water Data

by R.W. James, R.H. Simmons, and B.F. Strain



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MD-DE-93-1
Prepared in cooperation with the States of Maryland and Delaware
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Robert M. Hirsch, Acting Director

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Towson, Maryland 21286

PREFACE

This volume of the annual hydrologic data report of 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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16. Abstract (Limit: 200 words) Water resources data for the 1993 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 104 gaging stations; stage and contents 1 reservoir; and water quality at 29 gaging stations. Also included are data for 12 low-flow, 3 crest-stages and 12 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.			
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CONTENTS

	Page
Preface.....	iii
List of surface-water stations, in downstream order, for which records are published in this volume.....	vi
List of discontinued surface-water discharge stations.....	ix
List of discontinued surface-water-quality stations.....	xii
List of low-flow, partial-record stations.....	xiii
Introduction.....	1
Cooperation.....	1
Summary of hydrologic conditions.....	2
Special networks and programs.....	4
Explanation of records.....	4
Station identification numbers.....	4
Downstream order system.....	4
Latitude-longitude system.....	5
Records of stage and water discharge.....	5
Data collection and computation.....	6
Data presentation.....	7
Station manuscript.....	7
Data table of daily mean values.....	8
Statistics of monthly mean value.....	8
Summary statistics.....	8
Identifying estimated daily discharge.....	10
Accuracy of the records.....	10
Other records available.....	10
Records of surface-water quality.....	10
Classification of records.....	10
Arrangement of records.....	11
On-site measurements and sample collection.....	11
Water temperature.....	11
Sediment.....	11
Laboratory measurements.....	12
Data presentation.....	12
Remark codes.....	13
Access to WATSTORE data.....	13
Definition of terms.....	14
Publications on Techniques of Water-Resources Investigations.....	21
Station records, surface water.....	32
Discharge at partial-record stations and miscellaneous sites.....	353
Low-flow partial-record stations.....	353
Crest-stage partial-record stations.....	355
Elevation at tidal crest-stage partial-record stations.....	356
Analyses of samples collected at water-quality partial-record stations and miscellaneous sites.....	357
Index.....	361

ILLUSTRATIONS

Figure 1. Comparison of discharge at representative gaging stations during 1993 water year with median discharge for the period 1961-90.....	3
2. System for numbering miscellaneous sites (latitude and longitude).....	5
3. Map of Maryland and Delaware showing location of surface-water, water- quality stations.....	26
4. Map of Maryland and Delaware showing location of crest-stage and low-flow partial-record stations.....	28

vi SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[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]

	Station number	Page
<u>NORTH ATLANTIC SLOPE BASINS</u>		
<u>DELAWARE RIVER BASIN</u>		
Delaware River:		
Shellpot Creek at Wilmington, DE (d).....	01477800	32
Christina River at Coochs Bridge, DE (d).....	01478000	34
White Clay Creek near Newark, DE (d).....	01479000	36
Mill Creek at Mill Creek Road at Hockessin, DE (d).....	01479197	38
Red Clay Creek at Wooddale, DE (d).....	01480000	40
Red Clay Creek at Stanton, DE (d).....	01480015	42
Little Mill Creek near Newport, DE (d).....	01480095	44
Brandywine Creek at Wilmington, DE (d).....	01481500	46
Wiggins Millpond Outlet (head of Appoquinimink River):		
Noxontown Lake Outlet near Middletown, DE (d).....	01483153	49
Blackbird Creek at Blackbird, DE (d).....	01483200	51
<u>ST. JONES RIVER BASIN</u>		
Fork Branch (head of St. Jones River)		
Mudstone Branch at Chestnut Grove, DE (d).....	01483670	53
St. Jones River at Dover, DE (d).....	01483700	55
<u>MISPELLION RIVER BASIN</u>		
Beaverdam Branch (head of Mispillion River) at Houston, DE (d).....	01484100	57
<u>DELAWARE BAY NEAR LEWES, DE</u> (c,t).....	01484450	59
<u>INDIAN RIVER BASIN</u>		
Cow Bridge Branch (head of Indian River):		
Stockley Branch at Stockley, DE (d).....	01484500	63
Millsboro Pond Outlet at Millsboro, DE (d).....	01484525	65
<u>POCOMOKE RIVER BASIN</u>		
Pocomoke River near Willards, MD (d).....	01485000	67
Nassawango Creek near Snow Hill, MD (d).....	01485500	69
<u>MANOKIN RIVER BASIN</u>		
Manokin Branch (head of Manokin River) near Princess Anne, MD (d).....	01486000	71
<u>NANTICOKE RIVER BASIN</u>		
Nanticoke River near Bridgeville, DE (d).....	01487000	73
Marshyhope Creek near Adamsville, DE (d).....	01488500	75
<u>CHOPTANK RIVER BASIN</u>		
Choptank River near Greensboro, MD (d,c,s).....	01491000	77
<u>CHESTER RIVER BASIN</u>		
Chester River:		
Unicorn Branch near Millington, MD (d).....	01493000	82
Morgan Creek near Kennedyville, MD (d).....	01493500	84
<u>ELK RIVER BASIN</u>		
Big Elk Creek (head of Elk River) at Elk Mills, MD (d).....	01495000	86
Elk River near Town Point, MD (c,t).....	01495900	88
<u>SUSQUEHANNA RIVER BASIN</u>		
Susquehanna River at Conowingo, MD (d,c,s).....	01578310	92
Deer Creek at Rocks, MD (d).....	01580000	104
<u>BUSH RIVER BASIN</u>		
Winters Run near Benson, MD (d).....	01581700	106
<u>GUNPOWDER RIVER BASIN</u>		
Gunpowder Falls (head of Gunpowder River):		
Little Falls at Blue Mount, MD (d).....	01582000	108
Gunpowder Falls at Glencoe, MD (d).....	01582500	110
Western Run at Western Run, MD (d).....	01583500	112
Beaverdam Run at Cockeysville, MD (d).....	01583600	114
Long Green Creek at Glen Arm, MD (d).....	01584050	116
Bird River:		
Whitemarsh Run (head of Bird River):		
North Fork Whitemarsh Run near White Marsh, MD (d).....	01585095	118
Whitemarsh Run at White Marsh, MD (d).....	01585100	121
Honeygo Run at White Marsh, MD (d).....	01585105	124
Windlass Run near White Marsh, MD (d).....	01585107	126
<u>PATAPSCO RIVER BASIN</u>		
East Branch of North Branch Patapsco River:		
West Branch of North Branch Patapsco River:		
Cranberry Branch near Westminster, MD (d).....	01585500	129
North Branch Patapsco River at Cedarhurst, MD (d).....	01586000	131
Beaver Run near Finksburg, MD (d).....	01586210	133
Morgan Run near Louisville, MD (d).....	01586610	135
Patapsco River:		
Curtis Creek:		
Furnace Creek:		
Sawmill Creek at Glen Burnie, MD (d).....	01589500	137
Sawmill Creek at Crain Highway at Glen Burnie, MD (d).....	01589512	139

[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]

<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>	Station number	Page
<u>PATUXENT RIVER BASIN</u>		
Patuxent River near Unity, MD (d,c,s).....	01591000	141
Cattail Creek near Glenwood, MD (d).....	01591400	147
Patuxent River below Brighton Dam near Brighton, MD (d).....	01591610	149
Hawlings River near Sandy Spring, MD (d).....	01591700	151
Patuxent River near Laurel, MD (d).....	01592500	153
Little Patuxent River at Guilford, MD (d).....	01593500	155
Middle Patuxent River near Simpsonville, MD (d).....	01593710	157
Little Patuxent River at Savage, MD (d,c,s).....	01594000	159
Patuxent River near Bowie, MD (d,c,s).....	01594440	165
Western Branch at Upper Marlboro, MD (d,c,s).....	01594526	173
Hunting Creek near Huntingtown, MD (d,c,s).....	01594670	179
Killpeck Creek at Huntersville, MD (d,c,s).....	01594710	185
<u>POTOMAC RIVER BASIN</u>		
North Branch Potomac River:		
Laurel Run at Dobbin Road near Wilson, MD (d).....	01594930	191
North Fork Sand Run near Wilson, MD (d).....	01594936	193
McMillan Fork near Fort Pendelton, MD (d,c,t).....	01594950	195
North Branch Potomac River at Steyer, MD (d).....	01595000	202
Stony River near Mt. Storm, WV (d,t).....	01595200	204
Savage River near Barton, MD (d).....	01596500	208
Savage River below Savage River Dam, near Bloomington, MD (d).....	01597500	210
North Branch Potomac River at Luke, MD (d).....	01598500	212
Georges Creek at Franklin, MD (d).....	01599000	214
Wills Creek near Cumberland, MD (d).....	01601500	216
North Branch Potomac River near Cumberland, MD (d,c,s).....	01603000	218
Patterson Creek near Headsville, WV (d,c).....	01604500	222
South Branch Potomac River near Petersburg, WV (d).....	01606500	225
South Fork South Branch Potomac River near Moorefield, WV (d,c,s).....	01608000	227
South Branch Potomac River near Springfield, WV (d,c,s).....	01608500	231
Potomac River:		
Potomac River at Paw Paw, WV (d).....	01610000	235
Cacapon River near Great Cacapon, WV (d).....	01611500	237
Potomac River at Hancock, MD (d).....	01613000	239
Conococheague Creek at Fairview, MD (d,c,s).....	01614500	241
Opequon Creek near Martinsburg, WV (d).....	01616500	245
Marsh Run at Grimes, MD (d,c).....	01617800	247
Potomac River at Shepherdstown, WV (d,c,s).....	01618000	250
Antietam Creek:		
Beaver Creek:		
Albert Powell Fish Hatchery Spring at Beaver Creek, MD (d).....	01619320	254
Antietam Creek near Sharpsburg, MD (d).....	01619500	256
Shenandoah River at Millville, WV (d,c,s).....	01636500	258
Catoctin Creek near Middletown, MD (d).....	01637500	265
Potomac River at Point of Rocks, MD (d,t,s).....	01638500	267
Monocacy River:		
Monocacy River at Bridgeport, MD (d,c,t,s).....	01639000	271
Piney Creek near Taneytown, MD (d).....	01639140	280
Big Pipe Creek (head of Double Pipe Creek) at Bruceville, MD (d).....	01639500	282
Hunting Creek:		
Hunting Creek near Foxville, MD (d,c).....	01640965	284
Bear Branch near Thurmont, MD (d,c).....	01640980	289
Fishing Creek:		
Fishing Creek tributary near Lewistown, MD (d,c).....	01641510	295
Monocacy River at Jug Bridge, near Frederick, MD (d).....	01643000	301
Monocacy River at Reich's Ford Bridge, near Frederick, MD (t,s).....	01643020	303
Bennett Creek:		
Bennett Creek tributary at Park Mills, MD (d,c).....	01643495	306
Bennett Creek at Park Mills, MD (d).....	01643500	312
Seneca Creek at Dawsonville, MD (d).....	01645000	314
Potomac River near Washington, DC (d,c,t).....	01646500	316
Potomac River at Chain Bridge at Washington, DC (c,s).....	01646580	323
Rock Creek at Sherrill Drive, Washington, DC (d).....	01648000	327
Northeast Branch Anacostia River (head of Anacostia River)		
at Riverdale, MD (d).....	01649500	329
Northwest Branch Anacostia River near Hyattsville, MD (d).....	01651000	331
Watts Branch at Washington, DC (d).....	01651800	333
Piscataway Creek at Piscataway, MD (d).....	01653600	336
Zekiah Swamp (head of Wicomico River) near Newtown, MD (d).....	01660920	338
St. Clement Creek (head of St. Clement Bay) near Clements, MD (d).....	01661050	340
St. Marys River at Great Mills, MD (d).....	01661500	342

OHIO RIVER BASIN

MONONGAHELA RIVER BASIN

Monongahela River:		
Youghiogheny River near Oakland, MD (d).....	03075500	344
Deep Creek Reservoir near Oakland, MD (e).....	03076000	346
Youghiogheny River at Friendsville, MD (d).....	03076500	347
Bear Creek at Friendsville, MD (d).....	03076600	349
Casselman River at Grantsville, MD (d).....	03078000	351
Discharge at partial-record stations and miscellaneous sites.....		353
Low-flow partial-record stations.....		353
Crest-stage partial-record stations.....		355
Elevation at tidal crest-stage partial-record stations.....		356
Analyses of samples collected at water-quality partial-record stations and miscellaneous sites.....		357

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER

ix

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 ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS</u>			
<u>DELAWARE RIVER BASIN</u>			
Delaware River:			
Christina River:			
White Clay Creek above Newark, DE	01478500	66.7	1952-59 1962-80
Mill Creek at Stanton, DE	01479500	12.4	1931-33
Little Mill Creek at Elsmere, DE	01480100	6.70	1963-80
Army Creek at State Road, DE	01482200	2.42	1979-81
Red Lion Creek near Red Lion, DE	01482298	3.08	1979-81
Drawyer Creek tributary near Odessa, MD	01483170	4.68	1979-80
<u>LEIPSIC RIVER BASIN</u>			
Leipsic River near Cheswold, DE	01483500	9.35	1931-33 1943-57
<u>MURDERKILL RIVER BASIN</u>			
Murderkill River near Felton, DE	01484000	13.6	1931-33 1960-85
<u>BROADKILL RIVER BASIN</u>			
Broadkill River:			
Sowbridge Branch (head of Primshook Creek) near Milton, DE	01484300	7.08	1956-78
<u>INDIAN RIVER BASIN</u>			
Cow Bridge Branch (head of Indian River):			
Millsboro Pond Outlet at Millsboro, DE	01484525	66.0	1986-88
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	1930-33 1934-75
<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	1951-75
Broad Creek:			
Holly Ditch near Laurel, DE	01488000	2.19	1951-56
Marshyhope Creek:			
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
<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

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<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
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	1950-55
Bynum Run at Bel Air, MD	01581500	8.52	1944-51 1955-70
Church Creek:			
Cranberry Run at Aberdeen, MD	01581657	4.16	1987-89
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
Piney Run at Dover, MD	01583100	12.3	1982-88
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
Whitemarsh Run (head of Bird River) at White Marsh, MD	01585100	7.61	1959-89
<u>BACK RIVER BASIN</u>			
Herring Run (head of Back River):			
West Branch Herring Run at Idlewyde, MD	01585200	2.13	1957-65 1966-87
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
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
Gwynns Falls at Villa Nova, MD	01589300	32.5	1957-88
Dead Run at Franklinton, MD	01589330	5.52	1960-87
Jones Falls at Sorrento, MD	01589440	25.2	1966-88
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:			
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
<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:			
Dorsey Run near Jessup, MD	01594400	11.6	1948-58
Western Branch near Largo, MD	01594500	30.2	1950-75
Western Branch at Upper Marlboro, MD	01594526	89.7	1986-89
Cocktown Creek near Huntingtown, MD	01594600	3.85	1957-76
St. Leonard Creek near St. Leonard, MD	01594800	6.73	1957-68

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS, LISTED IN DOWNSTREAM ORDER

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN</u>			
North Branch Potomac River:			
South Fork Sand Run near Wilson, MD	01594934	1.55	1981-86
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 1967-80
Sawpit Run near Oldtown, MD	01609500	5.08	1948-58
Sideling Hill Creek at Bellegrove, MD	01610155	102	1967-77
Little TonoLoway Creek near Hancock, MD	01612500	16.9	1947-63
Antietam Creek near Waynesboro, MD	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:			
Hunting Creek tributary near Foxville, MD	01640970	4.01	1982-91
Hunting Creek near Thurmont, MD	01640975	7.08	1982-86
Hunting Creek at Jintown, MD	01641000	18.4	1950-92
Fishing Creek near Lewistown, MD	01641500	7.29	1948-84
Monocacy River near Frederick, MD	01642000	665	1896-1930
Linganore Creek near Frederick, MD	01642500	82.3	1932 1934-82
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 1962-78
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
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	1975-81
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.

xii DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS, LISTED IN DOWNSTREAM ORDER

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 ²)	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
			SED	1947-80
<u>CHOPTANK RIVER BASIN</u>				
Choptank River near Greensboro, MD	01491000	113	SC, T	1975-91
			SED	1981-91
<u>SUSQUEHANNA RIVER BASIN</u>				
Susquehanna River at Conowingo, MD	01578310	27,100	SC, T	1979-81
				1984-92
			SED	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	1978-80
				1986-91
			SED	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	1981-88
			pH	1984-88
South Fork Sand Run near Wilson, MD	01594934	1.55	SC, pH, T	1981-86
Nouth Fork Sand Run near Wilson, MD	01594936	1.91	SC, T	1981-88
			pH	1985-88
North Branch Potomac River at Kitzmiller, MD	01595500	225	SC, pH, DO	1981-85
			T	1961-85
North Branch Potomac River at Barnum, WV	01595800	266	SC, pH, T, DO	1981-85
North Branch Potomac River at Luke, MD	01603000	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:				
Monocacy River at Bridgeport, MD	01639000	173	T, SED	1990-93
Hunting Creek:				
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
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	1978-81
			SED	1979-81
Rock Creek:				
North Branch Rock Creek:				
Williamsburg Run near Olney, MD	01647685	2.25	SED	1967-68
North Branch Rock Creek near Rockville, MD	01647740	12.5	SED	1967-77
Northeast Branch Anacostia River:				
Northwest Branch Anacostia River:				
Browns Creek:				
Nursery Run at Cloverly, MD	01650085	0.35	SED	1967-68
Northwest Branch Anacostia River near Colesville, MD	01650500	21.1	SED	1967-75
Potomac River at Indian Head, MD	01655480	12,160	SC, pH, T, DO	1978-81
Potomac River at Piney Point, MD	01661475	---	SC, pH, T, DO	1980-81
<u>OHIO RIVER BASIN</u>				
<u>MONONGAHELA RIVER BASIN</u>				
Monongahela River:				
Youghiogheny River at Friendsville, MD	03076500	295	T	1963-75

LOW-FLOW, PARTIAL-RECORD STATIONS, LISTED IN DOWNSTREAM ORDER

xiii

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 ²)	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
Drawyer Creek near Mt. Pleasant, DE	01483160	1.54	1978-80
Drawyer Creek tributary near Odessa, DE	01483165	1.79	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

	Station number	Drainage area (mi ²)	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
Iron Branch at Millsboro, DE	01484530	a8.0	1985-88
Whartons Branch near Millsboro, DE	01484531*	a5.8	1968-69 1971, 1985-88
Swan Creek near Warwick, DE	01484535	a7.2	1985-88
Pepper Creek at Dagsboro, DE	01484550*	8.78	1955-71 1985-88
Blackwater Creek near Clarkesville, DE	01484600*	a3.5	1968-69 1971, 1985-88
Love Creek at Robinsonville, DE	01484655	a12	1985-88
Chapel Branch at Angola, DE	01484677	a8.0	1985-88
<u>DIRICKSON CREEK BASIN</u>			
Bearhole Ditch (head of Dirickson Creek) at Bunting, DE	01484700	a6.4	1968-71 1985-88
<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, MD	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
<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

LOW-FLOW, PARTIAL-RECORD STATIONS, LISTED IN DOWNSTREAM ORDER

xv

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<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 1968-69
Back Creek near Mt. Pleasant, DE	01495700	4.40	1968-70
Bohemia River:			
Sandy Branch at Bohemia Creek, MD	01495925	2.58	1982 1953-54
Little Bohemia Creek near Warwick, MD	01495935	2.45	1982-83
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
<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

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<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 1977-82
Georges Run near Beckleysville, MD	01581870	15.8	
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:			
Blackrock Run at Coopersville, MD	01583200	9.38	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	9.4	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	24	1964-67
<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

LOW-FLOW, PARTIAL-RECORD STATIONS, LISTED IN DOWNSTREAM ORDER

xvii

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>PATUXENT RIVER BASIN--Continued</u>			
Patuxent River--Continued			
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
<u>POTOMAC RIVER BASIN--Continued</u>			
Potomac River:			
Wills Creek at Eilerslie, MD	01601100	185	1979-82
Jennings Run:			
North Branch Jennings Run at Barreelsville, 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
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
Rush Run near Huyett, MD	01614575	5.20	1985-87 1976-79 1981-82
Meadow Brook at Conococheague, MD	01614625	6.77	1985-87 1976-79 1981-82
Conococheague Creek tributary near Huyett, MD	01614675	7.94	1985-87 1977-79 1981-82
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

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN--Continued</u>			
<u>Potomac River--Continued</u>			
<u>Antietam Creek:</u>			
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
<u>Catoctin Creek:</u>			
Little Catoctin Creek near Brunswick, MD	01636850	8.64	1977-82
Middle Creek at Ellerton, MD	01636975	22.7	1977-82
Tuscarora Creek at Tuscarora, MD	01638600	20.3	1975-79
<u>Monocacy River:</u>			
Piney Creek at Taneytown, MD	01639100	22.9	1956-59 1961-63 1966
<u>Toms Creek:</u>			
Friends Creek near Emmitsburg, MD	01639325	12.2	1977-82
<u>Double Pipe Creek:</u>			
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
<u>Little Pipe Creek:</u>			
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
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
Tuscarora Creek near Frederick, MD	01641900	16.5	1975-79
Israel Creek near Walkersville, MD	01642050	a29	1964-66 1975-79
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
Ballenger Creek near Lime Kiln, MD	01643125	20.2	1975-82
<u>Bennett Creek:</u>			
Little Bennett Creek at Hyattstown, MD	01643400	12.8	1968-69 1975-79
Broad Run at Elmer, MD	01643615	14.0	1975-82
<u>Seneca Creek:</u>			
Little Seneca Creek at Boyds, MD	01644400	a21	1964-67
Bucklodge Branch near Dawsonville, MD	01644425	8.47	1975-82
<u>Great Seneca Creek:</u>			
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
<u>Northeast Branch Anacostia River:</u>			
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

	Station number	Drainage area (mi ²)	Period of record
<u>NORTH ATLANTIC SLOPE BASINS--Continued</u>			
<u>POTOMAC RIVER BASIN--Continued</u>			
Potomac River--Continued			
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
<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

a Approximately.

* Also a crest-stage partial-record station.

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WATER RESOURCES DATA - MARYLAND AND DELAWARE, 1993

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 104 gaging stations; stage and contents at 1 reservoir; and water quality at 29 gaging stations. Also included are data for 3 crest-stages, 12 low-flow, and 8 tidal crest-gage partial-record stations. Locations of these sites are shown on figures 3 and 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 Books and Open-File Reports Section, Federal Center, Bldg. 41, Box 25425, 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-93-1." 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. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

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 (301) 828-1535. A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

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 been had 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, E. T. Cleaves, director.

Delaware Geological Survey, R. R. Jordan, State geologist.

Maryland Department of Environment; Chesapeake Bay and Special Projects Program, R. M. Summers, division chief.

District of Columbia Department of Public Works, William B. Johnson, director.

Assistance with funds or services was given by the U.S. Army Corps of Engineers for collecting records at 17 gaging stations and 5 water-quality stations throughout Maryland and Delaware.

The following organizations aided in collecting records:

Delaware: State 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 City.

Organizations that provided data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow at the start of the 1993 water year was in the normal range except for southern Maryland and in the Washington, D.C. area where flows were in the excessive range (upper 25 percent of the record) following above-normal rainfall (2 to 4 inches) during September 1992. During October 1992, flows were in the normal range throughout the bi-state area except for central Maryland where flows moved into the excessive range. November 1992, flows remained unchanged. During December 1992, flows remained unchanged except in the Washington, D.C. area where flows moved into the excessive range following above-normal rainfall. Flows were in the normal range during January 1993 throughout the bi-state area. In February 1993, flows in western Maryland and around the Washington, D.C. area fell into the deficient range (lower 25 percent of the record) following below-normal rainfall (1.5 inches). During March and April 1993 flows throughout the bi-state area moved into the excessive range following above-normal rainfall (4 to 5 inches and 1.5 to 3 inches respectively). Flows in May 1993 returned to the normal range and remained there during June 1993. Following below-normal rainfall in July 1993, flows throughout the bi-state area fell into the deficient range. For the months of August and September 1993, flows on the Eastern Shore remained in the deficient range while flows throughout the remainder of the bi-state area moved back into the normal range.

During the 1993 water year, flows at two of the four index stations used (Potomac River near Washington, D.C. in central Maryland and Seneca Creek at Dawsonville in central Maryland, were in the excessive range. Flows at the other two index stations (North Branch Potomac River at Paw Paw, W. Va., in western Maryland and Choptank River at Greensboro on the Eastern Shore of Maryland) were in the normal range. Several record maximum monthly and daily means were set during the 1993 water year. At the Potomac River at Paw Paw a new monthly mean was set for April 1993. The new record monthly mean was 20 percent greater than the previous record set in 1987. Also a new maximum daily mean was set which is 39 percent greater than the record set in 1983. A new maximum daily mean was set at Seneca Creek during December 1992. The new record daily mean was 25 percent greater than the record set in 1977. Also new record monthly means were set in March and April 1993. The new records were 73 percent and 15 percent greater than records set in 1953 and 1983, respectively. At the Potomac River near Washington, D.C., a new record monthly mean was set that was 20 percent greater than the record set in 1983.

Monthly and annual mean discharges in water year 1993 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 mi² (square mile) area, of which 21.6 mi² is in Delaware in the central part of the Delmarva peninsula.

Average freshwater inflow to the Chesapeake Bay was estimated to be 100,900 ft³/s (cubic feet per second), on the basis of flows of the James, Potomac, and Susquehanna Rivers. This is 133 percent of the long-term average during the reference period 1951-93. Flows for October averaged 43 percent below normal. During November and December flows averaged 46 percent above normal. For the next six months flows averaged 25 percent below normal. Flows in January were 16 percent below normal. Flows in February and March averaged 50 percent above normal. After heavy rains at the end of March and the beginning of April, flows for April were 160 percent above normal. In May, flows were 9 percent below normal. Flows for June thru September averaged 39 percent below normal. A new record monthly mean was set for April. The new record was 44 percent greater than the record set in 1983.

The combined storage in the three major water-supply reservoirs in the Baltimore City Municipal System (combined usable capacity of 85,340 million gallons) increased from 68 percent of capacity in September 1992, to 94 percent of capacity at the end of September 1993.

WATER RESOURCES DATA — MARYLAND AND DELAWARE, 1993

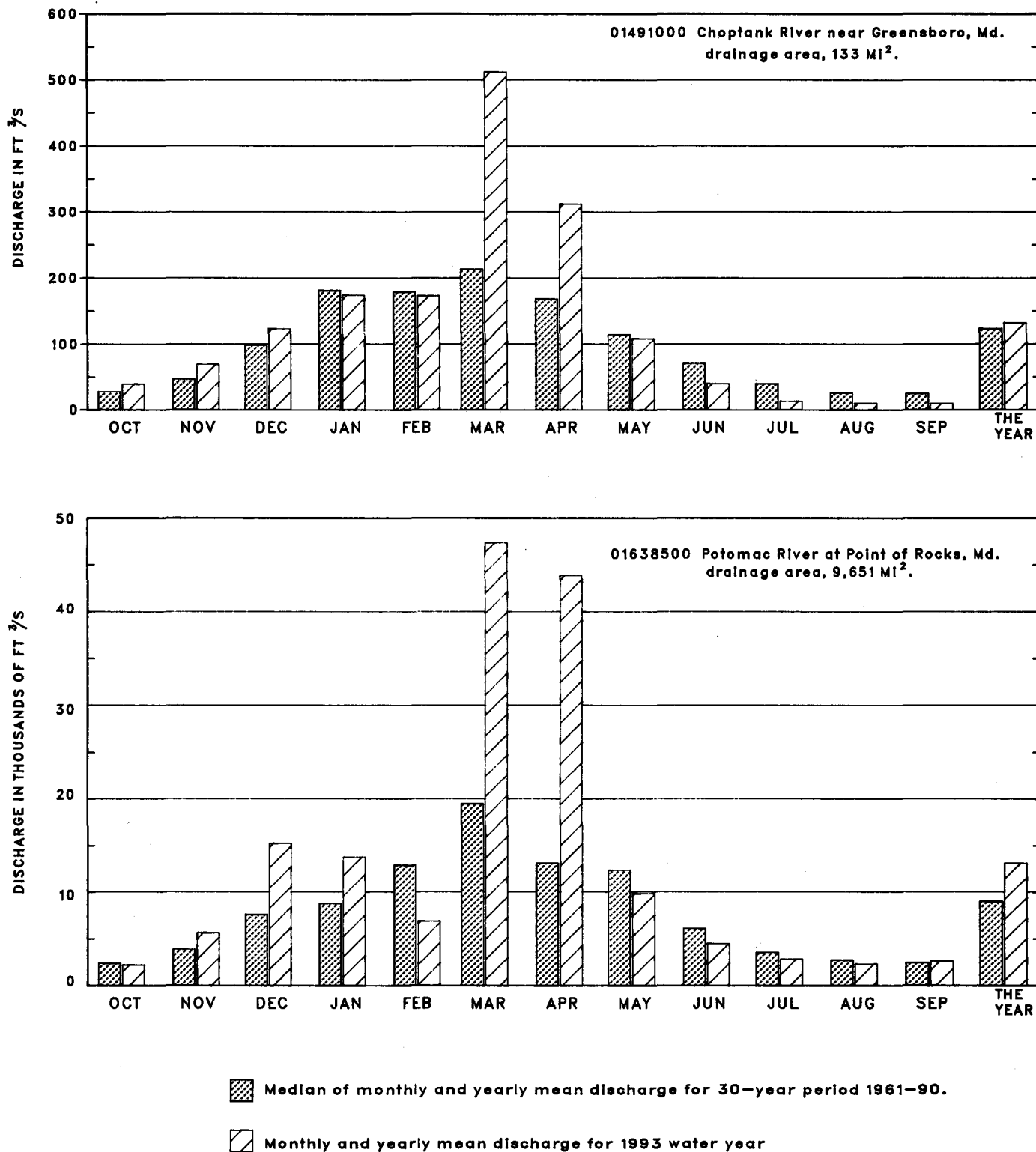


FIGURE 1. COMPARISON OF DISCHARGE AT TWO LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 1993 WATER YEAR WITH MEDIAN DISCHARGE FOR INDICATED PERIOD.

SPECIAL NETWORKS AND PROGRAMS

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 384 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.

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.

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.

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.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1993 water year that began October 1, 1992, and ended September 30, 1993. 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.)

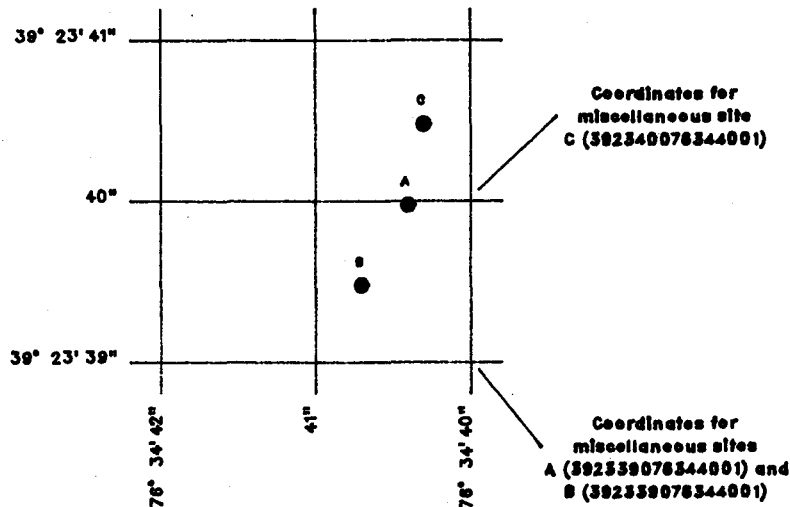


Figure 2.--System for numbering miscellaneous sites (latitude and longitude)

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, Book 3, Chapter A6.

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 by 10 percent of the time for the designated period.

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

90 PERCENT EXCEEDS.--The discharge that has been exceeded by 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 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/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 Mid-Atlantic Programs. 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. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. 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.

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 in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

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:

PRINTED OUTPUT

REMARK

E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

- * **Station Header File** - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
- * **Daily Values File** - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperature, specific conductance, sediment concentrations, sediment discharges, and ground-water levels.
- * **Peak Flow File** - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- * **Water Quality File** - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, radio-chemical characteristics of both surface and ground water.
- * **Ground-Water Site Inventory Data Base** - Contains inventory data for more than 900,000 well, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk; and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc. 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's District offices. (See address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

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 (g/m^3), and periphyton and benthic organisms in grams per square mile (g/m^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 [$(\text{ft}^3/\text{s})/\text{mi}^2$] 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^3/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 μm 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_3).

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 (ug/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 (UG/L, ug/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 (MG/L, 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 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 (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 (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{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.

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 (ft³/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 (7 Q₁₀) 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 emerged 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 planimeted. All areas shown are those for the stage when the planimeted 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 hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<i>Hexagenia</i>
Species.....	<i>Hexagenia limbata</i>

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."

WR 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.

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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, Books and Open-File Reports Section, Federal Center, Box 25425, 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. Mahey: 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.
- 2-E1. **Application of borehole geophysics to water-resources investigations**, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. **Borehole geophysics applied to ground-water investigations**, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.
- 2-F1. **Application of drilling, coring, and sampling techniques to test holes and wells**, by Eugene Shuter and W. E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. **General field and office procedures for indirect discharge measurements**, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. **Measurement of peak discharge by the slope-area method**, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. **Measurement of peak discharge at culverts by indirect methods**, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. **Measurement of peak discharge at width contractions by indirect methods**, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. **Measurement of peak discharge at dams by indirect methods**, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. **General procedure for gaging streams**, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. **Stage measurements at gaging stations**, T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. **Discharge measurements at gaging stations**, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
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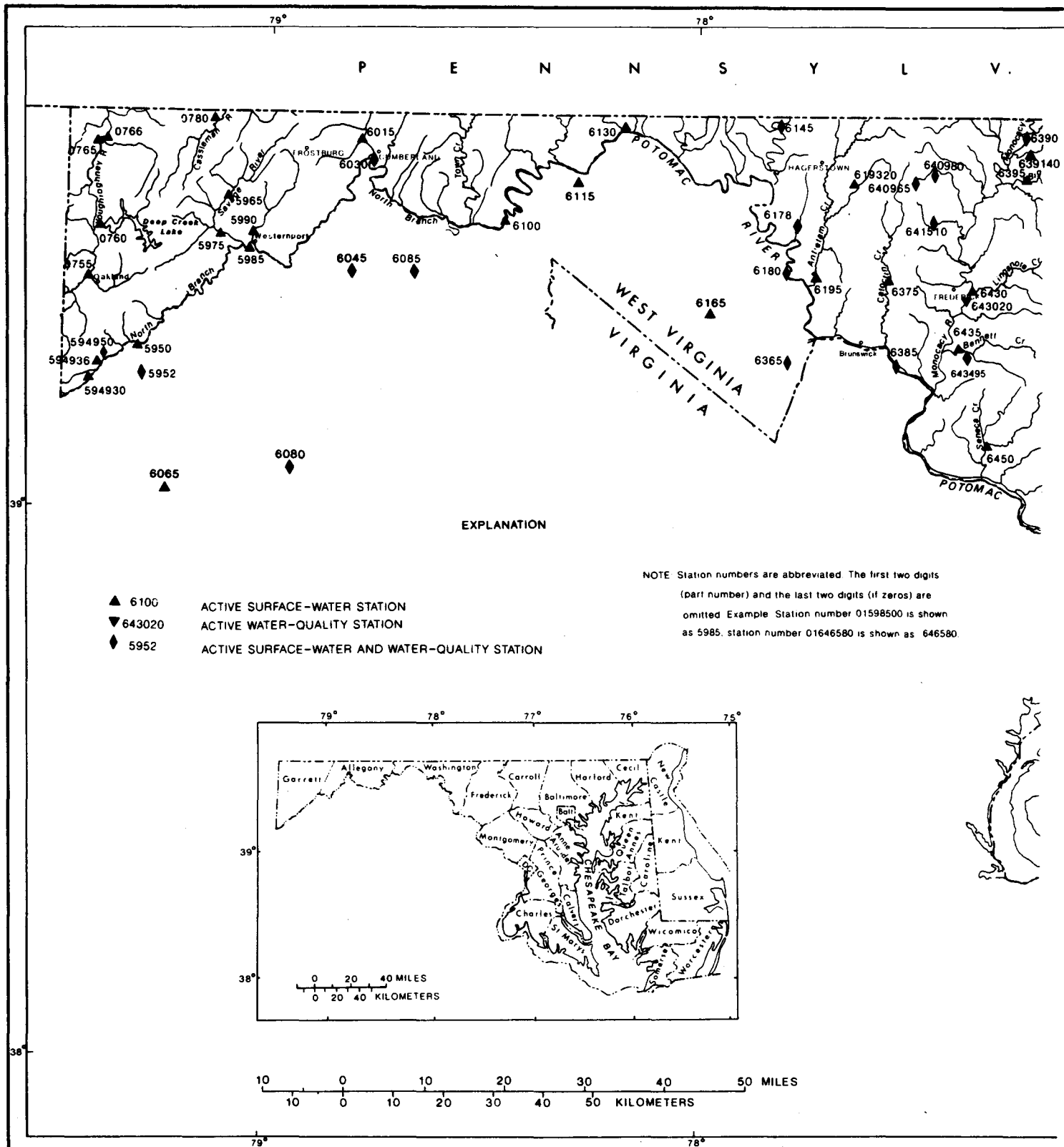
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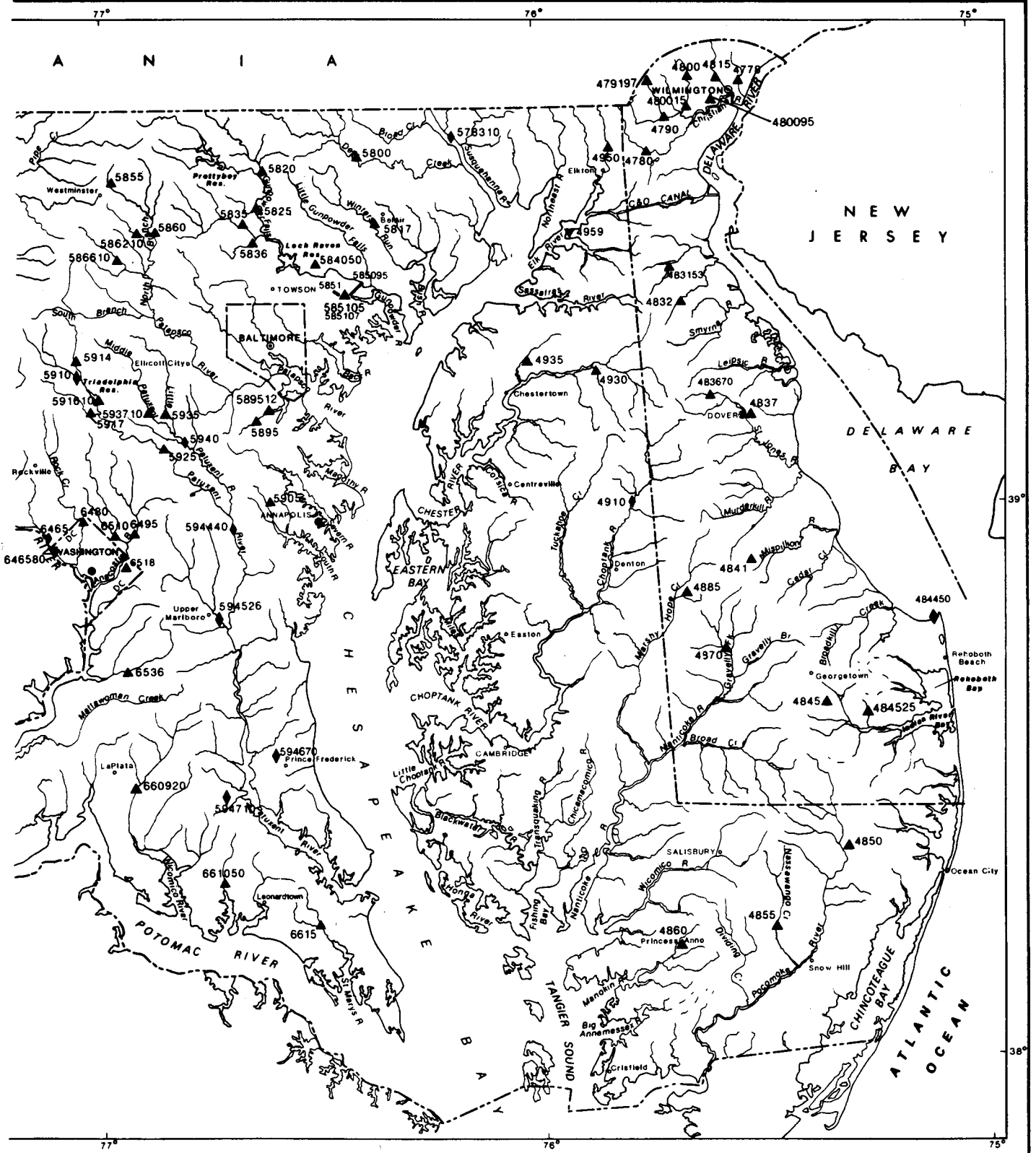
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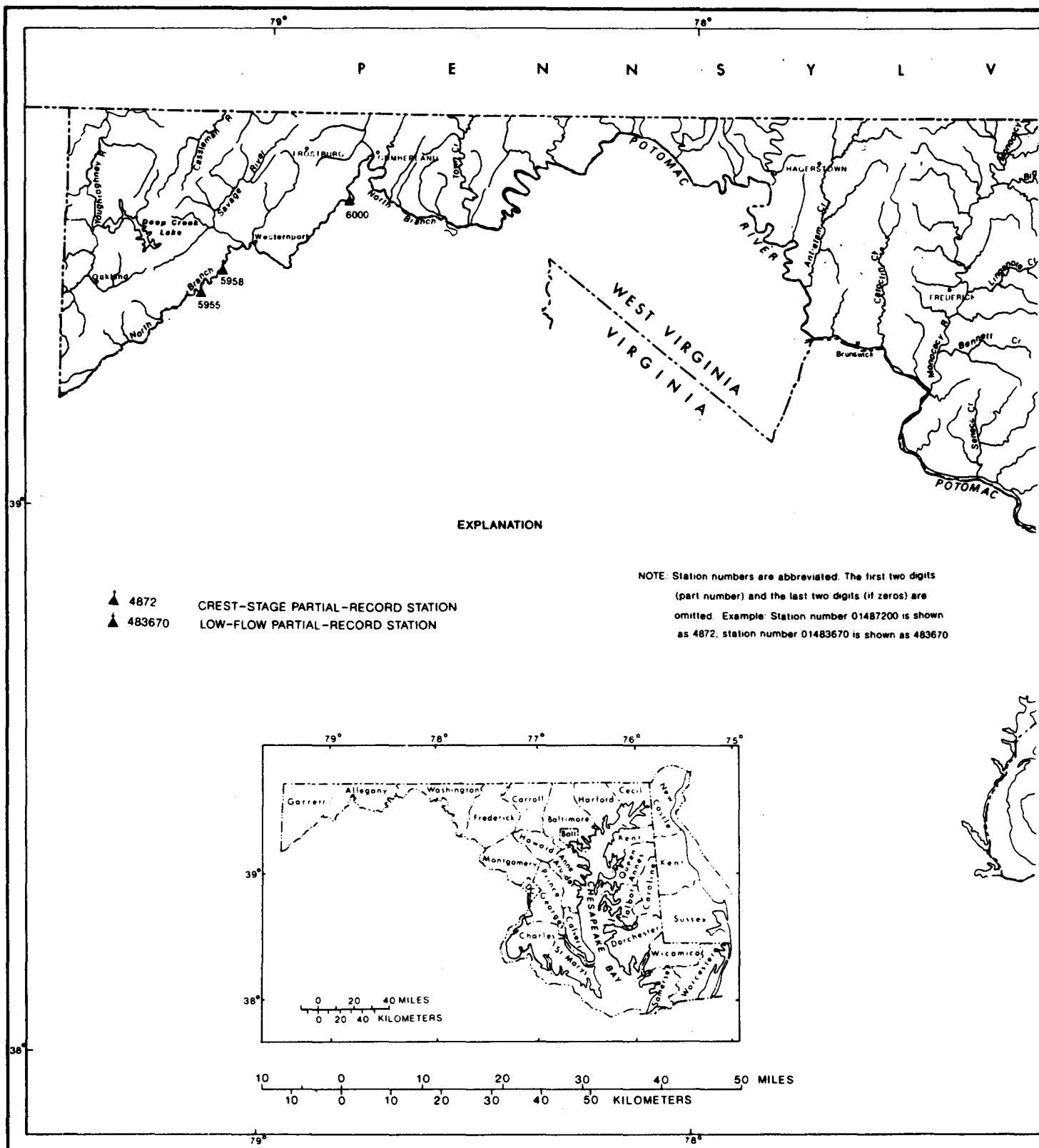
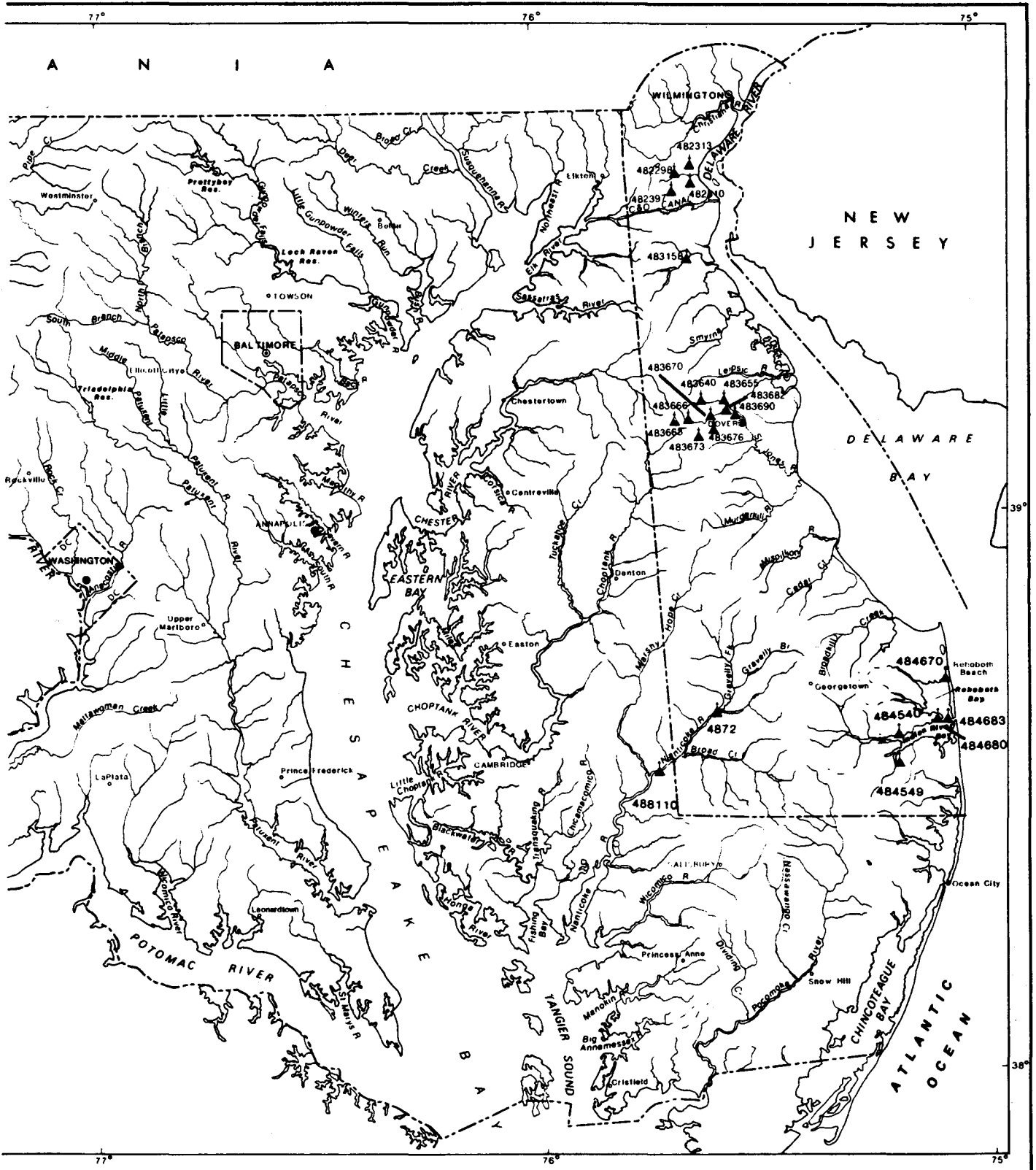


Figure 4. Map of Maryland and Delaware showing location of low-flow and crest-stage partial record stations.



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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.

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). Present 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 will begin using new trace-element protocols in water year 1994.

MBAS

NOTE--MBAS determinations made from January 1, 1970 through August 29, 1993, at the National Water Quality Laboratory in Denver (Analyzing Agency Code 80020) are positively biased. These data can be corrected on the basis of the following equation, if concentrations of dissolved nitrate plus nitrite, as nitrogen, and dissolved chloride, determined concurrently with the MBAS data, are applied:

$$MBASCOR = M - 0.0088N - 0.00019C$$

where:

MBASCOR = corrected MBAS concentration, in mg/L;
M = reported MBAS concentration, in mg/L;
N = dissolved nitrate plus nitrite, as nitrogen, concentration, in mg/L; and
C = dissolved chloride concentration, in mg/L.

The detection limit of the new method is 0.02 mg/L, whereas the detection limit for the old method was 0.01 mg/L. A detection limit of 0.02 mg/L should be used with corrected MBAS data from January 1, 1970 through August 29, 1993.

HYDROLOGIC DATA STATION RECORDS

NORTH ATLANTIC SLOPE BASINS

DELAWARE RIVER BASIN

01477800 SHELLPOT CREEK AT WILMINGTON, DE

LOCATION.--Lat 39°45'39", long 75°31'10", New Castle County, Hydrologic Unit 02040205, on right bank 100 ft east of intersection of 44th and Pine Streets in Clifton Park, 700 ft downstream from bridge on North Market Street in Wilmington, 0.2 mi downstream from Matson Run, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--7.46 mi².

PERIOD OF RECORD.--December 1945 to current year.

REVISED RECORDS.--WSP 1382: 1948(m).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 15.16 ft above sea level.

REMARKS.--Records good below 100 ft³/s and above 4,000 ft³/s, except those for estimated daily discharges (backwater from rocks or leaves, intake lag) and those between 100 and 4,000 ft³/s, which are fair. Occasional regulation at low flow from unknown source upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1940, that of July 5, 1989. Flood of Aug. 1, 1945, reached a stage of about 8.5 ft, from floodmarks.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 5	0745	1,180	4.65	Apr. 16	1815	1,060	4.44
Mar. 4	1550	1,500	5.24	May 31	2050	*1,700	*5.58
Apr. 10	0910	1,370	5.02	Sep. 26	0810	1,170	4.64

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.7	2.3	3.6	e2.7	3.6	166	4.0	44	1.0	.73	.63
2	e1.1	3.4	2.3	3.0	e2.6	4.1	50	3.6	3.5	19	.73	.61
3	e1.1	93	2.0	2.9	e2.5	4.6	12	3.4	2.6	7.4	.72	.59
4	e1.0	2.9	2.1	3.0	e2.4	336	8.3	3.3	2.7	1.7	.67	.79
5	e1.0	5.2	5.6	191	e2.3	47	7.0	6.7	2.3	1.2	1.2	.77
6	e.95	7.3	2.6	8.7	2.9	13	6.3	4.6	2.2	1.1	20	.60
7	e.95	2.1	2.5	5.4	2.9	7.9	5.8	3.2	1.8	1.1	4.6	4.4
8	e1.0	1.6	2.4	5.9	3.3	9.1	4.9	3.0	2.9	1.0	1.1	17
9	11	1.4	2.3	7.7	2.8	6.7	6.2	2.9	12	.90	2.4	12
10	3.1	1.4	21	4.6	2.6	5.4	301	2.9	5.1	.85	1.1	29
11	1.7	1.4	210	4.5	2.6	5.1	16	2.8	2.0	.79	.91	2.9
12	2.4	5.3	32	25	20	4.4	8.2	4.8	1.8	.77	4.3	1.3
13	1.2	52	7.5	21	86	7.6	6.4	5.3	1.7	.77	1.6	1.3
14	.94	2.8	4.0	9.2	14	9.0	5.7	3.1	1.6	2.9	.98	.86
15	e.86	1.9	3.2	e6.0	6.7	6.5	5.3	2.7	1.6	1.7	.81	1.1
16	e.84	1.7	2.8	e5.6	105	10	133	3.8	1.6	.81	5.0	3.5
17	e.84	1.6	44	e5.2	26	261	19	3.0	1.3	.72	2.4	89
18	e.90	1.7	9.0	e4.8	8.1	43	7.5	6.1	1.3	.72	1.9	14
19	1.7	1.6	3.8	e4.6	5.0	13	6.0	7.4	6.3	24	.81	3.0
20	1.5	1.6	10	e4.3	4.7	14	5.5	3.2	4.8	24	61	1.3
21	e1.0	1.7	3.9	e4.1	4.6	51	23	2.7	18	1.3	4.9	25
22	e.98	15	3.1	37	28	40	54	2.4	4.6	1.2	1.0	2.5
23	e.96	61	4.9	e5.0	11	61	7.5	2.2	1.5	1.1	.80	1.5
24	e.96	4.3	3.2	e4.5	5.6	209	5.7	2.1	1.3	1.1	.77	1.7
25	3.7	4.5	2.8	6.6	4.3	21	5.4	2.0	1.3	1.1	.74	6.9
26	2.3	7.8	3.0	e3.9	4.3	12	33	1.9	1.2	1.1	.74	154
27	1.7	6.3	2.5	e3.7	4.2	9.6	8.4	1.7	1.3	1.2	.73	79
28	e1.1	3.1	5.2	e3.4	3.8	13	5.2	1.7	1.2	1.2	.72	7.0
29	e1.1	2.7	4.3	e3.2	---	34	4.6	1.6	1.7	4.9	2.2	2.7
30	e1.1	2.5	11	e3.0	---	13	4.3	1.5	1.1	1.0	.67	2.0
31	5.3	---	4.8	e2.8	---	8.3	---	208	---	.73	.64	---
TOTAL	55.38	300.5	420.1	403.2	370.9	1282.9	931.2	307.6	136.3	108.36	126.87	466.95
MEAN	1.79	10.0	13.6	13.0	13.2	41.4	31.0	9.92	4.54	3.50	4.09	15.6
MAX	11	93	210	191	105	336	301	208	44	24	61	154
MIN	.84	1.4	2.0	2.8	2.3	3.6	4.3	1.5	1.1	.72	.64	.59
CFSM	.24	1.34	1.82	1.74	1.78	5.55	4.16	1.33	.61	.47	.55	2.09
IN.	.28	1.50	2.09	2.01	1.85	6.40	4.64	1.53	.68	.54	.63	2.33

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1993, BY WATER YEAR (WY)

	4.60	8.63	11.4	12.1	13.2	15.2	13.1	11.0	7.19	8.15	7.02	6.69
MEAN	4.60	8.63	11.4	12.1	13.2	15.2	13.1	11.0	7.19	8.15	7.02	6.69
MAX	20.2	27.7	30.5	37.9	34.1	41.4	32.7	31.5	34.8	69.5	62.8	58.3
(WY)	1972	1973	1968	1979	1979	1993	1983	1947	1975	1989	1967	1971
MIN	.62	1.35	1.03	1.18	2.95	2.93	2.55	1.76	1.09	.65	.32	.90
(WY)	1964	1966	1956	1981	1980	1985	1985	1955	1966	1957	1966	1951

01477800 SHELLPOT CREEK AT WILMINGTON, DE--Continued

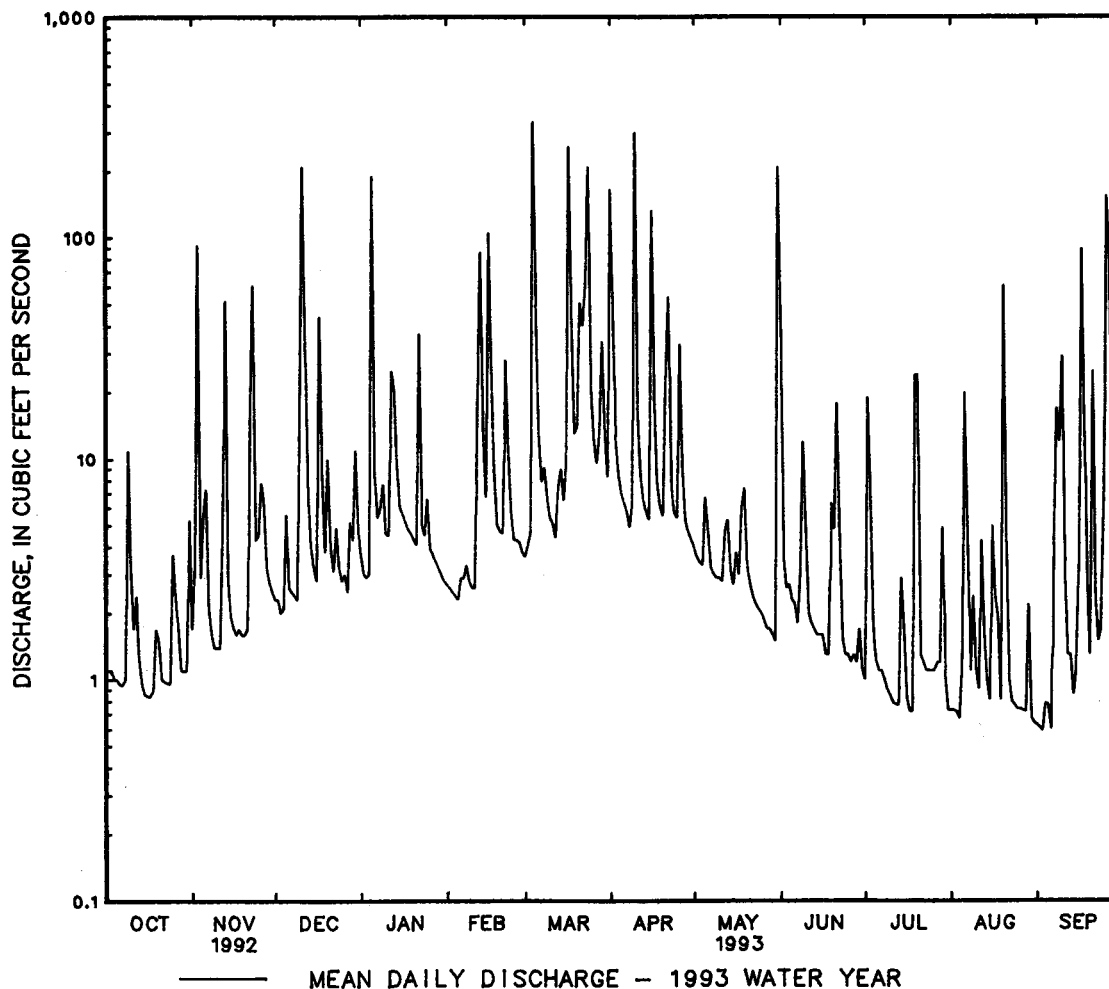
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1946 - 1993
ANNUAL TOTAL	2711.30	4910.26	
ANNUAL MEAN	7.41	13.5	9.68
HIGHEST ANNUAL MEAN			16.1 1973
LOWEST ANNUAL MEAN			5.52 1963
HIGHEST DAILY MEAN	210 Dec 11	336 Mar 4	1310 Jul 5 1989
LOWEST DAILY MEAN	.61 Sep 20	.59 Sep 3	.09 (a)
ANNUAL SEVEN-DAY MINIMUM	.67 Sep 15	.66 Aug 31	.10 Aug 27 1966
INSTANTANEOUS PEAK FLOW	1230 Jul 31	1700 May 31	(b)8040 Jul 5 1989
INSTANTANEOUS PEAK STAGE	4.75 Jul 31	5.58 May 31	13.76 Jul 5 1989
INSTANTANEOUS LOW FLOW	.61 (c)	.50 (d)	.09 Oct 2 1968
ANNUAL RUNOFF (CFSM)	.99	1.80	1.30
ANNUAL RUNOFF (INCHES)	13.52	24.49	17.63
10 PERCENT EXCEEDS	11	24	18
50 PERCENT EXCEEDS	2.8	3.2	2.8
90 PERCENT EXCEEDS	.96	.95	.77

a Oct. 2, 4, 1968.

b From rating curve extended above 200 ft³/s on basis of culvert and flow-over-road measurements at gage heights 9.10 and 11.91 ft.

c Sept. 1, 20, 21.

d Sept. 6, 7.



DELAWARE RIVER BASIN

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE

LOCATION.--Lat 39°38'14", long 75°43'43", New Castle County, Hydrologic Unit 02040205, on right bank 60 ft downstream from highway bridge, 0.5 mi southeast of Coochs Bridge, 3.3 mi south of Newark, 3.6 mi upstream from Belltown Run, and 22.6 mi upstream from mouth.

DRAINAGE AREA.--20.5 mi².

PERIOD OF RECORD.--April 1943 to current year.

REVISED RECORDS.--WDR MD-DE-79-1: 1943-70(P). WDR MD-DE-87-1: 1980-82(P).

GAGE.--Water-stage recorder. Datum of gage is 25.54 ft above sea level. Prior to Sept. 14, 1944, nonrecording gage on upstream side of bridge at same datum. Sept. 14, 1944, to May 13, 1969, recording gage at site on left bank at downstream side of highway bridge at same datum. May 26, 1969, to Dec. 5, 1973, recording gage on left bank 82 ft downstream from highway bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges (intake lag), which are fair. Low and medium flow regulated by mill upstream from station. 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 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0815	1,560	11.34	Apr. 10	1300	1,040	10.29
Jan. 5	1015	1,100	10.44	Apr. 22	0200	1,060	10.35
Mar. 4	2000	*1,580	*11.37	June 1	0200	1,400	11.05
Mar. 17	2015	1,220	10.70	Sep. 27	1630	1,140	10.52

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	8.4	14	21	18	19	319	24	377	9.0	5.4	4.8
2	9.3	11	14	18	16	21	157	23	33	53	5.2	4.7
3	8.8	161	13	17	16	25	48	21	25	40	5.2	4.7
4	8.4	20	12	18	17	629	38	21	20	11	5.0	4.3
5	8.2	20	17	396	17	e140	34	26	18	9.5	5.0	4.6
6	7.9	33	13	e52	17	67	33	27	18	8.9	56	4.3
7	7.5	14	12	e24	17	38	30	20	15	8.7	18	3.7
8	7.6	11	12	e21	17	33	28	18	15	8.3	7.7	14
9	e20	11	12	e24	17	30	28	17	46	8.0	10	13
10	e26	10	28	e19	16	25	405	16	43	7.8	7.8	121
11	e12	10	1030	e18	16	26	68	16	15	7.6	6.2	9.8
12	e10	14	e120	e30	47	24	42	18	13	12	7.2	6.5
13	e9.0	168	e29	e46	243	27	35	21	12	7.3	17	5.6
14	8.2	e24	e23	e32	e40	41	32	15	12	16	7.1	5.1
15	8.1	e17	e21	e28	e25	37	31	14	12	15	5.7	5.0
16	7.6	e14	e19	e23	178	37	145	30	11	7.6	5.5	9.9
17	7.0	e12	e62	e21	e68	455	73	20	11	6.8	7.4	129
18	7.9	e11	e54	e19	e40	e220	35	21	11	6.5	9.6	47
19	8.1	11	e29	e18	e23	e54	31	28	11	6.8	5.8	12
20	8.0	11	e40	e17	e22	e40	28	17	13	11	12	7.5
21	8.0	11	e24	18	e22	e120	58	15	52	7.2	14	14
22	7.9	38	e21	54	75	e155	313	13	33	6.5	6.0	8.6
23	7.9	189	e20	24	e45	e140	44	12	11	6.5	5.1	7.1
24	9.9	39	e19	24	27	521	33	12	9.5	6.3	5.1	6.7
25	10	26	e18	28	20	80	31	12	9.2	6.3	5.0	13
26	7.7	32	e17	20	20	51	76	12	9.1	6.1	4.9	121
27	7.8	48	e16	20	20	44	49	11	9.4	6.4	4.9	310
28	7.5	21	e20	19	20	46	31	11	8.8	5.9	9.3	41
29	7.6	17	e24	19	---	104	28	11	8.5	8.7	13	13
30	7.8	15	e40	18	---	54	26	10	8.6	6.3	5.2	10
31	13	---	e28	18	---	38	---	125	---	5.4	4.9	---
TOTAL	294.4	1027.4	1821	1124	1119	3341	2329	657	890.1	332.4	286.2	960.9
MEAN	9.50	34.2	58.7	36.3	40.0	108	77.6	21.2	29.7	10.7	9.23	32.0
MAX	26	189	1030	396	243	629	405	125	377	53	56	310
MIN	7.0	8.4	12	17	16	19	26	10	8.5	5.4	4.9	3.7
CFSM	.46	1.67	2.87	1.77	1.95	5.26	3.79	1.03	1.45	.52	.45	1.56
IN.	.53	1.86	3.30	2.04	2.03	6.06	4.23	1.19	1.62	.60	.52	1.74

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1993, BY WATER YEAR (WY)

	13.9	24.3	34.1	38.9	42.8	46.1	37.3	31.9	21.6	22.3	17.7	15.3
MEAN	13.9	24.3	34.1	38.9	42.8	46.1	37.3	31.9	21.6	22.3	17.7	15.3
MAX	62.9	82.8	97.9	165	154	121	107	77.6	76.5	165	117	53.6
(WY)	1972	1973	1984	1979	1979	1978	1983	1990	1972	1989	1967	1960
MIN	2.25	2.76	3.98	5.35	10.1	8.35	10.5	8.10	4.57	2.48	1.29	2.85
(WY)	1964	1966	1966	1981	1947	1981	1963	1965	1966	1963	1966	1965

01478000 CHRISTINA RIVER AT COOCHS BRIDGE, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

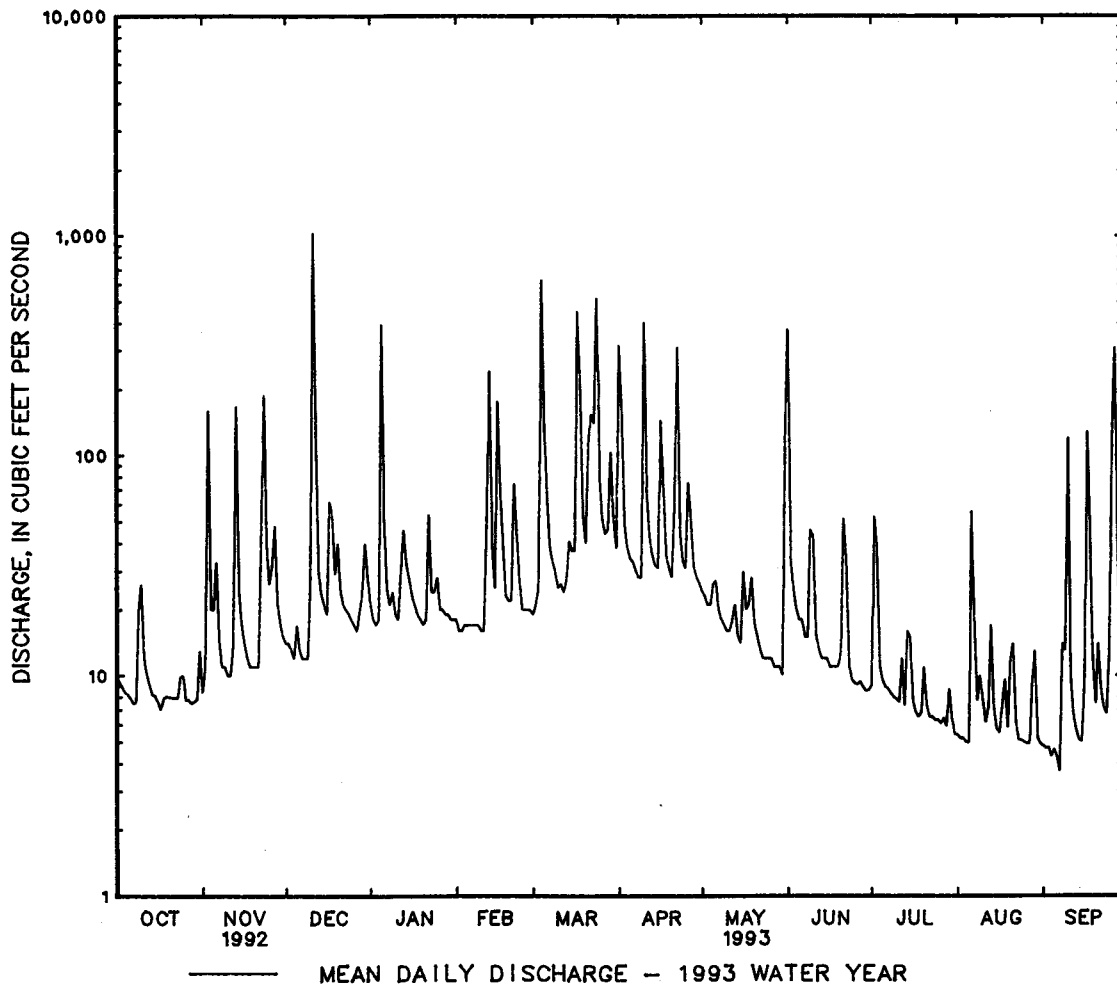
WATER YEARS 1943 - 1993

ANNUAL TOTAL	9483.2		14182.4			
ANNUAL MEAN	25.9		38.9		28.8	
HIGHEST ANNUAL MEAN					53.4	1978
LOWEST ANNUAL MEAN					14.2	1981
HIGHEST DAILY MEAN	1030	Dec 11	1030	Dec 11	2000	Jul 5 1989
LOWEST DAILY MEAN	4.8	Jul 22	3.7	Sep 7	.20	(a)
ANNUAL SEVEN-DAY MINIMUM	5.7	Sep 15	4.4	Sep 1	.50	Aug 25 1966
INSTANTANEOUS PEAK FLOW	1560	Dec 11	1580	Mar 4	5530	Jul 5 1989
INSTANTANEOUS PEAK STAGE	11.34	Dec 11	11.37	Mar 4	13.12	Jul 5 1989
INSTANTANEOUS LOW FLOW	(b)3.2	Feb 10	3.5	(c)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.26		1.90		1.40	
ANNUAL RUNOFF (INCHES)	17.21		25.74		19.07	
10 PERCENT EXCEEDS	41		60		48	
50 PERCENT EXCEEDS	11		17		13	
90 PERCENT EXCEEDS	6.5		6.5		4.4	

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

b Result of freeze-up.

c Sept. 4-8.



LOCATION.--Lat 39°41'47", long 75°40'33", 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 mi².

REVISED RECORDS.--WSP 1051: 1933(M). WSP 1382: 1932, 1934. WDR MD-DE-83-1: 1978-82(P).

REMARKS.--Records good except those for estimated daily discharges (Oct. 19-23, 27-30, backwater from leaves; ice effect), which are fair. Slight diurnal fluctuation at low flow caused by mills upstream from station. Records do not include a negligible diversion upstream from station by E. I. du Pont de Nemours & Co. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Discharge				Gage height			
Date	Time	(ft ³ /s)	(ft)	Date	Time	(ft ³ /s)	(ft)
Dec. 11	0900	2,120	12.20	Apr. 10	1330	2,120	11.75
Mar. 4	2100	*3,660	*13.82	May 31	2330	2,350	12.16
Mar. 24	0815	2,360	12.18				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	47	64	94	77	88	868	173	546	57	30	26
2	41	52	63	84	e76	92	464	166	129	129	30	25
3	40	498	61	82	e75	120	262	158	112	121	27	24
4	38	105	59	86	74	1380	227	156	105	68	26	23
5	38	82	69	518	e73	929	219	181	103	60	28	26
6	36	106	61	157	75	298	209	205	105	55	103	23
7	36	69	60	110	e75	213	197	163	94	54	91	22
8	36	60	58	108	e74	192	189	148	92	52	45	52
9	65	56	56	113	e72	179	185	142	136	49	40	53
10	113	54	91	97	69	160	1170	138	155	46	37	220
11	63	53	1230	91	71	155	437	135	92	45	37	36
12	61	63	475	162	119	140	258	135	86	48	50	26
13	48	352	189	211	407	158	226	149	84	42	47	25
14	43	91	134	139	184	e156	214	135	81	59	39	25
15	42	67	113	109	125	e152	207	125	79	57	33	26
16	41	61	104	99	308	e170	501	144	77	44	32	58
17	39	59	242	94	375	846	422	130	72	40	37	214
18	39	56	254	89	173	697	229	129	70	38	43	213
19	e39	55	126	83	e117	264	208	165	71	43	34	60
20	e39	54	145	80	e105	225	194	135	90	75	70	42
21	e39	53	126	81	e122	367	239	126	171	47	76	74
22	e39	91	105	195	e210	441	701	116	146	41	38	56
23	e39	521	108	116	182	420	248	110	76	38	32	42
24	45	143	101	101	e110	1530	216	109	68	36	30	39
25	47	99	88	104	e100	451	204	106	64	36	29	53
26	44	112	89	88	96	307	274	99	63	36	29	565
27	e42	135	86	85	93	257	268	95	63	38	30	630
28	e40	84	97	83	88	258	200	93	60	34	34	240
29	e40	74	110	81	---	400	187	92	58	44	39	81
30	e40	68	128	76	---	305	180	89	63	34	28	61
31	53	---	112	78	---	226	---	338	---	30	26	---
TOTAL	1407	3420	4804	3694	3725	11576	9603	4385	3211	1596	1270	3060
MEAN	45.4	114	155	119	133	373	320	141	107	51.5	41.0	102
MAX	113	521	1230	518	407	1530	1170	338	546	129	103	630
MIN	36	47	56	76	69	88	180	89	58	30	26	22
CFSM	.51	1.28	1.74	1.34	1.49	4.19	3.59	1.59	1.20	.58	.46	1.14
IN.	.59	1.43	2.01	1.54	1.56	4.83	4.01	1.83	1.34	.67	.53	1.28

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1993, BY WATER YEAR (WY)

MEAN	63.3	92.1	113	142	161	170	151	130	99.3	98.2	80.6	73.5
MAX	230	221	304	493	542	398	342	265	311	540	301	231
(WY)	1972	1973	1984	1979	1979	1978	1983	1989	1972	1975	1967	1979
MIN	17.6	28.4	28.1	32.8	52.4	57.5	59.7	42.3	37.9	16.6	13.6	15.0
(WY)	1964	1966	1966	1966	1934	1981	1963	1955	1963	1963	1966	1932

01479000 WHITE CLAY CREEK NEAR NEWARK, DE--Continued

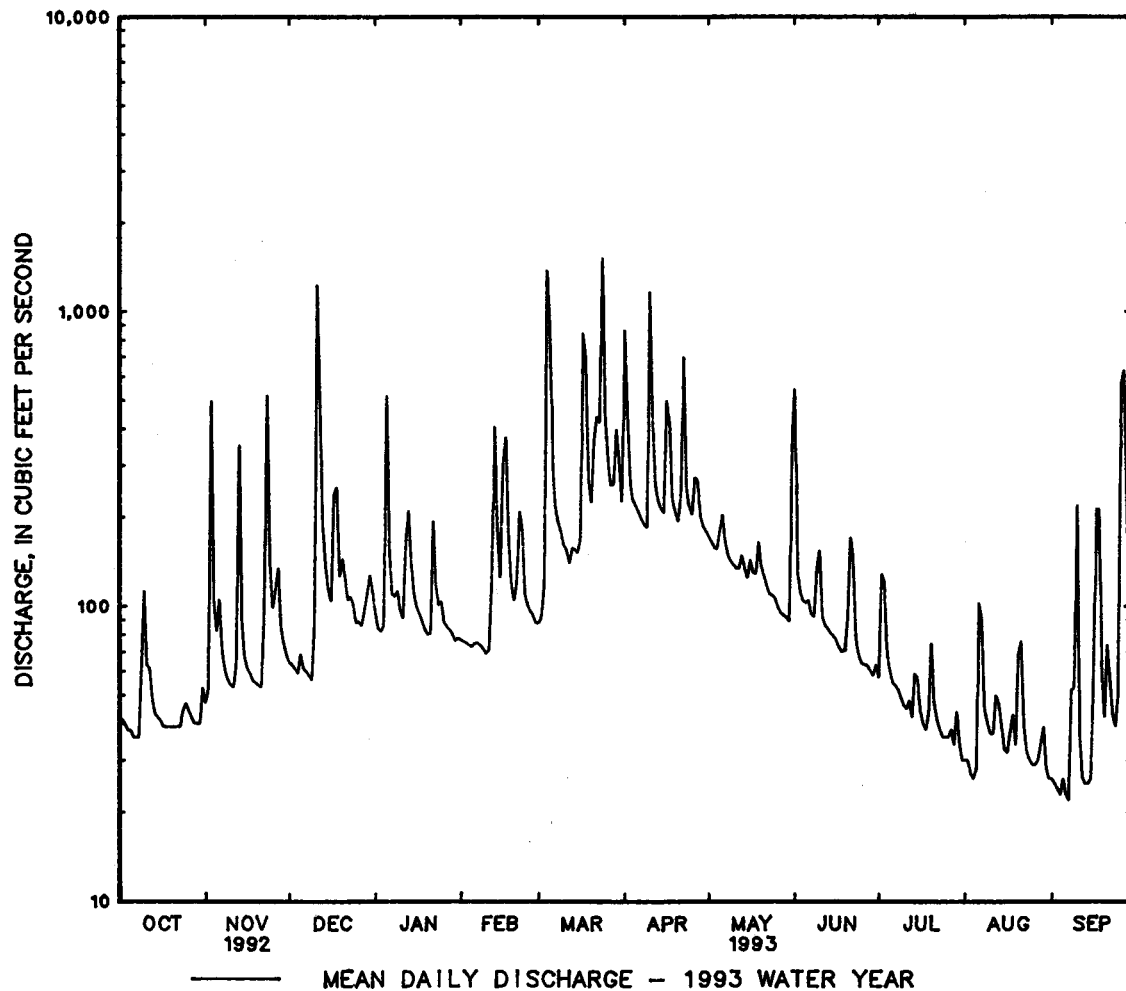
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1932 - 1993	
ANNUAL TOTAL	31750		51751		114	
ANNUAL MEAN	86.7		142		193	
HIGHEST ANNUAL MEAN					55.9	
LOWEST ANNUAL MEAN					5.0	
HIGHEST DAILY MEAN	1230	Dec 11	1530	Mar 24	5220	Jan 26 1978
LOWEST DAILY MEAN	26	Sep 2	22	Sep 7	5.7	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	29	Sep 15	24	Sep 1	5.7	Sep 7 1966
INSTANTANEOUS PEAK FLOW	2120	Dec 11	3660	Mar 4	(a)11600	Jul 5 1989
INSTANTANEOUS PEAK STAGE	12.20	Dec 11	13.82	Mar 4	(b)17.74	Jun 22 1972
INSTANTANEOUS LOW FLOW	20	(c)	21	(d)	4.7	Sep 11 1966
ANNUAL RUNOFF (CFSM)	.97		1.59		1.28	
ANNUAL RUNOFF (INCHES)	13.26		21.61		17.44	
10 PERCENT EXCEEDS	142		263		189	
50 PERCENT EXCEEDS	59		88		76	
90 PERCENT EXCEEDS	37		36		33	

a From rating curve extended above 6,700 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow.

b At previous site and datum.

c Feb. 2 (result of freezeup), Sept. 2.

d Sept. 4, 6, 7, 12.



DELAWARE RIVER BASIN

01479197 MILL CREEK AT MILL CREEK ROAD AT HOCKESSIN, DE

LOCATION.--Lat 39°46'48", long 75°41'49", New Castle County, Hydrologic Unit 02040205, on right bank at downstream side of highway bridge on Mill Creek Road, at Hockessin, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--3.66 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Concrete control since February 12, 1990. Datum of gage is 224.56 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1989 reached a stage of about 8 ft, from floodmarks; discharge, about 1,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 3	0515	162	4.58	Apr. 10	0930	394	5.72
Mar. 4	1700	374	5.64	May 31	2145	165	4.60
Mar. 17	1815	159	4.55	Sep. 26	0745	182	4.70
Apr. 1	0430	157	4.54	Sep. 27	1300	*411	*5.79

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.29	.70	3.3	1.2	1.6	44	3.2	10	1.0	.52	.26
2	.30	1.8	.67	2.2	.90	2.3	22	3.1	2.2	5.6	.50	.23
3	.29	39	.57	.97	1.1	2.5	6.1	2.9	2.0	2.4	.47	.20
4	.28	1.3	.56	1.0	1.1	91	4.9	3.0	1.9	1.2	.96	.28
5	.24	3.6	1.3	32	1.1	18	4.4	6.4	1.8	1.0	.59	.25
6	.22	3.2	.59	3.0	1.0	5.8	3.9	3.6	1.7	.97	8.5	.19
7	.23	.86	.59	2.1	1.2	3.4	3.6	2.9	1.6	.91	1.4	.19
8	.23	.68	.55	2.1	1.4	3.1	3.5	2.8	1.7	.86	.71	.27
9	2.5	.59	.54	2.8	1.1	2.8	4.3	2.7	7.5	.78	2.0	8.6
10	2.8	.57	9.3	1.6	1.1	2.5	96	2.7	2.9	.74	.82	5.4
11	.79	.57	65	1.5	1.1	2.3	9.9	2.7	1.6	.70	.89	.48
12	.51	5.7	13	10	9.4	2.0	5.8	3.4	1.5	.67	1.2	.45
13	.32	16	3.0	9.4	24	2.3	4.8	3.1	1.4	.60	1.5	.41
14	.28	1.2	1.8	3.0	6.3	4.1	4.4	2.7	1.4	2.5	.88	.39
15	.27	.88	1.4	2.0	3.1	3.0	4.0	2.4	1.4	1.3	.53	3.5
16	.24	.75	1.3	1.8	25	3.6	21	2.5	1.3	.71	.54	4.3
17	.17	.69	17	1.6	11	55	7.5	2.4	1.2	.64	1.0	21
18	.20	.65	5.7	1.5	3.3	20	4.5	3.8	1.2	.60	.78	6.0
19	.27	.64	6.1	1.3	2.0	6.0	3.9	3.5	7.5	2.3	.53	1.4
20	.22	.57	8.2	1.2	1.9	5.7	3.7	2.6	2.4	3.0	3.3	.76
21	.22	.55	3.9	1.4	1.9	19	17	2.4	11	.72	1.1	10
22	.22	2.6	3.4	12	10	19	24	2.1	3.1	.64	.51	1.4
23	.22	23	4.1	2.3	4.1	24	5.2	2.0	1.6	.58	.50	.95
24	.39	1.7	3.1	2.5	2.1	69	4.2	2.0	1.4	.56	.47	.81
25	.37	1.6	2.7	2.2	1.8	11	3.7	1.9	1.3	.57	.47	3.7
26	.24	9.1	2.6	1.5	1.8	6.2	12	1.8	1.3	.60	.43	30
27	.23	2.9	2.3	1.5	1.8	5.2	4.8	1.7	1.2	.58	.39	59
28	.22	1.1	4.6	1.4	1.6	6.2	3.7	1.6	1.1	.51	.40	4.6
29	.24	.85	3.9	1.4	---	15	3.5	1.5	1.1	1.4	.41	1.8
30	.24	.76	7.4	1.2	---	7.1	3.3	1.4	1.1	.53	.27	1.3
31	.72	---	4.1	1.3	---	4.6	---	24	---	.70	.25	---
TOTAL	14.00	123.70	179.97	113.07	123.40	423.3	343.6	104.8	78.4	35.87	32.82	168.12
MEAN	.45	4.12	5.81	3.65	4.41	13.7	11.5	3.38	2.61	1.16	1.06	5.60
MAX	2.8	39	65	32	25	91	96	24	11	5.6	8.5	59
MIN	.17	.29	.54	.97	.90	1.6	3.3	1.4	1.1	.51	.25	.19
CFM	.13	1.16	1.64	1.03	1.24	3.86	3.24	.95	.74	.33	.30	1.58
IN.	.15	1.30	1.89	1.19	1.30	4.45	3.61	1.10	.82	.38	.34	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

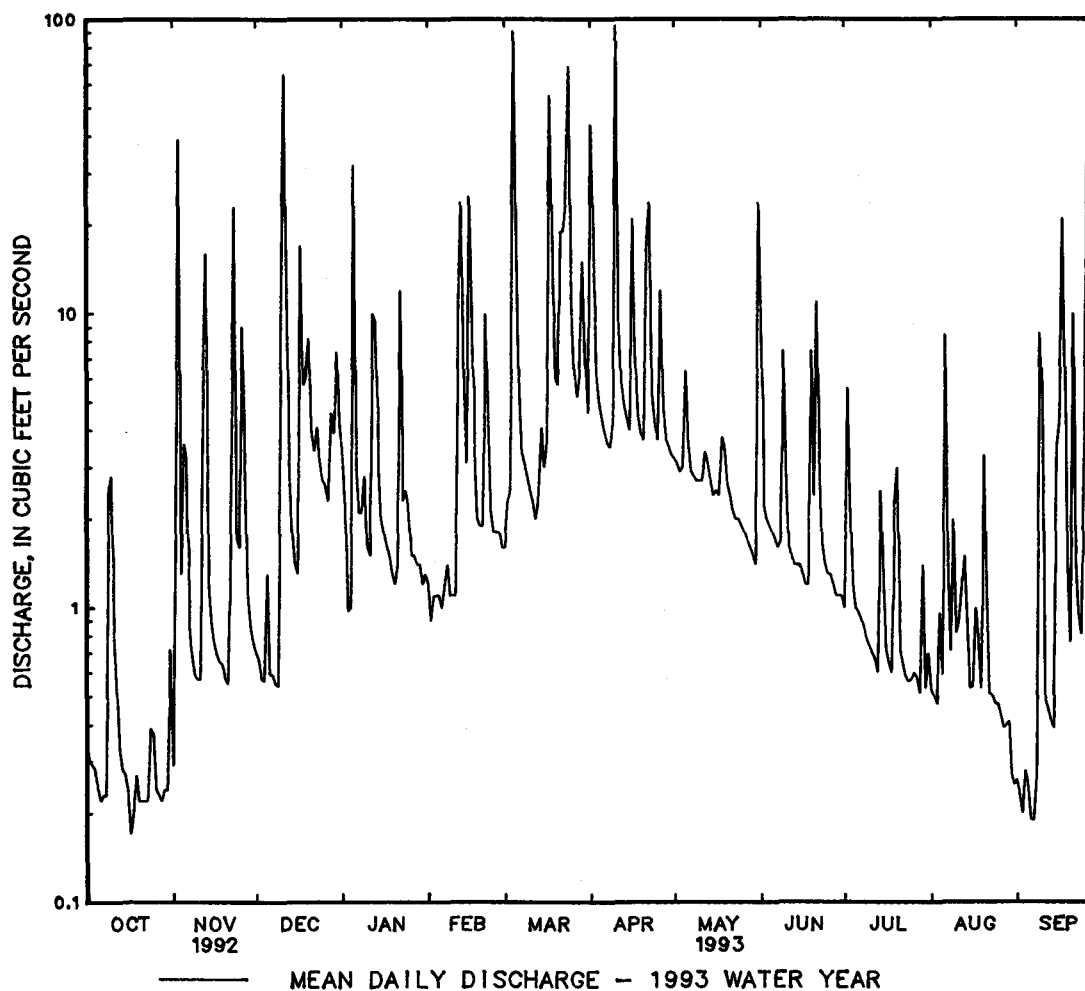
	1990	1991	1992	1993
MEAN	2.32	2.64	4.41	4.18
MAX	5.95	4.12	6.48	6.84
(WY)	1990	1993	1991	1993
MIN	.45	1.49	1.77	1.19
(WY)	1993	1992	1990	1992

01479197 MILL CREEK AT MILL CREEK ROAD AT HOCKESSIN, DE--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1990 - 1993	
ANNUAL TOTAL	943.95		1741.05			
ANNUAL MEAN	2.58		4.77		3.56	
HIGHEST ANNUAL MEAN					4.77	
LOWEST ANNUAL MEAN					2.22	
HIGHEST DAILY MEAN	65	Dec 11	96	Apr 10	96	Apr 10 1993
LOWEST DAILY MEAN	.11	Jul 22	.17	Oct 17	.11	Jul 22 1992
ANNUAL SEVEN-DAY MINIMUM	.20	Sep 15	.22	Oct 17	.20	Sep 15 1992
INSTANTANEOUS PEAK FLOW	199	Aug 11	411	Sep 27	413	Sep 11 1990
INSTANTANEOUS PEAK STAGE	4.80	Aug 11	5.79	Sep 27	5.80	Sep 11 1990
INSTANTANEOUS LOW FLOW	.07	(a)	.14	(b)	.07	(a)
ANNUAL RUNOFF (CFSM)	.73		1.35		1.01	
ANNUAL RUNOFF (INCHES)	9.92		18.30		13.66	
10 PERCENT EXCEEDS	5.6		10		6.6	
50 PERCENT EXCEEDS	.78		1.7		1.6	
90 PERCENT EXCEEDS	.23		.38		.50	

a July 21, 22, 1992.

b Sept. 3, 4, 7.



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 mi².

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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1915	*1,770	*5.69	Sep. 26	1100	1,420	5.13
Apr. 10	1200	1,730	5.62	Sep. 27	1600	1,670	5.53

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	32	45	43	46	329	95	175	32	19	26
2	20	21	31	41	37	49	224	91	62	40	19	26
3	20	216	30	40	38	59	135	86	54	59	18	25
4	19	44	29	40	40	579	117	84	51	38	19	26
5	18	34	33	174	39	320	109	100	51	34	25	23
6	18	48	30	69	41	114	104	93	50	32	44	20
7	17	32	29	54	37	85	99	83	47	31	43	26
8	18	27	29	52	40	78	95	77	47	29	24	24
9	28	25	28	53	39	72	94	76	54	28	23	28
10	40	25	32	48	38	67	700	75	59	27	22	67
11	25	24	445	45	39	64	205	73	46	26	20	19
12	33	25	188	71	46	60	146	73	44	26	28	16
13	23	116	74	91	165	71	128	79	43	24	30	16
14	21	39	55	66	89	80	121	73	42	28	22	19
15	20	31	48	54	64	67	118	68	41	33	20	22
16	19	29	46	51	129	65	232	67	40	26	22	44
17	18	28	114	49	171	285	191	67	38	24	21	102
18	18	28	96	46	81	280	127	73	38	23	23	112
19	19	27	55	44	57	109	119	83	48	25	20	34
20	19	26	61	42	52	94	111	72	54	43	29	25
21	18	25	54	43	53	151	113	67	82	27	83	57
22	18	32	47	107	77	178	279	63	77	23	24	34
23	18	218	49	59	81	165	128	61	42	22	21	26
24	19	55	47	51	56	672	114	58	38	21	20	24
25	20	43	42	53	48	230	108	57	36	21	19	24
26	18	50	41	46	49	156	152	54	34	21	22	338
27	18	63	38	46	49	129	139	52	35	22	23	523
28	18	41	45	45	47	139	108	51	33	20	17	124
29	19	36	50	44	---	217	102	50	33	24	20	49
30	18	33	56	41	---	157	98	48	32	20	18	39
31	21	---	52	42	---	118	---	81	---	19	21	---
TOTAL	639	1461	2006	1752	1745	4956	4845	2230	1526	868	779	1938
MEAN	20.6	48.7	64.7	56.5	62.3	160	161	71.9	50.9	28.0	25.1	64.6
MAX	40	218	445	174	171	672	700	100	175	59	83	523
MIN	17	20	28	40	37	46	94	48	32	19	17	16
CFSM	.44	1.04	1.38	1.20	1.33	3.40	3.44	1.53	1.08	.60	.53	1.37
IN.	.51	1.16	1.59	1.39	1.38	3.92	3.83	1.77	1.21	.69	.62	1.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1993, BY WATER YEAR (WY)

	MEAN	35.9	50.0	62.8	75.9	88.3	91.2	85.9	74.9	57.6	52.5	44.0	41.0
MAX	129	115	147	232	237	182	167	156	147	279	180	180	
(WY)	1972	1973	1984	1979	1979	1978	1958	1958	1972	1975	1955	1971	
MIN	11.1	18.8	18.9	16.8	33.3	27.3	35.1	24.2	21.7	12.7	9.79	13.7	
(WY)	1964	1966	1966	1981	1969	1981	1985	1955	1966	1963	1966	1964	

DELAWARE RIVER BASIN

41

01480000 RED CLAY CREEK AT WOODDALE, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1943 - 1993

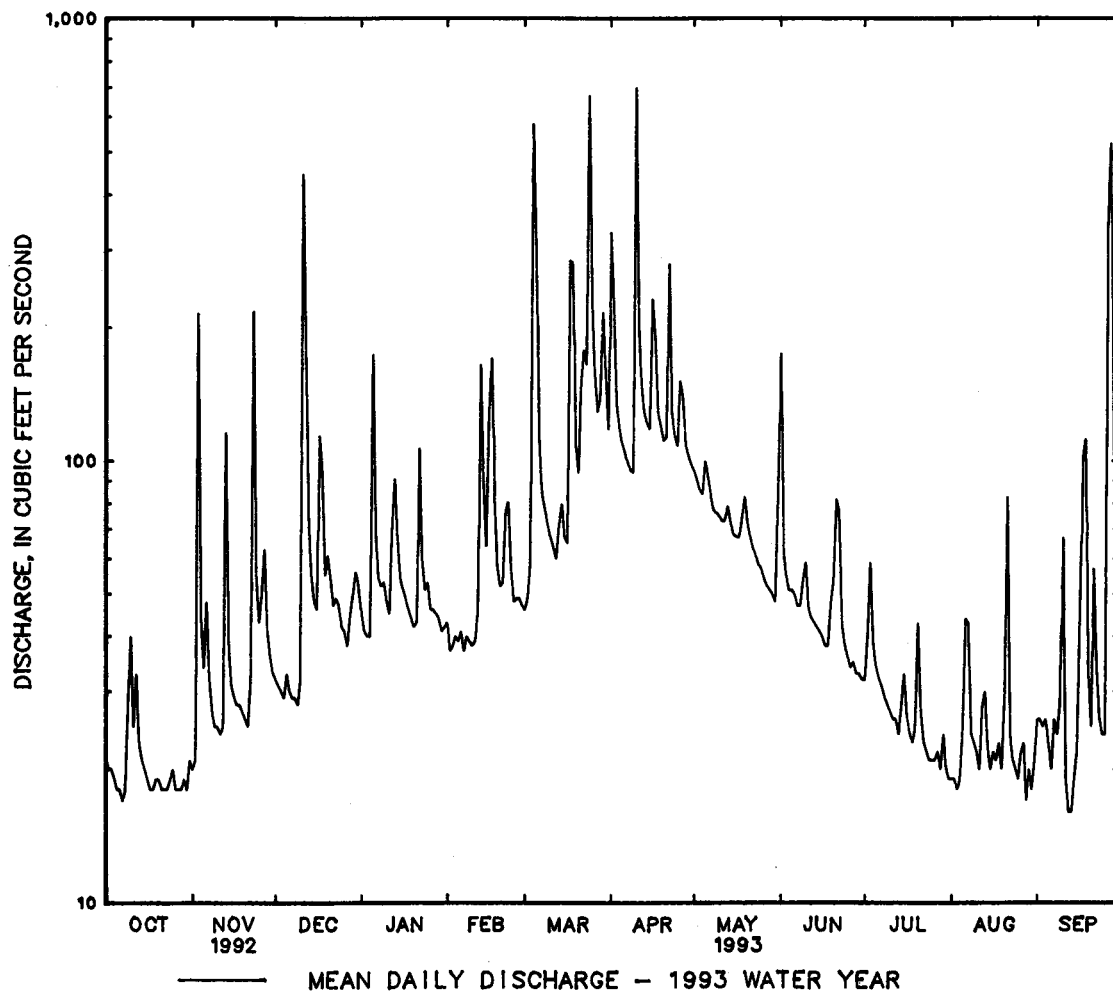
ANNUAL TOTAL	14561		24745		
ANNUAL MEAN	39.8		67.8		63.2
HIGHEST ANNUAL MEAN					104
LOWEST ANNUAL MEAN					32.3
HIGHEST DAILY MEAN	445	Dec 11	700	Apr 10	2430
LOWEST DAILY MEAN	15	(a)	16	(b)	4.5
ANNUAL SEVEN-DAY MINIMUM	16	Sep 15	18	Oct 17	4.9
INSTANTANEOUS PEAK FLOW	638	May 8	1770	Mar 4	(c)5010
INSTANTANEOUS PEAK STAGE	3.88	May 8	5.69	Mar 4	10.32
INSTANTANEOUS LOW FLOW	15	(d)	15	Sep 13	2.9
ANNUAL RUNOFF (CFSM)	.85		1.44		1.34
ANNUAL RUNOFF (INCHES)	11.52		19.59		18.27
10 PERCENT EXCEEDS	56		128		107
50 PERCENT EXCEEDS	31		44		44
90 PERCENT EXCEEDS	19		20		19

a Sept. 1, 2, 21.

b Sept. 12, 13.

c From rating curve extended above 3,900 ft³/s on basis of contracted-opening measurement at gage height 9.93 ft.

d Feb. 10, Aug. 6, 7, 10, 31, Sept. 1-3, 17-22, 24, 25.



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 mi².

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), 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 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2100	*2,280	*15.31	Sep. 26	1230	1,520	13.85
Apr. 10	1315	2,120	15.04	Sep. 27	1630	2,260	15.28

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	26	37	53	47	50	372	109	207	37	20	30
2	24	27	36	48	42	51	254	105	79	54	20	29
3	23	260	35	47	e43	61	167	100	68	74	19	29
4	23	54	32	47	44	732	144	97	63	46	18	30
5	22	42	39	205	43	445	134	112	63	39	28	28
6	20	56	35	79	45	154	127	108	62	36	52	21
7	20	39	33	60	43	111	120	94	58	35	57	28
8	20	34	33	57	44	102	115	88	57	33	28	42
9	35	31	32	58	44	94	115	86	79	31	24	36
10	50	30	41	54	42	85	865	84	74	30	24	104
11	32	30	456	50	43	83	251	83	56	29	22	24
12	39	33	205	78	58	76	184	84	53	28	33	19
13	28	148	85	100	187	90	160	89	52	28	35	18
14	25	48	64	73	100	111	148	84	50	29	25	20
15	24	38	57	59	71	99	143	78	49	39	21	24
16	23	34	54	56	136	88	263	80	48	29	27	54
17	22	32	118	54	183	338	239	77	45	26	24	117
18	23	32	115	51	87	324	153	82	45	24	26	147
19	24	31	64	48	e62	144	140	98	55	26	22	44
20	23	30	70	47	e60	120	131	83	73	52	27	30
21	23	30	63	48	57	181	139	78	100	31	98	68
22	23	39	55	115	84	218	276	73	100	27	29	43
23	23	243	57	66	91	206	152	70	51	25	24	33
24	24	66	55	57	61	744	133	68	45	24	22	29
25	26	49	49	58	54	258	126	66	43	23	21	31
26	23	52	49	51	53	194	165	64	41	23	23	404
27	23	76	47	50	53	159	164	62	41	24	27	663
28	23	47	51	49	51	167	124	60	39	22	19	161
29	24	42	58	48	---	231	116	59	38	29	22	59
30	24	38	65	45	---	192	113	56	38	22	19	46
31	27	---	61	46	---	143	---	139	---	20	21	---
TOTAL	788	1737	2251	1957	1928	6051	5733	2616	1872	995	877	2411
MEAN	25.4	57.9	72.6	63.1	68.9	195	191	84.4	62.4	32.1	28.3	80.4
MAX	50	260	456	205	187	744	865	139	207	74	98	663
MIN	20	26	32	45	42	50	113	56	38	20	18	18
CFSM	.49	1.10	1.39	1.20	1.31	3.73	3.65	1.61	1.19	.61	.54	1.53
IN.	.56	1.23	1.60	1.39	1.37	4.30	4.07	1.86	1.33	.71	.62	1.71

e Estimated

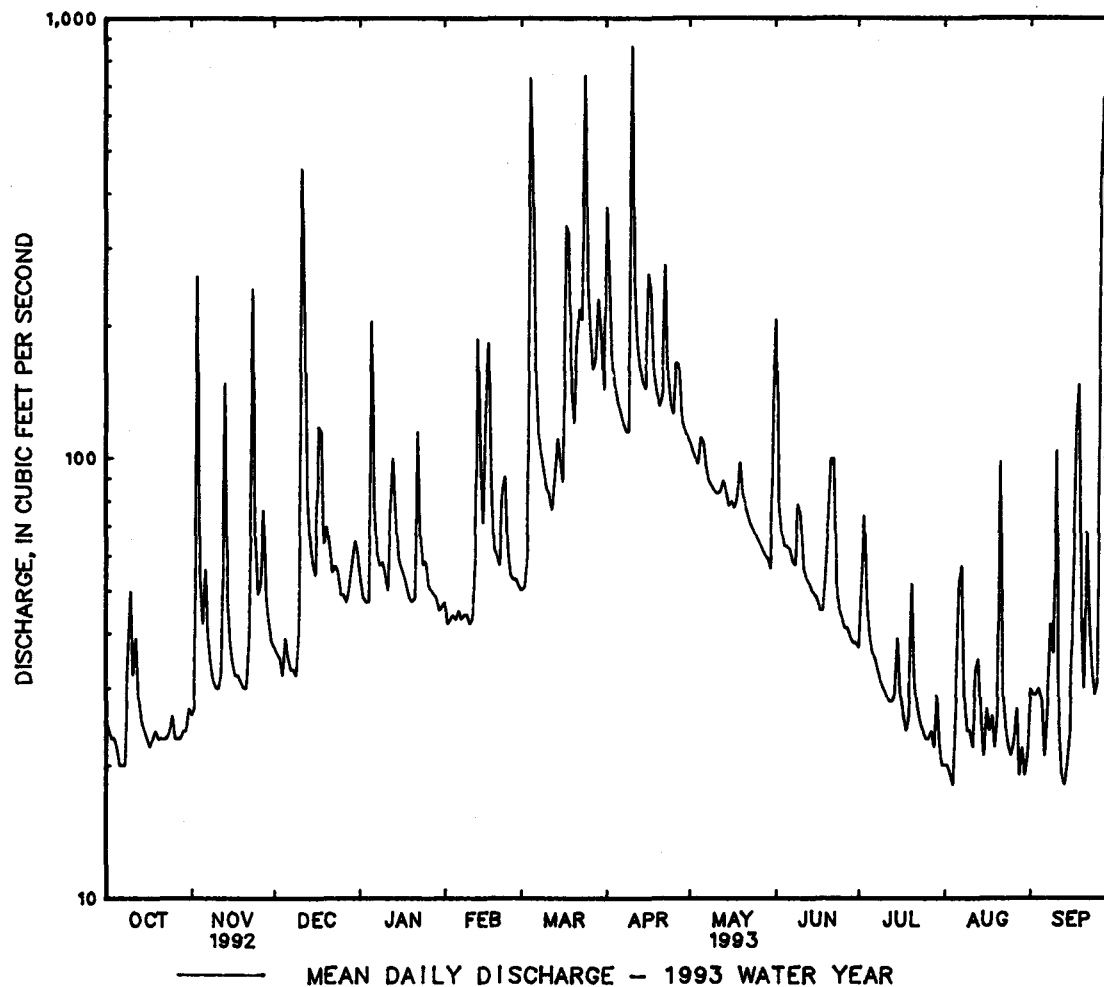
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1993, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993
MEAN	44.4	56.8	60.9	75.7	63.6
MAX	103	75.9	81.2	112	81.7
(WY)	1990	1990	1991	1990	1993
MIN	25.4	33.0	42.1	37.9	40.8
(WY)	1993	1992	1989	1992	1990

01480015 RED CLAY CREEK NEAR STANTON, DE--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1989 - 1993
ANNUAL TOTAL	16783	29216	
ANNUAL MEAN	45.9	80.0	70.9
HIGHEST ANNUAL MEAN			94.7
LOWEST ANNUAL MEAN			42.3
HIGHEST DAILY MEAN	456 Dec 11	865 Apr 10	2480 Jul 5 1989
LOWEST DAILY MEAN	17 Sep 2	18 (a)	15 (b)
ANNUAL SEVEN-DAY MINIMUM	19 Sep 15	21 Jul 30	17 Sep 7 1991
INSTANTANEOUS PEAK FLOW	835 Dec 11	2280 Mar 4	5320 Jul 5 1989
INSTANTANEOUS PEAK STAGE	12.33 Dec 11	15.31 Mar 4	19.35 Jul 5 1989
INSTANTANEOUS LOW FLOW	16 (c)	18 (d)	14 (f)
ANNUAL RUNOFF (CFSM)	.88	1.53	1.35
ANNUAL RUNOFF (INCHES)	11.91	20.74	18.38
10 PERCENT EXCEEDS	67	159	120
50 PERCENT EXCEEDS	36	51	52
90 PERCENT EXCEEDS	23	23	25

a Aug. 4, Sept. 13.
b Sept. 12, 13, 1991.
c Aug. 7, Sept. 1, 2.
d Aug. 4, 28, 31, Sept. 13, 14.
f Oct. 14, 1988, Sept. 3, 4, 1991.



DELAWARE RIVER BASIN

01480095 LITTLE MILL CREEK NEAR NEWPORT, DE

LOCATION.--Lat 39°43'54", long 75°36'14", New Castle County, Hydrologic Unit 02040205, on left bank at downstream side of railroad bridge at the Wilsmere Yards, 0.5 mi downstream from Chestnut Run, 1.2 mi northeast Newport, and 3.1 mi upstream from mouth.

DRAINAGE AREA.--5.24 mi².

PERIOD OF RECORD.--October 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 58.74 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (no gage-height record), which are poor. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1555	532	4.43	Sep. 26	Unknown	Unknown	Unknown
Apr. 16	1755	467	4.26	Sep. 27	Unknown	Unknown	Unknown
May 31	2130	*683	*4.85				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.6	2.5	3.7	3.0	4.5	84	6.1	40	e2.1	1.3	e1.2
2	1.6	3.3	2.3	3.2	2.3	4.7	29	5.8	5.9	e12	1.3	e1.1
3	1.6	40	2.2	3.0	2.5	5.1	11	5.5	4.8	e4.4	1.2	e1.1
4	1.6	3.8	2.1	3.1	2.6	130	9.4	5.2	4.4	e3.2	1.2	e1.2
5	1.4	4.8	3.8	74	2.5	27	8.4	9.9	4.2	e2.7	1.3	e1.1
6	1.4	4.7	2.6	7.5	2.8	11	7.8	6.9	4.1	e2.5	17	e1.0
7	1.4	2.5	2.6	5.0	2.6	8.0	7.4	5.4	3.9	e2.4	4.0	e3.2
8	1.5	2.2	2.3	5.6	3.0	9.6	7.0	4.8	3.8	e2.2	1.8	e13
9	7.6	1.9	2.2	6.6	3.0	7.7	8.9	4.7	26	e2.1	1.7	e10
10	3.7	1.9	14	4.3	2.9	6.3	128	4.4	e8.8	e2.0	1.4	e19
11	3.6	1.9	90	4.1	2.5	6.1	15	4.3	e4.8	e1.9	1.3	e4.5
12	3.1	5.7	22	15	20	5.7	9.7	7.0	e4.0	e1.8	8.1	e2.5
13	1.8	25	8.1	13	46	8.0	8.0	6.3	e3.6	e1.8	4.6	e2.0
14	1.6	3.3	5.3	6.3	10	11	7.2	4.2	e2.8	e3.2	1.8	e1.8
15	1.5	2.5	4.3	4.7	6.1	7.4	7.0	3.7	e2.7	e2.0	1.4	e1.9
16	1.5	2.3	3.9	4.3	48	10	75	7.8	e2.6	e1.8	9.1	e2.8
17	1.6	2.1	23	4.1	16	112	17	5.3	e2.5	e1.7	4.1	e45
18	1.6	2.2	9.6	3.4	7.4	27	8.6	7.5	e2.4	e1.7	2.6	e11
19	1.5	2.2	5.7	3.2	5.3	12	7.8	9.2	e7.0	e1.7	1.7	e4.0
20	1.5	2.2	10	3.0	5.1	12	8.1	5.0	e6.2	e15	6.7	e2.7
21	1.5	2.1	5.5	3.7	5.3	29	19	4.2	e11	e2.5	4.0	e17
22	1.4	9.8	4.6	18	22	25	33	3.6	e5.2	e1.8	1.7	e5.4
23	1.4	26	5.8	5.1	9.1	31	9.2	3.4	e3.5	1.7	1.6	e3.0
24	2.2	4.1	3.9	5.9	5.9	96	7.5	3.3	e3.0	1.5	1.5	e3.4
25	2.0	3.8	3.2	5.1	4.8	17	7.3	3.2	e2.8	1.5	1.3	e6.0
26	1.4	5.3	3.3	3.6	5.0	12	22	3.1	e2.7	1.5	1.3	e66
27	1.4	4.8	3.1	3.6	5.1	9.7	11	3.0	e2.6	1.5	1.3	e52
28	1.4	3.2	5.5	3.2	4.6	13	8.1	3.1	e2.5	1.4	1.3	e5.6
29	1.4	2.6	4.6	3.1	---	22	7.1	3.2	e3.1	7.4	1.3	e4.0
30	1.4	2.5	8.4	2.9	---	11	5.8	3.2	e2.3	1.7	1.2	e3.5
31	3.3	---	4.7	3.0	---	8.8	---	103	---	1.4	1.2	---
TOTAL	61.6	180.3	271.1	234.3	255.4	699.6	594.3	255.3	183.2	92.1	91.3	296.0
MEAN	1.99	6.01	8.75	7.56	9.12	22.6	19.8	8.24	6.11	2.97	2.95	9.87
MAX	7.6	40	90	74	48	130	128	103	40	15	17	66
MIN	1.4	1.6	2.1	2.9	2.3	4.5	5.8	3.0	2.3	1.4	1.2	1.0
CFSM	.38	1.15	1.67	1.44	1.74	4.31	3.78	1.57	1.17	.57	.56	1.88
IN.	.44	1.28	1.92	1.66	1.81	4.97	4.22	1.81	1.30	.65	.65	2.10

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1993, BY WATER YEAR (WY)

	1991	1992	1993	1991	1992	1993	1991	1992	1993	1991	1992	1993
MEAN	2.72	4.35	8.90	8.38	6.20	14.6	11.5	6.77	6.08	4.78	4.38	6.78
MAX	3.92	6.01	11.1	13.9	9.12	22.6	19.8	8.24	6.38	6.12	6.81	9.87
(WY)	1991	1993	1991	1991	1993	1993	1993	1993	1991	1991	1991	1993
MIN	1.99	3.06	6.85	3.66	4.59	10.5	5.32	4.74	5.75	2.97	2.95	4.82
(WY)	1993	1992	1992	1992	1991	1991	1992	1991	1992	1993	1993	1992

DELAWARE RIVER BASIN

45

01480095 LITTLE MILL CREEK NEAR NEWPORT, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

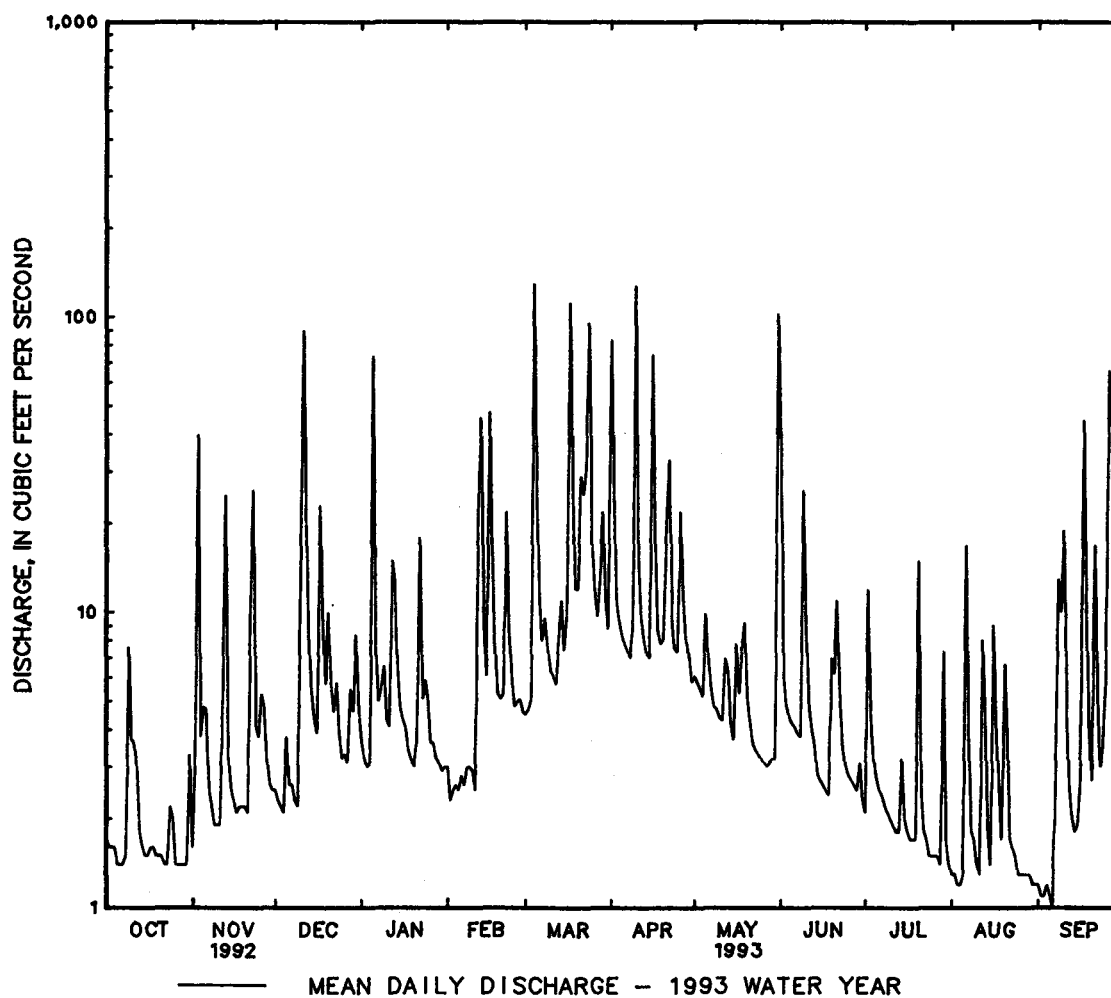
FOR 1993 WATER YEAR

WATER YEARS 1991 - 1993

ANNUAL TOTAL	2071.4	3214.5		
ANNUAL MEAN	5.66	8.81	7.12	
HIGHEST ANNUAL MEAN			8.81	1993
LOWEST ANNUAL MEAN			5.28	1992
HIGHEST DAILY MEAN	90	130	130	Mar 4 1993
LOWEST DAILY MEAN	1.3	(e)1.0	(e)1.0	Sep 6 1993
ANNUAL SEVEN-DAY MINIMUM	1.4	1.1	1.1	Aug 31 1993
INSTANTANEOUS PEAK FLOW	428	683	683	May 31 1993
INSTANTANEOUS PEAK STAGE	4.15	4.85	6.51	Jan 11 1991
INSTANTANEOUS LOW FLOW	1.3	UNKNOWN	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.08	1.68	1.36	
ANNUAL RUNOFF (INCHES)	14.71	22.82	18.47	
10 PERCENT EXCEEDS	9.8	17	14	
50 PERCENT EXCEEDS	3.0	4.0	3.3	
90 PERCENT EXCEEDS	1.6	1.5	1.6	

e Estimated.

a Sept. 22, Oct. 5, 6, 17.



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 mi².

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. 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	0845	*9,440	*9.78	Apr. 11	0015	5,750	8.10
Mar. 18	0215	4,200	7.08	Apr. 17	0345	4,080	6.97
Mar. 24	1700	6,020	8.24				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	131	254	338	320	322	2560	754	845	200	118	104
2	130	132	247	312	263	335	1990	716	408	218	116	100
3	123	1160	237	303	299	419	1410	689	371	375	114	97
4	122	582	220	314	303	2030	1200	659	364	264	110	167
5	118	330	241	957	288	6190	1160	697	358	215	119	205
6	109	385	227	635	300	1690	1040	750	360	193	158	116
7	110	334	209	462	260	1020	979	646	336	178	396	102
8	107	252	195	446	321	1060	935	593	329	190	204	152
9	150	223	190	451	300	931	899	569	370	156	151	177
10	669	194	204	376	293	776	3340	549	449	144	128	311
11	383	186	2560	348	303	631	3060	551	327	140	126	196
12	360	194	1800	418	325	547	1650	558	301	136	154	118
13	246	791	912	606	761	619	1430	602	296	129	139	102
14	186	550	669	639	604	641	1050	579	290	138	126	105
15	160	321	770	490	444	669	966	525	273	658	116	101
16	134	279	732	451	620	609	1350	506	270	263	124	175
17	131	250	959	443	1280	1420	2540	503	261	199	123	289
18	121	243	1160	380	749	2800	1190	508	254	166	127	347
19	120	233	588	356	496	1280	1020	609	261	187	123	188
20	122	205	561	335	459	988	972	543	266	265	167	137
21	122	194	571	341	425	1120	910	526	546	203	659	217
22	118	228	411	642	480	1460	2200	470	413	164	217	187
23	117	1210	401	541	544	1490	1300	447	297	150	135	143
24	119	710	385	459	405	4940	1000	431	251	140	119	128
25	166	376	332	506	343	2930	943	418	234	142	117	122
26	143	371	329	451	359	1960	1050	397	229	134	114	797
27	125	372	296	378	348	1620	1500	376	227	141	106	1300
28	110	302	325	366	332	1540	959	370	220	134	103	1150
29	115	278	374	354	---	1680	873	362	212	137	197	321
30	117	262	399	316	---	1760	833	337	210	129	138	272
31	130	---	393	323	---	1480	---	533	---	120	111	---
TOTAL	5124	11278	17151	13737	12224	46957	42309	16773	9828	6008	4955	7926
MEAN	165	376	553	443	437	1515	1410	541	328	194	160	264
MAX	669	1210	2560	957	1280	6190	3340	754	845	658	659	1300
MIN	107	131	190	303	260	322	833	337	210	120	103	97
(†)	-1.6	+2.0	-20.0	+1.2	+1.2	+18.9	-1.5	-0.8	-1.7	-2.9	-5.1	+5.8
MEAN*	163	378	533	444	438	1534	1408	540	326	191	155	270
CFSM*	0.52	1.20	1.70	1.41	1.40	4.89	4.49	1.72	1.04	0.61	0.49	0.86
IN*	0.60	1.34	1.96	1.63	1.46	5.64	5.01	1.98	1.16	0.70	0.56	0.96

† 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

47

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 - 1993, BY WATER YEAR (WY) [REGULATED, UNADJUSTED]

	287	358	507	610	637	698	720	626	467	422	268	303
MEAN	287	358	507	610	637	698	720	626	467	422	268	303
MAX	918	793	1306	1868	1610	1515	1773	1168	1079	1243	502	1095
(WY)	1980	1980	1984	1979	1979	1993	1983	1989	1975	1975	1989	1979
MIN	125	157	145	119	246	230	223	304	172	161	137	108
(WY)	1987	1982	1981	1981	1992	1981	1985	1977	1985	1986	1987	1980

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

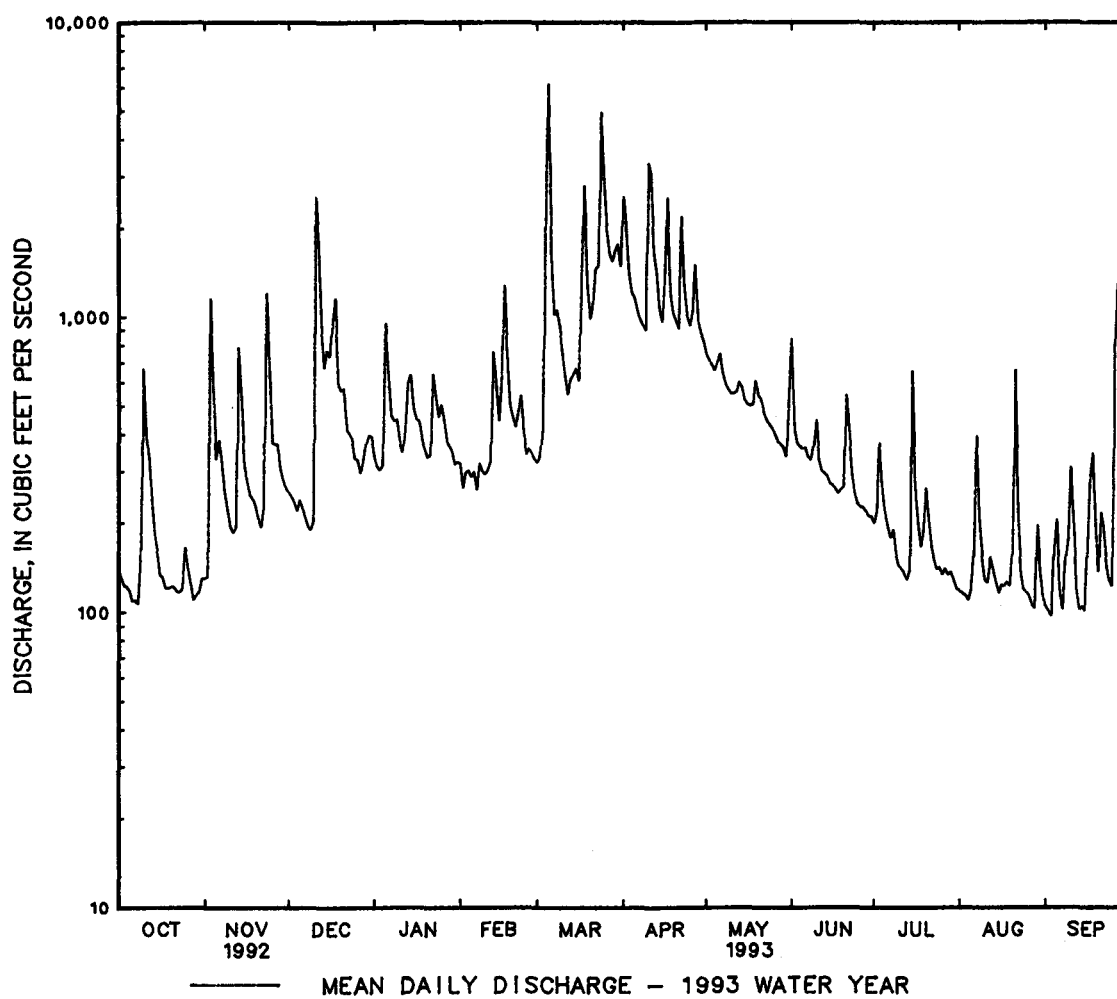
WATER YEARS 1974 - 1993

ANNUAL TOTAL	117347		194270			
ANNUAL MEAN	321		532		491	
ANNUAL MEAN*	321		532		491	
HIGHEST ANNUAL MEAN					835	1984
HIGHEST ANNUAL MEAN*					839	1984
LOWEST ANNUAL MEAN					228	1981
LOWEST ANNUAL MEAN*					229	1981
HIGHEST DAILY MEAN	2560	Dec 11	6190	Mar 5	12100	Jan 25 1979
LOWEST DAILY MEAN	94	Sep 21	97	Sep 3	81	Sep 18 1986
ANNUAL SEVEN-DAY MINIMUM	99	Sep 16	117	Oct 2	87	Sep 13 1986
INSTANTANEOUS PEAK FLOW	3260	Mar 27	9440	Mar 5	22400	Jan 25 1979
INSTANTANEOUS PEAK STAGE	6.24	Mar 27	9.78	Mar 5	13.22	Jan 25 1979
INSTANTANEOUS LOW FLOW	66	Oct 29	66	Oct 29	45	Sep 26 1986
ANNUAL RUNOFF (CFSM)	1.02		1.70		1.56	
ANNUAL RUNOFF (CFSM)*	1.02		1.70		1.56	
ANNUAL RUNOFF (INCHES)	13.90		23.02		21.26	
ANNUAL RUNOFF (INCHES)*	13.90		23.02		21.26	
10 PERCENT EXCEEDS	553		1160		905	
50 PERCENT EXCEEDS	264		332		352	
90 PERCENT EXCEEDS	122		122		142	

a From rating curve extended above 18,000 ft³/s.

b During period of ice effect.

* Adjusted for change in reservoir contents since November 1973.



49

LOCATION.-- Lat 39°26'00", long 75°41'01", New Castle County, Hydrologic Unit 02040205, on right bank just upstream from Noxontown Lake Dam, 15 ft upstream from bridge on State Road 38, 2.0 mi southwest of Odessa, 2.4 mi southeast of Middletown, 10.1 mi upstream from mouth of Appoquinimink River.

REMARKS.--Records good except those for estimated daily discharges (no gage-height record), which are poor. Outflow from lake controlled by stop logs at outlet. No stop logs were removed during the water year. Several measurements of water temperature were made during the year.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.2	e5.8	4.4	8.9	6.5	10	42	18	23	5.5	2.2	2.6
2	e4.1	e5.6	4.6	8.0	6.5	10	49	18	17	6.7	2.3	2.8
3	e4.4	e13	3.7	7.1	7.0	11	33	19	14	9.9	2.3	3.7
4	e3.9	e11	3.6	8.2	7.1	83	25	18	13	8.9	2.6	2.5
5	e3.7	e7.9	5.2	19	7.4	99	22	19	12	7.1	2.4	2.4
6	e3.6	8.7	4.3	20	8.2	38	19	19	11	5.6	5.6	2.2
7	e3.5	7.1	4.1	14	8.2	16	18	18	11	5.1	8.2	2.3
8	e4.0	6.1	3.4	14	8.1	11	18	18	11	3.8	6.2	5.8
9	e5.2	6.1	2.6	17	8.1	12	18	18	13	2.8	5.5	8.4
10	e6.2	7.0	5.7	15	8.2	12	38	18	11	2.7	4.6	7.0
11	e5.0	5.6	187	13	7.8	12	41	17	9.4	2.5	4.6	4.1
12	e4.4	6.3	81	13	14	11	29	17	8.9	3.7	7.5	3.0
13	e3.9	9.4	25	16	46	26	22	21	8.6	2.5	8.3	2.9
14	e3.4	8.3	15	14	26	32	20	17	8.3	5.1	7.2	2.7
15	e3.0	7.6	11	12	16	22	19	16	8.7	8.0	5.9	2.2
16	e3.2	5.1	9.6	11	17	18	44	17	8.2	5.2	6.1	1.7
17	e2.9	3.8	12	10	20	55	74	17	7.9	3.3	7.2	5.2
18	e3.1	3.9	15	8.4	15	91	37	16	7.8	2.6	7.4	16
19	e3.3	6.7	12	8.2	11	36	25	18	7.4	4.3	6.4	8.0
20	e3.2	5.7	12	8.2	9.9	25	21	17	7.9	16	5.5	3.5
21	e3.5	5.6	11	8.4	12	28	20	15	8.1	9.6	4.6	5.1
22	e3.3	7.7	9.5	13	21	31	34	14	10	6.4	4.4	5.5
23	e3.3	27	9.5	11	23	26	26	13	7.1	4.7	4.4	5.8
24	e4.0	21	7.8	11	16	51	22	14	6.4	2.9	4.3	5.5
25	e4.8	12	7.9	9.1	12	41	20	13	5.9	2.6	2.6	6.1
26	e4.6	10	6.8	8.3	11	26	21	11	5.9	3.1	2.6	9.2
27	e4.3	12	5.7	8.3	11	24	23	11	6.6	3.2	2.7	9.5
28	e4.0	9.1	7.5	8.2	10	29	21	11	6.4	2.8	2.9	8.4
29	e4.3	6.9	8.6	7.6	---	26	19	9.9	5.6	4.6	2.5	5.2
30	e4.5	5.1	11	7.6	---	23	18	9.5	5.5	3.9	2.5	3.8
31	e6.2	---	11	8.0	---	20	---	10	---	2.5	2.6	---
TOTAL	125.0	257.1	517.5	345.5	374.0	955	838	487.4	286.6	157.6	144.1	153.1
MEAN	4.03	8.57	16.7	11.1	13.4	30.8	27.9	15.7	9.55	5.08	4.65	5.10
MAX	6.2	27	187	20	46	99	74	21	23	16	8.3	16
MIN	2.9	3.8	2.6	7.1	6.5	10	18	9.5	5.5	2.5	2.2	1.7
CFSM	.46	.97	1.89	1.26	1.51	3.48	3.16	1.78	1.08	.57	.53	.58
IN.	.53	1.08	2.18	1.45	1.57	4.01	3.52	2.05	1.20	.66	.61	.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

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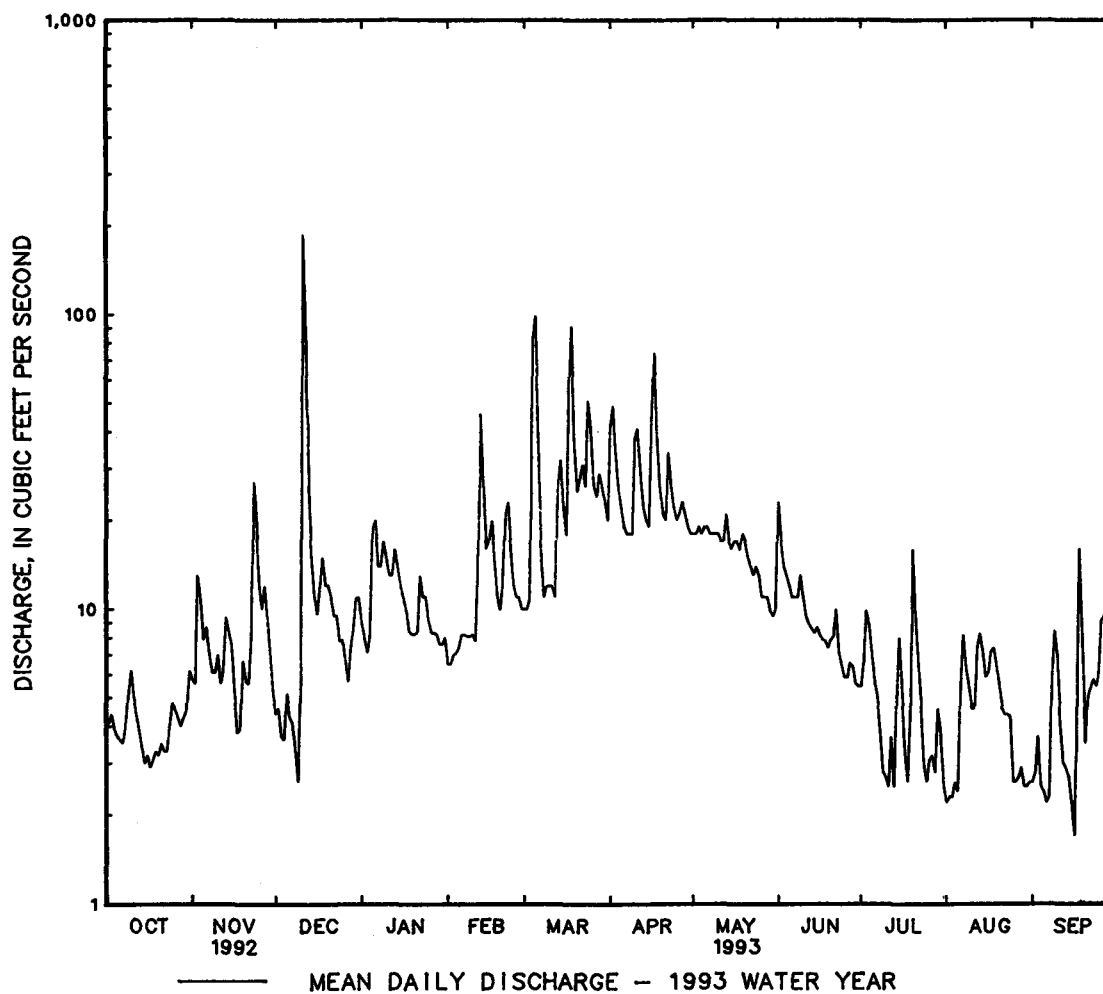
01483153 NOXONTOWN LAKE OUTLET NEAR MIDDLETOWN, DE--Continued

SUMMARY STATISTICS

FOR 1993 WATER YEAR

ANNUAL TOTAL	4640.9	
ANNUAL MEAN	12.7	
HIGHEST DAILY MEAN	187	Dec 11
LOWEST DAILY MEAN	1.7	Sep 16
ANNUAL SEVEN-DAY MINIMUM	2.6	Jul 30
INSTANTANEOUS PEAK FLOW	242	Dec 11
INSTANTANEOUS PEAK STAGE	2.28	Dec 11
INSTANTANEOUS LOW FLOW	(a).90	Dec 5
ANNUAL RUNOFF (CFSM)	1.44	
ANNUAL RUNOFF (INCHES)	19.51	
10 PERCENT EXCEEDS	24	
50 PERCENT EXCEEDS	8.3	
90 PERCENT EXCEEDS	3.1	

a Wind effect.



DELAWARE RIVER BASIN

51

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 mi².

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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0900	*129	*3.38	Mar. 17	2245	118	3.25
Mar. 4	2145	128	3.37	Apr. 17	0045	90	2.96

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	1.8	3.5	3.4	5.0	22	7.9	6.6	1.2	.52	.18
2	1.4	1.9	1.9	3.0	2.7	5.6	26	7.3	2.9	1.0	.50	.16
3	1.7	5.4	1.8	3.0	2.7	5.5	15	6.8	3.0	1.2	.47	.15
4	1.3	3.9	1.8	3.1	3.2	4.4	12	6.6	3.1	1.1	.46	.15
5	1.1	2.4	2.1	1.4	3.2	3.9	11	8.0	2.8	1.2	.42	.12
6	1.1	3.7	2.3	11	3.2	14	9.8	7.9	2.5	1.4	.37	.12
7	1.0	2.6	2.4	5.5	2.8	11	9.2	6.2	2.1	1.3	.28	.12
8	1.1	1.8	1.7	6.8	3.3	9.2	8.8	5.7	2.0	1.4	.32	.11
9	1.6	1.6	1.8	10	3.4	8.5	8.7	5.1	2.1	1.3	.38	.10
10	2.4	1.6	2.7	7.9	3.0	7.7	26	4.7	2.0	1.0	.33	.10
11	1.8	1.6	7.0	5.4	3.1	7.2	21	4.4	1.7	.80	.26	.09
12	1.6	1.9	2.4	7.9	7.7	6.2	12	4.3	1.6	.58	.23	.09
13	1.5	3.5	10	8.6	27	10	10	8.0	1.6	.48	.20	.09
14	1.2	2.7	5.9	6.8	11	20	9.5	4.9	1.6	.42	.17	.09
15	1.0	1.8	4.7	5.1	6.1	14	9.0	3.9	1.5	.58	.16	.09
16	1.2	1.7	4.4	4.7	8.4	12	24	3.6	1.4	.66	.15	.11
17	.79	1.6	7.0	4.4	12	45	39	3.6	1.4	.71	.14	.13
18	.90	1.6	9.2	4.1	7.3	45	13	4.5	1.3	.68	.15	3.0
19	1.0	1.7	5.6	3.9	4.4	17	11	8.0	1.3	.73	.15	2.2
20	.95	1.7	5.7	3.6	4.0	15	9.9	6.1	1.2	1.1	.18	1.2
21	1.1	1.7	5.2	3.9	5.5	18	11	4.5	1.3	1.4	.25	.96
22	1.0	2.6	4.3	7.0	15	17	22	3.7	1.9	1.2	.25	.81
23	1.0	6.7	4.2	5.2	13	14	12	3.4	1.5	1.1	.30	.80
24	1.3	4.1	4.0	4.4	7.3	29	10	2.9	1.3	1.1	.30	.73
25	1.8	2.9	3.4	4.3	4.9	18	9.3	2.6	1.3	1.1	.38	.69
26	1.5	3.0	3.5	3.8	5.1	13	12	2.4	1.3	.93	.43	.63
27	1.2	3.7	3.2	3.9	5.2	12	13	2.3	1.3	.70	.52	.90
28	1.1	2.8	3.9	3.7	5.0	13	9.6	2.2	1.3	.52	.50	1.4
29	1.2	2.7	4.1	3.5	---	13	8.7	2.0	1.2	.44	.49	.95
30	1.2	2.0	4.6	3.2	---	13	8.4	1.9	1.2	.49	.40	.75
31	2.2	---	4.2	3.5	---	11	---	2.2	---	.51	.29	---
TOTAL	40.84	79.0	211.4	168.7	182.9	511.9	422.9	147.6	57.3	28.33	9.95	17.02
MEAN	1.32	2.63	6.82	5.44	6.53	16.5	14.1	4.76	1.91	.91	.32	.57
MAX	2.4	6.7	7.0	14	27	45	39	8.0	6.6	1.4	.52	3.0
MIN	.79	1.6	1.7	3.0	2.7	5.0	8.4	1.9	1.2	.42	.14	.09
CFSM	.34	.68	1.77	1.41	1.70	4.29	3.66	1.24	.50	.24	.08	.15
IN.	.39	.76	2.04	1.63	1.77	4.95	4.09	1.43	.55	.27	.10	.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1957	2.42	8.83	1972	.30	1969
1958	3.50	10.4	1957	.73	1966
1959	4.91	14.8	1973	.71	1966
1960	6.19	18.1	1978	1.51	1981
1961	7.11	19.2	1979	2.44	1992
1962	8.32	20.3	1958	1.98	1966
1963	7.55	21.0	1983	2.16	1966
1964	5.49	13.9	1989	1.26	1977
1965	3.62	24.4	1972	.54	1966
1966	2.90	17.0	1989	.077	1966
1967	1.88	6.80	1971	.013	1966
1968	2.15	12.2	1960	.21	1968

DELAWARE RIVER BASIN

01483200 BLACKBIRD CREEK AT BLACKBIRD, DE--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1957 - 1993	
ANNUAL TOTAL	1110.91		1877.84		4.66	
ANNUAL MEAN	3.04		5.14		9.05	
HIGHEST ANNUAL MEAN					1.40	
LOWEST ANNUAL MEAN					338	
HIGHEST DAILY MEAN	70	Dec 11	70	Dec 11		Jun 22 1972
LOWEST DAILY MEAN	.32	Sep 3	.09	(a)	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	.41	Sep 1	.09	Sep 9	.00	Jul 17 1966
INSTANTANEOUS PEAK FLOW	129	Dec 11	129	Dec 11	(c) 712	Jun 22 1972
INSTANTANEOUS PEAK STAGE	3.38	Dec 11	3.38	Dec 11	5.04	Jun 22 1972
INSTANTANEOUS LOW FLOW	.26	Sep 3	.09	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	.79		1.34		1.21	
ANNUAL RUNOFF (INCHES)	10.73		18.14		16.44	
10 PERCENT EXCEEDS	4.8		12		9.5	
50 PERCENT EXCEEDS	1.8		2.7		2.7	
90 PERCENT EXCEEDS	.90		.38		.53	

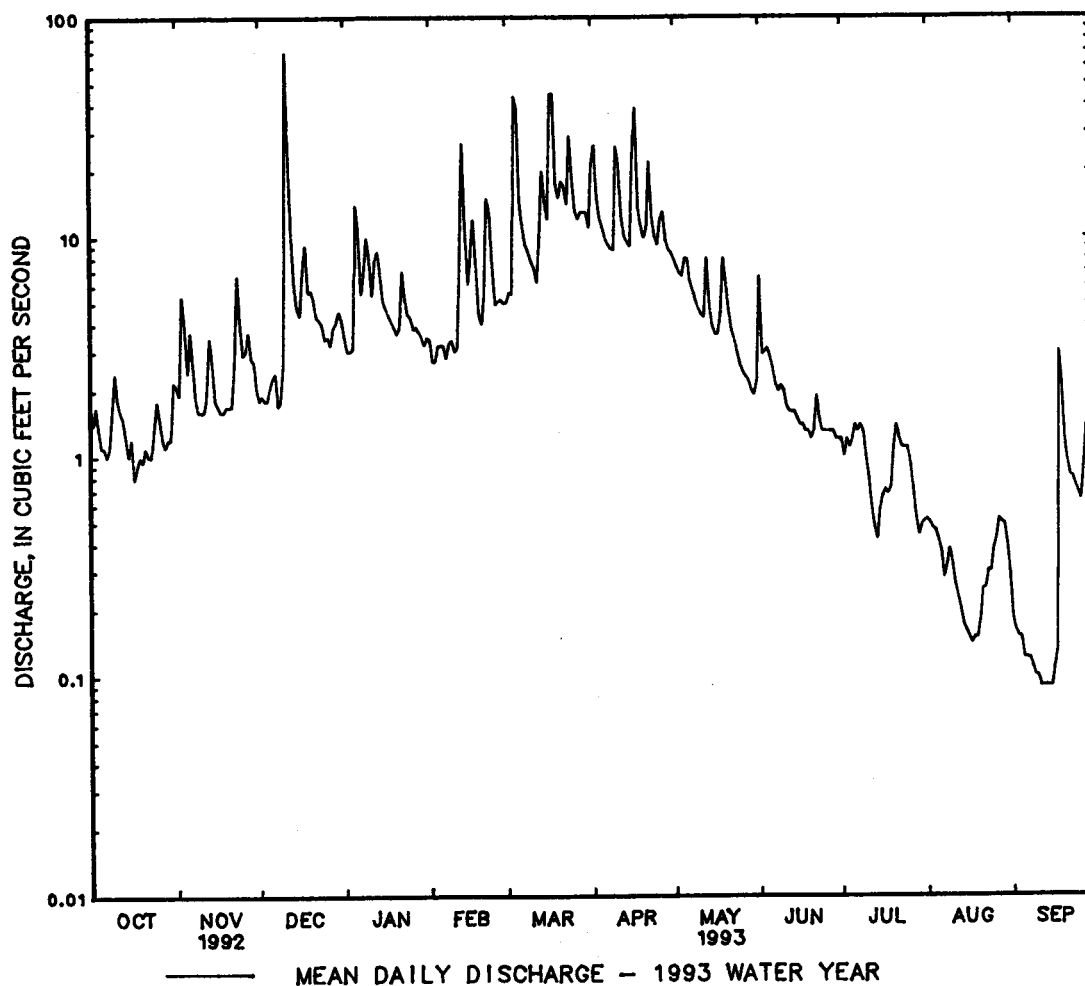
a Sept. 11-15.

b Sept. 11, 1965; July 12-15, 17-31, Aug. 1-12, 14, 15, 18-31, Sept. 1-20, 1966.

c From rating curve extended above 200 ft³/s on basis of Type III culvert measurement of peak flow.

d Sept. 12-15.

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



53

LOCATION.-- Lat. 39°10'37", long. 75°34'25", Kent County, Hydrologic Unit 02040207, on right bank at downstream side of bridge on State Highway 15, at Chestnut Grove, 1.5 mi upstream from Cahoon Branch, 1.9 mi upstream from mouth, and 2.9 mi northwest of Dover.

PERIOD OF RECORD.--October 1992 to September 1993.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 24.99 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (no gage-height record), which are poor.

Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0615	83	4.13	Mar. 18	0600	*168	*5.05
Mar. 5	0415	161	4.99	Apr. 17	0915	77	4.06
Mar. 14	1615	106	4.42				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.7	4.1	4.5	7.7	7.4	10	24	8.8	3.8	1.1	.37	.30
2	e2.6	3.4	4.4	6.6	4.9	11	43	8.3	2.7	1.1	.35	.26
3	e2.4	12	4.4	6.0	5.7	11	35	7.8	2.9	1.4	.32	.26
4	e2.3	7.8	4.1	6.3	6.6	58	21	7.7	2.9	1.6	.31	.52
5	e2.3	5.6	4.4	17	6.6	129	17	8.7	2.9	1.0	.26	.63
6	e2.1	10	4.2	21	6.6	63	15	8.2	2.8	.86	.53	.50
7	e2.0	6.6	4.1	12	5.7	34	14	7.0	2.4	.80	1.2	.46
8	e2.2	5.2	3.8	14	6.7	21	14	5.9	2.3	.73	.76	.54
9	e3.2	4.7	4.0	24	6.6	17	13	5.4	2.4	.70	.71	.88
10	e7.3	4.4	5.9	25	6.1	15	28	5.0	2.0	.64	.63	.84
11	e6.2	4.2	65	16	6.0	15	38	4.7	1.7	.57	.46	.52
12	e3.8	4.4	42	18	13	13	20	5.2	1.6	.53	.45	.44
13	e2.8	6.8	18	22	41	25	16	9.2	1.7	.57	.40	.36
14	e2.3	5.6	11	22	32	90	14	5.6	1.6	1.4	.37	.28
15	e2.2	4.8	8.8	15	15	63	13	4.6	1.6	3.3	.35	.27
16	e2.1	4.5	8.2	14	15	40	19	4.2	1.6	1.1	.52	.26
17	e2.0	4.2	12	12	27	81	63	5.6	1.5	.77	8.2	.67
18	e1.5	4.1	20	11	17	136	37	5.1	1.4	.70	5.9	1.0
19	e2.0	4.1	13	9.3	11	63	18	11	1.3	.73	1.4	.94
20	e1.5	4.1	13	8.4	9.3	35	15	11	1.3	2.1	.92	.67
21	e1.7	4.1	12	8.5	11	27	14	6.9	1.3	1.1	.83	.81
22	e1.8	5.5	9.3	15	28	23	21	5.0	1.2	.77	.67	.86
23	e1.9	6.8	9.0	14	30	19	16	4.1	1.0	.68	.59	.75
24	2.1	5.4	8.6	11	16	27	13	3.5	.99	.65	.50	.55
25	4.1	5.3	7.2	13	11	31	12	3.2	.96	.60	.44	.44
26	2.7	6.8	7.3	9.8	10	21	13	3.0	.94	.61	.43	.66
27	2.4	9.7	6.3	9.2	10	18	17	2.8	1.0	.63	.32	.96
28	2.3	6.4	6.8	8.6	10	29	12	2.6	.99	.54	.34	1.2
29	2.3	5.4	8.3	8.3	---	24	10	2.4	.94	.45	.38	.67
30	2.5	5.0	9.4	7.3	---	23	9.5	2.1	1.2	.40	.38	.52
31	5.1	---	8.6	7.6	---	19	---	2.2	---	.39	.36	---
TOTAL	85.4	171.0	347.6	399.6	375.2	1191	614.5	176.8	52.92	28.52	29.65	18.02
MEAN	2.75	5.70	11.2	12.9	13.4	38.4	20.5	5.70	1.76	.92	.96	.60
MAX	7.3	12	65	25	41	136	63	11	3.8	3.3	8.2	1.2
MIN	1.5	3.4	3.8	6.0	4.9	10	9.5	2.1	.94	.39	.26	.26
CFSM	.31	.64	1.25	1.44	1.50	4.29	2.29	.64	.20	.10	.11	.07
IN.	.35	.71	1.44	1.66	1.56	4.94	2.55	.73	.22	.12	.12	.07

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

[illegible]

01483670 MUDSTONE BRANCH AT CHESTNUT GROVE, DE--Continued

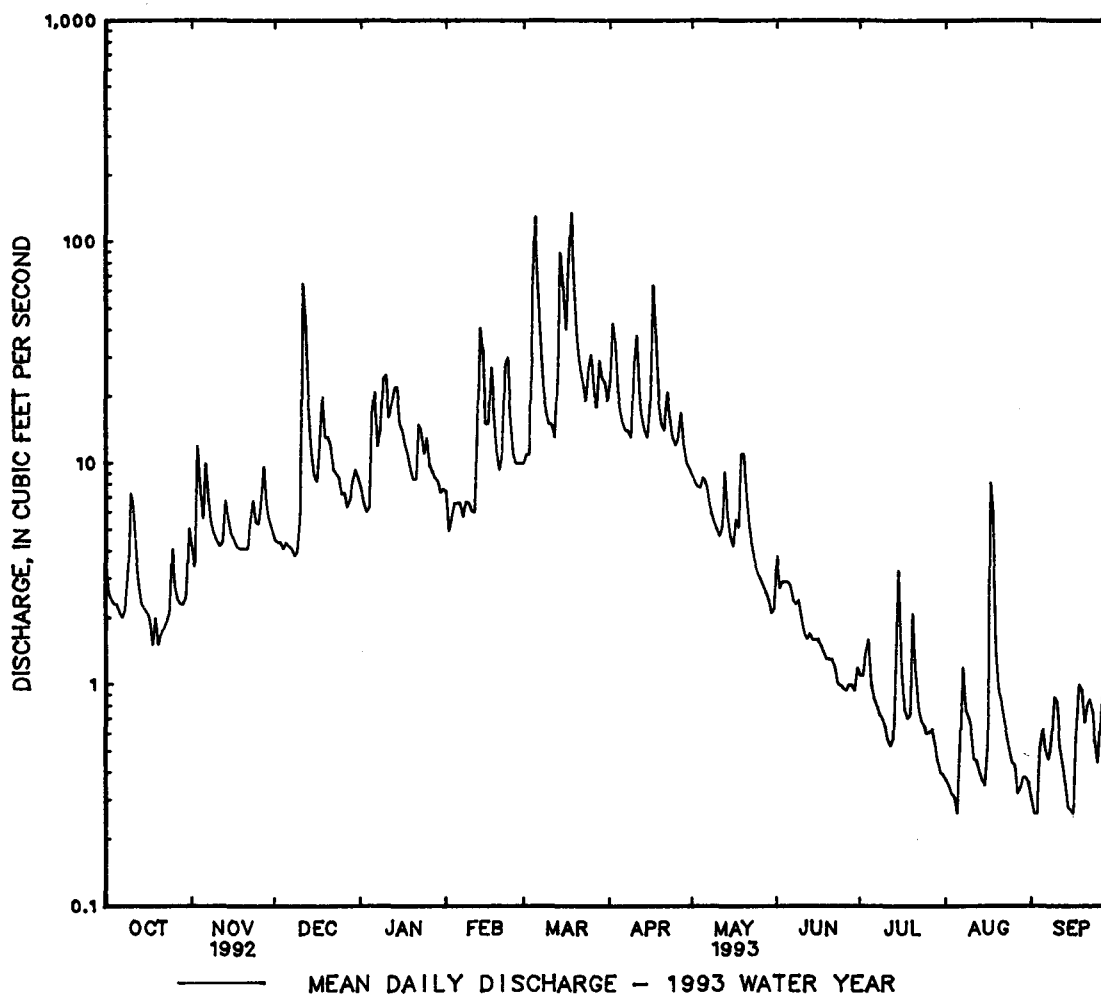
SUMMARY STATISTICS

FOR 1993 WATER YEAR

ANNUAL TOTAL	3490.21	
ANNUAL MEAN	9.56	
HIGHEST DAILY MEAN	136	Mar 18
LOWEST DAILY MEAN	.26	(a)
ANNUAL SEVEN-DAY MINIMUM	.33	Aug 28
INSTANTANEOUS PEAK FLOW	168	Mar 18
INSTANTANEOUS PEAK STAGE	5.05	Mar 18
INSTANTANEOUS LOW FLOW	.21	(b)
ANNUAL RUNOFF (CFSM)	1.07	
ANNUAL RUNOFF (INCHES)	14.49	
10 PERCENT EXCEEDS	22	
50 PERCENT EXCEEDS	4.9	
90 PERCENT EXCEEDS	.53	

a Aug. 5, Sept. 2, 3, 16.

b Sept. 14, 15.



55

LOCATION.--Lat 39°09'49", long 75°31'10", Kent County, Hydrologic Unit 02040207, on left bank 150 ft upstream from Division Street Bridge in Dover, 1,950 ft downstream from Silver Lake, and 12.5 mi upstream from mouth.

PERIOD OF RECORD.--January 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 0.00 ft above sea level. Prior to June 1973, at datum 0.50 ft higher.

REMARKS.--Records good except those for estimated daily discharges (backwater from tides), which are fair. Flow affected by Silver Lake. Flow occasionally affected by tide and wind effect. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 518 ft³/s, Mar. 18, gage height, 5.40 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	15	15	30	31	37	95	35	20	4.8	1.7	1.8
2	9.0	15	14	25	21	39	145	32	14	4.3	1.6	1.9
3	8.3	41	14	23	19	40	154	30	14	7.7	1.3	1.7
4	7.8	39	13	22	23	191	110	29	13	20	1.6	8.1
5	7.8	35	17	45	24	451	79	32	13	9.0	1.1	6.6
6	6.2	33	11	59	27	279	64	35	13	5.4	3.8	4.0
7	6.0	29	14	51	23	155	57	30	10	4.2	7.9	4.2
8	6.3	22	12	47	25	97	53	26	9.6	3.7	4.9	7.3
9	10	16	12	69	25	72	50	24	10	3.3	5.1	12
10	26	13	22	76	25	60	94	22	9.3	3.2	11	11
11	21	12	180	63	24	55	150	20	8.2	2.3	6.2	5.8
12	13	12	232	55	51	49	116	22	6.2	2.2	4.0	2.7
13	9.6	20	103	64	113	127	74	39	6.3	1.5	5.5	1.8
14	8.1	16	57	68	121	252	58	29	5.8	24	4.9	1.5
15	7.9	15	41	59	76	261	52	21	5.9	38	3.3	1.6
16	7.2	13	32	48	58	182	81	19	6.1	12	4.1	1.8
17	7.0	12	40	42	69	223	193	23	5.1	5.9	45	2.3
18	4.4	12	51	38	74	474	188	23	5.2	3.5	74	8.1
19	7.2	12	52	34	49	300	102	44	5.4	5.1	27	7.9
20	4.5	12	47	32	36	174	65	48	4.7	25	11	4.1
21	6.0	12	41	31	43	121	58	37	5.0	12	8.5	6.5
22	6.5	18	37	43	74	103	78	25	5.2	6.5	5.2	5.9
23	6.7	22	33	49	99	89	74	18	4.2	4.1	3.7	4.4
24	8.6	19	33	44	77	100	56	15	2.9	3.2	3.1	4.2
25	14	21	27	41	48	115	48	14	2.3	2.9	2.9	2.7
26	10	25	27	38	44	101	54	13	2.7	2.3	2.9	5.4
27	8.8	31	24	34	40	83	68	12	4.0	2.3	2.5	7.2
28	7.3	28	25	32	37	104	57	10	3.6	2.6	2.8	8.0
29	7.5	21	29	32	---	111	44	10	3.6	2.5	2.3	5.2
30	6.7	16	32	27	---	99	38	8.5	6.1	2.3	1.9	3.9
31	18	---	32	27	---	87	---	9.0	---	1.6	1.7	---
TOTAL	289.4	607	1319	1348	1376	4631	2555	754.5	224.4	227.4	262.5	149.6
MEAN	9.34	20.2	42.5	43.5	49.1	149	85.2	24.3	7.48	7.34	8.47	4.99
MAX	26	41	232	76	121	474	193	48	20	38	74	12
MIN	4.4	12	11	22	19	37	38	8.5	2.3	1.5	1.1	1.5
CFSM	.29	.63	1.33	1.36	1.54	4.68	2.67	.76	.23	.23	.27	.16
IN.	.34	.71	1.54	1.57	1.60	5.40	2.98	.88	.26	.27	.31	.17

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1993, BY WATER YEAR (WY)

MEAN	19.4	25.0	36.3	50.1	57.7	71.3	57.5	37.2	28.1	18.8	23.0	20.1
MAX	93.5	103	131	156	141	171	180	117	122	88.6	144	128
(WY)	1972	1973	1973	1978	1961	1958	1983	1989	1989	1975	1958	1960
MIN	.40	1.91	1.35	1.64	11.0	10.7	13.5	9.86	4.36	2.10	.69	1.92
(WY)	1964	1962	1966	1966	1966	1966	1966	1963	1986	1966	1966	1970

ST. JONES RIVER BASIN

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

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1958 - 1993	
ANNUAL TOTAL	8418.5		13743.8		36.0	
ANNUAL MEAN	23.0		37.7		69.3	
HIGHEST ANNUAL MEAN					1972	
LOWEST ANNUAL MEAN					1966	
HIGHEST DAILY MEAN	247	May 9	474	Mar 18	1460	Sep 13 1960
LOWEST DAILY MEAN	1.3	Apr 9	1.1	Aug 5	.00	(a)
ANNUAL SEVEN-DAY MINIMUM	3.2	Aug 5	1.6	Jul 30	.40	Sep 30 1963
INSTANTANEOUS PEAK FLOW	UNKNOWN	UNKNOWN	518	Mar 18	1900	Sep 13 1960
INSTANTANEOUS PEAK STAGE	(b)5.17	Dec 11	5.40	Mar 18	(c)9.45	Sep 13 1960
INSTANTANEOUS LOW FLOW	1.0	(d)	1.0	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	.72		1.18		1.13	
ANNUAL RUNOFF (INCHES)	9.82		16.03		15.35	
10 PERCENT EXCEEDS	43		94		84	
50 PERCENT EXCEEDS	13		20		20	
90 PERCENT EXCEEDS	4.8		3.2		3.7	

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

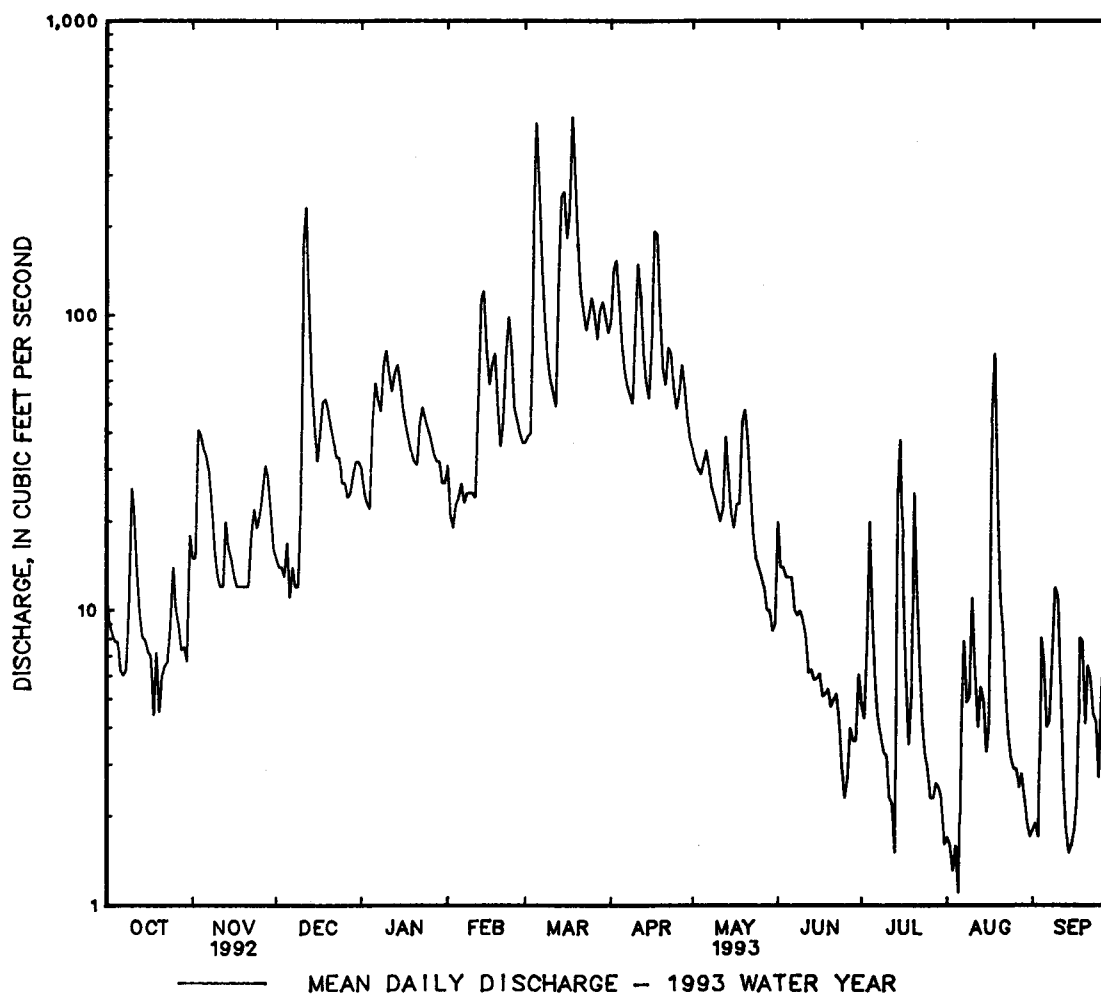
b Backwater from storm tide.

c From floodmarks.

d Apr. 9, 10.

f Aug. 5, 6.

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



57

LOCATION.--Lat 38°54'20", long 75°30'49", Kent County, Hydrologic Unit 02040207, on left bank 15 ft upstream from culverts on State Highway 384, 0.8 mi south of Houston, and 1.2 mi upstream from Blairs Pond and mouth.

PERIOD OF RECORD.--May 1958 to current year.

GAGE.--Water-stage recorder and concrete control; timber control prior to Nov. 8, 1979. Datum of gage is 35.67 ft above sea level.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1993, BY WATER YEAR (WY)

MEAN	1.82	2.06	3.12	4.40	5.17	6.10	5.51	4.42	3.08	2.69	2.35	2.01
MAX	4.69	6.55	11.5	10.7	14.6	11.9	11.0	10.5	6.17	16.8	9.38	10.1
(WY)	1959	1973	1973	1978	1961	1979	1983	1984	1979	1975	1967	1960
MIN	.37	.44	.48	.57	1.06	1.70	1.90	1.88	1.22	.42	.51	.44
(WY)	1987	1988	1966	1966	1966	1966	1985	1977	1986	1977	1987	1986

MISPILLION RIVER BASIN

01484100 BEAVERDAM BRANCH AT HOUSTON, DE--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1958 - 1993	
ANNUAL TOTAL	916.10		1211.54			
ANNUAL MEAN	2.50		3.32			
HIGHEST ANNUAL MEAN					3.51	
LOWEST ANNUAL MEAN					5.86	1961
HIGHEST DAILY MEAN	16	Aug 17	35	Mar 14	1.20	1966
LOWEST DAILY MEAN	.96	(a)	.31	Sep 3	(b).00	May 30 1984
ANNUAL SEVEN-DAY MINIMUM	1.1	Jul 14	.35	Aug 28	.06	Jul 28 1977
INSTANTANEOUS PEAK FLOW	39	Aug 17	54	Mar 14	(c)176	Jul 19 1977
INSTANTANEOUS PEAK STAGE	3.47	Aug 17	3.78	Mar 14	5.55	Sep 12 1960
INSTANTANEOUS LOW FLOW	.86	(d)	.25	Sep 3	.00	Sep 12 1960
ANNUAL RUNOFF (CFSM)	.88		1.17		1.24	(f)
ANNUAL RUNOFF (INCHES)	12.04		15.93		16.87	
10 PERCENT EXCEEDS	3.5		6.5		6.5	
50 PERCENT EXCEEDS	2.2		2.5		2.7	
90 PERCENT EXCEEDS	1.5		.59		.80	

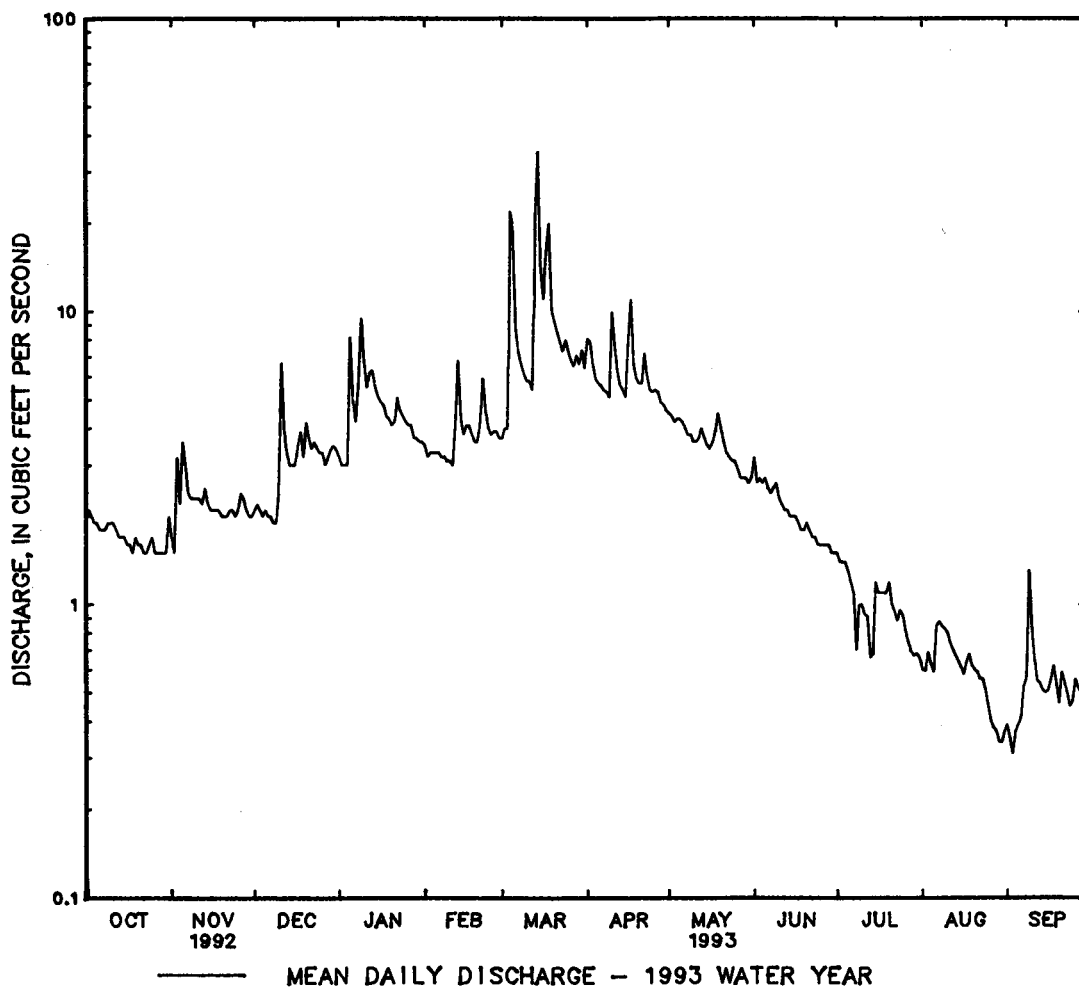
a July 17, 18.

b Result of pumpage for irrigation.

c From rating curve extended above 75 ft³/s.

d July 17, Aug 11.

f July 18-30, 1977.



59

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.--

SPECIFIC CONDUCTANCE: January 1993 to September 1993.
WATER TEMPERATURE: January 1993 to September 1993.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 53,300 microsiemens, Aug. 16, 1993; minimum, 32,900 microsiemens, Apr. 18, 1993.
WATER TEMPERATURE: Maximum, 26.8°C, July 12, 1993; minimum, 0.2°C, Feb. 2, 3, Mar. 1, 1993.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 53,300 microsiemens, Aug. 16; minimum, 32,900 microsiemens, Apr. 18.
WATER TEMPERATURE: Maximum, 26.8°C, July 12; minimum, 0.2°C, Feb. 2, 3, Mar. 1.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, JANUARY 1993 TO SEPTEMBER 1993

[illegible]

DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, JANUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	50500	45900	48900	46500	43900	45200	46200	40300	44300	42100	36000	38500
2	46100	41500	44300	46900	43900	45100	44300	39800	41400	41300	36500	38700
3	45700	40400	43500	46500	44700	45400	40400	36900	38800	42400	37000	39600
4	45700	43800	44800	47200	45200	45900	37500	36200	36900	42400	37500	39700
5	49300	43500	46800	46400	44800	45600	42300	36700	39000	42900	38600	40500
6	49800	47600	49000	46700	43400	44500	41200	38200	39500	43300	38700	40400
7	49800	46300	48000	46400	43700	44900	40700	36700	38500	42200	39300	40600
8	49300	47500	48100	46400	44100	45400	40600	37300	38800	42900	40100	41600
9	48800	46200	47700	45700	43800	44900	42200	36700	40100	43700	40200	42000
10	49000	46700	47800	46100	44600	45400	43700	40900	42600	43200	41000	42100
11	50500	47800	48500	46400	43900	45400	42500	37500	40000	43300	41500	42100
12	50500	47800	49300	46700	43900	45200	42100	37900	39100	42200	40000	41500
13	48400	47000	47900	46800	45200	46300	38500	33200	34900	40900	38200	40200
14	47400	43700	45900	46000	34700	40700	38700	33600	35100	42000	38100	39600
15	47500	45000	46300	45400	35900	38600	43900	33000	39300	43500	38500	41200
16	49200	47200	48500	46500	42200	45300	45100	41300	43900	44100	41500	42800
17	48500	44200	46900	46800	45000	46300	44100	34600	40100	43400	40000	41200
18	46600	43800	45500	45200	39100	41800	39300	32900	35000	43500	39900	41900
19	44900	42100	44000	44600	39100	41200	44200	33700	38600	42700	40100	41300
20	48500	43400	46700	44500	40300	42700	44600	41000	42700	42700	39500	40300
21	48500	46800	47700	43600	39800	41900	44000	41600	42700	41600	38500	39500
22	48100	47100	47800	43500	40100	41800	42800	36000	39100	41200	39500	40100
23	48200	47100	47500	43800	40700	42700	38300	36100	37500	42500	39500	40600
24	47500	44600	46400	44800	42000	43500	42200	37000	39300	43800	40200	42400
25	47400	43200	45200	43500	41100	42200	42700	39600	41200	44400	42700	43600
26	47900	45700	46900	44200	40200	42000	42800	40800	41800	44900	42900	43700
27	48000	46000	46800	43700	40400	42700	41700	38300	39700	44400	42800	43300
28	46400	44300	45700	44800	42600	43700	43400	38100	40000	45200	43000	43700
29	---	---	---	44500	40800	42400	41900	36700	39300	45200	43800	44200
30	---	---	---	42900	39600	41600	41700	36900	39000	45800	42400	43600
31	---	---	---	45800	37900	41500	---	---	---	47100	43100	45400
MONTH	50500	40400	46900	47200	34700	43600	46200	32900	39600	47100	36000	41500
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	46700	44200	45000	47500	46300	46800	50700	41800	46100	45200	39500	44100
2	46200	43400	44500	47900	46700	47100	51300	43900	48400	45000	37400	43700
3	46600	44100	45100	48000	46700	47200	51200	42800	47600	44100	36300	43200
4	46600	44700	45200	47900	46900	47200	51100	42600	47600	44500	38600	43000
5	46700	45000	45800	47500	46600	47200	51600	44300	48800	44500	38500	43300
6	46400	44400	45300	48100	46900	47500	51500	42700	49100	44100	43400	43800
7	45900	44300	44900	48000	46900	47400	51600	43400	48800	43700	36100	42000
8	45900	44500	45000	47700	46800	47200	51700	41700	45900	43700	35800	42200
9	45900	44500	45100	47500	46800	47000	52000	44200	47200	43400	39700	43100
10	45100	44300	44700	47300	46200	46700	52100	43800	47600	43200	41900	42500
11	44500	43700	44100	46800	46100	46500	52300	38300	45600	42600	41200	41800
12	45400	42900	43700	46600	45300	46200	52400	43300	51200	43400	38400	42500
13	44900	42600	43900	46400	44800	45700	52700	44100	50700	43500	36300	41400
14	44900	42900	43500	47100	45200	46000	52700	40200	46400	43500	36600	42900
15	46100	43400	44500	46700	46100	46500	52900	42100	45800	44200	41900	42800
16	46300	44200	45300	46600	45700	46200	53300	44600	47500	43300	41800	42500
17	46700	45000	45400	46600	37800	44200	46900	45600	46400	43100	40000	42400
18	46800	44700	45600	47500	45800	46300	46400	42900	45400	42900	37400	41100
19	46800	45300	45700	47500	45900	46800	46100	39000	44900	42500	38100	41400
20	46600	44800	45500	47600	46300	46900	46300	40900	45500	42600	36500	40100
21	47200	45300	46300	47300	46400	47000	46000	39400	44900	42700	36500	40000
22	47100	46100	46600	48000	47000	47500	46200	39500	44400	42600	35600	41500
23	46700	45400	46100	48300	47300	47800	46300	39000	43600	42300	36700	40600
24	47500	45900	46800	48700	47800	48200	46200	40100	44600	42200	36700	41200
25	48300	46400	47100	48900	48200	48500	46100	40100	44500	42500	35900	40900
26	48300	45600	47100	49100	48500	48800	45700	38400	44600	42700	36500	40800
27	47700	46400	47300	49500	48900	49200	45600	39600	44000	43000	36900	42100
28	47500	46700	47000	49500	48700	49100	45500	38000	43700	43100	42700	42900
29	47400	46200	46800	49600	49000	49300	45300	38200	42700	43100	42500	42800
30	47400	46400	46700	49800	43300	47700	45300	38200	43100	42800	37900	42200
31	---	---	---	50300	44300	48800	45200	33400	43900	---	---	---
MONTH	48300	42600	45500	50300	37800	47200	53300	33400	46100	45200	35600	42200

DELAWARE BAY

61

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

WATER TEMPERATURE, DEGREES CELSIUS, JANUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	7.7	6.1	7.0
6	---	---	---	---	---	---	---	---	---	7.4	6.2	6.9
7	---	---	---	---	---	---	---	---	---	7.0	6.5	6.7
8	---	---	---	---	---	---	---	---	---	7.1	6.6	6.8
9	---	---	---	---	---	---	---	---	---	6.7	5.9	6.3
10	---	---	---	---	---	---	---	---	---	5.9	5.0	5.4
11	---	---	---	---	---	---	---	---	---	5.7	4.8	5.3
12	---	---	---	---	---	---	---	---	---	5.8	5.2	5.6
13	---	---	---	---	---	---	---	---	---	6.1	5.5	5.8
14	---	---	---	---	---	---	---	---	---	5.8	5.4	5.6
15	---	---	---	---	---	---	---	---	---	5.5	4.9	5.3
16	---	---	---	---	---	---	---	---	---	5.5	5.0	5.3
17	---	---	---	---	---	---	---	---	---	5.1	4.6	4.9
18	---	---	---	---	---	---	---	---	---	4.9	4.3	4.6
19	---	---	---	---	---	---	---	---	---	4.5	3.9	4.3
20	---	---	---	---	---	---	---	---	---	4.9	2.5	4.0
21	---	---	---	---	---	---	---	---	---	5.2	4.1	4.7
22	---	---	---	---	---	---	---	---	---	5.9	5.2	5.6
23	---	---	---	---	---	---	---	---	---	5.6	5.0	5.4
24	---	---	---	---	---	---	---	---	---	6.3	4.8	5.7
25	---	---	---	---	---	---	---	---	---	6.3	5.2	5.7
26	---	---	---	---	---	---	---	---	---	5.5	4.6	5.0
27	---	---	---	---	---	---	---	---	---	5.1	4.5	4.9
28	---	---	---	---	---	---	---	---	---	5.0	4.0	4.5
29	---	---	---	---	---	---	---	---	---	5.1	3.7	4.7
30	---	---	---	---	---	---	---	---	---	4.1	3.3	3.7
31	---	---	---	---	---	---	---	---	---	4.6	3.7	4.2
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.6	1.9	3.9	1.5	.2	.8	6.9	4.8	5.6	13.5	10.1	11.8
2	1.9	.2	.6	2.2	1.0	1.6	7.0	5.5	6.3	13.7	10.6	12.2
3	2.5	.2	1.4	2.6	2.0	2.3	7.6	6.1	6.8	12.9	10.6	11.7
4	2.9	1.9	2.4	3.0	2.3	2.6	7.3	6.4	6.9	13.2	10.7	11.9
5	3.8	2.2	3.1	3.4	2.7	3.1	7.4	5.8	6.4	13.2	11.2	12.1
6	3.6	2.7	3.3	3.9	3.1	3.4	6.4	6.0	6.2	14.8	11.2	13.0
7	3.3	2.1	2.7	5.0	3.2	3.9	7.8	5.9	6.5	14.7	12.4	13.5
8	3.4	2.7	3.1	5.0	3.8	4.4	8.6	6.3	7.0	14.2	12.9	13.5
9	3.2	2.4	2.9	5.9	4.1	4.8	8.4	6.7	7.7	14.9	12.7	13.9
10	3.8	2.6	3.3	5.1	4.2	4.4	8.3	7.5	7.8	15.3	13.5	14.5
11	3.8	3.2	3.5	5.1	4.0	4.5	10.3	7.9	9.1	16.4	13.9	15.3
12	3.7	3.4	3.6	4.8	4.0	4.4	10.1	8.2	9.5	17.0	15.3	16.1
13	3.5	3.3	3.5	4.4	3.7	3.9	10.9	9.2	10.1	17.1	15.8	16.4
14	3.6	3.0	3.3	3.8	1.4	2.7	10.6	8.4	9.4	16.6	14.5	15.8
15	3.5	2.7	3.2	2.6	.3	1.4	10.6	7.4	8.7	17.3	14.1	15.4
16	4.3	3.2	3.6	3.7	1.7	2.9	8.7	7.4	8.2	16.3	14.1	15.2
17	4.5	3.9	4.2	4.0	3.2	3.6	10.9	8.4	9.6	17.1	14.3	16.0
18	4.3	3.0	3.9	3.9	2.4	3.1	11.1	9.0	10.1	16.6	13.9	14.9
19	3.0	1.2	1.9	2.4	1.6	2.0	11.2	8.3	9.9	16.2	14.1	15.0
20	2.9	.5	2.3	2.6	1.7	2.2	10.4	8.2	9.3	17.0	14.3	15.7
21	2.8	2.1	2.6	3.2	2.2	2.7	10.7	9.2	10.0	17.0	14.9	16.0
22	3.7	2.7	3.2	5.0	2.7	3.4	10.6	9.8	10.2	16.7	15.2	15.9
23	3.4	2.9	3.2	3.6	3.2	3.4	10.7	9.6	10.2	18.2	14.8	16.0
24	2.9	1.7	2.3	4.5	3.3	3.7	10.1	8.5	9.2	16.7	14.1	15.6
25	2.1	.8	1.4	4.6	3.6	4.1	10.7	8.4	9.5	17.1	14.7	16.0
26	2.1	1.1	1.7	6.2	3.8	4.6	11.3	9.6	10.4	17.8	15.4	16.5
27	1.9	1.0	1.3	5.0	4.1	4.5	12.6	10.4	11.6	18.2	15.8	17.1
28	1.2	.4	.8	5.4	4.1	4.7	11.8	9.3	10.7	18.4	16.4	17.2
29	---	---	---	6.4	4.7	5.6	12.4	10.0	10.7	18.2	16.1	17.2
30	---	---	---	6.4	5.2	5.8	12.3	10.1	11.2	19.5	15.1	17.5
31	---	---	---	6.5	4.9	5.9	---	---	---	17.4	13.8	15.4
MONTH	4.6	.2	2.7	6.5	.2	3.6	12.6	4.8	8.8	19.5	10.1	15.0

DELAWARE BAY

01484450 DELAWARE BAY NEAR LEWES, DE--Continued

WATER TEMPERATURE, DEGREES CELSIUS, JANUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.4	14.4	16.1	22.0	19.4	20.6	23.7	21.6	22.7	26.8	24.0	24.9
2	17.9	15.2	16.5	20.7	18.6	19.9	22.9	20.6	21.9	25.5	23.5	24.8
3	16.9	14.7	16.1	21.6	18.4	20.3	23.3	21.3	22.4	24.7	23.3	24.1
4	16.5	14.7	16.0	23.2	19.7	21.3	24.5	21.0	22.9	24.2	23.1	23.8
5	16.3	14.6	15.5	22.5	21.0	21.8	24.5	20.5	23.0	25.3	23.6	24.2
6	17.4	14.7	16.1	22.5	19.9	21.5	23.2	19.8	21.8	24.9	23.7	24.4
7	17.4	15.3	16.3	23.1	20.3	21.6	22.6	20.3	21.5	24.6	23.0	24.0
8	17.2	15.5	16.6	24.1	21.2	22.5	22.0	20.7	21.4	24.0	23.0	23.6
9	19.2	16.2	17.3	25.4	22.2	23.7	22.4	20.9	21.6	23.9	22.6	23.3
10	20.0	17.1	18.6	25.5	22.6	24.4	22.9	21.4	21.9	24.0	21.8	23.0
11	20.3	17.9	19.5	25.8	23.8	24.9	23.0	21.2	22.1	22.7	21.0	21.9
12	20.9	16.1	19.4	26.8	23.5	25.5	23.1	21.3	22.1	21.8	20.7	21.5
13	19.6	16.8	18.2	26.6	23.7	25.4	23.5	21.5	22.5	21.4	20.5	20.9
14	20.1	17.0	18.6	26.4	21.6	24.5	23.7	22.0	22.9	21.5	20.3	20.9
15	18.9	15.7	17.9	25.2	22.9	24.3	24.6	22.4	23.2	22.3	20.6	21.4
16	19.3	16.7	18.4	26.7	23.5	25.0	24.0	22.2	23.3	21.7	20.8	21.2
17	20.0	16.6	19.1	25.4	23.0	24.5	23.7	22.5	23.1	21.5	20.5	20.8
18	21.0	17.2	19.4	25.0	20.9	23.4	24.5	22.7	23.4	20.9	20.3	20.6
19	21.1	17.2	19.8	23.0	21.2	22.2	25.4	23.2	23.8	20.8	20.0	20.5
20	21.4	17.9	19.9	24.0	21.4	22.6	23.9	23.0	23.5	20.2	19.1	19.7
21	21.1	17.1	19.3	24.7	22.0	23.3	24.7	23.3	24.0	19.4	18.7	19.1
22	20.3	17.9	19.2	25.0	22.4	23.3	24.7	23.6	24.1	19.7	19.0	19.4
23	22.9	19.1	20.9	24.7	22.3	23.2	24.3	23.6	24.0	19.9	19.2	19.5
24	21.2	17.9	19.3	23.9	22.1	23.0	24.3	23.5	23.9	19.9	19.4	19.7
25	20.0	17.0	19.0	23.6	22.1	22.9	24.5	23.6	24.1	19.5	19.2	19.4
26	19.9	17.0	18.8	23.1	22.0	22.6	25.7	24.1	24.7	20.2	19.2	19.8
27	20.5	18.4	19.5	22.8	21.7	22.3	25.4	23.9	24.7	20.4	19.7	20.1
28	21.3	18.7	20.2	24.4	22.2	23.3	25.5	23.7	24.5	20.0	19.1	19.5
29	21.1	18.8	20.1	25.8	22.4	23.7	25.7	23.8	24.8	19.3	18.8	19.1
30	21.3	19.0	20.4	24.4	22.7	23.8	25.5	23.5	24.5	19.0	17.5	18.4
31	---	---	---	24.6	22.1	23.5	25.0	23.2	24.3	---	---	---
MONTH	22.9	14.4	18.4	26.8	18.4	23.1	25.7	19.8	23.2	26.8	17.5	21.4

INDIAN RIVER BASIN

63

01484500 STOCKLEY BRANCH AT STOCKLEY, DE

LOCATION.--Lat 38°38'19", long 75°20'31", Sussex County, Hydrologic Unit 02060010, on left bank at highway bridge in Stockley, 1.6 mi upstream from mouth, and 4.4 mi southeast of Georgetown.

DRAINAGE AREA.--5.24 mi².

PERIOD OF RECORD.--April 1943 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 24.54 ft above sea level. Prior to Aug. 16, 1950, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 45 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2130	115	3.95	Mar. 18	0030	52	3.15
Mar. 13	2315	*165	*4.45				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	5.2	6.1	8.8	8.9	6.7	17	11	7.8	3.4	1.9	1.8
2	10	4.8	6.1	8.2	8.1	7.1	16	10	6.0	3.4	1.8	1.5
3	11	11	5.8	7.8	8.3	7.3	13	10	7.1	3.4	1.8	2.8
4	9.0	8.2	5.4	8.0	9.3	4.8	12	12	7.6	3.2	1.6	2.1
5	10	8.3	5.6	15	9.5	4.9	14	13	6.8	2.8	2.1	4.4
6	10	9.4	5.1	12	8.7	2.2	13	12	8.3	2.6	5.0	1.9
7	9.2	7.6	5.4	11	7.2	1.7	14	9.9	6.2	2.6	3.2	1.8
8	8.3	7.0	6.3	14	7.9	1.6	12	8.8	5.3	2.4	2.0	1.7
9	7.9	6.7	6.1	22	7.4	1.4	11	8.5	8.9	2.3	2.6	2.9
10	6.6	7.8	7.3	20	6.6	1.3	16	9.7	9.1	2.3	3.7	3.9
11	8.3	8.4	2.5	16	6.6	1.4	14	11	11	2.3	2.3	2.5
12	8.3	8.6	1.3	16	7.9	1.3	12	10	6.6	2.2	1.7	1.5
13	9.2	9.2	1.1	17	9.5	5.8	12	12	5.5	2.6	1.6	1.6
14	7.1	7.8	9.8	15	8.2	9.2	11	12	7.3	5.6	1.6	3.0
15	6.3	5.7	9.5	14	7.3	2.7	11	8.8	8.5	8.9	1.6	2.7
16	6.1	5.8	9.3	13	7.5	2.1	14	7.8	6.3	4.0	1.5	3.6
17	5.7	7.1	9.3	13	7.6	2.7	21	9.6	4.8	2.7	1.5	3.3
18	5.0	7.3	9.6	12	6.8	3.8	14	10	4.2	2.5	1.5	2.6
19	5.1	6.4	8.8	11	6.3	2.2	12	15	3.7	2.9	1.6	1.7
20	4.9	5.3	1.1	11	6.4	1.9	12	18	4.0	3.4	2.1	1.5
21	4.8	5.1	1.1	11	7.7	1.8	12	15	4.1	2.6	3.6	1.9
22	5.0	5.3	1.0	12	9.7	1.7	19	12	4.0	2.4	1.8	1.7
23	5.1	5.8	1.0	11	8.1	1.6	14	10	3.6	2.1	1.7	1.9
24	5.0	6.9	1.0	11	7.6	1.7	12	11	3.4	2.1	1.6	2.3
25	4.8	6.9	9.2	1.0	6.9	1.7	12	11	3.5	2.1	1.6	1.7
26	5.4	8.2	9.1	9.9	7.2	1.5	12	11	3.5	2.0	1.6	2.4
27	6.8	8.1	8.5	1.0	7.4	1.5	14	8.2	4.8	2.2	1.5	2.4
28	5.1	6.8	8.8	9.6	6.9	1.5	13	7.3	3.9	3.6	1.5	2.3
29	4.7	6.3	9.0	9.4	---	1.6	13	6.5	3.5	4.4	1.5	1.4
30	4.8	6.0	9.4	9.0	---	1.5	13	5.8	3.6	3.1	1.5	1.4
31	5.8	---	9.2	9.2	---	1.4	---	6.1	---	2.5	2.1	---
TOTAL	214.9	213.0	279.7	376.9	217.5	706.1	405	323.0	172.9	94.6	62.7	68.2
MEAN	6.93	7.10	9.02	12.2	7.77	22.8	13.5	10.4	5.76	3.05	2.02	2.27
MAX	11	11	2.5	2.2	9.7	9.2	21	1.8	11	8.9	5.0	4.4
MIN	4.7	4.8	5.1	7.8	6.3	6.7	11	5.8	3.4	2.0	1.5	1.4
CFSM	1.32	1.35	1.72	2.32	1.48	4.35	2.58	1.99	1.10	.58	.39	.43
IN.	1.53	1.51	1.99	2.68	1.54	5.01	2.88	2.29	1.23	.67	.45	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1993, BY WATER YEAR (WY)

	3.33	4.63	6.68	9.43	10.1	12.4	10.2	7.54	5.57	4.14	4.90	3.27
MEAN	3.33	4.63	6.68	9.43	10.1	12.4	10.2	7.54	5.57	4.14	4.90	3.27
MAX	10.5	14.3	22.8	24.8	25.8	28.0	24.4	19.7	25.3	17.4	24.8	12.2
(WY)	1972	1957	1946	1978	1979	1958	1983	1948	1948	1945	1989	1992
MIN	.67	.77	.76	.92	1.19	4.05	3.78	2.36	1.80	1.21	.65	.67
(WY)	1989	1989	1989	1989	1989	1966	1985	1985	1977	1977	1944	1988

INDIAN RIVER BASIN

01484500 STOCKLEY BRANCH AT STOCKLEY, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1943 - 1993

ANNUAL TOTAL	2563.5	3134.5	
ANNUAL MEAN	7.00	8.59	6.85
HIGHEST ANNUAL MEAN			12.0
LOWEST ANNUAL MEAN			3.24
HIGHEST DAILY MEAN	43 Sep 5	92 Mar 14	174 Feb 26 1979
LOWEST DAILY MEAN	1.8 Aug 7	1.4 (a)	.13 (b)
ANNUAL SEVEN-DAY MINIMUM	1.9 Aug 5	1.5 Aug 24	.13 Sep 2 1944
INSTANTANEOUS PEAK FLOW	110 Sep 5	165 Mar 13	(c) 217 Feb 26 1979
INSTANTANEOUS PEAK STAGE	3.89 Sep 5	4.45 Mar 13	5.01 Feb 26 1979
INSTANTANEOUS LOW FLOW	1.6 (d)	1.3 (f)	.13 (g)
ANNUAL RUNOFF (CFSM)	1.34	1.64	1.31
ANNUAL RUNOFF (INCHES)	18.20	22.25	17.77
10 PERCENT EXCEEDS	11	15	14
50 PERCENT EXCEEDS	5.9	7.6	4.9
90 PERCENT EXCEEDS	3.1	2.0	1.5

a Sept. 29, 30.

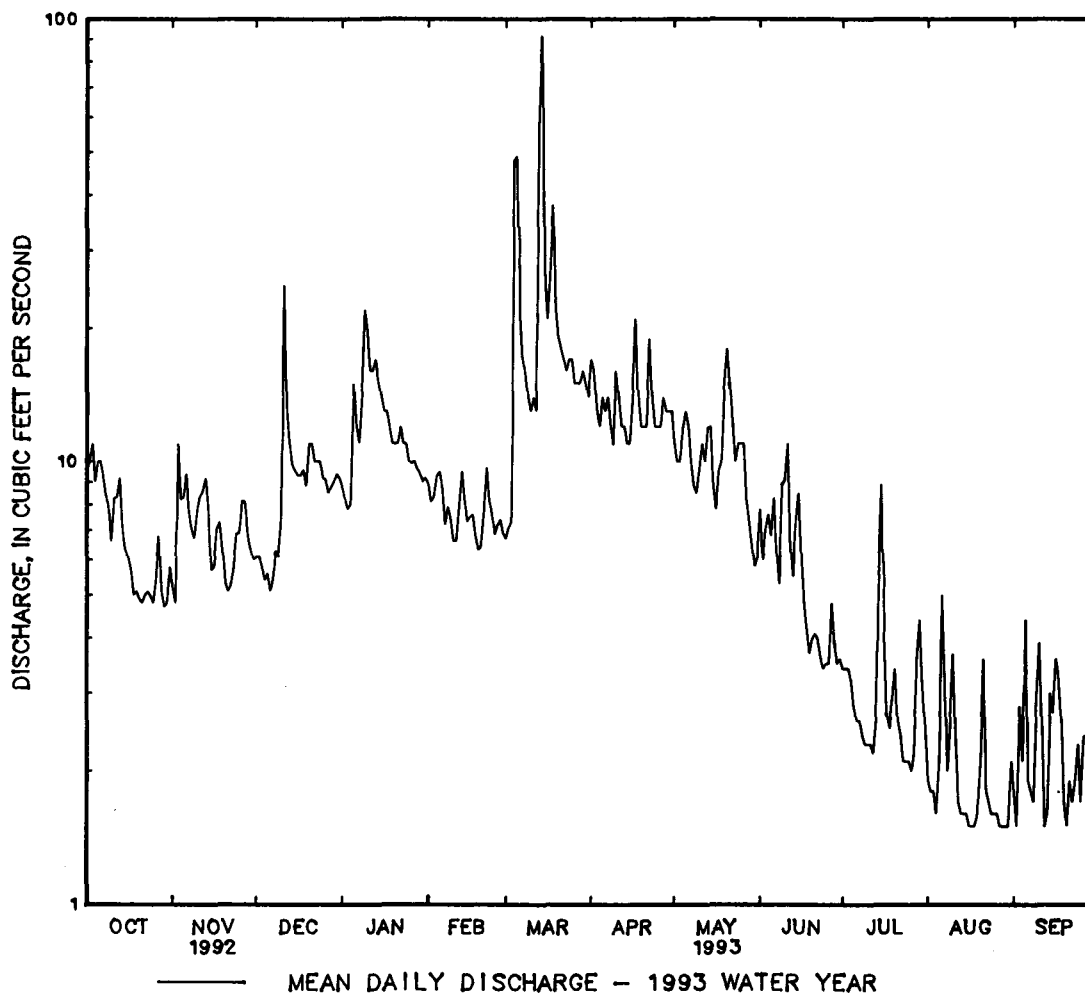
b Sept. 2-11, 1994.

c From rating curve extended above 130 ft³/s.

d Aug. 7, 11.

f Aug. 20, Sept. 12, 29, 30.

g Sept. 1-11, 1994.



INDIAN RIVER BASIN

65

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 mi².

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. Gates fully open during flood season some years. Gates open this year. Several measurements of water temperature were made during the period.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 1,210 ft³/s, Mar. 14, gage height, 4.37 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	77	74	102	108	86	187	143	128	67	34	36
2	91	69	77	95	97	86	202	131	117	64	32	30
3	88	92	75	91	94	88	198	124	109	64	35	27
4	89	100	72	88	97	189	178	108	107	58	37	28
5	101	96	72	126	96	504	167	99	108	54	34	47
6	99	93	67	156	98	401	164	115	129	53	43	46
7	92	92	67	146	98	272	155	121	114	51	71	32
8	86	84	64	148	96	217	145	115	103	51	53	28
9	81	78	64	186	93	198	144	111	111	49	49	28
10	80	72	73	226	93	182	180	105	107	46	47	34
11	80	76	151	220	89	173	221	105	106	42	42	36
12	78	79	182	206	103	166	204	108	97	41	38	28
13	77	86	147	194	126	261	181	134	84	47	37	25
14	77	80	123	190	116	908	170	153	78	51	46	25
15	77	77	111	178	100	643	153	135	76	97	45	27
16	73	74	105	159	94	369	156	118	73	66	36	28
17	68	68	104	155	94	299	228	136	70	50	36	28
18	67	67	108	146	91	364	237	141	66	46	36	40
19	69	69	105	138	83	361	191	182	64	44	34	44
20	67	70	113	132	80	286	166	263	64	60	39	32
21	67	73	127	129	89	254	156	258	67	49	85	37
22	67	73	123	141	121	236	190	205	71	44	57	39
23	67	75	118	144	110	226	214	165	65	42	41	34
24	68	75	117	139	95	230	181	144	59	39	36	37
25	72	74	103	135	86	206	159	137	55	37	34	42
26	69	83	100	130	88	204	158	127	59	37	34	57
27	67	89	96	125	92	197	201	121	70	37	33	56
28	67	84	94	118	89	199	198	112	74	37	31	56
29	67	79	99	117	---	193	163	108	67	37	31	46
30	67	75	107	110	---	185	150	101	70	35	31	33
31	79	---	106	107	---	176	---	94	---	34	33	---
TOTAL	2390	2379	3144	4477	2716	8359	5397	4219	2568	1529	1270	1086
MEAN	77.1	79.3	101	144	97.0	270	180	136	85.6	49.3	41.0	36.2
MAX	101	100	182	226	126	908	237	263	129	97	85	57
MIN	67	67	64	88	80	86	144	94	55	34	31	25
CFSM	1.17	1.20	1.54	2.19	1.47	4.09	2.73	2.06	1.30	.75	.62	.55
IN.	1.35	1.34	1.77	2.52	1.53	4.71	3.04	2.38	1.45	.86	.72	.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

MEAN	44.8	45.5	66.7	93.8	103	151	128	89.1	59.9	42.1	45.5	42.1
MAX	77.1	79.3	101	144	139	270	180	136	85.6	57.8	85.6	106
(WY)	1993	1993	1993	1993	1987	1993	1993	1993	1993	1991	1992	1992
MIN	20.8	24.3	33.2	53.7	77.4	94.1	77.3	47.3	34.0	23.2	25.5	20.1
(WY)	1987	1988	1988	1988	1992	1992	1992	1986	1986	1986	1988	1986

INDIAN RIVER BASIN

01484525 MILLSBORO POND OUTLET AT MILLSBORO, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

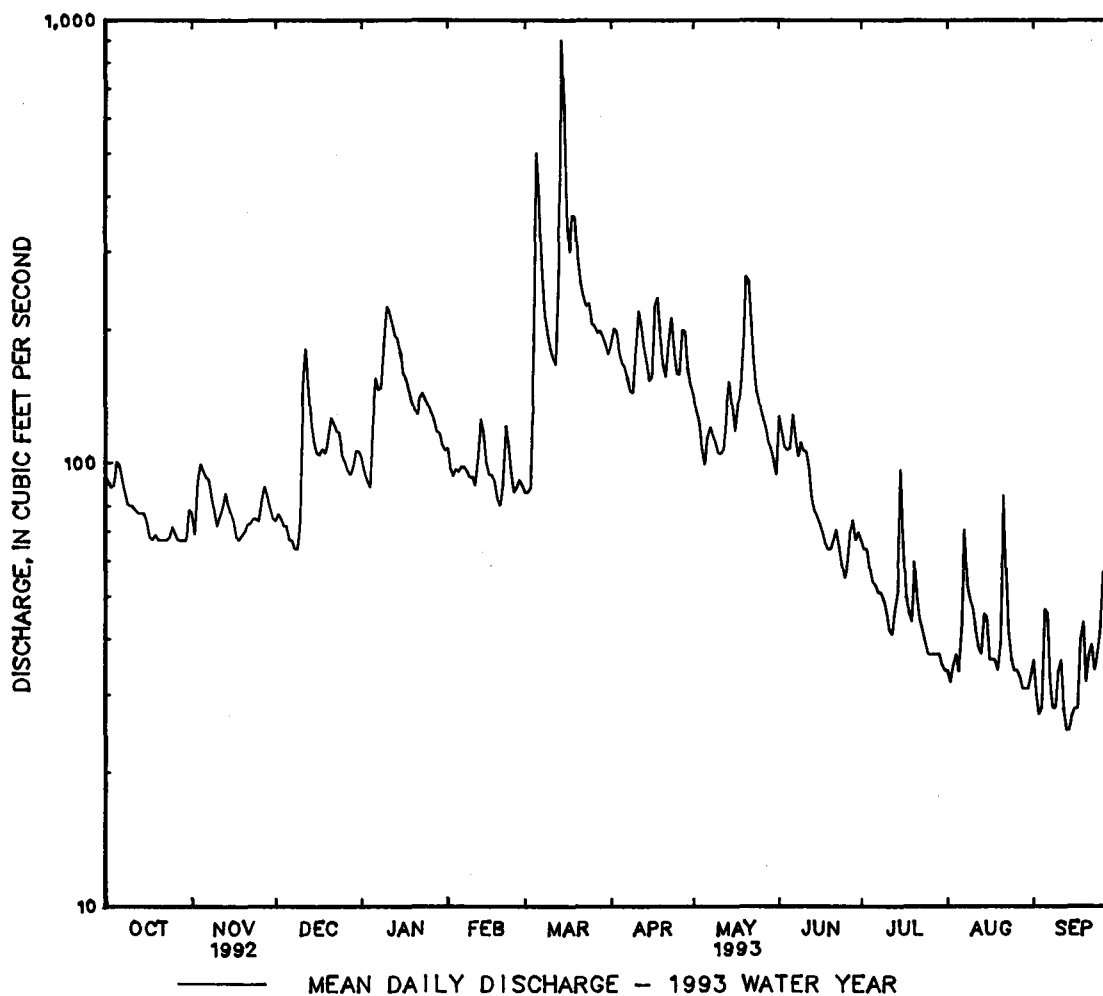
WATER YEARS 1986 - 1993

ANNUAL TOTAL	29396		39534			
ANNUAL MEAN	80.3		108		78.0	
HIGHEST ANNUAL MEAN					108	1993
LOWEST ANNUAL MEAN					55.0	1988
HIGHEST DAILY MEAN	358	Aug 18	908	Mar 14	908	Mar 14 1993
LOWEST DAILY MEAN	31	(a)	25	(b)	13	Oct 7 1986
ANNUAL SEVEN-DAY MINIMUM	33	Jul 15	28	Sep 11	15	Oct 5 1986
INSTANTANEOUS PEAK FLOW	401	Aug 18	1210	Mar 14	1210	Mar 14 1993
INSTANTANEOUS PEAK STAGE	3.66	Aug 18	4.37	Mar 14	4.37	Mar 14 1993
INSTANTANEOUS LOW FLOW	25	Jul 15	22	Sep 3	11	(c)
ANNUAL RUNOFF (CFSM)	1.22		1.64		1.18	
ANNUAL RUNOFF (INCHES)	16.57		22.28		16.05	
10 PERCENT EXCEEDS	112		195		137	
50 PERCENT EXCEEDS	74		91		64	
90 PERCENT EXCEEDS	51		37		23	

a July 18, 19.

b Sept. 13, 14.

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



POCOMOKE RIVER BASIN

67

01485000 POCOMOKE RIVER NEAR WILLARDS, MD

LOCATION.--Lat 38°23'20", long 75°19'30", Worcester County, Hydrologic Unit 02060009, on left bank 30 ft downstream from bridge on State Highway 346, 0.6 mi upstream from Burnt Mill Branch, 1.3 mi east of Willards, 1.3 mi west of Whaleyville, and 50.3 mi upstream from mouth.

DRAINAGE AREA.--60.5 mi².

PERIOD OF RECORD.--December 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 13.95 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 9	2300	507	9.63	Mar. 14	1600	*1,300	*12.40
Mar. 5	1200	865	11.02	May 20	0900	543	9.78

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	67	90	101	64	57	109	61	57	56	8.3	6.1
2	131	65	87	83	57	60	137	56	53	37	8.2	6.4
3	106	137	80	74	55	70	114	52	51	32	8.3	6.4
4	91	158	70	70	55	382	94	49	52	27	8.4	5.7
5	114	131	69	290	52	851	83	50	54	24	7.9	12
6	112	149	65	374	52	714	76	55	150	21	11	9.5
7	92	120	61	250	49	462	70	50	101	19	17	7.7
8	80	97	57	255	48	320	64	43	81	18	13	6.8
9	72	82	52	424	46	229	60	39	151	16	11	6.5
10	68	73	56	461	43	179	129	36	107	15	10	6.4
11	63	68	411	349	43	157	192	32	77	14	9.2	6.1
12	62	66	413	293	47	130	140	32	63	14	8.8	5.7
13	57	90	298	271	67	428	116	40	56	13	8.6	6.1
14	52	100	215	225	67	1230	98	66	50	13	8.5	5.6
15	47	83	169	182	60	1070	88	61	43	13	8.4	5.6
16	44	73	138	155	57	745	89	55	38	12	7.9	5.4
17	43	66	123	142	58	465	197	93	34	11	7.8	5.6
18	38	60	137	127	55	458	142	147	32	11	7.8	5.8
19	35	55	119	111	50	324	110	348	29	11	7.6	6.2
20	34	52	158	99	48	235	93	504	28	17	7.4	5.4
21	32	51	213	92	49	191	83	398	26	14	9.6	5.9
22	31	48	157	114	104	159	163	263	25	12	8.2	5.8
23	29	49	136	122	91	136	182	186	23	11	7.5	5.6
24	29	45	132	107	77	133	93	135	21	11	7.2	5.5
25	37	40	107	98	66	134	82	105	20	10	6.9	5.3
26	37	138	97	87	63	118	76	87	19	9.6	6.9	6.4
27	38	202	85	83	62	107	88	76	25	9.6	6.8	6.1
28	38	163	80	78	59	110	79	66	26	9.4	6.6	6.6
29	31	128	88	73	---	102	71	60	21	9.0	7.4	5.7
30	30	104	127	67	---	95	66	53	120	8.7	6.7	5.4
31	48	---	118	66	---	87	---	49	---	8.4	6.2	---
TOTAL	1894	2760	4208	5323	1644	9938	3184	3347	1633	506.7	265.1	189.3
MEAN	61.1	92.0	136	172	58.7	321	106	108	54.4	16.3	8.55	6.31
MAX	173	202	413	461	104	1230	197	504	151	56	17	12
MIN	29	40	52	66	43	57	60	32	19	8.4	6.2	5.3
CFSM	1.01	1.52	2.24	2.84	.97	5.30	1.75	1.78	.90	.27	.14	.10
IN.	1.16	1.70	2.59	3.27	1.01	6.11	1.96	2.06	1.00	.31	.16	.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

	MEAN	35.7	48.6	78.7	111	120	141	101	60.3	45.3	34.4	52.7	25.0
MAX	164	221	231	322	339	321	277	236	216	217	507	128	
(WY)	1977	1980	1978	1978	1979	1993	1983	1978	1972	1975	1989	1979	
MIN	4.18	7.27	9.41	15.5	50.0	49.7	33.0	16.1	9.31	6.29	3.51	4.34	
(WY)	1969	1969	1966	1981	1981	1981	1985	1985	1986	1986	1957	1957	

POCOMOKE RIVER BASIN

01485000 POCOMOKE RIVER NEAR WILLARDS, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1950 - 1993	
ANNUAL TOTAL	26894		34892.1		71.6	
ANNUAL MEAN	73.5		95.6		130	
HIGHEST ANNUAL MEAN					24.8	
LOWEST ANNUAL MEAN					2580	
HIGHEST DAILY MEAN	629	Aug 18	1230	Mar 14	Aug 20 1989	
LOWEST DAILY MEAN	11	Aug 9	5.3	Sep 25	(a)	
ANNUAL SEVEN-DAY MINIMUM	11	Aug 7	5.7	Sep 14	Aug 12 1957	
INSTANTANEOUS PEAK FLOW	672	Aug 18	1300	Mar 14	(b)2820	
INSTANTANEOUS PEAK STAGE	10.30	Aug 18	12.40	Mar 14	Aug 20 1989	
INSTANTANEOUS LOW FLOW	10	(c)	5.2	(d)	Aug 20 1989	
ANNUAL RUNOFF (CFSM)	1.21		1.58		2.2	
ANNUAL RUNOFF (INCHES)	16.54		21.45		1.18	
10 PERCENT EXCEEDS	137		191		16.09	
50 PERCENT EXCEEDS	52		61		157	
90 PERCENT EXCEEDS	22		7.5		40	
					9.0	

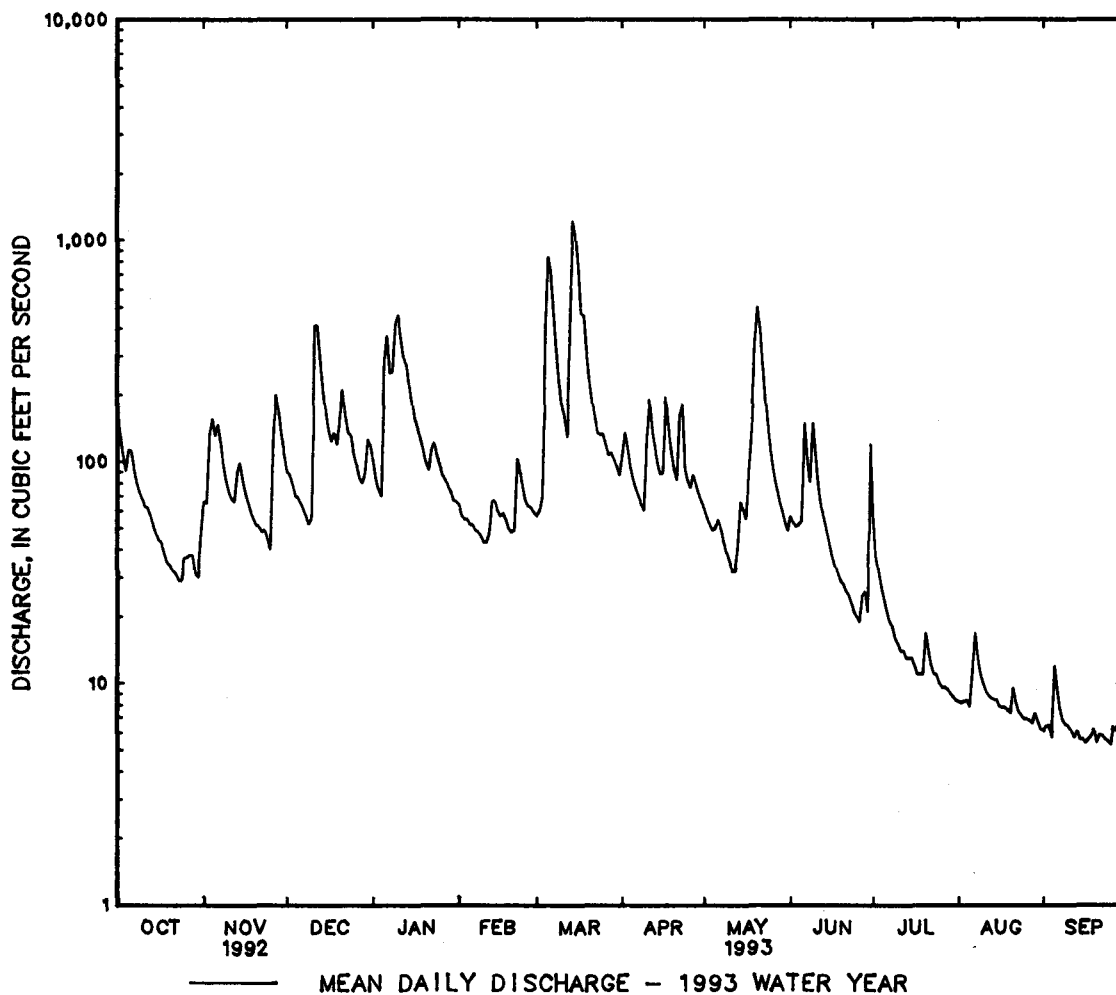
a Aug. 14, 18, 1957.

b From rating curve extended above 1,600 ft³/s.

c Aug. 10, 11.

d Sept. 20, 21, 25.

f Aug. 18, 19, 1957.



POCOMOKE RIVER BASIN

69

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD

LOCATION.--Lat 38°13'44", long 75°28'19", Worcester County, Hydrologic Unit 02060009, on right bank 15 ft downstream from bridge on State Highway 12, 0.5 mi upstream from Furnace Branch, 0.6 mi downstream from Millville Creek, 5.5 mi northwest of Snow Hill, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--44.9 mi².

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1332: 1953.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 12.29 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (poor stage/discharge relationship), which are poor. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	2000	462	5.98	Mar. 5	2000	910	6.89
Jan. 6	1600	568	6.24	Mar. 14	2000	*1,210	*7.28
Jan. 10	1400	517	6.12	May 20	1200	764	6.64

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	27	83	90	45	49	82	44	36	e4.5	e1.8	2.8
2	99	27	75	78	40	53	99	38	29	e4.5	e1.7	2.4
3	62	44	67	68	33	59	104	32	27	e4.3	e1.7	2.4
4	47	59	61	61	36	183	90	29	28	e4.1	e1.7	2.4
5	49	80	62	148	35	785	76	33	27	e3.9	e2.3	5.6
6	45	86	60	537	34	732	66	44	48	e3.7	e7.0	5.6
7	42	77	58	431	32	378	60	39	70	e3.5	e2.5	3.9
8	38	71	54	264	30	211	53	32	61	e3.3	e9.8	3.4
9	33	61	50	352	30	144	48	27	43	e3.1	e7.8	3.0
10	30	47	55	501	28	103	62	23	31	e2.9	e6.9	4.4
11	26	39	166	402	27	88	84	20	26	e2.7	e6.2	3.4
12	25	36	407	260	33	78	94	19	21	e2.6	e5.8	2.8
13	23	48	388	216	46	231	83	40	18	e2.5	e6.6	2.6
14	21	54	226	190	48	1050	70	66	16	e2.4	e6.0	2.2
15	19	58	143	149	47	914	60	70	14	e2.8	e5.2	2.2
16	17	54	101	111	44	436	57	61	13	e3.4	e4.9	2.3
17	15	47	87	96	42	235	87	67	11	e2.6	e4.7	2.7
18	14	40	83	89	38	244	120	125	10	e2.4	e11	7.0
19	14	38	80	82	32	258	103	501	9.1	e4.0	e8.4	12
20	13	36	87	74	27	191	76	741	13	e5.1	e6.9	5.4
21	13	34	125	68	37	134	61	626	10	e4.0	e5.5	6.2
22	12	33	165	76	78	102	77	355	8.5	e3.1	e4.6	6.4
23	12	33	128	87	91	91	90	183	7.2	e2.8	e4.1	4.9
24	12	31	102	90	87	89	90	101	e6.3	e2.5	e3.7	4.3
25	15	29	91	83	69	92	72	71	e5.9	e2.3	e3.4	4.0
26	16	81	82	72	59	90	61	54	e5.5	e2.2	e3.2	13
27	15	176	71	66	52	84	68	43	e5.1	e2.1	e3.3	9.6
28	13	178	66	60	47	84	67	33	e4.8	e2.0	e3.4	9.9
29	13	136	71	56	---	81	62	27	e4.6	e1.9	e3.3	6.2
30	13	98	86	51	---	79	52	22	e4.5	e1.8	3.1	4.7
31	25	---	93	48	---	74	---	20	---	e1.8	2.8	---
TOTAL	947	1858	3473	4956	1247	7422	2274	3586	613.5	94.8	171.8	147.7
MEAN	30.5	61.9	112	160	44.5	239	75.8	116	20.4	3.06	5.54	4.92
MAX	156	178	407	537	91	1050	120	741	70	5.1	25	13
MIN	12	27	50	48	27	49	48	19	4.5	1.8	1.7	2.2
CFSM	.68	1.38	2.50	3.56	.99	5.33	1.69	2.58	.46	.07	.12	.11
IN.	.78	1.54	2.88	4.11	1.03	6.15	1.88	2.97	.51	.08	.14	.12

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
MEAN	25.5	36.0	56.1	85.3	92.7	114	77.6	45.1	29.2	21.0	41.0	18.7
MAX	150	175	155	261	269	239	202	183	160	120	346	177
(WY)	1977	1980	1978	1978	1979	1993	1983	1978	1972	1975	1989	1979
MIN	2.81	3.80	6.33	10.8	32.1	29.5	17.6	7.10	2.52	2.02	1.59	1.64
(WY)	1991	1967	1966	1966	1991	1986	1985	1986	1986	1986	1966	1980

POCOMOKE RIVER BASIN

01485500 NASSAWANGO CREEK NEAR SNOW HILL, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1950 - 1993

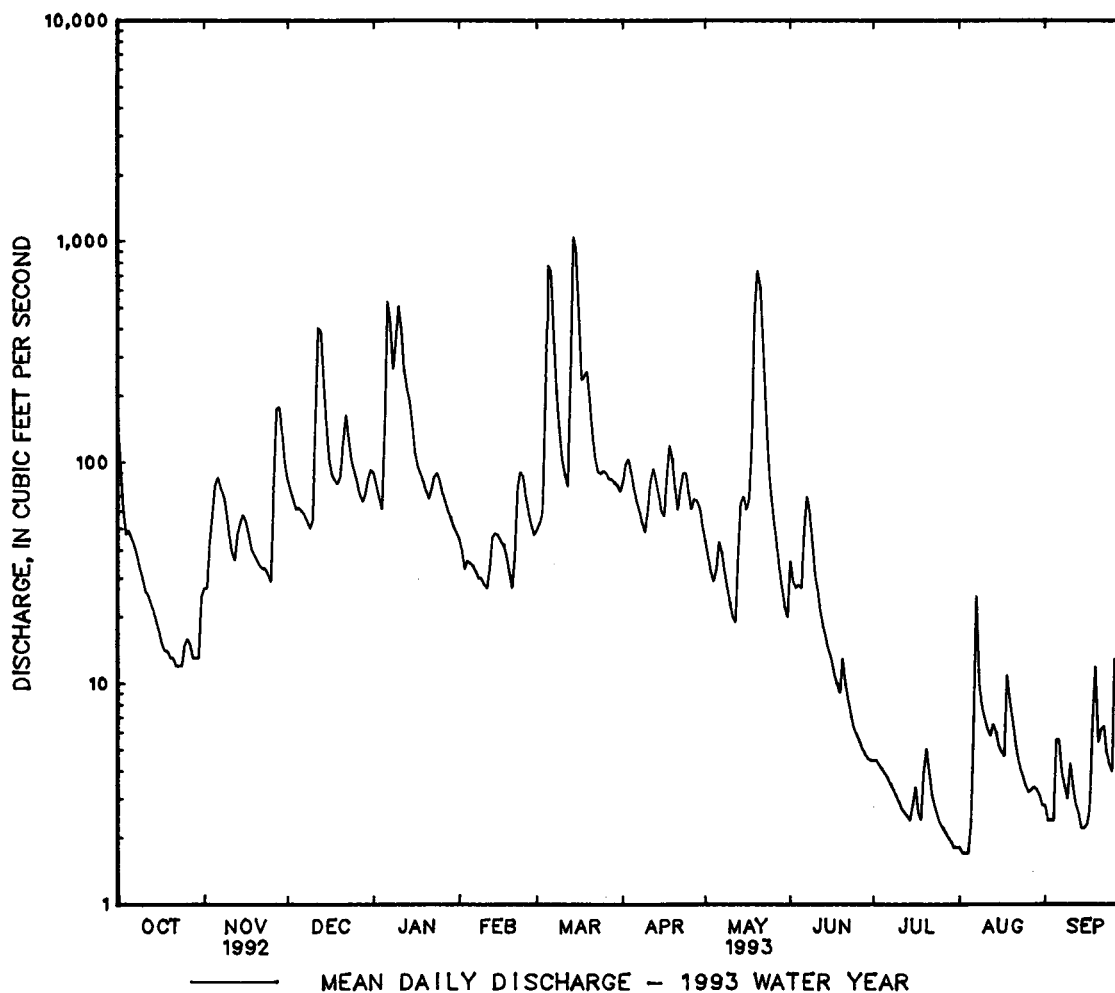
ANNUAL TOTAL	19278.2		26790.8		53.9	
ANNUAL MEAN	52.7		73.4		116	1979
HIGHEST ANNUAL MEAN					20.8	1981
LOWEST ANNUAL MEAN					2590	Aug 19 1989
HIGHEST DAILY MEAN	646	Aug 19	1050	Mar 14	.80	(c)
LOWEST DAILY MEAN	(e)3.7	(a)	(e)1.7	(b)	.86	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	3.9	Aug 5	1.8	Jul 29	(d)3930	Aug 19 1989
INSTANTANEOUS PEAK FLOW	695	Aug 19	1210	Mar 14	9.07	Aug 19 1989
INSTANTANEOUS PEAK STAGE	6.51	Aug 19	7.28	Mar 14	.80	(c)
INSTANTANEOUS LOW FLOW	UNKNOWN		UNKNOWN		1.20	
ANNUAL RUNOFF (CFSM)	1.17		1.63		16.32	
ANNUAL RUNOFF (INCHES)	15.97		22.20		125	
10 PERCENT EXCEEDS	119		148		26	
50 PERCENT EXCEEDS	29		40		3.4	
90 PERCENT EXCEEDS	7.8		3.1			

e Estimated.

a Aug. 8, 9.

b Aug. 2-4.

c Sept. 8-10, 1966.

d From rating curve extended above 1,300 ft³/s on basis of contracted-opening measurement at gage height 9.07 ft.

71

MEAN	1.77	2.49	4.82	8.21	8.59	10.6	7.16	3.95	2.43	1.61	3.92	1.85
MAX	10.5	17.5	13.5	23.8	22.8	22.0	17.3	12.2	12.7	9.20	27.8	18.7
(WY)	1980	1980	1978	1978	1979	1963	1983	1978	1979	1975	1969	1979
MIN	.030	.050	.13	.51	2.40	2.64	1.64	.62	.39	.16	.003	.017
(WY)	1967	1967	1967	1966	1981	1981	1967	1957	1964	1953	1966	1966

MANOKIN RIVER BASIN

01486000 MANOKIN BRANCH NEAR PRINCESS ANNE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1951 - 1993	
ANNUAL TOTAL	1814.63		2556.46			
ANNUAL MEAN	4.96		7.00		4.77	
HIGHEST ANNUAL MEAN					10.3	
LOWEST ANNUAL MEAN					1.41	
HIGHEST DAILY MEAN	66	Aug 18	83	Mar 13	251	Aug 20 1969
LOWEST DAILY MEAN	.73	(a)	.38	(b)	.00	(c)
ANNUAL SEVEN-DAY MINIMUM	.74	Aug 5	.39	Sep 11	.00	Aug 23 1963
INSTANTANEOUS PEAK FLOW	105	Aug 17	204	Mar 13	(d)547	Aug 20 1969
INSTANTANEOUS PEAK STAGE	3.81	Aug 17	5.27	Mar 13	(f)7.08	Aug 19 1985
INSTANTANEOUS LOW FLOW	.62	(g)	.38	(h)	.00	(i)
ANNUAL RUNOFF (CFSM)	1.03		1.46		.99	
ANNUAL RUNOFF (INCHES)	14.06		19.81		13.50	
10 PERCENT EXCEEDS	9.1		14		11	
50 PERCENT EXCEEDS	3.4		3.8		2.0	
90 PERCENT EXCEEDS	1.4		.60		.31	

a Aug. 8-11.

b Sept. 13-16.

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

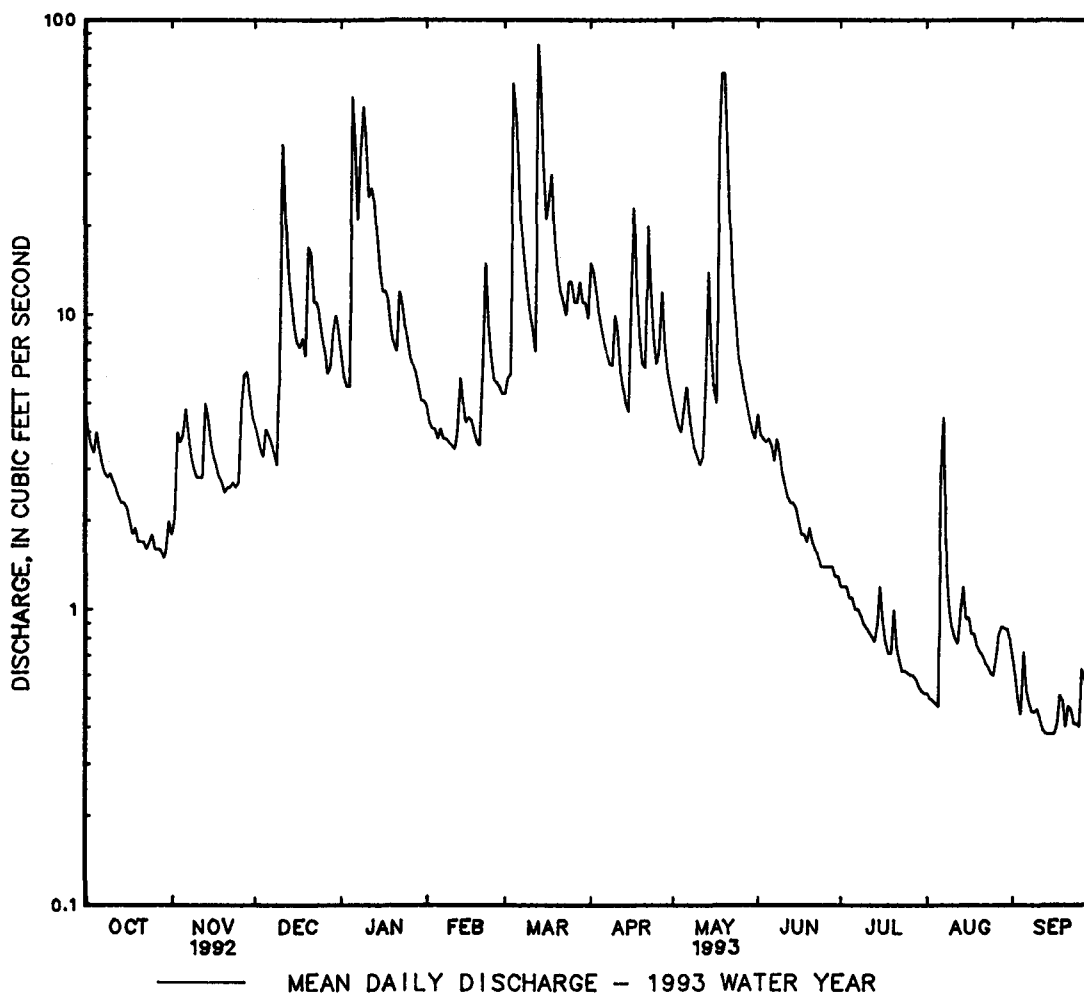
d From rating curve extended above 27 ft³/s on basis of channel-conveyance study.

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

g Aug. 11, 13.

h Sept. 12-17, 20, 24, 25.

i No flow at times during 1954, 1963, 1964, 1966.



NANTICOKE RIVER BASIN

73

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE

LOCATION.--Lat 38°43'42", long 75°33'44", Sussex County, Hydrologic Unit 02060008, on left bank at downstream side of highway bridge, 800 ft downstream from Gum Branch, 2.5 mi southeast of Bridgeville, and 50.5 mi upstream from mouth.

DRAINAGE AREA.--75.4 mi².

PERIOD OF RECORD.--April 1943 to current year. Prior to October 1955, published as Gravelly Fork near Bridgeville.

REVISED RECORDS.--WSP 1111: 1947. WSP 1232: 1945-49.

GAGE.--Water-stage recorder. Datum of gage is 13.64 ft above sea level (levels by Soil Conservation Service). Prior to Apr. 19, 1947, nonrecording gage, and Apr. 19, 1947 to Dec. 18, 1969, recording gage at present site and datum. Timber control Sept. 3, 1947 to Dec. 18, 1969. Feb. 18, 1970 to Oct. 1, 1973, recording gage at site 300 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 11.0 ft in September 1935, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 360 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	2400	704	7.14	Mar. 18	0300	549	6.74
Mar. 14	0600	*1,010	*7.83				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	39	42	67	97	97	222	157	117	45	23	21
2	46	35	43	63	91	98	288	153	102	45	24	20
3	45	58	42	61	90	99	254	148	98	45	24	20
4	45	48	40	62	90	274	229	145	95	40	24	21
5	46	51	41	104	88	479	215	146	94	37	23	22
6	43	54	40	121	88	272	206	144	92	36	28	21
7	41	47	39	99	84	224	196	137	88	34	33	22
8	40	45	39	109	85	201	188	131	88	32	29	24
9	40	43	38	157	82	186	184	126	111	31	30	27
10	43	42	43	176	80	172	214	123	95	30	31	28
11	41	42	91	144	80	167	245	121	85	31	28	24
12	41	44	83	139	87	155	219	119	78	29	26	22
13	40	48	71	143	159	313	203	126	77	29	25	22
14	38	45	66	139	125	798	191	121	75	31	24	21
15	37	43	64	128	106	388	183	114	71	41	23	21
16	37	42	62	124	105	296	194	112	70	36	23	21
17	37	42	65	120	107	311	285	118	65	33	23	22
18	37	43	72	115	101	465	235	117	63	31	23	23
19	39	42	66	109	98	317	211	135	53	29	23	22
20	38	41	74	107	96	277	198	131	55	32	23	21
21	37	41	78	106	100	262	194	122	56	30	34	25
22	37	42	74	113	125	247	222	114	54	26	27	24
23	37	44	75	112	117	235	213	110	49	26	25	23
24	37	42	73	108	108	238	192	107	49	25	23	22
25	42	42	69	107	102	234	180	105	43	24	22	21
26	39	46	69	103	102	221	182	101	42	27	21	24
27	38	45	65	103	102	214	184	97	60	27	20	23
28	37	43	66	102	99	216	170	93	60	24	20	23
29	37	42	67	100	---	211	164	92	50	22	21	21
30	37	41	69	96	---	216	161	87	45	23	22	22
31	45	---	69	97	---	207	---	87	---	22	22	---
TOTAL	1245	1322	1895	3434	2794	8090	6222	3739	2180	973	767	673
MEAN	40.2	44.1	61.1	111	99.8	261	207	121	72.7	31.4	24.7	22.4
MAX	48	58	91	176	159	798	288	157	117	45	34	28
MIN	37	35	38	61	80	97	161	87	42	22	20	20
CFSM	.53	.58	.81	1.47	1.32	3.46	2.75	1.60	.96	.42	.33	.30
IN.	.61	.65	.93	1.69	1.38	3.99	3.07	1.84	1.08	.48	.38	.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1993, BY WATER YEAR (WY)

	45.5	59.4	87.5	118	130	156	135	101	74.7	58.3	63.6	46.4
MEAN	45.5	59.4	87.5	118	130	156	135	101	74.7	58.3	63.6	46.4
MAX	137	192	294	311	376	373	300	219	298	210	412	234
(WY)	1980	1957	1949	1978	1961	1958	1958	1990	1948	1959	1967	1960
MIN	17.9	21.2	23.9	23.8	50.9	61.5	47.8	45.8	29.3	17.5	13.6	10.1
(WY)	1944	1988	1944	1966	1950	1977	1985	1951	1986	1944	1943	1943

NANTICOKE RIVER BASIN

01487000 NANTICOKE RIVER NEAR BRIDGEVILLE, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

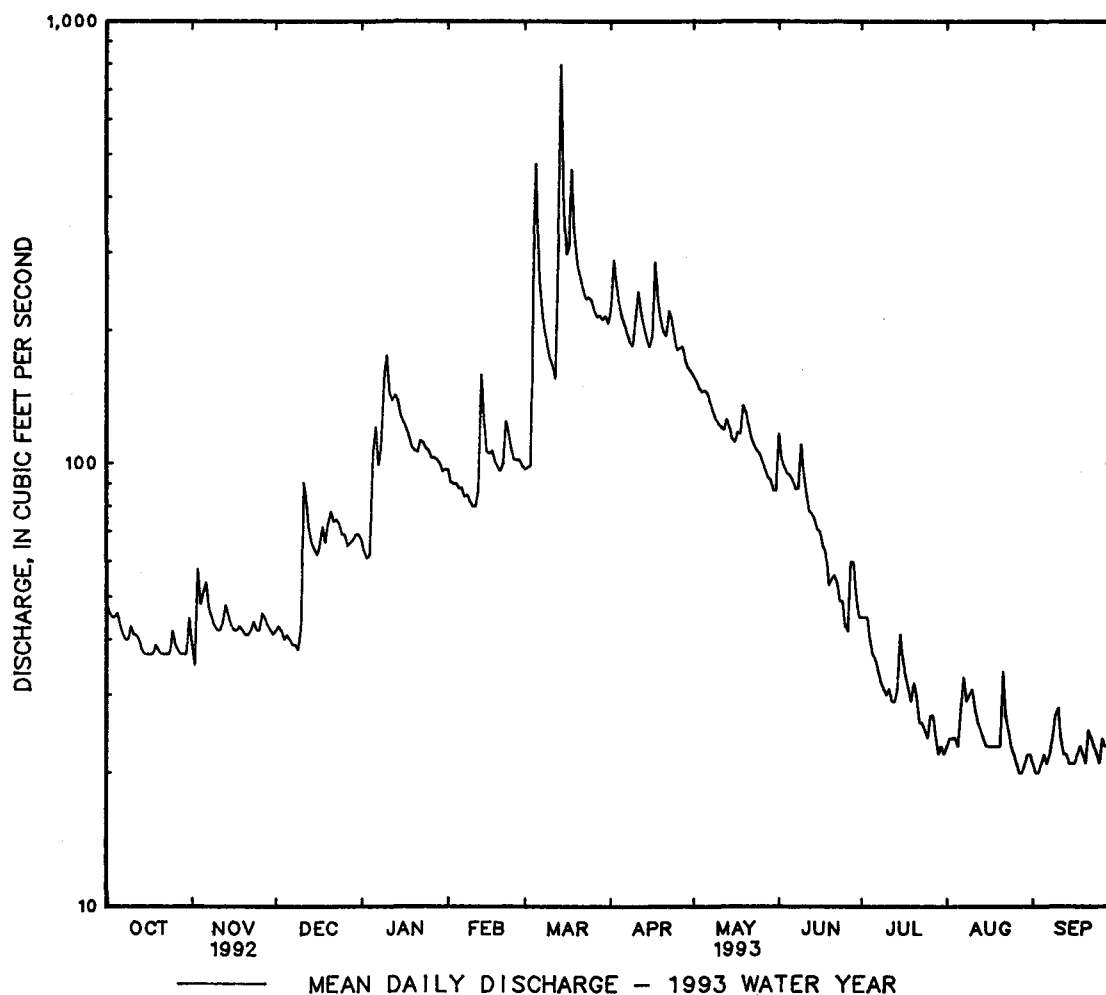
FOR 1993 WATER YEAR

WATER YEARS 1943 - 1993

ANNUAL TOTAL	23886		33334		
ANNUAL MEAN	65.3		91.3		89.8
HIGHEST ANNUAL MEAN					170
LOWEST ANNUAL MEAN					43.8
HIGHEST DAILY MEAN	244	May 9	798	Mar 14	2880
LOWEST DAILY MEAN	24	Jul 16	20	(a)	6.6
ANNUAL SEVEN-DAY MINIMUM	25	Jul 13	21	Aug 27	7.8
INSTANTANEOUS PEAK FLOW	310	May 8	1010	Mar 14	3020
INSTANTANEOUS PEAK STAGE	6.07	May 8	7.83	Mar 14	10.31
INSTANTANEOUS LOW FLOW	22	Aug 11	19	Aug 28	(b)6.3
ANNUAL RUNOFF (CFSM)	.87		1.21		1.19
ANNUAL RUNOFF (INCHES)	11.78		16.45		16.18
10 PERCENT EXCEEDS	107		206		171
50 PERCENT EXCEEDS	57		65		65
90 PERCENT EXCEEDS	34		23		26

a Aug. 27, 28, Sept. 2, 3.

b Minimum discharge observed.



75

MEAN	19.1	34.6	59.2	82.5	85.3	107	75.6	52.0	35.5	35.3	35.9	19.0
MAX	101	190	196	258	267	266	226	178	156	297	340	126
(WY)	1972	1957	1949	1978	1979	1958	1983	1989	1948	1975	1967	1960
MIN	3.46	4.95	3.22	4.30	27.8	27.8	21.7	15.5	7.32	4.58	2.83	2.78
(WY)	1966	1966	1966	1966	1966	1966	1985	1957	1965	1944	1964	1964

NANTICOKE RIVER BASIN

01488500 MARSHYHOPE CREEK NEAR ADAMSVILLE, DE--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1943 - 1993

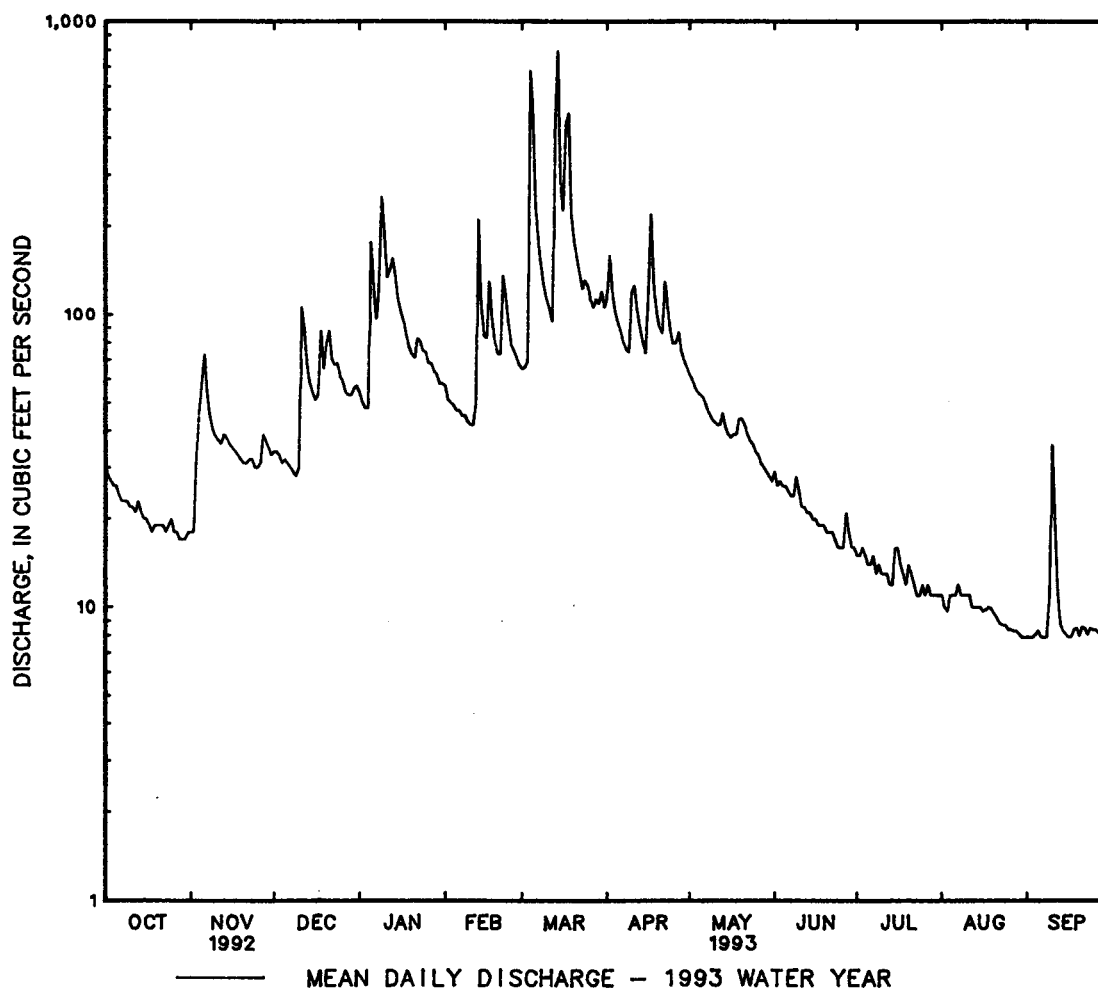
ANNUAL TOTAL	14383.9		21336.6			
ANNUAL MEAN	39.3		58.5		53.9	
HIGHEST ANNUAL MEAN					111	1958
LOWEST ANNUAL MEAN					16.2	1966
HIGHEST DAILY MEAN	271	Mar 27	795	Mar 14	2710	Aug 5 1967
LOWEST DAILY MEAN	9.9	Aug 11	7.9	(a)	1.2	(b)
ANNUAL SEVEN-DAY MINIMUM	11	Aug 7	8.0	Aug 29	1.3	Sep 5 1964
INSTANTANEOUS PEAK FLOW	520	May 8	1670	Mar 4	(c)3700	Jul 13 1975
INSTANTANEOUS PEAK STAGE	5.15	May 8	8.79	Mar 4	13.98	Aug 5 1967
INSTANTANEOUS LOW FLOW	9.1	Aug 11	7.2	Sep 27	1.0	(d)
ANNUAL RUNOFF (CFSM)	.90		1.33		1.23	
ANNUAL RUNOFF (INCHES)	12.19		18.08		16.69	
10 PERCENT EXCEEDS	71		120		113	
50 PERCENT EXCEEDS	32		34		28	
90 PERCENT EXCEEDS	16		9.0		7.1	

a Aug. 30, 31, Sept. 1-3, 6-8, 16, 17.

b Sept. 9, 10, 1964.

c From rating curve extended above 3,300 ft³/s.

d Sept. 9, 10, 1964; Aug. 20, 1965.



77

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 mi².

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. 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	1300	1,860	8.35	Mar. 18	1315	*2,260	*9.03
Mar. 14	2045	1.450	7.59				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	42	73	124	122	152	285	163	72	18	9.6	9.1
2	50	41	75	116	116	150	655	155	68	20	10	4.5
3	46	55	76	107	105	151	623	147	60	22	9.6	4.1
4	44	72	69	103	111	300	424	138	60	20	11	4.6
5	44	81	66	126	104	1520	307	138	58	16	5.0	6.9
6	39	88	65	173	99	917	260	142	56	15	4.9	7.1
7	37	92	64	183	96	504	234	138	52	15	16	6.8
8	37	90	61	168	94	362	216	128	51	15	17	11
9	37	76	61	220	96	288	202	119	64	14	15	12
10	51	68	64	325	92	250	241	110	53	9.8	14	10
11	51	63	132	286	89	230	467	106	46	11	12	6.4
12	48	63	243	234	100	214	412	103	43	8.1	4.8	7.3
13	44	73	222	251	198	255	297	127	40	8.8	9.5	5.4
14	40	75	169	273	342	1050	249	123	37	6.0	7.5	5.6
15	38	69	148	246	251	1090	223	105	37	19	9.7	6.6
16	36	65	135	207	199	635	232	94	36	22	9.1	6.7
17	35	63	132	188	244	741	639	103	32	17	9.3	8.8
18	35	61	156	175	302	1950	591	103	30	13	16	12
19	33	60	175	163	231	1040	360	113	30	13	15	13
20	34	59	162	150	186	557	272	123	29	13	13	12
21	33	56	162	142	174	440	237	117	26	14	13	13
22	32	57	160	151	206	381	247	105	27	12	9.7	13
23	32	64	149	163	294	322	268	96	25	11	10	11
24	32	67	142	161	270	312	236	86	22	8.8	8.1	11
25	40	67	132	158	208	368	204	79	21	12	6.7	9.9
26	39	71	125	151	179	327	196	75	21	12	4.8	13
27	37	81	121	143	168	277	221	69	23	12	5.3	13
28	35	87	114	139	159	264	213	64	25	7.6	7.8	17
29	33	85	116	132	---	277	188	61	21	5.9	6.2	13
30	32	79	121	125	---	279	172	57	22	7.0	6.1	12
31	37	---	123	120	---	275	---	54	---	6.2	8.5	---
TOTAL	1215	2070	3813	5403	4835	15878	9371	3341	1187	404.2	304.2	285.8
MEAN	39.2	69.0	123	174	173	512	312	108	39.6	13.0	9.81	9.53
MAX	54	92	243	325	342	1950	655	163	72	22	17	17
MIN	32	41	61	103	89	150	172	54	21	5.9	4.8	4.1
CFSM	.35	.61	1.09	1.54	1.53	4.53	2.76	.95	.35	.12	.09	.08
IN.	.40	.68	1.26	1.78	1.59	5.23	3.08	1.10	.39	.13	.10	.09

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

MEAN	52.7	89.6	147	197	215	253	196	132	91.5	58.2	82.6	45.7
MAX	402	476	475	559	646	557	649	457	329	421	829	323
(WY)	1972	1957	1973	1978	1979	1978	1983	1989	1972	1975	1967	1960
MIN	9.85	10.9	13.3	17.9	42.7	43.7	47.2	30.3	19.5	9.49	5.31	9.38
(WY)	1966	1966	1966	1966	1966	1966	1966	1977	1986	1977	1966	1987

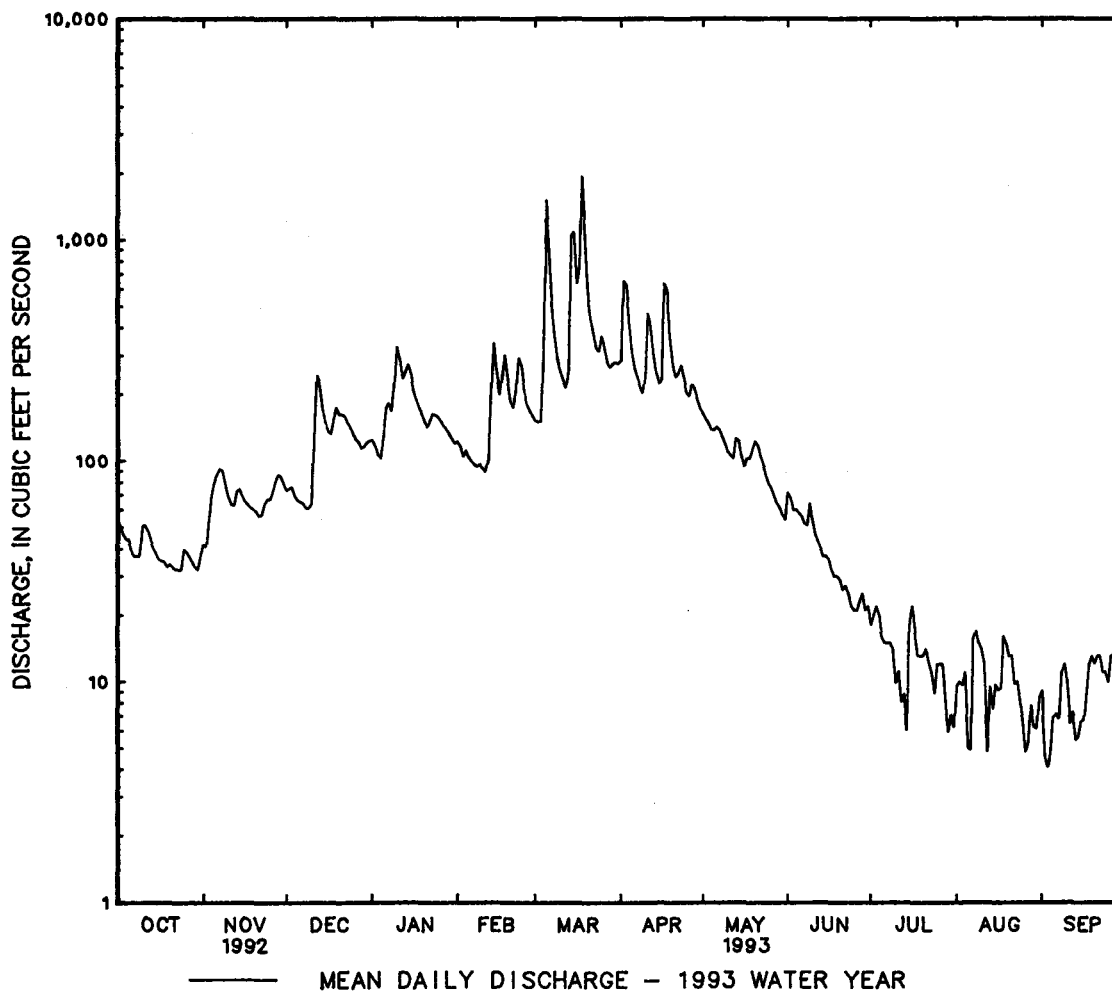
CHOPTANK RIVER BASIN

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1948 - 1993	
ANNUAL TOTAL	31339		48107.2		129	
ANNUAL MEAN	85.6		132		237	
HIGHEST ANNUAL MEAN					26.6	
LOWEST ANNUAL MEAN					1972	
HIGHEST DAILY MEAN	644	Mar 28	1950	Mar 18	6160	Aug 4 1967
LOWEST DAILY MEAN	12	Aug 10	4.1	Sep 3	1.5	Aug 29 1966
ANNUAL SEVEN-DAY MINIMUM	16	Aug 6	6.2	Aug 29	2.2	Aug 26 1966
INSTANTANEOUS PEAK FLOW	744	Mar 28	2260	Mar 18	(a)6970	Aug 4 1967
INSTANTANEOUS PEAK STAGE	5.74	Mar 28	9.03	Mar 18	14.47	Aug 4 1967
INSTANTANEOUS LOW FLOW	9.8	Aug 10	UNKNOWN		1.2	(b)
ANNUAL RUNOFF (CFSM)	.76		1.17		1.14	
ANNUAL RUNOFF (INCHES)	10.32		15.84		15.47	
10 PERCENT EXCEEDS	162		278		280	
50 PERCENT EXCEEDS	69		72		70	
90 PERCENT EXCEEDS	25		9.4		15	

a From rating curve extended above 3,600 ft³/s.

b Aug. 29, 1966, Sept. 3, 1987.



WATER-QUALITY RECORDS

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.

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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
NOV 1992										
03...	1100	55	148	5.4	12.0	23.0	760	0.27	7.8	73
JAN 1993										
28...	0930	139	172	5.2	3.0	2.0	767	--	12.1	89
MAR										
22...	1115	386	104	5.1	7.0	13.5	773	5.3	13.9	113
MAY										
26...	1115	76	147	7.0	20.0	21.0	763	--	7.0	77
JUN										
10...	1300	52	154	6.6	22.0	30.0	761	7.1	7.4	85
24...	1230	23	180	7.1	22.0	31.0	771	--	6.7	76
JUL										
08...	1200	15	186	7.0	27.0	34.0	764	--	5.8	73
21...	1230	14	198	7.0	24.0	29.0	763	1.8	6.5	77
AUG										
18...	1200	18	180	7.0	24.0	26.0	762	--	6.7	80
SEP										
01...	1130	11	188	6.9	25.0	28.0	762	--	6.5	79

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

CHOPTANK RIVER BASIN

81

01491000 CHOPTANK RIVER NEAR GREENSBORO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992					
03...	1100	55	3	0.44	93
JAN 1993					
28...	0930	139	5	1.9	--
MAR					
22...	1115	386	9	9.4	89
MAY					
26...	1115	76	8	1.6	--
JUN					
10...	1300	52	11	1.5	56
24...	1230	23	5	0.31	--
JUL					
08...	1200	15	3	0.12	--
21...	1230	14	3	0.11	81
SEP					
01...	1130	11	2	0.06	--

01493000 UNICORN BRANCH NEAR MILLINGTON, MD

LOCATION.--Lat 39°14'59", long 75°51'40", Queen Annes County, Hydrologic Unit 02060002, on right bank 20 ft upstream from bridge on State Highway 313, 0.9 mi upstream from mouth, and 1.4 mi southwest of Millington.

DRAINAGE AREA.--22.3 mi².

PERIOD OF RECORD.--January 1948 to current year.

REVISID RECORDS.--WSP 1382: 1952(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3.57 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flow by Unicorn Lake Dam upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	0615	288	3.95	Apr. 17	0715	207	3.53
Mar. 18	0530	*434	*4.51				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	8.6	11	16	16	25	59	33	20	11	6.6	7.0
2	8.4	8.8	11	15	12	11	73	31	17	11	5.6	6.9
3	8.1	11	10	14	14	88	66	29	18	13	5.5	6.3
4	7.7	12	10	36	14	60	54	28	18	11	6.1	5.5
5	8.3	11	10	49	14	222	47	31	17	10	6.2	7.5
6	7.8	11	10	45	14	121	43	33	16	8.0	8.4	5.9
7	7.8	10	9.5	33	14	69	40	29	15	7.4	10	5.8
8	7.5	9.2	9.5	26	14	52	39	27	15	8.0	8.6	7.1
9	10	8.7	9.5	28	14	43	39	25	16	7.8	7.3	7.9
10	10	8.4	10	31	14	39	59	24	14	8.7	6.0	8.4
11	9.1	8.5	43	36	14	35	102	23	14	6.9	5.8	7.7
12	8.7	9.7	48	41	15	33	74	24	14	6.5	6.7	7.6
13	8.0	10	29	40	50	44	58	27	13	7.1	8.0	7.0
14	7.9	10	21	40	66	78	47	23	13	9.4	7.4	7.1
15	7.5	9.5	18	38	43	92	42	22	13	14	5.9	6.9
16	7.3	11	16	36	36	66	59	20	13	11	5.1	6.5
17	6.5	9.1	19	33	57	120	162	21	12	9.7	9.4	8.8
18	7.3	10	26	23	47	333	93	22	12	9.3	12	12
19	7.3	9.0	22	13	36	130	61	29	12	9.3	8.3	9.8
20	7.5	8.8	20	14	34	80	49	30	12	11	7.7	8.1
21	7.3	8.7	21	19	33	68	46	25	11	8.0	7.5	10
22	7.5	11	19	26	34	65	64	22	10	8.1	7.6	9.1
23	7.6	13	18	26	60	58	59	20	11	7.5	7.3	8.5
24	7.6	11	17	26	48	68	46	19	11	8.5	6.4	7.8
25	8.2	11	16	25	44	73	41	18	11	7.5	6.9	7.7
26	7.8	12	15	25	39	58	44	18	11	9.1	6.8	9.5
27	7.3	13	14	20	31	52	57	19	11	7.5	6.8	10
28	6.9	12	15	16	30	53	43	18	11	6.3	7.2	10
29	6.5	11	16	19	---	51	37	17	9.4	6.1	6.8	8.2
30	6.9	10	17	22	---	52	35	16	9.8	5.9	6.3	7.9
31	9.7	---	17	21	---	49	---	18	---	6.1	6.1	---
TOTAL	245.0	307.0	547.5	852	857	2300.88	1738	741	400.2	270.7	222.3	238.5
MEAN	7.90	10.2	17.7	27.5	30.6	74.2	57.9	23.9	13.3	8.73	7.17	7.95
MAX	10	13	48	49	66	333	162	33	20	14	12	12
MIN	6.5	8.4	9.5	13	12	.88	35	16	9.4	5.9	5.1	5.5
CFSM	.35	.46	.79	1.23	1.37	3.33	2.60	1.07	.60	.39	.32	.36
IN.	.41	.51	.91	1.42	1.43	3.84	2.90	1.24	.67	.45	.37	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

MEAN	14.4	17.0	24.2	31.9	36.1	41.4	35.9	26.3	20.2	16.4	16.6	14.3
MAX	91.5	65.4	67.2	83.7	83.7	97.1	109	66.8	80.7	52.5	62.5	92.1
(WY)	1972	1972	1973	1978	1961	1958	1983	1989	1972	1972	1967	1960
MIN	5.27	4.99	5.32	5.80	12.1	9.29	10.7	8.64	4.51	5.22	3.15	4.79
(WY)	1966	1966	1966	1966	1966	1966	1966	1977	1966	1977	1966	1977

CHESTER RIVER BASIN

83

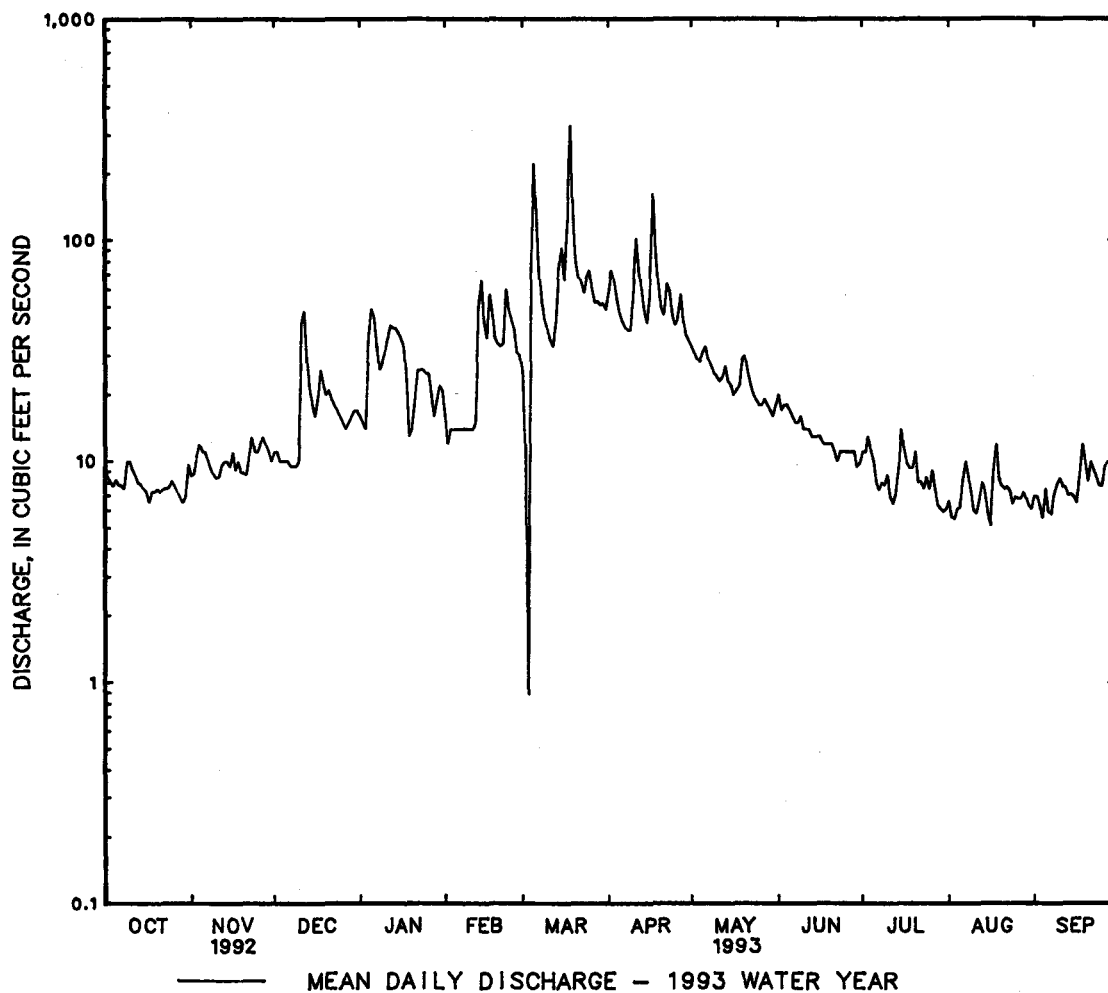
01493000 UNICORN BRANCH NEAR MILLINGTON, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1948 - 1993
ANNUAL TOTAL	5370.9	8720.08	
ANNUAL MEAN	14.7	23.9	24.4
HIGHEST ANNUAL MEAN			51.8
LOWEST ANNUAL MEAN			7.08
HIGHEST DAILY MEAN	126 Mar 27	333 Mar 18	685 Sep 13 1960
LOWEST DAILY MEAN	5.2 Aug 30	.88 Mar 3	.10 Jun 9 1965
ANNUAL SEVEN-DAY MINIMUM	6.5 Aug 27	6.0 Jul 29	.14 Jun 8 1965
INSTANTANEOUS PEAK FLOW	175 Mar 27	434 Mar 18	(a)1060 Sep 12 1960
INSTANTANEOUS PEAK STAGE	3.29 Mar 27	4.51 Mar 18	7.17 Sep 12 1960
INSTANTANEOUS LOW FLOW	.48 Feb 25	.18 (b)	.00 (c)
ANNUAL RUNOFF (CFSM)	.66	1.07	1.09
ANNUAL RUNOFF (INCHES)	8.96	14.55	14.87
10 PERCENT EXCEEDS	26	52	46
50 PERCENT EXCEEDS	11	13	16
90 PERCENT EXCEEDS	7.2	7.0	7.2

a From rating curve extended above 600 ft³/s.

b March 2, 3.

c No flow for part of each day June 13, 14, 1965, caused by regulation at Unicorn Lake Dam.



CHESTER RIVER BASIN

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD

LOCATION.--Lat 39°16'48", long 76°00'54", Kent County, Hydrologic Unit 02060002, on right bank 200 ft upstream from highway bridge, 2.0 mi southwest of Kennedyville, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--12.7 mi².

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1552: 1952, 1953(F), 1954(M), 1955, 1956-57(M). WDR MD-DE-76-1: Drainage area. WDR MD-DE-79-1: 1961(M). WDR MD-DE-80-1: 1976(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.76 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater from storm tides), which are fair. Several measurements of water temperature were made during the year. Water-quality data for some prior years have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 18	0100	*303	*4.98	No other peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.5	5.2	6.4	6.2	7.1	e31	8.3	10	5.3	3.7	5.8
2	4.0	5.8	5.3	5.9	4.5	7.7	30	8.4	8.2	8.4	3.6	7.9
3	3.8	13	5.0	5.8	5.3	7.5	17	8.9	7.4	12	3.3	3.4
4	3.8	8.9	4.9	5.9	6.0	67	11	8.7	7.3	8.9	3.5	2.3
5	3.5	7.8	5.9	22	6.2	e104	9.1	11	7.8	7.1	4.2	3.3
6	e3.3	7.9	5.2	13	6.3	19	8.8	11	7.5	5.7	6.2	1.9
7	3.1	6.5	5.4	10	5.5	9.3	8.2	9.4	7.1	5.1	6.1	2.7
8	3.1	5.8	5.1	11	6.3	8.2	7.6	7.4	6.7	4.6	5.1	2.9
9	4.2	4.9	4.7	14	6.2	7.6	7.7	7.2	7.1	3.7	4.5	5.9
10	6.2	5.0	11	11	6.0	8.4	e40	8.4	5.8	3.8	4.2	e5.1
11	5.1	5.1	e81	9.4	6.2	7.7	e51	7.4	5.5	3.8	4.2	4.2
12	4.4	5.3	42	10	e11	6.6	18	7.7	5.5	4.3	4.9	3.5
13	4.4	9.3	16	11	e45	11	14	11	5.3	4.5	4.0	3.2
14	3.5	6.9	12	9.2	15	e21	12	8.4	4.7	6.3	3.8	2.9
15	3.7	6.1	e9.7	8.2	8.1	12	11	6.3	4.5	9.5	3.6	2.7
16	3.8	5.3	e7.5	7.7	12	13	e26	7.0	4.5	7.5	3.7	3.2
17	3.8	5.1	9.0	6.9	15	102	e41	7.1	4.5	6.0	3.5	5.5
18	3.4	5.1	9.7	5.8	8.6	148	e14	7.8	5.1	4.7	3.4	9.9
19	3.8	5.4	7.7	5.7	5.9	29	e15	11	5.1	e4.3	3.4	9.4
20	4.0	5.2	7.6	6.0	6.0	16	10	9.7	5.0	6.4	e3.3	2.9
21	4.1	5.2	6.7	6.4	7.4	20	11	7.9	5.2	5.3	3.3	4.2
22	4.0	6.9	6.5	8.9	22	24	22	7.0	6.2	4.6	3.0	5.4
23	4.1	29	6.7	7.4	20	17	11	6.0	6.0	4.9	3.0	5.2
24	4.5	21	6.2	7.1	8.6	65	9.3	6.1	5.5	5.0	4.0	4.7
25	5.1	13	5.6	6.7	6.3	33	9.1	6.0	4.9	4.3	3.5	3.8
26	4.6	9.6	5.9	15	6.8	15	14	5.9	4.6	4.1	3.2	4.7
27	4.4	7.6	5.4	7.7	7.1	12	15	5.9	4.8	e4.3	2.9	11
28	4.4	6.2	6.9	6.6	6.9	12	9.7	5.7	4.9	3.8	2.8	13
29	5.1	5.5	7.5	6.3	---	16	9.0	5.6	5.0	4.4	3.0	10
30	4.9	5.4	7.5	5.7	---	11	8.4	6.1	4.8	3.5	2.8	5.4
31	6.1	---	7.2	6.2	---	8.8	---	6.4	---	3.5	2.7	---
TOTAL	130.8	239.3	332.0	268.9	276.4	845.9	500.9	240.7	176.5	169.6	116.4	156.0
MEAN	4.22	7.98	10.7	8.67	9.87	27.3	16.7	7.76	5.88	5.47	3.75	5.20
MAX	6.2	29	81	22	45	148	51	11	10	12	6.2	13
MIN	3.1	4.9	4.7	5.7	4.5	6.6	7.6	5.6	4.5	3.5	2.7	1.9
CFSM	.33	.63	.84	.68	.78	2.15	1.31	.61	.46	.43	.30	.41
IN.	.38	.70	.97	.79	.81	2.48	1.47	.71	.52	.50	.34	.46

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1993, BY WATER YEAR (WY)

MEAN	7.21	8.93	11.6	13.1	13.7	13.5	10.9	9.38	13.2	8.69	8.55	7.83
MAX	32.3	30.7	37.8	45.6	47.1	27.3	29.5	20.6	113	26.9	27.8	32.4
(WY)	1972	1973	1984	1978	1979	1993	1983	1990	1972	1989	1971	1960
MIN	2.98	3.14	3.21	3.74	5.09	4.47	4.49	3.77	1.96	1.11	1.41	2.07
(WY)	1964	1966	1966	1966	1968	1966	1966	1955	1966	1966	1966	1967

CHESTER RIVER BASIN

85

01493500 MORGAN CREEK NEAR KENNEDYVILLE, MD--Continued

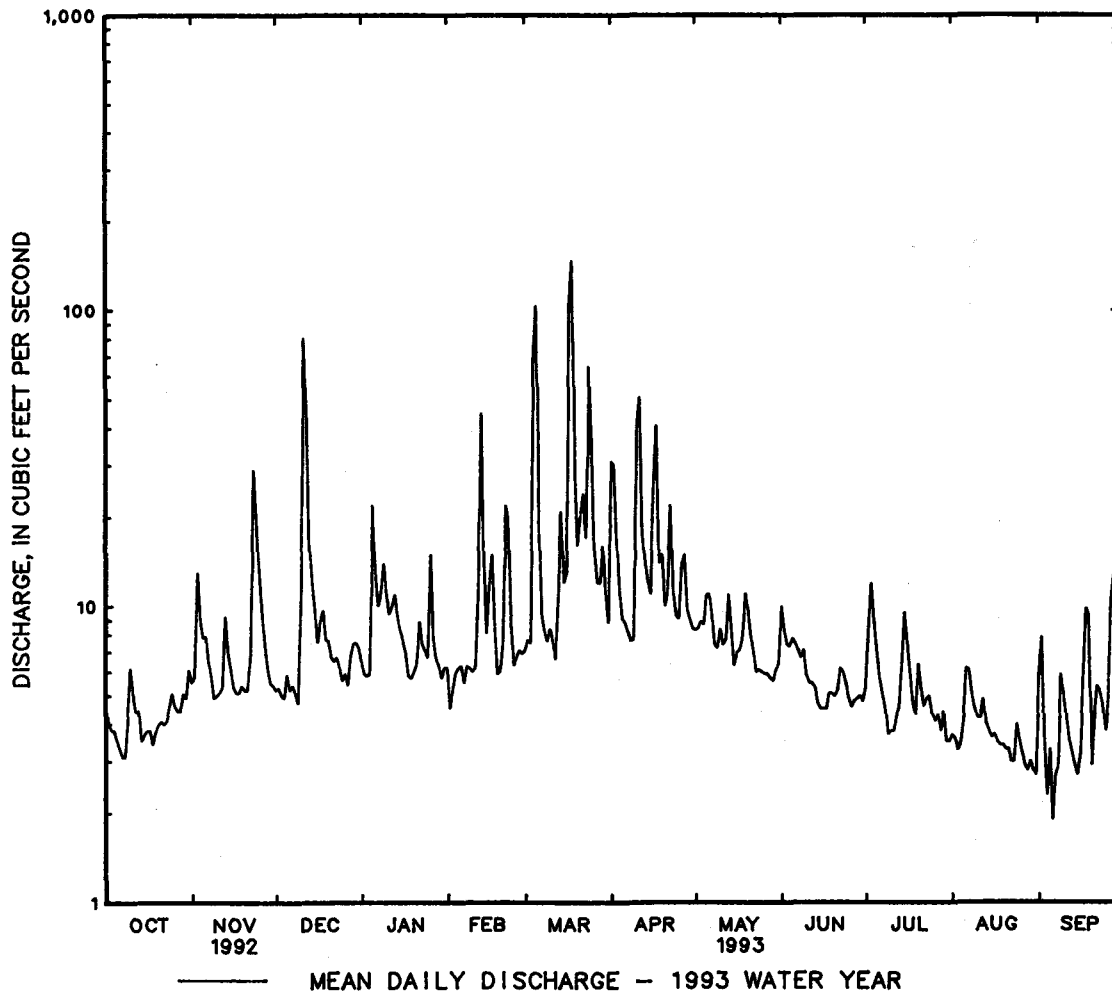
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1951 - 1993
ANNUAL TOTAL	2720.2	3453.4	
ANNUAL MEAN	7.43	9.46	10.5
HIGHEST ANNUAL MEAN			24.2
LOWEST ANNUAL MEAN			3.67
HIGHEST DAILY MEAN	129 Mar 27	148 Mar 18	2810 Jun 22 1972
LOWEST DAILY MEAN	2.7 Aug 8	1.9 Sep 6	.70 (a)
ANNUAL SEVEN-DAY MINIMUM	3.1 Aug 4	3.0 Aug 25	.71 Sep 7 1966
INSTANTANEOUS PEAK FLOW	174 Mar 27	303 Mar 18	(b)7500 Jun 22 1972
INSTANTANEOUS PEAK STAGE	3.70 Mar 27	4.98 Mar 18	13.07 Jun 22 1972
INSTANTANEOUS LOW FLOW	2.4 Jul 29	1.4 (c)	.60 (d)
ANNUAL RUNOFF (CFSM)	.59	.74	.83
ANNUAL RUNOFF (INCHES)	7.97	10.12	11.29
10 PERCENT EXCEEDS	11	15	16
50 PERCENT EXCEEDS	5.9	6.2	6.2
90 PERCENT EXCEEDS	3.6	3.6	3.2

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

b From rating curve extended above 640 ft³/s on basis of culvert and flow-over-road measurement of peak flow.

c Sept. 4, 6.

d Aug. 28, 29, 1966.



LOCATION.--Lat 39°39'26", long 75°49'20", Cecil County, Hydrologic Unit 02060002, on right bank 100 ft downstream from highway bridge at Elk Mills, 3.5 mi north of Elkton, and 7 mi upstream from confluence with Little Elk Creek.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

MEAN	40.8	54.5	67.3	83.5	98.2	98.7	90.5	77.7	60.2	58.2	53.0	44.2
MAX	133	115	152	283	236	227	191	160	216	248	241	134
(WY)	1972	1973	1984	1979	1936	1993	1993	1958	1972	1975	1933	1960
MIN	11.1	17.1	18.7	19.2	41.4	35.6	34.5	26.8	21.4	10.5	8.32	9.95
(WY)	1964	1966	1966	1966	1947	1981	1963	1955	1963	1963	1966	1932

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

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1932 - 1993	
ANNUAL TOTAL	19186		31236		69.0	
ANNUAL MEAN	52.4		85.6		109	
HIGHEST ANNUAL MEAN					35.4	
LOWEST ANNUAL MEAN					1972	
HIGHEST DAILY MEAN	1630	Dec 11	1630	Dec 11	3070	Jun 22 1972
LOWEST DAILY MEAN	18	(a)	19	(b)	4.8	(c)
ANNUAL SEVEN-DAY MINIMUM	20	Sep 16	20	Sep 2	4.9	Sep 7 1966
INSTANTANEOUS PEAK FLOW	3980	Dec 11	3980	Dec 11	(d)10600	Jul 5 1937
INSTANTANEOUS PEAK STAGE	7.79	Dec 11	7.79	Dec 11	(f)14.50	Jul 5 1937
INSTANTANEOUS LOW FLOW	(g)11	Feb 10	15	Sep 7	(g)4.5	Jan 21 1955
ANNUAL RUNOFF (CFSM)	1.00		1.63		1.31	
ANNUAL RUNOFF (INCHES)	13.57		22.09		17.81	
10 PERCENT EXCEEDS	68		159		114	
50 PERCENT EXCEEDS	38		50		46	
90 PERCENT EXCEEDS	25		25		20	

a Sept. 19, 21.

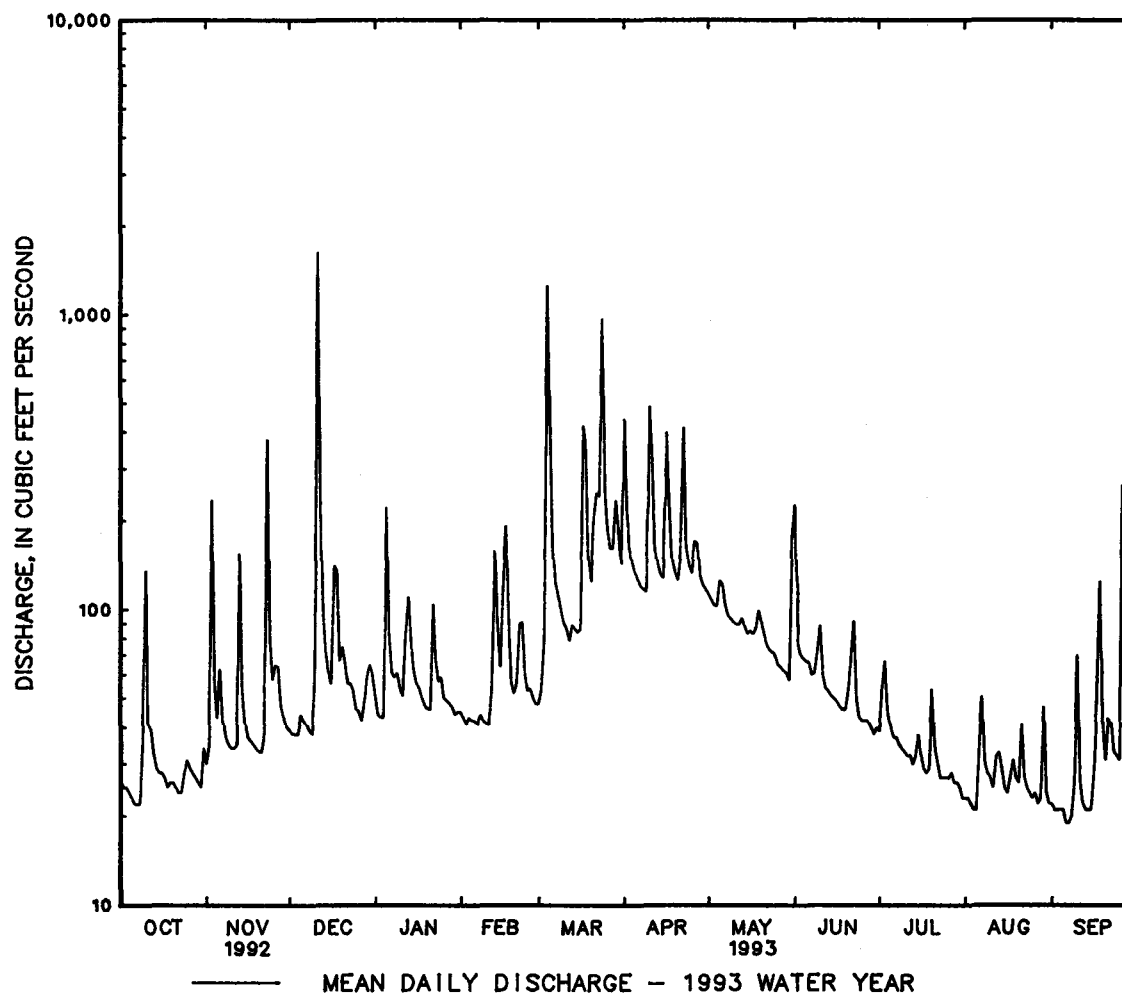
b Sept. 6, 7.

c Sept. 8-10, 1966.

d From rating curve extended above 1,700 ft³/s on basis of velocity-area and conveyance studies.

f From floodmarks.

g 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. 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, 1991-93): Maximum, 19,900 microsiemens, Oct. 26, 1982; minimum, 117 microsiemens, July 21-23, 28, 1984.

WATER TEMPERATURE (water years 1982-85, 1987-93): Maximum, 33.0°C, Aug. 6, 1988; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 12,800 microsiemens, Mar. 4; minimum, 143 microsiemens, Apr. 23, 26.

WATER TEMPERATURE: Maximum, 32.6°C, July 11, 13; minimum, 0.3°C, Dec. 25, 27, 28, Feb. 1-3, Mar. 13-16, 18, 19.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8830	6770	7430	4700	2100	2700	1040	721	827	993	719	836
2	8050	4680	5650	8770	2900	4660	1120	801	876	1010	719	823
3	5290	2680	3700	8530	4500	5690	1120	701	978	763	552	640
4	3020	2420	2700	6570	5250	6050	1320	561	897	638	404	534
5	11300	2760	5370	6510	4800	5470	761	320	536	404	319	359
6	11300	5870	7640	5290	4740	5000	721	460	594	619	256	313
7	6890	5250	5770	5470	5150	5280	460	300	344	385	278	327
8	5610	4960	5350	5490	4980	5270	621	340	394	386	321	355
9	5290	4760	4930	5670	4760	5190	621	340	389	603	343	408
10	4840	4460	4630	4860	3940	4420	5790	401	1350	2310	581	1460
11	4660	4220	4480	4180	2940	3680	10000	5790	8120	2350	1920	2140
12	4380	4060	4220	3340	2400	2860	9260	5590	7820	2120	1860	1990
13	4100	3320	3790	2660	1760	2130	8050	5380	6910	2190	1930	2040
14	3600	3140	3410	2020	1660	1830	9270	5490	6840	2130	2010	2070
15	3540	3240	3460	1660	1360	1510	8830	7970	8370	2100	1880	1980
16	3400	2680	3190	1440	1160	1320	8030	5730	6550	2030	1790	1900
17	2700	1880	2170	1380	1100	1240	5810	4450	5560	1790	1400	1560
18	2460	2160	2320	1100	721	864	5050	4380	4710	1400	1120	1230
19	2460	2380	2430	1140	801	875	4610	3600	3980	1160	943	1050
20	5290	2380	2830	2720	1140	1750	3960	2860	3650	1220	685	951
21	4900	1920	2650	2640	1660	2010	3380	2570	2810	897	556	669
22	2340	2040	2200	1880	1420	1600	2740	1860	2270	641	554	595
23	2620	2240	2350	1520	1260	1390	2230	1860	2060	660	575	617
24	2460	2080	2340	1400	1240	1330	2320	1220	1780	638	403	565
25	2080	1680	1940	2840	1380	1850	2220	521	1420	741	339	479
26	2660	1760	2030	2200	1720	1920	959	395	582	741	464	518
27	1840	1560	1710	1760	1520	1650	938	565	716	464	379	391
28	1700	1560	1630	1640	1540	1600	587	481	528	442	358	398
29	1740	1540	1610	1560	1400	1460	714	525	591	400	315	366
30	1620	1560	1590	1580	1020	1340	779	672	741	547	293	389
31	5270	1580	1950	---	---	---	822	758	787	397	314	349
MONTH	11300	1540	3470	8770	721	2800	10000	300	2710	2350	256	913

ELK RIVER BASIN

89

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	397	313	358	7150	4920	5910	1220	1110	1160	202	161	176
2	375	333	355	6950	5300	6060	1170	1090	1140	182	161	176
3	6400	354	3390	6130	4720	5440	1330	1110	1180	182	161	173
4	2290	1730	1930	12800	1980	6460	1320	792	1020	181	160	177
5	1950	1640	1780	9830	7920	8780	878	621	730	180	160	177
6	1840	1590	1690	9050	7540	8780	687	558	612	200	160	183
7	7460	1740	3520	8920	6300	8030	764	578	684	200	160	182
8	5530	3760	4530	6410	5170	5760	805	743	766	200	180	191
9	9030	3980	5440	6090	4360	5220	805	723	763	200	160	184
10	7440	5420	6250	4560	4190	4390	742	681	714	200	160	183
11	6190	5270	5690	4660	4040	4310	867	681	755	200	180	185
12	11200	6020	8200	4580	2770	3460	866	660	760	200	180	187
13	11200	6100	9460	4130	2640	3220	783	597	680	200	180	189
14	6940	5030	5740	4000	2770	3790	763	515	640	200	180	185
15	5350	4620	4960	2770	1790	2100	556	432	515	200	180	184
16	5220	4460	4910	1870	1110	1520	473	370	408	200	180	189
17	4460	3810	4110	1210	894	1070	782	288	406	220	180	204
18	4070	3290	3690	1040	333	539	761	452	621	200	180	190
19	3450	3110	3300	2410	353	1210	720	184	359	200	180	187
20	3430	2900	3160	2920	2190	2460	226	144	180	220	180	201
21	3360	2900	3070	2560	1940	2310	328	164	189	681	220	433
22	3310	2970	3170	2110	1920	2030	574	164	220	581	380	500
23	3150	2970	3050	2000	1920	1970	554	143	307	1060	480	776
24	3040	2330	2610	1940	1790	1870	368	163	244	1180	721	1020
25	2710	2320	2460	1880	1790	1840	245	163	194	961	801	885
26	2340	2140	2260	1870	1580	1810	184	143	169	801	601	705
27	6610	2260	3260	1750	1580	1710	224	163	184	641	521	580
28	7740	4490	6360	1730	1640	1700	183	162	172	661	521	593
29	---	---	---	1660	1540	1620	183	162	173	641	561	588
30	---	---	---	1560	1390	1470	202	162	181	621	501	550
31	---	---	---	1490	1170	1320	---	---	---	621	541	583
MONTH	11200	313	3880	12800	333	3490	1330	143	538	1180	160	352
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	561	420	475	1040	901	962	3240	2820	3010	5910	5650	5740
2	480	420	458	2660	941	1660	3360	2960	3200	6130	5710	5890
3	460	400	440	2900	1400	2030	3280	3020	3120	6170	5790	5990
4	440	400	423	2220	1620	1950	3140	2880	3080	5890	5370	5640
5	480	400	447	2460	1720	2130	3040	2860	2920	5570	5330	5460
6	480	400	443	3760	2080	3030	3280	2880	3040	5450	4420	5230
7	1520	440	850	3340	2200	2910	11300	2920	5330	5230	4440	5010
8	1220	661	999	2700	2200	2450	6510	4800	5550	4860	4140	4610
9	1600	801	1190	2860	2220	2440	5630	2360	4790	4480	3920	4360
10	1220	1020	1120	2520	2240	2350	5350	2520	4690	4440	3820	4320
11	1060	881	968	2740	2100	2200	5170	3660	4920	4560	3800	4350
12	1460	821	949	2340	2080	2220	4920	4260	4780	4480	3660	4180
13	1260	981	1110	2080	1820	1890	4820	4660	4730	4060	3180	3710
14	1140	961	1070	1940	1620	1770	4860	4680	4760	3680	3160	3500
15	1000	781	863	1700	1520	1580	4940	4480	4850	3680	3160	3490
16	821	601	679	1660	1540	1590	5070	4840	4970	3640	3020	3480
17	681	621	645	1640	1520	1580	5150	4840	5040	6990	3040	4240
18	641	601	613	1960	1580	1740	6670	4840	5180	7890	5410	6200
19	621	561	594	3100	1700	2120	10100	5690	8190	7690	5670	6580
20	601	561	583	1980	1720	1850	9250	6770	7850	9630	6530	7610
21	641	561	580	2300	1840	2060	6970	6170	6660	8850	6890	7720
22	581	541	559	3380	1940	2240	9390	6750	7460	7490	6610	6830
23	641	541	594	4200	2140	2720	8830	7610	8100	7490	6690	7020
24	1920	561	825	4460	2720	3450	8590	6810	7220	6790	6050	6420
25	2600	921	1750	5070	3500	3830	6810	5330	5870	6550	5750	6280
26	1840	1300	1560	6330	3540	4290	7330	3120	5040	6270	5530	5830
27	1300	1000	1110	5790	3620	4070	6030	5550	5750	5730	5050	5490
28	1060	961	1000	3700	3240	3440	5690	5250	5470	5370	4620	5070
29	1000	881	927	3500	3300	3410	5470	5090	5310	4740	3720	4300
30	941	861	892	3340	3140	3240	5670	5210	5440	4260	3980	4150
31	---	---	---	3180	2880	3030	5850	5390	5680	---	---	---
MONTH	2600	400	824	6330	901	2460	11300	2360	5230	9630	3020	5290

ELK RIVER BASIN

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	17.8	15.9	17.1	12.1	11.3	11.6	8.0	7.2	7.5	4.8	2.5	4.1
2	18.0	16.5	17.3	12.6	11.1	11.7	7.9	7.1	7.5	3.1	1.9	2.4
3	18.4	16.7	17.5	13.6	12.3	12.8	7.7	5.9	7.0	3.0	2.3	2.6
4	17.8	16.5	17.3	12.8	12.2	12.5	6.4	5.4	6.0	4.8	3.0	3.8
5	17.8	14.1	16.1	12.6	11.4	12.2	6.4	3.1	5.2	6.5	4.5	5.6
6	17.6	15.3	16.6	11.4	9.9	10.4	4.4	3.1	3.6	5.6	4.2	5.0
7	17.7	16.1	16.9	10.4	9.7	10.1	5.0	4.1	4.5	5.6	4.5	5.0
8	18.1	16.0	17.1	9.7	8.7	9.1	4.5	3.2	3.9	5.4	4.9	5.2
9	17.6	17.1	17.4	9.8	7.4	8.6	3.9	2.4	3.2	5.2	3.1	4.0
10	18.8	17.0	17.9	10.0	8.6	9.2	5.7	2.9	3.7	3.5	2.2	2.9
11	18.1	17.1	17.5	9.8	8.9	9.4	6.4	5.7	6.2	3.6	3.1	3.4
12	17.5	15.8	16.8	11.2	9.4	10.1	6.1	5.5	5.8	4.2	3.5	3.8
13	17.5	16.3	16.9	10.9	9.4	10.1	5.7	4.9	5.3	4.6	4.1	4.3
14	17.5	15.9	16.8	9.4	7.9	8.6	5.6	5.1	5.4	4.2	3.9	4.0
15	18.2	16.3	17.3	8.5	6.8	8.0	5.3	4.9	5.1	4.1	3.7	3.9
16	18.7	17.0	17.9	7.9	6.0	7.1	5.0	4.5	4.8	4.1	3.5	3.7
17	18.0	14.5	15.9	7.9	7.0	7.4	5.6	4.8	5.2	3.7	3.1	3.4
18	15.8	13.7	14.9	8.4	7.5	7.9	5.9	4.7	5.1	3.8	2.5	3.1
19	15.0	11.4	13.7	7.5	6.8	7.0	5.5	4.3	4.8	3.3	1.8	2.6
20	14.7	10.5	12.1	8.3	6.3	7.2	5.6	4.5	5.1	3.6	1.9	2.7
21	14.4	13.1	13.7	8.4	7.3	7.8	4.5	2.5	3.7	3.0	2.0	2.6
22	14.3	11.9	13.1	9.3	8.3	8.8	4.8	3.8	4.2	4.0	3.0	3.6
23	14.2	12.0	13.1	11.1	9.2	10.2	4.8	4.1	4.3	4.6	3.4	3.9
24	14.2	12.7	13.5	10.8	9.0	9.9	4.4	1.4	3.2	4.8	3.1	3.9
25	13.4	11.5	12.1	10.0	9.6	9.9	2.5	.3	1.5	4.3	2.4	3.3
26	12.5	10.2	11.5	10.4	9.8	10.1	2.5	.5	1.6	3.3	2.2	2.6
27	13.2	11.7	12.3	10.4	9.2	9.7	1.0	.3	.4	3.5	1.8	2.8
28	12.5	11.5	12.1	9.6	8.7	9.1	2.0	.3	1.2	3.0	2.2	2.6
29	12.8	12.2	12.5	9.1	7.9	8.7	3.3	2.0	2.6	3.6	1.3	2.8
30	13.2	12.4	12.8	8.0	7.0	7.6	3.6	2.8	3.2	2.4	1.0	1.6
31	12.4	11.3	11.8	---	---	---	4.9	3.4	4.1	3.8	1.7	2.6
MONTH	18.8	10.2	15.1	13.6	6.0	9.4	8.0	.3	4.4	6.5	1.0	3.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.3	.3	2.4	2.4	.7	1.6	9.9	8.9	9.3	17.1	13.6	14.9
2	.3	.3	.3	3.0	1.6	2.2	9.4	9.0	9.1	17.7	14.3	15.7
3	2.4	.3	1.3	3.8	2.1	2.8	9.7	8.3	9.0	17.7	14.7	16.1
4	2.9	1.1	1.8	3.3	2.7	3.0	9.3	7.7	8.5	17.9	15.8	16.7
5	2.8	1.2	1.9	3.2	2.6	2.9	8.7	7.4	8.1	17.6	16.5	17.0
6	2.3	.4	1.1	3.8	2.8	3.2	9.7	7.2	8.4	19.7	16.7	18.1
7	1.6	.4	.7	4.8	2.7	3.6	10.7	7.7	9.0	20.4	17.8	19.2
8	2.9	1.1	1.8	5.5	3.5	4.4	11.4	8.6	9.9	20.7	18.2	19.5
9	2.5	.4	1.6	6.2	3.7	5.0	11.1	9.6	10.5	20.8	19.1	19.9
10	3.1	1.5	2.2	4.8	4.2	4.5	11.0	10.2	10.7	21.7	19.7	20.6
11	3.8	1.9	2.8	5.2	3.7	4.4	12.8	9.5	11.1	21.9	20.3	21.1
12	3.0	1.5	2.2	5.7	3.3	4.5	11.9	9.9	11.3	23.1	21.3	22.0
13	2.8	2.2	2.5	5.1	.3	1.7	13.1	9.1	11.1	22.0	20.5	21.5
14	3.5	1.7	2.6	2.1	.3	1.3	13.0	11.0	11.9	22.2	19.7	21.0
15	3.9	1.4	2.6	1.3	.3	.6	12.8	11.3	12.1	23.2	20.5	21.7
16	3.3	2.4	2.7	3.2	.3	1.7	12.7	12.1	12.4	23.3	21.3	22.3
17	4.5	2.4	3.4	3.2	2.0	2.7	14.0	11.9	12.9	24.5	21.1	22.6
18	3.6	1.0	2.5	2.0	.3	.4	14.6	11.7	13.3	22.7	19.8	21.2
19	1.0	.5	.5	2.6	.3	1.2	14.2	12.4	13.1	20.5	19.6	20.1
20	2.2	.5	1.0	3.9	2.0	2.8	14.1	11.9	12.7	20.2	19.3	19.7
21	1.6	.5	1.1	5.6	2.7	3.7	14.3	12.7	13.3	20.7	17.9	19.5
22	2.7	1.1	1.8	6.0	3.3	4.5	13.9	10.1	12.0	20.7	18.0	19.4
23	2.2	1.0	1.5	4.9	4.2	4.5	11.4	9.3	10.5	20.7	18.1	19.4
24	1.6	.5	.7	5.8	4.3	4.8	12.0	9.8	10.8	21.3	19.5	20.3
25	.5	.5	.5	6.2	5.0	5.5	12.9	10.6	11.5	21.8	20.4	21.0
26	.6	.5	.5	7.3	5.1	6.1	12.9	11.3	12.4	22.7	20.1	21.4
27	1.8	.6	.8	7.7	6.3	7.1	18.1	9.3	13.6	22.5	20.3	21.4
28	1.6	.6	1.1	8.6	7.4	7.9	14.5	12.4	13.3	22.9	21.0	22.0
29	---	---	---	8.4	7.9	8.1	14.6	13.1	13.9	24.1	20.9	22.7
30	---	---	---	9.2	7.8	8.5	15.4	13.4	14.2	24.1	20.5	22.0
31	---	---	---	10.1	8.3	9.2	---	---	---	22.3	21.1	21.5
MONTH	4.5	.3	1.6	10.1	.3	4.0	18.1	7.2	11.3	24.5	13.6	20.0

ELK RIVER BASIN

91

01495900 ELK RIVER NEAR TOWN POINT, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.1	20.4	21.5	27.9	26.7	27.2	28.6	25.7	27.2	29.7	27.6	28.7
2	22.9	19.7	21.2	26.7	25.6	26.1	28.9	26.8	27.9	29.9	27.8	28.8
3	23.5	20.7	21.9	27.8	25.6	26.7	29.3	26.9	28.0	29.6	28.3	28.9
4	23.3	21.0	22.0	29.4	26.5	27.9	29.1	27.2	28.0	28.8	27.2	28.1
5	22.0	20.9	21.4	30.8	27.4	28.8	28.0	25.7	26.9	28.2	26.5	27.4
6	21.6	19.5	20.6	30.4	27.6	28.7	26.6	23.9	25.1	28.6	26.4	27.5
7	22.4	19.8	21.2	30.9	28.1	29.4	27.0	23.9	25.5	28.3	27.1	27.6
8	22.4	21.2	21.8	31.7	29.3	30.3	27.7	25.3	26.5	27.1	25.8	26.4
9	23.9	21.6	22.6	32.1	29.7	30.9	27.9	25.7	26.7	27.2	25.7	26.4
10	25.2	22.9	24.1	32.6	30.3	31.4	28.3	25.6	26.7	27.1	24.0	26.1
11	26.4	24.0	25.0	32.6	30.3	31.4	28.1	25.8	26.6	25.0	22.1	23.6
12	25.5	23.0	24.2	31.9	29.9	30.9	28.6	25.6	26.8	25.1	22.8	23.9
13	25.9	23.0	24.1	32.6	29.5	30.9	28.9	25.8	27.1	25.8	23.0	24.1
14	26.2	23.2	24.5	31.5	30.0	30.7	29.5	26.3	27.7	25.8	23.2	24.3
15	26.3	24.0	24.9	31.3	29.0	30.2	29.4	26.7	27.9	26.0	23.7	24.8
16	27.6	24.2	25.7	30.7	27.6	29.2	28.6	27.0	27.8	25.0	22.0	23.3
17	27.9	24.5	26.1	29.5	26.9	28.4	28.4	26.9	27.5	22.8	20.8	21.8
18	28.0	25.2	26.5	30.1	26.7	28.5	28.3	26.0	27.1	22.9	22.1	22.4
19	28.5	26.0	27.3	28.7	27.0	28.1	28.5	26.4	27.4	22.7	21.0	21.9
20	29.4	26.4	27.9	29.4	26.6	27.8	28.3	26.8	27.5	22.1	19.0	20.6
21	28.1	26.9	27.4	28.3	26.5	27.6	27.8	25.6	26.9	21.5	20.8	21.2
22	28.5	26.1	27.2	28.2	25.7	27.0	27.3	24.4	26.1	21.4	20.5	20.9
23	27.3	24.2	26.0	27.9	25.4	26.8	28.1	25.8	26.9	21.1	20.2	20.7
24	27.7	24.1	26.0	28.6	26.0	27.4	28.2	26.2	27.1	22.4	19.8	21.0
25	27.7	25.1	26.5	29.2	26.9	27.9	28.6	26.5	27.5	21.4	20.1	20.6
26	28.3	25.8	26.9	27.8	26.9	27.3	29.8	27.2	28.4	22.0	20.1	20.9
27	28.4	25.7	27.2	28.6	26.8	27.6	29.9	27.7	28.7	21.3	20.0	20.9
28	28.7	26.3	27.3	29.9	26.8	28.1	30.0	28.1	28.9	20.1	17.8	19.2
29	29.2	26.8	27.8	29.6	27.2	28.2	30.1	27.5	28.8	20.1	17.9	19.0
30	29.8	26.9	28.0	28.5	26.0	27.5	30.0	27.6	28.7	18.9	16.7	17.9
31	---	---	---	27.6	25.2	26.5	29.6	27.7	28.6	---	---	---
MONTH	29.8	19.5	24.8	32.6	25.2	28.6	30.1	23.9	27.4	29.9	16.7	23.6

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD

LOCATION.--Lat 39°39'31", long 76°10'28", Harford County, Hydrologic Unit 02050306, at downstream side of Conowingo Dam, 1.0 mi southwest of Conowingo, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--27,100 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.00 ft above sea level.

REMARKS.--No estimated daily discharge. Water-discharge records good. Flow regulated by Conowingo Reservoir beginning October 1928, usable capacity, 55,070,000,000 gal; dead storage, 45,290,000,000 gal. Records do not include a small infrequent diversion upstream from station to augment municipal supply of city of Baltimore. Records of diversion available from Baltimore Department of Public Works.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 500,000 ft³/s, April 2, gage height, 28.06 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32400	13900	58700	49400	38200	16800	410000	138000	25200	10000	6130	6780
2	37100	27000	49200	81100	45000	19400	467000	111000	19000	12100	6440	5180
3	19800	36600	52700	152000	22500	18700	461000	103000	17600	8110	6580	7100
4	15400	25400	47900	127000	23300	45600	393000	80600	18300	7060	6390	9310
5	21100	43200	31300	96300	24900	50000	323000	74300	6810	13200	6390	5410
6	21300	54000	28600	94400	19000	63100	247000	72800	6510	18200	6190	5400
7	22700	54200	32100	96800	14300	59200	203000	84100	11000	13800	6160	13700
8	14700	42400	34000	112000	25700	54000	181000	71000	16000	14800	6730	17200
9	17400	42500	30700	90200	20700	53900	163000	66100	19500	21700	6650	15200
10	15300	42700	29900	69600	21800	63400	162000	60900	19000	6340	6380	14300
11	12300	36500	47100	70400	20400	59900	217000	57100	18600	6370	6240	8470
12	24400	36500	32200	55600	28000	57800	335000	48200	15700	7990	6690	5730
13	26100	40000	53500	53900	14200	38100	304000	51000	8850	6980	6130	10300
14	25000	41300	43200	58300	12400	38000	239000	45200	24700	6920	5710	13300
15	22800	59500	39800	68200	18800	31500	185000	25200	17900	6330	6320	12500
16	31300	60600	34000	69400	24600	32400	154000	18900	16800	6190	6170	6000
17	19000	73200	43900	64900	19400	47900	188000	31700	13600	6160	7820	13100
18	16900	58300	41300	63100	23800	53200	282000	28900	14700	6250	10000	4350
19	19600	46800	48100	55800	28200	42100	301000	31600	6200	6540	7080	4310
20	24500	46500	66600	50500	4460	38300	242000	28100	8230	6340	13000	4350
21	22900	26600	71100	44700	4120	30300	192000	27200	14600	6240	9950	4430
22	24100	27500	77600	40600	17500	52200	196000	20500	15400	6340	5520	9090
23	22300	60200	77500	44200	20300	56200	223000	16100	15100	6270	5490	9790
24	15100	81600	77600	25700	16400	79100	207000	25100	19200	6220	5630	12800
25	16400	86500	69600	42600	14800	120000	189000	26400	14600	6120	9270	4320
26	19700	97500	51500	47800	20400	121000	185000	18900	6260	6090	11700	4590
27	20700	104000	34400	46300	10700	133000	206000	21500	6110	6270	6170	11700
28	23200	81100	41700	47900	6570	170000	246000	15000	14200	5990	5280	18900
29	24300	72400	47600	46100	---	248000	226000	15900	13900	5930	5560	15900
30	23100	70500	39000	40100	---	320000	176000	14200	10500	5970	5530	17800
31	18200	---	51200	20100	---	366000	---	9530	---	5960	5420	---
TOTAL	669100	1589000	1483600	2025000	560450	2579100	7503000	1438030	434070	258780	214720	291310
MEAN	21580	52970	47860	65320	20020	83200	250100	46390	14470	8348	6926	9710
MAX	37100	104000	77600	152000	45000	366000	467000	138000	25200	21700	13000	18900
MIN	12300	13900	28600	20100	4120	16800	154000	9530	6110	5930	5280	4310
CFSM	.80	1.95	1.77	2.41	.74	3.07	9.23	1.71	.53	.31	.26	.36
IN.	.92	2.18	2.04	2.78	.77	3.54	10.30	1.97	.60	.36	.29	.40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

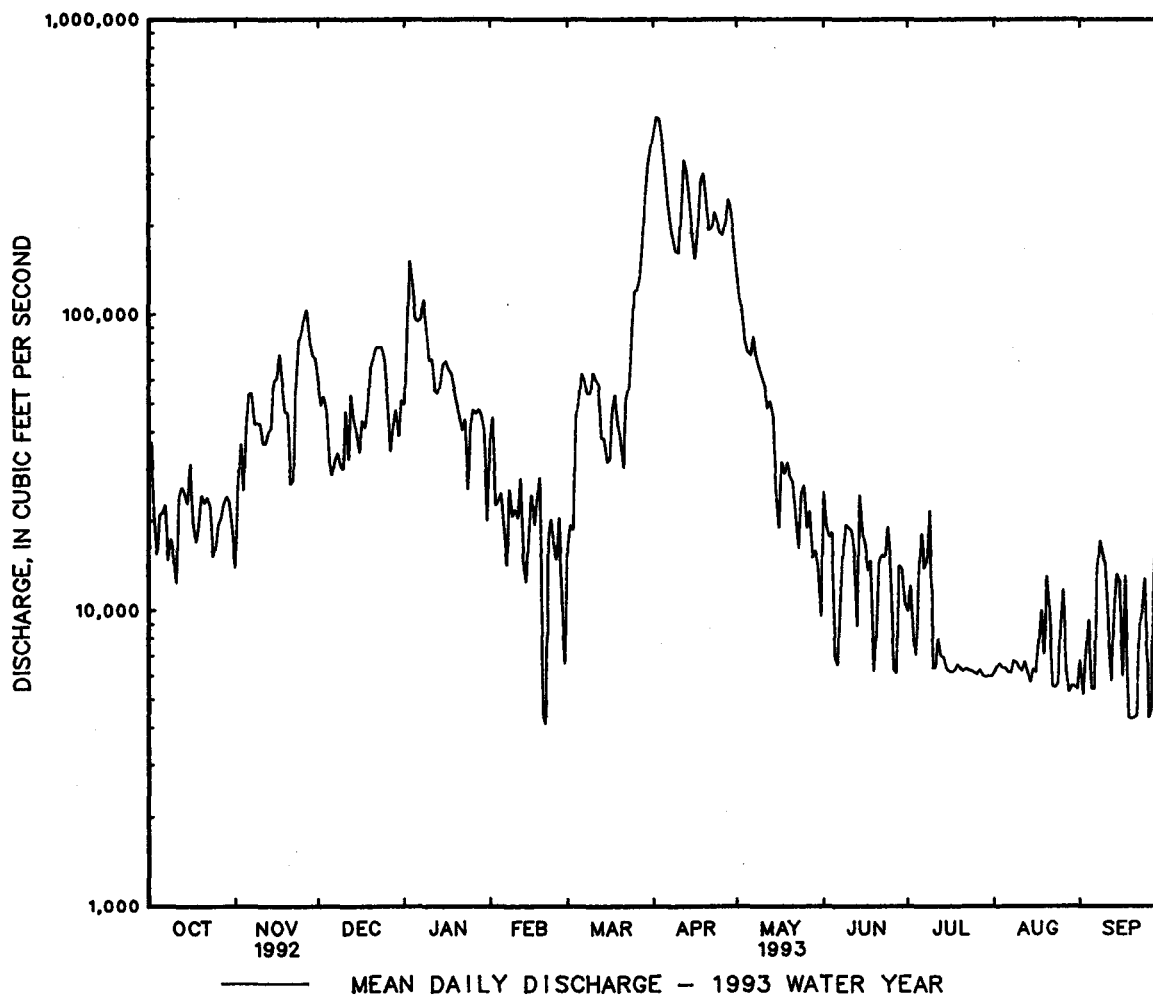
MEAN	24040	35620	48720	39310	53190	72260	81220	49380	37440	20340	13260	16350
MAX	81800	73170	104700	101200	115800	142800	250100	108200	208000	59050	28820	88450
(WY)	1977	1978	1973	1979	1984	1979	1993	1989	1972	1972	1984	1975
MIN	5557	9803	14630	7164	13050	28320	36670	23900	8656	6107	5927	4737
(WY)	1970	1981	1990	1981	1980	1969	1988	1982	1991	1991	1991	1980

SUSQUEHANNA RIVER BASIN

93

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1968 - 1993	
ANNUAL TOTAL	12991830		19046160			
ANNUAL MEAN	35500		52180			
HIGHEST ANNUAL MEAN					40820	
LOWEST ANNUAL MEAN					61090	1978
HIGHEST DAILY MEAN	163000	Mar 29	467000	Apr 2	26570	1981
LOWEST DAILY MEAN	1730	Jan 1	4120	Feb 21	1120000	Jun 24 1972
ANNUAL SEVEN-DAY MINIMUM	9150	Jul 2	5700	Aug 27	269	Jul 13 1969
INSTANTANEOUS PEAK FLOW	197000	Mar 30	500000	Apr 2	1810	Sep 24 1980
INSTANTANEOUS PEAK STAGE	21.22	Mar 30	28.06	Apr 2	1130000	Jun 24 1972
INSTANTANEOUS LOW FLOW	783	Feb 8	823	Dec 7	36.83	Jun 24 1972
ANNUAL RUNOFF (CFSM)	1.31		1.93		144	Mar 2 1969
ANNUAL RUNOFF (INCHES)	17.83		26.14		1.51	
10 PERCENT EXCEEDS	70500		135000		20.46	
50 PERCENT EXCEEDS	29900		24700		84900	
90 PERCENT EXCEEDS	11700		6200		27600	
					5870	



SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued
(National stream-quality accounting network station)

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.

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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV 1992												
18...	1100	54700	197	7.5	6.0	8.0	776	4.1	15.1	119	--	--
25...	1330	70400	181	7.3	10.0	14.0	764	--	12.3	109	--	--
30...	1400	70400	148	7.8	8.0	7.5	759	--	11.8	100	--	--
DEC 17...	1100	72600	230	--	5.0	15.0	760	--	12.2	96	--	--
JAN 1993												
05...	1430	95900	138	--	5.0	18.0	742	--	13.0	105	--	--
07...	1330	101000	171	7.4	5.0	13.0	769	--	13.3	103	--	--
08...	1300	114000	163	7.9	6.0	9.0	766	--	12.9	103	--	--
20...	1130	69100	219	7.8	5.5	7.0	774	3.2	13.9	109	27	--
MAR												
11...	1400	70900	290	7.3	4.0	10.0	763	8.0	12.5	95	47	26
25...	1130	145000	270	7.3	5.0	9.0	771	--	13.0	101	--	--
27...	1245	162000	225	7.5	6.0	11.0	766	--	13.2	106	--	--
28...	1330	184000	220	7.3	7.0	15.0	759	--	12.7	105	--	--
30...	1645	314000	160	7.3	7.0	16.0	757	--	--	--	--	--
31...	0145	321000	165	7.2	7.0	8.0	761	--	12.5	103	--	--
31...	1400	415000	146	7.2	8.0	15.0	759	--	12.3	104	--	--
APR												
01...	1230	448000	128	7.3	6.0	11.0	749	--	12.7	104	--	--
01...	2300	431000	120	7.2	7.0	14.0	749	--	12.5	105	--	--
02...	1315	480000	114	7.0	7.0	12.0	752	--	12.0	100	--	--
03...	1030	477000	119	7.0	7.0	12.0	762	--	12.6	104	--	--
03...	1900	460000	116	7.1	6.0	6.0	763	--	11.7	94	--	--
04...	1230	404000	220	7.2	7.0	10.0	765	--	13.2	108	--	--
04...	1945	378000	114	7.3	7.0	8.0	764	--	12.8	105	--	--
05...	1230	326000	124	7.4	7.0	15.0	766	--	13.3	109	--	--
08...	1500	190000	172	7.5	9.0	16.0	763	--	12.9	111	--	--
12...	1545	337000	196	7.3	8.0	14.0	753	--	12.5	107	--	--
13...	1415	295000	128	7.4	10.0	19.0	759	--	12.6	112	--	--
15...	1045	207000	133	7.4	9.0	16.0	760	--	10.8	94	--	--
19...	1515	300000	148	7.5	12.0	22.0	759	--	11.9	111	--	--
22...	1515	196000	--	--	12.0	8.0	747	--	11.1	--	--	--
28...	1115	244000	174	7.5	11.0	20.0	771	--	11.9	107	--	--
MAY												
03...	1215	121000	178	7.3	16.0	23.0	770	--	10.3	103	--	--
20...	1315	56700	264	7.4	19.0	20.0	753	--	8.3	91	--	--
JUN												
09...	1130	6750	337	7.5	23.0	28.0	760	5.2	6.1	71	K3	48
23...	1330	46900	385	7.9	28.0	37.0	766	--	5.4	69	--	--
JUL												
07...	0915	6400	395	7.7	29.0	35.0	767	--	5.5	71	--	--
28...	0945	5960	366	7.4	30.0	34.0	762	1.5	4.5	60	<1	K6
AUG												
10...	1030	6750	404	7.6	28.0	28.0	770	--	4.3	54	--	--
24...	1000	5640	--	7.4	28.0	30.0	768	--	5.8	74	--	--
SEP												
15...	1000	5780	392	7.3	27.0	29.0	763	3.6	5.6	70	K5	K7
30...	1300	48300	354	7.3	21.0	17.0	767	--	6.5	73	--	--

K: Results based on colony count outside the accepted range (non-ideal colony).

SUSQUEHANNA RIVER BASIN

95

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER WH FET FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
NOV 1992												
18...	64	18	4.5	6.0	1.8	43	52	--	28	9.3	0.10	4.4
25...	69	19	5.2	7.3	2.3	40	49	--	27	11	0.10	4.7
30...	--	--	--	--	--	32	39	--	23	8.0	0.30	5.0
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	4.7
JAN 1993												
05...	54	15	4.1	5.5	1.4	26	32	--	25	9.3	<0.10	--
07...	--	--	--	--	--	27	33	--	--	--	--	5.1
08...	55	15	4.2	5.2	1.4	28	34	--	26	8.2	0.20	5.0
20...	73	20	5.7	7.6	1.3	31	38	--	33	12	<0.10	5.4
MAR 11...	91	25	6.8	12	2.2	--	--	47	34	29	<0.10	4.6
25...	91	25	7.0	11	1.9	45	55	--	35	20	<0.10	--
27...	75	21	5.4	8.0	2.0	25	30	--	26	14	<0.10	2.6
28...	68	19	5.1	8.1	1.7	31	38	--	27	14	<0.10	--
30...	53	15	3.8	6.4	1.7	17	21	--	21	16	<0.10	4.7
31...	50	14	3.6	6.4	1.6	25	30	--	20	10	<0.10	4.8
31...	--	--	--	--	--	20	24	--	--	--	--	4.5
APR 01...	39	11	2.9	4.3	1.5	20	24	--	18	7.9	<0.10	4.3
01...	39	11	2.8	3.9	1.5	12	15	--	17	9.4	<0.10	4.5
02...	39	11	2.8	3.9	1.5	20	24	--	18	6.5	<0.10	4.4
03...	36	10	2.7	3.6	1.5	17	21	--	17	6.4	<0.10	4.3
03...	36	10	2.7	3.5	1.4	19	23	--	17	6.8	<0.10	4.3
04...	39	11	2.8	3.5	1.5	19	23	--	17	6.2	<0.10	4.5
04...	39	11	2.9	3.4	1.4	23	28	--	18	5.8	<0.10	4.5
05...	40	11	3.1	3.3	1.4	21	26	--	19	5.9	<0.10	4.7
08...	54	15	4.1	4.3	1.4	26	32	--	26	7.9	<0.10	5.0
12...	54	15	4.1	4.3	1.5	29	35	--	23	7.8	<0.10	4.6
13...	43	12	3.2	3.6	1.4	22	27	--	18	6.7	<0.10	4.9
15...	47	13	3.5	4.2	1.2	23	28	--	22	7.6	<0.10	4.8
19...	49	14	3.5	3.4	1.4	28	34	--	23	6.0	<0.10	4.8
22...	61	17	4.5	4.4	1.3	--	--	--	25	8.0	<0.10	--
28...	61	17	4.5	4.8	1.3	32	39	--	24	7.8	<0.10	5.0
MAY 03...	65	18	4.8	5.1	1.2	31	38	--	29	8.1	<0.10	5.0
20...	--	--	--	--	--	51	62	--	--	--	--	1.7
JUN 09...	120	33	9.8	11	1.8	--	--	--	55	21	0.10	0.79
23...	--	--	--	--	--	66	80	--	--	--	--	0.90
JUL 07...	140	37	11	12	2.2	68	83	--	67	25	0.20	1.8
28...	140	36	11	14	2.4	78	95	--	56	23	0.10	1.6
AUG 10...	140	38	12	16	3.0	78	95	--	66	22	0.20	2.4
24...	160	41	13	17	3.0	73	89	--	77	26	0.10	--
SEP 15...	140	36	12	19	2.9	62	76	--	80	27	0.10	2.6
30...	130	34	12	17	2.8	56	68	--	69	22	0.20	3.2

SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV 1992												
18...	93	7.0	0.020	0.013	1.00	1.60	0.050	0.040	0.30	<0.20	0.050	0.011
25...	--	5.2	--	0.016	--	1.20	--	0.070	0.50	0.40	0.120	0.036
30...	--	6.6	--	0.012	--	1.50	--	0.050	0.20	<0.20	0.040	0.012
DEC												
17...	--	7.1	--	0.002	--	1.60	--	0.130	0.50	0.40	0.060	0.038
JAN 1993												
05...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	4.4	--	0.009	--	1.00	--	0.050	0.20	<0.20	0.050	0.007
08...	--	4.8	--	0.012	--	1.10	--	0.070	0.20	<0.20	0.040	0.005
20...	109	6.6	--	0.014	--	1.50	--	0.110	<0.20	<0.20	0.020	0.009
MAR												
11...	150	11	--	0.014	--	2.60	--	0.110	0.40	0.30	0.070	0.022
25...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	9.7	--	0.010	--	2.20	--	0.070	0.30	<0.20	0.050	0.015
28...	--	10	--	0.010	--	2.30	--	0.080	0.50	0.20	0.060	0.021
30...	--	5.7	--	0.008	--	1.30	--	0.120	0.60	0.40	0.110	0.013
31...	--	5.7	--	0.007	--	1.30	--	0.120	0.50	0.30	0.090	0.011
31...	--	4.8	--	0.006	--	1.10	--	0.140	0.60	0.30	0.110	0.011
APR												
01...	--	4.2	--	0.005	--	0.960	--	0.150	0.60	0.30	0.120	0.008
01...	--	4.4	--	0.006	--	0.990	--	0.160	1.1	0.30	0.260	0.011
02...	--	4.3	--	0.006	--	0.970	--	0.170	0.90	0.30	0.320	0.009
03...	--	4.2	--	0.006	--	0.960	--	0.200	1.0	0.40	0.310	0.009
03...	--	4.4	--	0.006	--	0.990	--	0.210	0.90	0.50	0.240	0.011
04...	--	4.4	--	0.005	--	0.990	--	0.150	1.0	0.40	0.210	0.013
04...	--	4.8	--	0.005	--	1.10	--	0.120	0.60	0.40	0.190	0.014
05...	--	4.4	--	0.004	--	0.990	--	0.090	0.70	0.30	0.130	0.013
08...	--	5.3	--	0.005	--	1.20	--	0.070	0.40	<0.20	0.050	0.009
12...	--	4.4	--	0.006	--	1.00	--	0.070	0.30	0.20	0.050	0.010
13...	--	5.3	--	0.008	--	1.20	--	0.090	0.30	0.30	0.060	0.014
15...	--	4.4	--	0.006	--	1.00	--	0.060	0.50	0.20	0.040	0.009
19...	--	4.4	--	0.008	--	1.00	--	0.050	0.40	0.20	0.100	0.009
22...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	4.8	--	0.007	--	1.10	--	0.050	0.20	0.20	0.020	0.014
MAY												
03...	--	4.9	--	0.002	--	1.10	--	0.060	0.20	<0.20	0.020	0.014
20...	--	5.3	--	0.011	--	1.20	--	0.100	0.50	<0.20	<0.010	0.006
JUN												
09...	189	5.6	--	0.026	--	1.30	--	0.270	0.50	0.30	0.020	0.010
23...	--	5.6	--	0.030	--	1.30	--	0.160	0.40	0.40	0.030	0.005
JUL												
07...	--	5.0	--	0.180	--	1.30	--	0.090	0.30	0.30	0.030	0.008
28...	214	--	--	<0.001	--	1.10	--	0.070	0.30	0.20	0.010	0.003
AUG												
10...	--	4.3	--	0.124	--	1.10	--	0.070	0.30	0.30	0.010	0.004
24...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
15...	225	3.3	--	0.128	--	0.880	--	0.060	0.20	0.30	0.010	0.007
30...	--	5.1	--	0.049	--	1.20	--	0.060	0.40	0.20	0.050	0.014

SUSQUEHANNA RIVER BASIN

97

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)
NOV 1992												
18...	0.010	0.007	<10	<1	<0.60	24	<1	<0.10	<1	<0.20	<3	2
25...	--	0.029	<10	<1	<0.60	--	<1	<0.10	5	0.44	--	3
30...	--	0.010	<10	<1	<0.60	--	<1	<0.10	5	0.77	--	2
DEC 17...	--	0.026	20	--	--	--	--	--	--	--	--	--
JAN 1993												
05...	--	--	30	<1	<0.60	--	<1	0.16	5	1.9	--	2
07...	--	0.005	30	--	--	--	--	--	--	--	--	--
08...	--	0.005	20	<1	<0.60	--	<1	<0.10	--	0.63	--	5
20...	--	0.006	30	--	--	--	--	--	--	--	--	--
MAR 11...	--	0.018	30	<1	--	29	<1	--	<1	--	<3	2
25...	--	--	30	<1	<0.60	--	<1	<0.10	<1	<0.20	--	<1
27...	--	0.011	<10	<1	<0.60	--	<1	<0.10	1	0.36	--	2
28...	--	0.016	20	<1	<0.60	--	<1	<0.10	1	0.59	--	2
30...	--	0.007	<10	<1	<0.60	--	<1	<0.10	3	<0.20	--	4
31...	--	0.006	<10	1	0.65	--	<1	<0.10	<1	<0.20	--	4
31...	--	0.006	<10	<1	<0.60	--	<1	<0.10	5	<0.20	--	3
APR 01...	--	0.004	<10	1	<0.60	--	<1	<0.10	1	<0.20	--	4
01...	--	0.005	<10	2	<0.60	--	<1	<0.10	6	<0.20	--	9
02...	--	0.005	<10	2	<0.60	--	<1	<0.10	4	0.65	--	6
03...	--	0.005	<10	2	0.88	--	<1	<0.10	3	<0.20	--	7
03...	--	0.005	20	2	1.03	--	<1	<0.10	5	<0.20	--	6
04...	--	0.007	40	1	<0.60	--	<1	<0.10	4	<0.20	--	6
04...	--	0.008	20	2	<0.60	--	<1	<0.10	2	0.35	--	5
05...	--	0.007	10	1	<0.60	--	<1	<0.10	1	<0.20	--	4
08...	--	0.005	20	<1	<0.60	--	<1	<0.10	<1	<0.20	--	2
12...	--	0.007	30	<1	<0.60	--	<1	<0.10	2	<0.20	--	5
13...	--	0.011	10	1	<0.60	--	<1	<0.10	1	<0.20	--	5
15...	--	0.005	40	1	<0.60	--	<1	<0.10	4	<0.20	--	4
19...	--	0.008	30	<1	<0.60	--	<1	<0.10	1	<0.20	--	4
22...	--	--	20	<1	<0.60	--	<1	<0.10	--	0.44	--	3
28...	--	0.011	20	<1	<0.60	--	<1	<0.10	<1	0.46	--	3
MAY 03...	--	0.007	20	<1	<0.60	--	<1	<0.10	<1	0.46	--	<1
20...	--	0.003	--	--	--	--	--	--	--	--	--	--
JUN 09...	--	0.004	--	<1	<0.60	44	<1	<0.10	2	1.1	<3	4
23...	--	0.006	--	--	<0.60	--	--	<0.10	--	0.38	--	--
JUL 07...	--	0.003	20	<1	<0.60	--	<1	<0.10	<1	0.83	--	2
28...	--	<0.001	20	<1	1.26	--	<1	0.15	<1	0.59	--	1
AUG 10...	--	<0.001	40	<1	1.29	--	<1	<0.10	<1	0.20	--	1
24...	--	--	20	<1	1.07	--	<1	0.15	<1	<0.20	--	2
SEP 15...	--	0.001	<10	<1	1.20	28	<1	<0.10	<1	0.34	<3	1
30...	--	0.009	10	<1	<0.60	--	<1	<0.10	<1	0.84	--	<1

SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV 1992												
18...	1.2	--	21	<1	<0.06	<4	42	<0.10	--	9	<1	<1.0
25...	1.6	--	540	3	<0.06	--	--	<0.10	--	--	--	--
30...	0.97	--	<3	1	<0.06	--	--	<0.10	--	--	--	--
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 1993												
05...	1.5	--	12	2	0.92	--	--	<0.10	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
08...	0.69	--	14	1	<0.06	--	--	<0.10	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 11...	1.1	--	13	1	--	<4	120	<0.10	5	4	<1	<1.0
25...	0.74	650	17	1	<0.06	--	--	<0.10	5	4	--	--
27...	1.5	800	11	1	0.28	--	--	<0.10	5	2	--	--
28...	0.79	830	12	1	<0.06	--	--	<0.10	5	2	--	--
30...	1.2	2400	17	4	1.0	--	--	<0.10	9	3	--	--
31...	0.36	3000	22	5	<0.06	--	--	<0.10	12	3	--	--
31...	0.39	3000	--	5	<0.06	--	--	<0.10	12	3	--	--
APR 01...	0.30	3100	18	5	<0.06	--	--	--	12	3	--	--
01...	0.66	8600	25	15	0.15	--	--	<0.10	32	3	--	--
02...	0.90	6500	33	11	0.42	--	--	<0.10	21	4	--	--
03...	0.42	6600	31	12	<0.06	--	--	<0.10	21	4	--	--
03...	0.50	6400	34	11	<0.06	--	--	<0.10	20	4	--	--
04...	0.41	5800	66	9	<0.06	--	--	<0.10	19	4	--	--
04...	0.64	5200	24	8	<0.06	--	--	<0.10	17	4	--	--
05...	0.44	4100	10	6	<0.06	--	--	<0.10	15	3	--	--
08...	0.70	1100	5	2	<0.06	--	--	<0.10	8	4	--	--
12...	0.81	2700	6	4	<0.06	--	--	<0.10	9	3	--	--
13...	0.90	3600	13	5	<0.06	--	--	<0.10	9	3	--	--
15...	0.59	3900	6	4	<0.06	--	--	<0.10	8	3	--	--
19...	1.1	2600	11	5	0.28	--	--	<0.10	10	3	--	--
22...	0.66	1700	24	2	<0.06	--	--	<0.10	7	3	--	--
28...	0.76	1500	14	2	<0.06	--	--	<0.10	8	3	--	--
MAY 03...	0.53	670	36	1	<0.06	--	--	<0.10	5	4	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	0.68	480	8	1	<0.06	7	290	--	5	2	<1	<1.0
23...	0.86	--	--	--	<0.06	--	--	<0.10	--	--	--	--
JUL 07...	0.81	330	<3	<1	<0.06	--	--	<0.10	3	1	--	--
28...	1.0	200	<3	<1	<0.06	--	--	<0.10	2	1	--	--
AUG 10...	0.98	270	7	<1	<0.06	--	--	<0.10	3	2	--	--
24...	1.1	180	7	<1	<0.06	--	--	--	2	2	--	--
SEP 15...	1.4	--	4	<1	<0.06	13	<1	<0.10	2	2	<1	<1.0
30...	1.1	350	10	<1	<0.06	--	--	--	4	3	--	--

SUSQUEHANNA RIVER BASIN

99

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	PCB, TOTAL (UG/L)	ALA- CHLOR, WATER, DISS, REC, (UG/L)	ALDRIN, TOTAL (UG/L)	AMETRYN WATER, DISS, REC, (UG/L)	ATRA- ZINE, WATER, DISS, REC (UG/L)
NOV 1992												
18...	--	82	<6	30	3.9	3.2	--	--	--	--	--	--
25...	--	--	--	30	3.3	4.1	--	--	--	--	--	--
30...	--	--	--	10	2.6	3.1	--	--	--	--	--	--
DEC 17...	--	--	--	--	--	2.9	--	--	--	--	--	--
JAN 1993												
05...	--	--	--	30	9.8	--	--	--	--	--	--	--
07...	--	--	--	--	--	2.6	--	--	--	--	--	--
08...	--	--	--	30	4.4	2.8	--	--	--	--	--	--
20...	--	--	--	--	--	2.0	--	--	--	--	--	--
MAR 11...	130	120	<6	10	--	3.8	--	--	--	--	--	--
25...	100	--	--	<10	2.6	--	--	--	--	--	--	--
27...	100	--	--	<10	15	3.7	--	--	--	--	--	--
28...	80	--	--	10	8.1	3.8	--	--	--	--	--	--
30...	70	--	--	20	4.0	5.7	--	--	--	--	--	--
31...	60	--	--	30	1.7	7.8	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
31...	60	--	--	30	1.6	11	--	--	--	--	--	--
APR 01...	40	--	--	30	2.1	8.1	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
01...	60	--	--	100	2.9	26	--	--	--	--	--	--
02...	40	--	--	70	4.6	8.8	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
03...	40	--	--	80	1.9	13	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
03...	40	--	--	80	0.92	13	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
04...	40	--	--	70	2.4	7.5	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
04...	40	--	--	60	2.2	8.2	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
05...	40	--	--	50	1.9	5.5	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
08...	60	--	--	20	6.6	3.3	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
12...	70	--	--	30	2.3	6.3	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
13...	40	--	--	30	3.1	5.5	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
15...	60	--	--	30	2.4	5.1	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
19...	70	--	--	30	5.6	6.3	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
22...	70	--	--	20	1.4	--	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
28...	70	--	--	20	3.8	4.0	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
MAY 03...	10	--	--	<10	1.3	3.9	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05
20...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	160	170	<6	<10	1.3	--	<0.10	<0.1	--	<0.001	--	--
23...	--	--	--	--	2.8	2.8	<0.10	<0.1	<0.05	<0.001	<0.05	0.43
JUL 07...	180	--	--	<10	1.0	3.7	<0.10	<0.1	<0.05	<0.001	<0.05	0.16
28...	200	--	--	<10	4.7	3.4	<0.10	<0.1	<0.05	<0.001	<0.05	0.18
AUG 10...	210	--	--	<10	3.5	3.3	--	--	<0.05	--	<0.05	0.14
24...	250	--	--	<10	1.8	--	<0.10	<0.1	<0.05	<0.001	<0.05	0.07
SEP 15...	220	230	<6	20	20	3.8	<0.10	<0.1	<0.05	<0.001	<0.05	0.05
30...	220	--	--	<10	4.1	3.3	<0.10	<0.1	<0.05	<0.001	<0.05	<0.05

SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DYRIFOS TOTAL RECOVER (UG/L)	CYANA- ZINE, WATER, DISS, REC (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L)	DEF TOTAL (UG/L)	DEISO- PROPYL ATRAZIN WATER, DISS, REC (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- SYSTON TOTAL (UG/L)
NOV 1992												
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
17...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 1993												
05...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
11...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
31...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
31...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
01...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
01...	--	--	--	--	--	--	--	--	--	--	--	--
02...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
03...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
03...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
04...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
04...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
05...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
08...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	0.07	<0.01	<0.001	<0.01
12...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	0.05	<0.01	0.08	<0.01	<0.001	<0.01
13...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	0.05	<0.01	0.08	<0.01	<0.001	<0.01
15...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	0.07	<0.01	<0.001	<0.01
19...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
22...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
28...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
MAY												
03...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
20...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	<0.1	<0.01	--	<0.001	<0.001	<0.001	--	<0.01	--	<0.01	<0.001	<0.01
23...	<0.1	<0.01	0.30	<0.001	<0.001	<0.001	0.14	<0.01	0.12	<0.01	<0.001	<0.01
JUL												
07...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	0.06	<0.01	<0.001	<0.01
28...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	0.08	<0.01	0.06	<0.01	<0.001	<0.01
AUG												
10...	--	--	<0.20	--	--	--	0.08	--	0.08	--	--	--
24...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	0.06	<0.01	<0.05	<0.01	<0.001	<0.01
SEP												
15...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01
30...	<0.1	<0.01	<0.20	<0.001	<0.001	<0.001	<0.05	<0.01	<0.05	<0.01	<0.001	<0.01

SUSQUEHANNA RIVER BASIN

101

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	ETHION, TOTAL (UG/L)	FONOFOS (DY- FONATE) WATER WHOLE TOT.REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METO- LACHLOR WATER DISSOLV (UG/L)
NOV 1992											
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
17...	--	--	--	--	--	--	--	--	--	--	--
JAN 1993											
05...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
01...	--	--	--	--	--	--	--	--	--	--	--
02...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
03...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
03...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
04...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
04...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
05...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
05...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
08...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
12...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
13...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
15...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
19...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
22...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
28...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
MAY											
03...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	--
23...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	0.001	<0.01	<0.01	<0.01	0.20
JUL											
07...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	0.09
28...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	0.07
AUG											
10...	--	--	--	--	--	--	--	--	--	--	<0.05
24...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	0.001	<0.01	<0.01	<0.01	<0.05
SEP											
15...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01	<0.05
30...	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	0.001	<0.01	<0.01	<0.01	<0.05

SUSQUEHANNA RIVER BASIN

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	METRI- BUZIN SENCOR WATER DISSOLV (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	PHORATE TOTAL (UG/L)	PRO- METRYN, WATER, DISS, REC (UG/L)	PRO- METON, WATER, DISS, REC (UG/L)	PROP- AZINE WATER DISS REC (UG/L)	SI- MAZINE, WATER, DISS, REC (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)
NOV 1992											
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
DEC											
17...	--	--	--	--	--	--	--	--	--	--	--
JAN 1993											
05...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAR											
11...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
31...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
01...	--	--	--	--	--	--	--	--	--	--	--
02...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
03...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
03...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
04...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
04...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
05...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
08...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
12...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
13...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
15...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
19...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
22...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
28...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
MAY											
03...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
20...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	--	<0.01	<0.01	<0.1	<0.01	--	--	--	--	<1	<0.01
23...	0.07	<0.01	<0.01	<0.1	<0.01	<0.05	0.05	<0.05	0.09	<1	<0.01
JUL											
07...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	0.05	<1	<0.01
28...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	0.06	<1	<0.01
AUG											
10...	<0.05	--	--	--	--	<0.05	<0.05	<0.05	0.06	--	--
24...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	<0.05	<1	<0.01
SEP											
15...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	0.05	<1	<0.01
30...	<0.05	<0.01	<0.01	<0.1	<0.01	<0.05	<0.05	<0.05	0.05	<1	<0.01

SUSQUEHANNA RIVER BASIN

103

01578310 SUSQUEHANNA RIVER AT CONOWINGO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

RADIOCHEMICAL ANALYSES

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	ALPHA, COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L)	ALPHA, RADIO. WATER DISS AS TH-230 (PCI/L)	ALPHA, SED SUSP DRY WGH AS TH-230 (PCI/L)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L)	
SEP 1993 15...	1000	5780	1.1	0.80	0.32	0.7	<0.6	1.0	<0.6	1.1	
		BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)	BETA, 2 SIGMA SED, SUSP. TOT DRY SR90Y90 (PCI/L)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)
		0.84	0.50	4.4	<0.6	<0.6	3.4	0.05	0.020	0.24	<1.0

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992					
18...	1100	54700	10	1480	99
25...	1330	70400	38	7220	100
30...	1400	70400	13	2470	97
DEC					
17...	1100	72600	12	2350	96
JAN 1993					
05...	1430	95900	25	6470	99
07...	1330	101000	14	3820	100
08...	1300	114000	18	5540	96
20...	1130	69100	7	1310	94
MAR					
25...	1130	145000	21	8220	96
27...	1245	162000	32	14000	96
28...	1330	184000	28	13900	98
30...	1645	314000	79	67000	99
31...	0145	321000	67	58100	99
31...	1400	415000	97	109000	98
APR					
01...	2300	431000	338	393000	97
02...	1315	480000	214	277000	97
03...	1030	477000	251	323000	97
03...	1715	461000	230	286000	97
03...	1900	460000	234	291000	97
03...	2230	430000	167	194000	98
04...	1230	404000	175	191000	95
04...	1945	378000	177	181000	94
05...	1230	326000	131	115000	92
08...	1500	190000	28	14400	97
12...	1545	337000	95	86400	92
13...	1415	295000	118	94000	96
15...	1045	207000	99	55300	99
19...	1515	300000	92	74500	97
MAY					
03...	1215	121000	15	4900	94
20...	1315	56700	8	1220	95
AUG					
10...	1030	6750	6	109	99
SEP					
15...	1000	5780	8	125	88

SUSQUEHANNA RIVER BASIN

01580000 DEER CREEK AT ROCKS, MD

LOCATION.--Lat 39°37'49", long 76°24'13", Harford County, Hydrologic Unit 02050306, on right bank 0.3 mi upstream from bridge on Cherry Hill Road, 0.8 mi southeast of Rocks, 1.2 mi upstream from Stirrup Run, and 23.5 mi upstream from mouth.

DRAINAGE AREA.--94.4 mi².

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for November and December 1926, published in WSP 1302.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1927-36 (maximum and minimum only 1927-29, maximum only 1930-32, 1936).

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

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Prior to 1965, some regulation at low flow by mills upstream from station. 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.--Maximum stage since at least 1888, that of Aug. 23, 1933.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1730	*2,960	*7.49	Mar. 24	0700	1,960	5.98

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	48	77	116	104	99	543	234	339	101	63	54
2	46	53	71	109	e100	97	635	229	169	115	60	53
3	45	246	68	108	e95	121	390	221	159	154	59	51
4	44	101	67	110	91	1260	332	219	156	135	57	74
5	42	78	69	169	89	994	310	316	156	105	57	60
6	41	93	65	136	90	396	292	369	150	97	101	52
7	41	70	67	123	e88	306	277	242	141	100	106	50
8	40	63	63	126	e88	281	265	224	144	93	84	57
9	116	54	62	135	e86	244	256	214	191	92	69	65
10	330	51	93	127	e86	210	399	208	155	86	68	101
11	92	56	735	123	86	193	349	204	137	82	77	56
12	71	60	325	140	95	175	287	204	132	81	144	52
13	61	297	191	177	125	e170	262	241	130	79	78	51
14	55	107	149	147	116	e170	249	208	127	78	68	49
15	53	83	131	132	103	e170	242	195	126	79	64	49
16	51	74	123	128	122	e170	528	190	123	75	61	73
17	47	69	164	125	159	540	397	188	119	72	134	262
18	47	66	159	123	129	535	291	192	116	70	159	173
19	48	66	127	120	124	280	267	209	129	78	75	83
20	46	67	133	112	e120	240	252	194	177	115	69	67
21	46	64	126	107	e120	298	254	185	151	79	67	66
22	46	67	119	142	e115	361	722	177	158	74	63	65
23	46	240	119	124	121	443	346	172	125	70	61	62
24	47	126	114	117	104	1430	301	169	115	68	60	59
25	47	108	103	117	e100	645	283	164	110	68	59	58
26	46	95	98	110	100	483	310	159	108	69	57	160
27	45	89	130	109	95	411	294	156	109	69	55	387
28	44	81	127	109	98	418	259	153	104	65	57	177
29	44	79	120	109	---	377	247	150	103	74	69	94
30	44	79	136	105	---	358	241	146	104	67	56	82
31	50	---	129	103	---	308	---	187	---	64	54	---
TOTAL	1870	2830	4260	3838	2949	12183	10080	6319	4263	2654	2311	2742
MEAN	60.3	94.3	137	124	105	393	336	204	142	85.6	74.5	91.4
MAX	330	297	735	177	159	1430	722	369	339	154	159	387
MIN	40	48	62	103	86	97	241	146	103	64	54	49
CFSM	.64	1.00	1.46	1.31	1.12	4.16	3.56	2.16	1.51	.91	.79	.97
IN.	.74	1.12	1.68	1.51	1.16	4.80	3.97	2.49	1.68	1.05	.91	1.08

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1993, BY WATER YEAR (WY)

	MEAN	82.5	99.9	113	137	161	165	168	150	125	105	95.7	88.1
MAX	317	266	286	398	415	395	379	421	576	279	362	345	
(WY)	1980	1927	1984	1979	1979	1978	1984	1989	1972	1972	1933	1975	
MIN	26.0	32.5	37.8	41.7	60.2	62.2	63.2	50.9	42.8	21.0	17.4	29.0	
(WY)	1964	1932	1966	1966	1932	1981	1963	1963	1966	1966	1966	1986	

SUSQUEHANNA RIVER BASIN

105

01580000 DEER CREEK AT ROCKS, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1927 - 1993	
ANNUAL TOTAL	29796		56299		124	
ANNUAL MEAN	81.4		154		224	
HIGHEST ANNUAL MEAN					58.2	
LOWEST ANNUAL MEAN					6610	
HIGHEST DAILY MEAN	735	Dec 11	1430	Mar 24		1972
LOWEST DAILY MEAN	34	(a)	40	Oct 8		1966
ANNUAL SEVEN-DAY MINIMUM	36	Sep 16	43	Oct 2	8.6	(b)
INSTANTANEOUS PEAK FLOW	1280	Mar 27	2960	Mar 4	9.0	Sep 7 1966
INSTANTANEOUS PEAK STAGE	4.96	Mar 27	7.49	Mar 4	(c)13600	Aug 23 1933
INSTANTANEOUS LOW FLOW	33	(f)	33	(g)	(d)17.70	Aug 23 1933
ANNUAL RUNOFF (CFSM)	.86		1.63		8.0	(h)
ANNUAL RUNOFF (INCHES)	11.74		22.19		1.31	
10 PERCENT EXCEEDS	122		299		17.83	
50 PERCENT EXCEEDS	68		110		208	
90 PERCENT EXCEEDS	44		54		92	
					45	

a Sept. 1, 2.

b Sept. 11, 12 1966.

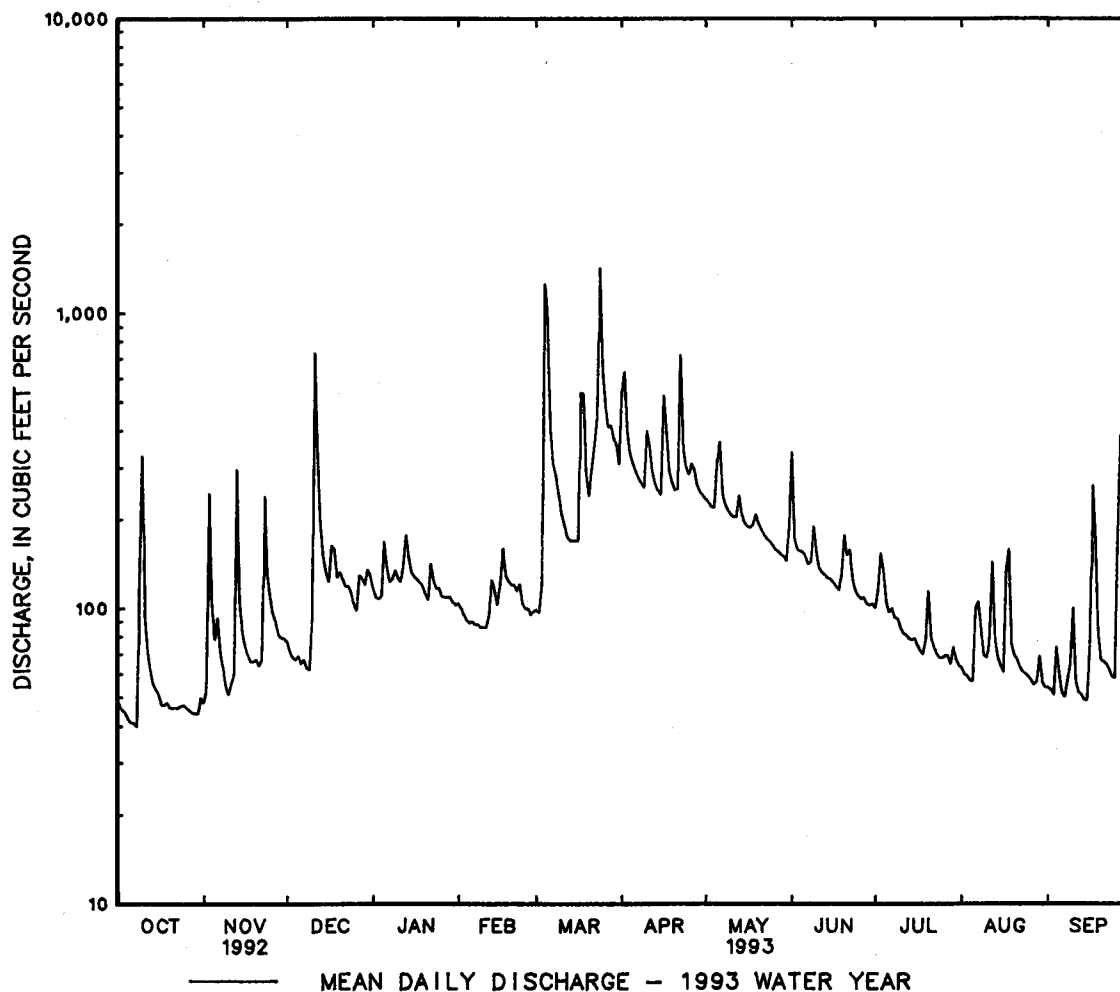
c From rating curve extended above 3,000 ft³/s, on basis of slope-area measurements at gage heights 13.3 ft and 17.7 ft.

d From floodmarks.

f Sept. 2, Nov. 9, 10.

g Nov. 9, 10.

h Dec. 16, 1930, Jan. 26, 1939, result of regulation.



BUSH RIVER BASIN

01581700 WINTERS RUN NEAR BENSON, MD

LOCATION.--Lat 39°31'12", long 76°22'24", Harford County, Hydrologic Unit 02060003, on left bank 30 ft downstream from bridge on U.S. Highway 1, 0.1 mi upstream from Heavenly Waters, 1.2 mi northeast of Benson, 1.8 mi southwest of Bel Air, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--34.8 mi².

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 195 ft above mean sea level, from topographic map.

REMARKS.--Records good below 200 ft³/s and fair above. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0430	*1,700	*5.58	May 31	2330	1,350	5.02
Mar. 4	1130	1,660	5.52	July 19	2330	1,130	4.63
Mar. 24	0445	1,190	4.75	Sep. 27	1345	1,420	5.14

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	19	28	38	33	37	200	74	217	36	24	19
2	13	24	27	35	31	56	181	73	72	48	23	19
3	13	195	27	33	32	67	110	71	62	48	23	18
4	13	41	26	33	31	768	92	71	60	41	22	19
5	12	38	27	96	31	248	85	174	59	36	21	19
6	12	37	27	51	32	120	82	136	56	34	65	17
7	12	28	26	42	32	89	80	85	52	44	46	18
8	12	24	24	43	32	79	78	74	55	34	39	18
9	74	23	24	46	30	71	78	70	68	31	30	39
10	120	22	96	41	32	65	186	67	53	30	27	59
11	31	21	390	38	30	64	133	65	49	29	28	28
12	23	28	129	58	50	60	94	69	47	27	71	22
13	18	111	60	79	52	e60	82	71	47	26	34	21
14	17	36	48	55	43	e58	79	64	44	38	30	20
15	16	28	42	47	39	e58	77	61	45	31	25	19
16	16	24	39	43	94	70	257	69	44	26	25	21
17	15	21	73	42	68	336	155	63	42	24	117	110
18	15	21	57	39	43	209	98	65	41	24	80	81
19	16	21	44	36	39	110	86	70	40	121	40	49
20	16	21	50	34	46	98	82	65	46	164	35	47
21	16	20	42	35	40	159	95	60	85	57	35	32
22	16	26	40	68	60	169	290	59	68	39	27	30
23	16	297	41	44	45	217	101	57	46	31	24	27
24	16	57	37	40	38	658	88	56	40	29	22	27
25	18	44	33	40	40	205	84	54	37	29	22	28
26	16	47	32	36	39	139	109	52	38	29	21	122
27	16	37	30	36	35	117	94	50	37	29	20	310
28	16	32	52	35	35	121	82	50	35	26	20	94
29	16	30	48	35	---	112	79	49	36	31	20	52
30	16	28	49	33	---	101	76	48	36	25	19	45
31	18	---	44	33	---	89	---	165	---	24	19	---
TOTAL	657	1401	1712	1364	1152	4810	3413	2257	1657	1241	1054	1430
MEAN	21.2	46.7	55.2	44.0	41.1	155	114	72.8	55.2	40.0	34.0	47.7
MAX	120	297	390	96	94	768	290	174	217	164	117	310
MIN	12	19	24	33	30	37	76	48	35	24	19	17
CFSM	.61	1.34	1.59	1.26	1.18	4.46	3.27	2.09	1.59	1.15	.98	1.37
IN.	.70	1.50	1.83	1.46	1.23	5.14	3.65	2.41	1.77	1.33	1.13	1.53

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1993, BY WATER YEAR (WY)

	34.8	43.3	52.8	59.3	66.7	65.0	63.5	60.6	53.9	46.0	39.3	42.1
MEAN	34.8	43.3	52.8	59.3	66.7	65.0	63.5	60.6	53.9	46.0	39.3	42.1
MAX	94.0	86.2	118	150	151	155	134	162	204	133	137	140
(WY)	1980	1972	1984	1979	1979	1993	1983	1989	1972	1975	1971	1975
MIN	13.4	12.5	18.2	16.9	28.1	22.5	28.8	17.9	12.9	11.3	11.6	10.4
(WY)	1970	1982	1981	1981	1992	1981	1969	1969	1969	1986	1981	1986

BUSH RIVER BASIN

107

01581700 WINTERS RUN NEAR BENSON, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1967 - 1993

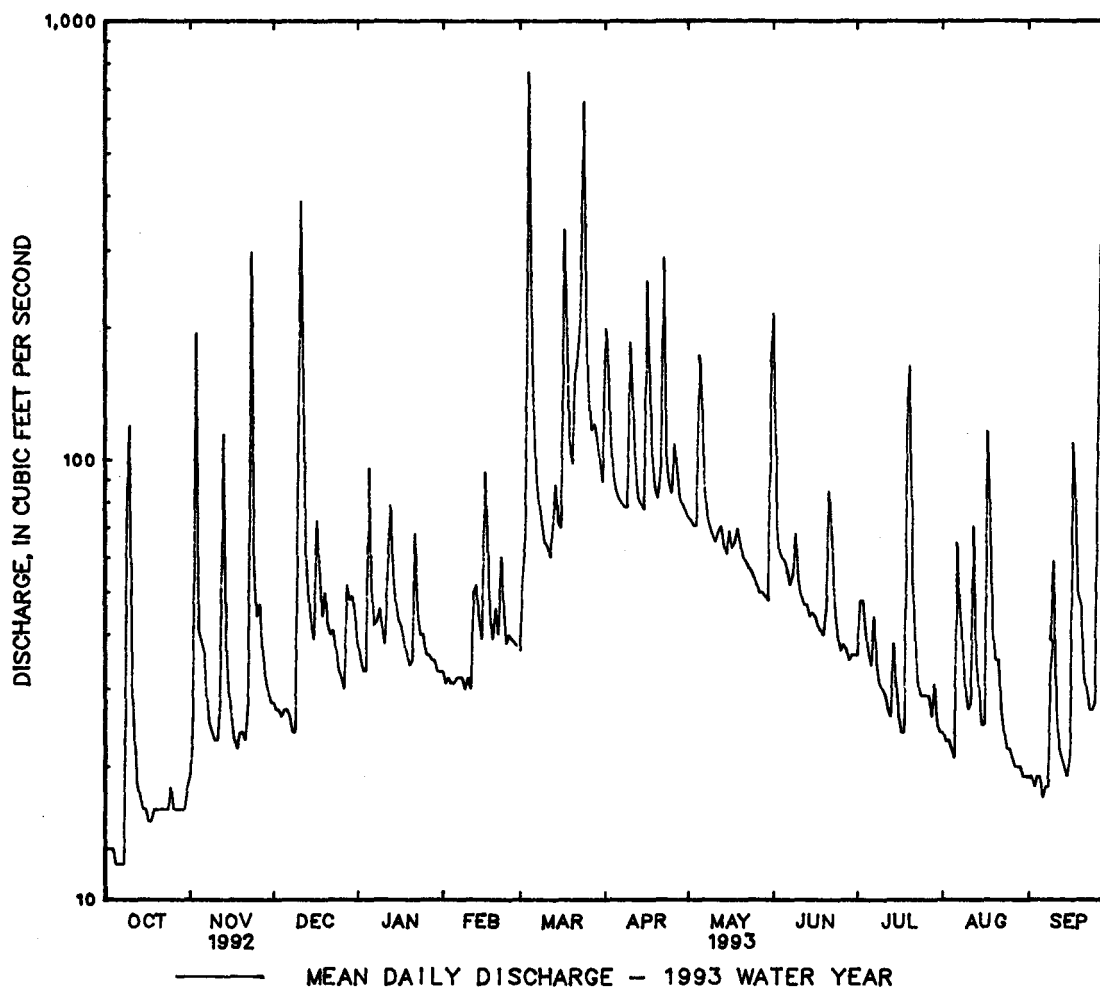
ANNUAL TOTAL	11447.2		22148			
ANNUAL MEAN	31.3		60.7		51.9	
HIGHEST ANNUAL MEAN					86.0	1972
LOWEST ANNUAL MEAN					22.9	1981
HIGHEST DAILY MEAN	390	Dec 11	768	Mar 4	3000	Jun 22 1972
LOWEST DAILY MEAN	7.6	Sep 20	12	(a)	6.7	(b)
ANNUAL SEVEN-DAY MINIMUM	8.8	Sep 15	12	Oct 2	7.9	Jun 30 1969
INSTANTANEOUS PEAK FLOW	1700	Nov 23	1700	Nov 23	7600	Jun 22 1972
INSTANTANEOUS PEAK STAGE	5.58	Nov 23	5.58	Nov 23	11.60	Jun 22 1972
INSTANTANEOUS LOW FLOW	11	(c)	11	(c)	(d)3.0	Jan 10 1982
ANNUAL RUNOFF (CFSM)	.90		1.74		1.49	
ANNUAL RUNOFF (INCHES)	12.24		23.68		20.27	
10 PERCENT EXCEEDS	47		110		85	
50 PERCENT EXCEEDS	24		41		38	
90 PERCENT EXCEEDS	11		19		16	

a Oct. 5-8.

b Aug. 28, 29, 1981.

c Oct. 5-9.

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 mi².

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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1800	*1,500	*5.12	May 31	2215	1,060	4.17

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	34	41	59	55	59	323	138	185	59	38	32
2	26	42	40	56	e53	60	339	133	105	84	37	31
3	26	147	39	55	e53	75	230	129	99	88	36	30
4	26	55	39	56	52	658	199	128	96	91	35	51
5	25	46	41	95	51	407	187	330	96	61	34	35
6	25	48	36	69	52	209	177	239	90	57	67	32
7	25	41	38	62	e46	182	168	165	86	64	60	31
8	25	38	37	64	e45	163	162	150	109	55	52	39
9	117	36	36	66	e46	139	159	141	154	53	41	41
10	157	36	80	59	e48	123	230	135	93	51	39	61
11	48	36	362	58	50	113	192	131	87	49	43	35
12	39	37	160	78	58	102	173	137	82	47	92	33
13	35	205	103	95	79	102	157	149	80	46	46	32
14	33	63	81	78	65	e100	149	130	77	45	41	31
15	32	51	71	71	58	e100	145	123	75	48	38	31
16	31	45	66	67	77	e100	269	121	73	44	37	43
17	31	42	96	65	88	355	205	118	70	42	56	171
18	31	40	80	61	71	258	167	122	69	41	58	73
19	32	41	67	58	e58	161	155	129	70	59	41	47
20	32	40	73	57	e65	145	148	120	75	87	39	39
21	33	38	65	57	e65	188	165	112	89	49	38	39
22	33	41	60	80	71	209	350	107	85	46	36	38
23	33	147	61	65	67	252	194	105	69	42	35	37
24	33	68	57	61	58	579	173	103	65	41	35	35
25	33	60	54	60	e52	303	164	99	63	41	34	36
26	32	56	54	57	e52	243	182	96	62	42	33	83
27	32	51	e46	56	55	217	164	93	61	41	32	97
28	32	47	63	56	e50	219	151	91	59	39	36	65
29	32	44	62	56	---	220	145	89	59	49	41	45
30	32	42	77	53	---	201	142	87	60	39	33	40
31	37	---	68	55	---	177	---	194	---	38	32	---
TOTAL	1185	1717	2253	1985	1640	6419	5764	4144	2543	1638	1315	1433
MEAN	38.2	57.2	72.7	64.0	58.6	207	192	134	84.8	52.8	42.4	47.8
MAX	157	205	362	95	88	658	350	330	185	91	92	171
MIN	25	34	36	53	45	59	142	87	59	38	32	30
CFSM	.72	1.08	1.37	1.21	1.11	3.91	3.63	2.53	1.60	1.00	.80	.90
IN.	.83	1.21	1.58	1.40	1.15	4.51	4.05	2.91	1.79	1.15	.92	1.01

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1993, BY WATER YEAR (WY)

	45.2	54.4	63.3	73.6	86.9	89.8	90.7	83.9	71.0	57.5	47.3	48.2
MEAN	45.2	54.4	63.3	73.6	86.9	89.8	90.7	83.9	71.0	57.5	47.3	48.2
MAX	203	129	145	180	187	207	194	202	353	158	159	227
(WY)	1980	1972	1973	1979	1979	1993	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

01582000 LITTLE FALLS AT BLUE MOUNT, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1944 - 1993

ANNUAL TOTAL	16029		32036			
ANNUAL MEAN	43.8		87.8		67.6	
HIGHEST ANNUAL MEAN					132	1972
LOWEST ANNUAL MEAN					31.8	1966
HIGHEST DAILY MEAN	362	Dec 11	658	Mar 4	4730	Jun 22 1972
LOWEST DAILY MEAN	18	(a)	25	(b)	4.5	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	20	Aug 30	25	Oct 2	4.8	Sep 6 1966
INSTANTANEOUS PEAK FLOW	736	(c)	1500	Mar 4	(d)8280	Jun 22 1972
INSTANTANEOUS PEAK STAGE	3.38	(c)	5.12	Mar 4	18.54	Jun 22 1972
INSTANTANEOUS LOW FLOW	17	(a)	24	(f)	1.9	Aug 26 1966
ANNUAL RUNOFF (CFSM)	.83		1.66		1.28	
ANNUAL RUNOFF (INCHES)	11.27		22.53		17.36	
10 PERCENT EXCEEDS	66		175		116	
50 PERCENT EXCEEDS	37		60		51	
90 PERCENT EXCEEDS	25		33		25	

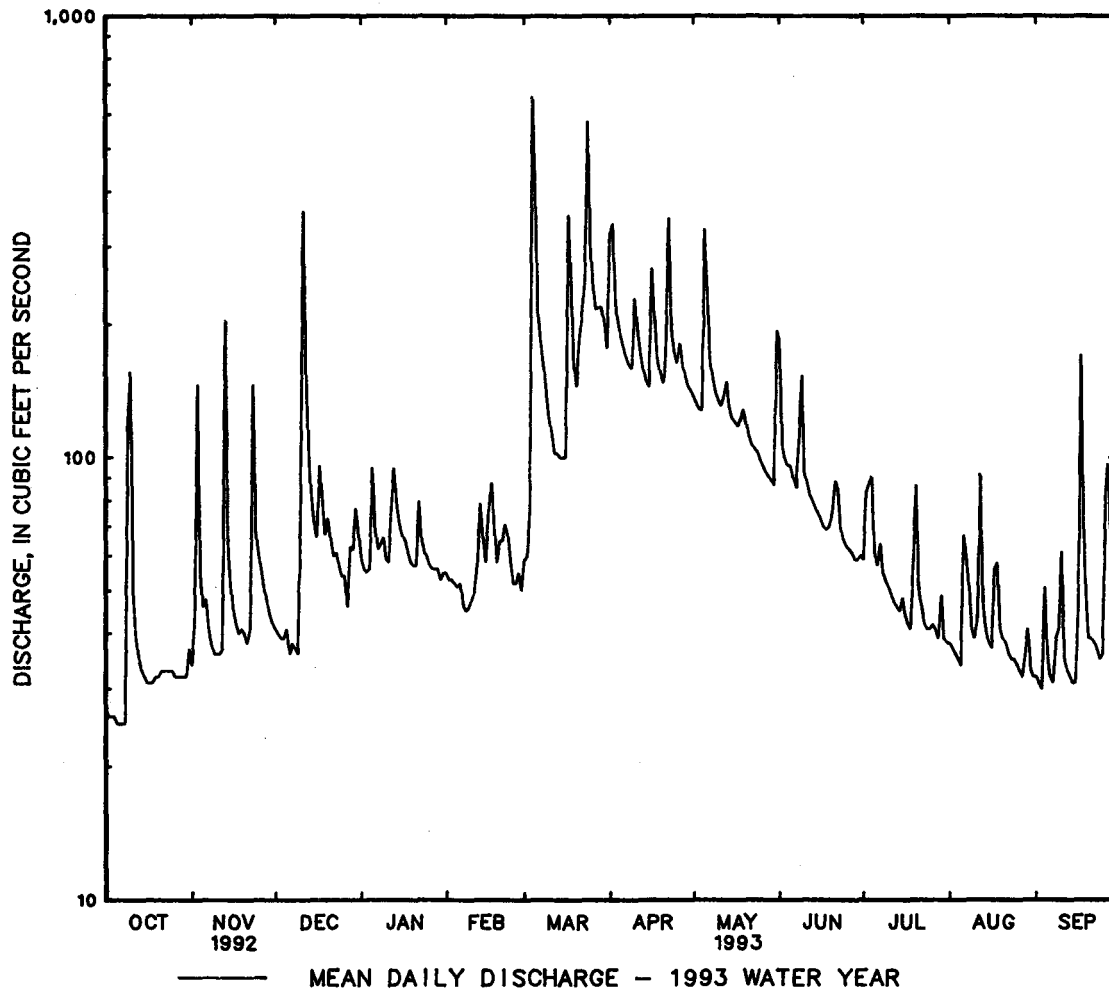
a Sept. 1, 2.

b Oct. 5-8.

c Mar. 27, Nov. 13.

d From rating curve extended above 1,300 ft³/s on basis of contracted-opening measurement of peak flow.

f Oct. 5-7, Dec. 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 mi².

PERIOD OF RECORD.--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 discharge (ice effect, missing record), 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, 1,930 ft³/s, Mar. 4, gage height, 7.18 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	48	63	92	e81	e84	782	402	751	154	119	108
2	62	54	62	85	e81	87	1070	388	405	175	117	107
3	61	197	60	83	e81	105	787	370	318	225	116	105
4	60	83	57	82	e81	818	631	361	283	236	114	126
5	59	70	61	132	e80	657	566	618	267	187	113	111
6	58	72	56	106	80	315	531	859	261	170	158	106
7	58	63	56	95	e80	260	500	552	231	186	148	104
8	58	59	55	95	e79	243	474	455	244	169	145	114
9	130	56	52	98	e79	215	455	412	381	155	125	122
10	303	55	81	93	e78	188	569	396	285	148	120	153
11	82	54	438	90	78	178	773	381	249	142	126	112
12	67	55	221	104	85	161	612	375	227	138	227	109
13	61	246	138	128	116	e160	527	422	212	134	159	108
14	58	92	110	115	101	e160	474	380	208	131	142	107
15	51	73	97	105	90	e155	451	348	208	134	129	106
16	50	67	90	99	106	e155	647	332	201	130	120	118
17	47	64	117	97	131	e430	796	324	192	127	129	352
18	46	62	114	93	109	501	594	319	186	126	157	192
19	47	61	95	90	e94	431	509	351	185	178	124	136
20	46	62	98	88	e94	412	467	339	198	247	120	124
21	47	59	93	91	94	470	460	312	e340	148	119	121
22	47	61	90	113	109	573	905	296	e290	138	115	e120
23	46	186	92	99	104	630	668	283	e180	130	114	e110
24	46	101	91	93	90	1500	539	275	e175	126	113	e105
25	48	89	83	93	e88	1040	497	271	e170	126	111	e115
26	46	81	83	87	e87	789	512	261	e165	126	110	e260
27	46	76	e83	86	85	673	503	250	e160	127	109	e210
28	46	70	93	85	e83	657	447	242	e155	122	110	e180
29	46	67	97	83	---	636	426	239	e150	134	125	136
30	46	64	103	e83	---	617	413	229	e150	123	110	129
31	50	---	102	e82	---	536	---	290	---	119	109	---
TOTAL	1982	2447	3131	2965	2544	13836	17585	11332	7427	4711	3953	4106
MEAN	63.9	81.6	101	95.6	90.9	446	586	366	248	152	128	137
MAX	303	246	438	132	131	1500	1070	859	751	247	227	352
MIN	46	48	52	82	78	84	413	229	150	119	109	104
(†)	11005	12312	14105	15667	16555	20097	20056	20092	19877	19799	19673	19828

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

MEAN	132	154	168	176	195	211	250	260	181	171	139	138
MAX	198	211	335	339	384	446	586	476	284	280	184	227
(WY)	1990	1989	1984	1991	1984	1993	1993	1989	1989	1986	1990	1987
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

† Monthend contents, in millions of gallons, in Prettyboy Reservoir (contents on Sept. 30, 1992, 11,226,000,000 gal). Records furnished by Baltimore Department of Public Works.

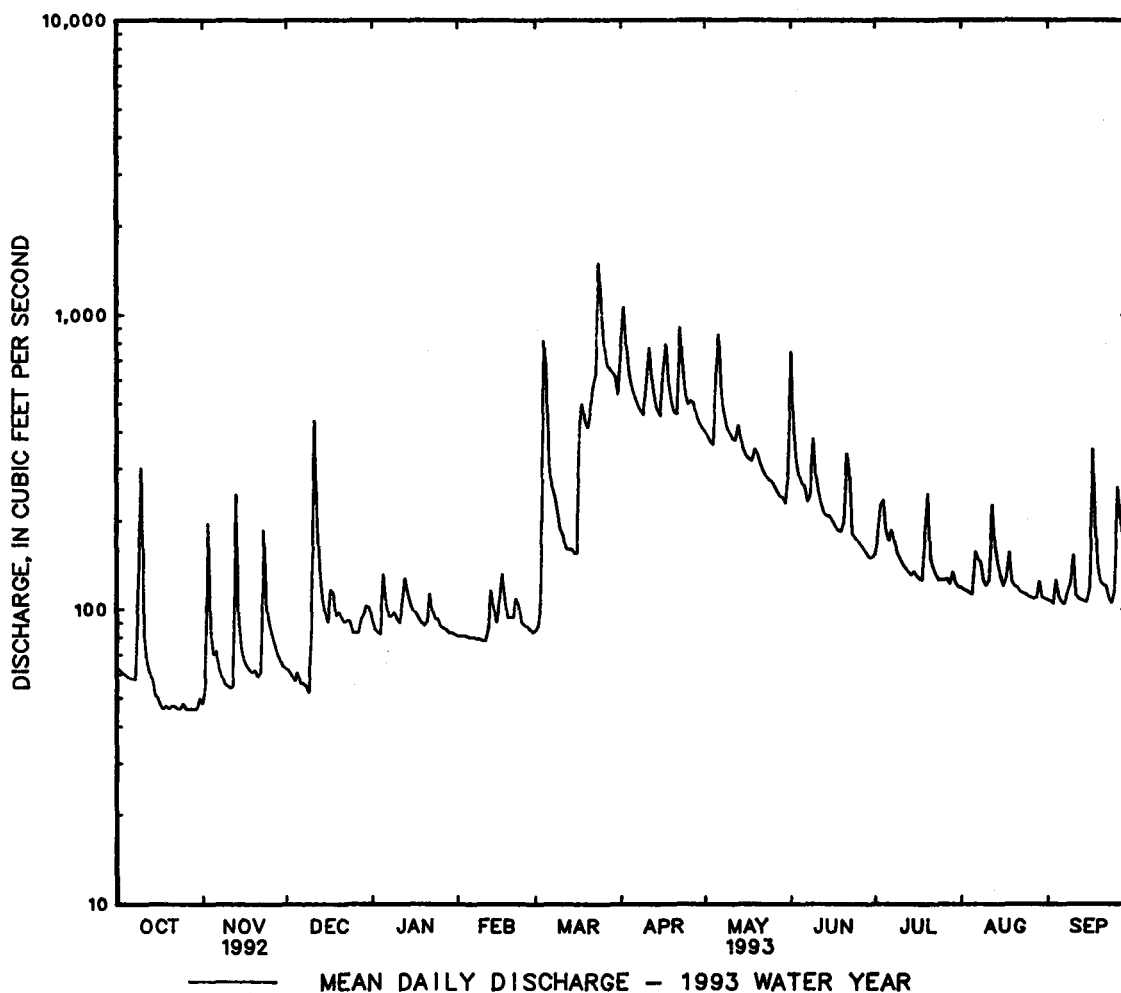
GUNPOWDER RIVER BASIN

111

01582500 GUNPOWDER FALLS AT GLENCOE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1983 - 1993
ANNUAL TOTAL	40292	76019	
ANNUAL MEAN	110	208	182
HIGHEST ANNUAL MEAN			257
LOWEST ANNUAL MEAN			118
HIGHEST DAILY MEAN	518 Mar 27	1500 Mar 24	2000 Feb 12 1985
LOWEST DAILY MEAN	46 (a)	46 (a)	42 (b)
ANNUAL SEVEN-DAY MINIMUM	46 Oct 23	46 Oct 23	43 Sep 14 1986
INSTANTANEOUS PEAK FLOW	1050 Oct 10	1930 Mar 4	4900 Feb 12 1985
INSTANTANEOUS PEAK STAGE	4.69 Oct 10	7.18 Mar 4	(c)13.20 Feb 12 1985
INSTANTANEOUS LOW FLOW	46 (d)	(f)43 Feb 2	(f)35 Jan 4 1983
ANNUAL RUNOFF (CFSM)	.69	1.30	1.14
ANNUAL RUNOFF (INCHES)	9.37	17.67	15.43
10 PERCENT EXCEEDS	189	500	319
50 PERCENT EXCEEDS	97	123	142
90 PERCENT EXCEEDS	58	60	75

- a Oct. 18, 20, 23, 24, 26-30.
b Sept. 17, 18, 1986.
c From floodmarks.
d Oct. 17, 18, 20, 21, 23-30.
f Result of freezeup.



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 mi².

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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 10	0015	1,030	4.33	Apr. 1	2330	1,140	4.56
Mar. 4	1900	*2,710	*6.94	Apr. 16	1715	1,460	5.14
Mar. 24	0645	1,080	4.43				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	30	42	60	53	56	386	139	238	59	36	33
2	23	36	41	56	48	67	393	136	97	71	35	34
3	23	178	39	55	e54	86	203	134	91	81	34	32
4	22	61	38	55	51	1060	176	134	97	75	44	39
5	22	50	42	101	50	453	168	269	93	61	36	36
6	21	50	37	74	50	205	158	192	86	58	91	32
7	22	42	37	65	48	158	151	145	81	64	65	31
8	22	39	36	67	e51	139	145	135	89	55	51	37
9	136	37	36	69	48	121	141	131	129	52	43	47
10	279	36	67	64	48	110	297	129	85	51	41	91
11	54	36	325	61	49	104	214	126	80	51	42	40
12	41	36	167	81	57	95	176	148	76	48	97	35
13	35	145	93	104	85	e93	156	161	75	46	49	34
14	32	56	76	83	72	e92	147	126	73	46	43	33
15	31	47	67	74	63	e92	144	115	72	47	40	32
16	29	42	64	70	78	92	383	108	70	44	38	36
17	28	40	90	66	98	377	224	108	68	41	40	218
18	28	39	81	63	80	285	174	109	67	40	45	93
19	29	40	67	60	66	157	163	124	66	52	39	55
20	28	40	72	58	e64	142	153	114	70	114	38	46
21	29	38	65	58	65	209	159	111	117	51	40	47
22	28	40	62	81	75	222	396	102	100	47	34	45
23	28	132	63	66	75	254	188	102	72	43	35	42
24	29	66	59	63	64	654	175	95	66	42	38	40
25	30	60	54	62	59	259	167	89	64	43	37	43
26	28	55	54	58	61	196	176	88	62	42	36	113
27	28	51	51	57	59	180	164	86	60	42	36	96
28	28	47	61	56	56	200	151	84	59	38	35	78
29	28	44	68	55	---	191	145	82	60	44	39	55
30	28	43	70	53	---	181	143	80	60	38	34	50
31	32	---	65	54	---	155	---	108	---	36	33	---
TOTAL	1245	1656	2189	2049	1727	6685	6016	3810	2523	1622	1344	1643
MEAN	40.2	55.2	70.6	66.1	61.7	216	201	123	84.1	52.3	43.4	54.8
MAX	279	178	325	104	98	1060	396	269	238	114	97	218
MIN	21	30	36	53	48	56	141	80	59	36	33	31
CFSM	.67	.92	1.18	1.11	1.03	3.61	3.35	2.06	1.41	.87	.72	.92
IN.	.77	1.03	1.36	1.27	1.07	4.16	3.74	2.37	1.57	1.01	.84	1.02

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1993, BY WATER YEAR (WY)

	45.3	54.4	65.7	78.2	91.1	92.9	89.2	82.5	71.6	55.3	48.7	47.9
MEAN	45.3	54.4	65.7	78.2	91.1	92.9	89.2	82.5	71.6	55.3	48.7	47.9
MAX	209	131	185	222	240	216	209	227	395	164	183	261
(WY)	1980	1953	1973	1979	1979	1993	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

113

01583500 WESTERN RUN AT WESTERN RUN, MD--Continued

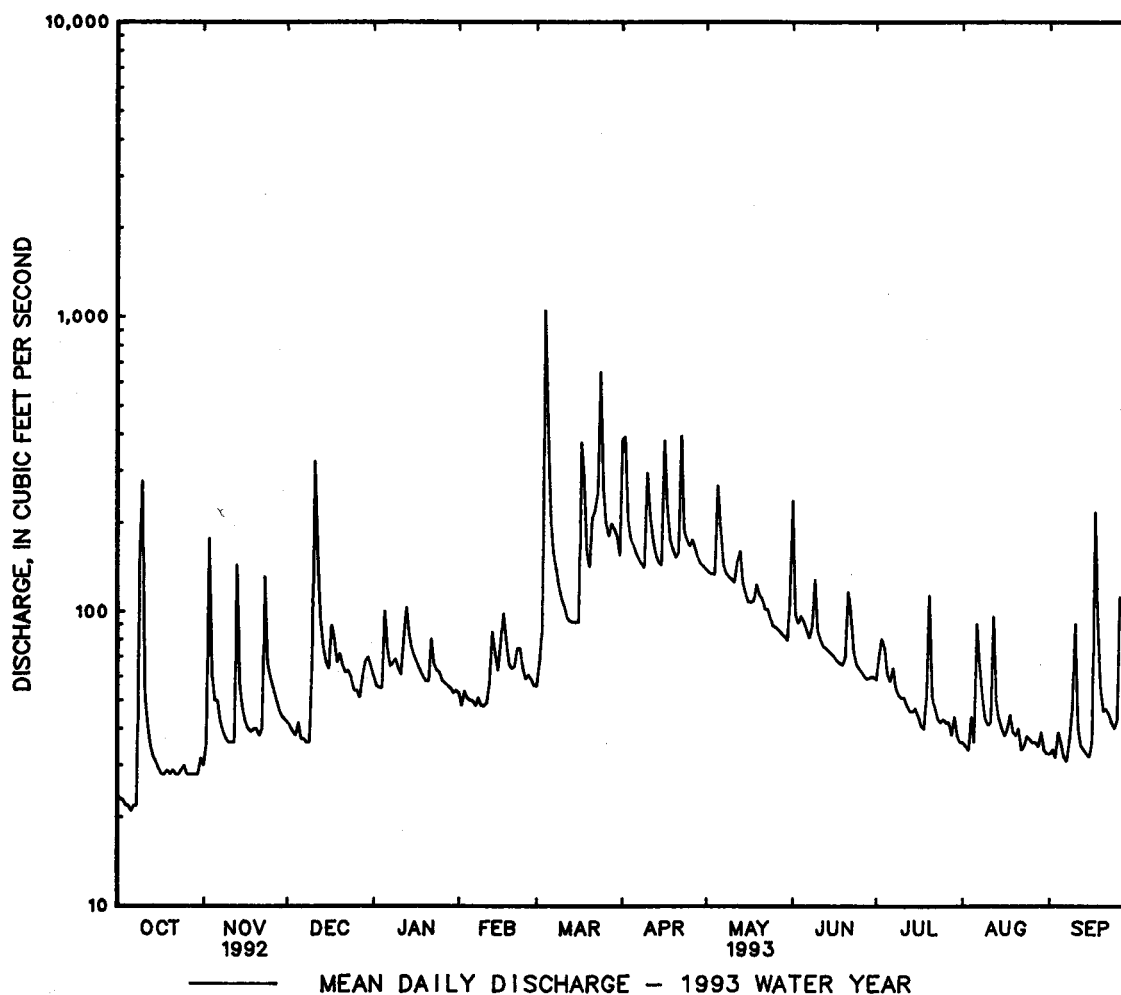
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1944 - 1993	
ANNUAL TOTAL	16131		32509			
ANNUAL MEAN	44.1		89.1		68.5	
HIGHEST ANNUAL MEAN					138	1972
LOWEST ANNUAL MEAN					28.9	1966
HIGHEST DAILY MEAN	385	Mar 27	1060	Mar 4	7000	Jun 22 1972
LOWEST DAILY MEAN	18	Sep 1	21	Oct 6	2.5	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	20	Aug 22	22	Oct 2	3.8	Sep 6 1966
INSTANTANEOUS PEAK FLOW	1030	Oct 10	2710	Mar 4	(a)38000	Jun 22 1972
INSTANTANEOUS PEAK STAGE	4.33	Oct 10	6.94	Mar 4	(b)26.00	Jun 22 1972
INSTANTANEOUS LOW FLOW	17	(c)	21	(d)	2.4	Sep 12 1966
ANNUAL RUNOFF (CFSM)	.74		1.49		1.15	
ANNUAL RUNOFF (INCHES)	10.03		20.22		15.56	
10 PERCENT EXCEEDS	64		170		115	
50 PERCENT EXCEEDS	37		62		51	
90 PERCENT EXCEEDS	23		34		23	

a From rating curve extended above 3,200 ft³/s, on basis of slope-area measurement and contracted-opening measurement of peak flow.

b From floodmarks.

c Sept. 1, 2.

d Oct. 5, 6, 8, 9.



GUNPOWDER RIVER BASIN

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD

LOCATION.--Lat 39°29'08", long 76°38'46", 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 mi².

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.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1530	*889	*6.40	No other peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	10	15	20	18	21	176	38	75	19	14	11
2	9.6	32	14	19	17	27	141	37	32	46	14	11
3	10	110	13	18	18	29	66	36	29	38	14	12
4	10	19	13	19	18	474	53	35	32	24	15	13
5	9.0	21	17	74	17	187	48	74	31	20	15	12
6	7.3	18	15	26	18	60	47	55	27	23	51	11
7	7.5	14	14	24	17	46	44	42	27	39	29	11
8	8.9	13	13	28	18	44	42	38	46	21	22	15
9	130	13	14	30	17	45	42	35	41	21	17	38
10	72	13	98	22	17	41	85	34	28	19	16	24
11	17	13	122	23	18	35	61	33	26	19	29	13
12	14	22	48	39	40	33	53	95	25	18	46	11
13	12	54	28	41	40	67	46	51	25	17	19	11
14	11	17	24	25	24	65	43	39	25	25	16	13
15	9.3	15	23	24	22	36	43	34	23	21	17	13
16	9.7	14	21	23	49	42	126	39	21	18	18	17
17	11	15	47	22	34	260	69	34	20	16	26	65
18	11	14	26	21	25	111	50	40	21	15	18	26
19	13	15	24	21	22	50	46	41	21	50	16	17
20	13	13	31	22	22	43	42	34	46	29	22	15
21	12	13	22	23	22	75	79	31	111	18	18	20
22	9.9	30	21	38	45	64	139	29	32	17	14	17
23	9.3	92	24	22	27	107	55	29	24	16	14	15
24	12	22	21	22	23	306	49	29	22	16	14	14
25	11	20	20	21	21	99	45	28	21	16	14	22
26	10	18	20	20	22	70	58	27	21	16	13	42
27	9.4	15	19	20	22	63	45	27	18	16	12	93
28	9.7	15	38	19	21	66	41	26	20	15	12	25
29	10	14	24	19	---	62	40	25	21	20	11	19
30	12	15	27	19	---	56	39	25	19	13	11	18
31	16	---	22	19	---	53	---	77	---	14	12	---
TOTAL	516.1	709	878	783	674	2737	1913	1217	930	675	579	644
MEAN	16.6	23.6	28.3	25.3	24.1	88.3	63.8	39.3	31.0	21.8	18.7	21.5
MAX	130	110	122	74	49	474	176	95	111	50	51	93
MIN	7.3	10	13	18	17	21	39	25	18	13	11	11
CFSM	.80	1.13	1.36	1.21	1.15	4.22	3.05	1.88	1.48	1.04	.89	1.03
IN.	.92	1.26	1.56	1.39	1.20	4.87	3.40	2.17	1.66	1.20	1.03	1.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	18.7	26.0	27.8	26.8	30.8	38.3	38.2	39.4	25.2	24.1	18.7	19.7
MAX	33.0	34.5	59.0	41.9	50.9	88.3	81.6	80.5	43.7	49.8	39.7	36.7
(WY)	1990	1988	1984	1991	1984	1993	1983	1989	1983	1984	1990	1987
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

115

01583600 BEAVERDAM RUN AT COCKEYSVILLE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL TOTAL	7449.7	12255.1			
ANNUAL MEAN	20.4	33.6	27.8		
HIGHEST ANNUAL MEAN			39.0		1984
LOWEST ANNUAL MEAN			17.2		1986
HIGHEST DAILY MEAN	202	Mar 26	600	Feb 12	1985
LOWEST DAILY MEAN	5.5	Sep 1	5.5	(a)	
ANNUAL SEVEN-DAY MINIMUM	7.5	Aug 26	5.8	Aug 10	1986
INSTANTANEOUS PEAK FLOW	538	Mar 26	889	Mar 4	(b)3360
INSTANTANEOUS PEAK STAGE	4.87	Mar 26	6.40	Mar 4	c12.10
INSTANTANEOUS LOW FLOW	5.5	(d)	7.0	(f)	4.1
ANNUAL RUNOFF (CFSM)	.97		1.61		1.33
ANNUAL RUNOFF (INCHES)	13.26		21.81		18.07
10 PERCENT EXCEEDS	31		62		48
50 PERCENT EXCEEDS	16		22		20
90 PERCENT EXCEEDS	9.3		12		10

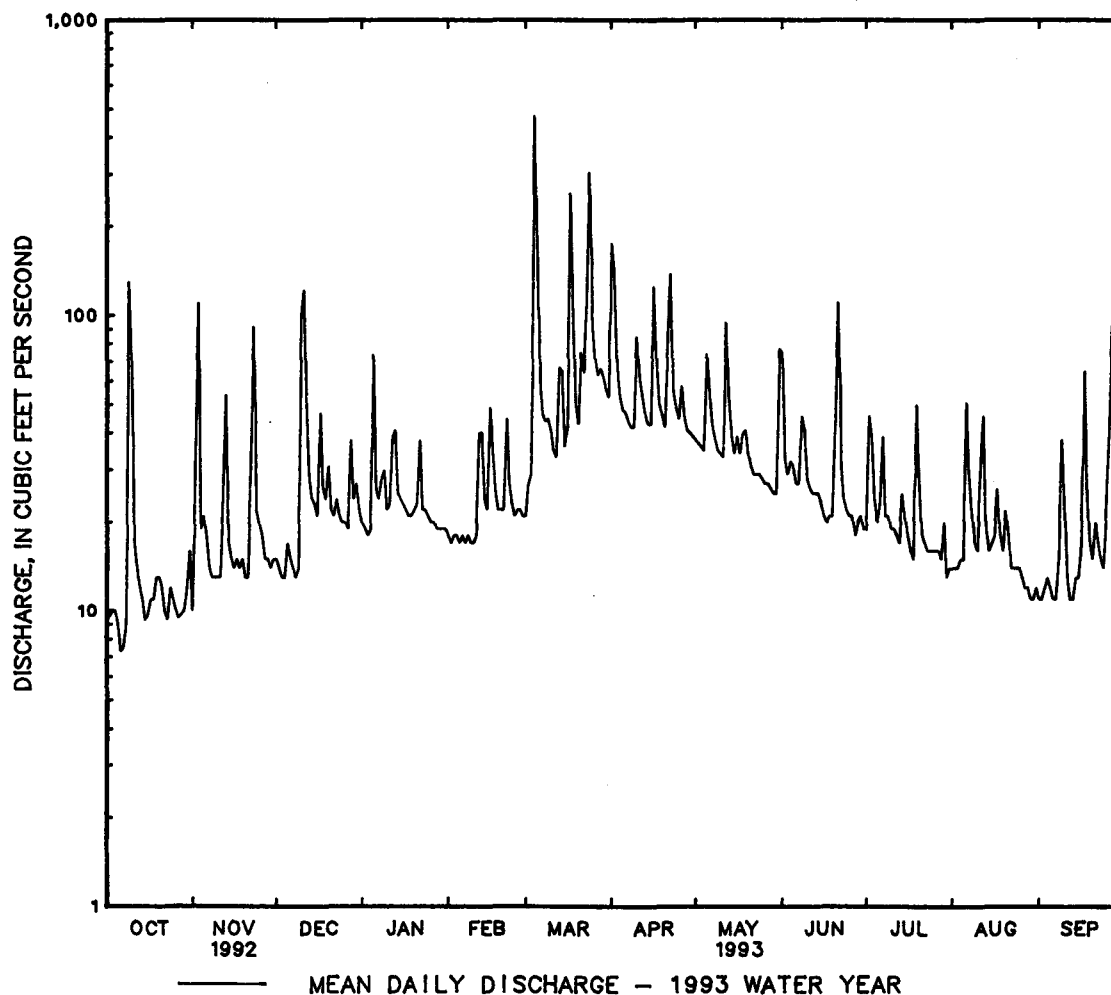
a Aug. 16, 1986, Sept. 1, 1992.

b From rating curve extended above 1,000 ft³/s.

c From floodmarks.

d Aug. 31, Sept. 1, 2, 24, 25.

f Oct. 6, 7.



GUNPOWDER RIVER BASIN

01584050 LONG GREEN CREEK AT GLEN ARM, MD

LOCATION.--Lat 39°27'17", long 76°28'45", Baltimore County, Hydrologic Unit 02060003, on right bank 0.5 mi downstream from bridge on Glen Arm Road, 0.6 mi upstream from State Highway 147 (Harford Road), 0.8 mi east of Glen Arm, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--9.40 mi².

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft above sea level, from topographic map.

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 YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0430	591	4.24	July 7	0130	365	3.70
Mar. 4	1300	424	3.86	July 19	2315	*1,600	*5.51
June 21	1830	312	3.54	Sep. 27	1315	497	4.04

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.5	5.6	8.6	8.4	9.2	62	17	18	8.0	6.1	4.2
2	2.8	5.9	5.6	7.7	e8.0	16	34	16	11	14	5.9	4.2
3	2.5	49	5.2	7.7	7.8	16	25	16	11	13	5.8	3.9
4	2.5	7.2	5.0	7.7	8.0	148	22	16	11	10	5.6	4.2
5	2.5	6.0	5.4	26	7.8	55	21	61	12	8.7	5.6	4.1
6	2.5	6.1	4.7	11	7.7	25	20	26	11	8.0	15	3.9
7	2.5	5.0	4.7	9.7	7.3	19	19	19	10	39	9.5	3.9
8	2.4	4.6	4.7	10	7.8	18	18	17	22	8.7	8.0	4.4
9	18	4.3	4.7	11	7.4	16	18	16	16	7.2	6.5	4.5
10	24	4.2	30	9.5	7.5	15	33	15	11	7.0	6.1	7.1
11	5.8	4.2	76	9.1	7.4	15	22	15	10	7.0	6.5	4.2
12	4.6	5.7	25	14	11	15	20	36	10	6.6	8.7	4.0
13	4.2	27	12	17	15	15	18	20	9.9	6.3	6.5	4.0
14	4.0	7.2	10	12	11	e15	17	17	9.5	15	6.0	3.8
15	3.9	6.2	9.6	11	9.4	e15	17	15	9.3	9.1	5.6	4.0
16	3.8	5.6	9.1	10	18	e15	52	16	9.2	7.1	5.3	4.8
17	4.1	5.3	18	9.8	20	89	24	15	8.8	6.5	16	15
18	4.2	5.0	12	9.3	13	55	19	16	8.6	6.2	8.5	9.2
19	4.4	5.0	9.9	9.0	10	26	18	16	8.7	120	6.6	6.3
20	4.4	4.9	12	8.7	10	26	18	15	9.6	55	6.1	5.5
21	4.2	4.5	9.5	8.8	10	58	25	14	41	11	6.1	5.7
22	4.2	6.1	9.2	16	14	47	45	13	14	9.1	6.1	5.5
23	4.2	78	9.5	10	12	67	21	13	10	8.2	5.7	5.3
24	4.5	9.9	8.6	9.8	10	134	19	13	9.2	7.7	5.1	5.1
25	4.8	8.4	7.8	9.4	9.4	36	18	12	9.0	7.6	4.8	5.7
26	4.3	8.1	7.9	8.8	9.7	28	27	12	8.9	7.3	4.7	9.7
27	4.2	7.3	7.1	8.6	9.6	27	20	11	9.0	7.2	4.6	80
28	4.2	6.6	13	8.4	9.2	41	18	11	8.0	6.6	4.5	11
29	4.2	6.1	11	8.3	---	35	17	11	8.0	7.0	4.3	7.9
30	4.2	5.6	12	7.7	---	25	17	11	8.0	6.1	4.2	6.8
31	5.0	---	9.6	8.3	---	23	---	15	---	6.1	4.3	---
TOTAL	154.0	313.5	374.4	322.9	286.4	1144.2	724	536	351.7	446.3	204.3	247.9
MEAN	4.97	10.4	12.1	10.4	10.2	36.9	24.1	17.3	11.7	14.4	6.59	8.26
MAX	24	78	76	26	20	148	62	61	41	120	16	80
MIN	2.4	4.2	4.7	7.7	7.3	9.2	17	11	8.0	6.1	4.2	3.8
CFSM	.53	1.11	1.28	1.11	1.09	3.93	2.57	1.84	1.25	1.53	.70	.88
IN.	.61	1.24	1.48	1.28	1.13	4.53	2.87	2.12	1.39	1.77	.81	.98

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1993, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	7.79	8.64	11.0	13.7	14.0	15.9	14.3	13.4	10.4	9.75	8.03	8.16						
MAX	25.1	18.0	26.9	38.4	39.3	36.9	35.3	28.1	17.0	28.0	26.9	32.2						
(WY)	1980	1980	1984	1979	1979	1993	1983	1989	1990	1989	1978	1979						
MIN	2.97	3.05	4.04	3.67	6.16	6.02	7.37	5.94	3.85	2.49	2.97	2.41						
(WY)	1987	1982	1981	1981	1992	1981	1981	1986	1986	1986	1981	1986						

GUNPOWDER RIVER BASIN

117

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

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1976 - 1993

ANNUAL TOTAL	2582.9	5105.6		
ANNUAL MEAN	7.06	14.0	11.2	
HIGHEST ANNUAL MEAN			18.1	1979
LOWEST ANNUAL MEAN			5.33	1981
HIGHEST DAILY MEAN	(e)86	148	408	Jan 26 1978
LOWEST DAILY MEAN	1.9	2.4	1.5	Aug 15 1986
ANNUAL SEVEN-DAY MINIMUM	2.2	2.5	1.6	Aug 10 1986
INSTANTANEOUS PEAK FLOW	591	1600	(a)3250	Jul 1 1984
INSTANTANEOUS PEAK STAGE	4.24	5.51	6.70	Jul 1 1984
INSTANTANEOUS LOW FLOW	1.9	2.3	(d)1.0	Jan 29 1977
ANNUAL RUNOFF (CFSM)	.75	1.49	1.20	
ANNUAL RUNOFF (INCHES)	10.22	20.21	16.25	
10 PERCENT EXCEEDS	10	25	18	
50 PERCENT EXCEEDS	5.6	9.2	8.2	
90 PERCENT EXCEEDS	2.7	4.3	3.6	

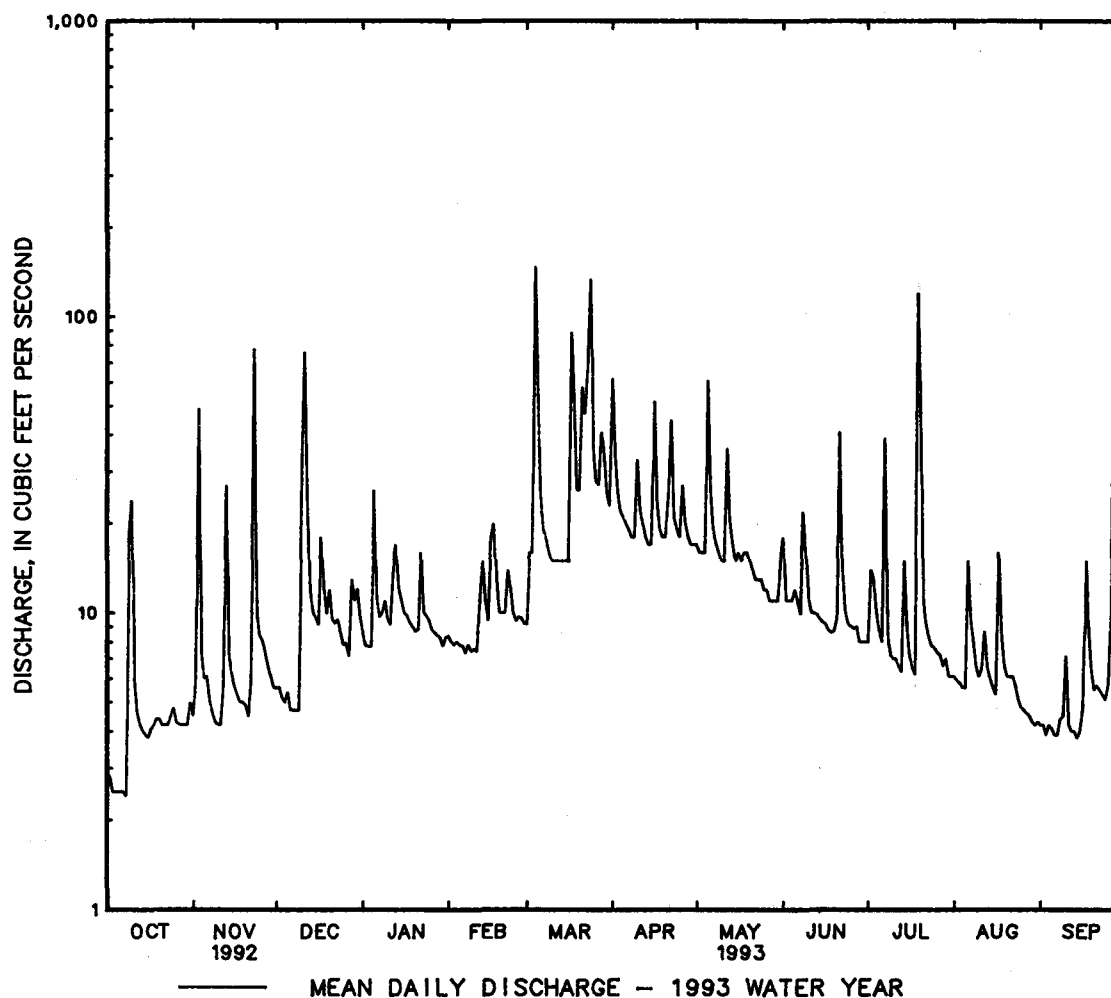
e estimated.

a From rating curve extended above 1,300 ft³/s.

b Sept. 1, 2, 23-25.

c Oct. 8, 9.

d Result of freezup.



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 from 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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 75 ft above sea level, from topographic maps.

REMARKS.--Records good. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 31, 1992	1715	708	3.31	May 5, 1993	1945	628	3.14
Oct. 9, 1992	2230	773	3.30	July 19, 1993	2200	595	3.10
Nov. 13, 1992	0030	754	3.28	Sep. 27, 1993	1145	600	3.18
Nov. 23, 1992	0330	*909	*3.43				

DISCHARGE, IN CUBIC FEET PER SECOND, APRIL 1992 TO SEPTEMBER 1992
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.45	.53	.34	.33	.05
2	---	---	---	---	---	---	---	.45	.40	.27	.11	.09
3	---	---	---	---	---	---	---	.48	.38	3.8	.11	5.3
4	---	---	---	---	---	---	---	.43	.39	.40	.10	.31
5	---	---	---	---	---	---	---	.41	19	.27	.08	.22
6	---	---	---	---	---	---	---	.41	1.1	.36	.07	7.7
7	---	---	---	---	---	---	---	.41	.46	.15	.07	.50
8	---	---	---	---	---	---	---	2.7	.35	.13	.07	1.6
9	---	---	---	---	---	---	---	.56	.30	.12	.08	.37
10	---	---	---	---	---	---	---	.41	.27	.14	.08	2.4
11	---	---	---	---	---	---	---	.37	.24	.13	.57	.57
12	---	---	---	---	---	---	---	.35	.23	.25	.14	.17
13	---	---	---	---	---	---	---	.35	.22	.17	1.4	.15
14	---	---	---	---	---	---	---	.35	.22	.13	.84	.15
15	---	---	---	---	---	---	---	3.7	.22	4.1	1.4	.16
16	---	---	---	---	---	---	---	.50	.23	.18	2.0	.15
17	---	---	---	---	---	---	---	.38	.25	.27	1.7	.18
18	---	---	---	---	---	---	---	.34	.26	.10	.36	.17
19	---	---	---	---	---	---	---	.33	3.5	.10	.27	.17
20	---	---	---	---	---	---	---	.31	.29	.12	.15	.17
21	---	---	---	---	---	---	---	.33	.21	.11	.09	.21
22	---	---	---	---	---	---	4.3	.34	.18	.11	.07	2.8
23	---	---	---	---	---	---	.58	.37	.15	1.4	.09	.28
24	---	---	---	---	---	---	.88	1.8	.75	3.8	.11	.14
25	---	---	---	---	---	---	.70	.71	2.9	3.9	.07	24
26	---	---	---	---	---	---	2.9	1.8	.30	1.2	.09	5.8
27	---	---	---	---	---	---	.53	.40	.17	.33	.66	2.2
28	---	---	---	---	---	---	.47	.32	.14	.15	1.9	.31
29	---	---	---	---	---	---	.45	.31	.17	.08	.16	.22
30	---	---	---	---	---	---	.45	11	.40	.10	.07	.15
31	---	---	---	---	---	---	---	10	---	23	.06	---
TOTAL	---	---	---	---	---	---	---	41.07	34.21	45.71	13.30	56.69
MEAN	---	---	---	---	---	---	---	1.32	1.14	1.47	.43	1.89
MAX	---	---	---	---	---	---	---	11	19	23	2.0	24
MIN	---	---	---	---	---	---	---	.31	.14	.08	.06	.05
CFSM	---	---	---	---	---	---	---	.99	.85	1.10	.32	1.41
IN.	---	---	---	---	---	---	---	1.14	.95	1.27	.37	1.57

GUNPOWDER RIVER BASIN

119

01585095 NORTH FORK WHITEMARSH RUN NEAR WHITE MARSH, MD

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.13	1.0	1.3	.85	1.2	20	.95	1.2	.38	.25	.23
2	.15	4.0	1.0	1.1	.95	3.7	4.4	.95	.48	17	.27	.24
3	.14	25	.97	.95	.85	2.3	2.0	.94	.58	2.9	.28	.25
4	.15	.29	1.0	1.2	.85	63	1.4	.85	.77	.58	.39	.28
5	.16	1.8	1.5	18	.85	7.9	1.2	24	1.1	.43	1.5	.21
6	.11	.54	.95	1.7	.85	2.5	1.2	1.7	.56	.38	11	.18
7	.11	.24	.95	1.2	.85	1.4	1.1	.77	.48	3.3	.42	.22
8	.11	.20	1.0	3.0	.85	1.2	1.0	.69	4.4	.41	.32	.24
9	31	.19	1.0	3.4	.85	.95	1.2	.65	.73	.34	.25	.23
10	3.8	.19	19	1.5	.85	1.1	9.6	.65	.42	.27	.25	2.1
11	1.6	.22	32	1.6	.85	1.0	1.9	.59	.52	.26	1.6	.35
12	.26	3.7	6.4	4.2	8.6	.95	1.9	5.7	.38	.32	2.0	.17
13	.17	27	1.9	5.9	5.4	.95	1.2	1.8	.38	.34	.27	.18
14	.15	.40	1.5	1.7	1.6	.95	1.2	.65	.37	4.8	.25	.19
15	.15	.33	1.3	1.3	1.1	.95	1.2	.58	.37	.49	.25	.22
16	.15	.30	1.2	1.2	13	4.0	27	1.5	.37	.31	.31	2.8
17	.20	.28	10	1.2	3.5	57	2.1	.60	.35	.23	15	2.2
18	.28	.28	2.2	.98	1.4	4.8	1.2	2.2	.36	.22	.47	1.6
19	.36	.63	1.5	.95	1.0	2.7	1.2	1.1	.36	22	.29	.30
20	.35	.31	3.1	.95	.95	3.2	1.0	.70	.42	1.1	2.4	.22
21	.35	.34	1.3	1.5	1.0	13	15	.61	8.9	.37	.35	.46
22	.38	3.6	1.2	7.1	7.4	5.4	7.0	.54	.53	.34	.24	.31
23	.42	52	1.7	1.3	2.4	17	1.4	.53	.39	.34	.22	.22
24	.77	1.9	1.1	1.7	1.2	25	1.2	.49	.35	.30	.21	.22
25	.19	2.0	.95	1.3	.98	2.3	1.1	.49	.46	.30	.20	.97
26	.15	2.6	.95	1.1	1.0	1.5	4.4	.49	.41	.30	.23	1.2
27	.15	1.7	.95	.95	1.3	2.2	1.3	.54	.41	.32	.26	33
28	.15	1.3	8.0	.95	1.0	6.6	1.0	.49	.41	.33	.24	.49
29	.17	1.2	2.3	.95	---	3.5	.95	.49	.38	1.5	.18	.35
30	.25	1.1	2.7	.87	---	1.8	.95	.49	.38	.28	.21	.25
31	.58	---	1.6	.85	---	1.9	---	2.7	---	.24	.21	---
TOTAL	43.13	133.77	112.22	71.90	62.28	241.95	117.30	55.43	27.22	60.68	40.32	49.88
MEAN	1.39	4.46	3.62	2.32	2.22	7.80	3.91	1.79	.91	1.96	1.30	1.66
MAX	31	52	32	18	13	63	27	24	8.9	22	15	33
MIN	.11	.13	.95	.85	.85	.95	.95	.49	.35	.22	.18	.17
CFSM	1.04	3.33	2.70	1.73	1.66	5.82	2.92	1.33	.68	1.46	.97	1.24
IN.	1.20	3.71	3.12	2.00	1.73	6.72	3.26	1.54	.76	1.68	1.12	1.38

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	1.39	4.46	3.62	2.32	2.22	7.80	3.91	1.56	1.02	1.72	.86	1.78
MAX	1.39	4.46	3.62	2.32	2.22	7.80	3.91	1.79	1.14	1.96	1.30	1.89
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1992
MIN	1.39	4.46	3.62	2.32	2.22	7.80	3.91	1.32	.91	1.47	.43	1.66
(WY)	1993	1993	1993	1993	1993	1993	1993	1992	1993	1992	1992	1993

GUNPOWDER RIVER BASIN

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

SUMMARY STATISTICS

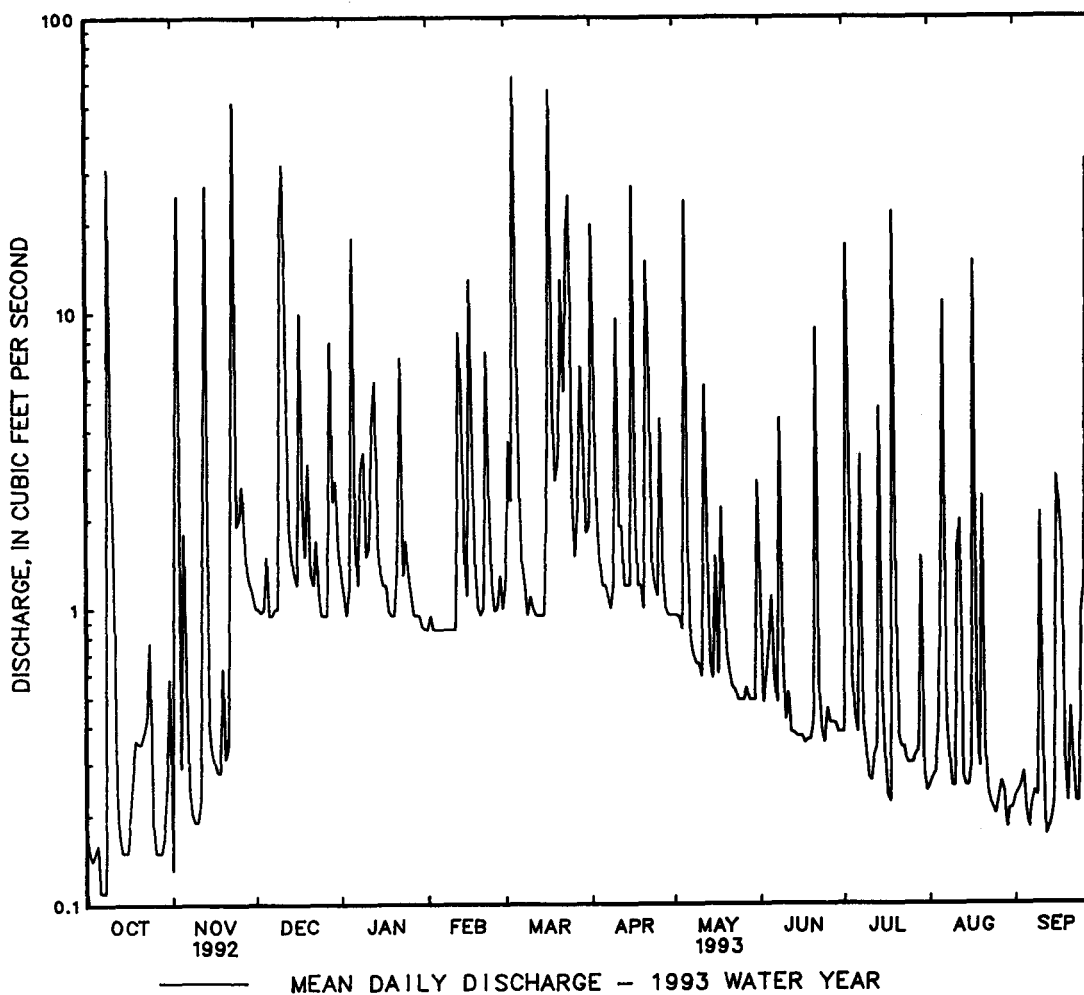
FOR 1993 WATER YEAR

WATER YEARS 1992 - 1993

ANNUAL TOTAL	1016.08			
ANNUAL MEAN	2.78		2.78	
HIGHEST ANNUAL MEAN			2.78	1993
LOWEST ANNUAL MEAN			2.78	1993
HIGHEST DAILY MEAN	63	Mar 4	63	Mar 4 1993
LOWEST DAILY MEAN	.11	(a)	.05	Sep 1 1992
ANNUAL SEVEN-DAY MINIMUM	.13	Oct 2	.08	Aug 4 1992
INSTANTANEOUS PEAK FLOW	909	Nov 23	909	Nov 23 1992
INSTANTANEOUS PEAK STAGE	3.43	Nov 23	3.43	Nov 23 1992
INSTANTANEOUS LOW FLOW	.09	(b)	.04	Jul 29 1992
ANNUAL RUNOFF (CFSM)	2.08		2.08	
ANNUAL RUNOFF (INCHES)	28.21		28.23	
10 PERCENT EXCEEDS	5.4		4.1	
50 PERCENT EXCEEDS	.95		.56	
90 PERCENT EXCEEDS	.22		.15	

a Oct. 6-8.

b Oct. 6, 7.



GUNPOWDER RIVER BASIN

121

01585100 WHITEMARSH RUN AT WHITE MARSH, MD

LOCATION.--Lat 39°22'15", long 76°26'46", Baltimore County, Hydrologic Unit 02060003, on left bank at upstream side of bridge on State Highway 7, 1.0 mi southwest of White Marsh, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--7.61 mi².

PERIOD OF RECORD.--February 1959 to September 1989, March 1992 to current year.

REVISED RECORDS.--WDR MD-DE-73-1: 1960(M), 1967-68, 1969(M). WDR MD-DE-79-1: 1965-66(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 38.96 ft above sea level.

REMARKS.--Records good except those for the period Nov. 23 to Jan. 12 (backwater from debris) and estimated daily discharges (Jan. 13, missing record; Mar. 13-16, ice effect), which are fair. Low flow affected by operations of sand and gravel plant in vicinity of gage. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 31, 1992	1815	*735	*4.28	Mar. 4, 1993	1315	835	4.66
Nov. 13, 1992	0130	798	4.52	Apr. 21, 1993	2330	754	4.35
Nov. 23, 1992	0430	*1,280	*6.71	Sep. 27, 1993	1315	869	4.79

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH 1992 TO SEPTEMBER 1992
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	5.0	2.8	5.7	4.9	7.7	.87
2	---	---	---	---	---	---	4.1	2.6	3.2	1.9	1.9	.89
3	---	---	---	---	---	---	3.6	2.6	2.5	1.4	1.4	17
4	---	---	---	---	---	---	3.5	2.5	2.2	4.6	1.3	3.2
5	---	---	---	---	---	---	3.2	2.3	100	1.8	.99	3.0
6	---	---	---	---	---	6.6	3.2	2.4	10	2.5	.91	44
7	---	---	---	---	---	148	3.2	2.4	4.5	1.5	.91	6.8
8	---	---	---	---	---	14	3.2	11	3.2	1.4	.98	5.0
9	---	---	---	---	---	8.7	2.9	4.7	2.8	1.2	1.1	5.1
10	---	---	---	---	---	13	5.1	2.7	2.2	1.2	.91	6.5
11	---	---	---	---	---	39	3.2	2.4	2.0	1.1	3.3	6.6
12	---	---	---	---	---	8.6	2.9	2.3	1.9	1.4	2.0	1.3
13	---	---	---	---	---	6.1	2.7	2.2	1.8	1.8	5.1	1.0
14	---	---	---	---	---	5.3	2.7	2.1	1.9	1.4	6.5	1.0
15	---	---	---	---	---	4.8	2.6	17	1.8	1.4	7.3	1.0
16	---	---	---	---	---	4.3	2.9	5.6	1.8	3.7	9.9	1.1
17	---	---	---	---	---	4.3	3.0	2.9	1.8	1.6	6.8	1.2
18	---	---	---	---	---	10	2.7	2.6	1.8	1.1	5.0	1.3
19	---	---	---	---	---	38	8.2	2.2	8.4	.98	2.2	1.5
20	---	---	---	---	---	9.0	2.9	2.0	2.3	.98	2.5	1.6
21	---	---	---	---	---	6.0	9.4	1.9	1.6	.96	1.2	1.7
22	---	---	---	---	---	18	34	1.9	1.5	1.0	.93	9.5
23	---	---	---	---	---	12	6.1	1.9	1.6	4.7	.97	4.8
24	---	---	---	---	---	5.9	5.3	4.1	3.3	16	1.0	1.1
25	---	---	---	---	---	5.1	4.2	5.8	21	20	1.0	80
26	---	---	---	---	---	148	13	8.6	4.9	4.6	1.0	59
27	---	---	---	---	---	105	4.0	3.1	1.9	4.4	1.8	12
28	---	---	---	---	---	11	3.2	1.9	1.5	1.8	13	3.5
29	---	---	---	---	---	7.9	3.0	1.8	1.5	1.2	2.9	1.6
30	---	---	---	---	---	6.1	2.9	52	2.7	1.0	1.0	1.0
31	---	---	---	---	---	8.1	---	67	---	62	.94	---
TOTAL	---	---	---	---	---	---	155.9	227.3	203.3	180.72	94.44	284.16
MEAN	---	---	---	---	---	---	5.20	7.33	6.78	5.83	3.05	9.47
MAX	---	---	---	---	---	---	34	67	100	62	13	80
MIN	---	---	---	---	---	---	2.6	1.8	1.5	.96	.91	.87
CFSM	---	---	---	---	---	---	.68	.96	.89	.77	.40	1.24
IN.	---	---	---	---	---	---	.76	1.11	.99	.88	.46	1.39

GUNPOWDER RIVER BASIN

01585100 WHITEMARSH RUN AT WHITE MARSH, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	2.1	3.3	5.1	3.6	6.0	109	5.2	14	1.7	1.0	1.8
2	.88	18	3.3	4.3	3.3	18	33	4.8	2.7	77	1.2	1.8
3	.81	120	3.3	4.2	3.0	13	14	4.6	3.1	15	1.2	1.8
4	.97	6.1	3.5	4.4	3.0	301	8.7	4.6	5.4	5.8	2.3	2.1
5	1.1	11	6.2	95	3.0	69	7.8	52	6.2	2.7	10	1.2
6	1.1	9.0	3.8	8.9	3.1	20	7.5	13	2.7	2.2	53	1.0
7	1.3	3.0	3.8	6.4	3.0	10	7.3	6.1	2.4	8.2	6.6	1.4
8	1.4	2.4	3.6	15	3.2	8.6	6.6	4.9	18	2.0	2.6	3.0
9	62	2.0	3.7	18	2.8	7.3	6.8	4.5	8.0	2.4	1.7	1.7
10	45	2.3	112	7.3	2.9	7.5	56	4.5	2.6	1.6	1.6	9.1
11	9.0	3.1	183	6.6	2.9	6.3	13	4.1	3.1	1.7	5.3	1.7
12	3.4	17	41	20	46	5.2	12	24	2.2	1.9	24	1.1
13	2.1	94	9.2	e35	33	e5.0	7.3	11	2.3	1.9	2.4	1.4
14	1.8	5.9	6.8	8.7	8.4	e5.0	6.5	4.9	2.1	11	1.7	1.6
15	2.0	3.6	5.7	6.5	4.9	e5.0	6.3	4.0	2.2	4.5	1.4	1.8
16	2.3	2.7	4.9	5.3	75	e18	92	6.7	2.2	1.7	1.6	11
17	3.3	2.5	48	4.9	21	259	14	4.6	2.2	1.6	30	16
18	2.9	2.4	11	4.3	7.7	38	8.2	8.7	2.2	1.7	7.0	11
19	4.3	6.3	6.4	3.7	6.3	17	7.2	9.1	2.3	26	2.2	2.8
20	4.8	3.0	14	3.5	4.7	19	6.6	4.5	2.7	11	10	1.7
21	5.8	2.6	6.2	4.7	4.6	81	46	3.4	29	2.0	4.4	4.6
22	5.5	19	5.1	40	39	37	59	3.1	5.2	1.4	1.6	2.4
23	5.9	153	7.0	6.4	13	96	9.2	3.0	2.2	1.4	1.4	1.7
24	7.8	6.3	4.6	6.7	7.2	166	7.7	3.0	1.7	1.2	1.4	1.8
25	3.5	6.2	3.9	5.8	5.8	17	7.1	2.8	1.8	1.1	1.3	6.4
26	2.0	8.8	4.0	4.2	6.0	11	29	2.7	1.7	1.2	1.3	13
27	2.0	6.2	3.5	3.7	6.5	16	8.3	2.6	1.7	1.3	1.3	109
28	2.0	4.2	41	3.5	5.3	34	6.6	2.6	1.9	1.4	1.4	7.3
29	1.9	3.6	11	3.4	---	23	5.9	2.5	2.1	7.4	1.3	2.3
30	2.6	3.3	10	3.9	---	11	5.4	2.4	1.7	1.3	1.5	1.5
31	7.0	---	6.7	4.2	---	9.4	---	6.9	---	1.0	1.8	---
TOTAL	197.34	529.6	579.5	353.6	328.2	1339.3	614.0	220.8	137.6	202.3	185.5	225.0
MEAN	6.37	17.7	18.7	11.4	11.7	43.2	20.5	7.12	4.59	6.53	5.98	7.50
MAX	62	153	183	95	75	301	109	52	29	77	53	109
MIN	.81	2.0	3.3	3.4	2.8	5.0	5.4	2.4	1.7	1.0	1.0	1.0
CFSM	.84	2.32	2.46	1.50	1.54	5.68	2.69	.94	.60	.86	.79	.99
IN.	.96	2.59	2.83	1.73	1.60	6.55	3.00	1.08	.67	.99	.91	1.10

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1993, BY WATER YEAR (WY)

	6.70	10.3	13.2	13.0	15.7	15.8	13.3	11.4	8.88	8.99	10.2	9.99
MEAN	6.70	10.3	13.2	13.0	15.7	15.8	13.3	11.4	8.88	8.99	10.2	9.99
MAX	27.2	31.8	41.5	45.2	42.7	43.2	43.5	43.7	44.5	45.4	90.1	36.3
(WY)	1972	1973	1984	1978	1979	1993	1983	1989	1972	1989	1971	1971
MIN	1.92	1.82	1.69	1.82	4.11	4.66	4.35	2.24	2.01	1.34	1.18	1.41
(WY)	1970	1966	1966	1981	1968	1969	1985	1969	1986	1966	1962	1980

01585100 WHITEMARSH RUN AT WHITE MARSH, MD--Continued

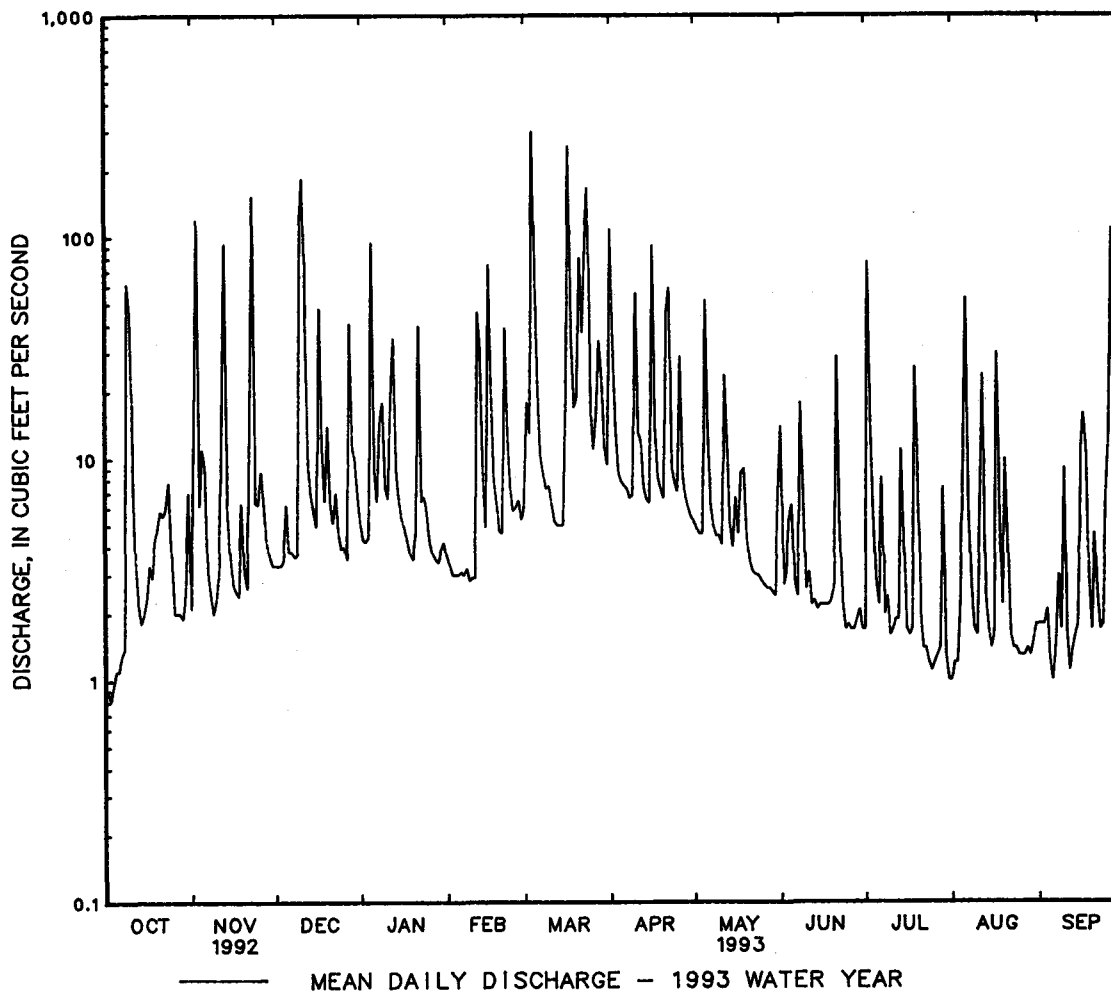
SUMMARY STATISTICS

FOR 1993 WATER YEAR

WATER YEARS 1959 - 1993

ANNUAL TOTAL	4912.74				
ANNUAL MEAN	13.5			11.7	
HIGHEST ANNUAL MEAN				21.0	1971
LOWEST ANNUAL MEAN				4.27	1969
HIGHEST DAILY MEAN	301	Mar 4		820	Jun 22 1972
LOWEST DAILY MEAN	.81	Oct 3		.10	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	1.0	Oct 1		.39	Sep 1 1966
INSTANTANEOUS PEAK FLOW	1280	Nov 23		(a)8000	Aug 1 1971
INSTANTANEOUS PEAK STAGE	6.71	Nov 23		14.05	Aug 1 1971
INSTANTANEOUS LOW FLOW	.80	Oct 1		(b).00	Mar 20 1965
ANNUAL RUNOFF (CFSM)	1.77			1.54	
ANNUAL RUNOFF (INCHES)	24.01			20.96	
10 PERCENT EXCEEDS	31			20	
50 PERCENT EXCEEDS	4.7			4.0	
90 PERCENT EXCEEDS	1.6			1.4	

- a From rating curve extended above 1,300 ft³/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 Result of construction work upstream from station.



GUNPOWDER RIVER BASIN

01585105 HONEYGO RUN AT WHITE MARSH, MD

LOCATION.--Lat 39°22'41", long 76°25'46", Baltimore County, Hydrologic Unit 02060003, on right bank at downstream side of bridge on U. S. Highway 40, 800 ft upstream from Whitmarsh Run, 1,000 ft southwest of Ebenezer Road, and 0.3 mi northeast of Whitmarsh Blvd.

DRAINAGE AREA.--2.65 mi².

PERIOD OF RECORD.--August 1990 to September 1993 (Discontinued).

GAGE.--Water-stage recorder and concrete block control. Datum of gage is 6.14 ft above sea level.

REMARKS.--Records good. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1330	338	4.20	July 19	2300	*349	*4.27
Mar. 17	1645	302	3.95				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	1.4	5.3	4.5	3.2	3.9	37	4.2	2.8	1.0	.26	.34
2	.58	2.8	5.3	3.9	2.7	9.1	15	3.9	1.1	10	.23	.42
3	.56	30	5.0	3.8	2.9	7.9	7.3	3.7	1.1	3.3	.23	.42
4	.52	2.2	4.8	3.8	3.1	130	5.5	3.5	1.3	2.0	.30	.39
5	.50	2.5	5.3	27	3.0	24	4.7	12	1.6	.73	.78	.26
6	.39	3.1	4.8	5.9	3.1	9.2	4.3	4.1	1.2	.57	6.1	.30
7	.36	1.6	4.8	4.7	2.6	5.3	3.9	2.1	1.0	3.8	1.6	.30
8	.36	1.3	4.7	6.3	2.9	4.4	3.7	1.8	2.1	.71	.64	.30
9	7.7	1.1	4.5	7.4	2.9	3.4	3.6	1.7	2.4	.47	.50	.34
10	15	1.0	23	4.9	2.9	3.0	16	1.6	1.1	.37	.43	1.1
11	2.4	1.0	53	4.3	2.9	2.9	7.8	1.5	1.0	.39	.72	.29
12	1.6	1.8	15	7.7	6.0	2.4	5.2	3.1	.88	.42	2.9	.23
13	.94	28	6.7	11	13	4.1	3.9	3.7	.80	.34	.75	.23
14	.77	2.5	5.4	5.9	6.0	6.7	3.5	2.1	.80	2.9	.50	.23
15	.70	1.9	4.9	5.0	4.4	3.8	3.5	1.7	.76	2.2	.42	.19
16	.70	1.5	4.4	4.6	16	5.1	37	2.0	.83	.65	.36	.80
17	.70	1.5	14	4.3	11	120	6.6	1.9	.72	.42	9.1	3.0
18	.75	1.3	6.9	e4.1	5.7	20	4.6	2.2	.60	.45	2.2	2.0
19	.80	1.5	5.0	e3.9	4.1	8.5	4.0	2.8	.58	15	.80	.80
20	.85	1.5	6.7	e3.7	3.8	8.1	3.7	2.1	.57	5.3	1.9	.42
21	.99	1.3	4.7	3.5	3.7	29	9.3	1.6	4.9	.84	1.2	.59
22	1.0	3.8	4.3	10	9.1	15	26	1.5	2.5	.55	.45	.60
23	1.1	52	4.4	5.1	7.5	28	5.7	1.5	1.3	.42	.36	.50
24	1.3	9.0	4.0	4.3	4.8	77	4.7	1.3	1.1	.36	.35	.41
25	1.3	8.0	3.4	4.5	4.0	10	4.4	1.3	.98	.36	.30	.51
26	1.2	8.1	3.5	3.6	4.0	6.3	8.1	1.3	1.1	.36	.28	2.1
27	1.1	7.6	3.0	3.5	4.1	5.9	5.9	1.2	1.0	.36	.23	16
28	1.0	6.4	10	3.4	3.7	11	5.0	1.2	1.0	.34	.28	2.2
29	1.0	6.0	6.9	3.3	---	12	4.7	1.1	1.0	.82	.22	.99
30	1.1	5.5	6.7	3.2	---	7.9	4.5	1.0	1.0	.38	.19	.71
31	2.0	---	5.2	3.3	---	6.9	---	1.8	---	.29	.21	---
TOTAL	49.87	197.2	245.6	174.4	143.1	590.8	259.1	76.5	39.12	56.10	34.79	37.07
MEAN	1.61	6.57	7.92	5.63	5.11	19.1	8.64	2.47	1.30	1.81	1.12	1.24
MAX	15	52	53	27	16	130	37	12	4.9	15	9.1	16
MIN	.36	1.0	3.0	3.2	2.6	2.4	3.5	1.0	.57	.29	.19	.19
CFSM	.61	2.48	2.99	2.12	1.93	7.19	3.26	.93	.49	.68	.42	.47
IN.	.70	2.77	3.45	2.45	2.01	8.29	3.64	1.07	.55	.79	.49	.52

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	1990	1991	1992	1993
MEAN	2.59	4.03	6.41	4.85
MAX	3.20	6.57	7.92	7.25
(WY)	1991	1992	1993	1994
MIN	1.61	2.29	4.82	1.68
(WY)	1990	1991	1992	1993

01585105 HONEYGO RUN AT WHITE MARSH, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1990 - 1993	
ANNUAL TOTAL	1143.81		1903.65		3.75	
ANNUAL MEAN	3.13		5.22		5.22	
HIGHEST ANNUAL MEAN					2.63	
LOWEST ANNUAL MEAN					130	
HIGHEST DAILY MEAN	60	Mar 27	130	Mar 4	Mar 4 1993	
LOWEST DAILY MEAN	.23	(a)	.19	(b)	.19 (c)	
ANNUAL SEVEN-DAY MINIMUM	.28	Sep 15	.24	Aug 25	.21 Jul 17 1991	
INSTANTANEOUS PEAK FLOW	298	Mar 27	349	Jul 19	502 Sep 17 1991	
INSTANTANEOUS PEAK STAGE	3.92	Mar 27	4.27	Jul 19	5.21 Sep 17 1991	
INSTANTANEOUS LOW FLOW	.23	(d)	.19	(f)	.19 (g)	
ANNUAL RUNOFF (CFSM)	1.18		1.97		1.42	
ANNUAL RUNOFF (INCHES)	16.06		26.72		19.25	
10 PERCENT EXCEEDS	5.6		9.2		6.8	
50 PERCENT EXCEEDS	1.4		2.8		1.7	
90 PERCENT EXCEEDS	.38		.39		.39	

a Sept. 1, 2, 19, 20.

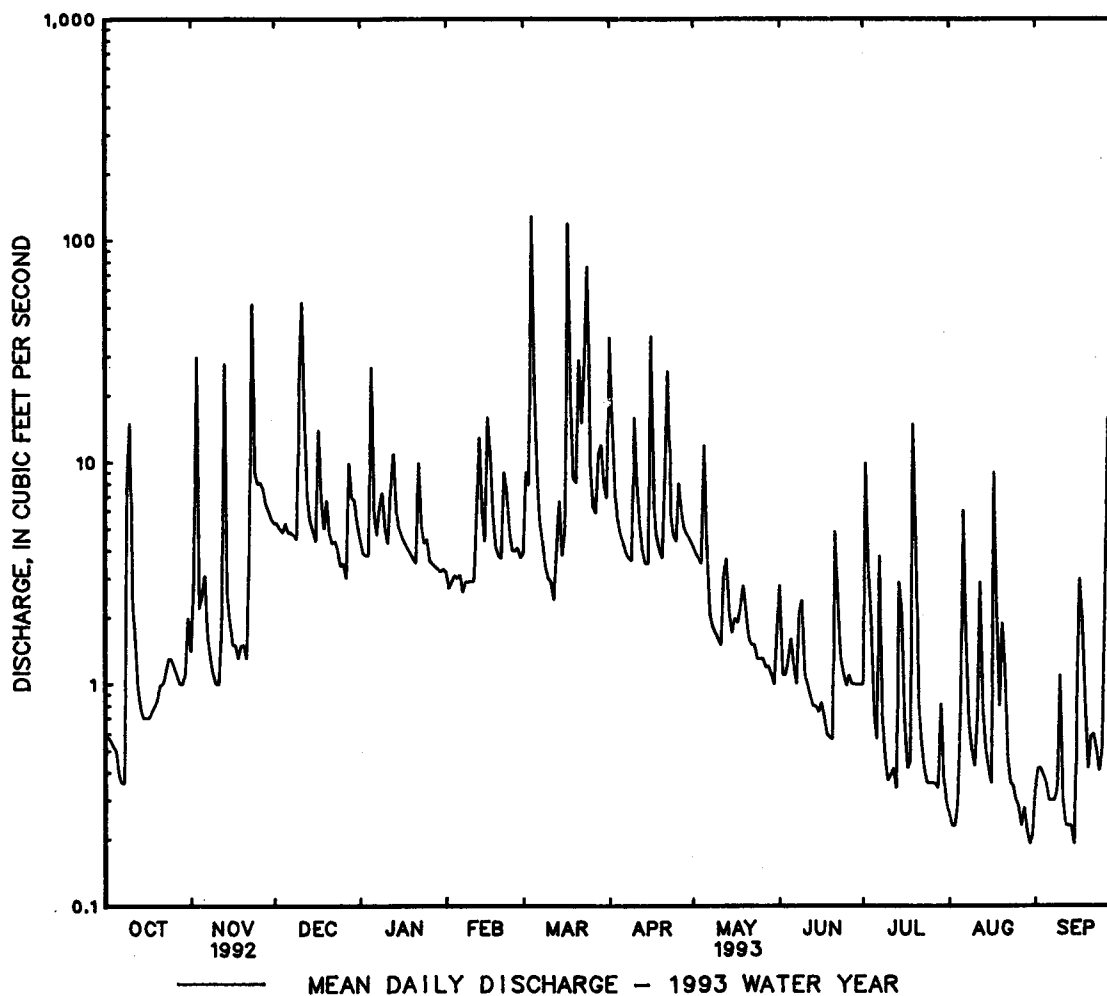
b Aug. 30, Sept. 15.

c July 17, 18, 23, 1991, Aug. 30, Sept. 15, 1993.

d Aug. 31, Sept. 1-3, 18-21, 24, 25.

f Aug. 29-31, Sept. 14-16.

g July 11, 12, 15-19, 21, 23, 24, Aug. 6, 8, 1991, Aug. 29-31, Sept. 14-16, 1993.



GUNPOWDER RIVER BASIN

01585107 WINDLASS RUN NEAR WHITE MARSH, MD

LOCATION.--Lat 39°21'58", long 76°24'50", Baltimore County, Hydrologic Unit 02060003, on right bank at downstream side of bridge on Bird River Road, 0.4 mi upstream from Ebenezer Road, 1.0 mi upstream from mouth, 1.4 mi southeast of White Marsh, and 2.5 mi north northeast of Middle River.

DRAINAGE AREA.--2.03 mi².

PERIOD OF RECORD.--March 1992 to September 1993 (Discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above sea level, from topographic maps.

REMARKS.--Records good except those for Mar. 14-16, 1993 (ice effect), which are fair, and those for Mar. 26, 27, May 16, 30, 31, June 5, July 31, Aug. 1, Sept. 3, 4, 25-30, Oct. 9-12, 31, Nov. 2, 3, 6, 24-29, 1992, and Mar. 17-20, 1993 (recorder malfunction resulting in no gage-height record), which are poor. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 27, 1992	0845	*37	*2.43	Mar. 4, 1993	1715	64	3.24
Nov. 13, 1992	0145	32	2.29	Mar. 17, 1993	2100	*76	*3.45
Nov. 23, 1992	0330	54	3.05	Mar. 24, 1993	0400	64	3.24
Dec. 11, 1992	1815	34	2.59				

DISCHARGE, IN CUBIC FEET PER SECOND, APRIL 1992 TO SEPTEMBER 1992
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	1.7	1.0	1.7	1.3	e2.2	.04
2	---	---	---	---	---	---	1.5	.93	.99	1.0	.48	.00
3	---	---	---	---	---	---	1.3	.80	.77	.63	.19	e.90
4	---	---	---	---	---	---	1.2	.73	.67	.90	.14	e.70
5	---	---	---	---	---	---	1.2	.67	e8.0	.39	.12	.27
6	---	---	---	---	---	---	1.1	.67	6.4	.16	.10	1.7
7	---	---	---	---	---	---	1.1	.67	1.9	.21	.08	1.3
8	---	---	---	---	---	---	1.1	1.2	1.1	.12	.07	.60
9	---	---	---	---	---	---	1.0	1.3	.78	.08	.07	.41
10	---	---	---	---	---	---	1.1	.92	.67	.03	.06	.36
11	---	---	---	---	---	---	1.1	.76	.61	.04	.09	.51
12	---	---	---	---	---	---	1.0	.65	.46	.02	.14	.30
13	---	---	---	---	---	---	.98	.64	.40	.01	.10	.22
14	---	---	---	---	---	---	.96	.64	.35	.02	.53	.18
15	---	---	---	---	---	---	.95	.82	.34	.23	.92	.15
16	---	---	---	---	---	---	.90	e1.9	.34	.29	1.4	.11
17	---	---	---	---	---	---	.96	1.0	.31	.08	2.0	.08
18	---	---	---	---	---	---	1.0	.84	.23	.08	6.1	.06
19	---	---	---	---	---	---	1.5	.77	.59	.05	1.4	.05
20	---	---	---	---	---	---	1.2	.64	.61	.02	.83	.05
21	---	---	---	---	---	---	1.2	.52	.37	.03	.59	.04
22	---	---	---	---	---	---	3.5	.47	.27	.04	.34	.06
23	---	---	---	---	---	---	2.0	.36	.29	.92	.31	.14
24	---	---	---	---	---	---	1.4	.32	.33	1.4	.24	.04
25	---	---	---	---	---	1.1	1.3	.67	.68	2.1	.05	e.50
26	---	---	---	---	---	e5.8	2.0	.67	1.0	.87	.23	e3.4
27	---	---	---	---	---	e32	1.7	.84	.56	.97	.23	e.18
28	---	---	---	---	---	5.7	1.3	.63	.10	.66	.21	e.14
29	---	---	---	---	---	2.4	1.1	.51	.03	.33	.24	e.13
30	---	---	---	---	---	1.9	1.0	e2.0	.10	.15	.24	e.12
31	---	---	---	---	---	1.9	---	e8.0	---	e5.8	.22	---
TOTAL	---	---	---	---	---	---	39.35	32.54	30.95	18.93	19.92	12.74
MEAN	---	---	---	---	---	---	1.31	1.05	1.03	.61	.64	.42
MAX	---	---	---	---	---	---	3.5	8.0	8.0	5.8	6.1	3.4
MIN	---	---	---	---	---	---	.90	.32	.03	.01	.05	.00
CFSM	---	---	---	---	---	---	.65	.52	.51	.30	.32	.21
IN.	---	---	---	---	---	---	.72	.60	.57	.35	.37	.23

e Estimated

GUNPOWDER RIVER BASIN

127

01585107 WINDLASS RUN NEAR WHITE MARSH, MD--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.33	1.1	1.3	1.9	2.3	18	2.5	1.3	.13	.05	.03
2	.12	e.90	1.1	1.0	1.8	3.1	11	2.2	.44	2.1	.05	.03
3	.11	e15	1.1	.95	1.7	3.5	6.1	2.0	.37	2.5	.06	.03
4	.10	1.9	1.0	.94	1.8	32	4.4	1.8	.51	1.5	.05	.03
5	.09	.65	1.2	11	1.8	17	3.7	1.9	.62	.48	.09	.03
6	.08	e1.3	1.1	5.3	1.8	5.9	3.4	2.4	.41	.37	2.5	.03
7	.08	.67	1.0	3.1	1.8	3.7	3.1	1.7	.46	1.0	.66	.03
8	.09	.60	1.0	3.3	1.8	2.9	3.0	1.2	.69	.45	.08	.03
9	e.80	.58	1.0	4.1	1.8	2.5	3.0	.85	1.3	.32	.06	.03
10	e3.1	.51	3.8	3.5	1.7	2.2	5.9	.84	.63	.25	.09	.07
11	e.50	.52	23	2.7	1.8	2.2	5.8	.79	.46	.17	.08	.03
12	e.20	.56	13	3.5	2.9	1.8	4.5	1.3	.40	.12	.42	.03
13	.22	10	3.4	4.8	5.6	2.5	3.7	2.6	.37	.10	.12	.03
14	.23	2.4	1.6	3.8	4.0	e3.7	3.2	1.2	.37	.20	.07	.04
15	.24	1.0	1.2	2.6	2.8	e2.7	3.0	.91	.21	.31	.06	.03
16	.25	.79	1.1	2.2	4.8	e3.3	8.2	.81	.15	.23	.06	.03
17	.26	.66	2.6	2.0	6.1	e37	8.4	.99	.11	.17	.65	.15
18	.26	.55	3.2	2.1	3.4	e14	4.1	1.1	.06	.12	.42	.50
19	.25	.68	1.6	2.0	2.5	e4.6	3.2	1.9	.24	.19	.09	.18
20	.24	.73	1.8	1.8	2.3	e4.9	2.9	1.6	.16	.54	.08	.06
21	.26	.63	1.5	1.8	2.1	13	4.3	1.1	.43	.22	.11	.08
22	.24	1.2	1.2	4.3	4.1	11	14	.85	.55	.18	.06	.10
23	.25	12	1.2	3.2	5.1	12	5.1	.75	.07	.09	.05	.09
24	.26	e3.3	1.1	2.6	3.6	37	3.6	.61	.15	.05	.05	.07
25	.27	e2.2	.92	2.5	2.8	8.1	3.2	.46	.05	.05	.05	.07
26	.29	e2.3	.93	2.2	2.5	5.0	5.1	.33	.05	.05	.05	.41
27	.29	e2.0	.82	2.1	2.3	4.3	5.6	.28	.04	.07	.05	2.4
28	.31	e1.6	2.4	2.0	2.3	5.2	3.4	.39	.04	.05	.04	.95
29	.29	e1.4	3.2	2.0	---	6.3	2.9	.27	.03	.05	.03	.14
30	.31	1.2	2.2	1.8	---	5.0	2.7	.24	.03	.05	.03	.09
31	e.60	---	1.7	1.9	---	4.1	---	.50	---	.05	.03	---
TOTAL	10.72	68.16	83.07	88.39	78.9	262.8	158.5	36.37	10.70	12.16	6.29	5.82
MEAN	.35	2.27	2.68	2.85	2.82	8.48	5.28	1.17	.36	.39	.20	.19
MAX	3.1	15	23	11	6.1	37	18	2.6	1.3	2.5	2.5	2.4
MIN	.08	.33	.82	.94	1.7	1.8	2.7	.24	.03	.05	.03	.03
CFSM	.17	1.12	1.32	1.40	1.39	4.18	2.60	.58	.18	.19	.10	.10
IN.	.20	1.25	1.52	1.62	1.45	4.82	2.90	.67	.20	.22	.12	.11

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

	MEAN	.35	2.27	2.68	2.85	2.82	8.48	3.30	1.11	.69	.50	.42	.31
MAX	.35	2.27	2.68	2.85	2.82	8.48	5.28	1.17	1.03	.61	.64	.42	
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992	1992
MIN	.35	2.27	2.68	2.85	2.82	8.48	1.31	1.05	.36	.39	.20	.19	
(WY)	1993	1993	1993	1993	1993	1993	1992	1992	1993	1993	1993	1993	1993

01585107 WINDLASS RUN NEAR WHITE MARSH, MD--Continued

SUMMARY STATISTICS

FOR 1993 WATER YEAR

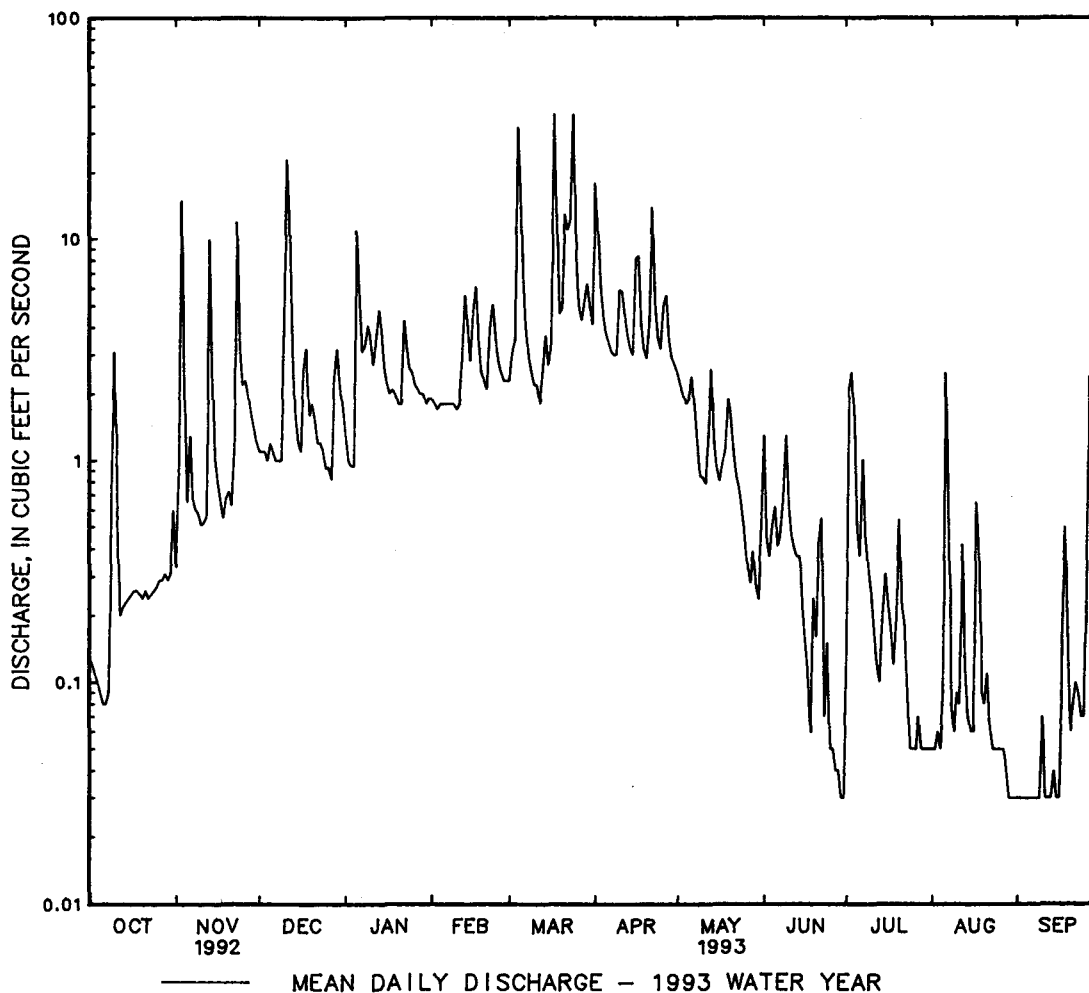
WATER YEARS 1992 - 1993

ANNUAL TOTAL	821.88		
ANNUAL MEAN	2.25		
HIGHEST ANNUAL MEAN			2.25 1993
LOWEST ANNUAL MEAN			2.25 1993
HIGHEST DAILY MEAN	(e)37	Mar 17	(e)37 Mar 17 1993
LOWEST DAILY MEAN	.03	(a)	.00 Sep 2 1992
ANNUAL SEVEN-DAY MINIMUM	.03	Aug 29	.03 Aug 29 1993
INSTANTANEOUS PEAK FLOW	76	Mar 17	76 Mar 17 1993
INSTANTANEOUS PEAK STAGE	3.45	Mar 17	3.45 Mar 17 1993
INSTANTANEOUS LOW FLOW	.03	(b)	.00 (c)
ANNUAL RUNOFF (CFSM)	1.11		1.11
ANNUAL RUNOFF (INCHES)	15.06		15.07
10 PERCENT EXCEEDS	4.8		4.1
50 PERCENT EXCEEDS	1.0		.79
90 PERCENT EXCEEDS	.05		.05

a June 29, 30, Aug. 29-31, Sept. 1-9, 11-13, 15, 16.

b June 18, Sept. 1-16.

c July 12, 13, Sept. 1-3, 1992.



PATAPSCO RIVER BASIN

129

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD

LOCATION.--Lat 39°35'35", long 76°58'05", Carroll County, Hydrologic Unit 02060003, on left bank 80 ft upstream from culvert, 0.7 mi upstream from mouth, and 1.8 mi northeast of Westminster.

DRAINAGE AREA.--3.29 mi².

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1432: Drainage area, 1954-55. WDR MD-DE-75-1: 1972(M). WDR MD-DE-79-1: 1973-78(F).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 670 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Occasional small diversions to and releases from Cranberry Reservoir located offstream 1 mi upstream from station since August 1957, capacity, 113,700,000 gal. Beginning October 1972 occasional large diversions past the gaging station from the reservoir through a 30-inch pipe. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1600	117	2.98	May 31	2045	*655	*4.66
Apr. 10	1730	89	2.82	June 8	2100	130	3.05
Apr. 16	1245	192	3.32	Sep. 9	2145	96	2.86

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.46	.55	3.1	2.6	2.7	29	7.6	10	1.4	.64	.52
2	.34	.59	.60	2.8	2.3	1.4	16	7.3	4.1	1.7	1.6	1.0
3	.34	10	.53	2.7	2.4	3.2	12	7.0	4.3	.98	.95	1.6
4	.34	1.6	.50	1.9	2.5	47	9.9	7.0	5.5	2.9	1.7	1.7
5	.31	.81	.55	7.0	2.4	24	6.2	17	5.4	2.6	.68	.49
6	.33	.72	.49	1.9	2.4	12	7.1	9.4	4.7	2.3	4.9	.49
7	.29	.67	.53	2.2	2.4	14	8.0	7.4	4.5	6.6	3.2	.49
8	.27	.62	.50	3.4	2.4	9.2	7.8	5.3	16	3.5	1.7	5.2
9	9.5	.60	.91	2.1	2.3	4.3	7.6	6.3	8.3	2.2	1.1	9.3
10	2.9	.55	6.7	3.2	2.1	3.4	26	6.3	2.9	2.4	.81	4.1
11	.57	.53	26	3.2	2.5	3.2	13	6.1	1.7	2.4	1.9	.75
12	.48	.57	10	5.8	3.9	2.4	8.5	7.8	4.1	2.3	4.9	.61
13	.40	1.5	3.1	6.0	4.9	2.0	8.0	7.4	4.1	1.8	1.0	.61
14	.40	.70	.92	.87	3.8	6.1	8.7	3.8	3.9	1.5	.65	1.1
15	.65	.64	.80	2.3	3.4	5.6	8.4	3.9	3.9	.98	.64	2.6
16	.61	.63	1.6	3.6	4.8	5.6	37	4.4	3.7	1.4	.63	3.4
17	.48	.62	6.2	3.5	5.6	27	16	5.3	3.8	1.8	1.1	5.0
18	.48	.60	2.6	3.2	2.4	14	8.6	5.8	3.7	1.1	2.0	2.2
19	.47	.61	.73	3.0	1.0	8.4	8.9	5.4	5.9	1.2	.58	.92
20	.39	.58	.86	2.9	3.2	6.5	9.5	4.7	12	1.8	.55	1.1
21	.43	.54	.68	3.1	1.9	15	15	5.3	9.0	1.5	.52	.91
22	.42	2.7	.66	5.2	3.6	16	24	5.2	5.7	1.4	.50	1.1
23	.40	10	2.0	2.1	3.5	29	11	5.1	3.3	1.1	.73	1.2
24	.40	1.8	3.0	1.8	3.0	36	10	5.0	1.9	1.1	.52	1.1
25	.37	1.7	2.6	3.1	2.7	12	9.7	4.8	2.3	1.3	1.0	2.2
26	.39	.68	2.7	2.8	2.8	7.7	10	4.6	3.0	.67	.83	5.8
27	.75	.63	2.4	2.8	2.8	9.1	9.0	4.5	3.4	.65	.48	7.7
28	.71	.60	2.9	2.8	2.7	12	8.3	3.4	3.0	.78	.59	2.2
29	.62	.57	3.5	2.8	---	12	8.1	3.4	2.7	2.6	.97	1.0
30	.54	.53	4.5	2.6	---	11	7.8	4.1	1.3	1.2	.75	1.4
31	.47	---	3.8	2.7	---	9.3	---	66	---	.65	.54	---
TOTAL	25.38	43.35	93.41	96.47	82.3	371.1	369.1	246.6	148.1	55.81	38.66	67.79
MEAN	.82	1.44	3.01	3.11	2.94	12.0	12.3	7.95	4.94	1.80	1.25	2.26
MAX	9.5	10	26	7.0	5.6	47	37	66	16	6.6	4.9	9.3
MIN	.27	.46	.49	.87	1.0	1.4	6.2	3.4	1.3	.65	.48	.49
CFSM	.25	.44	.92	.95	.89	3.64	3.74	2.42	1.50	.55	.38	.69
IN.	.29	.49	1.06	1.09	.93	4.20	4.17	2.79	1.67	.63	.44	.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

	1950	1953	1973	1978	1974	1993	1993	1952	1972	1972	1955	1975
MEAN	2.17	2.42	3.05	3.39	4.44	4.55	4.72	4.17	3.70	2.73	2.14	2.42
MAX	9.96	6.66	7.16	10.8	10.7	12.0	12.3	11.3	29.5	11.1	6.91	21.7
(WY)	1980	1953	1973	1978	1974	1993	1993	1952	1972	1972	1955	1975
MIN	.40	.53	1.02	.56	.70	.77	.89	.88	.64	.67	.36	.30
(WY)	1987	1974	1989	1992	1992	1981	1992	1986	1986	1991	1986	1977

PATAPSCO RIVER BASIN

01585500 CRANBERRY BRANCH NEAR WESTMINSTER, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1974 - 1993	
ANNUAL TOTAL	393.73		1638.07			
ANNUAL MEAN	a1.08		a4.49		a3.32	
HIGHEST ANNUAL MEAN					7.82	
LOWEST ANNUAL MEAN					.86	
HIGHEST DAILY MEAN	26	Dec 11	66	May 31	440	Jun 22 1972
LOWEST DAILY MEAN	.22	(b)	.27	Oct 8	.16	(c)
ANNUAL SEVEN-DAY MINIMUM	.24	Jul 10	.32	Oct 2	.22	Sep 8 1977
INSTANTANEOUS PEAK FLOW	62	(d)	655	May 31	£2220	Sep 26 1975
INSTANTANEOUS PEAK STAGE	2.60	(d)	4.66	May 31	7.47	Sep 26 1975
INSTANTANEOUS LOW FLOW	.20	(g)	.24	(h)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	.33		1.36		1.01	
ANNUAL RUNOFF (INCHES)	4.45		18.52		13.70	
10 PERCENT EXCEEDS	2.2		9.8		5.9	
50 PERCENT EXCEEDS	.47		2.6		2.3	
90 PERCENT EXCEEDS	.27		.53		.79	

a Unadjusted for storage and diversions.

b July 13, 14, 20.

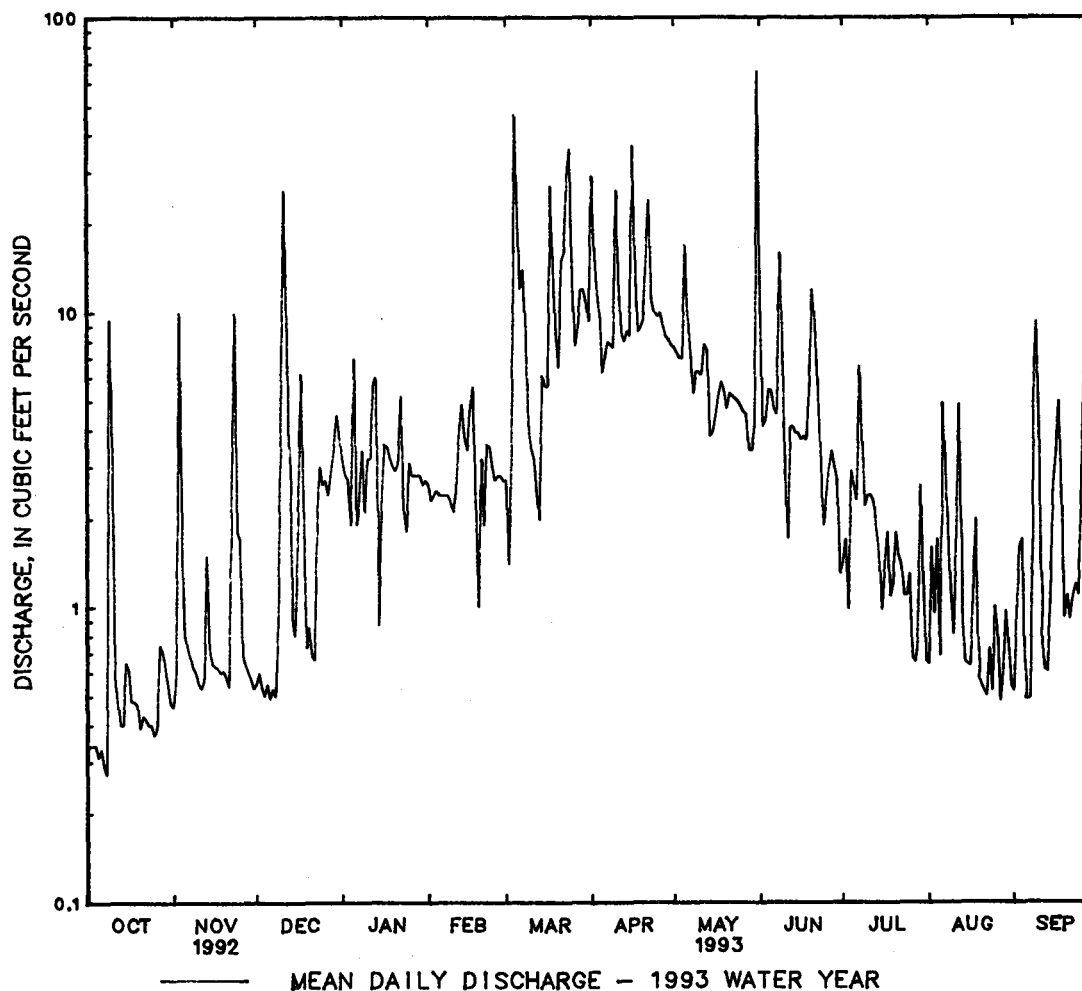
c Oct. 29, 30, 1986.

d Mar. 26 and Oct. 9.

f From rating curve extended above 200 ft³/s on the basis of culvert measurements at gage heights 5.54 ft and 7.47 ft.

g Many days.

h Oct. 8, 14, 15.



01586000 NORTH BRANCH PATAPSCO RIVER AT CEDARHURST, MD

LOCATION.--Lat 39°30'00", long 76°53'00", Carroll County, Hydrologic Unit 02060003, on left bank at downstream side of private footbridge at Cedarhurst, 0.8 mi downstream from Roaring Run, 8 mi southeast of Westminster, and 16.5 mi upstream from confluence with South Branch.

DRAINAGE AREA.--56.6 mi².

PERIOD OF RECORD.--September 1945 to current year.

REVISED RECORDS.--WSP 1903: 1959-60.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 420.70 ft above sea level.

REMARKS.--Records good except those for March 14-16 (ice effect) and March 28 to April 16 (missing record), which are fair. Slight diurnal fluctuation at low and medium flow caused by mill upstream from station. Low flow affected slightly by Cranberry Reservoir since August 1957, capacity, 113,700,000 gal. Records do not include a mean discharge of 3.00 ft³/s diverted upstream from station for municipal supply of Westminster; sewage effluent discharged into Little Pipe Creek in Monocacy River basin. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 7	1800	2,720	7.07	Apr. 16	1530	1,790	5.75
Mar. 17	1830	1,030	4.47	June 1	0115	*2,810	*7.19
Mar. 24	0545	1,230	4.86				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	26	36	54	47	47	e580	124	477	51	34	26
2	23	36	36	50	49	52	e300	118	98	65	32	26
3	22	220	34	49	44	67	e200	113	86	74	33	25
4	24	53	33	48	44	1040	e180	111	92	64	51	42
5	20	42	38	108	44	486	e170	294	89	53	34	29
6	19	44	33	68	44	235	e160	171	76	52	104	26
7	19	36	32	58	42	197	e150	125	71	112	66	24
8	19	33	31	65	41	176	e145	114	120	56	50	59
9	136	30	30	65	41	152	e140	109	180	48	41	60
10	160	29	87	59	40	137	e420	105	84	45	42	156
11	44	29	496	55	42	129	e220	100	76	44	46	38
12	34	34	201	86	58	113	e170	140	69	43	108	32
13	30	139	109	110	92	110	e155	137	67	41	45	29
14	29	45	83	80	68	e108	e145	105	64	40	39	28
15	28	38	71	69	58	e108	e140	97	62	40	36	27
16	26	33	65	67	76	e108	e500	91	60	38	34	59
17	24	32	107	65	100	475	259	92	57	38	35	148
18	24	31	85	59	74	281	182	97	57	42	41	70
19	24	32	65	56	57	165	165	110	66	67	35	43
20	23	34	76	52	56	149	156	94	140	89	34	35
21	24	32	64	53	53	238	170	87	148	43	35	35
22	24	34	59	89	68	242	425	80	104	40	31	40
23	23	165	62	67	67	317	196	78	69	38	31	34
24	24	63	57	57	54	711	172	77	61	37	29	33
25	27	56	51	58	50	285	161	74	57	37	28	37
26	23	49	50	51	51	220	167	71	57	36	27	119
27	22	44	51	49	50	203	150	71	56	35	26	152
28	22	41	61	49	47	e195	138	70	53	33	27	83
29	23	39	62	50	---	e185	132	67	53	54	34	47
30	24	36	74	46	---	e175	129	66	51	38	26	43
31	29	---	62	47	---	e170	---	226	---	35	26	---
TOTAL	1016	1555	2401	1939	1557	7276	6377	3414	2800	1528	1260	1605
MEAN	32.8	51.8	77.5	62.5	55.6	235	213	110	93.3	49.3	40.6	53.5
MAX	160	220	496	110	100	1040	580	294	477	112	108	156
MIN	19	26	30	46	40	47	129	66	51	33	26	24
CFSM	.58	.92	1.37	1.11	.98	4.15	3.76	1.95	1.65	.87	.72	.95
IN.	.67	1.02	1.58	1.27	1.02	4.78	4.19	2.24	1.84	1.00	.83	1.05

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

	41.2	49.2	61.2	71.3	85.4	92.4	87.0	76.8	65.2	48.5	42.0	42.4
MEAN	41.2	49.2	61.2	71.3	85.4	92.4	87.0	76.8	65.2	48.5	42.0	42.4
MAX	214	114	164	212	212	235	213	201	389	149	165	356
(WY)	1980	1953	1973	1979	1979	1993	1993	1952	1972	1972	1955	1975
MIN	11.8	15.8	15.5	17.6	36.4	37.1	36.3	26.3	19.5	9.72	6.91	12.4
(WY)	1964	1966	1966	1966	1992	1959	1969	1969	1969	1966	1966	1964

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

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1945 - 1993	
ANNUAL MEAN	42.3		89.7		63.4	
HIGHEST ANNUAL MEAN					121	
LOWEST ANNUAL MEAN					30.1	
HIGHEST DAILY MEAN	496	Dec 11	1040	Mar 4	6000	Jun 22 1972
LOWEST DAILY MEAN	16	(a)	19	(b)	3.1	(c)
ANNUAL SEVEN-DAY MINIMUM	17	Aug 30	21	Oct 2	3.5	Sep 7 1966
INSTANTANEOUS PEAK FLOW	1350	Mar 27	2810	Jun 1	(d)27800	Jun 22 1972
INSTANTANEOUS PEAK STAGE	5.08	Mar 27	7.19	Jun 1	(f)20.75	Jun 22 1972
INSTANTANEOUS LOW FLOW	3.7	Jul 5	12	Nov 10	1.3	(g)
ANNUAL RUNOFF (CFSM)	.75		1.58		1.12	
ANNUAL RUNOFF (INCHES)	10.18		21.51		15.22	
10 PERCENT EXCEEDS	65		171		111	
50 PERCENT EXCEEDS	33		57		44	
90 PERCENT EXCEEDS	20		28		19	

a Aug. 26, 27, Sept. 1, 2.

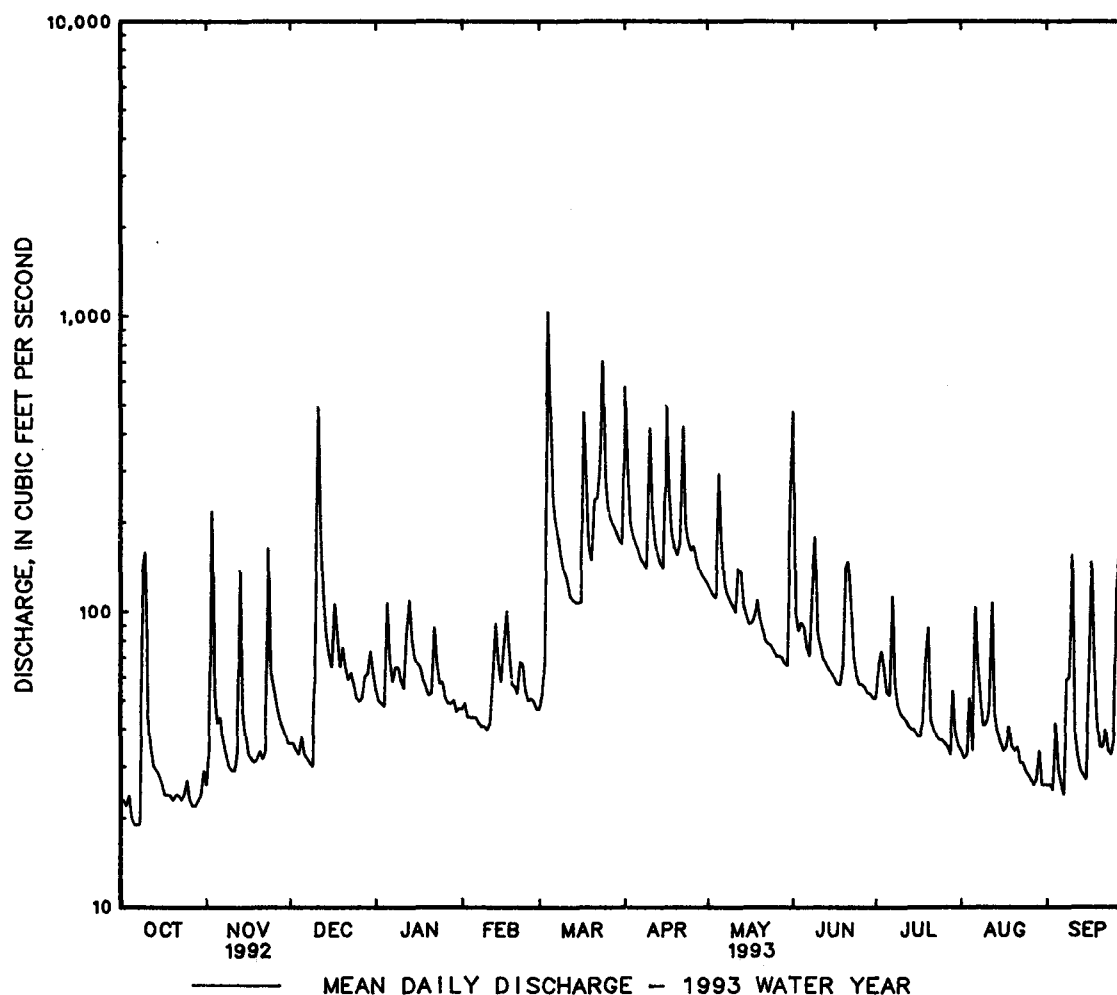
b Oct. 6-8.

c Sept. 10, 12, 1966.

d From rating curve extended above 4,100 ft³/s on basis of contracted-opening measurement of peak flow.

f From high-water mark in well.

g Sept. 17, 1983 and Aug. 10, 1985, result of regulation.



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 mi².

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 Feb. 20, 26, March 13-15 (ice effect) and Sept. 25-28 (missing record), 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 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1500	636	3.63	July 19	2200	*766	*3.91
Apr. 16	1500	576	3.49				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	7.9	11	16	13	14	130	32	44	11	9.0	7.5
2	6.5	11	11	15	12	15	80	31	19	16	8.5	7.5
3	6.2	61	11	15	13	18	53	29	18	18	8.3	7.2
4	5.6	15	11	15	13	255	46	29	18	15	10	8.9
5	5.5	13	12	26	13	107	43	51	18	11	8.4	7.8
6	5.2	13	11	18	12	61	40	33	17	12	28	7.3
7	5.3	12	11	17	12	53	37	29	16	43	14	7.2
8	5.3	11	10	18	12	49	36	27	24	12	11	13
9	54	10	10	18	12	42	34	26	27	11	10	20
10	32	9.7	37	16	11	38	96	25	17	9.9	9.4	26
11	12	9.5	135	16	12	35	56	24	16	9.2	9.1	7.8
12	10	10	49	21	17	31	45	34	15	8.8	23	6.8
13	9.2	45	28	26	22	e30	39	30	15	8.4	12	6.6
14	8.5	15	23	21	17	e28	36	25	14	8.7	10	6.5
15	8.3	13	20	19	15	e27	35	23	14	9.0	9.5	6.4
16	7.9	11	18	19	19	26	139	22	13	8.1	9.5	9.2
17	7.2	11	28	18	22	142	70	22	13	7.6	9.7	20
18	7.2	10	21	17	18	71	50	23	12	7.4	9.9	11
19	7.4	10	18	16	15	44	45	25	12	90	9.4	8.8
20	7.2	10	21	16	e15	40	42	22	14	47	11	7.8
21	7.2	9.9	18	15	15	71	54	21	24	15	10	8.9
22	7.2	11	17	22	17	63	103	20	18	13	8.6	8.9
23	7.2	40	17	17	16	91	53	20	13	12	8.4	7.9
24	7.3	17	16	16	14	171	46	19	12	12	8.2	7.4
25	7.4	16	15	15	14	80	43	18	12	11	8.2	e9.0
26	7.2	15	15	14	e14	63	45	18	11	11	8.1	e30
27	7.2	14	14	14	13	59	39	17	11	11	7.8	e20
28	7.2	13	17	14	13	57	37	17	11	9.9	7.8	e15
29	7.2	12	18	13	---	52	35	16	11	12	9.7	11
30	7.2	12	19	13	---	47	34	16	11	9.6	7.9	9.8
31	8.6	---	17	13	---	41	---	35	---	9.2	7.6	---
TOTAL	298.2	468.0	679	529	411	1921	1641	779	490	488.8	322.0	331.2
MEAN	9.62	15.6	21.9	17.1	14.7	62.0	54.7	25.1	16.3	15.8	10.4	11.0
MAX	54	61	135	26	22	255	139	51	44	90	28	30
MIN	5.2	7.9	10	13	11	14	34	16	11	7.4	7.6	6.4
CFSM	.69	1.11	1.56	1.22	1.05	4.43	3.91	1.79	1.17	1.13	.74	.79
IN.	.79	1.24	1.80	1.41	1.09	5.10	4.36	2.07	1.30	1.30	.86	.88

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	9.33	13.1	16.4	16.6	20.5	24.3	25.7	24.0	13.3	10.0	9.62	7.75
MAX	17.2	17.5	35.5	32.5	37.8	62.0	54.7	51.9	25.3	17.1	29.9	13.9
(WY)	1991	1991	1984	1991	1985	1993	1993	1989	1989	1984	1984	1987
MIN	3.73	7.75	8.20	8.41	10.7	13.8	11.9	10.1	5.50	4.30	4.01	2.78
(WY)	1987	1983	1983	1983	1992	1990	1985	1986	1986	1991	1986	1986

PATAPSCO RIVER BASIN

01586210 BEAVER RUN NEAR FINKSBURG, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1983 - 1993	
ANNUAL MEAN	12.3		22.9		15.9	
HIGHEST ANNUAL MEAN					24.7	
LOWEST ANNUAL MEAN					9.92	
HIGHEST DAILY MEAN	135	Dec 11	255	Mar 4	504	Feb 12 1985
LOWEST DAILY MEAN	4.2	Aug 27	5.2	Oct 6	2.1	(a)
ANNUAL SEVEN-DAY MINIMUM	4.6	Aug 21	5.7	Oct 2	2.2	Sep 15 1986
INSTANTANEOUS PEAK FLOW	337	Mar 27	766	Jul 19	(b)2150	May 6 1989
INSTANTANEOUS PEAK STAGE	2.83	Mar 27	3.91	Jul 19	(c)5.70	May 6 1989
INSTANTANEOUS LOW FLOW	(d)2.9	Feb 10	(d)4.0	Feb 2	2.0	(f)
ANNUAL RUNOFF (CFSM)	.88		1.64		1.13	
ANNUAL RUNOFF (INCHES)	11.94		22.21		15.39	
10 PERCENT EXCEEDS	18		46		28	
50 PERCENT EXCEEDS	10		15		12	
90 PERCENT EXCEEDS	5.9		7.8		5.1	

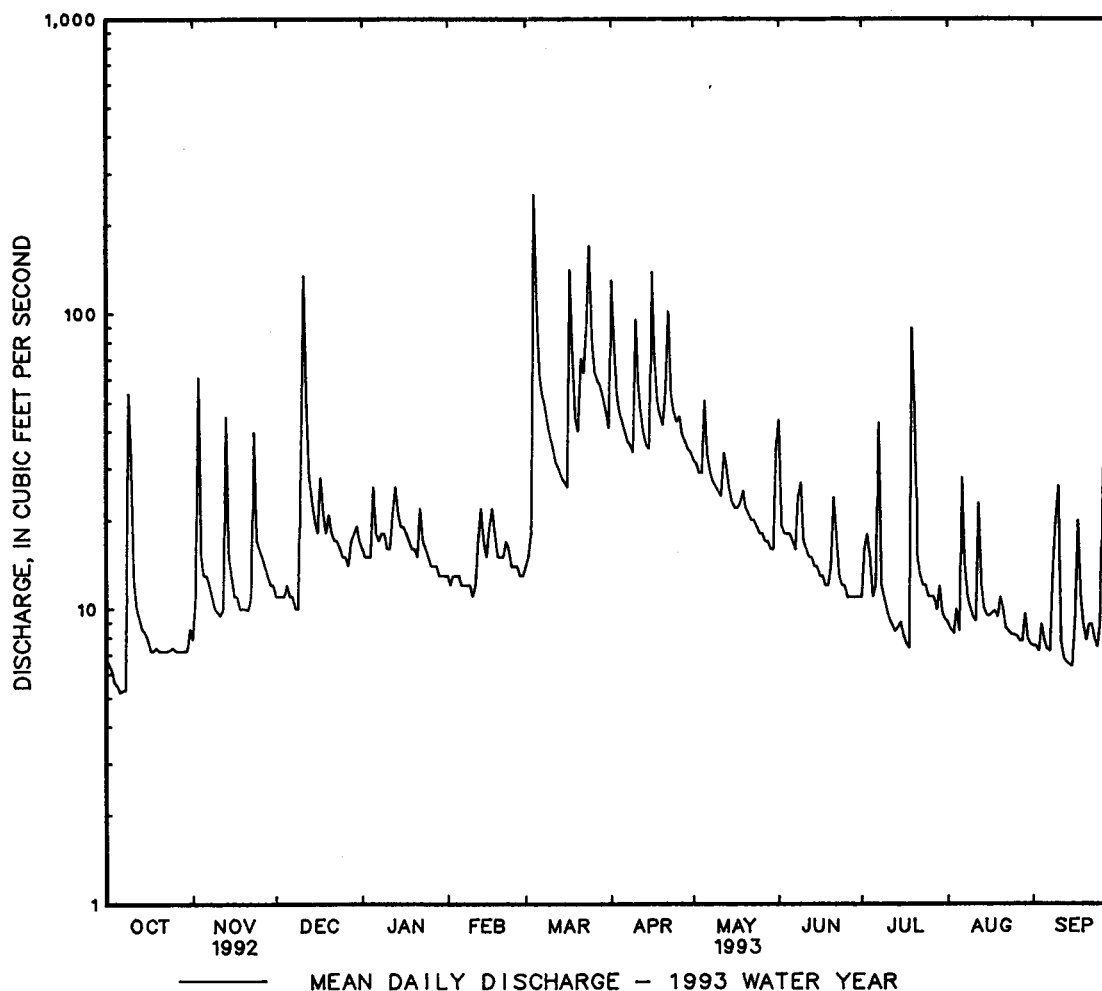
a Sept. 17, 18, 1986.

b From rating curve extended above 600 ft³/s.

c From floodmarks.

d Result of freezeup.

f Sept. 12, 1983, Sept. 17, 18, 1986.



PATAPSCO RIVER BASIN

135

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 mi².

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 Feb. 3, 7, 8, 20, March 13-15 (ice effect) and March 4, 5 (missing record), 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 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	UNKNOWN	*1,380	*5.76	Apr. 16	1315	1,270	5.57
Apr. 10	1845	1,010	5.07				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	23	35	27	27	235	83	68	23	16	12
2	12	20	23	32	26	29	178	79	38	35	16	12
3	11	112	22	31	e25	40	131	75	37	44	15	12
4	11	29	21	30	24	e700	118	73	38	33	22	14
5	10	23	23	57	23	e300	109	105	39	25	16	13
6	10	24	21	40	23	162	100	82	36	23	68	12
7	10	21	21	36	e23	140	93	71	33	46	31	12
8	10	19	21	39	e22	130	87	67	52	24	22	22
9	101	18	20	38	22	115	84	67	62	21	20	24
10	64	18	57	34	21	104	295	62	36	21	18	39
11	23	17	295	32	22	96	162	60	34	20	19	16
12	19	18	124	48	34	83	131	63	31	19	78	14
13	17	71	76	61	48	e77	115	65	30	18	27	13
14	16	28	61	50	37	e73	106	59	29	18	21	13
15	15	24	53	45	31	e70	99	55	28	21	18	13
16	15	21	47	42	42	69	362	54	27	18	17	22
17	15	21	65	40	51	281	178	53	27	17	18	44
18	15	20	53	36	41	169	138	55	26	16	18	26
19	15	20	46	33	39	113	126	60	26	61	17	19
20	15	20	51	30	e35	100	115	54	36	81	32	17
21	15	19	44	31	33	156	127	49	59	24	24	17
22	15	21	40	52	37	156	241	48	40	21	17	20
23	15	79	41	38	34	202	140	47	29	19	16	17
24	15	35	37	35	29	382	126	46	26	18	15	16
25	15	33	32	33	28	193	119	43	25	19	15	17
26	15	29	32	29	27	154	120	41	24	19	14	45
27	15	27	31	29	26	143	106	40	24	18	14	61
28	15	25	34	29	26	145	97	39	23	17	14	34
29	15	24	41	28	---	128	92	38	23	21	15	22
30	15	23	44	26	---	119	88	36	22	17	13	20
31	16	---	39	26	---	103	---	45	---	17	13	---
TOTAL	583	874	1538	1145	856	4759	4218	1814	1028	794	679	638
MEAN	18.8	29.1	49.6	36.9	30.6	154	141	58.5	34.3	25.6	21.9	21.3
MAX	101	112	295	61	51	700	362	105	68	81	78	61
MIN	10	15	20	26	21	27	84	36	22	16	13	12
CFSM	.67	1.04	1.77	1.32	1.09	5.48	5.02	2.09	1.22	.91	.78	.76
IN.	.77	1.16	2.04	1.52	1.14	6.32	5.60	2.41	1.37	1.05	.90	.85

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	18.0	23.7	33.9	34.1	41.3	55.1	58.3	50.1	27.8	19.4	17.4	14.3
MAX	44.3	31.4	85.9	65.8	91.2	154	141	111	52.0	30.8	46.2	23.7
(WY)	1991	1991	1984	1991	1984	1993	1993	1989	1989	1984	1984	1987
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 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1983 - 1993

ANNUAL MEAN	24.6		51.9		32.7	
HIGHEST ANNUAL MEAN					53.6	1984
LOWEST ANNUAL MEAN					19.5	1986
HIGHEST DAILY MEAN	295	Dec 11	700	Mar 4	1000	May 6 1989
LOWEST DAILY MEAN	8.9	Sep 1	10	(a)	4.0	(b)
ANNUAL SEVEN-DAY MINIMUM	10	Aug 30	11	Oct 2	4.2	Sep 17 1986
INSTANTANEOUS PEAK FLOW	511	Mar 27	1380	Mar 4	(c)3400	May 6 1989
INSTANTANEOUS PEAK STAGE	3.84	Mar 27	5.76	Mar 4	(d)8.31	May 6 1989
INSTANTANEOUS LOW FLOW	(f)8.1	Feb 10	9.7	Oct 5	UNKNOWN	
ANNUAL RUNOFF (CFSM)	.88		1.85		1.17	
ANNUAL RUNOFF (INCHES)	11.95		25.14		15.89	
10 PERCENT EXCEEDS	41		116		62	
50 PERCENT EXCEEDS	19		31		23	
90 PERCENT EXCEEDS	12		15		9.7	

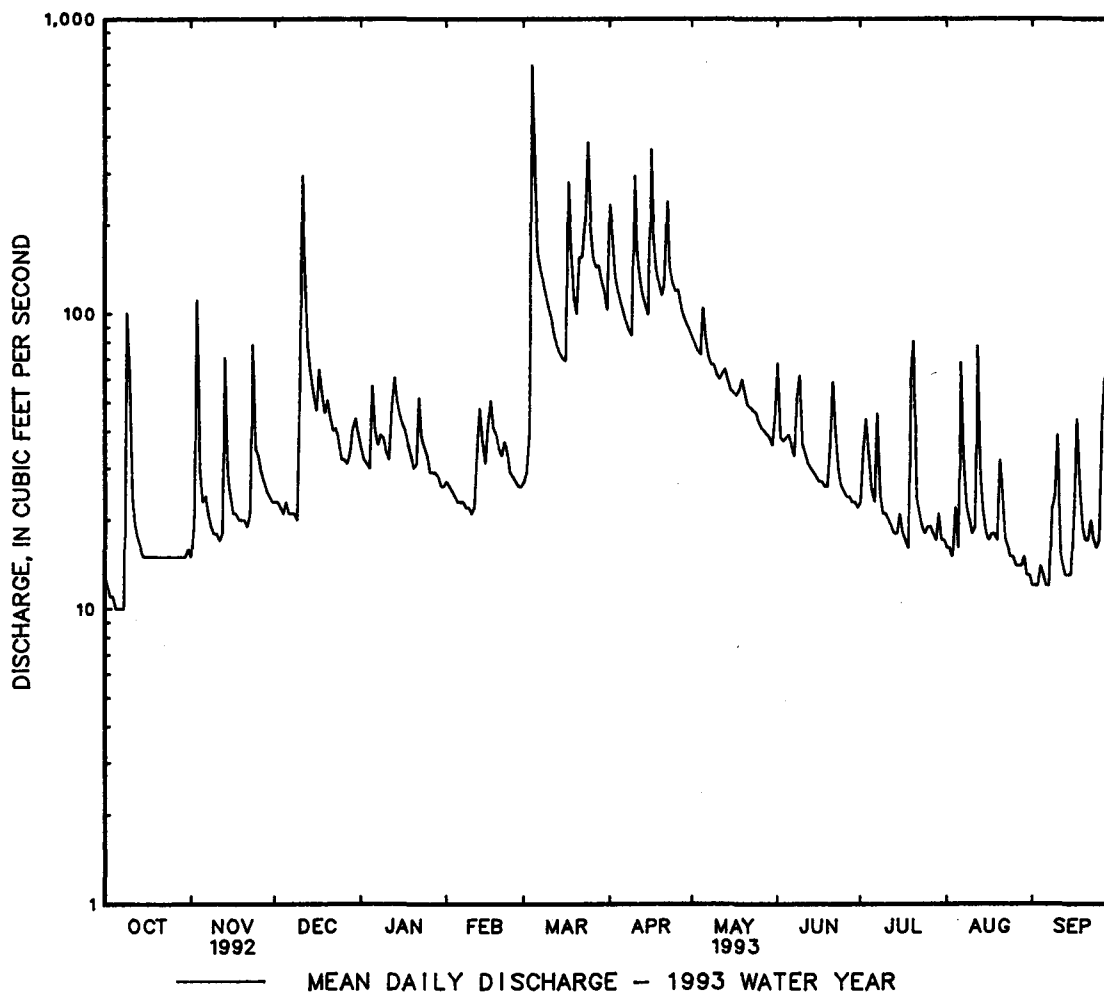
a Oct. 5-8.

b Sept. 18-20, 1986.

c From rating curve extended above 1,900 ft³/s.

d From floodmarks.

f Result of freezeup.



PATAPSCO RIVER BASIN

137

01589500 SAWMILL CREEK AT GLEN BURNIE, MD

LOCATION.--Lat 39°10'12", long 76°37'51", Anne Arundel County, Hydrologic Unit 02060003, on left bank 300 ft upstream from bridge on State Highway 648, 0.25 mi southeast of State Highway 3, and 0.5 mi northwest of Glen Burnie.

DRAINAGE AREA.--4.97 mi².

PERIOD OF RECORD.--May 1944 to September 1952. Annual maximum, water years 1965-70. October 1983 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1984-88.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 26.07 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Low flow affected by ground-water diversions from Anne Arundel County municipal well fields upstream from station. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1933 reached a stage of about 14 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1630	*63	*3.15	No other peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	.77	1.1	1.7	1.7	2.0	9.1	4.5	4.6	2.4	1.6	1.2
2	.58	1.6	1.1	1.4	1.5	2.2	9.0	4.3	3.3	2.7	1.6	1.3
3	.53	5.3	1.0	1.5	1.6	2.3	7.7	4.0	3.6	2.7	1.6	1.2
4	.50	1.9	.97	1.6	1.7	24	6.1	4.1	3.3	2.4	1.7	1.4
5	.46	1.4	1.1	6.7	1.7	18	5.5	5.1	4.1	2.2	1.8	1.4
6	.42	1.3	.94	3.5	1.7	7.3	5.2	6.6	3.4	2.2	7.7	1.3
7	.43	1.1	.99	2.4	1.6	4.6	5.1	4.8	3.2	2.1	3.8	1.3
8	.43	.90	.96	3.2	1.7	3.8	5.1	4.3	6.2	2.0	2.6	2.3
9	2.2	.79	.96	4.2	1.6	3.3	5.2	4.0	8.4	1.9	2.1	1.7
10	5.6	.77	5.0	3.0	1.6	3.2	9.2	4.0	4.0	1.9	2.0	2.0
11	1.3	.83	14	2.5	1.6	3.2	9.4	3.9	3.5	1.8	2.0	1.4
12	.89	1.2	10	2.8	3.9	3.0	6.1	8.5	3.2	1.8	2.7	1.2
13	.72	5.5	4.1	3.2	5.3	3.2	5.2	11	3.2	1.7	2.1	1.1
14	.61	1.7	2.6	2.7	2.8	5.3	4.8	5.5	3.1	4.0	1.9	1.2
15	.55	1.0	2.1	2.3	2.2	4.0	4.8	4.4	3.1	5.0	1.7	1.2
16	.57	.80	1.8	2.1	3.7	4.1	7.3	10	3.0	2.3	1.6	1.6
17	.53	.77	2.6	2.0	3.3	14	7.5	8.2	2.9	2.0	2.1	3.1
18	.53	.77	2.4	1.8	2.5	14	5.2	6.4	2.9	2.0	2.0	3.4
19	.60	.87	1.8	1.8	1.9	6.7	4.7	6.9	4.5	2.3	1.8	2.4
20	.46	.80	2.2	1.7	1.9	5.5	4.7	5.1	4.8	3.1	1.7	1.5
21	.53	.78	1.8	1.8	2.0	7.5	5.9	4.6	3.2	2.2	1.7	2.3
22	.52	1.1	1.6	3.3	4.7	8.6	10	4.2	3.2	2.0	1.5	2.0
23	.68	8.3	1.8	2.4	3.9	7.7	6.0	3.8	2.8	1.8	1.5	1.7
24	.68	2.9	1.6	2.1	2.7	18	4.9	3.8	2.6	1.8	1.5	1.5
25	.63	1.9	1.4	2.0	2.1	9.2	4.7	3.6	2.6	1.9	1.5	1.8
26	.55	2.0	1.5	1.8	2.1	6.4	6.6	3.4	2.6	2.0	1.4	2.3
27	.54	1.7	1.3	1.8	2.2	6.3	6.2	3.3	2.8	1.9	1.3	3.9
28	.54	1.3	3.4	1.8	2.0	7.1	4.9	3.3	2.6	1.7	1.4	3.0
29	.60	1.2	2.9	1.8	---	6.4	4.7	3.2	2.5	1.6	1.3	1.7
30	.70	1.1	2.1	1.7	---	6.7	4.5	3.0	2.5	1.5	1.2	1.5
31	1.3	---	1.9	1.8	---	5.9	---	3.3	---	1.5	1.2	---
TOTAL	25.77	52.35	79.02	74.4	67.2	223.5	185.3	155.1	105.7	68.4	61.6	54.9
MEAN	.83	1.74	2.55	2.40	2.40	7.21	6.18	5.00	3.52	2.21	1.99	1.83
MAX	5.6	8.3	14	6.7	5.3	24	10	11	8.4	5.0	7.7	3.9
MIN	.42	.77	.94	1.4	1.5	2.0	4.5	3.0	2.5	1.5	1.2	1.1
CFSM	.17	.35	.51	.48	.48	1.45	1.24	1.01	.71	.44	.40	.37
IN.	.19	.39	.59	.56	.50	1.67	1.39	1.16	.79	.51	.46	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1993, BY WATER YEAR (WY)

	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
MEAN	3.67	4.31	4.69	4.89	5.10	5.66	5.63	5.80	5.11	4.58	4.58	4.51
MAX	9.03	10.3	13.0	14.4	14.4	13.5	13.8	13.3	11.4	9.45	12.4	13.1
(WY)	1949	1952	1949	1949	1949	1949	1952	1952	1948	1952	1948	1952
MIN	.030	.19	.13	.30	.76	.76	.75	.11	.081	.10	.15	.024
(WY)	1987	1987	1989	1989	1989	1986	1985	1986	1986	1985	1986	1986

PATAPSCO RIVER BASIN

01589500 SAWMILL CREEK AT GLEN BURNIE, MD--Continued

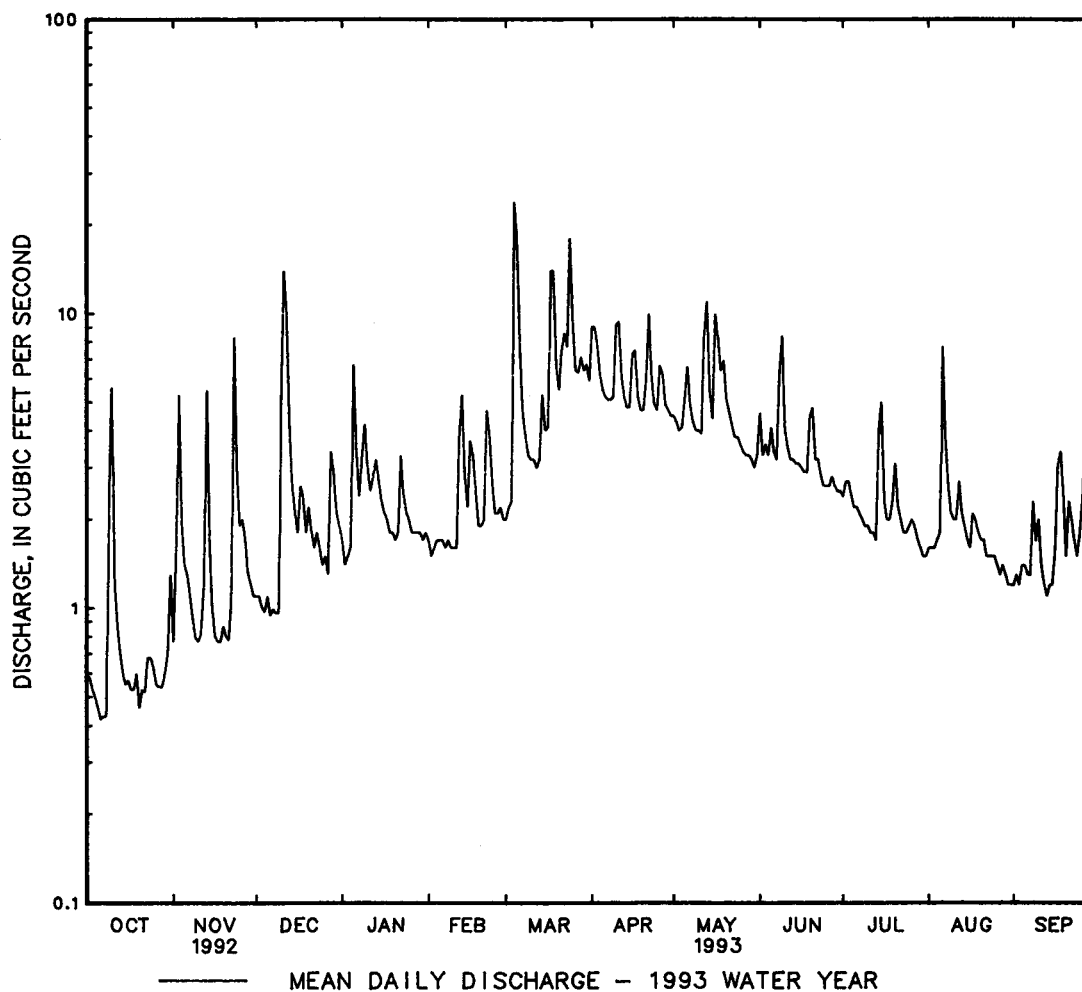
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1944 - 1993	
ANNUAL TOTAL	524.38		1153.24			
ANNUAL MEAN	1.43		3.16		4.87	
HIGHEST ANNUAL MEAN					11.0	
LOWEST ANNUAL MEAN					.43	
HIGHEST DAILY MEAN	14	Dec 11	24	Mar 4	84	Sep 1 1952
LOWEST DAILY MEAN	.19	Jul 20	.42	Oct 6	.01	(a)
ANNUAL SEVEN-DAY MINIMUM	.23	Jul 14	.48	Oct 2	.01	Jul 25 1986
INSTANTANEOUS PEAK FLOW	23	Mar 27	63	Mar 4	(b)178	Aug 29 1989
INSTANTANEOUS PEAK STAGE	2.37	Mar 27	3.15	Mar 4	5.12	Aug 29 1989
INSTANTANEOUS LOW FLOW	.08	Jun 27	.38	(c)	.00	(d)
ANNUAL RUNOFF (CFSM)	.29		.64		.98	
ANNUAL RUNOFF (INCHES)	3.92		8.63		13.31	
10 PERCENT EXCEEDS	2.4		6.4		9.5	
50 PERCENT EXCEEDS	1.1		2.2		4.6	
90 PERCENT EXCEEDS	.34		.88		.27	

a Many days in 1985, 1986, 1987.

b From rating curve extended above 157 ft³/s, on basis of contracted-opening measurement at gage height 4.77 ft.

c October 6, 7.

d Part of each day Sept. 6, 7, 1985, July 29, Aug. 2, 1986.



PATAPSCO RIVER BASIN

139

01589512 SAWMILL CREEK AT CRAIN HIGHWAY AT GLEN BURNIE, MD

LOCATION.--Lat 39°10'59", long 76°36'51", Anne Arundel County, Hydrologic Unit 02060003, on right bank 150 ft downstream from bridge on Crain Highway (Maryland Route 3 Business), 250 ft upstream from bridge on Maryland Route 2 at Glen Burnie, and 650 ft upstream from mouth.

DRAINAGE AREA.--8.24 mi².

PERIOD OF RECORD.--October 1983 to September 1985. May 1990 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2.26 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater from tide), which are fair. Low flow affected by ground-water diversions from Anne Arundel County municipal well fields upstream from station. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 9	2330	159	5.66	Mar. 24	0345	158	5.62
Oct. 10	0300	165	5.70	May 12	1815	205	5.93
Dec. 10	2015	226	6.10	June 8	2130	163	5.66
Mar. 4	1500	*354	*6.86	Aug. 6	0900	208	5.95
Mar. 17	1715	199	5.89				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.0	5.3	5.9	5.6	6.0	32	17	12	6.0	4.9	5.3
2	4.5	12	5.3	5.6	5.3	6.2	25	17	8.1	7.1	4.9	5.3
3	4.3	39	5.2	5.6	5.3	6.4	18	17	8.9	6.8	4.9	5.5
4	4.3	7.6	4.9	5.6	5.3	154	12	17	8.1	6.1	6.1	7.0
5	e4.2	6.8	5.4	38	5.3	59	12	21	10	5.6	6.1	6.3
6	e4.0	6.8	5.0	9.6	5.3	17	11	23	8.2	5.1	54	5.9
7	3.9	5.2	4.9	7.3	5.3	10	11	18	7.6	5.5	12	5.6
8	3.9	4.8	4.9	15	5.3	9.1	12	16	30	5.7	9.1	8.5
9	22	4.6	4.9	18	5.3	8.4	12	15	30	5.8	6.8	6.6
10	46	4.6	52	9.1	5.3	8.5	35	15	9.3	6.0	6.4	9.2
11	7.3	4.6	87	7.8	5.3	8.2	20	14	9.1	6.0	6.7	5.3
12	5.6	6.3	30	11	21	7.9	13	40	8.0	6.0	11	4.9
13	5.1	29	10	13	19	9.8	11	28	7.2	5.9	6.4	4.6
14	4.8	6.8	e8.6	8.1	7.7	15	11	11	6.7	20	5.8	4.6
15	4.6	5.3	e7.6	7.3	6.4	10	11	9.2	6.4	21	5.5	4.7
16	4.6	4.9	6.9	6.8	18	13	31	32	6.3	6.8	5.3	7.2
17	4.6	4.7	12	6.8	9.6	85	18	19	6.0	5.9	12	13
18	4.6	4.6	8.0	6.5	7.1	32	13	17	6.0	5.6	8.7	11
19	4.7	5.6	6.5	6.3	6.1	14	12	16	10	9.2	7.6	6.9
20	4.5	5.0	8.4	6.0	5.8	12	12	11	12	11	7.7	5.6
21	e4.4	4.9	6.6	6.4	6.0	25	19	9.4	7.2	6.3	7.0	8.8
22	4.3	7.3	6.0	15	24	19	30	8.9	7.2	5.7	6.3	6.8
23	4.3	50	7.2	7.5	10	22	12	8.7	6.1	5.4	6.0	6.0
24	4.7	9.2	6.2	7.0	7.3	70	11	8.7	5.6	5.9	6.4	5.6
25	5.0	8.3	5.7	6.9	5.7	21	11	8.3	5.6	5.8	6.0	6.9
26	4.5	9.5	5.6	6.4	6.1	14	27	8.0	5.6	5.8	6.0	8.3
27	4.3	7.7	5.4	6.4	6.7	16	23	7.7	6.4	e5.6	6.0	27
28	4.3	6.2	18	6.2	6.1	19	21	7.7	6.0	5.4	6.0	11
29	4.2	5.7	9.2	6.0	---	16	19	7.6	5.6	5.0	5.9	6.1
30	4.8	5.6	7.1	5.8	---	16	17	7.3	5.6	4.8	5.6	5.6
31	9.1	---	6.3	5.6	---	13	---	8.6	---	4.7	5.5	---
TOTAL	206.0	287.6	366.1	278.5	231.2	742.5	522	464.1	270.8	217.5	258.6	225.1
MEAN	6.65	9.59	11.8	8.98	8.26	24.0	17.4	15.0	9.03	7.02	8.34	7.50
MAX	46	50	87	38	24	154	35	40	30	21	54	27
MIN	3.9	4.6	4.9	5.6	5.3	6.0	11	7.3	5.6	4.7	4.9	4.6
CFSM	.81	1.16	1.43	1.09	1.00	2.91	2.11	1.82	1.10	.85	1.01	.91
IN.	.93	1.30	1.65	1.26	1.04	3.35	2.36	2.10	1.22	.98	1.17	1.02

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	6.81	7.79	10.5	7.77	8.56	14.1	9.63	10.5	6.66	7.87
MAX	10.0	10.0	14.3	14.8	10.7	24.0	17.4	16.2	10.3	15.6
(WY)	1991	1991	1984	1991	1984	1993	1993	1990	1990	1990
MIN	4.89	5.53	4.24	3.41	6.67	3.63	2.96	5.65	3.34	2.41
(WY)	1984	1985	1985	1985	1992	1985	1985	1985	1985	1985

PATAPSCO RIVER BASIN

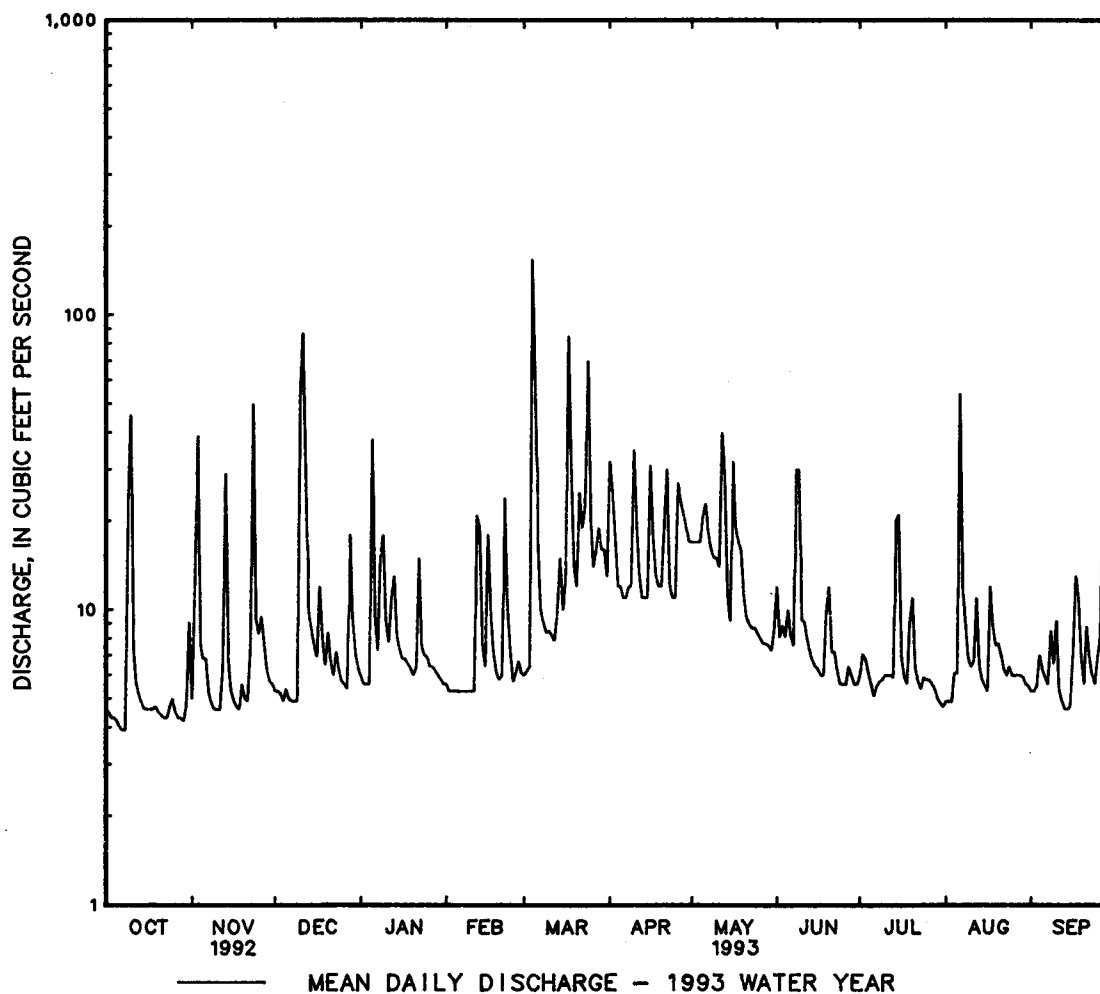
01589512 SAWMILL CREEK AT CRAIN HIGHWAY AT GLEN BURNIE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1984 - 1993	
ANNUAL TOTAL	2813.1		4070.0			
ANNUAL MEAN	7.69		11.2		8.73	
HIGHEST ANNUAL MEAN					13.2	
LOWEST ANNUAL MEAN					4.65	
HIGHEST DAILY MEAN	87	Dec 11	154	Mar 4	184	Sep 27 1985
LOWEST DAILY MEAN	2.7	Aug 10	3.9	(a)	1.3	Oct 8 1983
ANNUAL SEVEN-DAY MINIMUM	2.9	Aug 4	4.2	Oct 2	1.5	Aug 11 1985
INSTANTANEOUS PEAK FLOW	339	Jul 1	354	Mar 4	465	Sep 27 1985
INSTANTANEOUS PEAK STAGE	6.80	Jul 1	6.86	Mar 4	7.67	Sep 27 1985
INSTANTANEOUS LOW FLOW	2.5	(b)	3.9	(c)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	.93		1.35		1.06	
ANNUAL RUNOFF (INCHES)	12.70		18.37		14.40	
10 PERCENT EXCEEDS	11		21		16	
50 PERCENT EXCEEDS	5.0		6.9		6.0	
90 PERCENT EXCEEDS	3.3		4.9		2.8	

a Oct. 7, 8.

b Aug. 10, 11.

c Oct. 6-9, 29, 30, 1992.



141

LOCATION.--Lat 39°14'18", long 77°03'23", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 0.6 mi upstream from Cattail Creek, 0.8 mi upstream from Triadelphia Reservoir, 1.1 mi northeast of Unity, and 97 mi upstream from mouth.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 770 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	1930	1,120	6.26	Apr. 2	0030	1,320	6.67
Mar. 4	1930	*1,420	*6.85	Apr. 16	1700	1,210	6.44
Mar. 24	0615	837	5.60				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	20	26	40	35	35	383	84	76	21	12	12
2	14	31	26	36	30	45	364	80	39	25	12	12
3	12	203	25	35	32	53	170	76	39	26	13	12
4	12	50	24	35	30	652	145	75	36	22	17	13
5	12	38	27	82	29	309	132	89	42	20	14	13
6	12	38	24	54	30	145	122	79	36	19	36	11
7	12	31	24	48	27	106	112	70	32	19	25	12
8	12	27	23	51	27	91	106	65	54	18	18	13
9	71	24	22	55	26	79	103	63	73	19	16	17
10	166	23	68	48	26	74	242	61	38	17	15	14
11	33	23	618	44	27	70	159	58	37	16	15	12
12	26	24	208	59	40	63	124	61	32	15	38	11
13	22	72	96	78	56	67	110	70	31	15	18	11
14	19	36	73	62	47	67	102	59	29	17	16	11
15	19	31	63	55	41	67	96	54	28	29	15	11
16	18	27	56	52	53	61	413	56	27	17	14	19
17	17	26	80	50	65	293	196	57	25	16	38	51
18	17	25	65	46	52	214	133	57	24	15	27	23
19	17	25	53	43	42	111	118	67	24	16	18	17
20	16	24	56	40	40	99	108	57	29	18	17	15
21	17	24	49	41	40	198	114	50	43	15	18	16
22	16	26	47	58	51	203	287	47	30	14	15	16
23	16	123	47	46	51	240	152	45	25	14	14	15
24	16	49	43	43	41	554	124	43	23	14	14	15
25	17	42	39	41	37	225	113	41	22	15	13	15
26	16	38	39	39	37	165	117	39	21	15	13	25
27	16	34	35	38	36	221	106	37	21	14	12	66
28	16	31	44	37	35	370	97	36	20	13	12	28
29	16	29	51	37	---	189	91	34	20	14	12	17
30	17	27	49	34	---	164	89	32	21	13	12	15
31	24	---	44	35	---	138	---	37	---	12	12	---
TOTAL	727	1221	2144	1462	1083	5368	4728	1779	997	533	541	538
MEAN	23.5	40.7	69.2	47.2	38.7	173	158	57.4	33.2	17.2	17.5	17.9
MAX	166	203	618	82	65	652	413	89	76	29	38	66
MIN	12	20	22	34	26	35	89	32	20	12	12	11
CFSM	.67	1.17	1.99	1.36	1.11	4.98	4.53	1.65	.95	.49	.50	.52
IN.	.78	1.31	2.29	1.56	1.16	5.74	5.05	1.90	1.07	.57	.58	.58

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1993. BY WATER YEAR (WY)

MEAN	21.7	27.7	39.0	45.1	53.9	60.4	58.3	49.7	36.6	26.4	21.9	26.4
MAX	150	82.8	106	135	152	173	158	141	206	102	120	214
(WY)	1980	1953	1949	1979	1979	1993	1993	1952	1972	1956	1971	1971
MIN	4.19	9.09	8.51	10.0	19.6	23.9	21.6	15.2	8.75	4.15	2.79	4.51
(WY)	1987	1966	1966	1966	1947	1981	1963	1963	1986	1966	1966	1986

PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1944 - 1993

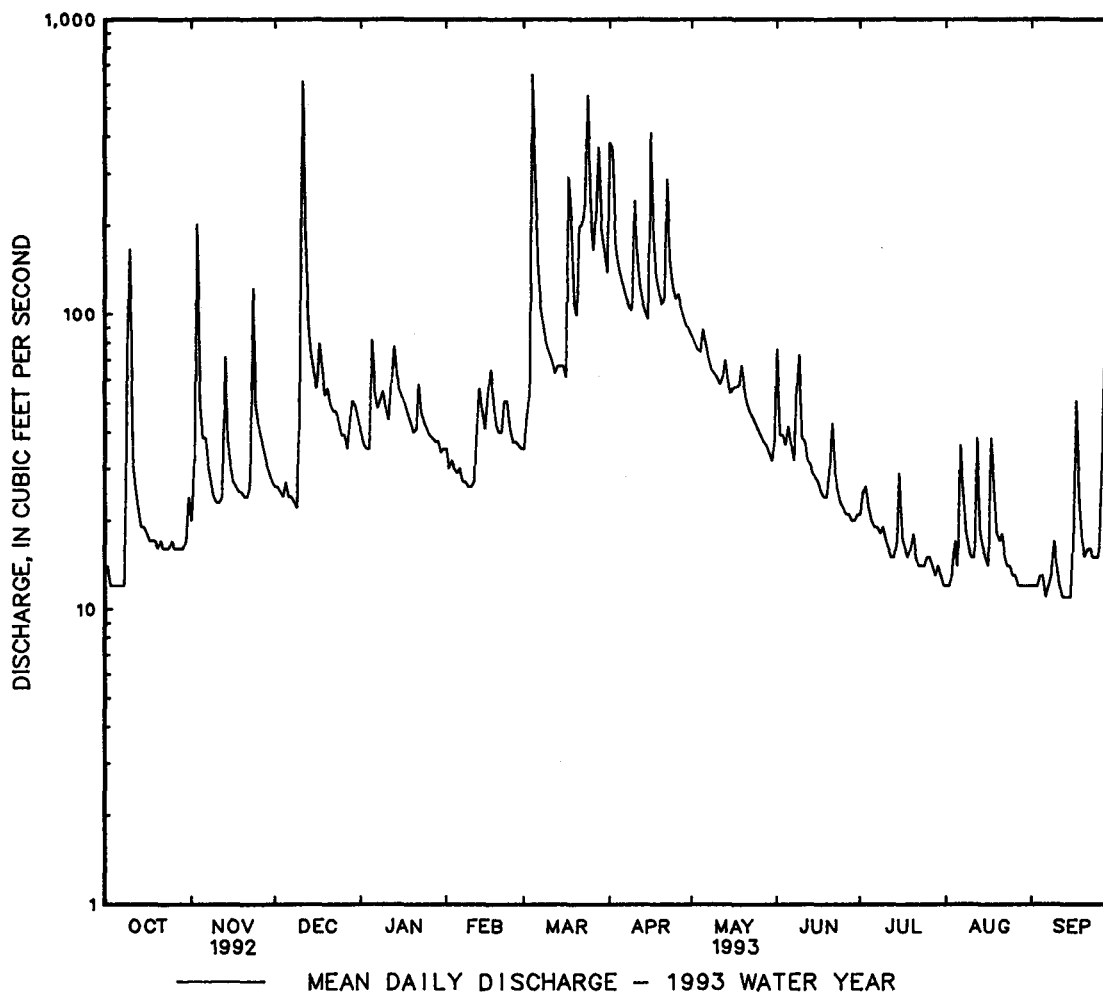
ANNUAL TOTAL	10905.9	21121		
ANNUAL MEAN	29.8	57.9	38.9	
HIGHEST ANNUAL MEAN			82.3	1972
LOWEST ANNUAL MEAN			19.8	1981
HIGHEST DAILY MEAN	618	Dec 11	2590	Sep 26 1975
LOWEST DAILY MEAN	7.6	Sep 1	.20	(b)
ANNUAL SEVEN-DAY MINIMUM	9.0	Aug 27	.40	Sep 6 1966
INSTANTANEOUS PEAK FLOW	1120	Dec 11	(c)21800	Sep 11 1971
INSTANTANEOUS PEAK STAGE	6.26	Dec 11	18.60	Sep 11 1971
INSTANTANEOUS LOW FLOW	7.2	Sep 1	.20	(d)
ANNUAL RUNOFF (CFSM)	.86		1.12	
ANNUAL RUNOFF (INCHES)	11.66		15.19	
10 PERCENT EXCEEDS	49	120	70	
50 PERCENT EXCEEDS	22	35	25	
90 PERCENT EXCEEDS	11	14	9.0	

a Sept. 6, 12-15.

b Sept. 10, 11, 1966.

c From rating curve extended above 1,500 ft³/s on basis of slope-area measurement at gage height 13.00 ft.

d Sept. 10-12, 1966.



PATUXENT RIVER BASIN

143

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)
OCT 1991									
15...	1045	7.2	113	7.6	12.0	20.0	4.8	9.6	--
31...	0815	7.2	101	6.4	7.5	10.0	4.9	--	10
31...	0820	7.2	--	--	--	--	6.3	--	<10
NOV									
05...	1027	8.5	100	7.9	4.0	3.0	3.0	11.7	--
21...	1245	9.0	98	6.5	12.0	20.0	2.3	--	<10
DEC									
03...	0519	117	--	--	--	--	46	--	<10
03...	1145	72	133	7.2	8.5	10.0	34	9.9	--
04...	0300	53	--	--	--	--	9.2	--	15
17...	1330	17	115	6.3	3.0	3.0	3.1	--	<10
JAN 1992									
06...	1055	26	121	6.9	5.0	5.5	4.3	12.4	--
21...	1145	17	112	6.1	0.0	5.0	2.4	--	<10
FEB									
10...	1025	14	103	8.0	0.0	-4.0	2.6	14.1	--
19...	1130	36	116	6.4	5.0	9.0	7.4	--	13
26...	1046	86	--	--	--	--	48	--	<10
MAR									
12...	0010	52	--	--	--	--	23	--	<10
19...	1230	45	104	6.2	4.0	2.0	7.6	--	15
23...	1145	32	113	7.6	4.5	3.0	2.6	12.4	--
27...	0055	414	--	--	--	--	580	--	16
APR									
13...	1005	25	105	7.9	10.0	5.0	3.5	11.1	--
22...	0353	303	--	--	--	--	190	--	15
22...	1329	104	--	--	--	--	25	--	<10
23...	0322	97	--	--	--	--	55	--	<10
27...	0745	51	98	6.5	10.0	7.0	7.5	--	<10
27...	0750	51	--	--	--	--	7.2	--	<10
MAY									
12...	0855	31	110	7.7	13.5	14.0	7.2	9.5	--
20...	1000	24	100	6.3	14.0	12.0	5.9	--	<10
31...	1243	105	--	--	--	--	62	--	<10
JUN									
22...	0955	15	106	7.4	15.0	15.0	15	9.4	--
26...	0730	15	102	6.5	17.0	17.0	12	--	<10
JUL									
06...	1028	21	109	7.3	20.0	19.0	23	8.0	--
25...	0400	222	--	--	--	--	520	--	12
25...	0849	530	--	--	--	--	850	--	20
25...	1130	524	--	--	--	--	380	--	<10
26...	0014	60	--	--	--	--	49	--	<10
29...	0900	23	115	6.7	18.0	22.0	15	--	<10
AUG									
10...	1230	14	113	7.5	22.0	28.0	5.8	8.9	--
24...	0915	13	105	--	17.0	22.5	4.6	--	<10
SEP									
21...	1035	11	122	7.6	17.5	21.0	4.3	9.0	--
28...	0915	24	116	6.6	16.0	17.0	15	--	--

PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SILICA, DIS- SOLVED (MG/L AS SIO2)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 1991										
15...	--	--	--	7	1.70	0.004	1.70	0.008	0.40	--
31...	1.8	28	9.1	9	0.707	0.003	0.710	0.008	0.35	<0.10
31...	1.8	--	9.1	7	0.717	0.003	0.720	<0.008	0.20	<0.10
NOV										
05...	--	--	--	2	1.10	0.004	1.10	0.008	0.10	--
21...	2.6	24	6.8	3	1.50	0.005	1.50	0.012	0.25	0.30
DEC										
03...	--	--	11	67	2.09	0.006	2.10	0.060	0.90	0.55
03...	--	--	--	25	1.88	0.018	1.90	0.088	1.8	--
04...	--	--	13	10	2.00	0.004	2.00	0.032	0.40	0.25
17...	4.0	18	9.3	<1	2.30	0.005	2.30	0.012	0.40	0.30
JAN 1992										
06...	--	--	--	8	1.89	0.009	1.90	<0.008	0.40	--
21...	--	17	7.7	6	2.80	0.005	2.80	0.008	<0.10	<0.10
FEB										
10...	--	--	--	3	2.69	0.007	2.70	0.008	0.25	--
19...	1.3	15	7.3	8	2.39	0.008	2.40	0.024	0.35	0.10
26...	--	--	9.6	12	2.09	0.007	2.10	0.032	0.30	0.15
MAR										
12...	--	--	12	19	1.89	0.006	1.90	0.052	0.30	0.15
19...	1.9	13	--	3	2.59	0.008	2.60	0.016	0.15	0.15
23...	--	--	--	3	2.59	0.008	2.60	0.012	0.25	--
27...	--	--	7.0	1400	2.29	0.011	2.30	0.248	4.4	0.80
APR										
13...	--	--	--	3	2.39	0.013	2.40	0.012	0.35	--
22...	--	--	8.7	420	1.69	0.012	1.70	0.184	--	--
22...	--	--	12	59	1.69	0.010	1.70	0.044	0.30	0.30
23...	--	--	12	79	1.59	0.012	1.60	0.052	--	--
27...	9.2	17	8.5	9	1.89	0.014	1.90	0.016	0.40	0.15
27...	7.4	--	8.5	4	1.88	0.017	1.90	0.020	0.33	0.15
MAY										
12...	--	--	--	10	2.19	0.007	2.20	0.032	0.55	--
20...	0.5	18	7.5	10	2.29	0.015	2.30	0.032	0.30	0.20
31...	--	--	10	97	2.18	0.016	2.20	0.112	1.1	0.55
JUN										
22...	--	--	--	18	2.29	0.010	2.30	0.024	0.50	--
26...	1.6	20	--	<1	2.39	0.008	2.40	0.032	0.25	0.15
JUL										
06...	--	--	--	21	1.99	0.009	2.00	0.044	0.60	--
25...	--	--	7.5	408	1.59	0.012	1.60	0.056	4.2	0.45
25...	--	--	5.2	602	1.49	0.014	1.50	0.128	6.7	0.40
25...	--	--	10	292	1.79	0.009	1.80	0.076	4.8	0.40
26...	--	--	11	101	1.59	0.007	1.60	0.016	1.2	0.35
29...	0.5	24	9.6	22	2.19	0.013	2.20	0.032	0.25	--
AUG										
10...	--	--	--	7	2.49	0.006	2.50	<0.008	0.30	--
24...	0.6	--	8.2	10	2.39	0.012	2.40	0.012	0.30	0.20
SEP										
21...	--	--	--	8	2.29	0.007	2.30	0.012	0.50	--
28...	1.0	22	--	15	--	--	--	--	0.30	--

PATUXENT RIVER BASIN

145

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L)
OCT 1991										
15...	2.1	0.030	--	0.012	1.8	--	--	<0.001	<0.001	<0.001
31...	1.1	<0.010	0.020	<0.004	3.2	3.0	0.200	0.600	<0.001	0.400
31...	0.92	<0.010	0.010	0.004	2.9	3.2	--	--	--	--
NOV										
05...	1.2	0.020	--	0.010	1.9	--	0.200	0.400	<0.001	<0.001
21...	1.7	0.020	0.010	<0.004	4.0	3.3	0.200	2.40	0.600	2.40
DEC										
03...	3.0	0.210	0.040	0.052	8.1	5.8	--	--	--	--
03...	3.8	0.320	--	0.134	9.1	--	3.80	4.80	0.600	1.80
04...	2.4	0.050	0.020	0.034	3.4	3.6	--	--	--	--
17...	2.7	0.010	0.010	<0.004	1.8	1.8	--	0.400	<0.001	<0.001
JAN 1992										
06...	2.3	0.030	--	0.012	2.3	--	<0.001	2.60	<0.001	0.200
21...	2.9	0.010	<0.010	<0.004	0.8	0.9	0.200	0.800	0.200	0.400
FEB										
10...	3.0	<0.010	--	0.004	0.8	--	0.400	1.20	<0.001	<0.001
19...	2.8	0.010	<0.010	0.004	2.2	2.1	0.600	2.80	0.200	0.400
26...	2.4	0.080	0.030	0.008	3.3	3.0	--	--	--	--
MAR										
12...	2.2	0.080	0.030	0.020	3.3	--	--	--	--	--
19...	2.8	0.040	0.030	<0.004	1.8	2.1	<0.001	1.80	<0.001	0.400
23...	2.9	0.020	--	0.008	1.4	--	0.400	1.20	<0.001	0.200
27...	6.7	1.10	0.040	0.012	4.6	--	--	--	--	--
APR										
13...	2.8	0.020	--	0.006	1.7	--	0.400	2.60	0.200	0.200
22...	--	2.00	0.900	0.040	--	--	--	--	--	--
22...	2.0	0.370	0.160	0.022	--	--	--	--	--	--
23...	--	0.900	0.340	0.042	--	--	--	--	--	--
27...	2.3	0.040	0.020	0.006	2.7	2.1	0.400	0.002	<0.001	0.200
27...	2.2	0.030	0.020	0.006	2.2	1.8	--	--	--	--
MAY										
12...	2.8	0.020	--	0.012	1.4	--	1.20	2.20	0.200	0.600
20...	2.6	0.060	0.040	0.006	1.0	--	0.600	2.40	0.200	0.400
31...	3.3	0.240	0.050	0.044	7.1	5.3	--	--	--	--
JUN										
22...	2.8	0.030	--	0.014	1.6	--	0.800	1.40	0.200	0.400
26...	2.7	0.060	0.020	0.008	2.7	0.5	1.20	2.20	<0.001	<0.001
JUL										
06...	2.6	0.090	--	0.004	2.1	--	1.40	2.60	<0.001	<0.001
25...	5.8	1.30	0.060	0.042	17	6.6	--	--	--	--
25...	8.2	2.10	0.060	0.040	25	9.5	--	--	--	--
25...	6.6	1.60	0.030	0.020	11	6.1	--	--	--	--
26...	2.8	0.220	0.040	0.036	4.3	3.9	--	--	--	--
29...	2.5	0.030	--	0.016	2.5	2.7	<0.001	0.001	<0.001	<0.001
AUG										
10...	2.8	0.040	--	0.008	1.8	--	0.400	0.002	<0.001	0.200
24...	2.7	0.020	<0.010	<0.004	1.3	1.2	0.001	1.60	<0.001	0.200
SEP										
21...	2.8	0.030	--	0.010	0.9	--	0.600	1.80	<0.001	<0.001
28...	0.30	0.040	--	--	2.8	2.7	0.600	1.40	<0.001	<0.001

PATUXENT RIVER BASIN

01591000 PATUXENT RIVER NEAR UNITY, MD--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 1991				
31...	0815	7.2	4	0.08
NOV				
21...	1245	9.0	5	0.12
DEC				
03...	0519	117	96	30
04...	0300	53	10	1.4
17...	1330	17	2	0.09
JAN 1992				
21...	1145	17	1	0.05
FEB				
19...	1130	36	6	0.59
26...	1046	86	79	18
MAR				
12...	0010	52	23	3.2
19...	1230	45	6	0.73
27...	0055	414	1300	1450
27...	0954	174	279	131
27...	2313	93	59	15
28...	2009	65	14	2.4
29...	2334	52	7	0.98
APR				
22...	0353	303	420	344
22...	1329	104	56	16
23...	0322	97	81	21
27...	0745	51	5	0.68
MAY				
20...	1000	24	11	0.70
31...	1243	105	126	36
JUN				
26...	0730	15	16	0.64
JUL				
25...	0400	222	977	585
25...	0849	530	1660	2380
25...	1130	524	646	914
26...	0014	60	91	15
29...	0900	23	17	1.0
AUG				
24...	0915	13	5	0.17
SEP				
28...	0915	24	15	0.98

PATUXENT RIVER BASIN

147

01591400 CATTAIL CREEK NEAR GLENWOOD, MD

LOCATION (REVISED).--Lat 39°15'21", long 77°03'05", Howard County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 97, 1.2 mi upstream from mouth.

DRAINAGE AREA.--22.9 mi².

PERIOD OF RECORD.--June 1978 to September 1983 (published as "at Roxbury Mills Road at Roxbury Mills, MD"), October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map. Prior to Dec. 28, 1983, at site 800 ft upstream at datum 1.76 ft lower.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 9	2200	593	4.11	Mar. 27	2230	618	4.15
Oct. 10	0130	827	4.60	Apr. 2	0130	*2,330	*6.67
Dec. 11	1715	1,080	5.06	Apr. 10	1815	670	4.27
Mar. 4	1745	1,970	6.28	Apr. 16	1500	2,310	6.65
Mar. 17	1915	522	3.91	June 9	0130	767	4.48
Mar. 24	0615	873	4.69				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	12	13	27	23	25	386	51	61	17	8.0	6.5
2	8.4	19	13	24	21	35	419	49	32	21	7.7	6.8
3	8.0	103	13	24	24	35	76	48	31	21	8.0	6.6
4	7.6	22	13	24	21	788	67	48	29	19	9.4	7.2
5	7.3	18	14	59	21	146	63	57	34	17	8.8	8.0
6	7.3	19	12	34	21	68	60	52	29	16	22	7.1
7	7.3	15	13	29	20	51	57	47	27	15	15	6.6
8	7.4	14	12	32	21	45	55	44	53	14	11	8.3
9	88	13	12	37	19	41	54	43	135	15	9.9	8.5
10	127	13	71	31	20	40	171	42	35	13	9.6	7.4
11	16	13	480	28	20	39	83	41	31	12	9.7	6.6
12	13	13	91	41	32	35	65	44	28	12	32	6.5
13	11	37	46	53	46	41	58	49	27	12	13	6.6
14	11	17	37	37	36	43	55	42	26	13	11	6.4
15	10	15	33	32	30	39	54	39	25	17	10	7.9
16	10	13	31	30	41	37	635	40	24	12	9.7	12
17	10	13	52	29	46	215	117	41	23	11	17	62
18	10	13	40	27	33	121	68	41	22	10	15	21
19	10	13	33	25	28	57	62	50	23	11	12	13
20	11	13	35	24	28	52	58	43	26	15	12	10
21	10	13	31	25	27	132	68	37	30	11	11	11
22	11	14	29	39	38	100	155	36	26	10	9.9	11
23	11	64	30	29	36	139	72	35	22	8.9	9.4	11
24	11	22	27	27	28	386	63	34	20	9.2	9.1	11
25	13	20	24	26	26	82	60	33	20	10	8.7	11
26	11	18	25	24	25	65	66	31	19	9.7	7.9	20
27	11	17	23	24	25	129	59	30	18	9.0	7.6	73
28	11	15	31	23	24	171	55	30	18	8.6	7.4	27
29	11	14	35	23	---	81	53	29	18	9.6	6.9	15
30	11	14	32	22	---	72	52	27	18	8.6	6.6	13
31	14	---	29	22	---	61	---	31	---	8.2	6.4	---
TOTAL	514.2	619	1380	931	780	3371	3366	1264	930	395.8	341.7	428.0
MEAN	16.6	20.6	44.5	30.0	27.9	109	112	40.8	31.0	12.8	11.0	14.3
MAX	127	103	480	59	46	788	635	57	135	21	32	73
MIN	7.3	12	12	22	19	25	52	27	18	8.2	6.4	6.4
CFSM	.72	.90	1.94	1.31	1.22	4.75	4.90	1.78	1.35	.56	.48	.62
IN.	.84	1.01	2.24	1.51	1.27	5.48	5.47	2.05	1.51	.64	.56	.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

MEAN	18.6	19.6	26.0	27.6	36.9	37.4	38.1	32.6	21.9	16.1	12.2	15.0
MAX	76.6	37.9	83.1	83.0	103	109	112	92.5	38.4	31.5	30.7	81.6
(WY)	1980	1980	1984	1979	1993	1993	1993	1989	1989	1978	1984	1979
MIN	3.73	5.96	9.24	8.38	14.6	14.5	14.9	14.1	6.96	4.23	4.63	4.43
(WY)	1987	1982	1982	1981	1992	1981	1985	1986	1986	1986	1991	1991

PATUXENT RIVER BASIN

01591400 CATTAIL CREEK NEAR GLENWOOD, MD--Continued

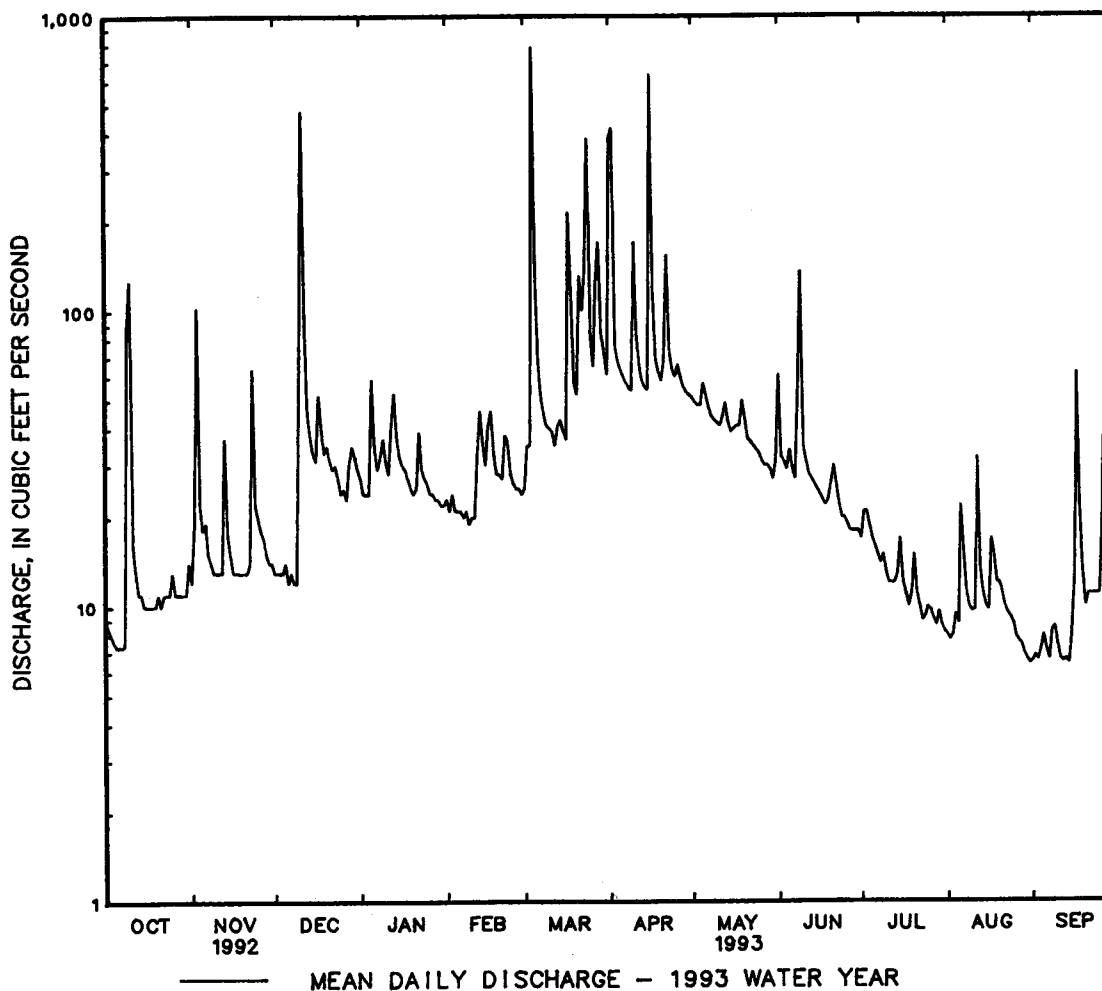
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1978 - 1993	
ANNUAL TOTAL	6483.2		14320.7		24.9	
ANNUAL MEAN	17.7		39.2		42.0	
HIGHEST ANNUAL MEAN					13.1	
LOWEST ANNUAL MEAN					13.1	
HIGHEST DAILY MEAN	480	Dec 11	788	Mar 4	1400	Feb 12 1985
LOWEST DAILY MEAN	5.4	Jul 15	6.4	(a)	2.4	Aug 19 1991
ANNUAL SEVEN-DAY MINIMUM	5.8	Jul 10	6.7	Aug 29	2.6	Sep 16 1985
INSTANTANEOUS PEAK FLOW	1170	Jul 25	2330	Apr 2	(b)4340	Oct 23 1990
INSTANTANEOUS PEAK STAGE	5.22	Jul 25	6.67	Apr 2	8.41	Oct 23 1990
INSTANTANEOUS LOW FLOW	5.2	(c)	6.1	(d)	1.7	Aug 19 1991
ANNUAL RUNOFF (CFSM)	.77		1.71		1.09	
ANNUAL RUNOFF (INCHES)	10.53		23.26		14.79	
10 PERCENT EXCEEDS	27		65		39	
50 PERCENT EXCEEDS	12		24		16	
90 PERCENT EXCEEDS	7.4		8.9		6.4	

a Aug. 31, Sept. 14.

b From rating curve extended above 175 ft³/s on basis of contracted-opening and flow-over-road measurement at gage.

c July 12, 14-17, Sept. 2.

d Aug. 31, Sept. 1, 8, 12, 14, 15.



01591610 PATUXENT RIVER BELOW BRIGHTON DAM NEAR BRIGHTON, MD

LOCATION.--Lat 39°11'31", long 77°00'16", 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 mi².

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 ft³/s. Data provided by Washington Suburban Sanitary Commission.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 949 ft³/s, Apr. 19, gage height, 4.61 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	17	62	6.8	42	107	90	143	352	31	78	77
2	71	64	153	11	56	53	452	143	484	31	124	96
3	19	73	62	23	55	50	765	142	466	31	29	78
4	18	70	17	49	48	46	756	141	177	31	28	60
5	61	70	15	65	14	377	416	144	67	31	27	79
6	69	43	14	57	15	565	92	145	25	31	27	60
7	69	43	65	214	15	550	91	143	25	31	26	60
8	69	43	122	359	15	528	88	143	29	31	25	76
9	63	72	149	352	15	474	217	143	29	30	26	64
10	18	72	98	344	12	348	381	101	27	30	26	55
11	18	70	76	334	9.8	94	380	71	28	30	26	56
12	66	43	100	327	9.4	94	408	70	29	30	26	51
13	71	23	99	317	8.8	94	204	70	29	30	27	52
14	70	18	98	307	8.8	94	92	70	29	30	27	55
15	69	36	90	249	8.4	172	91	68	30	28	28	55
16	68	86	67	174	8.2	242	92	69	29	28	29	55
17	18	86	64	172	7.9	147	94	378	27	29	28	56
18	18	73	127	167	18	275	424	222	26	29	28	55
19	62	75	205	118	53	396	801	65	24	27	29	55
20	70	78	220	55	52	387	576	65	22	25	29	55
21	70	68	227	55	52	383	129	65	29	25	29	55
22	68	48	249	56	53	390	148	67	28	75	28	56
23	69	50	154	55	52	279	335	68	131	76	28	55
24	43	47	99	55	149	397	431	68	188	104	28	32
25	37	47	98	55	213	652	264	68	124	113	28	19
26	61	47	98	55	211	688	146	78	30	75	24	43
27	69	47	99	55	207	384	350	58	29	108	20	50
28	70	47	103	53	205	94	431	25	30	90	20	66
29	68	47	43	41	---	394	230	11	31	28	20	93
30	69	37	7.5	17	---	677	141	9.7	32	119	65	96
31	17	---	7.3	14	---	498	---	9.6	---	77	74	---
TOTAL	1699	1640	3087.8	4211.8	1613.3	9929	9115	3063.3	2606	1484	1057	1815
MEAN	54.8	54.7	99.6	136	57.6	320	304	98.8	86.9	47.9	34.1	60.5
MAX	71	86	249	359	213	688	801	378	484	119	124	96
MIN	17	17	7.3	6.8	7.9	46	88	9.6	22	25	20	19
(†)	4500	5080	5950	5320	5920	6100	6080	6470	6450	6220	6250	5920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1993, BY WATER YEAR (WY)

MEAN	57.3	45.9	82.0	68.9	67.6	105	128	97.8	75.4	57.8	62.0	74.7
MAX	117	82.1	373	183	142	320	304	229	170	66.9	86.4	205
(WY)	1981	1990	1984	1991	1984	1993	1993	1989	1989	1984	1982	1989
MIN	7.87	17.1	14.9	9.33	10.1	8.90	8.49	8.63	22.4	46.7	18.1	26.1
(WY)	1987	1989	1992	1982	1987	1981	1981	1981	1981	1992	1987	1991

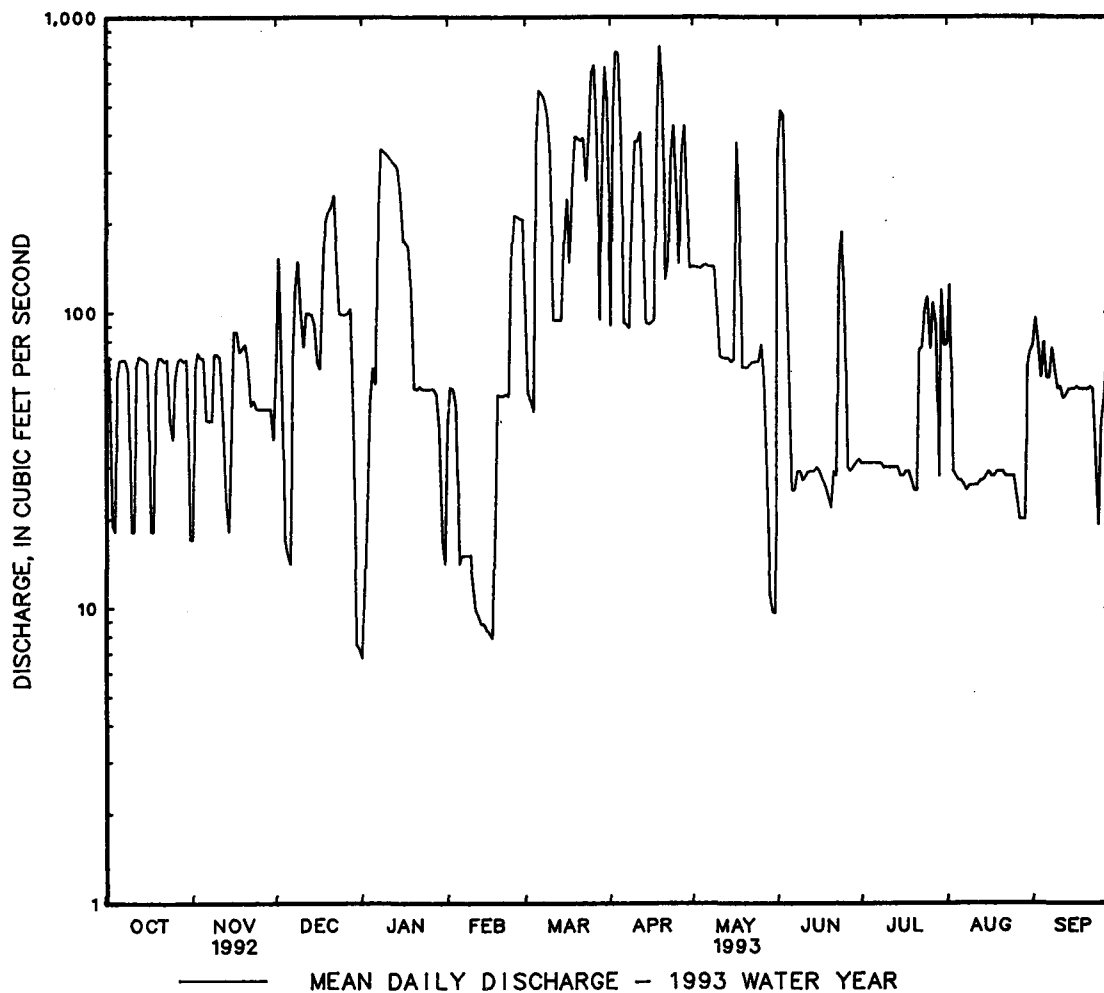
† Monthend contents, in millions of gallons, in Triadelphia Reservoir (contents on Sept. 30, 1992, 4,700,000,000 gal). Records provided by Washington Suburban Sanitary Commission.

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

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1981 - 1993	
ANNUAL TOTAL	21928.9		41321.2			
ANNUAL MEAN	59.9		113		76.9	
ANNUAL MEAN ^a	63.4		115		77.1	
HIGHEST ANNUAL MEAN					134	
LOWEST ANNUAL MEAN					47.5	
HIGHEST DAILY MEAN	441	Mar 28	801	Apr 19	1730	May 6 1989
LOWEST DAILY MEAN	7.3	Dec 31	6.8	Jan 1	2.1	(a)
ANNUAL SEVEN-DAY MINIMUM	12	Jan 1	8.8	Feb 11	4.0	Oct 16 1980
INSTANTANEOUS PEAK FLOW	623	Mar 28	949	Apr 19	2650	May 6 1989
INSTANTANEOUS PEAK STAGE	3.51	Mar 28	4.61	Apr 19	10.26	May 6 1985
INSTANTANEOUS LOW FLOW	4.9	Jan 8	2.3	Sep 16	1.2	Dec 3 1985
ANNUAL RUNOFF (CFSM)	.76		1.44		.98	
ANNUAL RUNOFF (CFSM) ^a	.81		1.46		.98	
ANNUAL RUNOFF (INCHES)	10.38		19.56		13.29	
ANNUAL RUNOFF (INCHES) ^a	10.95		19.86		13.33	
10 PERCENT EXCEEDS	96		346		144	
50 PERCENT EXCEEDS	49		65		52	
90 PERCENT EXCEEDS	17		20		8.8	

^a Adjusted for change in reservoir contents.

a Jan. 27, 28, 1983.



01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD

LOCATION.--Lat 39°10'29", long 77°01'22", Montgomery County, Hydrologic Unit 02060006, on right bank at downstream side of bridge on State Highway 650, 1.0 mi upstream from mouth, and 1.7 mi north of Sandy Spring.

DRAINAGE AREA.--27.0 mi².

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 320 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (Oct. 16-19, backwater from leaves; doubtful or no gage height record, Mar. 17-Apr. 15), 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 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	1515	1,120	5.66	Apr. 16	1645	*1,210	*5.84
Mar. 4	1930	1,170	5.74				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	22	13	23	17	18	e200	45	43	12	4.8	4.4
2	11	25	12	19	15	24	e115	43	25	15	4.6	4.5
3	9.1	180	12	18	16	29	e83	41	26	16	4.7	4.2
4	7.7	105	10	18	16	577	e70	41	24	13	7.7	5.5
5	7.1	63	12	111	16	474	e66	97	31	12	7.5	5.3
6	6.3	47	12	46	16	137	e60	84	26	12	26	4.7
7	5.9	36	12	31	14	69	e58	50	23	10	21	4.0
8	5.5	28	11	34	e14	48	e56	43	49	9.1	24	5.8
9	21	24	10	44	e14	39	e140	40	35	8.3	10	6.0
10	104	20	68	39	14	33	e100	37	25	7.8	7.8	5.5
11	54	18	815	30	14	33	e74	35	28	7.2	8.1	4.1
12	34	17	199	41	26	31	e62	35	23	8.0	37	3.6
13	25	165	65	56	49	31	e56	41	21	6.7	14	3.5
14	20	65	40	41	37	e32	e52	35	20	9.5	9.4	3.4
15	17	39	31	31	25	e34	e50	32	19	17	7.4	3.3
16	14	29	26	27	46	e40	445	44	18	9.4	6.5	4.7
17	13	24	49	25	55	e140	150	49	17	7.1	20	22
18	12	20	44	23	31	e80	76	41	17	6.1	17	14
19	15	17	30	21	24	e54	61	54	16	14	9.1	8.1
20	15	15	29	19	e17	e140	54	41	16	21	7.7	5.9
21	14	13	27	19	20	e125	58	33	18	9.1	7.9	6.4
22	14	13	24	42	38	e145	161	31	17	7.6	6.3	7.8
23	14	161	23	30	43	e250	79	29	15	6.0	5.9	6.7
24	14	48	23	24	27	e170	60	28	13	5.6	5.8	6.5
25	14	29	19	23	23	e90	55	26	12	5.8	5.5	6.2
26	e15	23	18	20	20	e110	73	25	12	6.0	5.4	13
27	e15	20	17	19	19	e150	61	24	12	5.9	5.2	40
28	e17	17	28	18	19	e180	52	23	11	5.4	5.1	28
29	e18	15	39	18	---	e93	49	22	11	5.5	4.8	11
30	24	13	30	16	---	e76	46	21	12	5.1	4.7	6.9
31	22	---	25	17	---	e135	---	21	---	4.8	4.7	---
TOTAL	591.6	1311	1773	943	685	3587	2722	1211	635	288.0	315.6	255.0
MEAN	19.1	43.7	57.2	30.4	24.5	116	90.7	39.1	21.2	9.29	10.2	8.50
MAX	104	180	815	111	55	577	445	97	49	21	37	40
MIN	5.5	13	10	16	14	18	46	21	11	4.8	4.6	3.3
CFSM	.71	1.62	2.12	1.13	.91	4.29	3.36	1.45	.78	.34	.38	.31
IN.	.82	1.81	2.44	1.30	.94	4.94	3.75	1.67	.87	.40	.43	.35

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	22.7	24.9	31.1	32.2	41.3	46.3	42.8	38.4	26.9	16.1	12.1	14.7				
MAX	129	48.6	88.9	99.5	112	116	90.7	94.3	68.3	33.1	26.5	85.3				
(WY)	1980	1980	1984	1979	1979	1993	1993	1989	1989	1978	1990	1979				
MIN	2.68	7.27	11.8	9.31	20.3	18.8	19.2	15.1	6.21	4.72	3.98	3.11				
(WY)	1987	1982	1981	1981	1992	1981	1985	1986	1986	1986	1987	1986				

PATUXENT RIVER BASIN

01591700 HAWLINGS RIVER NEAR SANDY SPRING, MD--Continued

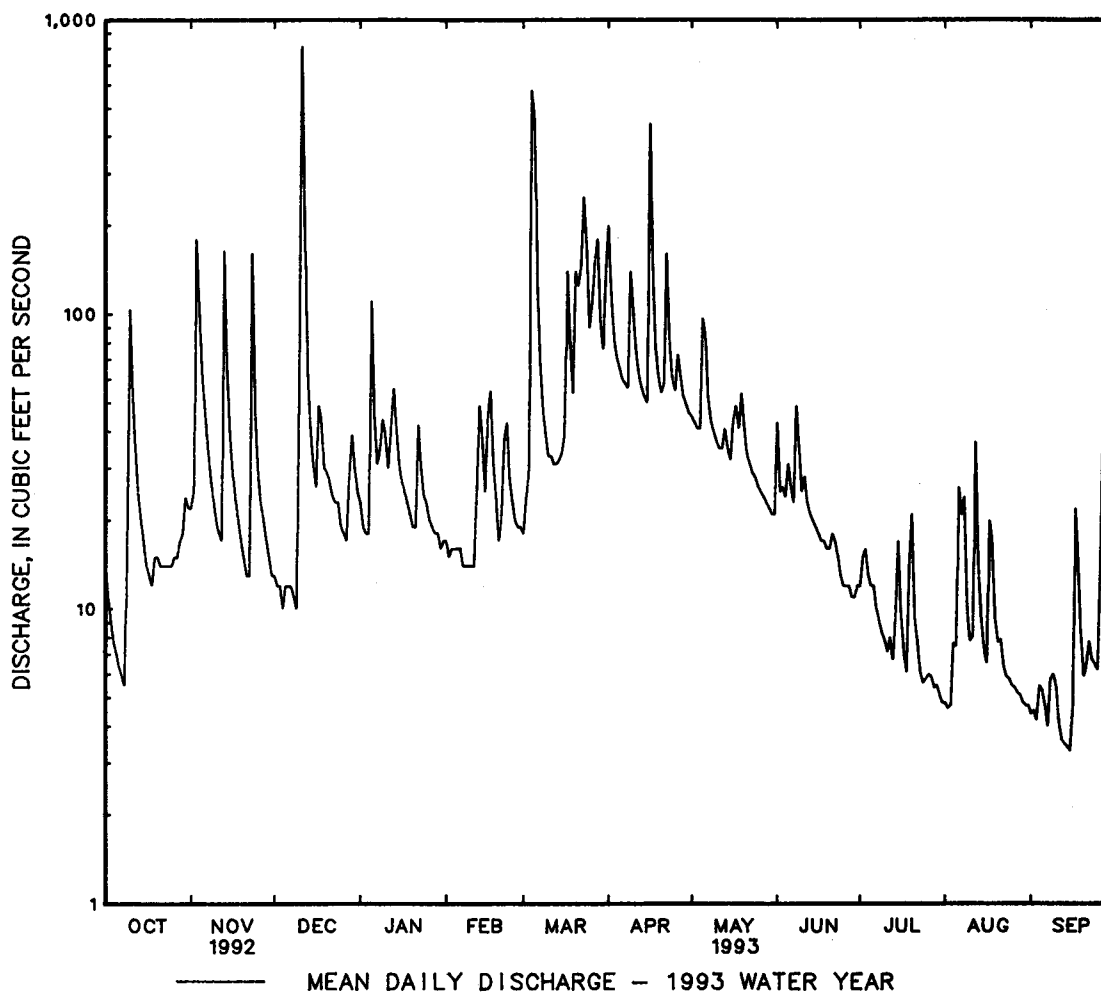
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1978 - 1993	
ANNUAL TOTAL	9080.2		14317.2		28.9	
ANNUAL MEAN	24.8		39.2		48.3	
HIGHEST ANNUAL MEAN					16.0	
LOWEST ANNUAL MEAN					1500	
HIGHEST DAILY MEAN	815	Dec 11	815	Dec 11	1500	Oct 1 1979
LOWEST DAILY MEAN	3.8	Jul 22	3.3	Sep 15	2.0	(a)
ANNUAL SEVEN-DAY MINIMUM	5.7	Jul 17	4.0	Sep 10	2.2	Oct 6 1986
INSTANTANEOUS PEAK FLOW	1120	Dec 11	1210	Apr 16	(b)4300	Sep 6 1979
INSTANTANEOUS PEAK STAGE	5.60	Dec 11	5.84	Apr 16	8.80	Sep 6 1979
INSTANTANEOUS LOW FLOW	(c)3.2	Feb 10	3.3	(d)	(c)1.75	Jan 30 1981
ANNUAL RUNOFF (CFSM)	.92		1.45		1.07	
ANNUAL RUNOFF (INCHES)	12.51		19.73		14.55	
10 PERCENT EXCEEDS	40		76		48	
50 PERCENT EXCEEDS	17		21		18	
90 PERCENT EXCEEDS	7.1		5.9		5.6	

a Oct. 11, 12, 1986.

b From rating curve extended above 1,200 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow.

c Result of freezeup.

d Sept. 14, 15.



PATUXENT RIVER BASIN

153

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 mi².

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 gal; dead storage, 80,000,000 gal. Several measurements of water temperature were made during the year.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 1,270 ft³/s, April 19, gage height, 7.99 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	21	20	21	20	756	218	21	20	21	36
2	19	19	20	20	21	20	782	218	21	20	21	19
3	19	19	21	20	21	20	847	138	22	20	21	19
4	19	19	20	20	21	21	844	92	22	20	21	20
5	19	19	20	20	20	459	545	88	22	20	21	20
6	19	19	20	20	20	813	190	89	22	20	21	20
7	19	19	20	21	21	808	213	89	22	20	21	20
8	19	19	20	145	20	788	213	88	22	20	21	19
9	19	19	20	291	20	766	213	89	22	20	21	19
10	19	19	21	293	20	590	213	89	32	20	21	19
11	19	19	21	326	20	506	213	89	21	21	21	19
12	19	19	21	350	20	506	312	92	21	21	21	19
13	19	19	21	348	19	506	415	90	21	20	20	19
14	19	19	21	346	20	506	408	93	21	21	20	19
15	19	19	21	269	20	506	214	92	21	20	20	19
16	19	19	21	159	20	506	214	91	22	20	20	19
17	20	20	21	159	20	506	215	90	22	20	20	19
18	20	20	21	160	20	656	361	139	21	20	20	19
19	20	20	21	123	20	773	991	157	21	20	20	18
20	20	20	21	90	20	697	904	158	21	20	20	18
21	19	20	96	47	20	301	209	157	21	20	20	18
22	19	20	232	21	20	375	215	157	21	21	20	18
23	19	45	241	21	20	670	340	157	22	21	20	18
24	19	25	85	21	20	642	493	156	21	21	20	19
25	20	20	89	21	20	887	407	156	21	20	20	19
26	20	20	87	21	20	1060	216	156	21	20	20	19
27	19	20	87	21	20	602	312	90	20	20	20	20
28	19	20	86	21	20	215	340	21	20	20	20	19
29	19	20	86	21	---	570	268	21	20	20	19	19
30	19	21	41	21	---	1010	229	21	20	21	19	18
31	19	---	19	21	---	961	---	21	---	21	28	---
TOTAL	595	615	1562	3457	564	17266	12092	3402	647	628	638	586
MEAN	19.2	20.5	50.4	112	20.1	557	403	110	21.6	20.3	20.6	19.5
MAX	20	45	241	350	21	1060	991	218	32	21	28	36
MIN	19	19	19	20	19	20	190	21	20	20	19	18
(†)	8500	9230	11100	10550	11320	11340	11530	11520	11870	10760	9670	8620
(*)	85.3	87.6	90.2	92.3	89.3	90.1	91.3	95.2	95.1	93.3	92.4	91.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

	MEAN	44.5	48.7	75.1	105	115	133	139	116	87.7	60.6	49.7	64.2
MAX	379	272	390	480	462	557	444	397	822	280	226	587	
(WY)	1980	1953	1984	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, 1992, 8,950,000,000 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 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1945 - 1993	
ANNUAL TOTAL	9211		42052			
ANNUAL MEAN	25.2		115		86.4	
ANNUAL MEAN*	100.7		206			
HIGHEST ANNUAL MEAN					241	1972
LOWEST ANNUAL MEAN					9.09	1966
HIGHEST DAILY MEAN	241	Dec 23	1060	Mar 26	13000	Jun 22 1972
LOWEST DAILY MEAN	18	Sep 28	18	(a)	1.1	Jun 26 1956
ANNUAL SEVEN-DAY MINIMUM	19	Sep 26	18	Sep 17	3.7	Aug 29 1966
INSTANTANEOUS PEAK FLOW	301	Dec 22	1270	Apr 19	(b)26000	Jun 22 1972
INSTANTANEOUS PEAK STAGE	6.07	Dec 22	7.99	Apr 19	(c)25.00	Jun 22 1972
INSTANTANEOUS LOW FLOW	UNKNOWN		17	Sep 29	(d).05	Jul 18 1985
ANNUAL RUNOFF (CFSM)	.19		.87		.65	
ANNUAL RUNOFF (INCHES)	2.60		11.85		8.90	
10 PERCENT EXCEEDS	21		367		188	
50 PERCENT EXCEEDS	20		21		23	
90 PERCENT EXCEEDS	19		19		11	

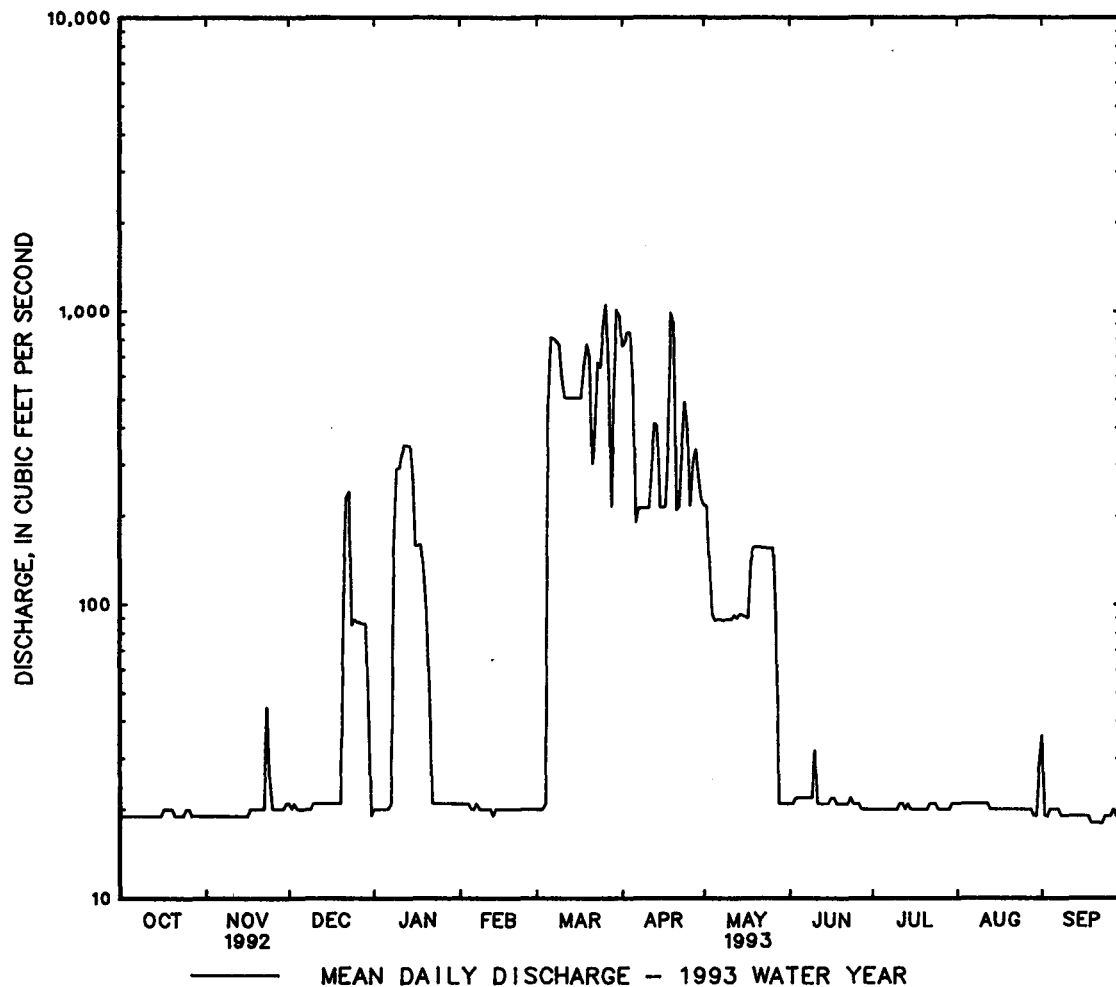
* Adjusted for diversions.

a Sept. 19-23, 30.

b From rating curve extended above 6,600 ft³/s on basis of contracted-opening measurement of peak flow.

c From floodmarks.

d Valve closed for repair.



01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD

LOCATION.--Lat 39°10'04", long 76°51'07", Howard County, Hydrologic Unit 02060006, on left bank 25 ft downstream from bridge on Guilford Road (formerly State Highway 32), 1 mi west of Guilford, 3 mi upstream from Middle Patuxent River, 4 mi north of Laurel, and 20.1 mi upstream from mouth.

DRAINAGE AREA.--38.0 mi².

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for April 1932, published in WSP 1302.

REVISED RECORDS.--WSP 1502: 1933, 1934(M), 1939(M), 1945(M), 1948(P).

GAGE.--Water-stage recorder. Concrete control since June 20, 1946. Datum of gage is 259.26 ft above sea level. Prior to June 25, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges (ice effect, timer malfunction resulting in no gage-height record), which are fair. Low flow affected by regulation from unknown source. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 9	2400	932	6.69	Mar. 17	2000	1,290	8.14
Nov. 3	0530	949	6.77	Mar. 24	0430	1,150	7.62
Nov. 23	0630	1,070	7.28	Apr. 10	1930	1,130	7.52
Dec. 11	1530	1,410	8.47	Apr. 16	1600	996	6.98
Mar. 4	1730	*1,900	*9.62	Apr. 22	0230	840	6.25

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	21	41	35	39	302	47	e74	e25	9.1	7.3
2	10	37	21	38	33	48	215	45	e50	e30	9.1	7.4
3	9.7	417	20	37	e35	57	84	42	e47	e38	12	6.6
4	9.4	44	21	38	32	968	65	42	e52	e29	26	15
5	8.8	32	20	253	32	594	60	109	e54	e25	21	12
6	8.4	32	17	66	33	107	58	89	e45	e23	214	8.8
7	8.3	20	17	47	31	66	54	51	e60	28	59	8.2
8	8.2	17	17	66	31	57	53	45	e200	19	35	29
9	247	16	16	81	31	51	52	42	e140	16	19	20
10	354	15	201	55	31	52	416	41	e54	13	16	14
11	35	15	1180	46	31	51	221	e44	e38	13	15	10
12	20	19	331	73	89	45	78	e60	e34	12	78	8.8
13	16	277	68	101	137	58	62	e70	e32	11	24	8.3
14	13	39	53	61	66	68	55	e60	e32	77	19	7.4
15	12	26	48	49	45	78	54	e62	e31	70	15	7.2
16	12	22	45	45	129	57	432	e80	e30	20	14	28
17	10	20	73	42	104	648	178	e68	e29	15	13	46
18	9.9	18	61	40	54	397	66	e76	e32	13	14	29
19	10	22	48	38	44	82	55	e78	e45	14	13	18
20	10	19	54	37	39	73	50	e60	e52	48	13	13
21	10	18	46	38	41	245	122	e52	e45	20	17	16
22	11	29	42	93	98	164	426	e49	e56	15	12	17
23	11	622	45	49	79	232	81	e48	e38	13	11	13
24	12	67	42	42	49	730	63	e47	e29	12	11	13
25	13	44	38	40	41	108	58	e45	e24	12	10	16
26	12	35	38	37	41	78	91	e42	e23	12	9.3	33
27	13	30	36	37	42	81	71	e40	e23	12	9.2	57
28	15	25	63	36	40	134	55	e39	e22	11	9.1	37
29	14	22	57	36	---	85	52	e38	e21	13	8.8	16
30	12	21	48	34	---	79	49	e41	e22	11	7.8	12
31	23	---	44	35	---	67	---	e66	---	9.7	7.8	---
TOTAL	968.7	2033	2831	1731	1493	5599	3678	1718	1434	679.7	751.2	534.0
MEAN	31.2	67.8	91.3	55.8	53.3	181	123	55.4	47.8	21.9	24.2	17.8
MAX	354	622	1180	253	137	968	432	109	200	77	214	57
MIN	8.2	13	16	34	31	39	49	38	21	9.7	7.8	6.6
CFSM	.82	1.78	2.40	1.47	1.40	4.75	3.23	1.46	1.26	.58	.64	.47
IN.	.95	1.99	2.77	1.69	1.46	5.48	3.60	1.68	1.40	.67	.74	.52

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1993, BY WATER YEAR (WY)

	MEAN	26.1	36.5	44.6	51.4	60.3	63.8	59.5	49.7	38.7	29.5	27.5	30.8
MAX	107	108	119	145	147	181	160	197	265	119	130	214	
(WY)	1980	1973	1973	1978	1979	1993	1973	1989	1972	1945	1955	1975	
MIN	5.90	9.31	11.6	12.9	19.7	24.9	21.0	15.7	9.32	6.66	4.91	3.88	
(WY)	1942	1942	1966	1955	1947	1981	1947	1955	1986	1966	1957	1932	

PATUXENT RIVER BASIN

01593500 LITTLE PATUXENT RIVER AT GUILFORD, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1932 - 1993

ANNUAL TOTAL	15721.1		23450.6		
ANNUAL MEAN	43.0		64.2		43.1
HIGHEST ANNUAL MEAN					93.7
LOWEST ANNUAL MEAN					17.7
HIGHEST DAILY MEAN	1180	Dec 11	1180	Dec 11	4680
LOWEST DAILY MEAN	7.8	Sep 1	6.6	Sep 3	.00
ANNUAL SEVEN-DAY MINIMUM	8.8	Sep 15	7.8	Aug 28	.73
INSTANTANEOUS PEAK FLOW	1410	Dec 11	1900	Mar 4	(a)12400
INSTANTANEOUS PEAK STAGE	8.47	Dec 11	9.62	Mar 4	(b)18.38
INSTANTANEOUS LOW FLOW	7.4	(c)	5.9	(d)	.00
ANNUAL RUNOFF (CFSM)	1.13		1.69		1.13
ANNUAL RUNOFF (INCHES)	15.39		22.96		15.40
10 PERCENT EXCEEDS	66		99		71
50 PERCENT EXCEEDS	22		38		26
90 PERCENT EXCEEDS	10		11		10

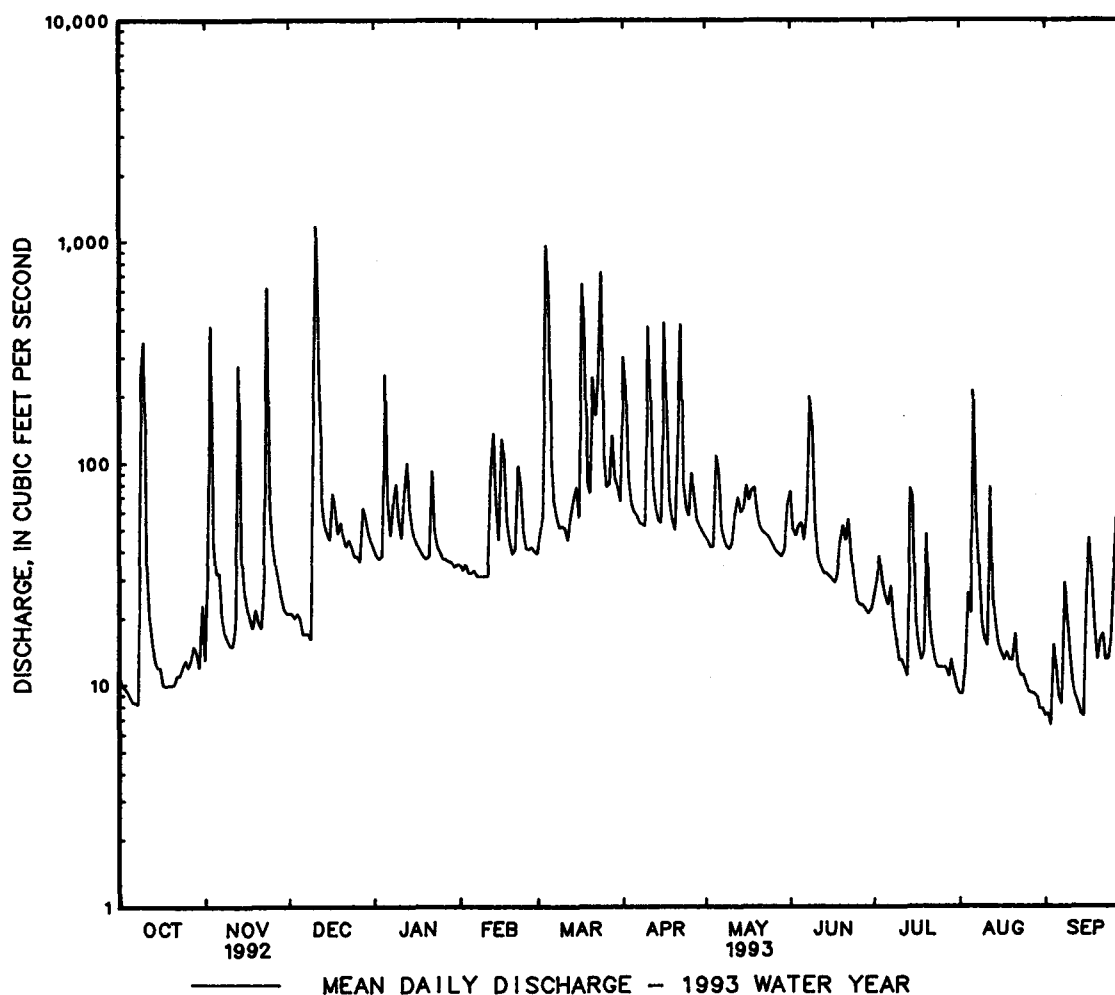
a From rating curve extended above 1,800 ft³/s on basis of contracted-opening measurement at gage height 13.26 ft and contracted-opening and flow-over-embankment measurement at gage height 18.38 ft.

b From high-water mark in well.

c Sept. 1, 2.

d Sept. 3, 4.

f Sept. 6-12, 1966.



01593710 MIDDLE PATUXENT RIVER NEAR SIMPSONVILLE, MD

LOCATION.--Lat 39°11'48", long 76°53'59", Howard County, Hydrologic Unit 02060006, on right bank 0.8 mi upstream from bridge on State Highway 32 on W. R. Grace Company property, 1.3 mi northwest of Simpsonville, and 7.8 mi upstream from Little Patuxent River.

DRAINAGE AREA.--48.4 mi².

PERIOD OF RECORD.--August 1987 to current year.

REVISED RECORDS.--WDR MD-DE-89-1: 1987-88(P).

GAGE.--Water-stage recorder. Elevation of gage is 275 ft above sea level, which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0500	*2,520	*6.31	Mar. 24	0330	1,220	4.69
Dec. 11	1230	1,590	5.19	Apr. 2	0200	1,250	4.73
Mar. 4	1745	2,290	6.06	Apr. 16	1600	2,000	5.72
Mar. 17	1815	1,430	4.98	June 9	0115	1,450	5.00

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	23	28	41	38	42	296	80	80	33	19	15
2	18	34	28	38	35	60	345	77	49	39	18	15
3	17	207	28	37	40	66	114	74	52	40	20	14
4	17	46	27	38	36	1030	95	73	48	34	25	16
5	17	37	29	149	36	297	88	127	58	32	23	16
6	16	37	26	62	36	132	84	108	48	32	79	16
7	16	31	27	50	34	93	80	79	45	33	41	15
8	16	28	26	58	e35	81	77	73	103	33	31	22
9	107	27	25	67	34	72	77	70	346	33	24	21
10	158	26	132	54	34	71	291	67	65	26	23	19
11	33	26	1010	50	35	70	154	64	57	25	22	16
12	26	28	197	76	60	63	111	66	50	24	49	16
13	24	146	80	100	95	e66	97	76	47	23	34	15
14	22	43	63	66	64	e66	90	62	44	32	37	15
15	21	35	55	56	50	e66	86	58	43	37	23	15
16	20	32	50	52	87	e66	577	71	41	25	22	21
17	19	30	89	50	92	587	183	66	39	24	22	39
18	20	29	68	45	60	262	106	65	38	23	24	28
19	20	30	53	43	47	106	92	79	39	23	21	20
20	20	29	57	41	e46	96	85	65	45	52	21	17
21	21	28	49	42	48	277	131	57	54	26	22	19
22	21	31	45	75	73	198	276	54	51	24	18	20
23	21	543	47	53	70	244	118	53	38	22	18	18
24	22	61	43	48	50	615	96	52	36	22	18	18
25	22	48	38	45	44	144	90	50	35	23	17	19
26	21	42	38	41	44	112	117	47	34	23	17	27
27	21	37	36	41	43	139	96	45	34	22	17	37
28	21	33	54	40	42	230	83	45	33	20	17	33
29	21	31	59	39	---	128	79	43	32	21	16	21
30	22	29	51	37	---	119	80	42	33	20	15	21
31	28	---	46	39	---	96	---	43	---	19	15	---
TOTAL	866	1807	2604	1673	1408	5694	4294	2031	1717	865	768	604
MEAN	27.9	60.2	84.0	54.0	50.3	184	143	65.5	57.2	27.9	24.8	20.1
MAX	158	543	1010	149	95	1030	577	127	346	52	79	39
MIN	16	23	25	37	34	42	77	42	32	19	15	14
CFSM	.58	1.24	1.74	1.12	1.04	3.80	2.96	1.35	1.18	.58	.51	.42
IN.	.67	1.39	2.00	1.29	1.08	4.38	3.30	1.56	1.32	.66	.59	.46

e Estimated

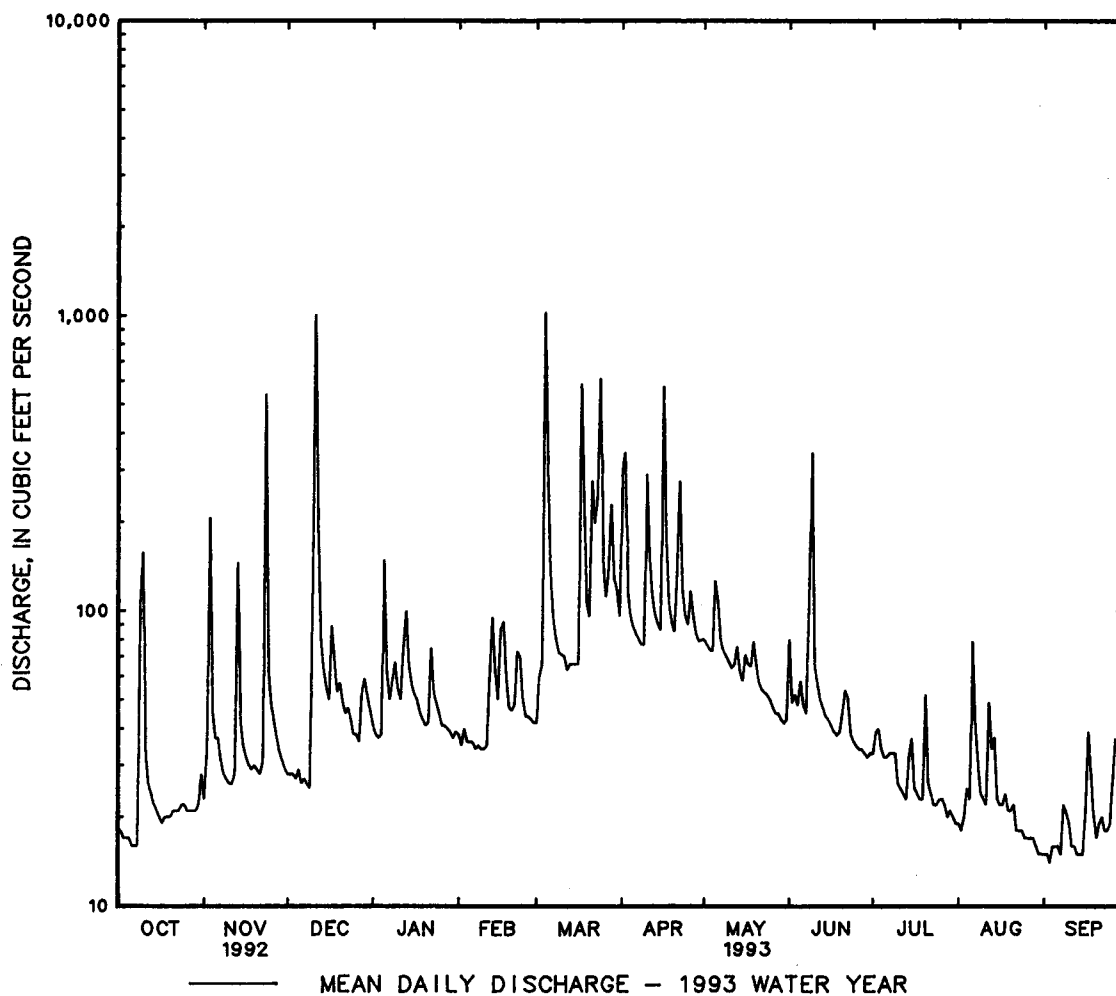
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993
MEAN	31.8	46.6	51.7	61.1	53.3	86.1	69.3
MAX	66.6	61.0	84.0	85.0	64.6	184	143
(WY)	1990	1990	1993	1991	1988	1993	1993
MIN	14.6	21.0	26.5	36.5	40.5	47.5	41.2
(WY)	1992	1992	1989	1992	1992	1988	1992

01593710 MIDDLE PATUXENT RIVER NEAR SIMPSONVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1987 - 1993	
ANNUAL TOTAL	14862		24331			
ANNUAL MEAN	40.6		66.7		51.0	1993
HIGHEST ANNUAL MEAN					66.7	1992
LOWEST ANNUAL MEAN					32.8	1992
HIGHEST DAILY MEAN	1010	Dec 11	1030	Mar 4	2100	May 6 1989
LOWEST DAILY MEAN	12	(a)	14	Sep 3	6.6	Sep 4 1987
ANNUAL SEVEN-DAY MINIMUM	14	Sep 15	15	Aug 29	7.3	Sep 9 1991
INSTANTANEOUS PEAK FLOW	2520	Nov 23	2520	Nov 23	(b)4800	May 6 1989
INSTANTANEOUS PEAK STAGE	6.31	Nov 23	6.31	Nov 23	8.84	May 6 1989
INSTANTANEOUS LOW FLOW	12	Sep 21	12	Sep 3	6.4	Aug 6 1991
ANNUAL RUNOFF (CFSM)	.84		1.38		1.05	
ANNUAL RUNOFF (INCHES)	11.43		18.70		14.31	
10 PERCENT EXCEEDS	57		111		80	
50 PERCENT EXCEEDS	29		41		36	
90 PERCENT EXCEEDS	16		19		15	

a July 21, 22.

b From rating curve extended above 300 ft³/s on the basis of slope-area measurement of peak flow.

159

LOCATION.--Lat 39°08'06", long 76°48'58", Howard County, Hydrologic Unit 02060006, on left bank 20 ft downstream from bridge on southbound lanes of U.S. Highway 1, 0.4 mi southeast of Savage, 0.9 mi downstream from Middle Patuxent River, and 16.2 mi upstream from mouth.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WRD MD-DE-89: 1985, 1987-88(P).

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above sea level, from topographic maps. Prior to October 1958, water-stage recorder at site 400 ft downstream at same datum. October 1958 to September 1972, crest-stage gage at site 400 ft downstream on right bank at same datum. October 1975 to September 1980, water-stage recorder at site 500 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some diurnal fluctuation at low flow caused by plant 0.5 mi upstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0800	*3,140	*10.19	Mar. 17	1630	1,610	8.13
Dec. 11	1545	3,010	10.04	June 9	0315	1,580	8.08
Mar. 4	1800	1,940	8.65				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	46	64	88	79	87	637	155	171	49	27	20
2	32	83	63	79	71	103	649	147	91	61	26	20
3	31	612	61	77	78	145	272	140	93	72	25	19
4	29	127	61	77	73	1040	212	138	86	58	52	28
5	28	88	63	434	72	875	192	252	114	53	48	26
6	26	90	57	168	73	330	182	290	93	58	254	21
7	26	66	56	115	70	202	171	157	79	60	146	19
8	26	58	55	150	70	170	164	137	149	49	82	42
9	280	54	52	189	69	149	159	130	752	43	46	48
10	564	51	248	137	69	145	532	127	136	40	40	34
11	91	51	2180	110	70	143	491	120	110	37	38	23
12	58	58	688	167	142	121	243	151	87	35	148	19
13	47	411	216	233	287	154	203	169	80	33	56	19
14	42	106	145	152	165	173	181	124	75	99	66	18
15	39	74	120	118	108	144	173	113	77	166	42	18
16	37	64	106	106	229	144	639	173	72	50	36	39
17	34	60	192	99	253	820	497	169	64	39	35	83
18	33	58	173	91	132	762	234	134	63	35	40	79
19	34	63	114	86	99	263	198	182	80	41	35	43
20	32	58	129	83	96	223	180	136	112	121	32	30
21	33	55	109	84	93	523	236	114	88	50	40	35
22	34	70	94	194	192	492	763	105	119	39	30	38
23	34	1090	99	118	191	481	274	104	68	34	27	31
24	36	183	92	98	112	1080	207	100	59	32	27	29
25	39	120	79	94	92	369	192	96	56	34	26	31
26	36	98	79	85	94	253	268	92	55	35	25	72
27	34	87	74	84	93	256	231	88	55	34	24	147
28	38	75	140	83	89	504	177	86	52	31	24	118
29	37	69	147	81	---	273	167	83	50	32	23	44
30	36	65	112	76	---	254	161	79	51	31	21	33
31	63	---	98	78	---	204	---	80	---	27	20	---
TOTAL	1942	4190	5966	3834	3261	10882	8885	4171	3237	1578	1561	1226
MEAN	62.6	140	192	124	116	351	296	135	108	50.9	50.4	40.9
MAX	564	1090	2180	434	287	1080	763	290	752	166	254	147
MIN	26	46	52	76	69	87	159	79	50	27	20	18
CFSM	.64	1.42	1.96	1.26	1.18	3.57	3.01	1.37	1.10	.52	.51	.42
IN.	.73	1.58	2.26	1.45	1.23	4.11	3.36	1.58	1.22	.60	.59	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1993, BY WATER YEAR (WY)

MEAN	71.8	92.6	114	141	138	159	141	128	94.4	76.0	63.6	66.4
MAX	336	228	260	386	375	351	351	367	294	312	315	432
(WY)	1980	1953	1978	1979	1979	1993	1952	1989	1951	1945	1955	1979
MIN	14.7	22.5	35.8	34.0	57.7	85.3	60.0	39.5	25.5	21.9	15.1	12.8
(WY)	1942	1942	1942	1942	1942	1947	1947	1955	1986	1957	1957	1986

PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1940 - 1993

ANNUAL TOTAL	34388		50733		
ANNUAL MEAN	94.0		139		
HIGHEST ANNUAL MEAN					107
LOWEST ANNUAL MEAN					196
HIGHEST DAILY MEAN	2180	Dec 11	2180	Dec 11	5250
LOWEST DAILY MEAN	22	(a)	18	(b)	7.0
ANNUAL SEVEN-DAY MINIMUM	25	Sep 15	21	Aug 28	8.7
INSTANTANEOUS PEAK FLOW	3140	Nov 23	3140	Nov 23	(c)35400
INSTANTANEOUS PEAK STAGE	10.19	Nov 23	10.19	Nov 23	(d)25.40
INSTANTANEOUS LOW FLOW	22	(f)	17	(g)	1.6
ANNUAL RUNOFF (CFSM)	.95		1.41		1.09
ANNUAL RUNOFF (INCHES)	13.00		19.18		14.81
10 PERCENT EXCEEDS	148		254		182
50 PERCENT EXCEEDS	63		84		71
90 PERCENT EXCEEDS	31		31		27

a Sept. 2, 21.

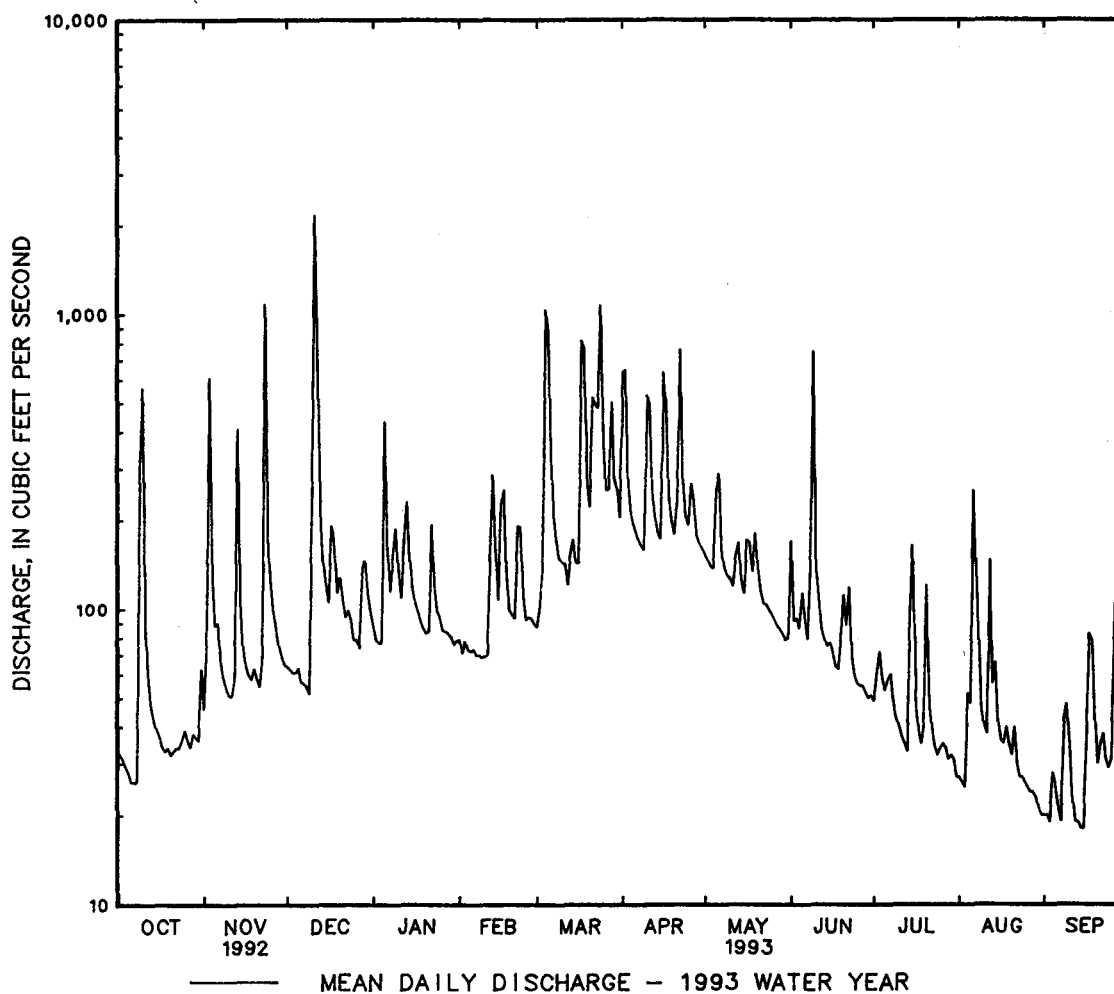
b Sept. 14, 15.

c From rating curve extended above 11,000 ft³/s on basis of contracted-opening measurement of peak flow.

d From floodmarks.

f Sept. 1, 2, 21.

g Sept. 3, 4, 15.



PATUXENT RIVER BASIN

161

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	TUR- BID- ITY (NTU)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
OCT 1991									
17...	1305	276	--	--	--	--	100	22	--
17...	2248	293	--	--	--	--	60	<10	--
31...	1040	33	253	7.3	10.0	17.0	0.90	<10	2.0
NOV									
21...	0900	32	236	6.9	11.0	19.0	0.90	<10	2.5
DEC									
17...	0915	55	248	6.8	1.5	2.5	3.4	<10	3.4
JAN 1992									
21...	0815	45	272	6.8	0.0	-5.0	2.0	17	--
FEB									
19...	1345	125	281	7.1	8.0	14.0	10	13	2.1
26...	0815	363	--	--	--	--	120	<10	--
MAR									
19...	1500	181	237	6.9	5.0	2.0	13	<10	2.1
19...	1505	181	--	--	--	--	14	<10	2.3
27...	0852	781	--	--	--	--	380	17	--
APR									
22...	0752	532	--	--	--	--	120	16	--
27...	1145	139	209	7.2	13.0	12.5	8.8	<10	3.5
MAY									
20...	1200	52	233	7.3	18.0	20.0	1.3	<10	0.5
31...	0434	750	--	--	--	--	150	22	--
31...	0808	1320	--	--	--	--	56	20	--
31...	1126	1140	--	--	--	--	190	25	--
31...	1617	599	--	--	--	--	120	24	--
JUN									
01...	0627	177	--	--	--	--	28	18	--
26...	0845	45	225	7.4	20.0	21.0	1.5	<10	2.3
JUL									
25...	0459	554	--	--	--	--	210	13	--
25...	0927	1080	--	--	--	--	440	11	--
25...	1345	868	--	--	--	--	300	15	--
25...	2216	247	--	--	--	--	160	15	--
29...	1130	48	220	7.7	23.0	26.0	3.0	<10	0.5
AUG									
24...	1115	32	240	--	22.0	21.0	2.3	<10	0.9
24...	1120	32	--	--	--	--	1.1	<10	0.6
SEP									
28...	1130	84	202	7.3	17.5	17.0	7.7	--	0.6

PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SILICA, DIS- SOLVED (MG/L AS SIO2)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT 1991										
17...	--	6.0	8800	0.624	0.006	0.630	0.012	1.5	0.45	2.2
17...	--	6.8	146	0.771	0.009	0.780	0.016	1.0	0.60	1.8
31...	71	11	2	--	0.003	<0.020	0.008	0.20	--	0.20
NOV										
21...	64	8.2	2	1.40	0.005	1.40	0.008	0.35	0.30	1.7
DEC										
17...	57	15	<1	2.10	0.004	2.10	0.032	0.50	0.40	2.6
JAN 1992										
21...	57	15	7	2.59	0.006	2.60	0.008	0.10	0.15	2.7
FEB										
19...	44	11	12	1.69	0.010	1.70	0.040	0.35	0.25	2.1
26...	--	7.7	17	1.19	0.011	1.20	0.044	0.95	0.25	2.2
MAR										
19...	46	--	3	1.79	0.012	1.80	0.044	0.33	0.20	2.1
19...	--	--	4	1.79	0.012	1.80	0.048	0.35	0.15	2.2
27...	--	5.2	740	0.682	0.008	0.690	0.132	3.2	0.50	3.9
APR										
22...	--	7.4	238	0.853	0.017	0.870	0.056	--	--	--
27...	48	9.7	5	1.18	0.021	1.20	0.016	0.50	0.20	1.7
MAY										
20...	56	11	1	1.78	0.020	1.80	0.012	0.30	0.20	2.1
31...	--	7.1	132	0.765	0.015	0.780	0.044	2.3	0.50	3.0
31...	--	5.3	695	0.764	0.016	0.780	0.116	1.6	0.60	2.4
31...	--	6.2	440	1.38	0.019	1.40	0.168	3.1	0.75	4.5
31...	--	7.1	1170	1.38	0.020	1.40	0.140	1.4	0.75	2.8
JUN										
01...	--	9.8	37	1.29	0.014	1.30	0.084	0.90	0.65	2.2
26...	55	--	<1	1.49	0.009	1.50	0.020	0.45	0.20	2.0
JUL										
25...	--	6.8	312	0.610	0.020	0.630	0.056	1.3	0.35	1.9
25...	--	6.1	570	0.500	0.010	0.510	0.068	1.6	0.40	2.1
25...	--	7.3	500	0.697	0.013	0.710	0.092	1.6	0.50	2.3
25...	--	7.4	180	0.567	0.013	0.580	0.128	1.5	0.60	2.1
29...	56	14	6	1.59	0.012	1.60	0.016	0.10	--	1.7
AUG										
24...	--	9.3	3	--	<0.010	1.50	0.016	0.25	0.20	1.7
24...	--	9.3	3	1.49	0.010	1.50	0.016	0.25	0.20	1.7
SEP										
28...	50	--	6	--	--	--	--	0.30	--	0.30

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHEO- PHYTTIN PHYTO- PLANK- TON, ACID M. (UG/L)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L)
OCT 1991									
17...	0.320	0.030	0.022	5.5	4.8	--	--	--	--
17...	0.190	0.040	0.028	3.9	--	--	--	--	--
31...	<0.010	0.010	<0.004	3.0	3.0	0.800	0.800	0.200	0.600
NOV									
21...	<0.001	<0.001	<0.004	3.6	3.4	--	1.40	<0.001	0.400
DEC									
17...	0.030	0.010	0.028	4.3	4.2	--	1.20	<0.001	<0.001
JAN 1992									
21...	0.010	0.020	<0.004	1.7	--	--	0.001	<0.001	<0.001
FEB									
19...	0.020	<0.010	0.004	3.8	3.5	0.600	5.40	0.400	0.002
26...	0.270	0.030	0.008	6.2	4.1	--	--	--	--
MAR									
19...	0.070	0.050	<0.004	3.3	3.0	0.001	0.009	0.400	2.40
19...	0.070	0.030	0.004	3.1	2.9	--	--	--	--
27...	1.00	0.040	0.024	5.2	--	--	--	--	--
APR									
22...	1.10	0.900	0.006	--	--	--	--	--	--
27...	0.080	0.010	0.006	4.0	4.1	--	4.60	0.400	0.001
MAY									
20...	0.360	0.060	0.004	2.4	1.8	--	1.40	<0.001	0.400
31...	0.700	0.030	0.012	15	5.9	--	--	--	--
31...	0.040	0.020	0.018	18	8.2	--	--	--	--
31...	1.00	0.030	0.022	20	9.1	--	--	--	--
31...	0.270	0.040	0.032	15	9.2	--	--	--	--
JUN									
01...	0.140	0.020	0.024	8.0	7.5	--	--	--	--
26...	0.030	0.030	0.004	8.0	2.8	0.200	1.80	<0.001	0.200
JUL									
25...	0.320	0.050	0.054	9.1	6.0	--	--	--	--
25...	0.460	0.030	0.032	13	6.7	--	--	--	--
25...	0.450	0.050	0.040	12	7.9	--	--	--	--
25...	0.360	0.050	0.044	9.8	7.7	--	--	--	--
29...	0.020	--	0.026	3.0	3.0	<0.001	0.800	0.200	<0.001
AUG									
24...	0.010	<0.010	<0.004	2.3	2.4	--	1.80	<0.001	<0.001
24...	0.010	<0.010	<0.004	2.4	2.3	--	--	--	--
SEP									
28...	0.010	--	--	4.7	4.6	0.800	3.60	<0.001	<0.001

PATUXENT RIVER BASIN

01594000 LITTLE PATUXENT RIVER AT SAVAGE, MD--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 1991				
17...	1305	276	185	138
17...	2248	293	119	94
31...	1040	33	2	0.18
NOV				
21...	0900	32	2	0.17
DEC				
17...	0915	55	1	0.15
JAN 1992				
21...	0815	45	2	0.24
FEB				
19...	1345	125	7	2.4
26...	0510	290	112	88
26...	0815	363	198	194
MAR				
19...	1500	181	16	7.8
27...	0852	781	1230	2590
APR				
22...	0752	532	205	295
27...	1145	139	7	2.6
MAY				
20...	1200	52	2	0.28
31...	0434	750	357	723
31...	0808	1320	530	1890
31...	1126	1140	386	1190
31...	1617	599	207	335
JUN				
01...	0627	177	34	16
05...	1754	561	166	251
06...	0310	363	91	89
26...	0845	45	1	0.12
JUL				
25...	0459	554	327	489
25...	0927	1080	670	1950
25...	1345	868	425	996
25...	2216	247	158	106
29...	1130	48	4	0.52
AUG				
24...	1115	32	2	0.17
SEP				
28...	0537	175	116	55
28...	0930	116	48	15
28...	1130	84	8	1.8

PATUXENT RIVER BASIN

165

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1955 to June 1977 (gage heights and discharge measurements only), August 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.--Records good except those for estimated daily discharges (broken orifice line), 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, 5,550 ft³/s, Mar. 5, gage height, 13.76 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	178	189	268	223	257	1720	534	e570	138	87	79
2	126	179	182	236	204	263	1540	505	e370	142	94	78
3	122	778	178	224	190	315	1270	489	e355	175	102	79
4	120	936	170	225	214	1060	1250	374	e330	178	92	80
5	119	278	170	716	210	4480	1210	407	e390	135	112	98
6	114	269	173	1170	207	2290	1060	967	e350	140	263	84
7	111	216	164	433	201	1390	635	510	e310	129	559	82
8	111	180	161	438	200	1250	585	376	e700	128	305	82
9	128	167	156	856	201	1170	561	342	e560	114	157	130
10	888	157	238	925	196	1110	677	330	e400	108	119	145
11	606	154	1860	691	198	908	1830	313	e300	104	110	107
12	211	159	4460	716	251	484	1000	322	e240	100	230	86
13	160	577	1530	867	872	521	836	856	e225	98	181	85
14	138	589	543	890	577	761	827	441	e220	98	124	81
15	129	243	381	719	335	654	806	345	e215	325	116	80
16	125	199	323	559	355	583	698	337	e190	158	100	94
17	123	180	338	430	791	1030	1780	577	e170	115	99	163
18	118	171	527	404	414	3350	944	396	e160	105	104	200
19	118	172	329	381	286	1720	812	651	e175	101	100	148
20	114	178	318	324	251	1340	1000	520	e210	188	94	111
21	118	167	345	303	265	1370	1310	424	e190	154	94	122
22	115	176	352	465	444	1670	1450	383	222	111	94	144
23	116	839	492	405	802	1190	1220	366	183	101	87	114
24	119	1630	490	297	400	2260	836	360	153	96	85	103
25	137	444	315	278	285	2450	903	342	148	98	83	98
26	124	328	294	290	268	1350	867	334	144	102	85	153
27	119	312	281	260	276	1500	931	e320	154	99	94	260
28	117	244	356	232	270	1780	756	e310	147	95	98	742
29	121	214	615	229	---	1230	708	e295	139	91	87	189
30	123	201	419	220	---	1070	596	e290	139	95	84	130
31	175	---	315	220	---	1290	---	e300	---	89	81	---
TOTAL	5198	10515	16664	14671	9386	42096	30618	13316	8059	3910	4120	4147
MEAN	168	350	538	473	335	1358	1021	430	269	126	133	138
MAX	888	1630	4460	1170	872	4480	1830	967	700	325	559	742
MIN	111	154	156	220	190	257	561	290	139	89	81	78
CFSM	.48	1.01	1.54	1.36	.96	3.90	2.93	1.23	.77	.36	.38	.40
IN.	.56	1.12	1.78	1.57	1.00	4.50	3.27	1.42	.86	.42	.44	.44

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1993, BY WATER YEAR (WY)

	242	273	378	466	439	558	520	498	330	204	191	226
MEAN	242	273	378	466	439	558	520	498	330	204	191	226
MAX	1093	459	1030	1316	1232	1358	1247	1291	846	492	532	1358
(WY)	1980	1980	1984	1978	1979	1993	1983	1989	1989	1989	1979	1979
MIN	80.4	108	136	119	252	173	167	154	113	102	86.1	65.2
(WY)	1987	1982	1981	1981	1992	1981	1985	1986	1977	1986	1987	1986

PATUXENT RIVER BASIN

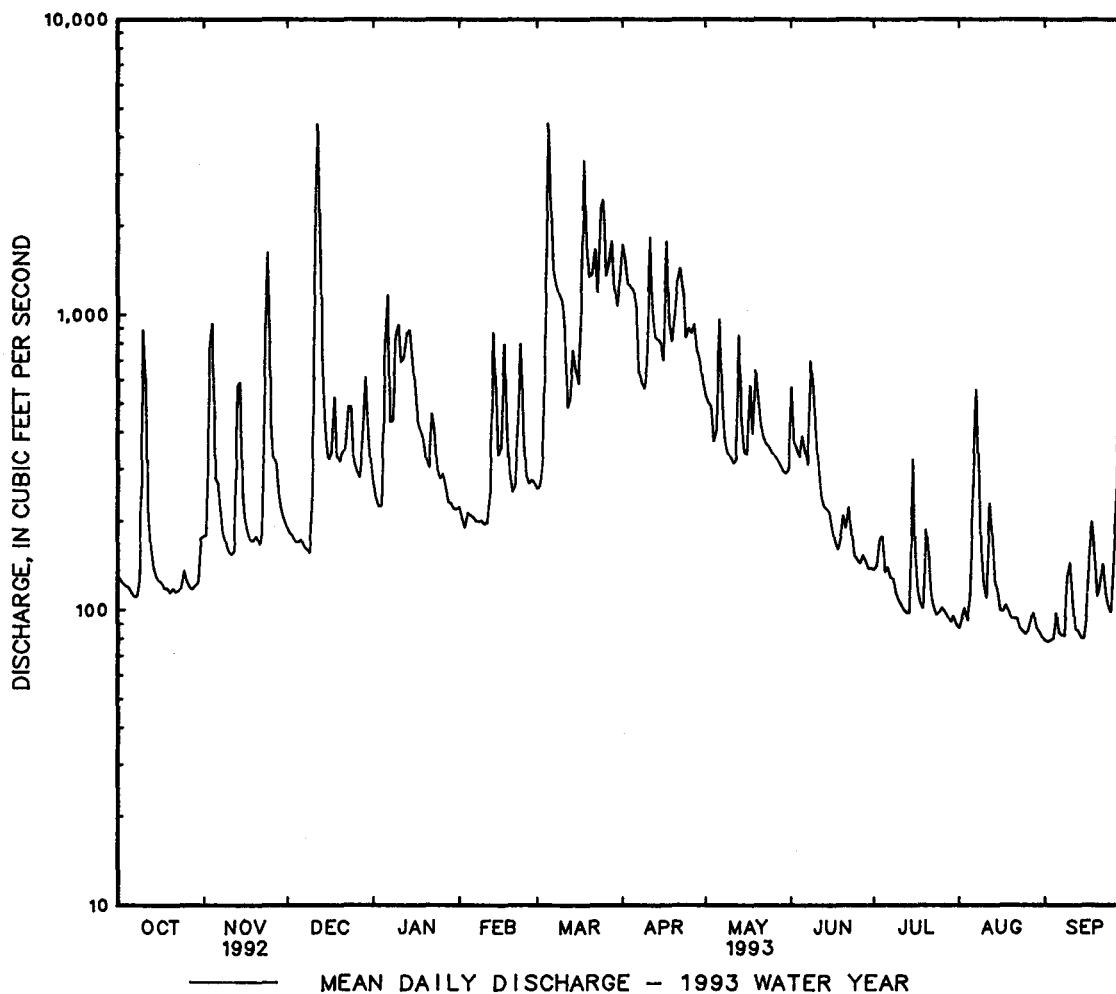
01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1977 - 1993	
ANNUAL TOTAL	98635		162700			
ANNUAL MEAN	269		446		358	
HIGHEST ANNUAL MEAN					637	
LOWEST ANNUAL MEAN					112	
HIGHEST DAILY MEAN	4460	Dec 12	4480	Mar 5	8860	Jan 27 1978
LOWEST DAILY MEAN	92	Jul 20	78	Sep 2	56	(a)
ANNUAL SEVEN-DAY MINIMUM	100	Jul 9	81	Aug 29	57	Sep 15 1986
INSTANTANEOUS PEAK FLOW	4950	Dec 12	5550	Mar 5	(b)31100	Jun 22 1972
INSTANTANEOUS PEAK STAGE	13.16	Dec 12	13.76	Mar 5	(c)27.90	Jun 22 1972
INSTANTANEOUS LOW FLOW	89	Jul 21	73	Sep 1	32	Aug 9 1966
ANNUAL RUNOFF (CFSM)	.77		1.28		1.03	
ANNUAL RUNOFF (INCHES)	10.54		17.39		13.96	
10 PERCENT EXCEEDS	491		1060		751	
50 PERCENT EXCEEDS	181		251		209	
90 PERCENT EXCEEDS	111		98		99	

a Sept. 17-19, 1986.

b On basis of contracted-opening measurement of peak flow.

c From floodmarks.



PATUXENT RIVER BASIN

167

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued
(National stream-quality accounting network station)

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.

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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
NOV 1992										
17...	1015	176	300	7.6	6.0	12.0	--	2.4	10.0	--
23...	1250	869	193	7.5	14.0	26.0	758	--	7.1	69
24...	1140	1790	158	7.3	12.0	18.0	769	--	6.8	63
25...	1150	409	205	7.4	12.0	19.0	769	--	8.1	74
DEC										
11...	1400	2000	320	7.7	6.0	11.0	745	--	9.8	81
12...	1230	4890	150	7.5	5.0	10.0	761	--	10.2	80
13...	1100	1290	181	7.6	6.0	9.0	771	--	10.4	83
30...	1100	411	348	7.5	7.0	16.0	770	--	11.0	90
JAN 1993										
20...	1140	311	262	6.7	3.0	11.0	780	4.5	12.2	89
FEB										
09...	1210	200	322	7.2	3.0	9.0	764	--	13.4	99
MAR										
05...	1330	4960	225	7.4	5.0	16.0	754	--	11.6	92
06...	1230	1800	215	7.3	5.0	10.0	761	--	11.2	88
10...	1110	1110	185	7.3	5.0	12.0	764	6.5	11.1	87
18...	1130	3520	335	7.6	0.0	5.0	778	--	12.8	86
19...	1230	1430	290	7.4	2.0	7.0	784	--	12.5	88
APR										
22...	1200	1290	177	7.4	10.0	13.0	751	--	9.0	81
23...	1100	1210	185	7.3	11.0	17.0	755	--	9.2	84
MAY										
26...	1430	332	225	7.4	20.0	27.0	765	--	7.8	86
JUN										
10...	0930	--	188	7.0	22.0	28.0	762	48	7.1	81
25...	1100	146	290	7.5	21.0	27.0	770	--	6.8	76
JUL										
14...	1000	95	310	7.5	26.0	30.0	759	--	6.5	81
27...	1010	98	325	7.4	24.0	30.0	761	2.9	6.4	76
AUG										
19...	1140	99	225	7.2	24.0	26.0	765	--	6.8	81
SEP										
01...	1510	82	311	7.5	26.0	32.0	762	--	6.4	79
16...	1100	82	300	7.6	23.0	23.0	766	4.0	6.2	72
28...	1130	945	158	6.7	19.0	17.0	768	--	7.1	76

PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS, TOTAL (MG/L AS CaCO3)	CALCIUM, DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY, WAT DIS TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE, WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)
NOV 1992										
17...	K84	78	71	21	4.5	19	4.9	62	76	18
23...	--	--	--	--	--	--	--	40	49	--
24...	--	--	--	--	--	--	--	29	35	--
25...	--	--	--	--	--	--	--	41	50	--
DEC										
11...	--	--	--	--	--	--	--	31	38	--
12...	--	--	--	--	--	--	--	22	27	--
13...	--	--	--	--	--	--	--	28	34	--
30...	--	--	--	--	--	--	--	43	52	--
JAN 1993										
20...	46	35	64	18	4.7	17	3.7	47	57	15
FEB										
09...	--	--	--	--	--	--	--	57	70	--
MAR										
05...	--	--	--	--	--	--	--	19	23	--
06...	--	--	--	--	--	--	--	26	32	--
10...	K90	47	42	11	3.4	13	2.6	26	32	11
18...	--	--	--	--	--	--	--	20	24	--
19...	--	--	--	--	--	--	--	25	30	--
APR										
22...	--	--	--	--	--	--	--	31	38	--
23...	--	--	--	--	--	--	--	31	38	--
MAY										
26...	--	--	--	--	--	--	--	41	50	--
JUN										
10...	4300	3300	48	14	3.2	12	3.9	38	46	12
25...	--	--	--	--	--	--	--	51	62	--
JUL										
14...	--	--	--	--	--	--	--	59	72	--
27...	170	600	68	20	4.4	27	5.7	57	70	20
AUG										
19...	--	--	--	--	--	--	--	55	67	--
SEP										
01...	--	--	--	--	--	--	--	54	66	--
16...	700	2300	68	20	4.3	29	6.0	57	70	22
28...	--	--	--	--	--	--	--	26	32	--

K: Results based on colony count outside the accepted range (non-ideal colony).

PATUXENT RIVER BASIN

169

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 1992										
17...	30	0.30	10	157	6.0	0.140	0.140	1.60	1.50	1.10
23...	--	--	6.9	--	4.6	--	0.070	--	1.10	--
24...	--	--	6.5	--	3.1	--	0.030	--	0.720	--
25...	--	--	9.4	--	4.5	--	0.080	--	1.10	--
DEC										
11...	--	--	5.4	--	3.9	--	0.030	--	0.900	--
12...	--	--	4.5	--	3.4	--	0.020	--	0.790	--
13...	--	--	6.9	--	4.3	--	0.030	--	1.00	--
30...	--	--	9.1	--	5.8	--	0.090	--	1.40	--
JAN 1993										
20...	25	0.20	7.7	125	6.7	--	0.090	--	1.60	--
FEB										
09...	--	--	9.0	--	8.9	--	0.100	--	2.10	--
MAR										
05...	--	--	3.8	--	3.7	--	0.010	--	0.850	--
06...	--	--	5.5	--	5.2	--	0.030	--	1.20	--
10...	24	0.10	4.8	83	6.5	--	0.040	--	1.50	--
18...	--	--	4.0	--	3.2	--	0.010	--	0.730	--
19...	--	--	5.5	--	5.2	--	0.020	--	1.20	--
APR										
22...	--	--	5.9	--	5.2	--	0.020	--	1.20	--
23...	--	--	6.5	--	4.8	--	0.010	--	1.10	--
MAY										
26...	--	--	6.6	--	7.4	--	0.022	--	1.70	--
JUN										
10...	18	0.20	7.4	104	4.8	--	0.020	--	1.10	--
25...	--	--	9.8	--	8.3	--	0.020	--	1.90	--
JUL										
14...	--	--	10	--	7.5	--	0.010	--	1.70	--
27...	34	0.40	10	169	7.9	--	0.020	--	1.80	--
AUG										
19...	--	--	10	--	6.2	--	0.010	--	1.40	--
SEP										
01...	--	--	9.1	--	6.4	--	0.060	--	1.50	--
16...	38	0.50	9.6	177	7.4	--	0.030	--	1.70	--
28...	--	--	5.8	--	4.1	--	0.020	--	0.950	--

PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)
NOV 1992										
17...	1.10	1.5	1.3	0.090	0.020	0.070	0.020	<10	28	<3
23...	0.410	2.2	0.80	0.660	0.060	--	0.050	90	--	--
24...	0.100	0.80	0.60	0.160	0.040	--	0.040	110	--	--
25...	0.280	0.80	0.70	0.140	0.010	--	0.020	30	--	--
DEC										
11...	0.320	0.80	0.80	0.150	0.040	--	0.030	90	--	--
12...	0.150	0.80	0.70	0.240	0.040	--	0.030	140	--	--
13...	0.310	1.3	0.60	0.250	0.050	--	0.020	100	--	--
30...	0.440	0.90	0.70	0.090	0.020	--	0.030	20	--	--
JAN 1993										
20...	0.060	1.4	1.1	0.120	0.050	--	0.050	30	--	--
FEB										
09...	1.40	1.8	1.7	0.080	0.050	--	0.030	40	--	--
MAR										
05...	0.300	1.4	1.0	0.350	0.050	--	0.030	190	--	--
06...	0.350	0.70	0.60	0.140	0.030	--	0.030	130	--	--
10...	0.210	0.60	0.30	0.070	0.020	--	0.010	50	27	<3
18...	0.200	0.80	0.70	0.170	0.020	--	0.020	140	--	--
19...	0.280	0.70	0.50	0.090	0.020	--	0.010	120	--	--
APR										
22...	0.100	0.60	0.50	0.080	0.050	--	0.030	50	--	--
23...	0.060	0.50	0.50	0.060	0.030	--	0.020	100	--	--
MAY										
26...	0.180	0.05	0.08	0.070	0.020	--	0.037	--	--	--
JUN										
10...	0.120	0.50	0.40	0.110	0.040	--	0.020	20	34	<3
25...	0.100	0.40	0.40	0.120	0.060	--	0.060	20	--	--
JUL										
14...	0.080	0.50	0.40	0.310	0.180	--	0.180	--	--	--
27...	0.090	0.50	0.40	0.180	0.090	--	0.090	--	--	--
AUG										
19...	0.070	0.40	0.30	0.200	0.080	--	0.060	--	--	--
SEP										
01...	0.220	--	0.20	--	0.110	--	0.100	--	--	--
16...	0.090	0.40	0.40	0.210	0.140	--	0.140	<10	20	<3
28...	0.090	0.40	0.30	0.100	0.070	--	0.050	--	--	--

171

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

PATUXENT RIVER BASIN

01594440 PATUXENT RIVER NEAR BOWIE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992					
17...	1015	176	5	2.4	100
23...	1250	869	355	833	--
24...	1140	1830	70	346	--
25...	1150	409	36	40	--
DEC					
11...	1400	2000	100	540	--
12...	1230	4890	110	1450	--
13...	1100	1290	45	157	--
30...	1100	411	13	14	--
JAN 1993					
20...	1140	311	7	5.9	100
FEB					
09...	1210	200	6	3.2	--
MAR					
05...	1330	4960	225	3010	--
06...	1230	1800	61	296	--
10...	1110	1110	25	75	87
18...	1130	3520	115	1090	--
19...	1230	1430	36	139	--
APR					
22...	1200	1290	117	408	--
23...	1100	1210	32	105	--
MAY					
26...	1430	332	16	14	--
JUN					
10...	0930	--	86	--	98
25...	1100	146	18	7.1	--
JUL					
14...	1000	95	16	4.1	--
27...	1010	98	20	5.3	97
SEP					
01...	1510	82	9	2.0	--
16...	1100	82	14	3.1	99
28...	1130	945	164	418	--

PATUXENT RIVER BASIN

173

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD

LOCATION.--Lat 38°48'52", long 76°44'53", 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to September 1987, May 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 (questionable gage-height record), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	UNKNOWN	*UNKNOWN	*UNKNOWN	Mar. 18	1415	1,440	10.70

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	40	41	65	50	66	285	86	118	19	7.0	9.2
2	24	54	40	55	43	68	291	80	53	25	9.5	9.1
3	21	251	37	51	44	65	264	76	71	96	24	8.4
4	20	113	34	52	45	442	165	74	55	27	9.9	8.8
5	20	65	36	394	45	e1500	139	108	68	20	8.4	11
6	17	76	31	399	46	467	127	208	59	19	168	8.5
7	17	48	31	131	41	204	114	98	43	27	227	7.9
8	16	38	30	215	42	152	106	76	170	16	89	8.2
9	32	32	29	434	42	125	101	69	84	13	55	14
10	54	30	136	256	42	115	265	64	54	12	41	14
11	49	29	661	145	41	118	488	59	41	10	25	15
12	50	30	717	164	108	96	189	60	35	9.3	50	11
13	31	117	244	192	305	167	140	118	32	8.9	28	9.3
14	23	65	119	142	125	407	121	77	30	18	19	8.7
15	19	45	92	105	77	215	111	60	28	39	16	8.5
16	17	36	76	91	100	191	308	80	27	14	14	11
17	14	33	92	82	112	632	372	129	25	11	14	41
18	14	32	102	72	79	1230	157	121	28	9.4	40	46
19	16	31	76	65	59	416	125	202	24	11	18	28
20	15	29	98	60	55	222	110	120	24	17	14	18
21	20	29	87	60	64	249	116	80	22	11	17	31
22	16	43	71	129	240	245	463	65	27	9.1	12	34
23	14	302	97	94	200	181	204	57	20	8.1	10	22
24	16	208	80	75	100	587	130	53	18	8.1	9.9	18
25	47	85	62	69	73	348	113	49	16	8.5	9.6	16
26	23	85	58	61	70	179	196	45	16	8.6	9.4	47
27	18	102	51	60	75	244	201	42	27	8.5	16	138
28	17	65	117	57	71	702	128	39	18	7.9	38	103
29	16	52	136	55	---	336	105	36	20	7.2	16	36
30	16	44	96	50	---	329	93	33	47	7.0	11	24
31	59	---	76	51	---	199	---	34	---	6.8	9.5	---
TOTAL	761	2209	3653	3931	2394	10497	5727	2498	1300	512.4	1035.2	764.6
MEAN	24.5	73.6	118	127	85.5	339	191	80.6	43.3	16.5	33.4	25.5
MAX	59	302	717	434	305	1500	488	208	170	96	227	138
MIN	14	29	29	50	41	65	93	33	16	6.8	7.0	7.9
CFSM	.27	.82	1.31	1.41	.95	3.77	2.13	.90	.48	.18	.37	.28
IN.	.32	.92	1.51	1.63	.99	4.35	2.38	1.04	.54	.21	.43	.32

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1986	1987	1988	1989
MEAN	30.6	85.9	92.1	93.6	114	154	112	70.9	31.6	33.0	33.8	32.5
MAX	70.5	95.2	146	127	153	339	191	122	45.5	65.0	49.4	56.9
(WY)	1986	1986	1987	1993	1988	1993	1993	1988	1987	1992	1986	1987
MIN	10.9	73.6	38.4	54.5	85.5	76.8	63.6	23.3	9.42	12.3	13.1	9.35
(WY)	1987	1993	1989	1986	1993	1986	1986	1986	1986	1987	1987	1986

PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

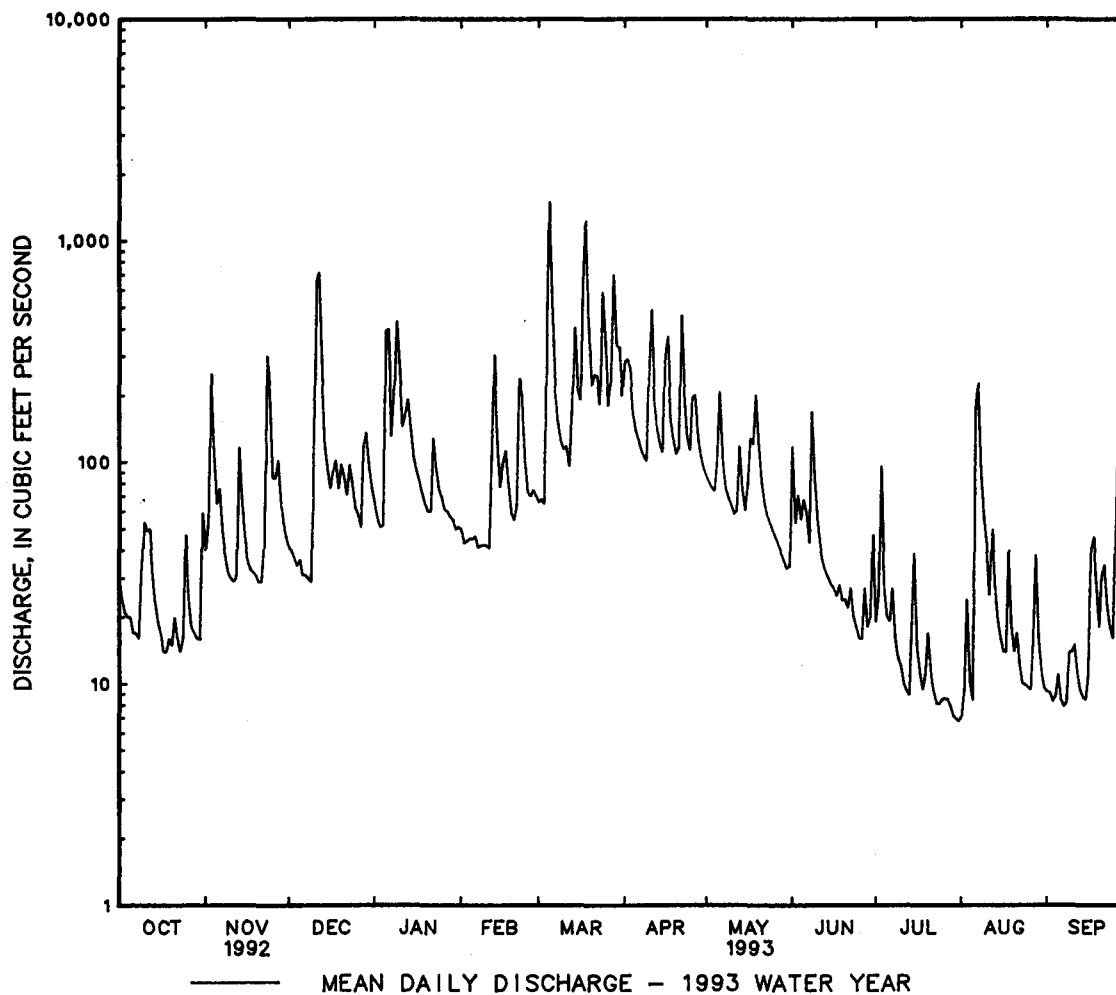
SUMMARY STATISTICS

FOR 1993 WATER YEAR

WATER YEARS 1986 - 1993

ANNUAL TOTAL	35282.2		
ANNUAL MEAN	96.7		75.4
HIGHEST ANNUAL MEAN			96.7
LOWEST ANNUAL MEAN			54.8
HIGHEST DAILY MEAN	e1500	Mar 5	e1500
LOWEST DAILY MEAN	6.8	Jul 31	2.8
ANNUAL SEVEN-DAY MINIMUM	7.6	Jul 26	4.2
INSTANTANEOUS PEAK FLOW	UNKNOWN	Mar 5	UNKNOWN
INSTANTANEOUS PEAK STAGE	UNKNOWN	Mar 5	UNKNOWN
INSTANTANEOUS LOW FLOW	6.6	Jul 31	2.6
ANNUAL RUNOFF (CFSM)	1.08		.84
ANNUAL RUNOFF (INCHES)	14.63		11.42
10 PERCENT EXCEEDS	218		160
50 PERCENT EXCEEDS	52		45
90 PERCENT EXCEEDS	11		9.3

e Estimated.



PATUXENT RIVER BASIN

175

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)
OCT 1991									
09...	0955	--	245	7.5	13.5	17.0	--	10.0	--
23...	0810	--	273	7.4	11.5	9.0	--	9.0	--
28...	0945	--	302	7.0	16.0	17.0	11	--	<10
NOV									
12...	1440	--	319	8.1	8.0	11.0	--	12.0	--
20...	0815	--	315	6.8	9.5	17.0	10	--	<10
DEC									
09...	1055	--	285	7.7	9.5	21.0	--	10.2	--
16...	0900	--	261	6.4	3.5	-7.0	13	--	13
JAN 1992									
22...	1015	--	287	6.3	0.5	-3.0	15	--	33
22...	1125	--	288	7.9	2.0	7.5	--	12.9	--
FEB									
18...	0900	--	383	6.6	6.0	5.5	15	--	11
18...	0905	--	--	--	--	--	15	--	15
20...	1155	--	--	--	--	--	--	--	--
MAR									
09...	1420	--	235	7.3	13.0	21.0	--	9.6	--
11...	0800	--	--	--	--	--	46	--	13
18...	0845	--	259	6.8	7.0	6.0	8.8	--	<10
23...	1135	--	255	7.8	5.5	5.0	--	11.5	--
APR									
06...	1215	--	260	7.8	10.5	17.0	--	11.0	--
20...	0815	45	231	7.1	11.5	9.0	8.2	--	12
20...	0830	45	224	7.0	11.5	9.0	10	--	14
20...	1042	45	236	7.7	12.0	11.5	--	10.1	--
22...	0837	348	--	--	--	--	150	--	20
22...	1130	294	--	--	--	--	80	--	<10
22...	2043	170	--	--	--	--	54	--	15
23...	0653	157	--	--	--	--	79	--	<10
23...	2249	96	--	--	--	--	--	--	23
MAY									
04...	1210	--	261	7.9	17.5	19.0	--	10.0	--
18...	1055	35	227	7.4	19.0	24.5	--	9.4	--
18...	1430	35	220	7.3	19.0	25.0	11	--	11
31...	0328	227	--	--	--	--	78	--	27
31...	0932	487	--	--	--	--	37	--	23
31...	1321	488	--	--	--	--	150	--	22
31...	1808	316	--	--	--	--	89	--	18
JUN									
01...	0310	156	--	--	--	--	57	--	22
15...	0950	19	270	7.8	21.5	28.0	--	10.1	--
29...	0750	12	269	7.3	19.0	24.0	10	--	<10
30...	0915	11	278	7.9	22.5	28.0	--	10.7	--
JUL									
15...	0947	8.3	321	7.7	27.5	34.0	--	9.0	--
25...	0102	163	--	--	--	--	220	--	13
25...	0923	634	--	--	--	--	380	--	22
25...	1305	693	--	--	--	--	240	--	12
25...	1646	656	--	--	--	--	180	--	<10
25...	2030	685	--	--	--	--	150	--	10
26...	0005	701	--	--	--	--	140	--	<10
26...	0342	669	--	--	--	--	140	--	14
28...	0745	66	--	7.0	22.0	21.0	27	--	13
28...	0750	66	--	--	--	--	24	--	12
30...	0910	24	240	7.0	23.5	27.0	--	7.0	--
AUG									
12...	0454	221	--	--	--	--	210	--	26
17...	1035	83	192	7.1	20.0	20.5	--	7.7	--
25...	0930	20	273	7.5	22.0	30.5	9.3	--	<10
31...	1200	15	282	8.7	23.0	31.0	--	12.6	--
SEP									
06...	2200	314	--	--	--	--	130	--	11
15...	0950	22	279	7.6	18.5	21.0	--	9.0	--
29...	1230	76	196	7.0	17.0	--	27	--	--
30...	0920	39	283	7.5	14.0	14.0	--	8.6	--

PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	SILICA, DIS- SOLVED (MG/L AS SIO2)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT 1991										
09...	--	--	9.0	4	0.215	0.005	0.220	0.032	--	--
23...	--	--	10	4	0.217	0.003	0.220	0.029	--	--
28...	3.6	79	14	5	--	<0.002	0.040	0.012	0.45	0.35
NOV										
12...	--	--	12	5	0.106	0.004	0.110	0.011	--	--
20...	0.5	85	11	7	0.057	0.003	0.060	0.012	0.35	0.30
DEC										
09...	--	--	12	5	0.365	0.005	0.370	0.087	--	--
16...	3.7	50	13	5	0.404	0.006	0.410	0.072	0.65	0.45
JAN 1992										
22...	--	51	14	16	0.582	0.008	0.590	0.086	0.30	0.15
22...	--	--	12	15	0.553	0.007	0.560	0.090	--	--
FEB										
18...	4.3	37	9.4	12	0.332	0.008	0.340	0.060	0.40	0.15
18...	3.4	--	9.4	12	0.343	0.007	0.350	0.060	0.40	0.30
20...	--	--	8.9	3	0.323	0.007	0.330	0.045	--	--
MAR										
09...	--	--	10	15	0.351	0.009	0.360	0.052	--	--
11...	--	--	9.2	50	0.310	0.010	0.320	0.076	0.95	0.45
18...	1.4	40	--	2	0.404	0.006	0.410	0.044	0.25	0.15
23...	--	--	10	4	0.453	0.007	0.460	0.047	--	--
APR										
06...	--	--	12	3	0.366	0.004	0.370	0.022	--	--
20...	3.9	44	9.8	8	0.276	0.014	0.290	0.020	0.45	--
20...	4.0	--	9.6	4	0.268	0.012	0.280	0.016	0.45	--
20...	--	--	9.8	4	0.323	0.007	0.330	0.013	--	--
22...	--	--	6.2	240	0.315	0.015	0.330	0.052	--	--
22...	--	--	6.4	142	0.288	0.012	0.300	0.072	--	--
22...	--	--	8.2	154	0.277	0.013	0.290	0.064	--	--
23...	--	--	7.7	114	0.219	0.011	0.230	0.044	--	--
23...	--	--	9.2	32	0.180	0.010	0.190	0.028	--	--
MAY										
04...	--	--	8.3	2	0.085	0.005	0.090	0.020	--	--
11...	--	--	11	8	0.268	0.022	0.290	0.180	--	--
18...	--	50	12	6	0.261	0.029	0.290	0.064	0.45	0.40
31...	--	--	6.8	132	0.352	0.018	0.370	0.084	1.2	0.55
31...	--	--	14	650	0.315	0.015	0.330	0.092	2.9	0.45
31...	--	--	6.0	355	0.324	0.016	0.340	0.112	1.5	0.50
31...	--	--	7.7	220	0.315	0.015	0.330	0.112	1.2	0.55
JUN										
01...	--	--	8.6	114	0.237	0.013	0.250	0.088	1.2	0.50
15...	--	--	13	<2	0.295	0.015	0.310	0.036	--	--
29...	0.6	74	12	4	0.162	0.008	0.170	0.020	0.30	0.30
30...	--	--	10	4	0.172	0.008	0.180	0.024	--	--
JUL										
15...	--	--	13	4	0.213	0.007	0.220	0.047	--	--
25...	--	--	7.1	315	0.352	0.018	0.370	0.076	1.1	0.35
25...	--	--	5.5	540	0.347	0.013	0.360	0.132	1.5	0.45
25...	--	--	5.5	320	0.335	0.015	0.350	0.140	1.2	0.45
25...	--	--	6.2	104	0.375	0.015	0.390	0.152	1.0	0.45
25...	--	--	6.3	176	0.336	0.014	0.350	0.128	1.1	0.45
26...	--	--	5.6	136	0.308	0.012	0.320	0.104	0.95	0.60
26...	--	--	5.6	154	0.278	0.012	0.290	0.092	0.85	0.40
28...	0.5	41	11	28	0.209	0.011	0.220	0.060	0.60	0.35
28...	0.5	--	11	28	0.219	0.011	0.230	0.056	0.60	0.30
30...	--	--	12	7	0.238	0.012	0.250	0.061	--	--
AUG										
12...	--	--	5.7	85	0.465	0.025	0.490	0.060	1.6	0.45
17...	--	--	11	15	0.253	0.007	0.260	0.052	--	--
25...	0.5	72	11	7	0.279	0.011	0.290	0.020	0.25	0.15
31...	--	--	8.4	4	0.295	0.005	0.300	0.005	--	--
SEP										
06...	--	--	6.2	266	0.252	0.008	0.260	0.052	1.7	0.60
15...	--	--	11	2	0.635	0.005	0.640	0.033	--	--
29...	0.9	49	--	29	--	--	--	--	0.85	--
30...	--	--	11	7	0.334	0.006	0.340	0.042	--	--

PATUXENT RIVER BASIN

177

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L)
OCT 1991										
09...	0.81	0.070	0.040	0.027	5.5	4.9	--	0.001	<0.001	<0.001
23...	0.80	0.060	0.030	0.016	6.4	5.6	--	0.001	<0.001	<0.001
28...	0.49	0.080	0.020	0.008	4.7	4.5	--	1.60	<0.001	<0.001
NOV										
12...	0.46	0.060	0.030	0.014	5.0	4.0	0.800	2.20	0.800	2.80
20...	0.41	0.040	0.040	0.008	3.9	3.6	--	2.40	<0.001	<0.001
DEC										
09...	0.97	0.060	0.020	0.010	6.0	5.3	0.600	1.80	0.800	2.40
16...	1.1	0.040	0.020	0.052	4.4	4.3	--	--	--	--
JAN 1992										
22...	0.89	0.070	0.020	<0.004	3.1	3.1	0.600	1.80	0.200	0.200
22...	1.2	0.070	0.010	0.005	4.0	2.8	1.40	2.40	0.200	0.200
FEB										
18...	0.74	0.040	<0.010	0.004	5.4	5.0	0.800	0.003	0.200	0.600
18...	0.75	0.050	<0.010	<0.004	5.2	4.7	--	--	--	--
20...	0.75	0.050	0.020	0.013	5.1	4.0	--	2.20	<0.001	<0.001
MAR										
09...	0.91	0.080	0.020	0.015	5.8	4.6	0.400	2.20	<0.001	<0.001
11...	1.3	0.220	0.060	0.016	6.6	5.3	--	--	--	--
18...	0.66	0.070	0.020	<0.004	3.4	3.5	--	1.80	<0.001	0.400
23...	1.1	0.050	0.020	0.010	4.6	3.7	--	1.60	<0.001	<0.001
APR										
06...	0.74	0.050	0.020	0.013	4.0	3.4	--	1.80	<0.001	<0.001
20...	0.74	0.050	--	0.006	--	--	0.800	4.40	0.400	0.600
20...	0.73	0.050	--	<0.004	--	--	--	--	--	--
20...	0.78	0.040	0.020	0.011	5.3	4.5	<0.001	4.40	<0.001	0.001
22...	--	2.30	1.00	0.006	--	--	--	--	--	--
22...	--	1.30	1.30	0.006	--	--	--	--	--	--
22...	--	1.50	1.30	0.012	--	--	--	--	--	--
23...	--	1.30	0.800	0.008	--	--	--	--	--	--
23...	--	1.20	1.10	0.014	--	--	--	--	--	--
MAY										
04...	0.50	0.050	0.030	0.017	5.6	5.0	<0.001	3.40	<0.001	<0.001
18...	0.81	0.070	0.040	0.025	6.1	5.5	<0.001	2.80	<0.001	0.200
18...	0.74	0.080	0.030	0.016	5.4	5.2	--	2.80	<0.001	0.600
31...	1.6	0.700	0.030	0.024	8.4	8.1	--	--	--	--
31...	3.2	1.60	0.020	0.016	13	7.4	--	--	--	--
31...	1.8	0.600	0.020	0.014	10	7.6	--	--	--	--
31...	1.5	0.400	0.030	0.020	11	8.0	--	--	--	--
JUN										
01...	1.5	0.420	0.040	0.022	8.0	--	--	--	--	--
15...	0.86	0.060	0.030	0.020	5.6	4.8	--	1.40	<0.001	<0.001
29...	0.47	0.050	0.010	0.010	8.5	4.4	0.600	0.003	0.400	0.400
30...	0.56	0.050	0.030	0.020	4.9	4.4	0.400	2.60	<0.001	<0.001
JUL										
15...	0.75	0.060	0.030	0.022	6.8	6.2	<0.001	2.40	<0.001	<0.001
25...	1.5	0.400	0.020	0.022	9.6	6.5	--	--	--	--
25...	1.9	1.10	0.020	0.018	13	5.9	--	--	--	--
25...	1.6	0.500	0.020	0.016	9.9	6.6	--	--	--	--
25...	1.4	0.390	0.020	0.016	10	7.0	--	--	--	--
25...	1.4	0.370	0.020	0.022	8.7	--	--	--	--	--
26...	1.3	0.320	0.020	0.022	9.5	7.4	--	--	--	--
26...	1.1	0.260	0.020	0.020	8.8	7.5	--	--	--	--
28...	0.82	0.140	0.010	0.018	6.8	--	0.600	4.60	0.600	0.200
28...	0.83	0.140	0.010	0.014	6.8	7.1	--	--	--	--
30...	0.83	0.100	0.050	0.025	6.8	6.1	--	2.20	<0.001	<0.001
AUG										
12...	2.1	0.900	0.040	0.012	9.8	6.8	--	--	--	--
17...	0.89	0.110	0.060	0.033	7.2	6.0	<0.001	3.60	<0.001	0.200
25...	0.54	0.070	--	0.006	4.2	4.4	0.600	0.003	0.200	0.600
31...	0.76	0.060	0.030	0.027	5.4	4.7	<0.001	10.4	<0.001	1.20
SEP										
06...	2.0	0.800	0.030	0.048	11	10	--	--	--	--
15...	0.98	0.060	0.040	0.005	6.0	5.4	0.400	2.60	<0.001	<0.001
29...	0.85	0.200	--	--	7.7	--	0.001	4.20	0.200	<0.001
30...	0.86	0.100	0.050	0.027	6.4	5.5	0.400	1.40	0.200	<0.001

PATUXENT RIVER BASIN

01594526 WESTERN BRANCH AT UPPER MARLBORO, MD--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 1991				
28...	0945	--	9	--
NOV				
20...	0815	--	20	--
DEC				
16...	0900	--	12	--
JAN 1992				
22...	1015	--	11	--
FEB				
18...	0900	--	13	--
MAR				
11...	0800	--	54	--
18...	0845	--	12	--
APR				
20...	0815	45	7	0.86
20...	0830	45	11	1.3
22...	0837	348	295	277
22...	1130	294	132	105
22...	2043	170	100	46
23...	0653	157	149	63
23...	2249	96	45	12
MAY				
09...	0200	307	362	300
09...	1208	137	162	60
10...	0702	77	42	8.7
18...	1430	35	6	0.56
31...	0328	227	141	87
31...	0932	487	482	634
31...	1321	488	291	384
31...	1808	316	160	137
JUN				
01...	0310	156	114	48
05...	1806	417	339	382
06...	0001	252	170	116
06...	1025	148	100	40
29...	0750	12	4	0.13
JUL				
25...	0102	163	361	159
25...	0923	634	635	1090
25...	1305	693	392	733
25...	1646	656	253	448
25...	2030	685	212	392
26...	0005	701	199	377
26...	0342	669	176	318
28...	0745	66	27	4.8
AUG				
12...	0454	221	373	222
25...	0930	20	6	0.32
SEP				
06...	2200	314	412	349
26...	0546	486	433	568
26...	1530	209	237	134
29...	1230	76	23	4.7

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 mi².

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 5.0 ft³/s and poor below except those for estimated daily discharges (control leak), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1630	*328	*8.51	No other peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	7.9	6.6	11	9.9	12	30	19	18	1.5	.00	.00
2	6.4	8.9	6.6	9.7	8.3	13	52	18	8.8	2.4	.00	.00
3	5.4	19	6.2	9.6	8.8	12	33	18	18	5.0	.00	.00
4	5.5	13	5.7	9.6	9.9	147	27	17	12	2.9	.00	.00
5	8.6	10	5.7	12	9.4	71	26	22	13	2.0	.00	.00
6	5.2	13	5.4	13	9.7	42	25	29	9.1	1.5	26	.00
7	4.1	8.4	5.5	10	8.8	30	24	18	7.4	1.2	29	16
8	3.8	7.0	5.5	17	9.4	27	23	20	13	.91	6.0	17
9	12	6.6	5.5	23	8.7	24	22	16	9.2	.68	3.3	4.1
10	12	6.3	17	21	8.6	23	29	15	7.2	.48	1.6	1.9
11	6.9	6.4	56	17	8.7	22	31	14	6.0	.25	1.1	1.1
12	6.2	6.6	39	17	16	20	23	15	5.4	.01	.79	.59
13	5.2	9.1	18	17	28	81	21	26	5.1	.32	.66	.39
14	4.1	7.1	16	15	14	95	20	19	4.9	.32	.52	.27
15	3.7	6.0	14	14	11	36	20	15	4.7	.61	.37	.22
16	3.4	5.7	12	14	14	34	46	13	4.7	.46	.27	.28
17	2.8	5.8	12	13	17	74	46	19	3.9	.04	.31	.66
18	2.6	5.8	13	12	13	76	27	19	3.5	.00	.45	1.7
19	2.7	5.8	12	12	10	43	25	32	3.1	.32	.30	3.0
20	2.5	5.7	11	11	11	38	23	20	3.9	4.8	.26	1.7
21	2.5	5.7	12	12	14	35	25	15	3.9	1.6	.27	3.4
22	2.7	7.4	12	16	23	32	38	13	3.4	.67	.18	3.5
23	2.7	8.5	12	13	15	30	25	12	2.6	.30	.14	2.1
24	3.2	6.9	12	12	12	41	22	12	2.1	.02	.16	1.2
25	6.3	9.2	9.8	12	11	31	22	10	1.9	.00	.16	e1.7
26	4.2	12	9.8	10	12	28	28	10	1.7	.00	.04	e2.5
27	3.3	11	9.5	11	13	36	28	9.5	1.7	.00	.00	e3.7
28	3.3	7.7	10	10	12	47	21	8.6	1.5	.07	.00	e5.0
29	3.4	7.0	13	10	---	32	21	8.0	1.5	.26	.00	e1.5
30	3.8	6.8	13	9.5	---	31	20	7.3	1.4	.19	.00	e1.0
31	10	---	12	10	---	27	---	9.5	---	.10	.00	---
TOTAL	156.0	246.3	397.8	403.4	346.2	1290	823	498.9	182.6	28.91	71.88	74.51
MEAN	5.03	8.21	12.8	13.0	12.4	41.6	27.4	16.1	6.09	.93	2.32	2.48
MAX	12	19	56	23	28	147	52	32	18	5.0	29	17
MIN	2.5	5.7	5.4	9.5	8.3	12	20	7.3	1.4	.00	.00	.00
CFSM	.54	.88	1.37	1.39	1.32	4.44	2.92	1.72	.65	.10	.25	.26
IN.	.62	.98	1.58	1.60	1.37	5.12	3.26	1.98	.72	.11	.29	.30

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1993, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993
MEAN	4.55	6.17	8.06	11.5	9.75
MAX	10.3	11.4	12.8	18.6	14.8
(WY)	1990	1990	1993	1990	1993
MIN	.52	1.43	3.80	4.77	5.54
(WY)	1989	1992	1989	1992	1990

PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1989 - 1993

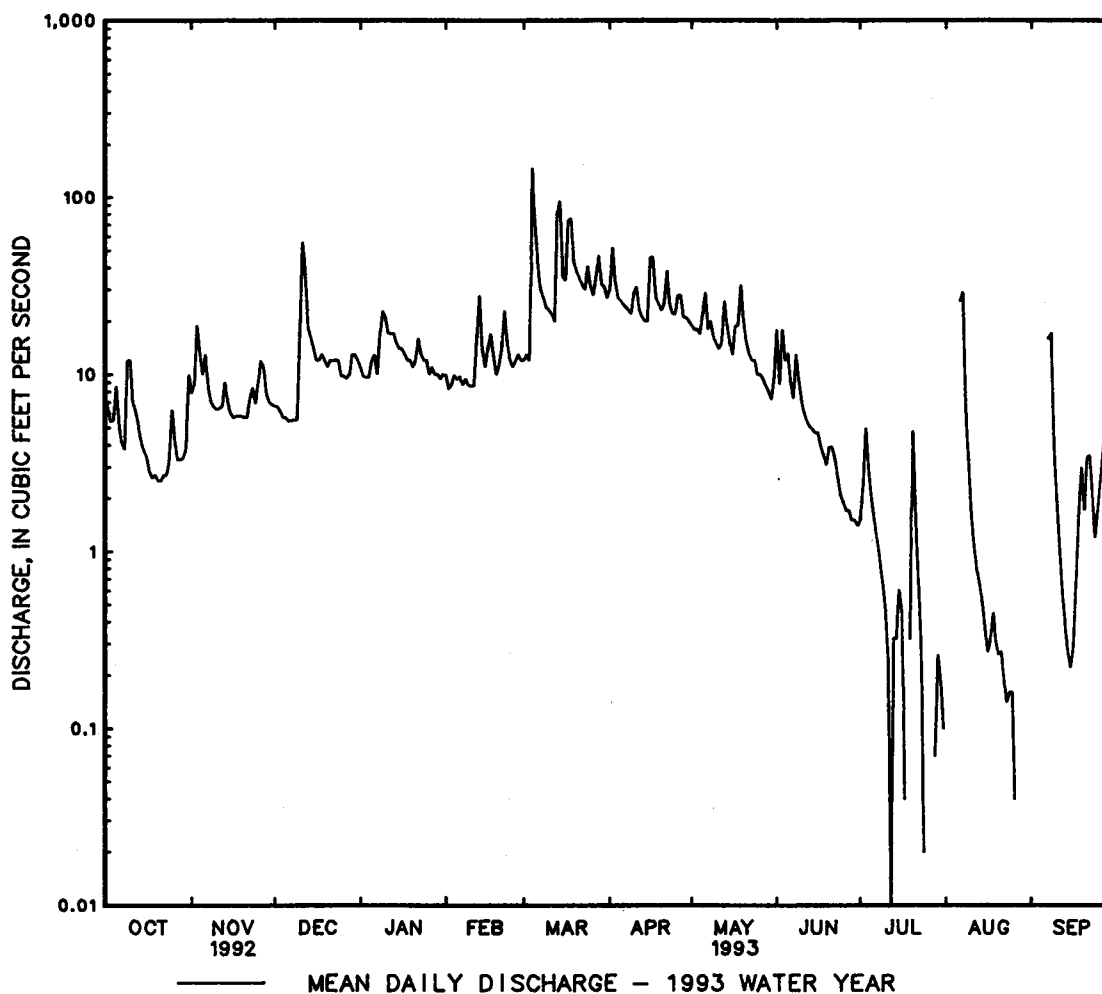
ANNUAL TOTAL	2560.57	4519.50		
ANNUAL MEAN	7.00	12.4	10.5	
HIGHEST ANNUAL MEAN			14.7	1990
LOWEST ANNUAL MEAN			5.79	1992
HIGHEST DAILY MEAN	74 Sep 29	147 Mar 4	221 Jun 15 1990	
LOWEST DAILY MEAN	.36 Jul 20	.00 (a)	.00 (b)	
ANNUAL SEVEN-DAY MINIMUM	.81 Aug 30	.00 Aug 27	.00 Aug 27 1993	
INSTANTANEOUS PEAK FLOW	125 Sep 29	328 Mar 4	568 Jun 15 1990	
INSTANTANEOUS PEAK STAGE	7.18 Sep 29	8.51 Mar 4	9.54 Jun 15 1990	
INSTANTANEOUS LOW FLOW	.29 Jul 21	.00 (c)	.00 (d)	
ANNUAL RUNOFF (CFSM)	.75	1.32	1.12	
ANNUAL RUNOFF (INCHES)	10.15	17.92	15.25	
10 PERCENT EXCEEDS	13	28	22	
50 PERCENT EXCEEDS	5.7	9.2	7.3	
90 PERCENT EXCEEDS	1.3	.27	.70	

a July 18, 25-27, Aug. 1-5, 27-31, Sept. 1-6.

b Sept. 12, 16, 17, 19-23, 1991.

c July 12, 13, 17-19, 24-31, Aug. 1-6, 26-31, Sept. 1-7.

d Sept. 10-24, 1991.



01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	TUR- BID- ITY (NTU)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
OCT 1991									
28...	1435	0.72	188	6.0	16.0	19.5	12	13	1.6
NOV									
20...	1415	1.0	180	6.4	12.5	24.0	8.7	16	0.7
20...	1420	1.0	180	6.4	12.5	24.0	8.8	11	1.0
DEC									
04...	1040	46	--	--	--	--	31	20	--
16...	1600	2.3	159	6.4	3.0	0.0	6.6	13	5.2
JAN 1992									
22...	1220	2.3	163	6.0	2.0	5.5	5.7	26	--
FEB									
18...	1100	4.7	153	6.6	6.0	6.0	7.4	11	1.3
MAR									
18...	1020	5.0	140	6.1	7.0	5.0	4.8	11	1.4
27...	0710	79	--	--	--	--	37	12	--
27...	1015	63	--	--	--	--	36	24	--
APR									
20...	1410	4.9	140	7.0	15.0	20.0	6.0	11	1.5
MAY									
18...	0915	4.1	146	6.6	17.0	20.0	9.0	10	--
18...	0920	4.1	--	--	--	--	8.2	15	--
31...	0830	30	--	--	--	--	21	21	--
JUN									
29...	1215	1.4	154	6.6	--	28.5	15	11	1.3
JUL									
28...	1245	11	107	6.4	23.5	25.0	21	<10	0.5
AUG									
15...	1421	34	--	--	--	--	--	<10	--
16...	0748	13	--	--	--	--	--	--	--
25...	1330	1.3	162	6.6	22.5	29.0	4.6	12	0.5
SEP									
06...	2400	36	--	--	--	--	68	12	--
28...	2130	34	--	--	--	--	51	--	--
29...	0018	84	--	--	--	--	75	--	--
29...	0230	110	--	--	--	--	64	--	--
29...	0430	120	--	--	--	--	48	--	--
29...	0642	122	--	--	--	--	41	--	--
29...	1642	39	--	--	--	--	28	--	--

PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	ALKA- LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SILICA, DIS- SOLVED (MG/L AS SIO2)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT 1991										
28...	22	18	4	--	<0.002	0.020	0.060	0.55	0.40	0.57
NOV										
20...	32	17	5	0.028	0.002	0.030	0.140	0.50	0.45	0.53
20...	32	17	7	0.018	0.002	0.020	0.152	0.50	0.50	0.52
DEC										
04...	--	10	24	0.107	0.003	0.110	0.024	0.60	0.55	0.71
16...	27	16	<1	0.058	0.002	0.060	0.072	0.45	0.40	0.51
JAN 1992										
22...	33	14	4	0.115	0.005	0.120	0.120	0.20	0.15	0.32
FEB										
18...	28	10	8	0.078	0.002	0.080	0.024	0.25	0.15	0.33
MAR										
18...	28	--	3	0.066	0.004	0.070	0.016	0.20	0.10	0.27
27...	--	9.0	27	0.117	0.003	0.120	0.016	0.35	<0.10	0.47
27...	--	8.7	20	0.078	0.002	0.080	0.024	0.40	--	0.48
APR										
20...	38	12	3	0.025	0.005	0.030	0.028	0.35	--	0.38
MAY										
18...	45	16	5	0.072	0.008	0.080	0.048	0.40	0.40	0.48
18...	--	--	2	0.081	0.009	0.090	0.044	0.40	0.40	0.49
31...	--	10	25	0.074	0.006	0.080	0.016	0.50	--	0.58
JUN										
29...	54	16	4	0.026	0.004	0.030	0.048	0.45	0.25	0.48
JUL										
28...	27	15	18	0.018	0.002	0.020	0.024	0.50	0.25	0.52
AUG										
15...	--	11	--	0.026	0.004	0.030	0.012	--	--	--
16...	--	13	--	0.026	0.004	0.030	0.012	--	--	--
25...	59	17	7	--	<0.002	<0.020	0.044	0.35	0.40	0.35
SEP										
06...	--	12	38	0.036	0.004	0.040	0.020	0.90	0.50	0.94
28...	--	--	29	--	--	--	--	0.75	--	0.75
29...	--	--	46	--	--	--	--	0.70	--	0.70
29...	--	--	62	--	--	--	--	0.70	--	0.70
29...	--	--	22	--	--	--	--	0.60	--	0.60
29...	--	--	6	--	--	--	--	0.80	--	0.80
29...	--	--	27	--	--	--	--	--	--	--

PATUXENT RIVER BASIN

183

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L)
OCT 1991									
28...	0.080	0.010	0.010	6.2	5.6	--	--	--	--
NOV									
20...	0.050	0.010	<0.004	5.3	5.1	--	0.002	<0.001	<0.001
20...	0.040	<0.001	<0.004	5.3	5.2	--	--	--	--
DEC									
04...	0.150	0.040	0.026	12	10	--	--	--	--
16...	0.010	0.010	0.008	4.3	4.2	--	1.60	<0.001	<0.001
JAN 1992									
22...	0.030	0.010	0.008	3.4	3.3	<0.001	1.60	0.200	0.200
FEB									
18...	0.020	<0.010	0.004	4.1	3.8	--	9.80	0.200	1.40
MAR									
18...	0.040	0.020	<0.004	3.7	4.0	--	4.20	0.200	0.001
27...	0.110	0.010	0.008	7.7	6.9	--	--	--	--
27...	0.100	--	0.008	8.0	--	--	--	--	--
APR									
20...	0.410	--	<0.004	--	--	<0.001	0.002	0.200	0.200
MAY									
18...	0.060	<0.001	0.004	5.6	--	0.200	2.80	0.200	0.400
18...	0.050	0.020	0.012	5.7	5.4	--	--	--	--
31...	0.110	--	0.014	9.0	9.0	--	--	--	--
JUN									
29...	0.080	0.010	0.006	7.0	6.6	--	0.001	<0.001	<0.001
JUL									
28...	0.110	<0.010	0.016	7.5	6.5	--	2.20	0.200	0.200
AUG									
15...	--	0.010	0.006	9.2	7.4	--	--	--	--
16...	--	0.050	0.012	8.5	7.6	--	--	--	--
25...	0.070	0.040	0.028	7.8	7.3	0.200	0.001	<0.001	<0.001
SEP									
06...	0.290	0.010	0.016	10	8.0	--	--	--	--
28...	0.230	--	--	8.6	7.5	--	--	--	--
29...	0.230	--	--	9.2	--	--	--	--	--
29...	0.160	--	--	9.3	8.1	--	--	--	--
29...	0.130	--	--	9.0	--	--	--	--	--
29...	0.140	--	--	8.8	--	--	--	--	--
29...	--	--	--	8.3	8.0	--	--	--	--

PATUXENT RIVER BASIN

01594670 HUNTING CREEK NEAR HUNTINGTOWN, MD

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 1991				
28...	1435	0.72	9	0.02
NOV				
20...	1415	1.0	6	0.02
DEC				
04...	1040	46	45	5.5
16...	1600	2.3	1	0.01
JAN 1992				
22...	1220	2.3	2	0.01
FEB				
18...	1100	4.7	9	0.11
MAR				
18...	1020	5.0	2	0.03
27...	0710	79	24	5.1
27...	1015	63	25	4.2
APR				
20...	1410	4.9	3	0.04
MAY				
18...	0915	4.1	16	0.18
31...	0830	30	27	2.2
JUN				
29...	1215	1.4	10	0.04
JUL				
28...	1245	11	13	0.40
AUG				
15...	1421	34	31	2.9
16...	0748	13	16	0.58
25...	1330	1.3	10	0.03
SEP				
06...	2400	36	71	6.9
26...	0430	28	32	2.4
26...	1148	27	31	2.3
28...	2130	34	91	8.4
29...	0018	84	92	21
29...	0230	110	66	20
29...	0430	120	42	14
29...	0642	122	35	11
29...	1642	39	21	2.2

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.--3.54 mi².

WATER-DISCHARGE RECORDS

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

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

REMARKS.--No estimated daily discharges. Water-discharge records good.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1545	*226	*5.22	Apr. 16	1530	113	4.01
Mar. 13	1845	147	4.41	Aug. 6	1230	107	3.94
Mar. 17	1615	105	3.90				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.4	2.9	4.3	2.4	4.2	8.7	6.0	4.9	1.9	.94	.88
2	3.3	4.0	2.9	4.1	2.1	4.2	8.9	5.8	3.5	2.1	.89	.83
3	3.0	9.9	2.7	3.9	2.2	4.2	8.4	5.8	5.3	2.2	.96	.78
4	3.7	4.1	2.6	3.9	4.7	86	7.2	5.8	4.1	1.9	.91	1.4
5	4.7	6.2	2.7	8.6	4.5	16	7.1	12	4.9	1.8	.93	1.5
6	3.3	5.4	2.6	4.7	3.1	10	6.8	10	3.7	1.8	23	.96
7	3.0	3.8	2.6	4.4	3.1	8.0	6.8	6.1	3.2	1.7	3.6	1.2
8	2.9	3.5	2.5	11	3.4	7.1	6.4	5.6	5.8	1.6	2.4	1.2
9	5.2	3.4	2.4	18	3.4	6.4	6.1	5.3	3.8	1.6	2.0	1.1
10	3.6	3.2	16	6.3	3.4	6.2	8.7	5.1	3.2	1.5	1.6	.95
11	3.9	3.1	20	5.0	3.4	6.1	7.9	4.9	2.6	1.5	1.6	.83
12	3.6	3.4	10	5.7	9.8	5.9	6.7	6.4	2.4	1.4	1.6	.79
13	2.8	4.0	5.8	4.9	6.8	40	6.4	6.4	2.5	1.5	1.5	.74
14	2.6	2.9	5.0	3.8	5.1	14	6.5	5.3	2.4	1.4	1.4	.79
15	2.6	3.0	4.4	3.5	4.5	10	6.1	4.5	2.3	1.5	1.4	.78
16	2.4	2.9	4.2	3.1	6.3	12	21	5.1	2.2	1.3	1.3	1.1
17	2.2	2.7	5.2	3.1	5.2	32	8.5	5.4	2.1	1.2	1.4	1.3
18	2.2	2.6	4.9	2.9	4.3	13	7.1	7.5	2.0	1.2	1.4	2.1
19	2.2	2.6	4.2	2.7	4.1	10	6.6	10	2.0	1.4	1.3	1.4
20	2.2	2.6	8.2	2.6	3.9	9.4	6.1	6.0	2.2	1.6	1.3	1.1
21	2.2	2.6	4.9	2.9	8.4	9.3	8.4	5.2	2.0	1.2	1.2	1.9
22	2.2	4.6	4.4	4.5	8.0	8.6	9.7	4.6	2.0	1.1	1.1	1.7
23	2.2	3.9	4.9	2.9	5.4	7.8	6.5	4.3	2.1	1.1	1.1	1.3
24	2.7	3.2	4.2	2.9	4.6	12	6.0	4.1	2.0	1.1	1.1	1.2
25	3.1	5.4	3.9	2.8	4.1	8.1	6.0	3.8	1.9	1.2	1.0	1.7
26	2.4	6.5	3.9	2.6	4.2	7.1	10	3.8	1.9	1.2	1.0	2.1
27	2.4	4.5	3.7	2.6	4.3	11	7.4	3.7	2.1	1.1	.99	3.3
28	2.3	3.6	7.3	2.5	4.2	9.5	6.3	3.4	1.8	.94	.93	1.8
29	2.2	3.3	5.3	2.4	---	8.9	6.1	3.2	1.7	1.1	.90	1.2
30	2.3	3.0	4.8	2.4	---	9.6	6.1	3.1	1.7	.90	.87	1.5
31	5.4	---	4.5	2.4	---	7.6	---	4.9	---	.92	.86	---
TOTAL	92.5	117.3	163.6	137.4	128.9	404.2	230.5	173.1	84.3	43.96	62.48	39.43
MEAN	2.98	3.91	5.28	4.43	4.60	13.0	7.68	5.58	2.81	1.42	2.02	1.31
MAX	5.4	9.9	20	18	9.8	86	21	12	5.8	2.2	23	3.3
MIN	2.2	2.6	2.4	2.4	2.1	4.2	6.0	3.1	1.7	.90	.86	.74
CFSM	.84	1.10	1.49	1.25	1.30	3.68	2.17	1.58	.79	.40	.57	.37
IN.	.97	1.23	1.72	1.44	1.35	4.25	2.42	1.82	.89	.46	.66	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	2.35	3.23	3.78	4.47	4.60	6.14	5.16	4.79
MAX	4.83	7.20	5.92	6.60	7.45	13.0	7.68	9.43
(WY)	1990	1986	1987	1990	1987	1993	1993	1990
MIN	.83	.94	2.09	2.45	2.27	3.90	2.97	1.93
(WY)	1989	1992	1989	1992	1992	1988	1992	1986

PATUXENT RIVER BASIN

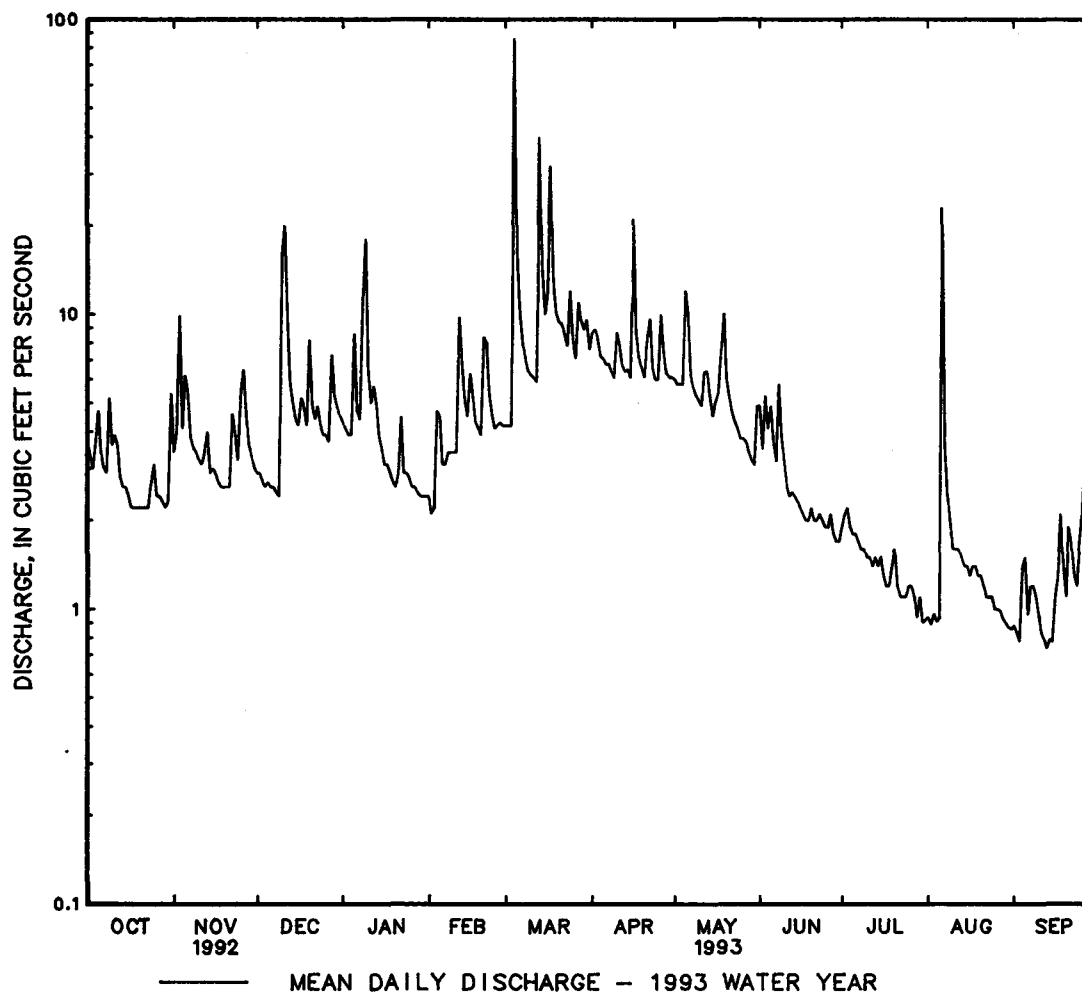
01594710 KILLPECK CREEK AT HUNTERVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1986 - 1993	
ANNUAL TOTAL	1283.14		1677.67			
ANNUAL MEAN	3.51		4.60		3.70	
HIGHEST ANNUAL MEAN					5.33	1990
LOWEST ANNUAL MEAN					2.43	1988
HIGHEST DAILY MEAN	50	Sep 6	86	Mar 4	86	Mar 4 1993
LOWEST DAILY MEAN	.94	Jul 20	.74	Sep 13	.27	Sep 12 1991
ANNUAL SEVEN-DAY MINIMUM	1.1	Jun 17	.85	Sep 9	.31	Sep 9 1991
INSTANTANEOUS PEAK FLOW	195	Sep 6	226	Mar 4	255	May 29 1990
INSTANTANEOUS PEAK STAGE	4.90	Sep 6	5.22	Mar 4	5.50	May 29 1990
INSTANTANEOUS LOW FLOW	.88	(a)	.66	(b)	.16	(c)
ANNUAL RUNOFF (CFSM)	.99		1.30		1.04	
ANNUAL RUNOFF (INCHES)	13.48		17.63		14.19	
10 PERCENT EXCEEDS	5.4		8.5		6.7	
50 PERCENT EXCEEDS	2.6		3.4		2.8	
90 PERCENT EXCEEDS	1.3		1.2		.76	

a Feb. 10, June 23, 24, July 19-21, Sept. 1, 2.

b Sept. 3, 4, 13-16.

c Aug. 6, Sept. 18, 1991.



01594710 KILLPECK CREEK AT HUNTERSVILLE, MD--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	TUR- BID- ITY (NTU)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
OCT 1991									
17...	1033	18	--	--	--	--	230	23	--
17...	1310	36	--	--	--	--	260	31	--
17...	1545	27	--	--	--	--	120	30	--
17...	2143	6.8	--	--	--	--	48	33	--
28...	1140	0.76	185	6.4	16.0	19.0	2.8	17	3.3
NOV									
20...	1030	0.88	196	6.5	11.0	19.5	2.5	<10	1.0
DEC									
02...	2130	16	--	--	--	--	96	--	--
03...	1456	52	--	--	--	--	350	22	--
03...	1702	56	--	--	--	--	250	28	--
03...	1950	61	--	--	--	--	220	29	--
03...	2200	52	--	--	--	--	140	35	--
04...	0415	11	--	--	--	--	61	19	--
09...	2236	8.6	--	--	--	--	71	<10	--
10...	0630	8.3	--	--	--	--	47	18	--
16...	1115	1.3	191	6.8	3.5	1.0	5.6	<10	3.2
16...	1120	1.3	--	--	--	--	5.8	<10	3.2
JAN 1992									
04...	1445	31	--	--	--	--	290	--	--
04...	2100	12	--	--	--	--	73	--	--
22...	1500	1.6	172	6.0	3.5	6.5	5.5	<10	--
FEB									
18...	1400	2.4	158	6.4	6.0	10.5	7.0	13	0.9
26...	0748	11	--	--	--	--	83	28	--
26...	2118	7.2	--	--	--	--	41	13	--
MAR									
18...	1400	2.9	154	6.4	7.0	4.5	7.7	<10	1.4
26...	1935	39	--	--	--	--	210	31	--
26...	2158	64	--	--	--	--	160	19	--
27...	0052	31	--	--	--	--	170	19	--
APR									
20...	1100	2.4	154	6.8	12.0	12.5	5.4	<10	3.1
20...	1110	2.4	154	6.8	12.0	12.5	4.2	11	1.4
MAY									
18...	1220	1.6	--	6.7	17.5	25.0	4.4	11	--
30...	2000	11	--	--	--	--	130	15	--
31...	0715	10	--	--	--	--	47	27	--
JUN									
24...	1818	115	--	--	--	--	3600	--	--
24...	1924	120	--	--	--	--	400	26	--
24...	2012	163	--	--	--	--	280	25	--
24...	2212	27	--	--	--	--	610	21	--
29...	0945	1.6	171	6.7	17.0	25.0	6.4	<10	0.5
29...	0950	1.6	--	--	--	--	6.3	<10	1.8
JUL									
28...	0945	3.1	135	6.7	21.0	20.0	21	<10	0.5
AUG									
15...	0900	41	--	--	--	--	--	19	--
25...	1145	1.5	163	6.9	20.0	27.5	5.9	<10	0.5
SEP									
06...	0818	18	--	--	--	--	11	<10	--
06...	1130	97	--	--	--	--	10	18	--
06...	1236	134	--	--	--	--	7.3	21	--
06...	1324	170	--	--	--	--	5.4	20	--
06...	1412	190	--	--	--	--	5.1	19	--
06...	1448	195	--	--	--	--	4.5	15	--
06...	1530	176	--	--	--	--	19	26	--
06...	1654	106	--	--	--	--	18	19	--
28...	1724	13	--	--	--	--	160	--	--
28...	1933	64	--	--	--	--	300	--	--
28...	2100	115	--	--	--	--	490	--	--
28...	2154	157	--	--	--	--	240	--	--
28...	2248	150	--	--	--	--	180	--	--
29...	0042	39	--	--	--	--	160	--	--
29...	0810	10	103	6.5	16.0	14.0	49	--	2.3

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	ALKA- LITY WAT WE TOT FET FIELD MG/L AS CACO3	SILICA, DIS- SOLVED (MG/L AS SiO2)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)
OCT 1991										
17...	--	5.5	284	0.575	0.005	0.580	0.240	1.5	0.65	2.1
17...	--	4.9	365	0.406	0.004	0.410	0.152	2.3	0.70	2.7
17...	--	5.8	230	0.526	0.004	0.530	0.132	1.5	0.70	2.0
17...	--	8.0	50	0.626	0.004	0.630	0.100	0.85	0.65	1.5
28...	37	13	2	0.517	0.003	0.520	0.012	0.30	0.25	0.82
NOV										
20...	35	8.0	5	1.20	0.004	1.20	0.012	0.30	0.30	1.5
DEC										
02...	--	8.3	124	0.415	0.005	0.420	0.012	1.1	0.60	1.5
03...	--	5.1	800	0.276	0.004	0.280	0.020	4.7	0.80	5.0
03...	--	5.7	560	0.265	0.005	0.270	0.028	2.7	0.85	2.9
03...	--	5.8	435	0.256	0.004	0.260	0.036	2.2	0.85	2.5
03...	--	5.9	250	0.285	0.005	0.290	0.040	2.1	0.70	2.3
04...	--	8.8	66	0.346	0.004	0.350	0.052	1.0	0.65	1.4
09...	--	11	80	0.994	0.006	1.00	0.040	0.95	0.20	2.0
10...	--	9.0	43	0.436	0.004	0.440	0.048	0.55	0.25	0.99
16...	31	12	<1	1.59	0.009	1.60	0.056	0.45	0.40	2.0
16...	--	12	<1	1.49	0.009	1.50	0.052	0.45	0.40	2.0
JAN 1992										
04...	--	6.0	268	--	--	--	--	--	--	--
04...	--	8.1	120	--	--	--	--	--	--	--
22...	25	10	4	1.69	0.008	1.70	0.036	0.15	<0.10	1.9
FEB										
18...	24	9.4	4	1.09	0.006	1.10	0.036	0.20	0.15	1.3
26...	--	7.9	8	0.425	0.005	0.430	0.044	0.70	0.25	1.1
26...	--	9.2	18	0.036	0.004	0.040	0.040	0.35	0.35	0.39
MAR										
18...	23	--	2	1.49	0.007	1.50	0.052	0.15	0.20	1.7
26...	--	4.7	1310	0.284	0.006	0.290	0.152	2.4	0.50	2.7
26...	--	4.3	590	0.245	0.005	0.250	0.112	2.6	0.35	2.9
27...	--	5.6	284	0.276	0.004	0.280	0.084	1.0	0.30	1.3
APR										
20...	25	7.5	2	1.68	0.018	1.70	0.012	0.30	--	2.0
20...	--	7.7	2	1.68	0.017	1.70	0.016	0.35	--	2.1
MAY										
18...	27	10	5	2.17	0.025	2.20	0.048	0.35	0.35	2.5
30...	--	8.1	1320	0.550	0.020	0.570	0.016	1.7	0.35	2.2
31...	--	9.0	84	0.589	0.011	0.600	0.048	0.70	0.50	1.3
JUN										
24...	--	--	2780	0.646	0.024	0.670	0.900	5.4	1.5	6.1
24...	--	--	670	0.654	0.016	0.670	0.500	2.9	1.2	3.6
24...	--	--	280	0.604	0.016	0.620	0.400	2.5	1.1	3.1
24...	--	--	310	0.724	0.016	0.740	0.400	1.7	1.1	2.5
29...	27	10	4	1.99	0.010	2.00	0.040	0.30	0.30	2.3
29...	--	10	2	1.89	0.010	1.90	0.040	0.35	0.35	2.3
JUL										
28...	27	12	28	0.661	0.009	0.670	0.052	0.50	--	1.2
AUG										
15...	--	5.8	--	0.213	0.007	0.220	<0.008	--	--	--
25...	28	11	4	2.09	0.011	2.10	0.032	0.25	--	2.4
SEP										
06...	--	6.8	212	0.354	0.006	0.360	0.032	1.7	0.75	2.1
06...	--	4.1	990	0.025	0.005	0.030	0.032	1.3	0.60	1.4
06...	--	3.9	660	0.234	0.006	0.240	0.052	1.5	0.90	1.8
06...	--	3.6	440	0.223	0.007	0.230	0.036	1.2	0.70	1.4
06...	--	3.4	310	0.214	0.006	0.220	0.056	1.2	0.70	1.5
06...	--	3.4	355	0.224	0.006	0.230	0.032	1.2	0.70	1.4
06...	--	4.3	325	0.253	0.007	0.260	0.028	1.7	0.90	2.0
06...	--	5.8	380	0.284	0.016	0.300	0.040	1.3	1.2	1.6
28...	--	--	505	--	--	--	--	1.1	--	1.1
28...	--	--	615	--	--	--	--	1.5	--	1.5
28...	--	--	660	--	--	--	--	0.90	--	0.90
28...	--	--	605	--	--	--	--	0.65	--	0.65
28...	--	--	208	--	--	--	--	1.1	--	1.1
29...	--	--	28	--	--	--	--	0.90	--	0.90
29...	18	--	72	--	--	--	--	0.85	--	0.85

PATUXENT RIVER BASIN

189

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD

WATER-QUALITY DATA, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	PHEO- PHYTIN PHYTO- PLANK- TON, ACID M. (UG/L)	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL C PHYTO- PLANK- TON, UNCORR. (UG/L)
OCT 1991									
17...	0.700	0.500	0.026	5.1	--	--	--	--	--
17...	0.900	0.060	0.020	--	--	--	--	--	--
17...	0.500	0.080	0.030	--	--	--	--	--	--
17...	0.180	0.040	0.022	--	--	--	--	--	--
28...	0.090	0.060	0.052	4.7	4.6	--	0.800	<0.001	<0.001
NOV									
20...	0.050	0.010	0.004	3.0	2.9	--	--	--	--
DEC									
02...	0.490	0.050	0.024	19	10	--	--	--	--
03...	2.20	0.060	0.024	30	8.2	--	--	--	--
03...	1.00	0.040	0.030	23	11	--	--	--	--
03...	0.800	0.050	0.030	21	10	--	--	--	--
03...	0.800	0.040	0.032	17	10	--	--	--	--
04...	0.240	0.020	0.024	11	8.5	--	--	--	--
09...	0.420	<0.001	0.012	8.2	4.1	--	--	--	--
10...	0.150	0.010	0.014	8.4	6.6	--	--	--	--
16...	0.030	0.010	0.014	3.1	3.1	--	0.200	<0.001	<0.001
16...	0.010	0.010	0.008	3.0	2.9	--	--	--	--
JAN 1992									
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
22...	0.030	0.010	0.006	2.3	2.4	<0.001	0.001	<0.001	<0.001
FEB									
18...	0.010	<0.010	0.008	3.3	3.5	--	0.002	0.200	0.400
26...	0.240	0.030	0.008	2.7	--	--	--	--	--
26...	0.110	0.040	0.004	9.7	1.6	--	--	--	--
MAR									
18...	0.050	0.030	0.006	2.9	3.2	--	0.800	<0.001	0.200
26...	1.00	0.050	0.012	14	9.2	--	--	--	--
26...	1.10	0.040	0.016	15	9.2	--	--	--	--
27...	0.410	0.040	0.020	15	9.4	--	--	--	--
APR									
20...	0.030	--	0.006	--	--	<0.001	5.80	0.400	1.20
20...	0.350	--	0.004	--	--	--	--	--	--
MAY									
18...	0.070	0.040	0.020	3.2	3.6	--	--	--	--
30...	1.00	0.040	0.020	15	8.1	--	--	--	--
31...	0.170	0.020	0.022	9.7	9.8	--	--	--	--
JUN									
24...	0.400	0.060	0.048	2.0	--	--	--	--	--
29...	0.050	0.020	0.008	4.4	4.2	--	0.600	0.200	<0.001
29...	0.050	0.010	0.004	3.8	3.7	--	--	--	--
JUL									
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
28...	0.110	--	0.032	6.9	6.6	--	8.60	<0.001	<0.001
AUG									
15...	--	0.030	0.014	20	1.8	--	--	--	--
25...	0.060	0.020	0.018	3.5	--	0.200	0.800	<0.001	<0.001
SEP									
06...	0.200	0.040	0.052	13	--	--	--	--	--
06...	0.160	0.030	0.040	24	12	--	--	--	--
06...	0.480	0.050	0.068	22	--	--	--	--	--
06...	0.490	0.040	0.060	18	15	--	--	--	--
06...	0.350	0.040	0.064	19	14	--	--	--	--
06...	0.390	0.040	0.060	18	7.9	--	--	--	--
06...	0.330	0.030	0.056	18	15	--	--	--	--
06...	0.250	0.210	0.280	18	16	--	--	--	--
28...	0.490	--	--	14	7.7	--	--	--	--
28...	0.900	--	--	18	10	--	--	--	--
28...	0.370	--	--	22	10	--	--	--	--
28...	0.210	--	--	24	11	--	--	--	--
28...	0.450	--	--	16	12	--	--	--	--
29...	0.330	--	--	14	5.9	--	--	--	--
29...	0.190	--	--	9.2	8.9	--	1.40	<0.001	<0.001

PATUXENT RIVER BASIN

01594710 KILLPECK CREEK AT HUNTERSVILLE, MD

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 1991				
17...	1033	18	331	16
17...	1310	36	508	49
17...	1545	27	269	20
17...	2143	6.8	58	1.1
28...	1140	0.76	4	0.01
NOV				
20...	1030	0.88	6	0.01
DEC				
02...	2130	16	148	6.5
03...	1456	52	1090	153
03...	1702	56	575	87
03...	1950	61	596	98
03...	2200	52	379	53
04...	0415	11	85	2.6
09...	2236	8.6	162	3.8
10...	0630	8.3	44	0.98
16...	1115	1.3	1	0.00
29...	0730	16	182	7.9
30...	0240	4.5	21	0.25
JAN 1992				
04...	1445	31	412	34
04...	2100	12	87	2.9
22...	1500	1.6	2	0.01
FEB				
18...	1400	2.4	5	0.03
26...	0748	11	112	3.4
26...	2118	7.2	35	0.68
MAR				
18...	1400	2.9	4	0.03
26...	1935	39	886	94
26...	2158	64	1030	178
27...	0052	31	382	31
APR				
20...	1100	2.4	7	0.05
20...	1110	2.4	6	0.04
MAY				
08...	2030	16	803	34
18...	1220	1.6	6	0.03
30...	2000	11	302	9.1
31...	0715	10	89	2.5
JUN				
05...	1350	12	123	3.9
24...	1818	115	4630	1440
24...	1924	120	931	302
24...	2012	163	584	257
24...	2212	27	467	34
29...	0945	1.6	6	0.03
JUL				
24...	1542	101	1860	506
24...	1724	37	607	61
25...	0854	6.1	66	1.1
28...	0945	3.1	19	0.16
AUG				
15...	0900	41	674	74
25...	1145	1.5	3	0.01
SEP				
06...	0818	18	224	11
06...	1130	97	2350	616
06...	1236	134	983	355
06...	1324	170	557	255
06...	1412	190	294	151
06...	1448	195	243	128
06...	1530	176	519	246
06...	1654	106	423	121
28...	1724	13	512	18
28...	1933	64	870	151
28...	2100	115	1200	374
28...	2154	157	383	162
28...	2248	150	391	158
29...	0042	39	405	43
29...	0810	10	198	5.4

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 mi².

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: Oct. 22-28 (no gage-height record) and Feb. 2 to Mar. 2 (ice effect), which are fair; and June 3-7, 9-16, 30, July 1, 5-31, Aug. 1-4, 10-30, Sept. 5-23 (beaver dam), 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 17	1715	204	4.03	Mar. 26	2000	258	4.45
Mar. 24	0030	*290	*4.70	Mar. 30	1845	199	3.99
Mar. 24	2030	211	4.09	Apr. 1	0245	270	4.54
Mar. 25	1945	271	4.55				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.0	7.9	69	13	e6.8	193	19	6.4	e4.2	e1.9	1.6
2	3.3	3.5	7.4	42	e11	e12	119	17	5.9	8.6	e2.0	1.8
3	3.6	6.8	7.9	35	e10	14	75	16	e5.6	6.3	e2.2	3.5
4	3.5	3.7	7.4	30	e9.0	34	54	15	e6.6	5.3	e2.2	7.4
5	3.1	3.5	12	43	e8.5	28	44	14	e9.5	e5.0	2.3	e3.8
6	3.0	5.3	9.4	33	e8.0	23	37	13	e6.6	e4.8	7.6	e3.6
7	2.9	3.9	8.9	28	e7.0	21	32	11	e6.3	e4.6	7.1	e2.3
8	2.9	3.5	8.2	25	e6.0	23	28	11	27	e4.4	3.9	e1.5
9	3.5	3.2	7.8	21	e6.0	22	26	9.8	e12	e4.3	3.2	e1.6
10	3.2	3.4	9.5	18	e5.5	21	67	9.4	e9.0	e4.1	e2.9	e2.5
11	3.4	8.7	10	18	e6.0	21	48	9.1	e13	e4.9	e2.6	e2.7
12	3.6	19	9.6	21	e5.8	18	42	10	e11	e4.7	e2.0	e3.3
13	3.2	23	8.7	27	e5.4	27	34	13	e8.2	e4.9	e1.4	e3.3
14	3.1	14	8.6	23	e5.0	72	28	10	e6.8	e4.8	e1.4	e3.0
15	3.2	11	9.1	20	e4.8	47	25	8.8	e5.9	e4.4	e1.1	e2.6
16	3.3	8.9	32	19	e6.0	28	92	9.3	e5.0	e4.3	e1.6	e6.6
17	3.7	8.3	141	17	e7.0	47	86	9.0	4.9	e3.6	e2.3	e8.0
18	3.3	8.0	96	15	e6.5	46	51	9.7	4.7	e3.8	e3.2	e12
19	3.7	9.2	50	13	e7.0	33	39	18	4.5	e4.1	e2.7	e9.2
20	3.3	7.9	75	12	e7.5	28	32	12	4.3	e2.7	e2.1	e5.5
21	3.6	8.7	56	15	e7.3	45	48	10	4.4	e3.0	e1.8	e4.1
22	e3.3	15	45	20	e7.3	47	43	9.6	5.6	e2.8	e1.6	e3.2
23	e4.5	23	90	19	e7.3	119	37	9.1	4.6	e3.5	e1.3	e2.9
24	e4.2	17	65	24	e7.1	205	32	8.7	4.0	e3.9	e1.2	3.1
25	e2.9	16	44	27	e7.3	187	27	7.8	3.9	e3.7	e1.5	3.4
26	e2.5	13	35	22	e7.3	189	39	7.2	3.9	e3.9	e1.3	30
27	e2.6	11	30	20	e7.3	162	31	6.8	3.9	e4.1	e1.1	23
28	e2.8	9.8	24	18	e6.8	154	27	6.4	3.7	e3.6	e1.4	17
29	2.7	8.9	23	18	---	146	24	6.2	e4.1	e9.0	e1.4	9.7
30	2.8	8.2	44	18	---	175	22	5.9	e4.9	e5.0	e1.5	7.3
31	3.3	---	88	21	---	133	---	6.2	---	e3.3	1.6	---
TOTAL	101.3	288.4	1070.4	751	202.7	2133.8	1482	328.0	206.2	139.6	71.4	189.5
MEAN	3.27	9.61	34.5	24.2	7.24	68.8	49.4	10.6	6.87	4.50	2.30	6.32
MAX	4.5	23	141	69	13	205	193	19	27	9.0	7.6	30
MIN	2.5	3.0	7.4	12	4.8	6.8	22	5.9	3.7	2.7	1.1	1.5
CFSM	.40	1.17	4.20	2.94	.88	8.36	6.00	1.29	.84	.55	.28	.77
IN.	.46	1.30	4.84	3.39	.92	9.64	6.70	1.48	.93	.63	.32	.86

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1993, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	10.5	25.3	31.5	23.7	34.8	38.6	33.4	26.9	20.5	18.5	10.5	7.07		
MAX	20.4	90.8	51.9	43.6	67.2	68.8	61.0	46.9	62.8	42.8	40.2	13.6		
(WY)	1990	1986	1985	1990	1986	1993	1984	1983	1981	1992	1980	1987		
MIN	3.27	6.21	16.8	8.85	7.24	13.9	19.2	9.35	6.36	2.88	2.30	2.99		
(WY)	1992	1992	1990	1981	1993	1990	1988	1991	1991	1988	1993	1991		

POTOMAC RIVER BASIN

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

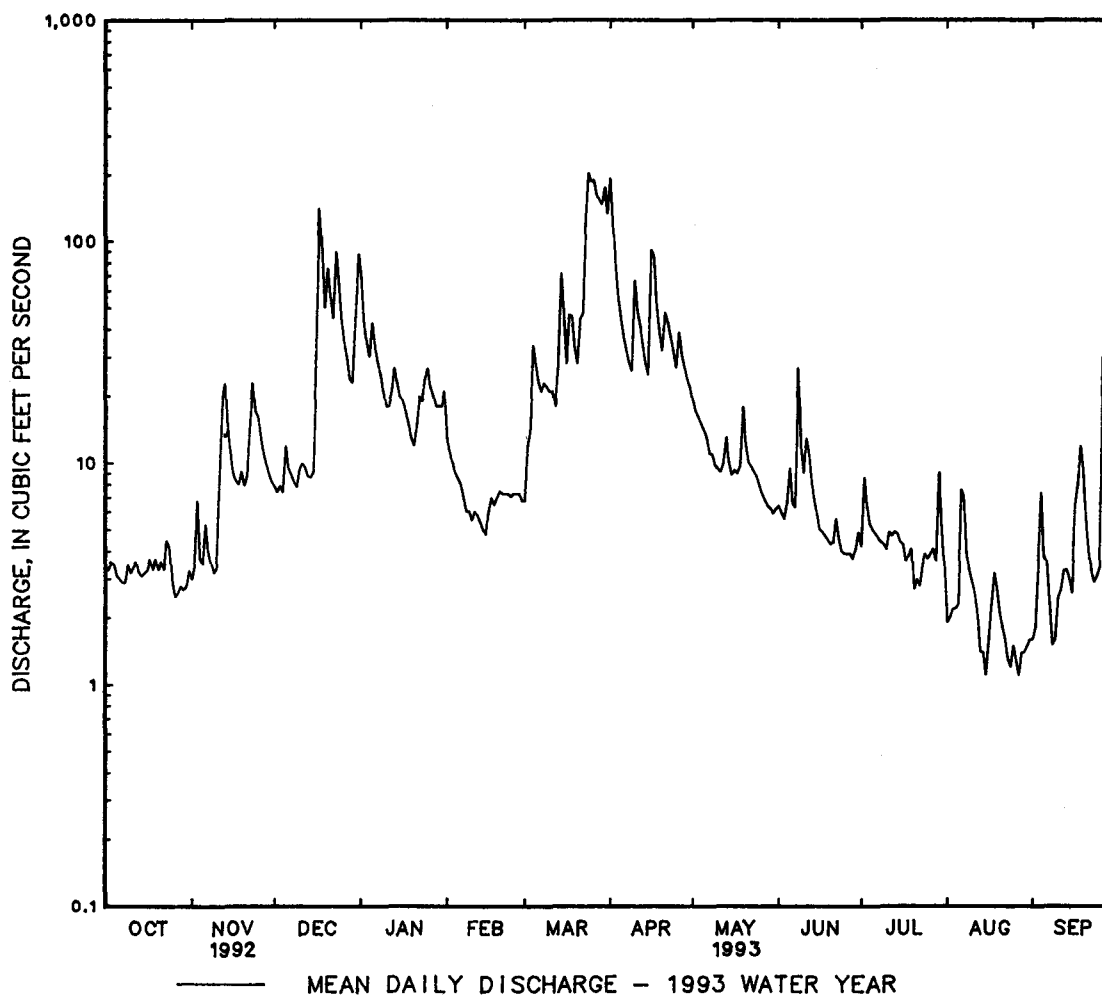
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1980 - 1993	
ANNUAL TOTAL	7374.2		6964.3			
ANNUAL MEAN	20.1		19.1			
HIGHEST ANNUAL MEAN					22.9	
LOWEST ANNUAL MEAN					29.3	1984
HIGHEST DAILY MEAN	174	Jul 27	205	Mar 24	17.3	1988
LOWEST DAILY MEAN	2.5	Oct 26	(e)1.1	(a)	(e)1.1	(a)
ANNUAL SEVEN-DAY MINIMUM	2.8	Oct 25	1.3	Aug 23	1.3	Aug 23 1993
INSTANTANEOUS PEAK FLOW	386	Jul 24	290	Mar 24	(b)863	Nov 5 1985
INSTANTANEOUS PEAK STAGE	5.40	Jul 24	4.70	Mar 24	10.10	Nov 5 1985
INSTANTANEOUS LOW FLOW	2.7	(c)	UNKNOWN		UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.45		2.32		2.79	
ANNUAL RUNOFF (INCHES)	33.33		31.48		37.89	
10 PERCENT EXCEEDS	44		44		48	
50 PERCENT EXCEEDS	13		7.9		15	
90 PERCENT EXCEEDS	3.6		2.7		4.1	

e Estimated

a Aug. 15, 27, 1993.

b From rating curve extended above 450 ft³/s on basis of runoff comparisons with nearby stations.

c Oct. 7, 28-30.



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 north-west of Wilson-Corunna Road, 0.1 mi upstream from mouth and 0.8 mi northwest of Wilson.

DRAINAGE AREA.--1.91 mi².

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.--Records good above 0.5 ft³/s and fair below, except those for estimated daily discharges (ice effect and no gage-height record), which are also fair. 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	2145	68	3.63	Mar. 26	1800	72	3.68
Mar. 24	1915	47	3.34	Mar. 30	1700	43	3.28
Mar. 25	1715	71	3.67	Apr. 1	0045	*76	*3.73

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.38	.97	13	2.3	e1.3	41	3.5	.64	.34	.28	.18
2	.24	.43	1.1	8.4	2.0	e1.9	22	2.9	.64	1.8	.51	.17
3	.27	.95	1.3	6.6	1.7	3.5	15	2.7	.88	.68	.75	.27
4	.30	.72	1.5	6.0	1.6	7.7	11	2.9	.65	.36	.33	1.1
5	.24	.57	2.7	9.0	e1.5	5.9	9.1	2.8	1.6	.26	.26	.40
6	.24	.64	1.5	6.5	e1.4	4.5	7.8	2.4	.67	.26	1.9	.19
7	.29	.58	1.2	5.3	e1.3	4.4	6.5	2.3	.63	.30	1.4	.14
8	.22	.46	1.1	5.1	e1.1	5.3	5.5	1.9	4.3	.30	.35	.21
9	.21	.36	1.0	4.1	e1.1	5.2	e4.7	1.2	1.2	.31	.19	.41
10	.20	.34	1.1	3.4	e1.0	4.8	e12	1.1	1.2	.45	.18	.41
11	.20	1.2	1.3	3.3	e1.1	5.1	e9.0	1.3	2.3	.66	.25	.29
12	.22	4.2	1.3	5.0	e1.1	4.2	e7.5	1.5	.98	.46	.20	.19
13	.19	4.6	1.2	7.4	e1.0	4.5	e6.5	2.5	.65	.26	.23	.16
14	.18	1.8	1.3	5.9	e.95	4.6	e5.5	1.4	.65	.32	.20	.17
15	.17	1.2	1.6	5.2	e.90	3.6	e4.8	1.2	.61	.65	.14	.41
16	.18	.91	8.6	4.8	e1.2	4.2	e17	.99	.60	.53	.11	2.2
17	.29	.88	28	3.9	e1.4	10	e16	.83	.77	.28	.15	2.5
18	.30	1.3	18	3.3	e1.3	9.9	e9.5	1.4	.70	.17	.21	2.4
19	.31	1.0	12	3.1	e1.4	7.2	e7.5	3.5	.68	.19	.17	.60
20	.24	.84	17	2.4	e1.5	6.7	e6.5	1.7	1.4	.31	.23	.36
21	.24	.84	13	4.1	e1.5	11	e8.5	2.0	.76	.32	.36	.56
22	.27	2.0	11	5.3	e1.5	13	e8.0	.93	.91	.30	.23	.40
23	.25	4.7	20	4.4	e1.5	31	e7.0	.82	.96	.51	.12	.36
24	.26	3.2	14	5.8	e1.4	39	e6.5	.83	.57	.37	.09	.32
25	.28	3.2	9.7	5.9	e1.4	43	e5.5	.98	.46	.19	.25	.46
26	.31	2.4	7.2	4.6	e1.4	44	e7.5	.78	.64	.13	.35	7.2
27	.35	1.5	5.4	4.6	e1.4	35	e6.0	.68	.38	.12	.22	4.4
28	.36	1.3	4.7	4.2	e1.3	34	e4.7	.83	.37	.25	.20	2.7
29	.34	1.1	4.4	4.0	---	32	4.4	.77	.36	2.3	.24	1.3
30	.35	.96	11	3.6	---	37	4.1	.72	.53	.45	.18	1.2
31	.42	---	17	3.0	---	29	---	.60	---	.39	.19	---
TOTAL	8.19	44.56	221.17	161.2	38.25	452.5	286.6	49.96	27.69	14.22	10.47	31.66
MEAN	.26	1.49	7.13	5.20	1.37	14.6	9.55	1.61	.92	.46	.34	1.06
MAX	.42	4.7	28	13	2.3	44	41	3.5	4.3	2.3	1.9	7.2
MIN	.17	.34	.97	2.4	.90	1.3	4.1	.60	.36	.12	.09	.14
CF5M	.14	.78	3.74	2.72	.72	7.64	5.00	.84	.48	.24	.18	.55
IN.	.16	.87	4.31	3.14	.74	8.81	5.58	.97	.54	.28	.20	.62

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1993, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	1.54	4.48	5.86	4.87	7.19	8.23	6.99	5.30	3.61	3.33	1.60	1.18		
MAX	3.65	17.5	8.67	9.75	15.9	14.6	13.4	9.25	12.7	8.78	7.91	3.42		
(WY)	1990	1986	1991	1991	1986	1993	1984	1988	1981	1992	1980	1981		
MIN	.21	.62	2.83	1.29	1.37	2.52	3.70	1.58	.63	.28	.30	.19		
(WY)	1992	1992	1990	1981	1993	1990	1992	1991	1991	1988	1983	1991		

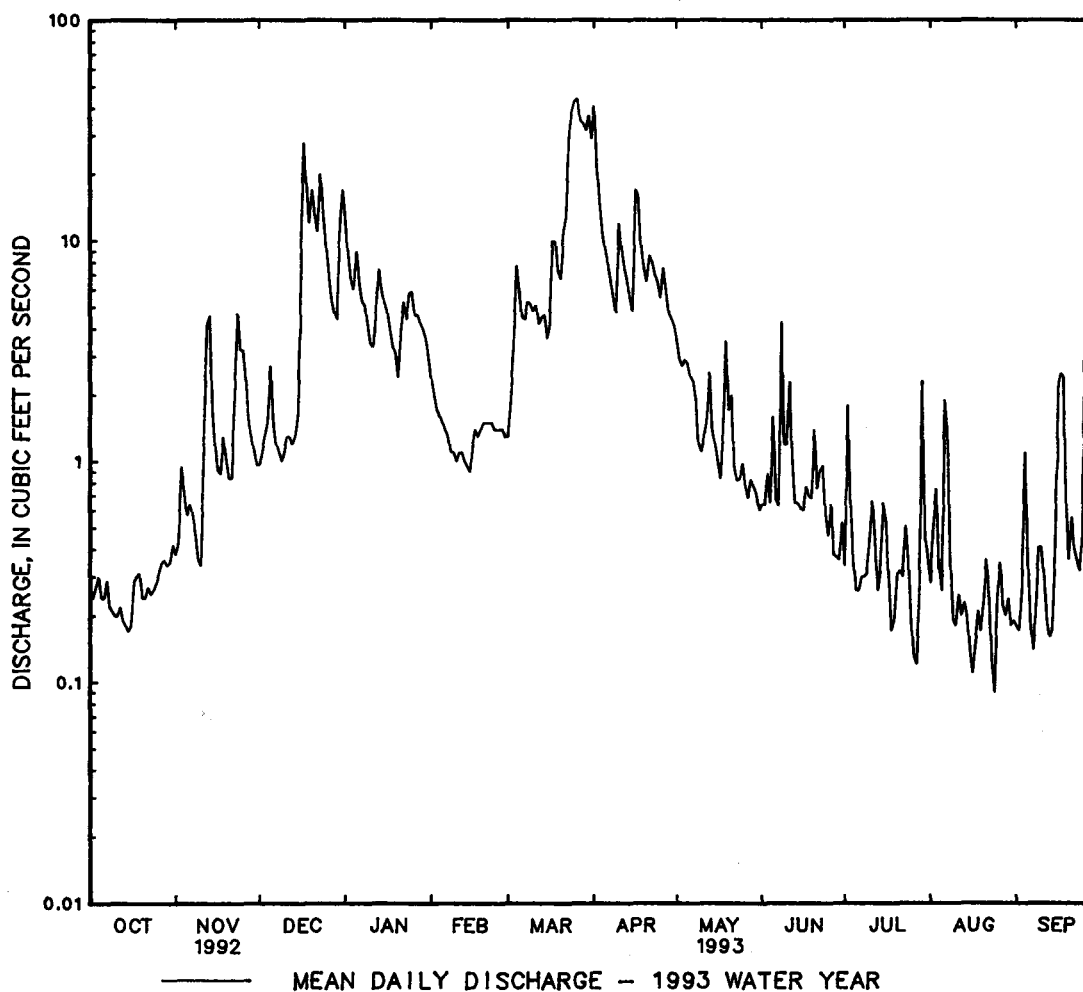
01594936 NORTH FORK SAND RUN NEAR WILSON, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1980 - 1993	
ANNUAL TOTAL	1453.55		1346.47			
ANNUAL MEAN	3.97		3.69		4.43	
HIGHEST ANNUAL MEAN					5.57	
LOWEST ANNUAL MEAN					3.43	
HIGHEST DAILY MEAN	45	Jul 11	44	Mar 26	139	May 31 1985
LOWEST DAILY MEAN	.17	Oct 15	.09	Aug 24	.09	(a)
ANNUAL SEVEN-DAY MINIMUM	.19	Oct 10	.17	Aug 13	.12	Aug 12 1988
INSTANTANEOUS PEAK FLOW	142	Jul 11	76	Apr 1	(b)895	May 31 1985
INSTANTANEOUS PEAK STAGE	4.47	Jul 11	3.73	Apr 1	10.47	May 31 1985
INSTANTANEOUS LOW FLOW	.15	Oct 16	.08	Aug 24	.01	(c)
ANNUAL RUNOFF (CFSM)	2.08		1.93		2.32	
ANNUAL RUNOFF (INCHES)	28.31		26.22		31.51	
10 PERCENT EXCEEDS	9.6		8.8		10	
50 PERCENT EXCEEDS	2.6		1.2		2.7	
90 PERCENT EXCEEDS	.32		.22		.40	

a Aug. 22, 1985, Aug. 24, 1993.

b From rating curve extended above 90 ft³/s on basis of contracted-opening measurement of peak flow.

c July 18 and Aug. 9, 1988, result of beaver activity upstream.



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-Corunna 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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to current year.

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 fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	2130	65	2.84	Mar. 27	1930	46	2.38
Mar. 24	1930	51	2.50	Mar. 30	1645	62	2.78
Mar. 25	1730	78	3.03	Apr. 1	0015	*139	*3.56
Mar. 26	1730	79	3.04	Apr. 16	0845	44	2.32

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.11	.79	14	2.9	e1.1	61	3.2	.23	.15	.07	.05
2	.11	.17	.69	8.0	4.0	2.0	31	2.8	.21	.46	.07	.08
3	.11	.32	.79	6.2	1.5	2.3	18	2.4	.21	.20	.07	.11
4	.11	.15	.69	5.4	1.4	4.5	12	2.3	.25	.15	.06	.20
5	.10	.18	1.5	7.8	1.3	4.3	9.1	2.0	.43	.13	.06	.11
6	.09	.21	1.2	5.9	1.3	3.5	7.3	1.7	.25	.13	.39	.08
7	.10	.17	.99	4.9	1.1	3.3	6.4	1.4	.20	.12	.16	.07
8	.10	.16	.93	4.4	1.1	3.9	5.8	1.3	.96	.12	.09	.06
9	.10	.14	.80	3.7	.95	3.9	5.2	1.2	.36	.12	.07	.06
10	.10	.14	.93	3.1	.94	3.6	15	1.1	.27	.12	.07	.07
11	.11	.43	5.5	3.0	.94	3.7	9.4	.91	.67	.12	.07	.06
12	.10	1.7	3.7	4.0	e.90	3.9	7.8	.93	.27	.12	.06	.05
13	.09	2.3	1.6	5.9	e.85	6.9	6.3	1.4	.18	.12	.06	.04
14	.09	1.0	1.0	5.2	e.80	e17	5.4	.91	.16	.15	.05	.06
15	.09	.64	1.5	4.3	e.75	e11	4.8	.72	.15	.12	.05	.14
16	.15	.53	5.6	3.8	e.95	e6.5	23	.69	.14	.11	.05	.15
17	.14	.49	26	3.4	e1.1	e12	17	.68	.14	.10	.06	.33
18	.11	.45	16	2.9	e1.0	e10	11	.91	.15	.10	.05	.13
19	.12	.46	9.0	2.6	e1.1	e8.0	8.2	1.9	.15	.11	.04	.04
20	.12	.47	16	e2.3	e1.2	e6.5	6.6	1.1	.14	.11	.04	.03
21	.12	.49	11	2.9	e1.2	e10	9.2	.76	.15	.10	.05	.03
22	.12	1.3	8.5	3.8	e1.2	e11	8.0	.66	.17	.09	.04	.03
23	.11	2.7	20	3.6	e1.2	27	6.6	.58	.13	.09	.03	.03
24	.14	1.7	13	4.7	e1.1	43	5.7	.57	.13	.08	.03	.04
25	.12	1.8	8.5	5.0	e1.2	47	5.0	.49	.13	.08	.03	.07
26	.11	1.4	e6.0	5.7	e1.2	49	6.3	.42	.13	.09	.03	2.3
27	.11	1.1	e5.0	3.5	e1.2	41	5.2	.38	.13	.09	.03	1.7
28	.11	.99	4.1	3.2	e1.1	41	4.5	.32	.12	.09	.03	.73
29	.11	.92	3.7	3.0	---	38	4.0	.30	.16	.52	.03	.53
30	.12	.82	9.7	5.0	---	49	3.6	.28	.14	.08	.03	.31
31	.14	---	20	2.4	---	44	---	.26	---	.07	.04	---
TOTAL	3.48	23.44	204.71	143.6	35.48	517.9	328.4	34.57	6.91	4.24	2.01	7.69
MEAN	.11	.78	6.60	4.63	1.27	16.7	10.9	1.12	.23	.14	.065	.26
MAX	.15	2.7	26	14	4.0	49	61	3.2	.96	.52	.39	2.3
MIN	.09	.11	.69	2.3	.75	1.1	3.6	.26	.12	.07	.03	.03
CFSM	.05	.34	2.87	2.01	.55	7.26	4.76	.48	.10	.06	.03	.11
IN.	.06	.38	3.31	2.32	.57	8.38	5.31	.56	.11	.07	.03	.12

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993
MEAN	1.75	3.63	6.29	7.20	6.39	8.47	7.16
MAX	4.57	10.2	10.0	11.5	8.89	16.7	11.3
(WY)	1990	1987	1991	1990	1989	1993	1987
MIN	.11	.30	3.92	4.05	1.27	3.34	4.25
(WY)	1993	1992	1990	1992	1993	1990	1992

01594950 MCMILLAN FORK NEAR FORT PENDLETON, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1987 - 1993	
ANNUAL TOTAL	1394.18		1312.43		4.49	
ANNUAL MEAN	3.81		3.60		5.54	
HIGHEST ANNUAL MEAN					3.60	
LOWEST ANNUAL MEAN					110	
HIGHEST DAILY MEAN	50	Jul 11	61	Apr 1		May 26 1990
LOWEST DAILY MEAN	.09	(a)	.03	(b)		(b)
ANNUAL SEVEN-DAY MINIMUM	.10	Oct 9	.03	Aug 23		Aug 23 1993
INSTANTANEOUS PEAK FLOW	UNKNOWN	Jul 11	139	Apr 1	UNKNOWN	May 26 1990
INSTANTANEOUS PEAK STAGE	(c)4.61	Jul 11	3.56	Apr 1	(c)4.91	May 26 1990
INSTANTANEOUS LOW FLOW	.08	(d)	.02	(f)	.02	(f)
ANNUAL RUNOFF (CFSM)	1.66		1.56		1.95	
ANNUAL RUNOFF (INCHES)	22.55		21.23		26.53	
10 PERCENT EXCEEDS	9.0		8.7		10	
50 PERCENT EXCEEDS	2.5		.73		3.0	
90 PERCENT EXCEEDS	.14		.07		.16	

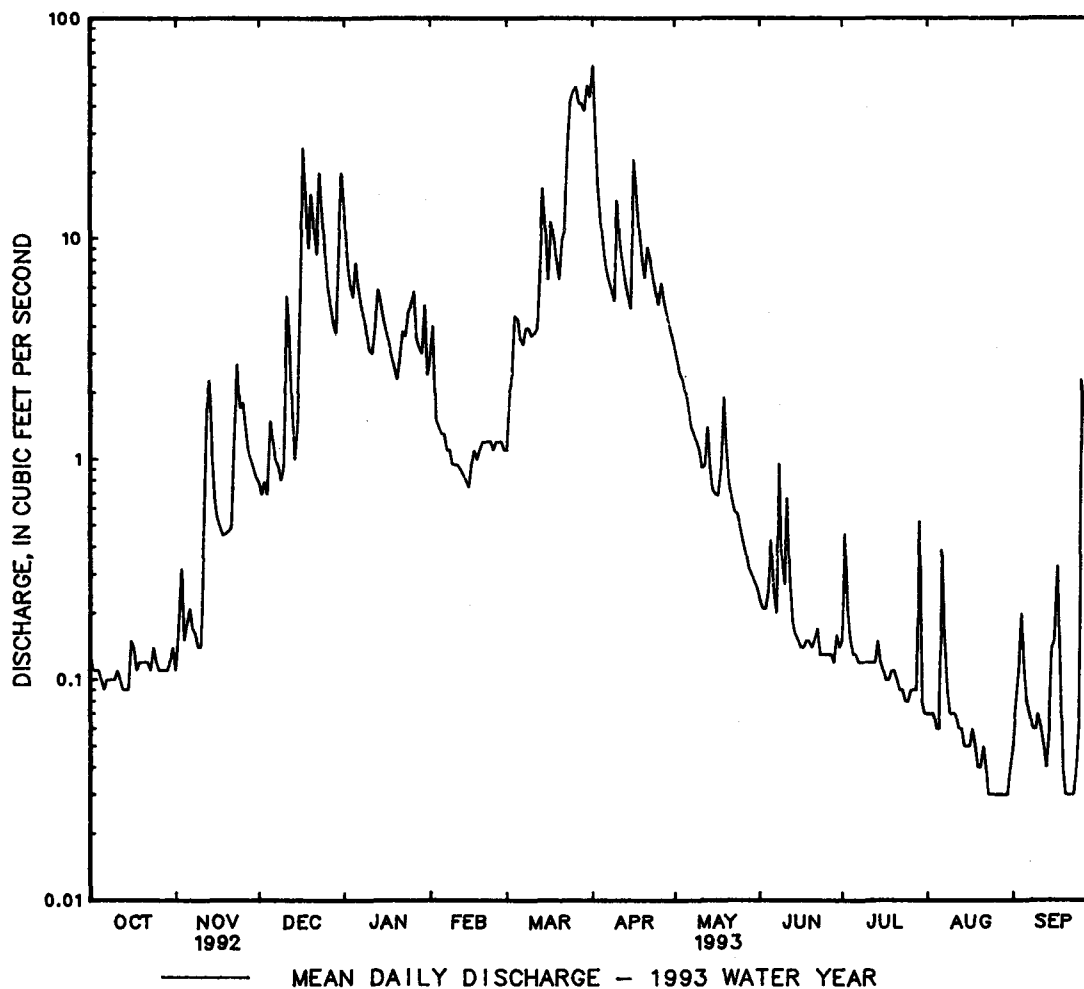
a Oct. 6, 13-15.

b Aug. 23-30, Sept. 20-23, 1993.

c Affected by backwater.

d Oct. 13-15.

f Sept. 24, 25, 1993.



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 current year.

pH: November 1986 to current year.

WATER TEMPERATURE: November 1986 to current year.

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

REMARKS.--Periods of missing record due to monitor malfunction or probes buried by sediment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 281 microsiemens, Sept. 4, 1988; minimum, 57 microsiemens, Feb. 20, 1991.

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

WATER TEMPERATURE: Maximum, 23.3°C, July 28, 1993; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 280 microsiemens, Aug. 29; minimum, 81 microsiemens, Dec. 18, 19.

pH: Maximum, 9.4 units, Sept. 19; minimum 6.0 units, Nov. 22.

WATER TEMPERATURE: Maximum, 23.3°C, July 28; minimum, 0.0°C, on many days during winter periods.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	144	142	144	160	158	159	117	115	116	99	86	93
2	146	144	145	160	136	153	117	114	116	110	99	105
3	147	145	146	138	128	134	116	111	113	114	110	112
4	148	146	147	147	138	142	117	102	114	118	114	116
5	149	147	148	149	138	146	107	99	102	119	111	115
6	151	148	149	140	137	138	112	107	109	117	113	115
7	152	150	151	142	139	141	111	107	109	120	117	118
8	153	151	152	146	142	144	110	108	109	122	119	121
9	153	150	152	149	146	148	111	109	110	128	122	125
10	153	151	152	150	147	149	111	107	109	132	128	130
11	153	150	152	151	121	140	109	106	107	132	128	131
12	153	151	151	167	121	148	107	106	107	128	122	125
13	154	146	151	157	133	148	108	106	107	122	111	116
14	152	147	149	148	138	143	108	106	107	113	110	111
15	156	152	153	146	138	143	107	105	106	115	111	113
16	157	145	154	150	141	145	109	94	101	121	114	118
17	150	148	149	149	139	145	107	82	93	127	121	124
18	151	148	149	143	139	142	83	81	81	134	127	131
19	151	147	149	144	139	141	87	81	84	139	134	136
20	152	148	150	144	143	144	87	82	85	145	139	142
21	155	151	152	144	130	140	91	85	88	144	122	134
22	157	155	156	134	122	131	96	91	93	134	120	127
23	160	156	158	122	108	114	98	83	88	121	118	119
24	161	156	160	114	110	113	94	85	90	128	112	120
25	159	156	157	112	109	110	104	94	99	116	108	110
26	163	158	161	112	110	111	109	103	107	114	109	111
27	167	162	165	112	111	112	116	109	112	118	112	115
28	168	164	166	113	112	112	118	115	117	122	118	120
29	165	163	165	115	113	114	119	117	118	130	121	124
30	166	164	165	117	114	115	117	97	110	137	129	134
31	164	158	160	---	---	---	97	82	87	141	136	138
MONTH	168	142	154	167	108	135	119	81	103	145	86	121

POTOMAC RIVER BASIN

01594950 MCMILLAN FORT NEAR FORT PENDLETON, MD--CONTINUED

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	149	137	139	143	137	139	95	86	88	158	153	155
2	155	149	152	138	132	136	100	92	96	163	157	159
3	154	151	153	135	120	130	120	100	109	167	161	164
4	155	152	153	120	107	112	134	117	124	167	164	166
5	157	153	155	112	106	109	149	132	138	171	167	168
6	156	154	155	115	110	112	155	139	148	175	170	172
7	163	156	159	117	108	114	166	153	160	178	174	175
8	165	160	163	111	106	109	168	159	163	179	169	177
9	168	163	164	112	107	109	172	158	166	183	178	179
10	168	163	165	114	109	112	158	131	144	185	181	183
11	167	164	166	115	108	111	143	129	132	188	183	185
12	167	163	164	118	106	114	140	131	134	189	180	185
13	167	154	159	132	115	119	145	132	136	183	167	174
14	170	160	166	134	122	126	157	142	146	188	183	185
15	173	169	172	136	127	134	168	148	154	192	188	189
16	173	124	159	130	121	127	157	104	134	193	185	189
17	151	130	145	127	104	116	108	100	105	194	184	188
18	155	148	150	105	100	103	119	105	113	195	153	186
19	160	155	158	112	102	106	127	118	123	175	153	169
20	159	155	157	119	108	113	137	123	132	174	170	172
21	158	107	138	112	101	106	129	117	121	177	173	175
22	123	96	108	103	94	100	119	116	117	179	175	177
23	122	104	111	101	86	94	123	116	119	182	179	181
24	118	111	114	96	86	92	130	122	126	187	181	183
25	137	118	123	99	91	95	139	129	134	195	187	190
26	135	125	128	104	93	98	139	136	138	201	194	196
27	136	130	133	103	93	101	142	137	139	206	200	202
28	140	136	137	101	97	100	146	141	143	211	204	207
29	---	---	---	103	98	100	149	144	146	215	208	210
30	---	---	---	103	97	100	154	148	150	218	212	214
31	---	---	---	103	86	97	---	---	---	218	211	214
MONTH	173	96	148	143	86	111	172	86	133	218	153	183
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	217	210	212	235	212	221	232	225	228	264	255	258
2	217	213	215	223	131	168	235	223	232	265	261	263
3	219	211	214	207	183	197	225	218	221	269	216	258
4	219	205	209	228	207	216	234	225	231	227	176	198
5	205	165	176	242	227	234	234	228	231	254	227	243
6	204	181	193	245	236	240	234	127	177	262	254	258
7	214	203	208	252	243	246	185	147	166	265	260	263
8	203	126	163	254	248	252	207	185	196	267	260	264
9	193	185	189	264	251	255	221	207	215	267	260	264
10	207	169	197	270	255	258	225	217	223	260	243	249
11	178	151	163	259	250	255	225	217	221	265	250	257
12	194	178	185	258	252	255	235	224	229	268	262	264
13	205	194	199	261	250	255	240	235	237	269	260	265
14	211	205	207	260	208	242	246	240	243	278	261	267
15	215	211	213	237	208	223	249	245	247	270	168	241
16	218	213	215	246	237	242	250	246	248	170	149	158
17	228	215	221	257	246	250	250	235	241	169	102	150
18	235	224	229	256	251	253	243	236	239	156	129	145
19	234	223	228	260	241	251	255	242	245	163	156	158
20	232	224	228	249	242	245	247	243	245	164	160	162
21	233	212	228	255	249	253	245	234	239	163	145	155
22	224	211	216	258	254	256	243	234	237	156	146	150
23	233	224	227	260	257	258	246	238	241	158	148	155
24	239	229	233	260	257	258	249	240	243	154	145	149
25	239	230	235	261	258	259	257	240	246	154	129	143
26	238	230	234	263	257	260	258	242	247	192	102	154
27	238	228	233	262	258	260	250	240	246	188	146	172
28	244	234	239	279	238	265	250	234	245	186	178	182
29	243	210	230	252	129	170	280	245	253	180	169	178
30	233	211	223	218	187	205	253	242	249	169	155	159
31	---	---	---	225	218	222	256	247	251	---	---	---
MONTH	244	126	212	279	129	239	280	127	233	278	102	206

POTOMAC RIVER BASIN

199

01594950 MCMILLAN FORT NEAR FORT PENDLETON, MD--CONTINUED

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	8.3	8.2	8.2	7.7	7.6	7.7	7.0	6.9	6.9	6.7	6.7	6.7
2	8.3	8.2	8.2	7.7	7.6	7.7	7.0	6.9	6.9	6.8	6.7	6.7
3	8.2	8.1	8.2	7.6	7.5	7.5	7.1	6.9	7.0	6.8	6.7	6.7
4	8.2	8.1	8.2	7.6	7.5	7.6	7.1	6.9	7.0	6.8	6.7	6.8
5	8.2	8.0	8.1	7.6	7.6	7.6	6.9	6.7	6.8	7.0	6.8	6.9
6	8.1	8.0	8.0	7.6	7.5	7.6	7.0	6.8	6.9	6.9	6.8	6.8
7	8.1	8.0	8.0	7.5	7.5	7.5	7.1	7.0	7.1	7.1	6.8	6.9
8	8.0	7.9	8.0	7.5	7.5	7.5	7.2	7.1	7.1	7.1	7.0	7.0
9	8.0	7.9	7.9	7.5	7.4	7.5	7.2	7.1	7.2	7.1	7.0	7.1
10	7.9	7.8	7.9	7.4	7.4	7.4	7.2	7.0	7.2	7.2	7.1	7.2
11	7.8	7.7	7.8	7.4	7.1	7.3	7.1	7.0	7.1	7.2	7.2	7.2
12	7.7	7.6	7.7	7.1	6.6	6.7	7.1	7.1	7.1	7.2	7.1	7.1
13	7.7	7.6	7.6	6.6	6.4	6.5	7.2	7.1	7.2	7.1	7.0	7.1
14	7.8	7.7	7.7	6.5	6.4	6.5	7.2	7.2	7.2	7.1	7.0	7.1
15	7.8	7.7	7.7	6.5	6.5	6.5	7.2	7.1	7.2	7.1	7.1	7.1
16	7.7	7.6	7.7	6.6	6.5	6.5	7.2	6.6	6.9	7.1	7.1	7.1
17	7.7	7.6	7.7	6.6	6.5	6.5	6.6	6.3	6.4	7.2	7.1	7.2
18	7.8	7.7	7.8	6.5	6.4	6.4	6.5	6.3	6.4	7.2	7.2	7.2
19	7.8	7.8	7.8	6.4	6.3	6.3	6.5	6.4	6.5	7.3	7.2	7.2
20	7.8	7.8	7.8	6.3	6.3	6.3	6.5	6.4	6.4	7.4	7.2	7.3
21	7.8	7.7	7.8	6.3	6.2	6.3	6.6	6.4	6.5	7.4	7.2	7.4
22	7.8	7.7	7.7	6.3	6.0	6.1	6.6	6.4	6.5	7.3	7.1	7.2
23	7.8	7.7	7.8	6.5	6.2	6.5	6.7	6.5	6.6	7.3	7.1	7.2
24	7.8	7.7	7.7	6.8	6.4	6.6	6.5	6.5	6.5	7.4	7.1	7.2
25	7.7	7.7	7.7	6.8	6.7	6.7	6.6	6.5	6.6	7.4	7.0	7.1
26	7.7	7.6	7.7	6.8	6.7	6.8	6.6	6.5	6.5	7.3	6.7	7.0
27	7.9	7.6	7.7	6.9	6.8	6.8	6.7	6.5	6.6	7.4	7.2	7.3
28	7.7	7.6	7.6	6.9	6.8	6.9	6.7	6.6	6.6	7.5	7.4	7.4
29	7.7	7.6	7.7	6.9	6.8	6.9	6.7	6.7	6.7	7.5	7.2	7.5
30	7.7	7.6	7.7	6.9	6.8	6.9	6.8	6.7	6.7	7.6	7.3	7.4
31	7.7	7.6	7.7	---	---	---	6.8	6.7	6.7	7.6	7.6	7.6
MONTH	8.3	7.6	7.8	7.7	6.0	6.9	7.2	6.3	6.8	7.6	6.7	7.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.7	7.4	7.6	7.5	7.4	7.4	---	---	---	7.9	7.8	7.8
2	7.7	7.5	7.6	7.6	7.5	7.5	---	---	---	7.9	7.8	7.8
3	7.8	7.6	7.7	7.5	7.4	7.5	---	---	---	7.9	7.8	7.9
4	7.7	7.7	7.7	7.4	7.1	7.2	8.5	8.2	8.4	7.9	7.8	7.9
5	7.8	7.7	7.8	7.2	7.1	7.1	8.4	8.2	8.3	7.9	7.8	7.9
6	7.8	7.7	7.7	7.1	7.0	7.0	8.5	8.2	8.3	7.9	7.8	7.9
7	7.9	7.7	7.8	7.0	6.9	7.0	8.5	8.4	8.4	7.9	7.9	7.9
8	7.8	7.8	7.8	6.9	6.9	6.9	8.4	8.1	8.3	8.0	7.8	7.9
9	7.8	7.7	7.8	6.9	6.9	6.9	8.1	7.9	8.0	8.0	7.9	7.9
10	7.7	7.6	7.7	7.0	6.9	7.0	8.4	8.1	8.2	8.0	7.9	7.9
11	7.7	7.6	7.7	7.0	7.0	7.0	8.1	7.9	8.0	8.0	7.9	7.9
12	7.7	7.6	7.6	7.0	6.9	7.0	7.9	7.7	7.8	8.0	7.9	7.9
13	7.9	7.6	7.6	7.3	7.0	7.0	8.1	7.9	8.0	7.9	7.8	7.8
14	8.0	7.8	7.9	7.6	7.0	7.2	8.0	7.9	7.9	8.0	7.9	7.9
15	7.9	7.9	7.9	7.7	7.5	7.6	8.2	7.8	7.9	8.0	7.9	8.0
16	8.0	7.8	7.9	7.6	7.2	7.4	8.3	7.7	8.0	8.0	7.9	8.0
17	7.9	7.7	7.8	7.3	7.0	7.2	8.2	7.7	8.0	8.0	8.0	8.0
18	8.0	7.5	7.8	7.1	6.9	7.1	8.2	8.1	8.2	8.1	7.7	7.9
19	8.0	7.7	7.9	7.1	6.9	6.9	8.3	8.0	8.2	7.8	7.6	7.7
20	7.8	7.7	7.8	7.1	6.9	6.9	8.1	7.9	8.0	7.9	7.8	7.9
21	7.9	7.7	7.8	---	---	---	8.0	7.8	7.9	8.0	7.9	7.9
22	7.7	7.3	7.4	---	---	---	8.0	7.8	7.9	8.0	7.9	7.9
23	7.6	7.3	7.5	---	---	---	7.9	7.8	7.9	8.0	7.9	8.0
24	7.8	7.3	7.4	---	---	---	7.8	7.4	7.6	8.0	7.9	8.0
25	7.9	7.5	7.7	---	---	---	7.7	7.7	7.7	8.1	7.9	8.0
26	7.6	7.4	7.5	---	---	---	7.7	7.7	7.7	8.1	8.0	8.1
27	7.4	7.4	7.4	7.4	7.1	7.3	7.9	7.7	7.8	8.2	8.0	8.1
28	7.4	7.4	7.4	7.4	7.3	7.3	7.9	7.8	7.8	8.2	8.0	8.1
29	---	---	---	7.4	7.2	7.3	7.8	7.8	7.8	8.2	8.0	8.2
30	---	---	---	7.2	7.1	7.2	7.9	7.8	7.8	8.2	8.1	8.2
31	---	---	---	---	---	---	---	---	---	8.2	8.1	8.2
MONTH	8.0	7.3	7.7	---	---	---	---	---	---	8.2	7.6	8.0

POTOMAC RIVER BASIN

01594950 MCMILLAN FORT NEAR FORT PENDLETON, MD--CONTINUED

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.3	8.1	8.2	8.1	8.0	8.0	8.2	7.9	8.0	8.3	7.9	8.0
2	8.3	8.2	8.2	8.1	7.7	7.9	8.2	7.8	8.0	8.2	7.7	7.9
3	8.2	8.1	8.2	8.0	7.8	7.9	8.1	7.8	8.0	8.0	7.7	7.9
4	8.2	8.0	8.1	8.0	7.8	7.9	8.1	7.8	7.9	8.1	7.8	7.9
5	8.1	7.9	8.0	8.1	7.9	8.0	8.0	7.8	8.0	9.3	8.0	8.4
6	8.1	8.0	8.0	8.1	7.9	8.0	7.9	7.5	7.7	8.6	8.0	8.3
7	8.2	8.0	8.1	8.2	7.9	8.0	7.8	7.6	7.7	8.6	8.0	8.2
8	8.0	7.5	7.7	8.2	7.9	8.1	7.9	7.7	7.8	8.6	7.9	8.2
9	8.0	7.7	7.9	8.2	7.8	8.0	7.9	7.7	7.8	8.8	8.2	8.4
10	8.1	7.7	8.0	8.1	7.8	8.0	7.9	7.8	7.9	8.9	8.2	8.5
11	7.8	7.7	7.7	8.2	7.9	8.0	7.9	7.7	7.8	9.2	8.3	8.6
12	8.0	7.8	7.9	8.2	7.9	8.1	7.9	7.6	7.8	9.0	8.2	8.5
13	8.0	7.9	8.0	8.2	7.9	8.0	7.8	7.6	7.7	9.1	8.3	8.5
14	8.0	7.9	7.9	8.2	7.6	8.0	7.7	7.5	7.6	9.1	8.2	8.5
15	8.0	7.9	7.9	8.0	7.6	7.8	7.8	7.5	7.6	9.4	8.1	8.5
16	8.1	8.0	8.1	7.9	7.7	7.8	7.9	7.6	7.8	8.3	7.9	8.1
17	8.1	8.0	8.1	7.8	7.6	7.7	7.9	7.6	7.8	8.4	7.7	8.1
18	8.1	7.9	8.0	8.0	7.6	7.8	7.8	7.6	7.7	8.0	7.7	7.9
19	8.0	7.9	7.9	7.9	7.6	7.7	7.9	7.6	7.7	8.1	7.9	8.0
20	8.0	7.8	7.9	8.1	7.6	7.9	7.9	7.6	7.7	8.3	7.9	8.1
21	7.9	7.8	7.8	8.0	7.7	7.9	7.9	7.6	7.8	8.3	8.0	8.1
22	7.9	7.7	7.8	8.0	7.8	7.9	7.9	7.6	7.7	8.3	7.7	8.0
23	8.1	7.8	7.9	8.2	7.9	8.0	7.8	7.6	7.7	8.7	7.7	8.0
24	8.1	7.9	8.0	8.2	7.9	8.0	7.9	7.6	7.7	8.2	7.6	7.9
25	8.2	8.0	8.1	8.2	7.8	8.0	8.0	7.6	7.7	8.2	7.5	7.8
26	8.1	8.0	8.1	8.2	7.9	8.0	7.9	7.6	7.8	7.6	7.0	7.2
27	8.1	8.0	8.1	8.2	7.8	8.0	8.5	7.7	8.0	7.4	6.9	7.2
28	8.1	8.0	8.1	8.1	7.8	8.0	8.7	7.8	8.1	7.4	7.2	7.3
29	8.3	8.0	8.1	7.9	7.4	7.6	8.1	7.7	7.9	7.5	7.3	7.4
30	8.1	8.0	8.1	8.1	7.7	7.9	8.6	7.7	8.0	7.6	7.5	7.6
31	---	---	---	8.1	7.8	8.0	8.5	7.8	8.1	---	---	---
MONTH	8.3	7.5	8.0	8.2	7.4	7.9	8.7	7.5	7.8	9.4	6.9	8.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.2	5.6	6.9	7.3	5.7	6.5	2.6	1.2	2.3	5.7	3.0	4.2
2	8.5	4.9	6.7	8.5	5.7	6.9	1.5	.4	1.1	3.9	2.6	3.2
3	9.5	6.0	7.7	8.4	6.2	7.6	.4	.0	.1	4.2	3.4	3.8
4	9.6	7.1	8.5	9.3	5.0	7.4	.7	.0	.3	6.5	3.9	5.0
5	8.7	5.5	7.3	7.9	4.5	6.6	.7	.0	.1	7.0	5.0	6.2
6	6.9	4.0	5.4	4.5	3.3	3.7	.5	.0	.2	5.2	4.7	4.9
7	7.0	3.3	5.1	3.5	2.7	3.2	.7	.5	.6	5.5	4.5	4.9
8	9.1	3.6	6.3	2.9	1.1	2.3	.7	.3	.5	4.9	4.2	4.7
9	11.6	8.3	10.1	2.7	.1	1.4	.4	.0	.3	4.2	2.6	3.3
10	9.3	6.9	8.3	4.4	1.4	3.0	.4	.0	.1	2.9	2.3	2.6
11	9.6	8.0	8.7	7.4	4.0	6.0	.0	.0	.0	3.8	2.9	3.4
12	8.8	7.5	8.1	9.6	7.0	8.3	.0	.0	.0	4.2	3.6	3.9
13	8.2	6.7	7.7	9.0	4.2	6.0	.8	.0	.3	5.0	3.3	4.2
14	10.8	6.2	8.5	4.2	2.2	2.9	.8	.2	.5	3.3	2.2	2.5
15	11.8	8.6	10.2	2.2	.8	1.6	.7	.0	.3	2.7	2.1	2.4
16	12.1	8.0	10.0	1.1	.0	.7	.8	.3	.6	2.7	2.2	2.6
17	8.8	4.2	6.4	4.4	1.1	2.7	3.4	.6	2.2	2.7	1.9	2.3
18	6.1	3.4	4.7	5.4	4.4	5.0	3.8	2.7	3.4	1.9	1.0	1.4
19	4.3	2.0	3.0	6.1	4.9	5.5	4.1	2.4	3.2	1.2	.0	.8
20	3.8	.5	2.4	5.0	4.2	4.6	4.1	2.8	3.7	.9	.0	.3
21	7.6	3.8	5.7	7.7	4.6	6.5	3.8	2.4	3.1	1.4	.2	.9
22	6.2	4.0	5.0	9.3	7.5	8.4	4.6	3.4	4.0	2.1	1.4	1.9
23	5.9	2.4	4.2	9.0	7.2	8.1	4.5	3.6	4.1	2.7	1.4	1.9
24	8.5	4.3	6.6	7.5	6.7	7.1	4.1	1.2	2.6	3.1	1.3	2.0
25	6.3	4.7	5.5	8.4	7.3	7.8	2.3	.7	1.6	1.4	.2	.8
26	7.1	3.2	5.4	8.3	6.8	7.9	2.1	.3	1.2	.6	.0	.2
27	9.0	6.7	7.6	6.8	4.6	5.5	1.1	.0	.4	1.1	.2	.8
28	9.3	6.2	7.7	4.6	3.9	4.3	2.9	1.1	2.3	2.6	.7	1.6
29	8.6	4.8	6.7	3.9	1.9	3.0	3.7	2.8	3.2	2.7	.0	1.5
30	8.3	6.5	7.3	2.4	1.6	2.0	4.5	3.6	4.1	.4	.0	.1
31	7.5	6.8	7.1	---	---	---	6.0	4.5	5.5	1.5	.1	.8
MONTH	12.1	.5	6.8	9.6	.0	5.1	6.0	.0	1.7	7.0	.0	2.6

POTOMAC RIVER BASIN

201

01594950 MCMILLAN FORT NEAR FORT PENDLETON, MD--CONTINUED

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	1.5	.0	.7	1.5	.0	.6	6.4	4.0	5.2	12.2	8.8	10.7
2	.0	.0	.0	2.0	1.1	1.5	5.5	4.2	5.1	13.3	8.8	11.1
3	.8	.0	.4	2.4	1.3	1.8	5.7	3.7	4.4	13.6	10.4	12.0
4	1.3	.6	.9	1.4	.0	.2	6.6	3.5	4.8	12.3	11.1	11.7
5	1.9	.2	1.1	.8	.0	.5	4.8	3.9	4.4	13.1	10.5	11.9
6	1.6	.8	1.4	1.1	.3	.7	6.7	3.8	5.0	14.4	11.1	12.4
7	1.9	.1	.9	1.8	.1	.9	8.0	3.6	5.7	14.1	8.9	11.5
8	1.7	.2	1.0	1.9	1.0	1.4	9.0	4.1	6.4	14.5	9.0	11.8
9	2.2	.0	1.1	1.4	.4	1.0	8.0	5.7	7.0	15.6	10.5	13.0
10	2.7	.3	1.4	1.4	.0	.8	6.9	4.9	6.0	14.7	10.7	12.9
11	2.9	.6	1.8	1.9	.7	1.2	8.8	4.3	6.4	16.1	11.2	13.6
12	2.3	.8	1.3	1.7	.0	.9	6.9	5.5	6.2	15.2	12.7	13.6
13	1.7	.0	.9	1.3	.0	.2	9.0	4.4	6.5	13.6	10.5	12.5
14	.4	.0	.2	.0	.0	.0	7.8	4.9	6.6	12.8	8.3	10.5
15	1.4	.3	.9	.1	.0	.0	10.8	5.6	8.3	14.2	9.0	11.6
16	2.1	.3	1.2	.8	.0	.5	9.7	7.2	8.8	12.6	11.4	12.0
17	.8	.0	.3	.8	.2	.6	7.2	5.2	6.1	13.0	10.3	11.4
18	.0	.0	.0	.7	.0	.2	9.2	4.9	6.8	10.5	9.2	9.8
19	.0	.0	.0	1.2	.0	.5	10.1	5.1	7.6	10.7	9.5	10.4
20	.3	.0	.1	2.4	.9	1.7	11.6	7.3	9.4	10.3	8.0	9.3
21	.4	.0	.2	2.1	1.6	1.9	9.6	6.3	8.2	9.3	6.4	8.0
22	.5	.0	.3	3.8	1.5	2.3	7.3	4.9	5.9	10.4	6.6	8.4
23	.2	.0	.0	2.5	.4	1.6	9.0	4.8	6.6	10.2	6.9	8.8
24	.0	.0	.0	3.5	.8	2.4	7.8	4.9	6.4	13.2	8.4	10.9
25	.3	.0	.1	5.1	2.6	3.3	11.7	6.0	8.7	14.0	11.6	12.7
26	.6	.0	.4	6.1	2.8	3.9	9.8	6.7	8.5	12.9	10.0	11.6
27	1.0	.3	.6	5.0	3.4	4.2	9.9	5.2	7.4	13.4	8.4	11.0
28	.9	.0	.5	4.6	3.9	4.3	11.0	5.1	8.1	15.6	10.8	13.1
29	---	---	---	4.6	4.2	4.4	12.4	7.0	9.8	14.3	10.4	13.1
30	---	---	---	6.4	4.2	4.9	11.8	8.2	10.1	13.8	8.3	10.9
31	---	---	---	6.8	4.1	5.2	---	---	---	13.9	10.7	12.3
MONTH	2.9	.0	.6	6.8	.0	1.7	12.4	3.5	6.9	16.1	6.4	11.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	12.2	8.9	10.9	16.4	15.5	15.8	18.8	13.8	16.3	20.3	17.3	18.8
2	10.4	7.4	8.9	18.2	15.2	16.4	19.5	14.0	16.4	20.8	17.2	18.8
3	13.6	9.1	11.1	19.1	15.3	17.1	19.8	15.0	17.1	20.7	18.1	19.3
4	13.3	11.5	12.1	21.2	16.1	18.2	17.4	14.4	16.0	18.7	15.8	17.9
5	13.7	11.1	12.3	21.1	16.3	18.4	17.2	14.5	15.7	17.0	14.3	15.6
6	13.2	10.4	11.4	21.9	16.5	18.9	14.6	13.9	14.2	17.0	12.4	14.7
7	14.6	9.6	12.1	22.1	16.8	19.0	16.4	14.0	15.0	17.2	12.5	15.0
8	16.6	12.7	14.5	22.3	16.5	19.1	16.9	12.5	14.5	17.8	15.1	16.3
9	18.4	14.1	15.9	22.3	16.6	19.2	17.1	12.2	14.8	17.8	13.7	15.8
10	18.7	15.3	16.6	22.2	17.7	19.6	18.1	13.7	15.9	16.5	12.4	15.2
11	16.8	14.7	15.6	22.5	17.4	19.5	19.6	15.4	17.0	12.5	9.2	11.0
12	16.8	13.5	15.0	21.3	17.7	19.1	19.6	15.5	17.3	12.8	6.8	10.1
13	16.6	13.2	14.8	21.9	17.1	19.0	20.5	15.8	17.8	16.0	9.9	12.9
14	16.3	11.5	13.6	21.3	16.1	18.4	20.1	15.0	17.2	17.4	11.1	14.2
15	17.0	12.5	14.5	20.3	16.5	18.8	20.0	14.0	16.8	19.1	12.6	15.7
16	16.7	11.6	13.9	19.3	14.1	16.3	20.4	15.7	17.9	15.7	14.3	15.1
17	18.0	11.5	14.6	19.4	12.5	15.4	21.7	17.2	19.0	17.1	14.2	15.2
18	19.0	13.0	15.8	20.7	13.3	16.5	20.5	16.7	18.7	16.1	12.9	15.1
19	19.9	15.3	17.4	19.6	15.7	17.4	20.6	15.3	17.4	15.2	11.5	13.2
20	20.2	15.1	17.5	21.0	16.9	18.9	20.5	15.4	18.0	15.5	10.3	12.7
21	17.9	15.5	16.7	20.0	15.9	17.6	19.3	14.6	17.3	16.3	12.4	14.1
22	18.6	15.1	16.4	19.0	13.9	15.9	19.0	12.9	15.6	15.9	12.8	14.1
23	18.2	13.2	15.4	19.0	12.2	15.2	20.0	13.5	16.6	16.5	12.2	14.3
24	18.3	11.2	14.4	20.1	12.0	15.7	21.9	15.1	18.1	14.4	10.3	12.4
25	17.7	12.4	15.1	20.3	14.7	17.2	22.1	17.8	19.6	13.1	9.9	11.6
26	17.7	13.2	15.1	21.2	15.4	18.1	22.1	16.6	19.2	15.6	12.4	14.6
27	18.7	11.8	14.8	22.0	17.7	19.4	21.8	16.0	18.8	15.0	11.5	13.9
28	19.5	13.3	15.8	23.3	16.4	19.7	22.3	16.8	19.4	11.5	10.0	10.6
29	17.0	14.1	15.3	19.6	17.3	18.6	21.8	16.7	19.0	10.0	8.5	9.3
30	18.5	14.3	16.0	17.5	15.8	16.7	21.8	16.4	19.1	8.5	5.4	7.5
31	---	---	---	17.8	15.2	16.4	22.1	16.5	19.3	---	---	---
MONTH	20.2	7.4	14.4	23.3	12.0	17.8	22.3	12.2	17.3	20.8	5.4	14.2

POTOMAC RIVER BASIN

01595000 NORTH BRANCH POTOMAC RIVER AT STEYER, MD

LOCATION.--Lat 39°18'07", long 79°18'26", Garrett County, Hydrologic Unit 02070002, on left bank 0.3 mi southeast of Steyer, 0.4 mi downstream from Steyer Run, 2.0 mi northeast of Gorman, and at mile 81.8.

DRAINAGE AREA.--73.0 mi².

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,276.01 ft above sea level.

REMARKS.--Records fair 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1954, reached a stage of 13.0 ft, from floodmarks; discharge, 11,300 ft³/s, from rating curve extended as explained above.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 25	1930	*2,060	*6.06	No peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	30	e47	507	e94	e64	e1300	e150	49	44	13	10
2	37	36	e44	301	e98	e64	954	e140	45	72	16	11
3	33	52	e43	250	e92	e110	600	e130	45	54	20	17
4	29	37	e42	222	e84	e200	430	e120	49	44	25	38
5	24	36	e76	310	e76	e180	338	e110	68	30	25	27
6	27	54	e61	254	e68	e160	281	e100	49	33	49	24
7	27	44	e55	207	e63	e150	240	e90	48	40	60	18
8	26	40	e51	194	e58	e150	219	e85	162	35	36	9.8
9	23	34	e47	173	e54	e160	197	e80	89	34	28	11
10	24	47	e57	157	e52	e160	510	e77	66	27	23	20
11	23	40	e165	148	e56	e150	398	e73	96	36	21	19
12	25	101	e131	187	e56	e150	329	e71	68	36	16	23
13	24	132	e102	226	e54	e150	265	e100	56	40	10	23
14	13	78	e83	200	e50	e150	230	86	50	35	11	20
15	12	61	e135	178	e48	e160	203	74	48	34	7.8	17
16	13	51	e220	168	e56	e180	819	67	48	33	11	39
17	20	53	e740	154	e67	e200	771	76	46	30	18	47
18	30	43	671	123	e52	e240	435	74	46	31	22	70
19	31	58	374	119	e62	e210	318	140	43	30	20	37
20	35	56	553	e90	e70	e180	e260	101	41	20	16	29
21	31	45	442	e130	e70	e200	e390	85	43	23	14	27
22	30	75	333	e160	e68	e300	e340	79	47	22	12	25
23	41	137	667	e150	e68	e600	e300	74	44	25	9.8	25
24	38	104	507	e150	e68	1420	e260	67	40	26	9.0	24
25	26	97	330	e180	e66	1420	e230	58	40	25	11	20
26	22	88	259	e130	e66	1420	e310	54	39	25	9.8	124
27	23	68	251	e140	e64	e1050	e260	50	43	27	7.2	126
28	26	59	215	e120	e64	e1000	e220	46	42	23	11	97
29	26	53	177	e110	---	e950	e190	48	46	57	10	53
30	29	e49	408	e110	---	e1300	e170	51	52	28	12	44
31	31	---	629	e100	---	e900	---	48	---	17	13	---
TOTAL	834	1858	7915	5648	1844	13728	11767	2604	1648	1036	566.6	1074.8
MEAN	26.9	61.9	255	182	65.9	443	392	84.0	54.9	33.4	18.3	35.8
MAX	41	137	740	507	98	1420	1300	150	162	72	60	126
MIN	12	30	42	90	48	64	170	46	39	17	7.2	9.8
CFSM	.37	.85	3.50	2.50	.90	6.07	5.37	1.15	.75	.46	.25	.49
IN.	.42	.95	4.03	2.88	.94	7.00	6.00	1.33	.84	.53	.29	.55

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1993, BY WATER YEAR (WY)

MEAN	74.3	137	232	230	253	339	284	190	120	89.1	69.6	49.5
MAX	316	588	527	569	491	885	573	419	442	340	334	238
(WY)	1977	1986	1973	1974	1961	1963	1958	1967	1981	1978	1956	1971
MIN	12.8	26.2	56.7	41.8	65.9	112	106	62.5	15.5	14.3	6.72	5.99
(WY)	1964	1966	1966	1977	1993	1990	1968	1965	1965	1965	1965	1959

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

SUMMARY STATISTICS

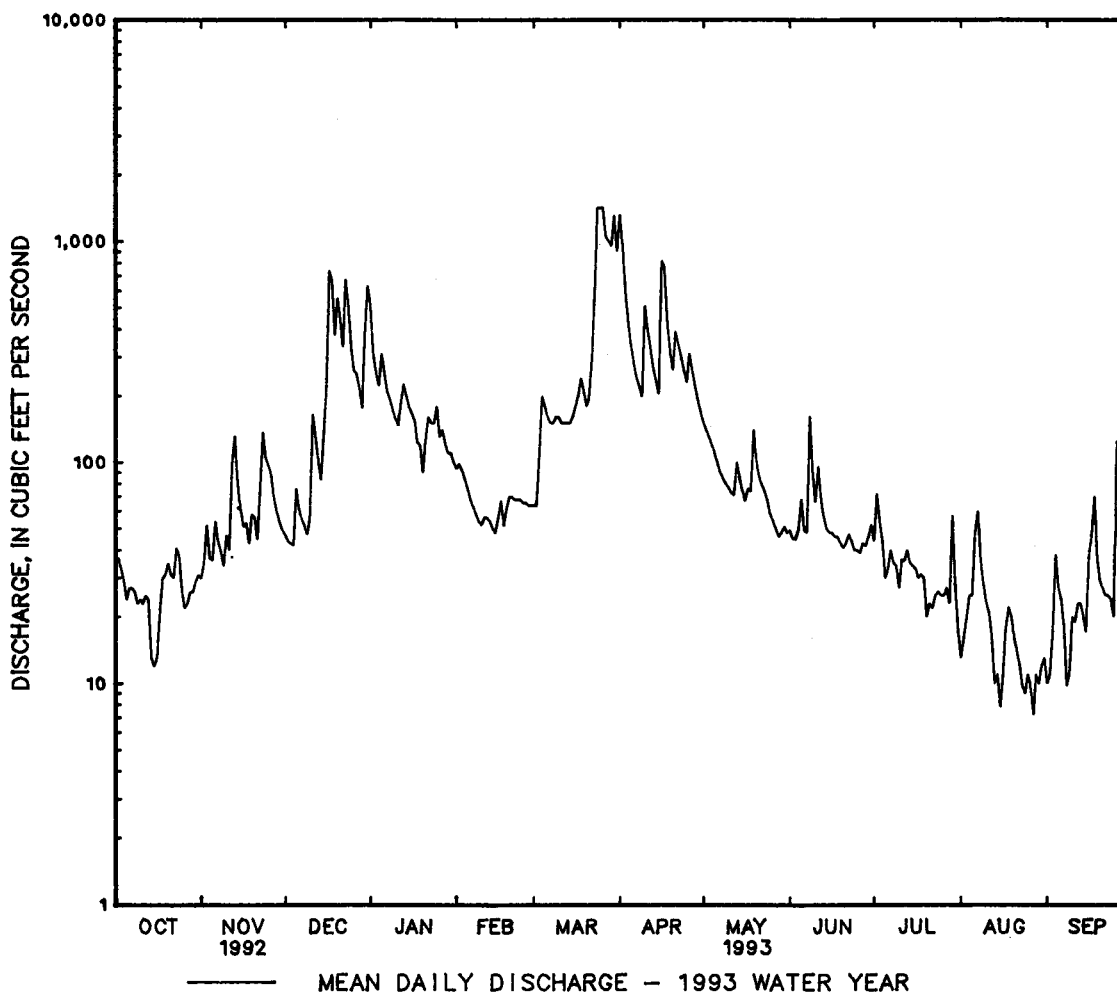
FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1956 - 1993

ANNUAL TOTAL	56900		50523.4				
ANNUAL MEAN	155		138			171	
HIGHEST ANNUAL MEAN						225	1978
LOWEST ANNUAL MEAN						115	1959
HIGHEST DAILY MEAN	1180	Jul 27	1420	(a)		4410	Nov 5 1985
LOWEST DAILY MEAN	12	Oct 15	7.2	Aug 27		3.1	Sep 9 1965
ANNUAL SEVEN-DAY MINIMUM	19	Oct 11	9.7	Aug 23		3.6	Sep 23 1959
INSTANTANEOUS PEAK FLOW	2490	Jul 24	2060	Mar 25		(b)11500	Nov 5 1985
INSTANTANEOUS PEAK STAGE	6.53	Jul 24	6.06	Mar 25		13.14	Nov 5 1985
INSTANTANEOUS LOW FLOW	10	Oct 14	3.1	Aug 29		2.9	Sep 10 1965
ANNUAL RUNOFF (CFSM)	2.13		1.90			2.34	
ANNUAL RUNOFF (INCHES)	29.00		25.75			31.85	
10 PERCENT EXCEEDS	349		310			380	
50 PERCENT EXCEEDS	110		58			100	
90 PERCENT EXCEEDS	35		20			20	

a Mar. 24-26.

b From rating curve extended above 3,000 ft³/s on basis of slope-area measurement at gage height 10.30 ft.

POTOMAC RIVER BASIN

01595200 STONY RIVER NEAR MOUNT STORM, WV

LOCATION.--Lat 39°16'10", long 79°15'45", Grant County, Hydrologic Unit 02070002, on left bank 100 ft downstream from highway bridge on U.S. Highway 50, 1.0 mi west of Mt. Storm, and at mile 6.4.

DRAINAGE AREA.--48.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,554.54 ft above sea level.

REMARKS.--Water-discharge records fair except those for estimated daily discharges (backwater from leaves and beaverdams), which are poor. Prior to June 1987, flow regulated by Stony River Reservoir, 14.0 mi upstream from station. Regulation since 1963 by Virginia Electric and Power Company dam (Mount Storm Lake), 4.0 mi upstream from station.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 2,210 ft³/s, Apr. 16, gage height, 7.36 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.5	14	e14	437	25	31	1320	58	20	6.5	8.0	4.3
2	e8.2	18	e14	203	31	32	1430	62	22	21	4.2	4.7
3	e7.8	33	e13	81	25	38	471	140	19	14	e6.0	15
4	e8.2	20	e13	78	27	69	142	113	17	8.9	e8.0	30
5	e8.0	18	e13	96	26	192	130	272	24	8.3	11	11
6	e7.5	19	e12	85	20	154	137	254	27	e7.0	19	7.3
7	e7.5	17	e12	78	18	31	292	126	24	e5.6	21	4.1
8	e8.0	15	e12	88	20	32	179	34	197	5.1	e6.0	9.6
9	e7.5	14	e11	121	20	42	108	38	281	5.2	e3.8	11
10	e7.5	e13	e11	168	24	42	299	50	163	4.2	e6.0	12
11	e8.0	e13	e11	144	20	44	299	46	56	2.3	9.8	9.7
12	e7.5	e13	32	91	20	38	1380	47	16	2.0	8.0	7.4
13	e7.8	e14	28	363	19	125	128	55	12	3.1	7.2	4.1
14	e8.2	e14	26	53	19	261	74	45	12	4.1	7.3	e4.0
15	e8.2	e15	37	42	17	243	66	36	16	4.3	3.3	e4.2
16	e7.0	e14	118	44	23	164	1200	34	12	2.0	3.0	e6.0
17	e6.8	e14	293	43	38	377	624	31	10	2.9	8.2	7.6
18	e6.5	e13	246	39	36	329	247	35	6.6	3.5	8.0	14
19	e7.5	e13	182	36	34	117	103	54	6.2	2.1	8.3	12
20	e8.0	e12	264	36	28	62	75	54	4.8	3.4	7.8	5.0
21	e9.0	e14	213	44	30	89	145	103	4.0	3.4	7.6	8.2
22	e10	e16	104	59	79	103	241	45	6.2	3.2	4.3	9.2
23	e11	e18	164	47	61	212	209	38	8.6	3.2	4.5	8.3
24	e12	e19	139	51	57	910	187	37	e10	1.7	12	8.2
25	e13	e18	190	54	51	746	119	38	10	5.4	12	11
26	14	e17	229	46	44	716	105	34	8.4	5.3	15	20
27	19	e16	68	47	37	1460	195	30	5.7	6.5	14	36
28	18	e16	48	44	33	847	176	24	9.1	7.9	14	21
29	17	e15	72	39	---	975	128	19	e14	14	10	14
30	16	e15	189	35	---	1130	59	17	7.6	7.5	e6.0	e12
31	15	---	249	37	---	1050	---	17	---	7.4	e5.0	---
TOTAL	308.2	480	3027	2829	882	10661	10268	1986	1029.2	181.0	268.3	330.9
MEAN	9.94	16.0	97.6	91.3	31.5	344	342	64.1	34.3	5.84	8.65	11.0
MAX	19	33	293	437	79	1460	1430	272	281	21	21	36
MIN	6.5	12	11	35	17	31	59	17	4.0	1.7	3.0	4.0

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

MEAN	51.3	91.0	113	112	135	216	161	115	71.1	46.1	28.4	30.1
MAX	234	669	301	239	253	537	371	271	237	205	104	140
(WY)	1977	1986	1973	1974	1982	1963	1987	1988	1981	1978	1975	1979
MIN	3.36	7.00	10.8	20.9	21.3	46.9	62.8	28.3	9.91	4.36	3.92	3.89
(WY)	1992	1992	1966	1981	1978	1990	1967	1964	1964	1968	1988	1985

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1962 - 1993

ANNUAL TOTAL	29099.8	32250.6		
ANNUAL MEAN	(a)79.5	(a)88.4	(a)97.4	
HIGHEST ANNUAL MEAN			134	1978
LOWEST ANNUAL MEAN			42.0	1964
HIGHEST DAILY MEAN	596 Feb 26	1460 Mar 27	9880	Nov 5 1985
LOWEST DAILY MEAN	6.5 Oct 18	1.7 Jul 24	1.3	Aug 28 1988
ANNUAL SEVEN-DAY MINIMUM	7.4 Oct 12	2.9 Jul 16	1.7	Aug 28 1988
INSTANTANEOUS PEAK FLOW	1280 Feb 27	2210 Apr 16	(b)14000	Nov 5 1985
INSTANTANEOUS PEAK STAGE	6.03 Feb 27	7.36 Apr 16	(c)16.41	Nov 5 1985
INSTANTANEOUS LOW FLOW	9.2 (d)	1.7 (f)	1.3	(g)
10 PERCENT EXCEEDS	225	205	229	
50 PERCENT EXCEEDS	39	19	48	
90 PERCENT EXCEEDS	11	5.7	8.5	

a Unadjusted.

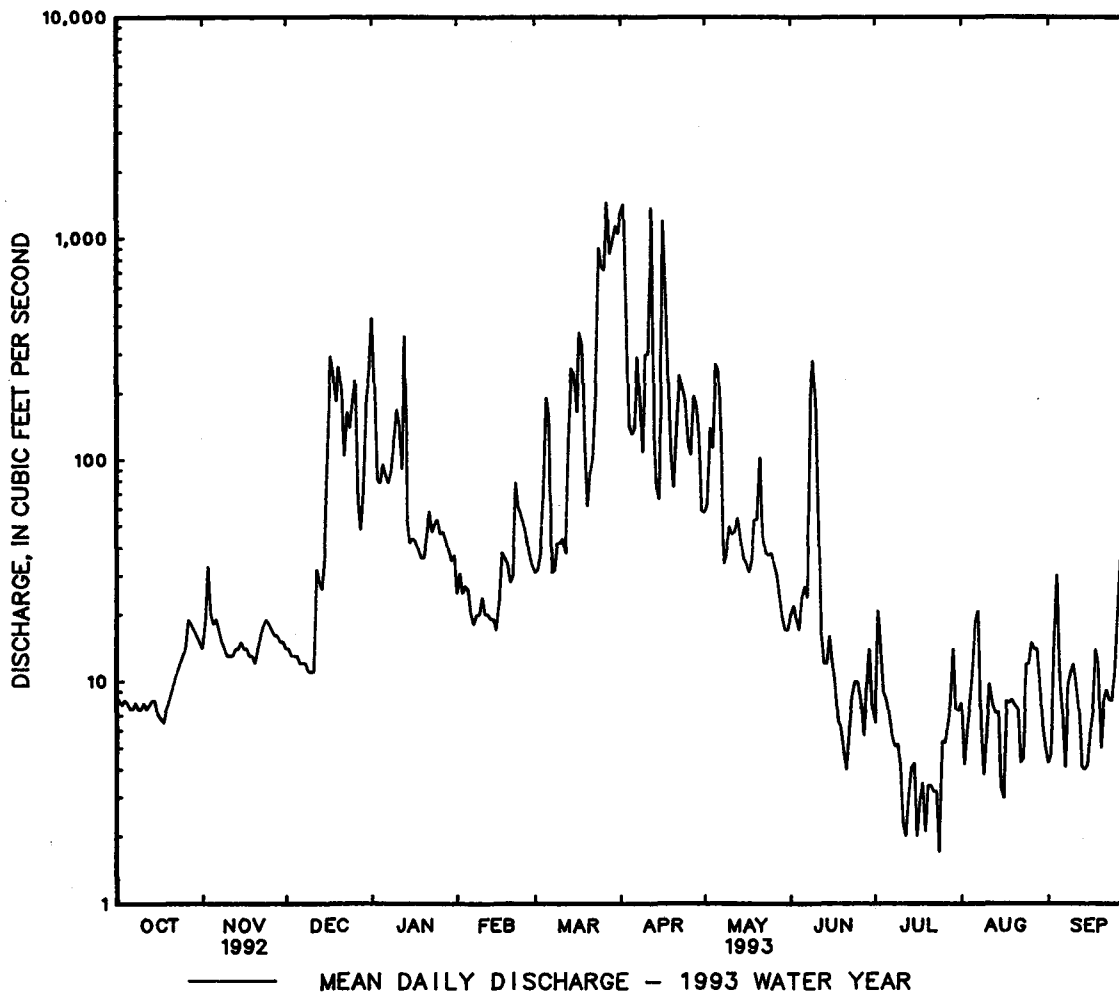
b From rating curve extended above 7,500 ft³/s on basis of slope-area measurement of peak flow.

c From floodmarks.

d Oct. 5, 6.

f July 24, 25.

g 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 TEMPERATURE: December 1961 to March 1974, September 1974 to current year.

INSTRUMENTATION.--Temperature recorder (continuous ethyl alcohol - actuated thermograph) since December 1961.

REMARKS.--Upstream reservoir regulation stopped June 1987. Temperature recorder malfunctioned Mar. 28-31.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 26.0°C, July 6; minimum, 1.5°C, Dec. 15, 16.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.5	11.0	9.0	8.5	4.0	3.5	10.0	9.0	2.5	2.5	3.0	3.0
2	13.0	10.5	8.5	8.0	3.5	3.0	10.0	6.5	2.5	2.5	4.0	3.0
3	14.5	12.0	9.0	8.5	3.0	3.0	6.5	6.0	2.5	2.5	5.0	4.5
4	14.0	13.0	9.0	8.0	3.0	3.0	7.0	6.5	3.0	2.5	4.5	4.5
5	13.5	12.0	9.0	8.0	3.0	3.0	7.5	7.0	3.0	3.0	8.5	2.5
6	12.0	10.0	8.0	7.0	3.0	3.0	7.0	7.0	3.0	3.0	8.5	6.0
7	11.5	10.0	7.0	6.5	3.0	3.0	7.0	7.0	3.0	3.0	6.0	4.0
8	12.0	10.0	6.5	6.0	3.0	3.0	7.0	7.0	3.0	3.0	5.0	4.0
9	14.0	12.0	6.0	4.0	3.0	3.0	8.0	7.0	3.5	3.0	4.0	4.0
10	14.0	13.0	6.0	4.0	3.0	3.0	8.5	8.0	3.5	3.0	4.0	3.0
11	13.5	13.0	7.0	5.5	3.0	3.0	10.0	8.5	5.0	3.5	4.0	3.0
12	13.5	12.0	9.0	7.0	3.0	3.0	9.5	8.5	4.0	3.5	3.0	3.0
13	13.0	11.5	9.0	6.0	3.0	3.0	14.0	8.5	3.5	3.0	3.0	3.0
14	13.5	11.0	6.0	4.5	3.0	2.0	8.5	5.5	3.0	3.0	3.0	3.0
15	15.0	13.5	4.5	3.0	2.0	1.5	5.5	5.0	3.0	3.0	3.0	2.0
16	14.0	12.0	4.0	3.0	2.0	1.5	5.0	5.0	3.0	3.0	2.0	2.0
17	13.0	10.0	4.0	3.0	4.5	2.0	5.0	4.5	3.0	3.0	8.0	2.0
18	10.0	8.0	5.0	4.0	6.5	4.5	4.5	4.0	3.0	3.0	8.0	6.0
19	8.0	7.0	7.0	5.0	8.0	6.5	4.0	3.0	3.0	3.0	6.0	4.5
20	7.0	5.0	6.5	5.5	8.5	7.5	3.0	2.5	3.0	3.0	4.5	4.0
21	8.0	5.5	7.0	5.5	9.0	6.5	3.0	2.5	3.0	3.0	5.0	5.0
22	9.0	7.5	9.0	7.0	6.5	6.5	3.5	2.5	3.0	3.0	6.0	4.5
23	8.5	7.0	9.0	9.0	6.5	6.5	3.5	3.0	3.0	3.0	5.5	5.0
24	10.0	8.0	9.0	7.5	6.5	4.5	4.5	3.5	3.0	3.0	8.5	5.0
25	10.0	8.5	8.0	7.5	7.5	4.5	4.0	2.5	3.0	3.0	9.5	5.0
26	9.0	7.0	9.0	8.0	7.5	7.5	3.0	2.5	3.0	3.0	10	5.0
27	9.5	9.0	8.5	6.0	7.5	3.5	3.0	2.5	3.0	3.0	11	7.0
28	10.5	9.5	6.0	6.0	4.0	3.5	3.5	2.5	3.0	3.0	---	---
29	9.5	8.0	6.0	4.5	4.5	3.5	3.5	3.0	---	---	---	---
30	9.5	9.0	4.5	4.0	5.5	4.5	3.0	2.5	---	---	---	---
31	9.0	9.0	---	---	9.0	5.5	2.5	2.5	---	---	---	---
MONTH	15.0	5.0	9.0	3.0	9.0	1.5	14.0	2.5	5.0	2.5	---	---

01595200 STONY RIVER NEAR MOUNT STORM, WV--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.0	11.0	14.5	12.5	17.5	15.0	20.5	19.5	21.0	18.0	24.0	21.5
2	11.0	11.0	16.5	13.5	16.0	13.5	21.0	19.5	20.5	18.5	24.0	20.5
3	11.0	7.0	17.0	15.5	17.5	14.5	22.5	19.5	22.5	18.5	23.5	21.5
4	7.0	5.5	16.5	16.0	17.0	16.0	24.5	20.5	21.0	18.5	22.5	20.5
5	7.0	6.0	17.5	16.0	17.5	15.5	25.5	21.0	19.5	18.5	20.5	18.5
6	8.0	6.0	18.5	17.5	16.5	15.5	26.0	23.0	19.0	17.5	20.0	18.5
7	11.5	7.5	19.5	17.0	19.0	15.0	25.5	22.5	19.0	17.0	20.0	18.0
8	12.0	11.0	18.0	15.0	23.0	18.0	25.0	22.0	19.5	17.0	20.5	19.0
9	11.0	9.0	20.0	16.5	24.5	23.0	25.5	21.5	19.5	17.0	20.5	18.5
10	9.5	9.0	19.5	17.0	24.0	23.5	25.0	22.5	19.5	18.0	20.0	18.5
11	10.5	9.0	20.5	18.0	23.5	21.5	25.5	22.0	21.0	18.0	18.5	15.5
12	11.5	10.5	19.5	18.0	21.5	18.5	25.0	22.5	21.5	18.5	17.0	13.5
13	11.5	9.0	18.5	17.0	19.5	18.5	25.5	22.0	21.5	19.0	19.5	15.5
14	9.0	8.5	17.0	13.5	20.5	16.0	24.5	21.5	21.5	18.5	20.0	17.0
15	12.0	9.0	18.5	15.0	20.5	17.5	23.5	22.5	22.5	19.0	20.0	18.5
16	14.0	10.5	17.5	16.5	21.5	17.0	24.0	19.0	22.0	19.5	20.0	18.0
17	14.0	10.0	17.5	15.0	22.5	17.5	24.0	18.5	22.0	20.0	18.0	17.0
18	12.0	10.0	16.5	14.5	23.0	18.5	24.0	18.5	22.0	20.0	18.0	17.0
19	11.0	9.5	14.5	14.5	24.0	21.0	23.0	21.0	22.0	19.0	17.0	15.0
20	12.0	10.0	14.5	13.5	24.0	20.5	25.0	21.5	21.5	19.0	16.0	14.5
21	11.5	10.5	16.5	14.0	23.0	20.5	23.5	21.0	21.5	19.0	17.0	15.0
22	10.5	10.0	15.5	14.0	22.0	19.5	23.5	19.5	20.5	18.0	17.0	16.0
23	11.5	9.5	14.5	13.5	22.5	18.5	21.0	18.0	21.5	18.0	16.5	16.0
24	10.5	10.0	17.0	14.0	22.0	17.0	22.0	17.5	21.5	18.5	16.5	15.0
25	13.5	11.0	17.0	16.5	21.5	18.0	23.0	19.0	23.5	20.5	16.0	14.5
26	15.0	10.5	17.0	16.0	21.0	18.0	22.5	20.5	23.5	21.0	17.0	14.5
27	13.0	10.5	18.0	14.5	22.5	16.5	24.5	21.5	23.5	21.0	17.0	14.0
28	14.5	11.5	19.5	17.0	23.0	18.0	24.5	21.0	24.5	21.5	14.0	12.0
29	15.5	13.0	20.0	19.0	21.5	19.0	24.5	22.5	24.5	21.5	13.0	12.0
30	14.0	12.5	19.0	14.5	20.5	18.0	22.5	19.5	24.5	21.5	12.0	11.0
31	---	---	18.0	16.5	---	---	19.5	18.5	24.5	20.5	---	---
MONTH	15.5	5.5	20.5	12.5	24.5	13.5	26.0	17.5	24.5	17.0	24.0	11.0

POTOMAC RIVER BASIN

01596500 SAVAGE RIVER NEAR BARTON, MD

LOCATION.--Lat 39°34'05", long 79°06'10", Garrett County, Hydrologic Unit 02070002, on right bank 0.9 mi upstream from Bear Pen Run, 1.5 mi downstream from Poplar Lick Run, 5.4 mi northwest of Barton, and 10 mi upstream from mouth.

DRAINAGE AREA.--49.1 mi².

PERIOD OF RECORD.--September 1948 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.88 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (ice effect and periods of no contact between well and stream), which are fair. 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 31	2300	913	3.39	Mar. 30	2030	1,410	4.03
Mar. 24	0230	981	3.48	Apr. 1	0330	1,800	4.49
Mar. 25	1945	1,180	3.74	Apr. 16	2045	*1,890	*4.60
Mar. 28	0445	1,230	3.81				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	3.9	28	642	49	41	1320	81	29	8.2	5.5	e4.3
2	4.1	7.8	25	348	e47	48	839	70	20	62	8.2	e4.2
3	3.9	82	24	203	e46	61	536	61	18	38	9.7	e4.8
4	3.8	38	20	147	e45	142	338	65	17	22	7.2	22
5	3.8	25	24	171	e43	143	219	72	21	16	5.6	12
6	3.8	26	25	138	e42	110	160	65	18	12	7.5	6.5
7	3.8	20	21	113	e42	91	138	59	15	9.0	15	5.8
8	3.8	17	20	99	e41	102	131	55	170	7.7	9.5	6.0
9	3.8	16	19	87	e41	127	132	50	115	6.3	6.2	7.4
10	3.5	15	16	75	e40	117	479	45	76	5.4	5.6	6.0
11	3.5	14	e37	65	34	103	530	43	72	e4.4	15	e5.0
12	3.5	16	e64	78	22	85	378	44	49	e4.3	23	e4.8
13	3.9	88	e44	112	21	71	244	53	37	e4.0	13	e4.7
14	3.9	61	e37	156	21	71	173	42	30	e3.8	8.5	e4.7
15	3.6	46	e32	142	19	93	134	37	26	e4.2	e5.8	e4.8
16	3.5	35	e44	119	20	87	1020	34	21	e3.9	e5.0	16
17	3.5	29	e100	98	23	83	990	35	18	e3.8	e4.9	16
18	3.5	25	428	81	37	103	502	37	16	e3.5	e4.8	12
19	3.5	23	239	63	53	114	319	90	14	e3.2	e4.8	8.4
20	3.6	21	214	70	67	93	204	78	12	e3.4	e4.7	6.6
21	3.8	21	235	102	48	86	196	70	11	e2.8	e4.6	5.6
22	3.8	32	181	86	61	88	199	60	12	e2.5	e4.6	6.0
23	3.8	59	204	92	58	302	181	51	10	e2.4	e4.5	5.7
24	3.8	59	270	108	50	819	153	44	8.1	e2.4	e4.5	5.7
25	4.2	66	185	120	45	873	125	38	7.3	e2.3	e4.4	6.1
26	4.5	59	133	109	46	883	143	32	6.7	e2.5	e4.3	42
27	4.1	51	117	100	46	846	143	28	7.2	11	e4.3	92
28	3.8	44	114	82	40	1070	134	24	8.4	5.3	e4.3	77
29	3.8	37	77	75	---	868	119	21	13	31	e4.8	46
30	3.8	32	254	75	---	1060	100	19	9.2	12	e4.6	31
31	3.8	---	766	85	---	1060	---	23	---	6.8	e4.4	---
TOTAL	117.7	1068.7	3997	4041	1147	9840	10279	1526	886.9	306.1	218.8	479.1
MEAN	3.80	35.6	129	130	41.0	317	343	49.2	29.6	9.87	7.06	16.0
MAX	4.5	88	766	642	67	1070	1320	90	170	62	23	92
MIN	3.5	3.9	16	63	19	41	100	19	6.7	2.3	4.3	4.2
CFSM	.08	.73	2.63	2.65	.83	6.46	6.98	1.00	.60	.20	.14	.33
IN.	.09	.81	3.03	3.06	.87	7.46	7.79	1.16	.67	.23	.17	.36

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

MEAN	27.8	50.3	91.4	93.8	124	180	145	91.2	44.6	20.1	16.6	15.3
MAX	157	336	256	251	307	348	343	205	154	111	116	98.1
(WY)	1955	1986	1973	1952	1956	1963	1993	1968	1981	1989	1956	1950
MIN	1.52	2.32	5.96	13.7	19.4	30.8	33.0	21.8	5.48	2.68	2.05	1.78
(WY)	1964	1954	1954	1977	1954	1990	1968	1991	1965	1965	1966	1991

01596500 SAVAGE RIVER NEAR BARTON, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1948 - 1993

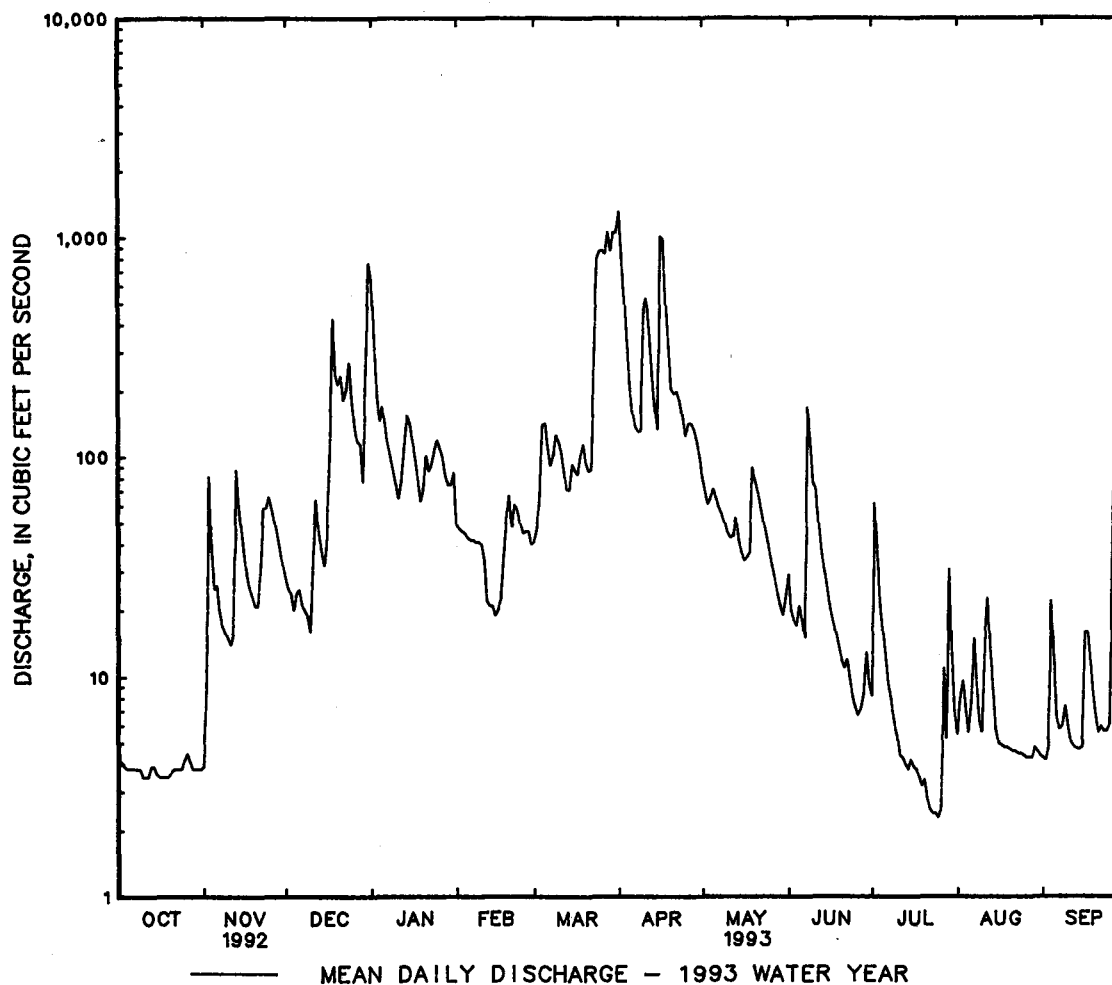
ANNUAL TOTAL	20794.7		33907.3			
ANNUAL MEAN	56.8		92.9		74.8	
HIGHEST ANNUAL MEAN					102	1955
LOWEST ANNUAL MEAN					34.9	1954
HIGHEST DAILY MEAN	766	Dec 31	1320	Apr 1	2180	Nov 5 1985
LOWEST DAILY MEAN	3.5	(a)	2.3	Jul 25	.50	(b)
ANNUAL SEVEN-DAY MINIMUM	3.6	Oct 15	2.6	Jul 20	.63	Aug 29 1966
INSTANTANEOUS PEAK FLOW	913	Dec 31	1890	Apr 16	(c)7510	Oct 15 1954
INSTANTANEOUS PEAK STAGE	3.39	Dec 31	4.60	Apr 16	8.45	Oct 15 1954
INSTANTANEOUS LOW FLOW	UNKNOWN		UNKNOWN		.40	(d)
ANNUAL RUNOFF (CFSM)	1.16		1.89		1.52	
ANNUAL RUNOFF (INCHES)	15.75		25.69		20.69	
10 PERCENT EXCEEDS	140		189		185	
50 PERCENT EXCEEDS	30		34		32	
90 PERCENT EXCEEDS	4.5		3.9		3.9	

a Oct. 10-12, 16-19.

b Sept. 2, 3, 12, 1966

c From rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow.

d Sept. 3, 4, 1966.



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.

PERIOD OF RECORD.--October 1948 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,276.40 ft above sea level.

REMARKS.--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, 5,120 ft³/s, Apr. 16, gage height, 6.35 ft.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	52	54	438	138	87	3460	247	75	75	57	59
2	68	53	54	438	111	87	2180	244	75	77	56	58
3	68	53	65	437	111	87	1270	244	75	75	56	58
4	68	52	70	486	111	100	972	243	75	75	56	58
5	68	53	70	630	111	98	737	242	76	75	56	58
6	68	52	70	684	111	97	454	241	75	75	57	58
7	68	52	70	676	111	96	294	200	76	75	56	58
8	68	52	70	668	111	97	246	180	76	75	56	58
9	68	52	70	661	111	98	222	177	75	75	56	58
10	68	52	71	651	110	116	405	179	76	75	56	58
11	68	52	70	644	109	126	954	178	78	75	56	58
12	68	53	70	636	109	189	930	176	76	65	56	58
13	69	52	70	490	108	227	752	130	75	61	56	58
14	70	52	70	409	108	227	526	111	75	61	55	58
15	59	52	70	409	108	352	448	111	75	61	54	58
16	54	52	78	408	108	455	1740	111	75	61	54	59
17	54	52	106	405	108	450	2920	87	75	60	54	58
18	54	53	123	402	107	447	1170	75	75	59	56	58
19	54	52	123	284	e97	446	764	75	75	59	58	58
20	54	52	126	214	e87	443	656	77	75	59	58	58
21	54	53	167	213	87	439	498	77	75	59	58	58
22	54	54	276	213	87	436	457	77	75	58	58	58
23	54	54	327	213	87	447	455	77	75	58	58	58
24	54	54	331	213	86	489	419	77	75	58	58	58
25	54	54	331	213	87	512	327	77	75	58	58	58
26	54	54	330	214	87	896	218	77	75	58	58	58
27	53	54	326	215	87	1210	227	76	75	58	58	59
28	52	54	326	214	87	2280	221	75	75	57	59	59
29	52	54	323	192	---	1900	223	76	75	60	59	59
30	52	54	324	180	---	2130	241	75	75	58	59	59
31	53	---	386	180	---	2150	---	76	---	58	59	---
TOTAL	1870	1584	5017	12330	2880	17214	24386	4168	2258	2013	1761	1746
MEAN	60.3	52.8	162	398	103	555	813	134	75.3	64.9	56.8	58.2
MAX	70	54	386	684	138	2280	3460	247	78	77	59	59
MIN	52	52	54	180	86	87	218	75	75	57	54	58
(t)	7180	8140	16600	9490	7320	20600	19600	17800	16500	14000	11500	9900

MEAN	112	122	213	213	268	330	217	195	107	67.9	70.1	87.4
MAX	446	641	655	713	596	684	813	488	298	329	262	206
(WY)	1955	1986	1973	1952	1956	1963	1993	1989	1951	1990	1956	1975
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, 1992, 10,160 acre-feet).
Records furnished by U.S. Army Corps of Engineers.

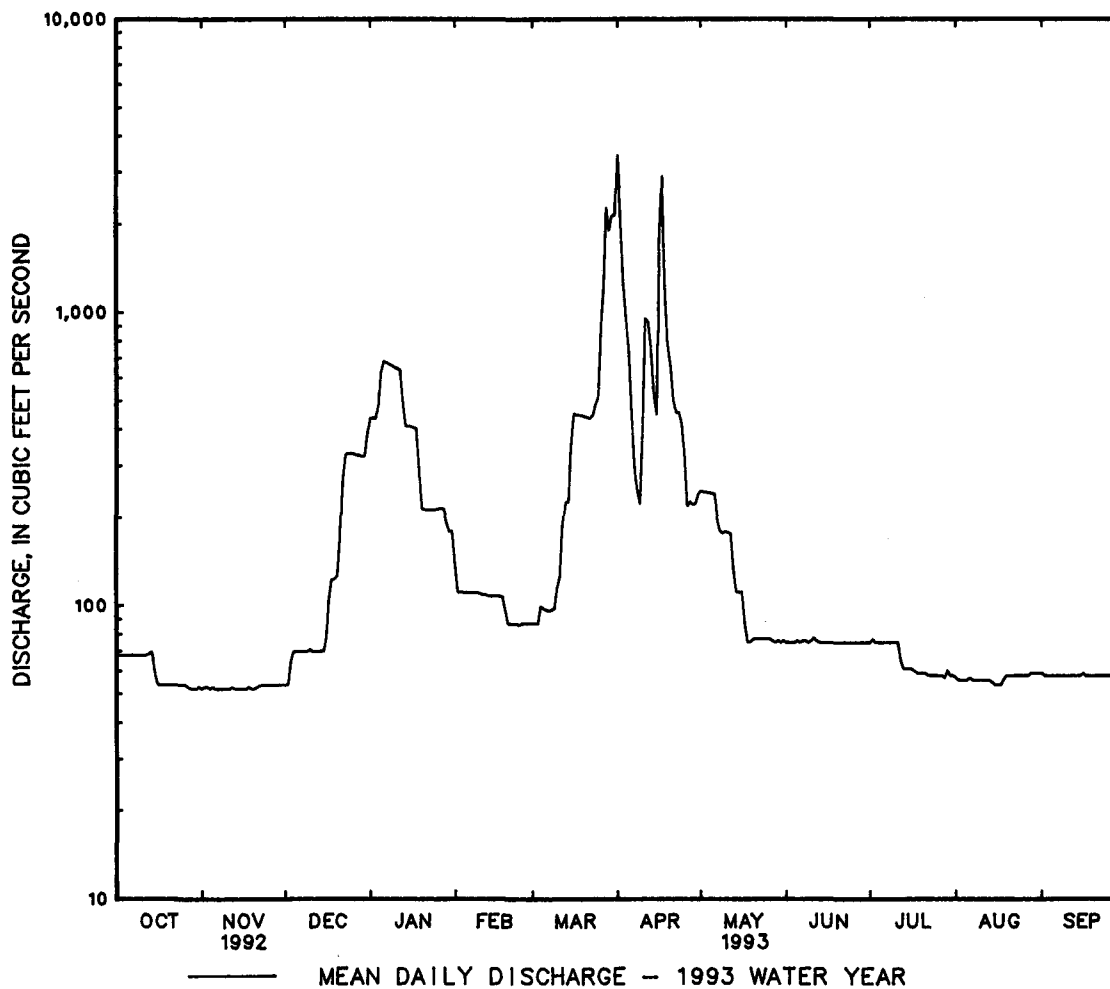
01597500 SAVAGE RIVER, BELOW SAVAGE RIVER DAM, NEAR BLOOMINGTON, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1951 - 1993	
ANNUAL TOTAL	44764		77227			
ANNUAL MEAN	122		212		167	
ANNUAL MEAN*	135		212		167	
HIGHEST ANNUAL MEAN					231	1955
LOWEST ANNUAL MEAN					69.7	1954
HIGHEST DAILY MEAN	677	Feb 27	3460	Apr 1	3790	Oct 16 1954
LOWEST DAILY MEAN	32	Jan 1	52	(a)	.60	(b)
ANNUAL SEVEN-DAY MINIMUM	37	Jan 1	52	Nov 4	.64	Aug 4 1951
INSTANTANEOUS PEAK FLOW	1100	May 14	5120	Apr 16	8550	Nov 4 1985
INSTANTANEOUS PEAK STAGE	3.39	May 14	6.35	Apr 16	7.81	Nov 4 1985
INSTANTANEOUS LOW FLOW	7.8	Sep 24	16	May 19	.35	Oct 27 1966
ANNUAL RUNOFF (CFSM)	1.15		2.00		1.57	
ANNUAL RUNOFF (INCHES)	15.71		27.10		21.35	
10 PERCENT EXCEEDS	345		454		412	
50 PERCENT EXCEEDS	70		75		84	
90 PERCENT EXCEEDS	52		54		20	

* Adjusted for change in reservoir contents since December 1950.

a Oct. 28-30, Nov. 1, 4, 6-11, 13-17, 19, 20.

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



POTOMAC RIVER BASIN

01598500 NORTH BRANCH POTOMAC RIVER AT LUKE, MD

LOCATION.--Lat 39°28'45", long 79°03'55", Mineral County, W. Va., Hydrologic Unit 02070002, on right bank 0.2 mi downstream from Savage River, 0.5 mi northwest of Luke, and at mile 53.3.

DRAINAGE AREA.--404 mi².

PERIOD OF RECORD.--June 1899 to July 1906 (published as "at Piedmont, W. Va."), October 1949 to current year.

REVISED RECORDS.--WSP 192: 1899-1904. WSP 1432: 1905-6, drainage area at former site.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 946.22 ft above sea level. June 27, 1899, to July 15, 1906, nonrecording gage at bridge 1.1 mi downstream at datum about 35 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated prior to July 1981 by Stony River Reservoir, 45 mi upstream from station, since December 1950 by Savage River Reservoir, 5 mi upstream from station (see station 01597500), and since July 1981 by Jennings Randolph Lake, 9 mi upstream from station. Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899-1906. U.S. Army Corps of Engineers satellite 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, 10,700 ft³/s, Apr. 1, gage height, 9.83 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	364	214	216	1340	606	481	9820	1020	336	281	216	223
2	363	226	230	1280	537	492	9260	944	333	319	217	218
3	362	240	256	1250	511	519	7350	793	332	287	215	221
4	360	220	262	1290	509	794	5520	792	330	282	214	232
5	347	219	268	1430	506	712	4090	795	338	280	214	219
6	324	219	263	1480	505	629	2050	889	329	278	231	218
7	314	216	262	1460	502	606	1520	925	330	259	222	217
8	315	215	261	1450	497	646	1330	782	356	233	216	223
9	316	214	261	1440	495	672	1290	693	329	236	215	220
10	314	214	277	1420	492	668	2070	663	330	236	215	221
11	314	214	266	1410	493	677	2980	611	350	235	219	217
12	312	217	264	1410	501	823	3330	611	332	228	222	216
13	311	219	264	1370	494	1020	3280	568	328	222	216	216
14	311	209	264	1430	491	995	1970	534	326	222	215	216
15	282	208	264	1420	488	1170	1450	682	325	222	215	219
16	254	208	352	1410	501	1450	4630	683	323	220	214	229
17	686	208	796	1390	508	1480	5340	467	320	219	215	222
18	792	208	1050	1380	494	1480	5180	412	319	219	214	222
19	250	209	1020	1090	477	1460	4170	422	317	219	223	218
20	248	208	1050	833	467	1450	2310	407	317	217	216	216
21	248	212	1060	841	474	1450	1800	402	317	216	216	222
22	248	219	1060	851	493	1480	1730	400	317	216	216	216
23	248	227	1120	861	490	1790	1690	399	300	216	223	216
24	249	221	1130	861	484	2720	1640	397	278	215	216	214
25	248	226	1100	859	486	3400	1540	394	277	215	216	213
26	247	221	1080	850	489	4440	1290	391	277	219	215	219
27	248	219	1070	847	484	6210	1020	390	277	215	216	236
28	238	218	1060	839	482	8200	1090	389	278	214	216	219
29	221	216	1060	788	---	7740	1180	514	279	254	216	215
30	214	216	1150	706	---	8240	1030	434	279	218	218	213
31	214	---	1350	650	---	8680	---	338	---	216	224	---
TOTAL	9762	6500	20386	35936	13956	72574	92950	18141	9479	7328	6736	6586
MEAN	315	217	658	1159	498	2341	3098	585	316	236	217	220
MAX	792	240	1350	1480	606	8680	9820	1020	356	319	231	236
MIN	214	208	216	650	467	481	1020	338	277	214	214	213

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

MEAN	365	480	825	897	1100	1517	1191	902	507	321	307	267
MAX	1423	2806	2536	2276	2421	3414	3098	2238	1493	1294	1401	737
(WY)	1955	1986	1973	1952	1956	1963	1993	1988	1981	1990	1955	1971
MIN	45.5	91.8	131	166	322	467	374	165	108	91.4	61.4	66.9
(WY)	1952	1954	1954	1977	1978	1988	1990	1982	1969	1953	1951	1951

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

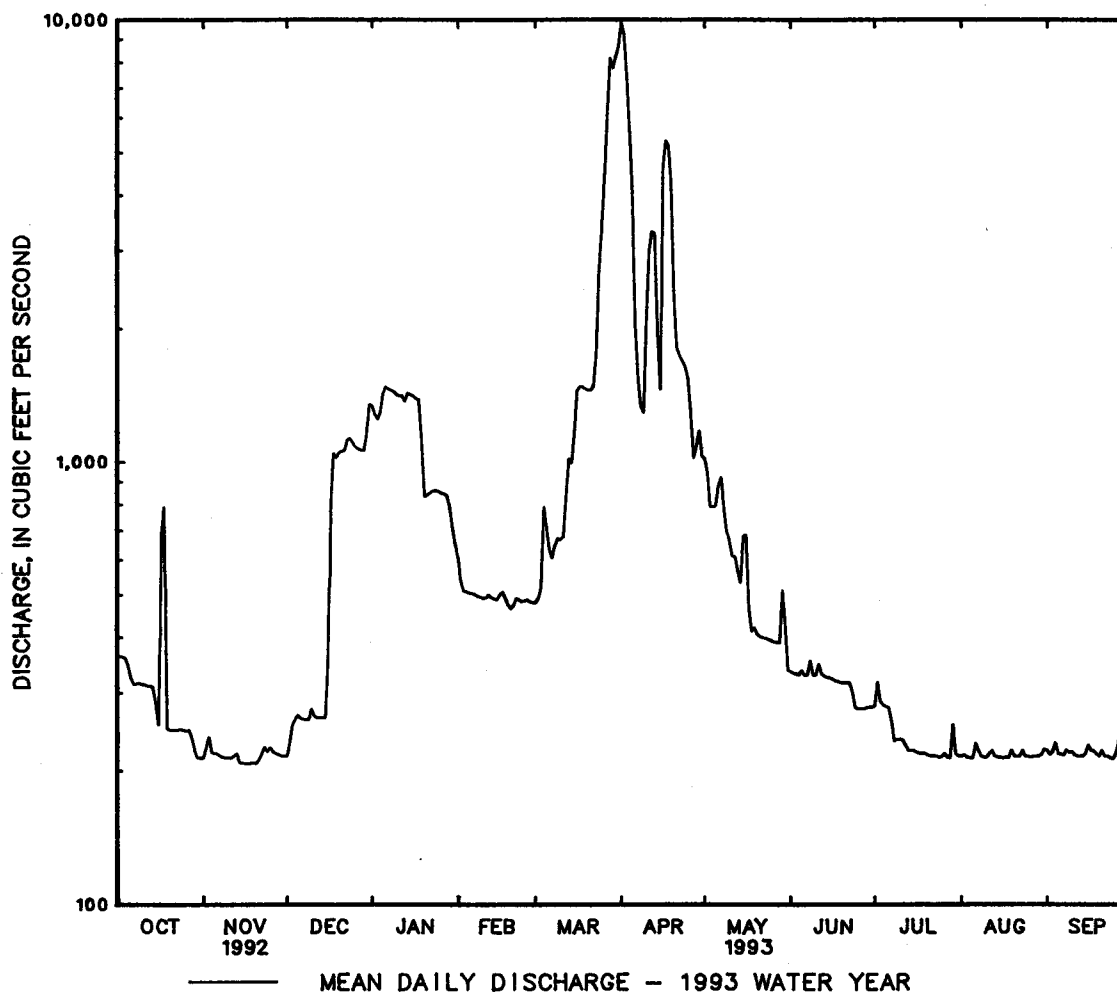
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1950 - 1993	
ANNUAL TOTAL	226492		300334			
ANNUAL MEAN	619		823		722	
ANNUAL MEAN*	641		812		717	
HIGHEST ANNUAL MEAN					943	
LOWEST ANNUAL MEAN					412	
HIGHEST DAILY MEAN	3250	Jul 28	9820	Apr 1	18400	Aug 18 1955
LOWEST DAILY MEAN	208	(a)	208	(a)	36	Oct 20 1951
ANNUAL SEVEN-DAY MINIMUM	208	Nov 14	208	Nov 14	38	Oct 18 1951
INSTANTANEOUS PEAK FLOW	3650	Jul 27	10700	Apr 1	(b)39400	Oct 15 1954
INSTANTANEOUS PEAK STAGE	6.10	Jul 27	9.83	Apr 1	17.15	Oct 15 1954
INSTANTANEOUS LOW FLOW	149	Jul 10	162	(c)	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.53		2.04		1.79	
ANNUAL RUNOFF (CFSM)*	1.59		2.01		1.77	
ANNUAL RUNOFF (INCHES)	20.86		27.65		24.27	
ANNUAL RUNOFF (INCHES)*	21.53		27.28		24.10	
10 PERCENT EXCEEDS	1260		1460		1610	
50 PERCENT EXCEEDS	425		330		410	
90 PERCENT EXCEEDS	245		216		113	

* Adjusted for change in reservoir contents since October 1949.

a Nov. 15-18, 20.

b From rating curve extended above 25,000 ft³/s on basis of slope-area measurement of peak flow.

c Oct. 7, Aug. 23.



POTOMAC RIVER BASIN

01599000 GEORGES CREEK AT FRANKLIN, MD

LOCATION.--Lat 39°29'38", long 79°02'42", Allegany County, Hydrologic Unit 02070002, on right bank at Franklin, and 1.2 mi upstream from Westernport and mouth.

DRAINAGE AREA.--72.4 mi².

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Westernport"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1502: 1940. WDR MD-DE-86-1: 1984(M).

GAGE.--Water-stage recorder. Datum of gage is 958.96 ft above sea level (Westvaco Corporation bench mark). May 4, 1905, to July 15, 1906, nonrecording gage at bridge 0.8 mi downstream at different datum. Oct. 16, 1929, to Oct. 1, 1937, water-stage recorder at site 95 ft downstream at present datum.

REMARKS.--Records good. Records include about 0.5 ft³/s of sewage from city of Frostburg, which obtains its water supply from Big Piney Run (Monongahela River basin) and Savage River. A negligible discharge is diverted upstream from station by Frostburg Water Co. for municipal supplies of Eckhart and Welch Hill. An undetermined amount of water is diverted from the upper third of basin into the Wills Creek basin by the Hoffman drainage tunnel (see station 01601500). Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 29, 1924, reached a stage of about 10 ft, from floodmarks, at site 95 ft downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	2115	1,230	6.51	Apr. 1	0115	*2,010	*7.63
Mar. 25	2130	1,500	6.91	Apr. 2	0500	1,500	6.91
Mar. 26	2230	1,370	6.71	Apr. 16	0930	1,650	7.13

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	11	21	395	59	31	1410	110	35	15	11	23
2	8.8	17	20	224	44	41	1190	100	28	55	11	9.3
3	8.4	60	19	155	50	60	716	92	27	34	14	9.5
4	8.4	26	17	122	46	316	512	94	25	19	10	24
5	8.4	18	24	124	43	288	378	108	34	16	9.2	12
6	8.4	20	19	96	43	162	291	92	27	14	21	8.5
7	8.4	16	17	85	39	125	224	85	22	13	25	7.6
8	8.4	14	16	80	37	160	182	83	124	12	15	10
9	9.2	12	16	76	35	197	152	80	62	11	11	11
10	9.3	11	14	71	34	164	547	75	42	10	11	10
11	9.0	11	e15	66	34	157	418	71	55	9.5	14	8.2
12	9.8	12	30	74	40	122	365	74	36	8.8	17	7.2
13	9.2	44	26	117	39	108	270	76	29	8.7	13	7.2
14	8.7	28	26	122	35	101	214	66	26	8.4	11	6.8
15	9.0	21	25	95	33	92	174	60	23	8.6	9.4	7.1
16	8.8	17	34	88	39	88	1020	57	20	8.3	8.5	28
17	8.5	17	184	83	48	112	1040	55	18	7.7	10	17
18	8.6	16	213	77	36	115	588	62	17	7.4	9.5	16
19	9.1	16	126	70	32	99	418	92	17	8.0	8.4	12
20	9.7	16	133	60	38	95	308	70	16	8.5	8.2	10
21	9.5	18	129	70	35	96	362	60	16	8.0	7.8	9.9
22	9.3	33	102	86	46	122	336	55	16	7.3	7.2	10
23	9.1	51	143	94	44	479	243	49	15	6.9	7.1	8.7
24	9.3	37	155	92	38	927	203	46	14	6.9	7.0	8.5
25	9.7	44	103	91	e37	1070	169	42	13	7.0	6.7	11
26	9.7	37	90	81	33	1140	248	38	13	10	6.6	21
27	9.4	32	75	78	33	1120	196	35	13	15	6.6	47
28	9.3	28	75	76	31	1180	155	32	13	8.5	6.6	36
29	9.2	25	73	74	---	1290	138	29	17	53	7.2	20
30	9.6	23	268	60	---	1250	124	27	16	16	6.6	16
31	11	---	557	62	---	1200	---	31	---	12	7.8	---
TOTAL	282.3	731	2765	3144	1101	12507	12591	2046	829	433.5	324.4	432.5
MEAN	9.11	24.4	89.2	101	39.3	403	420	66.0	27.6	14.0	10.5	14.4
MAX	11	60	557	395	59	1290	1410	110	124	55	25	47
MIN	8.4	11	14	60	31	31	124	27	13	6.9	6.6	6.8
CFSM	.13	.34	1.23	1.40	.54	5.57	5.80	.91	.38	.19	.14	.20
IN.	.15	.38	1.42	1.62	.57	6.43	6.47	1.05	.43	.22	.17	.22

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1993, BY WATER YEAR (WY)

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
MEAN	33.7	41.2	76.9	92.0	122	203	175	120	56.3	30.6	22.1	19.6
MAX	270	355	314	371	283	682	420	294	161	185	120	141
(WY)	1943	1986	1973	1937	1971	1936	1993	1989	1951	1989	1955	1945
MIN	1.78	3.40	3.42	10.9	8.77	43.2	40.0	27.7	12.5	5.19	3.97	2.65
(WY)	1931	1931	1944	1940	1954	1990	1954	1934	1969	1930	1930	1932

01599000 GEORGES CREEK AT FRANKLIN, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1905 - 1993	
ANNUAL TOTAL	19312.8		37186.7		81.4	
ANNUAL MEAN	52.8		102		129	
HIGHEST ANNUAL MEAN					30.7	
LOWEST ANNUAL MEAN					1.6	
HIGHEST DAILY MEAN	598	Feb 26	1410	Apr 1	4130	Mar 17 1936
LOWEST DAILY MEAN	8.4	(a)	6.6	(b)	1.6	(c)
ANNUAL SEVEN-DAY MINIMUM	8.5	Oct 2	6.8	Aug 24	1.6	Sep 29 1930
INSTANTANEOUS PEAK FLOW	574	Dec 30	2010	Apr 1	(d)8500	Mar 17 1936
INSTANTANEOUS PEAK STAGE	5.35	Dec 30	7.63	Apr 1	(f)9.60	Mar 17 1936
INSTANTANEOUS LOW FLOW	7.8	Dec 10	6.1	Aug 28	1.6	(g)
ANNUAL RUNOFF (CFSM)	.73		1.41		1.12	
ANNUAL RUNOFF (INCHES)	9.92		19.11		15.27	
10 PERCENT EXCEEDS	119		213		197	
50 PERCENT EXCEEDS	26		31		37	
90 PERCENT EXCEEDS	10		8.5		7.0	

a Oct.3-8.

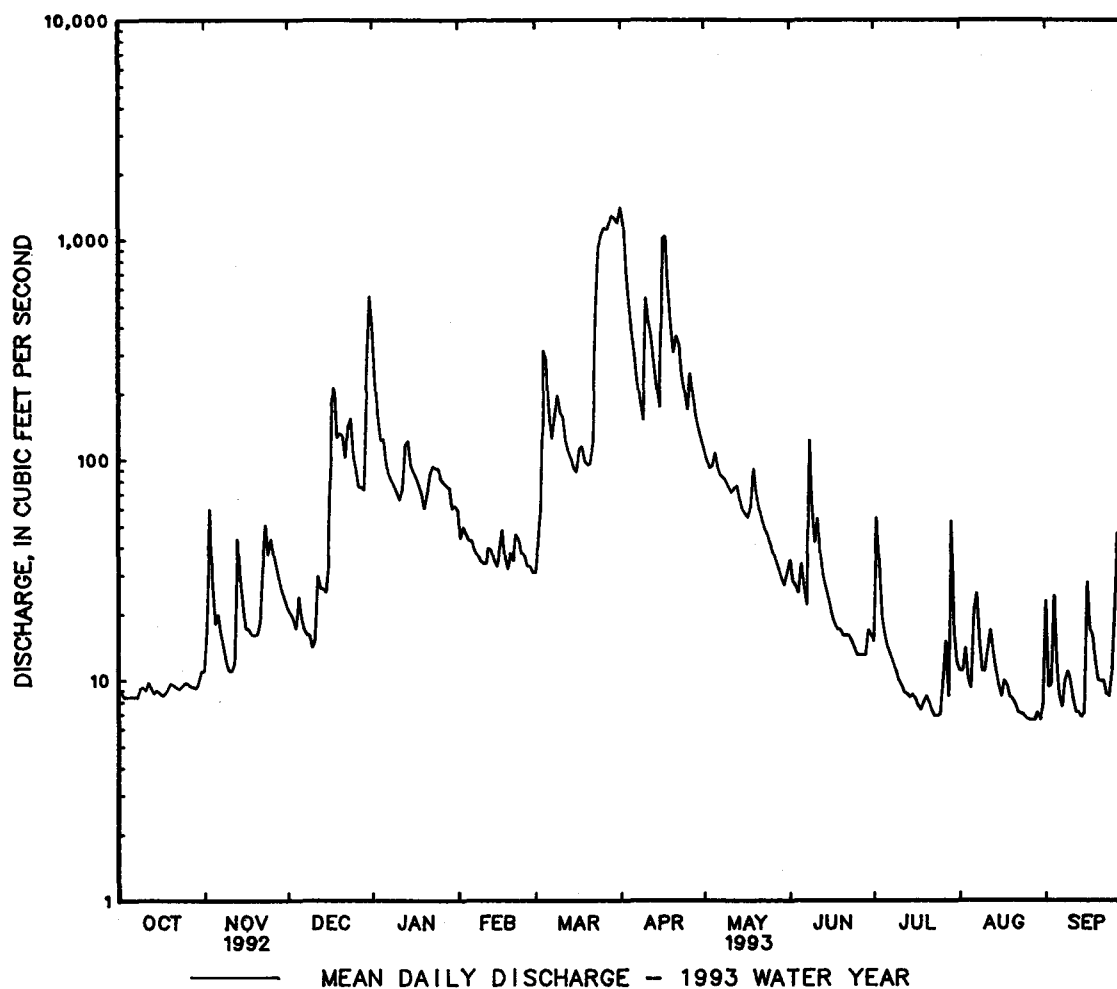
b Aug.26-28, 30.

c Sept. 29, 30, 1930.

d From rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow.

f At site then in use.

g Sept. 29 to Oct. 13, 1930.



POTOMAC RIVER BASIN

01601500 WILLS CREEK NEAR CUMBERLAND, MD

LOCATION.--Lat 39°40'07", long 78°47'18", Allegany County, Hydrologic Unit 02070002, on right bank at downstream side of Western Maryland Railway bridge, 0.15 mi downstream from Braddock Run, 2.0 mi upstream from Cumberland, and mouth.

DRAINAGE AREA.--247 mi².

PERIOD OF RECORD.--May 1905 to July 1906 (published as "at Cumberland"), October 1929 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WSP 1432: 1906, 1930(M), 1933-34(M), 1936-37, 1945(M).

GAGE.--Water-stage recorder. Datum of gage is 640.89 ft above sea level. May 6, 1905, to July 14, 1906, nonrecording gage at highway bridge 700 ft upstream at different datum. Oct. 18, 1929, to Mar. 17, 1936, water-stage recorder, and Apr. 1, 1936, to Mar. 19, 1937, nonrecording gage at site 200 ft upstream at present datum.

REMARKS.--Records good. Records include drainage from numerous active and abandoned coal mines. An undetermined amount of water is diverted into the basin from Georges Creek basin by Hoffman drainage tunnel. Miscellaneous measurements of discharge from the Hoffman drainage tunnel have been made in the water years 1944, 1964-65, 1967-82, and 1984 by the U.S. Geological Survey, and in the water years 1958 and 1959 by the Maryland Geological Survey. Slight diurnal fluctuation at low flow caused by quarry upstream. U.S. Army Corps of Engineers satellite 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 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 31	1930	3,840	6.51	Mar. 28	1530	5,770	7.57
Mar. 4	1745	4,100	6.66	Apr. 1	0245	5,780	7.58
Mar. 25	2245	5,540	7.45	Apr. 16	2145	*15,400	*11.73
Mar. 26	2130	5,180	7.25				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	34	189	2450	287	113	5150	626	152	70	45	31
2	37	58	169	1310	171	152	4520	536	135	351	46	35
3	35	415	158	910	214	255	2440	461	131	199	48	35
4	34	210	139	725	204	2100	1500	457	130	126	47	72
5	33	155	152	714	178	2070	1080	538	159	103	41	59
6	32	149	131	572	182	1200	855	461	145	88	51	43
7	30	121	125	481	153	917	704	407	129	76	65	36
8	30	104	113	427	143	1070	605	380	1200	66	60	34
9	32	92	105	377	138	1400	541	355	1070	61	46	36
10	34	82	87	328	138	1190	1960	328	739	57	42	36
11	34	76	113	298	141	1050	2210	303	546	54	136	44
12	34	105	194	327	152	801	1560	284	365	52	158	39
13	32	590	199	521	147	719	1090	284	276	49	103	34
14	31	420	174	674	135	606	883	244	223	47	74	31
15	30	315	156	642	128	557	751	218	186	45	61	32
16	29	244	198	575	143	493	7110	210	162	43	53	54
17	29	201	928	504	161	587	7630	218	145	42	49	42
18	29	173	1750	413	134	638	2680	234	133	40	46	43
19	30	153	1140	327	102	587	1600	447	123	39	43	38
20	30	145	958	258	133	577	1150	313	115	40	41	34
21	31	137	936	357	131	567	1210	274	110	42	39	34
22	31	200	833	550	152	671	1520	249	107	39	37	35
23	30	345	876	598	150	1660	1350	225	99	37	35	34
24	31	346	1080	588	129	4230	1090	208	89	35	34	34
25	31	409	864	589	111	4460	889	190	81	34	33	38
26	30	356	691	511	120	4670	1170	174	e70	37	31	87
27	30	320	501	500	121	4200	1290	160	e68	70	30	216
28	30	282	453	440	114	5240	1110	150	e66	49	30	230
29	30	245	390	391	---	4310	902	144	e64	72	30	124
30	29	212	807	285	---	4380	749	138	67	76	28	85
31	33	---	3310	302	---	3760	---	146	---	51	28	---
TOTAL	979	6694	17919	17944	4212	55230	57299	9362	7085	2190	1610	1725
MEAN	31.6	223	578	579	150	1782	1910	302	236	70.6	51.9	57.5
MAX	38	590	3310	2450	287	5240	7630	626	1200	351	158	230
MIN	29	34	87	258	102	113	541	138	64	34	28	31
CFSM	.13	.90	2.34	2.34	.61	7.21	7.73	1.22	.96	.29	.21	.23
IN.	.15	1.01	2.70	2.70	.63	8.32	8.63	1.41	1.07	.33	.24	.26

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1993, BY WATER YEAR (WY)

	140	188	325	380	504	805	691	455	227	113	90.0	73.7
MEAN	140	188	325	380	504	805	691	455	227	113	90.0	73.7
MAX	1130	1520	1113	1477	1255	2410	1910	1109	967	641	674	412
(WY)	1943	1986	1973	1937	1971	1936	1993	1989	1972	1989	1984	1945
MIN	11.9	15.5	18.4	54.2	65.8	182	184	101	51.1	24.3	16.6	12.1
(WY)	1931	1931	1944	1940	1954	1990	1968	1934	1965	1965	1930	1932

01601500 WILLS CREEK NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1905 - 1993	
ANNUAL TOTAL	100665		182249			
ANNUAL MEAN	275		499		332	
HIGHEST ANNUAL MEAN					499	
LOWEST ANNUAL MEAN					122	
HIGHEST DAILY MEAN	3310	Dec 31	7630	Apr 17	15700	Oct 15 1942
LOWEST DAILY MEAN	29	(a)	28	(b)	10	(c)
ANNUAL SEVEN-DAY MINIMUM	30	Oct 14	30	Oct 14	10	Oct 8 1930
INSTANTANEOUS PEAK FLOW	3840	Dec 31	15400	Apr 16	(d)38100	Mar 17 1936
INSTANTANEOUS PEAK STAGE	6.51	Dec 31	11.73	Apr 16	(f)20.20	Mar 17 1936
INSTANTANEOUS LOW FLOW	28	(g)	27	Aug 31	9.0	Oct 14 1930
ANNUAL RUNOFF (CFSM)	1.11		2.02		1.34	
ANNUAL RUNOFF (INCHES)	15.16		27.45		18.27	
10 PERCENT EXCEEDS	741		1140		789	
50 PERCENT EXCEEDS	128		152		145	
90 PERCENT EXCEEDS	41		34		30	

a Oct. 16-18, 30.

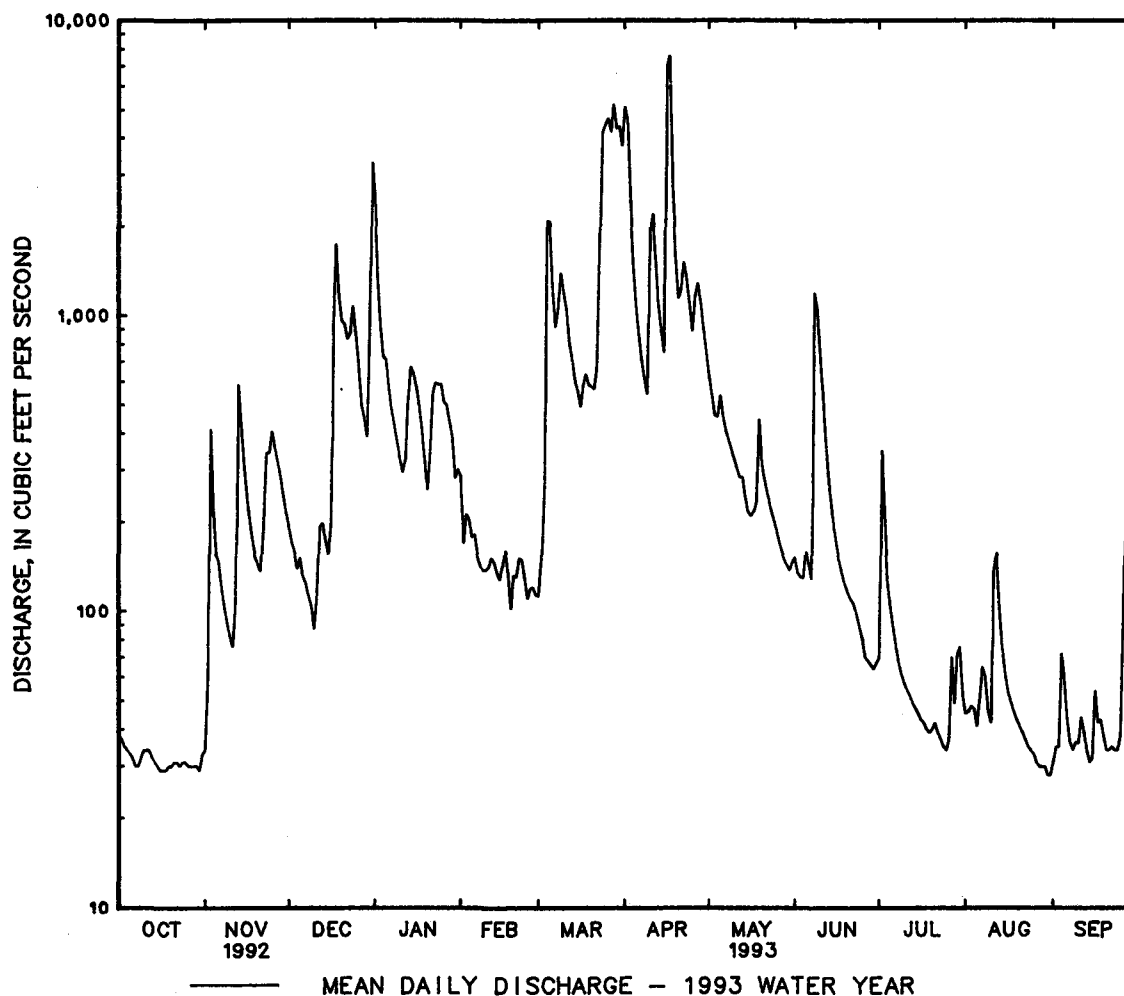
b Aug. 30, 31.

c Oct. 8-10, 1930.

d From rating curve extended above 11,000 ft³/s on basis of slope-area measurements at gage heights of 13.45 and 20.2 ft.

f From floodmarks at present site.

g Oct. 16, 17, 30.



POTOMAC RIVER BASIN

01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD

LOCATION.--Lat 39°37'16", 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 mi².

WATER-DISCHARGE RECORDS

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.--No estimated daily discharges. Water-discharge records good. 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 gage. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 29.2 ft June 1, 1889, discharge, about 89,000 ft³/s.

Flood of Mar. 29, 1924, reached a stage of 28.4 ft, discharge, about 82,000 ft³/s.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 25,900 ft³/s, Apr. 16, gage height, 19.05 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	414	284	521	4470	1130	842	16900	1830	667	371	280	286
2	409	335	498	2960	951	906	15800	1710	620	713	289	278
3	406	805	510	2380	914	1180	11800	1560	608	647	283	280
4	404	580	508	2110	915	4690	7630	1490	595	466	279	371
5	401	463	541	2170	872	5090	6270	1600	649	413	270	317
6	378	441	524	2110	866	3000	3560	1500	621	387	309	277
7	359	408	511	1980	840	2260	2700	1530	566	368	389	261
8	353	377	490	1910	811	2460	2230	1430	1640	334	318	261
9	363	359	473	1850	801	3160	2090	1280	1510	311	285	281
10	359	346	496	1770	794	2730	4590	1240	1170	308	277	273
11	359	341	554	1730	792	2660	6000	1150	1020	302	394	274
12	358	372	658	1770	821	2160	5170	1100	833	302	434	263
13	355	877	683	1960	831	2310	4960	1120	715	291	353	257
14	352	744	658	2210	813	2090	3450	998	648	281	308	253
15	354	619	631	2130	782	1950	2540	972	601	281	290	256
16	318	538	682	2020	815	2170	12300	1060	566	278	281	315
17	304	484	1740	1920	928	2450	17700	1040	531	272	277	307
18	932	453	3420	1810	897	2640	9790	852	509	270	274	290
19	537	434	2520	1680	786	2470	6770	1140	489	272	268	279
20	303	422	2200	1260	809	2420	4110	974	467	274	271	267
21	302	416	2310	1360	818	2410	3610	890	457	272	263	267
22	308	526	2090	1610	865	2680	3980	850	454	268	258	273
23	298	731	2160	1710	999	4410	3520	809	439	264	255	264
24	303	729	2670	1670	911	9790	3080	783	404	260	258	263
25	302	776	2210	1660	837	9640	2740	759	381	261	251	272
26	297	731	1950	1540	866	10900	3000	731	373	270	249	343
27	299	687	1680	1510	862	12000	2800	710	367	345	247	530
28	300	640	1640	1450	845	15300	2460	692	359	285	245	594
29	288	593	1570	1390	---	14400	2320	678	370	434	246	390
30	280	549	1960	1220	---	13700	2110	767	374	376	245	335
31	284	---	5200	1160	---	13800	---	729	---	291	251	---
TOTAL	11279	16060	44258	58480	24171	158668	175980	33974	19003	10467	8897	9177
MEAN	364	535	1428	1886	863	5118	5866	1096	633	338	287	306
MAX	932	877	5200	4470	1130	15300	17700	1830	1640	713	434	594
MIN	280	284	473	1160	782	842	2090	678	359	260	245	253

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1993, BY WATER YEAR (WY)

	MEAN	606	753	1293	1541	1966	2872	2388	1705	882	513	432	386
MAX	3791	5350	4652	5115	4125	8763	5866	3902	2375	2270	2028	2036	
(WY)	1943	1986	1973	1937	1961	1936	1993	1988	1981	1989	1955	1945	
MIN	28.9	44.8	134	269	393	789	723	374	209	89.7	57.7	40.3	
(WY)	1931	1931	1931	1940	1934	1990	1968	1934	1965	1930	1930	1932	

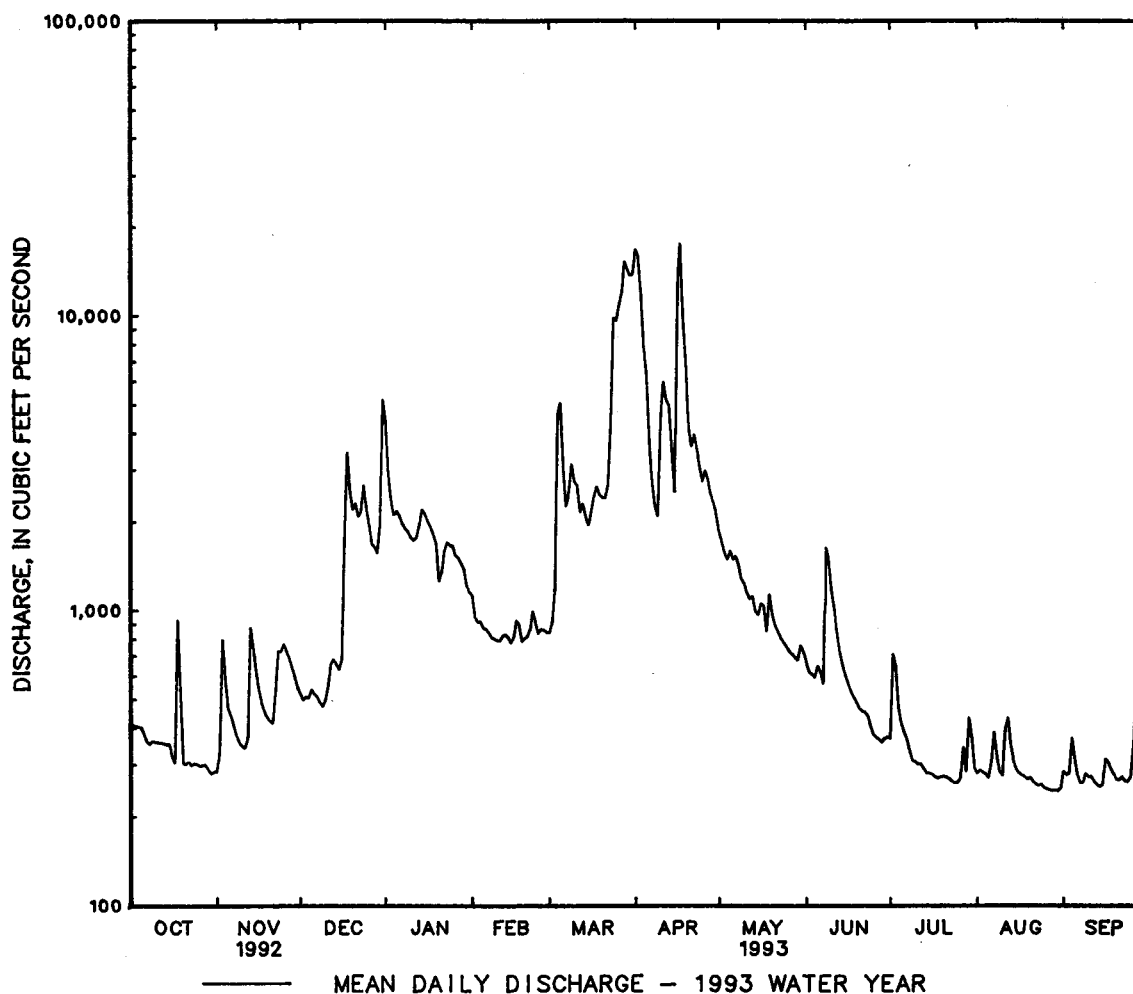
01603000 NORTH BRANCH POTOMAC RIVER NEAR CUMBERLAND, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1929 - 1993	
ANNUAL TOTAL	384417		570414			
ANNUAL MEAN	1050		1563		1276	
ANNUAL MEAN*	1072		1552		1277	
HIGHEST ANNUAL MEAN					1801	1973
LOWEST ANNUAL MEAN					632	1969
HIGHEST DAILY MEAN	5400	Feb 27	17700	Apr 17	47400	Mar 18 1936
LOWEST DAILY MEAN	280	Oct 30	245	(a)	13	(b)
ANNUAL SEVEN-DAY MINIMUM	290	Oct 26	248	Aug 25	16	Sep 20 1932
INSTANTANEOUS PEAK FLOW	6430	Feb 26	25900	Apr 16	(c)88200	Mar 17 1936
INSTANTANEOUS PEAK STAGE	7.32	Feb 26	19.05	Apr 16	29.10	Mar 17 1936
INSTANTANEOUS LOW FLOW	276	Oct 30	242	Aug 30	12	Sep 22 1932
ANNUAL RUNOFF (CFSM)	1.20		1.79		1.46	
ANNUAL RUNOFF (CFSM)*	1.26		1.77		1.46	
ANNUAL RUNOFF (INCHES)	16.34		24.25		19.82	
ANNUAL RUNOFF (INCHES)*	16.63		24.08		19.82	
10 PERCENT EXCEEDS	2330		3000		2950	
50 PERCENT EXCEEDS	649		682		664	
90 PERCENT EXCEEDS	412		274		163	

* Adjusted for change in reservoir contents since October 1981.

a Aug. 28, 30.

b Sept. 21-24, 1932.

c From rating curve extended above 33,000 ft³/s on basis of slope-area measurement of peak flow.

POTOMAC RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965-83, October 1992 to September 1993.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1964 to September 1982.

SUSPENDED SEDIMENT DISCHARGE: October 1964 to September 1982.

REMARKS.--Water temperatures were measured in field at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1965-81): Maximum daily, 33.0°C, July 13, 14, 1966, July 16, 18, Aug. 19, 23, 1968, July 17, 1977; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,600 mg/L, Feb. 13, 1966, July 4, 1978; minimum daily mean, 1 mg/L, Jan. 17, 1975.

SEDIMENT LOAD: Maximum daily, 66,300 tons, July 4, 1978; minimum daily, 2.0 tons, Jan. 28, 1982.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)
APR 1993												
08...	1230	2220	329	7.1	9.0	15.0	785	12.0	101	130	34	10
MAY												
06...	0930	1500	368	7.3	15.5	21.0	765	9.8	98	150	40	12
JUN												
07...	1100	562	582	7.6	18.0	25.0	765	9.5	100	240	68	18
JUL												
12...	1115	302	595	7.3	25.5	32.0	758	7.5	92	220	62	15
AUG												
10...	1300	272	656	7.7	23.0	29.0	766	9.0	105	250	72	16
SEP												
01...	1030	263	613	7.3	24.5	24.5	760	6.5	78	230	69	13

DATE	SODIUM, DIS-SOLVED (MG/L AS Na)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
APR 1993											
08...	8.0	1.6	21	26	100	12	<0.10	5.5	198	4.8	0.010
MAY											
06...	9.1	2.3	30	37	120	11	<0.10	5.5	222	--	<0.010
JUN											
07...	22	3.7	52	63	190	31	0.20	4.6	378	--	<0.010
JUL											
12...	31	4.6	52	63	170	43	0.20	3.5	384	--	<0.010
AUG											
10...	30	4.9	47	57	180	45	0.20	4.2	425	--	<0.010
SEP											
01...	37	4.0	54	65	180	52	0.20	4.1	404	--	<0.010

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
APR 1993											
08...	1.10	0.070	0.20	<0.20	<0.010	<0.010	<0.010	52	370	2.8	0.8
MAY											
06...	0.810	0.050	<0.20	<0.20	<0.010	<0.010	<0.010	27	320	2.7	0.6
JUN											
07...	0.670	0.030	0.20	<0.20	0.080	<0.010	<0.010	48	400	6.3	0.4
JUL											
12...	0.540	0.030	0.20	<0.20	0.020	<0.010	<0.010	39	170	7.0	0.2
AUG											
10...	0.620	0.010	0.20	0.20	0.110	0.060	0.060	42	230	7.5	--
SEP											
01...	0.640	0.060	0.30	0.20	0.060	0.040	0.030	62	300	9.6	0.4

POTOMAC RIVER BASIN

221

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

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
APR 1993				
08...	1230	2220	16	96
MAY				
06...	0930	1500	6	24
JUN				
07...	1100	562	5	7.6
JUL				
12...	1115	302	2	1.6
AUG				
10...	1300	272	5	3.7
SEP				
01...	1030	263	12	8.5

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 12.5.

DRAINAGE AREA.--219 mi².

WATER-DISCHARGE RECORDS

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.--Water-discharge records good except those for estimated daily discharges (backwater from beaverdams), which are fair. The flow from 115 mi² 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Aug. 19, 1955, gage height, 12.20 ft, from rating curve extended above 4,900 ft³/s, on basis of contracted-opening measurement at gage height 11.53 ft; minimum daily discharge, 1.2 ft³/s, Aug. 18, 1988.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 8,730 ft³/s, Apr. 16, gage height, 11.25 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	e8.8	25	524	105	168	1060	386	31	14	12	6.5
2	7.7	e9.5	24	360	87	203	1440	325	30	20	10	8.8
3	7.5	e11	23	282	84	325	992	271	29	24	9.3	8.1
4	7.7	e12	22	231	80	2360	783	236	28	25	8.2	20
5	7.6	e13	23	204	72	2230	685	224	33	20	7.1	19
6	7.1	e18	21	173	68	1270	609	193	33	16	11	15
7	7.1	e16	22	149	64	993	533	161	30	13	24	13
8	7.6	e14	22	135	60	1050	470	139	49	12	21	12
9	7.2	e13	21	128	56	1010	416	124	47	9.9	18	12
10	7.1	e12	21	119	53	858	1190	112	45	8.4	15	12
11	7.6	e12	19	111	51	933	1090	102	44	7.8	14	10
12	7.1	e11	39	139	56	859	790	96	33	7.3	13	8.7
13	7.7	e11	66	213	61	755	658	95	29	6.9	15	8.2
14	7.7	e11	71	246	59	686	570	92	26	6.4	14	7.5
15	e7.7	e17	67	230	56	611	499	84	23	5.9	12	7.1
16	5.5	e16	88	206	66	562	5080	79	21	6.0	10	e7.0
17	5.3	e16	300	182	139	761	4620	75	19	5.6	9.5	e6.8
18	5.0	e15	545	154	189	904	1900	73	18	5.4	9.2	e7.8
19	5.9	e16	479	131	180	728	1140	91	17	5.6	8.3	e9.0
20	6.3	e15	405	110	167	653	846	86	17	6.1	7.6	e10
21	6.7	e15	465	121	145	707	852	76	17	6.1	7.4	e9.5
22	6.9	e16	391	218	268	962	1060	68	16	6.0	6.9	e11
23	e6.9	e17	410	349	485	1370	856	61	15	5.2	6.5	e13
24	e7.2	e27	582	334	381	2340	705	56	14	4.9	6.6	e14
25	e7.3	41	449	281	315	1590	615	53	13	4.9	5.5	e15
26	e7.5	35	356	230	261	1300	759	48	12	6.1	5.5	e20
27	e7.8	32	279	198	224	1130	750	44	13	12	5.2	e46
28	e8.0	31	230	173	191	1150	607	39	12	6.7	5.4	e67
29	e8.0	30	210	153	---	1130	521	36	12	22	4.8	e42
30	e8.0	27	279	128	---	988	451	32	13	13	4.9	e30
31	e8.5	---	748	113	---	838	---	31	---	13	5.1	---
TOTAL	223.1	538.3	6702	6325	4023	31424	32547	3588	739	325.2	312.0	476.0
MEAN	7.20	17.9	216	204	144	1014	1085	116	24.6	10.5	10.1	15.9
MAX	8.5	41	748	524	485	2360	5080	386	49	25	24	67
MIN	5.0	8.8	19	110	51	168	416	31	12	4.9	4.8	6.5
CFSM	.03	.08	.99	.93	.66	4.63	4.95	.53	.11	.05	.05	.07
IN.	.04	.09	1.14	1.07	.68	5.34	5.53	.61	.13	.06	.05	.08

e Estimated

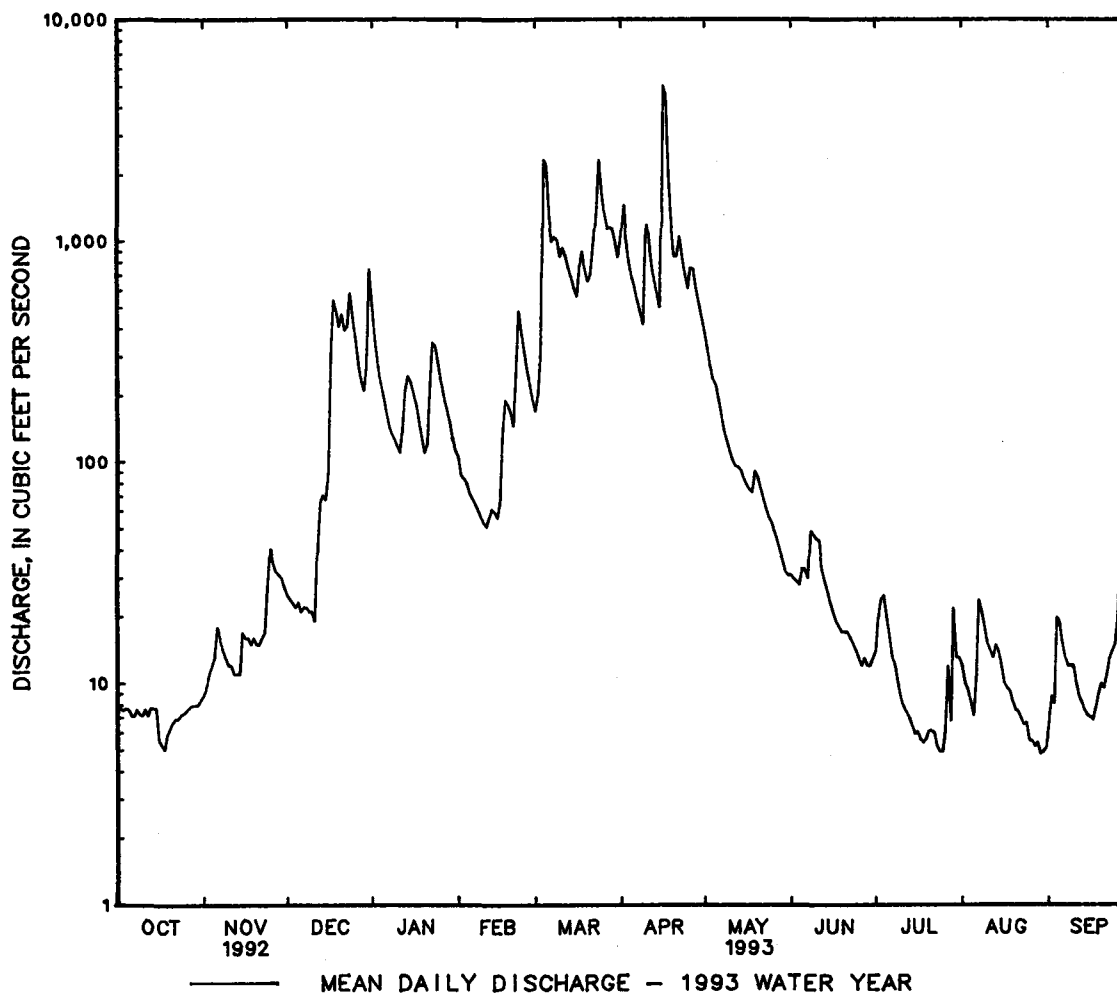
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1993, BY WATER YEAR (WY)

MEAN	78.1	80.3	161	195	297	420	321	219	107	59.5	49.0	39.3
MAX	745	901	825	558	752	1346	1085	763	379	415	475	395
(WY)	1943	1986	1973	1991	1971	1963	1993	1988	1940	1989	1955	1945
MIN	2.24	4.39	9.70	22.0	30.7	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

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1938 - 1993	
ANNUAL TOTAL	46788.3		87222.6			
ANNUAL MEAN	128		239		168	
HIGHEST ANNUAL MEAN					299	
LOWEST ANNUAL MEAN					35.1	
HIGHEST DAILY MEAN	983		5080		11100	
LOWEST DAILY MEAN	5.0	Oct 18	4.8	Aug 29	1.2	Oct 15 1942
ANNUAL SEVEN-DAY MINIMUM	5.9	Oct 16	5.2	Aug 25	1.7	Aug 18 1988
INSTANTANEOUS PEAK FLOW	1310	Feb 26	8730	Apr 16	(a)16000	Sep 5 1965
INSTANTANEOUS PEAK STAGE	6.74	Feb 26	11.25	Apr 16	12.20	Aug 19 1955
INSTANTANEOUS LOW FLOW	3.9	Oct 18	3.8	Aug 29	1.1	Aug 19 1955
ANNUAL RUNOFF (CFSM)	.58		1.09		.77	(b)
ANNUAL RUNOFF (INCHES)	7.95		14.82		10.44	
10 PERCENT EXCEEDS	376		760		426	
50 PERCENT EXCEEDS	52		32		58	
90 PERCENT EXCEEDS	9.8		7.1		9.6	

a From rating curve extended above 4,900 ft³/s on basis of contracted-opening measurement of peak flow.
b Aug. 18, 19, 1988.



POTOMAC RIVER BASIN

01604500 PATTERSON CREEK NEAR HEADSVILLE, WV---Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN 1993								
15...	1015	231	173	4.9	3.5	760	12.2	92
APR								
09...	1330	412	167	7.6	10.5	765	11.0	98
MAY								
05...	1330	228	199	7.7	17.5	765	9.5	99
JUL								
08...	1530	12	300	7.9	30.5	760	8.0	107

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 72.7.

DRAINAGE AREA.--642 mi².

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 at site 700 ft downstream and at different datum. June 1928 to Nov. 5, 1985, water-stage recorder at site 700 ft downstream at datum 6.34 ft lower.

REMARKS.--Records good. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year.

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 ft³/s and maximum(*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Mar. 24	0730	12,300	7.96	Apr. 1	1630	6,430	5.78
Mar. 29	0930	8,090	6.44	Apr. 16	1230	*20,800	*10.28

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	85	222	846	410	401	5960	1190	232	117	74	66
2	91	99	209	717	376	400	5660	1110	229	129	74	61
3	88	119	198	601	296	450	4090	1020	217	133	66	61
4	86	173	183	545	326	e2200	2910	970	220	129	55	71
5	84	167	180	525	320	e4250	2260	1010	318	117	51	114
6	88	143	186	725	288	2760	1970	938	427	111	67	134
7	92	137	174	677	285	2070	1660	815	248	103	117	98
8	90	133	173	635	271	2160	1440	740	849	95	170	81
9	89	121	162	672	251	2490	1360	674	662	87	120	75
10	86	111	152	663	238	2080	2310	614	383	80	95	74
11	84	104	169	616	228	1970	3210	615	284	79	87	73
12	80	105	188	707	233	1630	2570	602	231	77	108	71
13	79	126	189	904	247	1540	2090	894	209	76	96	63
14	78	317	180	952	249	1180	1730	928	198	72	90	56
15	76	234	174	869	233	1120	1480	795	194	71	76	53
16	75	191	197	781	226	951	11000	685	185	74	68	55
17	76	175	2200	715	297	1230	8380	677	171	72	68	67
18	74	161	3940	604	358	2470	4770	623	165	70	73	96
19	74	154	2190	531	304	1970	3110	867	156	69	75	156
20	74	148	1570	462	288	1700	2390	942	151	79	72	143
21	76	143	1700	427	326	1840	2080	834	148	78	70	122
22	77	148	1250	473	626	2860	2050	729	147	74	66	156
23	77	449	1100	558	978	4600	1840	608	144	68	58	168
24	78	568	1240	557	803	10200	1660	508	135	66	52	132
25	79	457	979	576	581	9590	1550	433	127	70	50	113
26	80	400	845	558	534	8240	1530	370	127	82	46	138
27	80	351	651	513	478	7040	1560	320	128	93	59	205
28	80	317	580	514	442	6520	1410	320	122	89	73	716
29	80	280	588	493	---	7320	1340	289	122	95	71	398
30	80	247	659	455	---	6140	1270	258	121	84	66	221
31	82	---	829	412	---	5070	---	240	---	77	66	---
TOTAL	2527	6363	23257	19283	10492	104442	86640	21618	7050	2716	2379	4037
MEAN	81.5	212	750	622	375	3369	2888	697	235	87.6	76.7	135
MAX	94	568	3940	952	978	10200	11000	1190	849	133	170	716
MIN	74	85	152	412	226	400	1270	240	121	66	46	53
CFSM	.13	.33	1.17	.97	.58	5.25	4.50	1.09	.37	.14	.12	.21
IN.	.15	.37	1.35	1.12	.61	6.05	5.02	1.25	.41	.16	.14	.23

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1993, BY WATER YEAR (WY)

	MEAN	337	477	700	873	1110	1592	1288	960	531	283	270	223
MAX	1863	5569	2511	2355	2880	4090	2888	2374	2175	1479	1290	1196	
(WY)	1977	1986	1973	1937	1939	1936	1993	1989	1949	1949	1955	1950	
MIN	49.3	62.7	95.1	143	212	543	398	233	128	70.5	54.1	52.3	
(WY)	1931	1931	1966	1981	1934	1990	1986	1930	1991	1930	1930	1930	

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

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1928 - 1993	
ANNUAL TOTAL	231052		290804			
ANNUAL MEAN	631		797		718	
HIGHEST ANNUAL MEAN					1181	
LOWEST ANNUAL MEAN					365	
HIGHEST DAILY MEAN	8050	Apr 22	11000	Apr 16	77000	Nov 5 1985
LOWEST DAILY MEAN	74	(a)	46	Aug 26	43	(b)
ANNUAL SEVEN-DAY MINIMUM	75	Oct 15	57	Aug 21	44	Sep 6 1966
INSTANTANEOUS PEAK FLOW	11000	Apr 22	20800	Apr 16	(c)130000	Nov 5 1985
INSTANTANEOUS PEAK STAGE	7.52	Apr 22	10.28	Apr 16	(d)21.80	Nov 5 1985
INSTANTANEOUS LOW FLOW	74	(f)	44	(g)	42	(h)
ANNUAL RUNOFF (CFSM)	.98		1.24		1.12	
ANNUAL RUNOFF (INCHES)	13.39		16.85		15.20	
10 PERCENT EXCEEDS	1450		2060		1610	
50 PERCENT EXCEEDS	386		233		370	
90 PERCENT EXCEEDS	104		73		95	

a Oct. 18-20.

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

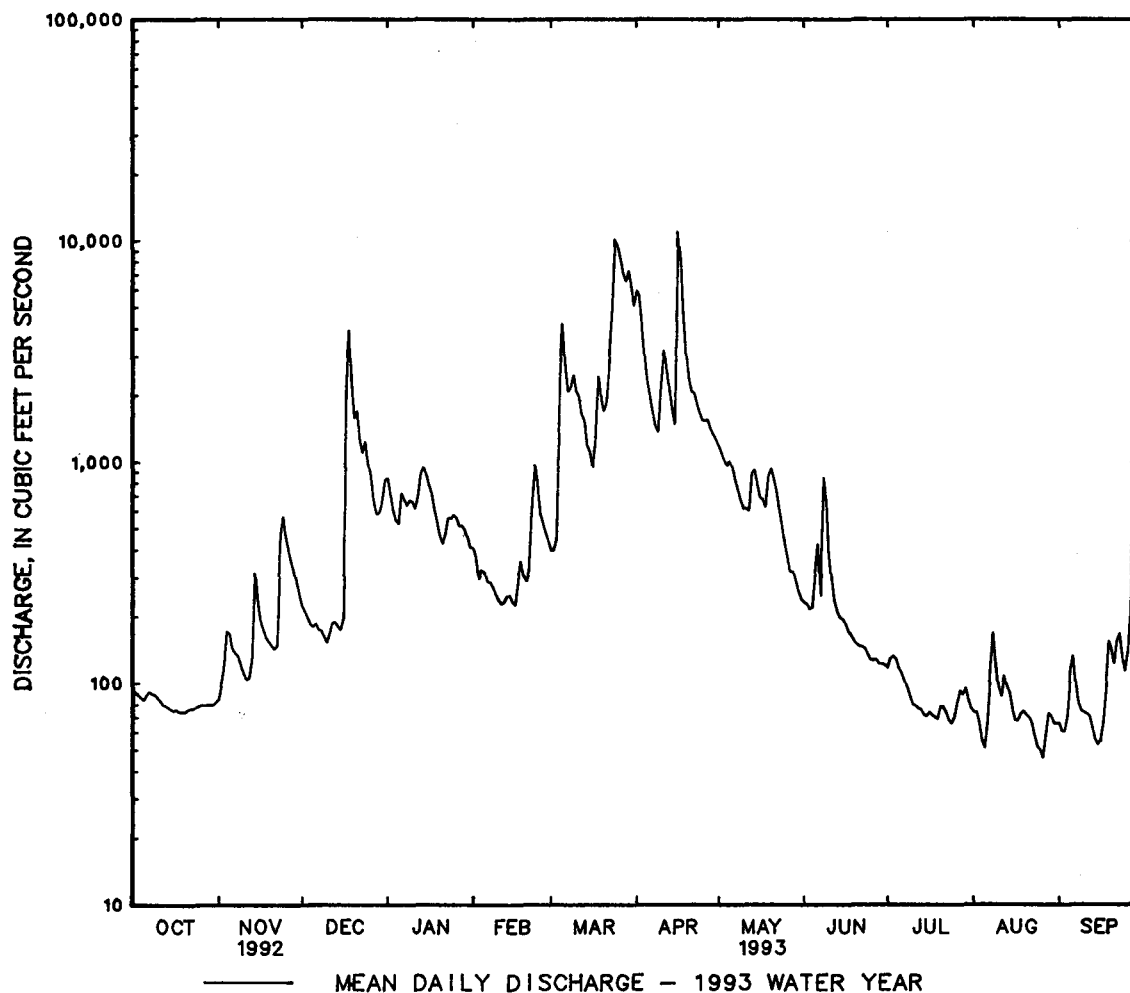
c From rating curve extended above 63,000 ft³/s on basis of slope-area measurement of peak flow.

d From floodmarks.

f Oct. 15-20.

g Aug. 5, 26.

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



POTOMAC RIVER BASIN

227

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 6.0.

DRAINAGE AREA.--283 mi².

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.--No estimated daily discharges. Water-discharge records good. The flow from 92.7 mi² 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, 4,400 ft³/s, Mar. 5, gage height, 6.09 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	20	72	135	101	117	1990	373	56	23	21	15
2	19	21	61	122	90	106	2590	308	55	26	19	15
3	19	24	55	113	77	106	1520	262	52	25	19	16
4	19	23	51	104	73	1550	1020	230	51	26	18	28
5	18	23	48	103	70	3770	778	231	60	30	18	20
6	18	29	44	119	62	2300	639	216	61	23	24	18
7	18	26	43	145	57	1400	513	209	58	24	31	19
8	18	25	40	142	55	1000	430	199	292	22	32	19
9	18	27	37	152	54	903	376	182	225	21	35	21
10	17	25	40	182	51	787	512	166	111	20	27	20
11	17	24	55	202	51	716	904	156	79	19	24	18
12	17	23	66	204	52	650	842	149	65	18	23	18
13	17	26	50	258	54	636	676	157	57	18	21	19
14	17	26	45	301	54	678	542	158	49	18	21	18
15	16	49	44	274	50	465	449	142	45	17	19	17
16	16	47	44	234	50	396	1140	131	43	17	19	18
17	16	43	908	213	50	591	1990	123	41	17	20	20
18	16	40	1790	175	59	1420	1170	121	38	17	19	21
19	17	41	884	150	77	1090	820	124	37	18	19	23
20	17	39	690	129	77	845	627	152	35	19	19	22
21	17	40	648	117	93	864	546	155	36	18	20	24
22	17	38	449	124	124	1470	774	138	36	17	19	25
23	17	85	360	143	250	1980	816	124	32	17	18	25
24	18	311	348	160	279	3630	703	113	28	16	17	25
25	18	222	256	166	205	3010	578	102	26	16	17	25
26	17	162	196	155	174	2080	582	92	27	21	17	28
27	17	130	158	140	153	1470	657	84	26	32	16	33
28	18	110	137	133	134	1570	603	76	23	23	16	38
29	18	94	128	128	---	2290	526	69	23	24	18	48
30	18	81	126	116	---	1980	448	63	24	26	17	45
31	19	---	141	104	---	1280	---	60	---	22	16	---
TOTAL	544	1874	8014	4943	2676	41150	25761	4865	1791	650	639	701
MEAN	17.5	62.5	259	159	95.6	1327	859	157	59.7	21.0	20.6	23.4
MAX	20	311	1790	301	279	3770	2590	373	292	32	35	48
MIN	16	20	37	103	50	106	376	60	23	16	16	15
CFSM	.06	.22	.91	.56	.34	4.69	3.03	.55	.21	.07	.07	.08
IN.	.07	.25	1.05	.65	.35	5.41	3.39	.64	.24	.09	.08	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1993, BY WATER YEAR (WY)

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
MEAN	135	177	208	242	317	476	414	322	166	82.9	101	76.5
MAX	776	2951	879	716	892	1327	1787	946	1071	510	801	497
(WY)	1977	1986	1974	1991	1939	1993	1987	1988	1949	1949	1955	1945
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

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1928 - 1993	
ANNUAL TOTAL	67223		93608		226	
ANNUAL MEAN	184		256		418	
HIGHEST ANNUAL MEAN					85.9	
LOWEST ANNUAL MEAN					28000	
HIGHEST DAILY MEAN	5330	Apr 22	3770	Mar 5		Nov 5 1985
LOWEST DAILY MEAN	16	(a)	15	(b)	4.4	Sep 10 1966
ANNUAL SEVEN-DAY MINIMUM	16	Oct 12	16	Aug 27	5.3	Sep 5 1966
INSTANTANEOUS PEAK FLOW	9430	Apr 22	4400	Mar 5	(c)110000	Nov 5 1985
INSTANTANEOUS PEAK STAGE	7.47	Apr 22	6.09	Mar 5	(d)19.99	Nov 5 1985
INSTANTANEOUS LOW FLOW	16	(f)	15	(g)	4.4	(h)
ANNUAL RUNOFF (CFSM)	.65		.91		.80	
ANNUAL RUNOFF (INCHES)	8.84		12.30		10.84	
10 PERCENT EXCEEDS	393		776		493	
50 PERCENT EXCEEDS	81		54		94	
90 PERCENT EXCEEDS	20		18		21	

a Oct. 15-18.

b Sept. 1, 2.

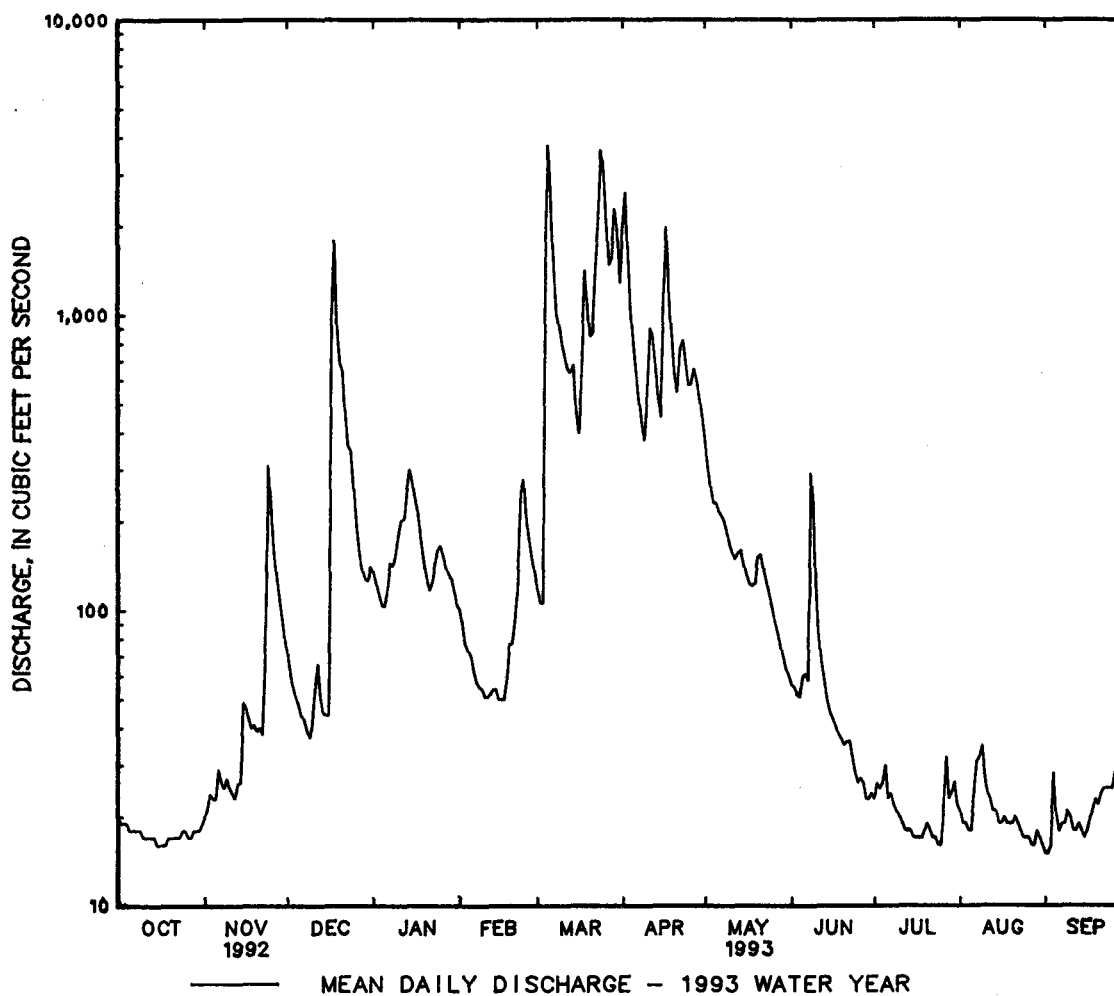
c From rating curve extended above 39,000 ft³/s on basis of slope-area measurement of peak flow.

d From floodmarks.

f Oct. 14-18, 27.

g Sept. 1-3.

h Sept. 10, 11, 1965, Sept. 9-11, 1966.



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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)
JAN 1993												
14...	1230	303	121	5.9	5.5	--	747	11.9	96	--	--	--
APR 07...	1100	514	141	7.5	8.5	10.0	760	11.3	97	68	21	3.8
MAY 03...	1030	260	166	7.2	15.5	24.0	761	9.7	97	74	23	4.0
JUN 02...	1315	54	206	8.0	19.5	22.0	753	9.1	100	92	29	4.8
JUL 07...	1115	25	218	7.7	27.0	35.0	756	7.8	99	94	29	5.3
27...	1100	30	199	8.2	27.5	34.0	755	9.3	119	84	26	4.7
AUG 11...	1215	24	238	8.6	27.0	31.0	758	10.5	133	92	28	5.3
30...	1130	18	225	8.1	25.5	30.0	756	9.0	111	100	31	5.7

DATE	SODIUM, DIS-SOLVED (MG/L AS Na)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
JAN 1993												
14...	--	--	--	--	--	--	--	--	--	--	--	--
APR 07...	2.0	1.1	60	73	--	15	2.9	<0.10	5.1	101	--	<0.010
MAY 03...	2.1	1.3	49	60	--	16	2.5	<0.10	4.5	93	--	<0.010
JUN 02...	2.4	1.4	68	83	--	18	2.9	<0.10	5.3	116	4.8	0.020
JUL 07...	2.6	1.6	78	95	--	20	2.8	<0.10	6.7	122	--	<0.010
27...	2.1	1.5	76	93	--	20	2.5	<0.10	6.0	118	0.75	0.020
AUG 11...	2.4	1.6	79	94	1	22	2.7	0.10	6.4	119	--	<0.010
30...	2.9	1.8	84	97	2	21	2.4	<0.10	7.5	127	--	<0.010

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
JAN 1993											
14...	--	--	--	--	--	--	--	--	--	--	--
APR 07...	1.70	0.020	<0.20	<0.20	<0.010	<0.010	<0.010	10	3	1.7	0.2
MAY 03...	1.10	0.010	0.30	<0.20	0.010	<0.010	<0.010	18	3	1.6	0.2
JUN 02...	1.10	0.020	<0.20	<0.20	<0.010	<0.010	<0.010	10	3	1.4	0.1
JUL 07...	0.400	0.030	<0.20	<0.20	<0.010	<0.010	<0.010	12	5	1.3	0.2
27...	0.190	0.020	<0.20	<0.20	<0.010	<0.010	<0.010	9	4	1.8	0.1
AUG 11...	0.150	0.020	<0.20	<0.20	<0.010	0.020	<0.010	10	5	1.5	0.1
30...	0.078	0.020	<0.20	<0.20	0.010	<0.010	<0.010	11	5	1.6	0.2

POTOMAC RIVER BASIN

01608000 SOUTH FORK SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, WV--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
APR 1993				
07...	1100	514	1	1.4
MAY				
03...	1030	260	1	0.70
JUN				
02...	1315	54	1	0.15
JUL				
07...	1115	25	1	0.07
27...	1100	30	1	0.08
AUG				
11...	1215	24	1	0.06
30...	1130	18	3	0.15

231

DRAINAGE AREA.--1,471 mi².

MEAN	642	844	1230	1537	1970	2946	2408	1759	1022	516	500	394
MAX	4629	12850	5000	4595	5137	10490	6421	4079	5231	2638	3923	1980
(WY)	1977	1986	1973	1937	1939	1936	1987	1989	1949	1949	1955	1950
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

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

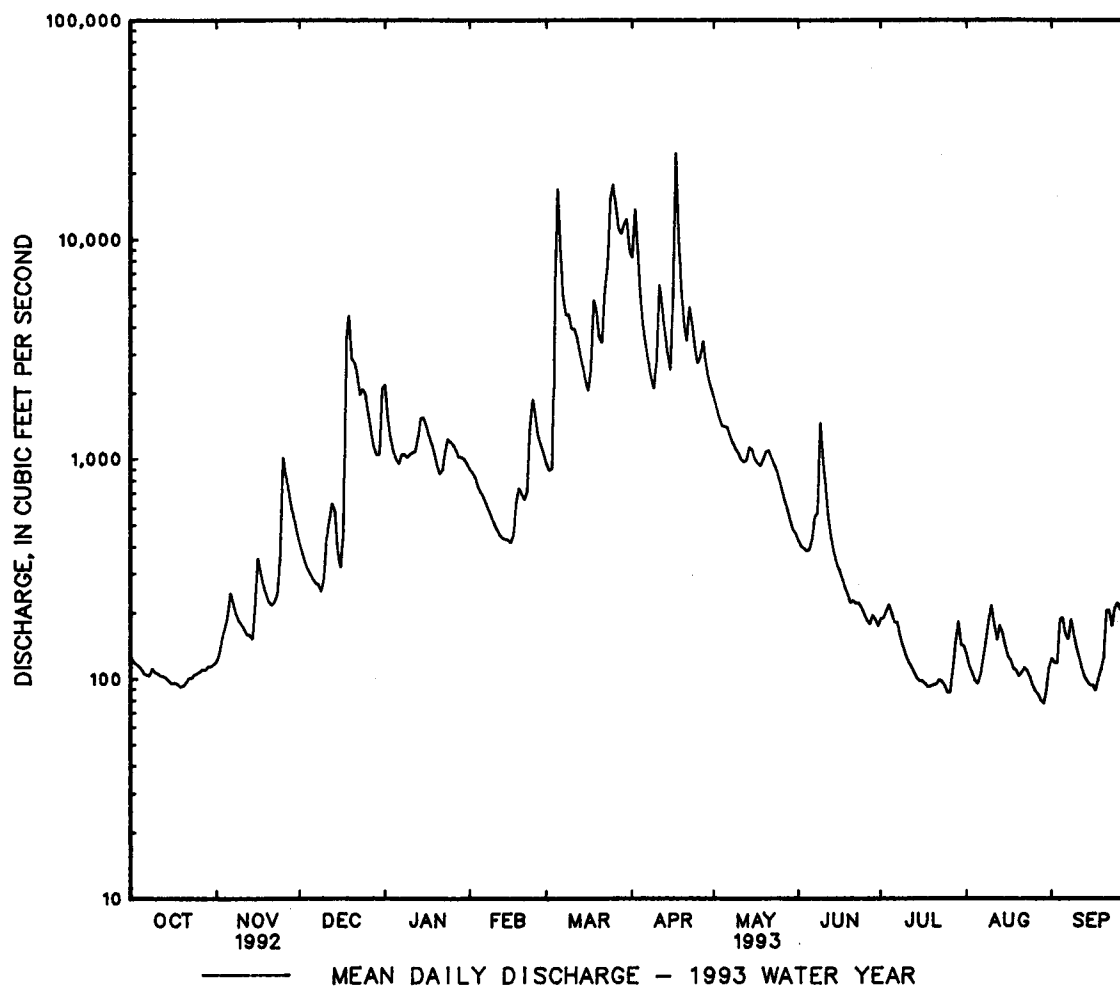
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1899 - 1993	
ANNUAL TOTAL	370705		527725		1310	
ANNUAL MEAN	1013		1446		2232	
HIGHEST ANNUAL MEAN					566	
LOWEST ANNUAL MEAN					1973	
HIGHEST DAILY MEAN	11200	Apr 23	24900	Apr 17	145000	Nov 5 1985
LOWEST DAILY MEAN	92	Oct 19	77	Aug 29	52	(a)
ANNUAL SEVEN-DAY MINIMUM	95	Oct 15	88	Aug 24	54	Sep 7 1966
INSTANTANEOUS PEAK FLOW	18000	Apr 22	34500	Apr 17	(b)240000	Nov 5 1985
INSTANTANEOUS PEAK STAGE	13.15	Apr 22	18.26	Apr 17	(c)44.22	Nov 5 1985
INSTANTANEOUS LOW FLOW	90	Oct 19	72	Aug 29	29	(d)
ANNUAL RUNOFF (CFSM)	.69		.98		.89	
ANNUAL RUNOFF (INCHES)	9.37		13.35		12.10	
10 PERCENT EXCEEDS	2250		3660		2970	
50 PERCENT EXCEEDS	605		433		632	
90 PERCENT EXCEEDS	135		102		151	

a Sept. 11, 12, 1966.

b From rating curve extended above 145,000 ft³/s on basis of slope-area measurement of peak flow.

c From floodmarks.

d Jan. 28, 1956 (result of freezeup), July 30, 1966 (result of temporary dam).



01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1963, 1965, 1969, 1976-80, 1993.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
APR 1993												
12...	1330	4860	154	7.5	11.0	13.0	757	10.4	95	64	20	3.4
MAY												
05...	0930	1400	206	7.6	18.0	23.0	765	8.4	88	93	30	4.5
JUN												
03...	1315	392	247	7.9	20.5	24.0	759	9.6	107	110	36	5.2
JUL												
08...	1045	159	231	8.4	29.5	35.0	762	8.1	106	97	29	5.9
AUG												
12...	1400	152	--	8.7	28.5	32.0	763	11.3	--	110	34	6.4
31...	1245	114	243	8.0	28.5	31.0	763	7.0	90	110	32	6.6

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
APR 1993												
12...	2.2	1.3	44	54	--	19	2.7	<0.10	5.6	95	--	<0.010
MAY												
05...	2.7	1.3	68	83	--	23	3.8	<0.10	2.5	114	--	<0.010
JUN												
03...	2.9	1.5	86	105	--	24	4.2	<0.10	2.6	149	--	<0.010
JUL												
08...	4.6	2.1	64	78	--	32	6.5	<0.10	6.7	141	--	<0.010
AUG												
12...	5.5	2.6	85	94	5	32	8.1	0.10	5.6	158	2.5	0.010
31...	5.5	2.3	78	95	--	33	7.0	0.10	6.2	148	--	<0.010

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
APR 1993											
12...	0.810	0.010	0.20	<0.20	0.020	<0.010	<0.010	29	6	2.5	0.7
MAY											
05...	0.860	<0.010	<0.20	<0.20	<0.010	<0.010	<0.010	15	4	1.7	0.3
JUN											
03...	0.890	0.040	0.20	<0.20	<0.010	<0.010	<0.010	9	5	1.6	0.2
JUL											
08...	0.540	0.020	0.20	<0.20	<0.010	<0.010	<0.010	14	4	2.0	0.2
AUG											
12...	0.580	0.040	<0.20	0.30	0.030	0.010	0.010	9	8	2.2	0.1
31...	<0.050	0.030	0.30	0.20	0.020	<0.010	<0.010	14	15	2.6	0.2

POTOMAC RIVER BASIN

01608500 SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, WV--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
APR 1993				
12...	1330	4860	23	302
MAY				
05...	0930	1400	4	15
JUN				
03...	1315	392	1	1.1
JUL				
08...	1045	159	2	0.86
AUG				
12...	1400	152	1	0.41
31...	1245	114	5	1.5

01610000 POTOMAC RIVER AT PAW PAW, WV

LOCATION.--Lat 39°32'13", long 78°27'28", Allegany County, Md., Hydrologic Unit 02070003, on left bank 250 ft upstream from bridge on Maryland State Highway 51 at Paw Paw, 3.3 mi downstream from Little Cacapon River, and at mile 277.

DRAINAGE AREA.--3,109 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 487.88 ft above sea level. Prior to Mar. 25, 1939, nonrecording gage at bridge 250 ft downstream at same datum.

REMARKS.--Records good. Low flow affected by Stony River Reservoir prior to July 1981, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage height telemeter at station. U.S. Army Corps of Engineers satellite 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, 54.0 ft on Mar. 18, 1936, discharge, 240,000 ft³/s, from rating curve extended above 85,000 ft³/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, W. Va.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	0500	42,300	22.90	Apr. 2	0915	39,000	21.90
Mar. 25	0145	36,400	21.08	Apr. 11	0515	20,700	15.82
Mar. 30	0015	31,300	19.44	Apr. 17	1245	*71,300	*30.62

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	698	487	1220	11600	2520	2290	26300	5630	1390	695	526	404
2	685	517	1140	7210	2240	2300	36700	5090	1300	817	501	487
3	675	888	1070	5560	2020	3040	26200	4550	1220	1370	529	514
4	667	1310	1050	4730	1990	13700	17300	4120	1200	1020	494	738
5	655	930	1030	4490	1860	35400	13400	4190	1210	864	487	753
6	643	859	1040	4360	1830	18400	9880	4160	1270	789	491	614
7	610	867	979	4110	1760	12200	7760	3840	1260	722	639	544
8	600	775	957	3960	1670	10700	6530	3550	2500	672	641	535
9	596	709	915	3810	1600	11300	5860	3230	3930	593	585	544
10	611	673	890	3690	1570	10300	10300	2990	3050	558	587	544
11	599	650	e1100	3600	1540	9690	18800	2820	2410	533	593	498
12	590	642	e1900	3700	1580	8890	14300	2640	1990	511	779	492
13	575	1010	1870	4390	1650	7880	11900	2690	1580	505	709	483
14	562	1400	1850	5390	1620	7210	9470	2660	1390	495	632	461
15	554	1130	1690	5260	1560	6220	7460	2590	1260	491	565	445
16	546	1130	1620	4850	1620	5910	21100	2520	1150	484	522	448
17	491	1060	3150	4460	2070	7060	62700	2470	1080	477	498	540
18	691	966	10500	4100	2450	10800	30900	2210	1010	472	495	512
19	1150	905	10100	3720	2220	10200	17700	2630	972	466	492	492
20	560	859	7080	3080	2150	8510	12500	2660	911	464	474	491
21	479	835	7170	2790	2100	8240	10400	2480	896	460	456	492
22	480	947	6520	4070	2210	11600	15700	2290	873	458	449	586
23	485	1510	5760	4690	3790	15500	13500	2130	836	455	442	560
24	491	1680	6780	4760	4020	32800	10200	2000	807	453	441	521
25	509	2140	6240	4450	3300	33500	8530	1890	752	453	438	578
26	494	2110	5210	4000	2930	29300	9170	1760	724	450	425	642
27	493	1840	4300	3720	2700	26100	11500	1650	707	454	412	778
28	497	1640	3860	3490	2480	27600	8680	1550	697	541	406	1270
29	497	1470	3660	3310	---	30000	7350	1480	713	634	396	1170
30	486	1340	3880	2940	---	29200	6470	1490	700	772	395	1160
31	481	---	10500	2680	---	25500	---	1400	---	588	395	---
TOTAL	18150	33279	115031	136970	61050	471340	468560	87360	39788	18716	15894	18296
MEAN	585	1109	3711	4418	2180	15200	15620	2818	1326	604	513	610
MAX	1150	2140	10500	11600	4020	35400	62700	5630	3930	1370	779	1270
MIN	479	487	890	2680	1540	2290	5860	1400	697	450	395	404
CFSM	.19	.36	1.19	1.42	.70	4.89	5.02	.91	.43	.19	.16	.20
IN.	.22	.40	1.38	1.64	.73	5.64	5.61	1.05	.48	.22	.19	.22

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1993, BY WATER YEAR (WY)

	1570	1967	3288	3799	5178	7340	6107	4393	2549	1331	1165	984
MEAN	1570	1967	3288	3799	5178	7340	6107	4393	2549	1331	1165	984
MAX	9709	17180	12300	9099	11440	17120	15620	10450	7612	5071	6458	5012
(WY)	1977	1986	1973	1991	1939	1963	1993	1988	1972	1949	1955	1945
MIN	261	327	388	679	1116	2043	2258	1074	544	303	278	252
(WY)	1952	1966	1966	1981	1954	1990	1968	1941	1965	1966	1944	1959

POTOMAC RIVER BASIN

01610000 POTOMAC RIVER AT PAW PAW, WV--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1939 - 1993

ANNUAL TOTAL	971660		1484434		3297	
ANNUAL MEAN	2655		4067		5080	1973
HIGHEST ANNUAL MEAN					1499	1969
LOWEST ANNUAL MEAN					125000	Nov 6 1985
HIGHEST DAILY MEAN	17600	Apr 23	62700	Apr 17	172	(b)
LOWEST DAILY MEAN	479	Oct 21	395	(a)	179	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	490	Oct 21	405	Aug 26	(c)235000	Nov 5 1985
INSTANTANEOUS PEAK FLOW	25100	Apr 22	71300	Apr 17	53.58	Nov 5 1985
INSTANTANEOUS PEAK STAGE	17.37	Apr 22	30.62	Apr 17	164	(g)
INSTANTANEOUS LOW FLOW	470	(d)	395	(f)	1.06	
ANNUAL RUNOFF (CFSM)	.85		1.31		14.41	
ANNUAL RUNOFF (INCHES)	11.63		17.76		7470	
10 PERCENT EXCEEDS	6250		10400			

a Aug. 30, 31.

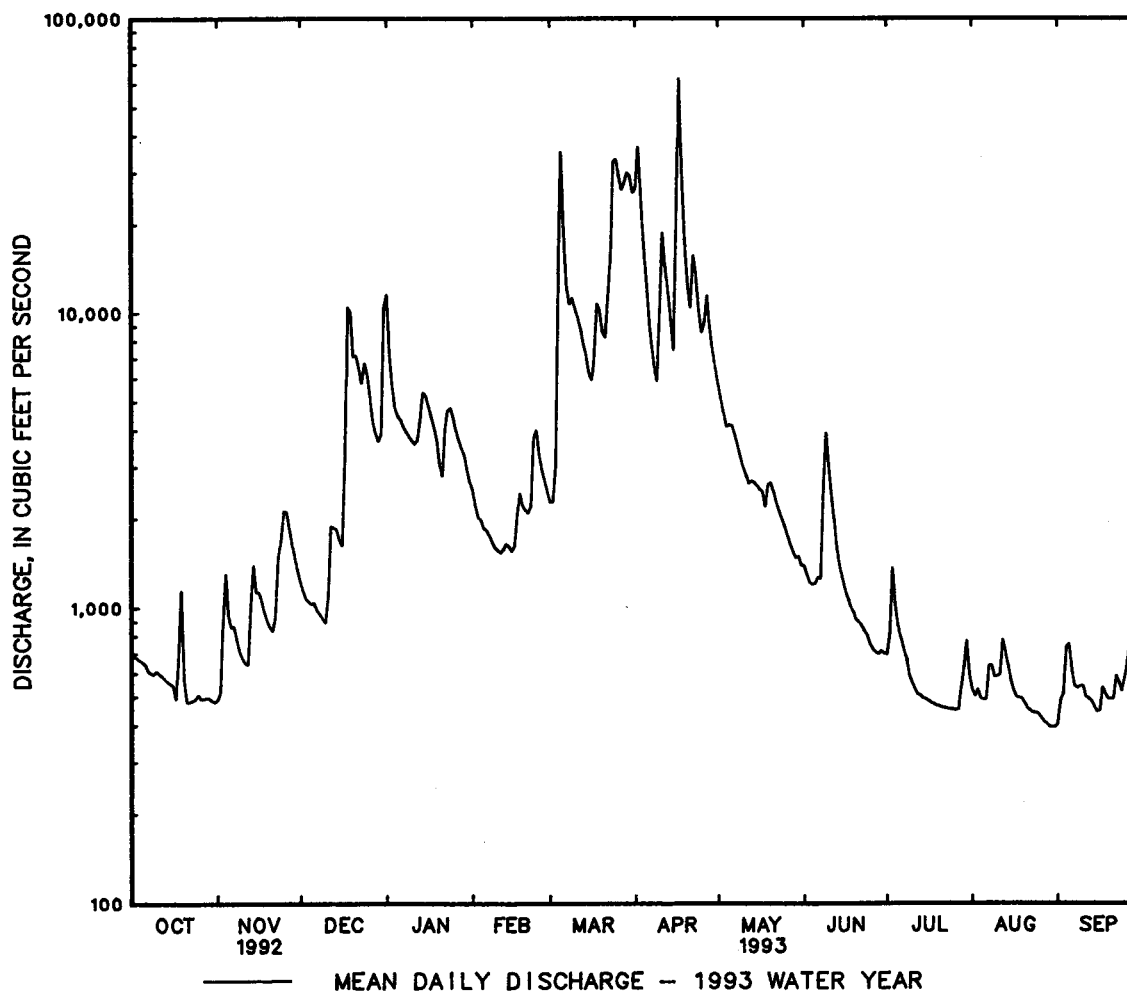
b Sept. 10, 12, 13, 1966.

c From rating curve extended above 85,000 ft³/s on basis of slope-area measurement of peak flow at site 5.0 mi upstream at Okonoko, WV.

d Oct. 21, 22.

f Aug. 30, 31.

g Sept. 10, 11, 1966.



01611500 CACAPON RIVER NEAR GREAT CACAPON, WV

LOCATION.--Lat 39°34'43", long 78°18'34", Morgan County, Hydrologic Unit 02070003, on left bank at Rock Ford 3.0 mi southwest of Great Cacapon, and at mile 6.5.

DRAINAGE AREA.--677 mi².

PERIOD OF RECORD.--December 1922 to current year.

REVISED RECORDS.--WSP 800: 1924(M). WSP 921: Drainage area. WSP 951: 1936-37. WSP 1552: 1925-26(M), 1928 1929(M), 1932.

GAGE.--Water-stage recorder. Datum of gage is 456.78 ft above sea level (U.S. Army Corps of Engineers bench mark). Prior to Nov. 10, 1933, nonrecording gage at same site and datum. National Weather Service gage-height telemeter at the station.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1889 reached a stage of about 24.7 ft, from floodmarks, discharge 57,500 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Dec. 18	1630	4,270	7.12	Mar. 29	2300	5,740	8.16
Jan. 1	0500	6,620	8.75	Apr. 2	1415	11,900	11.70
Mar. 5	0730	*26,000	*16.96	Apr. 17	0400	9,680	10.58
Mar. 18	1500	3,920	6.85	Apr. 22	1845	6,590	8.73
Mar. 22	1530	4,740	7.47	Apr. 27	0815	4,750	7.48
Mar. 24	1630	9,870	10.68				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	79	267	5340	395	366	3030	1480	192	111	112	108
2	126	86	242	2460	374	352	9130	1260	175	125	105	106
3	115	106	224	1620	322	554	5460	1090	168	165	100	85
4	108	142	209	1250	295	4890	3000	956	165	150	89	315
5	101	259	198	1050	311	19000	2240	923	170	188	83	438
6	95	236	185	965	294	6350	1820	901	171	176	88	269
7	90	182	173	806	279	3740	1560	815	171	154	97	186
8	86	161	163	692	266	2930	1330	706	237	147	100	148
9	82	148	156	650	251	2730	1160	637	315	152	99	122
10	81	137	166	645	242	2400	1310	587	251	135	108	109
11	79	128	171	591	238	2260	2780	539	267	114	101	117
12	84	124	247	567	247	2110	2630	501	248	101	92	130
13	83	124	311	866	261	1890	2170	630	192	92	86	109
14	78	121	353	1350	264	1650	1750	595	164	88	88	96
15	74	135	359	1220	259	1470	1490	545	149	84	82	86
16	71	171	331	1030	257	1390	2650	459	138	80	78	82
17	70	152	443	896	278	1490	7460	413	130	78	77	82
18	67	144	2870	783	429	3270	3620	413	126	76	76	88
19	65	140	2860	664	465	2800	2440	438	122	82	75	81
20	63	137	2000	557	379	2100	1920	472	116	83	70	77
21	63	135	2470	483	373	2070	1680	450	110	80	71	80
22	66	141	2280	571	398	4130	4560	369	126	86	71	81
23	67	170	1700	862	454	4970	4830	329	120	80	69	84
24	68	1250	2070	863	716	8620	3010	306	109	80	66	80
25	71	805	2160	785	567	7610	2270	286	105	80	63	79
26	71	594	1530	701	478	4880	2130	265	100	79	61	91
27	73	478	1140	591	456	3420	4080	245	106	77	61	107
28	77	397	886	545	416	4440	2730	227	110	77	59	110
29	85	340	848	538	---	5220	2120	211	112	214	57	112
30	79	298	1040	486	---	5030	1750	194	114	183	59	115
31	79	---	3910	426	---	3430	---	190	---	131	60	---
TOTAL	2559	7520	31962	30853	9964	117562	88110	17432	4779	3548	2503	3773
MEAN	82.5	251	1031	995	356	3792	2937	562	159	114	80.7	126
MAX	142	1250	3910	5340	716	19000	9130	1480	315	214	112	438
MIN	63	79	156	426	238	352	1160	190	100	76	57	77
CFSM	.12	.37	1.52	1.47	.53	5.60	4.34	.83	.24	.17	.12	.19
IN.	.14	.41	1.76	1.70	.55	6.46	4.84	.96	.26	.19	.14	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1993, BY WATER YEAR (WY)

	336	354	507	624	865	1263	1139	873	436	195	234	180
MEAN	336	354	507	624	865	1263	1139	873	436	195	234	180
MAX	2976	2577	2121	1683	2243	5708	2976	3565	3525	936	2791	1636
(WY)	1943	1986	1973	1991	1971	1936	1987	1924	1972	1972	1955	1975
MIN	44.8	51.1	56.5	69.6	89.1	247	242	157	77.0	56.4	39.8	39.4
(WY)	1931	1966	1966	1956	1934	1990	1947	1969	1969	1930	1966	1932

POTOMAC RIVER BASIN

01611500 CACAPON RIVER NEAR GREAT CACAPON, WV--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1923 - 1993	
ANNUAL TOTAL	169916		320565		586	
ANNUAL MEAN	464		878		1135	
HIGHEST ANNUAL MEAN					180	
LOWEST ANNUAL MEAN					67900	
HIGHEST DAILY MEAN	4820	Apr 23	19000	Mar 5	180	1972
LOWEST DAILY MEAN	63	(a)	57	Aug 29	26	1969
ANNUAL SEVEN-DAY MINIMUM	66	Oct 18	60	Aug 25	28	1966
INSTANTANEOUS PEAK FLOW	10200	Apr 22	26000	Mar 5	(b)87600	Mar 18 1936
INSTANTANEOUS PEAK STAGE	10.84	Apr 22	16.96	Mar 5	30.10	Mar 18 1936
INSTANTANEOUS LOW FLOW	63	(c)	55	(d)	26	(f)
ANNUAL RUNOFF (CFSM)	.69		1.30		.87	
ANNUAL RUNOFF (INCHES)	9.34		17.61		11.76	
10 PERCENT EXCEEDS	1140		2530		1320	
50 PERCENT EXCEEDS	233		242		240	
90 PERCENT EXCEEDS	86		79		66	

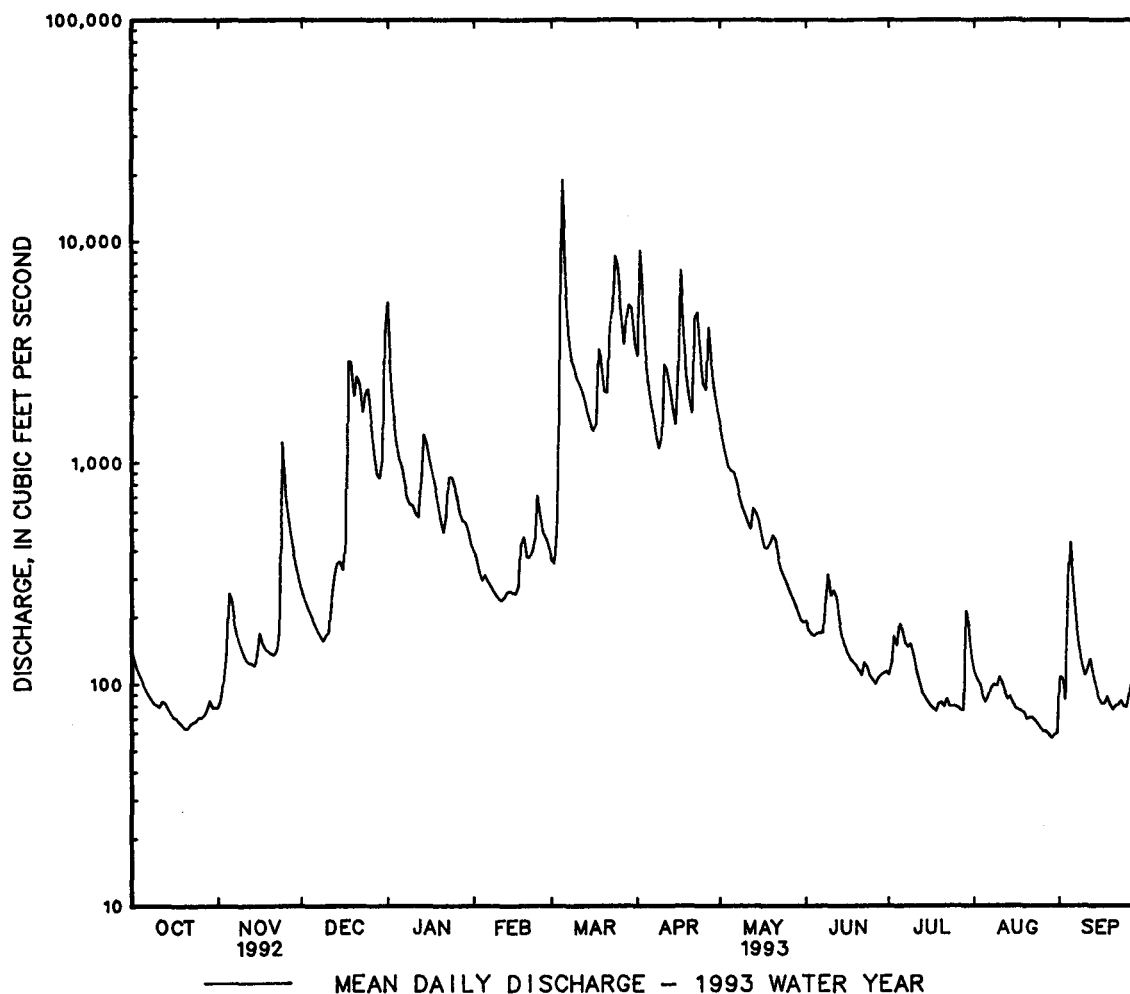
a Oct. 20, 21.

b From rating curve extended above 52,000 ft³/s.

c Oct. 19-21.

d Aug. 29, 30.

f Sept. 11-13, 1966.



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 mi².

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.--No estimated daily discharges. Records good. 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 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	1345	67,900	23.58	Apr. 11	1230	24,100	13.46
Mar. 24	2230	45,800	19.13	Apr. 17	2000	*76,400	*25.10
Mar. 29	0615	35,900	16.75	Apr. 22	2145	24,300	13.53
Apr. 2	1645	51,900	20.44				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1000	708	1750	19300	3080	2770	27400	7710	1690	933	842	546
2	965	748	1630	11600	2870	2630	45800	6700	1610	963	758	676
3	939	825	1520	7990	2600	3000	35900	5910	1500	1110	731	752
4	924	1300	1430	6420	2390	10900	22600	5240	1430	1570	720	875
5	912	1590	1400	5750	2310	58100	16400	4910	1430	1260	681	1420
6	890	1370	1360	5690	2220	29600	12900	5020	1440	1200	687	1170
7	873	1220	1350	5150	2160	18100	9840	4770	1490	1180	726	982
8	837	1190	1280	4860	2040	14500	8200	4410	2050	1020	826	869
9	831	1080	1250	4610	1960	14600	7130	4050	3850	951	863	801
10	816	1010	1240	4400	1910	14200	8660	3710	4080	882	811	803
11	828	958	1470	4250	1880	12200	22200	3450	3070	812	814	768
12	819	938	2330	4190	1890	11700	18500	3240	2560	761	803	748
13	810	937	2810	4760	1950	10100	14800	3150	2100	728	940	723
14	797	1380	2680	6660	1970	9400	12100	3220	1760	712	904	679
15	783	1590	2530	6950	1940	8030	9620	3150	1580	689	841	648
16	771	1410	2370	6300	1930	7450	15200	2970	1460	673	765	634
17	754	1420	3190	5680	2080	7700	65200	2870	1370	654	716	635
18	705	1330	10300	5130	2650	13100	45900	2790	1290	641	688	764
19	853	1250	15100	4610	2860	14200	22600	2660	1230	633	666	736
20	1270	1180	10300	4060	2610	11300	16100	3110	1180	640	644	688
21	795	1150	9510	3370	2560	10300	12300	3020	1120	631	631	676
22	670	1190	9660	4130	2540	14900	18600	2760	1090	625	623	691
23	669	1780	7910	5680	3010	20000	20800	2530	1090	615	606	766
24	681	3170	8100	6190	4730	39000	14700	2360	1060	609	595	786
25	695	2900	9120	5760	4180	43300	11500	2230	1010	613	593	751
26	706	3090	7270	5150	3510	35200	10900	2120	956	613	587	857
27	704	2660	5920	4610	3250	29800	17200	1970	936	607	567	955
28	703	2350	4940	4280	3040	30400	13000	1850	929	602	555	1150
29	712	2090	4610	4010	---	35000	10200	1750	924	804	539	1520
30	721	1910	4640	3760	---	34200	8850	1650	927	947	527	1410
31	718	---	10300	3340	---	29000	---	1710	---	994	528	---
TOTAL	25151	45724	149270	178640	72120	594680	575100	106990	48212	25672	21777	25479
MEAN	811	1524	4815	5763	2576	19180	19170	3451	1607	828	702	849
MAX	1270	3170	15100	19300	4730	58100	65200	7710	4080	1570	940	1520
MIN	669	708	1240	3340	1880	2630	7130	1650	924	602	527	546
CFSM	.20	.37	1.18	1.41	.63	4.71	4.71	.85	.39	.20	.17	.21
IN.	.23	.42	1.36	1.63	.66	5.43	5.25	.98	.44	.23	.20	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1993, BY WATER YEAR (WY)

	2076	2422	3974	4940	6438	9268	7801	5462	3092	1562	1491	1258
MEAN	2076	2422	3974	4940	6438	9268	7801	5462	3092	1562	1491	1258
MAX	13270	20090	15160	15450	16720	32280	19170	13260	13390	6677	9479	6756
(WY)	1977	1986	1973	1937	1971	1936	1993	1988	1972	1949	1955	1945
MIN	309	399	463	751	1041	2311	2857	1344	622	357	342	329
(WY)	1942	1966	1966	1956	1934	1990	1968	1941	1969	1966	1944	1946

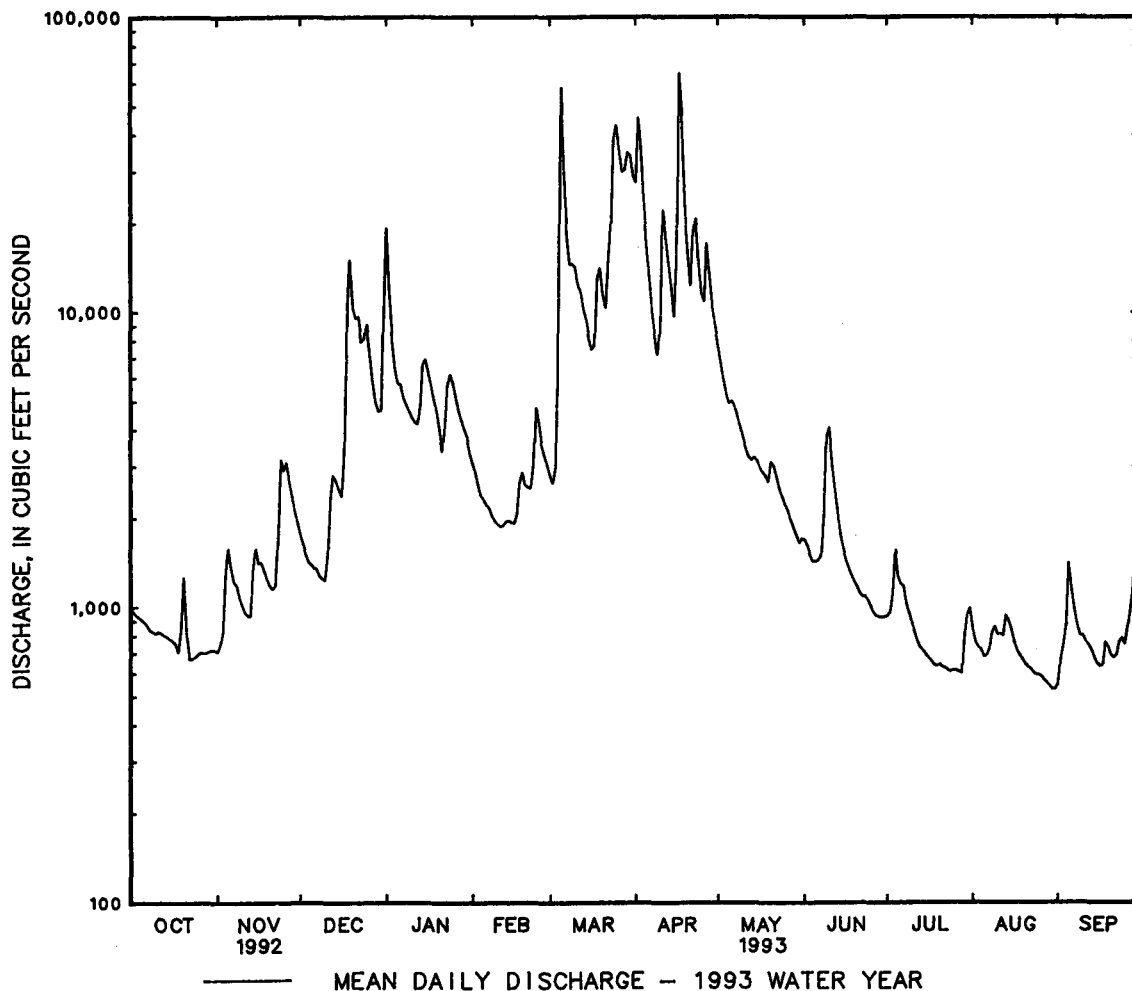
POTOMAC RIVER BASIN

01613000 POTOMAC RIVER AT HANCOCK, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1933 - 1993	
ANNUAL TOTAL	1169332		1868815			
ANNUAL MEAN	3195		5120		4137	
HIGHEST ANNUAL MEAN					6319	
LOWEST ANNUAL MEAN					1770	
HIGHEST DAILY MEAN	24200	Apr 23	65200	Apr 17	261000	Mar 18 1936
LOWEST DAILY MEAN	669	Oct 23	527	Aug 30	184	Oct 3 1932
ANNUAL SEVEN-DAY MINIMUM	690	Oct 22	550	Aug 26	215	Sep 7 1966
INSTANTANEOUS PEAK FLOW	28500	Apr 23	76400	Apr 17	(a)340000	Mar 18 1936
INSTANTANEOUS PEAK STAGE	14.77	Apr 23	25.10	Apr 17	47.60	Mar 18 1936
INSTANTANEOUS LOW FLOW	658	Oct 19	526	(b)	180	Oct 4 1932
ANNUAL RUNOFF (CFSM)	.78		1.26		1.02	
ANNUAL RUNOFF (INCHES)	10.68		17.07		13.80	
10 PERCENT EXCEEDS	7330		13500		9410	
50 PERCENT EXCEEDS	1970		1760		2140	
90 PERCENT EXCEEDS	958		681		525	

a From rating curve extended above 120,000 ft³/s on basis of slope-area measurement of peak flow.

b Aug. 30, 31.



POTOMAC RIVER BASIN

241

01614500 CONOCOCHIEAGUE 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 mi².

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. Low flow partly regulated by small powerplants near Mercersburg, Pennsylvania.

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 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	0715	7,130	9.75	Apr. 2	0845	*11,000	*12.17
Mar. 5	0230	5,790	8.77	Apr. 17	0830	6,220	9.09
Mar. 24	2100	7,860	10.25	Apr. 26	2330	4,430	7.62
Mar. 29	0715	8,090	10.40				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	119	494	1070	575	280	7200	1470	386	192	151	128
2	157	130	451	1070	487	303	10200	1300	351	332	144	129
3	150	663	417	972	467	441	6670	1160	315	799	149	168
4	144	720	377	898	472	2130	3900	1060	305	776	140	491
5	139	391	364	1060	439	4840	2810	1110	301	501	136	414
6	134	305	329	1120	426	3040	2240	1250	295	353	149	254
7	132	258	310	956	399	2490	1860	989	279	296	189	209
8	130	225	296	876	369	2700	1600	874	301	302	178	407
9	138	196	277	824	370	3260	1430	805	480	265	155	359
10	164	185	282	740	354	3120	1860	753	467	238	149	395
11	152	178	3150	685	355	2330	2790	717	346	219	168	282
12	141	178	6860	701	368	1820	2100	691	288	203	449	225
13	135	568	4090	949	380	1650	1730	806	270	194	335	201
14	132	745	2320	1190	381	1300	1500	718	258	185	216	187
15	130	441	1710	1030	357	1430	1370	629	249	189	e190	176
16	130	352	1410	913	364	1270	2730	586	241	177	166	173
17	120	308	1960	836	392	1470	5580	572	233	172	164	227
18	116	279	2750	758	372	2260	3390	536	224	166	153	211
19	119	253	2000	675	303	1780	2410	584	221	171	e160	207
20	121	235	1740	604	336	1510	1940	551	263	171	e164	182
21	121	224	1640	580	335	1620	1830	492	255	155	e151	177
22	119	622	1430	877	336	2330	3320	460	237	157	e142	196
23	117	2280	1310	1210	385	3260	3120	438	229	148	e142	194
24	119	1860	1220	1070	353	7470	2270	422	206	144	141	179
25	117	1250	1050	1010	298	6930	1900	409	193	145	139	176
26	117	999	961	860	308	5020	2420	389	189	146	139	550
27	114	846	851	777	311	4440	3600	370	214	145	134	760
28	117	713	793	725	279	5910	2360	353	212	143	131	1020
29	118	619	801	677	---	7790	1930	332	201	152	126	625
30	115	544	825	602	---	6850	1670	318	195	173	123	427
31	117	---	912	579	---	5010	---	326	---	161	123	---
TOTAL	4041	16686	43380	26894	10571	96054	89730	21470	8204	7570	5196	9329
MEAN	130	556	1399	868	378	3099	2991	693	273	244	168	311
MAX	166	2280	6860	1210	575	7790	10200	1470	480	799	449	1020
MIN	114	119	277	579	279	280	1370	318	189	143	123	128
CFSM	.26	1.13	2.83	1.76	.76	6.27	6.05	1.40	.55	.49	.34	.63
IN.	.30	1.26	3.27	2.03	.80	7.23	6.76	1.62	.62	.57	.39	.70

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1993, BY WATER YEAR (WY)

	330	426	606	647	832	1157	1071	740	500	322	223	243
MEAN	330	426	606	647	832	1157	1071	740	500	322	223	243
MAX	2177	1453	1904	1685	2446	3557	2991	1736	3278	1358	921	1828
(WY)	1977	1933	1973	1937	1984	1936	1993	1989	1972	1928	1942	1975
MIN	42.3	45.4	61.2	88.8	151	274	367	218	120	62.2	48.0	54.6
(WY)	1931	1931	1931	1931	1931	1990	1947	1941	1965	1966	1966	1930

POTOMAC RIVER BASIN

01614500 CONOCOCHIEGUE CREEK AT FAIRVIEW, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

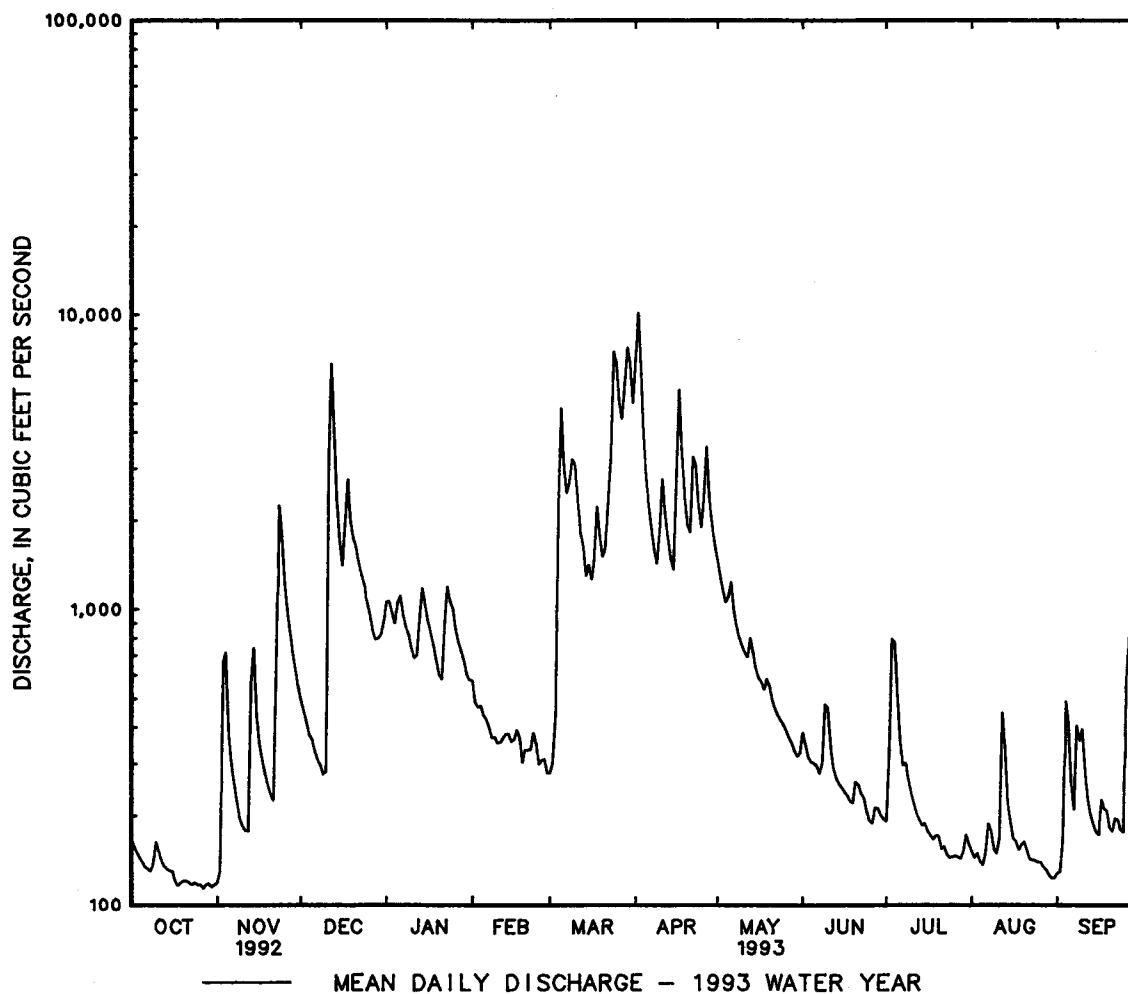
WATER YEARS 1928 - 1993

ANNUAL TOTAL	187330		339125			
ANNUAL MEAN	512		929		586	
HIGHEST ANNUAL MEAN					1078	1972
LOWEST ANNUAL MEAN					301	1954
HIGHEST DAILY MEAN	6860	Dec 12	10200	Apr 2	26700	Jun 23 1972
LOWEST DAILY MEAN	114	Oct 27	114	Oct 27	25	Nov 28 1930
ANNUAL SEVEN-DAY MINIMUM	116	Oct 25	116	Oct 25	28	Sep 7 1966
INSTANTANEOUS PEAK FLOW	7130	Dec 12	11000	Apr 2	(a)32400	Jun 23 1972
INSTANTANEOUS PEAK STAGE	9.75	Dec 12	12.17	Apr 1	(b)24.50	Jun 23 1972
INSTANTANEOUS LOW FLOW	81	Feb 13	111	Oct 27	21	(c)
ANNUAL RUNOFF (CFSM)	1.04		1.88		1.19	
ANNUAL RUNOFF (INCHES)	14.11		25.54		16.13	
10 PERCENT EXCEEDS	1020		2320		1300	
50 PERCENT EXCEEDS	315		377		329	
90 PERCENT EXCEEDS	140		140		102	

a From rating curve extended above 15,000 ft³/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

243

01614500 CONOCOCHEAGUE CREEK AT FAIRVIEW, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-83, 1992 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1966 to September 1980.

SUSPENDED SEDIMENT DISCHARGE: October 1966 to September 1980.

REMARKS.--Water temperatures were measured in field at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum daily, 30.0°C, July 17, 1969; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,050 mg/L, Oct. 25, 1971; minimum daily mean, 1 mg/L, on many days.

SEDIMENT LOAD: Maximum daily, 73,000 tons, June 23, 1972; minimum daily, 0.17 ton, Nov. 24, 26, 27, 1966.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
APR 1993												
15...	1100	1370	310	7.7	11.0	22.0	764	11.1	100	140	43	8.5
MAY												
04...	0900	727	329	7.7	15.5	18.0	773	9.0	89	160	49	9.6
JUN												
01...	1030	402	429	7.7	15.5	16.0	762	7.8	78	200	60	12
09...	1230	572	448	7.6	20.0	31.0	765	7.6	83	190	59	11
JUL												
06...	1215	346	393	7.6	24.0	31.0	770	7.3	86	170	50	11
AUG												
18...	1330	160	474	8.3	25.5	24.0	750	10.0	124	230	68	14
30...	1000	120	509	8.0	25.0	26.0	755	9.6	118	240	68	16
SEP												
28...	1100	1020	297	7.5	15.0	15.5	750	9.1	92	140	41	8.8

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
APR 1993												
15...	5.4	1.9	100	122	--	17	11	<0.10	6.0	184	16	0.030
MAY												
04...	5.5	1.8	116	142	--	17	9.9	<0.10	4.3	186	17	0.020
JUN												
01...	7.3	3.0	168	205	--	19	15	0.10	3.6	249	24	0.060
09...	7.6	3.2	158	193	--	22	17	0.20	5.8	268	23	0.070
JUL												
06...	8.0	3.3	126	154	--	23	13	0.20	7.5	230	23	0.030
AUG												
18...	11	3.4	171	195	7	24	17	0.20	5.1	264	22	0.020
30...	14	3.7	--	--	--	23	24	0.20	5.4	287	22	0.020
SEP												
28...	7.8	5.6	98	120	--	24	11	0.10	9.1	191	18	0.030

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
APR 1993											
15...	3.60	0.030	0.20	0.20	0.050	0.050	0.040	24	7	1.6	0.6
MAY											
04...	3.90	0.020	0.30	<0.20	0.060	0.020	0.040	16	5	1.8	0.6
JUN											
01...	5.40	0.040	0.40	0.30	0.150	0.120	0.100	9	5	2.8	0.5
09...	5.30	0.090	1.1	0.30	0.410	0.190	0.190	8	6	2.8	2.5
JUL											
06...	5.30	0.040	0.50	0.30	0.190	0.130	0.130	10	6	3.0	0.5
AUG											
18...	5.10	0.030	0.50	0.30	0.170	0.150	0.150	5	4	2.6	0.2
30...	5.00	0.030	0.40	0.40	0.240	0.240	0.190	4	4	2.6	0.2
SEP											
28...	4.10	0.090	1.0	0.80	0.200	0.120	0.120	41	5	5.6	>3.9

POTOMAC RIVER BASIN

01614500 CONOCOCHIEAGUE CREEK AT FAIRVIEW, MD--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
APR 1993				
15...	1100	1370	16	59
MAY				
04...	0900	727	14	27
JUN				
01...	1030	402	19	21
09...	1230	572	51	79
JUL				
06...	1215	346	21	20
AUG				
18...	1330	160	5	2.2
30...	1000	120	3	0.97
SEP				
28...	1100	1020	125	344

POTOMAC RIVER BASIN

245

01616500 OPEQUON CREEK NEAR MARTINSBURG, WV

LOCATION.--Lat 39°25'25", long 77°56'20", Berkeley County, Hydrologic Unit 02070004, on right bank 300 ft upstream from Evans Run, 2.3 mi upstream from Tuscarora Creek, 3.0 mi southeast of Martinsburg, and at mile 11.1.

DRAINAGE AREA.--272 mi².

PERIOD OF RECORD.--May 1905 to July 1906, July 1947 to current year.

REVISED RECORDS.--WSP 1702: 1959.

GAGE.--Water-stage recorder. Datum of gage is 354.89 ft above sea level. Prior to July 1906, nonrecording gage at approximately the same site at different datum. July 23, 1947 to July 22, 1948, nonrecording gage at present site and datum. National Weather Service gage-height telemeter at the station.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of about 17.5 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage Height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
Dec. 11	1745	4,500	11.59	Apr. 2	1215	3,040	10.42
Mar. 5	0800	*12,600	*15.38	Apr. 11	0545	1,920	8.30
Mar. 18	0745	2,440	9.59	Apr. 17	0315	4,810	11.79
Mar. 22	0700	2,930	10.31	Apr. 22	1200	2,990	10.37
Mar. 24	1200	3,760	11.07	Apr. 26	2345	2,140	8.85
Mar. 28	1700	3,080	10.46				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	76	67	304	189	194	1230	613	162	148	100	78
2	80	83	63	254	178	238	2380	563	156	191	103	78
3	76	174	60	233	169	408	1380	517	153	203	102	84
4	74	189	58	224	171	2730	996	489	150	178	96	230
5	72	105	58	249	166	8730	830	536	158	158	98	124
6	69	86	54	280	165	1680	730	666	150	142	107	99
7	70	79	53	240	160	1030	647	506	139	147	131	92
8	72	68	53	232	154	822	589	450	240	140	121	86
9	87	64	52	248	151	672	538	420	249	131	104	86
10	114	61	136	259	147	583	867	394	193	127	103	99
11	73	56	3320	247	142	606	1470	375	196	123	97	83
12	57	56	2690	317	153	542	935	364	180	121	99	79
13	56	64	1370	681	165	539	744	386	176	119	94	78
14	56	68	765	592	167	490	636	357	170	119	92	78
15	59	64	533	414	166	465	577	330	166	116	91	98
16	56	59	434	341	199	463	2070	311	161	119	90	132
17	58	58	784	302	312	854	3060	311	157	115	93	128
18	59	58	844	267	344	2020	1170	301	156	113	107	109
19	61	59	532	237	252	1100	907	337	150	116	97	101
20	62	58	433	219	218	859	773	306	186	124	91	91
21	65	59	365	219	210	1340	784	281	407	124	87	114
22	69	68	320	299	221	2350	2300	270	280	116	84	172
23	67	890	295	359	458	1900	1320	260	192	108	86	119
24	70	444	270	311	318	3250	934	254	166	105	87	105
25	71	232	239	284	234	1800	805	250	157	105	81	105
26	68	177	227	248	219	1200	1190	238	153	107	86	168
27	74	134	211	231	205	1040	1490	187	156	108	84	217
28	63	104	212	223	198	2480	922	180	149	98	80	321
29	64	88	325	215	---	2080	768	172	149	111	77	164
30	64	75	426	200	---	1640	680	165	147	109	78	133
31	71	---	367	191	---	1190	---	162	---	101	81	---
TOTAL	2140	3856	15616	8920	5831	45295	33722	10951	5404	3942	2927	3651
MEAN	69.0	129	504	288	208	1461	1124	353	180	127	94.4	122
MAX	114	890	3320	681	458	8730	3060	666	407	203	131	321
MIN	56	56	52	191	142	194	538	162	139	98	77	78
CFSM	.25	.47	1.85	1.06	.77	5.37	4.13	1.30	.66	.47	.35	.45
IN.	.29	.53	2.14	1.22	.80	6.19	4.61	1.50	.74	.54	.40	.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1993, BY WATER YEAR (WY)

MEAN	144	157	230	256	330	420	382	279	213	136	126	115
MAX	788	504	821	700	1022	1461	1199	1091	1190	456	543	911
(WY)	1977	1971	1973	1979	1984	1993	1984	1988	1972	1972	1978	1975
MIN	30.5	35.1	33.7	39.6	76.6	119	97.8	86.0	65.4	49.4	36.6	35.2
(WY)	1948	1966	1966	1966	1954	1959	1954	1969	1969	1966	1966	1947

POTOMAC RIVER BASIN

01616500 OPEQUON CREEK NEAR MARTINSBURG, WV--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

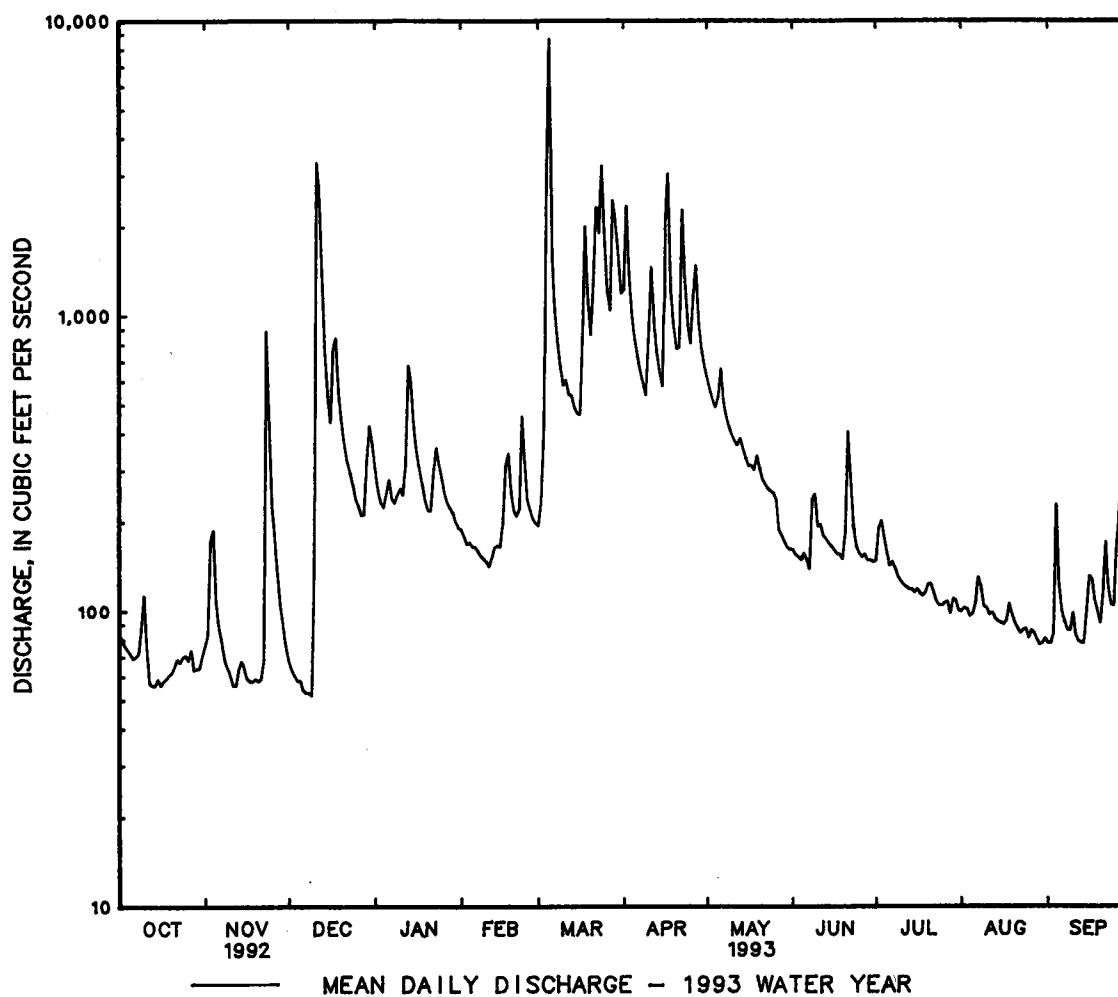
FOR 1993 WATER YEAR

WATER YEARS 1947 - 1993

ANNUAL TOTAL	81002		142255			
ANNUAL MEAN	221		390		232	
HIGHEST ANNUAL MEAN					464	1984
LOWEST ANNUAL MEAN					85.7	1954
HIGHEST DAILY MEAN	8470	Apr 22	8730	Mar 5	8890	Jun 22 1972
LOWEST DAILY MEAN	52	Dec 9	52	Dec 9	26	Oct 25 1947
ANNUAL SEVEN-DAY MINIMUM	55	Feb 7	55	Dec 3	27	Sep 7 1966
INSTANTANEOUS PEAK FLOW	12300	Apr 22	12600	Mar 5	(a)19000	Jun 22 1972
INSTANTANEOUS PEAK STAGE	15.27	Apr 22	15.38	Mar 5	17.45	Jun 22 1972
INSTANTANEOUS LOW FLOW	41	Feb 11	50	Dec 9	(b)25	Oct 25 1947
ANNUAL RUNOFF (CFSM)	.81		1.43		.85	
ANNUAL RUNOFF (INCHES)	11.08		19.46		11.59	
10 PERCENT EXCEEDS	373		897		450	
50 PERCENT EXCEEDS	115		169		136	
90 PERCENT EXCEEDS	61		68		55	

a From rating curve extended above 7,100 ft³/s.

b Observed.



247

LOCATION.--Lat 39°30'53", long 77°46'38", Washington County, Hydrologic Unit 02070004, on right bank 220 ft upstream from bridge on Sprecher Road, 0.1 mi downstream from unnamed tributary, 0.5 mi southwest of Grimes, 1.5 mi upstream from mouth, and 2.2 mi southwest of Fairplay.

WATER-DISCHARGE RECORDS

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0615	*133	*2.60	Mar. 24	1645	68	2.02
Mar. 5	0045	63	1.96	Apr. 17	0430	65	1.98

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	7.0	9.8	21	19	15	56	48	29	14	8.4	4.3
2	11	7.1	9.3	20	18	15	56	45	26	16	8.4	3.3
3	11	9.4	8.9	19	18	15	54	43	25	17	8.3	3.3
4	10	10	8.5	e19	18	33	52	42	23	15	8.0	14
5	9.8	9.4	8.3	21	18	54	49	41	22	13	8.0	7.6
6	9.3	8.7	7.9	21	18	43	47	40	21	13	7.8	5.1
7	8.8	8.0	7.6	21	18	38	46	39	19	12	7.8	3.4
8	8.4	7.4	7.3	20	18	37	44	37	26	12	8.6	3.7
9	8.4	6.7	7.0	20	17	35	42	35	22	12	8.9	4.5
10	8.7	6.4	7.9	20	17	34	41	34	19	12	8.7	9.4
11	8.7	6.3	112	19	17	33	42	32	19	12	8.7	5.7
12	8.7	6.1	66	20	17	32	42	31	19	11	8.7	5.2
13	8.6	6.6	39	22	17	31	41	31	19	11	8.7	4.0
14	8.3	6.6	33	23	17	30	40	30	20	11	8.7	3.7
15	8.0	6.3	30	22	17	29	38	29	18	12	8.7	3.8
16	8.0	6.0	29	22	17	29	43	29	16	14	8.7	10
17	7.6	5.7	38	e22	17	32	63	28	17	12	8.6	12
18	7.3	5.7	32	e22	17	42	59	28	16	11	8.4	12
19	7.2	5.6	28	e22	16	37	55	28	15	11	8.0	6.9
20	7.0	5.4	28	e22	16	35	51	27	15	11	7.8	5.5
21	6.9	5.4	26	20	16	37	48	26	18	10	7.5	5.1
22	6.7	5.6	26	21	16	43	48	26	17	9.7	7.3	5.0
23	6.7	17	25	22	16	46	48	25	15	9.4	5.6	4.9
24	6.7	17	23	22	16	63	47	25	15	9.1	4.6	5.5
25	6.7	15	22	22	16	67	46	25	15	9.1	4.6	6.0
26	6.7	14	22	21	16	63	49	24	14	9.1	5.1	7.5
27	6.7	13	21	21	15	59	57	24	14	9.1	5.1	7.9
28	6.3	12	21	20	15	60	54	23	15	8.7	5.1	8.4
29	6.0	11	23	19	---	63	52	23	14	9.1	5.0	7.8
30	5.7	10	23	19	---	61	50	23	14	9.0	4.8	7.0
31	6.7	---	23	19	---	58	---	23	---	8.7	4.8	---
TOTAL	248.6	260.4	772.5	644	473	1269	1460	964	557	353.0	227.4	192.5
MEAN	8.02	8.68	24.9	20.8	16.9	40.9	48.7	31.1	18.6	11.4	7.34	6.42
MAX	12	17	112	23	19	67	63	48	29	17	8.9	14
MIN	5.7	5.4	7.0	19	15	15	38	23	14	8.7	4.6	3.3
CFSM	.42	.46	1.32	1.10	.89	2.17	2.57	1.65	.98	.60	.39	.34
IN.	.49	.51	1.52	1.27	.93	2.50	2.87	1.90	1.10	.69	.45	.38

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

MEAN	8.02	7.64	10.3	12.1	14.6	18.1	19.3	16.3	13.9	9.97	7.26	6.34
MAX	39.5	27.0	29.7	30.1	32.2	40.9	49.8	36.2	48.2	32.4	18.0	31.8
(WY)	1977	1976	1973	1979	1973	1993	1984	1972	1972	1972	1972	1975
MIN	.83	1.71	1.60	2.24	4.14	5.08	4.45	3.65	2.74	2.13	1.62	1.68
(WY)	1987	1992	1989	1981	1989	1990	1969	1969	1969	1991	1991	1988

POTOMAC RIVER BASIN

01617800 MARSH RUN AT GRIMES, MD--Continued

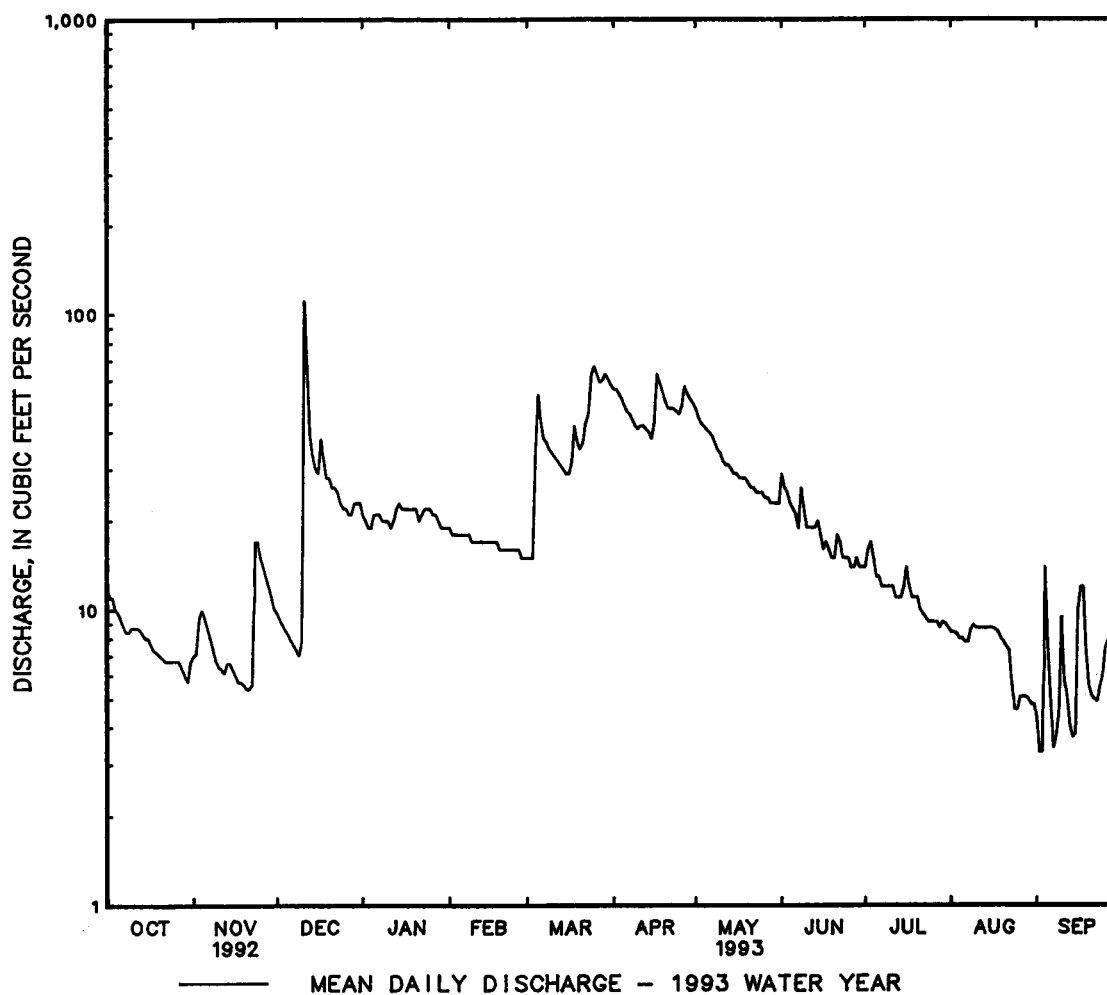
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1964 - 1993	
ANNUAL TOTAL	5175.0		7421.4		12.0	
ANNUAL MEAN	14.1		20.3		23.9	
HIGHEST ANNUAL MEAN					4.31	
LOWEST ANNUAL MEAN					223	
HIGHEST DAILY MEAN	112	Apr 22	112	Dec 11	223	Jun 23 1972
LOWEST DAILY MEAN	3.6	(a)	3.3	(b)	.00	Oct 1 1977
ANNUAL SEVEN-DAY MINIMUM	3.9	Feb 3	4.4	Aug 28	.60	Oct 21 1986
INSTANTANEOUS PEAK FLOW	205	Apr 21	133	Dec 11	(c)459	Feb 12 1985
INSTANTANEOUS PEAK STAGE	3.11	Apr 21	2.60	Dec 11	4.45	Feb 12 1985
INSTANTANEOUS LOW FLOW	3.4	Feb 7	3.2	(b)	(d).00	Oct 1 1977
ANNUAL RUNOFF (CFSM)	.75		1.08		.63	
ANNUAL RUNOFF (INCHES)	10.19		14.61		8.60	
10 PERCENT EXCEEDS	22		43		24	
50 PERCENT EXCEEDS	13		16		8.9	
90 PERCENT EXCEEDS	5.7		6.1		3.0	

a Feb. 6, 7.

b Sept. 2, 3.

c From rating curve extended above 220 ft³/s.

d Result of regulation caused by construction work upstream from station.



POTOMAC RIVER BASIN

249

01617800 MARSH RUN AT GRIMES, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1992 to September 1993.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
SEP 1993 07...	1500	3.2	578	8.1	22.5	31.0	770	8.3	95	290	99
	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)
	10	11	3.6	236	288	30	23	0.20	10	359	24
	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	DIMETH-OATE WATER FLTRD 0.7 U GG, REC (UG/L)
	0.040	5.50	0.050	0.30	0.30	0.050	0.020	0.020	5	7	<0.02
	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	2,6-DI-ETHYL ANALINE WAT FLT 0.7 U GF, REC (UG/L)	ALA-CHLOR, WATER, DISS, REC, (UG/L)	ATRA-ZINE, WATER, DISS, REC (UG/L)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYL-ATE, WATER, DISS, REC (UG/L)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.01	<0.02	<0.03	<0.01	<0.01	<0.01	0.21	<0.01	<0.01	<0.05	<0.01
	CHLOR-PYRIFOS DIS-SOLVED (UG/L)	CYANA-ZINE, WATER, DISS, REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L)	DI-AZINON, DIS-SOLVED (UG/L)	DI-ELDRIN DIS-SOLVED (UG/L)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	LINDANE DIS-SOLVED (UG/L)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.005	<0.01	<0.01	0.12	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.04
	MALA-THION, DIS-SOLVED (UG/L)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L)	METO-LACHLOR WATER DISSOLV (UG/L)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	FEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PARA-THION, DIS-SOLVED (UG/L)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)
	<0.01	<0.04	<0.03	0.04	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
	PRO-METON, WATER, DISS, REC (UG/L)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROP-CHLOR, WATER, DISS, REC (UG/L)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	SI-MAZINE, WATER, DISS, REC (UG/L)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L)	
	0.06	<0.01	<0.02	<0.01	<0.02	0.02	0.03	<0.01	<0.01	<0.01	<0.01

LOCATION.--Lat 39°26'04", long 77°48'07", Jefferson County, Hydrologic Unit 02070004, on right bank, 0.1 mi downstream from Rumsey Bridge at Shepherdstown, 3.3 mi upstream from Antietam Creek, and at mile 184.

DRAINAGE AREA.--5,936 mi².

PERIOD OF RECORD.--August 1928 to September 1953. Annual maximums, water years 1954-64. July 1964 to current year. Gage-height record and estimated discharges October 1953 to June 1964 available in files of the Maryland/Delaware/DC district office.

GAGE.--Water-stage recorder. Datum of gage is 281.00 ft above sea level.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some regulation at low flow by power plants upstream from station, prior to July 1981 by Stony River Reservoir, since December 1950 by Savage River Reservoir (see station 01597500), and since July 1981 by Jennings Randolph Lake. National Weather Service gage height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in June 1889 and May 1924 reached stages of 39.2 ft and 29.8 ft respectively, from floodmarks, discharges, about 290,000 ft³/s and 168,000 ft³/s respectively, from rating curve extended above 200,000 ft³/s on basis of slope-area measurement of peak flow.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23,000 ft³/s and maximum (*):

		Discharge	Gage height			Discharge	Gage height
Date	Time	(ft ³ /s)	(ft.)	Date	Time	(ft ³ /s)	(ft.)
Dec. 19	1330	26,200	9.58	Apr. 2	2400	77,200	18.96
Jan. 1	1830	28,900	10.18	Apr. 11	2330	36,200	11.71
Mar. 5	2100	*99,100	*22.15	Apr. 18	0430	90,500	20.97
Mar. 19	0800	25,300	9.37	Apr. 23	0830	39,500	12.38
Mar. 25	0430	70,200	17.86	Apr. 27	1900	32,800	10.99
Mar. 29	1630	56,800	15.64				

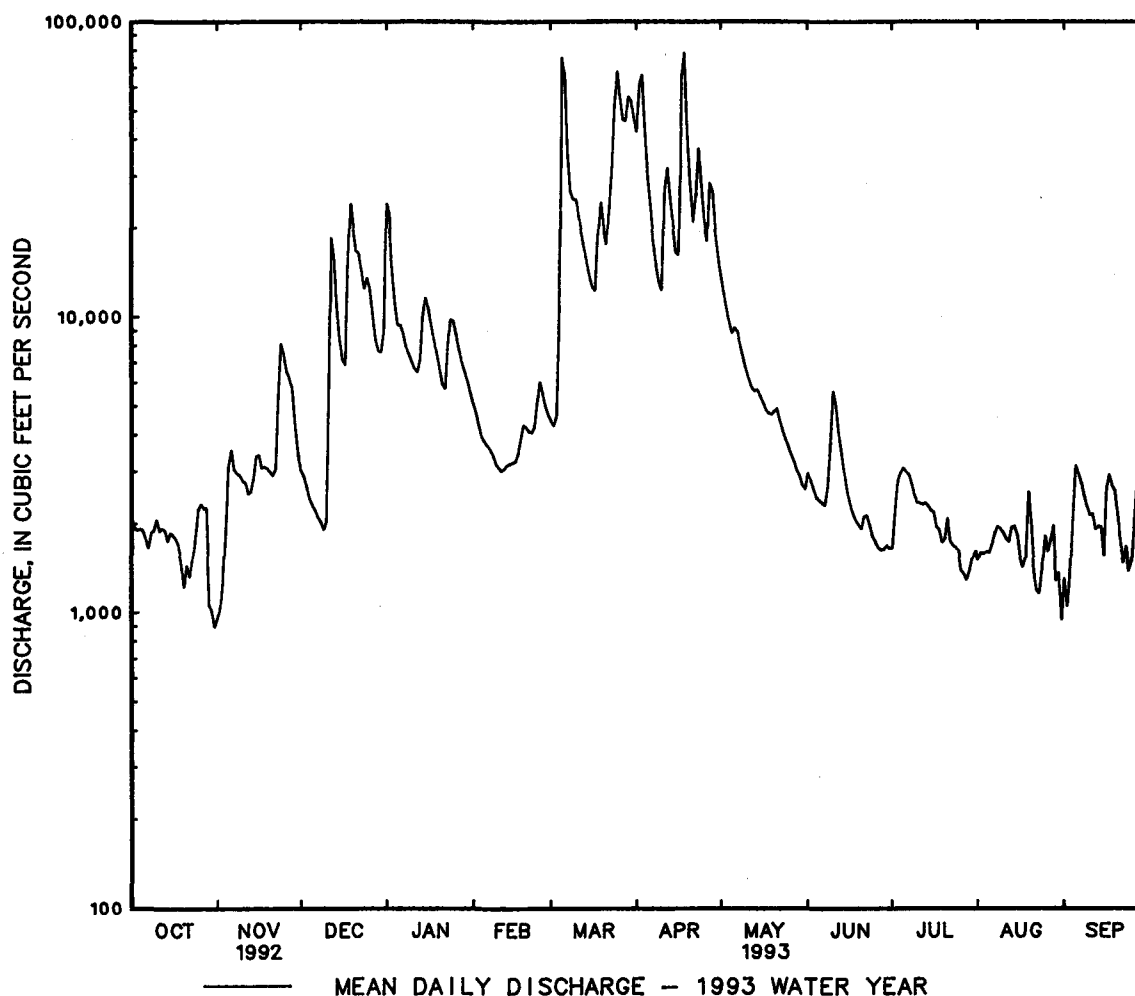
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2090	953	3010	24300	5090	4470	42400	14000	2960	1660	1520	1310
2	1930	1030	2880	22000	4730	4290	62000	12300	2790	2230	1600	1050
3	1900	1260	2650	14200	4260	4600	66000	10800	2620	2800	1590	1340
4	1920	1950	2430	11000	3930	9560	41900	9630	2450	2970	1610	2160
5	1900	3200	2300	9400	3780	75300	29300	8820	2400	3120	1600	3170
6	1760	3570	2220	9360	3680	66300	23200	9240	2350	3020	1710	2960
7	1650	3050	2100	8790	3570	35200	18000	8970	2310	2930	1860	2740
8	1870	2940	2030	7870	3400	26300	15000	7920	2680	2740	1960	2480
9	1900	2910	1910	7450	3200	25000	13100	7260	3720	2510	1930	2290
10	2070	2780	2040	7040	3100	25000	12300	6610	5630	2360	1870	2140
11	1880	2750	6010	6700	3010	21800	27500	6150	5050	2350	1790	2160
12	1930	2540	18600	6520	3070	19300	32100	5780	3990	2330	1740	1910
13	1900	2570	16000	7190	3170	17200	24800	5610	3470	2350	1950	1960
14	1740	2860	10800	10100	3200	15400	20300	5690	2950	2300	1960	1950
15	1870	3410	8320	11700	3230	13600	16600	5400	2570	2220	1830	1560
16	1830	3430	7170	10700	3260	12600	16200	5140	2350	2190	1540	2640
17	1770	3100	6880	9500	3460	12300	64200	4860	2160	1950	1430	2930
18	1680	3130	15000	8430	3880	19100	78600	4740	2050	1910	1530	2680
19	1460	3090	24200	7530	4320	24500	41100	4700	1980	1730	2550	2580
20	1220	2990	20000	6700	4240	20200	27700	4810	1920	1770	2020	2130
21	1450	2900	16700	5890	4110	17600	20900	4910	2120	2090	1380	1720
22	1320	3070	16500	5710	4080	23400	26000	4460	2140	1740	1190	1480
23	1520	5340	14200	8170	4250	31800	37400	4130	1970	1690	1160	1680
24	1790	8160	12500	9860	5190	52500	28000	3880	1810	1660	1390	1380
25	2240	7480	13600	9730	6070	68100	21000	3660	1730	1620	1830	1500
26	2330	6520	12400	8750	5510	56000	18100	3450	1660	1390	1610	2100
27	2260	6220	10200	7700	4970	46600	28600	3260	1630	1350	1770	2850
28	2260	5710	8420	7000	4670	46100	26600	3060	1640	1290	1980	3080
29	1060	4240	7640	6510	---	55600	19600	2890	1690	1380	1280	3140
30	1020	3410	7580	6070	---	54100	16200	2700	1650	1530	1370	3050
31	892	---	8970	5510	---	47100	---	2620	---	1610	946	---
TOTAL	54412	106563	285260	287380	112430	950920	914700	187450	76440	64790	51496	66120
MEAN	1755	3552	9202	9270	4015	30670	30490	6047	2548	2090	1661	2204
MAX	2330	8160										

MEAN	3164	3665	5673	6903	8991	12950	11400	8055	4555	2472	2238	1977
MAX	20080	24780	22070	20480	23770	45990	30490	20450	22600	9529	12140	11750
(WY)	1977	1986	1973	1937	1971	1936	1993	1988	1972	1949	1955	1975
MIN	351	395	621	1009	1580	3081	4010	2049	970	556	429	378
(WY)	1931	1931	1931	1981	1934	1990	1969	1930	1969	1966	1930	1930

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1928 - 1993	
ANNUAL TOTAL	1888685		3157961			
ANNUAL MEAN	5160		8652		5986	
HIGHEST ANNUAL MEAN					9988	1972
LOWEST ANNUAL MEAN					2607	1969
HIGHEST DAILY MEAN	35600	Apr 23	78600	Apr 18	287000	Mar 19 1936
LOWEST DAILY MEAN	892	Oct 31	892	Oct 31	185	Jul 31 1966
ANNUAL SEVEN-DAY MINIMUM	1170	Oct 29	1170	Oct 29	294	Sep 4 1966
INSTANTANEOUS PEAK FLOW	39900	Apr 23	99100	Mar 5	(a)335000	Mar 19 1936
INSTANTANEOUS PEAK STAGE	12.46	Apr 23	22.15	Mar 5	(b)42.10	Mar 19 1936
INSTANTANEOUS LOW FLOW	731	Oct 29	731	Oct 29	170	Aug 1 1966
ANNUAL RUNOFF (CFSM)	1.87		1.46		1.01	
ANNUAL RUNOFF (INCHES)	11.84		19.79		13.70	
10 PERCENT EXCEEDS	11500		23300		13400	
50 PERCENT EXCEEDS	3250		3170		3200	
90 PERCENT EXCEEDS	1800		1600		873	

a From rating curve extended above 200,000 ft³/s on basis of slope-area measurement of peak flow.
b From floodmarks.



POTOMAC RIVER BASIN

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979 to September 1993 (Discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1981.

WATER TEMPERATURE: October 1980 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Maximum, 670 microsiemens, Aug. 6, 10, 15, 30, Sept. 3, 1981; minimum, 160 microsiemens, Apr. 14-15, 1981.

WATER TEMPERATURE: Maximum, 30.0°C, July 17, 21, 25, 1981; minimum, 1.0°C, Feb. 13, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
DEC 1992											
02...	0915	2830	310	--	6.0	10.0	753	2.0	9.3	76	K14
MAR 1993											
08...	0910	26600	215	7.4	6.0	15.0	749	20	11.0	90	150
JUN											
07...	1040	2270	419	7.8	24.0	21.0	754	--	8.2	99	32
JUL											
19...	1240	1880	423	8.1	28.0	29.0	752	0.40	6.3	82	--
SEP											
13...	1100	1840	420	--	23.0	22.0	762	0.40	7.2	84	K10

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
DEC 1992											
02...	K11	110	35	6.6	8.2	2.7	--	--	35	12	0.10
MAR 1993											
08...	280	68	20	4.3	5.1	1.9	47	57	22	8.8	<0.10
JUN											
07...	110	--	--	--	--	--	122	149	--	--	--
JUL											
19...	--	180	53	12	12	2.9	123	150	52	17	0.20
SEP											
13...	360	180	53	11	16	3.5	--	--	59	23	0.10

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
DEC 1992											
02...	5.6	166	--	--	--	--	--	--	--	--	30
MAR 1993											
08...	6.4	112	6.6	0.020	1.50	0.070	0.50	0.150	0.040	0.050	30
JUN											
07...	--	--	7.5	0.010	1.70	0.020	0.30	0.050	0.020	<0.010	--
JUL											
19...	5.4	241	6.1	0.020	1.40	0.030	0.40	0.040	<0.010	<0.010	--
SEP											
13...	5.3	235	6.2	0.010	1.40	0.040	0.30	0.050	0.050	0.040	<10

K: Results based on colony count outside the acceptance range (non-ideal colony count).

01618000 POTOMAC RIVER AT SHEPHERDSTOWN, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)
DEC 1992										
02...	39	<3	33	<4	15	<1	<1	<1.0	190	<6
MAR 1993										
08...	32	<3	35	<4	16	2	<1	<1.0	94	<6
JUN										
07...	--	--	--	--	--	--	--	--	--	--
JUL										
19...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	52	<3	7	6	16	<1	<1	<1.0	300	<6

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 1992					
02...	0915	2830	3	23	100
MAR 1993					
08...	0910	26600	58	4160	92
JUN					
07...	1040	2270	6	37	82
JUL					
19...	1240	1880	3	15	93
SEP					
13...	1100	1840	6	30	84

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. No daily discharges for July 2 to Sept. 30, 1993 due to extensive construction at the hatchery resulting in removal of the gage for the period. Several measurements of water temperature were made during the year.

PEAK DISCHARGE FOR CURRENT YEAR.--Peak discharge, 17 ft³/s, Mar. 24, gage height, 1.63 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	6.7	7.5	12	11	9.2	14	13	11	9.7	---	---
2	7.5	6.7	7.5	12	10	9.2	14	13	11	---	---	---
3	7.5	6.7	7.3	12	10	9.2	14	13	11	---	---	---
4	7.5	6.7	7.2	12	11	13	14	12	11	---	---	---
5	7.5	6.5	7.0	12	11	15	14	12	11	---	---	---
6	7.5	6.5	7.0	12	10	15	14	12	11	---	---	---
7	7.5	6.5	7.0	11	10	14	13	12	11	---	---	---
8	7.5	6.5	7.0	11	10	14	13	12	11	---	---	---
9	7.5	6.5	7.0	11	10	14	12	12	11	---	---	---
10	7.5	6.5	7.5	10	9.7	13	13	12	11	---	---	---
11	7.5	6.5	15	10	9.7	13	13	12	10	---	---	---
12	7.5	6.5	15	10	9.7	13	13	12	10	---	---	---
13	7.5	6.5	15	10	9.7	12	13	12	10	---	---	---
14	7.4	6.5	14	10	9.6	12	12	12	10	---	---	---
15	7.2	6.5	14	10	9.5	12	12	12	10	---	---	---
16	7.2	6.5	13	10	9.5	12	13	12	10	---	---	---
17	7.2	6.5	13	10	9.5	13	14	12	10	---	---	---
18	7.0	6.5	14	10	9.5	14	14	12	10	---	---	---
19	7.0	6.5	14	10	9.5	14	14	12	10	---	---	---
20	7.0	6.5	14	10	9.5	14	14	11	10	---	---	---
21	7.0	6.5	14	10	9.5	14	13	11	10	---	---	---
22	7.0	6.5	13	10	9.5	15	14	12	10	---	---	---
23	7.0	8.6	13	11	9.5	15	14	12	10	---	---	---
24	7.0	8.2	13	11	9.4	16	14	12	10	---	---	---
25	7.0	7.9	13	11	9.2	16	14	12	10	---	---	---
26	7.0	7.7	13	11	9.2	15	13	11	10	---	---	---
27	7.0	7.7	13	11	9.2	15	13	11	10	---	---	---
28	7.0	7.7	13	11	9.2	15	13	11	9.7	---	---	---
29	6.8	7.5	13	11	---	15	13	11	9.7	---	---	---
30	6.7	7.5	12	11	---	14	13	11	9.7	---	---	---
31	6.7	---	12	11	---	14	---	12	---	---	---	---
TOTAL	223.7	206.6	355.0	334	273.1	418.6	401	368	309.1	---	---	---
MEAN	7.22	6.89	11.5	10.8	9.75	13.5	13.4	11.9	10.3	---	---	---
MAX	7.5	8.6	15	12	11	16	14	13	11	---	---	---
MIN	6.7	6.5	7.0	10	9.2	9.2	12	11	9.7	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993
MEAN	6.48	6.12	7.07	7.68	7.48	8.43	8.80
MAX	7.22	7.08	11.5	10.8	9.75	13.5	13.4
(WY)	1993	1991	1993	1993	1993	1993	1993
MIN	5.64	5.32	5.30	5.63	5.54	6.40	6.14
(WY)	1989	1988	1989	1989	1988	1988	1990

01619320 ALBERT POWELL FISH HATCHERY SPRING AT BEAVER CREEK, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1987 - 1993

ANNUAL TOTAL	2971.5				
ANNUAL MEAN	8.12			7.18	
HIGHEST ANNUAL MEAN				7.90	1991
LOWEST ANNUAL MEAN				6.51	1988
HIGHEST DAILY MEAN	17	Apr 22	16	(a)	17
LOWEST DAILY MEAN	6.1	(b)	6.5	(c)	5.0
ANNUAL SEVEN-DAY MINIMUM	6.1	Feb 9	6.5	Nov 5	5.1
INSTANTANEOUS PEAK FLOW	20	Apr 22	17	Mar 24	20
INSTANTANEOUS PEAK STAGE	1.72	Apr 22	1.63	(f)	1.72
INSTANTANEOUS LOW FLOW	6.1	(g)	6.0	Jul 8	4.9
10 PERCENT EXCEEDS	9.8		14		10
50 PERCENT EXCEEDS	7.8		11		7.2
90 PERCENT EXCEEDS	6.5		7.0		5.7

a Mar. 24, 25.

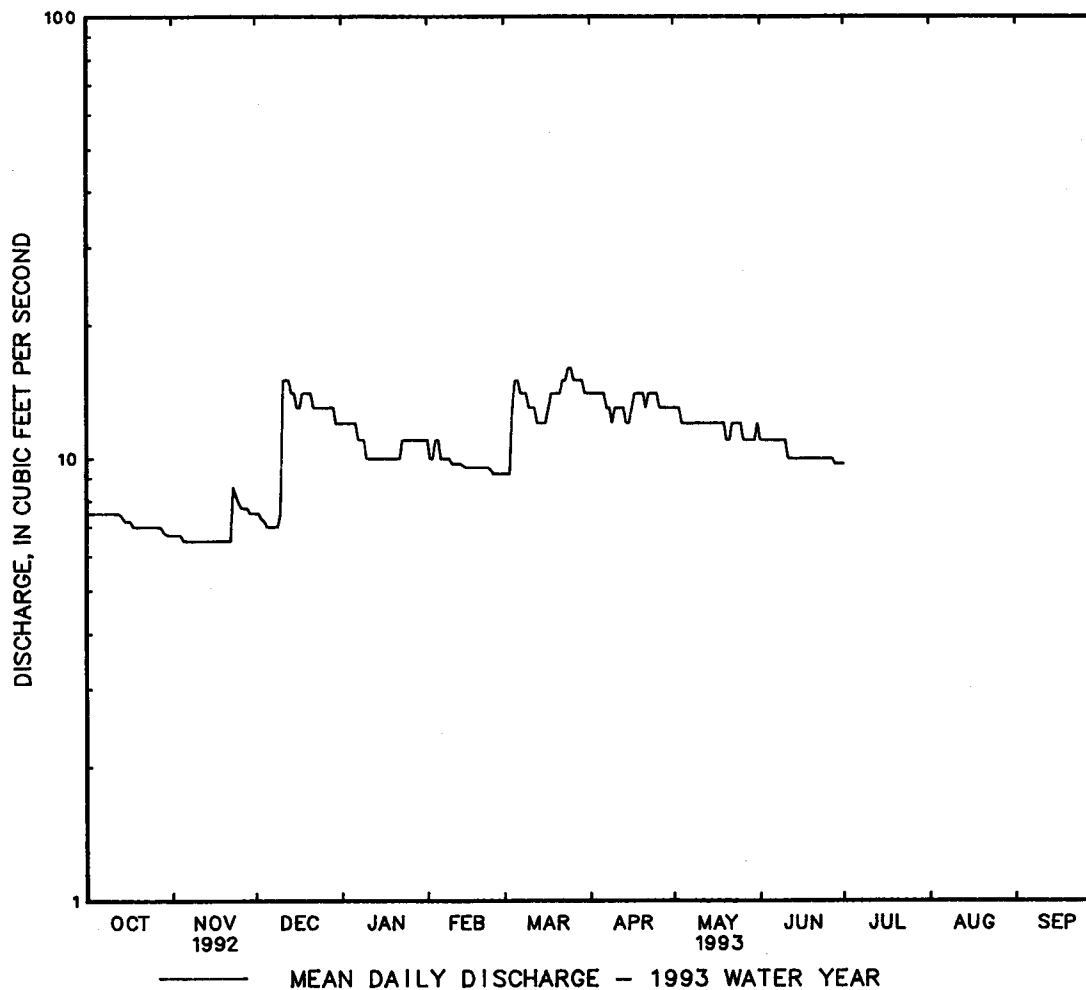
b Feb. 10-14.

c Nov. 5-22.

d Dec. 18, 19, 1988.

f Dec. 11, Mar. 24, 25.

g Feb. 9-15.



01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD

LOCATION.--Lat 39°27'01", long 77°43'52", Washington County, Hydrologic Unit 02070004, on left bank 400 ft downstream from Burnside Bridge, 1.0 mi southeast of Sharpsburg, and 4.0 mi upstream from mouth.

DRAINAGE AREA.--281 mi².

PERIOD OF RECORD.--June 1897 to September 1905, August 1928 to current year. Monthly discharge only for some periods. published in WSP 1302.

REVISED RECORDS.--WSP 192: 1897-1905. WSP 726: Drainage area. WSP 1432: 1929-31(M), 1933, 1935(M), 1937(M), 1949(M), 1952(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 29, 1934. Datum of gage is 311.05 ft above sea level. June 24, 1897, to Aug. 25, 1905, nonrecording gage a few hundred feet downstream from Middle Bridge, 1.2 mi upstream at datum 12 ft higher. Aug. 21, 1928, to July 13, 1933, nonrecording gage at Burnside Bridge, 0.1 mi upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation caused by powerplant upstream from station. Since 1928 records include pumpage from the Potomac River for municipal supply of Hagerstown. This water later enters Antietam Creek upstream from station as sewage. National Weather Service gage height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior years have been collected at this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	0145	2,760	7.24	Apr. 2	0030	2,290	6.61
Mar. 5	0700	2,640	7.09	Apr. 17	0315	2,460	6.84
Mar. 24	1400	*2,800	*7.29	Apr. 22	1245	1,820	5.92
Mar. 28	2215	2,790	7.28				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	129	203	606	381	263	1710	822	512	232	155	123
2	162	135	198	563	357	266	2000	777	391	265	155	124
3	160	239	192	531	346	291	1620	740	357	289	154	136
4	155	241	187	513	344	910	1310	719	347	245	152	421
5	152	170	187	564	336	2040	1150	748	346	226	149	258
6	150	158	182	550	330	1100	1060	768	334	219	175	166
7	148	149	178	497	322	943	967	688	321	227	216	152
8	146	142	174	483	316	933	899	648	369	212	177	196
9	157	137	168	481	311	913	846	623	376	205	161	211
10	184	135	289	453	315	876	962	604	370	197	153	222
11	166	133	2260	437	317	839	1320	577	331	194	156	194
12	151	134	2060	470	322	758	1060	557	312	193	252	161
13	146	152	1140	530	345	749	979	582	301	188	186	153
14	142	158	879	548	333	693	898	558	292	183	162	150
15	139	143	762	509	313	679	857	521	287	184	153	156
16	139	135	708	497	322	642	1230	502	280	185	148	230
17	133	134	904	489	336	788	2060	495	270	175	152	212
18	133	133	1010	471	321	1030	1370	487	265	170	176	201
19	133	132	836	445	295	866	1150	496	260	174	164	175
20	133	132	810	427	288	800	1040	482	270	202	146	162
21	133	131	823	422	299	882	1050	456	284	177	145	158
22	132	159	742	490	302	1040	1630	439	286	170	142	165
23	132	564	702	485	313	1260	1460	426	266	166	137	173
24	132	417	671	452	293	2480	1180	418	250	161	136	153
25	130	290	615	449	276	2150	1070	408	241	161	133	152
26	128	264	580	426	275	1740	1140	391	234	166	131	219
27	130	243	542	424	273	1650	1240	380	237	163	130	230
28	129	225	530	413	266	2290	990	371	230	155	127	249
29	128	215	540	405	---	2440	921	361	234	176	124	202
30	127	206	543	389	---	1900	870	349	224	165	125	180
31	132	---	590	381	---	1480	---	368	---	158	125	---
TOTAL	4428	5735	20205	14800	8847	35691	36039	16761	9077	5983	4797	5684
MEAN	143	191	652	477	316	1151	1201	541	303	193	155	189
MAX	184	564	2260	606	381	2480	2060	822	512	289	252	421
MIN	127	129	168	381	266	263	846	349	224	155	124	123
(†)	-15.0	-14.7	-15.0	-14.8	-14.8	-15.3	-15.1	-15.9	-16.4	-17.1	-16.6	-15.2
MEAN#	128	176	637	462	311	1136	1186	525	287	176	138	174
CFSM#	0.46	0.63	2.27	1.64	1.11	4.04	4.22	1.87	1.02	0.63	0.49	0.62
IN#	0.53	0.70	2.62	1.89	1.16	4.66	4.71	2.16	1.14	0.73	0.56	0.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1993, BY WATER YEAR (WY)

MEAN	172	186	246	285	347	448	464	372	287	211	170	163
MAX	916	589	776	799	938	1290	1201	779	1278	586	474	1090
(WY)	1977	1976	1951	1949	1984	1936	1993	1952	1972	1949	1984	1975
MIN	65.5	65.6	61.5	57.3	72.5	101	163	139	109	86.7	65.0	69.4
(WY)	1964	1966	1966	1966	1931	1931	1969	1931	1966	1954	1966	1963

† Pumpage in cubic feet per second, from Potomac River for municipal supply of Hagerstown.

* Adjusted for pumpage.

01619500 ANTIETAM CREEK NEAR SHARPSBURG, MD--Continued

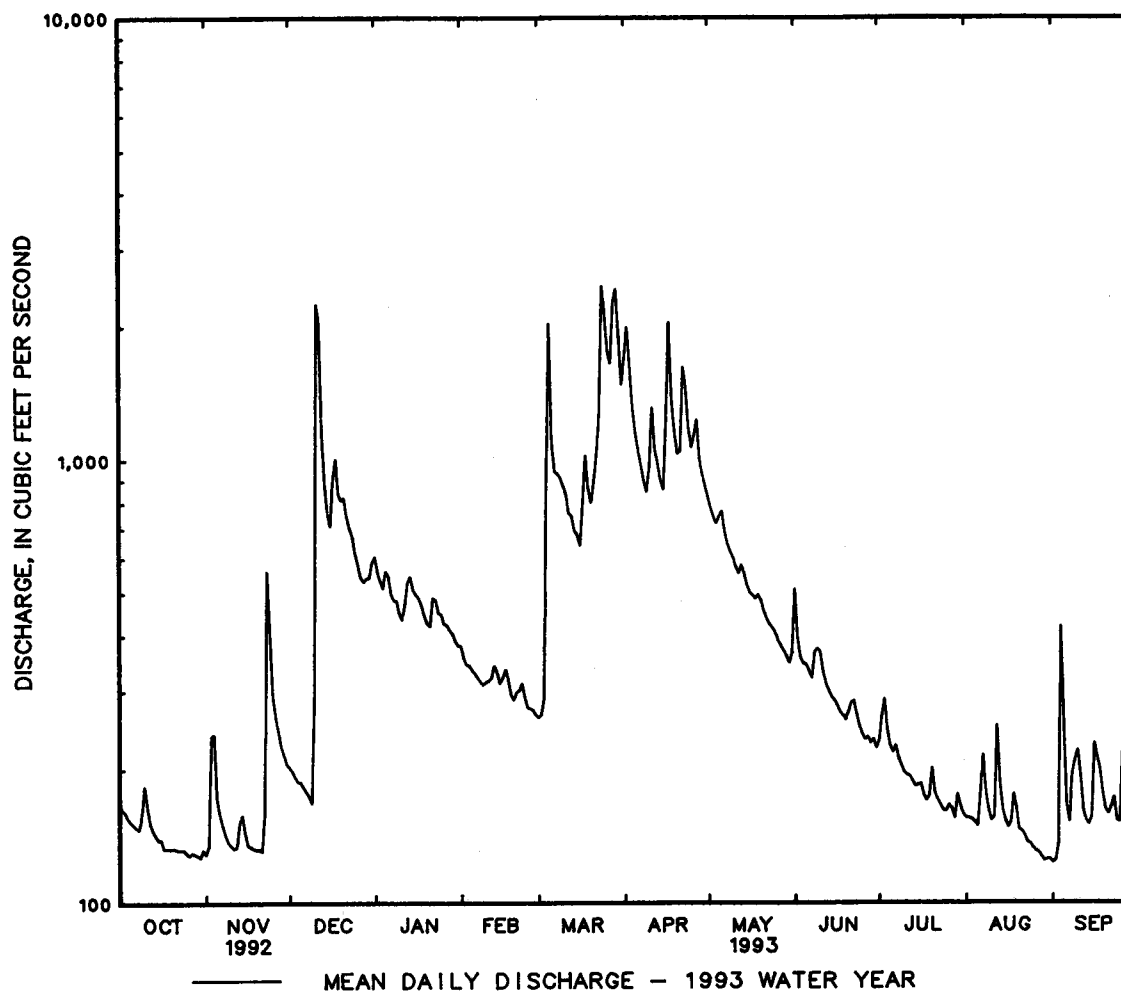
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1931 - 1993	
ANNUAL TOTAL	110117		168047			
ANNUAL MEAN	301		460		279	
ANNUAL MEAN*	286		444		270	
HIGHEST ANNUAL MEAN					510	1972
LOWEST ANNUAL MEAN					124	1966
HIGHEST DAILY MEAN	2820	Apr 22	2480	Mar 24	8970	Sep 26 1975
LOWEST DAILY MEAN	127	Oct 30	123	Sep 1	37	Jan 30 1966
ANNUAL SEVEN-DAY MINIMUM	129	Oct 26	125	Aug 27	49	Jan 26 1966
INSTANTANEOUS PEAK FLOW	3730	Apr 22	2800	Mar 24	(a)12600	Jul 20 1956
INSTANTANEOUS PEAK STAGE	8.46	Apr 22	7.29	Mar 24	16.73	Jul 20 1956
INSTANTANEOUS LOW FLOW	112	Sep 13	119	(b)	(c)9.4	Nov 22 1957
ANNUAL RUNOFF (CFSM)	1.07		1.64		.99	
ANNUAL RUNOFF (CFSM)*	1.02		1.58		.96	
ANNUAL RUNOFF (INCHES)	14.58		22.25		13.48	
ANNUAL RUNOFF (INCHES)*	13.82		21.45		13.05	
10 PERCENT EXCEEDS	530		1020		535	
50 PERCENT EXCEEDS	220		290		202	
90 PERCENT EXCEEDS	142		136		97	

* Adjusted for inflow since January 1930.

a From rating curve extended above 7,300 ft³/s on basis of contracted-opening measurement of peak flow.

b Aug. 29, Sept. 1.

c Result of regulation caused by construction work upstream from station.



POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi downstream from Cattail Run, 1.0 mi upstream from Millville, 5.0 mi upstream from Harpers Ferry, and at mile 5.0.
DRAINAGE AREA.--3,040 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-02, 1905, 1907-08, 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 293.00 ft above sea level. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi downstream at datum 0.32 ft higher.

REMARKS.--Water-discharge records good. Regulation by hydroelectric plants, particularly that of Potomac Light and Power Company, 0.5 mi upstream from station. National Weather Service gage-height telemeter and U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft, discharge, 151,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 19	0800	16,200	8.54	Mar. 30	1015	22,600	10.09
Mar. 6	0500	*60,900	*16.60	Apr. 2	2200	24,100	10.41
Mar. 23	0930	16,400	8.59	Apr. 17	1915	33,200	12.22
Mar. 25	1345	27,700	11.17				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	665	2670	4110	2710	3090	13900	5690	1940	1370	928	730
2	1250	709	2330	3920	2530	2870	19300	5240	1890	1560	847	712
3	1100	855	2090	3600	2320	2850	21500	4820	1900	1550	802	745
4	968	1070	1930	3270	2230	8260	15300	4510	1910	1510	763	786
5	898	1240	1760	3140	2110	44200	11600	4380	1880	1480	743	794
6	861	1620	1610	3200	2020	46800	9690	4420	1860	1390	830	928
7	843	1510	1510	3550	1950	e20000	8630	4590	1880	1340	950	841
8	834	1340	1440	3720	1880	e13500	7610	4350	2220	1300	1050	764
9	854	1220	1350	3780	1830	e10500	6660	4130	2060	1230	1090	762
10	838	1150	1560	4080	1770	e8800	6420	3910	2080	1200	1240	761
11	845	1080	4690	4610	1730	e7800	9830	3680	2090	1100	1080	741
12	826	1030	10700	4650	1750	e7300	10800	3590	1780	1060	947	797
13	892	1060	7650	5160	1830	e6900	9320	3470	1630	1030	894	882
14	881	1120	5660	6020	1820	e6600	7940	3450	1570	1040	826	811
15	853	3170	4730	6030	1880	e6100	6960	3390	1520	1030	793	788
16	795	3360	4200	5470	1930	e5500	7650	3200	1530	1010	818	874
17	751	2590	4390	4830	2180	e5800	25400	3110	1500	971	889	842
18	702	2100	10100	4380	2490	e11000	22100	3030	1380	936	901	886
19	697	1810	15200	3940	2770	e14500	13700	3100	1370	916	879	890
20	689	1560	11100	3510	2600	e11500	10600	3160	1440	922	831	893
21	662	1430	9000	3140	2440	e10000	9020	3560	2510	921	823	1010
22	665	1290	7950	3120	2470	e14000	12300	3340	1890	962	783	1010
23	639	2020	6560	3540	3350	15700	13700	3050	1620	962	745	900
24	645	6880	5530	4170	5560	18300	11000	2870	1390	944	754	887
25	627	10500	4820	4060	5180	25800	9000	2700	1310	876	712	869
26	617	6730	4380	3930	4210	21700	7880	2550	1280	830	700	935
27	614	5240	3860	3790	3700	16300	8380	2370	1280	825	689	944
28	595	4330	3560	3530	3360	18100	8270	2250	1280	1080	674	980
29	579	3610	3700	3300	---	20600	6990	2220	1240	1730	693	1080
30	575	3030	4010	3110	---	21400	6210	2070	1250	1300	751	1040
31	639	---	4260	2880	---	17200	---	1980	---	1040	744	---
TOTAL	24554	75319	154300	123540	72600	442970	337660	108180	50480	35415	26169	25882
MEAN	792	2511	4977	3985	2593	14290	11260	3490	1683	1142	844	863
MAX	1320	10500	15200	6030	5560	46800	25400	5690	2510	1730	1240	1080
MIN	575	665	1350	2880	1730	2850	6210	1980	1240	825	674	712
CFSM	.26	.83	1.64	1.31	.85	4.70	3.70	1.15	.55	.38	.28	.28
IN.	.30	.92	1.89	1.51	.89	5.42	4.13	1.32	.62	.43	.32	.32

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 1993, BY WATER YEAR (WY)

MEAN	1965	1823	2448	3031	3762	4916	4413	3354	2372	1427	1614	1320
MAX	16250	13350	8164	7925	13100	17540	12840	8700	10380	4809	10390	6701
(WY)	1943	1986	1973	1991	1897	1936	1901	1901	1972	1972	1955	1945
MIN	343	388	410	503	542	929	992	1001	660	402	388	411
(WY)	1931	1932	1966	1966	1931	1931	1981	1969	1977	1966	1930	1963

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SUMMARY STATISTICS

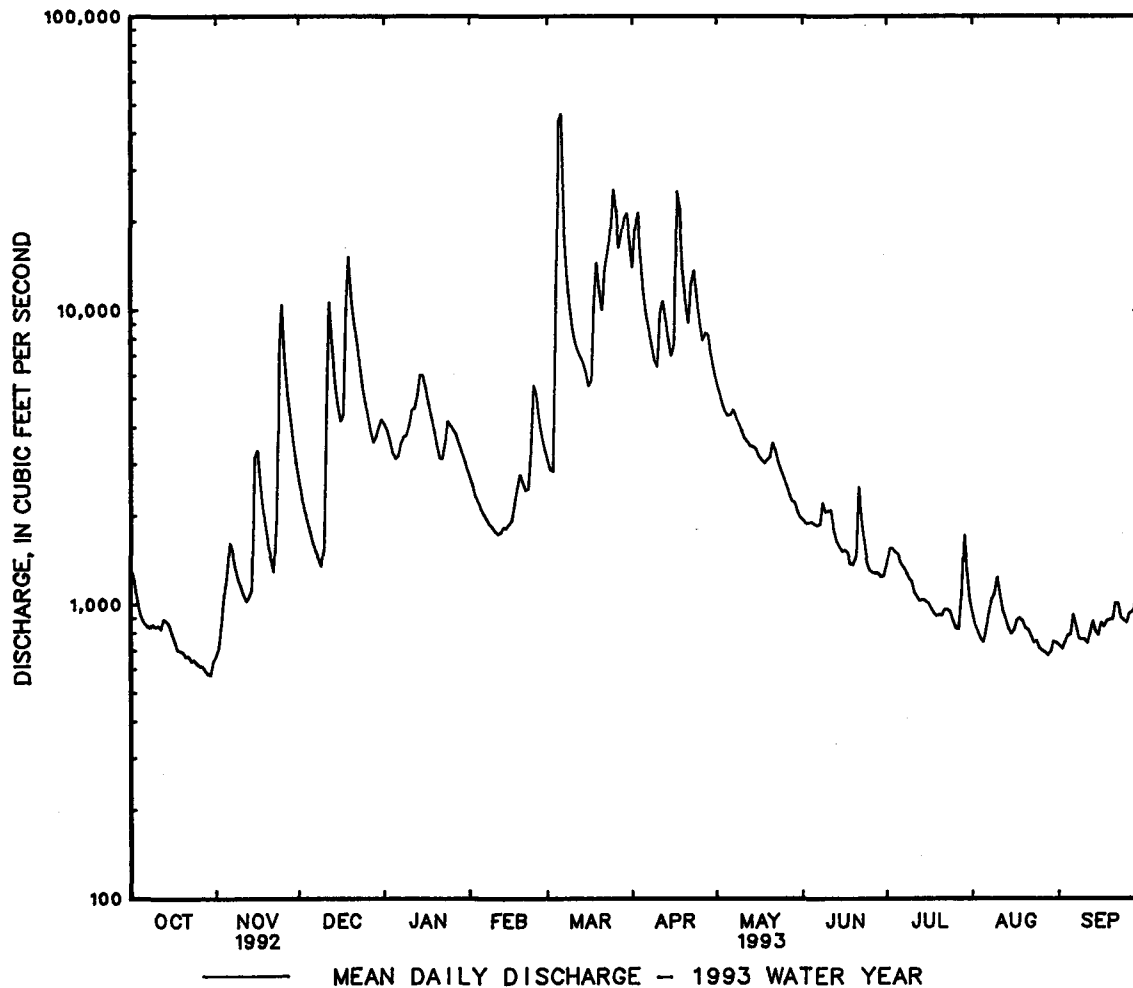
FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1895 - 1993

ANNUAL TOTAL	996436		1477069			
ANNUAL MEAN	2723		4047		2697	
HIGHEST ANNUAL MEAN					4838	1973
LOWEST ANNUAL MEAN					1111	1981
HIGHEST DAILY MEAN	48200	Apr 23	46800	Mar 6	192000	Oct 16 1942
LOWEST DAILY MEAN	563	Aug 28	575	Oct 30	194	Jul 24 1930
ANNUAL SEVEN-DAY MINIMUM	607	Oct 25	607	Oct 25	240	Sep 7 1966
INSTANTANEOUS PEAK FLOW	52400	Apr 23	60900	Mar 6	230000	Oct 16 1942
INSTANTANEOUS PEAK STAGE	15.36	Apr 23	16.60	Mar 6	(a)32.40	Oct 16 1942
INSTANTANEOUS LOW FLOW	521	Jul 13	564	Oct 30	59	Oct 4 1930
ANNUAL RUNOFF (CFSM)	.90		1.33		.89	
ANNUAL RUNOFF (INCHES)	12.19		18.07		12.05	
10 PERCENT EXCEEDS	5480		10000		5440	
50 PERCENT EXCEEDS	1560		1950		1590	
90 PERCENT EXCEEDS	748		785		610	

a From floodmarks.



POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued
(National stream-quality accounting network station)

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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DEC 1992												
02...	1300	2330	202	--	6.0	10.0	749	1.6	10.8	88	K19	K14
MAR 1993												
08...	1200	12200	205	7.5	5.0	14.0	746	27	11.4	91	780	390
30...	1300	22500	185	7.5	10.0	21.0	758	--	10.6	94	--	--
APR												
14...	1045	7970	238	7.8	12.0	16.0	769	--	10.8	99	--	--
28...	1030	8400	231	7.9	13.0	20.0	779	--	10.9	101	--	--
MAY												
11...	0915	3800	264	8.8	22.5	28.0	769	--	10.3	118	--	--
25...	1000	2710	317	8.2	20.0	27.0	769	--	9.6	105	--	--
JUN												
07...	1430	1650	370	7.6	23.0	27.0	753	1.7	9.6	113	28	87
10...	1000	2090	351	8.0	26.5	29.0	768	--	7.7	95	--	--
29...	0945	1240	350	8.2	26.0	27.0	768	--	7.7	94	--	--
JUL												
13...	0900	1040	343	8.1	29.0	34.0	769	--	7.2	93	--	--
19...	1530	1700	350	8.7	28.0	30.0	751	0.30	8.0	104	--	--
29...	1315	1610	331	8.2	29.0	33.0	765	--	9.1	118	--	--
AUG												
17...	1015	834	333	8.6	27.5	35.0	748	--	4.9	63	--	--
SEP												
02...	1000	705	324	8.6	27.5	32.5	751	--	6.4	82	--	--
13...	1315	732	340	--	22.0	25.0	761	0.30	7.3	84	K15	65

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
DEC 1992												
02...	81	23	5.8	3.8	1.9	--	--	--	11	5.6	<0.10	6.5
MAR 1993												
08...	81	24	5.2	3.2	2.0	63	77	--	12	5.6	<0.10	6.5
30...	79	23	5.3	3.2	2.0	55	67	--	12	5.3	0.10	6.4
APR												
14...	110	33	7.9	4.1	1.8	86	105	--	13	6.8	<0.10	6.7
28...	110	31	7.5	3.9	1.6	88	107	--	13	6.1	<0.10	6.3
MAY												
11...	130	37	10	4.9	2.0	116	132	5	13	7.8	0.10	0.81
25...	140	38	11	5.9	2.3	126	139	7	14	9.1	0.10	1.5
JUN												
07...	160	43	13	7.9	2.4	140	171	--	15	10	0.10	3.7
10...	150	40	12	7.1	2.4	138	168	--	16	9.8	0.20	5.1
29...	170	43	15	10	2.7	128	156	--	19	12	0.20	8.5
JUL												
13...	160	39	14	9.6	2.5	138	168	--	18	12	<0.10	9.4
19...	150	36	15	9.5	2.5	137	167	--	16	12	0.10	8.8
29...	140	33	15	10	2.3	132	161	--	17	13	0.20	6.4
AUG												
17...	140	33	14	12	2.1	133	150	6	20	13	0.20	3.3
SEP												
02...	130	29	15	14	2.1	--	--	--	20	15	0.20	3.2
13...	150	33	16	14	3.0	--	--	--	21	17	0.20	2.8

K: Results based on colony count outside the acceptance range (non-ideal colony count).

POTOMAC RIVER BASIN

261

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)
DEC 1992												
02...	102	--	--	--	--	--	--	--	--	--	20	23
MAR 1993												
08...	123	7.4	0.020	1.70	0.050	0.50	--	0.070	0.010	0.010	40	21
30...	106	5.2	0.020	1.20	0.040	0.50	0.30	0.110	0.030	0.040	--	--
APR												
14...	128	6.6	0.010	1.50	0.030	0.40	0.50	0.090	0.040	0.030	--	--
28...	--	--	<0.010	1.40	0.020	<0.20	<0.20	0.040	0.030	0.030	--	--
MAY												
11...	161	--	<0.010	1.20	0.020	0.30	0.30	0.070	<0.010	<0.010	--	--
25...	167	7.4	0.020	1.70	0.030	<0.20	<0.20	0.030	0.020	0.020	--	--
JUN												
07...	184	6.6	0.020	1.50	0.040	0.30	--	0.050	0.050	0.040	<10	38
10...	198	6.6	0.020	1.50	0.060	0.50	<0.20	0.110	0.070	0.060	--	--
29...	206	5.2	0.020	1.20	0.050	0.30	0.30	0.080	0.060	0.060	--	--
JUL												
13...	199	4.0	0.010	0.910	0.060	0.40	0.20	0.090	0.070	0.060	--	--
19...	187	2.3	0.010	0.540	0.050	0.30	--	0.070	0.050	0.040	--	--
29...	192	2.9	0.010	0.660	0.050	0.40	0.30	0.080	0.050	0.070	--	--
AUG												
17...	181	--	<0.010	0.570	0.040	0.30	0.30	0.060	0.040	0.030	--	--
SEP												
02...	173	1.9	0.010	0.430	0.040	0.40	0.20	0.050	0.040	0.030	--	--
13...	188	--	<0.010	0.430	0.020	0.40	--	0.050	0.030	0.020	<10	34

DATE	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM, DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
DEC 1992											
02...	<3	27	<4	4	<1	<1	<1.0	81	<6	--	--
MAR 1993											
08...	<3	40	<4	3	<1	<1	<1.0	68	<6	--	--
30...	--	52	--	3	--	--	--	--	--	--	--
APR											
14...	--	27	--	3	--	--	--	--	--	2.5	0.8
28...	--	19	--	3	--	--	--	--	--	2.1	0.4
MAY											
11...	--	4	--	2	--	--	--	--	--	2.1	0.3
25...	--	8	--	3	--	--	--	--	--	2.3	0.3
JUN											
07...	<3	6	4	8	<1	<1	<1.0	150	<6	--	--
10...	--	10	--	4	--	--	--	--	--	2.4	0.4
29...	--	6	--	7	--	--	--	--	--	2.7	0.3
JUL											
13...	--	6	--	7	--	--	--	--	--	2.6	0.3
19...	--	--	--	--	--	--	--	--	--	--	--
29...	--	7	--	5	--	--	--	--	--	2.7	0.4
AUG											
17...	--	6	--	5	--	--	--	--	--	3.8	0.2
SEP											
02...	--	<3	--	4	--	--	--	--	--	3.3	0.3
13...	<3	11	6	5	<1	<1	<1.0	170	<6	--	--

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible][illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

[illegible]

POTOMAC RIVER BASIN

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 1992					
02...	1300	2330	3	19	97
MAR 1993					
08...	1200	12200	109	3590	78
30...	1300	22500	86	5220	--
APR					
14...	1045	7970	24	516	--
MAY					
11...	0915	3800	7	72	--
25...	1000	2710	7	51	--
JUN					
10...	1000	2090	24	135	--
29...	0945	1240	7	23	--
JUL					
13...	0900	1040	4	11	--
19...	1530	1700	2	9.2	95
29...	1315	1610	7	30	--
AUG					
17...	1015	834	5	11	--
SEP					
02...	1000	705	4	7.6	--
13...	1315	732	3	5.9	95

POTOMAC RIVER BASIN

265

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD

LOCATION.--Lat 39°25'35", long 77°33'25", Frederick County, Hydrologic Unit 02070008, on right bank 300 ft downstream from bridge on State Highway 17, 1.3 mi south of Middletown, 2.2 mi downstream from Little Catoctin Creek, and 14.8 mi upstream from mouth.

DRAINAGE AREA.--66.9 mi².

PERIOD OF RECORD.--August 1947 to current year.

REVISED RECORDS.--WSP 1432: 1947-48. WDR MD-DE-77-1: 1960(M), 1965(M), 1970(M), 1972(P), 1975(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 385 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are poor. Several measurements of water temperature were made during the year. 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0230	2,280	6.00	Mar. 24	UNKNOWN	UNKNOWN	UNKNOWN
Dec. 11	0100	*4,800	*8.68	Apr. 16	1300	2,020	5.68
Mar. 4	UNKNOWN	UNKNOWN	UNKNOWN	Apr. 16	2300	1,310	4.68

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	93	161	88	e60	552	155	136	14	5.7	1.9
2	20	21	86	134	66	e90	529	140	41	29	5.2	1.8
3	19	235	79	125	80	e400	412	125	35	36	4.7	65
4	18	83	72	121	71	e1100	346	116	31	20	4.4	148
5	16	63	76	209	66	e600	293	177	34	15	4.0	28
6	15	62	65	157	66	e300	249	142	31	21	7.6	13
7	15	52	61	143	58	e220	214	110	27	26	16	9.4
8	15	45	57	144	58	e190	187	99	47	16	12	7.4
9	110	40	52	138	55	e180	168	91	38	12	7.2	7.9
10	106	38	373	122	55	e175	347	84	28	10	5.6	59
11	50	37	2750	114	53	e170	374	78	27	9.2	6.5	21
12	41	38	793	149	62	e155	311	74	25	8.2	40	11
13	34	97	506	212	75	e350	258	83	22	7.5	16	8.9
14	30	62	394	187	69	e500	224	73	20	7.0	9.2	7.4
15	28	53	321	172	60	e210	205	65	20	7.3	7.0	10
16	25	48	282	161	67	e350	898	60	20	6.8	6.1	57
17	23	45	507	150	70	e560	694	60	17	6.1	6.8	30
18	22	43	421	131	61	e400	456	56	16	5.6	10	31
19	22	41	350	117	e50	e270	367	68	15	6.1	7.0	21
20	20	39	366	105	e47	e350	302	57	14	27	6.6	15
21	20	39	304	109	e62	e500	423	50	26	11	6.8	14
22	19	105	258	177	e72	e460	648	46	34	7.8	4.8	14
23	19	823	241	142	e60	e550	470	44	19	6.8	4.2	13
24	19	235	217	133	e55	e830	385	42	15	6.3	3.8	11
25	19	208	174	136	e52	e650	325	39	13	6.3	3.5	12
26	19	168	161	116	e50	e470	324	35	13	6.4	2.8	39
27	18	145	136	111	e49	e640	262	33	13	6.6	2.4	44
28	18	125	144	107	e48	e520	215	31	12	5.7	2.1	60
29	18	112	164	102	---	e400	190	28	12	7.1	1.8	28
30	17	100	172	90	---	e300	172	27	14	11	1.7	22
31	20	---	180	91	---	e450	---	33	---	6.9	1.9	---
TOTAL	856	3224	9855	4266	1725	12400	10800	2321	815	371.7	223.4	810.7
MEAN	27.6	107	318	138	61.6	400	360	74.9	27.2	12.0	7.21	27.0
MAX	110	823	2750	212	88	1100	898	177	136	36	40	148
MIN	15	21	52	90	47	60	168	27	12	5.6	1.7	1.8
CFSM	.41	1.61	4.75	2.06	.92	5.98	5.38	1.12	.41	.18	.11	.40
IN.	.48	1.79	5.48	2.37	.96	6.90	6.01	1.29	.45	.21	.12	.45

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1993, BY WATER YEAR (WY)

	35.1	47.3	82.3	96.3	120	149	143	101	57.8	32.5	20.7	24.1
MEAN	35.1	47.3	82.3	96.3	120	149	143	101	57.8	32.5	20.7	24.1
MAX	399	162	318	278	357	400	360	391	439	214	208	284
(WY)	1977	1986	1993	1979	1984	1993	1993	1988	1972	1949	1955	1975
MIN	2.62	3.61	3.80	4.25	28.7	46.3	44.5	29.2	13.5	4.86	2.04	1.68
(WY)	1964	1966	1966	1966	1954	1969	1963	1963	1954	1966	1966	1965

POTOMAC RIVER BASIN

01637500 CATOCTIN CREEK NEAR MIDDLETOWN, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1947 - 1993

ANNUAL TOTAL	35181		47667.8			
ANNUAL MEAN	96.1		131		75.5	
HIGHEST ANNUAL MEAN					154	1972
LOWEST ANNUAL MEAN					29.7	1954
HIGHEST DAILY MEAN	2750	Dec 11	2750	Dec 11	4880	Oct 9 1976
LOWEST DAILY MEAN	12	(a)	1.7	Aug 30	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	13	Aug 30	1.9	Aug 27	.00	Aug 27 1966
INSTANTANEOUS PEAK FLOW	4800	Dec 11	4800	Dec 11	(c)12000	Oct 9 1976
INSTANTANEOUS PEAK STAGE	8.68	Dec 11	8.68	Dec 11	14.13	Oct 9 1976
INSTANTANEOUS LOW FLOW	(d)2.3	(f)	1.6	(g)	.00	(b)
ANNUAL RUNOFF (CFSM)	1.44		1.95		1.13	
ANNUAL RUNOFF (INCHES)	19.56		26.51		15.34	
10 PERCENT EXCEEDS	188		366		172	
50 PERCENT EXCEEDS	48		56		38	
90 PERCENT EXCEEDS	19		7.0		5.7	

a Sept. 1-3.

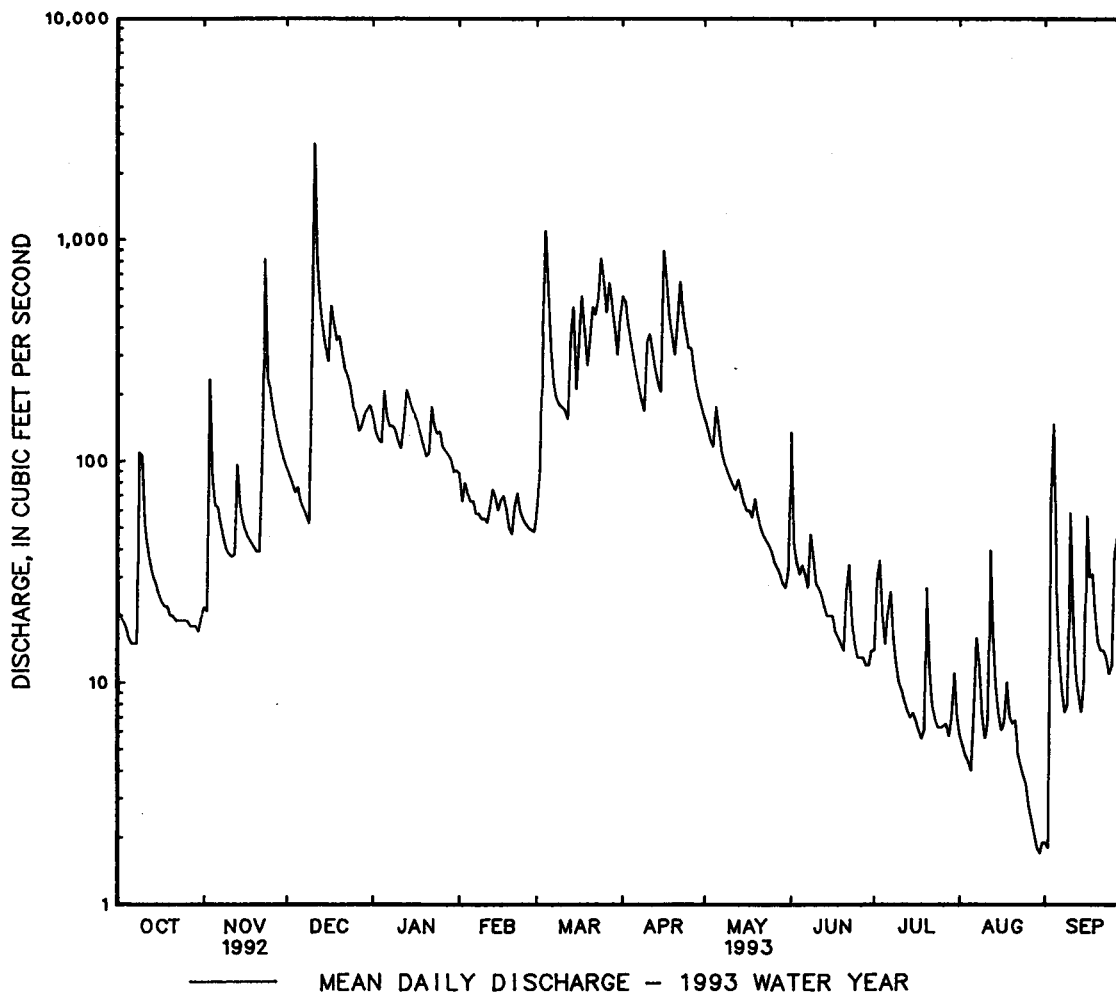
b Aug. 27 to Sept. 12, 1966.

c From rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow.

d Result of freezeup.

f Feb. 2, 12.

g Aug. 30, 31, Sept. 3.



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 mi².

WATER-DISCHARGE RECORDS

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.--Water-discharge records good except those for estimated daily discharges (backwater from grass), which are fair. 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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks, discharge, about 460,000 ft³/s from rating curve extended as explained in footnotes.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 19	1600	38,100	9.02	Apr. 3	0530	106,000	18.19
Mar. 6	0500	*167,000	*24.94	Apr. 12	0500	46,600	10.35
Mar. 9	1030	36,300	8.73	Apr. 18	0400	123,000	20.17
Mar. 19	1130	40,600	9.43	Apr. 23	1230	56,800	11.86
Mar. 25	1430	105,000	18.12	Apr. 28	0030	41,100	9.51
Mar. 29	1330	81,800	15.23				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3680	1750	6440	22400	8350	7550	60500	20700	5270	3190	e2400	e1500
2	3330	1870	5790	26900	7770	7250	79700	18200	5090	3570	e2400	e1500
3	3040	2970	5390	20000	7190	7300	97800	16300	4800	3780	e2700	e1500
4	2760	2950	4920	15700	6670	18500	64700	14600	4660	4320	e2500	e1500
5	2630	3990	4560	13800	6380	105000	44700	13800	4530	4710	3050	e3300
6	2500	4600	4370	13200	6150	141000	35200	13700	4460	4440	3170	e3100
7	2340	4290	4090	13100	5890	64300	28800	13900	4380	4030	e3000	e2900
8	2330	3790	3930	12500	5680	42800	24100	12600	5090	3880	e2800	e2700
9	2470	3310	3740	12000	5430	36500	20800	11600	5470	e3500	e2600	e2800
10	2810	3190	4010	11700	5250	34500	19700	10800	7240	e3100	e2600	e2800
11	2530	3070	21600	11800	5140	31000	32000	10000	7840	e2900	e3000	e2500
12	2200	2860	28400	11900	5220	27100	44600	9660	6400	e2800	e2900	e2400
13	2490	2910	26300	12700	5480	25100	36300	9410	5480	e2700	e3000	e2300
14	2350	3020	20100	15700	5450	22800	30000	9290	4920	e2600	e2700	e2200
15	2110	4860	15500	18300	5420	20500	25300	9060	4420	e2450	e2500	e2200
16	2270	6440	13100	17400	5590	18500	24800	8620	4170	e2200	e2400	e2350
17	1960	5420	12800	15500	5930	18900	76400	8190	3970	e2150	e2350	e2900
18	1940	4630	21500	13900	6340	28200	114000	7940	3800	e2250	e2550	e2650
19	1740	4290	35500	12400	6980	39200	63600	8000	3700	e2100	e2200	e2600
20	1830	3870	31800	11100	7150	33500	41000	7850	3630	e2400	e2050	e2600
21	1920	3610	27400	9920	6880	29100	32400	8510	4510	e2500	e1950	e2650
22	2180	3490	25800	9390	6810	35500	38600	8180	4700	e2300	e1850	e2500
23	1840	6490	23000	11100	7410	48200	54100	7530	3960	e2200	e1800	e2450
24	1710	12300	19400	14200	9760	71200	42900	7070	3550	e2200	e1750	e2400
25	1730	19400	18900	14500	11700	102000	32500	6700	3310	e2200	e1750	e2400
26	1610	14000	18300	13600	10200	86700	27300	6340	3210	e2100	e1700	e2500
27	1750	11600	15400	12300	8970	68100	34200	5910	3180	e2050	e1700	e2800
28	1680	9820	13200	11200	8100	68000	37200	5630	3140	e2000	e1700	e3600
29	1650	8320	12200	10500	---	80400	28400	5350	3120	e2200	e1650	e4500
30	1610	7210	12300	9790	---	79900	23600	5040	3060	e2600	e1600	e4100
31	1780	---	13000	9040	---	69700	---	4840	---	e2500	e1550	---
TOTAL	68770	170320	472740	427540	193290	1468300	1315200	305320	135060	87920	71870	78200
MEAN	2218	5677	15250	13790	6903	47360	43840	9849	4502	2836	2318	2607
MAX	3680	19400	35500	26900	11700	141000	114000	20700	7840	4710	3170	4500
MIN	1610	1750	3740	9040	5140	7250	19700	4840	3060	2000	1550	1500
CFSM	.23	.59	1.58	1.43	.72	4.91	4.54	1.02	.47	.29	.24	.27
IN.	.27	.66	1.82	1.65	.75	5.66	5.07	1.18	.52	.34	.28	.30

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1895 - 1993, BY WATER YEAR (WY)

	5064	5487	8412	11110	14140	19440	16640	12290	7981	4501	4173	3487
MEAN	5064	5487	8412	11110	14140	19440	16640	12290	7981	4501	4173	3487
MAX	37030	39000	32610	31350	42640	68360	43840	41970	40400	16000	23580	17820
(WY)	1943	1986	1973	1937	1897	1936	1993	1924	1972	1949	1955	1975
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 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1895 - 1993

ANNUAL TOTAL	3002110		4794530			
ANNUAL MEAN	8202		13140			
HIGHEST ANNUAL MEAN					9379	
LOWEST ANNUAL MEAN					15840	1972
HIGHEST DAILY MEAN	82300	Apr 23	141000	Mar 6	434000	Mar 19 1936
LOWEST DAILY MEAN	1610	(a)	(e)1500	(b)	540	Sep 10 1914
ANNUAL SEVEN-DAY MINIMUM	1680	Oct 24	1540	Aug 29	593	Sep 6 1966
INSTANTANEOUS PEAK FLOW	90000	Apr 23	167000	Mar 6	(c)480000	Mar 19 1936
INSTANTANEOUS PEAK STAGE	16.25	Apr 23	24.94	Mar 6	41.03	Mar 19 1936
INSTANTANEOUS LOW FLOW	UNKNOWN		UNKNOWN		530	(d)
ANNUAL RUNOFF (CFSM)	.85		1.36		.97	
ANNUAL RUNOFF (INCHES)	11.57		18.48		13.20	
10 PERCENT EXCEEDS	17500		32900		20400	
50 PERCENT EXCEEDS	5300		5420		5380	
90 PERCENT EXCEEDS	2670		2110		1660	

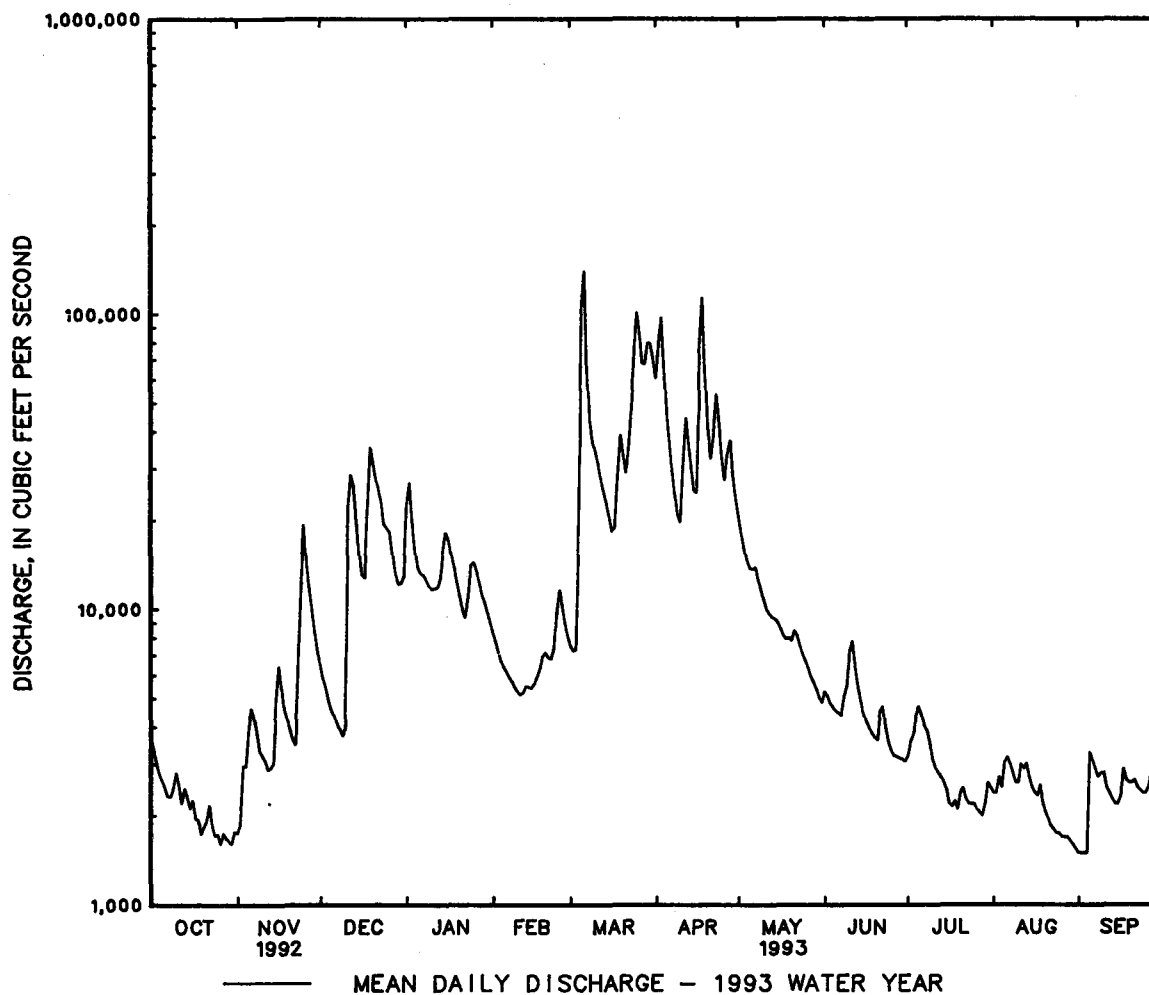
a Oct. 26, 30.

e Estimated.

b Sept. 1-4.

c From rating curve extended above 300,000 ft³/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.

d September 11, 12, 1966.



WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to April 1993 (Discontinued).

SUSPENDED-SEDIMENT DISCHARGE: October 1960 to April 1993 (Discontinued).

REMARKS.--Water temperatures are measured daily in field by local observer at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1961-1990): Maximum daily, 33.5°C, Aug. 24, 1964, July 19, 1977; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION (water years 1961-1992): Maximum daily mean, 2,690 mg/L, Nov. 7, 1985; minimum daily mean, 1 mg/L, on many days most years.

SEDIMENT LOAD (water years 1961-1992): Maximum daily, 1,930,000 tons, Nov. 7, 1985; minimum daily, 2.0 tons on many days during 1964, 1966-1969.

EXTREMES FOR CURRENT PERIOD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 780 mg/L, Apr. 18; minimum daily mean, 1 mg/L, Feb. 9-12.

SEDIMENT LOAD: Maximum daily, 277,000 tons, Mar. 5; minimum daily, 8.7 tons, Oct. 26.

WATER TEMPERATURE, DEGREES CELSIUS, OCTOBER 1992 TO APRIL 1993

DAILY INSTANTANEOUS VALUES

[illegible]

POTOMAC RIVER BASIN

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1992 TO APRIL 1993

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	4	40	3	14	6	104	33	2000	8	180	4	82
2	4	36	3	15	5	78	61	4430	6	126	3	59
3	4	33	3	24	4	58	58	3130	4	78	3	59
4	4	30	3	24	2	27	35	1480	6	108	122	8980
5	3	21	3	32	4	49	19	708	4	69	662	277000
6	3	20	3	37	5	59	15	535	3	50	612	245000
7	3	19	3	35	4	44	13	460	3	48	212	39100
8	2	13	3	31	3	32	13	439	2	31	105	12100
9	2	13	3	27	2	20	13	421	1	15	55	5420
10	2	15	4	34	3	32	11	347	e1	14	42	3910
11	2	14	4	33	55	3210	9	287	e1	14	35	2930
12	2	12	3	23	186	14300	9	289	e1	14	e30	2200
13	2	13	3	24	112	7950	10	343	e2	30	e25	1690
14	2	13	3	24	82	4450	10	424	e2	29	e20	1230
15	3	17	4	52	25	1050	9	445	e2	29	e15	830
16	3	18	5	87	25	884	9	423	e3	45	e10	499
17	3	16	5	73	25	864	9	377	e3	48	e15	765
18	3	16	4	50	52	3020	9	338	e3	51	e30	2280
19	3	14	3	35	142	13600	7	234	e3	57	e50	5290
20	3	15	2	21	105	9020	7	210	e2	39	e40	3620
21	2	10	2	19	65	4810	6	161	e2	37	e30	2360
22	2	12	2	19	43	3000	6	152	e2	37	35	3350
23	2	9.9	11	193	34	2110	5	150	e3	60	70	9110
24	2	9.2	38	1260	30	1570	7	268	e6	158	170	32700
25	2	9.3	104	5450	23	1170	11	431	e8	253	255	70200
26	2	8.7	74	2800	18	889	11	404	e6	165	210	49200
27	5	24	41	1280	12	499	12	399	e5	121	145	26700
28	7	32	26	689	e10	356	13	393	e4	87	95	17400
29	7	31	14	314	e8	264	13	369	---	---	115	25000
30	5	22	9	175	e6	199	13	344	---	---	120	25900
31	4	19	---	---	e10	351	11	268	---	---	95	17900
TOTAL	---	575.1	---	12894	---	74069	---	20659	---	1993	---	892864
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	70	11400	---	---	---	---	---	---	---	---	---	---
2	170	36600	---	---	---	---	---	---	---	---	---	---
3	265	70000	---	---	---	---	---	---	---	---	---	---
4	165	28800	---	---	---	---	---	---	---	---	---	---
5	65	7840	---	---	---	---	---	---	---	---	---	---
6	40	3800	---	---	---	---	---	---	---	---	---	---
7	33	2570	---	---	---	---	---	---	---	---	---	---
8	e30	1950	---	---	---	---	---	---	---	---	---	---
9	e25	1400	---	---	---	---	---	---	---	---	---	---
10	e25	1330	---	---	---	---	---	---	---	---	---	---
11	45	3890	---	---	---	---	---	---	---	---	---	---
12	95	11400	---	---	---	---	---	---	---	---	---	---
13	55	5390	---	---	---	---	---	---	---	---	---	---
14	40	3240	---	---	---	---	---	---	---	---	---	---
15	25	1710	---	---	---	---	---	---	---	---	---	---
16	30	2010	---	---	---	---	---	---	---	---	---	---
17	428	112000	---	---	---	---	---	---	---	---	---	---
18	780	240000	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

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 mi².

WATER-DISCHARGE RECORDS

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.--Water-discharge records good except those for estimated daily discharges (ice effect), which are fair. Occasional regulation at low flow from unknown source upstream from station.

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 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0945	*10,600	*15.92	Mar. 24	0500	7,100	13.41
Dec. 11	2130	7,180	13.48	Apr. 16	1915	5,140	11.64
Mar. 4	2245	7,520	13.76	Apr. 22	0515	5,130	11.63

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	20	152	260	118	125	2920	184	93	13	10	7.9
2	29	28	125	172	88	132	2610	162	57	24	7.8	6.4
3	25	1980	107	147	83	258	916	141	41	155	6.7	9.7
4	22	399	92	145	e80	3080	564	127	37	78	6.2	734
5	20	188	95	658	e75	4060	418	208	35	55	4.9	150
6	18	147	90	391	e70	1570	334	325	36	34	6.4	54
7	15	115	79	261	65	1410	271	160	34	24	43	31
8	15	91	76	230	62	1580	230	121	39	27	37	907
9	27	77	70	276	69	1670	200	106	273	20	20	225
10	907	65	68	211	68	1190	1030	97	106	16	14	300
11	145	60	3940	172	71	673	1250	88	59	15	11	115
12	89	60	3160	357	82	533	447	84	43	13	45	53
13	64	742	754	1100	136	522	314	137	34	11	53	35
14	49	235	461	624	241	255	248	105	32	8.5	24	26
15	40	151	338	347	170	505	224	82	25	8.8	15	33
16	36	122	276	274	148	446	2020	73	23	11	12	244
17	29	113	998	242	249	756	2090	71	22	9.4	11	121
18	26	104	710	199	210	1520	603	63	19	7.9	66	106
19	24	99	392	151	150	774	400	76	19	8.1	50	111
20	24	101	423	126	148	499	295	75	41	13	24	62
21	24	87	369	124	114	907	444	63	93	17	16	44
22	21	490	255	520	160	1600	4000	55	74	13	16	82
23	20	5840	242	484	304	2060	1100	52	40	10	13	68
24	21	645	231	274	239	5300	493	49	28	8.0	10	46
25	20	623	156	388	172	2070	369	45	21	7.0	7.4	37
26	20	429	142	201	147	1220	509	41	17	6.5	5.8	312
27	20	349	126	157	137	1100	527	37	15	7.1	5.7	248
28	18	243	123	156	119	1960	285	35	15	6.4	5.5	314
29	18	201	164	143	---	1240	240	34	15	6.3	5.9	116
30	19	172	280	111	---	935	210	31	13	9.6	15	72
31	19	---	375	116	---	654	---	32	---	11	10	---
TOTAL	1859	13976	14869	9017	3775	40604	25561	2959	1399	653.6	577.3	4670.0
MEAN	60.0	466	480	291	135	1310	852	95.5	46.6	21.1	18.6	156
MAX	907	5840	3940	1100	304	5300	4000	325	273	155	66	907
MIN	15	20	68	111	62	125	200	31	13	6.3	4.9	6.4
CFSM	.35	2.69	2.77	1.68	.78	7.57	4.93	.55	.27	.12	.11	.90
IN.	.40	3.01	3.20	1.94	.81	8.73	5.50	.64	.30	.14	.12	1.00

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1993, BY WATER YEAR (WY)

	MEAN	91.9	169	262	277	377	440	306	215	123	79.9	59.2	80.2
MAX	906	513	697	784	1029	1310	1029	964	1065	598	613	1027	
(WY)	1977	1986	1984	1979	1961	1993	1983	1989	1972	1949	1942	1975	
MIN	3.24	10.4	13.7	13.8	51.0	94.7	58.7	41.2	10.5	2.68	2.40	2.34	
(WY)	1964	1954	1966	1981	1980	1949	1946	1969	1966	1966	1944	1943	

POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1942 - 1993

ANNUAL TOTAL	77595.1		119919.9		
ANNUAL MEAN	212		329		205
HIGHEST ANNUAL MEAN					372
LOWEST ANNUAL MEAN					76.8
HIGHEST DAILY MEAN	5840	Nov 23	5840	Nov 23	16700
LOWEST DAILY MEAN	6.8	Sep 4	4.9	Aug 5	.00
ANNUAL SEVEN-DAY MINIMUM	8.1	Aug 30	7.3	Jul 24	.04
INSTANTANEOUS PEAK FLOW	10600	Nov 23	10600	Nov 23	(b)21300
INSTANTANEOUS PEAK STAGE	15.92	Nov 23	15.92	Nov 23	24.05
INSTANTANEOUS LOW FLOW	6.6	(c)	4.3	(d)	.00
ANNUAL RUNOFF (CFSM)	1.23		1.90		1.19
ANNUAL RUNOFF (INCHES)	16.69		25.79		16.11
10 PERCENT EXCEEDS	381		763		436
50 PERCENT EXCEEDS	80		104		63
90 PERCENT EXCEEDS	18		13		8.0

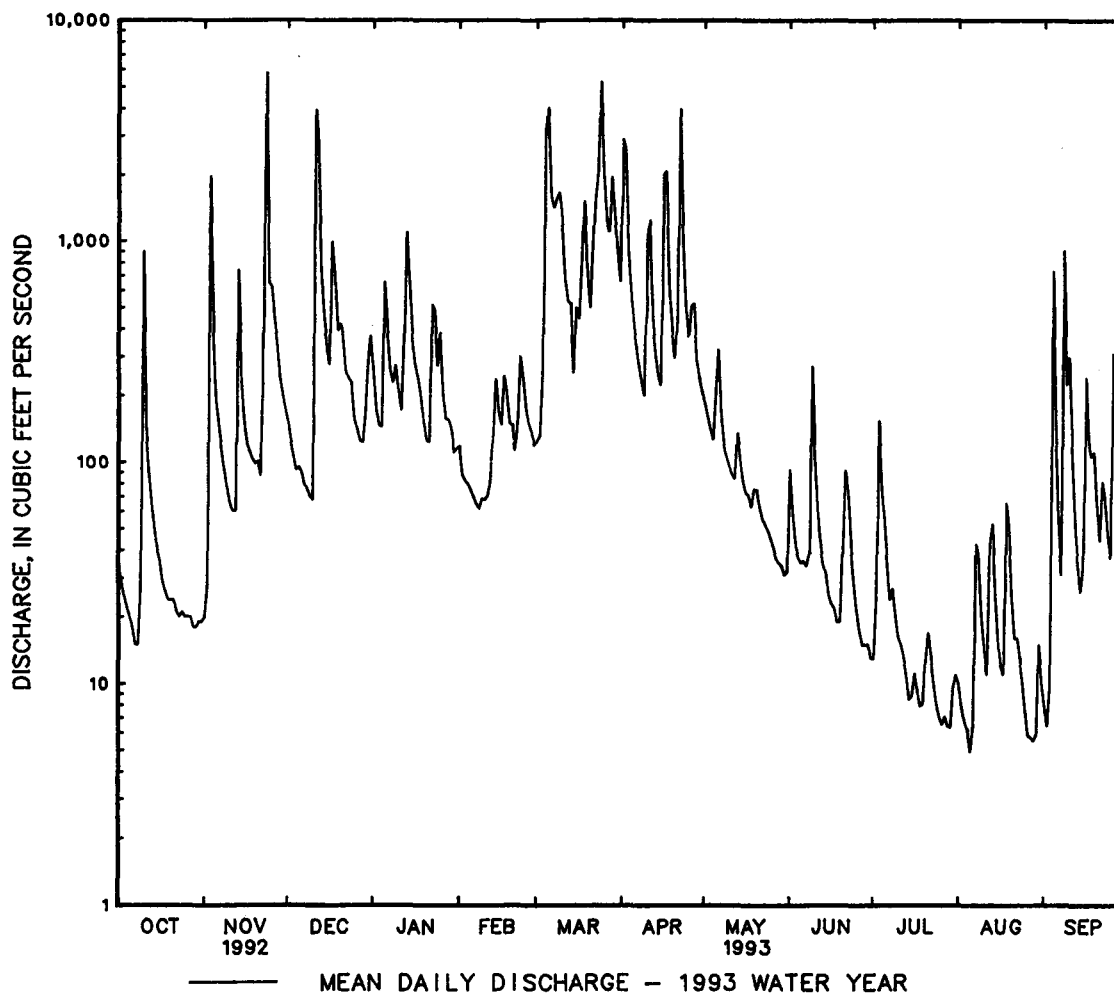
a July 25-28, 1966.

b From rating curve extended above 7,000 ft³/s on basis of slope-conveyance study.

c Sept. 3, 4.

d Aug 5, 6.

f July 24-29, 1966.



POTOMAC RIVER BASIN

273

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948-51, 1969-72, 1974-79, 1982-83, 1990 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1989 to September 1993 (Discontinued).

SUSPENDED-SEDIMENT DISCHARGE: October 1989 to September 1993 (Discontinued).

INSTRUMENTATION.--Pumping sampler for nutrients and sediment since Nov. 29, 1989.

REMARKS.--Prior to October 1993, water temperatures are measured daily in field by local observer at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 565 mg/L, Oct. 20, 1989, July 25, 1992; minimum daily mean, 1 mg/L, on many days.

SEDIMENT LOAD: Maximum daily, 7,230 tons, Jan. 30, 1990; minimum daily, 0.03 ton, July 28, 29, 1993.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 440 mg/L, Nov. 3; minimum daily mean, 1 mg/L, Nov. 8, Jan. 20.

SEDIMENT LOAD: Maximum daily, 6,290 tons, Nov. 23; minimum daily, 0.03 ton, July 28, 29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	ENDING DATE	ENDING TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
OCT 1992											
10-10	0038	921010	0943	1670	--	--	--	--	4.3	0.020	0.010
27...	1015	--	--	21	377	7.8	10.5	12.0	--	<0.010	<0.010
NOV											
03...	0850	--	--	3660	226	7.3	--	--	6.1	0.030	0.020
03...	1112	--	--	4120	184	7.3	--	--	5.1	0.030	0.040
03...	1125	--	--	4100	181	7.2	11.5	18.5	5.7	0.030	0.020
03...	1337	--	--	3540	175	7.2	--	--	6.1	0.030	0.020
03...	1455	--	--	2950	161	7.1	13.0	22.5	6.5	0.030	0.030
03...	1640	--	--	2170	162	7.0	11.5	17.5	7.4	0.030	0.030
03...	1703	--	--	2020	187	7.2	--	--	7.0	0.030	0.020
03...	1855	--	--	1490	166	7.2	11.5	9.5	7.9	0.030	0.020
NOV											
13-13	0508	921113	1305	1310	218	6.8	8.5	8.0	6.1	0.040	0.030
23...	1025	--	--	11500	--	--	--	--	4.3	0.040	0.030
23...	1050	--	--	11400	100	7.0	15.0	17.5	4.2	0.030	0.040
23...	1114	--	--	11100	--	--	--	--	4.3	0.030	0.030
23...	1208	--	--	10700	--	--	--	--	4.7	0.030	0.030
23...	1303	--	--	9830	--	--	--	--	4.7	0.030	0.040
23...	1400	--	--	7570	--	--	--	--	--	--	--
23...	1403	--	--	8800	--	--	--	--	4.7	0.040	0.030
23...	1455	--	--	7740	107	7.0	13.5	15.0	5.2	0.030	0.030
23...	1513	--	--	7300	--	--	--	--	5.2	0.030	0.030
23...	1647	--	--	4770	--	--	--	--	6.6	0.030	0.010
23...	1700	--	--	4620	121	7.1	13.5	10.0	6.5	0.030	0.040
23...	1931	--	--	2140	--	--	--	--	9.2	0.030	0.020
23...	1945	--	--	2050	138	7.1	13.0	10.0	7.8	0.030	0.030
DEC											
03...	1055	--	--	106	260	7.7	4.5	6.0	--	0.020	<0.010
JAN 1993											
20...	1250	--	--	116	227	7.2	1.5	5.0	9.7	--	0.010
FEB											
04...	1240	--	--	78	253	7.1	1.5	7.0	8.3	--	0.020
MAR											
23...	1105	--	--	1340	140	6.3	2.0	4.5	5.7	--	0.020
APR											
01-01	0110	930401	0845	3020	--	--	--	--	--	--	<0.010
01...	0305	--	--	1740	--	--	--	--	3.9	--	0.060
01...	0615	--	--	4090	--	--	--	--	2.8	--	0.010
01...	0800	--	--	4680	--	6.3	--	--	2.6	--	0.010
APR											
01-01	0830	930401	1100	4640	--	--	--	--	--	--	<0.010
01...	0940	--	--	4680	--	--	--	--	--	--	<0.010
01...	1045	--	--	4500	108	6.3	--	--	2.9	--	0.010
APR											
01-01	1120	930401	1930	2960	--	--	--	--	2.3	--	0.010
01...	1121	--	--	4340	--	--	--	--	--	--	<0.010
01...	1315	--	--	3690	--	--	--	--	2.5	--	0.010
01...	1400	--	--	3430	107	6.5	10.0	16.0	2.9	--	0.010
01...	1420	--	--	3280	--	--	--	--	--	--	--
01...	1540	--	--	2680	108	6.4	10.0	16.0	--	--	<0.010
01...	1545	--	--	2680	--	--	--	--	--	--	<0.010
01...	1750	--	--	2020	108	6.4	10.0	13.5	3.5	--	0.010
01...	1915	--	--	1780	--	--	--	--	3.6	--	0.010
APR											
01-02	2100	930402	0100	1340	--	--	--	--	3.3	--	0.010
01...	2245	--	--	2780	--	--	--	--	3.8	--	0.020
02...	0055	--	--	3970	--	--	--	--	3.8	--	0.020
APR											
02-02	0130	930402	0345	1170	--	--	--	--	2.8	--	0.010
02...	0245	--	--	4390	--	--	--	--	2.7	--	0.010

POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1992											
10-10	0.960	0.980	0.050	0.030	1.4	0.50	0.520	0.160	0.180	0.160	--
27...	0.520	0.510	0.030	0.030	0.50	0.40	0.050	0.030	0.030	0.020	5.7
NOV											
03...	1.40	1.40	0.050	0.060	2.2	0.70	0.690	0.190	0.190	0.180	--
03...	1.20	1.20	0.160	0.160	2.0	1.9	0.570	0.420	0.230	0.230	--
03...	1.30	1.30	0.130	0.130	1.4	0.80	0.460	0.270	0.250	0.240	17
03...	1.40	1.40	0.070	0.080	1.6	0.90	0.470	0.240	0.220	0.210	--
03...	1.60	1.50	0.120	0.110	1.2	0.90	0.390	0.260	0.250	0.230	16
03...	1.70	1.70	0.110	0.080	1.4	1.1	0.420	0.250	0.240	0.230	17
03...	1.60	1.60	0.060	0.070	1.3	0.90	0.440	0.220	0.210	0.200	--
03...	1.80	1.80	0.080	0.070	1.4	0.90	0.400	0.240	0.230	0.220	12
NOV											
13-13	1.30	1.40	0.060	0.050	0.80	0.70	0.290	0.140	0.150	0.110	--
23...	1.00	1.00	0.220	0.210	2.5	0.80	0.670	0.160	0.220	0.140	--
23...	1.00	1.00	0.070	0.080	1.0	0.60	0.380	0.160	0.190	0.140	21
23...	1.00	1.00	0.070	0.080	1.9	0.70	0.650	0.160	0.190	0.130	--
23...	1.10	1.10	0.060	0.060	1.5	0.60	0.480	0.170	0.190	0.140	--
23...	1.10	1.10	0.040	0.060	1.2	0.50	0.430	0.160	0.160	0.150	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	1.10	1.10	0.040	0.050	1.7	0.60	0.570	0.160	0.160	0.140	--
23...	1.20	1.20	0.040	0.040	1.0	0.60	0.310	0.160	0.160	0.140	17
23...	1.20	1.20	0.040	0.050	0.90	0.60	0.300	0.160	0.160	0.140	--
23...	1.50	1.50	0.060	0.030	1.2	0.60	0.430	0.160	0.170	0.130	--
23...	1.50	1.50	0.040	0.050	1.1	0.60	0.350	0.180	0.160	0.150	12
23...	2.10	2.10	0.060	0.030	1.2	0.70	0.340	0.160	0.160	0.120	--
23...	1.80	1.80	0.040	0.040	1.0	0.50	0.330	0.150	0.150	0.130	12
DEC											
03...	2.80	2.60	0.020	0.030	0.40	0.40	0.060	0.030	0.040	0.030	3.5
JAN 1993											
20...	--	2.20	--	0.030	<0.20	0.30	0.040	0.020	--	0.020	3.0
FEB											
04...	--	1.90	--	0.030	0.20	0.30	0.030	0.030	--	0.020	--
MAR											
23...	--	1.30	--	0.490	1.2	0.80	0.120	0.130	--	0.070	7.0
APR											
01-01	--	0.520	--	0.080	1.4	0.90	0.430	0.020	--	0.050	--
01...	--	0.930	--	0.170	1.6	1.8	0.370	0.320	--	0.210	--
01...	--	0.650	--	0.070	0.90	0.50	0.250	0.060	--	0.070	--
01...	--	0.600	--	0.070	1.0	0.50	0.160	0.040	--	0.070	--
APR											
01-01	--	0.530	--	0.090	1.1	0.90	0.240	0.040	--	0.050	--
01...	--	0.580	--	0.060	0.90	0.50	0.190	0.050	--	0.070	--
01...	--	0.660	--	0.090	1.1	0.70	0.280	0.070	--	0.080	16
APR											
01-01	--	0.520	--	0.070	0.70	0.70	0.170	0.070	--	0.050	--
01...	--	0.400	--	0.040	0.90	0.30	0.210	0.040	--	0.050	--
01...	--	0.580	--	0.060	0.90	0.50	0.190	0.040	--	0.060	--
01...	--	0.670	--	0.060	0.80	0.40	0.160	0.040	--	0.070	12
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	0.640	--	0.060	0.70	0.40	0.160	0.040	--	0.060	9.3
01...	--	0.630	--	0.060	1.0	0.50	0.160	0.040	--	0.060	--
01...	--	0.790	--	0.070	0.90	0.50	0.160	0.050	--	0.060	9.7
01...	--	0.830	--	0.070	0.60	0.60	0.120	0.070	--	0.060	--
APR											
01-02	--	0.760	--	0.280	1.6	0.90	0.370	0.080	--	0.100	--
01...	--	0.880	--	0.370	1.5	0.90	0.350	0.120	--	0.120	--
02...	--	0.880	--	0.310	1.2	1.2	0.210	0.100	--	0.110	--
APR											
02-02	--	0.640	--	0.190	0.90	0.90	0.200	0.080	--	0.080	--
02...	--	0.630	--	0.180	0.90	0.80	0.170	0.070	--	0.070	--

POTOMAC RIVER BASIN

275

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	ENDING DATE	ENDING TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)
APR 1993												
02-03	0400	930403	1145	999	--	--	--	--	--	--	--	--
02...	0435	--	--	4190	--	--	--	--	--	--	--	--
02...	0650	--	--	3420	--	--	--	--	--	--	--	--
02...	0850	--	--	2620	116	7.2	10.0	12.0	--	--	--	45
02...	0928	--	--	2450	--	--	--	--	--	--	--	--
02...	1230	--	--	2160	119	7.4	10.0	13.0	--	--	--	--
02...	1245	--	--	2160	--	--	--	--	--	--	--	--
02...	1255	--	--	2160	--	--	--	--	--	--	--	--
02...	1635	--	--	1970	--	--	--	--	--	--	--	--
02...	2120	--	--	1450	--	--	--	--	--	--	--	--
03...	0335	--	--	1150	--	--	--	--	--	--	--	--
10...	1915	--	--	3000	--	--	--	--	--	--	--	--
10...	2137	--	--	3500	--	--	--	--	--	--	--	--
10...	2345	--	--	3450	--	--	--	--	--	--	--	--
11...	0215	--	--	3090	--	--	--	--	--	--	--	--
11...	0630	--	--	1390	--	--	--	--	--	--	--	--
12...	1125	--	--	446	165	7.5	11.0	10.5	--	11.8	--	57
21...	2335	--	--	2430	--	--	--	--	--	--	--	--
APR												
21-22	2335	930422	0350	E3550	--	--	--	--	--	--	--	--
22...	0205	--	--	4150	--	--	--	--	--	--	--	--
22...	0350	--	--	4900	--	--	--	--	--	--	--	--
APR												
22-22	0435	930422	0605	5100	--	--	--	--	--	--	--	--
22...	0520	--	--	5130	--	--	--	--	--	--	--	--
22...	0650	--	--	4840	--	--	--	--	--	--	--	--
APR												
22-22	0745	930422	1300	3660	--	--	--	--	--	--	--	--
22...	0830	--	--	4110	--	--	--	--	--	--	--	--
22...	0900	--	--	3940	106	7.3	10.0	4.0	--	7.3	--	--
22...	1040	--	--	3450	--	--	--	--	--	--	--	--
22...	1210	--	--	3180	105	7.1	9.0	7.0	--	7.1	--	--
22...	1300	--	--	3190	--	--	--	--	--	--	--	--
APR												
22-22	1410	930422	1710	2850	--	--	--	--	--	--	--	--
22...	1510	--	--	3660	103	7.2	8.5	6.5	--	7.2	--	--
22...	1515	--	--	3680	--	--	--	--	--	--	--	--
22...	1710	--	--	4250	--	--	--	--	--	--	--	--
APR												
22-22	1800	930422	1945	4480	--	--	--	--	--	--	--	--
22...	1855	--	--	4490	--	--	--	--	--	--	--	--
22...	2040	--	--	4250	--	--	--	--	--	--	--	--
APR												
22-23	2040	930423	1110	2480	--	--	--	--	--	--	--	--
22...	2240	--	--	3430	--	--	--	--	--	--	--	--
23...	0140	--	--	2100	--	--	--	--	--	--	--	--
23...	0650	--	--	1180	--	--	--	--	--	--	--	--
23...	0915	--	--	1030	129	7.4	8.5	12.0	--	7.4	--	--
26...	2240	--	--	1240	--	--	--	--	--	--	--	--
MAY												
13...	1000	--	--	196	205	7.5	20.0	15.0	743	7.9	89	75
JUN												
08...	1015	--	--	30	254	7.4	21.0	21.0	762	7.3	82	91
JUL												
07...	0950	--	--	24	284	7.2	28.0	31.0	754	6.2	80	88
28...	1133	--	--	--	--	--	--	--	--	--	--	--
28...	1431	--	--	--	--	--	--	--	--	--	--	--
AUG												
09...	1110	--	--	19	536	8.9	23.5	23.0	761	--	--	180
SEP												
04...	0800	--	--	1130	--	--	--	--	--	--	--	--
08...	1300	--	--	2020	--	--	--	--	--	--	--	--
08...	1615	--	--	2400	--	--	--	--	--	--	--	--
08...	2015	--	--	1320	--	--	--	--	--	--	--	--
14...	0915	--	--	26	259	7.5	20.0	25.5	759	7.6	84	96

POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
APR 1993												
02-03	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	12	3.7	3.8	2.4	--	--	--	12	4.6	<0.10	7.8	77
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
12...	15	4.8	5.7	2.1	40	49	--	19	7.9	0.10	8.8	109
21...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-22	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22-23	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
13...	20	6.2	9.6	2.6	60	73	--	23	13	<0.10	1.0	120
JUN												
08...	25	6.9	13	3.5	68	--	--	24	19	0.10	4.9	144
JUL												
07...	24	6.7	16	4.4	65	79	--	31	22	0.10	11	173
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
09...	52	12	38	6.4	93	101	6	86	57	0.20	6.3	333
SEP												
04...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
14...	26	7.5	11	3.6	59	72	--	35	14	0.10	13	160

POTOMAC RIVER BASIN

277

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)
APR 1993												
02-03	3.9	0.010	0.880	0.200	1.0	0.60	0.160	0.070	0.080	--	--	--
02...	3.1	0.020	0.710	0.230	0.90	0.90	0.160	0.080	0.080	--	--	--
02...	3.0	0.010	0.690	0.240	1.0	1.1	0.180	0.070	0.080	--	--	--
02...	3.5	0.010	0.810	0.280	1.1	0.60	0.190	0.080	0.100	340	14	10
02...	3.0	0.010	0.690	0.240	0.90	0.90	0.180	0.070	0.080	--	--	--
02...	3.6	0.010	0.830	0.170	0.90	0.60	0.190	0.070	0.080	--	--	10
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	3.7	0.010	0.840	0.170	0.90	0.80	0.170	0.070	0.080	--	--	--
02...	4.0	0.010	0.920	0.090	0.70	0.50	0.130	0.040	0.060	--	--	--
02...	3.6	0.010	0.830	0.080	0.60	1.2	0.130	0.050	0.050	--	--	--
03...	4.8	0.010	1.10	0.310	0.90	0.80	0.140	0.090	0.080	--	--	--
10...	4.0	0.020	0.920	0.110	1.9	0.50	0.530	0.100	0.080	--	--	--
10...	3.1	0.020	0.710	0.180	1.0	0.80	0.290	0.120	0.090	--	--	--
10...	2.4	0.030	0.580	0.330	1.7	1.7	0.480	0.160	0.130	--	--	--
11...	2.7	0.020	0.620	0.220	1.6	1.1	0.370	0.130	0.100	--	--	--
11...	3.1	0.020	0.720	0.190	1.3	0.80	0.280	0.120	0.110	--	--	--
12...	5.2	0.020	1.20	0.060	1.1	0.50	0.130	0.060	0.050	100	9	6.4
21...	3.0	0.010	0.680	0.120	0.90	0.60	0.210	0.120	0.110	--	--	--
APR												
21-22	2.7	0.020	0.630	0.240	1.1	0.80	0.190	0.110	0.120	--	--	--
22...	3.0	0.020	0.700	0.320	1.1	1.2	0.250	0.160	0.150	--	--	--
22...	2.5	0.020	0.590	0.260	1.1	0.80	0.200	0.150	0.120	--	--	--
APR												
22-22	2.2	0.010	0.500	0.220	1.0	0.70	0.170	0.080	0.100	--	--	--
22...	2.4	0.010	0.560	0.250	0.80	0.80	0.180	0.140	0.110	--	--	--
22...	2.6	0.010	0.590	0.200	1.0	0.70	0.170	0.140	0.100	--	--	--
APR												
22-22	2.7	0.010	0.630	0.180	0.90	0.70	0.150	0.140	0.090	--	--	--
22...	2.7	0.010	0.610	0.150	0.80	0.70	0.150	0.130	0.090	--	--	--
22...	2.8	0.020	0.660	0.180	1.2	0.80	0.160	0.100	0.100	--	--	14
22...	2.8	0.010	0.640	0.150	0.90	0.70	0.170	0.120	0.090	--	--	--
22...	2.7	0.010	0.630	0.190	1.0	0.60	0.150	0.100	0.100	--	--	9.1
22...	3.1	0.010	0.710	0.180	1.0	0.80	0.160	0.140	0.100	--	--	--
APR												
22-22	2.8	0.010	0.650	0.160	0.80	2.0	0.180	0.120	0.090	--	--	--
22...	2.8	0.010	0.650	0.150	0.90	0.60	0.150	0.100	0.100	--	--	10
22...	2.6	0.010	0.590	0.140	0.90	0.60	0.160	0.140	0.090	--	--	--
22...	2.7	0.010	0.610	0.150	0.80	1.0	0.170	0.080	0.090	--	--	--
APR												
22-22	2.5	0.010	0.570	0.150	1.2	2.0	0.220	0.110	0.080	--	--	--
22...	2.7	0.010	0.620	0.130	0.70	1.9	0.150	0.100	0.090	--	--	--
22...	2.5	0.010	0.580	0.140	0.80	2.0	0.170	0.110	0.080	--	--	--
APR												
22-23	3.1	0.010	0.720	0.330	0.80	2.1	0.180	0.140	0.120	--	--	--
22...	3.1	0.010	0.720	0.220	0.70	1.9	0.190	0.110	0.100	--	--	--
23...	3.1	0.020	0.710	0.330	0.90	2.3	0.190	0.120	0.110	--	--	--
23...	3.4	0.020	0.790	0.510	1.2	2.4	0.270	0.170	0.160	--	--	--
23...	3.5	0.020	0.820	0.570	1.4	1.2	0.210	0.160	0.140	--	--	7.9
26...	3.2	0.010	0.740	0.160	0.50	2.1	0.080	0.040	0.020	--	--	--
MAY												
13...	2.2	0.020	0.510	0.070	0.50	0.50	0.060	0.040	0.020	39	14	4.1
JUN												
08...	2.6	0.010	0.590	0.070	0.40	0.50	0.060	0.050	0.030	33	18	4.7
JUL												
07...	4.8	0.020	1.10	0.040	0.50	0.40	0.120	0.060	0.080	27	37	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
09...	3.3	0.050	0.800	0.030	0.70	0.50	0.120	0.050	0.030	16	23	9.1
SEP												
04...	--	<0.010	1.30	0.040	1.9	0.70	0.760	0.310	0.300	--	--	--
08...	7.5	0.010	1.70	0.080	0.70	0.80	0.080	0.100	0.070	--	--	--
08...	8.7	0.030	2.00	0.120	0.90	0.90	0.160	0.170	0.150	--	--	--
08...	8.3	0.030	1.90	0.090	0.80	0.90	0.180	0.200	0.190	--	--	--
14...	7.9	0.020	1.80	0.090	0.80	0.90	0.130	0.150	0.120	82	48	7.7

POTOMAC RIVER BASIN

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued
 WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SUSPENDED SEDIMENT DISCHARGE

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 1992				
27...	1015	21	2	0.11
NOV				
03...	1125	4100	179	1980
03...	1455	2950	89	709
03...	1640	2170	75	439
03...	1855	1490	62	249
23...	1050	11400	608	18700
23...	1455	7740	301	6290
23...	1700	4620	232	2890
23...	1945	2050	149	825
DEC				
03...	1055	106	7	2.0
JAN 1993				
20...	1250	116	2	0.63
FEB				
04...	1240	78	3	0.63
MAR				
23...	1105	1340	32	116
APR				
01...	1045	4500	284	3450
01...	1400	3430	168	1560
01...	1540	2680	124	897
01...	1750	2020	94	513
02...	0850	2620	161	1140
02...	1230	2160	87	507
12...	1125	446	28	34
22...	0900	3940	172	1830
22...	1040	3450	132	1230
22...	1210	3180	122	1050
22...	1510	3660	111	1100
23...	0915	1030	38	106
MAY				
13...	1000	196	16	8.5
JUN				
08...	1015	30	10	0.81
JUL				
07...	0950	24	18	1.2
AUG				
09...	1110	19	24	1.2
SEP				
14...	0915	26	16	1.1

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM
NOV 1992								
23...	1400	7570	329	6720	56	72	81	87
APR 1993								
01...	1420	3280	143	1260	49	61	74	83
02...	1245	2160	89	519	46	58	74	76
DATE								
		SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
NOV 1992								
23...		92	99	100	100	100	100	100
APR 1993								
01...		91	98	99	100	100	100	100
02...		86	97	97	98	98	99	100

POTOMAC RIVER BASIN

279

01639000 MONOCACY RIVER AT BRIDGEPORT, MD--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCENTRATION (MG/L)	LOAD (TONS/ DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	e7	.66	3	.16	6	2.5	8	5.6	2	.64	e4	1.3
2	e7	.55	4	.30	4	1.3	7	3.3	4	.95	e4	1.4
3	10	.67	440	2640	3	.87	6	2.4	4	.90	e10	7.0
4	e9	.53	22	24	4	.99	4	1.6	3	.65	239	2360
5	e8	.43	14	7.1	4	1.0	68	121	e3	.61	125	1370
6	e7	.34	7	2.8	4	.97	64	68	e3	.57	110	466
7	e6	.24	3	.93	4	.85	48	34	e2	.35	100	381
8	e6	.24	1	.25	3	.62	40	25	e3	.50	80	341
9	e10	.73	2	.42	2	.38	30	22	e3	.56	90	406
10	69	191	e3	.53	2	.37	e15	8.5	e3	.55	85	273
11	32	13	e3	.49	163	2540	4	1.9	e3	.58	70	127
12	16	3.8	3	.49	145	1620	4	3.9	e4	.89	85	122
13	13	2.2	192	526	20	41	42	125	e8	2.9	e80	113
14	10	1.3	28	18	9	11	20	34	e10	6.5	e60	41
15	11	1.2	8	3.3	6	5.5	5	4.7	e8	3.7	e70	95
16	12	1.2	4	1.3	e6	4.5	4	3.0	e6	2.4	e65	78
17	15	1.2	e4	1.2	36	97	4	2.6	e10	6.7	e75	153
18	11	.77	e3	.84	24	46	3	1.6	e8	4.5	e70	287
19	7	.45	e3	.80	10	11	2	.82	e6	2.4	65	136
20	4	.26	2	.55	7	8.0	1	.34	e4	1.6	55	74
21	e4	.26	e2	.47	e10	10	2	.67	e2	.62	85	208
22	e4	.23	e9	12	e6	4.1	100	140	e4	1.7	90	389
23	e4	.22	295	6290	5	3.3	50	65	e10	8.2	124	908
24	4	.23	e70	122	e5	3.1	e30	22	e10	6.5	231	3640
25	4	.22	e50	84	e6	2.5	e11	12	e8	3.7	80	447
26	3	.16	23	27	7	2.7	e8	4.3	e6	2.4	80	264
27	2	.11	18	17	4	1.4	e6	2.5	e4	1.5	100	297
28	e2	.10	11	7.2	4	1.3	e6	2.5	e4	1.3	80	423
29	e2	.10	10	5.4	4	1.8	e9	3.5	---	---	50	167
30	e2	.10	8	3.7	8	6.0	e7	2.1	---	---	50	126
31	2	.10	---	---	8	8.1	e5	1.6	---	---	60	106
TOTAL	---	222.60	---	9798.23	---	4438.15	---	725.43	---	64.37	---	13807.7
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	302	2430	25	12	e30	7.5	e6	.21	9	.24	9	.19
2	178	1620	e20	8.7	e25	3.8	e8	.52	9	.19	9	.16
3	25	62	e15	5.7	e20	2.2	e35	15	9	.16	12	.31
4	10	15	e10	3.4	e18	1.8	e30	6.3	e8	.13	219	538
5	e10	11	40	22	e16	1.5	e25	3.7	e8	.11	50	20
6	e8	7.2	40	35	e14	1.4	e20	1.8	e8	.14	17	2.5
7	e6	4.4	e30	13	12	1.1	18	1.2	e25	2.9	17	1.4
8	e6	3.7	e25	8.2	10	1.1	e18	1.3	e30	3.0	186	842
9	e4	2.2	e20	5.7	e40	29	e16	.86	25	1.3	70	43
10	106	786	e20	5.2	e35	10	e16	.69	e20	.76	80	65
11	115	388	18	4.3	e30	4.8	e14	.57	e18	.53	30	9.3
12	30	36	e15	3.4	e25	2.9	e14	.49	e25	3.0	20	2.9
13	e25	21	16	5.9	e20	1.8	e12	.36	e30	4.3	17	1.6
14	e20	13	e14	4.0	e18	1.6	e12	.28	28	1.8	16	1.1
15	e20	12	e12	2.7	e16	1.1	e10	.24	e26	1.1	e20	1.8
16	275	2760	e10	2.0	e14	.87	e10	.30	e24	.78	e50	33
17	312	2010	e10	1.9	e12	.71	e8	.20	24	.71	e40	13
18	100	163	e10	1.7	e10	.51	e8	.17	e30	5.3	e30	8.6
19	80	86	e12	2.5	e8	.41	e6	.13	e35	4.7	e20	6.0
20	50	40	e10	2.0	e10	1.1	e8	.28	e30	1.9	e15	2.5
21	152	182	e8	1.4	e25	6.3	e10	.46	e25	1.1	e10	1.2
22	241	2710	e8	1.2	e20	4.0	e8	.28	e20	.86	e20	4.4
23	55	163	e8	1.1	e18	1.9	e6	.16	e18	.63	e18	3.3
24	50	67	e6	.79	e16	1.2	e6	.13	e16	.43	e15	1.9
25	40	40	e6	.73	e14	.79	e4	.08	13	.26	e12	1.2
26	70	96	e6	.66	e12	.55	e4	.07	13	.20	e60	51
27	e50	71	e4	.40	e10	.40	e2	.04	11	.17	e30	20
28	e40	31	e4	.38	e8	.32	e2	.03	9	.13	e40	34
29	e30	19	e2	.18	e8	.32	e2	.03	9	.14	e30	9.4
30	28	16	2	.17	e6	.21	e10	.26	10	.40	e20	3.9
31	---	---	2	.17	---	---	e10	.30	11	.30	---	---
TOTAL	---	13865.5	---	156.48	---	91.19	---	36.44	---	37.67	---	1722.66

TOTAL LOAD FOR YEAR:

44966.42 TONS.

e Estimated

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.

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, Feb. 3, 26, Mar. 1 (ice effect), and Mar. 18-24 (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 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 3	0530	505	3.56	Mar. 24	UNKNOWN	1,860	7.01
Nov. 23	0345	*1,950	*7.19	Apr. 1	0345	1,310	5.74
Dec. 11	1115	1,080	5.17	Apr. 1	2215	1,200	5.48
Mar. 4	2000	1,810	6.90	Apr. 10	1800	1,410	5.99
Mar. 5	1800	622	3.92	Apr. 16	1400	1,410	5.98
Mar. 7	1815	714	4.19	Apr. 17	0130	886	4.67
Mar. 8	1745	618	3.91	Apr. 21	2345	1,790	6.85
Mar. 18	UNKNOWN	1,730	6.71	Apr. 22	1415	988	4.94

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.0	20	46	14	e19	668	38	45	4.1	3.2	2.0
2	5.8	15	20	31	11	18	413	33	10	25	2.8	1.8
3	5.3	204	16	27	e10	58	143	29	7.9	23	2.4	13
4	4.9	44	11	26	8.3	911	98	25	7.2	7.8	2.0	117
5	4.4	33	13	147	7.7	592	79	55	7.0	5.8	1.6	13
6	4.1	32	9.8	61	7.9	330	67	60	6.9	5.1	3.8	5.9
7	3.8	25	8.6	47	8.1	352	57	32	5.7	51	9.5	4.4
8	3.6	20	7.9	53	9.0	330	51	24	49	9.1	6.4	3.8
9	21	17	6.9	55	9.5	198	45	20	92	6.1	4.7	3.8
10	83	16	32	41	7.9	133	441	18	17	5.3	3.6	13
11	23	14	729	34	6.6	110	198	15	10	6.0	16	7.1
12	18	15	288	99	13	77	116	32	8.2	5.1	52	4.2
13	14	37	102	204	61	80	80	41	7.0	4.5	7.4	3.6
14	11	22	69	99	51	95	64	22	6.1	4.1	4.7	3.2
15	9.8	17	56	67	38	103	57	15	5.4	4.3	3.8	14
16	9.7	15	53	56	43	83	488	12	5.0	4.7	3.3	88
17	8.0	13	173	48	80	284	352	11	4.1	3.8	4.0	24
18	7.9	12	86	37	61	e440	106	10	3.8	3.1	11	14
19	7.2	11	59	29	54	e110	77	16	4.2	3.8	5.2	9.5
20	6.1	12	73	23	51	e80	62	12	14	8.4	3.8	7.0
21	6.4	13	50	22	36	e220	260	9.7	11	5.5	3.3	6.2
22	6.5	70	41	99	37	e300	899	8.5	8.6	4.3	2.9	11
23	6.6	861	40	58	55	e360	175	7.6	4.9	3.6	2.7	7.9
24	6.9	91	33	42	33	e1000	109	7.3	3.7	3.4	2.5	6.5
25	6.9	87	23	39	28	243	87	6.9	3.1	3.1	2.2	6.1
26	6.6	61	18	26	e26	153	83	6.2	2.8	2.5	2.1	29
27	6.0	50	20	22	23	152	70	5.6	2.9	2.5	1.8	21
28	5.5	36	22	19	19	195	55	5.5	2.9	2.1	1.8	25
29	5.3	29	30	18	---	128	49	5.3	4.0	3.8	1.7	10
30	5.1	22	82	15	---	114	43	5.0	4.1	3.5	2.8	7.5
31	5.9	---	71	12	---	87	---	18	---	3.6	2.5	---
TOTAL	325.0	1900.0	2263.2	1602	809.0	7355	5492	605.6	363.5	228.0	177.5	482.5
MEAN	10.5	63.3	73.0	51.7	28.9	237	183	19.5	12.1	7.35	5.73	16.1
MAX	83	861	729	204	80	1000	899	60	92	51	52	117
MIN	3.6	6.0	6.9	12	6.6	18	43	5.0	2.8	2.1	1.6	1.8
CFSM	.33	2.02	2.33	1.65	.92	7.58	5.85	.62	.39	.23	.18	.51
IN.	.39	2.26	2.69	1.90	.96	8.74	6.53	.72	.43	.27	.21	.77

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

[illegible]

01639140 PINEY CREEK NEAR TANEYTOWN, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1990 - 1993	
ANNUAL TOTAL	11612.3		21603.3			
ANNUAL MEAN	31.7		59.2		38.6	
HIGHEST ANNUAL MEAN					59.2	
LOWEST ANNUAL MEAN					24.3	
HIGHEST DAILY MEAN	861	Nov 23	(e)1000	Mar 24	(e)1000	Mar 24 1993
LOWEST DAILY MEAN	1.4	(a)	1.6	Aug 5	.00	(b)
ANNUAL SEVEN-DAY MINIMUM	2.0	Aug 30	2.1	Aug 27	.03	Aug 2 1991
INSTANTANEOUS PEAK FLOW	1950	Nov 23	1950	Nov 23	1950	Nov 23 1992
INSTANTANEOUS PEAK STAGE	7.19	Nov 23	7.19	Nov 23	7.19	Nov 23 1992
INSTANTANEOUS LOW FLOW	1.0	(c)	1.3	(d)	.00	(f)
ANNUAL RUNOFF (CFSM)	1.01		1.89		1.23	
ANNUAL RUNOFF (INCHES)	13.80		25.68		16.76	
10 PERCENT EXCEEDS	59		116		76	
50 PERCENT EXCEEDS	15		16		13	
90 PERCENT EXCEEDS	4.2		3.7		2.0	

e estimated.

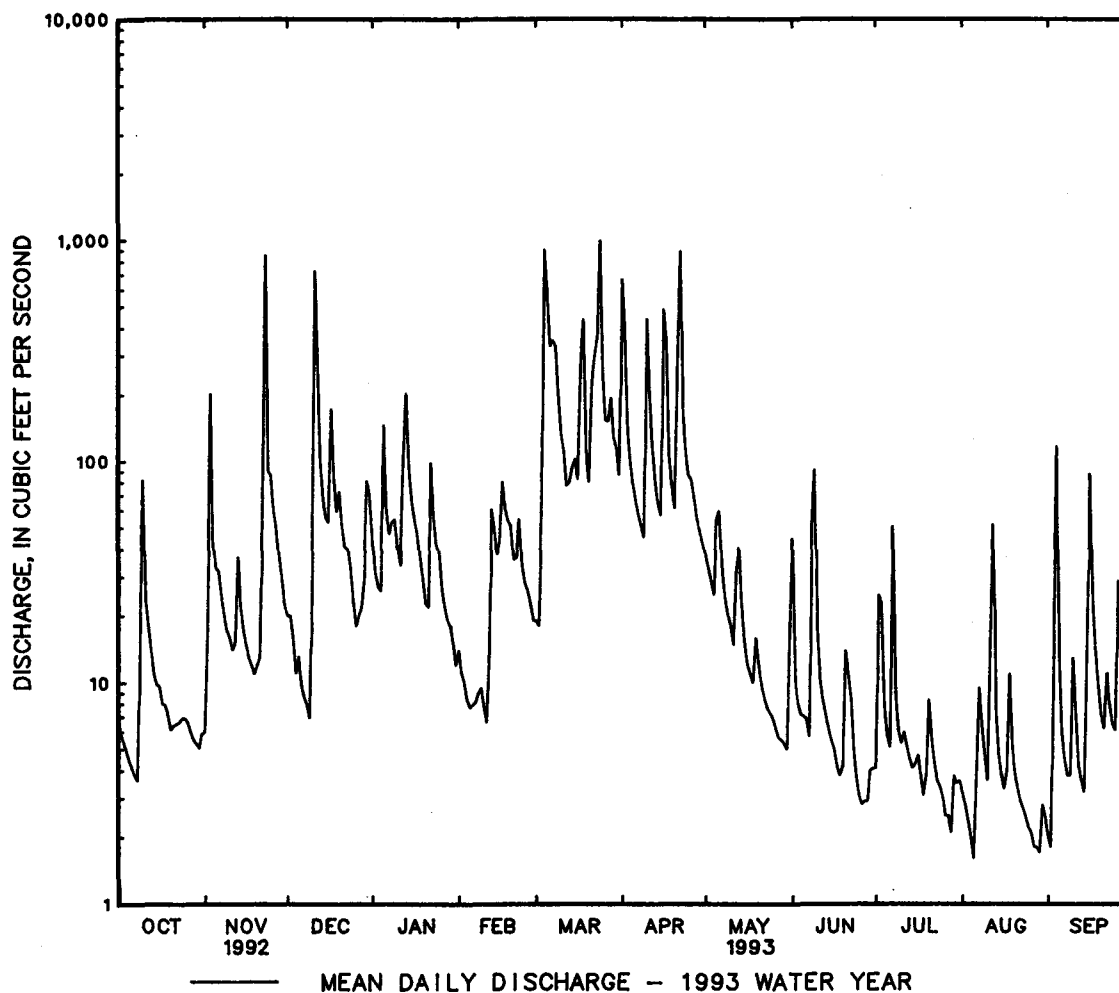
a Sept. 3, 4.

b Aug. 4, 5, Sept. 2, 3, 1991.

c Sept. 3, 4.

d Aug. 5, 29.

f Aug. 3-9, 17, Sept. 1-4, 1991



POTOMAC RIVER BASIN

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD

LOCATION.--Lat 39°36'45", long 77°14'10", Carroll County, Hydrologic Unit 02070009, on left bank 300 ft downstream from bridge on State Highway 194, 800 ft downstream from Bruceville, 3.5 mi upstream from Detour and confluence with Little Pipe Creek.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--October 1947 to current year. Prior to December 1947, monthly discharge only, published in WSP 1302.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 336.88 ft above sea level.

REMARKS.--No estimated daily discharges. Records excellent. Occasional diversion for irrigation upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0200	1,790	5.49	Apr. 1	0230	2,310	6.53
Dec. 11	1130	2,560	7.01	Apr. 1	2100	2,110	6.13
Mar. 4	1800	*3,240	*8.24	Apr. 10	1630	2,820	7.49
Mar. 17	2230	1,630	5.18	Apr. 16	1330	2,110	6.12
Mar. 24	0430	3,070	7.95	Apr. 21	2230	2,500	6.90

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	38	70	118	83	84	1420	207	695	68	40	31
2	38	44	67	98	70	89	846	195	131	96	38	31
3	36	615	62	92	78	132	447	185	114	117	37	112
4	34	126	58	92	76	1610	358	185	107	79	35	400
5	33	84	62	293	71	1660	315	180	106	69	34	79
6	31	83	56	163	73	811	281	292	101	66	55	54
7	29	68	55	131	64	666	253	283	90	341	93	48
8	28	59	53	135	73	516	234	186	160	87	60	46
9	97	54	50	142	74	375	220	169	409	72	47	73
10	315	50	118	123	70	298	1110	159	125	65	43	136
11	73	49	1590	114	67	270	706	153	107	66	82	58
12	55	50	808	196	79	213	490	147	97	59	381	48
13	47	92	284	337	167	201	345	160	92	56	76	46
14	42	67	194	215	146	191	298	148	86	52	56	43
15	40	55	158	165	115	227	275	132	83	52	48	45
16	38	51	142	147	133	207	1190	125	81	49	45	102
17	36	47	307	135	243	671	811	126	76	46	53	78
18	34	46	207	119	167	891	397	122	74	45	63	110
19	35	46	147	106	114	375	330	143	98	50	48	68
20	33	49	166	96	118	311	293	129	224	109	46	55
21	34	48	137	95	108	697	645	117	269	56	45	54
22	34	162	119	191	118	844	1550	110	205	50	42	64
23	34	892	118	140	139	1100	552	107	105	45	40	56
24	34	183	107	118	105	2230	396	104	88	43	39	51
25	37	157	88	113	92	833	342	101	81	44	38	48
26	35	121	88	97	91	552	329	93	77	43	37	107
27	34	107	87	93	89	544	289	90	76	42	35	100
28	34	88	86	90	84	576	250	88	71	39	33	127
29	33	80	108	88	---	441	234	85	70	57	35	71
30	33	74	178	79	---	408	220	81	71	47	35	61
31	37	---	159	82	---	374	---	238	---	41	32	---
TOTAL	1493	3685	5929	4203	2907	18397	15426	4640	4169	2151	1791	2402
MEAN	48.2	123	191	136	104	593	514	150	139	69.4	57.8	80.1
MAX	315	892	1590	337	243	2230	1550	292	695	341	381	400
MIN	28	38	50	79	64	84	220	81	70	39	32	31
CFSM	.47	1.20	1.88	1.33	1.02	5.82	5.04	1.47	1.36	.68	.57	.78
IN.	.54	1.34	2.16	1.53	1.06	6.71	5.63	1.69	1.52	.78	.65	.88

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

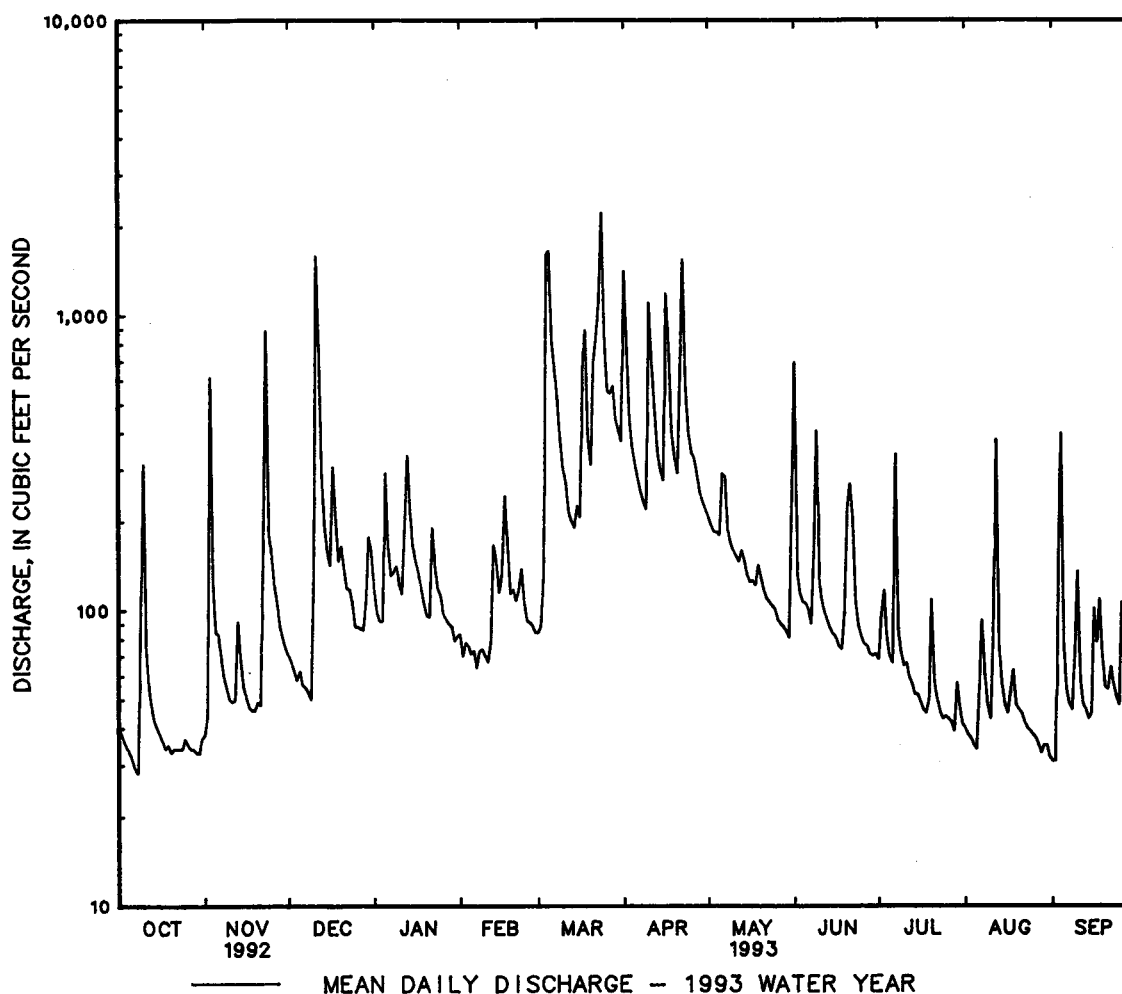
MEAN	59.5	82.2	119	141	173	188	166	122	101	70.5	53.8	64.1
MAX	390	289	356	401	387	593	514	383	891	295	212	729
(WY)	1980	1948	1973	1979	1979	1993	1993	1989	1972	1949	1955	1975
MIN	14.9	16.7	18.9	22.5	58.1	71.4	61.3	38.6	19.8	10.4	4.39	13.0
(WY)	1964	1966	1966	1966	1954	1981	1965	1965	1966	1966	1966	1963

01639500 BIG PIPE CREEK AT BRUCEVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1948 - 1993	
ANNUAL TOTAL	33889		67193		111	
ANNUAL MEAN	92.6		184		227	
HIGHEST ANNUAL MEAN					50.8	
LOWEST ANNUAL MEAN					14400	
HIGHEST DAILY MEAN	1590	Dec 11	2230	Mar 24		Jun 22 1972
LOWEST DAILY MEAN	18	(a)	28	Oct 8	1.0	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	21	Aug 30	33	Oct 2	1.4	Sep 7 1966
INSTANTANEOUS PEAK FLOW	2560	Dec 11	3240	Mar 4	(b)28000	Sep 26 1975
INSTANTANEOUS PEAK STAGE	7.01	Dec 11	8.24	Mar 4	18.98	Sep 26 1975
INSTANTANEOUS LOW FLOW	13	Sep 1	14	Oct 6	1.0	Sep 12 1966
ANNUAL RUNOFF (CFSM)	.91		1.80		1.09	
ANNUAL RUNOFF (INCHES)	12.36		24.51		14.81	
10 PERCENT EXCEEDS	158		396		209	
50 PERCENT EXCEEDS	60		92		65	
90 PERCENT EXCEEDS	33		38		24	

a Sept. 2, 3.

b From rating curve extended above 3,900 ft³/s on the basis of contracted-opening measurement at gage height of 17.86 ft.



POTOMAC RIVER BASIN

01640965 HUNTING CREEK NEAR FOXVILLE, MD

LOCATION.--Lat 39°37'10", long 77°28'00", Frederick County, Hydrologic Unit 02070009, on left downstream wingwall of culvert on park road in Cunningham Falls State Park, 0.25 mi upstream from Hunting Creek Lake, and 2.9 mi west of Thurmont.

DRAINAGE AREA.--2.14 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1981 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,030 ft above sea level, from topographic map.

REMARKS.--Water-discharge records good except those for estimated daily discharges (missing record), and discharges below 1.0 ft³/s, which are fair, and discharges above 25 ft³/s, which are poor.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 11	0230	104	2.82	Mar. 27	1915	98	2.80
Nov. 23	0130	142	2.93	Mar. 28	0800	*180	*3.10
Dec. 11	0230	146	2.94	Apr. 1	0230	49	2.57
Mar. 4	1515	86	2.74	Apr. 10	1730	60	2.62
Mar. 23	2015	49	2.57	Apr. 16	1145	117	2.86
Mar. 24	1600	47	2.56	Apr. 16	2215	53	2.59

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.83	.69	4.4	6.8	3.5	1.6	34	5.2	e1.2	.37	.10	.05
2	.73	7.2	4.0	5.8	2.9	2.0	23	4.7	e.90	1.3	.10	.05
3	.66	28	3.7	5.5	2.9	2.5	15	4.1	e.85	.56	.08	1.6
4	.63	7.2	3.4	5.2	2.8	31	12	3.8	e.80	.32	.08	3.5
5	.55	5.6	3.7	9.6	2.7	17	9.8	8.6	e.75	.24	.08	.26
6	.48	5.1	3.0	6.5	2.6	11	8.5	5.4	e.80	.22	.43	.13
7	.41	4.0	2.9	5.8	2.3	11	7.4	4.2	e.75	.28	.19	.10
8	.41	3.4	2.6	5.7	2.3	14	6.6	3.7	e1.9	.17	.11	.09
9	4.3	3.0	2.4	5.3	2.2	14	6.1	3.3	1.1	.15	.10	1.5
10	2.7	2.7	5.3	4.7	2.2	12	23	3.0	.70	.13	.10	2.8
11	1.4	2.7	65	4.4	2.1	9.1	17	2.7	.72	.11	.28	.33
12	1.1	4.7	24	5.6	2.3	7.7	14	3.0	.59	.11	.53	.18
13	.89	8.1	14	9.8	2.8	9.4	10	3.0	.55	.10	.17	.14
14	.80	4.5	11	7.8	2.5	7.9	8.3	2.3	.48	.10	.13	.13
15	.80	3.8	8.8	6.5	2.1	5.6	7.4	2.0	.45	.10	.10	2.2
16	.71	3.3	8.9	5.8	2.2	5.3	46	1.9	.40	.10	.08	2.6
17	.72	3.0	25	5.4	2.1	15	28	1.7	.35	.09	.09	1.6
18	.61	2.7	16	4.7	1.8	12	15	e1.6	.33	.09	.10	1.3
19	.49	2.6	12	4.2	1.8	8.4	11	e1.5	.31	.11	.08	.64
20	.55	2.5	16	3.9	1.8	7.5	9.1	e1.9	.38	.13	.17	.38
21	.72	3.0	12	4.2	1.8	11	13	e1.6	.60	.11	.13	.38
22	.61	7.4	9.6	7.9	2.0	14	22	e1.4	.49	.09	.08	.39
23	.63	38	9.7	6.0	2.0	23	14	e1.2	.31	.08	.07	.31
24	.69	12	8.4	6.2	1.8	37	11	e1.1	.26	.08	.07	.25
25	.69	11	7.0	5.7	1.7	28	9.2	e1.0	.23	.09	.07	.47
26	.66	8.9	6.3	4.8	1.7	27	12	e.90	.19	.09	.06	1.5
27	.63	7.3	5.3	4.6	1.7	41	8.7	e.85	.18	.09	.06	1.8
28	.60	6.2	5.8	4.2	1.6	75	7.4	e.80	.19	.08	.06	1.3
29	.57	5.5	6.9	4.0	---	44	6.6	e.75	.23	.18	.05	.65
30	.55	4.8	8.4	3.7	---	29	5.9	e.70	.20	.12	.05	.52
31	.74	---	8.0	3.8	---	21	---	e1.5	---	.10	.05	---
TOTAL	26.86	208.89	323.5	174.1	62.2	554.0	421.0	79.40	17.19	5.89	3.85	27.15
MEAN	.87	6.96	10.4	5.62	2.22	17.9	14.0	2.56	.57	.19	.12	.90
MAX	4.3	38	65	9.8	3.5	75	46	8.6	1.9	1.3	.53	3.5
MIN	.41	.69	2.4	3.7	1.6	1.6	5.9	.70	.18	.08	.05	.05
CFSM	.40	3.25	4.88	2.62	1.04	8.35	6.56	1.20	.27	.09	.06	.42
IN.	.47	3.63	5.62	3.03	1.08	9.63	7.32	1.38	.30	.10	.07	.47

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	.91	2.86	3.86	3.22	5.18	6.98	7.09	5.56	1.97	.85	.86	.41
MAX	4.12	10.6	10.4	7.18	12.6	17.9	14.0	15.2	5.43	2.69	6.33	1.58
(WY)	1991	1986	1993	1991	1984	1993	1993	1989	1982	1989	1984	1992
MIN	.093	.49	.68	1.25	2.22	2.62	2.56	1.90	.48	.17	.052	.063
(WY)	1987	1982	1989	1983	1993	1988	1985	1991	1991	1991	1987	1986

01640965 HUNTING CREEK NEAR FOXVILLE, MD--Continued

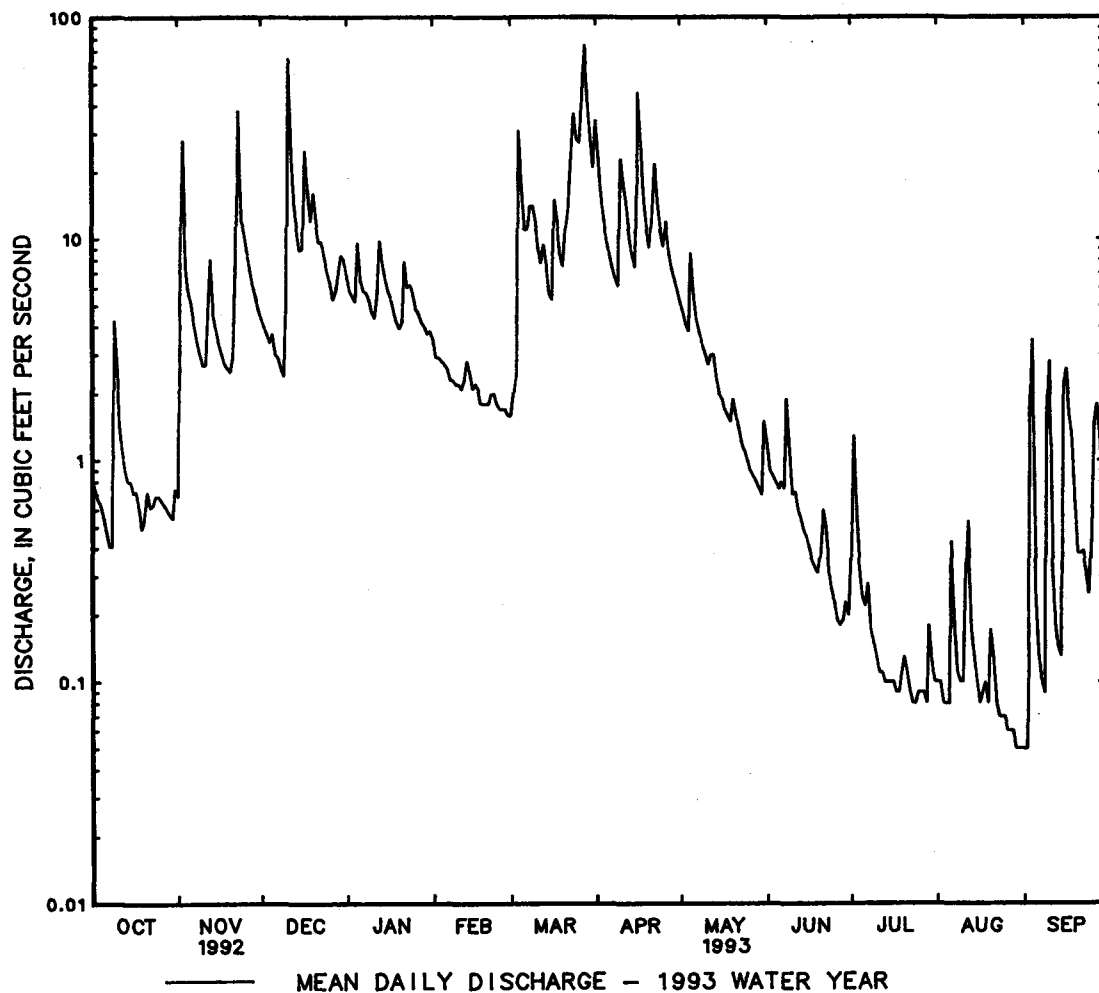
SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1982 - 1993
ANNUAL TOTAL	1452.93	1904.03	
ANNUAL MEAN	3.97	5.22	3.30
HIGHEST ANNUAL MEAN			5.22 1993
LOWEST ANNUAL MEAN			1.82 1985
HIGHEST DAILY MEAN	65 Dec 11	75 Mar 28	101 Feb 14 1984
LOWEST DAILY MEAN	.38 Jul 15	.05 (a)	.02 (b)
ANNUAL SEVEN-DAY MINIMUM	.44 Aug 30	.05 Aug 27	.03 Aug 28 1991
INSTANTANEOUS PEAK FLOW	148 Apr 21	180 Mar 28	(c)814 May 19 1988
INSTANTANEOUS PEAK STAGE	3.38 Apr 21	3.10 Mar 28	4.71 May 19 1988
INSTANTANEOUS LOW FLOW	.34 (d)	.04 Sep 1	.01 Sep 3 1991
ANNUAL RUNOFF (CFSM)	1.86	2.44	1.54
ANNUAL RUNOFF (INCHES)	25.26	33.10	20.96
10 PERCENT EXCEEDS	8.4	12	7.8
50 PERCENT EXCEEDS	2.6	2.2	1.7
90 PERCENT EXCEEDS	.66	.10	.12

a Aug. 29-31, Sept. 1, 2.

b Aug. 18, Sept. 1-3, 1991.

c From rating curve extended above 40 ft³/s on basis of computation of peak flow through culvert.

d July 15, 16.



WATER-QUALITY RECORDS

WATER TEMPERATURE: October 1987 to July 1991.

REMARKS.--Periods of missing record were due to instrument malfunction.

WATER TEMPERATURE (water years 1989-90): Maximum daily, 21.5°C, July 25, 1989; minimum daily, 0.0°C, on many days during winter periods.

WATER QUALITY DATA, JUNE 1992 TO SEPTEMBER 1992

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
JUN 1992									
04...	1030	2.7	78	7.4	13.0	--	--	--	--
11...	1215	2.8	71	7.2	14.5	21.0	28	6.4	2.9
19...	0850	2.1	82	7.3	15.5	21.0	40	7.3	5.3
25...	0900	1.7	81	7.3	14.0	--	--	--	--
30...	0900	0.74	86	7.2	16.0	--	--	--	--
JUL									
07...	0915	0.68	87	7.3	16.0	--	--	--	--
17...	0830	1.7	89	7.3	19.0	23.0	47	8.6	6.2
17...	0930	1.6	89	7.3	19.0	--	--	--	--
24...	0745	1.2	95	7.3	--	--	--	--	--
30...	1115	2.7	80	7.3	18.0	--	--	--	--
AUG									
06...	1145	1.4	84	7.2	17.0	--	--	--	--
13...	0850	0.92	87	6.9	17.0	21.0	49	9.4	6.2
20...	0915	1.7	85	--	15.5	17.0	--	--	--
27...	0930	0.53	90	7.2	19.0	30.0	50	9.3	6.5
SEP									
03...	0740	0.41	88	6.7	16.0	--	--	--	--
11...	1035	4.8	83	6.8	17.0	--	--	--	--
17...	0650	0.99	93	6.7	15.5	16.0	50	9.5	6.5
24...	0940	0.68	94	6.6	11.0	--	--	--	--

[illegible]

POTOMAC RIVER BASIN

287

01640965 HUNTING CREEK NEAR FOXVILLE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 1992									
01...	0845	0.86	88	7.4	10.0	37	8.4	3.8	3.0
08...	0820	0.41	89	6.5	9.0	--	--	--	--
15...	1125	0.80	91	7.1	13.0	33	7.3	3.5	3.1
22...	0815	0.58	88	7.2	8.0	--	--	--	--
30...	0745	0.53	92	7.0	10.0	--	--	--	--
NOV									
03...	1100	19	76	7.1	10.0	--	--	--	--
12...	0915	2.5	81	7.0	9.0	28	6.1	3.1	2.6
19...	0745	2.4	79	7.3	6.0	--	--	--	--
25...	0730	12	75	7.0	9.0	26	5.8	2.8	2.1
DEC									
03...	1525	3.5	75	7.1	5.0	--	--	--	--
11...	1620	39	78	6.6	2.0	22	5.0	2.3	3.7
16...	0825	7.8	77	7.1	4.0	24	5.4	2.6	3.1
21...	0835	12	89	5.9	6.0	--	--	--	--
23...	0820	9.5	73	7.0	5.0	--	--	--	--
29...	1350	6.9	92	6.8	4.0	--	--	--	--
JAN 1993									
07...	1045	5.8	77	7.1	5.0	--	--	--	--
15...	1040	6.6	78	7.1	3.0	26	5.8	2.8	2.9
21...	0830	3.7	75	6.9	2.0	23	5.2	2.5	2.5
28...	1200	4.1	77	6.7	3.0	--	--	--	--
FEB									
05...	1520	2.8	79	6.3	4.0	--	--	--	--
10...	0915	2.1	79	7.2	1.0	26	5.6	2.8	3.4
17...	1130	2.1	80	6.9	1.0	--	--	--	--
25...	1000	2.1	84	6.8	0.0	--	--	--	--
MAR									
04...	1105	32	98	6.6	1.0	--	--	--	--
10...	1015	12	81	7.1	2.0	25	5.7	2.7	2.9
11...	1130	8.8	80	6.9	3.0	--	--	--	--
19...	1200	8.8	73	7.1	2.0	--	--	--	--
25...	1100	25	67	6.7	4.0	22	4.9	2.3	2.3
APR									
01...	1105	32	67	6.9	8.0	--	--	--	--
08...	0910	6.7	77	6.8	6.0	--	--	--	--
14...	0915	8.5	78	7.1	8.0	24	5.5	2.6	3.0
15...	1105	7.4	74	7.0	9.5	24	5.5	2.6	3.0
22...	0945	23	69	6.9	10.0	--	--	--	--
29...	1010	6.7	77	6.9	12.0	--	--	--	--
MAY									
06...	0640	5.8	86	6.8	12.0	--	--	--	--
13...	1030	3.1	89	7.2	15.0	29	6.6	3.1	3.5
20...	0840	--	90	7.1	11.0	30	7.1	3.1	3.5
27...	0835	--	94	7.0	16.0	--	--	--	--
JUN									
03...	0830	--	92	7.0	14.0	--	--	--	--
09...	1345	1.1	94	6.8	18.0	--	--	--	--
16...	0745	0.49	96	7.0	17.0	34	7.7	3.5	3.6
24...	1545	0.26	98	7.0	19.0	--	--	--	--
JUL									
01...	1040	0.59	104	7.1	17.0	--	--	--	--
08...	1115	0.18	100	7.0	23.0	--	--	--	--
15...	1200	0.11	90	6.9	25.0	29	7.1	2.8	4.3
22...	0830	0.10	91	6.5	17.5	--	--	--	--
29...	1000	0.20	97	6.5	24.0	--	--	--	--
AUG									
05...	0830	0.08	84	6.0	20.0	--	--	--	--
12...	1100	0.32	98	6.8	20.0	38	8.7	3.9	3.5
17...	1215	0.08	92	6.9	19.0	--	--	--	--
26...	0845	0.07	86	7.1	22.0	--	--	--	--
SEP									
01...	0900	0.05	82	6.8	22.0	--	--	--	--
09...	0725	0.08	90	7.1	20.0	--	--	--	--
15...	1115	0.11	95	7.1	19.0	35	8.3	3.4	3.8
22...	1115	0.40	104	6.9	19.0	--	--	--	--
29...	0830	0.70	94	6.7	17.0	--	--	--	--

POTOMAC RIVER BASIN

01640965 HUNTING CREEK NEAR FOXVILLE, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 1992								
01...	0.20	33	7.2	3.7	11	0.77	50	57
08...	--	--	--	--	--	--	--	--
15...	0.32	36	7.3	6.2	11	0.71	--	--
22...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
NOV								
03...	--	--	--	--	--	--	--	--
12...	0.21	25	8.4	3.9	10	1.6	--	--
19...	--	--	--	--	--	--	--	--
25...	0.24	19	8.8	3.3	9.3	2.6	--	--
DEC								
03...	--	--	--	--	--	--	--	--
11...	0.35	12	8.5	7.2	6.6	3.4	--	--
16...	0.24	17	8.9	5.9	7.9	2.5	--	--
21...	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
JAN 1993								
07...	--	--	--	--	--	--	--	--
15...	0.15	17	9.2	5.9	9.8	2.4	<10	<1
21...	0.17	15	9.5	4.5	8.8	2.9	--	--
28...	--	--	--	--	--	--	--	--
FEB								
05...	--	--	--	--	--	--	--	--
10...	0.16	18	7.7	7.3	9.2	2.4	<10	<1
17...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
MAR								
04...	--	--	--	--	--	--	--	--
10...	0.18	15	9.3	5.8	8.3	4.3	<10	<1
11...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
25...	0.21	12	8.6	3.9	7.0	3.7	11	<1
APR								
01...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
14...	0.21	17	8.6	5.8	8.7	2.3	<10	<1
15...	0.19	18	8.7	6.0	9.2	2.3	--	--
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
MAY								
06...	--	--	--	--	--	--	--	--
13...	0.28	27	7.8	6.5	11	1.5	<10	<1
20...	0.22	27	7.1	6.8	10	1.3	--	--
27...	--	--	--	--	--	--	--	--
JUN								
03...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
16...	0.27	35	5.8	7.0	11	1.1	<10	<1
24...	--	--	--	--	--	--	--	--
JUL								
01...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
15...	0.40	33	3.6	8.6	11	1.3	<10	<1
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
AUG								
05...	--	--	--	--	--	--	--	--
12...	0.36	38	6.9	4.9	11	1.8	<10	<1
17...	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--
SEP								
01...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
15...	0.40	35	5.4	6.5	11	1.0	<10	<1
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

01640980 BEAR BRANCH NEAR THURMONT, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1990 - 1993

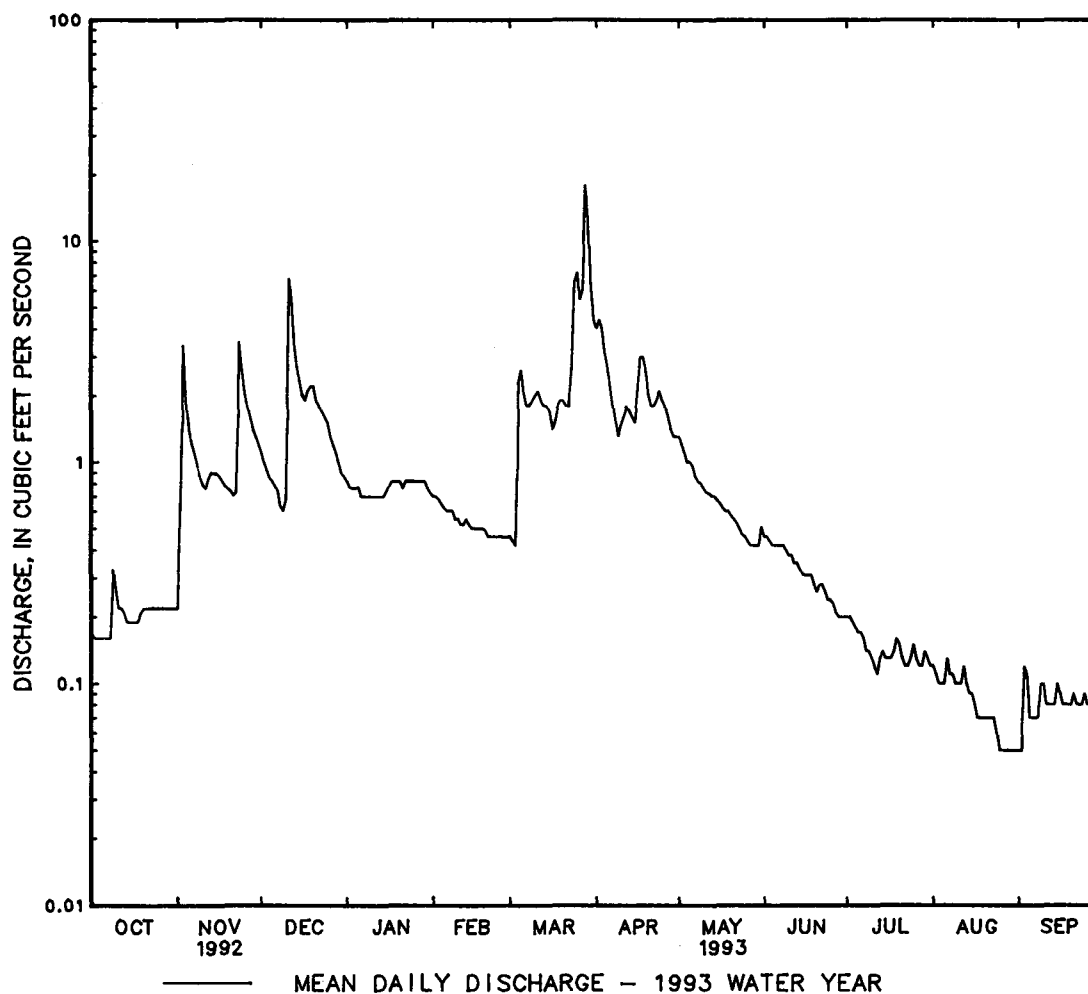
ANNUAL TOTAL	260.62	347.31		
ANNUAL MEAN	.71	.95	.68	
HIGHEST ANNUAL MEAN			.95	1993
LOWEST ANNUAL MEAN			.46	1992
HIGHEST DAILY MEAN	9.4	18	18	Mar 28 1993
LOWEST DAILY MEAN	.12 (a)	.05 (b)	.04	many days
ANNUAL SEVEN-DAY MINIMUM	.14	.05	.04	Aug 23 1991
INSTANTANEOUS PEAK FLOW	30	25	30	Apr 21 1992
INSTANTANEOUS PEAK STAGE	4.34	4.31	4.34	Apr 21 1992
INSTANTANEOUS LOW FLOW	.12 (c)	.05 (d)	.04	many days
ANNUAL RUNOFF (CFSM)	1.87	2.50	1.78	
ANNUAL RUNOFF (INCHES)	25.51	34.00	24.22	
10 PERCENT EXCEEDS	1.5	2.0	1.4	
50 PERCENT EXCEEDS	.55	.52	.36	
90 PERCENT EXCEEDS	.15	.08	.07	

a Jan. 1-3.

b Aug. 25-31, Sept. 1, 2.

c Jan. 1-4, Feb. 14.

d Aug. 25-31, Sept. 1-3.



POTOMAC RIVER BASIN

291

01640980 BEAR BRANCH NEAR THURMONT, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-Water years 1990 to current year.

WATER QUALITY DATA, JUNE 1992 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 1992								
02...	1130	0.64	23	5.4	12.5	--	--	--
09...	1000	0.85	24	5.5	14.0	1.0	0.81	0.72
16...	1040	0.64	22	5.4	13.5	0.95	0.700	0.70
23...	1115	0.58	20	5.4	12.0	--	--	--
30...	1030	0.36	19	5.4	16.0	0.77	0.610	0.71
JUL								
07...	1050	0.26	18	5.5	15.5	--	--	--
14...	1330	0.19	18	5.2	19.0	0.68	0.520	0.70
21...	1130	0.16	17	5.3	18.5	--	--	--
28...	1040	0.47	22	5.2	17.0	0.90	0.680	0.71
AUG								
04...	1030	0.31	22	5.2	17.0	--	--	--
11...	0955	0.26	20	5.1	18.0	0.91	0.570	0.68
18...	1045	0.22	19	5.2	16.0	--	--	--
25...	1010	0.16	19	5.2	17.0	0.69	0.520	0.63
SEP								
01...	0955	0.14	18	5.2	15.0	--	--	--
08...	1140	0.16	19	5.1	16.0	0.74	0.530	0.63
15...	1005	0.22	19	5.3	14.0	--	--	--
17...	1013	0.22	20	5.3	16.0	0.69	0.560	0.64
22...	0930	0.19	20	5.2	15.0	0.89	0.590	0.72
29...	1050	0.19	20	5.2	14.0	--	--	--

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
JUN 1992							
02...	--	--	--	--	--	--	--
09...	0.86	<1	4.9	1.3	5.2	1.0	39
16...	0.66	<1	4.9	1.4	5.1	0.96	30
23...	--	--	--	--	--	--	--
30...	0.49	<1	4.4	1.2	5.5	0.36	38
JUL							
07...	--	--	--	--	--	--	--
14...	0.38	<1	3.8	1.3	5.7	0.50	41
21...	--	--	--	--	--	--	--
28...	0.66	<1	4.6	1.2	5.3	1.1	62
AUG							
04...	--	--	--	--	--	--	--
11...	0.41	<1	4.1	1.3	5.6	0.20	24
18...	--	--	--	--	--	--	--
25...	0.39	<1	4.0	1.5	5.5	0.42	42
SEP							
01...	--	--	--	--	--	--	--
08...	0.48	<1	3.9	1.2	5.3	0.53	38
15...	--	--	--	--	--	--	--
17...	0.42	<1	4.0	1.3	5.7	0.62	35
22...	0.36	<1	4.0	1.3	5.8	0.03	--
29...	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

01640980 BEAR BRANCH NEAR THURMONT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 1992								
06...	0915	0.16	19	5.1	9.0	0.79	0.590	0.69
13...	1040	0.22	19	5.2	11.0	--	--	--
20...	0945	0.22	19	5.2	7.0	0.74	0.610	0.72
27...	1025	0.22	18	5.2	8.0	--	--	--
NOV								
03...	1130	2.6	34	4.9	10.0	1.6	0.98	0.62
10...	1225	0.76	24	5.3	8.0	--	--	--
17...	1215	0.82	24	5.4	6.0	0.98	0.780	0.73
24...	0945	2.8	28	5.2	9.0	--	--	--
DEC								
01...	1050	1.0	26	5.2	7.0	1.1	0.750	0.71
08...	1010	0.60	25	5.3	4.0	--	--	--
15...	1210	2.2	28	5.1	6.0	1.2	0.780	0.73
21...	1220	1.9	27	5.1	7.0	--	--	--
29...	1725	0.89	26	5.2	7.0	0.95	0.740	0.71
JAN 1993								
05...	1230	0.76	24	5.4	9.0	--	--	--
12...	1300	0.70	26	5.3	6.0	0.98	0.780	0.71
19...	0945	0.82	26	5.4	4.0	--	--	--
26...	1050	0.82	25	5.4	5.0	1.0	0.79	0.71
FEB								
02...	0950	0.70	27	5.4	2.0	--	--	--
09...	1200	0.55	24	5.4	2.5	0.88	0.720	0.71
18...	1000	0.50	24	5.4	1.0	--	--	--
23...	1415	0.46	23	5.5	3.0	0.91	0.720	0.65
MAR								
02...	1030	0.42	25	5.5	7.0	--	--	--
08...	1300	1.7	31	5.4	7.0	1.2	0.96	0.69
17...	1400	1.6	28	5.3	5.0	--	--	--
23...	1040	2.2	32	5.2	7.0	1.2	0.97	0.66
24...	1325	6.7	34	5.1	7.5	1.3	0.95	0.59
29...	1454	11	37	5.0	9.0	--	--	--
30...	1230	5.5	--	5.1	9.5	--	--	--
APR								
06...	1015	2.2	28	5.2	8.0	0.98	0.720	0.67
13...	1020	1.8	27	5.2	9.0	--	--	--
20...	1103	1.9	26	5.4	12.0	0.98	0.760	0.67
27...	0843	1.7	26	5.1	9.5	--	--	--
MAY								
04...	0835	1.0	25	5.3	12.0	0.97	0.670	0.65
11...	1240	0.70	24	5.4	14.0	--	--	--
18...	0730	0.60	23	5.3	12.0	0.87	0.640	0.65
25...	0950	0.46	22	5.3	13.0	--	--	--

POTOMAC RIVER BASIN

293

01640980 BEAR BRANCH NEAR THURMONT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
OCT 1992							
06...	0.31	<1	3.6	1.1	5.6	0.38	110
13...	--	--	--	--	--	--	--
20...	0.34	<1	3.7	1.3	5.9	0.28	68
27...	--	--	--	--	--	--	--
NOV							
03...	1.2	<1	7.5	1.2	4.7	2.2	320
10...	--	--	--	--	--	--	--
17...	0.89	<1	5.2	1.2	5.5	1.4	45
24...	--	--	--	--	--	--	--
DEC							
01...	0.94	<1	5.3	1.2	5.0	1.8	55
08...	--	--	--	--	--	--	--
15...	1.0	<1	5.6	1.5	4.9	2.0	97
21...	--	--	--	--	--	--	--
29...	0.99	<1	5.1	1.1	4.9	1.7	74
JAN 1993							
05...	--	--	--	--	--	--	--
12...	0.99	<1	5.3	1.3	5.0	1.7	22
19...	--	--	--	--	--	--	--
26...	0.95	<1	5.2	1.3	5.0	1.8	51
FEB							
02...	--	--	--	--	--	--	--
09...	0.94	<1	4.8	1.3	5.0	1.6	41
18...	--	--	--	--	--	--	--
23...	0.89	<1	4.4	1.2	4.8	1.5	37
MAR							
02...	--	--	--	--	--	--	--
08...	1.1	<1	6.3	1.3	4.8	2.3	82
17...	--	--	--	--	--	--	--
23...	1.1	<1	6.7	1.2	4.5	2.4	110
24...	1.2	<1	7.3	1.1	4.0	2.4	160
29...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
APR							
06...	1.0	<1	5.5	1.2	4.5	1.6	76
13...	--	<1	--	--	--	--	--
20...	1.1	<1	5.4	1.1	4.5	1.4	59
27...	--	--	--	--	--	--	--
MAY							
04...	0.90	<1	5.4	1.2	4.7	1.4	43
11...	--	--	--	--	--	--	--
18...	0.70	<1	5.0	1.2	5.1	1.1	41
25...	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

01640980 BEAR BRANCH NEAR THURMONT, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 1993								
01...	0935	0.46	21	5.3	12.5	0.82	0.570	0.64
08...	0845	0.42	20	5.3	13.0	--	--	--
15...	0855	0.31	20	5.3	15.0	0.78	0.490	0.67
22...	0915	0.29	19	5.2	11.0	--	--	--
29...	0928	0.20	19	5.1	17.0	0.68	0.500	0.69
JUL								
06...	1500	0.17	19	5.0	19.0	--	--	--
13...	0740	0.11	18	5.1	19.0	0.54	0.420	0.73
20...	1630	0.11	18	--	19.0	--	--	--
27...	1030	0.11	18	--	19.0	0.49	0.390	0.69
AUG								
03...	1007	0.11	18	5.1	19.0	--	--	--
10...	1045	0.10	17	5.1	18.0	0.57	0.390	0.71
17...	1125	0.07	17	5.2	19.0	--	--	--
24...	1330	0.06	16	5.1	18.5	0.48	0.370	0.69
31...	1130	0.05	17	5.4	19.0	--	--	--
SEP								
07...	1030	0.07	17	5.3	18.0	0.54	0.380	0.69
14...	1040	0.08	16	4.8	16.5	--	--	--
21...	1140	0.08	16	3.9	14.0	0.52	0.370	0.69
28...	1107	0.08	18	4.5	14.0	--	--	--

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
JUN 1993							
01...	0.66	<1	4.7	1.2	5.0	0.62	42
08...	--	--	--	--	--	--	--
15...	0.49	<1	4.2	1.2	5.3	0.45	35
22...	--	--	--	--	--	--	--
29...	0.40	<1	3.7	1.1	5.6	0.53	48
JUL							
06...	--	--	--	--	--	--	--
13...	0.42	<1	3.5	1.2	6.1	0.65	45
20...	--	--	--	--	--	--	--
27...	0.30	<1	3.3	1.2	6.3	0.57	46
AUG							
03...	--	--	--	--	--	--	--
10...	0.36	<1	3.0	1.1	6.3	0.32	47
17...	--	--	--	--	--	--	--
24...	0.35	<1	3.0	1.2	6.6	0.35	49
31...	--	--	--	--	--	--	--
SEP							
07...	0.40	<1	3.2	1.1	6.5	0.110	51
14...	--	--	--	--	--	--	--
21...	0.42	<1	3.2	1.1	6.2	0.22	41
28...	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

295

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD

LOCATION.--Lat 39°32'09", long 77°26'48", Frederick County, Hydrologic Unit 02070009, on right bank 800 ft upstream from entrance to Lewistown State Fish Hatchery, 1.2 mi west of U.S. Route 15, 1.7 mi west of Lewistown, and 0.6 mi upstream from Fishing Creek.

DRAINAGE AREA.--0.40 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 542.30 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (missing record), which are fair.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0430	*9.2	*3.03	No peak greater than base discharge.			

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.27	1.3	1.1	.81	.54	4.6	1.9	.42	.21	.14	.07
2	.25	.51	1.2	1.0	.79	.58	4.6	1.7	.36	.46	.13	.07
3	.25	1.6	1.1	1.0	.76	.63	4.2	1.6	.35	.23	.13	.32
4	.24	.65	1.1	.96	.75	4.2	3.9	1.4	.34	e.20	.13	.32
5	.24	.63	1.0	1.1	.72	4.4	3.6	1.5	.35	e.18	.13	.12
6	.24	.63	1.0	.97	.69	3.1	3.2	1.3	.33	e.17	.22	.11
7	.24	.63	1.0	.92	.66	2.8	3.0	1.3	.32	.19	.20	.10
8	.24	.63	.91	.90	.66	2.8	2.6	1.1	.36	.18	.18	.11
9	.60	.62	.84	.90	.63	2.7	2.3	1.1	.30	.18	.17	.13
10	.36	.59	1.0	.88	.62	2.7	2.7	.99	.28	.17	.16	.13
11	.29	.57	8.0	.85	.60	2.6	2.4	.93	.28	.17	.15	.11
12	.28	.69	5.4	.89	.63	2.4	2.2	.89	.27	.17	.17	.11
13	.26	.72	4.3	1.0	.66	2.4	2.0	.91	.26	.16	.14	.11
14	.25	.63	3.6	.92	.62	2.2	1.9	.87	.25	.17	.14	.09
15	.25	.63	3.2	.90	.60	2.0	1.7	.82	.24	.17	.13	.14
16	.25	.63	2.8	.90	.60	1.8	2.9	.79	.23	.16	.13	.15
17	.28	.62	3.0	.90	.60	2.6	3.7	.78	.23	.16	.13	.15
18	.28	.60	2.5	.90	.57	2.3	3.5	.76	.22	.16	.14	.14
19	.27	.57	2.2	.89	.54	2.2	3.2	.72	.22	.22	.13	.12
20	.27	.55	2.1	.87	.54	2.2	2.8	.60	.33	.18	.13	.11
21	.27	.56	1.9	.89	.54	2.6	3.0	.57	.31	.16	.12	.12
22	.26	.77	1.8	.99	.55	2.8	3.8	.56	.25	.15	.12	.12
23	.25	3.3	1.7	.89	.54	e2.9	3.6	.54	.21	.15	.11	e.10
24	.25	1.9	1.6	.87	.52	e5.6	3.3	.52	.21	.15	.11	e.08
25	.25	1.8	1.5	.87	.53	5.4	3.1	.48	.20	.21	.11	e.10
26	.25	1.6	1.5	.84	.54	4.8	2.9	.46	.19	.17	.11	e.13
27	.25	1.5	1.4	.84	.52	4.6	2.6	.45	.18	.15	.10	e.14
28	.27	1.5	1.3	.83	.52	5.1	2.4	.42	.19	.15	.10	.11
29	.27	1.4	1.3	.81	---	4.9	2.2	.41	.20	.18	.08	.10
30	.27	1.3	1.2	.81	---	4.5	2.0	.40	.19	.15	.08	.10
31	.28	---	1.1	.81	---	4.1	---	.51	---	.14	.08	---
TOTAL	8.46	28.60	63.85	28.20	17.31	94.45	89.9	27.28	8.07	5.65	4.10	3.81
MEAN	.27	.95	2.06	.91	.62	3.05	3.00	.88	.27	.18	.13	.13
MAX	.80	3.3	8.0	1.1	.81	5.6	4.6	1.9	.42	.46	.22	.32
MIN	.24	.27	.84	.81	.52	.54	1.7	.40	.18	.14	.08	.07
CFSM	.68	2.38	5.15	2.27	1.55	7.62	7.49	2.20	.67	.46	.33	.32
IN.	.79	2.66	5.94	2.62	1.61	8.78	8.36	2.54	.75	.53	.38	.35

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993
MEAN	.18	.35	.61	.61	.53	1.04
MAX	.29	.95	2.06	1.39	.77	3.05
(WY)	1991	1993	1993	1991	1991	1993
MIN	.093	.13	.12	.21	.26	.53
(WY)	1989	1992	1989	1992	1992	1989

POTOMAC RIVER BASIN

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1988 - 1993	
ANNUAL TOTAL	261.20		379.68			
ANNUAL MEAN	.71		1.04		.59	
HIGHEST ANNUAL MEAN					1.04	
LOWEST ANNUAL MEAN					.45	
HIGHEST DAILY MEAN	8.0	Dec 11	8.0	Dec 11	11	May 19 1988
LOWEST DAILY MEAN	.09	(a)	.07	(b)	.05	(c)
ANNUAL SEVEN-DAY MINIMUM	.14	Jan 7	.08	Aug 27	.06	Sep 10 1991
INSTANTANEOUS PEAK FLOW	17	Jul 25	9.2	Dec 11	33	May 18 1988
INSTANTANEOUS PEAK STAGE	3.25	Jul 25	3.03	Dec 11	3.25	Jul 25 1992
INSTANTANEOUS LOW FLOW	.09	(d)	.03	(f)	.03	(g)
ANNUAL RUNOFF (CFSM)	1.78		2.60		1.48	
ANNUAL RUNOFF (INCHES)	24.29		35.31		20.18	
10 PERCENT EXCEEDS	1.3		2.8		1.1	
50 PERCENT EXCEEDS	.55		.59		.38	
90 PERCENT EXCEEDS	.24		.13		.11	

a Feb. 12, 13.

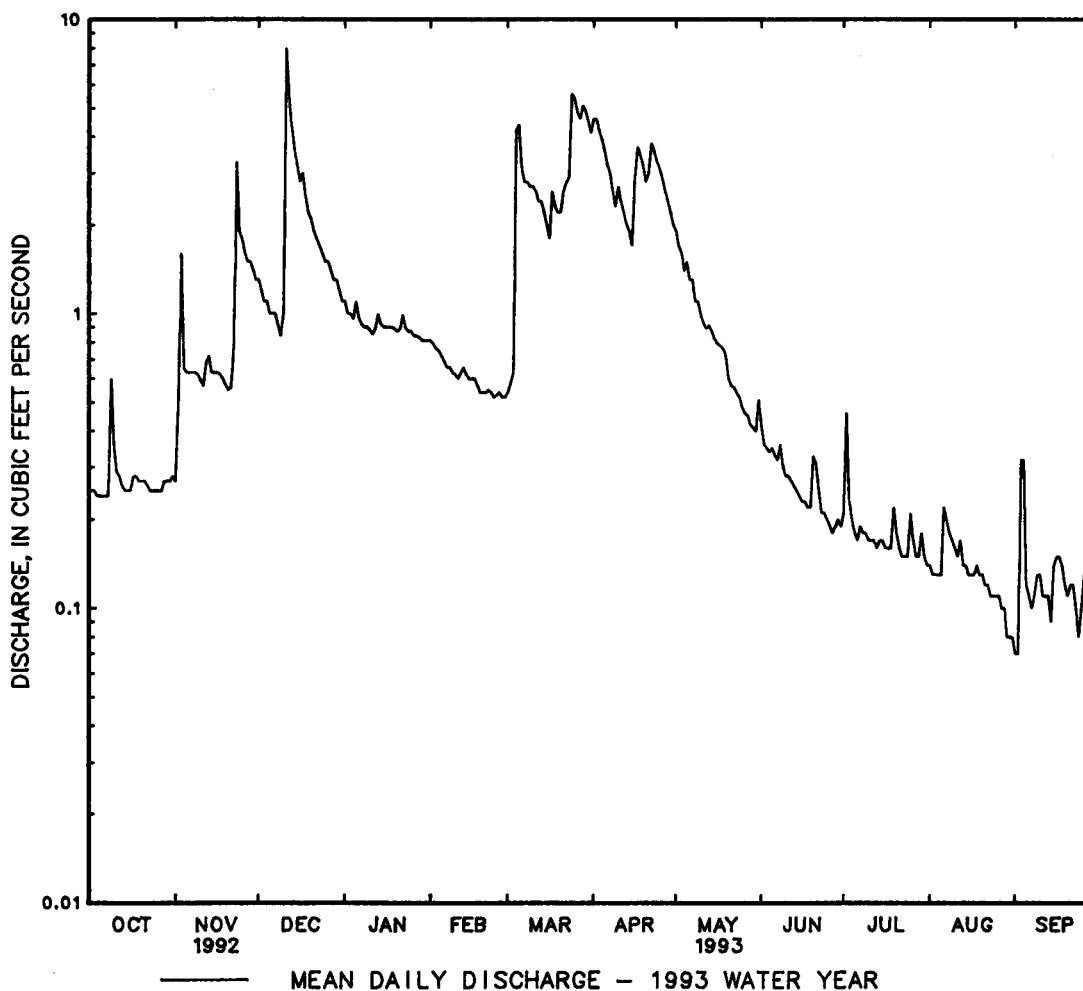
b Sept. 1, 2.

c Oct. 1, 2, 1991.

d Jan. 1, 3, Feb. 4, 11-14.

f Aug. 29-31, Sept. 1-3, 14, 15.

g Aug. 15, 1988, Aug. 29-31, Sept. 1-3, 14, 15, 1993.



POTOMAC RIVER BASIN

297

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1987 to September 1990.

WATER TEMPERATURE: October 1987 to September 1990.

INSTRUMENTATION.--Water-quality monitor October 1987 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 90 microsiemens, Oct. 29, 1988; minimum, 13 microsiemens, Sept. 6, 7, 1989.

WATER TEMPERATURE: Maximum daily, 23.0°C, Aug. 15, 1988; minimum daily, 1.0°C, Jan. 6, 7, 8, 15, 16, 1988, Mar. 6, 1989.

WATER QUALITY DATA, JUNE 1992 TO SEPTEMBER 1992

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 1992								
02...	1345	0.72	17	6.6	13.0	--	--	--
09...	1045	1.0	16	6.2	14.5	0.57	0.54	0.98
16...	1115	0.72	15	6.4	14.5	0.52	0.48	0.97
23...	1205	0.54	15	6.4	14.0	--	--	--
30...	1145	0.39	15	6.3	16.0	0.51	0.500	1.0
JUL								
07...	1125	0.32	15	6.4	16.5	--	--	--
14...	0950	0.28	15	6.4	18.5	0.60	0.460	1.0
21...	1225	0.25	15	6.4	18.5	--	--	--
28...	1525	0.90	15	6.1	17.0	0.50	0.460	0.98
AUG								
04...	1100	0.78	16	6.2	17.0	--	--	--
11...	0955	0.52	15	6.2	18.0	0.51	0.450	0.92
18...	1205	0.46	15	6.3	16.0	--	--	--
25...	1150	0.34	15	6.4	18.0	0.50	0.460	0.95
SEP								
01...	1135	0.28	15	6.4	16.5	--	--	--
08...	1505	0.30	16	6.3	18.0	0.51	0.470	0.89
15...	1140	0.30	15	6.4	16.0	0.52	0.440	0.91
22...	1045	0.27	15	6.3	16.0	0.58	0.480	1.0
29...	1340	0.25	15	6.3	15.0	--	--	--

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
JUN 1992							
02...	--	--	--	--	--	--	--
09...	0.77	3	1.7	1.8	7.2	<0.007	20
16...	0.69	3	1.6	1.3	7.0	0.74	9
23...	--	--	--	--	--	--	--
30...	0.69	3	1.5	1.2	7.3	0.22	18
JUL							
07...	--	--	--	--	--	--	--
14...	0.65	3	1.4	1.2	7.9	0.25	22
21...	--	--	--	--	--	--	--
28...	0.78	2	1.9	1.3	7.3	0.59	30
AUG							
04...	--	--	--	--	--	--	--
11...	0.68	2	1.4	1.2	7.4	0.20	16
18...	--	--	--	--	--	--	--
25...	0.65	2	1.5	1.3	7.2	0.39	5
SEP							
01...	--	--	--	--	--	--	--
08...	0.72	3	1.7	1.2	7.0	0.050	25
15...	0.64	3	1.6	1.3	7.6	0.070	21
22...	0.57	3	1.4	1.2	7.9	0.030	9
29...	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 1992								
06...	1030	0.24	15	6.4	11.0	0.50	0.500	1.0
13...	1215	0.25	15	6.4	12.0	--	--	--
20...	1130	0.27	17	6.4	8.5	0.52	0.490	0.96
27...	1130	0.25	15	6.4	9.0	--	--	--
NOV								
03...	1655	0.84	25	5.9	11.5	1.1	0.98	0.86
10...	1435	0.59	17	6.5	9.0	--	--	--
17...	1500	0.60	17	6.2	8.0	0.48	0.500	1.0
24...	1445	1.8	19	6.0	11.0	--	--	--
DEC								
01...	1230	1.3	17	6.2	8.0	0.52	0.490	0.92
08...	1255	0.87	17	6.4	7.0	--	--	--
15...	1530	3.1	18	6.1	8.0	0.52	0.510	0.97
21...	1540	1.9	17	6.4	8.5	--	--	--
29...	1310	1.3	18	6.2	8.0	0.50	0.530	0.99
JAN 1993								
05...	0950	1.1	20	6.4	11.0	--	--	--
12...	1045	0.87	19	6.5	7.0	0.56	0.590	0.97
19...	1200	0.90	18	6.4	7.0	--	--	--
26...	1230	0.84	18	6.6	6.0	0.54	0.550	0.98
FEB								
02...	0845	0.78	18	6.5	4.5	--	--	--
09...	1000	0.63	18	6.5	3.5	0.52	0.550	1.0
18...	1230	0.54	20	6.6	4.0	--	--	--
23...	1630	0.52	19	6.2	3.0	0.56	0.580	0.94
MAR								
02...	1500	0.63	20	6.4	5.0	--	--	--
08...	1500	2.7	18	6.1	8.0	0.68	0.660	0.88
16...	1000	1.9	20	6.2	6.0	--	--	--
23...	1350	2.9	20	6.1	7.0	0.63	0.650	0.91
24...	1135	5.5	23	5.9	8.0	0.73	0.680	0.80
30...	1500	4.5	--	6.3	11.5	--	--	--
APR								
06...	1233	3.2	18	6.0	10.0	0.49	0.510	0.95
13...	1215	1.9	17	6.2	11.0	--	--	--
20...	1255	2.7	18	6.2	14.0	0.53	0.550	0.97
27...	0745	2.7	17	5.7	9.0	--	--	--
MAY								
04...	1030	1.4	18	6.2	12.0	0.60	0.520	0.95
11...	0735	0.97	17	6.4	14.0	--	--	--
18...	1050	0.75	17	6.2	12.0	0.54	0.500	0.94
25...	1040	0.49	17	6.4	14.0	--	--	--
JUN								
01...	1415	0.41	17	6.4	13.0	0.54	0.450	0.92
08...	1050	0.36	17	6.0	14.0	--	--	--
15...	1135	0.25	16	6.4	16.0	0.54	0.440	0.98
22...	0750	0.27	17	6.2	16.0	--	--	--
29...	0750	0.21	16	6.2	12.0	0.55	0.520	0.95
JUL								
06...	1700	0.17	16	6.2	15.0	--	--	--
13...	1010	0.17	16	6.3	19.0	0.51	0.480	1.0
21...	0756	0.16	15	6.3	18.5	--	--	--
27...	0850	0.16	16	6.1	19.0	0.50	0.470	0.92

POTOMAC RIVER BASIN

299

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
OCT 1992							
06...	0.56	2	1.5	1.2	7.8	0.25	14
13...	--	--	--	--	--	--	--
20...	0.61	3	1.6	1.1	8.0	0.120	58
27...	--	--	--	--	--	--	--
NOV							
03...	1.2	<1	5.6	1.4	6.2	--	170
10...	--	--	--	--	--	--	--
17...	0.86	2	2.0	1.2	7.3	0.60	9
24...	--	--	--	--	--	--	--
DEC							
01...	0.85	2	2.0	1.1	6.9	0.52	8
08...	--	--	--	--	--	--	--
15...	0.98	<1	2.5	1.2	6.6	0.91	23
21...	--	--	--	--	--	--	--
29...	0.93	2	2.0	1.2	6.8	0.90	21
JAN 1993							
05...	--	--	--	--	--	--	--
12...	0.92	2	2.1	1.3	6.8	0.94	31
19...	--	--	--	--	--	--	--
26...	0.88	2	2.1	1.3	7.0	1.0	12
FEB							
02...	--	--	--	--	--	--	--
09...	0.91	3	1.9	1.3	7.1	1.1	7
18...	--	--	--	--	--	--	--
23...	0.91	3	2.0	1.2	6.5	0.48	21
MAR							
02...	--	--	--	--	--	--	--
08...	1.0	<1	3.0	1.2	6.1	0.69	37
16...	--	--	--	--	--	--	--
23...	0.95	2	3.0	1.3	5.5	1.1	31
24...	1.1	<1	4.0	1.1	5.0	1.1	56
30...	--	--	--	--	--	--	--
APR							
06...	0.92	2	2.1	1.3	6.0	0.95	15
13...	--	--	--	--	--	--	--
20...	0.98	2	2.1	1.3	5.7	0.85	14
27...	--	--	--	--	--	--	--
MAY							
04...	0.83	3	1.7	1.3	5.9	0.88	12
11...	--	--	--	--	--	--	--
18...	0.72	3	1.6	1.2	6.5	0.56	14
25...	--	--	--	--	--	--	--
JUN							
01...	0.72	3	1.6	1.3	7.0	0.57	17
08...	--	--	--	--	--	--	--
15...	0.61	3	1.5	1.2	7.3	0.39	15
22...	--	--	--	--	--	--	--
29...	0.60	2	1.5	1.2	7.2	0.58	22
JUL							
06...	--	--	--	--	--	--	--
13...	0.66	3	1.4	1.2	8.0	0.66	22
21...	--	--	--	--	--	--	--
27...	0.57	2	1.5	1.1	7.6	0.48	24

POTOMAC RIVER BASIN

01641510 FISHING CREEK TRIBUTARY NEAR LEWISTOWN, MD--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
AUG 1993								
03...	0810	0.13	16	6.2	19.0	--	--	--
10...	0835	0.17	16	6.3	18.0	0.450	0.470	1.0
17...	0910	0.13	16	6.5	19.0	--	--	--
24...	0900	0.11	16	6.0	18.5	0.56	0.490	1.0
31...	0945	0.11	15	6.9	20.0	--	--	--
SEP								
07...	1240	0.11	16	5.7	20.0	0.56	0.470	0.93
14...	1221	0.11	16	6.1	17.5	--	--	--
15...	1010	0.10	15	6.0	18.0	0.56	0.460	1.0
21...	1430	0.12	16	5.8	15.0	0.55	0.470	0.96
28...	0805	0.13	17	5.7	14.0	--	--	--

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
AUG 1993							
03...	--	--	--	--	--	--	--
10...	0.68	3	1.6	1.2	7.8	0.120	22
17...	--	--	--	--	--	--	--
24...	0.61	3	1.4	1.3	8.2	0.24	26
31...	--	--	--	--	--	--	--
SEP							
07...	0.67	3	1.4	1.2	8.0	0.060	33
14...	--	--	--	--	--	--	--
15...	0.63	3	1.4	1.3	8.1	0.25	24
21...	0.66	3	1.6	1.2	7.7	0.040	25
28...	--	--	--	--	--	--	--

01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD

LOCATION.--Lat 39°24'13", long 77°21'58", Frederick County, Hydrologic Unit 02070009, on right bank 500 ft downstream from Interstate 70 highway bridge, 0.4 mi downstream from Linganore Creek, 2.0 mi east of Frederick, and 16.9 mi upstream from mouth.

DRAINAGE AREA.--817 mi².

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for October, November 1929, published in WSP 1302.

REVISED RECORDS.--WSP 711: 1930.

GAGE.--Water-stage recorder. Nonrecording gage at site 0.2 mile downstream. Datum of gage is 231.92 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Occasional regulation at low and medium flows since September 1972 by Linganore Reservoir, total capacity, 883,200,000 gal, 2.8 mi upstream from station. National Weather Service gage-height telemeter at station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 reached a stage of 30 ft, from floodmarks, discharge, 56,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	2400	16,100	15.21	Apr. 1	2400	13,500	13.80
Dec. 12	0730	19,900	16.99	Apr. 11	0830	11,900	12.86
Mar. 5	1130	*23,200	*18.41	Apr. 17	0900	16,300	15.32
Mar. 24	1830	21,500	17.68	Apr. 22	1900	15,500	14.89
Mar. 28	1530	13,300	13.67				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	293	219	861	1400	732	625	9530	1540	2080	321	170	133
2	261	262	799	1110	633	712	12200	1420	874	347	168	131
3	240	5340	724	960	564	1070	5690	1310	591	570	159	126
4	226	3000	649	925	643	7860	3550	1230	535	604	154	1090
5	208	1260	634	1760	589	21100	2860	1440	529	428	154	1060
6	195	982	608	2210	581	8470	2470	2070	512	372	215	371
7	187	805	558	1390	543	5730	2140	1400	473	585	314	240
8	184	664	532	1250	489	5560	1900	1150	534	483	323	192
9	283	578	500	1370	509	5290	1730	1050	1490	313	267	1050
10	2090	522	563	1250	516	4340	2920	988	998	273	212	1060
11	1040	485	10700	1080	491	3030	8810	934	609	252	188	651
12	556	473	17700	1280	545	2350	3510	911	517	251	769	342
13	434	1440	4800	2990	853	2250	2630	1070	467	231	606	240
14	363	1360	2760	2920	1130	1630	2170	1030	437	220	330	201
15	317	758	2160	1810	986	1900	1950	871	411	219	251	205
16	291	630	1820	1520	1000	1960	4430	808	412	202	208	632
17	263	568	2590	1370	1300	3270	13300	787	391	189	191	677
18	241	539	3810	1220	1330	7270	4260	758	368	187	293	544
19	233	512	2180	1050	892	4030	2930	823	351	198	263	453
20	227	502	1970	908	766	2860	2410	836	452	350	264	374
21	221	503	2050	859	827	4000	2330	748	678	347	229	305
22	218	774	1610	1590	818	6790	11700	676	975	229	201	289
23	215	10900	1490	1920	1170	7740	9300	635	558	203	176	350
24	212	6830	1430	1320	1080	18500	3520	617	411	186	164	303
25	214	2410	1190	1360	777	13200	2790	604	354	186	160	262
26	211	2010	1050	1110	742	6010	2460	597	333	191	150	382
27	205	1630	894	933	724	5210	2940	583	330	181	144	948
28	203	1300	919	882	644	11400	2080	568	326	172	137	955
29	199	1100	1100	843	---	7720	1820	579	323	186	134	684
30	198	959	1350	757	---	5580	1670	543	323	201	133	430
31	215	---	1680	728	---	3920	---	523	---	181	131	---
TOTAL	10443	49315	71681	42075	21874	181377	132000	29099	17642	8858	7258	14680
MEAN	337	1644	2312	1357	781	5851	4400	939	588	286	234	489
MAX	2090	10900	17700	2990	1330	21100	13300	2070	2080	604	769	1090
MIN	184	219	500	728	489	625	1670	523	323	172	131	126
CFSM	.41	2.01	2.83	1.66	.96	7.16	5.39	1.15	.72	.35	.29	.60
IN.	.48	2.25	3.26	1.92	1.00	8.26	6.01	1.32	.80	.40	.33	.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1993, BY WATER YEAR (WY)

MEAN	510	697	1005	1159	1452	1777	1552	1029	706	446	409	479
MAX	3943	2504	3007	3664	4062	5851	4533	3773	6826	2571	3233	5165
(WY)	1977	1933	1973	1979	1984	1993	1983	1989	1972	1949	1933	1975
MIN	46.8	65.1	108	123	175	589	453	296	158	64.5	36.4	59.9
(WY)	1931	1931	1966	1981	1931	1981	1947	1963	1966	1966	1966	1963

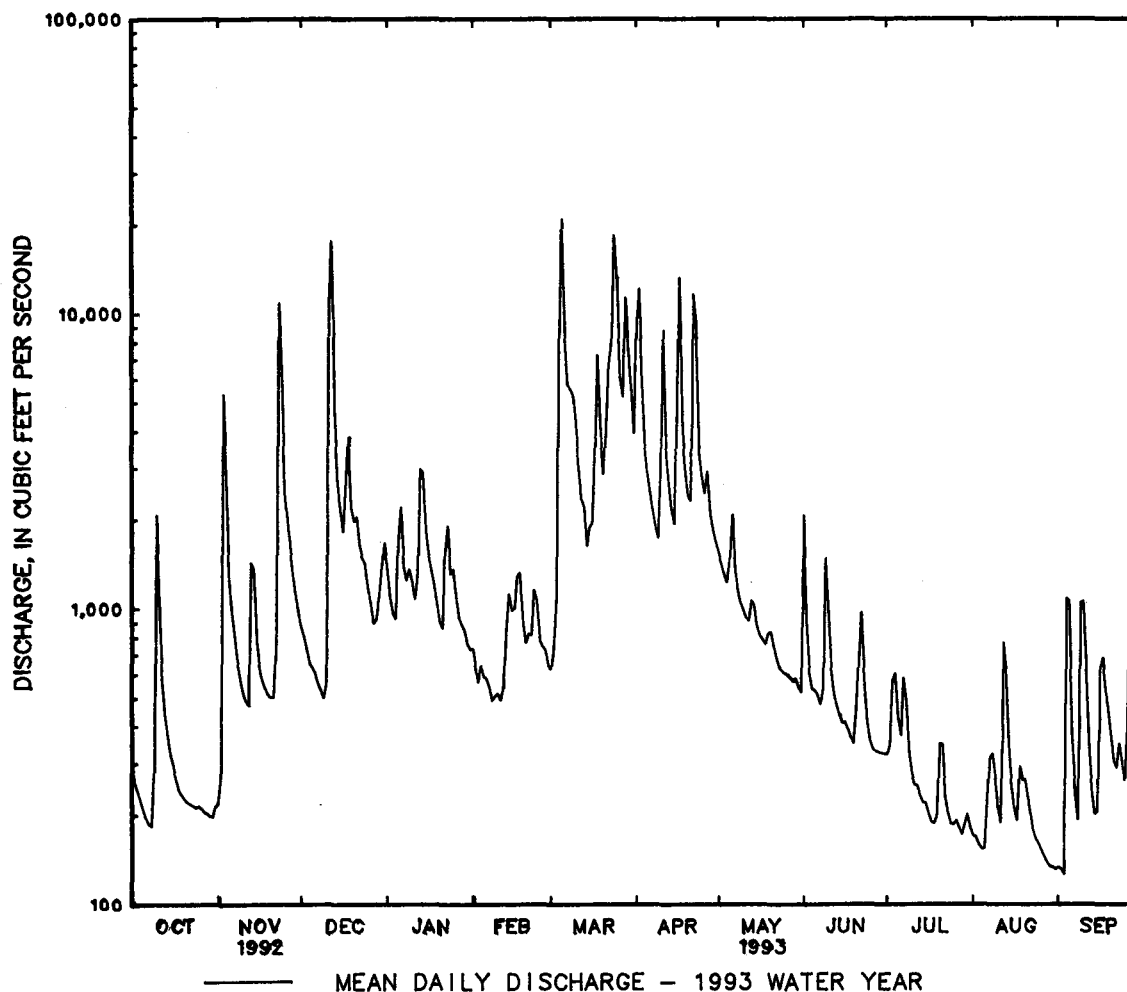
01643000 MONOCACY RIVER AT JUG BRIDGE NEAR FREDERICK, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1930 - 1993	
ANNUAL TOTAL	351428		586302		932	
ANNUAL MEAN	960		1606		1834	
HIGHEST ANNUAL MEAN					345	
LOWEST ANNUAL MEAN					1972	
HIGHEST DAILY MEAN	17700	Dec 12	21100	Mar 5	74000	Jun 23 1972
LOWEST DAILY MEAN	134	Sep 2	126	Sep 3	19	(a)
ANNUAL SEVEN-DAY MINIMUM	144	Aug 30	132	Aug 28	19	Sep 7 1966
INSTANTANEOUS PEAK FLOW	19900	Dec 12	23200	Mar 5	81600	Jun 23 1972
INSTANTANEOUS PEAK STAGE	16.99	Dec 12	18.41	Mar 5	(b)35.90	Jun 23 1972
INSTANTANEOUS LOW FLOW	131	Sep 2	124	Sep 3	17	(c)
ANNUAL RUNOFF (CFSM)	1.18		1.97		1.14	
ANNUAL RUNOFF (INCHES)	16.00		26.70		15.50	
10 PERCENT EXCEEDS	1820		3650		1960	
50 PERCENT EXCEEDS	540		712		470	
90 PERCENT EXCEEDS	214		201		122	

a Sept. 7-13, 1966.

b From floodmark.

c Sept. 11 and 13, 1966.



01643020 MONOCACY RIVER AT REICH'S FORD BRIDGE NEAR FREDERICK, MD

LOCATION.--Lat 39°23'16", long 77°22'40", Frederick County, Hydrologic Unit 02070009, at Reich's Ford Bridge, 1.1 mi downstream from U.S. Highway 40, 1.2 mi downstream from gaging station, 2 mi southeast of Frederick, and 15.0 mi upstream from mouth.

PERIOD OF RECORD.--Water years 1961 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to March 1993 (Discontinued).

SUSPENDED-SEDIMENT DISCHARGE: October 1960 to March 1993 (Discontinued).

REMARKS.--Water temperatures are measured daily in field by local observer at time of sampling. Water-discharge records for Monocacy River at Jug bridge near Frederick (station 01643000) are used for computation of sediment loads. Prior to 1970, published as Monocacy River at Jug Bridge near Frederick (station 01643000).

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1961-72, 1975, 1977, 1980-87, 1989): Maximum daily, 32.0°C, July 21, 1980; minimum daily, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION (water years 1961-1992): Maximum daily mean, 2,000 mg/L, July 10, 1970; minimum daily mean, 1 mg/L on many days in water years 1961-67, 1970, 1972, 1982, 1985, 1989.

SEDIMENT LOAD (water years 1961-1992): Maximum daily, 134,000 tons, June 22, 1972; minimum daily, 0.25 ton, Oct. 14, 1988.

EXTREMES FOR CURRENT PERIOD.--

SEDIMENT CONCENTRATION: Maximum daily mean, 504 mg/L, Nov. 23; minimum daily mean, 1 mg/L, Oct. 21-23, Feb. 7-11.

SEDIMENT LOAD: Maximum daily, 16,500 tons, Nov. 23; minimum daily, 0.58 ton, Oct. 23.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TEMPERATURE AIR (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS TOTAL (MG/L AS CaCO3)	CALCIUM DISSOLVED (MG/L AS Ca)	MAGNESIUM, DISSOLVED (MG/L AS Mg)
APR 1993												
21...	1300	2120	209	7.7	15.5	20.0	751	9.6	98	79	23	5.2
MAY												
05...	1100	1310	260	8.1	18.0	19.0	756	10.2	109	97	29	5.9
JUN												
09...	1100	1790	283	8.0	21.0	30.0	753	7.7	88	110	34	6.2
JUL												
08...	1000	483	--	7.3	27.0	34.0	756	5.3	--	110	33	5.7
AUG												
12...	1030	469	280	7.9	24.0	27.0	756	7.4	89	110	33	6.5
SEP												
02...	0915	134	420	7.4	25.5	27.0	759	6.7	82	160	49	8.5

DATE	SODIUM, DISSOLVED (MG/L AS Na)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY, WATER TOTAL FIELD (MG/L AS CaCO3)	BICARBONATE, WATER TOTAL FIELD (MG/L AS HCO3)	SULFATE, DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS Cl)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)
APR 1993											
21...	6.9	2.0	49	60	16	12	<0.10	6.1	117	12	0.010
MAY											
05...	7.8	2.1	68	83	15	15	0.10	4.2	163	12	0.020
JUN											
09...	7.9	3.6	80	98	19	17	0.10	6.4	188	14	0.040
JUL											
08...	8.3	6.3	75	92	17	18	0.20	6.0	171	18	0.070
AUG											
12...	12	3.7	77	94	18	19	0.10	5.6	173	11	0.020
SEP											
02...	19	4.9	107	131	22	31	0.20	6.0	247	27	0.020

POTOMAC RIVER BASIN

01643020 MONOCACY RIVER AT REICH'S FORD BRIDGE NEAR FREDERICK. MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
APR 1993											
21...	2.70	0.030	0.40	0.30	0.070	0.050	0.040	30	13	2.3	0.5
MAY											
05...	2.80	0.020	0.30	0.40	0.060	0.040	0.030	17	11	2.3	0.8
JUN											
09...	3.30	0.120	1.0	0.40	0.360	0.090	0.100	18	4	3.1	3.6
JUL											
08...	4.10	0.100	1.3	0.50	0.420	0.220	0.200	49	3	5.0	>3.1
AUG											
12...	2.60	0.050	0.40	0.30	0.280	0.160	0.110	16	19	3.5	1.2
SEP											
02...	6.10	0.060	0.30	0.40	0.520	0.430	0.430	<3	19	2.7	0.4

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 1992					
23...	0910	10100	761	20800	--
24...	0720	9900	174	4650	--
DEC					
11...	1240	13300	77	2770	--
12...	1040	19400	65	3400	--
MAR 1993					
04...	0830	2710	481	3520	93
05...	1745	21200	213	12200	100
06...	1230	7160	69	1330	89
22...	0830	7140	164	3160	90
23...	0800	8200	153	3390	91
APR					
21...	1300	2120	17	97	--
MAY					
05...	1100	1310	12	42	--
JUN					
09...	1100	1790	126	609	--
JUL					
08...	1000	483	152	198	--
AUG					
12...	1030	469	27	34	--
SEP					
02...	0915	134	15	5.4	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, OCTOBER 1992 TO MARCH 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM
NOV 1992								
23...	0910	10100	761	20800	41	53	68	83
24...	0720	9900	174	4550	65	79	88	90
DEC								
11...	1240	13300	77	2870	47	59	69	78
12...	1040	19400	65	3400	66	79	85	89

DATE	SED.	SED.	SED.	SED.	SED.	SED.	SED.
	SUSP.	SUSP.	SUSP.	SUSP.	SUSP.	SUSP.	SUSP.
	FALL	SIEVE	SIEVE	SIEVE	SIEVE	SIEVE	SIEVE
	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.	DIAM.
	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER	% FINER
	THAN	THAN	THAN	THAN	THAN	THAN	THAN
	.031 MM	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM
NOV 1992							
23...	93	--	--	--	--	--	--
24...	97	--	--	--	--	--	--
DEC							
11...	86	--	--	--	--	--	--
12...	96	--	--	--	--	--	--

01643020 MONOCACY RIVER AT REICH'S FORD BRIDGE NEAR FREDERICK, MD--Continued

WATER TEMPERATURE, DEGREES CELSIUS, OCTOBER 1992 TO MARCH 1993

DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	10.0	---	7.0	5.0	7.0	---	---	---	---	---	---
2	10.0	---	---	6.0	---	7.0	---	---	---	---	---	---
3	---	15.0	---	8.0	---	6.0	---	---	---	---	---	---
4	---	13.0	---	10.0	7.0	---	---	---	---	---	---	---
5	18.0	14.0	---	11.0	6.0	---	---	---	---	---	---	---
6	---	12.0	---	10.0	---	---	---	---	---	---	---	---
7	---	10.0	---	8.0	7.0	---	---	---	---	---	---	---
8	19.0	---	7.0	8.0	5.0	---	---	---	---	---	---	---
9	20.0	10.0	4.0	8.0	---	9.0	---	---	---	---	---	---
10	---	---	5.0	---	---	6.0	---	---	---	---	---	---
11	12.0	10.0	7.0	7.0	---	---	---	---	---	---	---	---
12	20.0	---	---	5.0	---	5.0	---	---	---	---	---	---
13	---	---	10.0	5.0	---	---	---	---	---	---	---	---
14	17.0	9.0	7.0	5.0	4.0	---	---	---	---	---	---	---
15	17.0	8.0	---	7.0	8.0	---	---	---	---	---	---	---
16	16.0	5.0	8.0	7.0	---	---	---	---	---	---	---	---
17	---	9.0	7.0	8.0	---	---	---	---	---	---	---	---
18	15.0	10.0	5.0	9.0	---	---	---	---	---	---	---	---
19	8.0	---	---	7.0	---	---	---	---	---	---	---	---
20	11.0	7.0	---	3.0	---	5.0	---	---	---	---	---	---
21	12.0	10.0	---	9.0	---	7.0	---	---	---	---	---	---
22	---	---	---	7.0	---	---	---	---	---	---	---	---
23	10.0	5.0	---	---	---	---	---	---	---	---	---	---
24	17.0	13.0	---	8.0	---	---	---	---	---	---	---	---
25	---	15.0	---	---	---	---	---	---	---	---	---	---
26	---	14.0	---	---	4.0	---	---	---	---	---	---	---
27	15.0	---	---	7.0	---	---	---	---	---	---	---	---
28	---	---	5.0	5.0	---	---	---	---	---	---	---	---
29	17.0	14.0	4.0	---	---	---	---	---	---	---	---	---
30	15.0	17.0	7.0	7.0	---	---	---	---	---	---	---	---
31	17.0	---	8.0	5.0	---	---	---	---	---	---	---	---

SUSPENDED-SEDIMENT, OCTOBER 1992 TO MARCH 1993

DAY	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)	MEAN CONCEN- TRATION (MG/L)	LOAD (TONS/ DAY)
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	20	16	3	1.8	e6	14	6	23	3	5.9	3	5.1
2	10	7.0	5	3.5	e6	13	5	15	3	5.1	5	9.6
3	10	6.5	194	3390	e4	7.8	3	7.8	3	4.6	e10	29
4	10	6.1	83	734	e4	7.0	5	12	4	6.9	e80	1700
5	10	5.6	35	119	e4	6.8	104	575	12	19	e100	5700
6	8	4.2	15	40	e4	6.6	82	489	7	11	e80	1830
7	4	2.0	7	15	e6	9.0	16	60	2	2.9	e65	1010
8	2	.99	9	16	22	32	12	40	1	1.3	57	856
9	6	4.6	12	19	13	18	8	30	e1	1.4	53	757
10	85	544	8	11	7	11	10	34	e1	1.4	23	270
11	25	70	3	3.9	65	2040	15	44	e1	1.3	19	155
12	25	38	3	3.8	65	3110	10	35	e2	2.9	16	102
13	23	27	68	264	46	627	33	266	e3	6.9	e14	85
14	15	15	37	136	27	201	30	237	4	12	e12	53
15	22	19	15	31	23	134	27	132	5	13	e10	51
16	12	9.4	25	43	19	93	13	53	e5	13	e10	53
17	17	12	7	11	28	196	3	11	e8	28	e30	265
18	25	16	3	4.4	51	525	4	13	e10	36	e50	981
19	27	17	10	14	e20	118	15	43	e8	19	e30	326
20	8	4.9	14	19	e18	96	12	29	e6	12	23	178
21	1	.60	10	14	e16	89	12	28	e4	8.9	30	324
22	1	.59	30	63	e14	61	19	82	e5	11	80	1470
23	1	.58	504	16500	e12	48	13	67	e8	25	---	---
24	6	3.4	157	3460	e10	39	9	32	e10	29	---	---
25	6	3.5	42	273	e8	26	9	33	e6	13	---	---
26	4	2.3	25	136	e6	17	8	24	e4	8.0	---	---
27	3	1.7	20	88	e4	9.7	7	18	e4	7.8	---	---
28	10	5.5	15	53	4	9.9	3	7.1	e3	5.2	---	---
29	18	9.7	6	18	7	21	3	6.8	---	---	---	---
30	21	11	6	16	17	62	2	4.1	---	---	---	---
31	3	1.7	---	---	14	64	4	7.9	---	---	---	---
TOTAL	---	865.86	---	25500.4	---	7711.8	---	2458.7	---	311.5	---	---

POTOMAC RIVER BASIN

01643495 BENNETT CREEK TRIBUTARY AT PARK MILLS, MD

LOCATION.--Lat 39°17'21", long 77°23'46", Frederick County, Hydrologic Unit 02070009, on right bank 100 ft downstream from culvert under Stewart Hill Road, 0.9 mi southeast of Park Mills, 0.8 mi upstream from mouth, and 3.4 mi southwest of Urbana.

DRAINAGE AREA.--0.15 mi².

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

GAGE.--Water-stage recorder. Broadcrested weir since Aug. 18, 1993. Elevation of gage is 395 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges and those below 0.1 ft³/s, which are poor. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 5.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 26, 1992	2115	*9.2	*1.38	May 8, 1992	1900	6.5	1.36
Dec. 10, 1992	2400	10	1.53	Apr. 16, 1993	1030	9.0	1.52
Mar. 4, 1993	1700	*13	*1.56	Apr. 16, 1993	2215	6.5	1.48
Mar. 24, 1993	0200	5.9	1.47	Apr. 21, 1993	1915	6.5	1.48
Mar. 28, 1993	0615	8.4	1.51	May 31, 1993	2015	5.4	1.46

DISCHARGE, IN CUBIC FEET PER SECOND, MARCH 1992 TO SEPTEMBER 1992
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.07	.06	.12	.02	.04	.00
2	---	---	---	---	---	---	.06	.05	.08	.02	.02	.01
3	---	---	---	---	---	---	.05	.05	.07	.02	.03	.02
4	---	---	---	---	---	---	.05	.05	.07	.02	.03	.01
5	---	---	---	---	---	---	.05	.06	.12	.03	.01	.01
6	---	---	---	---	---	---	.05	.07	.07	.03	.01	.13
7	---	---	---	---	---	---	.05	.05	.06	.02	.01	.02
8	---	---	---	---	---	---	.05	.41	.05	.02	.01	.03
9	---	---	---	---	---	---	.04	.18	.05	.02	.02	.02
10	---	---	---	---	---	---	.04	.14	.04	.01	.01	.13
11	---	---	---	---	---	---	.05	.12	.04	.01	.03	.04
12	---	---	---	---	---	---	.05	.11	.03	.01	.01	.01
13	---	---	---	---	---	---	.05	.10	.03	.01	.01	.01
14	---	---	---	---	---	---	.04	.09	.03	.01	.01	.01
15	---	---	---	---	---	---	.04	.10	.03	.02	.02	.01
16	---	---	---	---	---	---	.05	.10	.02	.01	.02	.01
17	---	---	---	---	---	---	.05	.09	.02	.01	.02	.01
18	---	---	---	---	---	---	.04	.13	.03	.01	.02	.01
19	---	---	---	---	---	.11	.06	.11	.03	.01	.01	.01
20	---	---	---	---	---	.06	.04	.08	.03	.01	.01	.01
21	---	---	---	---	---	.05	.54	.07	.02	.01	.01	.01
22	---	---	---	---	---	.06	.87	.07	.02	.02	.01	.06
23	---	---	---	---	---	.07	.20	.06	.02	.06	.01	.01
24	---	---	---	---	---	.07	.13	.05	.02	.10	.01	.01
25	---	---	---	---	---	.06	.11	.05	.03	.19	.01	.06
26	---	---	---	---	---	1.4	.09	.11	.02	.03	.01	.12
27	---	---	---	---	---	.58	.09	.06	.02	.05	.01	.04
28	---	---	---	---	---	.15	.08	.04	.02	.02	.01	.02
29	---	---	---	---	---	.13	.07	.04	.02	.01	.01	.01
30	---	---	---	---	---	.11	.07	.24	.02	.01	.01	.01
31	---	---	---	---	---	.11	---	.53	---	.30	.01	---
TOTAL	---	---	---	---	---	---	3.23	3.47	1.23	1.12	0.46	0.86
MEAN	---	---	---	---	---	---	.11	.11	.041	.036	.015	.029
MAX	---	---	---	---	---	---	.87	.53	.12	.30	.04	.13
MIN	---	---	---	---	---	---	.04	.04	.02	.01	.01	.00
CFSM	---	---	---	---	---	---	.72	.75	.27	.24	.10	.19
IN.	---	---	---	---	---	---	.80	.86	.31	.28	.11	.21

POTOMAC RIVER BASIN

307

01643495 BENNETT CREEK TRIBUTARY AT PARK MILLS, MD--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.03	.06	.17	.13	.91	.48	.25	.07	.02	.02
2	.01	.22	.03	.06	.16	.17	.80	.45	.18	.15	.01	.02
3	.01	.58	.03	.06	.15	.25	.67	.45	.16	.12	.01	.02
4	.01	.08	.03	.06	.13	5.7	.66	.45	.16	.07	.01	.02
5	.01	.08	.04	.22	.13	1.9	.59	.45	.18	.05	.01	.02
6	.01	.08	.04	.13	.13	.86	.59	.39	.11	.05	.14	.03
7	.01	.06	.04	.09	.13	.68	.59	.31	.10	.05	.09	.05
8	.01	.05	.04	.11	.13	.62	.49	.28	.28	.04	.06	.05
9	.28	.03	.03	.12	.13	.59	.45	.25	.13	.03	.02	.05
10	.06	.03	.85	.10	.11	.59	1.2	.24	.09	.03	.02	.05
11	.02	.04	3.3	.10	.11	.48	.71	.22	.14	.03	.07	.05
12	.02	.09	.54	.17	.17	.39	.57	.34	.09	.03	.07	.04
13	.01	.18	.27	.19	.21	.58	.50	.30	.07	.03	.03	.02
14	.01	.06	.19	.13	.15	.42	.45	.27	.06	.12	.02	.02
15	.01	.05	.17	.13	.14	.39	.45	.24	.05	.09	.02	.18
16	.01	.04	.15	.13	.25	.35	2.2	.23	.04	.03	.02	.03
17	.01	.03	.19	.13	.24	1.0	1.3	.22	.03	.03	.02	.11
18	.01	.03	.09	.13	.17	.80	.77	.22	.03	.02	.02	.02
19	.01	.03	.07	.13	.15	.70	.77	.23	.10	.09	.02	.02
20	.01	.03	.09	.13	.14	.60	.68	.19	.16	.07	.02	.02
21	.01	.03	.07	.16	.15	1.5	1.3	.16	.12	.03	.02	.02
22	.01	.09	.06	.24	.18	1.3	1.6	.15	.06	.02	.02	.02
23	.01	.15	.07	.18	.16	1.6	.94	.14	.05	.02	.02	.02
24	.02	.06	.07	.16	.14	2.9	.77	.13	.05	.02	.02	.02
25	.02	.05	.08	.14	.13	1.1	.76	.13	.05	.02	.02	.02
26	.02	.04	.07	.14	.13	.80	.68	.13	.08	.02	.02	.02
27	.02	.03	.06	.14	.13	1.1	.67	.11	.08	.02	.02	.06
28	.02	.03	.10	.13	.13	2.5	.59	.08	.07	.01	.01	.02
29	.02	.03	.14	.12	---	1.0	.54	.09	.07	.02	.01	.02
30	.02	.03	.07	.14	---	.87	.51	.10	.06	.01	.01	.02
31	.05	---	.06	.16	---	.69	---	.36	---	.02	.02	---
TOTAL	0.76	2.36	7.07	4.09	4.25	32.56	23.71	7.79	3.10	1.41	0.89	1.08
MEAN	.025	.079	.23	.13	.15	1.05	.79	.25	.10	.045	.029	.036
MAX	.28	.58	3.3	.24	.25	5.7	2.2	.48	.28	.15	.14	.18
MIN	.01	.03	.03	.06	.11	.13	.45	.08	.03	.01	.01	.02
CFSM	.16	.52	1.52	.88	1.01	7.00	5.27	1.68	.69	.30	.19	.24
IN.	.19	.59	1.75	1.01	1.05	8.07	5.88	1.93	.77	.35	.22	.27

• Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	.025	.079	.23	.13	.15	1.05	.45	.18	.072	.041	.022	.032
MAX	.025	.079	.23	.13	.15	1.05	.79	.25	.10	.045	.029	.036
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	.025	.079	.23	.13	.15	1.05	.11	.11	.041	.036	.015	.029
(WY)	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992	1992	1992

POTOMAC RIVER BASIN

01643495 BENNETT CREEK TRIBUTARY AT PARK MILLS, MD--Continued

SUMMARY STATISTICS

FOR 1993 WATER YEAR

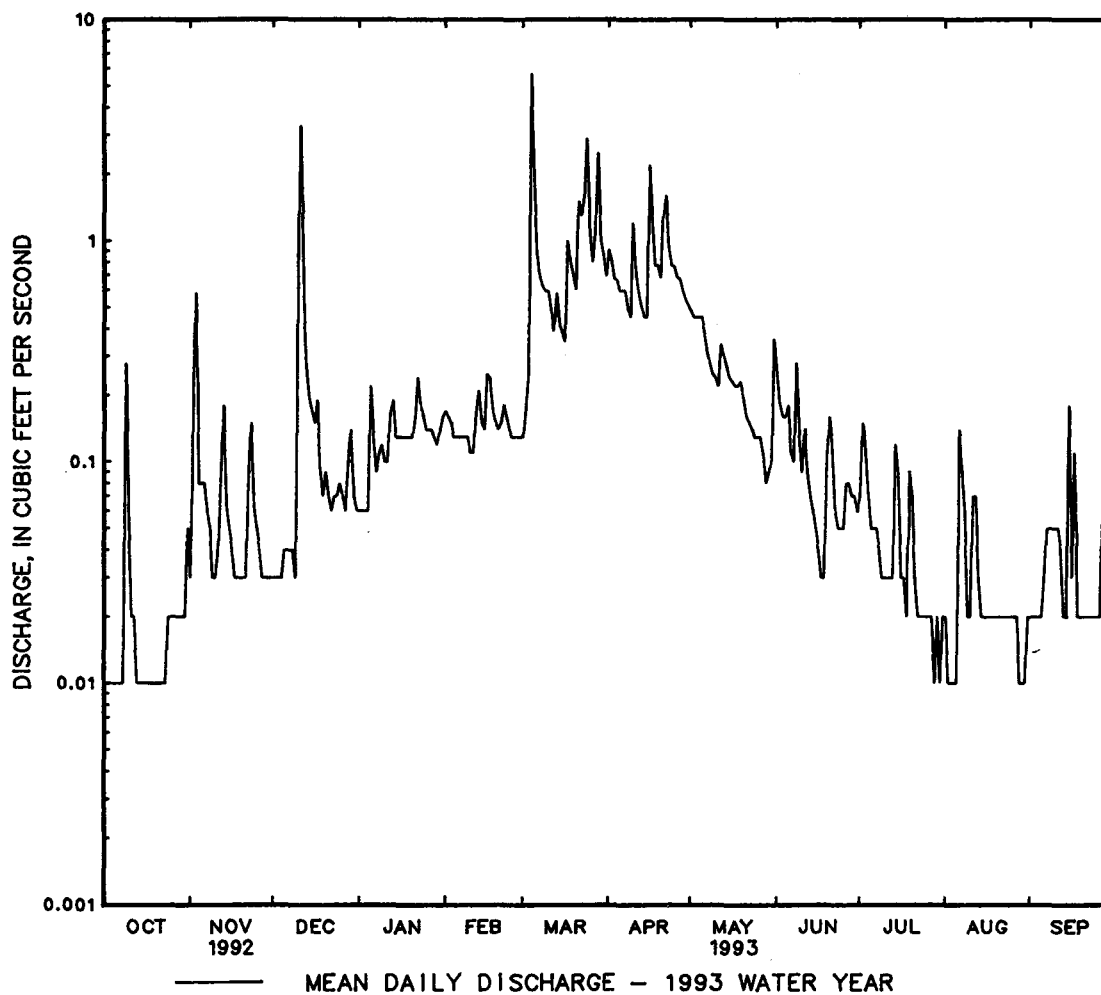
WATER YEARS 1992 - 1993

ANNUAL TOTAL	89.07		
ANNUAL MEAN	.24		.24
HIGHEST ANNUAL MEAN			.24
LOWEST ANNUAL MEAN			.24
HIGHEST DAILY MEAN	5.7	Mar 4	5.7
LOWEST DAILY MEAN	.01	(a)	.00
ANNUAL SEVEN-DAY MINIMUM	.01	Oct 1	.01
INSTANTANEOUS PEAK FLOW	13	Mar 4	13
INSTANTANEOUS PEAK STAGE	1.56	Mar 4	1.56
INSTANTANEOUS LOW FLOW	.00	(b)	.00
ANNUAL RUNOFF (CFSM)	1.63		1.63
ANNUAL RUNOFF (INCHES)	22.09		22.10
10 PERCENT EXCEEDS	.67		.53
50 PERCENT EXCEEDS	.09		.06
90 PERCENT EXCEEDS	.02		.01

a Oct. 1-8, 13-23, July 28, 30, Aug. 2-5, 28-30.

b Aug. 28-31, Sept. 25, 28.

c Sept. 1, 1992, Aug. 28-31, Sept. 25, 28, 1993.



WATER-QUALITY RECORDS

WATER QUALITY DATA, JUNE 1992 TO SEPTEMBER 1992

[illegible]

POTOMAC RIVER BASIN

01643495 BENNETT CREEK TRIBUTARY AT PARK MILLS, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 1992									
01...	0710	0.01	73	7.1	11.0	--	--	--	--
08...	1130	0.01	68	6.6	11.5	--	--	--	--
15...	1000	0.01	77	7.0	13.0	31	9.1	2.0	2.5
22...	0930	0.01	74	6.8	8.5	--	--	--	--
30...	0900	0.02	75	6.9	11.0	--	--	--	--
NOV									
12...	1035	0.05	70	6.6	--	24	6.4	1.9	2.2
19...	0850	0.03	65	6.9	8.0	--	--	--	--
25...	0930	0.04	66	6.9	10.5	--	--	--	--
DEC									
03...	1400	0.03	64	7.0	6.5	--	--	--	--
11...	1415	2.9	46	6.1	5.0	16	3.4	1.9	0.91
16...	1045	0.14	48	6.9	6.5	18	4.3	1.8	1.3
23...	0935	0.08	44	6.8	6.5	--	--	--	--
29...	1000	0.17	45	6.6	4.0	--	--	--	--
JAN 1993									
07...	0915	0.09	46	7.0	6.5	--	--	--	--
15...	0910	0.13	43	7.0	5.0	15	3.3	1.6	1.5
21...	1130	0.13	37	6.5	4.0	--	--	--	--
28...	0945	0.14	36	6.6	3.5	--	--	--	--
FEB									
05...	1635	0.14	37	6.7	5.0	--	--	--	--
10...	0810	0.13	36	6.9	1.5	12	2.5	1.3	1.5
17...	1300	0.22	43	6.9	4.0	--	--	--	--
25...	0830	0.14	40	6.2	0.0	--	--	--	--
MAR									
04...	0940	4.9	61	8.5	2.0	--	--	--	--
11...	1015	0.51	33	6.5	4.5	--	--	--	--
19...	1100	--	34	6.9	2.0	--	--	--	--
25...	0945	1.1	38	6.3	6.0	13	2.0	1.8	0.98
APR									
01...	1015	0.77	34	6.4	9.0	11	1.9	1.4	1.0
02...	1015	0.67	34	6.4	9.0	11	2.0	1.5	1.1
03...	1015	0.67	34	6.4	9.0	11	2.0	1.4	1.0
08...	0800	0.59	30	6.4	7.5	--	--	--	--
15...	0730	0.45	31	6.2	10.0	9	1.7	1.3	1.2
22...	0800	2.2	34	6.3	10.0	--	--	--	--
29...	0835	0.59	31	6.4	10.5	--	--	--	--
MAY									
06...	0800	0.45	33	6.4	13.0	--	--	--	--
13...	0800	0.29	38	6.7	16.0	14	2.9	1.5	1.3
20...	1355	0.17	36	6.9	13.0	--	--	--	--
27...	0635	0.14	37	6.3	14.0	--	--	--	--
JUN									
03...	0720	0.18	39	6.8	15.0	--	--	--	--
09...	1445	0.13	44	6.5	16.0	--	--	--	--
16...	0900	--	42	6.9	18.0	15	3.5	1.5	1.5
24...	0730	EO.05	47	6.8	17.0	--	--	--	--
JUL									
01...	0750	0.06	49	6.6	18.0	--	--	--	--
08...	0925	0.05	50	6.8	23.0	--	--	--	--
15...	1045	0.09	62	7.0	23.0	24	6.3	1.9	1.8
22...	1045	0.02	56	6.9	20.0	--	--	--	--
29...	1130	0.02	61	6.8	25.0	--	--	--	--
AUG									
05...	1045	0.02	62	6.8	22.0	--	--	--	--
12...	0915	0.05	62	6.5	20.0	25	6.9	2.0	1.9
17...	0845	0.02	67	6.7	22.0	--	--	--	--
SEP									
01...	1130	0.02	90	7.1	24.0	--	--	--	--
09...	0845	0.05	79	7.2	20.0	--	--	--	--
15...	1330	0.02	96	7.1	22.0	39	12	2.5	3.1
22...	0900	0.02	68	7.0	19.0	--	--	--	--
29...	1115	0.02	86	6.7	17.0	--	--	--	--

01643495 BENNETT CREEK TRIBUTARY AT PARK MILLS, MD--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER WH IT LAB MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 1992								
01...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
15...	0.40	42	3.0	1.2	14	--	--	33
22...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
NOV								
12...	0.71	30	5.4	1.6	13	--	--	--
19...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
DEC								
03...	--	--	--	--	--	--	--	--
11...	1.2	5	11	1.8	4.7	0.50	210	75
16...	0.68	13	7.4	1.3	8.4	--	60	69
23...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
JAN 1993								
07...	--	--	--	--	--	--	--	--
15...	0.43	12	6.1	1.6	9.1	0.09	30	52
21...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
FEB								
05...	--	--	--	--	--	--	--	--
10...	0.34	11	4.4	1.5	9.1	0.29	20	41
17...	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--
MAR								
04...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
25...	0.62	4	9.1	1.5	6.0	0.35	70	--
APR								
01...	0.58	5	7.2	1.5	6.5	0.23	70	35
02...	0.60	5	6.8	1.4	6.7	0.29	70	37
03...	0.59	5	7.1	1.5	6.6	0.28	70	35
08...	--	--	--	--	--	--	--	--
15...	0.47	6	5.0	1.5	7.4	0.25	--	--
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
MAY								
06...	--	--	--	--	--	--	--	--
13...	0.39	12	4.7	1.6	8.5	0.11	--	--
20...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
JUN								
03...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
16...	0.26	17	3.0	1.5	11	0.10	--	--
24...	--	--	--	--	--	--	--	--
JUL								
01...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
15...	0.46	29	3.5	1.8	12	0.29	--	--
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
AUG								
05...	--	--	--	--	--	--	--	--
12...	0.40	28	3.7	1.6	12	0.08	--	--
17...	--	--	--	--	--	--	--	--
SEP								
01...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
15...	0.49	53	1.6	1.3	17	0.16	--	--
22...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--

POTOMAC RIVER BASIN

01643500 BENNETT CREEK AT PARK MILLS, MD

LOCATION.--Lat 39°17'40", long 77°24'30", Frederick County, Hydrologic Unit 02070009, on left bank 75 ft downstream from highway bridge, 0.2 mi south of Park Mills, 1.8 mi upstream from mouth, and 3.7 mi southwest of Urbana.

DRAINAGE AREA.--62.8 mi².

PERIOD OF RECORD.--July 1948 to September 1958. Annual maximum, water years 1960-66. August 1966 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 240 ft above sea level, from topographic maps.

REMARKS.--Records good except those for estimated daily discharges (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 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 3	0500	1,350	5.39	Mar. 24	0203	1,340	5.20
Dec. 11	UNKNOWN	*UNKNOWN	*UNKNOWN	Apr. 10	2000	1,450	5.41
Mar. 4	0938	2,080	6.46	Apr. 16	1615	2,260	6.74
Mar. 17	1857	1,370	5.25	Apr. 17	0215	1,350	5.23

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	24	42	e125	66	76	e320	133	106	30	16	11
2	19	33	40	e115	60	100	e400	124	58	38	15	12
3	18	499	36	e110	65	144	291	116	57	36	15	12
4	17	91	e34	e105	61	1210	243	112	54	32	50	18
5	17	66	e35	e150	60	484	214	123	60	28	19	14
6	16	63	e32	e110	59	300	193	113	53	27	47	12
7	16	50	e29	95	55	221	177	101	48	26	39	11
8	16	44	e27	100	58	189	164	96	86	25	36	17
9	156	39	e26	106	54	160	156	92	63	26	22	19
10	303	36	e300	95	55	144	469	88	50	23	20	14
11	57	36	e2000	89	55	138	342	84	52	21	20	11
12	44	38	e600	129	86	117	235	119	45	20	195	11
13	34	125	e300	167	96	204	194	118	43	20	30	10
14	30	60	e250	128	87	533	173	91	41	29	25	9.5
15	28	49	e230	112	84	246	161	82	39	46	22	19
16	26	43	e220	105	163	130	779	82	38	24	20	41
17	22	41	e380	101	141	617	620	84	36	21	23	55
18	23	39	e310	89	102	489	295	83	35	20	26	32
19	23	40	e260	82	96	250	233	95	37	27	21	21
20	21	36	e300	78	91	213	197	82	57	64	19	17
21	22	36	e230	83	90	476	262	74	62	23	21	20
22	22	42	e190	125	123	453	751	70	44	21	18	20
23	22	252	e160	93	101	520	372	67	36	19	17	18
24	22	86	e140	87	83	e1000	269	64	33	19	17	17
25	24	75	e125	80	78	e470	226	61	32	21	16	18
26	22	67	e115	75	77	e430	215	59	31	20	15	44
27	21	60	e110	75	74	e790	182	57	31	19	15	78
28	20	54	e120	73	72	e470	161	58	29	17	14	46
29	20	49	e130	71	---	e350	150	53	30	20	13	24
30	20	45	e140	67	---	e260	140	50	30	17	12	21
31	29	---	e145	69	---	e240	---	61	---	16	12	---
TOTAL	1150	2218	7056	3089	2292	11424	8584	2692	1416	795	850	672.5
MEAN	37.1	73.9	228	99.6	81.9	369	286	86.8	47.2	25.6	27.4	22.4
MAX	303	499	2000	167	163	1210	779	133	106	64	195	78
MIN	16	24	26	67	54	76	140	50	29	16	12	9.5
CFSM	.59	1.18	3.62	1.59	1.30	5.87	4.56	1.38	.75	.41	.44	.36
IN.	.68	1.31	4.18	1.83	1.36	6.77	5.08	1.59	.84	.47	.50	.40

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 1993, BY WATER YEAR (WY)

	38.1	45.7	75.8	83.6	98.5	113	107	87.4	66.3	42.6	34.5	38.9
MEAN	38.1	45.7	75.8	83.6	98.5	113	107	87.4	66.3	42.6	34.5	38.9
MAX	245	119	228	237	229	369	286	302	498	178	148	211
(WY)	1980	1972	1993	1978	1979	1993	1993	1988	1972	1987	1955	1971
MIN	8.21	12.5	17.3	15.5	38.9	37.6	44.6	25.8	15.3	9.59	5.70	7.38
(WY)	1987	1982	1981	1981	1954	1981	1985	1969	1986	1986	1966	1986

01645000 SENECA CREEK AT DAWSONVILLE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1931 - 1993	
ANNUAL TOTAL	38367		64444			
ANNUAL MEAN	105		177		105	
HIGHEST ANNUAL MEAN					251	1972
LOWEST ANNUAL MEAN					32.8	1931
HIGHEST DAILY MEAN	2520	Dec 11	2520	Dec 11	9900	Jun 22 1972
LOWEST DAILY MEAN	27	(a)	28	(b)	1.8	(c)
ANNUAL SEVEN-DAY MINIMUM	30	Aug 30	30	Sep 1	2.2	Sep 27 1930
INSTANTANEOUS PEAK FLOW	1750	Mar 27	3350	Apr 16	(d)26100	Jun 22 1972
INSTANTANEOUS PEAK STAGE	6.55	Mar 27	8.15	Apr 16	(f)16.40	Jun 22 1972
INSTANTANEOUS LOW FLOW	25	(g)	25	Sep 12	1.7	(h)
ANNUAL RUNOFF (CFSM)	1.04		1.75		1.04	
ANNUAL RUNOFF (INCHES)	14.13		23.74		14.12	
10 PERCENT EXCEEDS	164		320		185	
50 PERCENT EXCEEDS	69		100		67	
90 PERCENT EXCEEDS	38		40		26	

a Sept. 1, 2.

b Sept. 3, 7, 14.

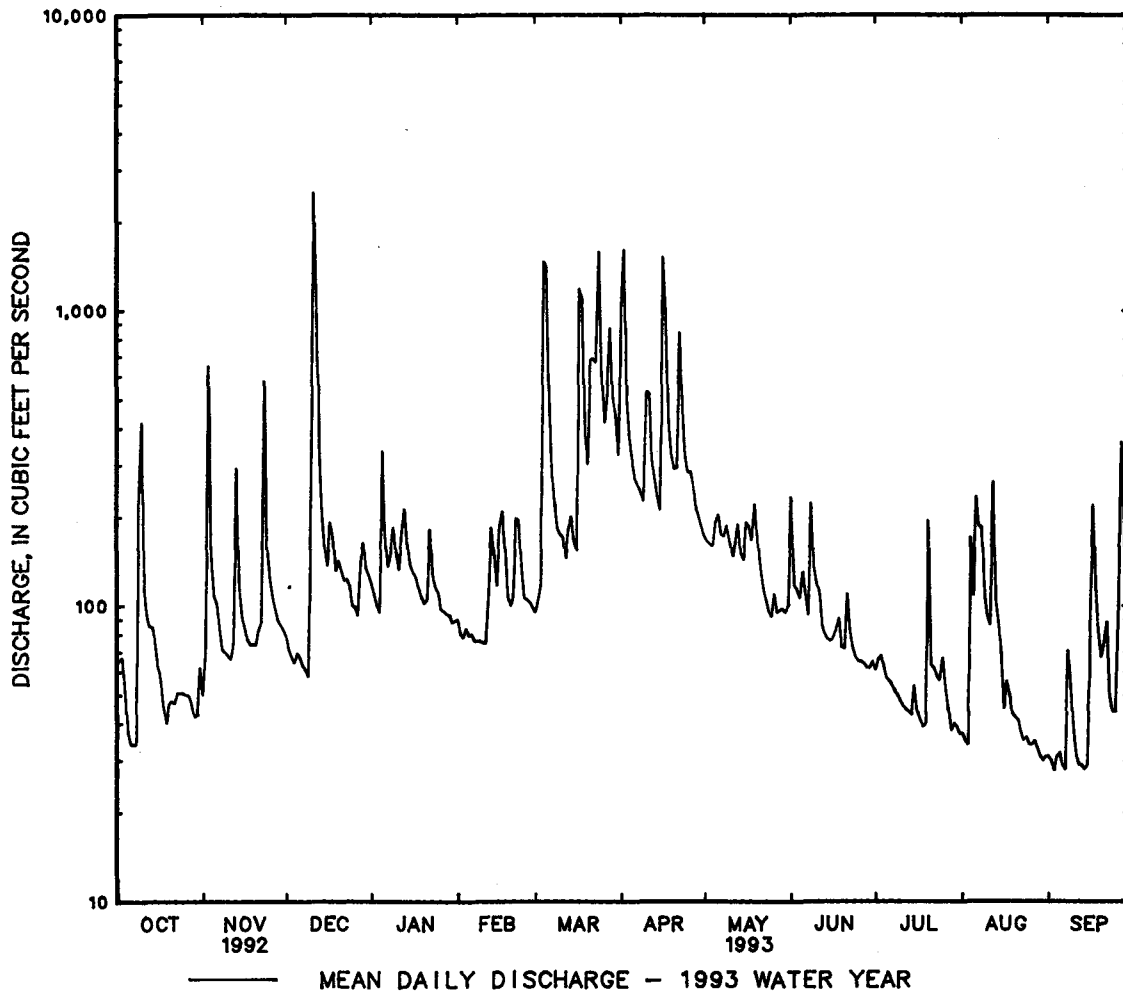
c Sept. 29, 1930, Sept. 12, 1966.

d From rating curve extended above 3,000 ft³/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.

f From high-water mark in gage house.

g Aug. 27, Sept. 1.

h 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 mi².

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. Gage-height 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	2115	66,600	7.50	Apr. 12	0945	59,700	7.18
Dec. 20	0215	48,100	6.60	Apr. 18	1115	147,000	10.55
Mar. 6	1115	*189,000	*12.35	Apr. 23	1530	79,200	8.05
Mar. 25	1715	138,000	10.16	Apr. 28	0800	50,000	6.70
Apr. 3	1145	131,000	9.91				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3500	1750	8010	19200	9980	9290	80500	26900	5950	2670	1840	945
2	3370	1860	7180	34700	9220	8820	100000	23800	7640	2970	1760	936
3	3080	4960	6470	27100	8560	8860	125000	21000	6170	3730	1760	889
4	2830	10700	5880	20200	7940	21000	19900	18900	5540	3820	2570	993
5	2480	6450	5410	19900	7550	111000	61900	18100	5390	4210	1880	1250
6	2340	5630	4980	18900	7230	179000	47400	18700	5150	4160	3040	3060
7	2180	5680	4780	17000	6900	105000	39200	18200	4950	3950	3080	2640
8	2060	4980	4440	16200	6530	62200	32500	16500	5640	3500	2600	2640
9	2200	4290	4330	16100	6280	50300	27800	14700	6010	3460	2520	2350
10	5610	3730	4610	15600	6090	46400	26300	13700	7120	2970	2300	2450
11	5590	3590	41100	14500	5890	42700	38500	12700	8510	2640	2200	2590
12	3920	3450	62000	14800	6200	36200	58100	12100	7990	2330	2540	2500
13	2870	5270	52700	16300	7090	33700	49800	12200	6470	2120	2470	2100
14	2780	5420	31900	20100	7650	30500	40200	11800	5620	2100	2670	1810
15	2610	4870	23200	22400	7560	26900	34000	11400	4990	2220	2350	1730
16	2290	6080	18700	22200	7670	24900	36200	11100	4460	2040	2030	1990
17	2250	6860	16800	20100	8920	28800	79800	11000	4160	1870	1860	2030
18	2040	5770	21700	17800	8640	44400	142000	10200	3920	1660	1930	2860
19	1790	5140	39000	15800	8600	52000	97200	10400	3720	1590	2150	2530
20	1710	4680	45100	13900	8730	48000	57700	10200	3530	1750	1790	2200
21	1790	4320	35200	12400	8720	42200	44000	9850	3890	1770	1640	2250
22	1780	4100	31100	12300	9130	49600	50800	10200	5490	1830	1560	2380
23	2140	12200	29100	13100	10400	63100	74500	9420	5130	1690	1370	2180
24	2010	24200	24600	15800	10400	90500	62200	8730	4060	1510	1310	2060
25	1780	23400	21800	17400	13000	131000	45800	8190	3400	1680	1170	2110
26	1690	21100	22200	16900	13100	119000	37300	7620	3090	1520	1160	2100
27	1700	15500	19500	15200	11400	91100	37400	7000	2970	1460	1050	2440
28	1710	13000	17100	13700	10200	92900	48000	6470	2890	1350	1100	3580
29	1650	10800	16600	12600	---	102000	38400	6090	2790	1310	1240	3810
30	1600	9090	15600	11800	---	102000	31100	5810	2820	1730	1060	4420
31	1730	---	15600	10900	---	91700	---	5470	---	2100	1100	---
TOTAL	77080	238870	656690	534900	239580	1945070	1735500	388450	149460	73710	59100	67823
MEAN	2486	7962	21180	17250	8556	62740	57850	12530	4982	2378	1906	2261
MAX	5610	24200	62000	34700	13100	179000	142000	26900	8510	4210	3080	4420
MIN	1600	1750	4330	10900	5890	8820	26300	5470	2790	1310	1050	889
(†)	559	538	509	499	490	489	475	562	656	801	716	607
MEAN*	3045	8494	21690	17760	9048	63200	58270	13100	5637	3179	2622	2868
CFSM*	.26	.73	1.88	1.54	.78	5.47	5.04	1.13	.49	.28	.23	.25
IN*	.30	.82	2.16	1.77	.82	6.30	5.63	1.31	.54	.32	.26	.28

† 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

317

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1958, BY WATER YEAR (WY) (UNREGULATED)

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 - 1993, BY WATER YEAR (WY) (REGULATED, UNDJUSTED)

MEAN	6134	7333	11010	12700	16520	24080	21260	15270	9296	4602	3626	3931
MAX	36790	42030	35690	35700	39460	62740	57850	40410	46630	17160	11350	25310
(WY)	1977	1986	1973	1991	1984	1993	1993	1989	1972	1972	1984	1975
MIN	908	1097	1038	1682	5703	7403	7058	3921	2216	695	538	791
(WY)	1964	1966	1966	1981	1963	1990	1969	1969	1969	1966	1966	1964

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

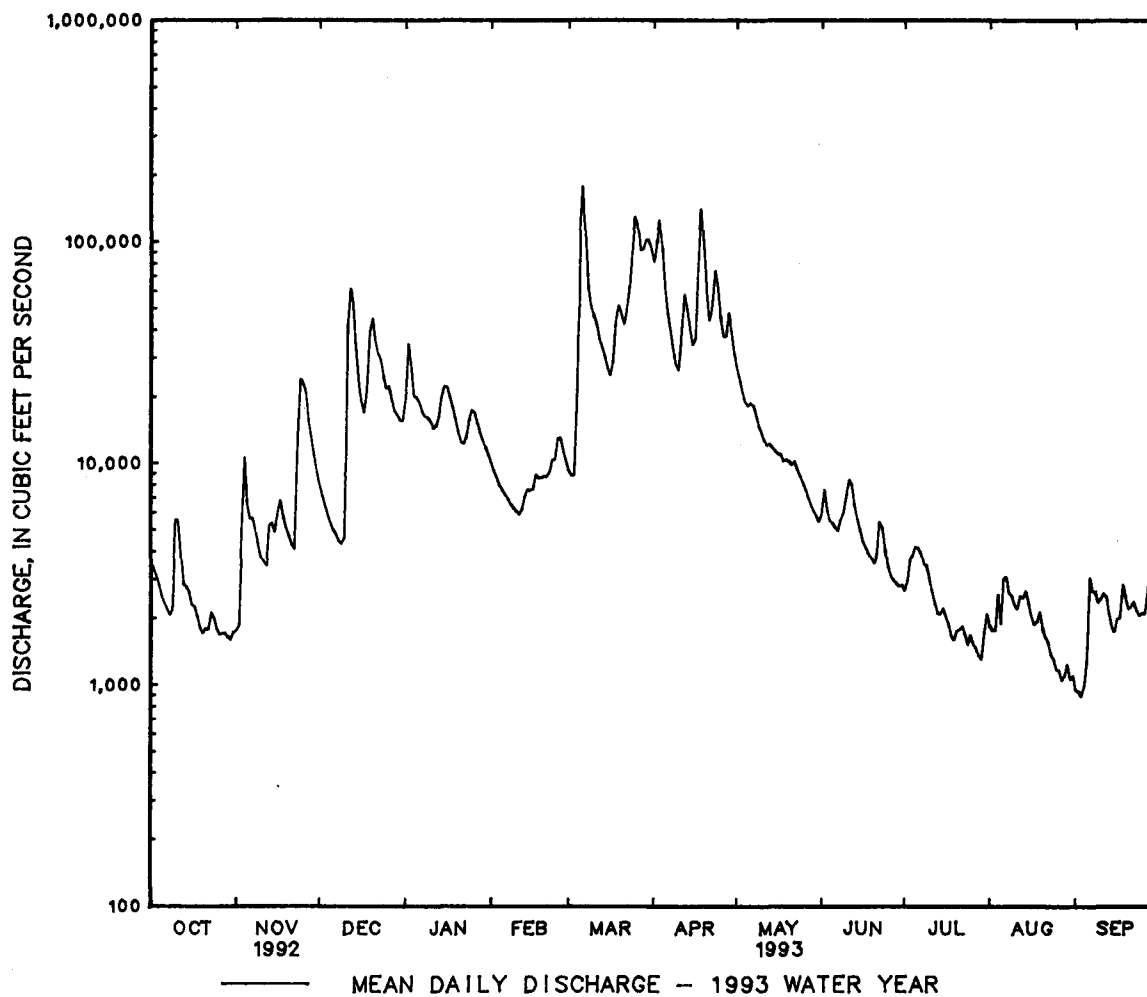
WATER YEARS 1959 - 1993

ANNUAL TOTAL	3576220		6166233		
ANNUAL MEAN	9771		16890		11280
ANNUAL MEAN*	10350		17460		11771
HIGHEST ANNUAL MEAN					18580
HIGHEST ANNUAL MEAN*					19030
LOWEST ANNUAL MEAN					4900
LOWEST ANNUAL MEAN*					5306
HIGHEST DAILY MEAN	93000	Apr 23	179000	Mar 6	334000
LOWEST DAILY MEAN	1600	Oct 30	889	Sep 3	(b)121
LOWEST DAILY MEAN*	1600	Oct 30	889	Sep 3	(c)601
ANNUAL SEVEN-DAY MINIMUM	1690	Oct 26	1020	Aug 29	181
INSTANTANEOUS PEAK FLOW	106000	Apr 24	189000	Mar 6	359000
INSTANTANEOUS PEAK STAGE	9.07	Apr 24	12.35	Mar 6	22.03
INSTANTANEOUS LOW FLOW	1370	Oct 19	795	Sep 3	66
ANNUAL RUNOFF (CFSM)	.85		1.46		.98
ANNUAL RUNOFF (CFSM)*	.90		1.51		1.02
ANNUAL RUNOFF (INCHES)	11.51		19.84		13.26
ANNUAL RUNOFF (INCHES)*	12.19		20.51		13.83
10 PERCENT EXCEEDS	22300		46000		25500
50 PERCENT EXCEEDS	5730		6470		6310
90 PERCENT EXCEEDS	2350		1760		1570

a At previous site, 1 mi upstream at same datum.

* Adjusted for diversion.

b Minimum daily discharge observed at gaging station, does not include diversion of 489 ft³/s.c Includes diversion of 449 ft³/s for municipal use.



POTOMAC RIVER BASIN

319

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: Maximum, 33.5°C, July 11, 1993; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT PERIOD.--

SPECIFIC CONDUCTANCE: Maximum, 667 microsiemens, Feb. 22; minimum, 142 microsiemens, Dec. 11, 12.

WATER TEMPERATURE: Maximum, 33.5°C, July 11; minimum, 0.9°C, Feb. 25.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	327	324	325	386	380	383	229	228	228	256	247	252
2	335	327	332	391	383	387	237	229	233	262	214	248
3	337	332	335	383	241	307	244	237	241	214	189	198
4	342	333	338	349	292	323	249	244	246	196	189	191
5	353	342	347	292	245	262	257	249	252	204	153	188
6	353	349	351	289	249	267	260	256	258	218	197	207
7	358	349	354	352	289	325	264	260	262	231	218	225
8	364	356	359	382	352	372	269	264	267	237	231	233
9	361	348	358	382	373	378	275	269	273	239	234	236
10	348	186	283	374	371	373	556	274	307	257	239	246
11	306	263	287	376	373	375	583	142	245	258	254	255
12	282	263	275	375	359	371	215	142	172	286	254	270
13	287	282	285	359	273	318	227	215	221	309	267	284
14	303	283	292	327	310	321	227	214	218	267	261	263
15	318	303	312	314	300	304	225	215	218	264	260	262
16	325	315	320	319	308	314	241	225	233	264	251	259
17	336	324	330	364	315	341	252	240	247	251	244	247
18	343	336	339	364	337	347	255	252	254	244	242	243
19	343	339	341	337	322	328	270	249	261	245	243	244
20	348	342	346	328	322	324	249	208	221	246	244	245
21	356	347	353	332	323	329	219	210	215	250	246	248
22	362	355	360	324	304	315	212	202	205	261	250	253
23	365	359	362	304	177	242	204	201	203	256	251	252
24	371	364	368	238	182	209	211	203	206	269	256	263
25	367	362	364	284	182	233	219	210	216	275	269	272
26	368	362	364	284	246	257	224	219	222	269	258	262
27	380	367	377	257	238	249	225	221	223	267	258	262
28	389	378	386	238	225	228	368	221	274	259	256	257
29	391	387	390	229	225	227	290	236	247	259	256	257
30	392	388	391	230	225	228	239	230	233	263	259	261
31	391	380	388	---	---	---	248	239	244	266	262	264
MONTH	392	186	342	391	177	308	583	142	237	309	153	247

POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	268	265	266	368	359	363	190	180	187	229	218	224
2	271	267	268	363	321	340	186	179	182	239	229	234
3	274	271	272	323	307	315	190	172	183	249	239	244
4	278	274	276	441	233	309	184	172	177	256	249	253
5	282	277	280	233	182	206	198	184	191	261	196	244
6	286	281	283	195	162	167	209	198	204	260	210	249
7	287	285	286	180	164	172	222	209	215	272	259	265
8	292	287	290	193	180	187	234	222	227	279	272	275
9	298	292	296	206	193	199	242	233	238	281	275	279
10	300	298	299	211	205	207	247	224	240	279	276	277
11	301	296	299	213	209	210	242	232	237	284	279	281
12	474	298	322	222	213	218	248	211	235	283	264	279
13	511	372	435	237	222	228	211	203	206	285	267	274
14	374	343	358	260	233	249	213	209	211	290	283	285
15	343	321	326	273	254	260	219	213	216	295	287	290
16	492	318	370	434	268	299	225	144	201	295	259	288
17	454	320	351	544	261	383	208	185	194	296	277	288
18	320	310	315	261	223	232	207	164	173	300	296	297
19	324	317	321	249	234	244	177	166	172	297	289	292
20	323	319	320	243	230	232	193	177	185	301	296	299
21	362	323	330	245	223	233	206	193	202	309	301	306
22	667	362	489	223	214	217	210	199	204	315	309	312
23	567	322	372	224	212	220	207	195	200	319	315	317
24	323	310	315	212	186	195	200	192	193	322	318	320
25	331	321	327	187	168	177	201	193	197	321	314	318
26	352	320	327	178	171	174	212	201	205	317	313	315
27	353	329	338	186	177	180	223	209	216	317	310	314
28	367	352	359	180	176	178	228	205	222	313	311	312
29	---	---	---	187	179	184	208	201	203	316	310	313
30	---	---	---	185	182	183	218	208	213	316	311	313
31	---	---	---	186	182	184	---	---	---	319	314	317
MONTH	667	265	325	544	162	230	248	144	204	322	196	286
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	319	311	314	352	325	339	363	352	356	359	356	358
2	327	313	320	366	352	358	368	360	364	361	357	360
3	328	309	319	373	355	366	369	354	359	362	359	361
4	325	311	319	366	322	350	358	322	347	365	359	362
5	328	319	324	381	365	375	345	316	337	367	363	365
6	333	323	328	373	353	364	352	300	333	371	366	368
7	340	333	336	374	361	368	301	278	287	378	368	374
8	340	301	318	387	371	380	323	301	315	385	371	379
9	334	311	325	385	371	378	345	301	329	371	356	362
10	340	334	337	376	352	362	370	344	359	373	362	369
11	350	340	345	373	335	347	380	367	373	396	368	386
12	369	350	361	361	346	350	371	345	365	415	396	407
13	372	364	368	361	333	347	365	330	354	421	415	418
14	368	363	365	350	322	328	367	356	362	417	396	402
15	364	338	348	344	310	329	375	359	368	396	374	380
16	354	340	345	346	310	324	373	362	366	376	370	372
17	358	346	352	358	338	347	366	358	362	381	371	376
18	349	318	333	358	335	345	371	360	365	386	379	383
19	321	305	312	351	322	334	376	364	370	389	381	386
20	311	298	304	353	321	333	378	368	371	381	376	379
21	313	304	308	344	321	333	378	365	372	376	354	368
22	320	309	314	340	331	336	377	366	371	354	326	336
23	330	302	311	339	326	330	371	356	363	354	333	345
24	331	319	326	341	321	332	367	354	358	359	353	355
25	340	318	328	344	324	337	367	352	362	363	358	360
26	339	319	326	335	325	331	367	353	359	364	358	362
27	354	328	338	344	331	337	367	353	359	365	345	361
28	354	323	334	355	341	346	369	354	361	364	287	338
29	339	319	331	344	343	343	369	355	364	366	349	359
30	336	317	323	346	342	344	367	355	359	383	358	374
31	---	---	---	354	343	349	358	356	357	---	---	---
MONTH	372	298	330	387	310	347	380	278	356	421	287	370

POTOMAC RIVER BASIN

321

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.0	16.4	17.3	12.8	12.2	12.5	7.8	7.2	7.6	5.4	5.0	5.1
2	18.4	16.2	17.4	12.2	11.7	11.8	7.2	6.7	7.0	5.0	4.4	4.7
3	18.9	16.6	17.9	13.6	11.8	12.7	6.7	6.1	6.4	5.5	5.0	5.2
4	18.6	17.4	17.8	13.2	12.6	12.9	6.1	5.5	5.6	6.6	5.3	5.7
5	18.0	17.1	17.6	13.0	12.0	12.8	5.5	4.2	5.2	10.2	6.6	8.1
6	17.6	16.4	17.1	12.0	11.1	11.5	4.2	3.3	3.7	7.8	7.1	7.4
7	17.2	16.0	16.7	11.2	10.3	10.6	4.2	3.1	3.6	7.5	6.9	7.2
8	17.4	16.2	16.8	10.3	9.7	10.0	4.1	3.7	3.9	7.3	7.0	7.2
9	17.6	17.1	17.3	10.0	8.4	9.2	4.0	3.1	3.6	7.1	6.1	6.6
10	19.0	17.1	18.0	9.7	8.0	9.0	3.8	2.7	3.1	6.1	5.2	5.5
11	18.7	17.9	18.3	9.7	8.8	9.2	5.7	2.8	4.1	5.2	4.9	5.0
12	18.1	17.2	17.6	11.5	9.4	10.1	3.6	2.8	3.2	5.1	4.9	5.0
13	17.7	16.5	17.2	12.0	11.3	11.6	3.8	3.3	3.5	5.3	5.1	5.1
14	17.4	16.2	16.9	11.4	9.8	10.3	4.0	3.5	3.7	5.1	4.8	5.0
15	18.0	16.6	17.2	9.8	8.5	8.9	4.4	3.9	4.1	5.1	4.7	4.9
16	18.7	17.2	18.0	8.5	6.8	7.5	4.7	4.2	4.4	4.9	4.7	4.8
17	18.4	16.7	17.3	7.5	6.5	6.9	5.4	4.7	5.0	5.1	4.6	4.8
18	16.7	15.8	16.1	7.8	6.9	7.4	5.5	4.9	5.2	5.1	4.5	4.7
19	15.8	13.5	14.3	7.7	7.5	7.6	5.4	4.8	5.0	4.7	4.2	4.4
20	13.5	12.6	13.0	7.7	7.3	7.4	5.6	5.0	5.3	4.3	3.5	3.8
21	13.0	12.2	12.5	8.8	7.4	7.9	5.2	4.7	4.9	3.7	3.1	3.3
22	12.6	11.5	12.1	9.6	8.3	8.8	5.3	4.6	5.0	3.8	3.3	3.6
23	12.9	11.8	12.4	13.4	9.6	11.6	5.5	5.1	5.3	4.2	3.6	3.9
24	13.2	12.3	12.7	12.6	11.0	11.9	5.2	4.1	4.7	4.7	4.2	4.4
25	13.1	12.6	12.8	12.5	10.4	11.6	4.1	3.3	3.4	4.6	3.7	4.0
26	13.5	12.0	12.7	11.2	10.3	10.8	3.3	2.7	2.9	3.8	3.2	3.4
27	13.0	12.4	12.7	11.2	10.5	10.8	2.7	2.1	2.3	3.5	2.7	3.1
28	13.0	12.4	12.7	10.5	10.1	10.4	2.4	2.1	2.2	3.2	2.6	2.8
29	13.0	12.5	12.8	10.2	8.9	9.7	2.9	2.3	2.5	3.4	2.7	2.9
30	13.4	12.9	13.1	8.9	7.8	8.4	4.3	2.9	3.4	2.9	2.3	2.6
31	13.4	12.8	13.1	---	---	---	5.2	4.0	4.5	3.4	2.6	2.9
MONTH	19.0	11.5	15.5	13.6	6.5	10.1	7.8	2.1	4.3	10.2	2.3	4.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.0	2.7	3.5	3.5	1.8	2.5	11.3	10.3	10.8	17.1	14.6	15.8
2	2.9	1.1	2.0	4.7	2.5	3.5	11.2	10.6	11.0	18.3	15.9	17.0
3	2.6	1.0	1.6	5.4	3.9	4.7	10.6	10.0	10.3	18.7	17.2	18.0
4	3.4	1.6	2.4	5.2	4.4	4.8	10.2	9.5	9.9	18.7	17.9	18.3
5	4.2	2.4	3.0	4.4	3.1	3.6	9.5	8.7	9.1	19.3	18.4	18.7
6	3.7	3.1	3.4	3.6	2.9	3.2	9.1	8.5	8.7	20.1	18.5	19.3
7	3.2	2.1	2.4	4.6	3.6	4.0	10.4	8.7	9.5	21.0	19.2	20.1
8	3.1	1.7	2.2	5.5	4.5	5.0	11.4	9.3	10.4	21.1	19.7	20.6
9	3.3	1.9	2.5	6.0	5.1	5.5	11.6	10.4	11.0	21.8	20.2	21.0
10	3.9	2.1	2.9	5.8	5.3	5.5	11.8	11.3	11.4	22.7	21.2	21.9
11	4.5	2.8	3.5	5.6	5.1	5.3	12.1	10.6	11.4	23.5	22.5	23.0
12	4.0	3.0	3.7	5.7	4.9	5.3	12.0	11.3	11.6	23.7	22.4	23.4
13	3.3	2.8	3.0	5.4	2.5	3.9	12.1	10.7	11.4	23.2	22.2	22.8
14	3.6	2.8	3.1	2.5	1.5	1.9	12.7	11.5	12.1	22.4	21.4	21.9
15	3.8	2.7	3.2	2.4	.9	1.6	13.3	11.9	12.6	22.7	21.4	22.0
16	3.7	3.2	3.4	3.0	1.3	2.1	15.3	13.0	13.9	23.4	21.7	22.5
17	4.6	3.3	3.8	2.9	1.9	2.4	14.3	13.4	13.8	23.0	21.6	22.2
18	4.0	2.6	3.5	2.9	1.7	2.4	13.4	12.6	13.1	21.9	19.6	21.1
19	2.6	1.2	2.0	3.4	1.9	2.7	12.8	12.0	12.4	19.7	18.8	19.1
20	2.5	1.0	1.7	4.0	2.8	3.4	13.7	12.2	12.9	19.2	18.2	18.7
21	2.0	1.3	1.7	5.6	3.8	4.5	14.0	13.3	13.6	19.7	18.0	18.6
22	3.0	1.2	2.0	5.8	4.9	5.4	13.9	12.5	13.2	19.6	18.4	18.9
23	2.9	2.0	2.6	6.1	5.5	5.8	12.5	11.7	12.0	19.3	18.4	18.8
24	2.1	1.1	1.8	6.7	5.9	6.3	11.9	11.3	11.5	20.9	18.6	19.6
25	1.7	.9	1.3	6.6	6.1	6.3	12.8	11.0	11.8	22.0	19.8	20.8
26	1.5	1.0	1.2	7.8	6.6	7.2	13.5	12.5	12.8	22.5	21.0	21.6
27	2.4	1.1	1.6	8.4	7.7	8.0	13.4	11.9	12.7	23.2	20.8	21.9
28	2.8	1.5	2.0	8.9	8.3	8.7	13.9	12.4	13.2	24.3	21.8	23.0
29	---	---	---	9.0	8.8	8.9	14.5	12.7	13.6	24.5	22.7	23.5
30	---	---	---	9.8	8.9	9.3	15.5	13.7	14.6	24.7	22.0	23.4
31	---	---	---	10.4	9.7	10.0	---	---	---	23.7	22.3	23.0
MONTH	4.6	.9	2.5	10.4	.9	5.0	15.5	8.5	11.9	24.7	14.6	20.7

POTOMAC RIVER BASIN

01646500 POTOMAC RIVER NEAR WASHINGTON, DC--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	23.1	21.1	22.2	29.2	27.8	28.2	28.3	27.2	27.7	30.4	29.2	29.8
2	22.0	20.8	21.4	27.8	26.4	26.8	28.8	27.5	28.0	30.3	29.2	29.7
3	22.7	21.0	21.7	27.3	25.9	26.4	29.0	27.6	28.2	30.6	29.6	30.1
4	23.0	21.1	22.1	28.8	25.4	27.2	28.7	27.6	28.0	30.4	29.2	29.7
5	22.7	21.6	22.1	30.6	27.5	29.1	27.7	26.8	27.3	29.7	28.2	29.0
6	23.1	20.6	21.9	31.8	28.9	30.4	27.2	24.2	25.8	28.8	27.3	28.2
7	23.2	20.7	22.1	32.2	29.7	31.1	24.7	23.5	24.1	28.5	27.1	27.9
8	24.2	21.6	22.9	33.0	30.5	31.9	25.4	23.8	24.7	28.1	26.9	27.4
9	26.4	23.0	24.8	33.2	31.0	32.4	27.2	24.9	25.8	27.3	26.3	26.8
10	27.7	25.1	26.4	33.4	31.4	32.5	27.6	26.1	26.8	26.9	25.8	26.4
11	27.6	26.3	26.9	33.5	31.7	32.6	27.5	26.6	27.1	25.8	24.1	24.9
12	26.5	25.4	26.1	33.0	31.5	32.3	27.4	26.0	26.8	24.5	22.9	23.7
13	26.2	24.9	25.4	32.3	31.3	31.8	28.0	26.3	27.0	24.2	22.7	23.5
14	26.6	24.2	25.5	31.9	30.9	31.3	29.0	27.0	28.0	25.1	23.5	24.3
15	26.9	24.8	25.8	31.7	30.5	31.1	29.4	27.8	28.7	26.2	24.4	25.2
16	27.7	25.0	26.4	31.2	29.7	30.4	29.7	28.6	29.0	25.8	24.5	25.2
17	28.1	25.4	27.0	30.6	29.0	29.8	29.5	28.6	28.9	24.5	23.2	23.9
18	29.0	26.3	27.9	30.1	28.8	29.4	29.2	28.2	28.7	23.2	22.5	22.8
19	30.0	27.5	28.9	29.4	28.5	28.8	29.0	27.8	28.3	23.1	21.8	22.6
20	31.0	28.3	29.7	29.7	28.1	28.8	28.8	28.0	28.3	22.7	21.6	22.0
21	30.4	28.6	29.5	29.1	28.2	28.6	29.2	27.9	28.5	21.7	20.9	21.2
22	29.5	27.8	28.7	29.5	27.7	28.6	28.7	27.5	28.2	21.2	20.3	20.8
23	29.0	27.1	28.0	28.9	27.4	28.2	28.9	27.3	28.0	21.5	20.5	21.0
24	28.7	25.9	27.5	29.0	27.4	28.0	29.1	27.1	28.0	22.1	20.9	21.5
25	29.1	26.1	27.8	28.5	27.7	28.0	29.0	27.8	28.3	21.7	20.5	21.0
26	29.4	26.6	28.0	28.1	27.4	27.8	29.7	28.2	28.8	21.3	20.2	20.7
27	29.3	27.1	28.2	28.8	27.1	27.8	30.0	28.7	29.2	21.0	20.7	20.7
28	30.2	27.7	28.7	29.5	28.0	28.6	30.3	29.0	29.6	20.7	19.2	19.9
29	29.8	28.3	29.1	30.5	28.8	29.6	30.8	29.2	29.9	19.6	18.1	18.9
30	29.4	28.2	28.9	30.0	28.9	29.4	30.4	29.4	29.8	18.9	17.5	18.0
31	---	---	---	29.0	27.8	28.2	30.5	29.2	29.9	---	---	---
MONTH	31.0	20.6	26.1	33.5	25.4	29.5	30.8	23.5	27.9	30.6	17.5	24.2

POTOMAC RIVER BASIN

323

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC
(National stream-quality accounting network station)

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 mi².

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--High flows are sampled from the George Mason Memorial Bridge (14th Street) located 6 mi downstream from Chain Bridge.

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 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 1992											
18...	1100	5780	370	8.1	8.0	12.0	770	2.8	11.4	95	24
JAN 1993											
21...	1100	12400	274	7.7	3.0	10.0	778	1.7	13.1	95	K4
MAR											
06...	1430	187000	183	6.5	3.5	--	--	210	15.8	--	--
09...	1120	49600	200	7.8	6.0	12.0	763	32	13.2	106	5400
25...	1045	134000	183	7.6	6.5	8.5	--	120	15.0	--	--
29...	1145	104000	196	7.6	9.0	13.0	--	40	13.4	--	--
APR											
20...	1800	52200	180	7.9	15.0	23.0	755	--	--	--	--
MAY											
04...	1130	19000	247	8.2	17.5	22.0	765	--	9.6	100	--
JUN											
08...	1130	5710	313	8.6	22.5	26.0	758	--	8.5	99	--
08...	1230	5710	342	8.3	23.0	23.0	758	3.8	8.0	94	--
JUL											
07...	1315	3980	--	8.9	32.0	34.0	--	--	--	--	--
20...	1115	1640	330	7.8	29.0	29.0	761	0.60	7.2	94	--
AUG											
10...	1030	2380	359	8.1	26.0	27.0	766	--	7.7	95	--
SEP											
01...	0930	825	345	8.1	29.0	27.0	760	--	7.4	97	--
14...	1130	1740	390	8.5	24.0	26.0	769	0.50	7.9	93	44

K: Results based on colony count outside the acceptance range (non-ideal colony count).

POTOMAC RIVER BASIN

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3
NOV 1992											
18...	43	140	39	9.4	11	3.2	107	--	130	--	--
JAN 1993											
21...	K12	100	29	6.6	6.1	1.7	68	--	83	--	--
MAR											
06...	--	57	17	3.5	4.5	2.9	--	46	--	56	--
09...	380	75	22	4.8	4.9	2.2	53	--	65	--	--
25...	--	64	19	4.1	4.5	2.0	34	--	41	--	--
29...	--	75	22	4.8	4.1	1.8	91	--	111	--	--
APR											
20...	--	73	22	4.5	3.8	1.8	44	--	54	--	--
MAY											
04...	--	110	33	7.1	5.1	1.7	78	--	95	--	--
JUN											
08...	--	140	40	10	9.1	2.4	106	--	126	--	2
08...	3100	140	40	9.7	8.9	2.3	105	--	128	--	--
JUL											
07...	--	150	41	12	11	3.1	114	--	139	--	8
20...	--	120	29	12	12	2.8	84	--	102	--	--
AUG											
10...	--	140	38	12	14	2.6	101	--	121	--	1
SEP											
01...	--	130	33	12	15	2.6	91	--	109	--	1
14...	560	160	44	12	18	3.9	88	--	107	--	--

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 1992											
18...	33	16	0.10	4.0	192	5.7	0.020	0.010	1.40	1.30	0.020
JAN 1993											
21...	27	11	0.10	6.6	138	8.3	--	0.020	--	1.90	--
MAR											
06...	16	7.9	<0.10	4.8	92	5.2	--	0.020	--	1.20	--
09...	19	8.8	<0.10	7.4	109	7.9	--	0.020	--	1.80	--
25...	18	7.6	<0.10	6.2	95	6.2	--	0.010	--	1.40	--
29...	22	7.0	<0.10	6.7	114	6.6	--	0.020	--	1.50	--
APR											
20...	19	5.5	<0.10	6.7	104	6.1	--	0.020	--	1.40	--
MAY											
04...	25	8.5	0.10	5.9	140	--	--	<0.010	--	1.70	--
JUN											
08...	32	14	0.10	2.2	179	6.6	--	0.010	--	1.50	--
08...	31	14	0.10	1.9	177	6.6	--	0.020	--	1.50	--
JUL											
07...	36	16	0.20	6.7	202	6.1	--	0.020	--	1.40	--
20...	36	17	0.20	7.9	181	2.5	--	0.010	--	0.580	--
AUG											
10...	38	20	0.20	4.6	209	5.7	--	0.010	--	1.30	--
SEP											
01...	42	21	0.20	4.0	198	3.2	--	0.010	--	0.730	--
14...	51	24	0.20	4.9	225	--	--	<0.010	--	1.20	--

K: Results based on colony count outside the acceptance range (non-ideal colony count).

POTOMAC RIVER BASIN

325

01646580 POTOMAC RIVER AT CHAIN BRIDGE AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 1992											
18...	0.020	0.30	<0.20	0.070	0.050	0.040	0.050	20	34	<3	36
JAN 1993											
21...	0.020	0.20	--	0.040	0.020	--	0.020	--	--	--	--
MAR											
06...	0.210	1.2	--	0.380	0.060	--	0.090	--	--	--	--
09...	0.070	0.60	--	0.150	0.040	--	0.040	80	29	<3	83
25...	0.060	1.0	--	0.250	0.040	--	0.030	--	--	--	--
29...	0.060	0.50	--	0.140	0.010	--	0.030	--	--	--	--
APR											
20...	0.080	0.60	0.30	0.020	0.040	--	0.030	--	--	--	63
MAY											
04...	0.020	0.30	<0.20	0.040	0.020	--	0.010	--	--	--	10
JUN											
08...	0.020	0.30	0.30	0.030	0.020	--	<0.010	--	--	--	8
08...	0.010	0.30	--	0.010	0.010	--	<0.010	<10	40	<3	8
JUL											
07...	0.020	0.60	<0.20	0.070	0.050	--	<0.010	--	--	--	6
20...	0.080	0.60	0.30	0.060	<0.010	--	<0.010	--	--	--	--
AUG											
10...	0.040	0.30	0.30	0.040	0.030	--	0.040	--	--	--	5
SEP											
01...	0.050	0.30	0.30	0.040	0.030	--	0.020	--	--	--	<3
14...	0.020	0.40	--	0.070	0.050	--	0.040	20	42	4	13

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
NOV 1992										
18...	5	11	<1	<1	<1.0	180	<6	3.7	--	--
JAN 1993										
21...	--	--	--	--	--	--	--	2.9	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
09...	<4	8	1	<1	<1.0	88	<6	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
APR										
20...	--	3	--	--	--	--	--	--	2.9	2.1
MAY										
04...	--	2	--	--	--	--	--	--	1.8	0.8
JUN										
08...	--	<1	--	--	--	--	--	--	2.4	0.7
08...	<4	2	<1	<1	<1.0	180	<6	--	--	--
JUL										
07...	--	2	--	--	--	--	--	--	2.8	2.0
20...	--	--	--	--	--	--	--	4.5	--	--
AUG										
10...	--	9	--	--	--	--	--	--	3.3	0.3
SEP										
01...	--	3	--	--	--	--	--	--	3.1	0.2
14...	8	8	<1	<1	<1.0	240	<6	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
------	------	--	---	--	---

NOV 1992					
18...	1100	5780	4	63	100
MAR 1993					
06...	1430	187000	645	326000	--
09...	1120	49600	115	15400	89
25...	1045	134000	181	65500	96
29...	1145	104000	99	27800	96
APR					
20...	1800	52200	98	13800	--
MAY					
04...	1130	19000	20	1030	--
JUN					
08...	1130	5710	10	154	--
08...	1230	5710	14	216	90
JUL					
07...	1315	3980	9	97	--
20...	1115	1640	14	62	86
AUG					
10...	1030	2380	6	39	--
SEP					
01...	0930	825	3	6.7	--
14...	1130	1740	4	19	82

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	ALPHA COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L)	ALPHA RADIO. WATER DISS AS TH-230 (PCI/L)	ALPHA SED SUSP DRY WGH AS TH-230 (PCI/L)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L)	
MAR 1993	09...	1120	49600	--	--	--	<0.6	3.4	--	--	--
SEP 14...	1130	1740	0.96	0.74	0.22	<0.6	<0.6	0.8	<0.6	1.4	
		BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90/Y90 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED (PCI/L AS SR/ METHOD YT-90) (PCI/L)	RA-226 2 SIGMA WATER, DISS, METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	
MAR 1993	09...	--	--	3.1	2.7	--	--	0.03	--	0.11	--
SEP 14...	0.87	0.50	5.2	<0.6	<0.6	3.8	0.22	0.050	0.27	<1.0	

POTOMAC RIVER BASIN

327

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 mi².

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 (timer malfunction), which are fair. Flow affected by two upstream reservoirs which control flow from about 25 mi², 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.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1700	*1,540	*6.76	Apr. 16	1842	1,480	6.57
Mar. 17	1800	1,420	6.40	May 5	1820	1,210	5.74
Apr. 10	1814	1,210	5.73	Aug. 6	0915	1,220	5.76

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	24	31	51	35	42	344	73	e82	21	9.8	8.8
2	19	104	30	40	33	43	348	69	e47	32	69	8.8
3	17	370	28	38	35	47	162	64	e56	109	21	8.6
4	15	100	26	37	32	859	139	64	e46	44	111	24
5	15	84	29	374	33	351	126	334	e76	24	27	14
6	13	69	26	122	33	209	110	157	e50	22	366	9.1
7	12	41	24	92	32	169	99	96	e43	22	75	9.2
8	11	34	25	148	32	149	88	80	e130	28	122	21
9	123	30	24	154	31	124	81	70	e60	18	29	10
10	297	27	214	86	31	129	451	63	e45	16	22	51
11	57	26	835	67	31	95	212	59	e38	15	20	8.1
12	41	37	318	89	135	74	147	174	e35	15	207	6.9
13	27	273	203	103	121	92	129	96	e33	14	41	7.0
14	22	93	172	73	73	109	116	59	e31	46	27	7.0
15	19	61	150	60	55	103	102	54	e31	35	21	10
16	17	43	125	54	147	101	612	130	e30	14	18	50
17	14	38	176	49	93	727	245	86	e29	12	23	49
18	14	30	109	45	66	319	181	89	e29	12	17	34
19	15	32	81	41	52	202	162	115	e28	11	15	15
20	14	28	91	39	44	184	145	68	e27	20	15	10
21	14	26	59	45	48	301	197	59	e26	19	14	82
22	14	36	49	123	188	232	318	53	e29	16	12	35
23	14	479	71	60	101	266	153	50	e24	14	11	15
24	28	154	46	50	67	455	130	49	e21	12	11	12
25	19	132	40	45	53	217	117	e47	e21	51	11	28
26	12	100	40	41	51	176	211	e46	e20	23	11	50
27	14	71	36	39	53	305	119	e44	e22	15	21	116
28	17	50	138	38	46	273	95	e43	e21	14	14	48
29	16	39	79	37	---	184	84	e41	e22	18	18	29
30	18	34	60	35	---	173	78	e40	25	13	9.7	23
31	75	---	60	35	---	141	---	e48	---	10	9.1	---
TOTAL	1024	2665	3395	2310	1751	6851	5501	2520	1177	735	1397.6	799.5
MEAN	33.0	88.8	110	74.5	62.5	221	183	81.3	39.2	23.7	45.1	26.6
MAX	297	479	835	374	188	859	612	334	130	109	366	116
MIN	11	24	24	35	31	42	78	40	20	10	9.1	6.9
CFM	.53	1.43	1.76	1.20	1.01	3.55	2.95	1.31	.63	.38	.72	.43
IN.	.61	1.59	2.03	1.38	1.05	4.10	3.29	1.51	.70	.44	.84	.48

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1993, BY WATER YEAR (WY)

	MEAN	MAX	MIN	CFM	IN.
1930	40.6	196	2.63	.53	.61
1931	50.7	165	4.57	1.43	1.59
1932	61.0	184	8.75	1.76	2.03
1933	70.1	201	11.8	1.20	1.38
1934	82.2	210	11.9	1.01	1.05
1935	89.3	221	23.4	3.55	4.10
1936	85.5	215	29.2	2.95	3.29
1937	74.0	232	24.3	1.31	1.51
1938	59.5	456	18.3	.63	.70
1939	48.9	192	7.09	.38	.44
1940	47.2	174	1.72	.72	.84
1941	44.3	348	2.04	.43	.48

POTOMAC RIVER BASIN

01648000 ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, DC--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1930 - 1993	
ANNUAL TOTAL	22775.5		30126.1			
ANNUAL MEAN	62.2		82.5		62.7	
HIGHEST ANNUAL MEAN					142	
LOWEST ANNUAL MEAN					16.1	
HIGHEST DAILY MEAN	835	Dec 11	859	Mar 4	5000	Jun 22 1972
LOWEST DAILY MEAN	9.6	Jul 20	6.9	Sep 12	.50	(a)
ANNUAL SEVEN-DAY MINIMUM	12	Jul 14	11	Aug 28	.50	Oct 1 1930
INSTANTANEOUS PEAK FLOW	1280	Jul 25	1540	Mar 4	(b)12500	Jun 22 1972
INSTANTANEOUS PEAK STAGE	5.95	Jul 25	6.76	Mar 4	(c)16.20	Jun 22 1972
INSTANTANEOUS LOW FLOW	8.6	(d)	6.9	(f)	.50	(a)
ANNUAL RUNOFF (CFSM)	1.00		1.33		1.01	
ANNUAL RUNOFF (INCHES)	13.62		18.02		13.69	
10 PERCENT EXCEEDS	130		184		120	
50 PERCENT EXCEEDS	36		45		37	
90 PERCENT EXCEEDS	15		14		12	

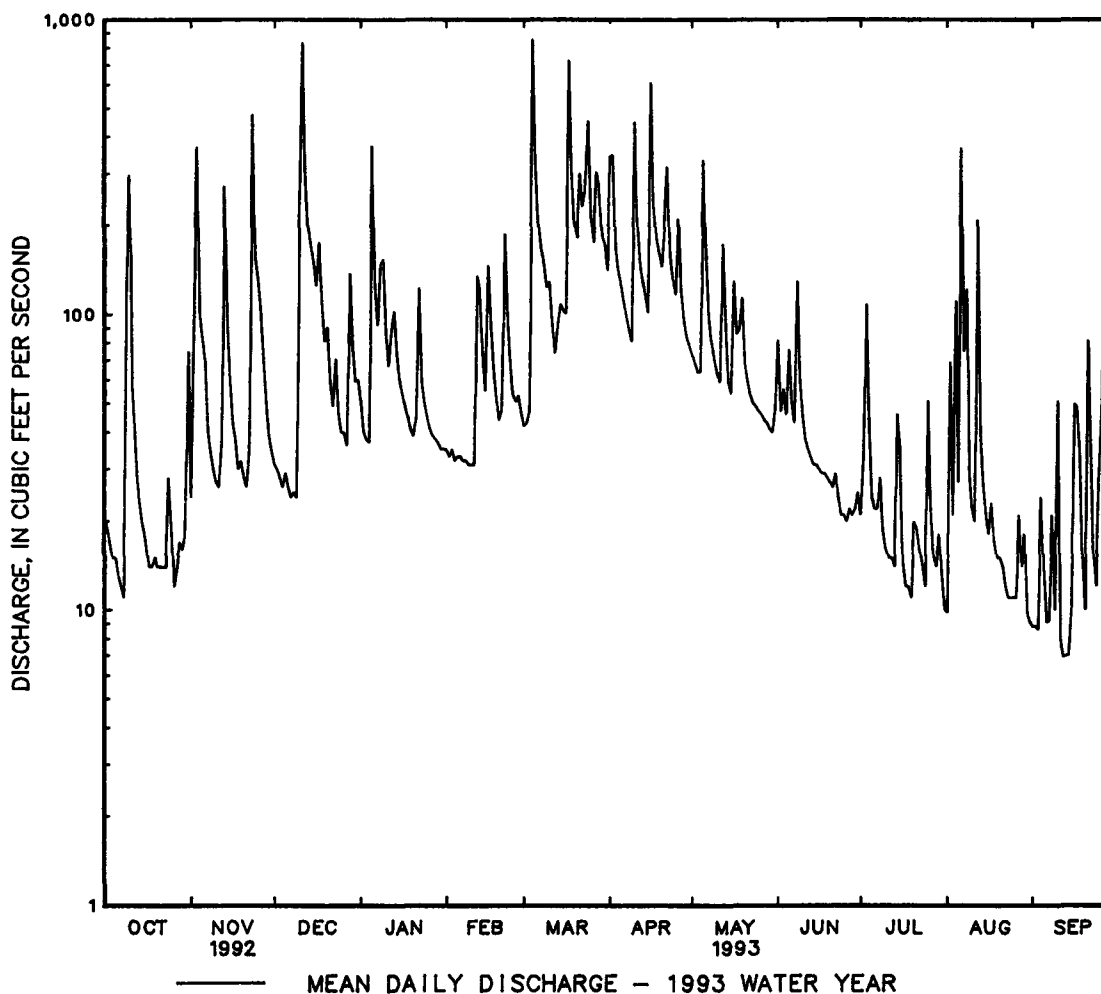
a Oct. 1-7, 1930.

b From rating curve extended above 5,640 ft³/s on basis of contracted-opening measurements at gage heights of 13.19 ft and 16.2 ft.

c From floodmark.

d July 20, 21.

f Sept. 12-15.



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 mi².

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, 1969, water-stage recorder, all at bridge at datum 14.00 ft above mean sea level. Mar. 23, 1966 to Apr. 11, 1967, nonrecording gage 600 ft downstream from bridge at datum 9.25 ft above mean sea level.

REMARKS.--No estimated daily discharges. Records good. Some regulation at low flow by sand and gravel plants upstream from station. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 23 or 24, 1933, reached a stage of about 15.5 ft at datum 14.00 ft above mean sea level, from floodmarks, discharge, 10,500 ft³/s, from rating curve extended above 3,000 ft³/s on basis of velocity-area study.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0430	*3,060	*6.11	Mar. 27	1930	2,290	5.35
Dec. 11	1545	2,120	5.17	Apr. 16	1415	2,420	5.48
Jan. 5	0730	2,640	5.70	Apr. 21	2145	2,030	5.07
Mar. 4	1245	2,880	5.93	Sep. 27	1445	2,260	5.32
Mar. 17	1700	2,820	5.88				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	38	38	50	42	53	369	65	102	19	14	13
2	22	131	37	44	37	56	412	62	40	33	70	12
3	19	504	35	42	40	58	177	58	62	64	34	14
4	18	91	34	42	38	1700	118	57	41	64	26	25
5	17	77	34	779	37	842	103	320	92	56	21	17
6	17	75	32	176	36	223	93	210	45	41	659	14
7	17	50	32	91	35	129	85	85	36	25	122	12
8	18	42	33	230	36	103	79	64	217	22	183	55
9	123	38	32	349	37	82	78	55	60	21	136	23
10	302	35	281	152	36	101	379	51	38	22	50	91
11	64	33	1370	97	35	92	248	48	33	19	34	21
12	46	49	506	126	195	71	125	304	29	18	111	16
13	33	323	132	157	216	155	100	201	29	18	52	13
14	29	77	86	103	93	214	89	73	29	50	39	13
15	26	52	69	79	60	136	84	55	29	70	25	19
16	23	44	61	69	211	175	643	117	28	32	22	87
17	20	40	124	62	152	1350	256	85	27	23	72	91
18	20	38	91	54	76	412	116	111	27	20	43	59
19	21	39	64	51	54	198	93	160	25	19	26	32
20	22	38	95	47	48	175	81	84	22	27	23	22
21	23	35	66	57	67	355	361	60	26	19	22	101
22	23	49	55	203	312	255	676	52	34	19	19	50
23	25	799	78	85	179	264	169	47	24	18	17	27
24	64	122	58	63	88	844	109	46	20	18	17	22
25	30	82	45	56	62	206	91	43	20	20	18	44
26	20	81	43	49	63	129	208	42	19	20	17	56
27	20	66	38	48	63	566	135	40	23	18	17	515
28	19	51	157	47	55	638	89	39	21	18	15	128
29	20	44	106	45	---	225	75	37	19	17	15	40
30	29	40	71	42	---	173	69	34	18	18	13	28
31	91	---	57	42	---	125	---	48	---	15	14	---
TOTAL	1247	3183	3960	3537	2403	10105	5710	2753	1235	863	1946	1660
MEAN	40.2	106	128	114	85.8	326	190	88.8	41.2	27.8	62.8	55.3
MAX	302	799	1370	779	312	1700	676	320	217	70	659	515
MIN	17	33	32	42	35	53	69	34	18	15	13	12
CFSM	.55	1.46	1.75	1.57	1.18	4.48	2.61	1.22	.57	.38	.86	.76
IN.	.64	1.63	2.02	1.81	1.23	5.16	2.92	1.41	.63	.44	.99	.85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1993, BY WATER YEAR (WY)

	MEAN	70.6	91.2	99.9	112	127	112	94.5	68.1	61.2	65.0	58.1
MAX	234	205	248	325	265	326	322	329	353	335	243	449
(WY)	1943	1973	1984	1979	1972	1993	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

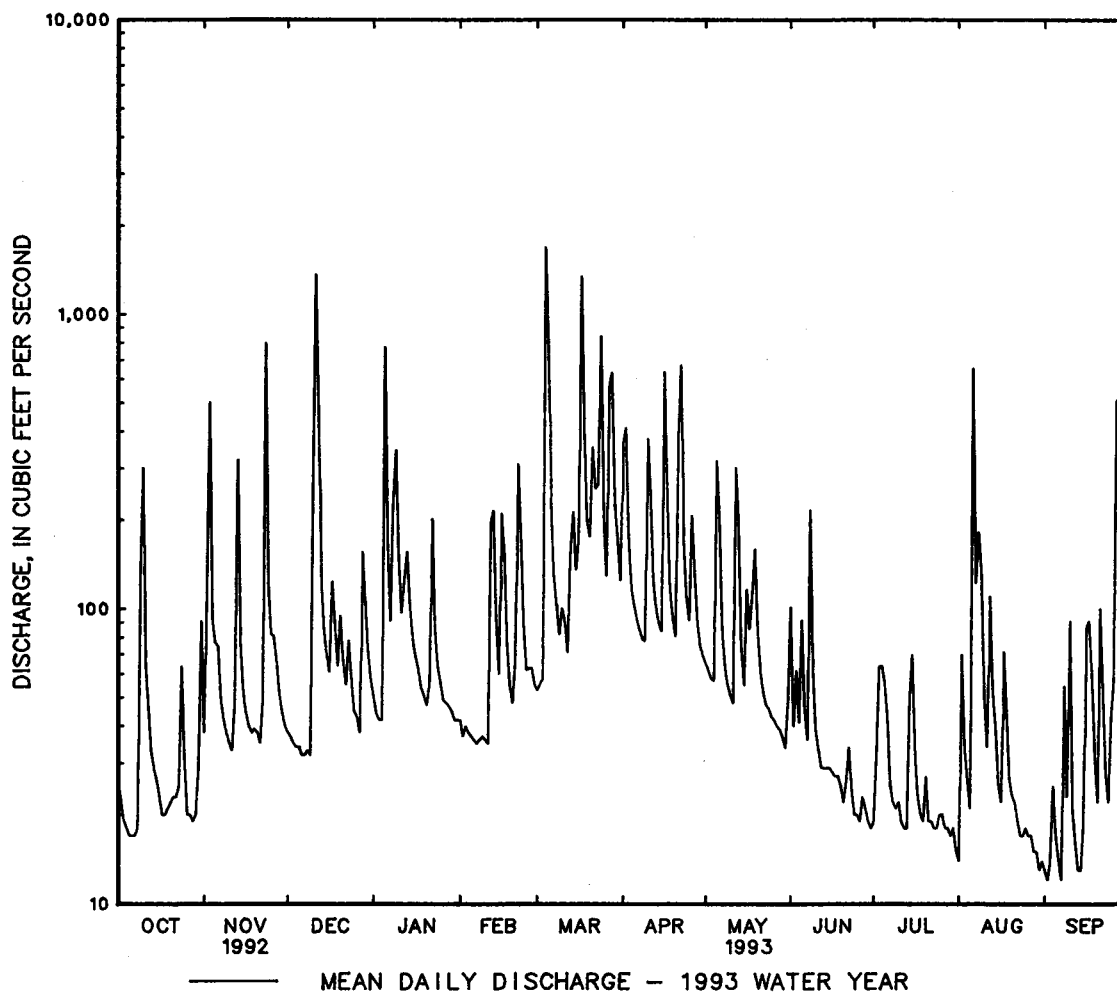
POTOMAC RIVER BASIN

01649500 NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1938 - 1993	
ANNUAL TOTAL	30667.7		38602			
ANNUAL MEAN	83.8		106		84.4	
HIGHEST ANNUAL MEAN					150	
LOWEST ANNUAL MEAN					49.3	
HIGHEST DAILY MEAN	2100	Jul 25	1700	Mar 4	6830	Sep 26 1975
LOWEST DAILY MEAN	9.7	Jul 20	12	Sep 2	1.4	Sep 12 1966
ANNUAL SEVEN-DAY MINIMUM	12	Jul 14	14	Aug 28	1.7	Sep 7 1966
INSTANTANEOUS PEAK FLOW	5350	Jul 25	3060	Nov 23	(a)12000	Jun 22 1972
INSTANTANEOUS PEAK STAGE	8.03	Jul 25	6.11	Nov 23	12.93	Oct 16 1942
INSTANTANEOUS LOW FLOW	9.0	(b)	9.0	Sep 3	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.15		1.45		1.16	
ANNUAL RUNOFF (INCHES)	15.67		19.73		15.75	
10 PERCENT EXCEEDS	161		216		162	
50 PERCENT EXCEEDS	41		50		44	
90 PERCENT EXCEEDS	20		19		16	

a From rating curve extended above 3,800 ft³/s on basis of the average of contracted-opening and slope-area measurements at gage height 9.52 ft.

b July 20, 21.



331

LOCATION.--Lat 38°57'09", long 76°58'00", Prince Georges County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on Queens Chapel Road (State Highway 500), 0.8 mi downstream from Sligo Branch, 1.0 mi west of Hyattsville, and 1.6 mi upstream from confluence with Northeast Branch.

PERIOD OF RECORD.--July 1938 to current year. Monthly discharge only for July 1938 published in WSP 1302.

REVISID RECORDS.--WSP 971: 1942(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 17.10 ft above sea level (Washington Suburban Sanitary Commission bench mark). Prior to Oct. 22, 1938, nonrecording gage; Oct. 22, 1938 to Sept. 17, 1951, water-stage recorder; Sept. 17, 1951 to Aug. 29, 1952, nonrecording gage and crest-stage gage.

REMARKS.--Records good except those for estimated daily discharges (orifice pier destroyed), which are fair. Prior to June 1961, low flow regulated by storage at Burnt Mills Dam, 7.0 mi upstream from station. Inflow pumped from Patuxent River to augment water supply for Washington Suburban Sanitary District, August 1939 to August 1960. Small diversion since 1962 for irrigation of golf courses upstream from station. 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 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 23	0345	*1,930	*4.50	Mar. 4	1415	1,870	4.45

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	24	23	32	28	33	e200	e42	e54	16	9.9	10
2	15	104	24	29	24	35	e140	e41	e30	35	66	9.7
3	14	335	21	28	25	42	e82	e40	e35	47	25	9.6
4	12	54	22	28	26	e680	e68	e50	e33	53	63	21
5	12	52	23	335	25	e350	e63	e150	e50	54	16	13
6	11	49	20	71	26	e100	e60	e86	e26	22	330	9.7
7	10	28	22	44	25	e70	e58	e47	e35	17	61	9.6
8	11	24	20	132	25	e60	e57	e38	e100	18	71	44
9	131	25	20	153	24	e55	e56	e36	e34	15	22	14
10	260	25	182	65	24	e68	e220	e34	e30	13	14	66
11	44	27	783	48	25	e58	e105	e50	e26	12	13	12
12	24	44	196	74	130	e50	e74	e170	e24	12	144	9.6
13	19	229	71	90	100	e76	e62	e76	e22	12	55	9.6
14	16	48	47	52	50	e140	e59	e41	e20	41	27	9.6
15	15	33	39	41	34	e96	e90	e42	e20	40	14	14
16	14	29	34	38	137	e170	e250	e72	e19	14	14	71
17	11	34	94	37	83	e560	e100	e64	e19	11	47	55
18	11	29	58	34	39	e200	e66	e76	e18	10	25	37
19	12	31	36	32	32	e120	e60	e96	e17	11	15	16
20	11	28	62	31	32	e125	e70	e42	e16	16	14	12
21	12	27	37	43	46	e190	e250	e34	e18	17	14	79
22	16	39	31	126	178	e170	e160	e30	e22	14	13	33
23	15	479	53	45	87	e210	e84	e29	e17	13	12	14
24	57	69	34	36	43	e450	e70	e28	22	12	11	12
25	24	51	27	33	35	e150	e70	e27	18	17	12	31
26	13	42	27	31	42	e140	e110	e26	17	20	11	40
27	13	32	26	30	41	e300	e74	e26	19	14	32	232
28	13	27	113	30	36	e250	e52	e25	16	12	16	55
29	13	25	65	29	---	e120	e47	e25	15	12	16	14
30	21	23	40	27	---	e94	e44	e24	16	12	11	11
31	73	---	35	28	---	e105	---	e44	---	10	10	---
TOTAL	937	2066	2285	1852	1422	5267	2901	1611	808	622	1203.9	973.4
MEAN	30.2	68.9	73.7	59.7	50.8	170	96.7	52.0	26.9	20.1	38.8	32.4
MAX	260	479	783	335	178	680	250	170	100	54	330	232
MIN	10	23	20	27	24	33	44	24	15	10	9.9	9.6
CFSM	.61	1.39	1.49	1.21	1.03	3.44	1.96	1.05	.55	.41	.79	.66
IN.	.71	1.56	1.72	1.39	1.07	3.97	2.18	1.21	.61	.47	.91	.73

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1993, BY WATER YEAR (WY)

MEAN	28.5	39.0	48.4	52.3	62.5	68.8	62.1	55.0	42.0	34.4	37.7	37.0
MAX	129	109	136	173	183	170	167	198	237	159	193	327
(WY)	1980	1953	1984	1979	1979	1993	1952	1989	1972	1945	1955	1975
MIN	2.44	4.30	11.4	8.04	13.6	23.5	15.3	9.91	10.1	4.07	3.61	2.58
(WY)	1942	1942	1966	1955	1947	1981	1950	1941	1940	1944	1943	1941

POTOMAC RIVER BASIN

01651000 NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1938 - 1993

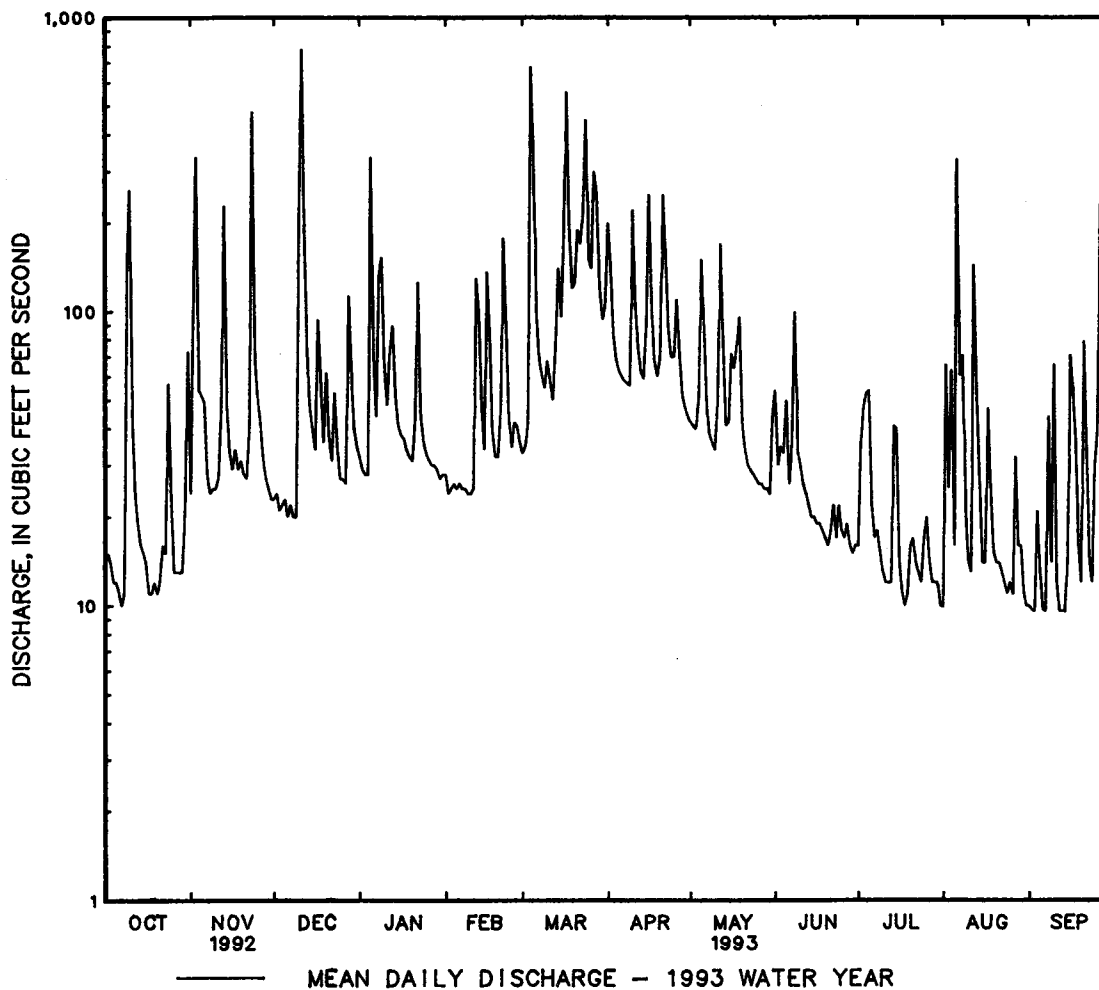
ANNUAL TOTAL	18284.7		21948.3		
ANNUAL MEAN	(a)50.0		(a)60.1		(a)47.3
HIGHEST ANNUAL MEAN					96.9
LOWEST ANNUAL MEAN					20.8
HIGHEST DAILY MEAN	783	Dec 11	783	Dec 11	5050
LOWEST DAILY MEAN	(e)6.0	Jul 20	9.6	(b)	.40
ANNUAL SEVEN-DAY MINIMUM	7.3	Jul 14	12	Aug 28	.60
INSTANTANEOUS PEAK FLOW	4980	Jul 21	1930	Nov 23	(d)18000
INSTANTANEOUS PEAK STAGE	6.35	Jul 21	4.50	Nov 23	14.47
INSTANTANEOUS LOW FLOW	UNKNOWN		7.9	Sep 11	.20
ANNUAL RUNOFF (CFSM)	1.01		1.22		.96
ANNUAL RUNOFF (INCHES)	13.77		16.53		13.01
10 PERCENT EXCEEDS	103		134		90
50 PERCENT EXCEEDS	27		33		23
90 PERCENT EXCEEDS	11		12		6.5

a Unadjusted.

e Estimated

b Sept. 3, 7, 12-14.

c Sept. 8, 11, 1966.

d From rating curve extended above 4,000 ft³/s on the basis of the average of slope-area and step-backwater measurements of peak flow.

POTOMAC RIVER BASIN

333

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 mi².

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

GAGE.--Water-stage recorder and cobblestone control. Datum of gage is 16.52 ft above sea level.

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 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 1, 1992	1730	*930	*6.03	July 2, 1993	1915	*1,030	*6.30
Mar. 17, 1993	2130	573	4.89	Aug. 9, 1993	1545	372	4.09
Apr. 5, 1993	1845	369	4.08	Aug. 17, 1993	1630	360	4.04

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE 1992 TO SEPTEMBER 1992
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	44	1.4	.74
2	---	---	---	---	---	---	---	---	---	2.6	.84	2.0
3	---	---	---	---	---	---	---	---	---	1.3	.80	3.5
4	---	---	---	---	---	---	---	---	---	1.0	7.6	.85
5	---	---	---	---	---	---	---	---	---	.84	1.0	.83
6	---	---	---	---	---	---	---	---	---	1.6	.85	13
7	---	---	---	---	---	---	---	---	---	1.1	.82	2.0
8	---	---	---	---	---	---	---	---	---	.81	.80	2.2
9	---	---	---	---	---	---	---	---	---	.82	.86	1.3
10	---	---	---	---	---	---	---	---	---	.82	.83	2.9
11	---	---	---	---	---	---	---	---	---	.85	8.1	1.9
12	---	---	---	---	---	---	---	---	---	1.1	1.3	.83
13	---	---	---	---	---	---	---	---	---	.85	4.3	.87
14	---	---	---	---	---	---	---	---	---	1.1	2.2	.83
15	---	---	---	---	---	---	---	---	---	3.0	10	.82
16	---	---	---	---	---	---	---	---	---	1.2	3.8	.82
17	---	---	---	---	---	---	---	---	---	.83	1.4	.86
18	---	---	---	---	---	---	---	---	---	1.7	1.1	.81
19	---	---	---	---	---	---	---	---	2.7	.82	.87	.81
20	---	---	---	---	---	---	---	---	.93	.87	.83	.81
21	---	---	---	---	---	---	---	---	.88	3.0	.82	.81
22	---	---	---	---	---	---	---	---	.88	1.0	.81	6.6
23	---	---	---	---	---	---	---	---	.89	8.2	.81	1.4
24	---	---	---	---	---	---	---	---	2.3	13	.81	.81
25	---	---	---	---	---	---	---	---	2.2	14	.80	19
26	---	---	---	---	---	---	---	---	1.2	.99	.78	3.6
27	---	---	---	---	---	---	---	---	.88	3.6	.78	1.5
28	---	---	---	---	---	---	---	---	.87	.97	3.0	2.1
29	---	---	---	---	---	---	---	---	.91	.83	.81	1.0
30	---	---	---	---	---	---	---	---	2.4	.82	.81	.83
31	---	---	---	---	---	---	---	---	---	14	.75	---
TOTAL	---	---	---	---	---	---	---	---	---	127.62	60.68	76.33
MEAN	---	---	---	---	---	---	---	---	---	4.12	1.96	2.54
MAX	---	---	---	---	---	---	---	---	---	44	10	19
MIN	---	---	---	---	---	---	---	---	---	.81	.75	.74
CFSM	---	---	---	---	---	---	---	---	---	1.26	.60	.78
IN.	---	---	---	---	---	---	---	---	---	1.45	.69	.87

01651800 WATTS BRANCH AT WASHINGTON, D.C.--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	1.5	e.97	2.5	2.9	3.4	8.9	2.6	4.7	.61	.40	.66
2	.81	8.0	e.96	2.4	2.5	3.4	e16	2.4	1.6	37	.45	.81
3	.81	12	e.92	2.6	2.4	3.2	5.7	2.1	5.3	3.5	.49	.75
4	.81	1.3	e.90	2.4	2.6	e89	4.2	2.1	1.7	1.3	.51	2.1
5	.88	3.8	e.92	35	2.5	12	3.6	e33	4.7	1.3	.41	.85
6	.78	2.0	e.88	4.2	2.4	5.9	3.4	4.1	1.8	1.4	28	.76
7	.80	1.2	e.89	3.1	2.4	4.3	3.1	2.4	1.5	5.7	1.4	.77
8	.77	1.0	e.94	16	2.4	4.0	2.9	2.3	e15	1.8	.67	3.2
9	5.5	.94	1.0	17	2.3	3.0	2.9	2.2	2.1	1.2	13	.89
10	4.9	.92	25	5.3	2.3	4.6	e15	2.0	1.6	1.2	1.5	2.6
11	1.6	1.1	28	4.7	2.4	2.6	4.6	2.0	1.2	.94	1.0	.89
12	.86	5.8	6.8	6.7	e17	2.3	3.5	e15	1.1	.65	3.3	.89
13	.82	6.0	2.9	7.4	5.4	e19	3.6	2.5	1.1	1.5	.94	.85
14	.80	1.2	2.5	4.1	3.0	12	3.5	2.0	1.1	3.1	.89	.78
15	.79	.98	2.0	3.4	2.7	8.0	2.9	1.8	1.1	1.7	1.1	.75
16	.79	1.0	1.8	3.2	7.7	8.1	e25	e12	1.2	.91	.95	5.1
17	.81	1.0	6.6	3.1	3.2	e109	4.4	2.9	1.1	.62	14	6.0
18	.83	1.0	2.2	2.9	2.7	e39	3.2	9.9	1.4	.44	1.8	4.1
19	.81	1.0	1.7	2.7	2.3	7.3	2.8	6.5	1.8	.84	1.4	.98
20	.82	1.0	5.3	2.7	2.6	5.8	2.6	2.9	2.1	.67	1.7	.86
21	.83	1.1	1.9	5.2	7.6	8.3	e21	2.1	1.0	.46	.98	3.5
22	.84	2.9	1.8	6.9	14	5.6	12	1.8	1.1	.45	.92	1.0
23	.89	27	6.3	3.5	4.3	e11	4.2	1.7	.80	.37	.90	.89
24	3.3	1.5	2.7	3.7	3.2	e34	3.3	1.7	1.0	.39	.76	.89
25	1.2	1.9	2.6	3.5	2.8	5.6	3.1	1.6	.78	.44	.77	6.4
26	.85	5.8	2.4	3.1	4.2	4.6	e14	1.6	.78	.42	.79	1.6
27	.85	1.7	2.1	3.1	3.9	e19	3.7	1.6	1.9	.69	.67	13
28	.85	1.1	10	3.2	3.1	9.6	3.1	1.6	1.0	.67	.68	1.4
29	.87	e1.0	4.0	3.1	---	8.7	2.8	1.5	1.3	.46	.66	.83
30	2.7	e.98	3.1	2.9	---	6.7	2.7	1.4	.88	.40	.63	1.1
31	5.2	---	2.7	2.9	---	5.8	---	4.3	---	.49	.60	---
TOTAL	44.18	97.72	132.78	172.5	116.8	464.8	191.7	133.6	63.74	71.62	82.27	65.20
MEAN	1.43	3.26	4.28	5.56	4.17	15.0	6.39	4.31	2.12	2.31	2.65	2.17
MAX	5.5	27	28	35	17	109	25	33	15	37	28	13
MIN	.77	.92	.88	2.4	2.3	2.3	2.6	1.4	.78	.37	.40	.66
CFSM	.43	.99	1.31	1.70	1.27	4.57	1.95	1.31	.65	.70	.81	.66
IN.	.50	1.11	1.51	1.96	1.32	5.27	2.17	1.52	.72	.81	.93	.76

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

[illegible]

01651800 WATTS BRANCH AT WASHINGTON, D.C.--Continued

SUMMARY STATISTICS

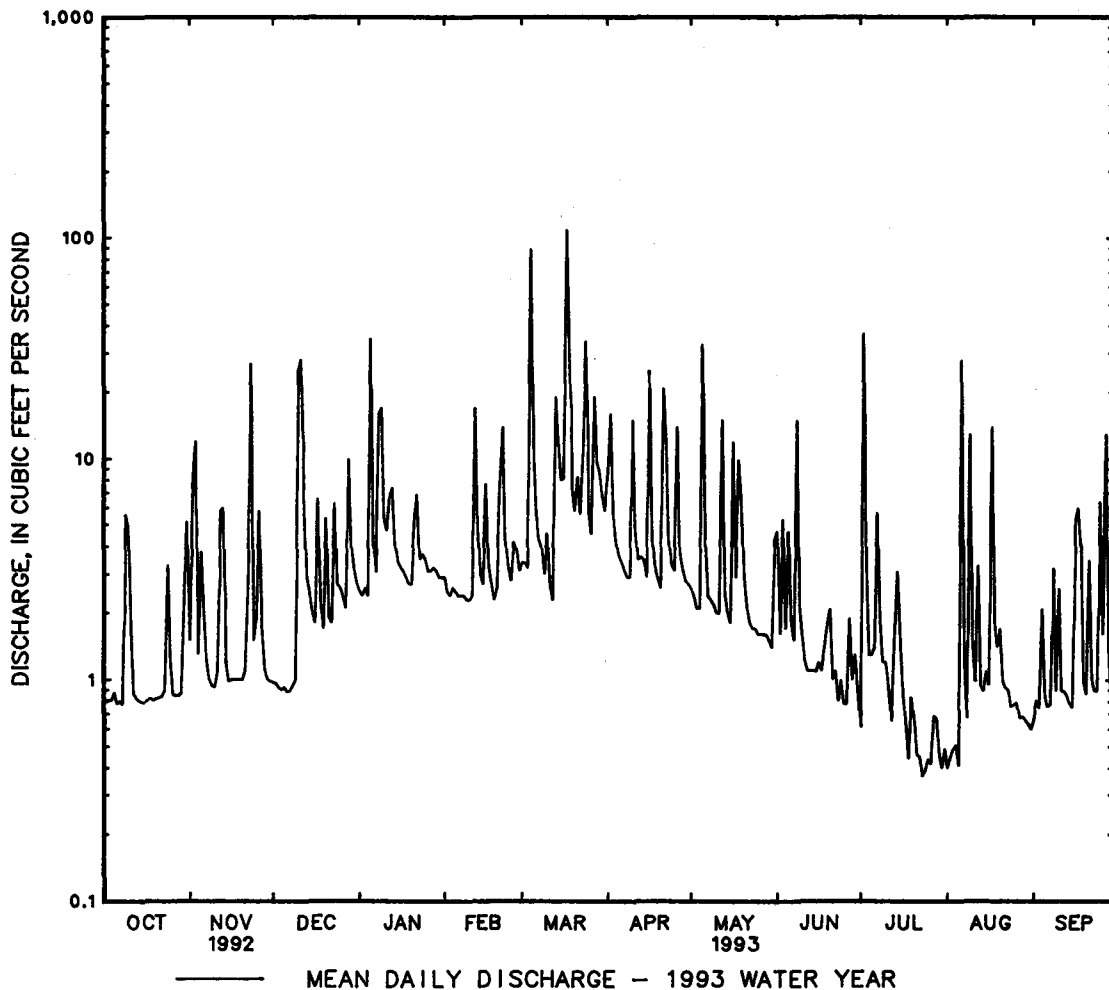
FOR 1993 WATER YEAR

WATER YEARS 1992 - 1993

ANNUAL TOTAL	1636.91				
ANNUAL MEAN	4.48			4.48	
HIGHEST ANNUAL MEAN				4.48	1993
LOWEST ANNUAL MEAN				4.48	1993
HIGHEST DAILY MEAN	(e)109	Mar 17		(e)109	Mar 17 1993
LOWEST DAILY MEAN	.37	Jul 23		.37	Jul 23 1993
ANNUAL SEVEN-DAY MINIMUM	.45	Jul 30		.45	Jul 30 1993
INSTANTANEOUS PEAK FLOW	1030	Jul 2		1030	Jul 2 1993
INSTANTANEOUS PEAK STAGE	6.30	Jul 2		6.30	Jul 2 1993
INSTANTANEOUS LOW FLOW	.36	(a)		.36	(a)
ANNUAL RUNOFF (CFSM)	1.37			1.37	
ANNUAL RUNOFF (INCHES)	18.56			18.58	
10 PERCENT EXCEEDS	9.2			8.2	
50 PERCENT EXCEEDS	2.2			1.8	
90 PERCENT EXCEEDS	.78			.80	

e Estimated

a July 22-26, 28-31, Aug. 1, 2.



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 mi².

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 dams, timer malfunction), 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 11	0800	498	5.79	Mar. 24	1430	464	5.65
Mar. 5	0430	*1,710	*8.39	Mar. 28	0700	462	5.64
Mar. 18	0200	896	7.04	Apr. 10	2400	635	6.30

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	42	22	38	36	39	153	e66	49	4.7	.00	.04
2	19	36	23	33	34	40	148	e64	22	5.1	.00	.00
3	17	124	22	31	32	40	159	e62	39	7.5	.00	.00
4	19	61	20	31	31	504	104	e70	27	5.2	.00	.00
5	30	41	20	170	30	1020	94	e100	35	4.0	.00	.00
6	18	63	19	81	30	202	88	e110	35	6.5	18	.00
7	14	39	19	54	28	136	83	e70	20	9.8	44	.00
8	13	30	18	98	28	113	79	e60	45	12	6.7	.00
9	18	26	17	214	28	101	77	e52	29	9.8	3.0	.00
10	37	25	60	113	27	92	218	e48	28	9.5	3.4	.00
11	25	24	412	77	27	85	453	e44	18	6.9	1.6	.00
12	30	25	220	89	54	71	138	e42	15	2.3	6.6	.00
13	18	90	83	114	110	141	105	66	15	.53	4.6	.00
14	14	49	59	82	56	261	93	47	13	.35	1.5	.00
15	13	32	51	66	43	132	e86	38	12	25	6.2	.00
16	12	27	47	59	45	130	e180	37	11	4.9	8.7	.00
17	12	24	49	56	56	480	e200	54	9.7	1.5	9.5	.00
18	12	23	56	53	44	667	e130	49	8.9	.53	20	18
19	13	21	47	49	37	191	e100	104	8.3	.16	11	31
20	e14	21	64	46	33	161	e90	59	8.9	10	8.3	14
21	e15	20	60	45	38	170	e100	41	7.8	3.6	11	16
22	e12	28	47	75	103	153	e220	34	8.5	.91	12	24
23	e13	54	45	57	68	125	e140	31	6.6	.20	7.8	16
24	23	38	47	53	49	359	e110	29	4.6	.03	5.3	12
25	37	29	40	50	41	165	e100	26	3.8	.02	3.7	16
26	23	35	37	47	37	124	e120	25	3.5	.01	3.4	37
27	18	38	35	44	39	186	e120	22	5.5	.00	2.0	25
28	17	29	51	41	40	330	e90	21	5.9	.00	1.3	39
29	17	25	67	40	---	161	e80	19	3.0	.00	.76	7.3
30	17	23	51	38	---	199	e72	17	8.5	.00	.41	3.9
31	56	---	43	37	---	129	---	18	---	.00	.18	---
TOTAL	620	1142	1851	2081	1224	6707	3930	1525	506.5	131.04	200.95	259.24
MEAN	20.0	38.1	59.7	67.1	43.7	216	131	49.2	16.9	4.23	6.48	8.64
MAX	56	124	412	214	110	1020	453	110	49	25	44	39
MIN	12	20	17	31	27	39	72	17	3.0	.00	.00	.00
CFSM	.51	.96	1.51	1.70	1.11	5.48	3.32	1.25	.43	.11	.16	.22
IN.	.58	1.08	1.74	1.96	1.15	6.32	3.70	1.44	.48	.12	.19	.24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1993, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
MEAN	28.8	32.5	52.2	61.3	67.4	75.7	67.2	49.8	32.4	19.0	21.1	29.0
MAX	177	95.8	153	217	188	216	218	189	173	92.7	88.8	256
(WY)	1980	1973	1973	1978	1972	1993	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

01653600 PISCATAWAY CREEK AT PISCATAWAY, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1966 - 1993
ANNUAL TOTAL	12171.73	20177.73	
ANNUAL MEAN	33.3	55.3	44.6
HIGHEST ANNUAL MEAN			85.9
LOWEST ANNUAL MEAN			13.4
HIGHEST DAILY MEAN	480 Mar 27	1020 Mar 5	4500 Sep 6 1979
LOWEST DAILY MEAN	.02 Jul 21	.00 (a)	.00 (b)
ANNUAL SEVEN-DAY MINIMUM	.34 Jul 15	.00 Jul 27	.00 many days
INSTANTANEOUS PEAK FLOW	564 Mar 27	1710 Mar 5	(c) 8540 Sep 6 1979
INSTANTANEOUS PEAK STAGE	6.05 Mar 27	8.39 Mar 5	11.21 Sep 6 1979
INSTANTANEOUS LOW FLOW	.02 Jul 21	.00 (d)	.00 (f)
ANNUAL RUNOFF (CFSM)	.84	1.40	1.13
ANNUAL RUNOFF (INCHES)	11.46	19.00	15.34
10 PERCENT EXCEEDS	60	127	87
50 PERCENT EXCEEDS	22	31	24
90 PERCENT EXCEEDS	7.0	.53	1.5

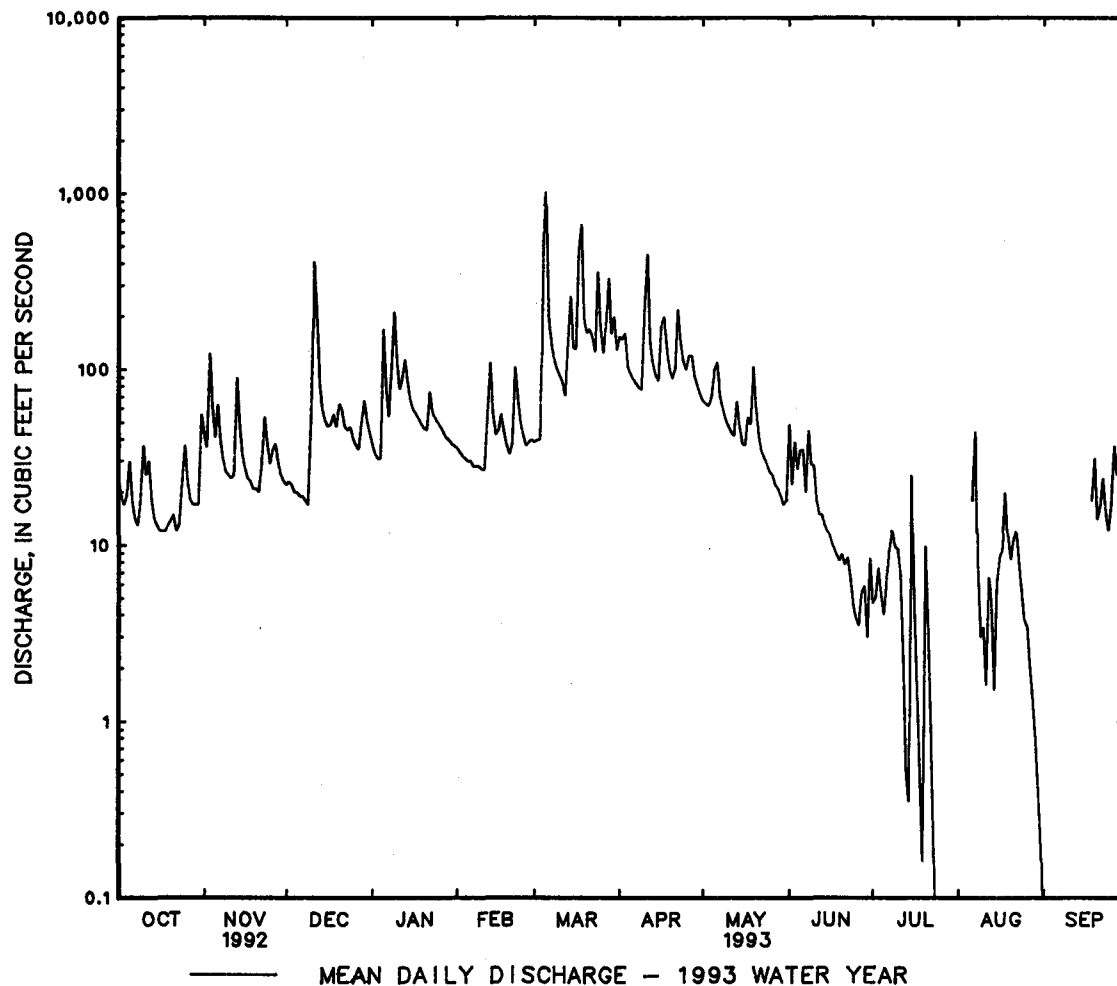
a July 27-31, Aug. 1-5, Sept. 2-17.

b Many days in 1966, 1970, 1977, 1980-83, 1985-89, 1991-1993.

c From rating curve extended above 1,700 ft³/s on basis of contracted-opening measurement of peak flow at bridge 100 ft upstream.

d July 26-31, Aug. 1-6, Sept. 2-18.

f At times in 1966, 1970, 1977, 1980-83, 1985-89, 1991-1993.



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 mi².

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 34.88 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges (backwater from beaver dams), which are poor. 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 12	1000	708	3.76	Mar. 18	1600	1,220	4.21
Mar. 5	1130	*2,170	*4.77	Apr. 17	1730	867	3.92
Mar. 15	0800	736	3.79				

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	108	54	111	76	91	237	135	267	9.1	.00	.04
2	58	95	54	94	70	89	236	124	205	12	.00	.22
3	46	144	51	82	69	87	249	113	136	24	.00	.17
4	42	204	47	81	72	405	233	106	155	36	.00	.09
5	84	174	44	145	67	1790	180	130	125	20	.00	.07
6	78	181	41	213	66	924	161	438	112	14	2.6	.02
7	48	166	41	148	61	452	150	369	72	9.7	39	.00
8	38	112	39	171	60	263	141	162	84	7.5	29	.00
9	49	81	40	405	59	198	137	123	111	5.5	13	e.00
10	86	65	61	534	57	170	168	106	73	3.5	7.3	e.00
11	73	58	307	362	58	162	484	99	51	2.1	4.1	e.07
12	53	57	650	236	89	145	533	95	43	1.0	3.3	e.04
13	44	100	467	225	206	182	264	155	39	.86	2.7	e.02
14	37	169	230	204	180	478	188	185	38	1.6	2.3	e.06
15	31	120	147	167	107	578	165	130	35	13	1.2	e.00
16	27	78	120	143	98	326	241	100	33	27	.55	e.02
17	25	63	118	131	144	443	758	131	29	12	.81	e.07
18	22	57	147	119	114	1120	563	142	25	5.4	5.8	e.20
19	20	56	137	107	86	735	255	256	22	3.0	1.8	e3.1
20	20	54	144	99	82	378	191	252	44	15	1.5	e2.8
21	19	51	214	98	89	290	184	154	46	24	1.8	e2.5
22	21	60	166	144	203	259	520	110	32	9.5	1.2	e6.4
23	22	97	132	150	212	237	566	89	23	4.4	.89	e5.0
24	26	91	127	119	136	324	297	79	17	2.5	1.3	e2.4
25	47	78	105	109	107	399	202	73	14	1.4	1.1	e1.7
26	53	109	99	98	91	295	196	71	13	1.1	.67	e3.7
27	43	125	90	90	90	239	261	64	14	.82	.45	e6.4
28	34	94	108	87	95	386	221	57	14	.48	.14	e14
29	31	70	177	84	---	401	167	51	12	.30	.03	e9.5
30	32	58	161	78	---	316	148	45	10	.17	.00	e4.3
31	70	---	129	76	---	282	---	58	---	.04	.00	---
TOTAL	1377	2975	4447	4910	2844	12444	8296	4202	1894	266.97	122.54	62.89
MEAN	44.4	99.2	143	158	102	401	277	136	63.1	8.61	3.95	2.10
MAX	98	204	650	534	212	1790	758	438	267	36	39	14
MIN	19	51	39	76	57	87	137	45	10	.04	.00	.00
CFSM	.56	1.24	1.80	1.98	1.27	5.02	3.46	1.70	.79	.11	.05	.03
IN.	.64	1.39	2.07	2.29	1.32	5.79	3.86	1.96	.88	.12	.06	.03

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
MEAN	42.0	73.8	108	125	125	163	140	120	71.6	29.9	26.9	32.8
MAX	163	139	226	248	187	401	277	334	311	93.5	113	127
(WY)	1990	1986	1984	1990	1985	1993	1993	1989	1989	1989	1990	1992
MIN	7.93	7.35	41.9	49.1	57.6	57.0	30.5	25.5	2.07	4.47	.68	1.94
(WY)	1992	1992	1985	1985	1992	1985	1985	1986	1986	1987	1987	1991

01660920 ZEKIAH SWAMP RUN NEAR NEWTOWN, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

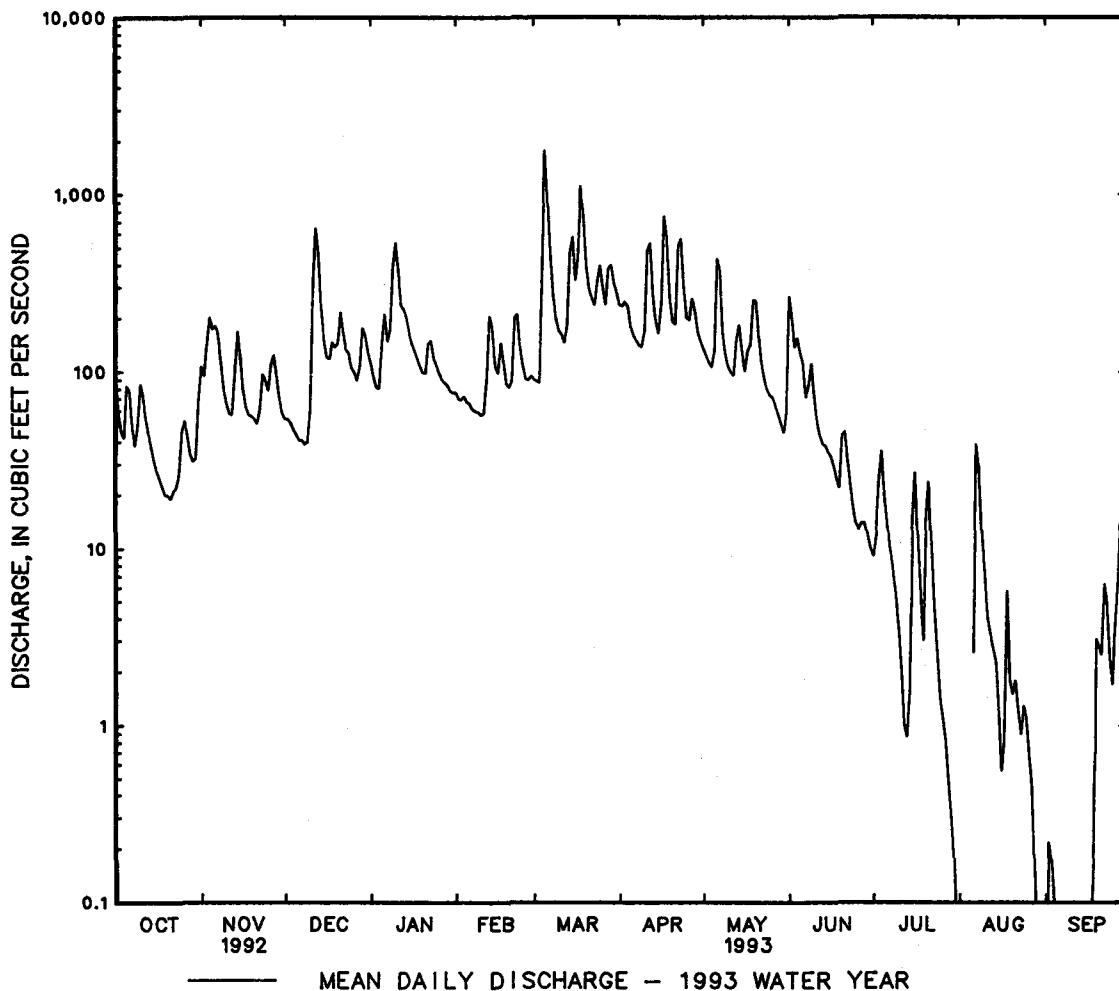
WATER YEARS 1983 - 1993

ANNUAL TOTAL	28287.1		43841.40		88.6	
ANNUAL MEAN	77.3		120		137	1990
HIGHEST ANNUAL MEAN					45.1	1985
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	1120	Sep 7	1790	Mar 5	1790	Mar 5 1993
LOWEST DAILY MEAN	1.5	Jul 22	.00	(a)	.00	many days
ANNUAL SEVEN-DAY MINIMUM	3.5	Jul 17	.02	Sep 6	.00	many days
INSTANTANEOUS PEAK FLOW	1250	Sep 7	2170	Mar 5	2170	Mar 5 1993
INSTANTANEOUS PEAK STAGE	4.23	Sep 7	4.77	Mar 5	4.77	Mar 5 1993
INSTANTANEOUS LOW FLOW	1.6	Jul 22	.00	(b)	.00	(c)
ANNUAL RUNOFF (CFSM)	.97		1.50		1.11	
ANNUAL RUNOFF (INCHES)	13.17		20.41		15.07	
10 PERCENT EXCEEDS	163		263		195	
50 PERCENT EXCEEDS	46		78		50	
90 PERCENT EXCEEDS	13		.84		1.8	

a Aug. 1-5, 30, 31 and Sept. 7-10, 15.

b July 31, Aug. 1-6, 29-31, Sept. 1, 6-9, 14-16.

c No flow for several days in 1983, 1985-89, 1991, 1993.



01661050 ST. CLEMENT CREEK NEAR CLEMENTS. MD

LOCATION.--Lat 38°20'00", long 76°43'31", St. Marys County, Hydrologic Unit 02070011, on left bank 60 ft downstream from bridge on State Highway 242, 0.5 mi north of Clements, 2.3 mi upstream from mouth, and 5.7 mi northwest of Leonardtown.

DRAINAGE AREA.--18.5 mi².

PERIOD OF RECORD.--October 1968 to current year.

REVISÉD RECORDS.--WDR MD-DE-79-1: 1974(P).

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Elevation of gage is 8 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	0130	*954	*5.37	Apr. 16	2100	267	3.83
Mar. 14	0330	382	4.48				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	15	11	19	16	21	68	23	27	4.5	.00	.27
2	7.0	13	11	16	13	22	133	21	15	5.0	.00	.13
3	6.1	28	10	15	13	20	66	19	15	5.6	.00	.13
4	7.3	22	9.8	15	16	220	44	18	17	5.8	.00	.14
5	28	20	9.7	37	16	336	39	27	21	4.9	.00	.51
6	17	23	9.7	30	16	88	37	51	19	3.5	26	1.3
7	9.4	16	9.4	20	14	48	33	25	13	2.5	44	.90
8	7.9	13	9.3	55	15	40	31	19	16	2.1	7.7	.67
9	21	11	9.3	109	15	34	30	17	19	1.8	3.9	.67
10	27	10	28	64	14	30	35	17	12	1.6	3.2	.64
11	15	10	150	37	14	29	49	15	10	1.4	2.1	.32
12	14	10	100	37	40	27	34	20	8.7	1.1	1.7	.16
13	12	14	41	34	69	123	30	43	8.1	1.5	1.5	.13
14	8.9	13	27	29	30	208	29	30	8.2	.94	1.4	.13
15	7.8	11	22	25	21	50	28	19	7.9	.77	1.5	.12
16	7.0	10	20	23	23	46	106	16	7.6	.40	1.2	.07
17	6.2	9.6	23	23	32	92	128	30	6.8	.17	1.9	.17
18	5.6	9.7	33	21	22	132	45	50	6.2	.42	2.8	1.5
19	6.3	9.7	22	19	17	51	37	91	5.6	.38	2.0	2.6
20	5.1	9.7	45	17	17	44	33	46	16	.67	1.6	1.9
21	5.8	9.7	39	19	36	40	35	28	9.9	.74	1.4	2.0
22	5.7	11	25	31	67	37	55	22	7.1	.34	1.1	5.4
23	5.8	12	25	25	31	35	36	19	5.6	.28	.89	3.2
24	7.7	11	24	21	23	62	29	18	4.5	.21	.77	2.3
25	11	14	18	20	19	46	28	16	4.0	.20	.61	1.6
26	9.5	24	17	19	20	37	41	15	3.8	.16	.63	3.2
27	7.9	23	16	18	22	53	48	15	4.3	.00	.61	4.6
28	6.8	15	28	17	21	70	30	13	3.7	.00	.48	6.1
29	6.7	12	36	17	---	44	27	12	3.2	.00	.35	3.6
30	6.8	11	25	15	---	44	26	11	3.7	.00	.36	2.2
31	14	---	21	16	---	36	---	11	---	.00	.25	---
TOTAL	314.6	420.4	874.2	863	672	2165	1390	777	308.9	46.98	109.95	46.66
MEAN	10.1	14.0	28.2	27.8	24.0	69.8	46.3	25.1	10.3	1.52	3.55	1.56
MAX	28	28	150	109	69	336	133	91	27	5.8	44	6.1
MIN	5.1	9.6	9.3	15	13	20	26	11	3.2	.00	.00	.07
CFSM	.55	.76	1.52	1.50	1.30	3.78	2.50	1.35	.56	.08	.19	.08
IN.	.63	.85	1.76	1.74	1.35	4.35	2.80	1.56	.62	.09	.22	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

MEAN	10.4	15.0	21.1	26.2	27.9	31.3	26.5	22.8	16.9	11.8	11.5	12.2
MAX	46.8	45.3	40.3	77.4	85.7	69.8	54.7	57.9	116	56.4	45.0	75.2
(WY)	1980	1980	1973	1978	1979	1993	1983	1978	1972	1975	1985	1979
MIN	.73	3.23	5.01	5.30	11.9	10.1	9.05	4.39	1.32	.50	.036	.000
(WY)	1989	1982	1989	1981	1991	1981	1985	1991	1988	1988	1988	1988

01661050 ST. CLEMENT CREEK NEAR CLEMENTS, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1969 - 1993	
ANNUAL TOTAL	6745.76		7988.69		19.4	
ANNUAL MEAN	18.4		21.9		34.5	
HIGHEST ANNUAL MEAN					9.19	
LOWEST ANNUAL MEAN					1580	
HIGHEST DAILY MEAN	913	Sep 6	336	Mar 5		Jun 22 1972
LOWEST DAILY MEAN	.32	Jul 20	.00	(a)	.00	1981
ANNUAL SEVEN-DAY MINIMUM	.66	Jul 15	.00	Jul 27	.00	many days
INSTANTANEOUS PEAK FLOW	2900	Sep 6	954	Mar 5	(b)4500	Aug 31 1980
INSTANTANEOUS PEAK STAGE	6.21	Sep 6	5.37	Mar 5	(c)6.96	Sep 6 1979
INSTANTANEOUS LOW FLOW	.20	(d)	.00	(f)	.00	(g)
ANNUAL RUNOFF (CFSM)	1.00		1.18		1.05	
ANNUAL RUNOFF (INCHES)	13.56		16.06		14.26	
10 PERCENT EXCEEDS	28		44		37	
50 PERCENT EXCEEDS	10		15		11	
90 PERCENT EXCEEDS	2.9		.61		1.3	

a July 27-31, Aug. 1-5.

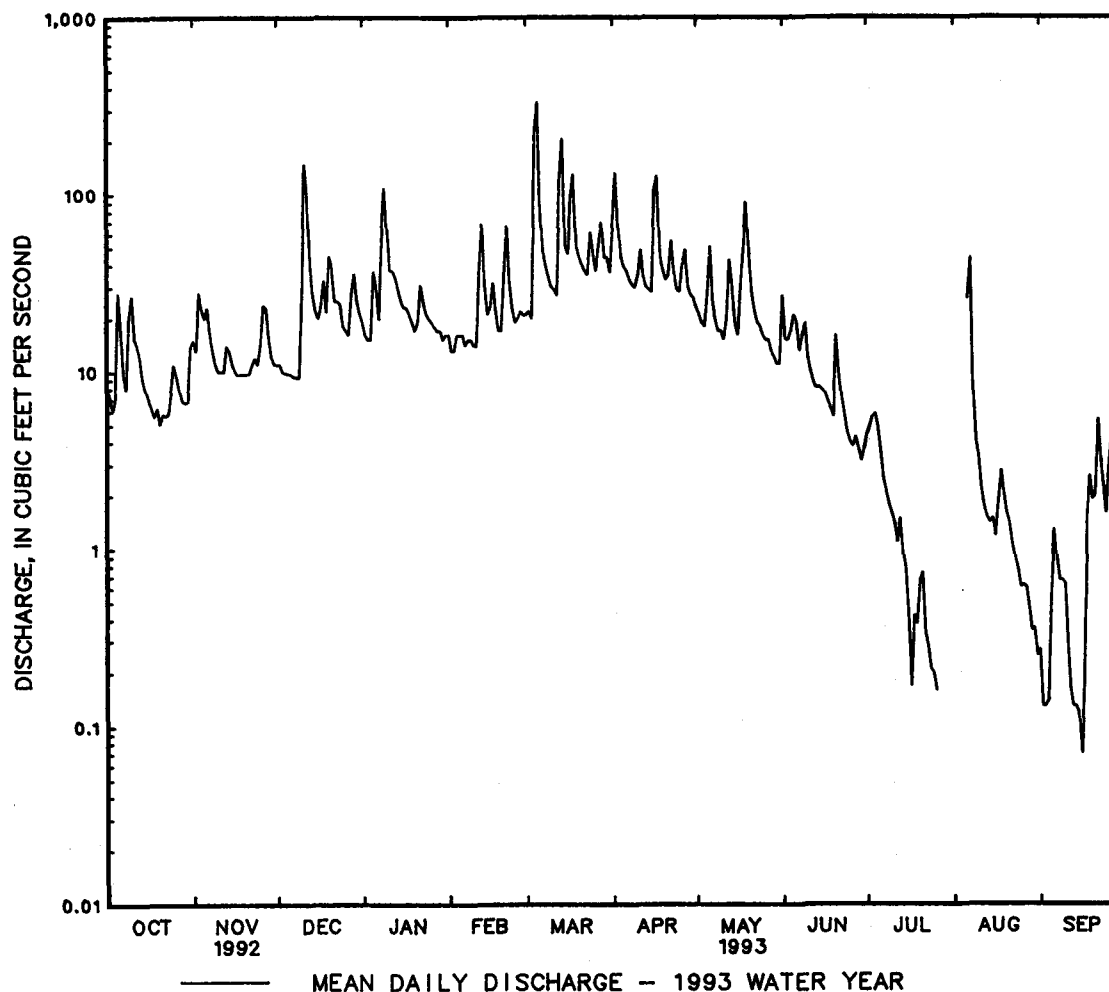
b From rating curve extended above 480 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow.

c Backwater from tide; maximum gage height unaffected by backwater, 6.55 ft, June 22, 1972.

d July 20, 21.

f July 17, 22, 26-31, Aug. 1-6.

g No flow at times in 1977, 1980, 1983, 1985-89, 1991, 1993.



LOCATION.--Lat 38°14'36", long 76°30'13", St. Marys County, Hydrologic Unit 02070011, on left bank at downstream side of bridge on State Highway 471 in Great Mills, 0.3 mi downstream from Western Branch, and 12.0 mi upstream from mouth.

PERIOD OF RECORD.--June 1946 to current year.

REVISED RECORDS.--WSP 1702: 1946, 1948-49, 1955, 1957-58. WDR MD-DE-83-1: 1981-82(M).

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

REMARKS.--No estimated daily discharges. Records good. Occasional regulation by reservoir on Western Branch of St. Marys River, 2.0 mi upstream since 1975, total capacity, 3,200 acre feet. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	1730	1,000	7.91	Aug. 6	2130	435	4.50
Mar. 13	2130	*1,100	*8.25				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	57	10	24	10	15	67	19	21	4.4	2.0	3.2
2	8.4	20	9.8	20	9.0	16	54	17	15	4.7	2.0	2.7
3	8.1	53	9.4	18	9.8	15	46	16	14	8.3	2.6	2.4
4	8.6	22	8.7	17	10	484	37	16	13	24	3.1	2.3
5	17	18	9.4	143	9.7	311	32	21	17	11	2.6	4.2
6	13	21	8.1	185	9.8	141	29	40	14	7.8	148	4.1
7	9.9	15	7.8	162	9.2	79	26	24	11	6.4	96	3.3
8	11	13	7.8	216	9.6	56	24	19	16	5.7	28	3.2
9	14	11	7.5	281	8.9	44	23	16	14	4.6	15	4.4
10	13	10	61	211	8.9	36	31	15	10	4.0	9.5	3.0
11	11	9.8	242	159	8.9	32	43	14	8.9	3.4	7.1	2.4
12	11	10	216	115	38	27	36	13	7.3	3.0	6.1	2.2
13	12	13	97	78	75	410	30	19	6.6	2.8	5.3	2.2
14	9.3	11	55	41	30	419	27	21	6.4	2.8	4.6	2.2
15	11	9.7	39	19	19	139	26	16	6.2	4.6	4.1	2.1
16	14	8.9	30	17	19	83	27	14	6.1	4.2	3.5	2.2
17	23	8.7	28	18	20	142	28	16	5.6	3.2	7.9	3.2
18	26	8.7	31	15	16	201	24	49	5.2	2.8	7.9	6.5
19	33	8.7	24	14	13	102	22	99	5.2	2.9	6.2	5.0
20	42	8.7	49	13	12	68	20	78	16	3.2	4.9	3.5
21	40	8.7	43	13	39	55	23	44	9.5	2.9	4.6	5.5
22	32	9.6	32	24	69	46	54	31	7.3	3.0	3.8	6.1
23	30	11	32	18	31	41	31	23	6.3	2.7	3.3	4.5
24	49	9.9	29	15	20	66	25	19	5.0	2.6	3.1	4.0
25	72	13	23	14	16	53	23	16	4.6	2.6	2.7	3.6
26	64	19	20	13	15	43	32	14	4.4	2.6	2.7	4.7
27	62	17	17	13	16	57	39	13	5.3	2.5	2.7	6.4
28	65	15	34	12	15	84	28	11	4.9	2.1	2.5	7.6
29	70	13	40	12	---	61	24	10	4.5	2.0	2.8	4.7
30	71	11	32	11	---	55	21	8.8	4.3	1.9	31	3.7
31	83	---	28	11	---	44	---	8.2	---	1.8	67	---
TOTAL	942.4	464.4	1280.5	1922	566.8	3425	952	740.0	274.6	140.5	492.6	115.1
MEAN	30.4	15.5	41.3	62.0	20.2	110	31.7	23.9	9.15	4.53	15.9	3.84
MAX	83	57	242	281	75	484	67	99	21	24	148	7.6
MIN	8.1	8.7	7.5	11	8.9	15	20	8.2	4.3	1.8	2.0	2.1
CFSM	1.27	.64	1.72	2.58	.84	4.60	1.32	.99	.38	.19	.66	.16
IN.	1.46	.72	1.98	2.98	.88	5.31	1.48	1.15	.43	.22	.76	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1993, BY WATER YEAR (WY)

MEAN	12.1	18.5	28.4	34.0	34.3	42.9	32.4	25.9	15.4	13.5	18.0	13.6
MAX	39.9	84.4	68.7	125	114	121	95.9	97.4	68.4	63.7	118	112
(WY)	1980	1957	1949	1978	1979	1984	1983	1990	1972	1960	1955	1979
MIN	2.58	4.29	5.27	6.45	9.31	8.52	6.82	5.36	2.68	1.48	1.46	2.02
(WY)	1969	1982	1966	1955	1968	1981	1985	1985	1986	1985	1966	1988

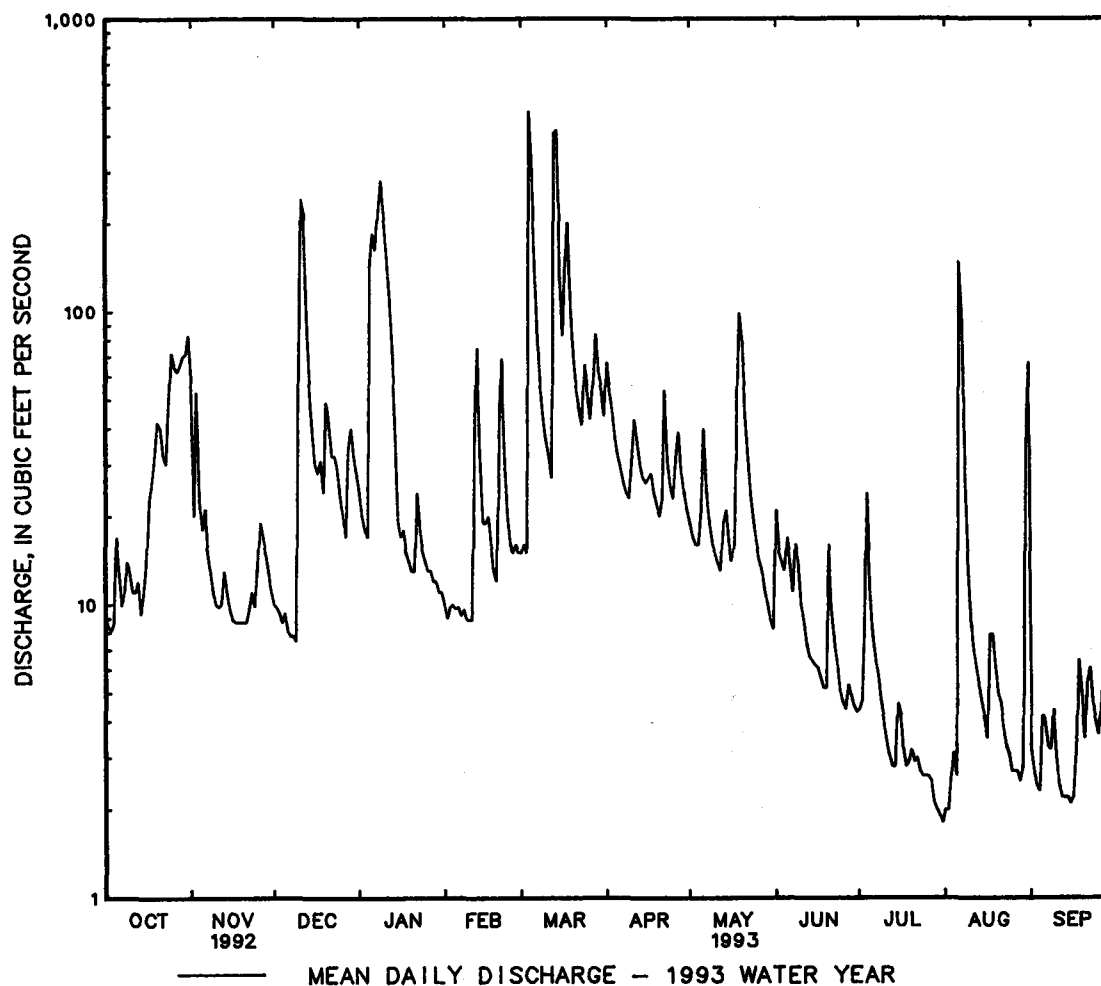
POTOMAC RIVER BASIN

343

01661500 ST. MARYS RIVER AT GREAT MILLS, MD

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1946 - 1993
ANNUAL TOTAL	11682.1	11315.9	
ANNUAL MEAN	31.9	31.0	24.0
HIGHEST ANNUAL MEAN			49.1
LOWEST ANNUAL MEAN			11.1
HIGHEST DAILY MEAN	767 Sep 7	484 Mar 4	2260 Aug 13 1955
LOWEST DAILY MEAN	1.4 Jul 20	1.8 Jul 31	.30 Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	1.8 Jul 14	2.0 Jul 27	.39 Sep 3 1966
INSTANTANEOUS PEAK FLOW	2050 Sep 6	1100 Mar 13	(a)7950 Aug 20 1969
INSTANTANEOUS PEAK STAGE	9.95 Sep 6	8.25 Mar 13	13.34 Aug 20 1969
INSTANTANEOUS LOW FLOW	1.3 Jul 20	1.7 (b)	.20 Sep 7 1966
ANNUAL RUNOFF (CFSM)	1.33	1.29	.99
ANNUAL RUNOFF (INCHES)	18.11	17.54	13.58
10 PERCENT EXCEEDS	61	67	47
50 PERCENT EXCEEDS	12	14	12
90 PERCENT EXCEEDS	5.0	3.1	3.2

a From rating curve extended above 1,500 ft³/s on basis of contracted-opening measurement at gage height 12.08 ft.
b July 30, 31.



LOCATION.--Lat 39°25'19", long 79°25'32", Garrett County, Hydrologic Unit 05020006, on left bank 200 ft downstream from Baltimore and Ohio Railroad bridge, 250 ft downstream from Little Youghiogheny River, 1.2 mi northwest of Oakland, and 1.5 mi upstream from Dunkard Lick Run.

PERIOD OF RECORD.--August 1941 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,353.61 ft above sea level. Prior to Aug. 1, 1946, nonrecording gage at bridge 200 ft upstream at same datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a stage of 15.3 ft. from floodmarks.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 17	2245	2,360	5.64	Mar. 27	0115	*3,820	*6.99
Mar. 24	0800	3.740	6.92	Apr. 1	0915	2.760	6.04

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	21	106	1190	178	226	2490	239	77	37	25	11
2	18	31	100	719	140	168	1830	205	52	214	29	9.9
3	17	138	101	533	143	207	1190	176	49	151	40	15
4	16	76	91	457	115	733	826	163	43	80	28	93
5	17	51	142	542	103	717	605	147	80	58	22	61
6	15	77	147	488	101	486	459	132	68	76	41	28
7	14	64	136	389	92	378	354	114	46	52	92	18
8	13	53	134	334	94	402	289	102	380	38	42	14
9	13	46	115	282	83	466	250	95	188	32	26	14
10	15	43	93	232	78	387	937	85	122	27	23	23
11	17	54	134	216	76	446	897	78	404	29	19	23
12	24	318	153	265	87	366	665	82	216	32	22	16
13	21	565	146	514	103	278	498	149	152	25	19	12
14	17	289	142	524	92	267	383	111	120	21	15	11
15	14	197	151	407	99	355	312	85	97	24	13	17
16	12	149	270	334	97	292	1060	76	81	23	13	231
17	11	125	1520	276	247	663	1570	81	66	18	13	136
18	12	115	1940	226	184	1060	949	75	57	15	18	166
19	17	114	1040	189	163	715	647	151	52	15	16	82
20	17	101	1270	162	152	503	479	115	44	17	13	53
21	18	95	1270	219	170	792	785	92	45	17	11	44
22	17	155	868	422	920	936	775	83	68	14	11	57
23	21	244	1330	397	628	1540	636	75	52	12	9.5	49
24	20	208	1270	445	400	3510	498	72	38	11	11	44
25	21	219	782	585	307	3030	399	64	31	9.9	8.5	44
26	22	192	560	419	264	3430	543	56	29	10	8.3	282
27	19	168	423	342	222	3330	547	50	33	14	7.9	653
28	17	146	332	282	202	3040	412	46	30	14	7.3	566
29	18	130	299	263	---	2370	342	44	50	90	6.7	269
30	17	117	643	241	---	2220	285	41	48	56	6.3	191
31	17	---	1170	213	---	2050	---	50	---	29	9.3	---
TOTAL	526	4301	16878	12107	5540	35363	21912	3134	2818	1260.9	625.8	3232.9
MEAN	17.0	143	544	391	198	1141	730	101	93.9	40.7	20.2	108
MAX	24	565	1940	1190	920	3510	2490	239	404	214	92	653
MIN	11	21	91	162	76	168	250	41	29	9.9	6.3	9.9
CFSM	.13	1.07	4.06	2.91	1.48	8.51	5.45	.75	.70	.30	.15	.80
IN.	.15	1.19	4.69	3.36	1.54	9.82	6.08	.87	.78	.35	.17	.90

MEAN	116	237	410	420	485	597	456	321	204	160	127	81.5
MAX	608	1152	1027	861	1100	1477	879	676	730	629	586	533
(WY)	1955	1986	1973	1952	1986	1963	1973	1956	1981	1978	1956	1945
MIN	4.45	7.08	62.2	63.2	127	168	121	76.0	24.0	10.3	10.5	5.99
(WY)	1954	1954	1944	1977	1978	1990	1946	1982	1965	1953	1944	1953

MONONGAHELA RIVER BASIN

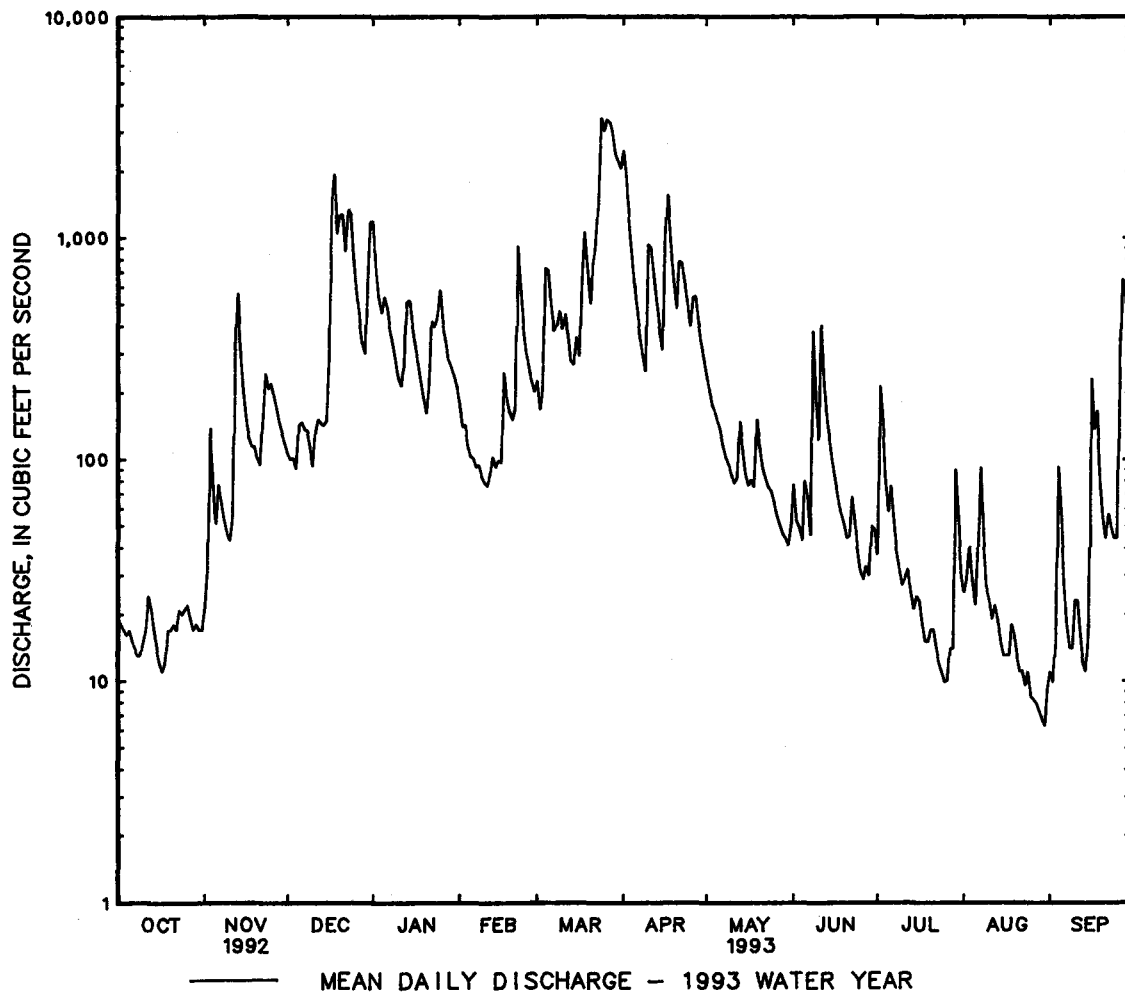
345

03075500 YOUGHIOGHENY RIVER NEAR OAKLAND, MD--Continued

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1941 - 1993	
ANNUAL TOTAL	101314		107698.6		301	
ANNUAL MEAN	277		295		390	
HIGHEST ANNUAL MEAN					193	
LOWEST ANNUAL MEAN					8570	
HIGHEST DAILY MEAN	2030	Jul 27	3510	Mar 24	Nov 5	1985
LOWEST DAILY MEAN	11	Oct 17	6.3	Aug 30	Oct 4	1953
ANNUAL SEVEN-DAY MINIMUM	14	Oct 14	7.8	Aug 25	Oct 2	1953
INSTANTANEOUS PEAK FLOW	3090	Jul 27	3820	Mar 27	Oct 16	1954
INSTANTANEOUS PEAK STAGE	6.35	Jul 27	6.99	Mar 27	Oct 16	1954
INSTANTANEOUS LOW FLOW	11	(b)	5.5	Aug 31	UNKNOWN	
ANNUAL RUNOFF (CFSM)	2.07		2.20		2.24	
ANNUAL RUNOFF (INCHES)	28.13		29.90		30.47	
10 PERCENT EXCEEDS	701		725		713	
50 PERCENT EXCEEDS	158		103		163	
90 PERCENT EXCEEDS	26		15		24	

a From rating curve extended above 7,000 ft³/s.

b Oct. 16-18.



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 mi².

PERIOD OF RECORD.--July 1925 to current year. Prior to October 1950, monthend contents published in WSP 1305, and October 1950 to September 1955, monthend contents published in WSP 1385.

GAGE.--Water-stage recorder at right end of spillway. Datum of gage is at sea level, unadjusted.

REMARKS.--Reservoir is formed by an earthfill dam completed January 1925, with storage beginning at that time. Usable capacity, 92,975 acre-ft between elevations 2,425 ft, top of intake to outlet tunnel, and 2,462 ft, crest of spillway. Dead storage, 13,085 acre-ft. Figures given herein represent usable contents. Reservoir is used for hydroelectric power.

COOPERATION.--Elevations and capacity table furnished by Pennsylvania Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 93,800 acre-ft, July 14, 1990, elevation, 2,462.25 ft; minimum observed, 11,763 acre-ft, Sept. 30, 1925, elevation, 2,433.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 92,600 acre-ft, Apr. 3, elevation, 2,461.9 ft; minimum, 71,100 acre-ft, Oct. 31, elevation, 2,456.0 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2457.7	77100	
Oct. 31	2456.0	71100	-6000
Nov. 30	2456.9	74300	+3200
Dec. 31	2456.3	72200	-2100
CAL YR 1992			-1400
Jan. 31	2457.0	74700	+2500
Feb. 28	2456.6	73200	-1500
Mar. 31	2460.9	88900	+15700
Apr. 30	2460.3	86700	-2200
May 31	2460.6	87800	+1100
June 30	2460.7	88100	+300
July 31	2459.6	84100	-4000
Aug. 31	2458.9	81500	-2600
Sept. 30	2458.5	80000	-1500
WTR YR 1993			+2900

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD

LOCATION.--Lat 39°39'13", long 79°24'31", Garrett County, Hydrologic Unit 05020006, on left bank 0.7 mi upstream from bridge on State Highway 42 at Friendsville, and 1.5 mi upstream from Bear Creek.

DRAINAGE AREA.--295 mi².

PERIOD OF RECORD.--August 1898 to December 1904 and October 1940 to current year. Annual maximum, water years 1905, 1923-31, 1940, published in WSP 1675. October, November 1940 monthly discharge only, published in WSP 1305. September 1922 to September 1926 (gage heights only) in reports of Pennsylvania Department of Forests and Waters.

REVISED RECORDS.--WSP 1385: Drainage area at former site, 1898-1905, 1941(M), 1942, 1944-45, 1948-49, 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,487.33 ft above sea level. Aug. 17, 1898, to Dec. 31, 1904, and Sept. 1, 1922, to Sept. 30, 1926, nonrecording gages at bridge 0.7 mi downstream at datum 16.24 ft and 16.29 ft lower, respectively.

REMARKS.--No estimated daily discharges. Records good. Low and medium flow regulated since July 1925 by Deep Creek Reservoir, 12 mi upstream from station (see station 03076000). U.S. Army Corps of Engineers satellite 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 5,540 ft³/s, Mar. 27, gage height, 5.96 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	50	277	2220	475	359	4250	517	157	162	68	146
2	235	92	286	1320	406	336	3540	480	142	417	173	115
3	97	195	290	1110	457	335	2670	444	121	488	73	202
4	52	227	274	1510	359	1190	2070	371	154	208	72	266
5	125	140	247	1390	333	1180	1710	342	194	212	117	177
6	178	145	265	1200	244	793	1480	285	164	166	124	163
7	180	157	303	759	197	613	1320	323	118	269	195	67
8	134	133	276	636	280	663	1210	276	482	224	114	54
9	141	122	264	521	294	792	1150	211	432	213	141	115
10	86	112	269	442	292	662	2140	206	256	158	98	122
11	51	113	267	447	312	706	2370	181	970	75	55	51
12	146	381	299	621	420	606	1870	185	542	228	345	48
13	151	863	272	836	263	568	1580	318	360	205	176	104
14	145	548	315	1030	205	538	1360	330	347	200	77	45
15	106	380	372	1060	210	817	743	209	237	128	65	165
16	98	307	574	621	252	499	1700	189	199	131	130	295
17	89	258	2170	501	377	889	2860	191	171	56	107	435
18	46	281	3420	547	395	1800	2130	183	212	48	97	292
19	89	255	2270	463	422	1210	1690	293	132	114	140	233
20	127	263	2510	418	337	813	1470	291	122	82	115	222
21	131	211	2680	468	339	1050	1170	297	178	49	48	130
22	108	265	1980	832	976	1350	1320	200	140	87	40	128
23	100	437	2390	646	989	2160	1140	186	138	112	97	213
24	96	454	2670	696	651	4650	838	175	104	39	89	208
25	56	453	1810	1130	484	4600	698	179	154	35	178	131
26	98	378	1460	874	454	5090	871	147	143	93	146	443
27	157	330	1160	752	379	4970	1080	135	83	92	163	1180
28	122	284	1100	657	340	4740	801	188	144	168	57	1190
29	92	265	902	639	---	4100	717	125	129	277	29	700
30	94	284	1020	406	---	3930	606	108	116	257	115	563
31	88	---	2140	361	---	3880	---	166	---	103	125	---
TOTAL	3569	8383	34532	25113	11142	55889	48554	7731	6841	5096	3569	8203
MEAN	115	279	1114	810	398	1803	1618	249	228	164	115	273
MAX	235	863	3420	2220	989	5090	4250	517	970	488	345	1190
MIN	46	50	247	361	197	335	606	108	83	35	29	45
(†)	-97.8	+53.9	-34.1	+40.6	-27.0	+255	-37.0	+17.9	+5.0	-65.0	-42.3	-25.2
MEAN*	17	333	1080	851	371	2058	1581	267	232	99	73	248
CFSM*	0.06	1.13	3.66	2.88	1.26	6.98	5.36	0.91	0.79	0.34	0.25	0.84
IN*	0.07	1.26	4.22	3.32	1.31	8.05	5.98	1.05	0.88	0.39	0.29	0.94

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1993, BY WATER YEAR (WY)

	MEAN	284	494	857	867	977	1210	954	677	484	367	290	231
MAX	1103	2190	2147	1664	2277	2644	2231	1564	1823	1335	1319	920	
(WY)	1955	1986	1903	1952	1903	1963	1901	1967	1903	1990	1956	1945	
MIN	50.2	55.7	145	140	337	285	342	176	84.2	64.6	51.0	49.8	
(WY)	1992	1905	1944	1981	1954	1990	1946	1982	1969	1991	1991	1991	

† Change in contents in Deep Creek Reservoir, equivalent in cubic feet per second, provided by Pennsylvania Electric Co.

* Adjusted for change in reservoir contents.

MONONGAHELA RIVER BASIN

03076500 YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

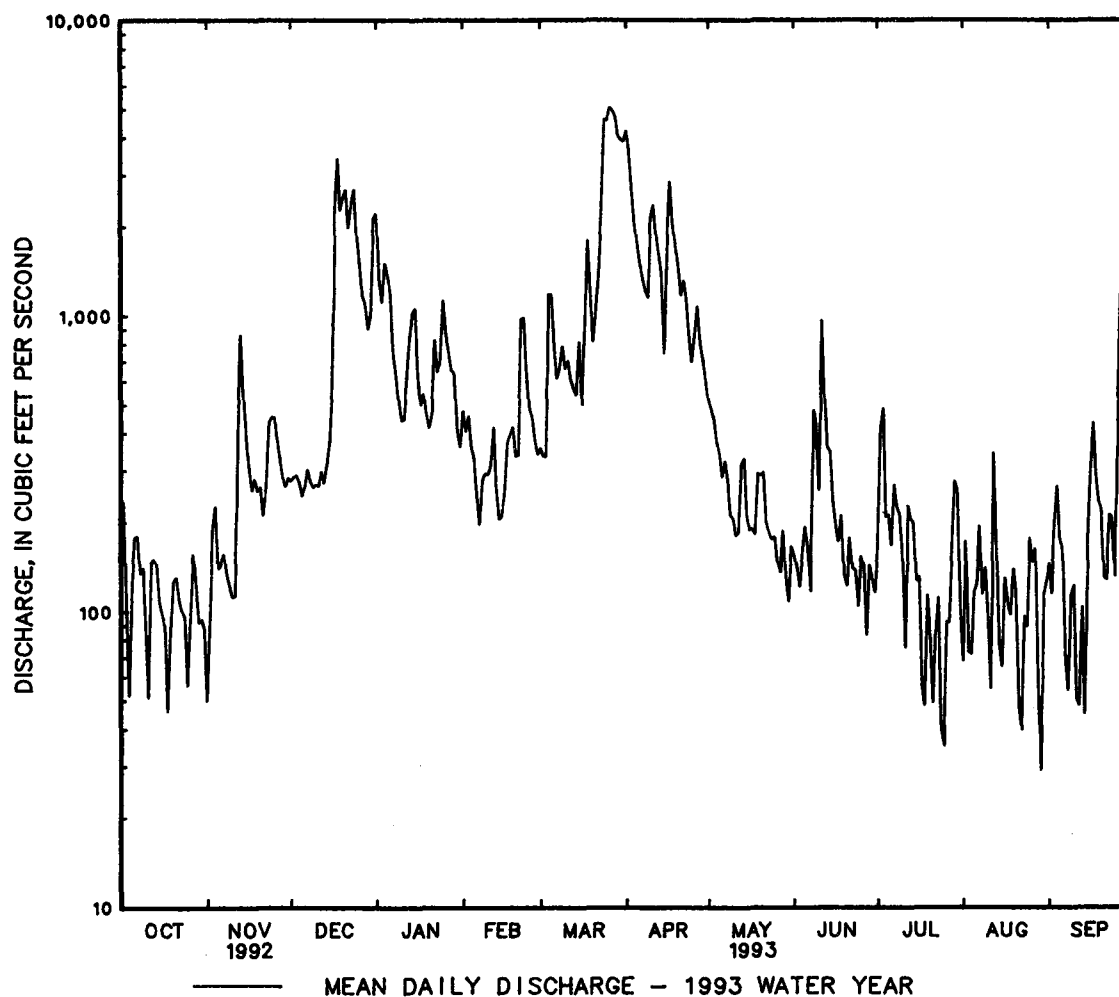
WATER YEARS 1898 - 1993

ANNUAL TOTAL	193607		218622			
ANNUAL MEAN	529		599		637	
ANNUAL MEAN*	527		603		641	
HIGHEST ANNUAL MEAN					1052	1903
LOWEST ANNUAL MEAN					375	1954
HIGHEST DAILY MEAN	3460	Jul 28	5090	Mar 26	10000	Aug 6 1956
LOWEST DAILY MEAN	46	Oct 18	29	Aug 29	8.2	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	98	Oct 15	71	Jul 20	29	Sep 21 1972
INSTANTANEOUS PEAK FLOW	4930	Jul 27	5540	Mar 27	(a)15600	Mar 29 1924
INSTANTANEOUS PEAK STAGE	5.67	Jul 27	5.96	Mar 27	(b)14.20	Mar 29 1924
INSTANTANEOUS LOW FLOW	44	Oct 8	27	Aug 30	UNKNOWN	
ANNUAL RUNOFF (CFSM)	1.79		2.03		2.16	
ANNUAL RUNOFF (CFSM)*	1.79		2.04		2.17	
ANNUAL RUNOFF (INCHES)	24.41		27.57		29.35	
ANNUAL RUNOFF (INCHES)*	24.25		27.75		29.51	
10 PERCENT EXCEEDS	1170		1470		1410	
50 PERCENT EXCEEDS	340		274		405	
90 PERCENT EXCEEDS	114		92		104	

* Adjusted for change in reservoir contents since October 1940.

a From rating curve extended above 5,800 ft³/s on basis of slope-area measurement of peak flow.

b From floodmarks, site and datum then in use or 10.2 ft, present site and datum.



349

MEAN	36.3	70.4	123	108	149	187	156	100	52.6	52.5	30.7	31.5
MAX	187	341	293	248	387	347	293	215	153	274	117	256
(WY)	1980	1986	1991	1975	1986	1967	1984	1989	1981	1990	1980	1971
MIN	4.05	12.0	23.2	19.1	39.8	45.5	66.0	23.5	10.6	6.35	4.32	2.98
(WY)	1992	1992	1966	1977	1993	1990	1968	1982	1991	1965	1966	1991

MONONGAHELA RIVER BASIN

03076600 BEAR CREEK AT FRIENDSVILLE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1965 - 1993

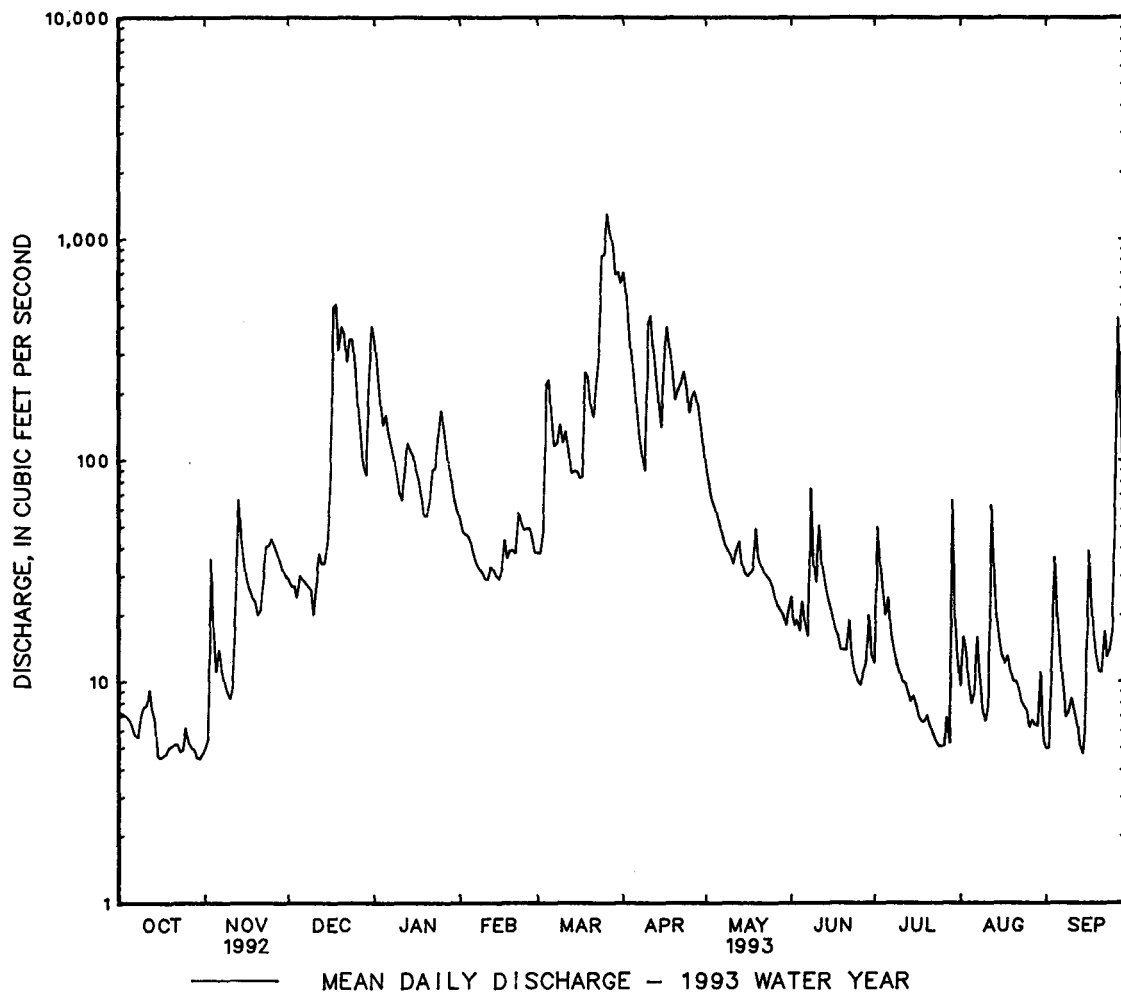
ANNUAL TOTAL	27907.6	32412.8	91.2	
ANNUAL MEAN	76.3	88.8	122	1978
HIGHEST ANNUAL MEAN			53.4	1966
LOWEST ANNUAL MEAN			1.6	(b)
HIGHEST DAILY MEAN	508	1300	3100	Sep 14 1971
LOWEST DAILY MEAN	4.5	4.5	2.0	Sep 7 1966
ANNUAL SEVEN-DAY MINIMUM	4.8	4.8	1.5	Sep 12 1966
INSTANTANEOUS PEAK FLOW	694	1710	(c)4650	Sep 14 1971
INSTANTANEOUS PEAK STAGE	3.83	5.11	(d)9.60	Sep 14 1971
INSTANTANEOUS LOW FLOW	4.2	4.2	1.5	Sep 12 1966
ANNUAL RUNOFF (CFSM)	1.56	1.82	1.87	
ANNUAL RUNOFF (INCHES)	21.23	24.66	25.34	
10 PERCENT EXCEEDS	227	239	225	
50 PERCENT EXCEEDS	40	31	49	
90 PERCENT EXCEEDS	8.2	6.4	8.5	

a Oct. 16, 29, 30.

b Sept. 12, 13, 1966.

c From rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow.

d From floodmarks.



03078000 CASSELMAN RIVER AT GRANTSVILLE, MD

LOCATION.--Lat 39°42'08", long 79°08'12", Garrett County, Hydrologic Unit 05020006, on left bank at downstream side of highway bridge, 0.3 mi upstream from Slaubaugh Run, 0.7 mi downstream from U.S. Highway 40, and 1.0 mi north-east of Grantsville.

DRAINAGE AREA.--62.5 mi².

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WSP 1143: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,088.97 ft above sea level.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 31	2200	1,110	3.87	Apr. 1	0430	*2,840	*5.81
Mar. 25	2130	1,650	4.46	Apr. 10	1615	1,130	3.89
Mar. 26	2130	1,560	4.37	Apr. 16	1215	1,820	4.62
Mar. 28	0415	1,320	4.11	Apr. 17	0045	1,720	4.52
Mar. 30	2030	2,260	5.16				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
MEAN DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	9.9	51	685	e88	e46	2250	122	38	21	15	4.4
2	9.0	18	48	341	e99	e58	1310	109	30	214	21	4.1
3	8.8	178	52	254	e88	68	620	97	28	102	28	11
4	8.3	66	57	226	78	176	409	101	26	41	16	35
5	7.4	38	65	309	71	215	318	100	38	28	13	19
6	7.1	45	72	234	61	148	260	88	32	34	14	11
7	6.6	36	64	186	54	e132	226	76	26	22	34	8.2
8	6.4	31	61	163	57	154	204	66	304	18	21	7.0
9	7.4	27	e50	143	49	174	188	59	111	15	14	7.5
10	8.2	25	e47	124	52	139	763	52	58	13	21	9.6
11	8.3	26	e168	118	56	128	523	49	110	12	40	7.8
12	10	54	247	189	45	114	415	55	71	11	46	6.4
13	9.8	223	203	239	51	75	291	100	45	11	32	5.0
14	8.6	100	178	207	45	98	229	64	36	9.8	19	4.0
15	7.7	68	168	157	46	131	194	48	32	11	14	5.2
16	7.3	53	e183	137	45	e120	1110	46	27	9.9	11	39
17	7.5	47	e540	124	76	e115	1090	52	24	8.8	11	34
18	7.9	48	542	106	e62	e140	479	57	22	7.8	11	21
19	8.9	49	307	97	93	e160	325	166	20	7.7	10	15
20	9.6	47	439	e84	84	e140	254	99	18	7.8	8.8	10
21	10	47	370	e124	73	e120	321	76	18	7.0	8.8	10
22	11	93	271	181	e83	e140	304	63	23	6.0	8.2	16
23	10	138	443	163	e78	412	242	54	20	5.2	7.8	14
24	9.9	100	384	e159	e70	847	194	48	15	4.7	7.1	15
25	12	123	257	e180	e60	1040	169	42	13	3.9	6.5	21
26	10	98	204	151	e62	1190	261	38	13	6.3	5.1	152
27	9.4	82	172	e151	e62	1060	247	34	15	9.7	4.1	357
28	8.7	72	162	e124	e50	1270	180	31	13	7.7	5.7	174
29	8.7	63	145	112	---	1000	156	29	37	124	12	90
30	8.1	54	427	e127	---	1630	137	27	23	37	6.4	65
31	8.9	---	879	125	---	1430	---	29	---	19	5.2	---
TOTAL	270.7	2058.9	7256	5720	1838	12670	13669	2077	1286	835.3	476.7	1178.2
MEAN	8.73	68.6	234	185	65.6	409	456	67.0	42.9	26.9	15.4	39.3
MAX	12	223	879	685	99	1630	2250	166	304	214	46	357
MIN	6.4	9.9	47	84	45	46	137	27	13	3.9	4.1	4.0
CFSM	.14	1.10	3.75	2.95	1.05	6.54	7.29	1.07	.69	.43	.25	.63
IN.	.16	1.23	4.32	3.40	1.09	7.54	8.14	1.24	.77	.50	.28	.70

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1993, BY WATER YEAR (WY)

	MEAN	47.1	85.4	150	157	193	261	214	133	71.8	48.5	36.0	31.0
MAX	288	449	341	333	414	582	468	287	200	169	202	236	
(WY)	1955	1986	1973	1952	1956	1963	1970	1968	1951	1990	1956	1971	
MIN	1.65	3.38	14.5	26.4	60.3	57.0	77.1	40.1	10.0	4.30	2.87	1.58	
(WY)	1954	1954	1954	1977	1964	1990	1968	1976	1965	1965	1991	1991	

MONONGAHELA RIVER BASIN

03078000 CASSELMAN RIVER AT GRANTSVILLE, MD--Continued

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1947 - 1993

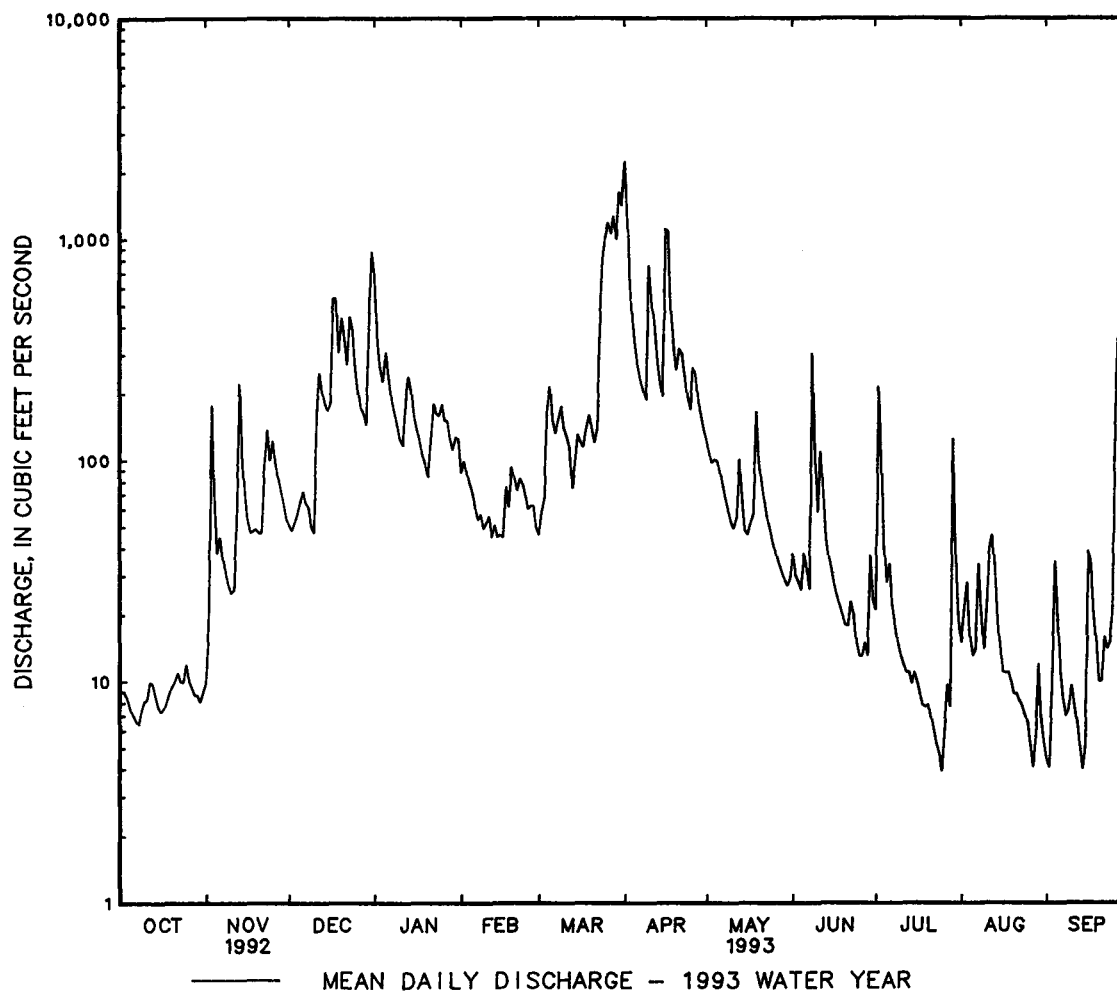
ANNUAL TOTAL	35941.0		49335.8		
ANNUAL MEAN	98.2		135		119
HIGHEST ANNUAL MEAN					158
LOWEST ANNUAL MEAN					64.2
HIGHEST DAILY MEAN	879	Dec 31	2250	Apr 1	2630
LOWEST DAILY MEAN	6.4	Oct 8	3.9	Jul 25	(a).00
ANNUAL SEVEN-DAY MINIMUM	7.3	Oct 4	5.8	Jul 20	.89
INSTANTANEOUS PEAK FLOW	1130	Feb 26	2840	Apr 1	(b)8400
INSTANTANEOUS PEAK STAGE	3.90	Feb 26	5.81	Apr 1	10.70
INSTANTANEOUS LOW FLOW	6.3	(c)	2.7	Aug 28	(a).00
ANNUAL RUNOFF (CFSM)	1.57		2.16		1.90
ANNUAL RUNOFF (INCHES)	21.39		29.36		25.79
10 PERCENT EXCEEDS	249		304		278
50 PERCENT EXCEEDS	60		54		64
90 PERCENT EXCEEDS	10		8.0		8.1

a Result of regulation from unknown source.

b From rating curve extended above 1,600 ft³/s on basis of contracted-opening measurement at gage height 8.13 ft.

c Oct. 7, 8.

d 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 1993

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
RED LION CREEK BASIN						
01482298	Red Lion Creek near Red Lion, De.	Lat 39°36'16", long 75°40'06", New Castle County, Hydrologic Unit 02040205, on left bank at downstream side of culvert on U.S. Highway 301S, 0.2 mi southwest of Red Lion, and 3.4 mi upstream from mouth.	3.08	1979-81*, 1993	8- 3-93	0.14
01482310	Doll Run at Red Lion, De.	Lat 39°35'53", long 75°39'43", New Castle County, Hydrologic Unit 02040205, 10 ft upstream from culvert on secondary road, 0.7 mi upstream from mouth, and 0.7 mi south of Red Lion.	1.23	1966-75*, 1993	8- 3-93	0.28
01482313	Red Lion Creek Tributary at Red Lion, De.	Lat 39°36'33", long 75°39'22", New Castle County, Hydrologic Unit 02040205, at culvert on State Highway 71, 0.5 mi upstream from mouth, and 0.6 mi northeast of Red Lion.	1.67	1993	8- 3-93	0.23
DRAGON CREEK BASIN						
01482397	Dragon Creek near Kirkwood, De.	Lat 39°34'33", long 75°41'34", New Castle County, Hydrologic Unit 02040205, at culvert on U.S. Highway 301, 0.5 mi northeast of Kirkwood, and 6.9 mi upstream from mouth.	1.42	1993	8- 3-93	0.13
ST. JONES RIVER BASIN						
01483640	Fork Branch near Moores Corner, De.	Lat 39°11'51", long 75°35'50", Kent County, Hydrologic Unit 02040207, at bridge on State Highway 15, 1.0 mi southeast of Moores Corner, and 3.7 mi upstream from mouth at Silver Lake.	5.73	1993	2-10-93 8-31-93	3.71 0.04
01483655	Fork Branch near Dover, De.	Lat 39°11'44", long 75°33'56", Kent County, Hydrologic Unit 02040207, at railroad bridge 200 ft upstream from road No. 100, 1.6 mi upstream from mouth at Silver Lake and 3.3 mi northwest of Dover.	9.46	1991, 1993	2-10-93 8-31-93	5.35 0.01
01483663	Penrose Branch Tributary at Casson Corner, De.	Lat 39°09'35", long 75°36'58", Kent County, Hydrologic Unit 02040207, at culvert on road No. 159, 0.2 mi upstream from mouth, and 0.4 mi west of Casson Corner.	1.04	1993	2-10-93 8-31-93	0.75 0.02

* Operated as a continuous-record station.

* Operated as a crest-stage partial-record station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1993

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
ST. JONES RIVER BASIN--Continued						
01483666	Mudstone Branch (formerly Maidstone Branch) near Casson Corner, De.	Lat 39°10'15", long 75°36'19", Kent County, Hydrologic Unit 02040207, at culvert on road No. 160, 0.8 mi north of Casson Corner, and 3.5 mi upstream from mouth.	7.48	1993	2-10-93 8-31-93	5.26 0.28
01483670	Mudstone Branch (formerly Maidstone Branch) at Chestnut Grove, De.	Lat 39°10'37", long 75°34'25", Kent County, Hydrologic Unit 02040207, on right bank at downstream side of bridge on State Highway 15, at Chestnut Grove, and 1.9 mi upstream from mouth.	8.96	1993	2-10-93 8-31-93	5.77 0.34
01483673	Cahoon Branch near Paden Corner, De.	Lat 39°08'39", long 75°36'06", Kent County, Hydrologic Unit 02040207, at culvert on road No. 198, 1.1 mi southwest of Paden Corner, and 3.2 mi upstream from mouth.	2.34	1993	2-10-93 8-31-93	1.51 0.08
01483676	Cahoon Branch at Chestnut Grove, De.	Lat 39°10'24", long 75°34'46", Kent County, Hydrologic Unit 02040207, at bridge on State Highway 15, 0.4 mi northwest of Chestnut Grove, and 0.5 mi upstream from mouth.	6.70	1993	2-10-93 8-31-93	4.25 0.59
01483682	Mudstone Branch (formerly Maidstone Branch) at Dupont, De.	Lat 39°11'30", long 75°33'43", Kent County, Hydrologic Unit 02040207, at railroad bridge, 0.1 mi upstream from mouth, and 0.35 mi southeast of Dupont.	17.4	1993	2-10-93 8-31-93	12.3 0.39
01483690	Silver Lake Tributary at Dover, De.	Lat 39°10'24", long 75°32'23", Kent County, Hydrologic Unit 02040207, at culverts on Pear Street, at Dover, and 0.25 mi upstream from mouth.	0.26	1993	2-10-93 8-31-93	0.08 0.03

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 1993 maximum		Period of record maximum			
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
POTOMAC RIVER BASIN								
North Branch Potomac River at Kitzmiller, Md. (01595500)	Lat 39°23'38", long 79°10'55", Garrett County, Hydrologic Unit 02070002, on left bank 0.6 mi downstream from bridge on State Highway 38 in Kitz- miller. Drainage area is 225 mi ² .	1950-85*, 1986-93	4-1-93	8.13	6,690	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 ² .	1967-85*, 1986-93	3-31-93	7.89	6,180	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 ² .	1939-85*, 1986-93	4-17-93	12.66	12,900	10-16-54	23.23	37,000

* 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 1993

Station No.	Station Name	Location	Period of Record	Annual Maximum	
				Date	Elevation, in feet NGVD
DELAWARE RIVER BASIN					
01483158	Appoquinimink River at Odessa, De.	Lat 39°27'09", long 75°39'20", New Castle County, Hydrologic Unit 02040205, on left bank 100 ft down- stream from bridge on State Highway 299, at Odessa and 6.4 mi up- stream from the confluence with Delaware River.	1993	12-11-92	5.99
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.	1985-93	12-12-92	4.76
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.	1992-93	12-12-92	5.08
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.	1985-93	12-12-92	3.89
01484680	Massey Ditch at Massey Landing, De.	Lat 38°37'31", long 75°06'00", Sussex County, Hydrologic Unit 02060010, just south of Rehoboth Bay at south shore of Roman T Pond, and on Massey Ditch at a boat dock at Massey Landing.	1992-93 (Discontinued)	12-12-92	4.12
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.	1992-93	12-12-92	5.10
NANTICOKE RIVER BASIN					
01487200	Nanticoke River at Seaford, De.	Lat 38°38'25", long 75°36'37", Sussex County, Hydrologic Unit 02060008, on right bank attached to bulkhead at the City of Seaford Diesel Electric Power Plant, 300 ft downstream from Alternate U.S. Highway 13.	1992-93 (Discontinued)	3-14-93	4.01
01488110	Nanticoke River at Sharptown, Md.	Lat 38°32'38", long 75°43'13", Wicomico County, Hydrologic Unit 02060008, on left bank at upstream side of fishing pier (remains of old State Highway 313 bridge), at Sharptown.	1992-93	3-14-93	3.73

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 1992 TO SEPTEMBER 1993

NANTICOKE RIVER BASIN

384429075235301 GRAVELLY DITCH NEAR REDDEN, ~~DEL~~ OEL

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	
APR 1993 07...	1030	101	3.3	6.5	4.4	7	1.3	0.79	3.9	0	
		SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
		8.5	7.4	0.10	11	<0.010	<0.050	0.040	<0.010	460	33

384443075234101 GRAVELLY DITCH TRIBUTARY AT REDDEN, ~~DEL~~ OEL

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY WAT WH TOT FET FIELD MG/L AS CACO3	
APR 1993 07...	1330	87	3.4	10.0	7.1	6	1.3	0.77	5.2	0	
		SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
	10	7.9	<0.10	11	<0.010	<0.050	0.020	<0.010	310	22	

384502075242401 GRAVELLY DITCH AT REDDEN, ~~DEL~~ OEL

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	ALKALINITY WAT WH TOT FET FIELD (MG/L AS CACO3)
APR 1993 07...	1600	91	3.3	10.0	7.9	6	1.1	0.69	4.2	0
	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
	8.6	7.1	0.10	11	<0.010	<0.050	0.030	<0.010	730	23

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

POTOMAC RIVER BASIN

01614525 ROCKDALE RUN AT FAIRVIEW, MD

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
SEP 1993 08...	0830	4.7	467	7.7	16.0	20.0	751	8.8	91	230	68
	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)
	14	4.4	3.8	189	231	15	13	<0.10	8.3	155	29
	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	DIMETH-OATE WATER FLTRD 0.7 U GG, REC (UG/L)
	0.060	6.70	0.100	0.40	0.40	0.120	0.090	0.060	12	25	<0.02
	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	2,6-DI-ETHYL ANALINE WAT FLT 0.7 U GF, REC (UG/L)	ALA-CHLOR, WATER, DISS, REC (UG/L)	ATRA-ZINE, WATER, DISS, REC (UG/L)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYL-ATE, WATER, DISS, REC (UG/L)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.01	<0.02	<0.03	0.003	<0.01	<0.01	0.20	<0.01	<0.01	<0.05	<0.01
	CHLOR-PYRIFOS DIS-SOLVED (UG/L)	CYANA-ZINE, WATER, DISS, REC (UG/L)	P, P' DDE DISSOLV (UG/L)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L)	DI-AZINON, DIS-SOLVED (UG/L)	DI-ELDRIN DIS-SOLVED (UG/L)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	LINDANE DIS-SOLVED (UG/L)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.005	<0.01	<0.01	0.18	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.04
	MALA-THION, DIS-SOLVED (UG/L)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L)	METO-LACHLOR WATER DISSOLV (UG/L)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PARA-THION, DIS-SOLVED (UG/L)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)
	<0.01	<0.04	<0.03	0.03	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
	PRO-METON, WATER, DISS, REC (UG/L)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROP-CHLOR, WATER, DISS, REC (UG/L)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	SI-MAZINE, WATER, DISS, REC (UG/L)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L)	
	0.03	<0.01	<0.02	<0.01	<0.02	0.03	<0.02	<0.01	<0.01	<0.01	

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

POTOMAC RIVER BASIN--Continued

01619140 MARSH RUN AT REID, MD

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
SEP 1993 07...	1050	3.8	607	7.8	15.0	24.0	766	10.2	101	330	110
	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3)
	14	3.9	2.3	277	338	30	12	0.20	9.2	350	29
	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	DIMETH-OATE WATER FLTRD 0.7 U GG, REC (UG/L)
	0.010	6.60	0.050	<0.20	<0.20	0.030	<0.010	0.010	<3	40	<0.02
	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L)	2,6-DI-ETHYL ANALINE WAT FLT 0.7 U GF, REC (UG/L)	ALA-CHLOR, WATER, DISS, REC, (UG/L)	ATRA-ZINE, WATER, DISS, REC (UG/L)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYL-ATE, WATER, DISS, REC (UG/L)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.01	<0.02	<0.03	<0.01	<0.01	<0.01	0.43	<0.01	<0.01	<0.05	<0.01
	CHLOR-PYRIFOS DIS-SOLVED (UG/L)	CYANA-ZINE, WATER, DISS, REC (UG/L)	P, P' DDE DISSOLV (UG/L)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L)	DI-AZINON, DIS-SOLVED (UG/L)	DI-ELDRIN DIS-SOLVED (UG/L)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	LINDANE DIS-SOLVED (UG/L)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L)
	<0.005	<0.01	<0.01	0.24	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.04
	MALA-THION, DIS-SOLVED (UG/L)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L)	METO-LACHLOR WATER DISSOLV (UG/L)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	FEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PARA-THION, DIS-SOLVED (UG/L)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)
	<0.01	<0.04	<0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02
	PRO-METON, WATER, DISS, REC (UG/L)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROP-CHLOR, WATER, DISS, REC (UG/L)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	SI-MAZINE, WATER, DISS, REC (UG/L)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L)	
	0.04	<0.01	<0.02	<0.01	<0.02	0.08	<0.02	<0.01	<0.01	<0.01	

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

POTOMAC RIVER BASIN--Continued

01619200 HAMILTON CREEK AT HAGERSTOWN, MD

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TEMPER- ATURE AIR (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	
SEP 1993 07...	1530	2.4	776	7.8	20.5	29.5	751	8.5	96	320	110	
		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
	11	34	3.0	245	299	47	67	0.20	9.0	412	<0.010	
		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	DIMETH- OATE WATER FLTRD 0.7 U GG, REC (UG/L)	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)
	6.10	0.050	0.20	<0.20	0.020	<0.010	<0.010	<3	8	<0.02	<0.01	
		PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	2,6-DI- ETHYL ANALINE WAT FLT 0.7 U GF, REC (UG/L)	ALA- CHLOR, WATER, DISS, REC, (UG/L)	ATRA- ZINE, WATER, DISS, REC (UG/L)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L)	BUTYL- ATE, WATER, DISS, REC (UG/L)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CHLOR- PYRIFOS DIS- SOLVED (UG/L)
	<0.02	<0.03	<0.01	<0.01	0.02	0.19	<0.01	<0.01	0.02	<0.01	0.01	
		CYANA- ZINE, WATER, DISS, REC (UG/L)	P,P' DDE DISSOLV (UG/L)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L)	DI- AZINON, DIS- SOLVED (UG/L)	DI- ELDRIN DIS- SOLVED (UG/L)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	LINDANE DIS- SOLVED (UG/L)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L)	MALA- THION, DIS- SOLVED (UG/L)
	0.23	<0.01	0.07	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.04	<0.01	
		METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L)	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L)	METO- LACHLOR WATER DISSOLV (UG/L)	METRI- BUZIN WATER DISSOLV (UG/L)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PARA- THION, DIS- SOLVED (UG/L)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	
	<0.04	<0.03	1.9	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02		
		PRO- METON, WATER, DISS, REC (UG/L)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PROP- CHLOR, WATER, DISS, REC (UG/L)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	SI- MAZINE, WATER, DISS, REC (UG/L)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L)	
	0.17	<0.01	<0.02	<0.01	<0.02	0.03	<0.02	<0.01	<0.01	<0.01		

INDEX

Page	Page
Access to WATSTORE data.....	13
Accuracy of stage and water-discharge records....	10
Acre-foot, definition of.....	14
Adamsville, DE, Marshyhope Creek near.....	75-76
Adenosine triphosphate (ATP), definition of.....	14
Albert Powell Fish Hatchery Spring at Beaver Creek, MD.....	254-255
Algae, definition of.....	14
Algal growth potential (AGP), definition of.....	14
Anacostia River, Northeast Branch, at Riverdale, MD.....	329-330
Anacostia River, Northwest Branch, near Hyattsville, MD.....	331-332
Analyses of samples collected at partial-record and miscellaneous sites.....	357-360
Annual mean, explanation of.....	9
Annual runoff (AC-FT), explanation of.....	9
(CFSM), explanation of.....	9
(INCHES), explanation of.....	9
7-day minimum, explanation of.....	9
total, explanation of.....	9
Antietam Creek near Sharpsburg, MD.....	256-257
Appoquinimink River at Odessa, DE.....	356
Arrangement of surface-water quality records.....	11
Artificial substrate, definition of.....	18
Ash mass, definition of.....	14
Bacteria, definition of.....	14
fecal coliform, definition of.....	14
fecal streptococcal, definition of.....	14
total coliform, definition of.....	14
Barnum, WV, North Branch Potomac River at.....	355
Barton, MD, Savage River near.....	208-209
Bear Branch near Thurmont, MD.....	289-294
Bear Creek at Friendsville, MD.....	349-350
Beaver Creek, MD, Albert Powell Fish Hatchery Spring at.....	254-255
Beaver Run near Finksburg, MD.....	133-134
Beaverdam Branch (Mispillion River Basin) at Houston, DE.....	57-58
Beaverdam Run at Cockeysville, MD.....	114-115
Bed load, definition of.....	18
Bed load discharge, definition of.....	18
Bed material, definition of.....	14
Bennett Creek at Park Mills, MD.....	312-313
Bennett Creek tributary at Park Mills, MD.....	306-311
Benson, MD, Winters Run near.....	106-107
Bernard Frank Lake.....	327
Bethany Beach, DE, Indian River Bay at Indian River Inlet near.....	357
Bibliographic Data Sheet.....	iv
Big Elk Creek at Elk Mills, MD.....	86-87
Big Pipe Creek at Bruceville, MD.....	282-283
Biochemical oxygen demand (BOD), definition of... Biomass, definition of.....	14
Blackbird Creek at Blackbird, DE.....	51-52
Bloomington, MD, Savage River below Savage River Dam, near.....	210-211
Blue-green algae, definition of.....	17
Blue Mount, MD, Little Falls at.....	108-109
Bottom material, definition of.....	15
Bowie, MD, Patuxent River near.....	165-172
Brandywine Creek at Wilmington, DE.....	46-48
Bridgeport, MD, Monocacy River at.....	271-279
Bridgeville, DE, Nanticoke River near.....	73-74
Brighton, MD, Patuxent River below Brighton Dam near.....	149-150
Bruceville, MD, Big Pipe Creek at.....	282-283
Burnt Mills Dam.....	331
Bush River basin, gaging-station record in.....	106-107
Cacapon River near Great Cacapon, WV.....	237-238
Cahoon Branch at Chestnut Grove, DE.....	354
near Paden Corner, DE.....	354
Casselman River at Grantsville, MD.....	351-352
Casson Corner, DE, Mudstone Branch near.....	354
Penrose Branch tributary at.....	353
Catoctin Creek near Middletown, MD.....	265-266
Cattail Creek near Glenwood, MD.....	147-148
Cedarhurst, MD, North Branch Patapsco River at.....	131-132
Cells/volume, definition of.....	14
CFSM, explanation of.....	15
Cfs-day, definition of.....	15
Chain Bridge, Washington, DC, Potomac River at.....	323-326
Chemical data, explanation of.....	10-13
Chemical oxygen demand (COD), definition of.....	14
Chesapeake and Ohio Canal, diversions to.....	316
Chester River basin, gaging-station records in... Chestnut Grove, DE, Cahoon Branch at.....	82-85
Mudstone Branch at.....	354
Chlorophyll, definition of.....	53-54, 354
Choptank River basin, gaging-station record in... Choptank River near Greensboro, MD.....	15
Christina River at Coochs Bridge, DE.....	77-81
Classification of surface-water-quality records... Clements, MD, St. Clement Creek near.....	3, 77-81
Cockeysville, MD, Beaverdam Run at.....	34-35
Coliform bacteria, fecal.....	10
total.....	340-341
Collection and computation of stage and water discharge records.....	114-115
Collection and examination of data, explanation of:	14
sediment.....	6
water temperature.....	11-12
Color unit, definition of.....	11
Concentration, explanation of.....	15
Conococheague Creek at Fairview, MD.....	11-12
Conowingo, MD, Susquehanna River at.....	241-244
Conowingo Reservoir, MD, capacity of.....	92-103
Contents, definition of.....	92
Control, definition of.....	15
Control structure, definition of.....	15
Conversion factors, English units to International System (SI) units... Inside back cover	34-35
Coochs Bridge, DE, Christina River at.....	1-2
Cooperation, explanation of.....	129-130
Cranberry Branch near Westminster, MD.....	129
Cranberry Reservoir, MD, capacity of.....	355
Crest-stage partial-record stations.....	15
Cubic feet per second per square mile, definition of.....	15
Cubic foot per second, definition of.....	15
Cumberland, MD, North Branch Potomac River near.....	218-221
Wills Creek near.....	216-217
Dagsboro, DE, Vines Creek near.....	356
Daily mean value table, explanation of.....	9
Data, accuracy of.....	10
collection and computation of stage and water discharge.....	6
presentation, stage and water-discharge.....	7-9
surface-water quality.....	12
Datum, explanation of.....	12
Dawsonville, MD, Seneca Creek at.....	314-315
Deep Creek Reservoir near Oakland, MD.....	346
Deer Creek at Rocks, MD.....	104-105
Definition of terms.....	14-20
Delaware and Maryland, 1993, water resources data for, explanation of.....	1-20
Delaware Bay near Lewes, DE.....	59-62
Delaware River basin, gaging-station records in... tidal crest-stage partial record station in...	32-54
Dewey Beach, DE, Rehoboth Bay at.....	356
Diatoms, definition of.....	17
Discharge at partial-record stations and miscellaneous sites.....	353-356

INDEX

	Page		Page
Discharge, definition of.....	15	Hagerstown, MD, Hamilton Creek at.....	360
estimated daily, identification of.....	10	Hamilton Creek at Hagerstown, MD.....	360
instantaneous, definition of.....	15	Hancock, MD, Potomac River at.....	239-240
mean, definition of.....	15	Hardness, definition of.....	15
Discharge during 1993 water year compared with		Hawlings River near Sandy Spring, MD.....	151-152
median discharge for period 1961-90 for two		Headsville, WV, Patterson Creek near.....	222-224
representative gaging stations.....	3	Hockessin, DE, Mill Creek at Mill Creek Road at..	38-39
Discontinued gaging stations, list of.....	ix-xi	Honeygo Run at White Marsh, MD.....	124-125
Discontinued water-quality stations, list of.....	xii	Hoopes Reservoir.....	40
Dissolved, definition of.....	15	Houston, DE, Beaverdam Branch at.....	57-58
Dissolved-solids concentration, definition of....	15	Huntersville, MD, Killpeck Creek at.....	185-190
Doll Run at Red Lion, DE.....	353	Hunting Creek (Patuxent River Basin)	
Dover, DE, Fork Branch near.....	353	near Huntingtown, MD.....	179-184
St. Jones River at.....	55-56	Hunting Creek (Potomac River Basin)	
Silver Lake tributary at.....	354	near Foxville, MD.....	284-288
Downstream order and station number.....	4	Huntingtown, MD, Hunting Creek near.....	179-184
Downstream order system, explanation of.....	4	Hyattsville, MD, Northwest Branch	
Dragon Creek basin, low-flow partial-record		Anacostia River near.....	331-332
station in.....	353	Hydrologic Bench-Mark Network, definition of....	15
Dragon Creek near Kirkwood, DE.....	353	Hydrologic conditions, summary of.....	2
Drainage area, definition of.....	15	Hydrologic unit, definition of.....	15
explanation of, stage and water discharge.....	7		
explanation of, surface-water quality.....	12	Identifying estimated daily discharge.....	10
Drainage basin, definition of.....	15	Indian River at Rosedale Beach, DE.....	356
Dry mass, definition of.....	14	Indian River basin, gaging station records in....	63-66
Dupont, DE, Mudstone Branch at.....	354	tidal crest-stage partial-record stations in..	356
		Indian River Bay at Indian River Inlet	
Elk Mills, MD, Big Elk Creek at.....	86-87	near Bethany Beach, DE.....	356
Elk River basin, gaging-station records in.....	86-91	Instantaneous discharge, definition of.....	15
Elk River near Town Point, MD.....	88-91	Instrumentation, explanation of.....	12
Estimated daily discharge, identification of.....	10	Introduction.....	1
Explanation of stage and water-discharge			
records.....	4-10	Kennedyville, MD, Morgan Creek near.....	84-85
Explanation of water-quality records.....	10-13	Killpeck Creek at Huntersville, MD.....	185-190
Extremes, explanation of:		Kirkwood, DE, Dragon Creek near.....	353
stage and water discharge.....	7	Kitzmill, MD, North Branch Potomac River at....	355
surface-water quality.....	12		
Factors for converting English units to		Laboratory measurements.....	12
International System (SI) units...Inside back cover		Lakes and reservoirs:	
Fairfax Water Treatment Plant.....	316	Deep Creek Reservoir near Oakland, MD,	
Fairview, MD, Conococheague Creek at.....	241-244	month-end contents of.....	346
Rockdale Run at.....	358	Prettyboy Reservoir, MD, month-end	
Fecal coliform bacteria, definition of.....	14	contents of.....	110
Fecal streptococcal bacteria, definition of.....	14	Savage River Reservoir, MD, month-end	
Finksburg, MD, Beaver Run near.....	133-134	contents of.....	210
Fishing Creek tributary near Lewistown, MD.....	295-300	T. Howard Duckett, and Triadelphia Reservoirs,	
Fluvial sediment data, explanation of.....	11-12	MD, combined month-end contents of.....	153
Footnotes, surface-water and		Triadelphia Reservoir, MD, month-end	
quality-water records.....	13	contents of.....	149
Fork Branch near Dover, DE.....	353	Latitude-longitude system, explanation of.....	5
near Moores Corner, DE.....	353	Laurel, MD, Patuxent River near.....	153-154
Fort Pendelton, MD, McMillan Fork near.....	195-201	Laurel Run at Dobbin Road near Wilson, MD.....	191-192
Foxville, MD, Hunting Creek near.....	284-288	Lewes, DE, Delaware Bay near.....	59-62
Franklin, MD, Georges Creek at.....	214-215	Lewistown, MD, Fishing Creek tributary near.....	295-300
Frederick, MD, Monocacy River at Jug Bridge		Little Falls at Blue Mount, Md.....	108-109
near.....	301-302	Little Falls Dam, diversions at.....	316
Monocacy River at Reich's Ford Bridge near....	303-305	Little Mill Creek near Newport, DE.....	44-45
Friendsville, MD, Bear Creek at.....	349-350	Little Patuxent River at Guilford, MD.....	155-156
Youghiogheny River at.....	347-348	at Savage, Md.....	159-164
		Location, explanation of:	
Gage, explanation of.....	7	stage and water discharge.....	7
Gage height (G.H.), definition of.....	15	surface-water quality.....	12
Gaging station, definition of.....	15	Long Green Creek at Glen Arm, MD.....	116-117
Gaging station records.....	32-352	Louisville, MD, Morgan Run near.....	135-136
Gaging stations, discontinued list of.....	ix-xi	Low-flow, partial-record stations, list of.....	xiii-xix
Georges Creek at Franklin, MD.....	214-215	Luke, MD, North Branch Potomac River.....	212-213
Glen Arm, MD, Long Green Creek at.....	116-117		
Glen Burnie, MD, Sawmill Creek at.....	137-138	Manokin Branch near Princess Anne, MD.....	71-72
Sawmill Creek at Crain Highway at.....	139-140	Manokin River basin, gaging-station	
Glencoe, MD, Gunpowder Falls at.....	110-111	record in.....	71-72
Glenwood, MD, Cattail Creek near.....	147-148	Marsh Creek Reservoir.....	46
Goose Creek, diversions from.....	316	Marsh Run at Grimes, MD.....	247-249
Grantsville, MD, Casselman River at.....	351-352	at Reid, MD.....	359
Gravelly Ditch at Redden, MD.....	357	Marshyhope Creek near Adamsville, DE.....	74-76
near Redden, MD.....	357	Martinsburg, WV, Opequon Creek near.....	245-246
Gravelly Ditch tributary at Redden, MD.....	357	Maryland and Delaware, 1993, water resources	
Great Cacapon, WV, Cacapon River near.....	237-238	data for, explanation of.....	1-20
Great Falls, MD, diversions at.....	316	Massey Ditch at Massey Landing, DE.....	356
Great Mills, MD, St. Marys River at.....	342-343	Massey Landing, DE, Massey Ditch at.....	356
Green algae, definition of.....	17	Max discharge, explanation of.....	8
Greensboro, MD, Choptank River near.....	3, 77-81	McMillan Fork near Fort Pendelton, MD.....	195-201
Grimes, MD, Marsh Run at.....	247-249	Mean concentration, definition of.....	18
Guilford, MD, Little Patuxent River at.....	155-156	Mean discharge, definition of.....	15
Gunpowder Falls at Glencoe, MD.....	110-111	explanation of.....	8
Gunpowder River basin, gaging-station		Metamorphic stage, definition of.....	15
records in.....	108-119	Methylene blue active substance (MBAS),	
		definition of.....	16

Page	Page
Micrograms per gram, definition of.....	16
Micrograms per liter, definition of.....	16
Middle Patuxent River near Simpsonville, MD.....	157-158
Middletown, DE, Noxontown Lake Outlet near.....	49-50
Middletown, MD, Catoctin Creek near.....	265-266
Mill Creek at Mill Creek Road at Hockessin, DE....	38-39
Milligrams, of carbon per area or volume per unit of time for periphyton, macrophytes, and phytoplankton, definition of.....	17
Milligrams, of oxygen per area or volume per unit of time for periphyton, macrophytes, and phytoplankton, definition of.....	17
Milligrams per liter, definition of.....	16
Millington, MD, Unicorn Branch near.....	82-83
Millsboro, DE, Millsboro Pond Outlet at.....	65-66
Millsboro Pond Outlet at Millsboro, DE.....	65-66
Millville, WV, Shenandoah River at.....	258-264
Min discharge, explanation of.....	8
Miscellaneous sites, explanation of.....	9
numbering system for.....	5
Mispillion River basin, gaging-station record in.....	57-58
Monocacy River at Bridgeport, MD.....	271-279
at Jug Bridge near Frederick, MD.....	301-302
at Reich's Ford Bridge near Frederick, MD.....	303-305
Monongahela River basin, gaging-station records in.....	344-352
Monthly and annual mean discharge during water year 1993 compared with median of monthly and annual mean discharge for 1961-90 for two representative streamflow-gaging stations..	3
Moorefield, WV, South Fork South Branch Potomac River near.....	227-230
Moore's Corner, DE, Fork Branch near.....	353
Morgan Creek near Kennedyville, MD.....	84-85
Morgan Run near Louisville, MD.....	135-136
Mt. Storm, WV, Stony River near.....	204-207
Mudstone Branch at Chestnut Grove, DE.....	53-54, 354
at Dupont, DE.....	354
near Casson Corner, DE.....	354
Nanticoke River at Seaford, DE.....	356
at Sharptown, MD.....	356
Nanticoke River basin, gaging-station records in.....	73-76
tidal crest-stage partial-record stations in.....	356
Nanticoke River near Bridgeville, DE.....	73-74
Nassawango Creek near Snow Hill, MD.....	69-70
National Geodetic Vertical Datum of 1929 (NGVD), definition of.....	16
National Stream-Quality Accounting Network (NASQAN), definition of.....	16
National Technical Information Service.....	1
National Trends Network, definition of.....	16
National Water-Quality Assessment (NAWQA) Program, definition of.....	4
Natural substrate, definition of.....	18
Needwood Lake.....	327
Newark, DE, White Clay Creek near.....	36-37
Newport, DE, Little Mill Creek near.....	44-45
Newtown, MD, Zekiah Swamp Run near.....	338-339
North Branch Patapsco River at Cedarhurst, MD....	131-132
North Branch Potomac River at Barnum, WV.....	355
at Kitzmiller, MD.....	355
at Luke, MD.....	212-213
at Pinto, MD.....	355
at Steyer, MD.....	202-203
near Cumberland, MD.....	218-221
Northeast Branch Anacostia River at Riverdale, MD	329-330
North Fork Sand Run near Wilson, MD.....	193-194
North Fork Whitemarsh Run near White Marsh, MD...	118-120
Northwest Branch Anacostia River near Hyattsville, MD.....	331-332
Noxontown Lake Outlet near Middletown, DE.....	49-50
Numbering system miscellaneous sites.....	5
Numbers, station identification.....	5
Oakland, MD, Youghiogheny River near.....	344-345
Deep Creek Reservoir near.....	346
Odessa, DE, Appoquinimink River at.....	356
Ohio River basin.....	344-352
On-site measurements and sample collection, surface-water quality.....	11
Opequon Creek near Martinsburg, WV.....	245-246
Order, downstream and station number.....	4
Organic mass, definition of.....	14
Organism, definition of.....	16
Organism count/area, definition of.....	16
Organism count/volume, definition of.....	16
Organism total count, definition of.....	16
Other records available, explanation of.....	10
Paden Corner, DE, Cahoon Branch near.....	354
Parameter code, definition of.....	16
Park Mills, MD, Bennett Creek at.....	312-313
Bennett Creek tributary at.....	306-311
Partial-record station, definition of.....	16
explanation of.....	9
Partial-record stations and miscellaneous sites..	353-360
Particle-size classification, definition of.....	16
Particle size, definition of.....	16
Patapsco River, North Branch, at Cedarhurst, MD..	131-132
Patapsco River basin, gaging-station records in..	129-140
Patterson Creek near Headsville, WV.....	222-224
Patuxent Filtration Plant, diversions at.....	153
Patuxent River basin, gaging-station records in..	141-190
Patuxent River below Brighton Dam near Brighton, MD.....	149-150
near Bowie, MD.....	165-172
near Laurel, MD.....	153-154
near Unity, MD.....	141-146
Paw Paw, WV, Potomac River at.....	235-236
Peak discharge, explanation of.....	8
Penrose Branch tributary at Casson Corner, DE....	353
Percent composition, definition of.....	17
Period of record, explanation of: stage and water discharge.....	7
surface-water quality.....	12
Periphyton, definition of.....	17
Pesticides, definition of.....	17
Petersburg, WV, South Branch Potomac River near..	225-226
Piney Creek near Taneytown, MD.....	280-281
Pinto, MD, North Branch Potomac River at.....	355
Phytoplankton, definition of.....	17
Picocurie, definition of.....	17
Piscataway Creek at Piscataway, MD.....	336-337
Plankton, definition of.....	17
Pocomoke River basin, gaging-station records in..	67-70
Pocomoke River near Willards, MD.....	67-68
Point of Rocks, MD, Potomac River at.....	3, 267-270
Potomac Filtration Plant, diversions at.....	316
Potomac River at Chain Bridge, Washington, DC....	323-326
at Hancock, MD.....	239-240
at Paw Paw, WV.....	235-236
at Point of Rocks, MD.....	3, 267-270
at Shepherdstown, WV.....	250-253
near Washington, DC.....	316-322
North Branch at Barnum, WV.....	355
at Kitzmiller, MD.....	355
at Luke, MD.....	212-213
at Pinto, MD.....	355
at Steyer, MD.....	202-203
near Cumberland, MD.....	218-221
South Branch, near Petersburg, WV.....	225-226
near Springfield, WV.....	231-234
South Fork South Branch near Moorefield, WV...	227-230
Potomac River basin, crest-stage partial-record stations in.....	355
gaging-station records in.....	191-343
Preface.....	iii
Prettyboy Reservoir, MD, capacity of.....	110
month-end contents of.....	110
Primary productivity, definition of.....	17
Princess Anne, MD, Manokin Branch near.....	71-72
Publications on Techniques of Water-Resources Investigations.....	22-24
Radiochemical program, definition of.....	17
Records, accuracy of.....	10
arrangement of surface-water quality.....	11
classification of surface-water quality.....	10
explanation of, stage and water discharge.....	5-10
surface-water quality.....	10-13
other available.....	10
Recoverable from bottom material, definition of..	17
Red Clay Creek at Wooddale, DE.....	40-41
Red Clay Creek near Stanton, DE.....	42-43
Redden, MD, Gravelly Branch at.....	357
Gravelly Branch near.....	357
Gravelly Branch tributary at.....	357
Red Lion Creek basin, low-flow partial-record stations in.....	353
Red Lion Creek near Red Lion, DE.....	353
Red Lion Creek tributary at Red Lion, DE.....	353
Red Lion, DE, Doll Run at.....	353
Red Lion Creek near.....	353
Red Lion Creek tributary at.....	353

	Page		Page
Reid, MD, Marsh Run at.....	359	Suspended sediment, definition of.....	18
Rehoboth Bay at Dewey Beach, DE.....	356	Suspended-sediment discharge, definition of.....	18
Remark codes.....	13, 31	Suspended-sediment load, definition of.....	18
Remarks, explanation of:		Suspended, total, definition of.....	19
stage and water discharge.....	7	Susquehanna River at Conowingo, MD.....	92-103
surface-water quality.....	12	Susquehanna River basin, gaging-station	
Reservoir stations, explanation of.....	10	records in.....	92-105
Reservoirs, See Lakes and reservoirs		System for numbering miscellaneous sites.....	5
Return period, definition of.....	17	Taneytown, MD, Piney Creek near.....	280-281
Revised stage and discharge records,		Taxonomy, definition of.....	19
explanation of.....	8	Techniques of Water-Resources Investigations,	
Revisions, stage and water-discharge records.....	7	publications on.....	22-24
surface-water quality records.....	12	Temperature, water, explanation of.....	11
Riverdale, MD, Northeast Branch Anacostia		Terms and abbreviations, definition of.....	4-20
River at.....	329-330	Thermograph, definition of.....	19
Rock Creek at Sherrill Drive, Washington, DC.....	327-328	T. Howard Duckett and Triadelphia Reservoirs,	
Rockdale Run at Fairview, MD.....	358	MD, combined month-end contents of.....	153
Rocks, MD, Deer Creek at.....	104-105	Thurmont, MD, Bear Branch near.....	289-294
Rockville, MD, City of, diversions by.....	316	Tidal crest-stage stations.....	356
Rosedale Beach, DE, Indian River at.....	356	Time-weighted average, definition of.....	19
Runoff in inches, definition of.....	17	Tons per acre-foot, definition of.....	19
St. Clement Creek near Clements, MD.....	340-341	Tons per day, definition of.....	19
St. Jones River at Dover, DE.....	55-56	Total coliform bacteria, definition of.....	14
St. Jones River basin, gaging-station		Total, definition of.....	19
records in.....	55-56	Total discharge, explanation of.....	19
low-flow partial-record stations in.....	353-354	Total organism count, definition of.....	16
St. Marys River at Great Mills, MD.....	342-343	Total, recoverable, definition of.....	20
Sample collection, surface-water quality,		Total sediment discharge, definition of.....	18
explanation of.....	11	Total-sediment load, definition of.....	18
Sand Run, North Fork, near Wilson, MD.....	193-194	Town Point, MD, Elk River near.....	88-91
Sandy Spring, MD, Hawlings River near.....	151-152	Triadelphia and T. Howard Duckett Reservoirs,	
Savage, Md, Little Patuxent River at.....	159-164	MD, combined month-end contents of.....	153
Savage River, below Savage River Dam, near		Triadelphia Reservoir, MD, capacity of.....	149
Bloomington, MD.....	210-211	month-end contents of.....	149
near Barton, MD.....	208-209	Tritium network, definition of.....	20
Savage River Reservoir, MD, capacity of.....	210	Unicorn Branch near Millington, MD.....	82-83
month-end contents of.....	210	Unity, MD, Patuxent River near.....	141-146
Sawmill Creek at Crain Highway at Glen Burnie, MD		Upper Marlboro, MD, Western Branch at.....	173-178
at Glen Burnie, MD.....	139-140	Vines Creek near Dagsboro, DE.....	356
Seaford, DE, Nanticoke River at.....	137-138	Violets Lock, diversions at.....	316
Sediment, definition of.....	356	Washington, DC, Potomac River at Chain Bridge....	323-326
explanation of.....	11-12	Potomac River near.....	316-322
Seneca Creek at Dawsonville, MD.....	314-315	Rock Creek at Sherrill Drive.....	327-328
7-day 10-year low flow, definition of.....	18	Watts Branch at.....	333-335
Sharpsburg, MD, Antietam Creek near.....	256-257	Water-discharge records and stage, explanation of	5-10
Sharptown, MD, Nanticoke River at.....	356	Water-quality codes.....	13, 31
Shellpot Creek at Wilmington, DE.....	32-33	Water-quality records, explanation of.....	10-13
Shenandoah River at Millville, WV.....	258-264	Water resources data for Maryland and Delaware,	
Shepherdstown, WV, Potomac River at.....	250-253	1993, explanation of.....	1-20
Silver Lake, DE.....	55	Water Resources Investigations, publications	
Silver Lake tributary at Dover, DE.....	354	on Techniques of.....	22-24
Simpsonville, MD, Middle Patuxent River near.....	157-158	Water temperature, explanation of.....	11
Snow Hill, MD, Nassawango Creek near.....	69-70	Water year, explanation of.....	20
Sodium-adsorption-ratio, definition of.....	18	WATSTORE data, access to.....	13
Solute, definition of.....	18	Watts Branch at Washington, DC.....	333-335
South Branch Potomac River near Petersburg, WV...	225-226	WDR (Water Data Reports), definition of.....	20
near Springfield, WV.....	231-234	Weighted average, definition of.....	20
South Fork South Branch Potomac River		Western Branch at Upper Marlboro, MD.....	173-178
near Moorefield, WV.....	227-230	Western Run at Western Run, MD.....	112-113
Special networks and programs.....	4	Westminster, MD, Cranberry Branch near.....	129-130
Specific conductance, definition of.....	18	Wet mass, definition of.....	14
Springfield, WV, South Branch Potomac River near.	231-234	White Clay Creek near Newark, DE.....	36-36
Stage and water discharge records,		White Marsh, MD, Honeygo Run at.....	124-125
explanation of.....	5-6	North Fork Whitemarsh Run near.....	118-120
Stage-discharge relation, definition of.....	18	Whitemarsh Run near.....	121-123
Stanton, DE, Red Clay Creek near.....	42-43	Windlass Run near.....	126-128
Station identification number, explanation of....	4	Whitemarsh Run near White Marsh, MD.....	121-123
Statistics, monthly mean data, explanation of....	8	Willards, MD, Pocomoke River near.....	67-68
summary, explanation of.....	8	Willis Creek near Cumberland, MD.....	216-217
Steyer, MD, North Branch Potomac River at.....	202-203	Wilmington, DE, Brandywine Creek at.....	46-48
Stockley Branch at Stockley, DE.....	63-64	Shellpot Creek at.....	32-33
Stony River near Mt. Storm, WV.....	204-207	Wilson, MD, Laurel Run at Dobbin Road.....	191-192
Streamflow, definition of.....	18	North Fork Sand Run near.....	193-194
Streptococcal bacteria, fecal.....	14	Windlass Run near White Marsh, MD.....	126-128
Substrate, definition of.....	18	Winters Run near Benson, MD.....	106-107
artificial, definition of.....	18	Wooddale, DE, Red Clay Creek at.....	40-41
natural, definition of.....	18	WSP (Water-Supply Paper), definition of.....	20
Summary of hydrologic conditions.....	2	Youghiogheny River at Friendsville, MD.....	347-348
Summary statistics, explanation of.....	8	near Oakland, MD.....	344-345
Surface area, definition of.....	18	Zekiah Swamp Run near Newtown, MD.....	338-339
Surface-water records, explanation of.....	5-10	Zooplankton, definition of.....	17
Surface-water quality records, explanation of....	10-13		
Surficial bed material, definition of.....	19		
Suspended, definition of.....	19		
Suspended, recoverable, definition of.....	19		
Suspended-sediment concentration, definition of..	18		

CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-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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